41 ... 0 Notes on the repair technique used in the main group 41

Two different repair techniques are used in body repair.

These are welding and bonding/riveting.

If the repair instructions do not specify a repair technique, then welding must **always** be used.

The bonding/riveting repair technique is **always** described in detail in the repair instructions.

Quality standards must be met.

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41 00 ... Blind rivet

1.0 Recommended tools and equipment

- Blind riveting tongs
- Rivet head extension

Sourcing reference BMW Workshop equipment catalogue

Setting blind rivets:

- Refer to repair instructions for rivet size.
- Position bore holes for blind rivets in accordance with specification in repair instructions. If necessary, carry over the positions of the blind rivets to the new part.
- Drill holes that exceed the outer diameter of the blind rivet (example ⌀ 4.2 mm with 4 mm blind rivet and ⌀ 6.8 mm with 6.5 mm blind rivet).
- The edge of the hole must even on both sides.If necessary, sand down and even out surfaces (e.g. edges of punch rivet connections).Deburr bore holes.
- Apply adhesive.
- Insert blind rivet. If necessary, remove adhesive that has emerged.
  Position blind rivet tool vertically. Use rivet head extension if accessibility is poor.
- Rivet blind rivet with blind rivet tool. In the meantime clean rivet head if dirty with adhesive. Risk of damage to rivet head by penetrating adhesive.
- Seal blind rivet with sealantD1 (risk of corrosion).
- Seal cavities after work on vehicle paintwork on with cavity preservation (risk of corrosion).

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41 00 ... BMW/MINI bonding instructions



Special tools required:

- 2 357 309

Attention!

Conform with safety regulations !

1 Brief overview of surface preparation

1.1 Structure

Material (surface condition) Type of repair	Preparation
Aluminium (used part) Repairs on front end/rear end Example: Replacement of engine support or front wheel arch	• Remove coarse dirt from the bonding surfaces using solvent cleaner R2 • Clean with cleaning agent R1 • Grind bonding surfaces to a metallic bright-finish • Clean with cleaning agent R1 • Flame-coating • Bond with adhesive K1
Aluminium (new part) Repairs on front end/rear end Example: Replacement of engine support or front wheel arch	• Do **not** sand bonding surface • Remove coarse dirt from the bonding surfaces using solvent cleaner R2 • Clean with cleaning agent R1 • Bond with adhesive K1
Carbon (new part) Bonding new parts to the body with adhesiveK1 Example: Replacement of rear wheel arch	• Remove coarse dirt from the bonding surfaces using solvent cleaner R2 • Clean with cleaning agent R1 • Sand with non-woven abrasive S1 • Clean with cleaning agent R1 • Activate with Betawipe 4800 • Bond with adhesive K1
Carbon (used part) Bonding new parts to the body with adhesiveK1 Example: Replacement of B-pillar	• Remove coarse dirt from the bonding surfaces using solvent cleaner R2 • Clean with cleaning agent R1 • Sand adhesive residue • Clean with cleaning agent R1 • Bond with adhesive K1

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Sheet steel (used part and new part) Partial replacement of components Example: Replacement of B-pillar or rear wheel arch	• Remove coarse dirt from the bonding surfaces using solvent cleaner R2 • Clean with cleaning agent R1 • Grind bonding surfaces to a metallic bright-finish • Clean with cleaning agent R1 • Bond with adhesive K1

1.2 Outer skin (without roof outer skin)

Material (surface condition) Type of repair	Preparation
Sheet steel (used part) Adhesive strip for outer skin component Example: Replacement of rear side panel or tail panel	• Remove coarse dirt from the bonding surfaces using solvent cleaner R2 • Clean with cleaning agent R1 • Grind bonding surfaces to a metallic bright-finish • Clean with cleaning agent R1 • Bond with adhesive K5
Sheet steel (new part) Adhesive strip for outer skin component Example: Replacement of rear side panel or tail panel	• Do **not** sand bonding surface • Remove coarse dirt from the bonding surfaces using solvent cleaner R2 • Clean with cleaning agent R1 • Bond with adhesive K5

1.3 Roof outer skin

Material (surface condition) Type of repair	Preparation
Aluminium (new part) Adhesive strip for roof outer skin	• Do **not** sand bonding surface • Remove coarse dirt from the bonding surfaces using solvent cleaner R2 • Clean with cleaning agent R1 • Bond with adhesive K2
Sheet steel (primer undamaged) Adhesive strip for roof outer skin	• Remove coarse dirt from the bonding surfaces using solvent cleaner R2 • Clean with cleaning agent R1 • Cut back adhesive bead • Clean with cleaning agent R1 • Bond with adhesive K2
Sheet steel (primer damaged) Adhesive strip for roof outer skin	• Remove coarse dirt from the bonding surfaces using solvent cleaner R2 • Clean with cleaning agent R1 • thin coat with adhesive K1 • Bond with adhesive K2

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Carbon (used part) Adhesive strip for roof outer skin	• Remove coarse dirt from the bonding surfaces using solvent cleaner R2 • Clean with cleaning agent R1 • Cut back adhesive bead • Clean with cleaning agent R1 • Bond with adhesive K2
Carbon (new part) Adhesive strip for roof outer skin	• Remove coarse dirt from the bonding surfaces using solvent cleaner R2 • Clean with cleaning agent R1 • Sand with non-woven abrasive S1 • Clean with cleaning agent R1 • Activate with Betawipe 4800 • Bond with adhesive K2

2.1 The following general conditions are applicable to all bondings:

- The working temperature of glue cartridge must be more than 18°C.
- Object temperature, vehicle and new parts, at least 15°C.
- Read the vehicle-specific repair instructions to determine the thickness and positioning of the adhesive bead.
- After applying the adhesive, check whether an adhesive component has emerged at the back of the glue cartridge. If yes, break off the bonding procedure. Clean new part. Use new glue cartridge.
- Join components and secure in position.
- Remove excess adhesive. Do not use solvent cleaning agents.

2.2 Surface preparation (structural):

2.2.1 Flame-coating (aluminium):

- Clean bonding surfaces with cleaning agent R1.
- Remove oxide layers or paint from bonding surfaces using a stainless steel wire brush or sandpaper with 120 graining.
- Clean bonding surfaces with cleaning agent R1.
  Allow cleaned surfaces to dry for approx. 5 min.
  Bonding surfaces must be completely dry.
- Flame spray the surface:
  Go over the bonding surfaces slowly with the flame.
  Avoid flaming with the blue part of the flame.
  Condensation water appears on the area that is still uncoated. The condensation water in the line of the flame must evaporate completely.
  Directly after flaming, coat the still hot bonding surfaces (approx. 50 °C) with primer.P1
  Apply primer with a brush, cotton or similar item.
  Allow the coated surfaces to dry for approx. 5 minutes.

2.2.2 Surface preparation (carbon new part):

This surface preparation is applicable to new carbon parts.

Remove coarse dirt from the bonding surfaces using solvent cleaner R2.

Clean bonding surfaces with cleaning agent R1.

Sand bonding surfaces with non-woven abrasive S1.

Clean bonding surfaces with cleaning agent R1.

Let cleaned bonding surfaces dry for at least 2 min.

Bonding surfaces must be completely dry.

Activate bonding surfaces with Betawipe 4800.

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Let activated bonding surfaces dry for at least 2 min.

Bonding surfaces must be completely dry.

2.2.3 Surface preparation (carbon used part):

This surface preparation applies to the B-pillar area at the top.

Attention!

Carbon component not damaged!

Components must be replaced if showing signs of damage.

Remove coarse dirt from the bonding surfaces using solvent cleaner R2.

Clean bonding surfaces with cleaning agent R1.

Grind off adhesive residue to a thickness of approx. 0.5 mm.

Clean bonding surfaces with cleaning agent R1.

Let cleaned bonding surfaces dry for at least 2 min.

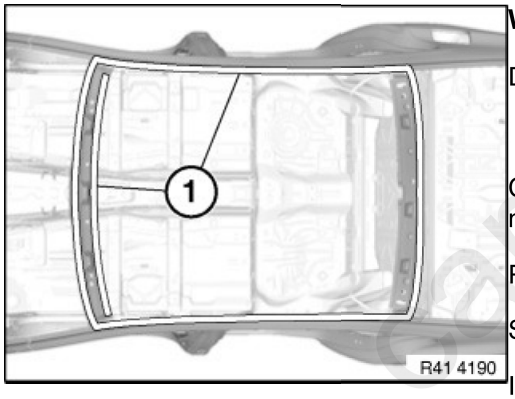
Bonding surfaces must be completely dry.

2.3 Surface preparation (outer skin (without roof outer skin)):

The procedure is described here.

2.4 Surface preparation (roof outer skin):

2.4.1 Surface preparation of roof frame and convertible top bow from sheet steel:



Warning!

Danger of injury by the sharp edge of the scraper!

Cut back adhesive remnants (1) with scraper 2 357 309 to a minimum of 0.5 mm.

Primed surface must not be damaged.

Smaller damage to 5 mm or scratch marks can be ignored.

In the event of larger damage to primer (greater than 5 mm), proceed as follows:

Clean damaged area with cleaning agent R1.

Apply adhesive K5 to the bare areas with a spatula or a brush. Apply a uniformly thin layer (max. 0.5 mm). The roof outer skin can be bonded after a curing period of 24 hours.

The adhesive flange area must not be painted over when the roof frame is being repaired or replaced.

2.4.2 Surface preparation of carbon (used part):

Warning!

Danger of injury by the sharp edge of the scraper!

Remove coarse dirt from the bonding surfaces using solvent cleaner R2.

Clean bonding surfaces with cleaning agent R1.

Cut back adhesive bead with scraper 2 357 309 to a minimum of 0.5 mm.

Clean bonding surfaces with cleaning agent R1.

Let cleaned bonding surfaces dry for at least 2 min.

Bonding surfaces must be completely dry.

2.4.3 Surface preparation of carbon (new part):

Prepare the surface as described under point 2.2.2.

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72 11 ... Checklist for front seat

Event		Check	Action
Has at least one belt tensioner and/or one side airbag been activated?	**Yes**	**Check 1 (when installed):** Check all seat adjustment options of both front seats. There must be no stiff movement, sticking or other functional problems or noises across the entire adjustment range of all the seat adjustment options. Check head restraints for damage. Check crash-active headrest for activation. **Only 2-door model:** Check backrest lock. Backrest must unlock and lock easily without any great physical effort.	If components are OK with regard to checks 1 and 2, only replace activated belt tensioner or side airbag. Otherwise, replace faulty parts on the seat/body. Replace belt tensioner, seat belt and, if necessary, side airbag.
		Check 2 (when dismounted): Check for deformation/damage on the following components: 1. All seat cross members on the body 2. Threaded support sleeves in the seat cross members 3. End fittings on the seat mechanism. Check for visible damage or deformation.	
	No	Check all adjustment options of the head restraints. Check crash-active headrest for activation.	Replace faulty parts.
Only seat with integrated seat belt:			
Does the backrest indicator light turn on when the backrest is locked and also when the backrest is shaken?	**Yes**	Check microswitch of backrest lock and renew if necessary. Check electrical lines and repair if necessary.	If there is still a fault, replace the entire seat
	No	No further action necessary.	

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41 00 ... Corrosion protection

Note:

Following repairs, the corrosion protection work already begins with the correct removal of the underbody protection, anti-drumming layer and seam sealing in the repair area.

The products recommended by BMW are optimized with regard to corrosion protection.

1.0 Removing and applying sealant:

1.1 Removing sealant:

Important!

- Do not burn off PVC material (sealant) with an autogenous torch or similar or heat to temperatures above 180 °C. This would generate highly corrosive hydrochloric acid and release harmful vapour.
- The new sealant does not adhere appropriately to burnt polyvinyl chloride material and hence subsequent rust creep is possible.

Remove PVC material with a rotating steel brush, or heat PVC to maximum 180 °C with a hot air blower and scrape off with a spatula.

1.2 Applying sealant:

Prime and seal all weld seams that are sealed with sealant in original condition immediately after repair work. Replace damaged or removed anti-drumming layers.

Note:

Required spray gun for sealant (order number 81 49 0 300 887).

Seal blind rivet with sealant (risk of corrosion).

Seal affected cavities with cavity preservation (risk of corrosion).

2.0 Basics of cavity preservation:

Apply cavity preservation after all body repairs.

Concluding cavity preservation is the most important part of all corrosion protection measures.

Use the cavity protection spray only for smaller-scale straightening work where the parts in question are easily accessible. Use the pressure cup gun for all other repairs. Cavity protection agent is available in different container sizes.

Use the relevant sensors with tubes for the different cavity areas.

Required tools can be found in the Aftersales Assistance Portal (ASAP) - Service/Technology - Workshop Equipment (Start BMW) - Shop Workshop Equipment or at www.bmwgroup-wep.com.

Important!

Incorrectly performed cavity protection can, especially in the case of steel/aluminium joints, give rise to a non-calculable product liability and safety risk.

The best repair is worth nothing if the subsequent cavity protection measures are not conscientiously carried out.

2.1 Cavity preservation of steel parts:

New doors and lids must be sealed with cavity protection agent after being painted.

New sheet-metal parts or cavities, weld seams and folds formed by new sheet-metal parts must be sealed

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with cavity protection agent after being painted.

The cavities affected must be sealed with cavity protection agent after all straightening work.

2.2 Cavity preservation of aluminium parts:

New doors, lids and side panels made of aluminium are not sealed with cavity protection agent.

After all straightening work on aluminium components, the cavities affected must be sealed with cavity protection agent after being painted.

After all welding work (E52 only) on aluminium components, the cavities affected must be sealed with cavity protection agent after being painted.

Cavities, seams and folds formed from new sheet metal parts or extruded profile must be sealed with cavity protection agent after being painted.

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41 00 ... EMC screws

(EMC = electromagnetic compatibility)

1. Purpose:

- EMC screws are used in the bonding/riveting repair method to re-establish bonding transition.
- They adopt the task of welded connections or self-tapping screws, which handle bonding transition between the individual components in series production.
- The punch or blind rivets used in the repair do not guarantee permanent bonding transition between the individual components!
- The EMC screws ensure the operational reliability and safety of the electrical/electronic components following repairs!

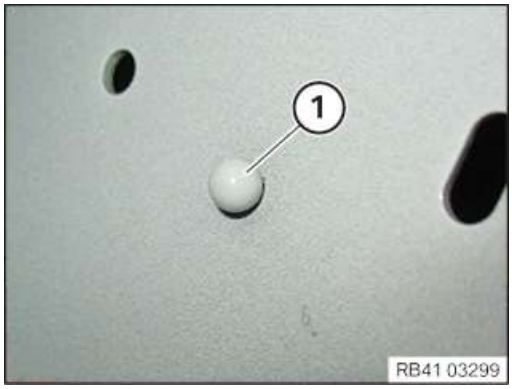
2. **Procedure**:

- Install the number of EMC screws described in the repair instructions.
- Drill holes to a diameter of 4.2 mm and insert screws.
- Seal EMC screws with PU sealing material (risk of corrosion).

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41 00 513 Fix bolts on the new part

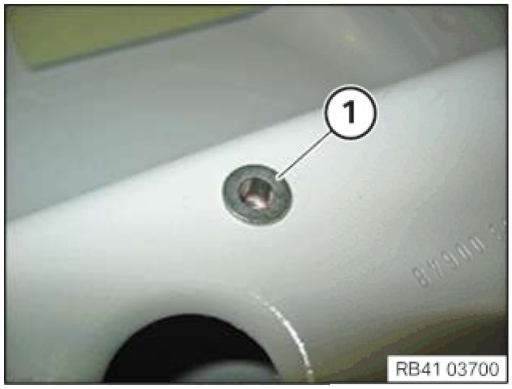
Note: On BMW and MINI bodies, various welded and pushed in bolts are being used.



Single ball/double ball (version 1):

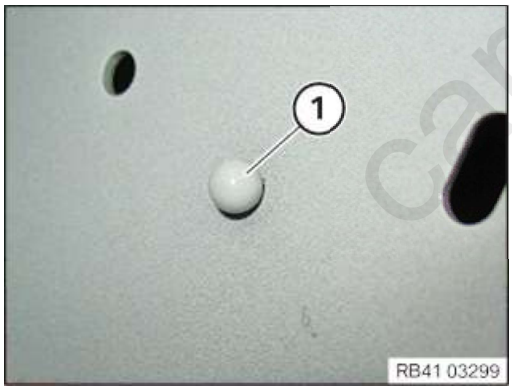
Grind off any residues of the single ball (1), if applicable.

Drill hole with diameter 7 mm.



Set blind rivet nut (1).

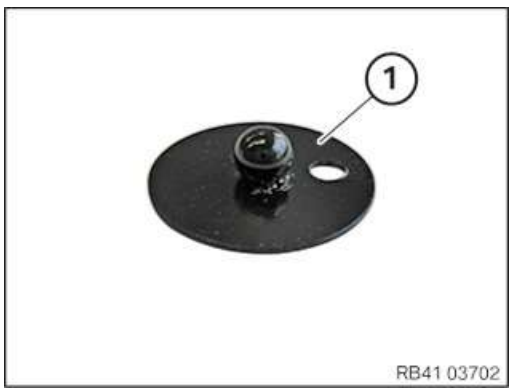
Screw in single ball with thread until a height of 5 mm (double ball 10 mm) is reached.



Single ball/double ball (version 2):

Grind off any residues of the single ball (1), if applicable.

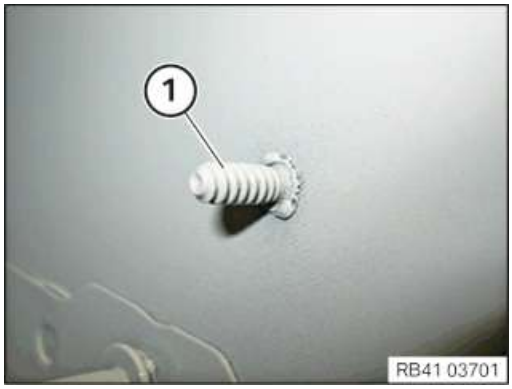
Clean area with solvent cleaner R1.



Clean bonding surface of repair element single ball (1) with solvent cleaner R1.

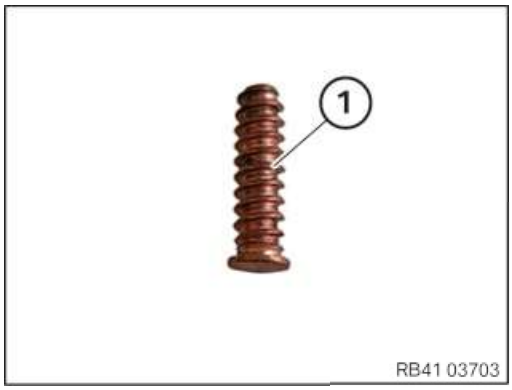
Bond repair element optionally with adhesive K1, K5 or window pane adhesive at the same position.

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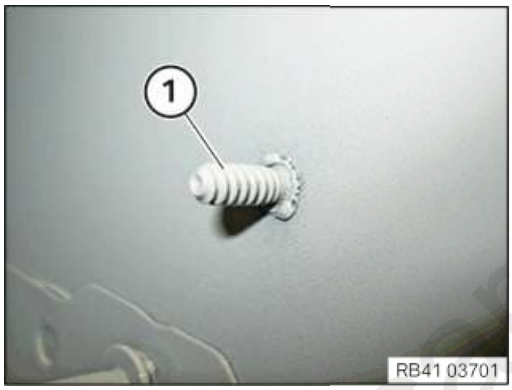


Coarse threaded bolt (version 1):

Grind off any residues of the coarse threaded bolt (1), if applicable.



Spot weld coarse threaded bolt to same position.



Coarse threaded bolt (version 2):

Grind off any residues of the coarse threaded bolt (1), if applicable.

Drill hole with diameter 7 mm.

Set blind rivet coarse threaded bolt using riveting pliers.

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99 00 ... General instructions on paintwork

General instructions and classification of paint stages are described on the KSD CD (under Notes, General information on flat rate unit data, Passenger car explanation for FRU specifications for paintwork).

The marked area shows the basis of area calculation for creating the flat rate unit. The marked area does not show the area actually to be painted. If touching up is required, the painter defines the precise position as he sees fit.

Special procedure for matte paintwork:

Matte paintwork cannot be touched up since the painted surface cannot be polished.

For further information, see also the BMW painting handbook and the Aftersales Assistance Portal.

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51 14 ... General notes for labelling with adhesive films

In the event of a repair the adhesive films must be partially or completely replaced. The basic procedure for all areas of the vehicle is described below.

In addition, vehicle-specific repair instructions are available.

1. Preparation:

Wash and dry vehicle. Rework with compressed air as required in area of joints.

Clean complete component surface with glass cleaner (BMW part number 83 12 0 396 775). Also clean the inside of the component in areas, in which adhesive films are applied.

Only carry out repair work with clean hands!

Important!

Labels can only be applied to recently painted components after a waiting period of **2 weeks**. The paint hardening is only fully completed after this time.

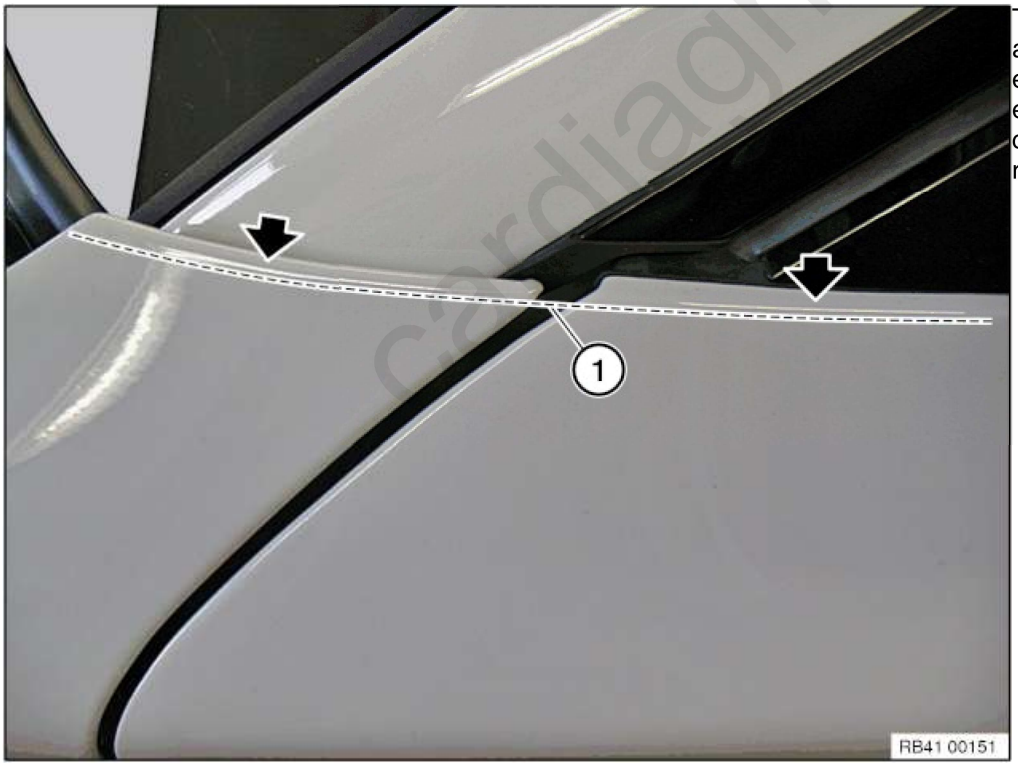
2. Procedure for applying labels:

All adhesive films in the repair kit are marked with numbers. Prepare the required plastic films prior to start of repairs.

The templates included in the repair kit assist orientation. A straight line running over the different components is the top priority.

Pull off the templates positioning of the adhesive films.

Only throw away templates after completion of all repair work, as some templates are used several times.



Templates are always applied along the light edge (1). The light edge is the reflection of the light source in radius (see arrow).

Roughly align the adhesive film using a template.

For large adhesive films, pull off the first 20 cm of protective film and fold back the edge.

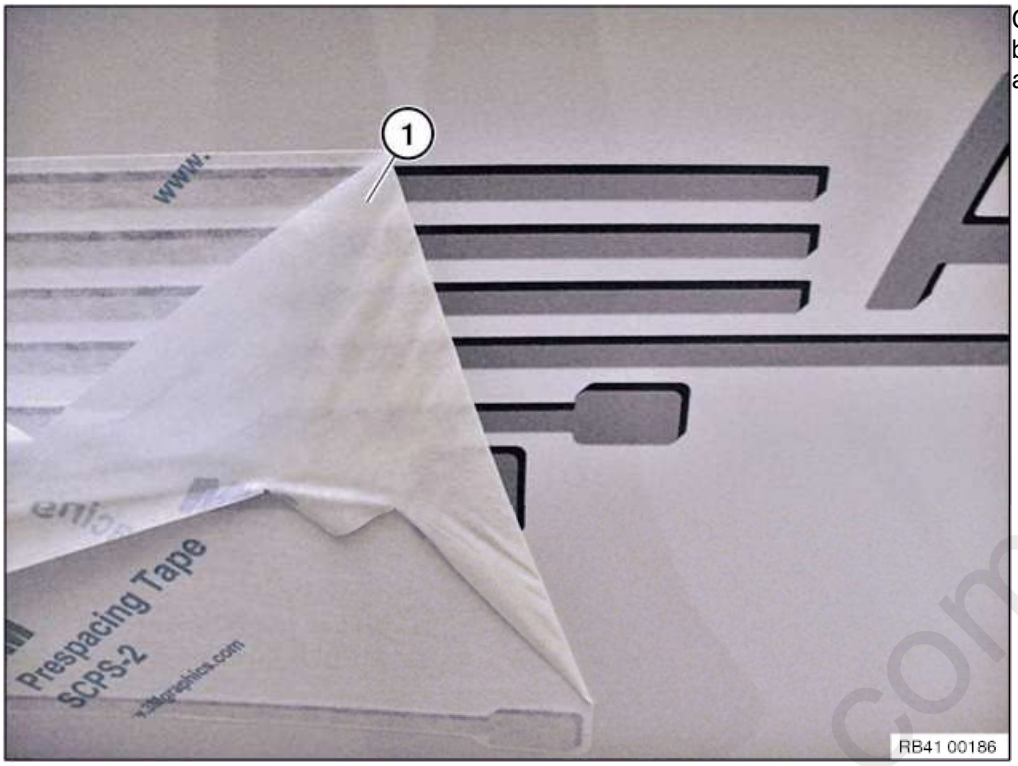
Align and lightly press down the adhesive film. Use only one finger for this and not the entire hand so that air pockets are unable to form under the adhesive film.

Pull off the remaining protective film and press down the adhesive film from front to rear and from inside to outside.

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If faults are made in applying the adhesive film, it can be pulled off and repositioned several times. When no further corrections have to be made, use a squeegee to press down the adhesive film firmly from inside to outside.

Lay protruding ends of the adhesive film around the component edge and press down firmly.



Carefully pull off backing film (1) at an acute angle.

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41 00 ... Grinding aluminium components

1.0 Recommended tools and equipment

Grinding work on the outer skin:

- To carry out grinding work by hand or machine, you must use the recommended tools and equipment (refer to Service Information 5 03 03 975).
  The workbay can be cleaned with conventional extractor systems (low dust concentration).

Grinding work on the structure (except Z8):

- To carry out grinding work by hand or machine, you must use the recommended tools and equipment (refer to Service Information 5 03 03 975).
  The workbay can be cleaned with conventional extractor systems (low dust concentration).

Z 8 Spaceframe structure:

- To carry out machine grinding on the structure, you must use the recommended device with grinding dust extractor facility (refer to Service Information 5 01 00 532).
  The workbay must be cleaned with the recommended explosion-proof extractor system (refer to Service Information 5 01 00 532).
  High dust concentration, **explosion hazard!**

2.0 Grinding outer skin and structure

Do not use any abrasives (grinding wheels, paper, etc.) which contain iron (risk of corrosion).

Always replace abrasives which have already been used to treat steel (risk of corrosion).

Use stainless steel wire brushes only (risk of corrosion).

Reduce speed of grinding machines. Excessive speeds cause a smearing effect.

Do not use coarse abrasive grains (only ≥ 80).

Do not grind notches into the material (risk of cracking).

Do not grind the material thin.

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41 00 ... Grinding steel parts

1.0 Recommended tools and equipment

- Tools are recommended for manual grinding work.
- Machines/equipment are recommended for machine grinding work.

See also Aftersales Assistance Portal (ASAP) - Service/Technology - Workshop Equipment (Start BMW) - Shop Workshop Equipment

2.0 Grinding outer shell and structure

Always replace abrasives which have already been used to treat aluminum (risk of corrosion).

Do not grind the material thin.

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41 00 ... Handling airbags and restraint systems

1.0 Airbags and restraint systems

- In the case of vehicles with airbags and restraint systems observe the relevant safety instructions.
- When straightening work is carried out on the body there is a risk of airbags being accidentally activated when the battery is connected.
  Because of this risk the battery ground cable must be disconnected prior to all repair work on the body.

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11 00 ... Handling components after flood damage

Flood damage can occur if the permissible fording depth of a vehicle is exceeded. Ingress of water can cause damage to the engine (water shock) or components.

Because dirt particles generally enter into the component with the water (e.g. starter motor, wiring harness), the components need to be thoroughly inspected.

Residual moisture in the components leads to corrosion (increased contact resistance in the component), which can lead to a component failure at a later time.

If water ingress into the electrical components cannot be ruled out, it is recommended to replace the component to ensure correct functioning through the vehicle lifetime.

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41 00 ... Handling electrical system and electronics

1.0 Battery

- Explosion hazard in the vicinity of the battery during welding and grinding work. The battery must be removed.

2.0 Control units

- Control units with visible mechanical damages and/or electrical damages caused by accidents must be replaced.
- The following risks exist when the battery is connected:
  - Damage to control units resulting from welding work on the body or a line short circuit.
  - Accidental activation of airbags during straightening work on the body.

Because of these risks the ground cable must be disconnected prior to all repair work.

- Control units are designed for a temperature of 65 °C. The temperatures in a spray booth do not pose any problems. If a vehicle is in the spray booth at a displayed temperature of 80°C, the actual temperature of the vehicle is ≤ 60 °C (object temperature).
- Protect control units against the influence of heat >65 °C (e.g. during welding and drying work with infrared beams or hot air blowers).

3.0 Electrical wires and wiring harnesses

- Protect electrical wires and wiring harnesses against damage (e.g. during straightening and grinding work).
- Protect electrical wiring and wiring harnesses against the influence of heat >65 °C (e.g. during welding and drying work with infrared beams or hot air blowers).
- Do not kink electrical wiring.

4.0 Optical fibres

- Follow instructions for handling optical fibres.

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41 00 ... Information on hazards

1. Aluminium

Hazards/effects	Measures / regulations
Repair stage 1 and 2: No hazards/effects	none
Repair stage 3: (Welding - only E52) • Explosion hazard due to high concentration of fine aluminium dust. Arising e.g. during straight-through grinding of coated components in the base material and large-surface grinding of bright-finish components. • Explosion hazard due to swirling up of fine aluminium dust in cavities. Created by the necessary, thorough cleaning of machining surfaces and tools before and after machining aluminium.	• Avoid high concentration of fine aluminium dust by means of continuous extraction. • Use explosion-proof exhaust extraction unit • Do not use compressed air when cleaning the workbay. • Avoid swirling up dust when cleaning the workbay.
• Spontaneous combustion of fine aluminium dust when ignition and fire sources are drawn in. E.g.: hot swarf, grinding sparks, cigarettes, etc.	• Do not operate ignition and fire sources in the intake area of exhaust extraction unit.

2. Carbon

Hazards / effects	Measures / regulations
Repair stage 1: No hazards/effects	none
Repair stage 2 and 3: • Explosion hazard due to high concentration of carbon dust. Produced when grinding carbon. • Explosion hazard due to swirling up of carbon dust in cavities. Created by the necessary, thorough cleaning of machining surfaces and tools before and after machining carbon.	• Avoid high concentration of carbon dust by drawing it off continuously. • Use explosion-proof exhaust extraction unit • Do not use compressed air when cleaning the workbay. • Avoid swirling up dust when cleaning the workbay.
• Spontaneous combustion of carbon dust when ignition and fire sources are drawn in. E.g.: hot swarf, grinding sparks, cigarettes, etc.	• Do not operate ignition and fire sources in the intake area of exhaust extraction unit.

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41 00 ... Information on metal filler

Note:

The metal spatula is omitted.

Changes to the procedure are described here.

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64 00 ... Information on using cleaning agent/paints (personal protection equipment)



Warning!

Use of cleaning agents/paints not compliant with instructions can cause serious injuries or burns!

Handling cleaning agents/paints can trigger allergic skin and respiratory reactions!



Important!

Observe following instructions:

- Store cleaning agents/paints only in a secure cabinet.
- Keep cleaning agents/paints away from naked flames and other sources of ignition.
- Protect cleaning agents/paints from high temperatures and direct sunlight.
- Always keep an eye douche on hand, change the water regularly (once a month).



Important!

Observe following instructions before use:

- Manufacturer's instructions (on container/packaging)
- Hazard warnings (on container/packaging)
- Manufacturer's instructions on package insert
- Material safety data sheet of manufacturer
- Product information in EPC
- National market regulations



Important!

Observe following instructions during use:

- Do not eat, drink or smoke while working with these products.
- Avoid direct contact with skin and eyes.
- Wear personal protective clothing/equipment.
- Ensure that all enclosed areas are well ventilated or extract fumes directly.
- Immediately change working clothes soiled with cleaning agent/paint.
- After finishing work, wash your hands and apply protective skin cream.



Important!

Follow hazard warnings and wear personal protection equipment!

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First Aid:

- If product comes in contact with eyes, immediately flush with running water for about 10 - 15 minutes. Seek the advice of eye specialist.
- In the event of skin contact and where applicable an allergic skin reaction, clean the affected areas immediately with soap and water and then apply silicone-free skin cream. Seek advice of physician.
- If an adhesive product is swallowed, rinse mouth/parts of mouth thoroughly with running water. Drink 1-2 glasses of water. Do not induce vomiting. Consult a doctor.
- After inhaling vapours ensure ample supply of fresh air. Keep calm, keep respiratory tracks clear and call doctor.



Recycling:

Dispose of cleaning agents/paints in a professional manner!

Observe national/country-specific disposal regulations.

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41 00 ... Information on vehicle protection

- Vehicle parts located in the repair zone or threatened by heat, sparks or dust, must be removed or covered. For suitable covering material , see Service Information.

Important!

Do not use flammable or dirty material for covering.

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41 00 ... Information/warning labels

Missing or damaged labels (e. g. tyre pressure) must be replaced.

--> overview via the installation location

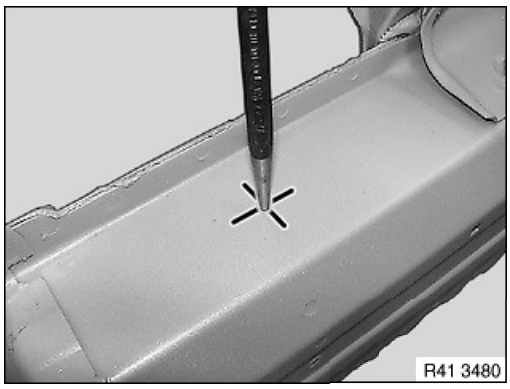
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41 00 ... Installation solution for straight shank/hexagon rivet nut



Protection measures!

- Wear safety goggles
- Wear protective gloves



Hexagon/straight shank rivet nut (up to thread 8) with hand rivet gun ZS308 Important!

Risk of damage!

Failure to comply with these instructions may result in the drill bit slipping and causing significant paintwork damage.

1. Mark position of bore and then punch-mark component



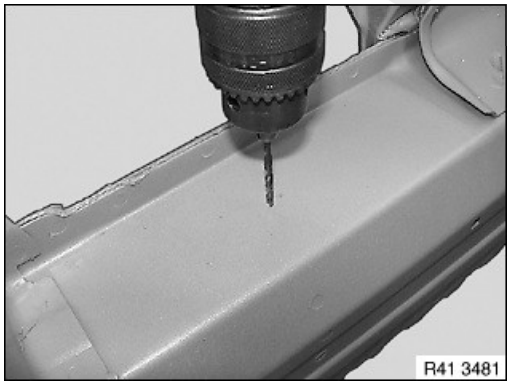
Important!

If the determined drill bit diameter is not observed:

- the knurling on the straight shank rivet nut is rendered useless
- the component will be damaged when the straight shank rivet nut is inserted

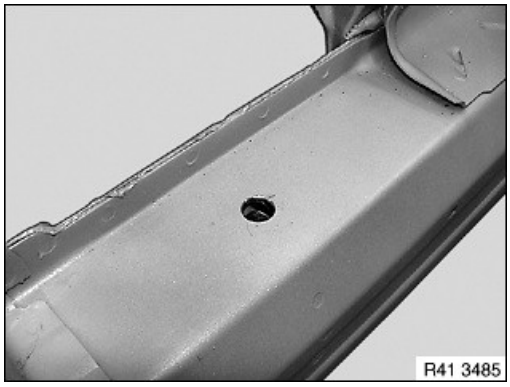
Determining suitable drill bit:
Depending on the rivet nut shank diameter, the next drill bit diameter higher (5/10 step) can be used.

E.g. with a shank diameter of 10.1 mm, the 10.5 mm drill bit can be used. The 11.0 mm drill bit must not be used.

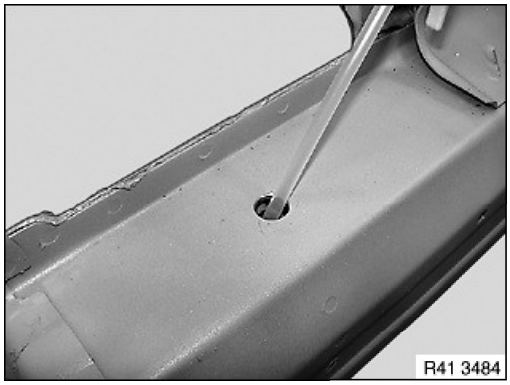


2. Drill bore with determined drill bit and deburr, pilot-drill with a smaller drill bit if necessary

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3. Clean component, eliminate paintwork damage if necessary

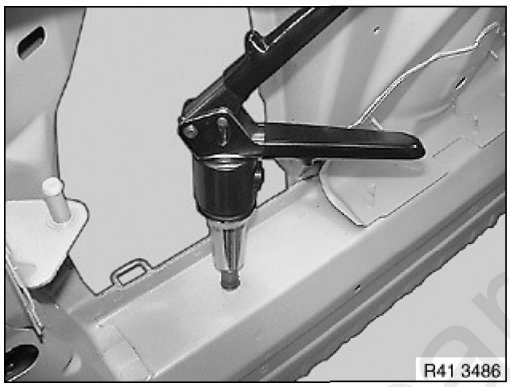


Important!

To avoid corrosion, stop chips/swarf by means of cavity sealing.

Follow instructions on corrosion protection .

4. Preserving cavity

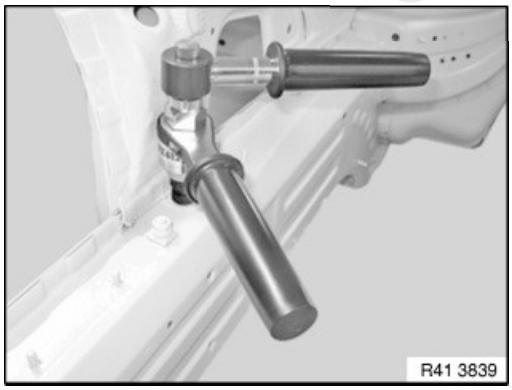


Important!

Follow manufacturer's operating instructions.

Make sure straight shank rivet nut correctly contacts component.

5Set rivet nut with hand rivet gun*Note:*
According to the manufacturer, the pictured tool is suitable up to an M8 thread (see Aftersales Assistance Portal (ASAP) - Service/Technology - Workshop Equipment (Start BMW) - Workshop Equipment Shop or www.bmwgroup-wep.com).



Hexagon / straight shank rivet nut (up to thread M12) with hand rivet gun MB512

Important!

Follow manufacturer's operating instructions.

Make sure hexagon rivet nut correctly contacts component.

Set rivet nut with hand rivet gun

Note:
According to the manufacturer, the pictured tool is suitable up to an M12 thread (see Aftersales Assistance Portal (ASAP) - Service/Technology - Workshop Equipment (Start BMW) - Workshop Equipment Shop or www.bmwgroup-wep.com).

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41 00 ... Installing a cavity sealing with 2-component PU cavity foam

Sourcing reference for cavity foam HS1 (refer to BMW Parts Department).

Important!

> The cavity foam may only be use for cavity sealing at the points at which cavity sealing is present as standard!

The following repair represents the replacement of a shaped part for the cavity sealing by the use of cavity foam.

This type of cavity sealing is used at points at which shaped parts cannot be used for repairs.

This is the case when large amounts of heat occur (e.g. due to welding, soldering or tin-plating) in the direct vicinity or at the point of the standard cavity sealing.

It is not possible here to install shaped parts for the cavity sealing because of the fire risk!

To replace shaped parts with cavity foam at further locations, adopt the procedure shown here and adapt it to the relevant ratios.

It must be ensured that the cavity sealing is fully completed.

Note:

> Check the accessibility for the spraying pipe of the cavity foam to the affected cavity after removing the defective parts.

Properties of cavity foam HS1:

- 2-component PU foam, solvent-free.
- Excellent flow capacity, enabling complete sealing of cavities.
- Good strength, preventing slipping in cavities.
- Low water absorption, preventing corrosion.
- Ideal for use as insulating and sealing compound.

Information on dangers/hazards:

- Avoid eye and skin contact.
  Wear eye protection, solvent-resistant protective gloves and protective clothing.
- Do not inhale.
  Apply in well ventilated rooms only.
- **Warning!**
  Application time after mixing process: within **8 minutes!**
  Completely empty open can after use.
- Residual amounts which are not used can cause the can to explode on account of a chemical reaction (buildup of heat)!
  Alternatively, cool the can containing the non-removed residual amount for several hours in cold water.
- Do not eat, drink or smoke while working with these products.
- Keep heat and ignition sources far away.
- Read the manufacturer's information on hazards/dangers (printed on the can) prior to application.

Processing instructions:

- Observe the expiry date on the cartridge.
  Do not use spray can after the expiry date has passed. After the Use by date the properties of the cavity foam will no longer meet the requirements of the BMW Group.
- Cavity preservation of the repair area possible after an air drying time of 1 hour.
- Surface must be **clean, free of dust, grease, oil and separating agents**.
- Application temperature at least 15 °C. Optimally 20 °C.
- Important!

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Foam expands many times over as it sets (change in volume).

- Before applying to the vehicle, fill a clearly visible cavity of corresponding size with foam on a used part. This enables an optimal dosage (i.e. spraying time) to be specified for filling the cavity on the vehicle with foam.
- Tape off open passages to visible areas with adhesive tape to prevent foam from escaping.
- The setting takes approx. 30 minutes. Mechanical processing (e.g. drilling, cutting, etc.) is then possible
- Cavity preservation of the repair area possible after an air drying time of 1 hour.
- Remove fresh, non-hardened polyurethane foam with adhesive remover 208.
  Sourcing reference: BMW Parts Department.
  Hardened polyurethane foam can only be removed mechanically.
- Excess hardened polyurethane foam can be disposed of as residual waste.
  Cans that are not entirely empty or are unused and have an expired expiry date are classed as hazardous waste.
  Observe country-specific waste disposal regulations.
- Observe the manufacturer's processing instructions (printed on the can).

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41 00 ... Installing a cavity sealing with 2-component PU cavity foam

Sourcing reference for cavity foam HS3 (refer to BMW Group Parts).

Attention!

The cavity foam may only be use for cavity sealing at the points at which cavity sealing is present as standard!

The following repair represents the replacement of a shaped part for the cavity sealing by the use of cavity foam.

This type of cavity sealing is used at points at which shaped parts cannot be used for repairs.

This is the case when large amounts of heat occur (e.g. due to welding, soldering or tin-plating) in the direct vicinity or at the point of the standard cavity sealing.

It is not possible here to install shaped parts for the cavity sealing because of the fire risk!

To replace shaped parts with cavity foam at further locations, adopt the procedure shown here and adapt it to the relevant ratios.

It must be ensured that the cavity sealing is fully completed.

Note:

Check the accessibility for the spraying pipe of the cavity foam to the affected cavity after removing the defective parts.

Properties of cavity foam HS3:

- 2-component PU foam, solvent-free.
- Excellent flow capacity, enabling complete sealing of cavities.
- Low water absorption, preventing corrosion.
- Ideal for use as insulating and sealing compound.

Information on dangers/hazards:

- Avoid eye and skin contact.
  Wear eye protection, solvent-resistant protective gloves and protective clothing.
- Do not inhale.
  Apply in well ventilated rooms only.
- **Warning!**
  Processing after the mixing process within a few seconds!
- Do not eat, drink or smoke while working with these products.
- Keep heat and ignition sources far away.
- Observe the manufacturer's information on dangers / hazards prior to application (imprint on double cartridge).

Processing instructions:

- Observe the expiry date on the cartridge.
  Do not use cavity foam after the expiry date has passed. After the Use by date the properties of the cavity foam will no longer meet the requirements of the BMW Group.
- Cavity preservation of the repair area possible after an air drying time of 1 hour.
- Surface must be **clean, free of dust, grease, oil and separating agents**.
- Application temperature at least 15 °C. Optimally 20 °C.
- Attention!
  Foam expands during hardening (volume change).
- Tape off open passages to visible areas with adhesive tape to prevent foam from escaping.
- The setting takes approx. 30 minutes. Mechanical processing (e.g. drilling, cutting, etc.) is then possible

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- Cavity preservation of the repair area possible after an air drying time of 1 hour.
- Remove fresh, non-hardened polyurethane foam with adhesive remover 208.
  Sourcing reference, see BMW Group Parts.
  Hardened polyurethane foam can only be removed mechanically.
- Excess hardened polyurethane foam can be disposed of as residual waste.
  Double cartridges that are not entirely empty or are unused and have an expired expiry date are classified as hazardous waste.
  Observe country-specific waste disposal regulations.
- Observe the manufacturer's processing instructions (imprinted on double cartridge).

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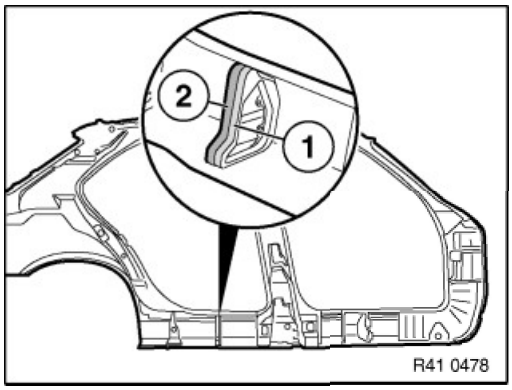
41 00 ... Installing cavity sealing (expanded)

Note:
Carry over schematic diagram to the relevant vehicle type.

The following repair represents the procedure for an already expanded cavity acoustic baffle.

The cavity acoustic baffle remains on the body in this instance.

Before these work steps, prepare the new part so that it is ready to install (adapting, cutting to size, applying welding primer etc.).



Clean contact surface (1) with cleaning agent R2.

Apply a bead (2) approx. 15 mm high of sealant D2 to contact surface (1).

If necessary apply sealant D2 somewhat thinner on each side, to prevent the sealant from running.

Fit, secure and weld up new part.

Warning:
Ensure adequate ventilation over entire processing period.

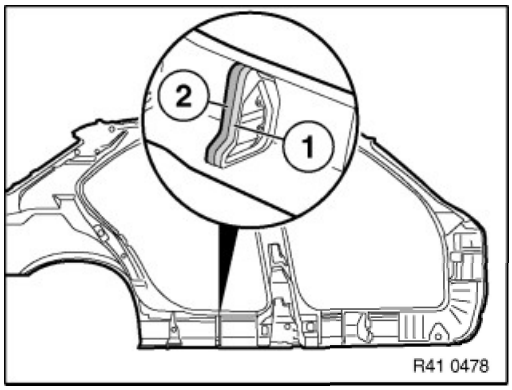
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41 00 ... Installing cavity sealing (not expanded)

Note:
Carry over schematic diagram to the relevant vehicle type.

The following repair represents replacement of a cavity acoustic baffle.

Before these work steps, prepare the new part so that it is ready to install (adapting, cutting to size, applying welding primer etc.).



Sand contact surface of cavity acoustic baffle (1) with coarse-grained sandpaper (grain 50-100).

Clean contact surface (1) with cleaning agent R2.

Apply a bead approx. 15 mm high of sealant D2 to contact surface (1).

If necessary apply sealant D2 somewhat thinner on each side, to prevent the sealant from running.

Attach cavity acoustic baffle in specified position (see old part).

Fit, secure and weld up new part.

Warning:
Ensure adequate ventilation over entire processing period.

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41 00 ... Materials science

1. Aluminium

1.1 Chassis/suspension components

Read and observe the Notes on chassis/suspension components before handling aluminium.

1.2 Material influences

Causes	Effects / remedies
A galvanic element is created under the effects of moisture by contact with materials such as copper, tin, nickel, iron and zinc.	This plating process causes aluminium to be removed from the connection point. This results in surface corrosion or pitting. New parts and accessory parts which have been approved by the BMW Group for aluminium (screws, washers, nuts etc.) have undergone special surface treatment. Such parts must not be replaced by conventional parts. *Note:* Damaged parts lose this protection and must be specially coated or replaced. Damage caused by contact corrosion is excluded from the warranty.
Tools also used for work on steel components can implant steel particles in the softer surface of an aluminium component.	Surface corrosion or pitting occurs. A separate tool set is available for processing/machining aluminium.
Surfaces are attacked when fluxing agents are used.	Soldering is not permitted for joining aluminium components. Risk of corrosion from chemical factors.
Aluminium/steel grinding dust from adjoining working areas.	This results in surface corrosion. Erection of protective barriers.

1.3 Machining properties

Properties of aluminium compared with steel	Effects
Aluminium parts are magnetically neutral.	Attachment with magnetic tools/working aids is not possible.
Elasticity is only 1/3 as high. Elongation failure is approx. 50 % slighter.	Convertibility is limited in comparison with steel. Overstretching the material results in strain-hardening and an increased tendency of cracking.

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Electrical conductivity is almost 4 times higher.	Electric welding methods require different equipment (MIG welding).
Material expansion during heating is twice as high.	The material expands more markedly. Shorter heat treatment is necessary for removing dents.
Thermal conductivity is 3 times higher.	Heat is drained more quickly. Adjoining working areas are affected more heavily e.g. during welding.
Structural transformation between 200 °C and 250 °C	Elongation characteristics and thus plasticity are improved. Strength is reduced. ***Important!*** No heat treatment during repair work on the vehicle structure! Workshop operation doesn't make it possible to control the temperature to sufficiently exact levels.
Aluminium shows no annealing colours.	The melting point is 650 °C. Once the melting temperature has been reached, the material begins to flow without any further indications. The temperature can only be estimated by means of the paint colouring and the surface warpage. ***Important!*** Do not use thermo crayons. Not suitable for workshop operation because the paint runs too quickly.

1.4 Storage

Characteristic features of aluminium	Special measures
Corrosion (ageing) in damp environments.	Store aluminium components in a dry place.
Contact corrosion in event of contact e.g. with steel components.	Always store aluminium components separately or in isolation from steel components.
Susceptibility to paint infiltration.	Do not damage factory protective layer of the surface since this would cause oxidation. Failure to comply with this requirement would result in more painting work.

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41 00 ... Notes on adhesive K1

Important!

Note the following information before starting to apply adhesive!

- Country-specific safety and industrial safety regulations
- Material safety data sheet of manufacturer
- Processing instructions on glue cartridge

Storage:

Dry at 15°- 25 °C.

Shelf life:

The glue cartridge is marked with a date.

Do not use the adhesive after this date.

Surface pre-treatment:

The pre-treatment depends on the material to be bonded and its coating.

Required cartridge gun:

Overview of glue cartridge guns

Do not use compressed-air-operated cartridge guns!

Preparing the glue cartridge:

Opened glue cartridges may be used again before the expiry date as long as a new mixing tube is used.

The working temperature of glue cartridge must be at least 20°C.

Insert glue cartridge into cartridge gun, remove cap and allow both adhesive components to emerge. Strip adhesive components uniformly and attach mixing tube. Only use mixing tubes supplied with glue cartridge. Allow approx. 10 cm of mixed adhesive to emerge.

Only after this apply the mixed adhesive to one side of the bonding surface.

Application time of mixed adhesive approx. 2 hours. A change of mixer is only necessary if over a period of 1 hour no material has flowed through the mixer.

2-component adhesive application:

Read the vehicle-specific repair instructions to determine the thickness and positioning of the adhesive bead.

After applying the adhesive, check whether an adhesive component has emerged at the back of the glue cartridge. If yes, break off the bonding procedure. Clean new part. Use new glue cartridge. Contact national hotline.

Remove contamination caused by adhesive residue immediately.

Hardened adhesive can only be removed mechanically.

Hardening time:

Do not move the vehicle before the adhesive has hardened.

Check the degree of hardness of the adhesive with a fingernail.

If the adhesive cannot be pressed in any further with a fingernail, the vehicle may be moved (without engine force) for further processing applications (e.g. painting).

Vehicle **strength for driving applications** is achieved after:

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48 hours at an object temperature of 15°C.

10 hours at an object temperature of 23°C.

1 hour at an object temperature of 60°C.

0.5 hours at an object temperature of 85°C.

Important!

> When using radiant heaters, make sure that the object temperature does not exceed 85 °C. Excessively high temperatures will destroy the adhesive.

Disposal of adhesive:

Hardened adhesive is disposed of as normal waste.

Empty glue cartridges are disposed of as normal waste.

Non-hardened adhesives and a mixture of adhesive and solvent and the like must be disposed of as hazardous waste.

These regulations apply to the Federal Republic of Germany.

For other countries, comply with the (possibly differing) nationally applicable regulations.

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41 00 ... Notes on adhesive K2

Important!

Note the following information before starting to apply adhesive!

- Country-specific safety and industrial safety regulations
- Material safety data sheet of manufacturer
- Processing instructions on glue cartridge

Storage:

Dry, at 15 °C - 25 °C.

Shelf life:

The glue cartridge is marked with a date.

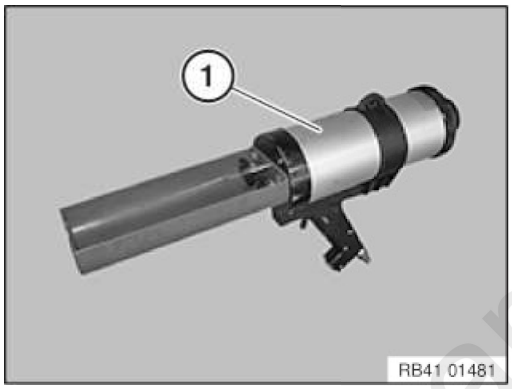
Do not use the adhesive after this date.

Surface pre-treatment:

Refer to vehicle-specific repair instructions or Notes.

Required cartridge gun:

Cartridge gun 81 49 2 355 475 for 2x290 ml container



Preparation of the glue cartridge (2x290 ml):

Opened glue cartridges may be used again before the expiry date as long as a new mixing tube is used.

The working temperature of glue cartridge must be at least 20°C.

Application time of adhesive at 28 °C 35 min and at 18 °C 50 min

Remove the sealing cap on the back of the glue cartridge. Remove the safety and connecting pipe. Puncture the glue cartridges open. Attach the connecting pipe and insert the glue cartridge in the cartridge gun. Allow both adhesive components to emerge. Strip adhesive components uniformly and attach mixing tube. Only use mixing tubes supplied with glue cartridge. Allow approx. 10 cm of mixed adhesive to emerge.

Only after this apply the mixed adhesive to one side of the bonding surface.

2-component adhesive application:

Read the vehicle-specific repair instructions to determine the thickness and positioning of the adhesive bead.

After applying the adhesive, check whether an adhesive component has emerged at the back of the glue cartridge. If yes, break off the bonding procedure. Clean new part. Use new glue cartridge. Contact national hotline.

Remove contamination caused by adhesive residue immediately.

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Hardened adhesive can only be removed mechanically.

Hardening time:

Do not move the vehicle before the adhesive has hardened.

The following hardening times apply unless the specifications in the vehicle-specific repair instructions indicate otherwise:

Adhesive K2 (2x290 ml):

Important!

> During the initial 12 hours, no accelerated hardening with a heat gun or heat chamber is permitted!

The **solidity for installation work** on the vehicle is reached after:

12 hours at an object temperature of 18°C.

Vehicle **strength for driving applications** is achieved after:

48 hours at an object temperature of 18°C.

Important!

> When a complete side frame is replaced (without partial replacement), the hardening period will increase to 24 hours until the beginning of installation work.

Disposal of adhesive:

Hardened adhesive is disposed of as normal waste.

Empty glue cartridges are disposed of as normal waste.

Non-hardened adhesives and mixtures of adhesive and solvent and the like must be disposed of as hazardous waste.

These regulations apply to the Federal Republic of Germany.

For other countries, comply with the (possibly differing) nationally applicable regulations.

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41 00 ... Notes on adhesive K3

Important!

Note the following information before starting to apply adhesive!

- Country-specific safety and industrial safety regulations
- Material safety data sheet of manufacturer
- Processing instructions on glue cartridge

Storage:

Dry at 15°- 25 °C.

Shelf life:

The glue cartridge is marked with a date.

Do not use the adhesive after this date.

Surface pre-treatment:

See vehicle-specific repair instructions

Required cartridge gun:

Overview of glue cartridge guns

Preparing the glue cartridge:

Do not prepare the glue cartridge until just before applying the adhesive.

The working temperature of glue cartridge must be at least 18°C.

Pot life of adhesive is approx. 10 minutes at 25 °C.

Insert glue cartridge into cartridge gun, remove cap and allow both adhesive components to emerge. Strip adhesive components uniformly and attach mixing tube. Only use mixing tubes supplied with glue cartridge.

Before starting to apply adhesive, allow approx. 1 mixing tube length of mixed adhesive to emerge. Only then apply the mixed adhesive to one side of the bonding surface.

Opened cartridges may be used again before the expiry date as long as a new mixing tube is used.

2-component adhesive application:

Read the vehicle-specific repair instructions to determine the thickness and positioning of the adhesive bead.

Hardening time:

See vehicle-specific repair instructions

Adhesive disposal:

Hardened adhesive is disposed of as normal waste.

Empty glue cartridges are disposed of as normal waste.

Non-hardened adhesives and mixtures of adhesive and solvent and the like must be disposed of as hazardous waste.

These regulations apply to the Federal Republic of Germany.

For other countries, comply with the (possibly differing) nationally applicable regulations.

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41 00 ... Notes on adhesive K4

Important!

Note the following information before starting to apply adhesive!

- Country-specific safety and industrial safety regulations
- Material safety data sheet of manufacturer
- Processing instructions on glue cartridge

Storage:

Dry at 15°- 25 °C.

Shelf life:

The glue cartridge is marked with a date.

Do not use the adhesive after this date.

Surface pre-treatment:

See vehicle-specific repair instructions

Required cartridge gun:

Overview of glue cartridge guns

Preparing the glue cartridge:

Do not prepare the glue cartridge until just before applying the adhesive.

Opened glue cartridges may be used again before the expiry date as long as a new mixing tube is used.

The working temperature of glue cartridge must be at least 18°C.

Working life of adhesive is approx. 10 minutes.

Insert glue cartridge into cartridge gun, remove cap and allow both adhesive components to emerge. Strip adhesive components uniformly and attach mixing tube. Only use mixing tubes supplied with glue cartridge.

Before starting to apply adhesive, allow approx. one half mixing tube length of mixed adhesive to emerge. Only then apply the mixed adhesive to one side of the bonding surface.

2-component adhesive application:

Read the vehicle-specific repair instructions to determine the thickness and positioning of the adhesive bead.

Hardening time:

The bonded connection will be resistant after 30 minutes.

Disposal of adhesive:

Hardened adhesive is disposed of as normal waste.

Empty glue cartridges are disposed of as normal waste.

Non-hardened adhesives and mixtures of adhesive and solvent and the like must be disposed of as hazardous waste.

These regulations apply to the Federal Republic of Germany.

For other countries, comply with the (possibly differing) nationally applicable regulations.

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41 00 ... Notes on adhesive K5

Important!

Note the following information before starting to apply adhesive!

- Country-specific safety and industrial safety regulations
- Material safety data sheet of manufacturer
- Processing instructions on glue cartridge

Storage:

Dry at 15°- 32 °C.

Shelf life:

The glue cartridge is marked with a date.

Do not use the adhesive after this date.

Surface pre-treatment:

See vehicle-specific repair instructions

Required cartridge gun:

Overview of glue cartridge guns

Preparing the glue cartridge:

The working temperature of glue cartridge must be at least 20°C.

Opened glue cartridges may be used again before the expiry date as long as a new mixing tube is used.

Insert glue cartridge into cartridge gun, remove cap and allow both adhesive components to emerge. Strip adhesive components uniformly and attach mixing tube. Only use mixing tubes supplied with glue cartridge.

Before starting to apply adhesive, allow approx. 1 mixing tube length of mixed adhesive to emerge. Only then apply the mixed adhesive to one side of the bonding surface.

Pot life of adhesive is approx. 60 minutes at 23°C.

2-component adhesive application:

Read the vehicle-specific repair instructions to determine the thickness and positioning of the adhesive bead.

After applying the adhesive, check whether an adhesive component has emerged at the back of the glue cartridge. If yes, break off the bonding procedure. Clean new part. Use new glue cartridge. Contact national hotline.

Remove contamination caused by adhesive residue immediately.

Hardened adhesive can only be removed mechanically.

Hardening time:

Do not move the vehicle before the adhesive has hardened.

Check the degree of hardness of the adhesive with a fingernail.

If the adhesive cannot be pressed in any further with a fingernail, the vehicle may be moved (without engine force) for further processing applications (e.g. painting).

Vehicle **strength for driving applications** is achieved after:

48 hours at an object temperature of 15°C.

10 hours at an object temperature of 23°C.

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1 hour at an object temperature of 60°C.

0.5 hours at an object temperature of 85°C.

Important!

> When using radiant heaters, make sure that the object temperature does not exceed 85 °C. Excessively high temperatures will destroy the adhesive.

Disposal of adhesive:

Hardened adhesive is disposed of as normal waste.

Empty glue cartridges are disposed of as normal waste.

Non-hardened adhesives and mixtures of adhesive and solvent and the like must be disposed of as hazardous waste.

These regulations apply to the Federal Republic of Germany.

For other countries, comply with the (possibly differing) nationally applicable regulations.

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41 00 ... Notes on adhesive K6

Important!

Note the following information before starting to apply adhesive!

- Country-specific safety and industrial safety regulations
- Material safety data sheet of manufacturer
- Processing instructions on glue cartridge

Storage:

Dry at 15°-25 °C.

Shelf life:

The glue cartridge is marked with a date.

Do not use the adhesive after this date.

Surface pre-treatment:

See vehicle-specific repair instructions

Required cartridge gun:

Overview of glue cartridge guns

Preparing the glue cartridge:

Do not prepare the glue cartridge until just before applying the adhesive.

The working temperature of glue cartridge must be at least 18°C.

Pot life of adhesive is approx. 10 minutes at 25 °C.

Insert glue cartridge into cartridge gun, remove cap and allow both adhesive components to emerge. Strip adhesive components uniformly and attach mixing tube. Only use mixing tubes supplied with glue cartridge.

Before starting to apply adhesive, allow approx. 1 mixing tube length of mixed adhesive to emerge. Only then apply the mixed adhesive to one side of the bonding surface.

Opened cartridges may be used again before the expiry date as long as a new mixing tube is used.

2-component adhesive application:

Read the vehicle-specific repair instructions to determine the thickness and positioning of the adhesive bead.

Hardening time:

See vehicle-specific repair instructions

Disposal of adhesive:

Hardened adhesive is disposed of as normal waste.

Empty glue cartridges are disposed of as normal waste.

Non-hardened adhesives and mixtures of adhesive and solvent and the like must be disposed of as hazardous waste.

These regulations apply to the Federal Republic of Germany.

For other countries, comply with the (possibly differing) nationally applicable regulations.

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41 00 ... Notes on cleaning agent R1

Use only cleaning agent R1, as other cleaning agents cab be emollient/moistening or may start to dissolve the cathodic dip paint primer.

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61 00 ... Notes on handling the high pressure cleaner



Warning!

Only used a high pressure cleaner approved by BMW!

Only specially trained persons of 16 years of age or older may work with the high pressure cleaner.

Check the high pressure cleaner and electrical wiring for visible damage.

Only use at a suitable location.



Attention!

Pay attention to following hazard warnings:

- Danger of injury due to water jet
- Contact with hazardous substances in spray
- Risk of skidding on wet floor
- Risk of stumbling due to hoses and cables
- Comply with notes and instructions on handling cleaning agents !
- Risk of scalding when cleaning with hot water.
- On electric or hybrid cars, the safety instructions for handling with hybrid cars are to be complied with.



Warning!

The following personal protective equipment is to be used:

- Safety goggles/face guard
- Suitable gloves
- Apron
- Rubber boots
- Ear protectors
- Safety shoes



Attention!

Notes on washing a vehicle with a high pressure cleaner:

- Do not wash directly on gaskets and control units during engine

  washes.
- A minimum distance of 30 cm must be adhered to for tyres and tyre valves.
- A minimum distance of 30 cm must be adhered to for the soft top and painted parts.
- Do not use if engine is still hot.
- Do not exceed maximum water temperature of 60 degrees.
- Do not spray directly onto cameras/sensors.

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Attention!

- For your own safety, we recommend that you do not wash on the high-voltage components in electric or hybrid vehicles.

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41 00 ... Notes on the water drain hose of the slide/tilt sunroof

The water drain hoses for the slide/tilt sunroof are partially permanently integrated in the body and cannot be replaced individually.

These water drain hoses can only be completely replaced with extensive body repair work (e. g. after an accident).

Component	Vehicle	Individually replaceable
Water drain hose, front	All BMW All MINI	No
Rear water drain hose	E60, F34	No
	All other BMWs	Yes
	All MINI	Yes

An individual solution is required for damage that was not caused by an accident.

Contact national hotline.

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99 Notes on using temperature-controlled infra-red radiators

When using temperature-controlled infrared radiators, damage to adhesive bonds, paint and vehicle components can occur when drying spatula and filler.

The temperature sensors in the infrared radiator only operate reliably on large, even surfaces.

On small surfaces such as C-pillars or sills, often only a colder, adjacent area is measured.

This leads to actual surface temperatures of up to 130°C, even if only 70°C is set on the infrared radiator.

When the rear side walls are partially replaced by bonding and riveting, these high temperatures can lead to a visible pattern in the area of the joint.

Remedy:

Check the surface temperatures on small component surfaces during the drying process with an external temperature sensor.

The general rule is: The surface temperatures must not exceed 85°C.

Important!

Do not use infrared radiators on carbon parts!

Risk of component destruction.

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41 00 ... Opening bonded connections

1. Opening spot-welded adhesive joint

Open welding spots.

Warning!

Draw off vapour and gases!

Use personal protective clothing/equipment.

Heat connecting flange with a hot air blower. Heat components to max. 250 °C object temperature.

Release connecting flange with chisel.

Remove adhesive residue from connecting flange.

2. Opening bonded connections

Release any punch rivet or blind rivet.

Roughly cut out damaged component.

Warning!

Draw off vapour and gases!

Use personal protective clothing/equipment.

Heat adhesive flange with a hot air blower. Heat components to max. 250 °C object temperature.

The component can be peeled with the aid of pliers. Do not damage adjacent components.

Remove adhesive residue from connecting flange.

3. Opening bonded connections on aluminium roofs

Procedure is described in detailed in the relevant repair instructions.

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41 00 ... Opening brazed connections

The "Bonding and Riveting" repair method involves replacing the watertight brazed connection with adhesive.

This gives rise to a new procedure for opening brazed connections.

Grind brazed seam with a belt grinder. This keeps the influence of heat in the area around the brazed seam as small as possible.

Important!

Never use a gas flame.

All traces of brazing solder do not have to be removed.

Do not grind body panels thin.

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41 00 ... Opening rivet connections

Different rivet types are used on BMW vehicles.

1. Opening blind rivets:

1.1 Loosening blind rivets (N1, N2, N7, N8, N9 and N10):

Grind off blind rivet head with a belt or angle grinder. Do not grind off base material. Remove rivet remnants with a drift punch.

1.2 Opening blind rivets (N3 and N6):

Drill out blind rivet head with a 5 mm dia. drill bit. Do not damage base material. Remove rivet remnants with a drift punch.

2. Opening punch rivets:

2.1 Opening punch rivets by extraction:

This procedure is used on the reduced-weight aluminium front end.

Recommended tools and equipment:

- Stud welding apparatus (refer to Service Information 5 03 03 975) with gas bottle containing inert gas (82 % argon, 18 % CO_2).
- Stainless steel stud (sourcing reference via BMW Parts Department image board Aluminium and steel/bonding and welding)
- Universal riveting tool (refer to Service Information 5 03 03 975)

Grind off paint and dark grey coating of punch rivets.

Position bolt centrally on the rivet and weld on vertically. The area in which the bolts are welded on should be between the two grounding terminals. Position both terminals, if possible, on the top side of the panel on which the rivet is located.

Extract bolt with welded-on rivet using universal riveting tool. Use a large plastic nose piece if not otherwise specified in the repair instructions. Check plastic nose piece prior to use for wear.

Plastic nose piece must rest on sheet metal all round; if necessary, grind off plastic noise piece in collision area.

Do not push riveting tool forcefully onto special-steel bolts.

Do not use riveting tool to bend special-steel bolts.

Pay particular attention to central positioning of the bolt when using the small plastic mouthpiece.

Follow the equipment manufacturer's instructions for use.

2.2 Opening punch rivets by drilling out:

Drill out rivets with a 6 mm dia. carbide drill bit.

Punch rivets can be drilled out on both sides. When drilling from the protruding rear side, spot-drill the rivet shank only and remove the rest with a rivet punch.

Note:

Sand down and even out remaining burr on the rear side.Deburr bore holes.

Use a drift punch to remove punch rivet remnants in the aluminium (risk of corrosion).

Clean vehicle to remove swarfs (risk of corrosion).

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41 00 ... Opening welded connections

1. Components made of steel:

1.1 Opening welding spots (resistance pressure spot welding):

Sheet steel panels made from high- and super-high-strength materials make great demands on the tools used.

Only with special carbide milling cutters can welding spots be drilled out on these sheet panels.

Use BTR/BOR milling cutters only in conjunction with Vario Drill spot-weld remover. Sourcing reference for spot-weld remover and BTR/BOR milling cutters, see Aftersales Assistance Portal (ASAP) - Service/Technology - Workshop Equipment (Start BMW) - Shop Workshop Equipment or at www.bmwgroup-wep.com.

- **Procedure:**
  If necessary, surface-grind existing unevenness with a belt or angle grinder in the area around the welding spot.
  Set punch mark in centre of welding spot. Set 8 mm dia. welding spot drill bit on punch mark and drill through top metal sheet.
  Note: Because the welding spots may have surface-hardened, grind them if necessary with an angle grinder and paper grinding disc.
  Use a chisel to separate the sheet metal flange and remove the component.
  Follow the special procedure for spot welds .

1.2 Opening MAG weld seams and MIG brazing seams:

- **Procedure:**
  Grind off weld seams with a belt or angle grinder. Do not grind the base material thin.
  Use a chisel to separate the sheet metal flange and remove the component.

1.3 Opening laser weld seams:

Laser weld seams are used in the roof outer skin area.

- **Procedure:**
  Roughly cut roof outer skin in the roof channel to improve accessibility.
  Place angle grinder with grinding disc on laser weld seam and grind through top metal sheet. Be careful not to cut through and damage sheet metal underneath.
  Remove sheet metal flange.

2. Components made of aluminium:

2.1 Opening MiG weld seams:

- **Procedure:**
  Grind off weld seams with a belt or angle grinder. Do not grind the base material thin.
  Do not use a chisel.
  Remove component.

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61 35 ... Overview of additional work for the removal and installation or replacement of electronic components in the body area/windscreen

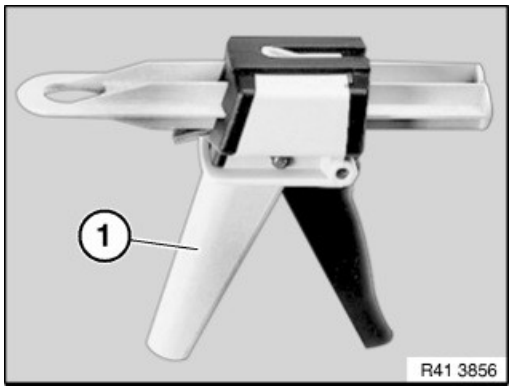
Component	**Removal and installation** Calibration/Initialisation required **(diagnosis system must be connected)**	**Removal and installation** Use of the Special tool necessary	**Replacement** Programming/encoding Calibration/Initialisation required **(diagnosis system must be connected)**	**Replacement** Use of the Special tool necessary	Remarks
Front section: (including bumper panel)					
ACC sensor	Yes	Yes	Yes	Yes	
Night vision camera	No	No	Yes	Yes*	*conventional workshop headlight adjusting device
PDC ultrasonic sensor	No	No	No	No	
PMA ultrasonic sensor	No	No	No	No	
Sensor, lane change warning	no*	No	Yes	No	*Required after a body repair in the surrounding area of the sensor. **Comply with the regulations for repainting!**
Sensor for active pedestrian protection	No	No	No	No	Must be replaced after the active pedestrian protection has been activated! **Impact absorber** must also be replaced!
Actuator for active pedestrian protection	No	No	No	No	Must be replaced after the active pedestrian protection has been activated!
Front camera	No	No	Yes	No	
Side section:					

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Top view camera (in the exterior mirror)	No	No	Yes	No	
Rear area: (including bumper panel):					
reversing camera (with Surround View)	No	No	Yes	No	
reversing camera (without Surround View)	No	No	Yes	No	
PDC ultrasonic sensor	No	No	No	No	
PMA ultrasonic sensor	No	No	No	No	
Sensor, lane change warning	no*	No	Yes	No	*Required after a body repair in the surrounding area of the sensor. **Comply with the regulations for repainting!**
Windscreen:					
Camera-based driver support systems camera	no*	No	Yes	No	*Necessary after **replacement of the windscreen**
Rain sensor (separate document)					

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41 00 ... Overview of adhesive cartridge guns



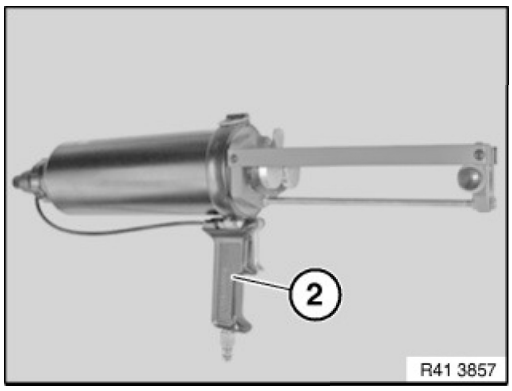
Adhesive gun 83 19 2 149 522

Obtainable via Electronic Parts Catalogue.

Usable for adhesives K4, K5a.

Usable for BMW 2K polyurethane foam.

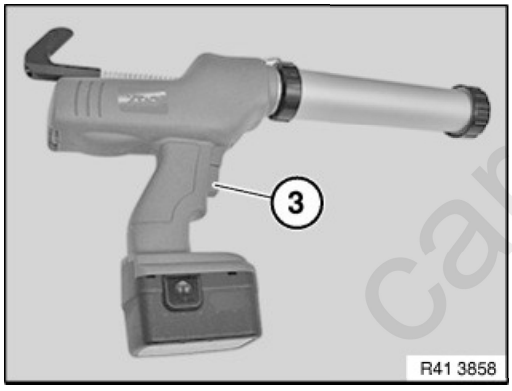
Including insert 1:1 and 2:1.



Adhesive gun 81 49 0 443 166

Orderable via BMW Workshop Equipment Catalogue.

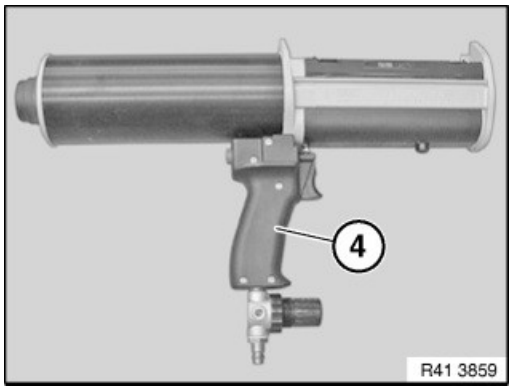
Usable for adhesive K3.



Adhesive cartridge gun 81 49 2 213 059

Orderable via BMW Workshop Equipment Catalogue.

Usable for adhesives K1, K5b, sealant D1/D2, window glass adhesive and all 310 ml Euro cartridges.



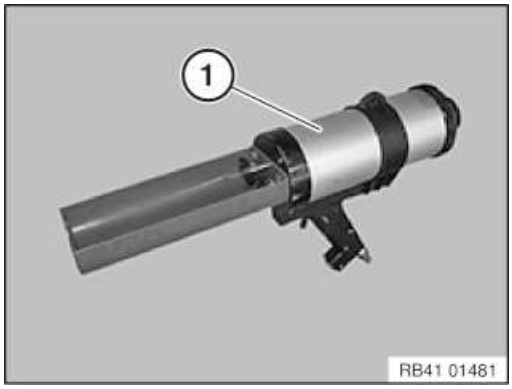
Adhesive cartridge gun 83 30 0 494 836

Orderable via BMW Workshop Equipment Catalogue.

Usable for structural foam HS2.

Note:
Special tool number 41 3 010

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Adhesive cartridge gun 81 49 2 355 475
Orderable via BMW Workshop Equipment Catalogue.
Usable for adhesive K2 (2x290 ml glue cartridge)

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41 00 ... Overview of consumables (Electronic Parts Catalogue)

1.0 Adhesives

Designation, repair instructions	Naming of Electronic Parts Catalogue	Part number of Electronic Parts Catalogue	Remarks
Adhesive K1	Body adhesive K1	83 19 0 413 015	195 ml
Adhesive K2	Body adhesive K2	83 19 2 355 849	2x290 ml
Adhesive K3	Body adhesive K3	83 19 0 417 144	2 x 300 ml
Adhesive K4	Body adhesive K4	83 19 2 149 520	50 ml
Adhesive K5	Body adhesive K5	83 19 2 158 654	50 ml
Adhesive K5	Body adhesive K5	83 19 2 157 298	195 ml
Adhesive K6	Adhesive set K6	83 19 2 317 925	

1.1 Primer / activator

Designation, repair instructions	Naming of Electronic Parts Catalogue	Part number of Electronic Parts Catalogue	Remarks
PrimerP1	PrimerP1	83 19 0 302 556	50 ml
PrimerP2	Primer P2/Gas cartridge	83 19 0 302 555	50 ml
Betawipe 4800	Betawipe 4800	83 19 2 357 707	10 ml
Bonding base VP 206	Bonding base VP 206	83 19 9 407 777	30 ml
Aktivator 205	Aktivator 205	83 19 0 030 155	250 ml

1.2 Cleaning agent

Designation, repair instructions	Naming of Electronic Parts Catalogue	Part number of Electronic Parts Catalogue	Remarks
Filler S1	Alluvial tin replacement	83 19 2 464 575	175 ml

1.3 Fillers

Designation, repair instructions	Naming of Electronic Parts Catalogue	Part number of Electronic Parts Catalogue	Remarks
Cleaning agent R1	Cleaning agent R1	83 19 2 211 217	125 ml
Cleaning agent R2	Cleaning agent R2	83 19 0 417 324	500 ml
Cavity sealing wax remover	Cavity sealing wax remover	83 12 0 390 086	500 ml

2.0 Rivet

Designation, repair instructions	Naming of Electronic Parts Catalogue	Part number of Electronic Parts Catalogue	Remarks
Blind rivet N1	Blind rivet N1	83 19 0 301 414	dia. 6.5 mm; clamping range 2.8-4.8 mm
Blind rivet N2	Blind rivet N2	83 19 0 301 419	dia. 6.5 mm; clamping range 4.8-6.8 mm
Blind rivet N3	Blind rivet N3	83 19 0 301 421	dia. 4 mm; clamping range 1-3 mm
Punch rivetN4	Punch rivetN4	83 19 2 457 307	dia. 3 mm; length 4 mm

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Punch rivetN5	Punch rivetN5	83 19 2 158 079	dia. 5 mm; length 5 mm
Blind rivet N6	Blind rivet N6	83 19 2 158 655	dia. 4 mm; clamping range 3-5 mm
Blind rivet N7	Blind rivet N7	83 19 2 240 352	dia. 6.5 mm; clamping range 1.5-3.5 mm
Blind rivet N8	Blind rivet N8	83 19 2 355 998	dia. 6.5 mm; clamping range 6.8-8.8 mm
Blind rivet N9	Blind rivet N9	83 19 7 239 634	dia. 6.5 mm; clamping range 8.8-10.8 mm
Blind rivet N10	Blind rivet N10	83 19 9 144 282	dia. 6.5 mm; clamping range 10.8-12.8 mm
Blind rivet N11	Blind rivet N11	07 14 7 391 057	Blind rivet for carbon connections dia. 4.8 mm; clamping range 2.2-4.7 mm
Blind rivet N12	Blind rivet N12	07 14 7 391 046	Blind rivet for carbon connections dia. 4.8 mm; clamping range 4.5-7.5 mm

2.1 Plastic nuts

Designation, repair instructions	Naming of Electronic Parts Catalogue	Part number of Electronic Parts Catalogue	Remarks
Cap nut	Plastic nut	51 16 1 943 122	Dia. 18 mm
Cap nut	Plastic nut	07 14 7 169 847	Dia. 22 mm

3.0 Primer/paint spray aerosol

Designation, repair instructions	Naming of Electronic Parts Catalogue	Part number of Electronic Parts Catalogue	Remarks
Primer	Emergency program base filler 2K spray	51 91 0 432 615	200 ml; application time 8 h
Welding primer	INOX spray welding primer	83 40 0 409 992	500 ml
Paint spray aerosol, cathodic dip coating, grey	Paint spray aerosol, inside filler of spare wheel well	51 91 0 411 026	400 ml
Spray can, black, matte	Spray paint, black matt	51 91 1 900 346	400 ml

4.0 Sealant

Designation, repair instructions	Naming of Electronic Parts Catalogue	Part number of Electronic Parts Catalogue	Remarks
Sealant D1 Sprayable sealant	Seam sealing	83 42 2 409 985	310 ml
Sealant D2	Seam sealing, spreadable	83 42 2 409 986	310 ml

5.0 Cavity preservation

Designation, repair instructions	Naming of Electronic Parts Catalogue	Part number of Electronic Parts Catalogue	Remarks

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Cavity sealant	Cavity sealant spray	83 42 2 457 337	400 ml
Cavity sealant	Cavity preservation	83 42 2 457 338	1000 ml

6.0 Cavity foam

Designation, repair instructions	Naming of Electronic Parts Catalogue	Part number of Electronic Parts Catalogue	Remarks
Cavity foamHS1	Cavity foam	83 42 9 410 694	400 ml
Structural foamHS2	Structural foam	83 19 0 007 361	420 ml
Cavity foamHS3	2K polyurethane foam	83 42 2 288 930	50 ml

7.0 EMC screw (electromagnetic compatibility)

Designation, repair instructions	Naming of Electronic Parts Catalogue	Part number of Electronic Parts Catalogue	Remarks
EMC screw	Screw	83 19 0 301 639	SF Plus M5x15

8.0 Twist drill

Designation, repair instructions	Naming of Electronic Parts Catalogue	Part number of Electronic Parts Catalogue	Remarks
Drill bit	Drill bit	83 19 2 460 424	4.2 x 120 mm
Drill bit	Drill bit	83 19 2 460 425	6.8 x 150 mm
Drill bit	Twist drill	83 19 2 166 463	4.2 x 55 mm
Drill bit	Twist drill	83 19 2 166 464	6.8 x 74 mm
Drill bit	High-strength drill	83 19 2 359 262	6.8 x 79 mm
Drill bit	High-strength drill	83 19 2 359 263	4.2 x 66 mm

9.0 Grinding material

Designation, repair instructions	Naming of Electronic Parts Catalogue	Part number of Electronic Parts Catalogue	Remarks
Non-woven abrasivesS1	ScotchBrite Multiflex A, very fine	51 91 0 402 967	

10.0 Spacer

Designation, repair instructions	Naming of Electronic Parts Catalogue	Part number of Electronic Parts Catalogue	Remarks
Spacer	Adhesive tape	51 71 7 901 759	

11.0 Adhesive tape

Designation, repair instructions	Naming of Electronic Parts Catalogue	Part number of Electronic Parts Catalogue	Remarks
Aluminium adhesive tape	Adhesive tape	11 00 7 769 948	Width 50 mm

12.0 reinforcement plates

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Designation, repair instructions	Naming of Electronic Parts Catalogue	Part number of Electronic Parts Catalogue	Remarks
Reinforcement plate, universal	Reinforcement plate, universal	41 21 7 275 563	

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41 00 ... Punch rivets

The "Bonding and Riveting" repair method involves the use for the first time of punch rivets in the repair. This requires new tools and procedures.

The punch rivets are matched in size to the material thickness and quality used at the respective connection point.

1.0 Recommended tools and equipment

- Punch rivet tool (see Service Information 05 03 09 (535))

Sourcing reference via Aftersales Assistance Portal (ASAP) - Service/Technology - Workshop Equipment (Start BMW) - Shop Workshop Equipment or at www.bmwgroup-wep.com.

Setting punch rivets:

- Refer to the vehicle-specific repair instructions for the punch rivet size.
- Mark the positions of the rivets on the vehicle. Set punch rivets at roughly equal spacings.
  Punch rivets do not require a predrilled hole. They are pressed directly into the full material.
- Insert punch rivet in riveting die. Position punch rivet tool on sheet metal parts to be riveted.

  Riveting direction:
  Always from new part to used part.
  Deviations are specified in the vehicle-specific repair instructions.
- Rivet punch rivets with punch rivet tool. In the meantime clean riveting die and matrix if fouled with adhesive.
- Seal punch rivets in moist area (e.g. wheel arch or carrier support) on both sides with sealantD1 (risk of corrosion).
- Seal cavities after painting vehicle with cavity sealant (risk of corrosion).

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41 00 ... Quality standard

- The overall requirements relating to a vehicle can only be implemented by including "all" components. This applies in particular to the body. With regard to an optimum crash result, it is necessary to maintain the structural measures.

  The procedures described in the repair instructions must be complied with. Deviations are only permitted after arrangement with and approval by BMW. Should you have any questions, please contact the country-specific Hotline.

  The use of non-approved repair steps or tools may have serious consequences for the structure of the vehicle (e.g. in the event of a crash). In the end, this can result in safety and product liability risks which cannot be calculated.

  Corrosion protection measures during and after repair work are vital for ensuring the vehicle retains its value.

- For repair work, only use original BMW/MINI parts, or parts that are of an equivalent quality, and approved auxiliary materials and operating fluid.

  For repairs that are settled by a warranty or goodwill, only original BMW/MINI parts may be used.

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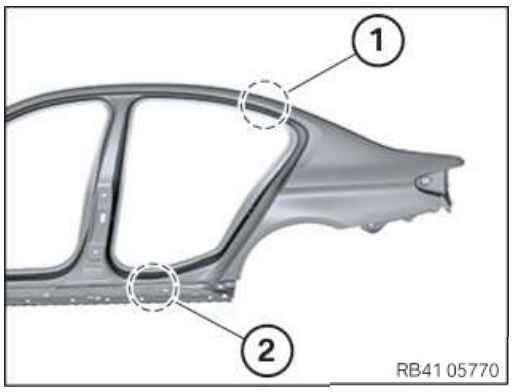
- For repair work, only use original BMW/MINI parts and approved auxiliary materials and operating fluids.

  For repairs that are settled by a warranty or goodwill, only original BMW/MINI parts may be used.

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41 00 ... Reinforcement plate with stud bolt (bonded or welded)

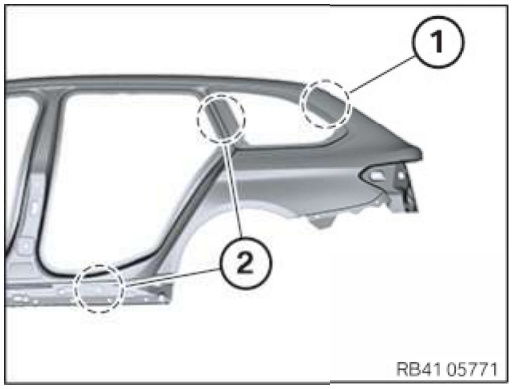
When replacing the rear side panel, reinforcement plates are bonded or welded on the separation points.



Applicable to Saloon, hatchback, Coupé.

Welding is done in area (1) (incl. water channel).

Bonding is done in area (2).

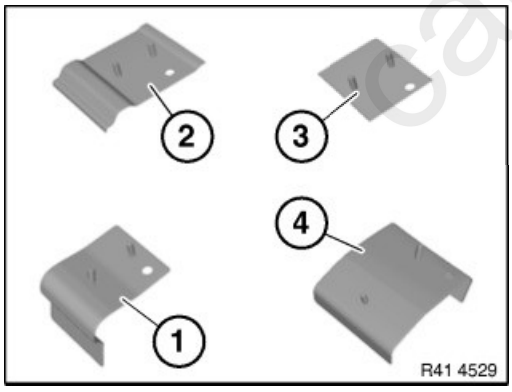


Applicable to Touring, X models, Gran Coupé, Gran Turismo.

Welding is done in area (1) (incl. water channel).

Bonding is done in areas (2).

Note:
The following graphics serve as general illustrations of reinforcement plate repair work. They apply to sectional repairs on the outer skin which are produced using the adhesive joining method.



Overview of the reinforcement plates (for sourcing reference, see Electronic Parts Catalogue):

(1) Reinforcement plate, sill

(2) Reinforcement plate, C-pillar

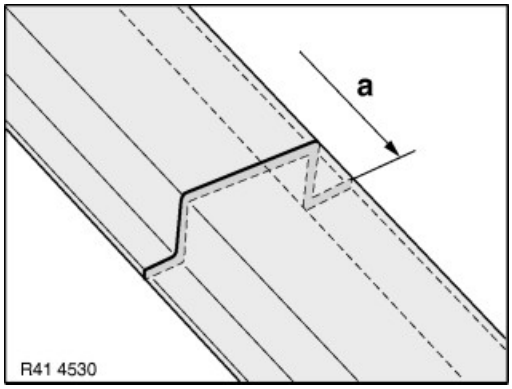
(3) Reinforcement plate, universal

(4) Reinforcement plate, C- or D-pillar

(5) Nuts (not shown)

- Plastic nut dia. 18 mm, part number 07 14 1 943 122
- Plastic nut ⌀ 22 mm, part number 07 14 7 169 847

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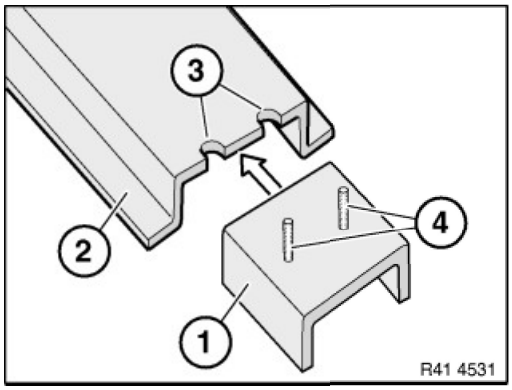


Mark side panel according to dimension a and detach it.

Preparation of the reinforcement plate (bonded or welded)

Some reinforcement plates are oversized.

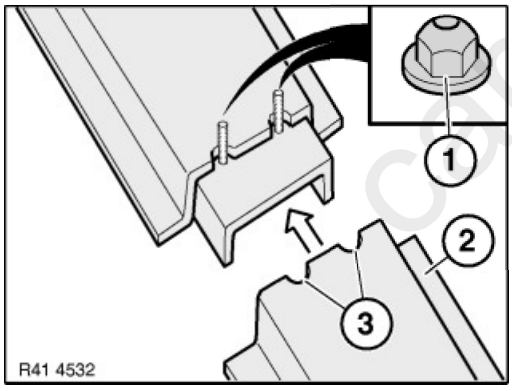
It may be necessary to rework the reinforcement plates at the edges or cut them to size until they rest against the outer skin free of tension.



Adjust reinforcement plate (1) to fit in component (2) on vehicle.

Make semicircular recesses (3) for the stud bolts (4).

Diameter of recesses approx. 10 - 12 mm.



Fix the reinforcement plate using plastic nuts (1).

Fit new part (2).

Make semi-circular recesses (3) in the new part.

Diameter of recesses approx. 10 - 12 mm.

Remove reinforcement plate.

Note:

Bonded reinforcement plates:

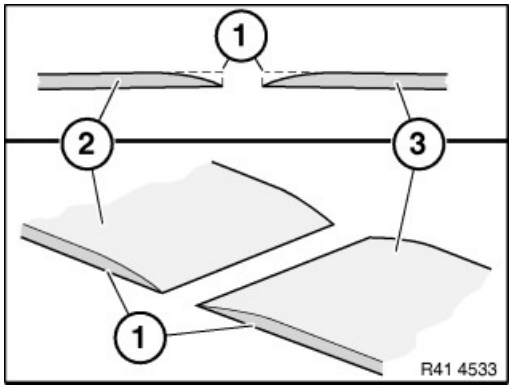
Width of joint between new part and component on vehicle approx. 5 - 8 mm (at least 30 mm flange width per side).

Welded reinforcement plates:

Width of joint between new part and component on vehicle approx. 2 - 3 mm.

Grind down to the metal in the area of the joint.

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Carry out the following step only if the reinforcement plates are bonded.

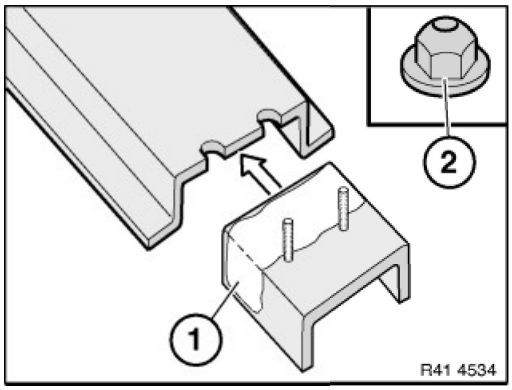
Chamfer cutting edges (1) on joint by grinding.

(2) Component on vehicle

(3) New part

If the cutting edges have not been sufficiently chamfered, there may be voids in the paintwork after painting.

Installing bonded reinforcement plate



Clean <u>all</u> bonding surfaces.

Apply the adhesive in area (1) on the reinforcement plate.

Apply more adhesive in the radii to avoid air pockets.

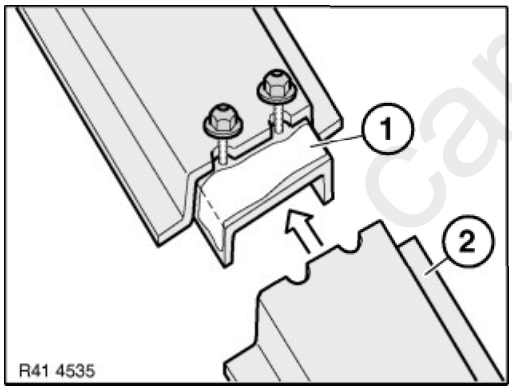
Apply additional adhesive to the outer skin around radii.

Slide the reinforcement plate carefully into the component on the vehicle and fix plastic nuts (2).

Screw on the nuts with only a few turns.

Attention!

When joining the reinforcement plate, make sure that there is sufficient adhesive on the bonding surfaces!



Apply the adhesive on bonding surface (1) of the reinforcement plate.

Apply more adhesive in the radii to avoid air pockets.

Apply additional adhesive to the outer skin around radii.

Fit new part (2).

Align new part to adjoining component and secure with gripping pliers.

First tighten the plastic nuts at the radii.

Only then tighten all the plastic nuts in the flat areas.

Tightening torque 41 14 1AZ.

Attention!

Check that the transition of the components is OK at the separation point. Corrections can only be made <u>before</u> the adhesive has hardened. Straightening at a later stage is not possible.

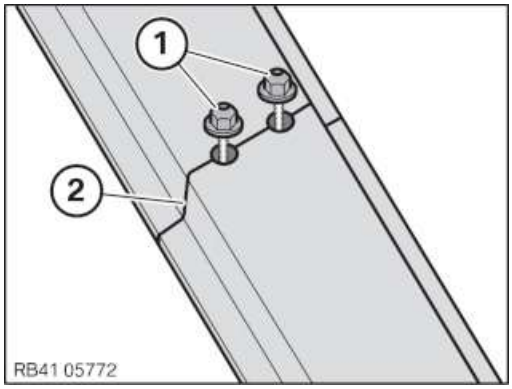
<u>After adhesive has hardened:</u>

Grind off stud bolts and surplus adhesive flush.

Paint area as specified in BMW Painting Handbook.

Installing welded reinforcement plate

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Attention!

Risk of damage!

Protect the adjacent components from heat and flying sparks.

Align new part to adjoining component and secure with gripping pliers.

First tighten the plastic nuts at the radii.

Only then tighten all the plastic nuts in the flat areas.

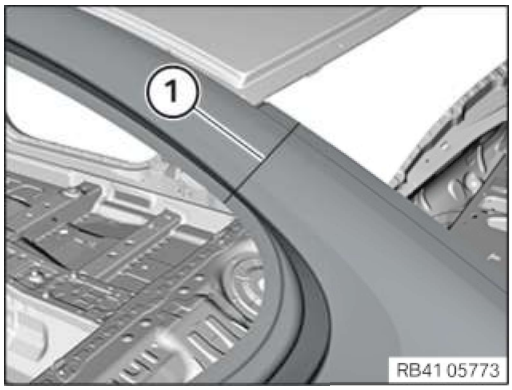
Tightening torque 41 14 1AZ.

Weld joint (2) between plastic nuts (1).

Release plastic nuts (1).

Grind down stud bolt until flush.

Weld joint (2) in the remaining areas.



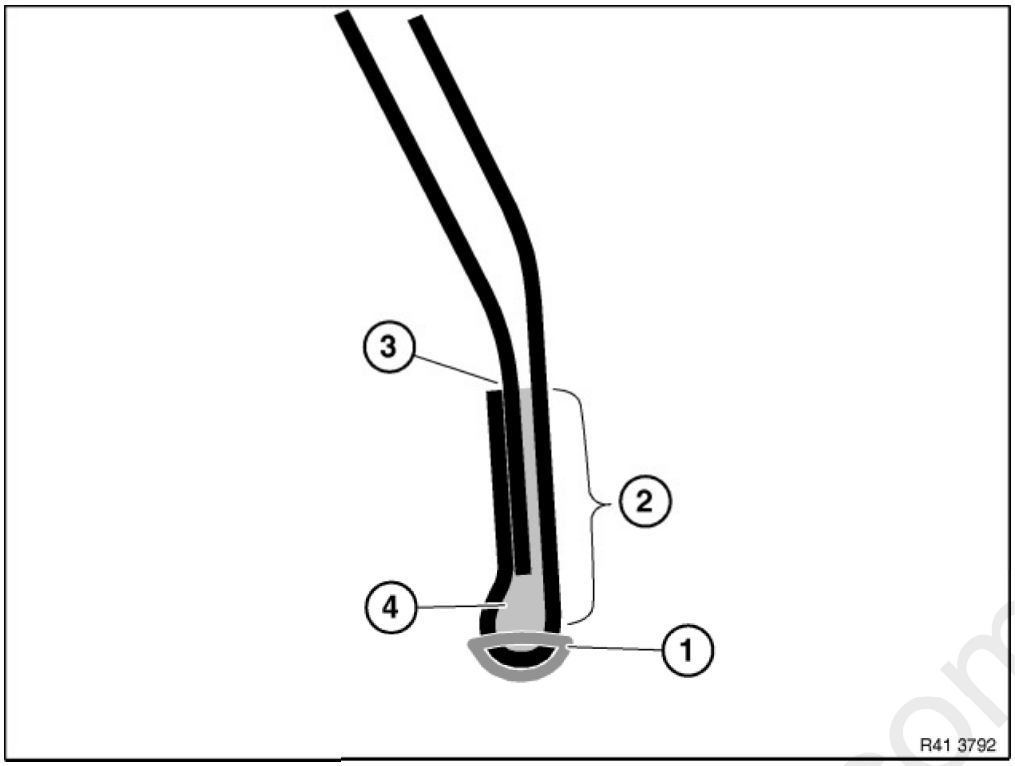
Grind weld seam (1) until flush.

If necessary, straighten area (1) and level it with a multi-functional spatula.

Paint area as specified in BMW Painting Handbook.

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41 05 800 Releasing bonded folded seam connections



- Remove area (1) of bead edge on wheel arch bend with a one-hand angle grinder and rough grinding wheel.
- Heat area (2) with hot air blower.
  Caution! Extract vapours and gases.
- Release connection flange with chisel.
- Grind adhesive residue (4) off wheel arch connection flange.
  Caution! Wear a grinding dust mask.
- Remove remnants of sealing material in area (3).

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41 00 ... Repair methods, repair stages 1

All work as part of which screwed body components must be replaced.

Repair techniques -> Repairing threads

Repair stage 1a

-> Blind rivet

-> Blind rivet nuts and bolts

-> Glass pane

All procedures during which repairs are to be done on the outer skin.

Repair techniques -> Straightening outer skin -> Straightening aluminium parts

Repair stage 1b

-> Straightening steel components

-> Repairing plastic components

-> Grinding -> Grinding aluminium components

-> Grinding steel parts

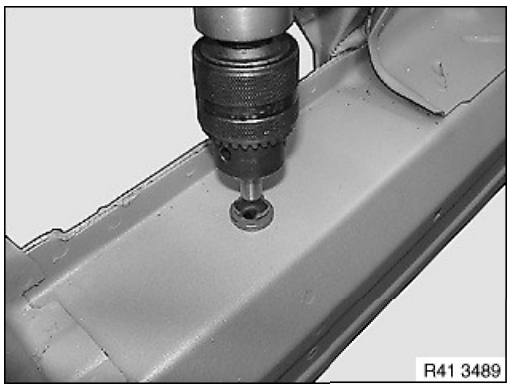
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41 00 ... Repair solution for straight shank/hexagon rivet nut



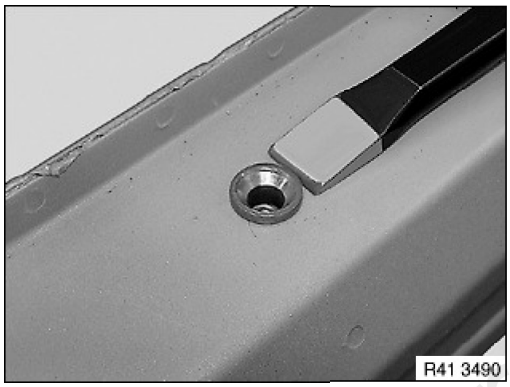
Protective measures!

- Wear safety goggles
- Wear protective gloves



Important!
To prevent the material from tapering, do not drill out the rivet head.

1. Carefully spot-drill rivet head with a larger drill bit/countersink



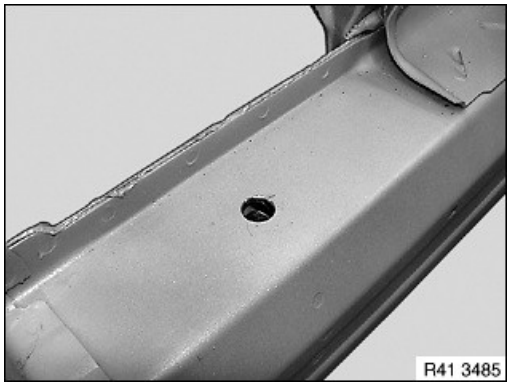
Important!
Avoid paint damage

2. Knock rivet head away with a chisel

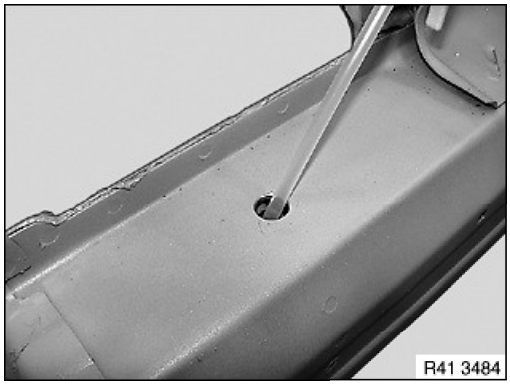


3. Punch through rivet shank into cavity, remove if necessary

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4. Clean component, eliminate paint damage if necessary

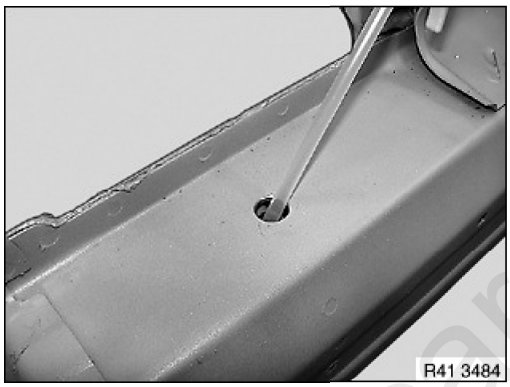


If the rivet shank can be removed: **Important!**

To avoid corrosion, stop chips/swarf by means of cavity preservation.

Follow notes on corrosion protection.

5. Preserving cavity



If the rivet shank cannot be removed: **Warning!**

Danger of injury!

Observe notes on cavity foam.

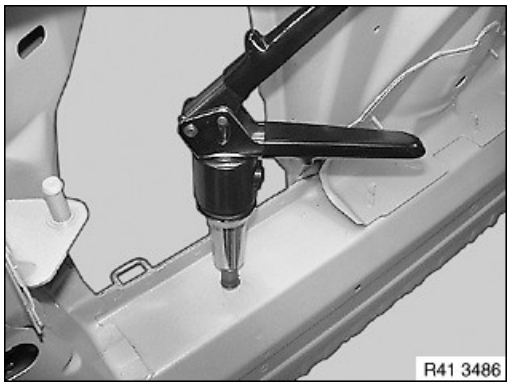
Important!

To avoid corrosion and rattling noises, stop chips/swarf and rivet nut shank with cavity foam.

Remove foam remnants with isohexane (benzine).

5. Stop rivet shank by means of specific foaming
6. Set rivet nut with hand rivet gun

Note:
Fit rivet nut as quickly as possibly, ideally before the cavity foam hardens.



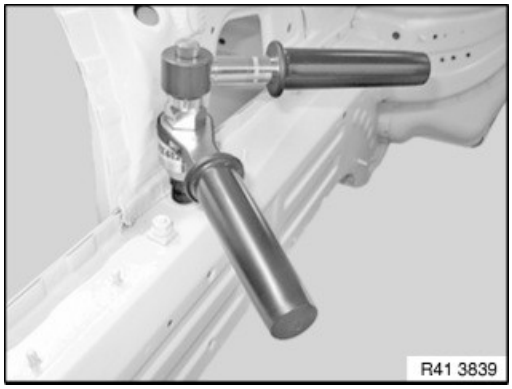
Hexagon / straight shank rivet nut (up to thread M8) with hand rivet gun ZS308 Important!

Follow manufacturer's operating instructions.

Make sure rivet nut correctly contacts component.

Note:
According to the manufacturer, the pictured tool is suitable up to an M8 thread (see Aftersales Assistance Portal (ASAP) - Service/Technology - Workshop Equipment (Start BMW) - Workshop Equipment Shop or www.bmwgroup-wep.com).

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Hexagon / straight shank rivet nut (up to thread M12) with hand rivet gun MB512 Important!

Follow manufacturer's operating instructions.

Make sure rivet nut correctly contacts component.

Note:
According to the manufacturer, the pictured tool is suitable up to an M12 thread (see Aftersales Assistance Portal (ASAP) - Service/Technology - Workshop Equipment (Start BMW) - Workshop Equipment Shop or www.bmwgroup-wep.com).

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41 00 ... Repair techniques, repair stage 2

Repairs that are carried out by bonding and riveting and/or welded with MAG welder without the use of a straightening bench.

Repair techniques -> Removing used part -> Opening welded connections
-> Opening brazed connections
-> Opening rivet connections
-> Opening bonded connections

-> Grinding aluminium components
-> Grinding steel components

-> Sectional repair -> Reinforcement plate (bonded)
-> Installing new part -> Notes on consumables
-> Notes on adhesive
-> Bonding on painted surfaces
-> Blind rivet
-> Punch rivets
-> Welding steel components
-> Cavity sealing
-> EMC screws

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41 00 ... Repair techniques, repair stage 3

Repairs that are carried out by bonding and riveting with the use of a straightening bench or welding.

Repair techniques

-> Straightening structure
- -> Straightening aluminium components on the structure
- -> Straightening steel components on the structure

-> Removing used part
- -> Opening welded connections
- -> Opening brazed connections
- -> Opening rivet connections
- -> Opening bonded connections
- -> Removing carbon components

- -> Grinding aluminium components
- -> Grinding steel components

-> Sectional repair
- -> Welding in reinforcement plate (sheet steel)
- -> Sectional repair (steel) with repair element

Sectional repair (aluminium) with repair element

-> Installing new part
- -> Welding aluminium components
- -> Welding steel components
- -> Spot-weld bonding steel components
- -> Soldering steel components
- -> Notes on consumables
- -> Notes on adhesive
- -> Bonding aluminium on steel
- -> Bonding steel on steel
- -> Blind rivets
- -> Punch rivets
- -> Cavity sealing
- -> EMC screws

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63 12 ... Repairing headlights

It is possible to repair the following damage:

- Deformed or broken holders can be replaced using the available repair kits.
  Replacement of headlight is **not required**!
  For reasons of pedestrian safety it is **not permitted** to use adhesive or reinforcements to repair broken holders!

Note:

Headlight repair kits are not available for every vehicles (see Electronic Parts Catalogue).

Follow the vehicle-specific repair instructions.

It is not possible to repair the following damage:

- Deformed or broken headlight housing.
- Scratched or damaged headlight lenses
  The standard coating of headlight lens cannot be restored. Commercially available repair systems are unable to provide sufficient protection from ultraviolet radiation and external influences (stone chipping).

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41 00 ... Repairing plastic components

1.0 General notes

- In general, the economic viability must be checked prior to the repair.
- The following painted components on the outer skin are suitable for repair:
  - Bumper panels (exception: E52)
  - Side sill trim panels
  - Side Panels
  - Door outer skin
  - Hardtop/roof
  - Soft top compartment lid
  - Rear lid
- **It is possible to repair the following damage:**
  - Slight deformations without visible cracks in the paint.
    Visible cracks reach the component and it is not possible to permanently rectify the damage.Cracks once again become visible on the paintwork after a certain period of time.
  - Slight damage, e.g. scrapes, if the component underneath does not become visible.
  - Cracks, holes up to 2.5 centimetre in length.
    Cracks must **not** reach the edge of the component.
- **Attention!**
  The following components **cannot** be repaired:
  - Components that are not painted as standard.
    Unable to restore grained surface.
  - Fuel tank, fluid tank (e.g. window washer system, brake fluid, coolant expansion tank, etc.)

2.0 Reshaping of plastic parts

- A hot air blower can be used to reshape plastic parts as per the aforementioned criteria.

3.0 Bonding of plastic parts

Important!

Conform with safety regulations!

- A plastic repair box is offered (sourcing reference via BMW Parts Department) for inexpensive repair with fair time values.
- The procedure for repair of plastic parts is included in the plastic repair box.
  Clamps or other metal reinforcements must **not** be used for reasons of pedestrian protection.

4.0 Welding plastic parts

- Plastic welding procedures are permitted as they are cost-effective repairs in line with the components' current value.
- Clamps or other metal reinforcements must **not** be used for reasons of pedestrian protection.

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41 00 ... Replacement parts standards

SUBJECT

Replacement parts standards

MODEL

All

SITUATION

BMW/MINI vehicles are subjected to rigorous crash tests by internal BMW/MINI departments, government agencies and additional crash assessment tests by independent organisations. When repairs are required, the only way to guarantee that a vehicle will retain and fulfil all crash requirements following repairs is to follow BMW/MINI repair standards and use only new original BMW/MINI parts. Any deviation could have serious consequences on the crash performance of the vehicle and jeopardise the safety of the occupants.

BMW/MINI utilises many different types of materials and joining methods during production of the body shell. The advanced steels, aluminium and synthetic materials are used to improve weight, strength, energy absorption and corrosion resistance. These materials work in unison with the rest of the vehicle to deliver the level of safety, driving performance and appearance often associated with the BMW/MINI brand.

PROCEDURE

BMW/MINI of North America does not support the use of aftermarket, imitation, recycled and salvage repair parts. Returning BMW/MINI vehicles to manufacturer's specifications requires trained technicians utilising only approved equipment, materials and joining processes. BMW/MINI repair instructions are supported only by the use of new original BMW/MINI parts.

BMW/MINI of North America bases its considerations on the following points:

- It cannot be confirmed that equivalent materials are used to produce aftermarket parts.
- All crash testing results and certifications are achieved with original BMW/MINI parts and joining methods in place.
- It cannot be confirmed that remanufactured components from outside sources fulfil BMW/MINI repair standards.
- Salvage components cannot be traced if subjected to a manufacturer's recall.
- It cannot be confirmed that salvage parts have not been subjected to prior crash impact loads, previous repair work, weathering and/or exposure to additional elements such as fire, smoke/heat damage or flooding.
- Non-original BMW/MINI parts may have poor fit, finish and quality which has a direct impact on the residual value of the vehicle. Original BMW/MINI parts are the same parts utilised to build the vehicles.

All BMW/MINI repair procedures, processes and standards are located on the BMW/MINI Online Service System (OSS).

www.bmwtechinfo.com

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41 00 ... Replacing blind rivets

Special tools required:

- 2 348 128
- 72 1 210

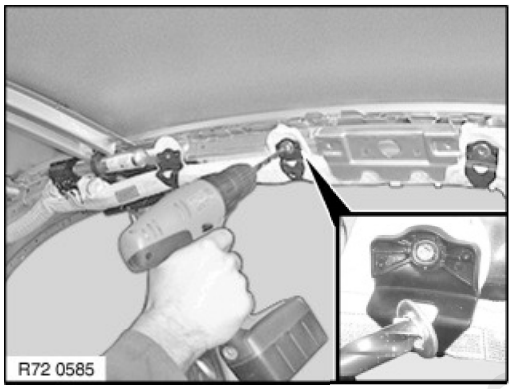


Important!

Lay out protective mats to protect the interior equipment against swarf from the drilled-out rivets and damage.

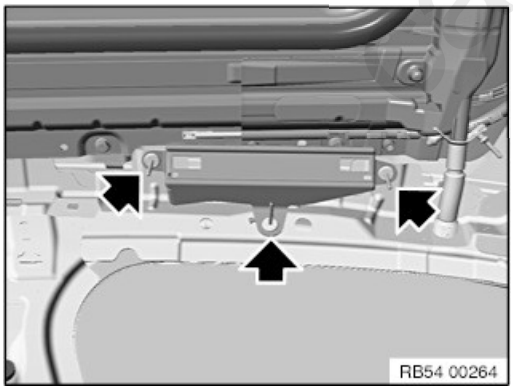
Lay out protective mats in the relevant working area:

- Instrument panel
- Entrance area
- Passenger compartment



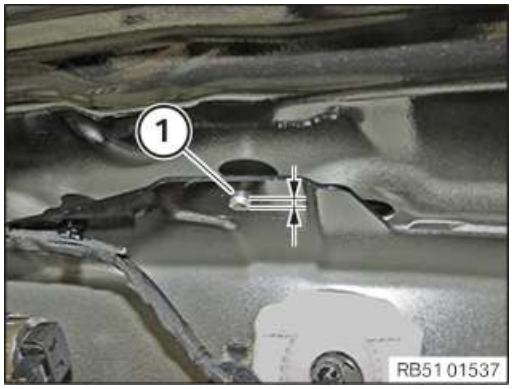
Schematic diagram of folding pack holder for head airbag:

Drill off rivet plate down to rivet shank with a 10 mm twist drill bit.



Described for grab handle holder:

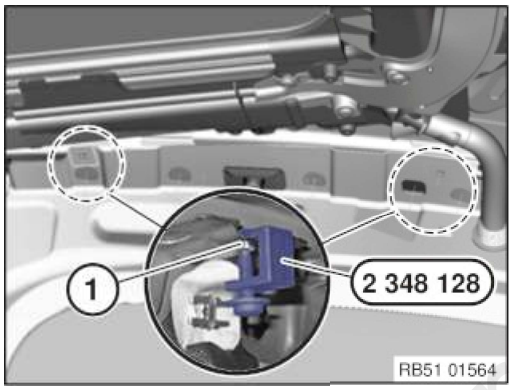
Drill off rivet plate down to rivet shank with a 10 mm twist drill bit.



Drill out all blind rivet protusions (1) up to the body.

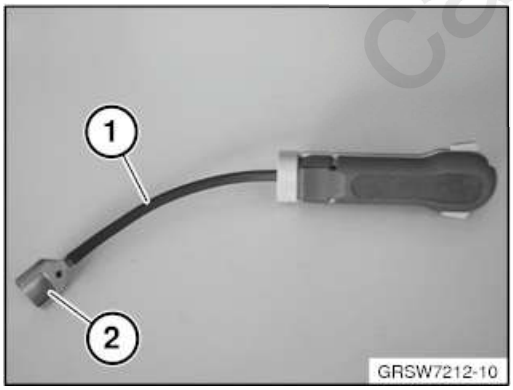
Installation note:
Apply primer to paintwork damages on side frame.
Note:
Depending on accessibility, the rivet heads will have to be removed using special tool 2 348 128 or 72 1 210 .

In areas that cannot be reached using special tools, cavity foam HS3must first be applied around the rivet head before the rivet head is then punched out immediately..



Removal of rivet head with special tool 2 348 128:

Press off rivet heads (1) using special tool 2 348 128 and remove.



Removal of rivet head with special tool 72 1 210:

Shank (1) of special tool 72 1 210 is flexible and can be adapted to the relevant body contours.

Note:
Insert butyl in the collecting tray (2) to secure rivet heads and prevent them from falling out.

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Insert special tool 72 1 210 through bore hole in body next to attachment points.

Position special tool from rear on rivet head in cavity.

Note:
A second person will be needed to help hold the special tool on the rivet head during the driving-out operation.

Make sure collecting tray is correctly fitted on rivet head.

Drive out stem with hammer and 6 mm punch.

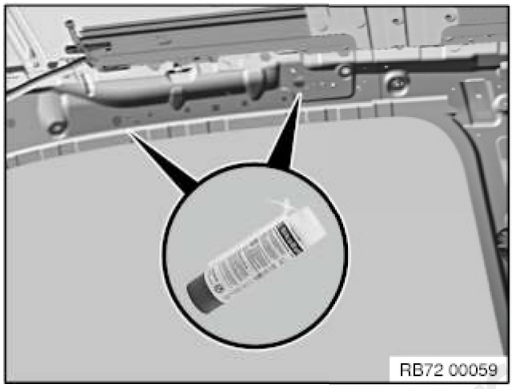
Carefully feed special tool out of body so that rivet head does not fall out of collecting tray.

Note:
If the rivet falls out of the collecting tray into the side frame when the special tool is fed out, this area must be generously filled with foam.

For details of procedure for filling cavities with foam, see further operations.

Use cavity preservation (refer to BMW Group Parts) for foam filling.

Cavity foam (refer to BMW Group Parts) may also be used if required.



Fit tube to foam can.

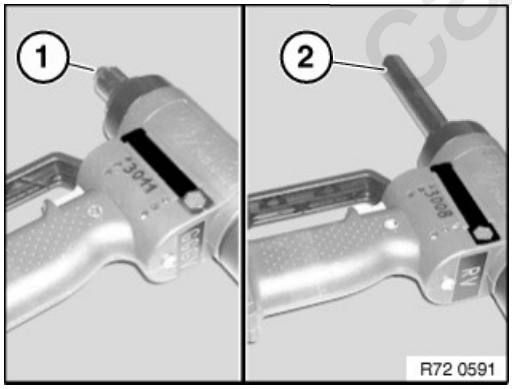
Push the hose in through the pillar holes.

Fill cavity with a filling material.

Warning!

Empty foam can completely onto cardboard and after hardening dispose of foam and can in residual waste.

Can may burst if not completely emptied.



<u>Overview of rivet gun:</u>

Riveting of gas generator housing and holders for folding pack with rivet gun (refer to BMW Workshop Catalogue).

The interchangeable head is changed for the different work operations.

Riveting of gas generator housing with:

1.) 17/36 nosepiece and short shank

Riveting of holders for folding pack:

2.) 17/40 nosepiece and long shank

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41 00 ... Safety at work

Note national regulations.

1.0 Compressed air:

- Air guns must not be pointed at individuals. "Blowing off" the body with compressed air may lead to serious injury.
- The devices are not permitted to be cleaned with compressed air due to dust contamination.

2.0 Electrical systems/devices:

- Only perfectly functioning systems and devices may be used.
- Repairs on electrical systems and devices must only be performed by certified electricians.

3.1 Working with aluminium dust:

- Wear a fine dust mask.
- The following applies only to E52 and BMWi: Use explosion-proof exhaust extraction unit.
- Note national regulations.

3.2 Removing sealant.

- Hydrochloric acid is created when PVC sealing material is heated to temperatures in excess of 180 °C.
- Remove PVC sealant with a rotating wire brush only or heat material with a hot air blower to maximum 180 °C and remove with a spatula.
- For good ventilation or direct extraction.

3.3 Arc welding and brazing solder:

Important!

> The extremely bright arc during welding may cause serious injury to the eyes if appropriate protective measures are not taken.

- Use a welding screen suitable for the relevant welding method (metal active gas or metal inert gas).
- Separation of workbays with protective curtains.
- Use a welding-emissions extractor facility.
- Wear protective clothing and gloves suitable for welding (not combustible).
- A fire extinguisher must be located within reach of the welding area.
- Do not carry out any welding work in the proximity of a fuel tank e.g. when it is installed.
- Note national regulations.

3.4 Working with chemical products (adhesive, cleaning agents, fillers, etc.):

Heed the manufacturer's material safety data sheets.

Important!

> Handling chemical products may result in allergic skin and breathing reactions.

- Do not eat, drink or smoke while working with these products.
- Avoid direct contact with eyes and skin.
- Wear safety goggles, protective gloves and if necessary an apron.
- For good ventilation or direct extraction.
- Use a breathing apparatus with a suitable filter type when ventilation is insufficient.
- Wear impermeable protective clothing.
- Immediately change contaminated work clothing.
- After finishing work, thoroughly clean your hands and apply protective skin cream.
- Always keep an eye douche on hand, change the water regularly (once a month).

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- Store bonding products in a secure cabinet only.
- Keep bonding products away from naked flames and other ignition sources.
- Protect bonding products against strong heat sources and direct sunlight.
- Note national regulations.

First Aid:

If product comes in contact with eyes, immediately flush with running water for about 10 -15 minutes. Seek the advice of eye specialist.

In the event of skin contact and where applicable an allergic skin reaction, clean the affected areas immediately with soap and water and then apply silicone-free skin cream. If necessary, consult a doctor.

If an adhesive product is swallowed, rinse mouth/parts of mouth thoroughly with running water. Drink 1-2 glasses of water. Do not induce vomiting. Consult a doctor.

After inhaling adhesive vapours ensure ample supply of fresh air. Stay calm. Keep air passages open. Consult a doctor.

3.5 Working with carbon dust:

- Do not eat, drink or smoke while working with these products.
  After finishing work, thoroughly clean your hands. Use protective hand cream.
- Fire, smoking and naked flames are forbidden.
- Wear work clothes, safety shoes, safety goggles and protective gloves.
- Only carry out grinding and cutting work with explosion-proof extraction (BMWi only).
- Wear ear protectors.
- Wear a dust mask (minimum protection class FFP2).
- Avoid carbon dust contact with skin, eyes and clothing.
- Regularly clean the working area with a vacuum cleaner and wipe the surfaces with a damp cloth.
- Separate workbay by means of mobile partition walls or protective curtains.

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00 Safety information for working on vehicles with automatic engine start-stop function (MSA)

Warning!

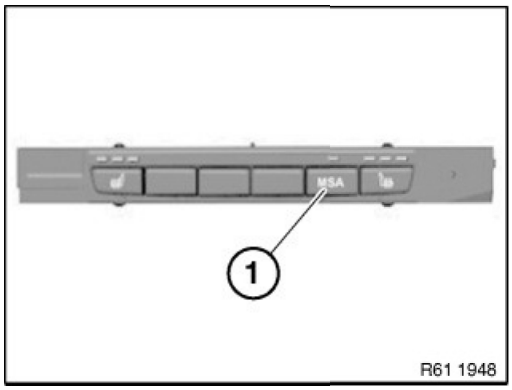
If the engine hood/bonnet contact is pulled upwards (workshop mode), the information "switch closed" is output. The automatic engine start-stop function is active.

An automatic engine start is possible.

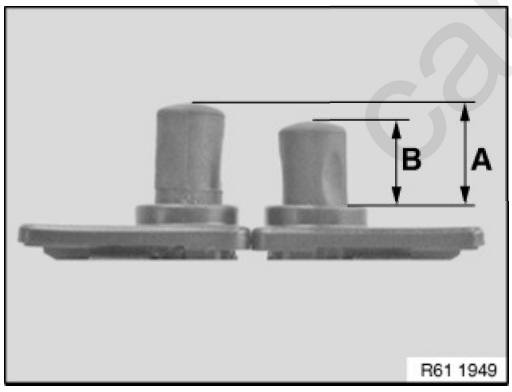
Observe safety precautions when working on MSA vehicles.

Before carrying out practical work on the engine, always ensure that the MSA functionality is deactivated so as to prevent automatic engine starting while work is being carried out in the engine compartment.

MSA function is deactivated by:



- Deactivate MSA by means of button (1) in passenger compartment
- Open seat belt buckle and driver's door



- Open engine bonnet/hood and ensure that engine hood/bonnet contact is not in workshop mode
  - Workshop mode

    A = 10 mm
  - Basic setting (engine hood/bonnet open)

    B = 7 mm

  To make sure that the engine hood/bonnet contact is at the basic setting, if necessary press the hood/bonnet contact up to the limit position before starting work and slowly release.

When working with diagnosis tools:

- Observe instructions in diagnosis tool

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Note:
For further information on automatic engine start-stop function (MSA):

- Refer to the Service Information (bulletin) (for manual transmissions) Service Information (bulletin) 61 01 07 335
- Refer to the Service Information (bulletin) (for automatic transmissions or twin-clutch gearboxes) Service Information (bulletin) 61 01 10 629

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41 00 ... Safety instructions for handling magnets

Precautionary measures are necessary when handling magnets in order to exclude any potential danger.

If the distance between the magnets falls below the minimum distance, the magnets will be abruptly attracted to each other. The brittle magnets will then collide with each other at high speed.

Very sharp splinters (similar to glass splinters) may then be chipped off.

Crush or cut injuries may also be caused.

Observe the manufacturer's safety data sheets.

Warning!

- Danger of crush injuries
- Danger of injury due to splinters
- Danger of injury due to magnetic fields

Handling instructions

- Wear safety goggles and protective gloves.
- Persons with heart pacemakers must not use the magnets.
- Do not store any iron parts (tools, small parts) close to the magnets.
- Keep magnets away from magnetic data media (credit cards, memory cards).
- Do not machine the magnets.
- Keep the magnets away direct heat and naked flames.
- Do not eat, drink or smoke while working with these products.

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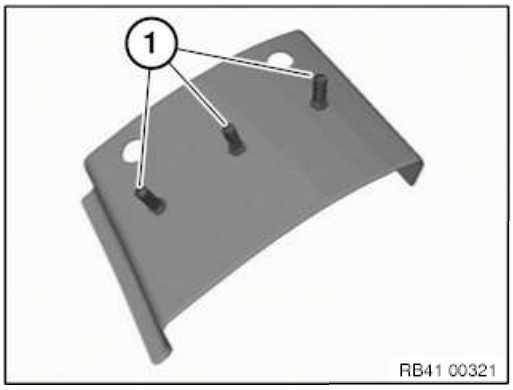
41 00 ... Separating cut determination with a template

In the case of a partial replacement piece, a body component is cut at a point described in the repair instructions.

A template may be used for the exact position determination for the separating cut.

The template is made from the reinforcement plate and can be reused.

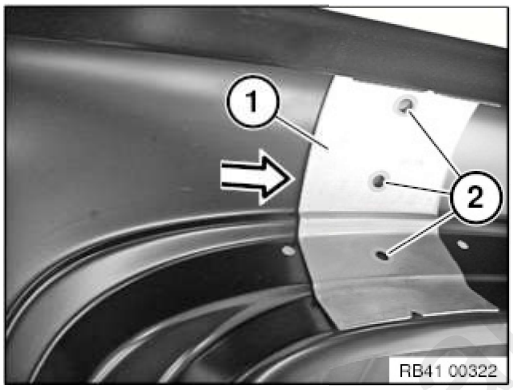
Carry over schematic diagram at the separation cut C-pillar to the relevant vehicle type.



Remove stud bolts (1).

Set bore holes Ø 4 mm at the positions of the removed stud bolts.

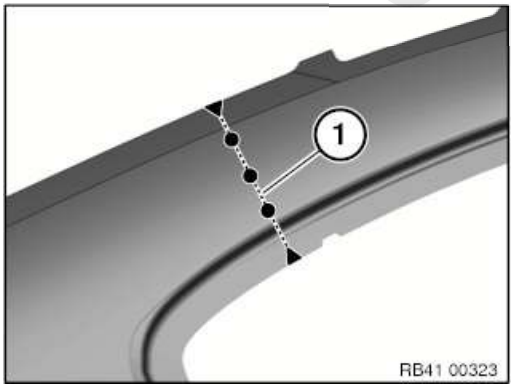
If applicable, place additional bore holes in the area of the edges.



Insert the template (1) into the new part (in direction of arrow) until it is flush (without gap).

Carry over the positions of the holes (2) to the new part.

Remove reinforcement plate again.



Connect marks (positions of holes) to the separating cut line (1).

Carry out the separating cut.

Tear and separate the separating cut on the vehicle according to the new part.

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41 00 ... Setting blind rivet nuts and bolts

- Studs welded as standard are always replaced by blind rivet bolts.
- Drill holes (0.2 mm larger than the outside diameter of the blind rivet nuts or blind rivet bolts).
- Blind rivet nuts and studs must have a special coating for anti-corrosion purposes (sourcing reference: BMW Parts Department).

Use the blind rivet nuts and bolts supplied in the case of the manual riveting tool for steel only!

- It will no longer be possible to set a blind rivet nut if the drilled hole is too big. In this event, set a clip nut (sourcing reference: BMW Parts Department). This nut tightens itself automatically when screwed to the component.
- Insert blind rivet nuts or bolts and tighten down with rivet tool .
- Seal blind rivet nuts and blind rivet bolts with sealantD1 (risk of corrosion).

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41 00 ... Soldering steel components

Attention!

Comply with the following topics from "Body, General":

Safety regulations.

Handling electrical system, electronics, airbags and restraint systems.

1. General information

- For repair cases the following procedure will implemented:
  - Autogenous brazing solder
- The MIG soldering procedure is not used in repairs for strength reasons. MIG soldered/brazed seams used in standard production are replaced in repairs by MAG weld seams.
- Brazed areas from vehicle production are bonded following the same procedure.

2. Work materials

- Tube pack and torch (autogenous torch)
- Brazing solder
- Gas bottles (oxygen and acetylene)
- Welding goggles

3. Preparation

- Remove the paint and zinc layer in an area of approx. 30 mm around the seam to be soldered.

4. Implementation

- Execute brazed seam without overheating the solder and with low heat dissipation. If necessary, use heat protecting paste.

5. Subsequent treatment of brazed connections:

- Remove burnt residual zinc completely. Align and grind visible connection faces.
- Remove burnt paint with a stainless steel wire brush.

6. Notes on melting/tinning:

Only applicable within the European Union!

The European End-of-life Vehicles Act prohibits the use of leaded tin in vehicles introduced after 01.07.2003!

Even out unevenness smaller than 2 mm with filler according to painting handbook.

Only perform in visible areas of the outer skin and on the carrier support.

All areas which have covers on the vehicle are not to be processed.

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41 00 ... Spot-weld bonding steel components

Important!

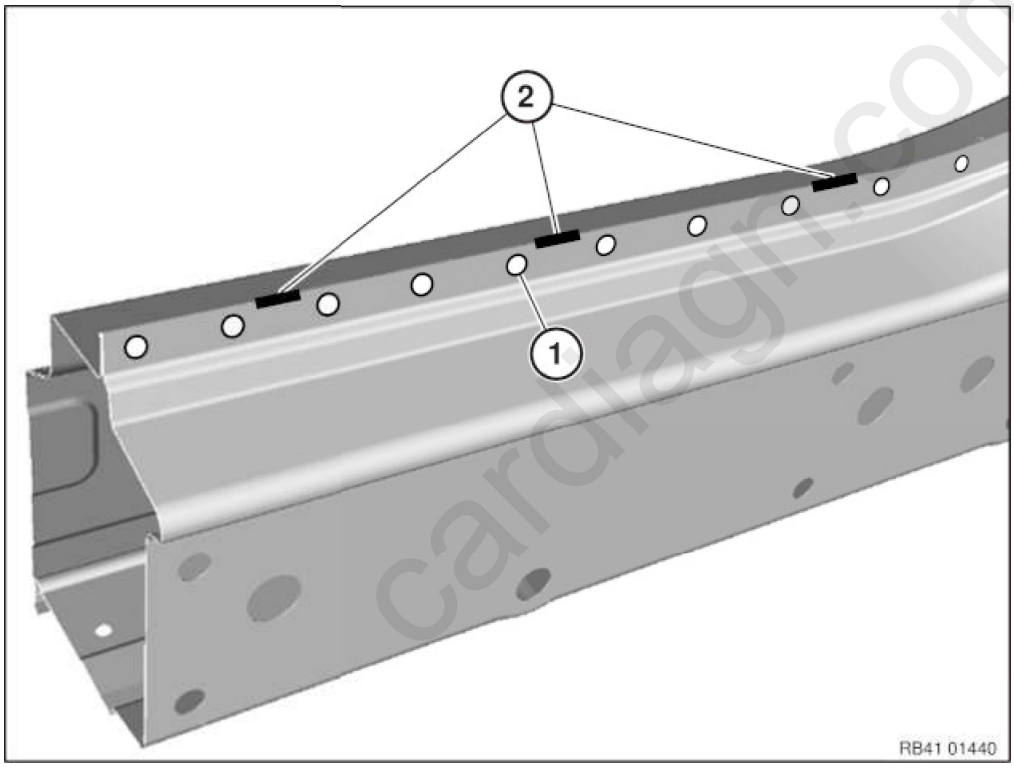
Comply with the following topics from "Body, General":

Safety regulations .

Handling electrical system, electronics, airbags and restraint systems.

Welding steel components.

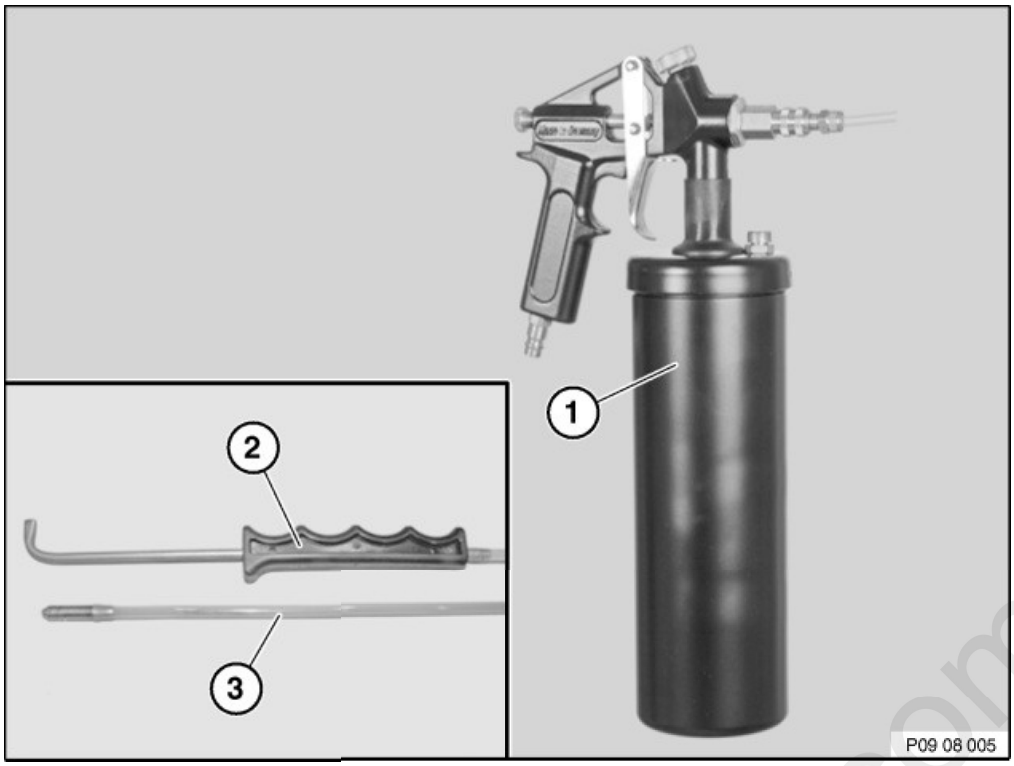
- Beginning with E65 the spot-weld bonding process is used to increase vehicle rigidity. In partial body areas, a 1-component adhesive is applied to the spot flanges and this is followed by resistance pressure spot welding. The adhesive is hardened only after the paint drying process (at approx. 180 °C).
- In the case of repairs, adhesive is **not** applied to the spot flanges. The number of welding spots is **doubled** as a substitute for the omitted adhesive.
- Minimum distance between welding spots (1) is 25 mm. Important! The minimum distance must not be undershot! If there is not enough space for twice the number of resistance weld points, each non-made resistance weld point must be replaced by a MAG weld seam (2). Length of a MAG weld seam = 20 mm. Set the MAG weld seams at equal intervals distributed on the face.



- The following procedures are used as a substitute for spot-weld bonding:
  - MAG welding (**M**etal **Ac**tive **G**as welding)
  - Resistance pressure spot welding (referred to in the following and in the repair instructions as spot welding).
- Adhesive is not applied between the spot flanges on new parts in the case of 2- or multi-sheet joints. Areas which cannot be reached by the spot-welding tongs can be joined by MAG plug welding. The number of welding spots is doubled as a substitute for the omitted adhesive.
- **Exceptions** (e.g.E65) are described in the relevant repair instructions. Apply welding spots to existing welding spots on new part. This is necessary because the adhesive between the spot flanges of the new part acts as an insulator.
- **Caution:** Extract smoke and fumes during welding work.

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41 00 ... Spray gun for cavity sealant



1.0 Delivery specification:

- Owner's Handbook
- Pressure reservoir spray gun (1) for cavity sealant
- Spray set, consisting of spray hoses: Angle nozzle (2) and round spray nozzle (3)

Important!
Prior to start-up read and familiarise yourself with the manufacturer's operating and safety instructions.

2.0 Start-up:

- Open the pressure reservoir and insert the cavity sealant in the form of a 1-litre can.
  Close the pressure reservoir.
- Connect the spray hose to the quick-release coupling.
- Connect the device to the compressed air supply.
  Operating pressure 2-6 bar, max. 8 bar!

3.0 Operating principle:

Note:
Unlike previous devices you can alter the spray pattern on this device with the air volume regulating screw (large knurled screw).

- Twisting the air volume regulating screw in decreases the air volume and thus reduces the formation of material mist.
  This facilitates optimum working when preserving open components/surfaces.

- Twisting the air volume regulating screw out increases the air volume and thus increases the formation of material mist. (For closed cavities)
- The trigger has two settings.
  1st setting - air discharge only.
  2nd setting - air and material discharge.

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- After finishing work, press the first setting to clean the spray hose with compressed air.
- Prior to storing, remember to twist the air volume regulating screw closed to reduce the risk of the material drying out.
- Prior to an extended period of non-use (2 weeks and more), clean the gun.
- To ensure that the spray hoses function properly, do not store them coiled up e.g. in the side member area!
  Store the spray hoses stretched out.

4.0 Application examples:

- Use the appropriate spray hoses for the different types of cavity and surface.
- Example - doors, lids and hatches:
  Spray hose with angle nozzle. Reduce air volume to keep the formation of mist low.
- Example - side members:
  Long spray hose with round spray nozzle. The air volume must be increased a little, depending on the type used.
- Basically, keep the formation of mist low to avoid fouling and unpleasant odours.

5.0 Safety instructions:

- Do not inhale spray mist.
- Use in well ventilated rooms only.
- Operating pressure max. 8 bar.

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41 00 ... Straightening aluminium component on the outer skin

1.0 Prerequisites

The component must be replaced if there are cracks and it is neither possible to drill into the end of the crack, nor to weld it.

2.0 Recommended tools

- Only use tools specifically designed for aluminium repairs.
- Do not use tools and operating fluids that have already been used for steel repairs (e. g. grinding wheel). Danger of contact corrosion.
- Do not use any sharp-edged tools (notch effect).
- We recommend the "Alu Slimliner A (6106)" tool to repair minor and moderate body damage. Sourcing reference BMW Workshop Equipment Catalogue.

3.0 Straightening outer skin.

- ”Cold” straightening: Press dents out from their centre and smooth in an outwards direction with gentle taps.
  In the case of small, soft dents (hail and parking damage), this is also possible without damaging the paintwork. This requires special tools and trained employees.
- ”Hot” straightening: Heat the component in the damaged area with a hot air blower to approx. 60 °C. This significantly reduces the force that needs to be applied for straightening.
- Avoid notching and cracking.
- Avoid hardening and overstretching.
- Avoid heating and excess temperature the outer skin over large areas.

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41 00 ... Straightening aluminium components in structure

- **Reshaping or heating extruded profiles and cast parts is not permitted!**
  Failure to comply with this requirement would have the following results:
  In the case of reshaping, weld seams (E52) or bonded connections (E60, E61, E63, E64) tear in the surrounding area.
  In the case of reshaping, the material loses up to 40 % of its original strength.
  In the case of heating, the material loses up to 40 % of its original strength.
  The adhesive is destroyed at temperatures ≥120 °C (E60, E61, E63, E64).

  Extruded profiles and cast parts which show visible or measurable signs of deformation must be replaced.
  Perform the check for deformation with the aid of the straightening system.
  For optical testing, strip adjoining components in cases of doubt.
  Extruded profiles are used in the E52 as engine supports, door posts, side members, etc.
  Extruded profiles are used in the E60, E61, E63, E64 as engine supports.
  Cast parts are used in the E60, E61, E63, E64, E70, E71 as spring supports.
- Reshaping of extruded profiles and cast parts may only be used to achieve optimum joining of connection faces (e.g. when bulkhead is damaged). Reshaped parts must be replaced.
- Repairs which affect the attachment points of mechanical assemblies and chassis/suspension components must be carried out on the straightening bench. Use the vehicle-specific set of attachments set or vehicle-specific data sheet.
  Straightening attachment supports and data sheets are also available for the top section, e.g.: door posts, soft top mounts, cowl panel, tailgate hinges, etc.
- Check windscreen and rear window apertures for curvature by inserting the original glass.
- Take the gap dimensions for doors, engine compartment lid and tailgate from the vehicle-specific gap dimension diagram.
- Exceptions on the E60, E61, E63, E64:
  Carrier support and bulkhead may be straightened if they do not have any cracks, sharp-edged damage or holes. After repair work, check parts again for cracks.
  Examine adjoining adhesive flanges for peeling off. If necessary, seal and preserve with sealant.
  Observe the frame reference dimension for the carrier support.
  Any repairs to the bulkhead if cracked outside the approved scope of repair work are only permitted after consultation with and approval by BMW. Should you have any questions, please contact the country-specific Hotline.

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41 00 ... Straightening steel components in the structure

- High-strength and super-high-strength steel plates as a rule cannot be reshaped. Reshaping only serves as a preparatory measure to replacing the component in order to achieve optimal joining of the connection points.
- Bearing body components such as e.g. engine supports, door pillars, side members etc. with deformations which can no longer be returned to their original shape by ”cold straightening” must be replaced.
  Heating bearing body components for better reshaping is not permitted!
  Failure to comply with this requirement would result in a loss of original strength of up to 40 %.
- **The body must be anchored as follows for reshaping:**
  If using vehicle-specific/universal straightening attachment sets (Carbench/ Celette/ Car-O-Liner), it is necessary to secure the body **additionally** with 4 retaining clips to the spot flange of the entrance or to the 4 jacking points. The spot flange (if available) is to be preferred.
  If using universal electronic or mechanical straightening systems (Car-O-liner/ Celette), it is necessary to secure the body with 4 retaining clips to the spot flange of the entrance or to the 4 jacking points. The spot flange (if available) is to be preferred. **In addition** anchor at least 2 points with the securing set.
  Failure to comply with these instructions will result in damage to the body during reshaping in non-damaged areas. Vehicle-specific straightening attachments and universal mounts may be damaged.
- Repairs affecting the mounting points of assemblies and chassis/suspension components must be carried out on the straightening bench with the matching straightening attachment set or specification sheet for the vehicle.
  Straightening attachments and specification sheets are also available for the top section, e.g.: door pillars, convertible top mounts, cowl, rear lid hinges, etc.
- Check windshield and rear window apertures for curvature by inserting the original glass.
- Take the gap dimensions for doors, engine hood and rear lid from the vehicle-specific gap dimension diagram.

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41 00 ... Straightening steel components on the outer skin

1.0 Recommended tools.

Only use those tools designed for steel repairs (sourcing reference BMW Workshop Equipment Catalogue).

2.0 Straightening outer skin.

- ”Cold” straightening: Press dents out from their centre and smooth in an inwards direction with gentle taps. In the case of small, soft dents (hail and parking damage), this is also possible without damaging the paintwork. This requires special tools and trained employees.
- In the event of damage that is only accessible from one side it is possible to use a dent removal system featuring welding.
- Avoid cracking.
- Avoid hardening and overstretching.
- Prevent overheating small areas of the outer skin.
- When the surface exhibits an unevenness no greater than 2 mm after straightening, putty compound can be used to even out the area (see Painting Handbook).
  Only applicable within the European Union!
  European used-vehicle regulations prohibit the use of tin containing lead in vehicles introduced after 01.07.2003!
- For high-security vehicle, note the special information in the repair instructions!

2.1 Straightening the wheel arch (rear side panel).

Vehicles in which the wheel arch is not welded but bonded and bordered can be straightened.

This is possible in the following situations:

- Rear side panel (wheel arch) is not torn in the area of the bonding. Welding in this area is not permissible.
- The outer skin has not become separated from the outer wheel arch section.

In general, the following applies:

When performing straightening work on the wheel arch, apply sealant to the inside. After straightening, the area must be primed and resealed with sealant D1. Protect from the inside using cavity preservation.

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99 00 ... Touching up paintwork damage

These notes apply to paintwork damage on the body aperture that occurred when detaching bonded window glass.

To ensure long-term corrosion protection, it is absolutely essential to touch up damage to paintwork!

The "BMW Color System" painting handbook forms the basis of these repair instructions and must be observed without fail.

Ground down damage to paintwork on body aperture and touch up with BMW multibase filler.

Grind larger areas or damage down to the bare sheet metal and coat with BMW multibase filler (layer thickness 30 to 40 µm).

Hardening time:

- With infrared, at least 10 minutes
- Without infrared for at least 60 °C, at least 30 minutes
- Without infrared for at least 20 °C, at least 24 hours

If a complete build-up of paint is required in the visible area:

- Tape off primed adhesive flange before applying top coat

Important!

Observe hardening time of BMW multibase filler otherwise a perfect bond cannot be guaranteed!

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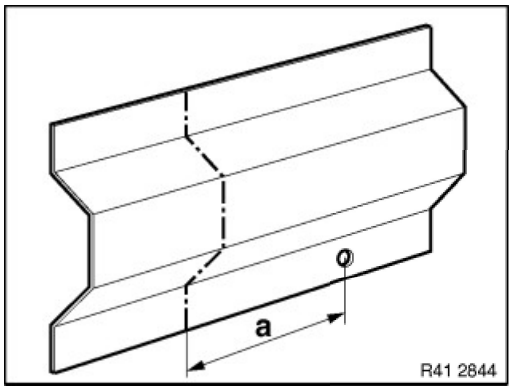
41 00 ... Welding in reinforcement plate (sheet steel)

In the case of a partial replacement piece, a body component is cut at a point described in the repair instructions.

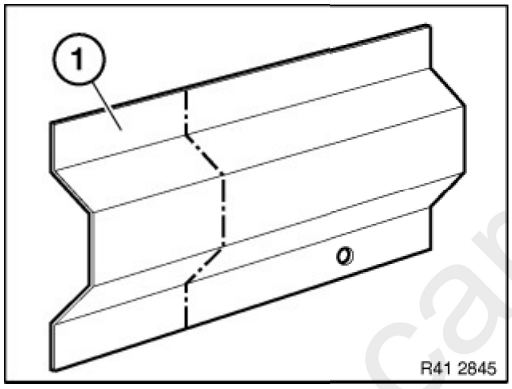
A reinforcement plate is welded in to ensure sufficient strength.

Follow notes for welding steel components.

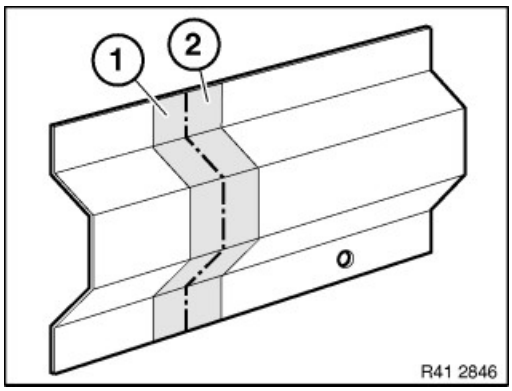
Note:
The following graphics serve as general illustrations of reinforcement plate repair work. They are applicable to all sectional repairs.



Mark component in accordance with dimension A and cut.



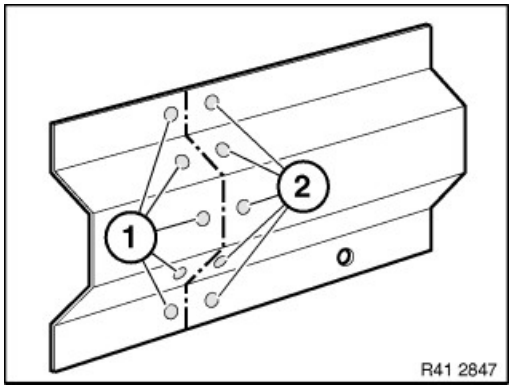
Cut new part (1) in accordance with cut and if necessary adjust to fit with alignment bracket or universal mount.*Installation note:*
Maintain a distance of approximately one to no more than two material thicknesses at the severance cut to ensure welding with the reinforcement metal and enable more tolerant adjustment.



Clean inner and outer sides of connection faces (1) on new part and (2) on body.

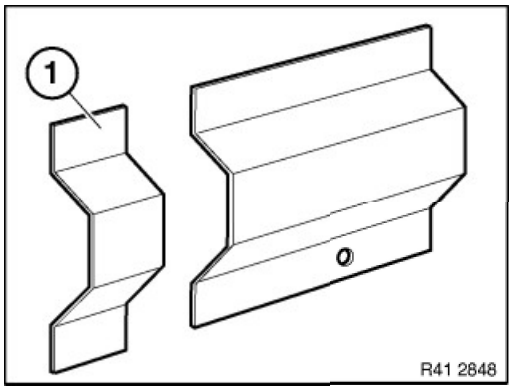
Coat insides with welding primer.

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Drill bore holes (1) and (2) at distance of 25 mm to each other.

Hole diameter approx. 8 mm.

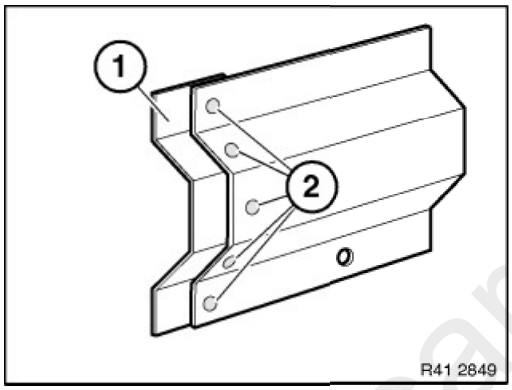


Make reinforcement plate (1) from trim of new part.

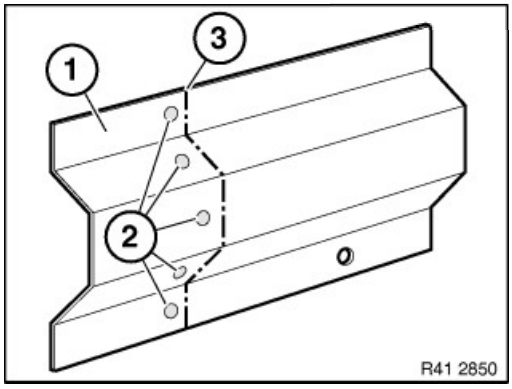
If applicable, produce more reinforcement plates.

Length of reinforcement plates is min. 40 mm.

Coat reinforcement plates (1) and (2) on both sides with welding primer.



Push reinforcement plate (1) into component on body up to half way and plug-weld (2).



If applicable, adjust the new part (1) with the alignment bracket or universal tool and plug-weld (2)

MAG weld the joint (3).

Grind and clean weld seam and plug weld spots.

Only visible areas of the outer skin and on the carrier support must be tinned.

All areas which have covers on the vehicle are not to be tinned.

Note:
Only applicable within the European Union!

European used-vehicle regulations prohibit the use of tin containing lead in motor vehicles introduced after 01.07.2003!

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41 00 ... Welding steel components

Important!

Comply with the following topics from "Body, General":

Safety regulations.

Handling electrical system, electronics, airbags and restraint systems.

1. General information

- The following procedures are used for repairs:
  - MAG welding (**M**etal **Ac**tive **G**as welding)
  - Resistance pressure spot welding (referred to in the following and in the repair instructions as spot welding).
- Take the number and position of welding spots and MAG weld seams from the separated part. Replace areas inaccessible to spot-welding tongs with MAG plug weldings at the same distance. Diameter of bore holes for plug weldings 8 mm.
- In the case of emissions extraction, observe a minimum distance of 30 cm for MAG welding during the welding process. Otherwise the inert gas would be drawn off.
- Follow the equipment manufacturer's instructions for use.

2. Work materials

- MAG welding:
  - Steel welder (see Workshop Equipment).
  - Steel welding wire - G3SI1 (SG2) or alternatively G4SI1 (SG3)
  - Welding mask
  - Gas bottle containing inert gas (82 % argon, 18 % CO_2)
- Resistance pressure spot welding:
  - Spot-welding apparatus (see Workshop Equipment).
  - Safety goggles

3. Preparations for MAG and spot-welding

- Remove the paint coating in an area of approx. 30 mm around the weld seam or spot.
  - The zinc layer underneath must be removed during the MAG welding method.
  - It is not necessary to remove the zinc layer underneath during spot-welding.
- Remove the paint coating on the reverse side of the weld seam or spot.
  - Contaminants will otherwise enter the weld pool via the root of the weld seam.
  - An insufficient electron flow prevents an optimum spot-weld joint.
- Coat all metal overlaps and weld spot flanges with welding primer.
- To determine the optimum electrode contact force for spot-welding, carry out spot-weld shear tests on sample sheet metal.
- In order to keep the electron flow short during MAG welding on the body, you must if possible attach the ground terminal directly to the component to be welded.

4. Welding

- During MAG welding, the weld gap must be kept as small as possible. The larger the weld gap, the lower will be the strength of the joint.
- During spot-welding, the sheet metal flanges to be joined must be placed as close together as possible without gaps.
  The larger the gap, the lower will be the strength of the joint.
  Minimum distance between welding spots 25 mm.

5. Subsequent treatment of welded connections:

- When grinding a weld seam, do not grind thin the base material next to the seam.

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- After joining, clean all weld seams and spots with a stainless steel wire brush.
- Remove burnt paint with a stainless steel wire brush.
- All welded connections sealed off with body sealing compound in original condition must be primed and sealed off again thoroughly after repairing. Replace damaged or removed anti-drumming layers.

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41 00 ... Working with 2-component PU cavity foam

Sourcing reference for cavity foam, refer to BMW Parts Service.

Properties of cavity foam:

- 2-component PU foam, solvent-free.
- Excellent flow capacity, enabling complete sealing of cavities.
- Good strength, preventing slipping in cavities.
- Low water absorption, preventing corrosion.
- Ideal for use as insulating and sealing compound

Information on dangers/hazards:

- Avoid eye and skin contact.
  Wear protective goggles, solvent-resistant protective gloves and protective clothing.
- Do not inhale.
  Apply in well ventilated rooms only.

- **Warning!**
  Application time after mixing: within **8 minutes!**
  Completely empty open can after use.
- Remaining amounts which are not used can cause the **can to explode** on account of a chemical reaction (buildup of heat)!
  Alternatively, cool the can containing the non-removed remaining amount for several hours in cold water.
- Do not eat, drink or smoke during this operation.
- Keep heat and ignition sources well away.
- Read the manufacturer's information on hazards/dangers (printed on the can) prior to application.

Application instructions:

- Use by date on can.
  Do not use the spray can after the Use by date on the can has expired. After the Use by date the properties of the cavity foam will no longer meet the requirements of the BMW Group.
- Cavity sealing of repair area possible after an air drying time of 1 hour.
- Backing surface must be
  clean and free from
  dust,
  grease,
  oil and stripping agent.
- Application temperature at least 15 °C. Optimally 20 °C.
- Remove fresh, non-hardened PU foam with adhesive cleaner 208.
  Sourcing reference: BMW Parts Service.
  Hardened PU foam can only be removed by mechanical means (machine).
- Excess, hardened PU foam can be disposed of as residual waste.
  Cans which are not entirely empty and unused whose Use by date has expired are classed as hazardous waste.
  Observe country-specific waste-disposal regulations.
- Observe the manufacturer's application instructions (printed on the can).
- Important!
  Foam expands many times over as it sets (change in volume).
- Setting takes approx. 30 minutes. Mechanical processing (e.g. drilling, cutting, etc.) is then possible.

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41 00 ... Workshop equipment (BMW and MINI vehicles)

Minimum requirements for workshop equipment to guarantee professional body repairs:

The tools listed below **must be used**.

Repair stage 1a:

Tool*	Sourcing reference	Screwed parts (steel or plastic)	Screwed parts (aluminium)
Body tool trolley	81 64 2 153 204 or 81 64 2 410 578	x	x
Drill	conventional Span width 0 to min. 10 mm	x	x
Blind riveting tongs	81 43 0 301 744	x	x
Manual riveting machine for blind rivet nuts	81 43 2 155 739 (up to M12) or 81 43 9 429 204 (up to M8)	x	x

Repair stage 1b:

Tool*	Sourcing reference	Screwed parts (steel or plastic)	Screwed parts (aluminium)
Aluminium bodywork tool assortment	81642336755		x
Pressure cup spray gun for cavity preservation	81452148795	x	x
Drill	conventional Span width 0 to min. 10 mm	x	x
Blind riveting tongs Electrical or pneumatic With rivet head extension	81430301744 with extension 81432158706 or 81432159003	x	x
Manual riveting machine for blind rivet nuts	81432155739 (up to M12) or 81439429204 (up to M8)	x	x

Repair stage 2:

		Steel		Aluminium	
Tool*	Sourcing reference	Structure	Outer skin	Structure	Outer skin
Body tool trolley accessory set	81642334947	x	x		
Bodywork saw	81432156415 or 81432410594	x	x		
Belt sander	81432236488 (230V) or 81432333873 (100-115V)	x	x	x	x
Single-handed grinder	81430303336	x	x	x	x
Welding spot remover	81439428600	x	x		

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Punch riveting tool	8132158708	x	x	x	
MAG welding apparatus	conventional	x	x		
Cartridge gun for adhesives		x	x	x	x
Infrared heater	81442211107 (220V) or 81452211615 (110V)		x		
Thermometer	81312211265		x		

In addition, the repair stage 1 tools are required.

Repair stage 3:

	Steel		Aluminium	
Tool*	**Structure**	**Outer skin**	**Structure**	**Outer skin**
Spot welding apparatus	x	x		
Straightening system	x		x	
Stud welding apparatus	x		x	
Flame coating set			x	
MIG welding apparatus			x (E52 only)	

In addition, the repair stage 1 and 2 tools are required.

*Sourcing reference BMW Workshop Equipment Catalogue

Attention!

In vehicles from model year 2001, higher-tensile and high-tensile steels are used in certain areas.

It is essential to check whether the spot-welding apparatus used conforms to the technical requirements of the currently recommended welding sets. Should you have any questions, please contact the country-specific Hotline.

The use of technically obsolete equipment may have serious consequences for the structure of the vehicle (e.g. in the event of an accident). In the end, this can result in safety and product liability risks which cannot be calculated.

Use and restrictions:

Definition of recommendation:

All currently recommended spot welding sets comply according to the *latest* information with the requirements relating to reliable welding of today's and future BMW Group vehicles. A spot welding unit will lose its recommendation as soon as tests with materials and material combinations designated for future use in BMW Group vehicles return negative results (see Table Group 1). All previous application before the withdrawal of the recommendation shall remain unaffected.

	Device designation	Manufacturer
Group 1 Devices currently *no* longer recommended	CR500	CAR-O-LINER
	Spot9000	Tecna
	ATL 400V	Wieländer&Schill
	MIDIspot QSVM12000T	CAR-O-LINER
	MIDIspot QSVM12000T	Elmatech
	MIDIspot QSVM9000	CELETTE
	MIDIspot QSVM9000	Elmatech

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	CR600 QSM	CAR-O-LINER
Group 2 Devices currently *recommended*	Multispot MI-100 Control	Elektron
	Inverta Spot GT BM	Wieländer&Schill
	3664 BM	Tecna
	CTR12000T	CAR-O-LINER

Application options and restrictions of above devices.

Vehicle	Group 1	Group 2
All BMW convertibles from E64	x Except A-pillar, B-pillar, sill	x
All BMW model ranges from E70	x Except B-pillar	x

Note:

As at May 2016

All BMW and MINI vehicles not mentioned can be repaired with the equipment of Group 1 and Group 2.

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41 ... 0 Notes on the repair technique used in the main group 41

Two different repair techniques are used in body repair.

These are welding and bonding/riveting.

If the repair instructions do not specify a repair technique, then welding must **always** be used.

The bonding/riveting repair technique is **always** described in detail in the repair instructions.

Quality standards must be met.

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41 11 205 Completely replacing the left carrier support

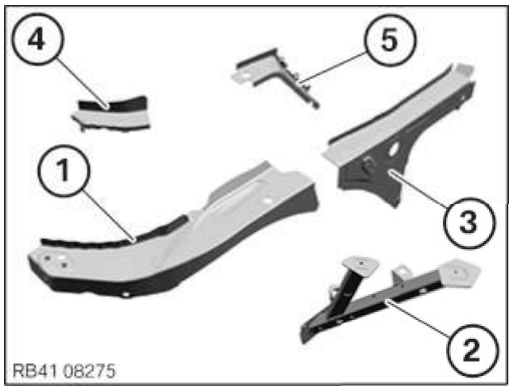
TECHNICAL INFORMATION

- Observe the procedure for repair stage 3.

For additional information see: 41 00 ... Repair method for repair stage 3

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

1 – Supplying the new parts required



- Prepare the following new parts (see Electronic Parts Catalogue EPC):

  Carrier support, wheel arch, front(1)

  Support for the carrier support (2)

  Extension for wheel arch carrier support (3)

  Bottom wheel arch carrier support (4)

  A-pillar partition plate (5)

  Front wheel arch carrier support shaped part

TECHNICAL INFORMATION

For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

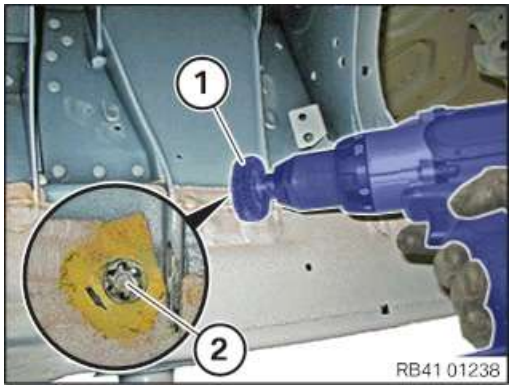
- Supply the following consumables:

Material	Quantity
Adhesive K1	1
Blind rivet N1	40
Blind rivet N2	5
Punch rivet N4	20
EMC screw	31
Cleaner R1	1
Cleaner R2	1
Sealing compound D1	1
Cavity sealing wax remover	1

2 – Removing self-tapping screws

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Remove the sealant with a wire brush attachment (1).
- Completely remove the sealant from the screw head (2).



- Vertically position the battery-powered drill (1) using special tool on the self-tapping screw and release the self-tapping screw.

Your browser doesn't support HTML5 video.

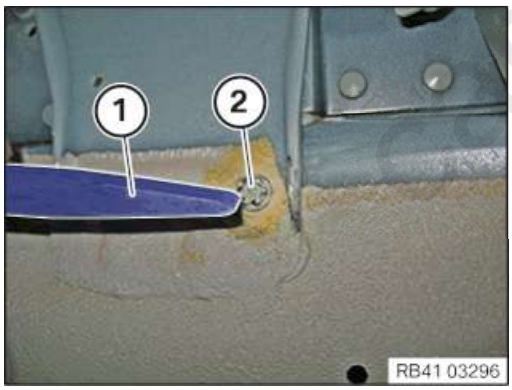
3 – Removing damaged self-tapping screws

Prerequisite

Sealant has been removed from the screw head.

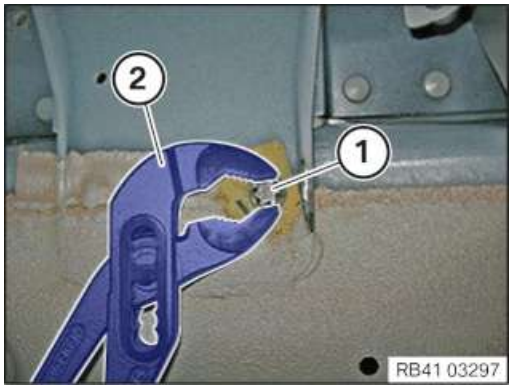
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Position the chisel (1) on the side of the screw head.

  Loosen the screw (2) by hitting it with a hammer.
- Repeat the process until the screw (2) has turned by approximately 90°.

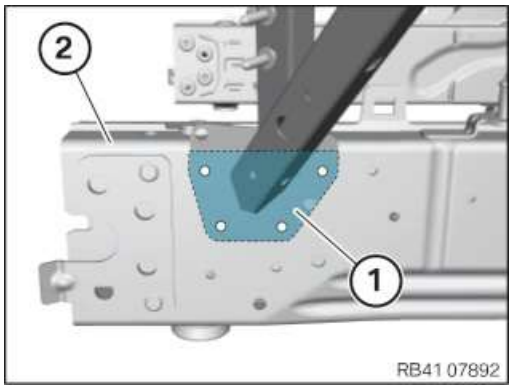


- Remove the screw (1) using pliers (2).

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4 – Removing carrier support

4 – Removing carrier support

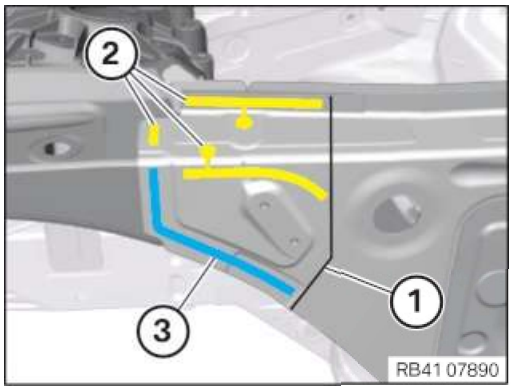


TECHNICAL INFORMATION

For more information see: 41 00 ... Releasing bonded connections

- Loosen self-tapping screws and bonded connection in area (1).

  Do not damage the aluminium engine support (2)!

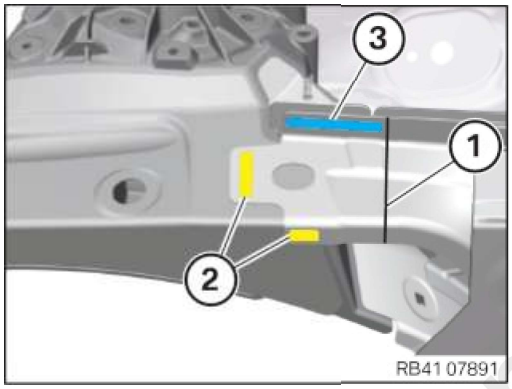


- Make the separating cut (1) according to the schematic diagram. Thereby disconnect only the outer panel.
- Release welded connections in areas (2).

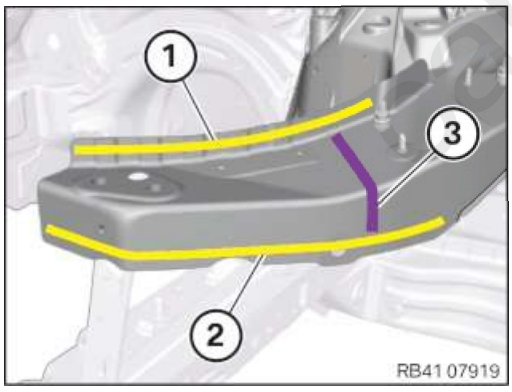
TECHNICAL INFORMATION

For more information see: 41 00... Spot-weld bonding steel components

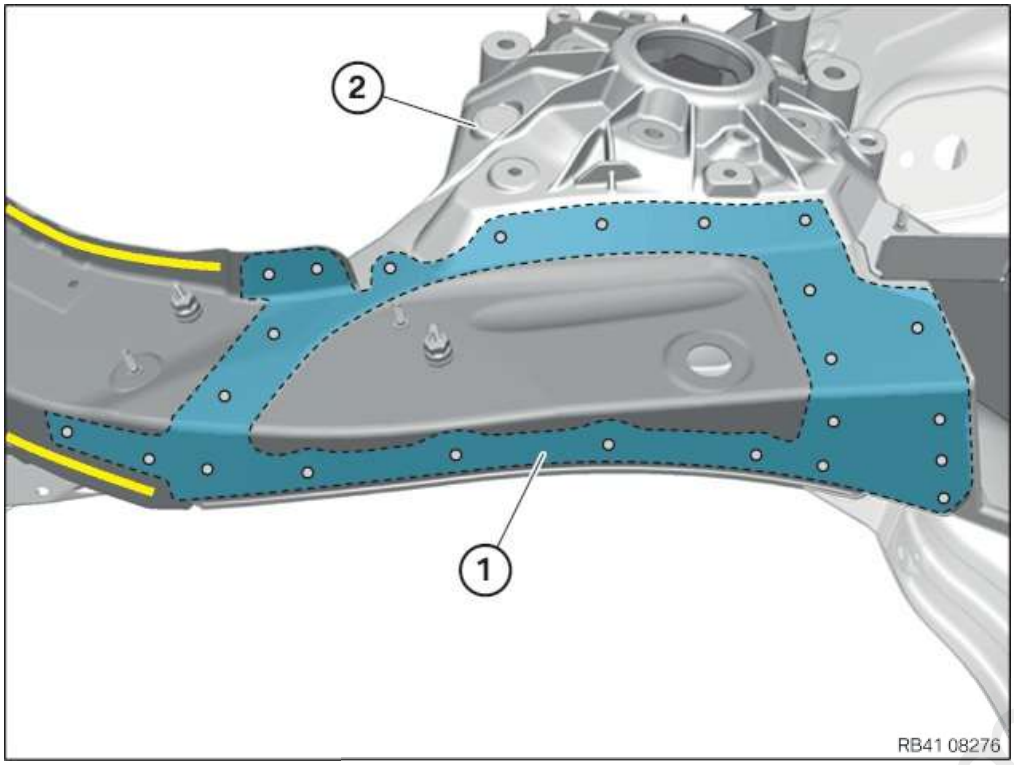
- Open the spot-welded adhesive joints in the area (3) and remove the carrier support section.



- Make the separating cut (1) according to the schematic diagram. Thereby disconnect only the outer panel.
- Release welded connections in areas (2).
- Open spot-welded adhesive joints in area (3) and remove bulkhead section.



- Open welded connections in areas (1) and (2).
- Release carrier support from the cavity sealing (3).



TECHNICAL INFORMATION

For more information see: Open riveted joints (41 00).

- Release bonded rivet connections in the area (1) and remove the carrier support.

  Do not damage aluminium spring support (2) in the process!

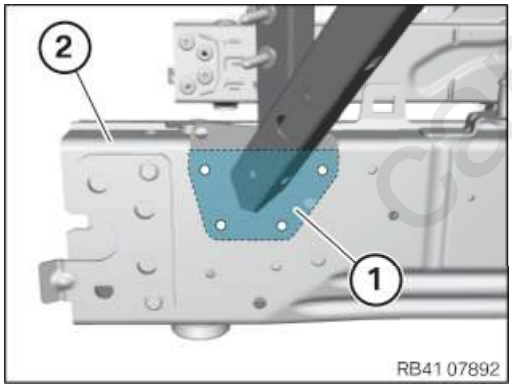
5 – Prepare new part

TECHNICAL INFORMATION

Structure bonding.

Observe preparation of bonding surfaces.

For additional information see: 41 00 ... BMW bonding instructions

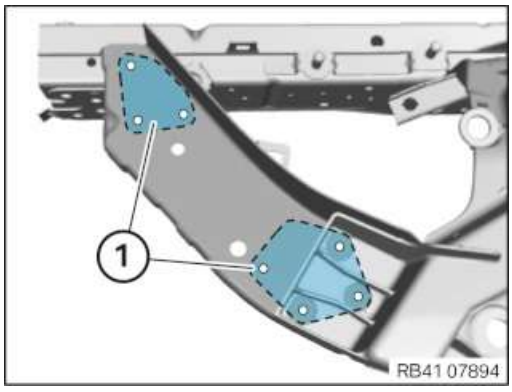


- Remove adhesive residue from all bonding surfaces.
- Adjust new parts with an alignment bracket or a universal fixture and secure.
- Prepare area (1) for a structural bonding with blind rivets of steel to aluminium.

TECHNICAL INFORMATION

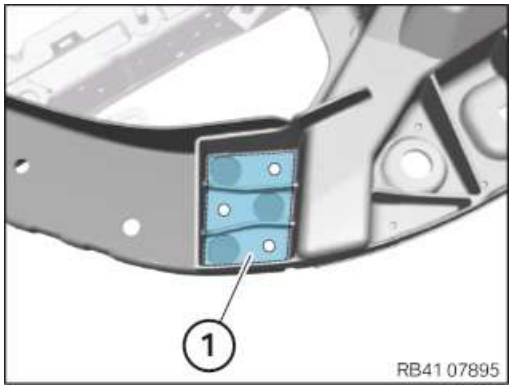
For more information see: 41 00 ... Transferring hole pattern.

- In area (1), transfer the hole pattern of the engine support (2) onto new part. Drill out holes to Ø 6.8 mm.

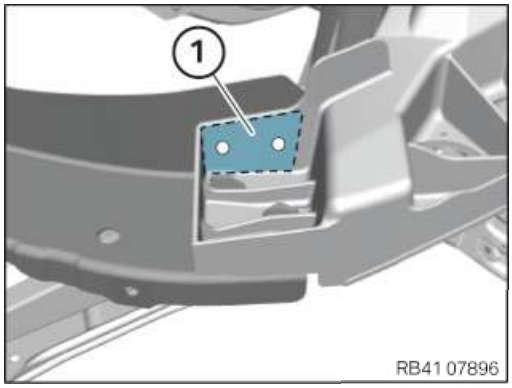


- Prepare areas (1) for the structural bonding of steel on steel with blind rivets.
- Drill seven holes Ø 6.8 mm in areas (1) in accordance with the illustration. Compare the position of the rivet holes with the welds of the standard components.

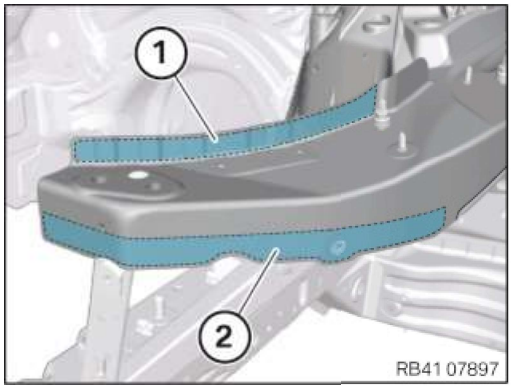
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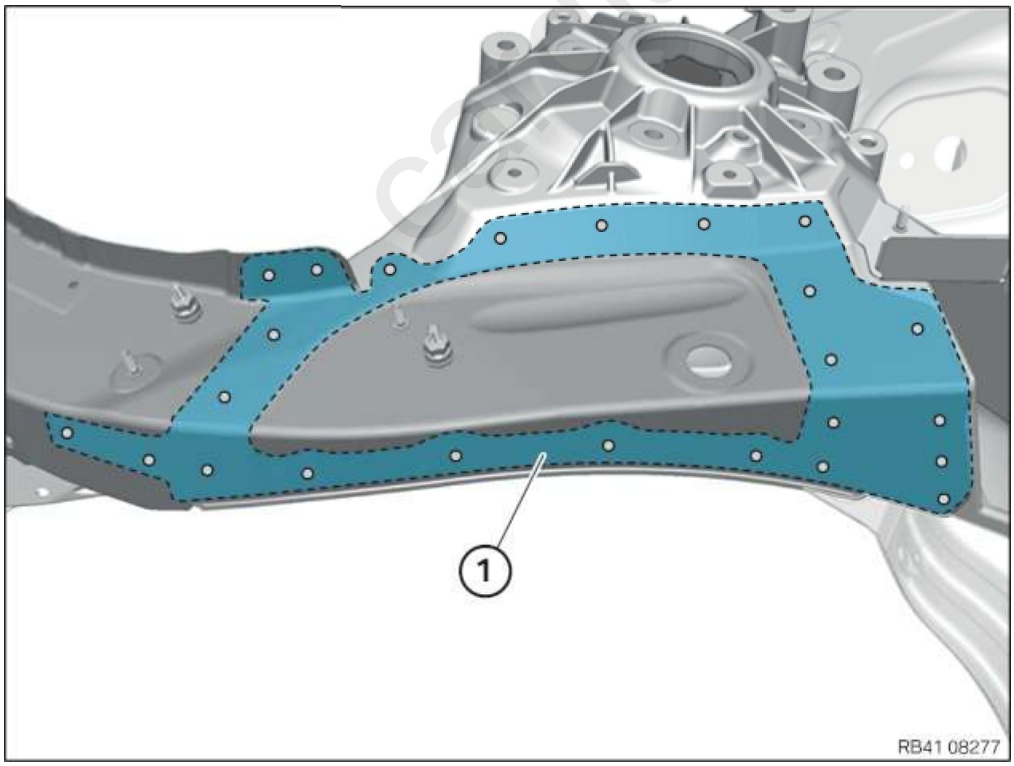
- Prepare area (1) for the structural bonding with blind rivets of steel to aluminium.
- In the area (1), transfer the 3 holes onto the new part. Drill out holes to Ø 6.8 mm.



- Prepare area (1) for the structural bonding with blind rivets of steel to aluminium.
- In the area (1), transfer the 2 holes onto the new part. Drill out holes to Ø 6.8 mm.

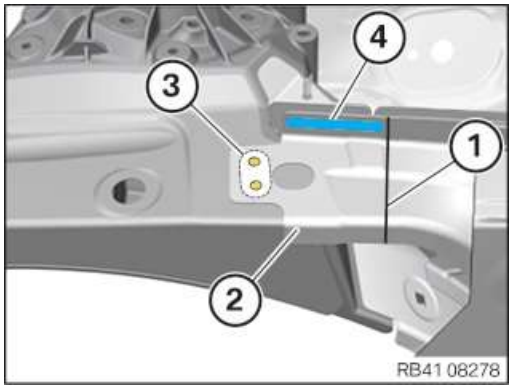


- Prepare areas (1) and (2) for the structural bonding of steel on steel with punch rivets.



- Prepare area (1) for the structural bonding with blind rivets of steel to aluminium.
- In the area (1), transfer the positions of the punch rivet holes from the spring support to the carrier support. Drill out holes to Ø 6.8 mm.

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- Make separating cut (1) on the bulkhead new part (2) in accordance with separating cut on vehicle.
- Adjust bulkhead new part (2).

TECHNICAL INFORMATION

For additional information see: 41 00 ... Weld in the reinforcement plates (sheet steel)

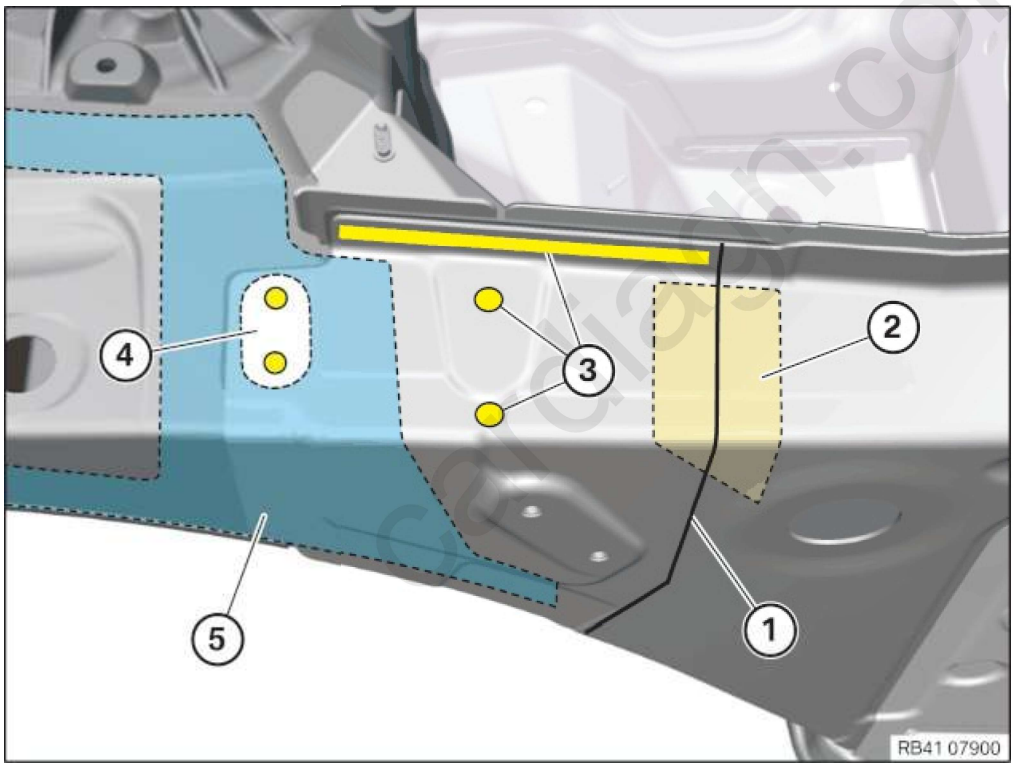
- Prepare a reinforcement plate for the separating cut (1).
- In the area of the recess (3), prepare for joining by 2 x spot-welds.

TECHNICAL INFORMATION

For more information see: 41 00... Spot-weld bonding steel components

- Prepare area (4) for joining by welding.

  In this process, observe the procedure for replacing spot-welded adhesive joints for the standard production.

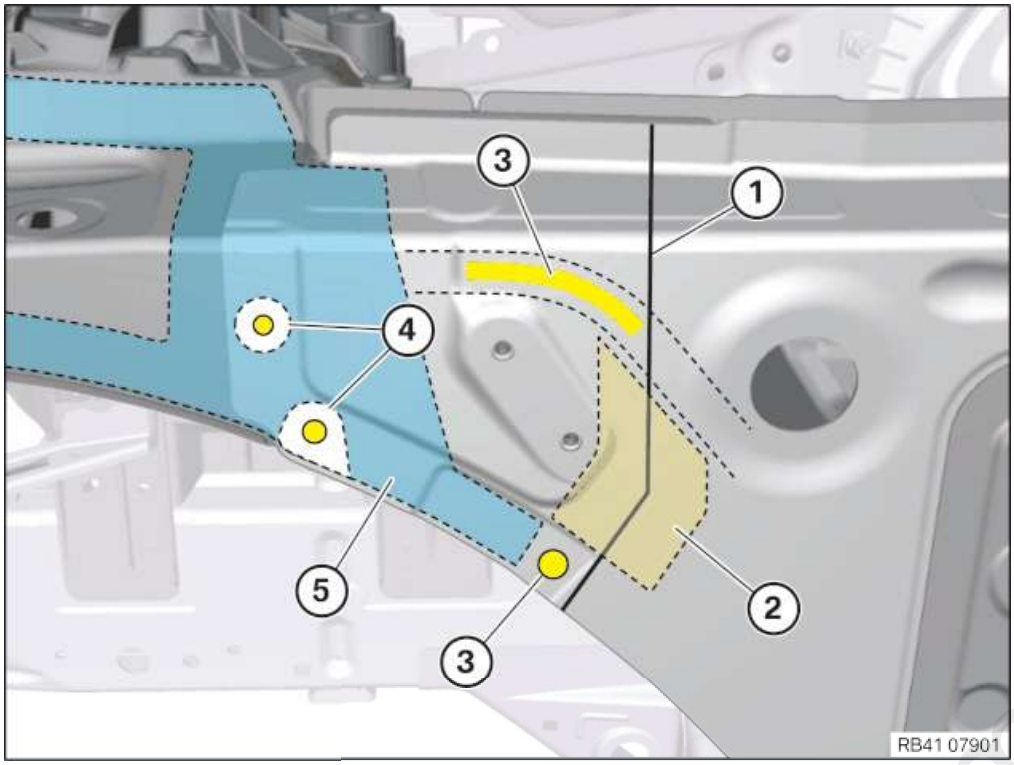


- Make severance cut (1) on the new part in accordance with severance cut on vehicle.
- Prepare a reinforcement plate (1) for the separating cut (2).

  Prepare the separating cut (1) and the reinforcement plate (2) for joining by welding.
- Prepare areas (3) for joining by welding.
- In the area of the recess (4), prepare for joining by 2 x spot-welds.

  Observe the underlying structural bonding in the area (5).

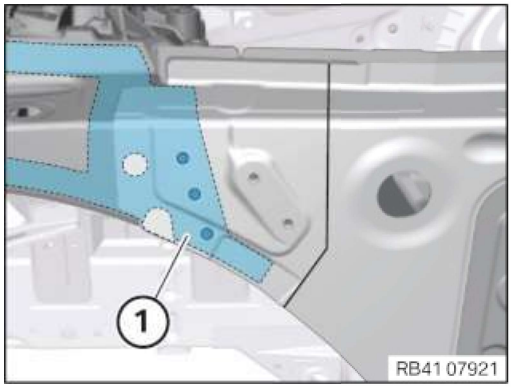
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- Prepare a reinforcement plate (1) for the separating cut (2).

  Prepare the separating cut (1) and the reinforcement plate (2) for joining by welding.
- Prepare areas (3) for joining by welding.
- In the recesses (4), prepare for joining by 2 x spot-welds.

  Observe the underlying structural bonding in the area (5).



- Prepare area (1) for the structural bonding with blind rivets.
- In area (1), transfer the positions of the 3 punch rivet holes to the new part. Drill out holes to Ø 6.8 mm.
- Remove new parts and deburr bore holes.

6 – Install carrier support

- Pre-clean the bonding surfaces at the new part and vehicle using R2 solvent cleaner.

Expendable materials

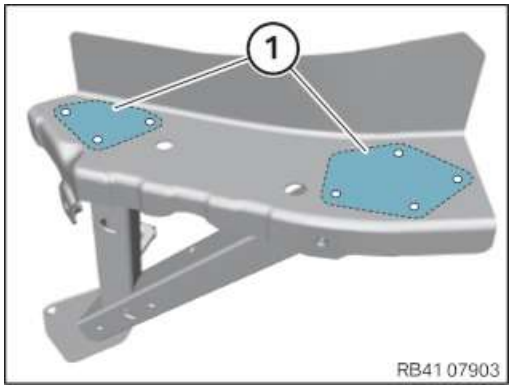
Cleaning agent R2	500 ml	83190417324

- Clean bonding surfaces on vehicle and on new part with cleaning agent R1.

Expendable materials

Cleaning agent R1	100 ml, Bottle	83192211217

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- Apply adhesive K1 to the bonding surfaces (1).

Adhesive

Body adhesive K1	195 ml	83190413015

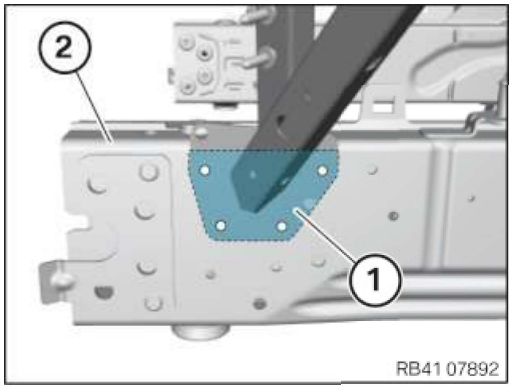
- Join new parts and rivet in areas (1) with blind rivets N1.

Expendable materials

Blind rivet N1 Ø 6.5 mm ; clamping area 2.8-4.8 mm		83190301414

- Apply adhesive K1 to bonding surfaces.
- Install the new parts with an alignment bracket or a universal mount.

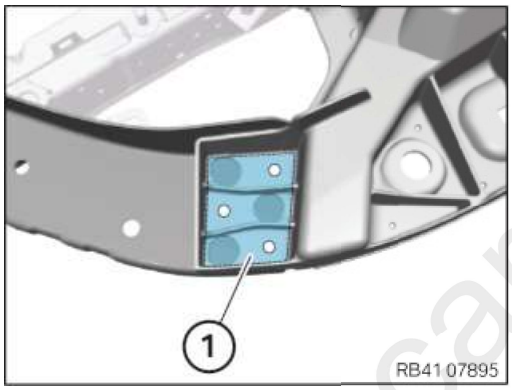
  While installing, make sure that there is sufficient adhesive on the bonding surfaces.



- Rivet the new part and engine support (2) in area (1) with blind rivets N2.

Expendable materials

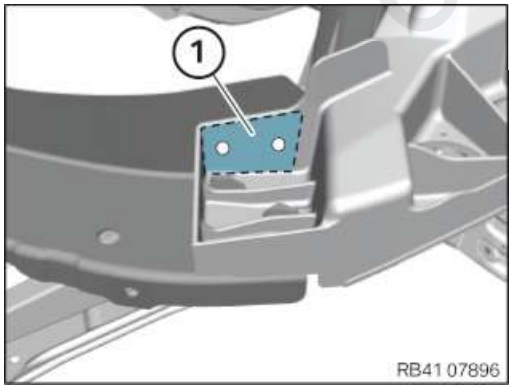
Blind rivet N2 Ø 6.5 mm ; clamping area 4.8-6.8 mm		83190301419



- Rivet the new part in area (1) with blind rivets N1.

Expendable materials

Blind rivet N1 Ø 6.5 mm ; clamping area 2.8-4.8 mm		83190301414

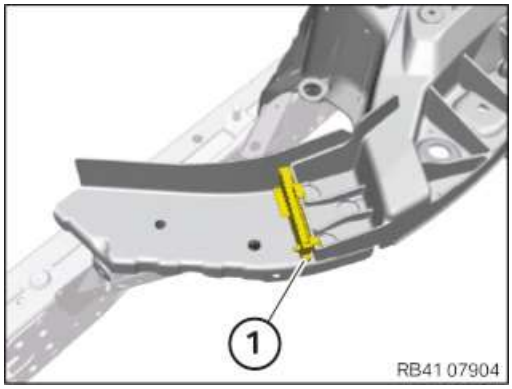


- Rivet the new part in area (1) with blind rivets N1.

Expendable materials

Blind rivet N1 Ø 6.5 mm ; clamping area 2.8-4.8 mm		83190301414

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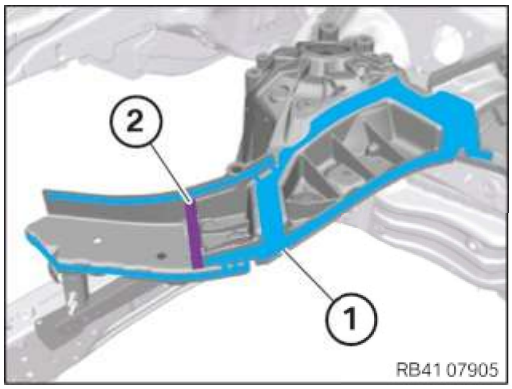
TECHNICAL INFORMATION

For more information see: 41 00 ... Installation of a cavity sealing (not expanding)

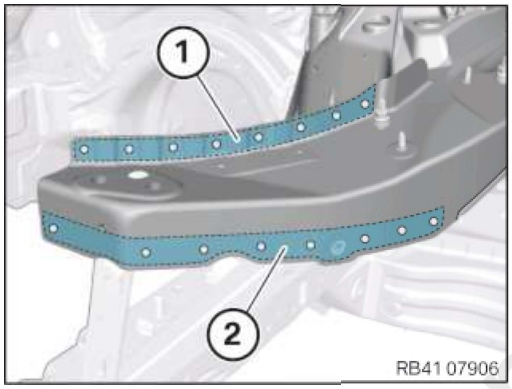
- Apply sealing agent D1 to the cavity bulkhead (1) and install cavity bulkhead.

Expendable materials

Sealant D1 (seam sealing)	310 ml	83422409985



- Clean bonding surface (1) with cleaning agent R2 and R1.
- Apply adhesive K1 to the bonding surfaces.
- Apply sealant D1 to cavity sealing (1).
- Install new part. While installing, make sure that there is sufficient adhesive on the bonding surfaces.

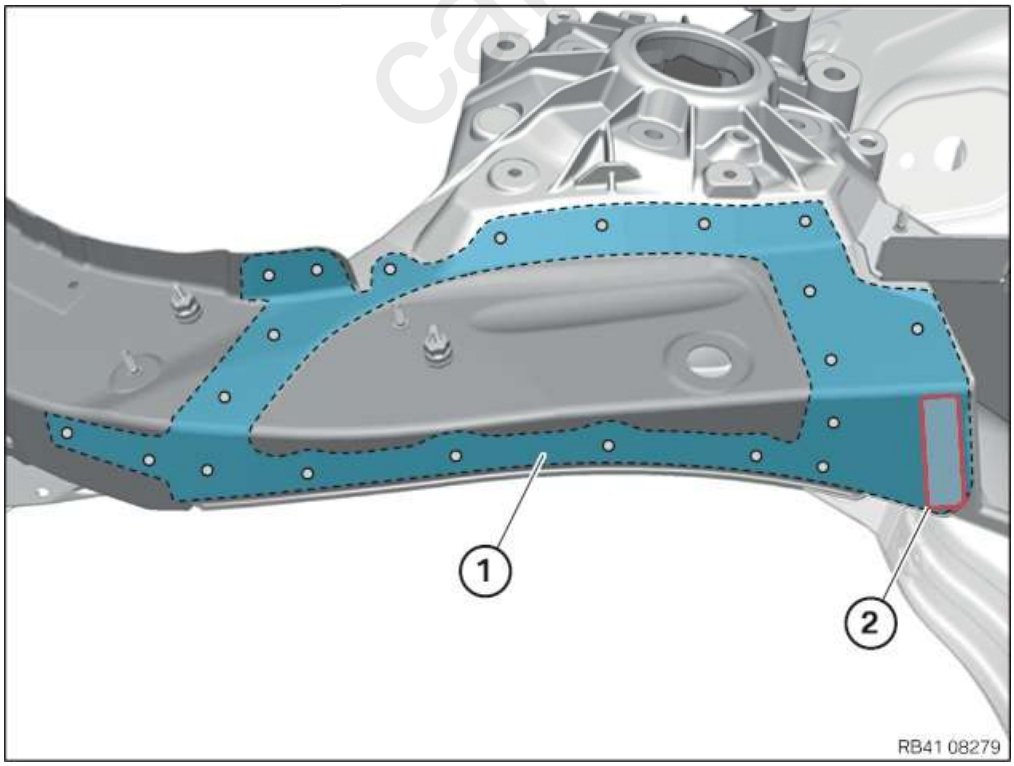


- Rivet new part in the areas (1) and (2) using the punch rivets N4 according to the diagram.

Area	Description	Number
1	N4	8
2	N4	8

Expendable materials

Punch rivet N4 Ø 3 mm ; 4 mm long		83192457307



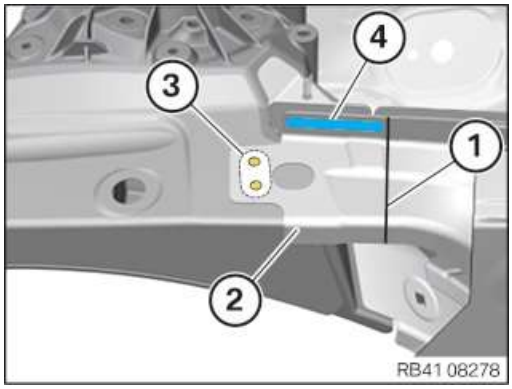
- Rivet the new part in area (1) with blind rivets N1.

Expendable materials

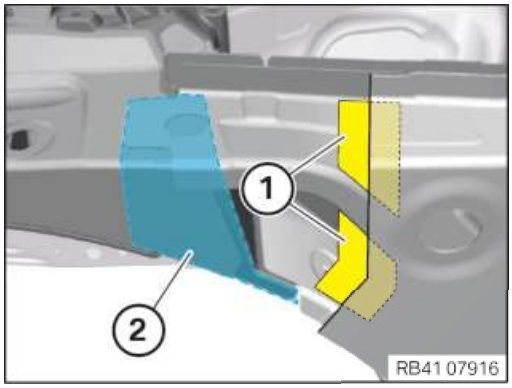
Blind rivet N1 Ø 6.5 mm ; clamping area 2.8-4.8 mm	83190301414

- Do not install any blind rivets in the area (2).

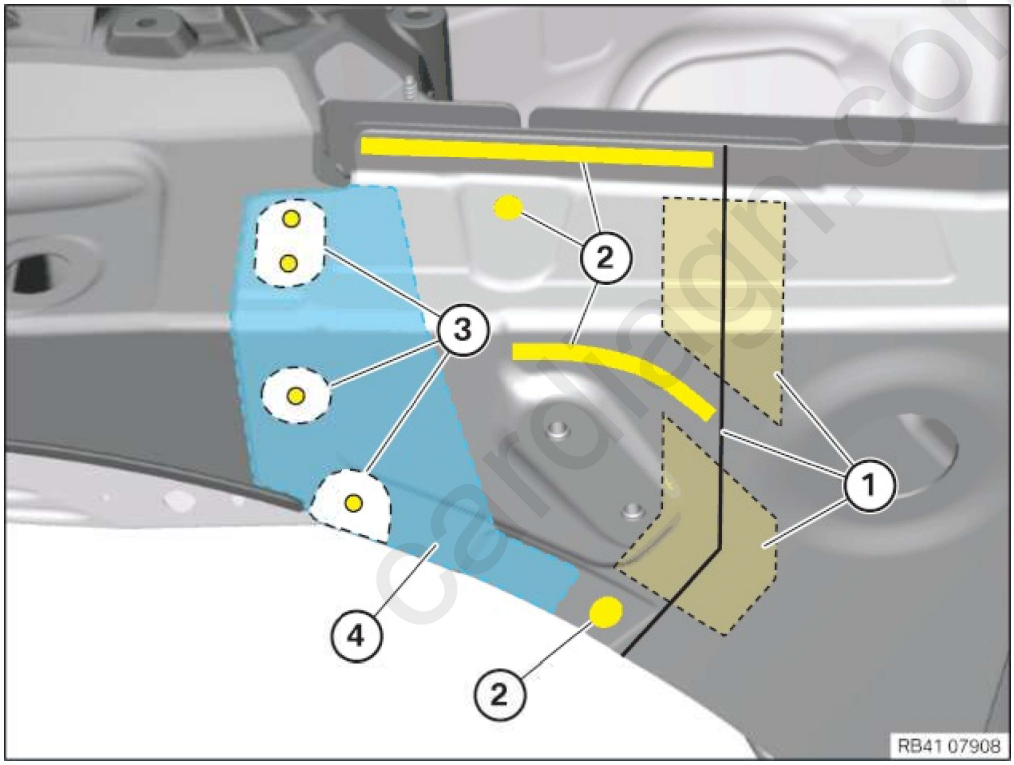
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- Install the new bulkhead (2) and reinforcement plate.
- Weld separating cut (1), the reinforcement plate and the areas (3) and (4) as per new part preparation process.



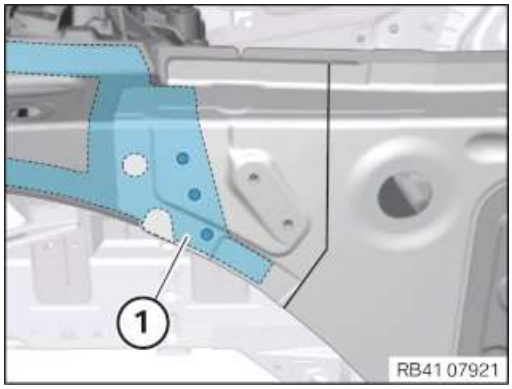
- Install the reinforcement plate (1) and attach by welding.
- Clean bonding surface (2) with cleaning agent R2 and R1.
- Apply adhesive K1 to the bonding surface (2).



- Install new part section and weld in areas (1) to (3).

  While doing so, observe the adhesive area (4) of the aluminium spring support.

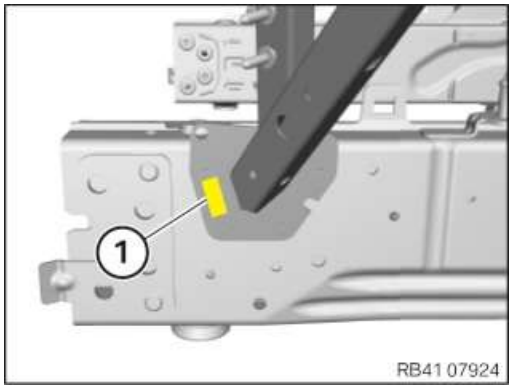
  Avoid introducing too much heat in the adhesive area (4).



- Rivet new part in adhesive area (1) with 3 blind rivets N1.

Expendable materials

Blind rivet N1 Ø 6.5 mm ; clamping area 2.8-4.8 mm		83190301414



- After the adhesive has hardened in area (1), install an electromagnetic compatibility screw.

Expendable materials

Screw EMC screw, SF Plus, M5x15		83190301639

Additional Information

Overview of Special Tools

Links

Repair instructions (PRE)	Used in step
Transferring hole pattern	5

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... Opening bonded connections	4
41 00 ... Opening rivet connections	4
41 00 ... BMW bonding instructions	5
41 00 ... Spot-weld bonding steel components	5
41 0 Repair techniques, repair stage 3	

Repair instructions	Used in step
41 00 ... Installing cavity sealing (not expanded)	6

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41 11 091 Replacing engine support in front of bulkhead, left

Prerequisite

- Vehicle is secured on the straightening bench.

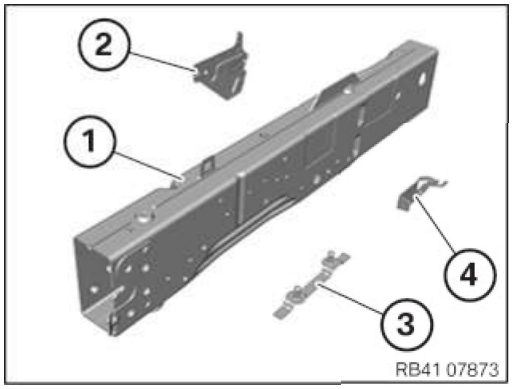
TECHNICAL INFORMATION

- Observe the procedure for repair stage 3.

For additional information see: 41 00 ... Repair method for repair stage 3

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

1 – Supplying the new parts required



- Prepare the following new parts (see Electronic Parts Catalogue):

  Centre engine support (1)

  Reinforcement, engine support, inner (2)

  Dynamic Stability Control (DSC) holder (3)

  Bracket, radio data system (RDS) (4)

TECHNICAL INFORMATION

For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

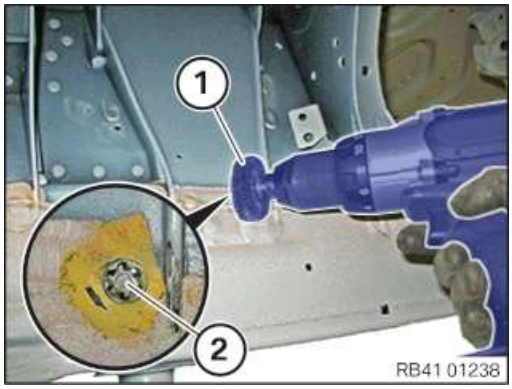
- Supply the following consumables:

Material	Quantity
Adhesive K1	1
Blind rivet N1	25
Blind rivet N2	20
EMC screw	3
Cleaner R1	1
Cleaner R2	1
Sealing compound D1	
Cavity sealing wax remover	

2 – Removing self-tapping screws

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Remove the sealant with a wire brush attachment (1).
- Completely remove the sealant from the screw head (2).



- Vertically position the battery-powered drill (1) using special tool on the self-tapping screw and release the self-tapping screw.

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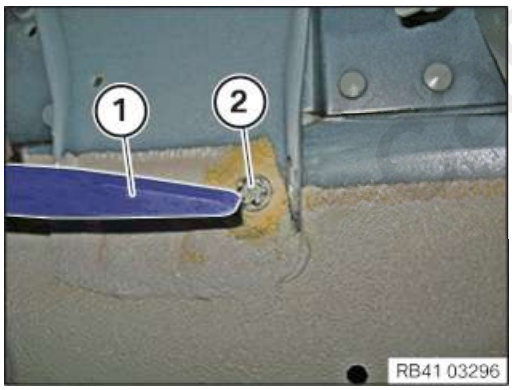
3 – Removing damaged self-tapping screws

Prerequisite

Sealant has been removed from the screw head.

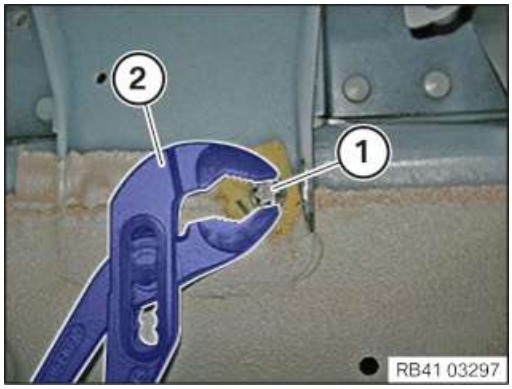
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Position the chisel (1) on the side of the screw head.

  Loosen the screw (2) by hitting it with a hammer.
- Repeat the process until the screw (2) has turned by approximately 90°.

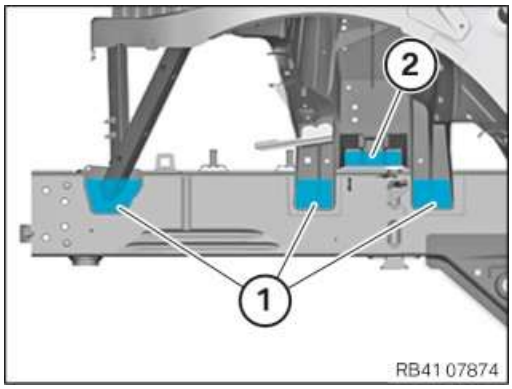


- Remove the screw (1) using pliers (2).

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4 – Remove engine support.

4 – Remove engine support.



TECHNICAL INFORMATION

For more information see: 41 00 ... Releasing bonded connections

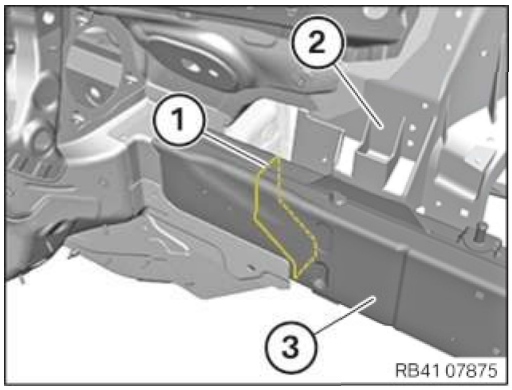
- Loosen self-tapping screws and bonded connections in the areas (1).

TECHNICAL INFORMATION

For more information see: Open riveted joints (41 00).

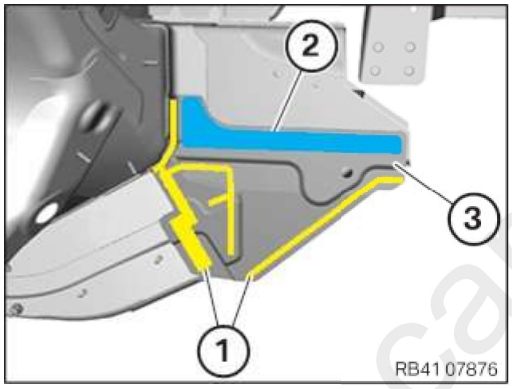
- Open bonded rivet connections in area (2).

  In this process, do not damage the aluminium spring strut dome and the carrier support!

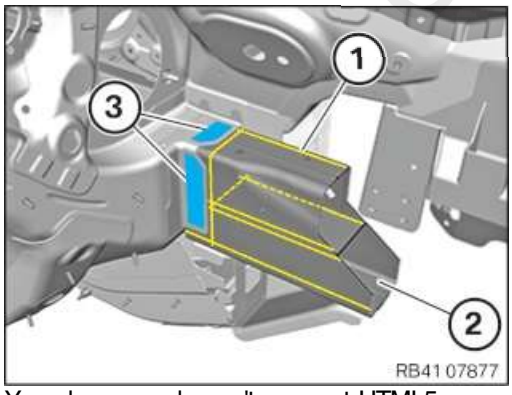


- Mark the severance cut (1) according to the schematic diagram and cut.

  Do not damage the aluminium spring strut dome (2) in the process.
- Remove engine support section (3).



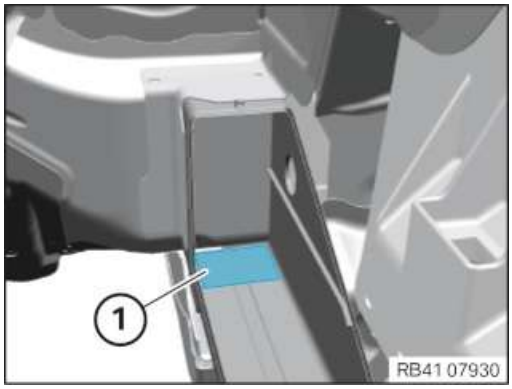
- Release welded connections in areas (1).
- Loosen self-tapping screws and bonded connection in area (2).
- Remove reinforcement (3).



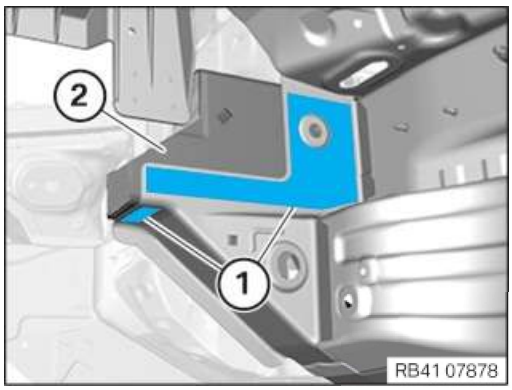
- Execute the separating cut (1) in accordance with schematic diagram and separate engine support section by section (2).
- Release the bonded rivet connection joints in the areas (3).

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- Release bonded connection in area (1).



- Release the self-tapping screws and bonded connections in the areas (1) and remove the engine support (2).

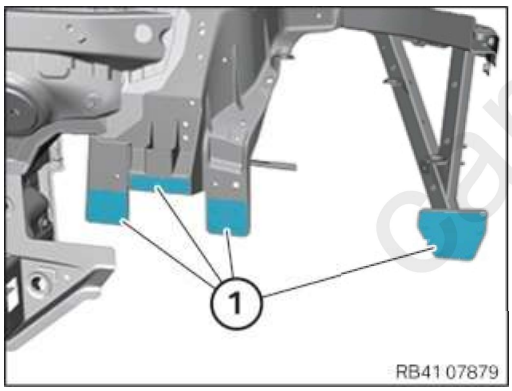
5 – Prepare new part

TECHNICAL INFORMATION

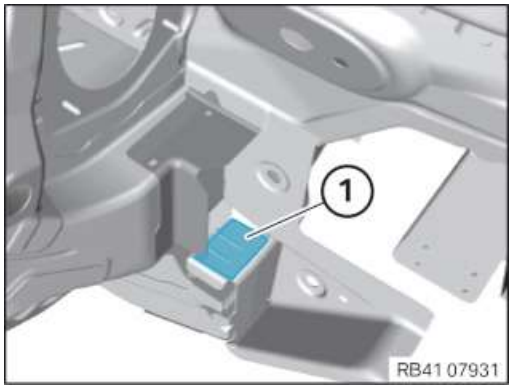
Structure bonding.

Observe preparation of bonding surfaces.

For additional information see: 41 00 ... BMW bonding instructions

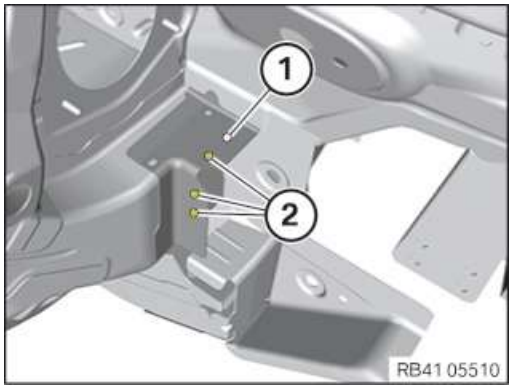


- Remove adhesive residue on the bonding surfaces (1). In this process, do not damage the spring strut dome and the carrier support!
- Prepare areas (1) for an aluminium-on-aluminium and aluminium-on-steel structure bonding .

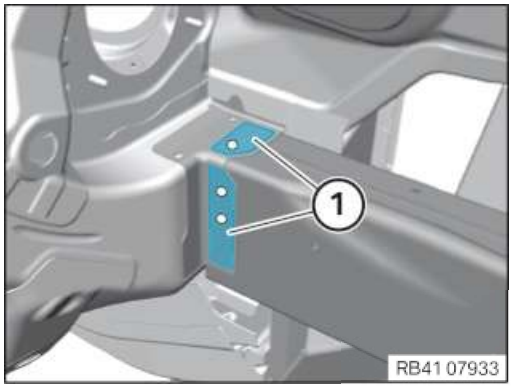


- Remove adhesive residue from the bonding surface (1).
- Prepare the bonding surface (1) for structural bonding steel to aluminium.

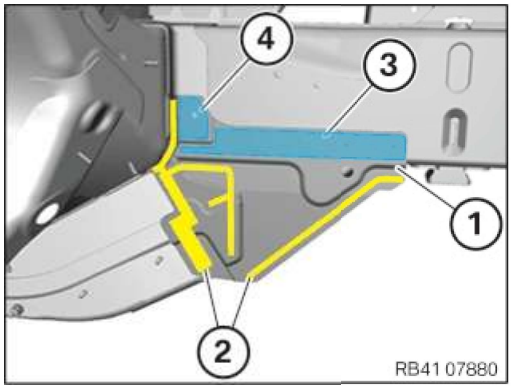
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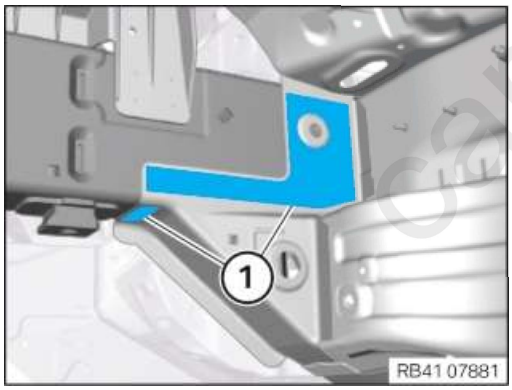
- Remove adhesive residue from bonding surfaces.
- Seal the hole (1) by MAG weld.
- Drill out holes (2) to dia. 6.8 mm.
- Remove adhesive residue from all other bonding surfaces.



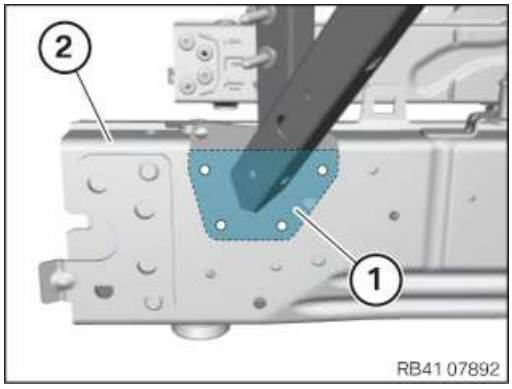
- Adjust engine support new part using an alignment bracket or a universal fixture and secure.
- Prepare areas (1) for a steel-on-aluminium structure bonding with blind rivets.
- In areas (1), transfer the holes onto the new part. Drill holes with 6.8 mm diameter.



- Adjust new part (1).
- Prepare areas (2) for joining by welding.
- Prepare area (3) for a steel-on-aluminium structure bonding with blind rivets.
- In the area (3), drill holes to 6.8 mm diameter. Select the number and position, same as the self-tapping screws in standard production.
- Prepare area (4) for a steel-on-steel structure bonding with blind rivet.
- In area (4), drill a hole with Ø 6.8 mm. Select the position as per the series production flow drill screw.



- Prepare areas (1) for a steel-on-aluminium structure bonding with blind rivets.
- In areas (1), transfer the holes onto the new part. Drill holes with 6.8 mm diameter.

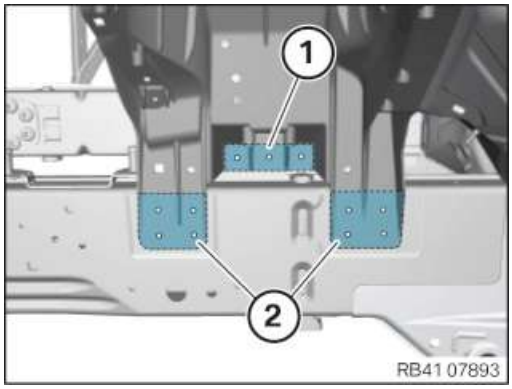


- Prepare area (1) for a steel-on-aluminium structure bonding with blind rivets.

TECHNICAL INFORMATION

For more information see: 41 00 ... Transferring hole pattern.

- In area (1), transfer the hole pattern of the engine support (2) onto new part. Drill out holes to Ø 6.8 mm.

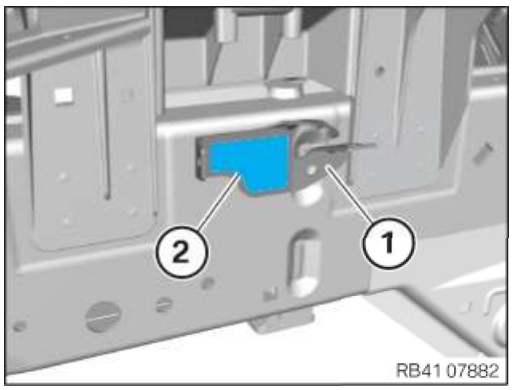


- Prepare areas (1) and (2) for aluminium-on-aluminium structure bonding with blind rivets.
- In area (1) transfer the positions of the holes from the engine support to the spring support. Drill out holes to Ø 6.8 mm.

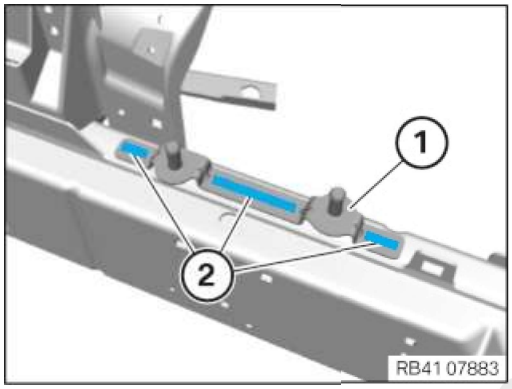
TECHNICAL INFORMATION

For more information see: 41 00 ... Transferring hole pattern.

- In areas (2), transfer the hole patterns from the engine support to the spring support. Drill out holes to Ø 6.8 mm.



- Position holder (1).
- Prepare area (2) for a aluminium-on-aluminium structure bonding with blind rivets.
- In the area (2), drill holes to 6.8 mm diameter. Select the number and position, same as the self-tapping screws in standard production.



- Position holder (1).
- Prepare the areas (2) for structural bonding of aluminium on aluminium.
- In the areas (2), drill holes of 6.8 mm diameter. Select the number and position, same as the self-tapping screws in standard production.

6 – Insert engine support

- Pre-clean the bonding surfaces at the new part and vehicle using R2 solvent cleaner.

Expendable materials

Cleaning agent R2	500 ml	83190417324

- Clean bonding surfaces on vehicle and on new part with cleaning agent R1.

Expendable materials

Cleaning agent R1	100 ml, Bottle	83192211217

- Apply adhesive K1 to the bonding surfaces.

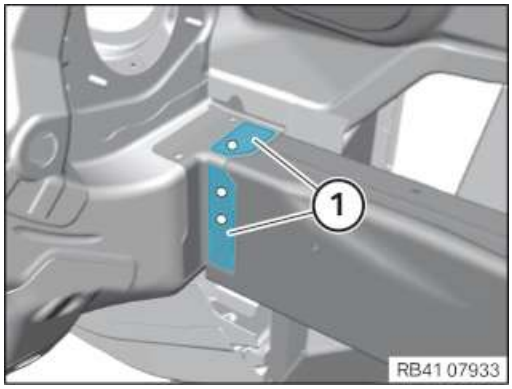
Adhesive

Body adhesive K1	195 ml	83190413015

- Install the new parts with an alignment bracket or a universal mount.

  During installation, ensure that sufficient adhesive has been applied to all bonding surfaces.

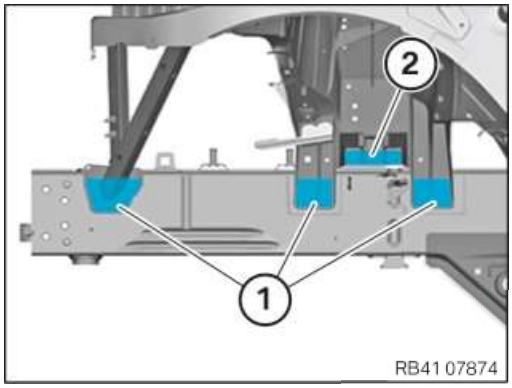
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- Rivet new parts in the areas (1) using 3 blind rivets N1.

Expendable materials

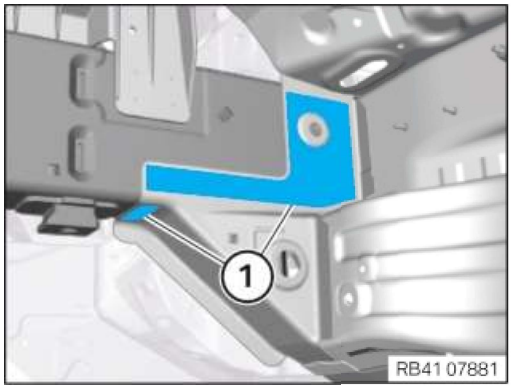
Blind rivet N1 Ø 6.5 mm ; clamping area 2.8-4.8 mm		83190301414



- Rivet the new part in the areas (1) and (2) with blind rivets N2.

Expendable materials

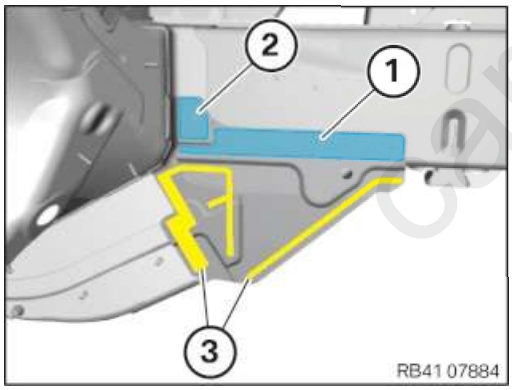
Blind rivet N2 Ø 6.5 mm ; clamping area 4.8-6.8 mm		83190301419



- Rivet the new part in area (1) and (2) with blind rivets N1.

Expendable materials

Blind rivet N1 Ø 6.5 mm ; clamping area 2.8-4.8 mm		83190301414



- Position the new part and rivet it in the area (1) with blind rivetsN1.

Expendable materials

Blind rivet N1 Ø 6.5 mm ; clamping area 2.8-4.8 mm		83190301414

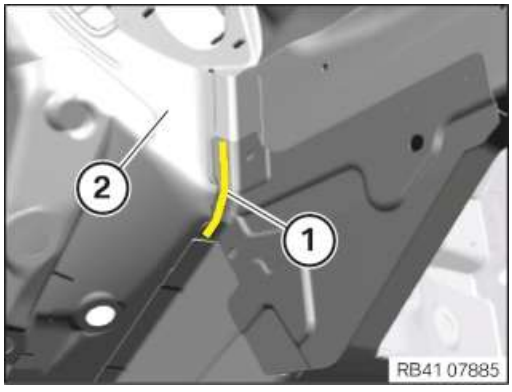
- In area (2) rivet new parts with blind rivet N2.

Expendable materials

Blind rivet N2 Ø 6.5 mm ; clamping area 4.8-6.8 mm		83190301419

- Weld the new part in areas (3).

  Avoid excessive application of heat to adhesive areas .



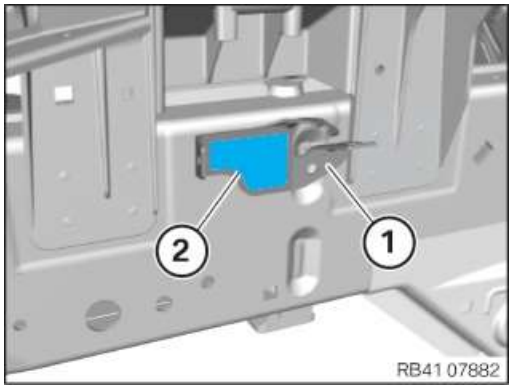
- Weld the new part in the area (1).

  Avoid excessive application of heat in this process.

  The bulkhead cross member (2) is filled with hardly inflammable cavity foam.

- In case of smoke formation: Stop the welding procedure and cool the welded area with compressed air if applicable.

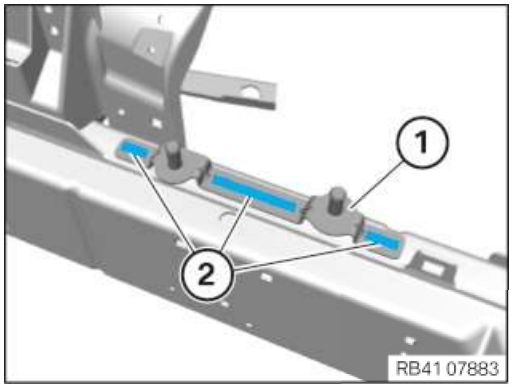
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- Rivet holder (1) in area (2) with blind rivets N1.

Expendable materials

Blind rivet N1 Ø 6.5 mm ; clamping area 2.8-4.8 mm		83190301414



- Rivet holder (1) in areas (2) with blind rivets N1.

Expendable materials

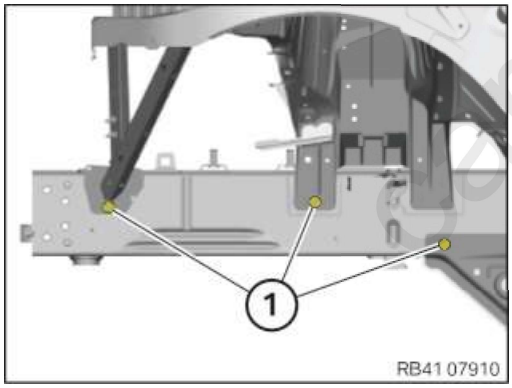
Blind rivet N1 Ø 6.5 mm ; clamping area 2.8-4.8 mm		83190301414

▸ **Install the EMC screw (EMC = electromagnetic compatibility)**

- After adhesive has fully hardened: Drill a hole with a diameter of 4.2 mm.
- Screw in the EMC screw.
- Seal the EMC screw with the sealant D1 .

Expendable materials

Sealant D1 (seam sealing)	310 ml	83422409985



- Install 3 EMC screws after the adhesive in the areas (1) has hardened.

Expendable materials

Screw EMC screw, SF Plus, M5x15		83190301639

Additional Information

Overview of Special Tools

Links

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... Opening bonded connections	4
41 00 ... Opening rivet connections	4
41 00 ... BMW bonding instructions	5

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41 11 071 Replacing engine support with left wheel arch in front of bulkhead

Prerequisite

- Vehicle is secured on the straightening bench.

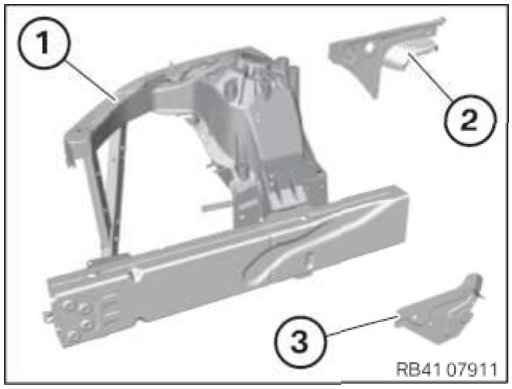
TECHNICAL INFORMATION

- Observe the procedure for repair stage 3.

For additional information see: 41 00 ... Repair method for repair stage 3

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

1 – Supplying the new parts required



- Supply the following new parts (see Electronic Parts Catalogue EPC):

  Front wheel arch(1)

  Extension for wheel arch carrier support (2)

  Reinforcement, engine support, inner (3)

TECHNICAL INFORMATION

For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

- Supply the following consumables:

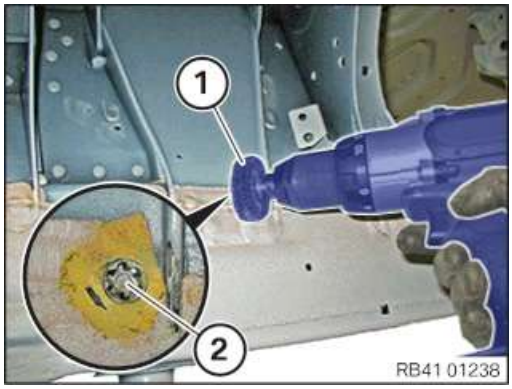
Material	Quantity
Adhesive K1	1
Blind rivet N1	45
Blind rivet N2	5
EMC screw	2
Cleaner R1	1
Cleaner R2	1
Sealing compound D1	1
Cavity sealing wax remover	1

2 – Removing self-tapping screws

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

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- Remove the sealant with a wire brush attachment (1).
- Completely remove the sealant from the screw head (2).



- Vertically position the battery-powered drill (1) using special tool on the self-tapping screw and release the self-tapping screw.

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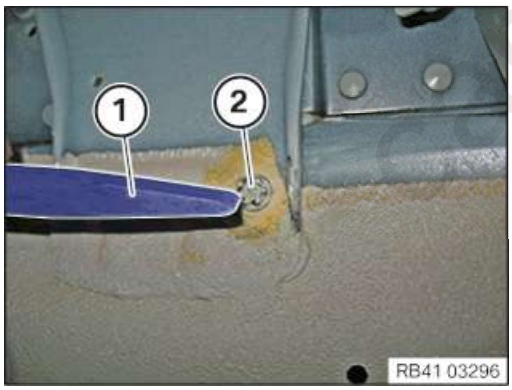
3 – Removing damaged self-tapping screws

Prerequisite

Sealant has been removed from the screw head.

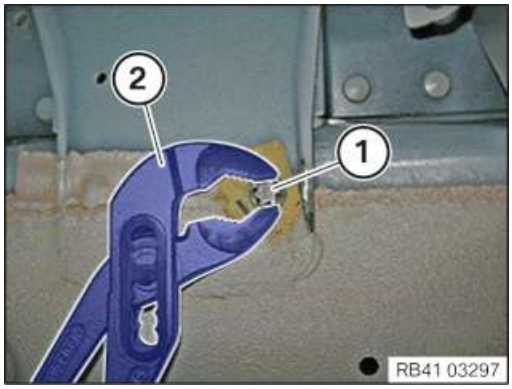
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Position the chisel (1) on the side of the screw head.

  Loosen the screw (2) by hitting it with a hammer.
- Repeat the process until the screw (2) has turned by approximately 90°.

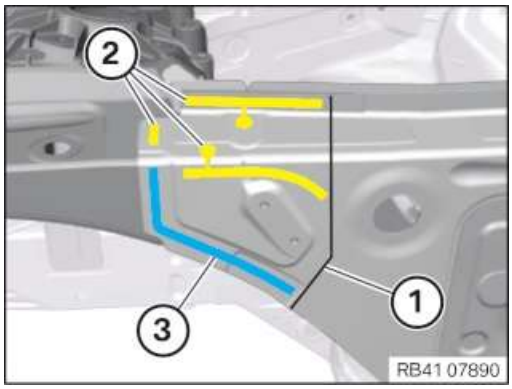


- Remove the screw (1) using pliers (2).

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4 – Removing engine support in front of bulkhead with wheel arch

4 – Removing engine support in front of bulkhead with wheel arch

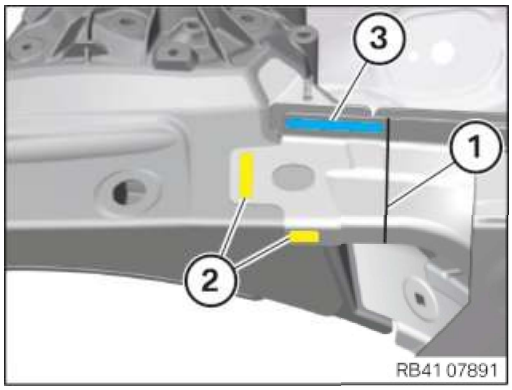


- Make the separating cut (1) according to the schematic diagram. Thereby disconnect only the outer panel.
- Release welded connections in areas (2).

TECHNICAL INFORMATION

For more information see: 41 00... Spot-weld bonding steel components

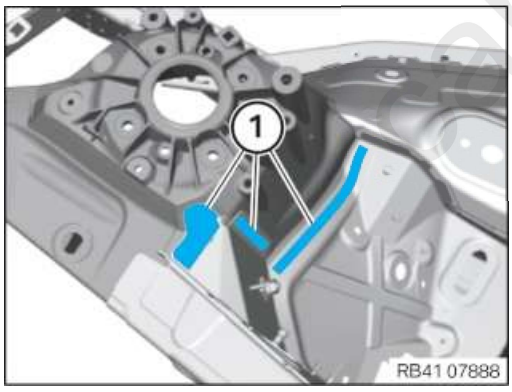
- Open the spot-welded adhesive joints in the area (3) and remove the carrier support section.



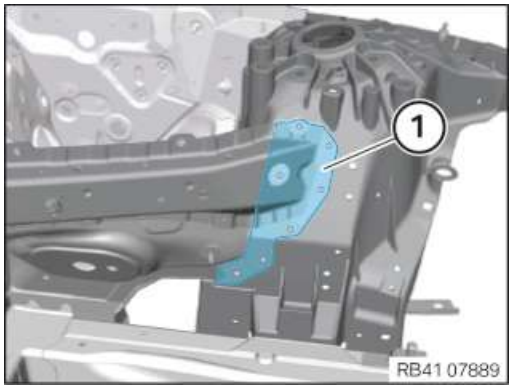
- Release welded connections in areas (1).



- Open bonded rivet connections in area (1).

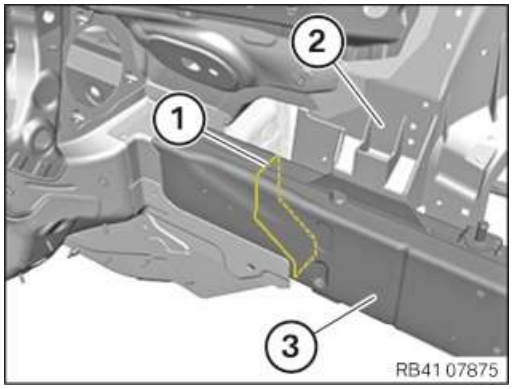


- Loosen the bonded rivet connection joints in the areas (1).

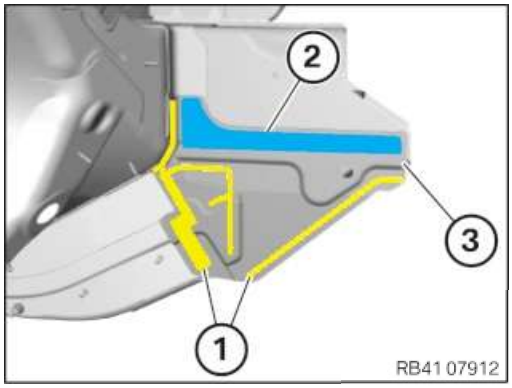


- Open bonded rivet connections in area (1).

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- Mark rough separating cut (1) as shown and cut.
- Remove wheel arch (2) together with engine support section (3).

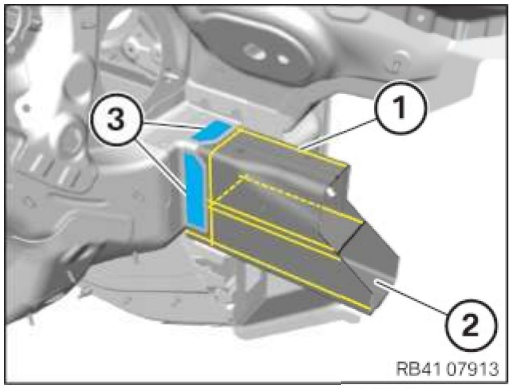


- Release welded connections in areas (1).

TECHNICAL INFORMATION

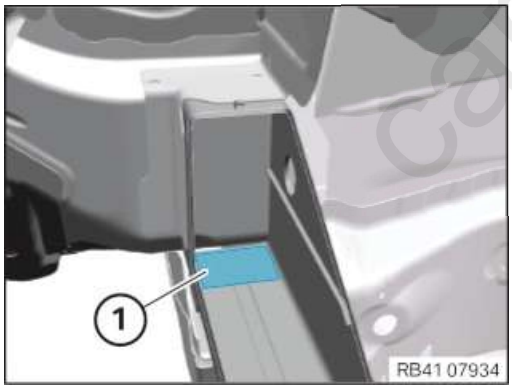
For more information see: 41 00 ... Releasing bonded connections

- Loosen self-tapping screws and bonded connection in area (2).
- Remove reinforcement (3).

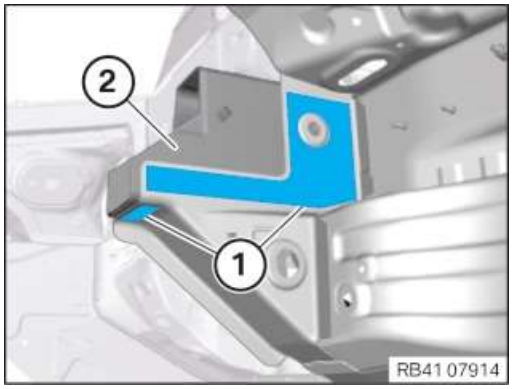


- Execute the separating cut (1) in accordance with schematic diagram and separate engine support section by section (2).
- Release the bonded rivet connection joints in the areas (3).

Your browser doesn't support HTML5 video.



- Release bonded connection in area (1).



- Release the self-tapping screws and bonded connections in the areas (1) and remove the engine support (2).

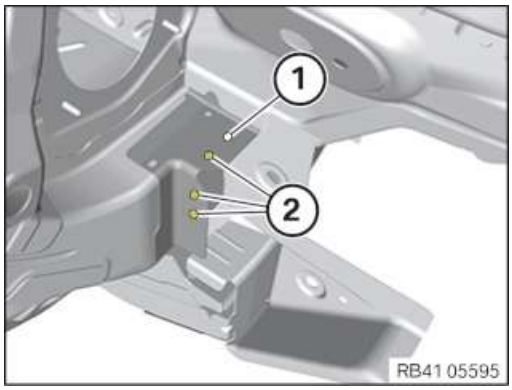
cardiagn.com

TECHNICAL INFORMATION

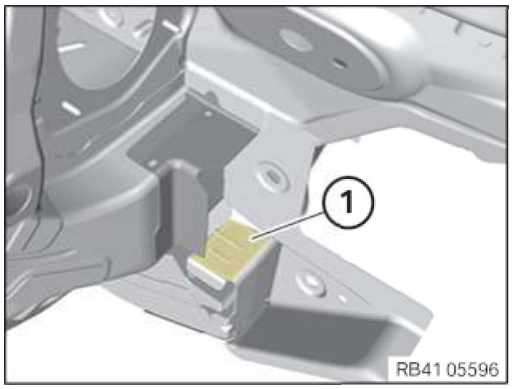
Structure bonding.

Observe preparation of bonding surfaces.

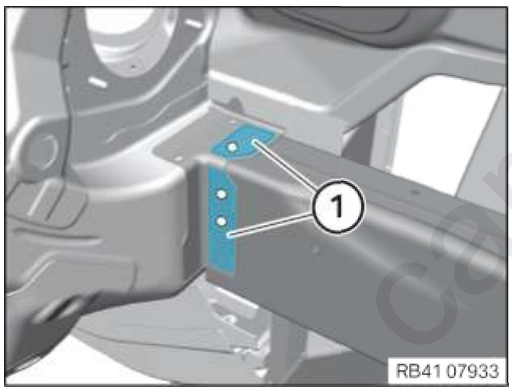
For additional information see: 41 00 ... BMW bonding instructions



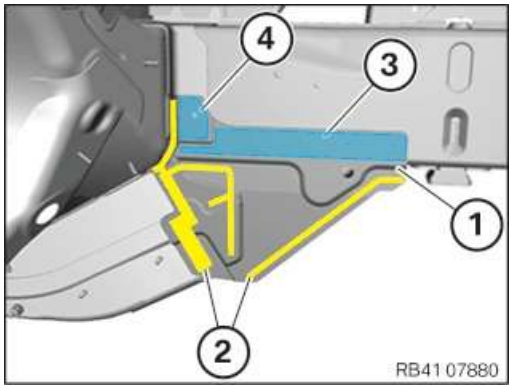
- Remove adhesive residues on the bonding surfaces of the connecting plate.
- Seal the hole (1) by MAG weld.
- Drill out holes (2) to dia. 6.8 mm.



- Remove adhesive residues from all bonding surfaces.
- Prepare area (1) for the structural bonding of steel on aluminium.

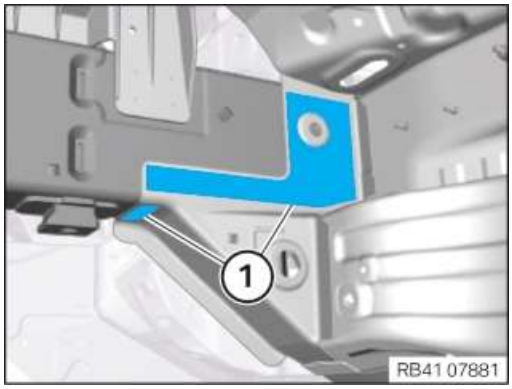


- Adjust the new part using an alignment bracket or a universal fixture and secure it.
- Prepare areas (1) for the structural bonding of steel on aluminium with blind rivets.
- In areas (1), transfer the holes onto the new part. Drill holes with 6.8 mm diameter.



- Adjust new part (1).
- Prepare areas (2) for joining by welding.
- Prepare area (3) for the structural bonding of steel on aluminium with blind rivets.
- In the area (3), drill holes to 6.8 mm diameter. Select the number and position, same as the self-tapping screws in standard production.
- Prepare area (4) for the structural bonding of steel on steel with blind rivets.
- In the area (4), drill a hole to Ø 6.8 mm. Select the position same as the self-tapping screw in standard production.

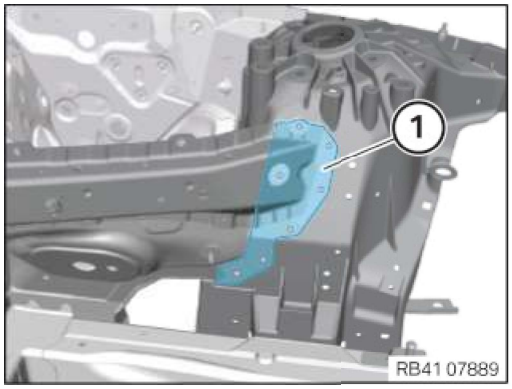
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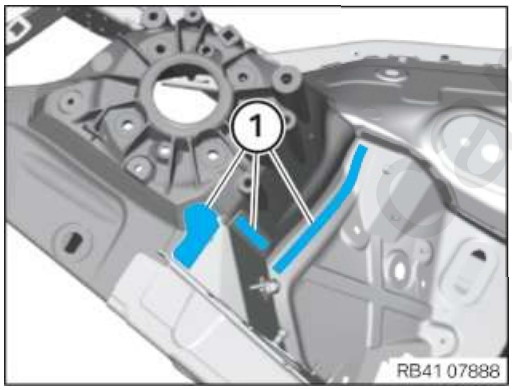
- Prepare areas (1) for the structural bonding of steel on aluminium with blind rivets.
- In areas (1), transfer the holes onto the new part. Drill holes with 6.8 mm diameter.



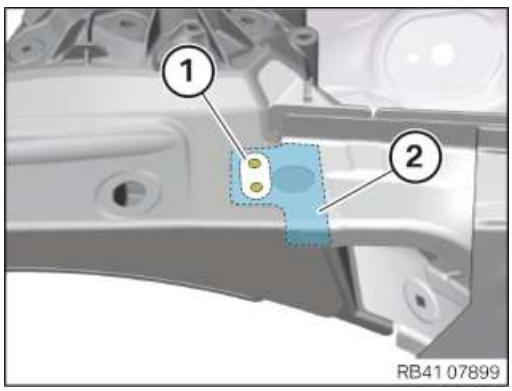
- Prepare area (1) for the structural bonding of aluminium on steel with blind rivets.
- In area (1), transfer the positions of the holes from the wheel arch to the spring supports. Drill out holes to Ø 6.8 mm.



- Prepare area (1) for the structural bonding of aluminium on steel with blind rivets.
- In area (1), transfer the positions of the holes from the engine bulkhead to the spring support. Drill out holes to Ø 6.8 mm.



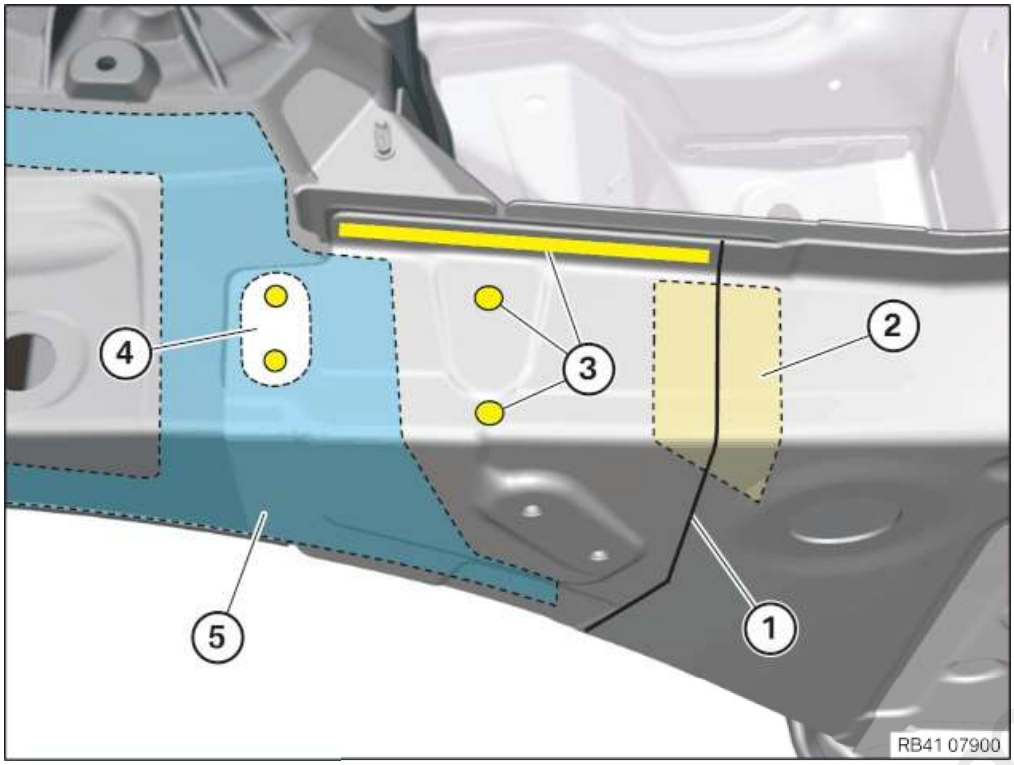
- Prepare areas (1) for the structural bonding of aluminium on steel with blind rivets.
- In area (1), transfer the positions of the holes from the wheel arch to the spring supports. Drill out holes to Ø 6.8 mm.



- In the area of the recess (1), prepare for joining by 2 x spot-welds.

  When doing this, observe the structural bonding in the area (2).

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- Make severance cut (1) on the new part in accordance with severance cut on vehicle.

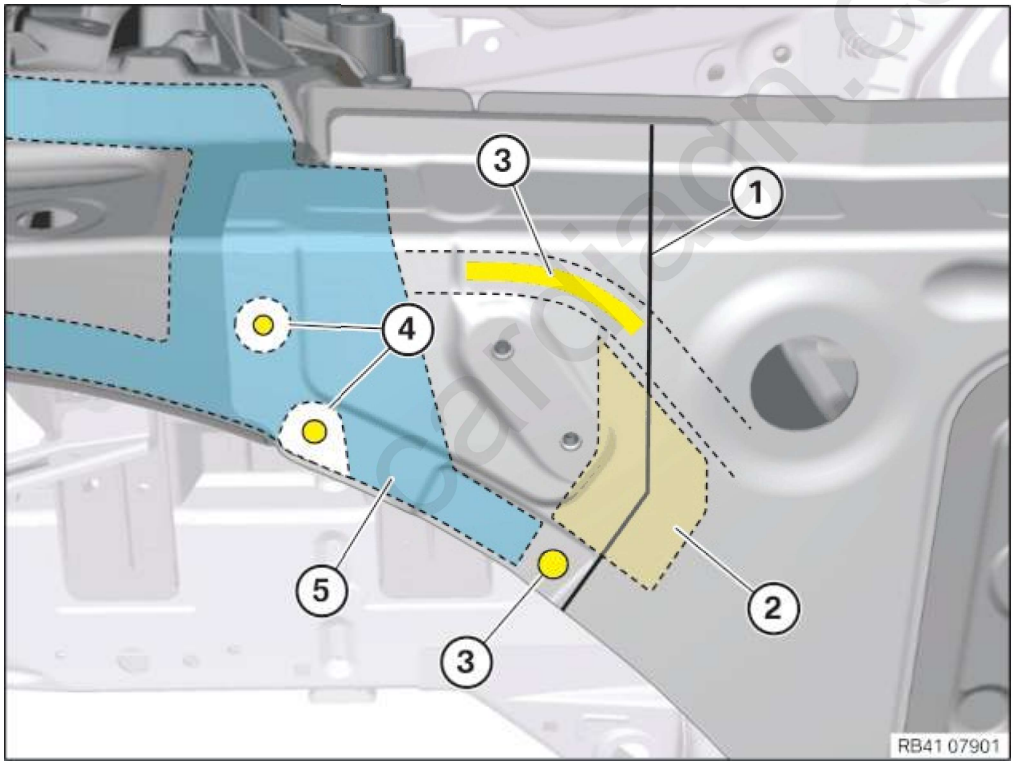
TECHNICAL INFORMATION

For additional information see: 41 00 ... Weld in the reinforcement plates (sheet steel)

- Prepare a reinforcement plate (1) for the separating cut (2).

  Prepare the separating cut (1) and the reinforcement plate (2) for joining by welding.
- Prepare areas (3) for joining by welding.
- In the area of the recess (4), prepare for joining by 2 x spot-welds.

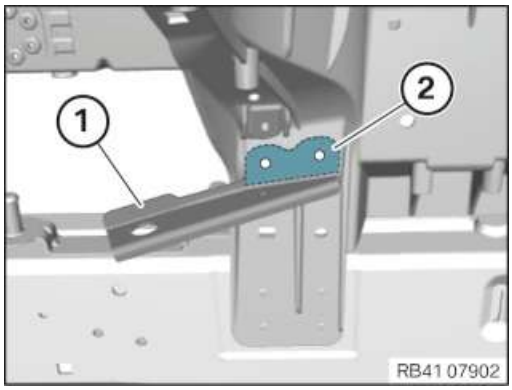
  When doing this, observe the structural bonding in the area (5).



- Prepare a reinforcement plate (1) for the separating cut (2).

  Prepare the separating cut (1) and the reinforcement plate (2) for joining by welding.
- Prepare areas (3) for joining by welding.
- In the recesses (4), prepare for joining by 2 x spot-welds.

  When doing this, observe the structural bonding in the area (5).



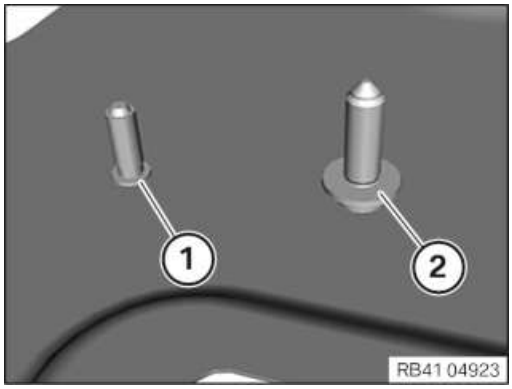
- Position holder (1) for the brake hose on the wheel arch.

  Prepare area (2) for the structural bonding of aluminium on aluminium with blind rivets.
- In the area (1) drill 2 holes to Ø 6.8 mm in accordance with the illustration.
- Remove new parts and deburr bore holes.

▸ **Renewing the coarse thread bolt and threaded weld bolt**

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

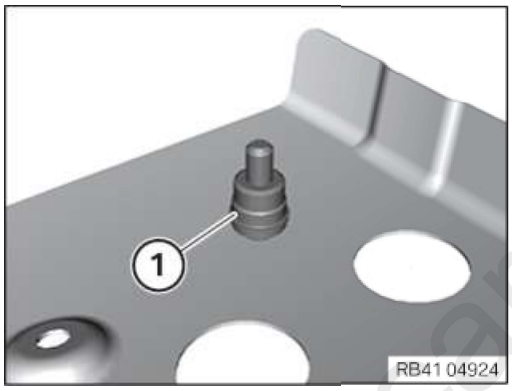


- Take the quantity and position from the component to be replaced.
- Weld the coarse thread bolt (1) and the threaded weld bolt (2) onto the new part.

▸ **Earth pin**

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Check the ground pins (1) for stability and renew where required.

6 – Installing engine support in front of bulkhead with wheel arch

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- Pre-clean all the bonding surfaces with solvent cleaner R2.

Expendable materials

Cleaning agent R2	500 ml	83190417324

- Clean all bonding surfaces with solvent cleaner R1.

Expendable materials

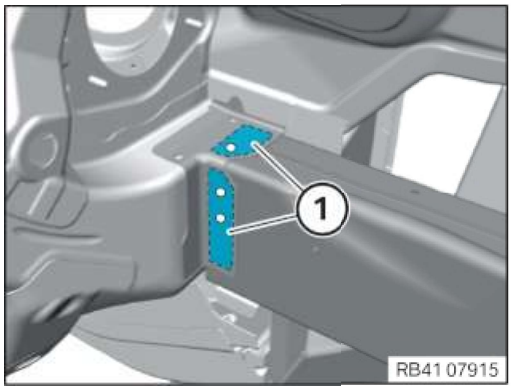
Cleaning agent R1	100 ml, Bottle	83192211217

- Apply adhesive K1 to bonding surfaces.

Adhesive

Body adhesive K1	195 ml	83190413015

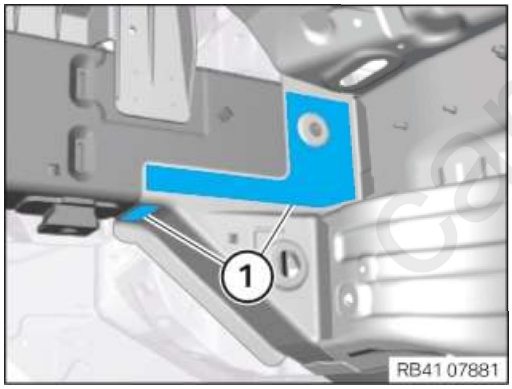
- When installing the new parts make sure that sufficient adhesive is applied to all the bonding surfaces.
- Install the new part with an alignment bracket or a universal fixture.



- Rivet new parts in the areas (1) using 3 blind rivets N1.

Expendable materials

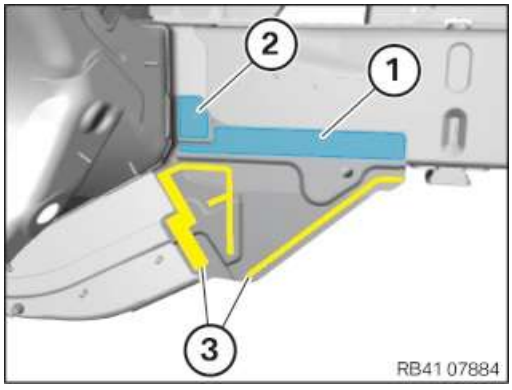
Blind rivet N1 Ø 6.5 mm ; clamping area 2.8-4.8 mm		83190301414



- Rivet the new part in area (1) and (2) with blind rivets N1.

Expendable materials

Blind rivet N1 Ø 6.5 mm ; clamping area 2.8-4.8 mm		83190301414



- Install new part and rivet in area (1) with blind rivets N1.

Expendable materials

Blind rivet N1 Ø 6.5 mm ; clamping area 2.8-4.8 mm		83190301414

- In area (2) rivet new parts with blind rivet N2.

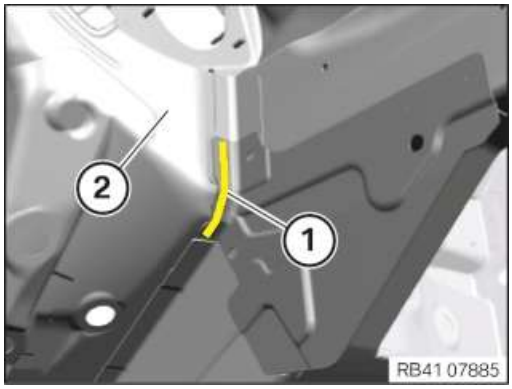
Expendable materials

Blind rivet N2 Ø 6.5 mm ; clamping area 4.8-6.8 mm		83190301419

- Weld the new part in areas (3).

  Avoid excessive application of heat to adhesive areas .

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- Weld the new part in the area (1).

  Avoid excessive application of heat in this process.

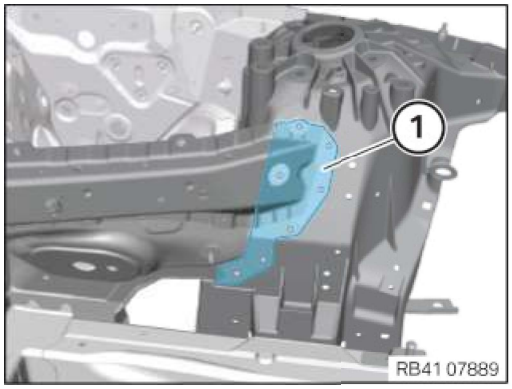
  The bulkhead cross member (2) is filled with hardly inflammable cavity foam.
- In case of smoke formation: Stop the welding procedure and cool the welded area with compressed air if applicable.



- Rivet the new part in the areas (1) and (2) with blind rivets N1.

Expendable materials

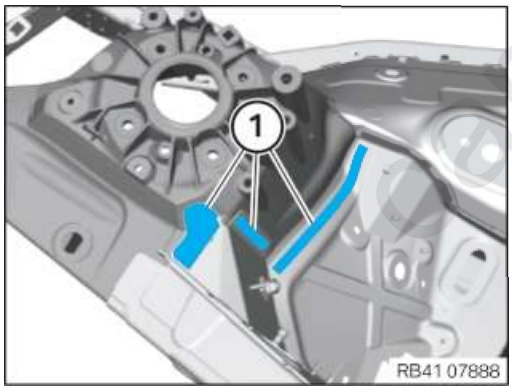
Blind rivet N1 Ø 6.5 mm ; clamping area 2.8-4.8 mm		83190301414



- Rivet the new part in the areas (1) with blind rivets N1.

Expendable materials

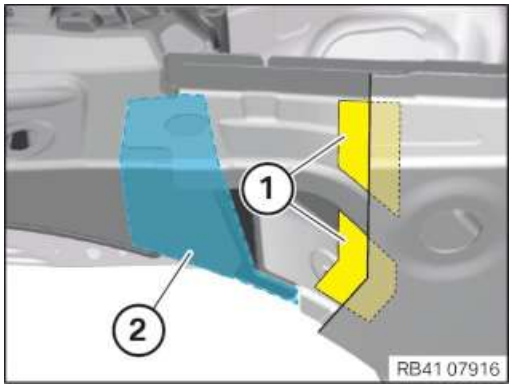
Blind rivet N1 Ø 6.5 mm ; clamping area 2.8-4.8 mm		83190301414



- Rivet the new part in the areas (1) with blind rivets N1.

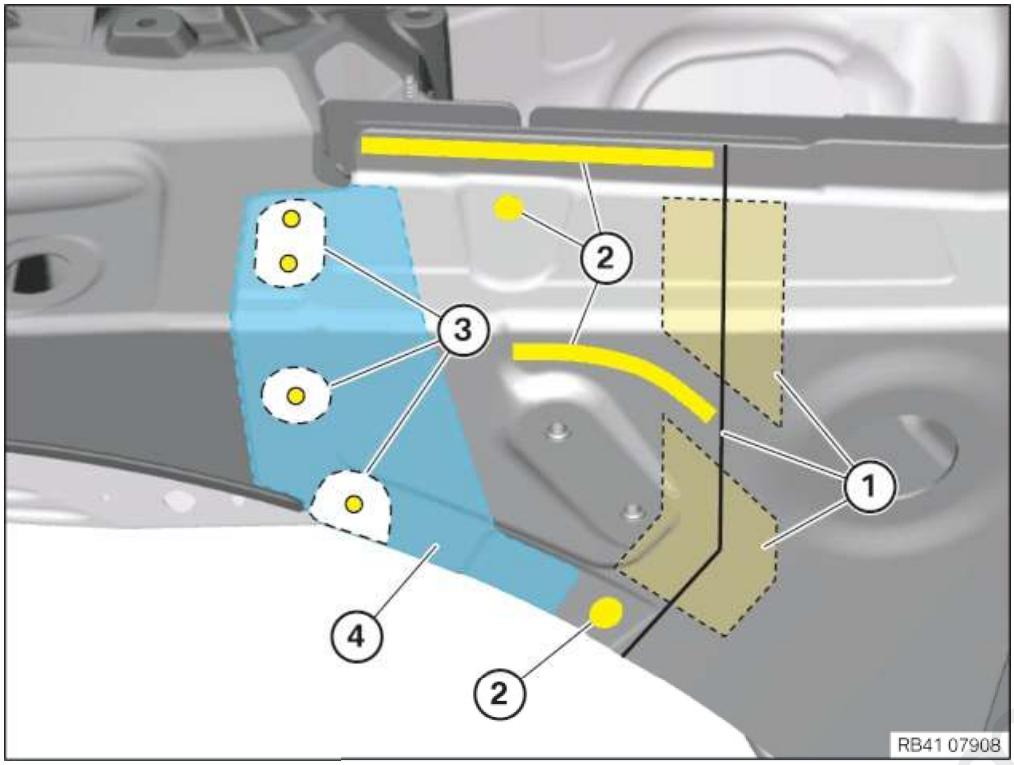
Expendable materials

Blind rivet N1 Ø 6.5 mm ; clamping area 2.8-4.8 mm		83190301414



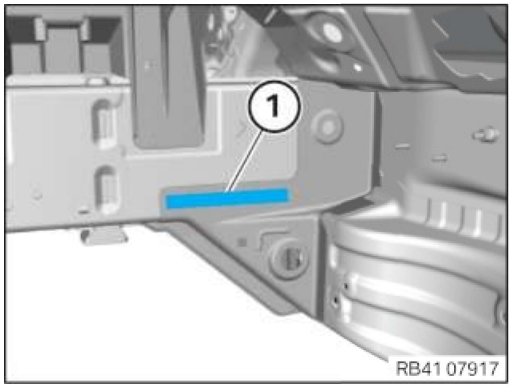
- Install the reinforcement plates (1) and attach by welding.
- Observe the bonding surface (2) of the aluminium spring support.

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- Install the new part section and weld it in the areas (1) to (3).
- While doing so, observe the adhesive area (4) of the aluminium spring support.

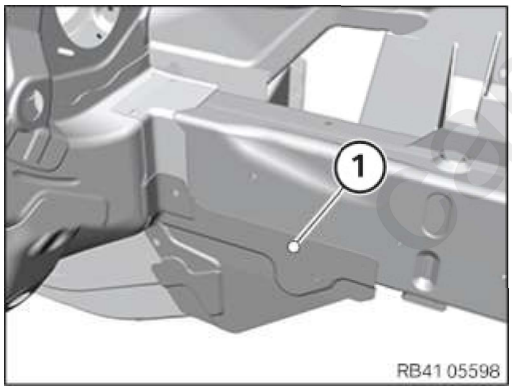
  Avoid applying too much heat to adjacent adhesive area (4).



- Install an EMC screw in area (1).

Expendable materials

Screw EMC screw, SF Plus, M5x15		83190301639



- Install an EMC screw in area (1).

Expendable materials

Screw EMC screw, SF Plus, M5x15		83190301639

Additional Information

Overview of Special Tools

Links

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... Opening bonded connections	4
41 00 ... Opening rivet connections	4
41 00 ... BMW bonding instructions	5

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41 00 ... Spot-weld bonding steel components	5

41 0 Repair techniques, repair stage 3

Repair instructions	Used in step
41 00 ... Installing cavity sealing (not expanded)	6

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41 11 311 Replacing entrance for door front left

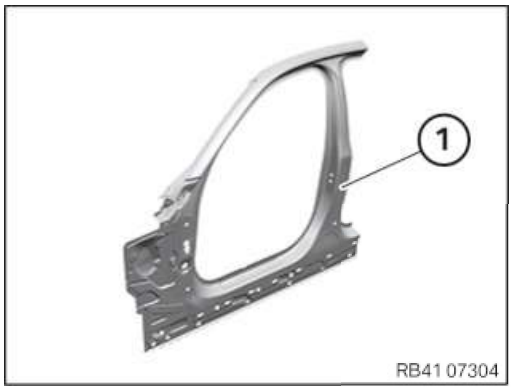
TECHNICAL INFORMATION

- Observe the procedure for repair stage 3.

For additional information see: 41 00 ... Repair method for repair stage 3

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

1 – Supplying the new parts required



- Supply the following new parts (see Electronic Parts Catalogue EPC):

  A-pillar, outer(1)

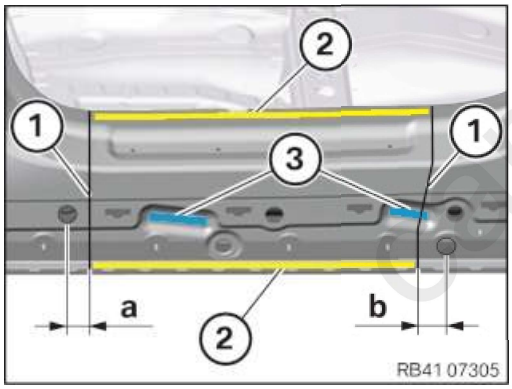
TECHNICAL INFORMATION

For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

- Supply the following consumables:

Material	Quantity
Cavity sealing wax remover	
Sealant D1	

2 – Remove the door sill at the front door



- Mark and carry out the separating cuts (1) in accordance with the specified dimensions. Thereby disconnect only the outer panel.

  Dimension a = 30 mm from the centre of the Ø 25 mm hole.

  Dimension b = 40 mm from the centre of the Ø 25 mm hole.
- Release welded connections in areas (2).

TECHNICAL INFORMATION

For more information see: 41 00 ... Releasing bonded connections

- Detach bonded connections in areas (3) and remove section of the rocker panel.

3 – Prepare new part

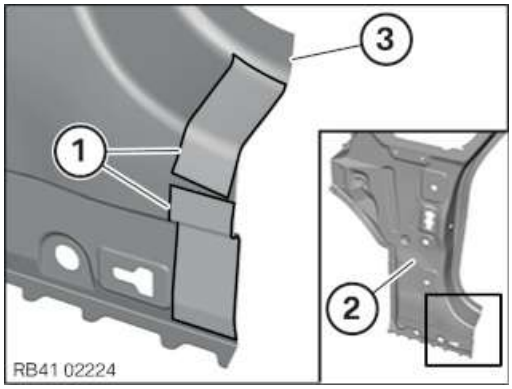
- Carry out the separating cuts on the new part according to the separating cuts on the vehicle.

TECHNICAL INFORMATION

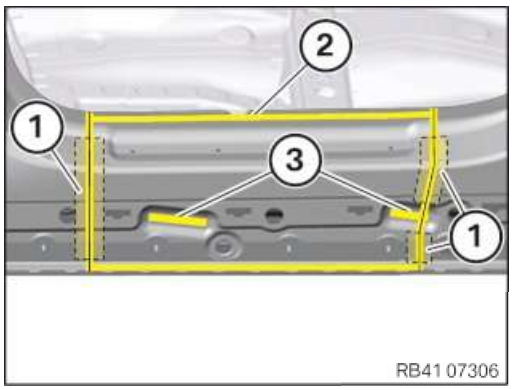
For additional information see: 41 00 ... Weld in the reinforcement plates (sheet steel)

- Prepare reinforcement plates at severance cuts.

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- Make a reinforcement plate (1) (two parts) from the trim of the new part (2).

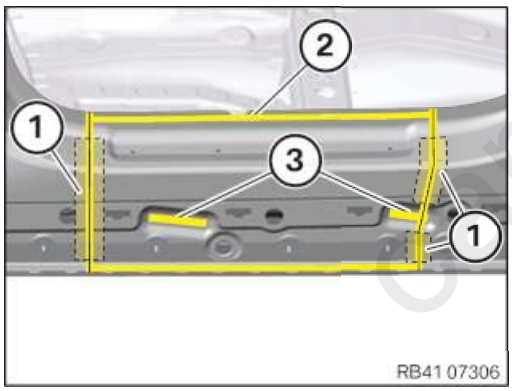


- Remove adhesive residue in the areas 3.
- Adjust the new part and the reinforcement plates (1) to fit.
- Prepare reinforcement plates (1) and areas (2) and (3) prepare for joining by welding.

4 – Install the door sill at the front door

TECHNICAL INFORMATION

Use only approved spot-welding apparatus for repair.
For additional information see: 41 00 ... Workshop equipment



- Install the new part and reinforcement plates (1) and weld in areas (2) and (3).

Additional Information

Links

General repair instructions	Used in step
41 00 ... Opening bonded connections	2
41 00 ... Workshop equipment (BMW and MINI vehicles)	4
41 00 ... Repair techniques, repair stage 3	

Repair instructions	Used in step
41 00 ... Welding in reinforcement plate (sheet steel)	3
41 00 ... Installing cavity sealing (expanded)	4

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41 ... 0 Notes on the repair technique used in the main group 41

Two different repair techniques are used in body repair.

These are welding and bonding/riveting.

If the repair instructions do not specify a repair technique, then welding must **always** be used.

The bonding/riveting repair technique is **always** described in detail in the repair instructions.

Quality standards must be met.

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41 12 557 Replace luggage compartment floor, middle section

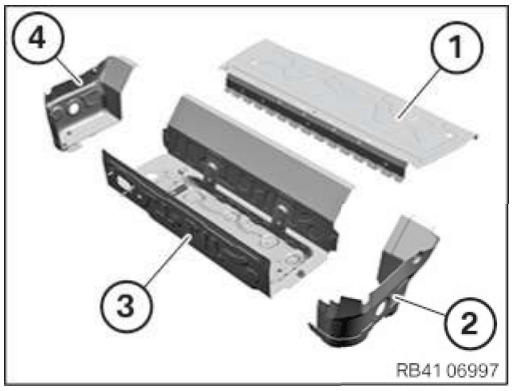
TECHNICAL INFORMATION

- Observe the procedure for repair stage 2.

For additional information see: 41 00 ... Repair method for repair stage 2

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

1 – New parts required



- Supply the following new parts (see Electronic Parts Catalogue EPC):

  Rear luggage compartment floor(1)

  Luggage compartment well outer section, left(2)

  Luggage compartment well(3)

  Luggage compartment well outer section, right(4)

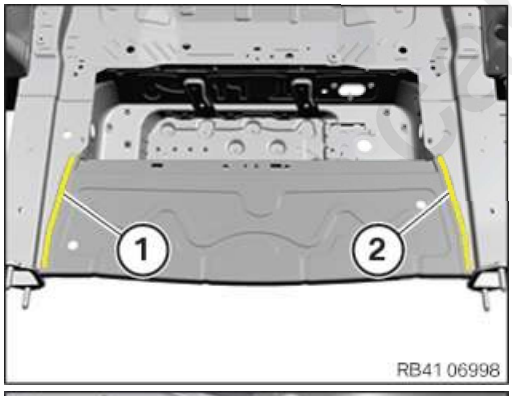
TECHNICAL INFORMATION

For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

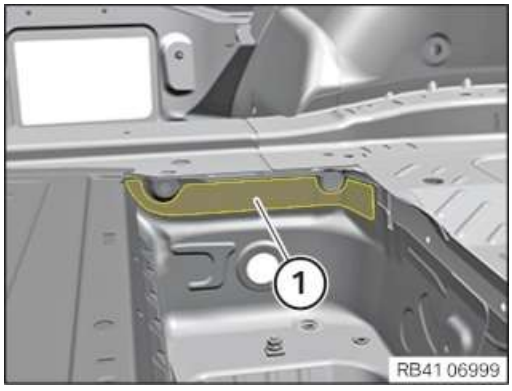
- Supply the following consumables:

Material	Quantity
Coarse thread bolt	25
Sealant D1	

2 – Removing the centre luggage compartment floor



- Open welded connections in areas (1) and (2).

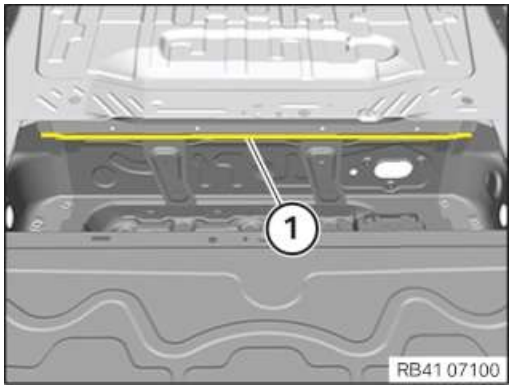


NOTICE

Perform the operations on the left and right side.

- Open welded connections in area (1).

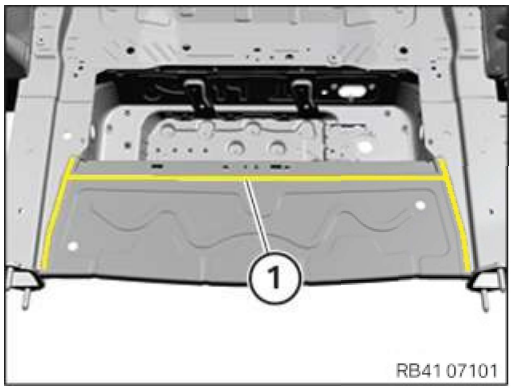
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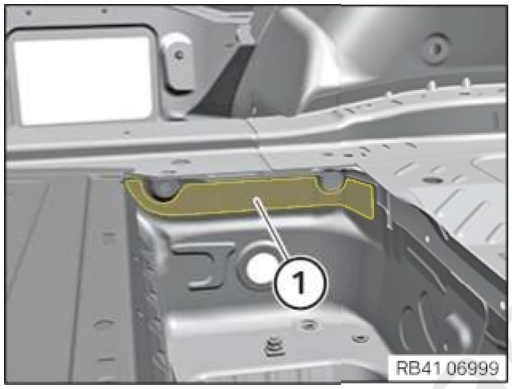
- Open welded connections in area (1) and remove the support .

3 – Prepare new part

- Adjust the new parts in combination with the tail panel to fit and secure.



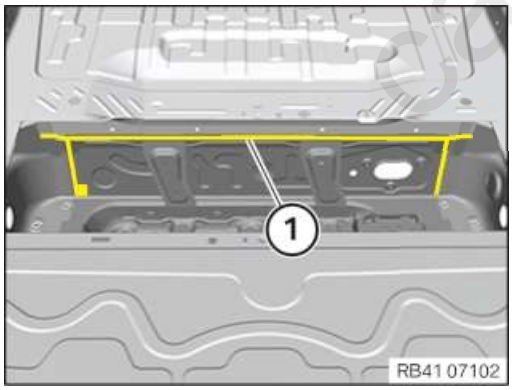
- Prepare areas (1) for joining by welding.



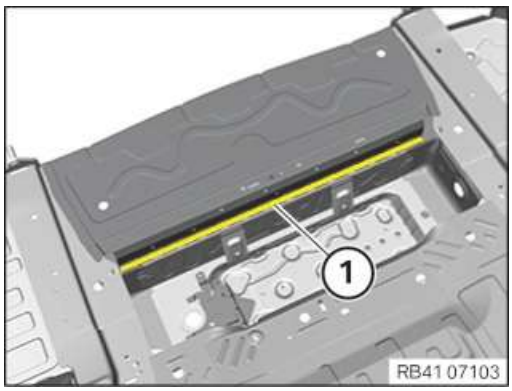
NOTICE

Perform the operations on the left and right side.

- Prepare areas (1) for joining by welding.

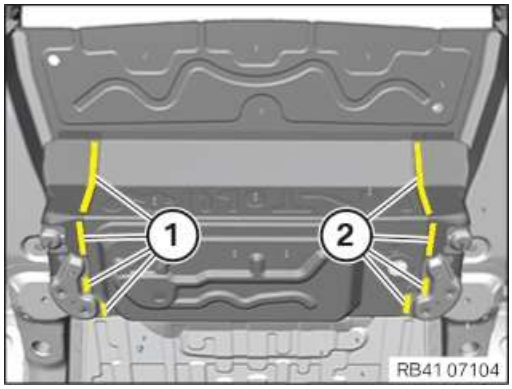


- Prepare areas (1) for joining by welding.



- Prepare areas (1) for joining by welding.

carfdiagn.com

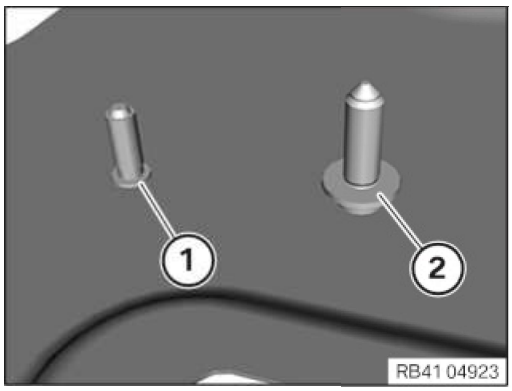


- Prepare areas (1) and (2) for joining by welding.

▸ **Renewing the coarse thread bolt and threaded weld bolt**

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

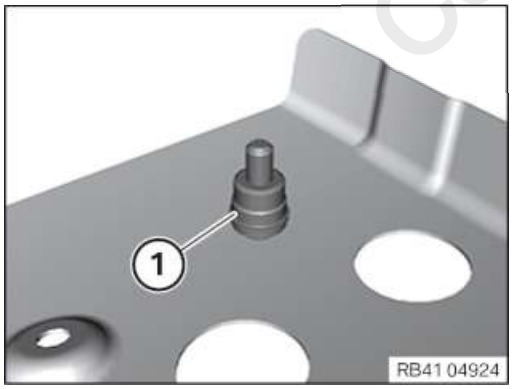


- Take the quantity and position from the component to be replaced.
- Weld the coarse thread bolt (1) and the threaded weld bolt (2) onto the new part.

▸ **Earth pin**

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Check the ground pins (1) for stability and renew where required.

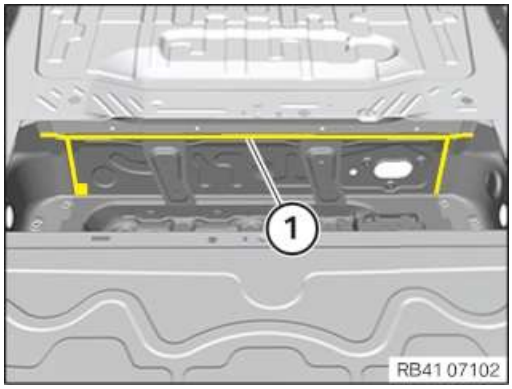
4 – Installing centre luggage compartment floor

TECHNICAL INFORMATION

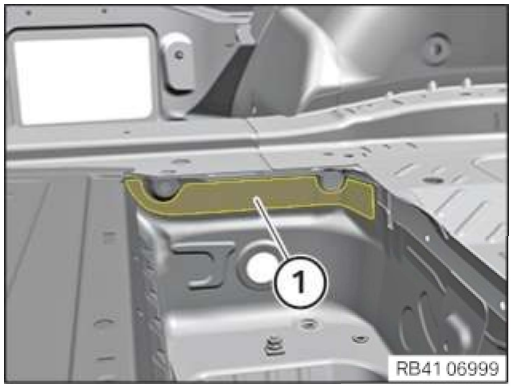
Use only approved spot-welding apparatus for repair.
For additional information see: 41 00 ... Workshop equipment

cardiagn.com

- Install new parts and secure.



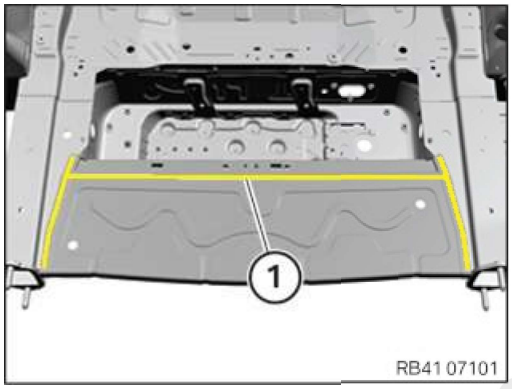
- Weld the new parts in the area (1).



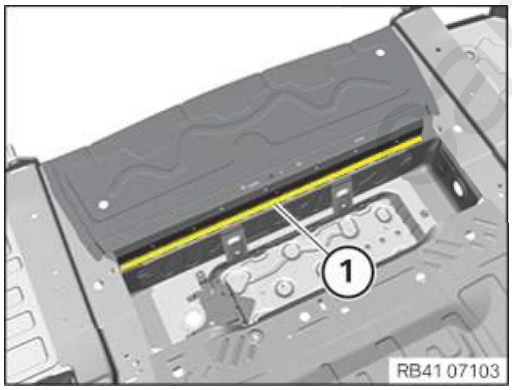
NOTICE

Perform the operations on the left and right side.

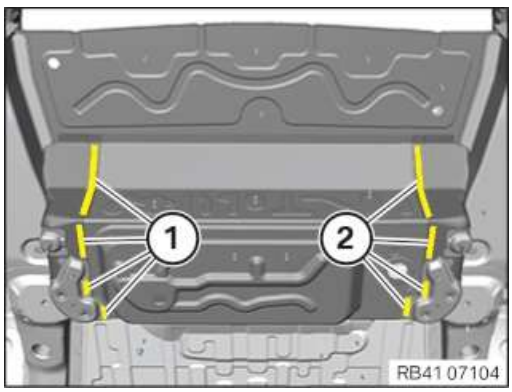
- Weld the new parts in the area (1).



- Weld the new parts in the area (1).



- Weld the new parts in the area (1).



- Weld the new parts in areas (1) and (2).

Additional Information

mdiagn.com

Links

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... Workshop equipment (BMW and MINI vehicles)	4
41 00 ... 0 Contents of Body, General	
41 00 ... Repair techniques, repair stage 2	

cardiagn.com

41 12 190 Replacing left luggage compartment base

TECHNICAL INFORMATION

- Observe the procedure for repair stage 2.

For additional information see: 41 00 ... Repair method for repair stage 2

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

1 – New parts required



- Supply the following new parts (see Electronic Parts Catalogue EPC):

  Luggage compartment floor, left(1)

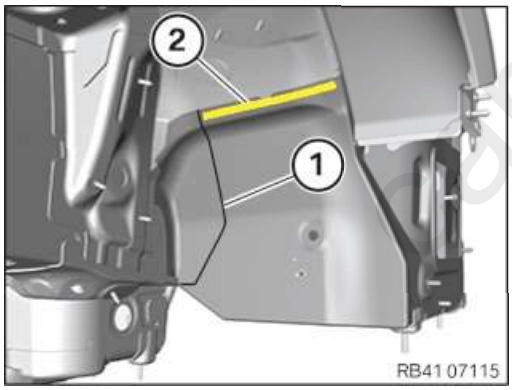
TECHNICAL INFORMATION

For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

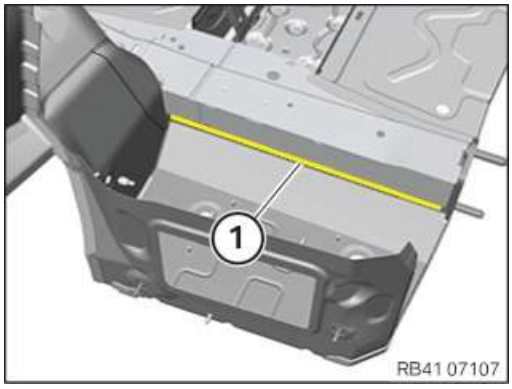
- Supply the following consumables:

Material	Quantity
Coarse thread bolt	10
Threaded weld bolt	5
Sealant D1	

2 – Removing the left luggage compartment floor



- Make the separating cut (1) according to the schematic diagram.
- Open welded connections in area (2).

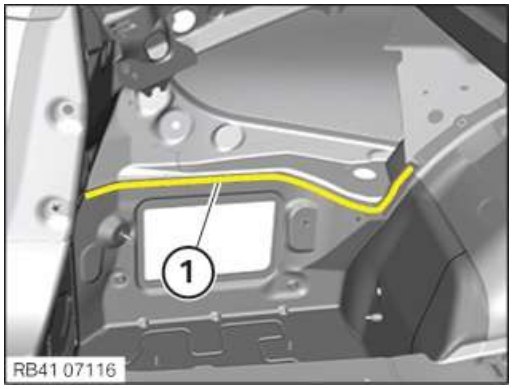


NOTICE

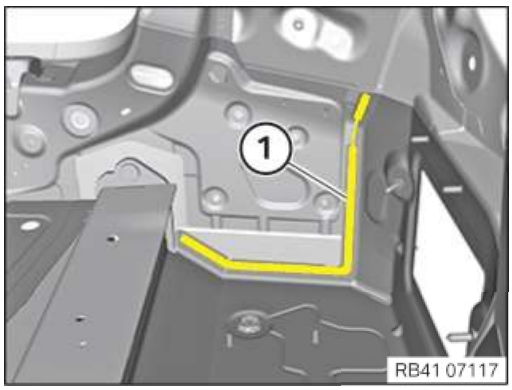
To provide a better overview: Shown without side panel and without tail panel.

- Open welded connections in area (1).

cardiagn.com

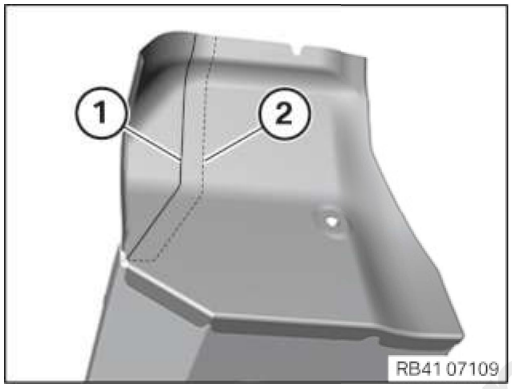


- Open welded connections in area (1).

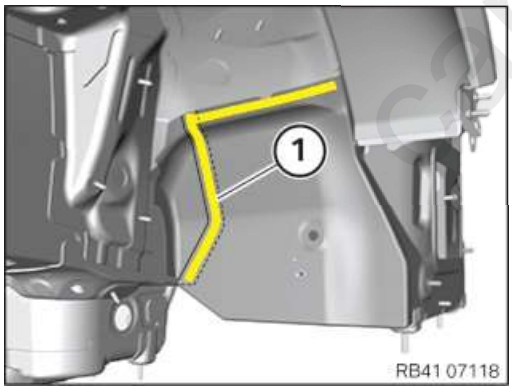


- Open welded connections in area (1) and remove the support .

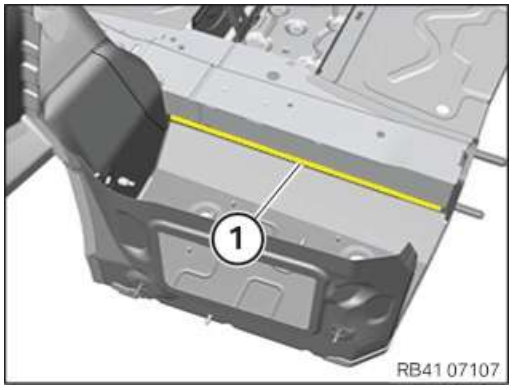
3 – Prepare new part



- Mark and carry out separating cut (1) on new part as per separating cut (2) on vehicle +20 mm material allowance.



- Adjust new part to fit and secure.
- Prepare area (1) for joining by welding.

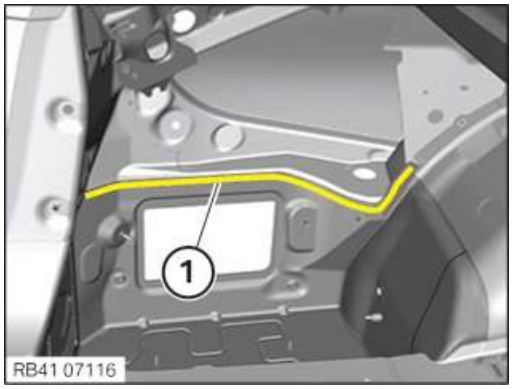


NOTICE

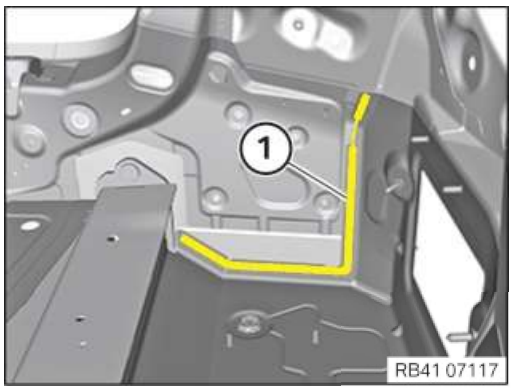
To provide a better overview: Shown without side panel and without tail panel.

- Prepare area (1) for joining by welding.

c3-diagn.com



- Prepare area (1) for joining by welding.

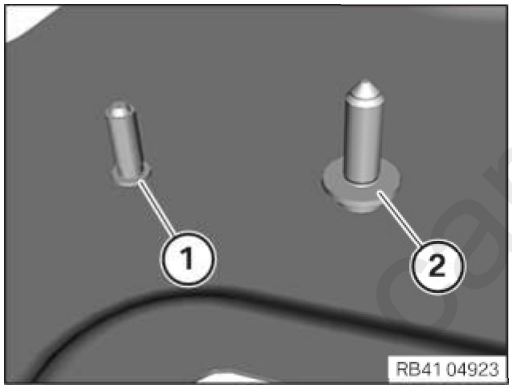


- Prepare area (1) for joining by welding.

▸ **Renewing the coarse thread bolt and threaded weld bolt**

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

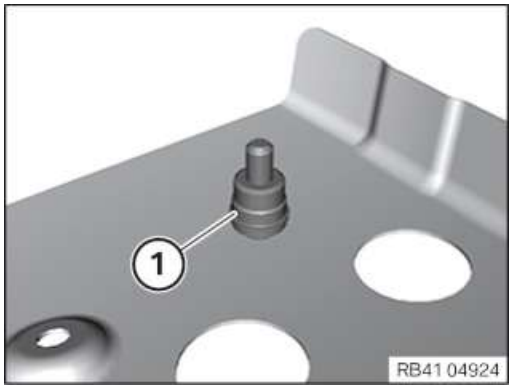


- Take the quantity and position from the component to be replaced.
- Weld the coarse thread bolt (1) and the threaded weld bolt (2) onto the new part.

▸ **Earth pin**

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

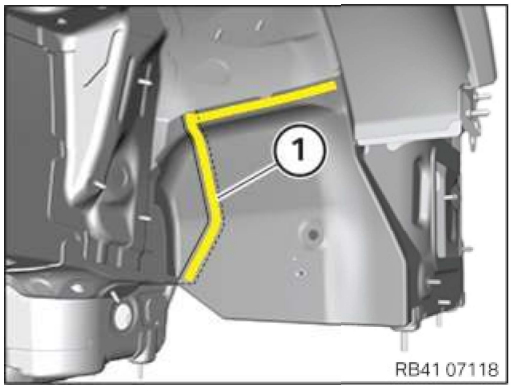


- Check the ground pins (1) for stability and renew where required.

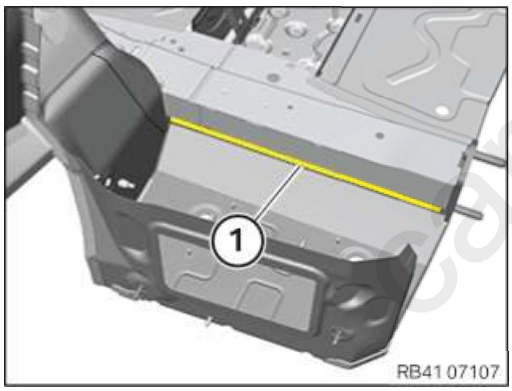
4 – Installing the left luggage compartment floor

TECHNICAL INFORMATION

Use only approved spot-welding apparatus for repair.
For additional information see: 41 00 ... Workshop equipment



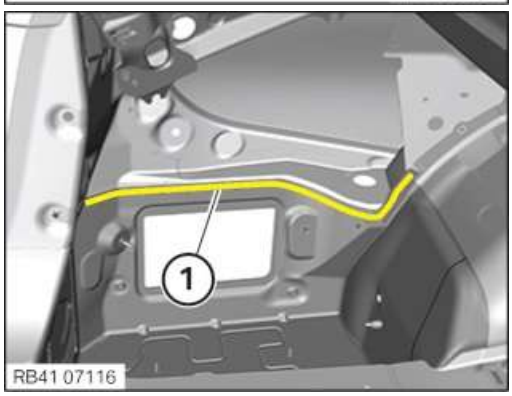
- Install new part and weld in the area (1).



NOTICE

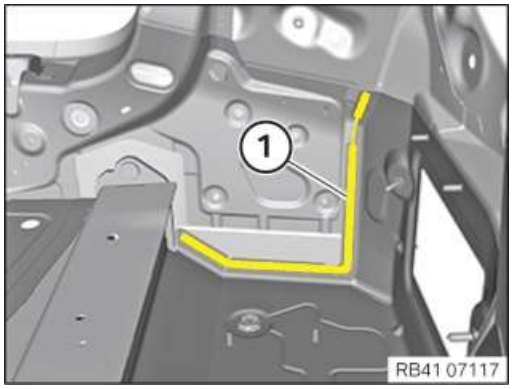
To provide a better overview: Shown without side panel and without tail panel.

- Weld the new part in the area (1).



- Weld the new part in the area (1).

carmagn.com



- Weld the new part in the area (1).

Additional Information

Links

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... Opening bonded connections	2
41 00 ... Workshop equipment (BMW and MINI vehicles)	4
41 00 ... Repair techniques, repair stage 2	

cardiagn.com

41 12 653 Replacing left luggage compartment base

TECHNICAL INFORMATION

- Observe the procedure for repair stage 2.

For additional information see: 41 00 ... Repair method for repair stage 2

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

1 – New parts required



- Supply the following new parts (see Electronic Parts Catalogue EPC):

  Luggage compartment floor, left(1)

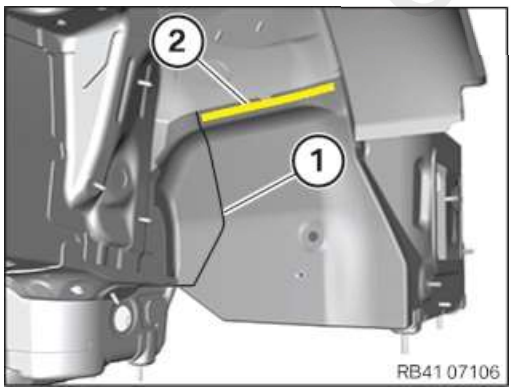
TECHNICAL INFORMATION

For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

- Supply the following consumables:

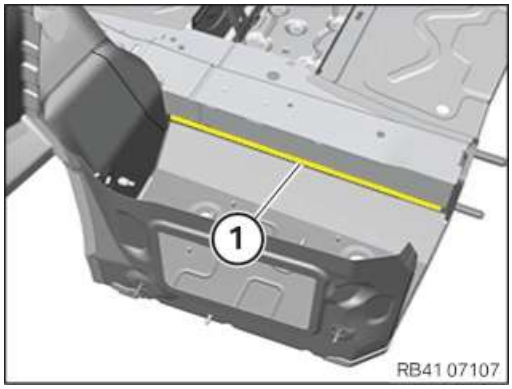
Material	Quantity
Adhesive K5 (50 ml)	1
Blind rivet N3	15
Coarse thread bolt	10
Threaded weld bolt	5
Cleaning agentR1	1
Cleaning agentR2	1
Sealant D1	
Cavity sealing wax remover	

2 – Removing the left luggage compartment floor

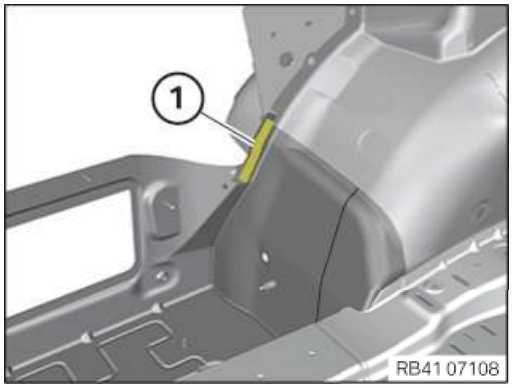


- Make the separating cut (1) according to the schematic diagram.
- Open welded connections in area (2).

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- Open welded connections in area (1).

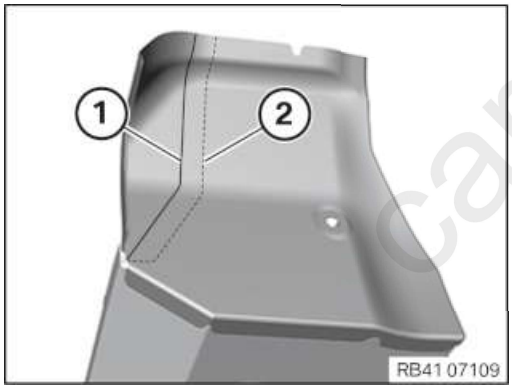


- Open welded connections in area (1) and remove the support .

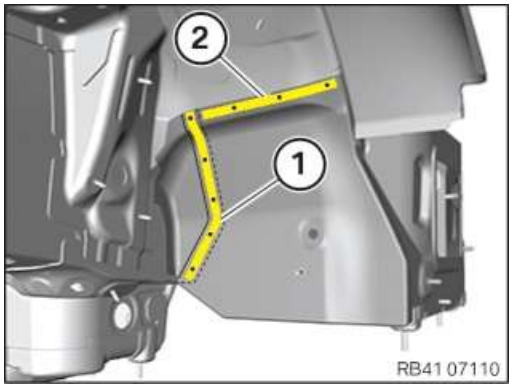
3 – Prepare new part

TECHNICAL INFORMATION

Adhesive technology in the area of the outer skin (not for structural adhesion):
The bonding surfaces of the new parts may not sharpened or ground.
For additional information see: 41 00 ... BMW bonding instructions



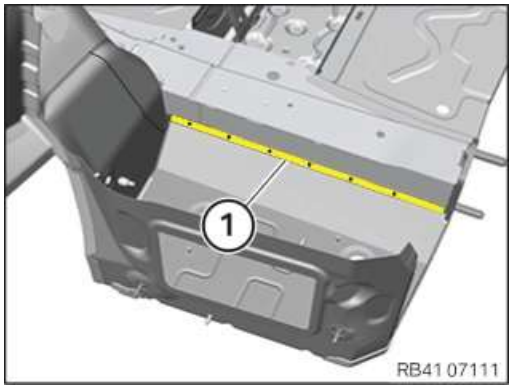
- Mark and carry out separating cut (1) on new part as per separating cut (2) on vehicle +20 mm material allowance.



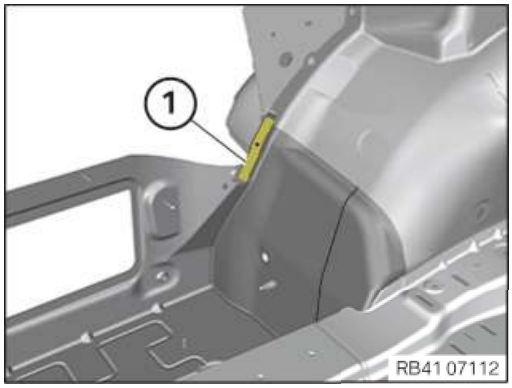
- Adjust the luggage compartment floor and secure.
- Prepare the joints in areas (1) and (2) using the bond-and-rivet method.
- In the areas (1) and (2), set 8 bore holes of Ø 4.2 mm for blind rivet.

Area	Number
1	4
2	3

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- Prepare area (1) for joining by glue rivet method.
- In the area (1), drill out 6 bore holes of Ø 4.2 mm for blind rivet.

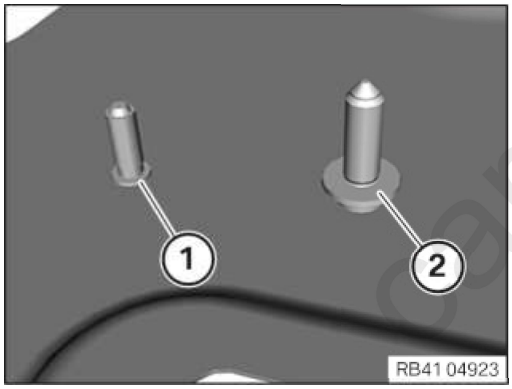


- Prepare area (1) for joining by bonded rivet method.
- In the area (1), drill out a bore hole of Ø 4.2 mm for blind rivet.
- Remove new component. Deburr bore holes.

▸ **Renewing the coarse thread bolt and threaded weld bolt**

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



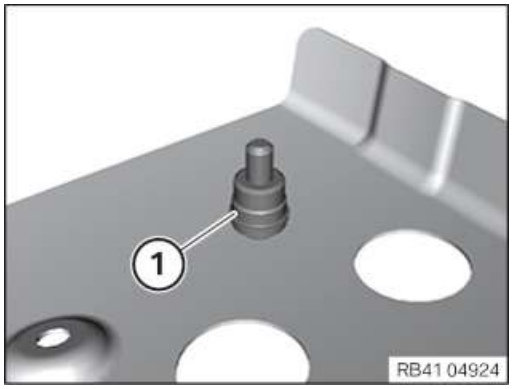
- Take the quantity and position from the component to be replaced.
- Weld the coarse thread bolt (1) and the threaded weld bolt (2) onto the new part.

▸ **Earth pin**

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

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- Check the ground pins (1) for stability and renew where required.

4 – Installing the left luggage compartment floor

- Pre-clean the bonding surfaces at the new part and vehicle using R2 solvent cleaner.

Expendable materials

Cleaning agent R2	500 ml	83190417324

- Clean bonding surfaces on vehicle and on new part with cleaning agent R1.

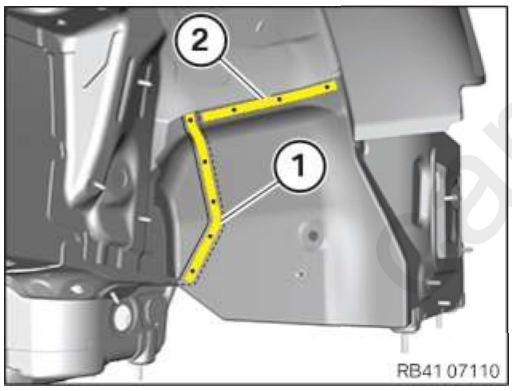
Expendable materials

Cleaning agent R1	100 ml, Bottle	83192211217

- Apply adhesive K5 to the bonding surfaces.

Adhesive

Body adhesive K5	50 ml	83192158654



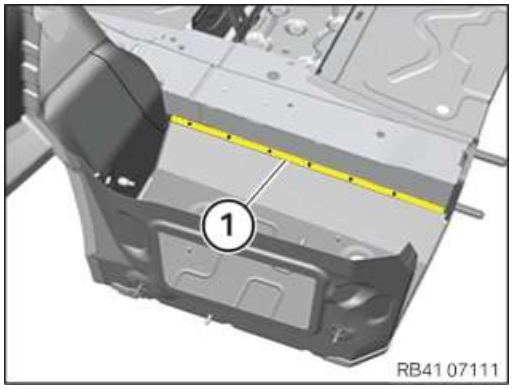
TECHNICAL INFORMATION

When installing the new part, make sure that all bonding surfaces have sufficient adhesive.

- Install the new part and rivet it in the areas (1) and (2) with blind rivets N3.

Expendable materials

Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421

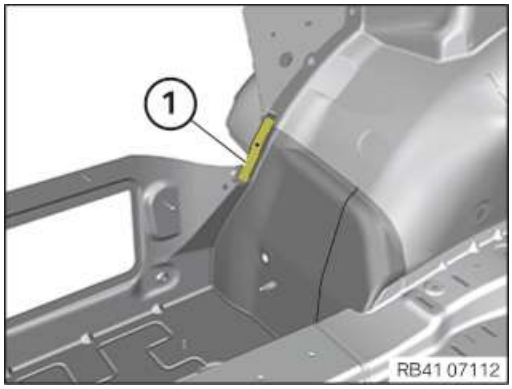


- Rivet new parts in the areas (1) and (2) with blind rivets N3.

Expendable materials

Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421

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- In area (1), rivet the new part with blind rivet N3.

Expendable materials

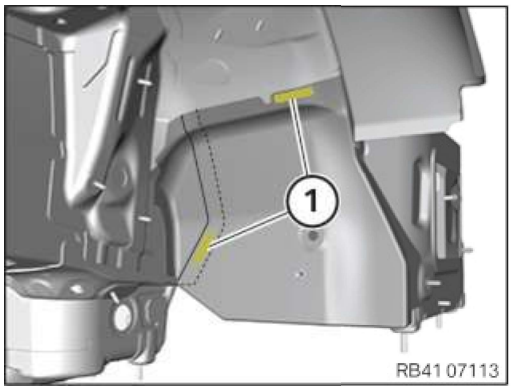
Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421

▸ **Install the EMC screw (EMC = electromagnetic compatibility)**

- After adhesive has fully hardened: Drill a hole with a diameter of 4.2 mm.
- Screw in the EMC screw.
- Seal the EMC screw with the sealant D1 .

Expendable materials

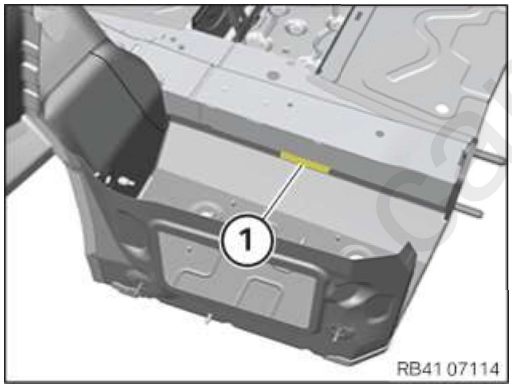
Sealant D1 (seam sealing)	310 ml	83422409985



- After the adhesive hardens, install two EMC screws in areas (1) .

Expendable materials

Screw EMC screw, SF Plus, M5x15		83190301639



- After the adhesive has hardened in area (1), install an electromagnetic compatibility screw.

Expendable materials

Screw EMC screw, SF Plus, M5x15		83190301639

Additional Information

Links

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... Opening bonded connections	2
41 00 ... BMW/MINI bonding instructions	3
41 00 ... Spot-weld bonding steel components	3
41 00 ... Workshop equipment (BMW and MINI vehicles)	4
41 00 ... Repair techniques, repair stage 2	

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41 12 660 Replacing rear luggage compartment floor (tail panel removed)

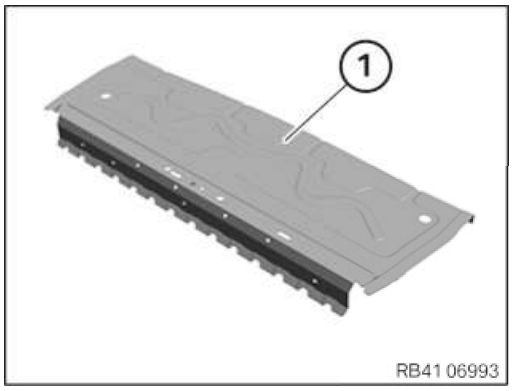
TECHNICAL INFORMATION

- Observe the procedure for repair stage 2.

For additional information see: 41 00 ... Repair method for repair stage 2

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

1 – New parts required



- Supply the following new parts (see Electronic Parts Catalogue EPC):

  Rear luggage compartment floor(1)

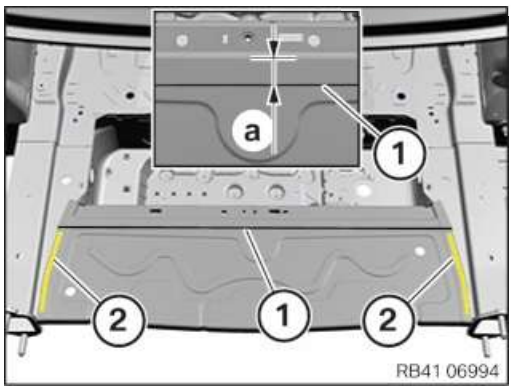
TECHNICAL INFORMATION

For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

- Supply the following consumables:

Material	Quantity
Adhesive K5 (50 ml)	1
Blind rivet N3	20
Coarse thread bolt	10
EMC screw	3
Cleaning agentR1	1
Cleaning agentR2	1
Sealant D1	
Cavity sealing wax remover	

2 – Remove rear luggage compartment floor



- Mark and make the separating cut (1) according to dimension a.

  Dimension a = 25 mm..

  Ensure that the new part overlaps in area of the separating cut.
- Open the welded connections in areas (2) and remove the luggage compartment floor.

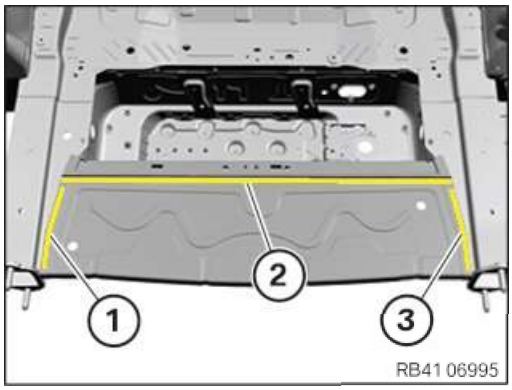
3 – Prepare new part

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TECHNICAL INFORMATION

Adhesive technology in the area of the outer skin (not for structural adhesion):
The bonding surfaces of the new parts may not sharpened or ground.
For additional information see: 41 00 ... BMW bonding instructions

- Mark the separating cut on the new part according to the separating cut on the vehicle +20 mm added material and cut.



- Adjust new part in conjunction with tail panel and secure.
- In areas (1) to (3) drill out 20 bore holes of dia. 4.2 mm for blind rivet.

  When positioning the bore holes, make sure that no series spot-welds get drilled or drilled through!

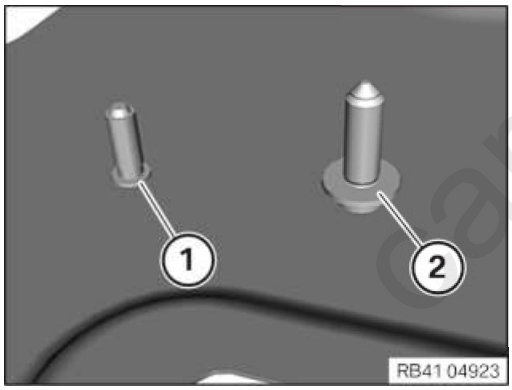
Area	Number
1	4
2	12
3	4

- Remove new part and deburr holes.

▸ **Renewing the coarse thread bolt and threaded weld bolt**

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Take the quantity and position from the component to be replaced.
- Weld the coarse thread bolt (1) and the threaded weld bolt (2) onto the new part.

4 – Installing the rear luggage compartment floor

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- Pre-clean the bonding surfaces at the new part and vehicle using R2 solvent cleaner.

Expendable materials

Cleaning agent R2	500 ml	83190417324

- Clean bonding surfaces on vehicle and on new part with cleaning agent R1.

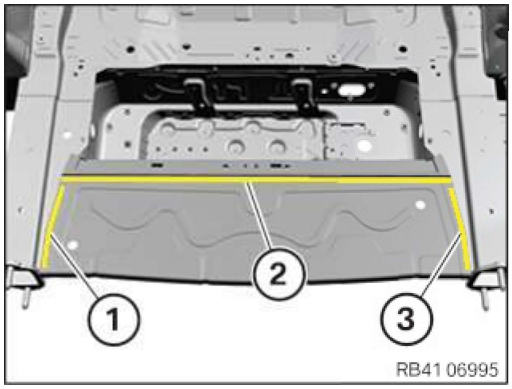
Expendable materials

Cleaning agent R1	100 ml, Bottle	83192211217

- Apply adhesive K5 to the bonding surfaces.

Adhesive

Body adhesive K5	50 ml	83192158654



- Install the new part and rivet in areas (1) to (3) with blind rivets N3.

Expendable materials

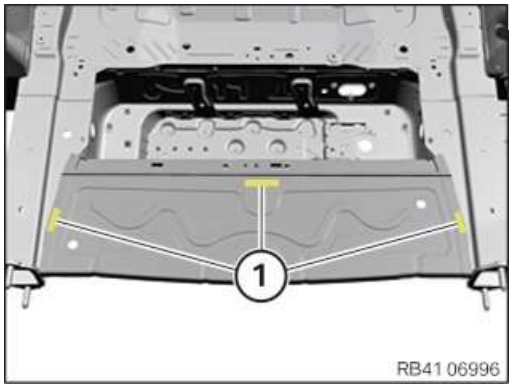
Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421

▸ **Install the EMC screw (EMC = electromagnetic compatibility)**

- After adhesive has fully hardened: Drill a hole with a diameter of 4.2 mm.
- Screw in the EMC screw.
- Seal the EMC screw with the sealant D1 .

Expendable materials

Sealant D1 (seam sealing)	310 ml	83422409985



- After the adhesive has hardened, install 3 EMC screws in the areas (1).

Expendable materials

Screw EMC screw, SF Plus, M5x15		83190301639

Additional Information

Links

Repair instructions (PRE)	Used in step

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EMC screws, general information	4

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... BMW/MINI bonding instructions	3
41 00 ... Repair techniques, repair stage 2	

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41 12 700 Replacing the left luggage compartment floor and side member

Prerequisite

- Vehicle is fixed on straightening bench.

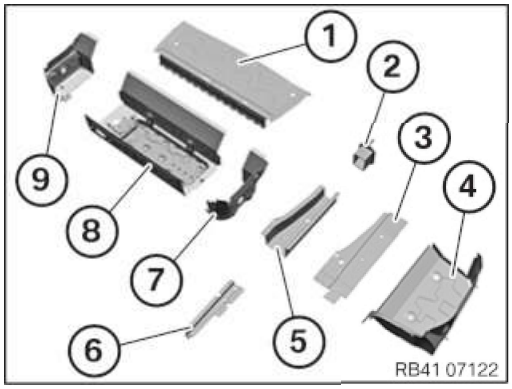
TECHNICAL INFORMATION

- Observe the procedure for repair stage 3.

For additional information see: 41 00 ... Repair method for repair stage 3

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

1 – Supplying the new parts required



- Supply the following new parts (see Electronic Parts Catalogue EPC):

Rear luggage compartment floor(1)

Panel for rear bumper (2)

Extension of rear top side member (3)

Side section of luggage compartment floor (4)

Extension of rear bottom side member (5)

reinforce., side member(6)

Luggage compartment well, left(7)

Luggage compartment well(8)

Luggage compartment well, right(9)

TECHNICAL INFORMATION

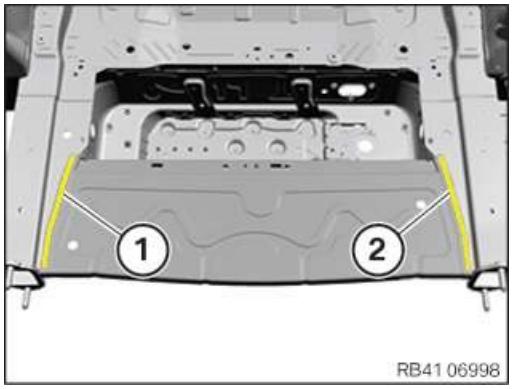
For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

- Supply the following consumables:

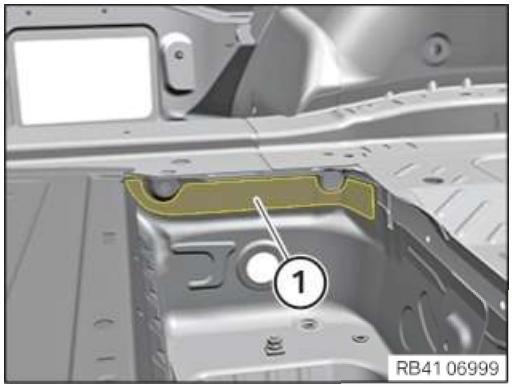
Material	Quantity
Adhesive K5 (50 ml)	1
Blind rivet N3	25
Coarse thread bolt	25
Threaded weld bolt	5
EMC screw	3
Cleaning agentR1	1
Cleaning agentR2	1
Sealant D1	1
Cavity sealing wax remover	

2 – Remove luggage space tray and left side rail

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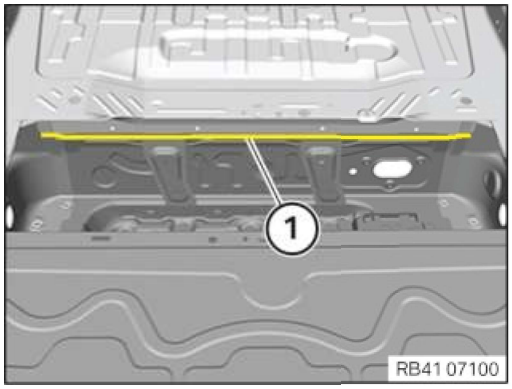
- Open welded connections in areas (1) and (2).



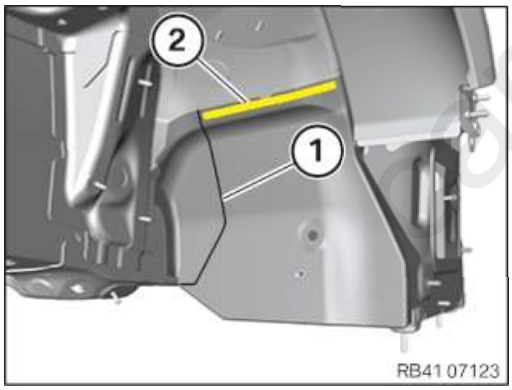
NOTICE

Perform the operations on the left and right side.

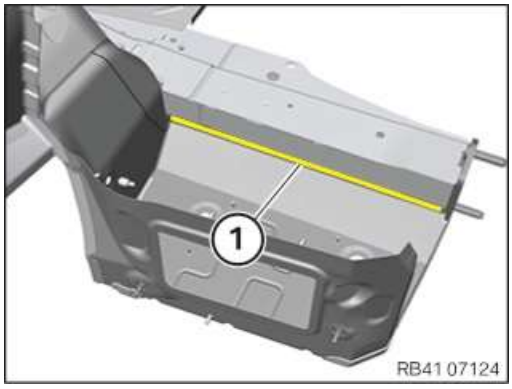
- Open welded connections in area (1).



- Open welded connections in area (1) and remove the support .



- Make the separating cut (1) according to the schematic diagram.
- Open welded connections in area (2).

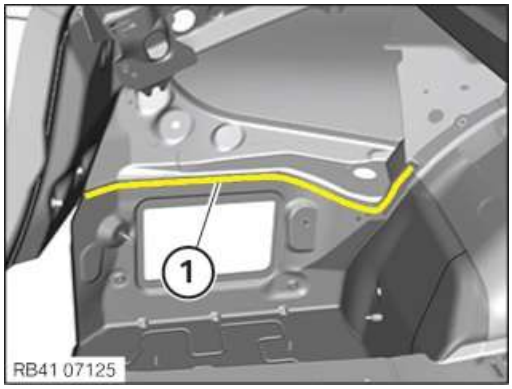


NOTICE

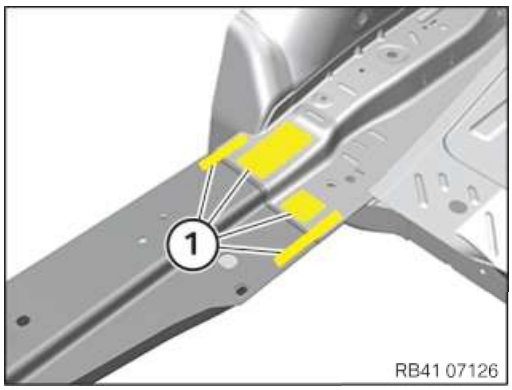
To provide a better overview: Side panel omitted for clarity.

- Open welded connections in area (1).

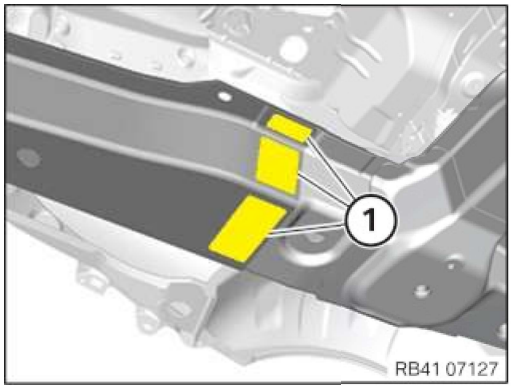
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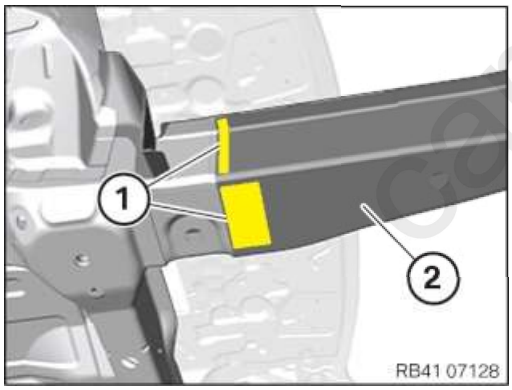
- Open welded connections in area (1) and remove the support .



- Release welded connections in areas (1).



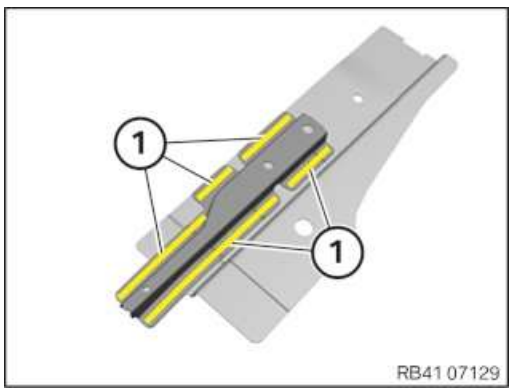
- Release welded connections in areas (1).



- Release the welded connections in areas (1) and remove the side member (2).

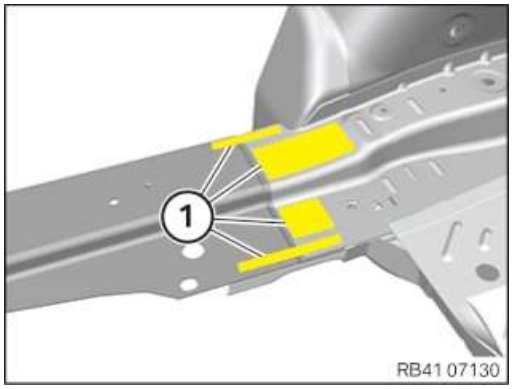
3 – Preparing new parts

▸ **Prepare new parts, left side rail**

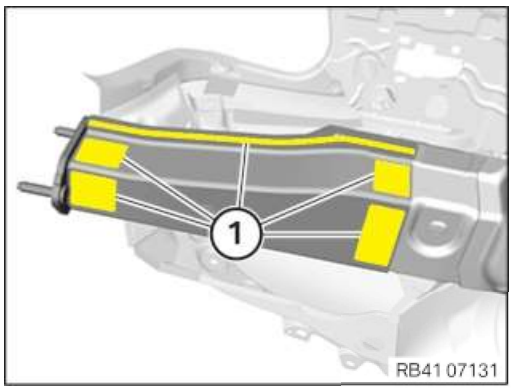


- Position new parts and prepare them for joining by welding in areas (1).

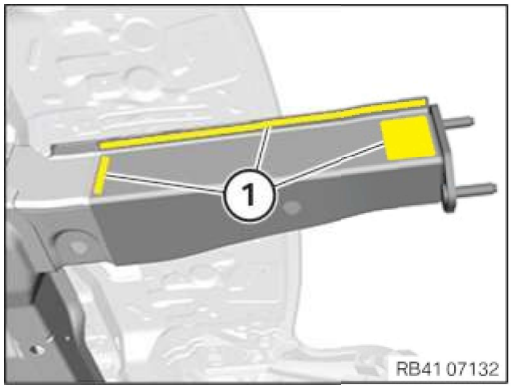
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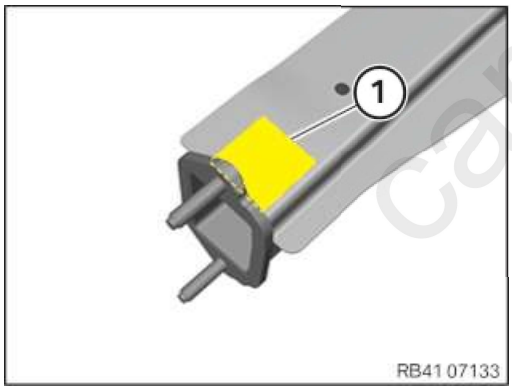
- Adjust new parts to fit with alignment bracket or universal mount and secure.
- Prepare the new parts in the areas (1) for joining by welding.



- Insert new parts and prepare for joining by welding in areas (1).



- Prepare the new parts in the areas (1) for joining by welding.



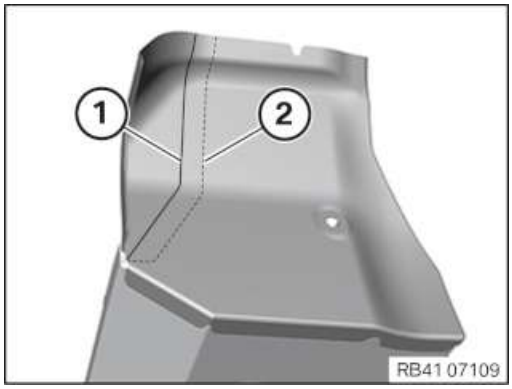
- Prepare the new parts for joining by welding in the area (1).

▸ **Prepare new parts, left side rail**

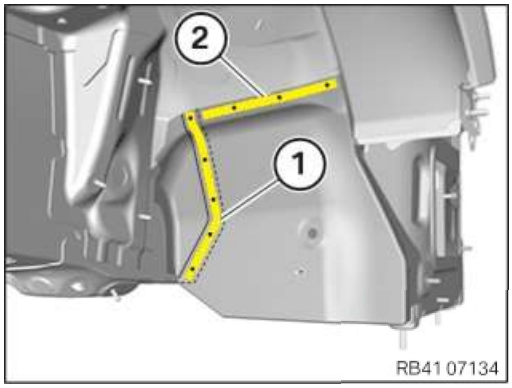
TECHNICAL INFORMATION

Adhesive technology in the area of the outer skin (not for structural adhesion):
The bonding surfaces of the new parts may not sharpened or ground.
For additional information see: 41 00 ... BMW bonding instructions

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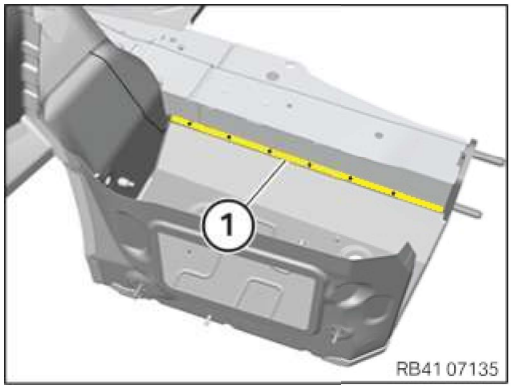


- Mark and carry out separating cut (1) on new part as per separating cut (2) on vehicle +20 mm material allowance.



- Adjust and secure the new part together with the tail panel.
- Prepare the joints in areas (1) and (2) using the bond-and-rivet method.
- In the areas (1) and (2), set 8 bore holes of Ø 4.2 mm for blind rivet.

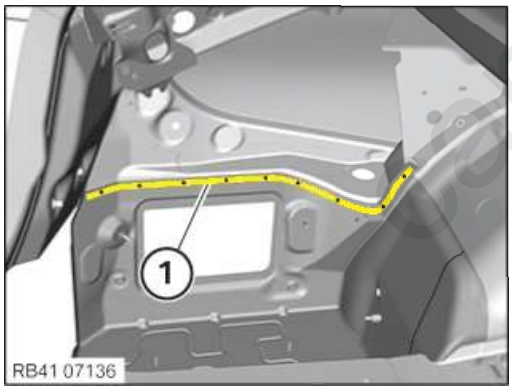
Area	Number
1	5
2	3



NOTICE

To provide a better overview: Side panel omitted for clarity.

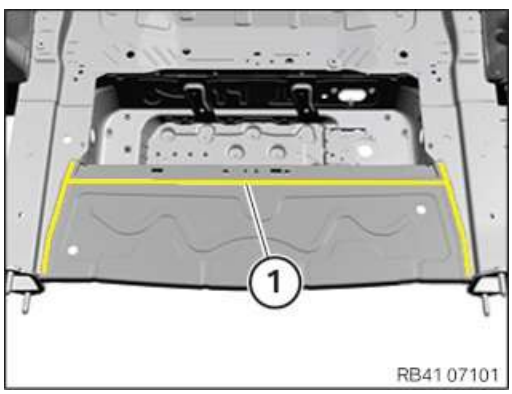
- Prepare area (1) for joining by glue rivet method.
- In the area (1), drill out 6 bore holes of Ø 4.2 mm for blind rivet.



- Prepare area (1) for joining by glue rivet method.
- In the area (1), drill out 9 bore holes Ø 4.2 mm for the blind rivets.
- Remove new part and deburr holes.

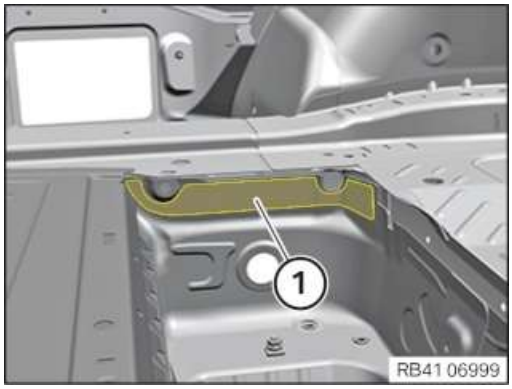
▸ **Prepare new part, middle luggage compartment floor**

- Adjust the new parts in combination with the tail panel to fit and secure.



- Prepare areas (1) for joining by welding.

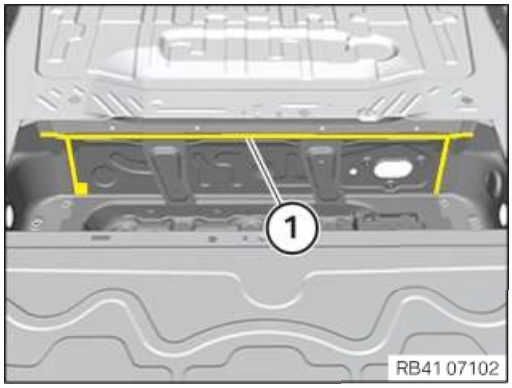
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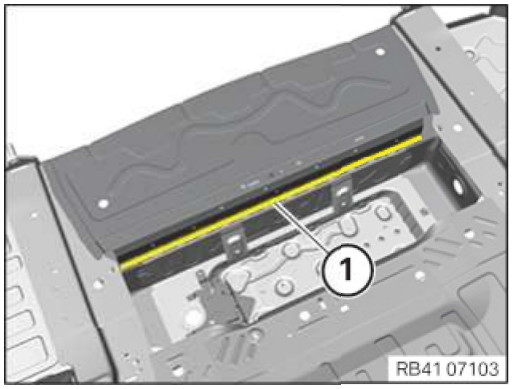
NOTICE

Perform the operations on the left and right side.

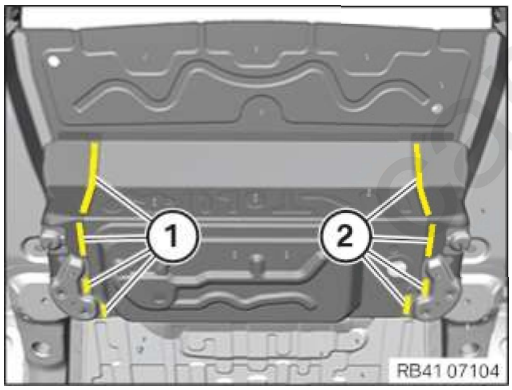
- Prepare areas (1) for joining by welding.



- Prepare areas (1) for joining by welding.



- Prepare areas (1) for joining by welding.

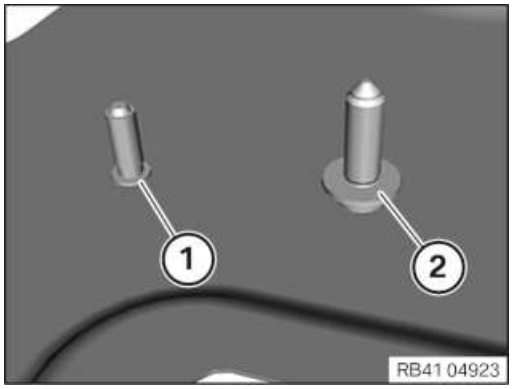


- Prepare areas (1) and (2) for joining by welding.

▸ **Renewing the coarse thread bolt and threaded weld bolt**

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

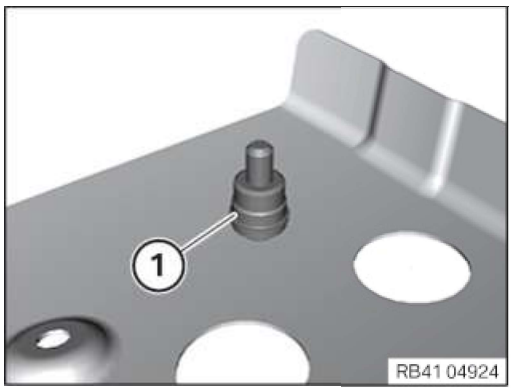


- Take the quantity and position from the component to be replaced.
- Weld the coarse thread bolt (1) and the threaded weld bolt (2) onto the new part.

▸ **Earth pin**

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



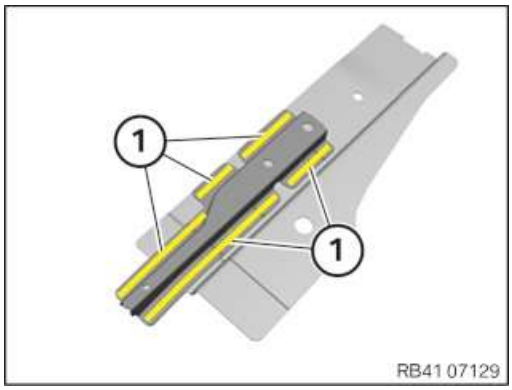
- Check the ground pins (1) for stability and renew where required.

4 – Install new parts

▸ **Installing left side member**

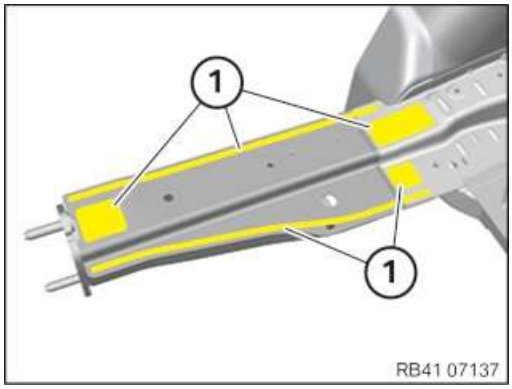
TECHNICAL INFORMATION

Use only approved spot-welding apparatus for repair.
For additional information see: 41 00 ... Workshop equipment

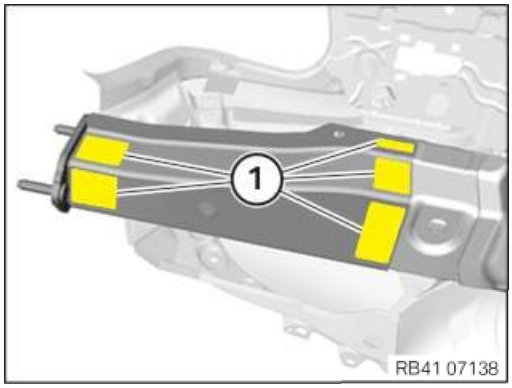


- Weld new part in the area(1).

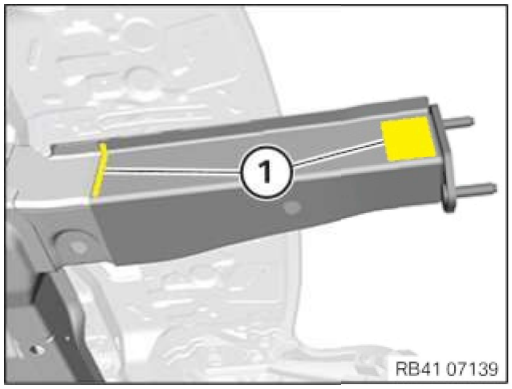
cardiagn.com



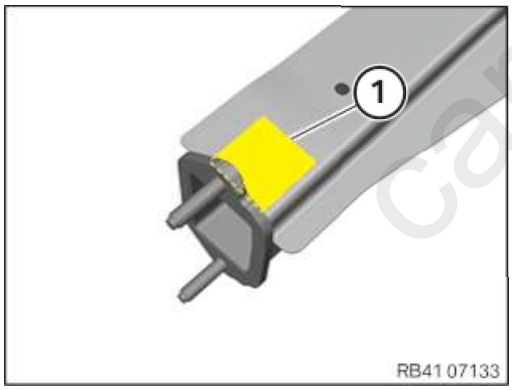
- Adjust new parts to fit with alignment bracket or universal mount and secure.
- Weld new part in the area(1).



- Weld new part in the area(1).



- Weld new part in the area(1).



- Weld the new parts in the area (1).

▸ **Installing the left luggage compartment floor**

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- Pre-clean the bonding surfaces at the new part and vehicle using R2 solvent cleaner.

Expendable materials

Cleaning agent R2	500 ml	83190417324

- Clean bonding surfaces on vehicle and on new part with cleaning agent R1.

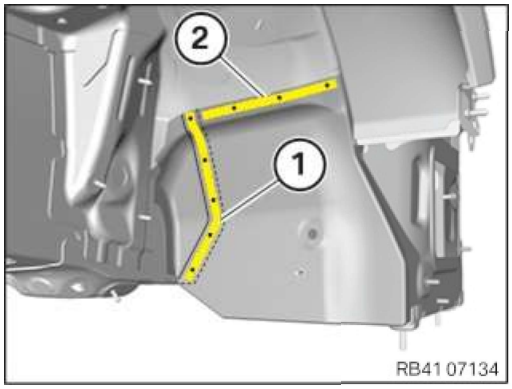
Expendable materials

Cleaning agent R1	100 ml, Bottle	83192211217

- Apply adhesive K5 to the bonding surfaces.

Adhesive

Body adhesive K5	50 ml	83192158654



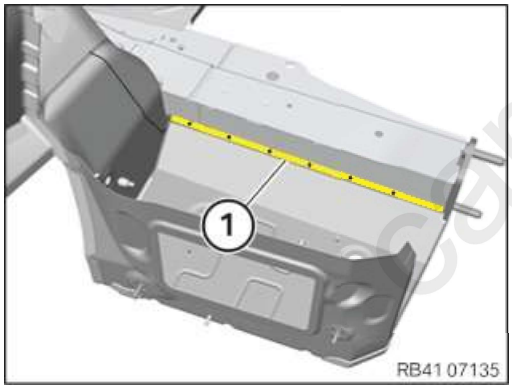
TECHNICAL INFORMATION

When installing the new part, make sure that all bonding surfaces have sufficient adhesive.

- Install the new part and rivet it in the areas (1) and (2) with blind rivets N3.

Expendable materials

Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421



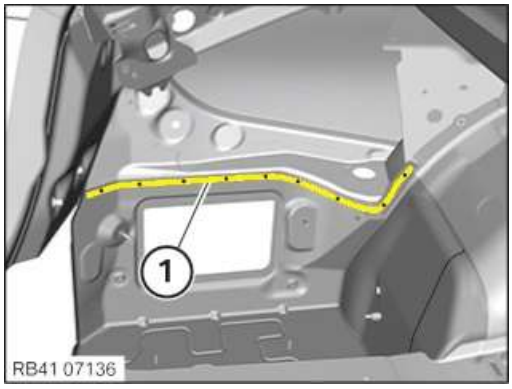
NOTICE

To provide a better overview: Side panel omitted for clarity.

- Rivet new parts in the areas (1) and (2) with blind rivets N3.

Expendable materials

Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421



- In area (1), rivet the new part with blind rivet N3.

Expendable materials

Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421

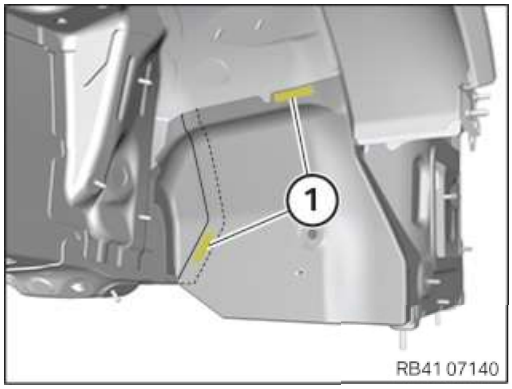
▷ **Install the EMC screw (EMC = electromagnetic compatibility)**

- After adhesive has fully hardened: Drill a hole with a diameter of 4.2 mm.
- Screw in the EMC screw.
- Seal the EMC screw with the sealant D1 .

Expendable materials

Sealant D1 (seam sealing)	310 ml	83422409985

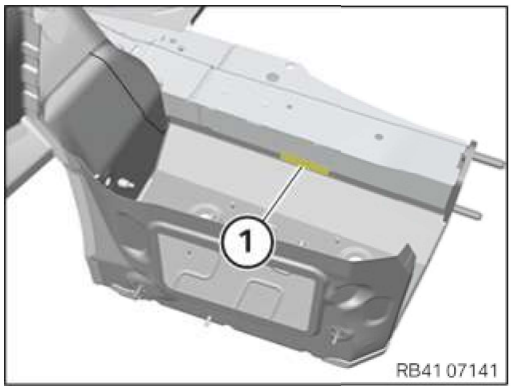
◁



- After the adhesive hardens, install two EMC screws in areas (1) .

Expendable materials

Screw EMC screw, SF Plus, M5x15		83190301639



NOTICE

To provide a better overview: Side panel omitted for clarity.

- After the adhesive has hardened in area (1), install an electromagnetic compatibility screw.

Expendable materials

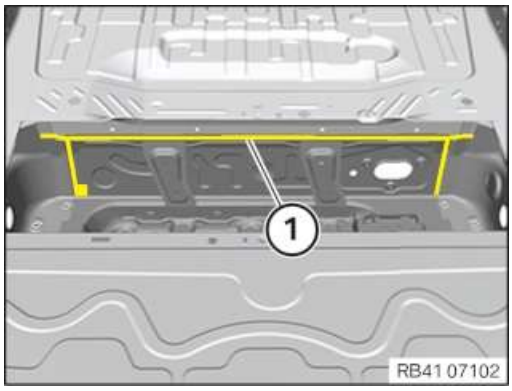
Screw EMC screw, SF Plus, M5x15		83190301639

▶ **Installing centre luggage compartment floor**

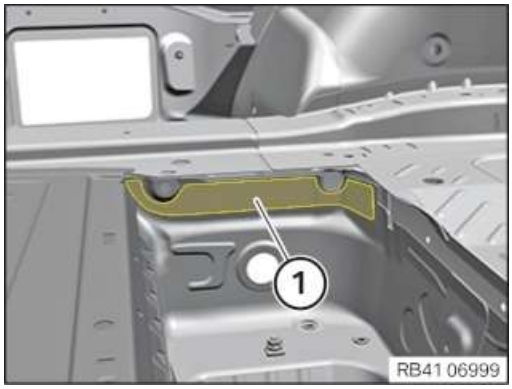
TECHNICAL INFORMATION

Use only approved spot-welding apparatus for repair.
For additional information see: 41 00 ... Workshop equipment

- Install new parts and secure.
- Weld the new parts in the area (1).



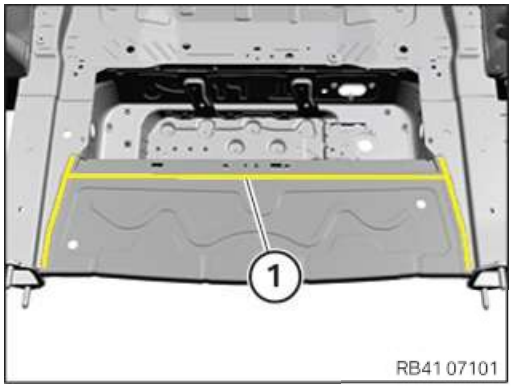
cardiag.com



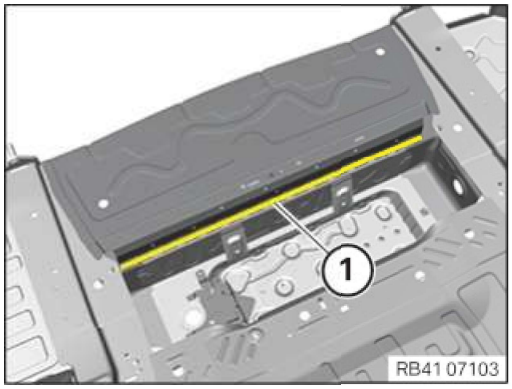
NOTICE

Perform the operations on the left and right side.

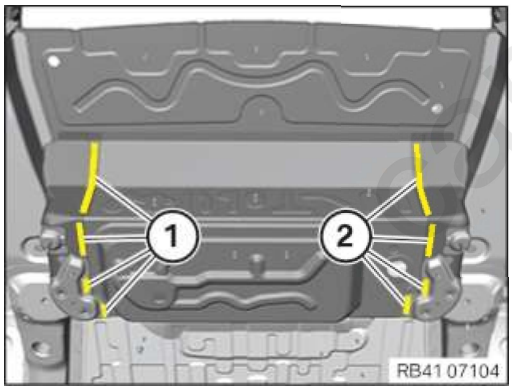
- Weld the new parts in the area (1).



- Weld the new parts in the area (1).



- Weld the new parts in the area (1).



- Weld the new parts in areas (1) and (2).

Additional Information

Links

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... BMW/MINI bonding instructions	3
41 00 ... Workshop equipment (BMW and MINI vehicles)	4
41 00 ... Repair techniques, repair stage 3	

41 12 701 Replacing the luggage compartment floor and right-hand side member

Prerequisite

- Tail panel has been removed.

  Vehicle is fixed on straightening bench.

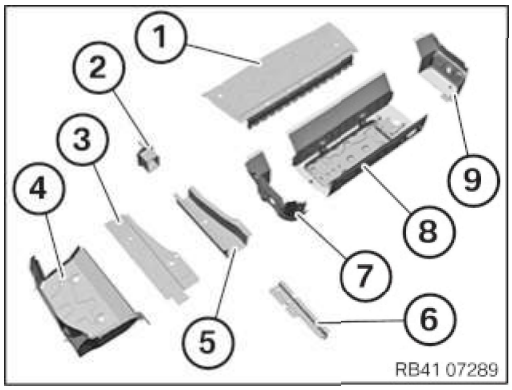
TECHNICAL INFORMATION

- Observe the procedure for repair stage 3.

For additional information see: 41 00 ... Repair method for repair stage 3

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

1 – Supplying the new parts required



- Supply the following new parts (see Electronic Parts Catalogue EPC):

  Rear luggage compartment floor(1)

  Panel for rear bumper (2)

  Extension of rear top side member (3)

  Side section of luggage compartment floor (4)

  Extension of rear bottom side member (5)

  reinforce., side member(6)

  Luggage compartment well, right(7)

  Luggage compartment well(8)

  Luggage compartment well, left(9)

TECHNICAL INFORMATION

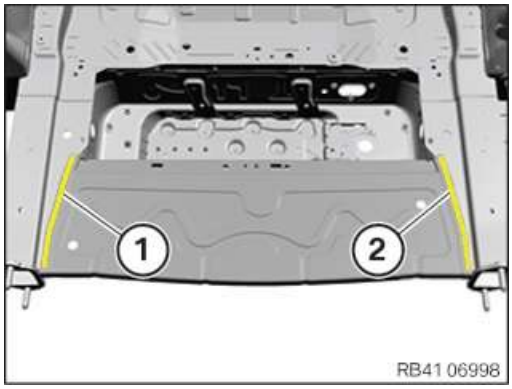
For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

- Supply the following consumables:

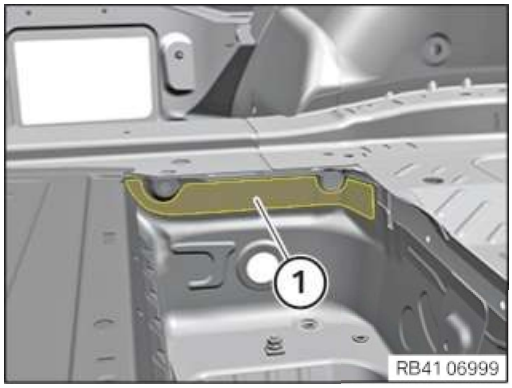
Material	Quantity
Coarse thread bolt	25
Threaded weld bolt	5
Sealant D1	1
Cavity sealing wax remover	

2 – Removing the luggage compartment floor and right-hand side member

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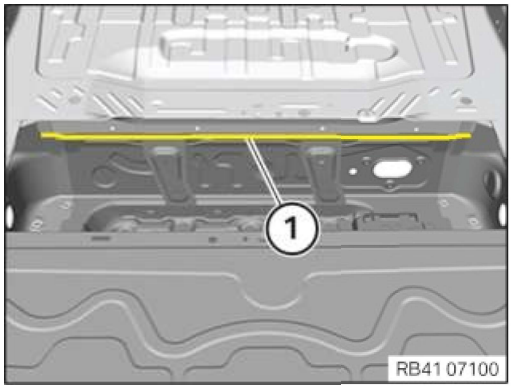
- Open welded connections in areas (1) and (2).



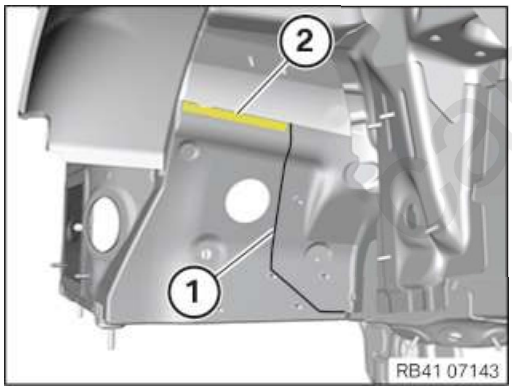
NOTICE

Perform the operations on the left and right side.

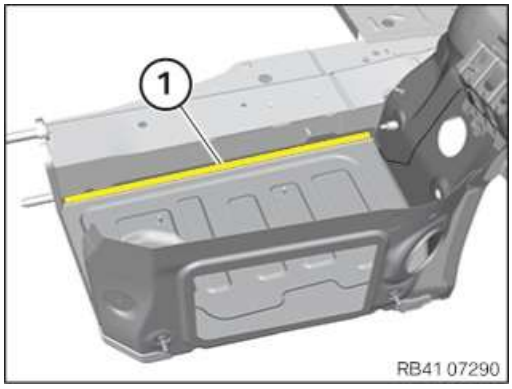
- Open welded connections in area (1).



- Open welded connections in area (1) and remove the support .



- Make the separating cut (1) according to the schematic diagram.
- Open welded connections in area (2).

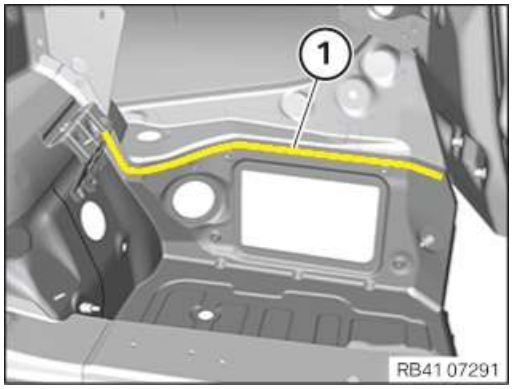


NOTICE

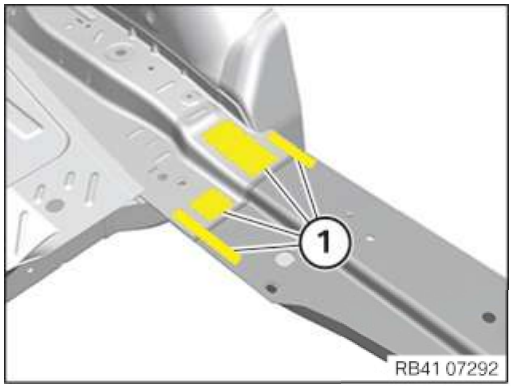
To provide a better overview: Side panel omitted for clarity.

- Open welded connections in area (1).

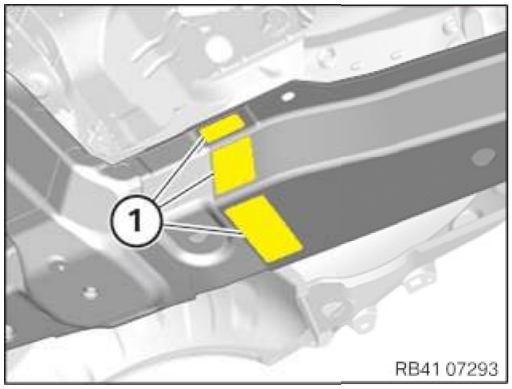
autodiagn.com



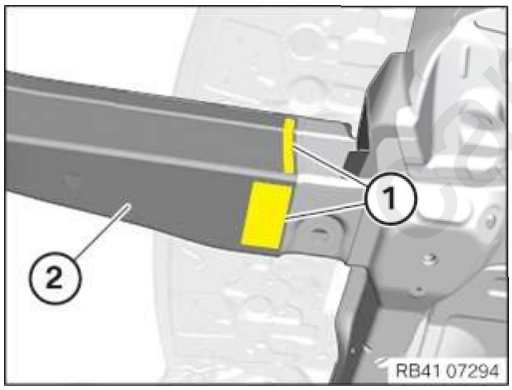
- Open welded connections in area (1) and remove the support .



- Release welded connections in areas (1).



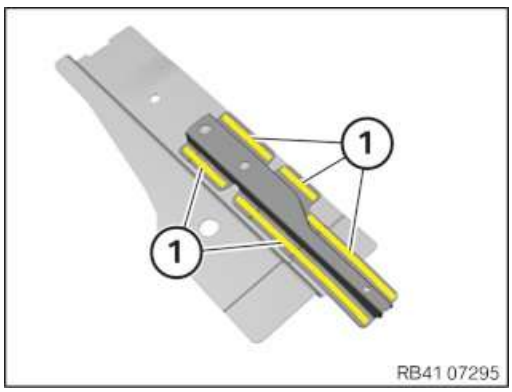
- Release welded connections in areas (1).



- Release the welded connections in areas (1) and remove the side member (2).

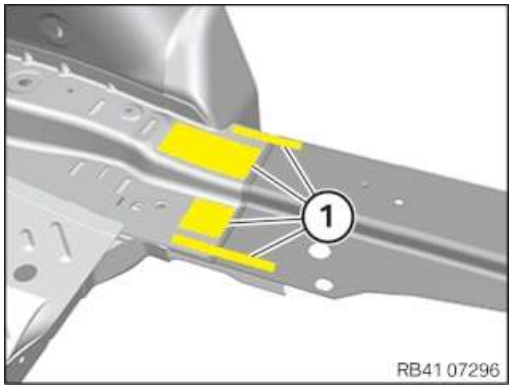
3 – Preparing new parts

▸ **Preparing the new part, right side member**

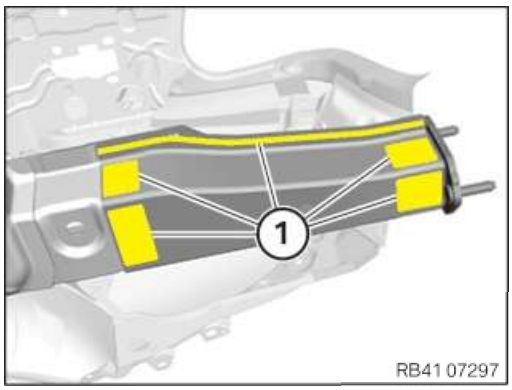


- Position new parts and prepare them for joining by welding in areas (1).

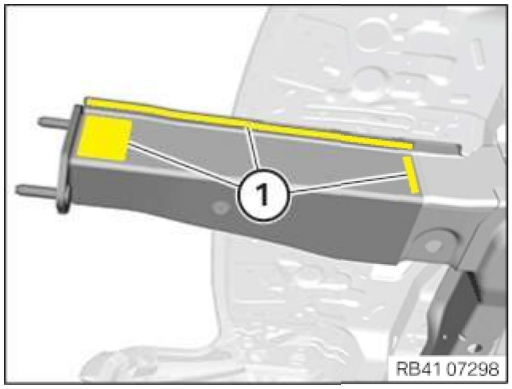
cardiagn.com



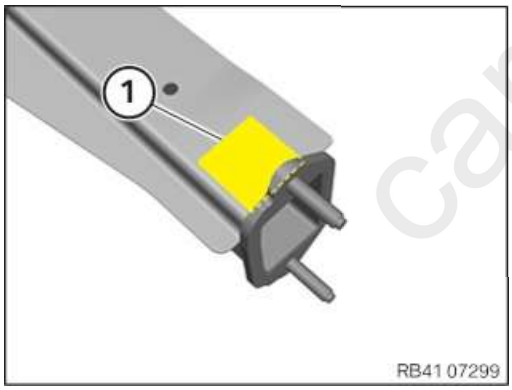
- Adjust new parts to fit with alignment bracket or universal mount and secure.
- Prepare the new parts in the areas (1) for joining by welding.



- Insert new parts and prepare for joining by welding in areas (1).

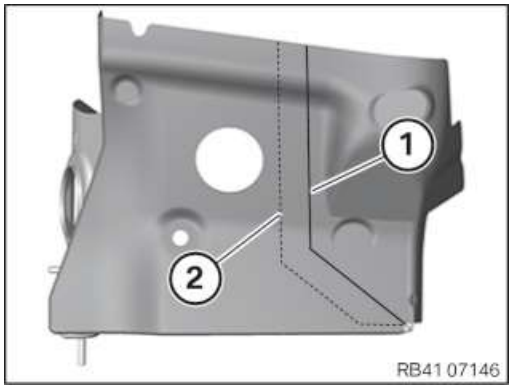


- Prepare the new parts in the areas (1) for joining by welding.



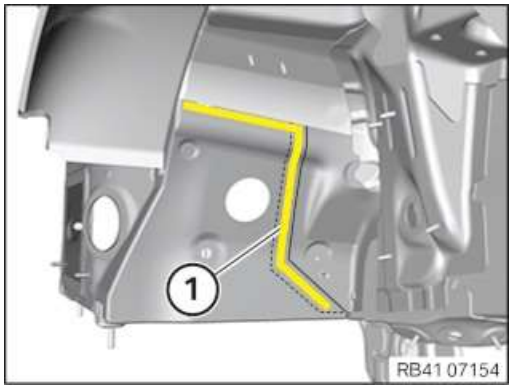
- Prepare the new parts for joining by welding in the area (1).

▸ **Preparing the new part, right luggage compartment floor**

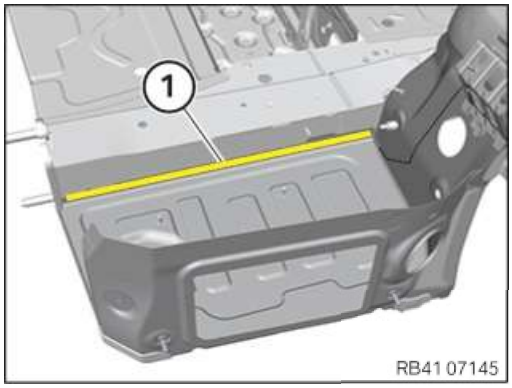


- Mark and carry out separating cut (1) on new part as per separating cut (2) on vehicle +20 mm material allowance.

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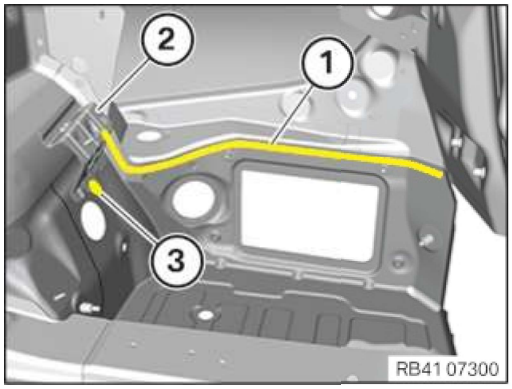
- Adjust the new part in conjunction with tail panel and secure.
- Prepare area (1) for joining by welding.



NOTICE

To provide a better overview: Side panel omitted for clarity.

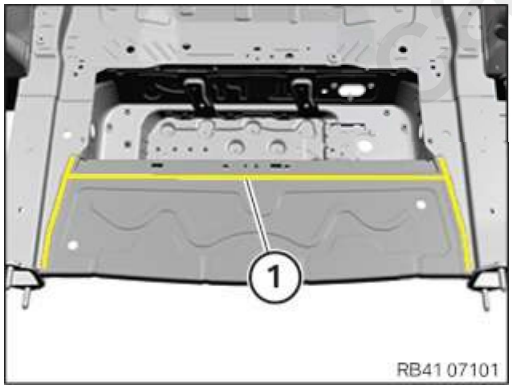
- Prepare area (1) for joining by welding.

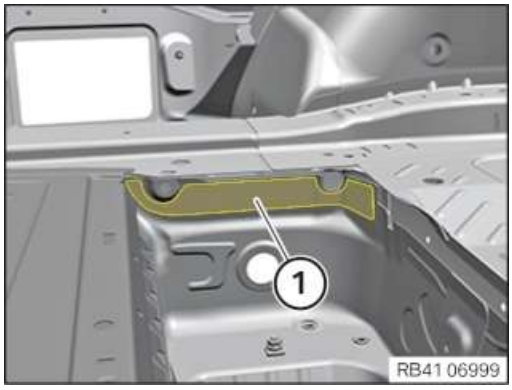


- Prepare area (1) for joining by welding.
- Fit holder (2) and prepare for joining by means of welding in area (3).

▸ **Prepare new part, middle luggage compartment floor**

- Adjust the new parts in combination with the tail panel to fit and secure.
- Prepare areas (1) for joining by welding.



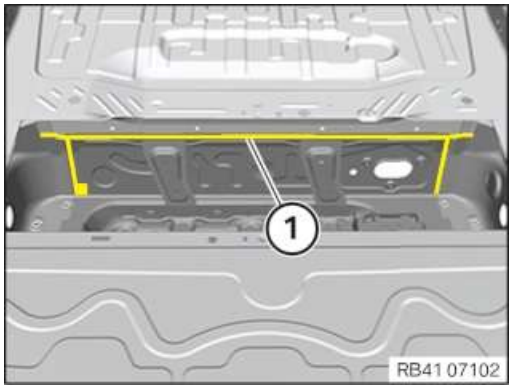


NOTICE

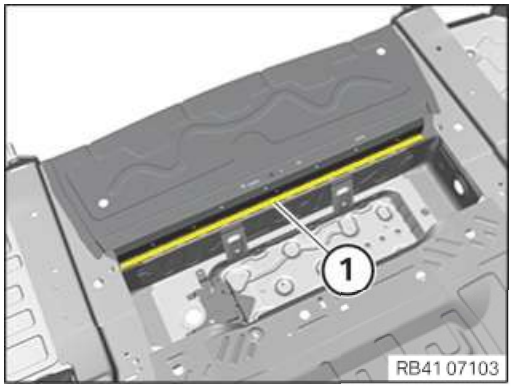
Perform the operations on the left and right side.

- Prepare areas (1) for joining by welding.

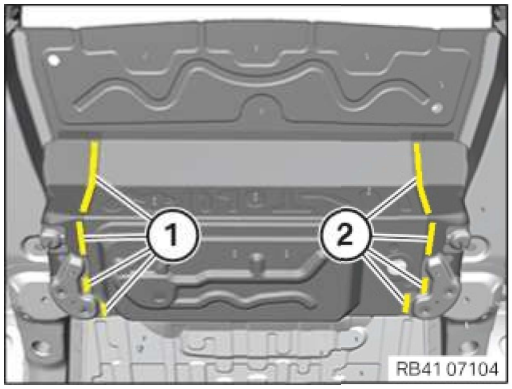
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- Prepare areas (1) for joining by welding.



- Prepare areas (1) for joining by welding.

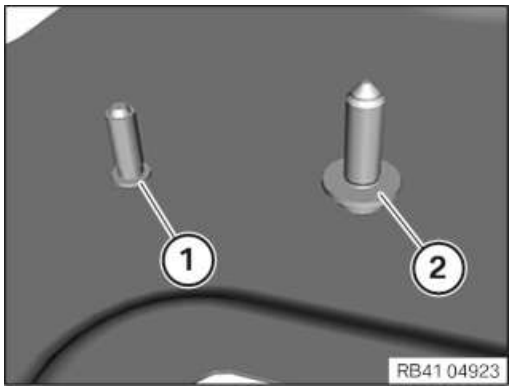


- Prepare areas (1) and (2) for joining by welding.

▸ Renewing the coarse thread bolt and threaded weld bolt

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



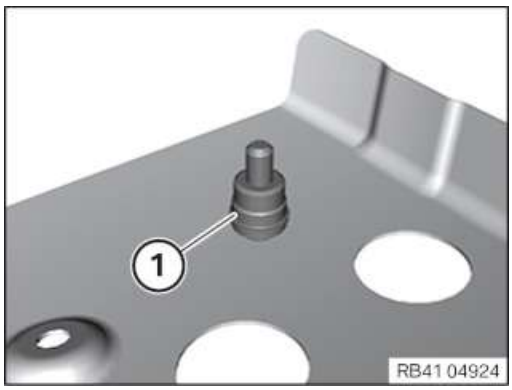
- Take the quantity and position from the component to be replaced.
- Weld the coarse thread bolt (1) and the threaded weld bolt (2) onto the new part.

▸ Earth pin

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NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



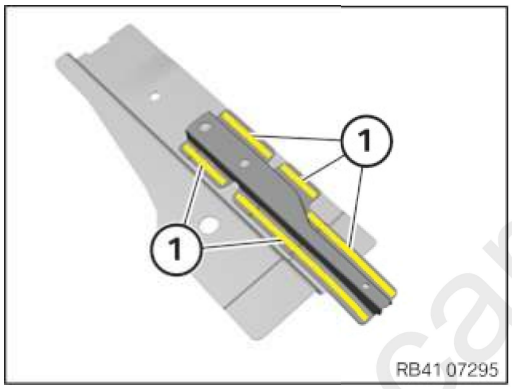
- Check the ground pins (1) for stability and renew where required.

4 – Install new parts

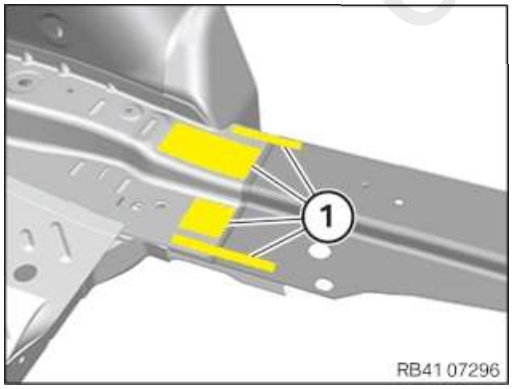
▸ **Installing the right side member**

TECHNICAL INFORMATION

Use only approved spot-welding apparatus for repair.
For additional information see: 41 00 ... Workshop equipment

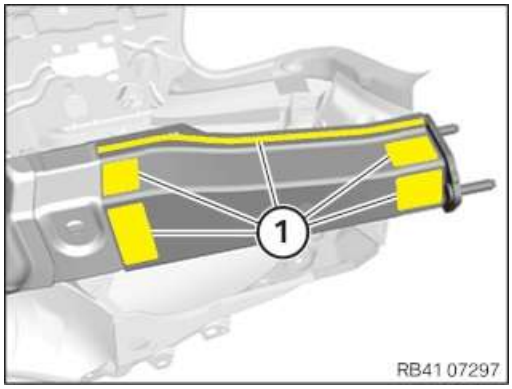


- Weld new part in the area(1).

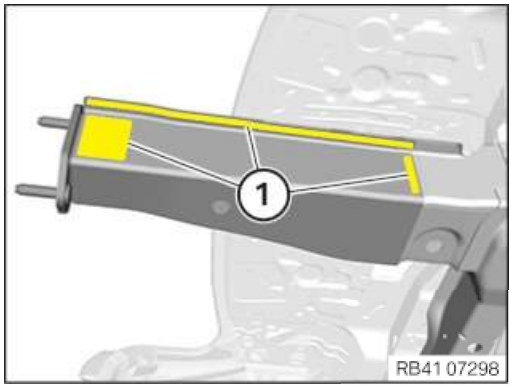


- Adjust new parts to fit with alignment bracket or universal mount and secure.
- Weld new part in the area(1).

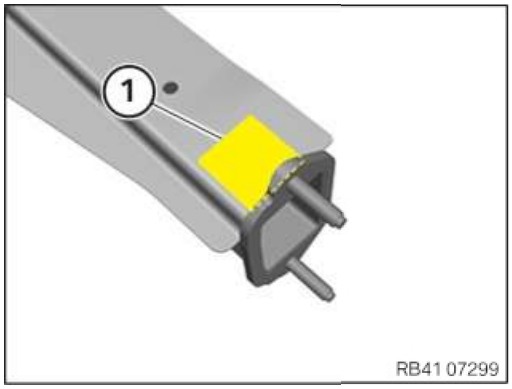
cardiagn.com



- Weld new part in the area(1).



- Weld new part in the area(1).

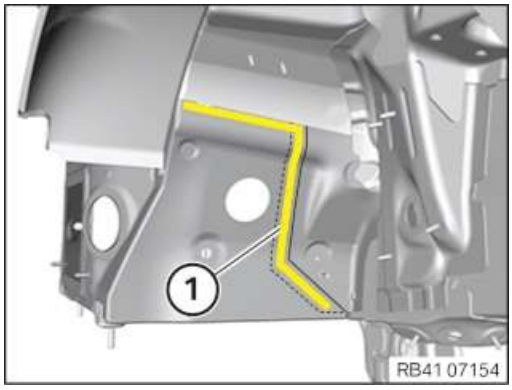


- Weld the new parts in the area (1).

▸ **Install the luggage compartment floor on the right**

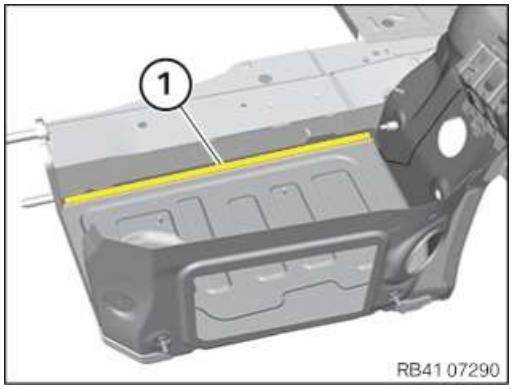
TECHNICAL INFORMATION

Use only approved spot-welding apparatus for repair.
For additional information see: 41 00 ... Workshop equipment



- Install new part and weld in the area (1).

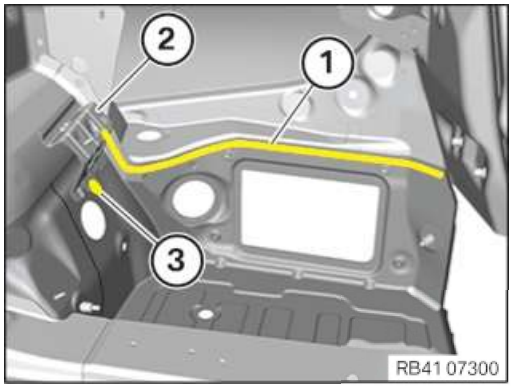
cardiagn.com



NOTICE

To provide a better overview: Side panel omitted for clarity.

- Weld the new part in the area (1).



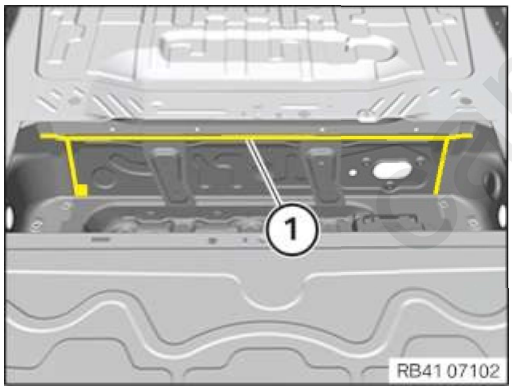
- Weld the new part in the area (1).
- Install holder (2)and weld in area (3).

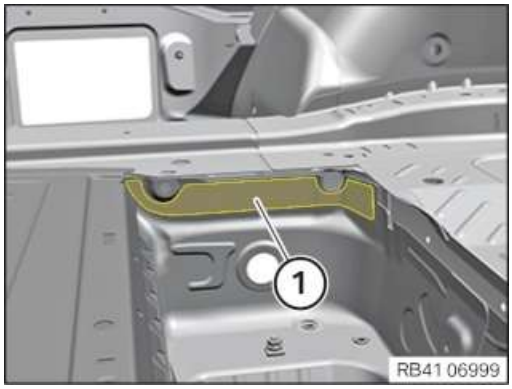
▸ **Installing centre luggage compartment floor**

TECHNICAL INFORMATION

Use only approved spot-welding apparatus for repair.
For additional information see: 41 00 ... Workshop equipment

- Install new parts and secure.
- Weld the new parts in the area (1).



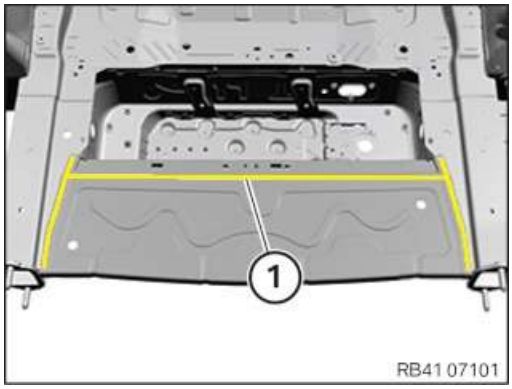


NOTICE

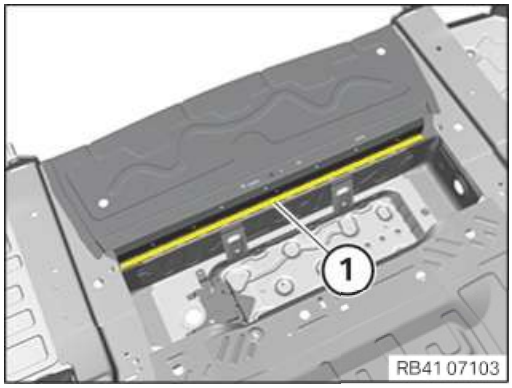
Perform the operations on the left and right side.

- Weld the new parts in the area (1).

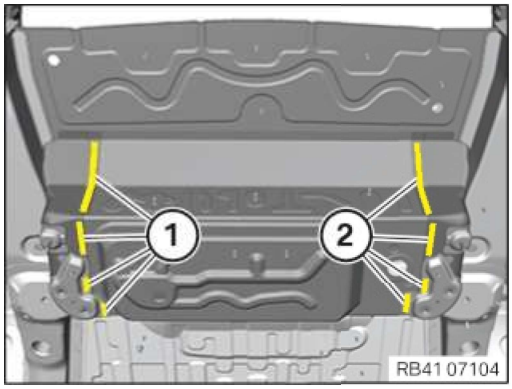
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- Weld the new parts in the area (1).



- Weld the new parts in the area (1).



- Weld the new parts in areas (1) and (2).

Additional Information

Links

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... Workshop equipment (BMW and MINI vehicles)	4
41 00 ... Repair techniques, repair stage 3	

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41 12 191 Replacing the right luggage compartment floor

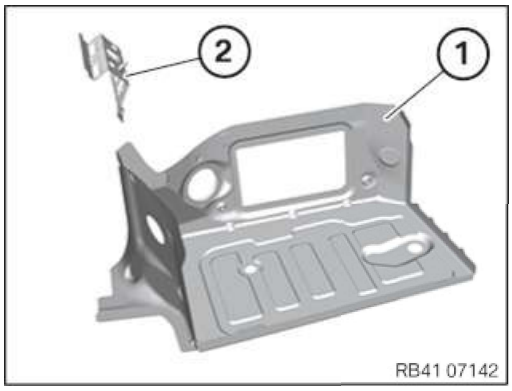
TECHNICAL INFORMATION

- Observe the procedure for repair stage 2.

For additional information see: 41 00 ... Repair method for repair stage 2

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

1 – New parts required



- Supply the following new parts (see Electronic Parts Catalogue EPC):

  Luggage compartment floor, right(1)

  Holder for power distribution box(2)

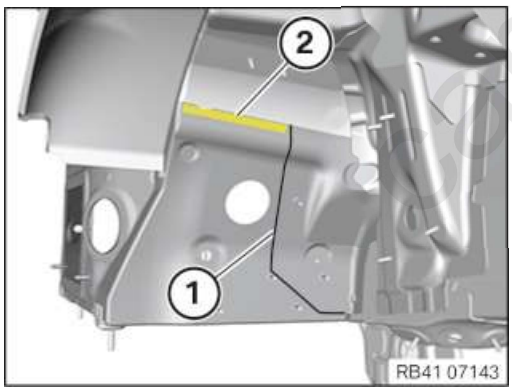
TECHNICAL INFORMATION

For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

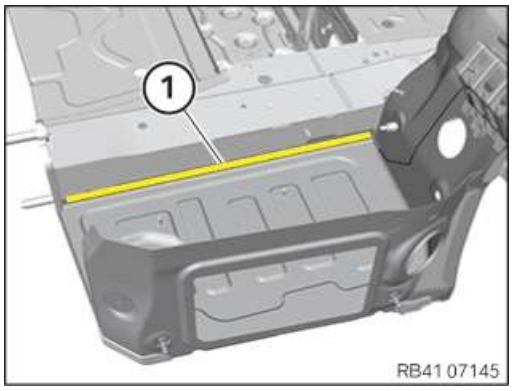
- Supply the following consumables:

Material	Quantity
Coarse thread bolt	10
Threaded weld bolt	5
Sealant D1	

2 – Remove the luggage compartment floor, right



- Make the separating cut (1) according to the schematic diagram.
- Open welded connections in area (2).

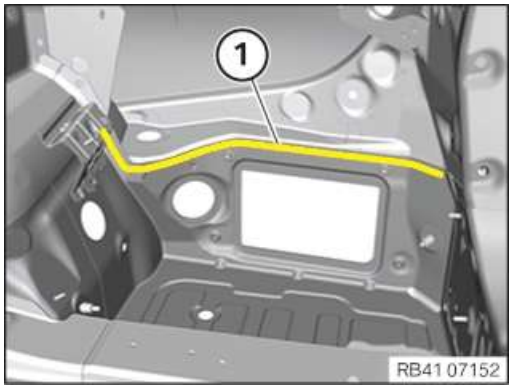


NOTICE

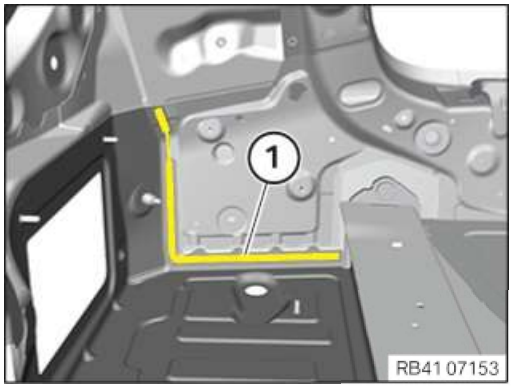
To provide a better overview: Shown without side panel and without tail panel.

- Open welded connections in area (1).

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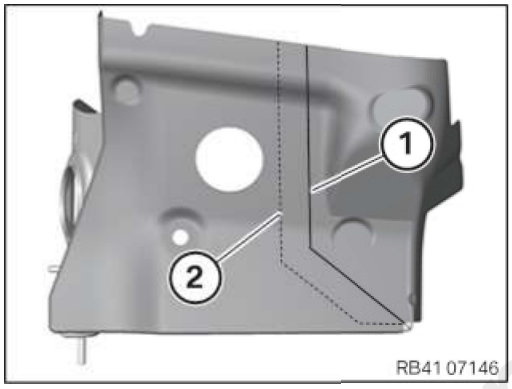


- Open welded connections in area (1).

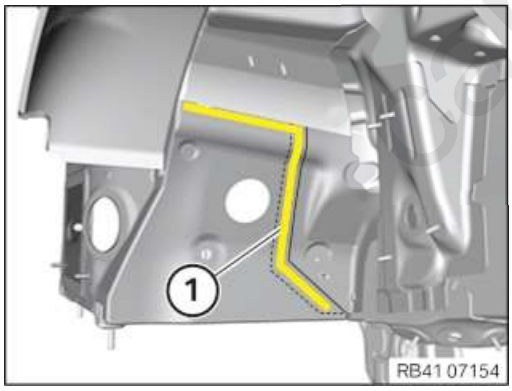


- Open welded connections in area (1) and remove the support .

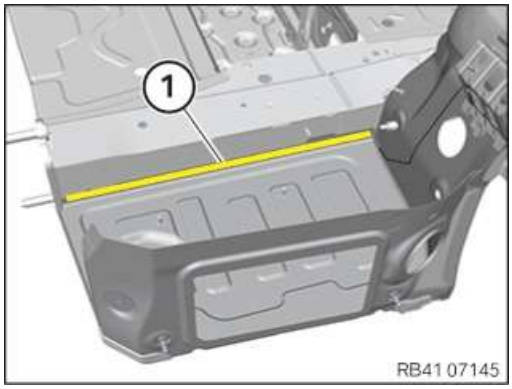
3 – Prepare new part



- Mark and carry out separating cut (1) on new part as per separating cut (2) on vehicle +20 mm material allowance.



- Adjust new part to fit and secure.
- Prepare area (1) for joining by welding.

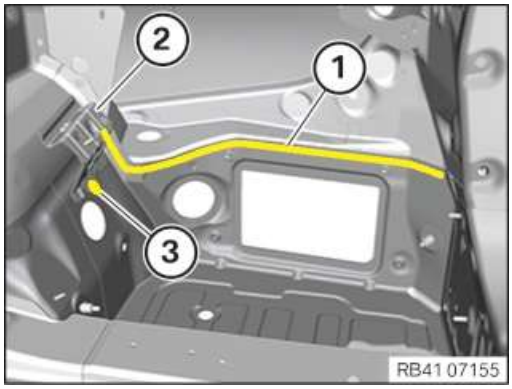


NOTICE

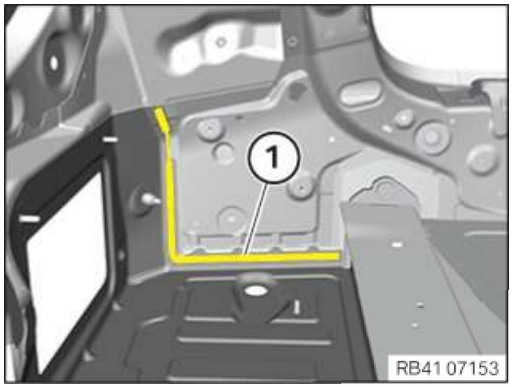
To provide a better overview: Shown without side panel and without tail panel.

- Prepare area (1) for joining by welding.

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- Prepare area (1) for joining by welding.
- Fit holder (2) and prepare for joining by means of welding in area (3).

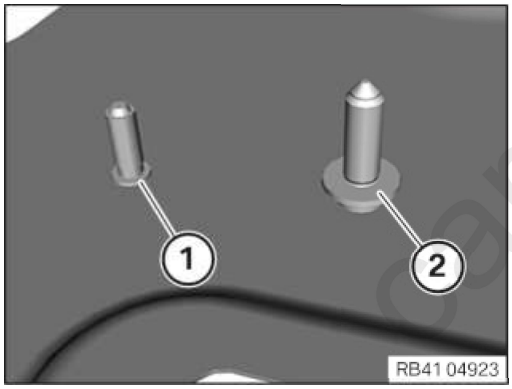


- Prepare area (1) for joining by welding.

▸ **Renewing the coarse thread bolt and threaded weld bolt**

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



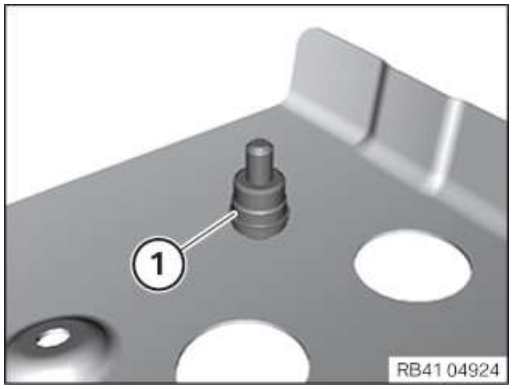
- Take the quantity and position from the component to be replaced.
- Weld the coarse thread bolt (1) and the threaded weld bolt (2) onto the new part.

▸ **Earth pin**

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

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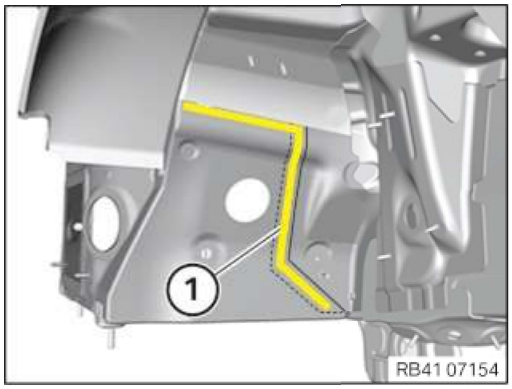


- Check the ground pins (1) for stability and renew where required.

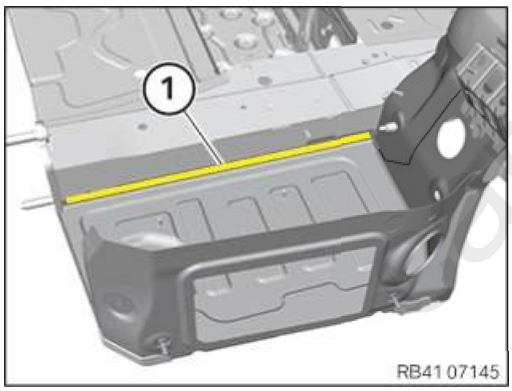
4 – Install the luggage compartment floor on the right

TECHNICAL INFORMATION

Use only approved spot-welding apparatus for repair.
For additional information see: 41 00 ... Workshop equipment



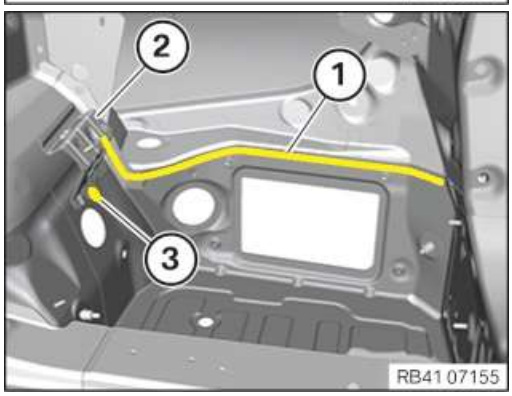
- Install new part and weld in the area (1).



NOTICE

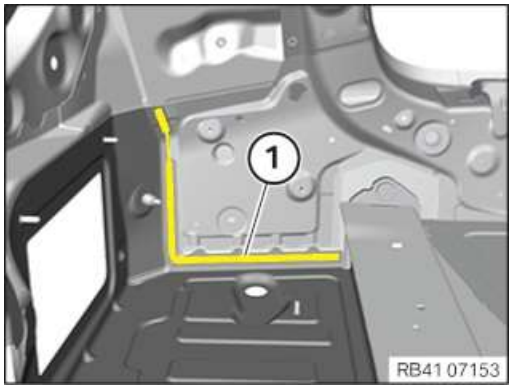
To provide a better overview: Shown without side panel and without tail panel.

- Weld the new part in the area (1).



- Weld the new part in the area (1).
- Install holder (2)and weld in area (3).

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- Weld the new part in the area (1).

Additional Information

Links

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... Workshop equipment (BMW and MINI vehicles)	4
41 00 ... Repair techniques, repair stage 2	

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41 12 654 Replacing the right luggage compartment floor

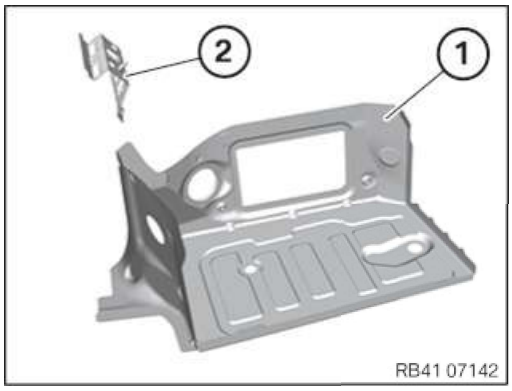
TECHNICAL INFORMATION

- Observe the procedure for repair stage 2.

For additional information see: 41 00 ... Repair method for repair stage 2

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

1 – New parts required



- Supply the following new parts (see Electronic Parts Catalogue EPC):

  Luggage compartment floor, right(1)

  Holder for power distribution box(2)

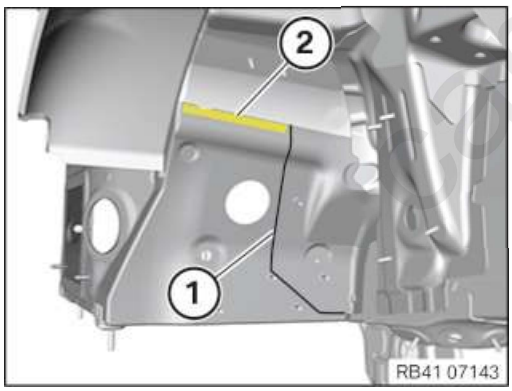
TECHNICAL INFORMATION

For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

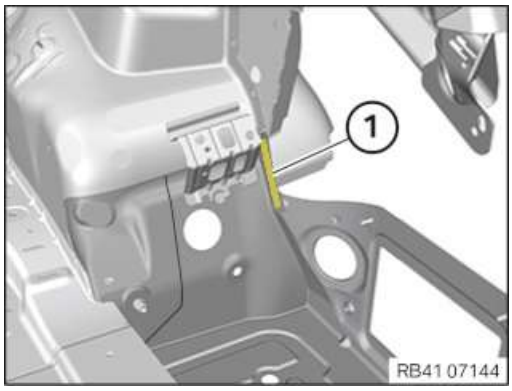
- Supply the following consumables:

Material	Quantity
Coarse thread bolt	10
Threaded weld bolt	5
Sealant D1	

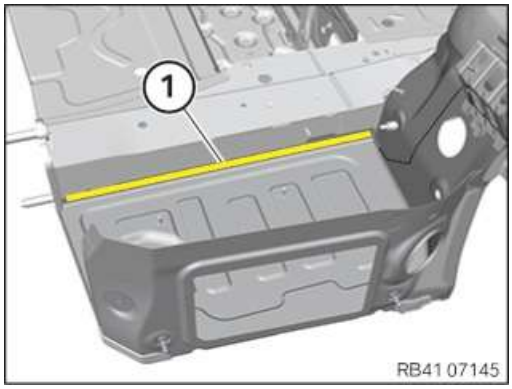
2 – Remove the luggage compartment floor, right



- Make the separating cut (1) according to the schematic diagram.
- Open welded connections in area (2).

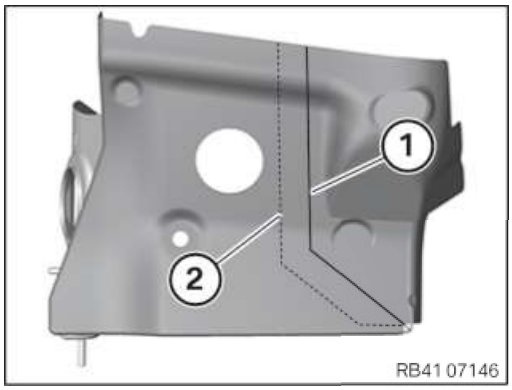


- Open welded connections in area (1).

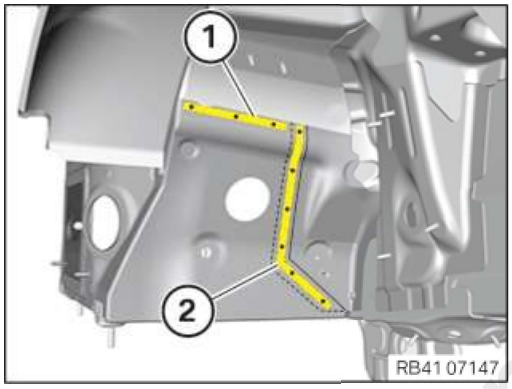


- Open welded connections in area (1) and remove the support .

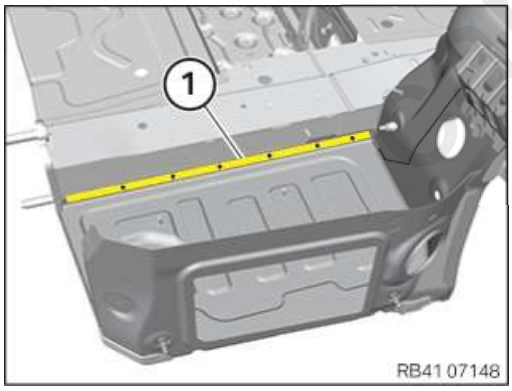
3 – Prepare new part



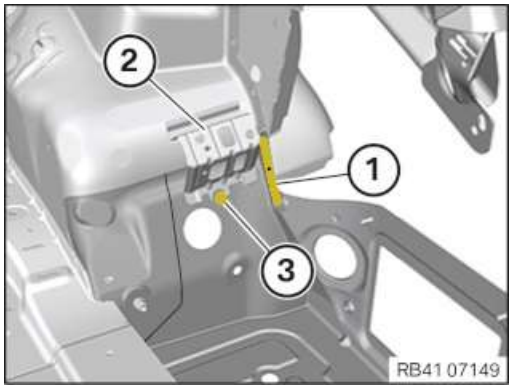
- Mark and carry out separating cut (1) on new part as per separating cut (2) on vehicle +20 mm material allowance.



- Adjust the luggage compartment floor and secure.
- Prepare for joining by welding in areas (1) and (2).



- Prepare area (1) for joining by welding.

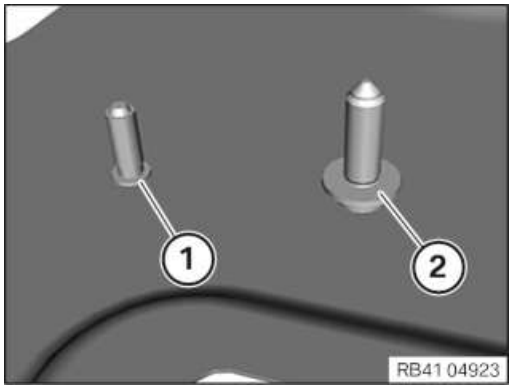


- Prepare area (1) for joining by welding.
- Insert holder (2) and prepare for joining by welding in area (3).
- Remove new component. Deburr bore holes.

► **Renewing the coarse thread bolt and threaded weld bolt**

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

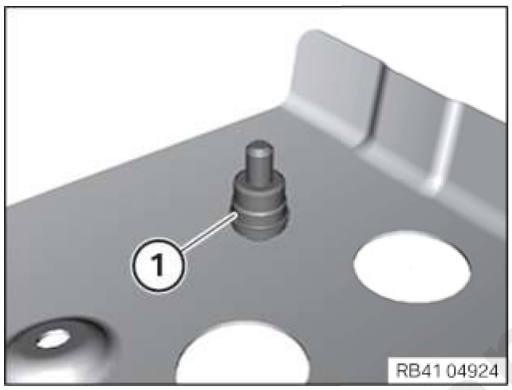


- Take the quantity and position from the component to be replaced.
- Weld the coarse thread bolt (1) and the threaded weld bolt (2) onto the new part.

▸ **Earth pin**

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

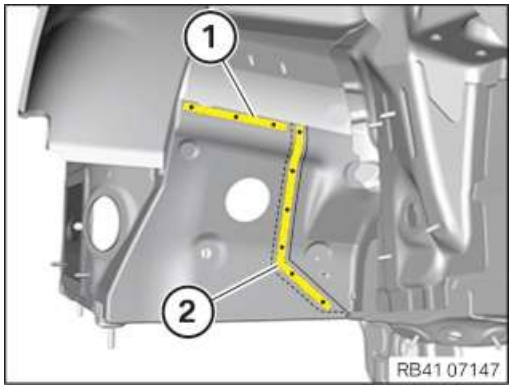


- Check the ground pins (1) for stability and renew where required.

4 – Install the luggage compartment floor on the right

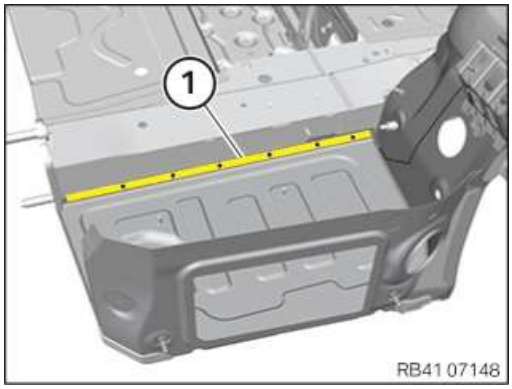
TECHNICAL INFORMATION

Use only approved spot-welding apparatus for repair.
For additional information see: 41 00 ... Workshop equipment

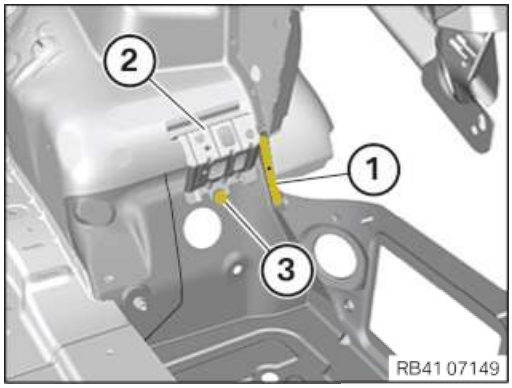


- Install new part and weld in the areas (1) and (2).

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- Weld the new part in the area (1).



- Weld the new part in the area (1).
- Install holder (2)and weld in area (3).

Additional Information

Links

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... Repair techniques, repair stage 2	

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41 ... 0 Notes on the repair technique used in the main group 41

Two different repair techniques are used in body repair.

These are welding and bonding/riveting.

If the repair instructions do not specify a repair technique, then welding must **always** be used.

The bonding/riveting repair technique is **always** described in detail in the repair instructions.

Quality standards must be met.

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41 14 502 Replace rear outer wheel arch section with left reinforcement

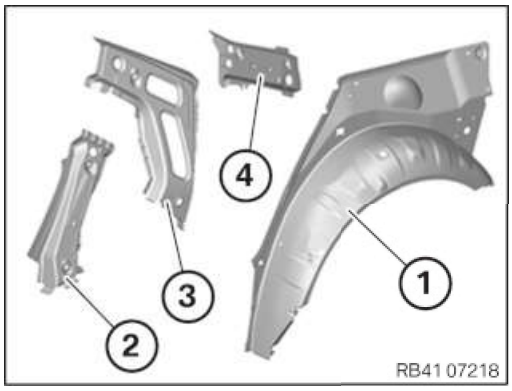
TECHNICAL INFORMATION

- Observe the procedure for repair stage 3.

For additional information see: 41 00 ... Repair method for repair stage 3

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

1 – Supplying the new parts required



- Supply the following new parts (see Electronic Parts Catalogue EPC):

  Outer wheel arch section (1)

  C-pillar support (2)

  C-pillar reinforcement(3)

  Tensioning strap, wheel arch (4)

  Shaped part, C-pillar inner

  Lower C-pillar shaped part

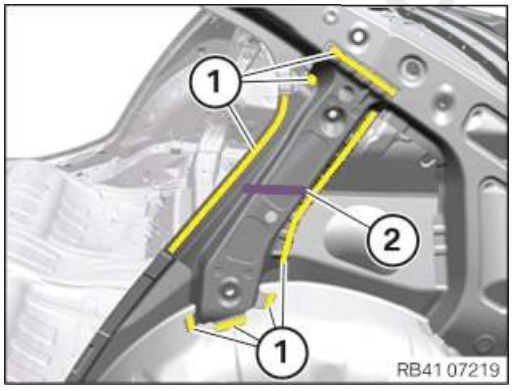
TECHNICAL INFORMATION

For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

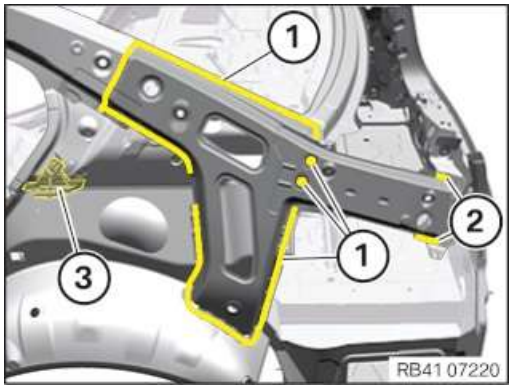
- Supply the following consumables:

Material	Quantity
Coarse thread bolt	10
Sealant D1	1
Cavity sealing wax remover	

2 – Remove outer wheel arch section with reinforcement

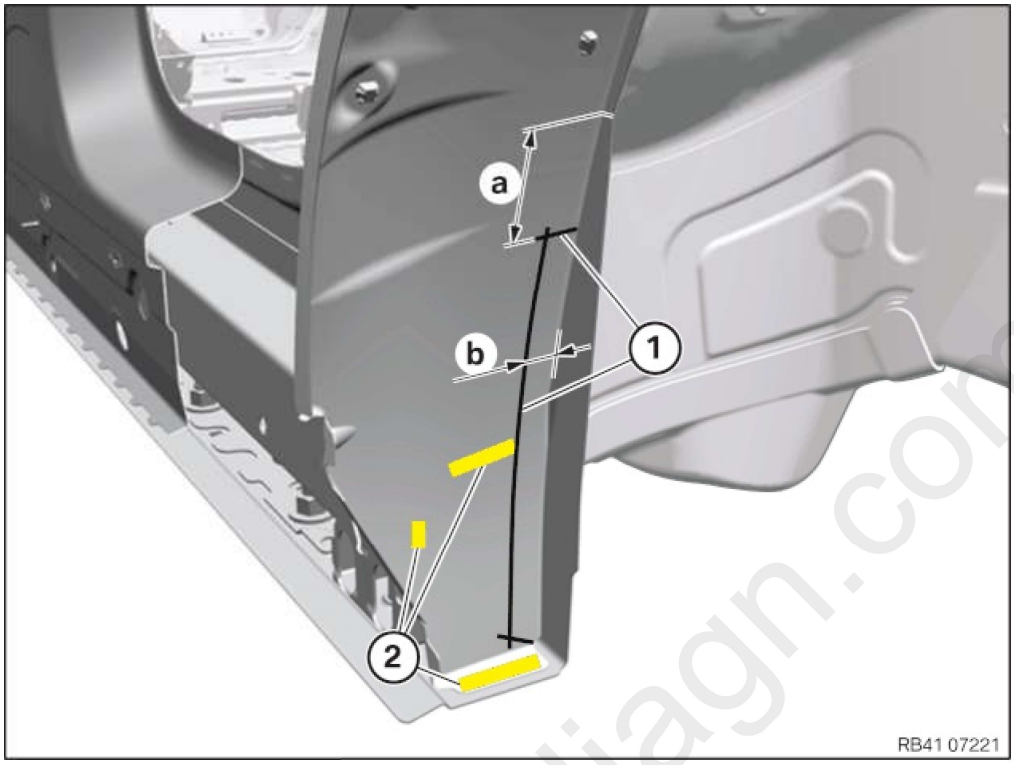


- Release welded connections in areas (1).
- Release the C-pillar support from the cavity sealing (2) and remove.



- Open welded connections in areas (1) and (2).

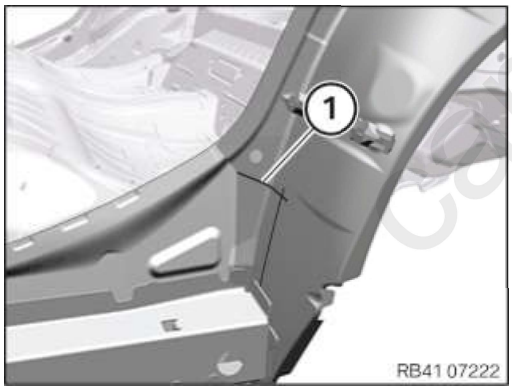
  Remove reinforcement on C-pillar.
- Remove the outer cavity sealing (3).



- Mark separating cuts (1) according to the specified dimensions a and b and carry out.

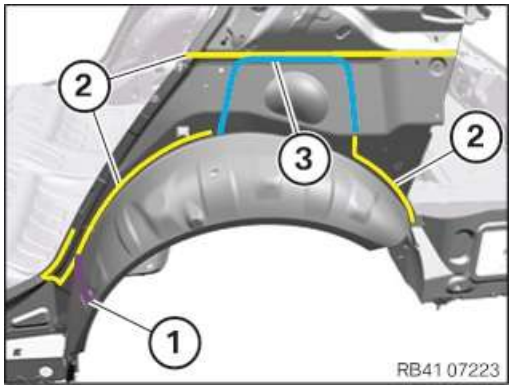
  Dimension a = 60 mm..

  Dimension b = 20 mm.
- Release welded connections in areas (2).



- Continue with the separating cut (1) from the previous operation as shown.

  Thereby disconnect only the outer panel.



- Remove cavity sealing (1).
- Release welded connections in areas (2).

TECHNICAL INFORMATION

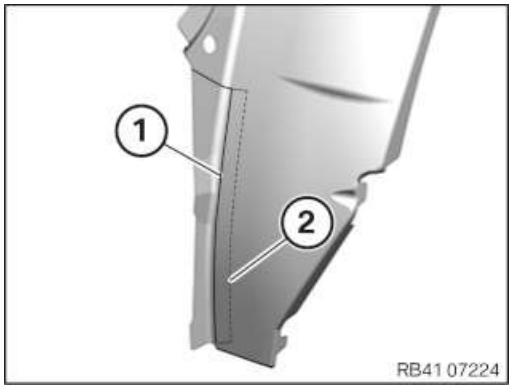
For more information see: 41 00 ... Releasing bonded connections

- Release the spot-welded adhesive joints in area (3).
- Remove outer section of wheel arch.

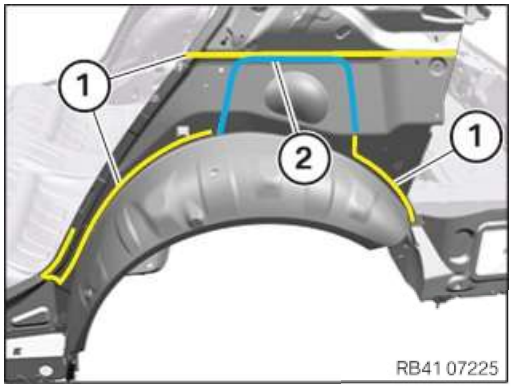
3 – Prepare new part

- Remove adhesive residue on the vehicle flange surfaces.

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- Mark and carry out a separating cut (1) on the outer wheel arch section according to the separating cut (2) on the vehicle with a material allowance of 15 mm.



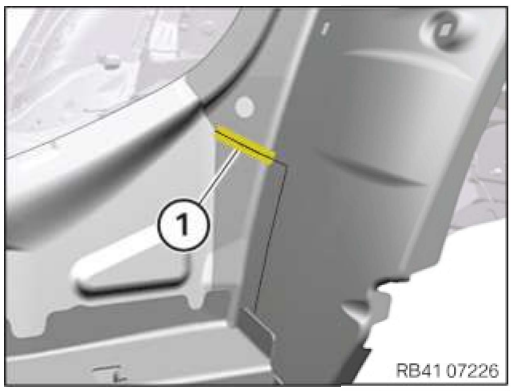
- Adjust the new outer wheel arch section together with the side panel.

  Prepare the new part in areas (1) and (2) for joining by welding.

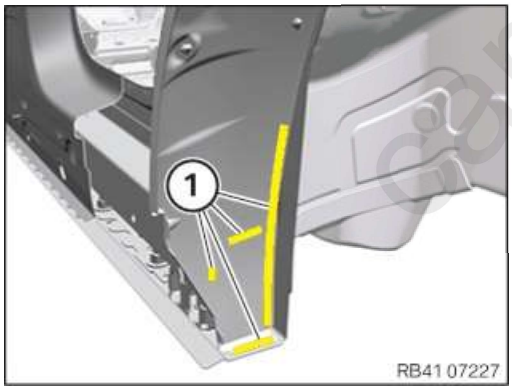
TECHNICAL INFORMATION

For more information see: 41 00... Spot-weld bonding steel components

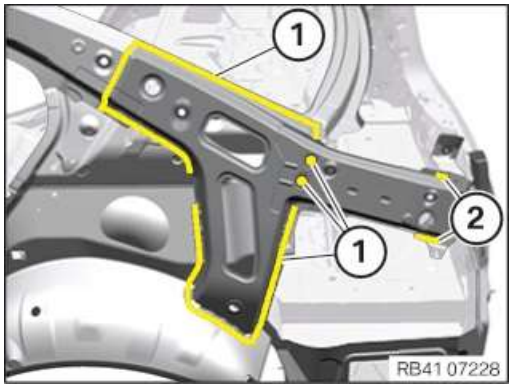
- In area (2), observe the procedure for the replacement of spot-welded adhesive joints for the standard production.



- Prepare area (1) of the separating cut for joining by welding.

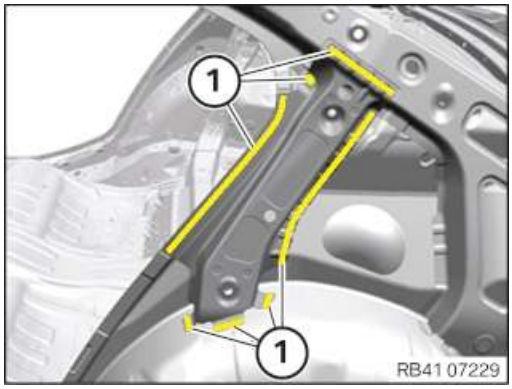


- Prepare areas (1) for joining by welding.



- Adjust new part C-pillar reinforcement .
- Prepare areas (1) and (2) for joining by welding.

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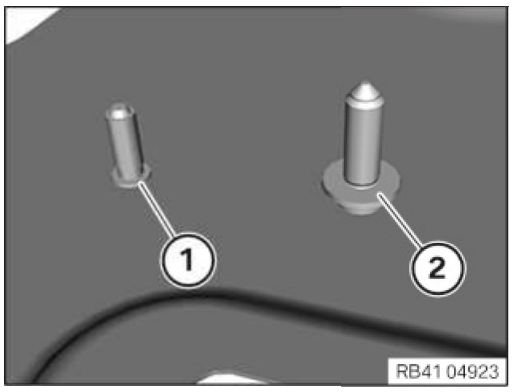


- Adjust new part C-pillar support and prepare in the areas (1) for joining by welding.

▸ **Renewing the coarse thread bolt and threaded weld bolt**

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

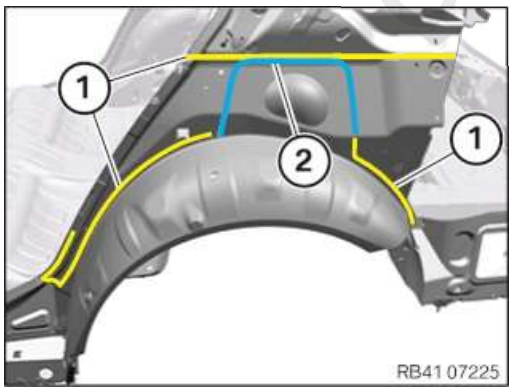


- Take the quantity and position from the component to be replaced.
- Weld the coarse thread bolt (1) and the threaded weld bolt (2) onto the new part.

4 – Install outer wheel arch section with reinforcement

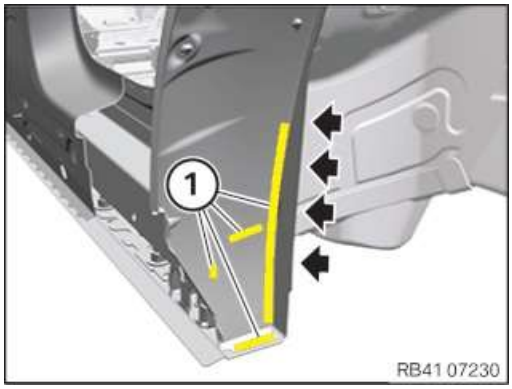
TECHNICAL INFORMATION

Use only approved spot-welding apparatus for repair.
For additional information see: 41 00 ... Workshop equipment



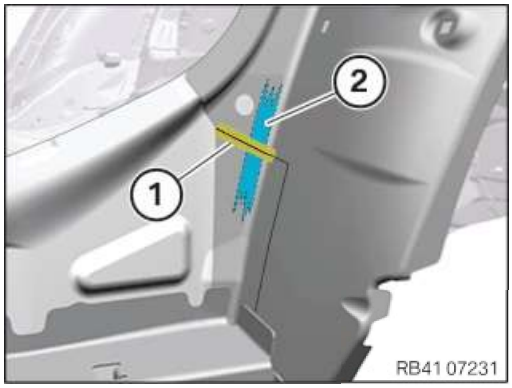
- Install the new outer wheel arch section part in areas (1) and (2) and weld it according to the new part preparation process.

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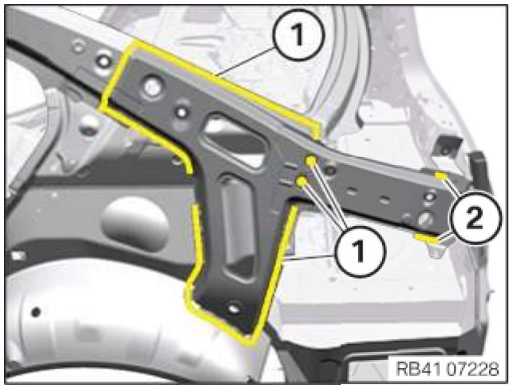
- Weld new part in the areas (1).

  In this process, avoid excessively high heat input in the adjacent adhesive area (arrows).

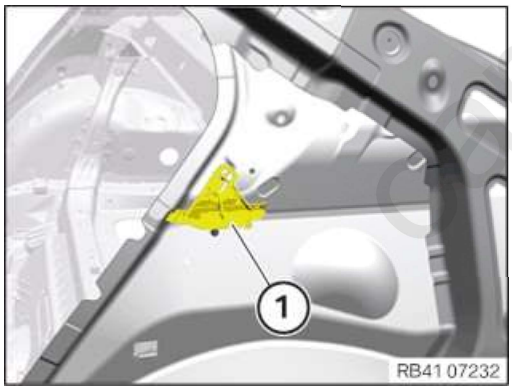


- Weld the new part in the area (1).

  Avoid applying too much heat to the adjacent adhesive area (2).



- Install new part and weld in the areas (1) and (2).



TECHNICAL INFORMATION

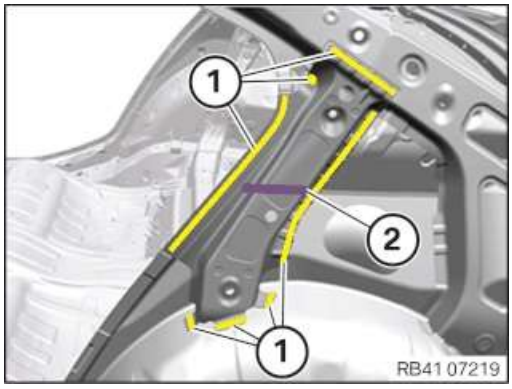
For more information see: 41 00 ... Installation of a cavity sealing (not expanding)

- Apply sealant D1 to cavity sealing (1).

  Install cavity sealing (1).

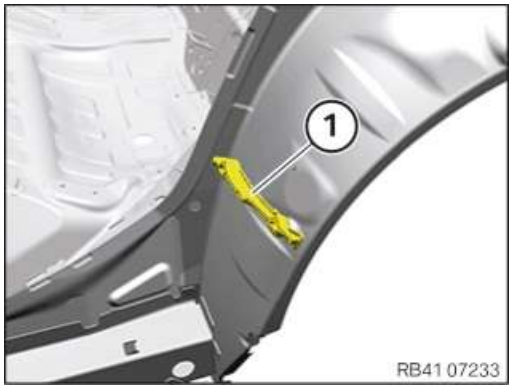
Expendable materials

Sealant D1 (seam sealing)	310 ml	83422409985



- Apply sealant D1 to cavity sealing (2).
- Install new part and weld in the areas (1).

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- Apply sealant D1 to cavity sealing (1).

  Install cavity sealing (1).

Additional Information

Links

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... Opening bonded connections	2
41 00 ... Spot-weld bonding steel components	3
41 00 ... BMW bonding instructions	3
41 00 ... Workshop equipment (BMW and MINI vehicles)	4
41 00 ... Repair techniques, repair stage 3	

Repair instructions	Used in step
41 00 ... Installing cavity sealing (not expanded)	4

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41 14 505 Replace the rear left outer wheel arch section

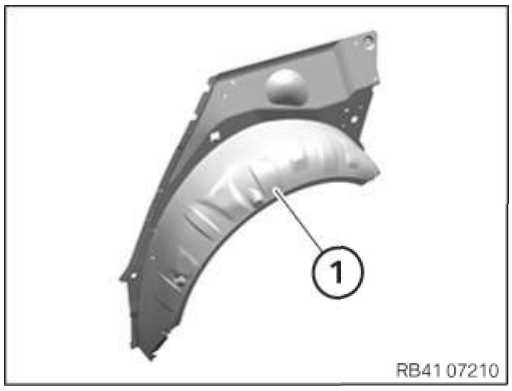
TECHNICAL INFORMATION

- Observe the procedure for repair stage 2.

For additional information see: 41 00 ... Repair method for repair stage 2

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

1 – New parts required



- Supply the following new parts (see Electronic Parts Catalogue EPC):

  Rear outer wheel arch section(1)

  Lower C-pillar shaped part

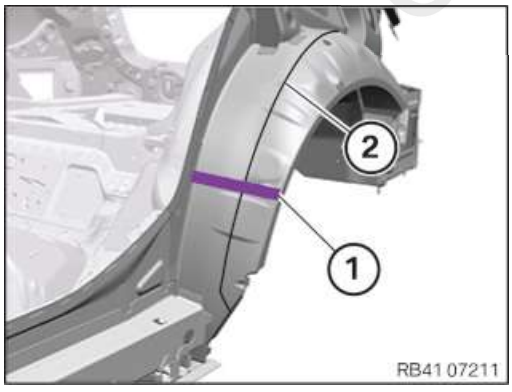
TECHNICAL INFORMATION

For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

- Supply the following consumables:

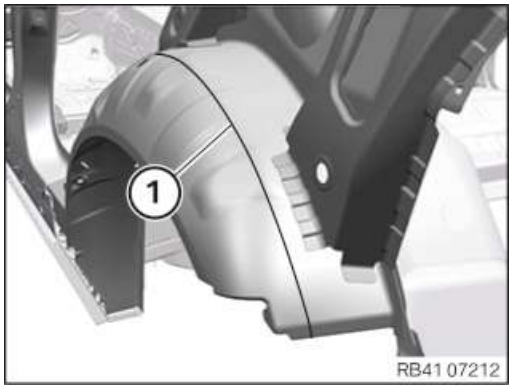
Material	Quantity
Adhesive K5 (50 ml)	1
Blind rivet N3	20
Coarse thread bolt	5
Cleaning agentR1	1
Cleaning agentR2	1
Sealant D1	
Cavity sealing wax remover	

2 – Removing the rear outer wheel arch section



- Remove cavity sealing(1).
- Mark and make the separating cut (2) as shown.

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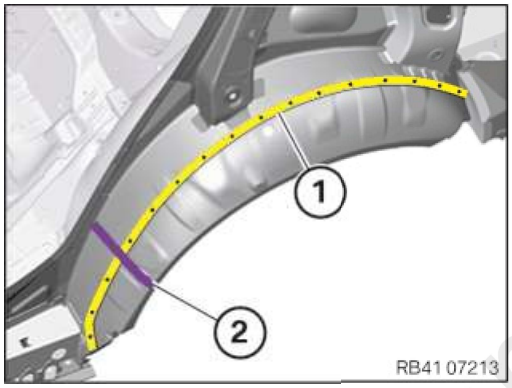
- Mark and make the separating cut (1) as shown.
- Remove the separated section of the outer wheel arch section.

3 – Prepare new part

TECHNICAL INFORMATION

Adhesive technology in the area of the outer skin (not for structural adhesion):
The bonding surfaces of the new parts may not sharpened or ground.
For additional information see: 41 00 ... BMW bonding instructions

- Mark and make the separating cut on the new part according to the separating cut on the vehicle with a material allowance of +20 mm.
- Prepare the joint areas for bonding with adhesive rivet technology.

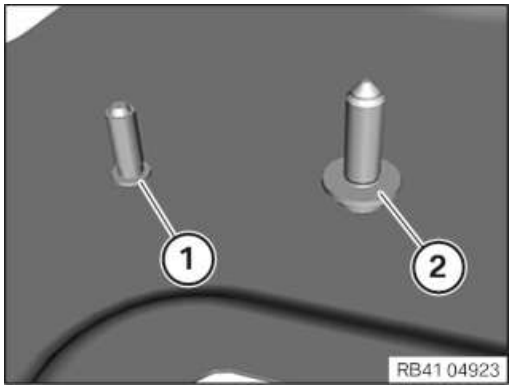


- Adjust the new part together with the side panel and fix in place.
- In the area of the bonding surface (1), drill 17 holes with Ø 4.2 mm for the blind rivets.

▸ **Renewing the coarse thread bolt and threaded weld bolt**

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Take the quantity and position from the component to be replaced.
- Weld the coarse thread bolt (1) and the threaded weld bolt (2) onto the new part.

4 – Installing the rear outer wheel arch section

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TECHNICAL INFORMATION

When installing the new part, make sure that all bonding surfaces have sufficient adhesive.

- Pre-clean the bonding surfaces at the new part and vehicle using R2 solvent cleaner.

Expendable materials

Cleaning agent R2	500 ml	83190417324

- Clean bonding surfaces on vehicle and on new part with cleaning agent R1.

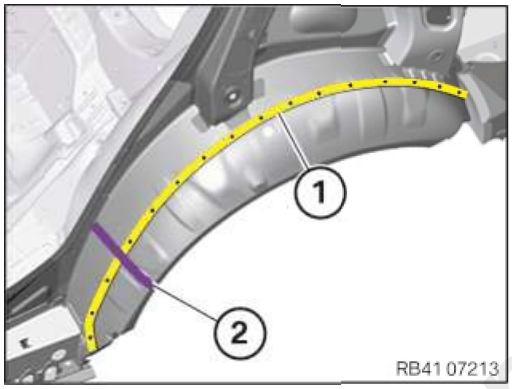
Expendable materials

Cleaning agent R1	100 ml, Bottle	83192211217

- Apply adhesive K5 to the bonding surfaces.

Adhesive

Body adhesive K5	50 ml	83192158654



- Install new part and rivet the part in the area (1) using a blind rivet N3.

Expendable materials

Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421

TECHNICAL INFORMATION

For more information see: 41 00 ... Installation of a cavity sealing (not expanding)

- Apply sealant D1 to new cavity partition. Install cavity sealing (2).

Expendable materials

Sealant D1 (seam sealing)	310 ml	83422409985

Additional Information

Links

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... Opening bonded connections	2
41 00 ... BMW/MINI bonding instructions	3
41 00 ... Repair techniques, repair stage 2	

Repair instructions	Used in step
41 00 ... Installing cavity sealing (not expanded)	4

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41 14 504 Replace the rear right outer wheel arch section

TECHNICAL INFORMATION

- Observe the procedure for repair stage 2.

For additional information see: 41 00 ... Repair method for repair stage 2

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

1 – New parts required



- Supply the following new parts (see Electronic Parts Catalogue EPC):

  Rear outer wheel arch section(1)

  Shaped part entrance / shaped part outer wheel arch

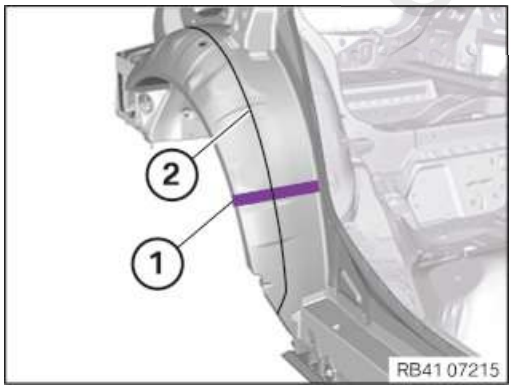
TECHNICAL INFORMATION

For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

- Supply the following consumables:

Material	Quantity
Adhesive K5 (50 ml)	1
Blind rivet N3	20
Coarse thread bolt	5
Cleaning agentR1	1
Cleaning agentR2	1
Sealant D1	
Cavity sealing wax remover	

2 – Removing the rear outer wheel arch section



- Remove cavity sealing(1).
- Mark and make the separating cut (2) as shown.

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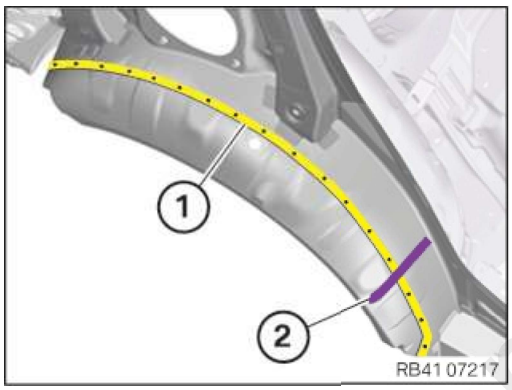
- Mark and make the separating cut (1) as shown.
- Remove the separated section of the outer wheel arch section.

3 – Prepare new part

TECHNICAL INFORMATION

Adhesive technology in the area of the outer skin (not for structural adhesion):
The bonding surfaces of the new parts may not sharpened or ground.
For additional information see: 41 00 ... BMW bonding instructions

- Mark and make the separating cut on the new part according to the separating cut on the vehicle with a material allowance of +20 mm.
- Prepare the joint areas for bonding with adhesive rivet technology.

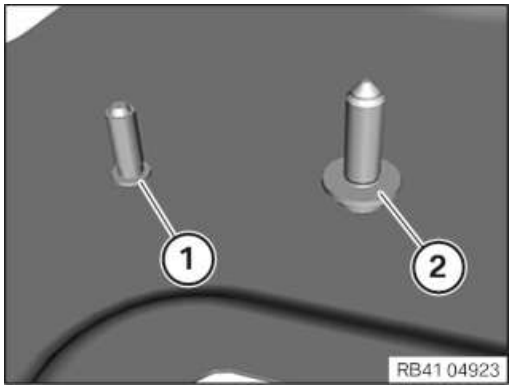


- Adjust the new part together with the side panel and fix in place.
- In the area of the bonding surface (1), drill 17 holes with Ø 4.2 mm for the blind rivets.

▸ **Renewing the coarse thread bolt and threaded weld bolt**

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Take the quantity and position from the component to be replaced.
- Weld the coarse thread bolt (1) and the threaded weld bolt (2) onto the new part.

4 – Installing the rear outer wheel arch section

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TECHNICAL INFORMATION

When installing the new part, make sure that all bonding surfaces have sufficient adhesive.

- Pre-clean the bonding surfaces at the new part and vehicle using R2 solvent cleaner.

Expendable materials

Cleaning agent R2	500 ml	83190417324

- Clean bonding surfaces on vehicle and on new part with cleaning agent R1.

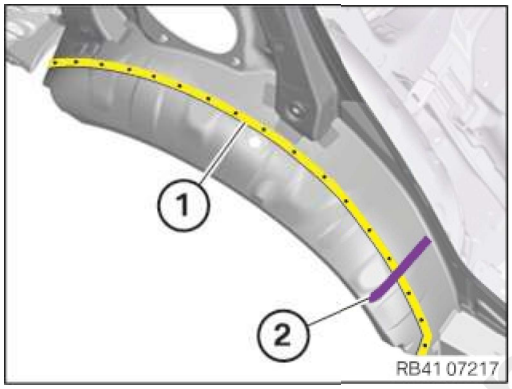
Expendable materials

Cleaning agent R1	100 ml, Bottle	83192211217

- Apply adhesive K5 to the bonding surfaces.

Adhesive

Body adhesive K5	50 ml	83192158654



- Install new part and rivet the part in the area (1) using a blind rivet N3.

Expendable materials

Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421

TECHNICAL INFORMATION

For more information see: 41 00 ... Installation of a cavity sealing (not expanding)

- Apply sealant D1 to new cavity partition. Install cavity sealing (2).

Expendable materials

Sealant D1 (seam sealing)	310 ml	83422409985

Additional Information

Links

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... Opening bonded connections	2
41 00 ... BMW/MINI bonding instructions	3
41 00 ... Repair techniques, repair stage 2	

Repair instructions	Used in step
41 00 ... Installing cavity sealing (not expanded)	4

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41 14 531 Replacing engine support side frame connection, front left

Prerequisite

- Left engine support removed.

TECHNICAL INFORMATION

- Observe the procedure for repair stage 3.

For additional information see: 41 00 ... Repair method for repair stage 3

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

Additional Information

Links

General repair instructions	Used in step
41 00 ... Repair techniques, repair stage 3	

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41 14 020 Replacing front left wheel arch

Prerequisite

- Vehicle is secured on the straightening bench.

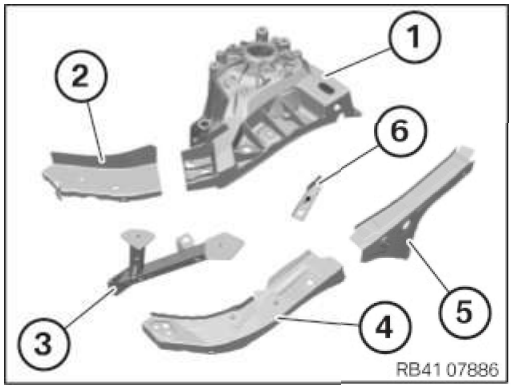
TECHNICAL INFORMATION

- Observe the procedure for repair stage 3.

For additional information see: 41 00 ... Repair method for repair stage 3

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

1 – Supplying the new parts required



- Supply the following new parts (see Electronic Parts Catalogue EPC):

  Front spring support(1)

  Lower wheel arch section carrier support (2)

  Support for the carrier support (3)

  Carrier support, wheel arch, front(4)

  Extension for wheel arch carrier support (5)

  Brake hose holder (6)

  Support bracket shaped part

TECHNICAL INFORMATION

For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

- Supply the following consumables:

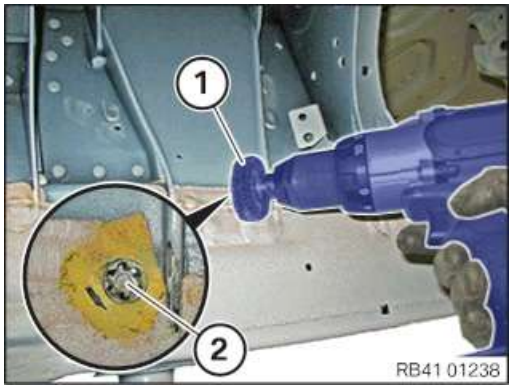
Material	Quantity
Adhesive K1	1
Blind rivet N1	60
Blind rivet N2	20
Punch rivet N4	20
EMC screw	2
Cleaner R1	1
Cleaner R2	1
Sealing compound D1	1
Cavity sealing wax remover	1

2 – Removing self-tapping screws

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

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- Remove the sealant with a wire brush attachment (1).
- Completely remove the sealant from the screw head (2).



- Vertically position the battery-powered drill (1) using special tool on the self-tapping screw and release the self-tapping screw.

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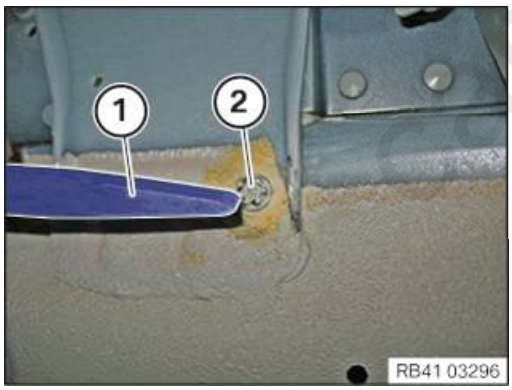
3 – Removing damaged self-tapping screws

Prerequisite

Sealant has been removed from the screw head.

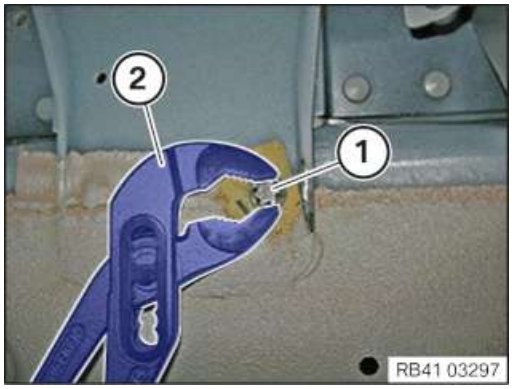
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Position the chisel (1) on the side of the screw head.

  Loosen the screw (2) by hitting it with a hammer.
- Repeat the process until the screw (2) has turned by approximately 90°.



- Remove the screw (1) using pliers (2).

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4 – Remove wheel arch

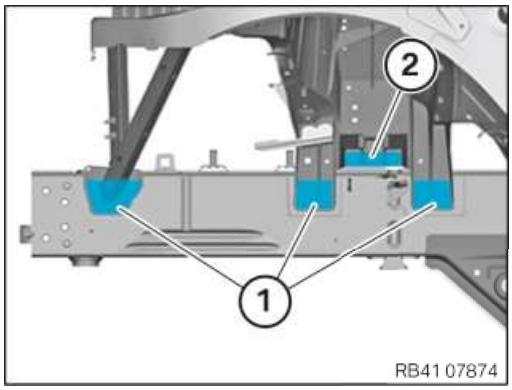
4 – Remove wheel arch

TECHNICAL INFORMATION

For more information see: 41 00 ... Releasing bonded connections

TECHNICAL INFORMATION

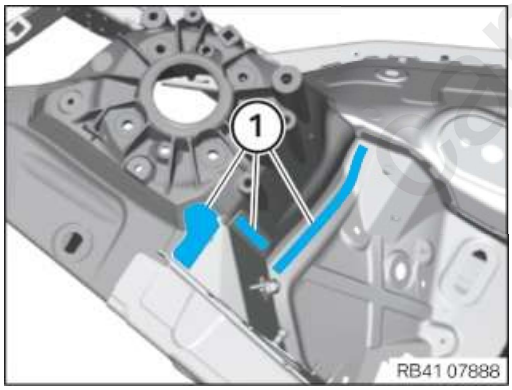
For more information see: Open riveted joints (41 00).



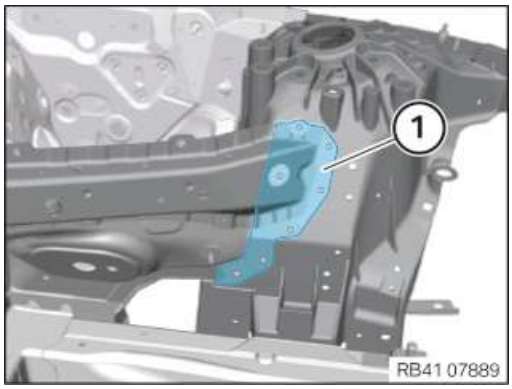
- Loosen self-tapping screws and bonded connections in the areas (1). In doing so, do not damage the aluminium engine support.
- Open bonded rivet connections in area (2).



- Open bonded rivet connections in area (1).

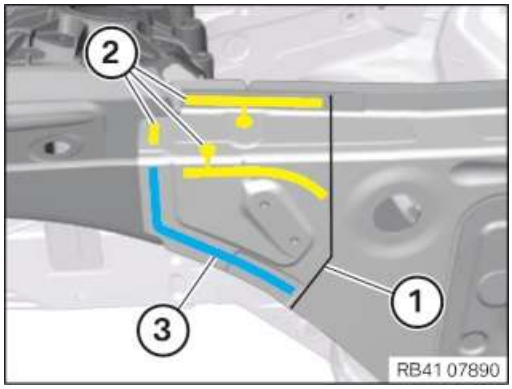


- Loosen the bonded rivet connection joints in the areas (1).



- Open bonded rivet connections in area (1).

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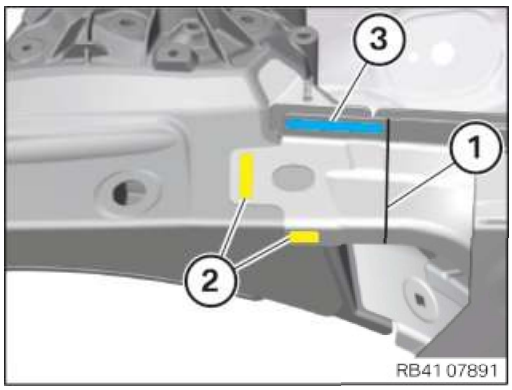


- Make the separating cut (1) according to the schematic diagram. Thereby disconnect only the outer panel.
- Release welded connections in areas (2).

TECHNICAL INFORMATION

For more information see: 41 00... Spot-weld bonding steel components

- Open the spot-welded adhesive joints in the area (3) and remove the carrier support section.



- Loosen welds in area (1) and remove the wheel arch.

5 – Prepare new part

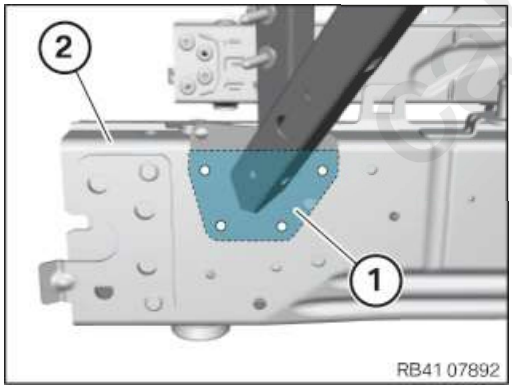
TECHNICAL INFORMATION

Structure bonding.

Observe preparation of bonding surfaces.

For additional information see: 41 00 ... BMW bonding instructions

- Remove adhesive residue on the flange surfaces.



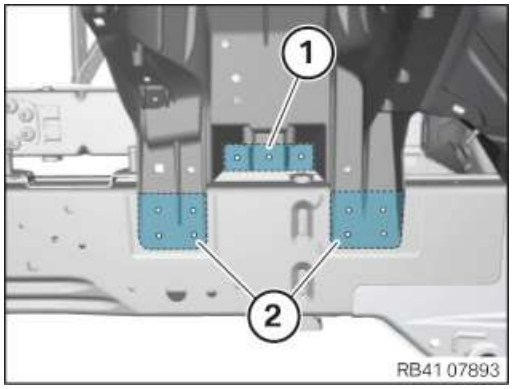
- Adjust new parts with an alignment bracket or a universal fixture and secure.
- Prepare area (1) for a structural bonding with blind rivets of steel to aluminium.

TECHNICAL INFORMATION

For more information see: 41 00 ... Transferring hole pattern.

- In area (1), transfer the hole pattern of the engine support (2) onto new part. Drill out holes to Ø 6.8 mm.

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- Prepare areas (1) and (2) for a structural bonding of aluminium on aluminium with blind rivets.
- In area (1) transfer the positions of the holes from the engine support to the spring support. Drill out holes to Ø 6.8 mm.

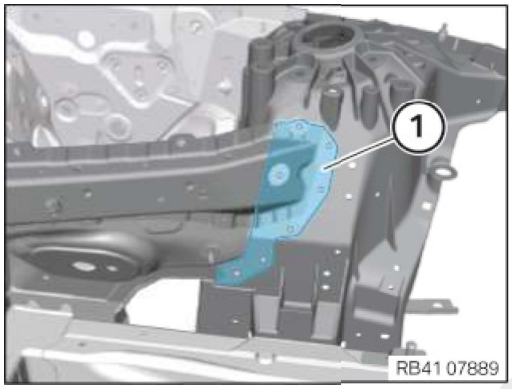
TECHNICAL INFORMATION

For more information see: 41 00 ... Transferring hole pattern.

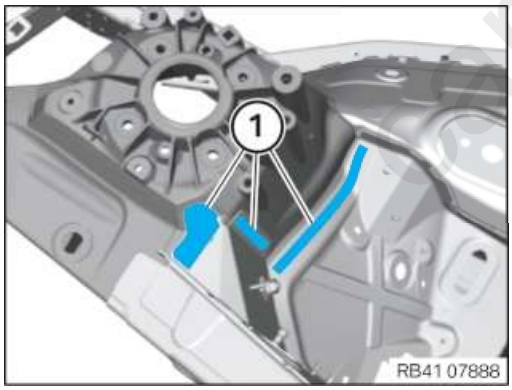
- In areas (2), transfer the hole patterns from the engine support to the spring support. Drill out holes to Ø 6.8 mm.



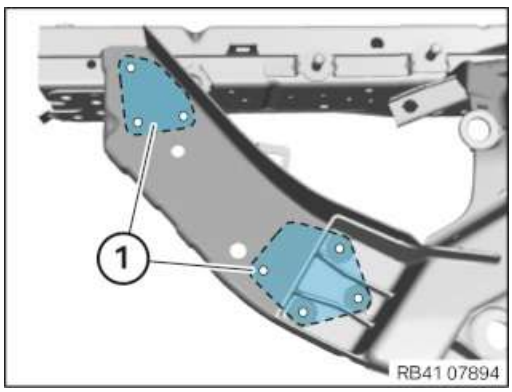
- Prepare area (1) for the structural bonding of aluminium on steel with blind rivets.
- In area (1), transfer the positions of the holes from the wheel arch to the spring supports. Drill out holes to Ø 6.8 mm.



- Prepare area (1) for the structural bonding of aluminium on steel with blind rivets.
- In area (1), transfer the positions of the holes from the engine bulkhead to the spring support. Drill out holes to Ø 6.8 mm.

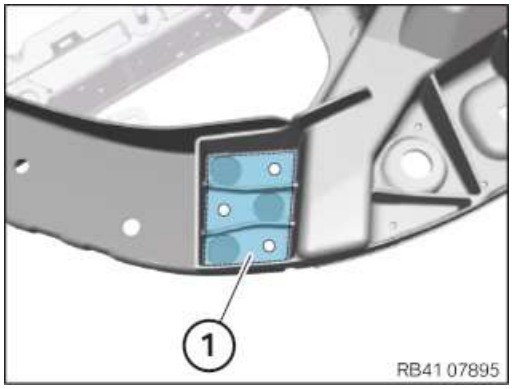


- Prepare areas (1) for the structural bonding of aluminium on steel with blind rivets.
- In area (1), transfer the positions of the holes from the wheel arch to the spring supports. Drill out holes to Ø 6.8 mm.

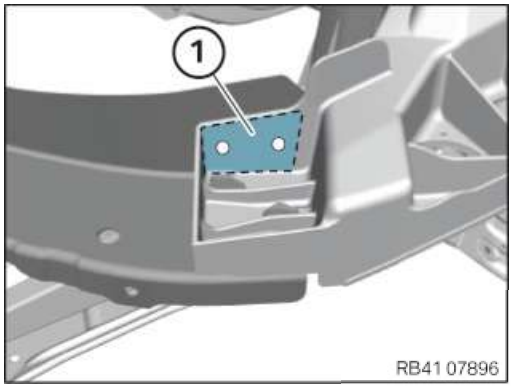


- Prepare areas (1) for the structural bonding of steel on steel with blind rivets.
- Drill seven holes Ø 6.8 mm in areas (1) in accordance with the illustration. Select the position and number of the rivet holes similar to the punch rivet connections of the standard components.

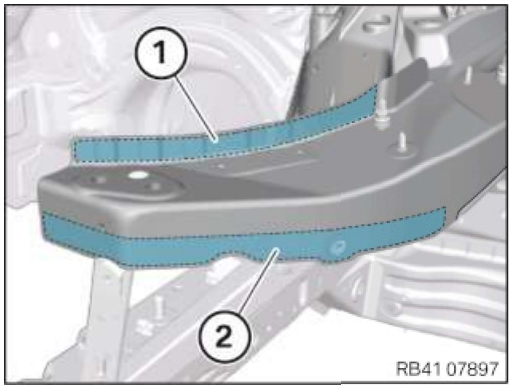
mydiagn.com



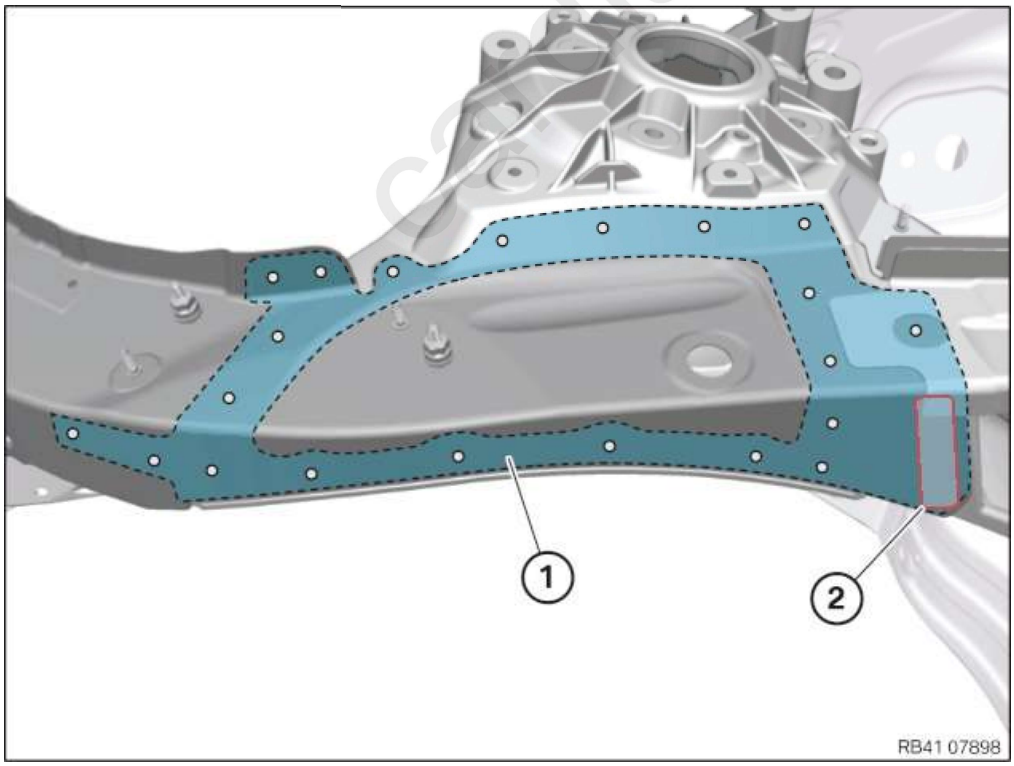
- Prepare area (1) for the structural bonding with blind rivets of steel to aluminium.
- Drill three holes Ø 6.8 mm in area (1) in accordance with the illustration. Select the position and number of the rivet holes similar to the punch rivet connections of the standard components.



- Prepare area (1) for the structural bonding with blind rivets of steel to aluminium.
- Drill two holes Ø 6.8 mm in area (1) in accordance with the illustration. Select the position and number of the rivet holes similar to the punch rivet connections of the standard components.

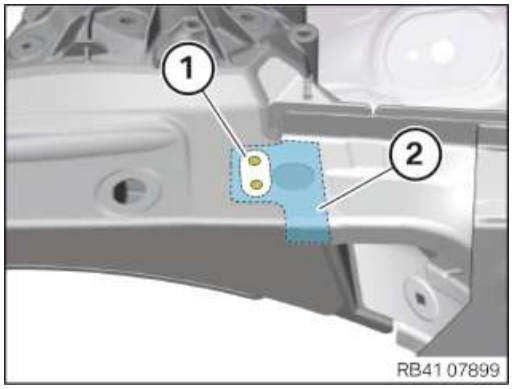


- Prepare areas (1) and (2) for the structural bonding of steel on steel with punch rivets.



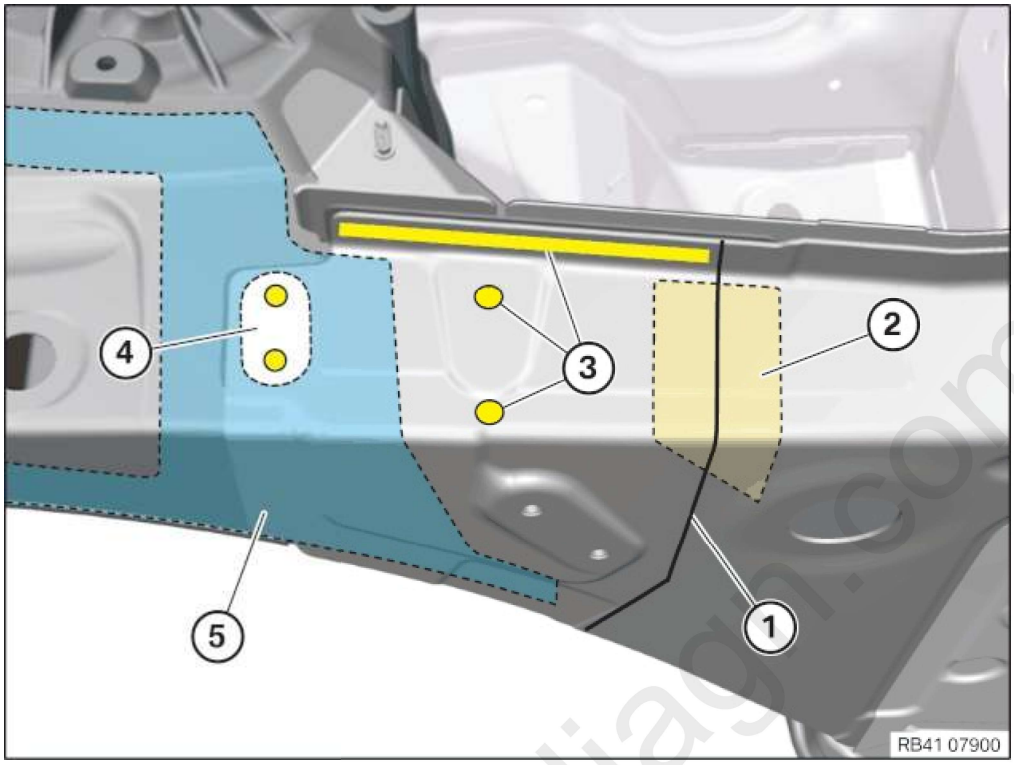
- Prepare area (1) for the structural bonding with blind rivets of steel to aluminium.
- Drill 21 holes Ø 6.8 mm in area (1) in accordance with the illustration. Select the position and number of the rivet holes similar to the punch rivet connections of the standard components.
- Do not drill any blind rivet holes in area (2). Prepare area (2) for joining by punch rivets.

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- In the area of the recess (1), prepare for joining by 2 x spot-welds.

  Note the bonded connection in the area (2).



- Make severance cut (1) on the new part in accordance with severance cut on vehicle.

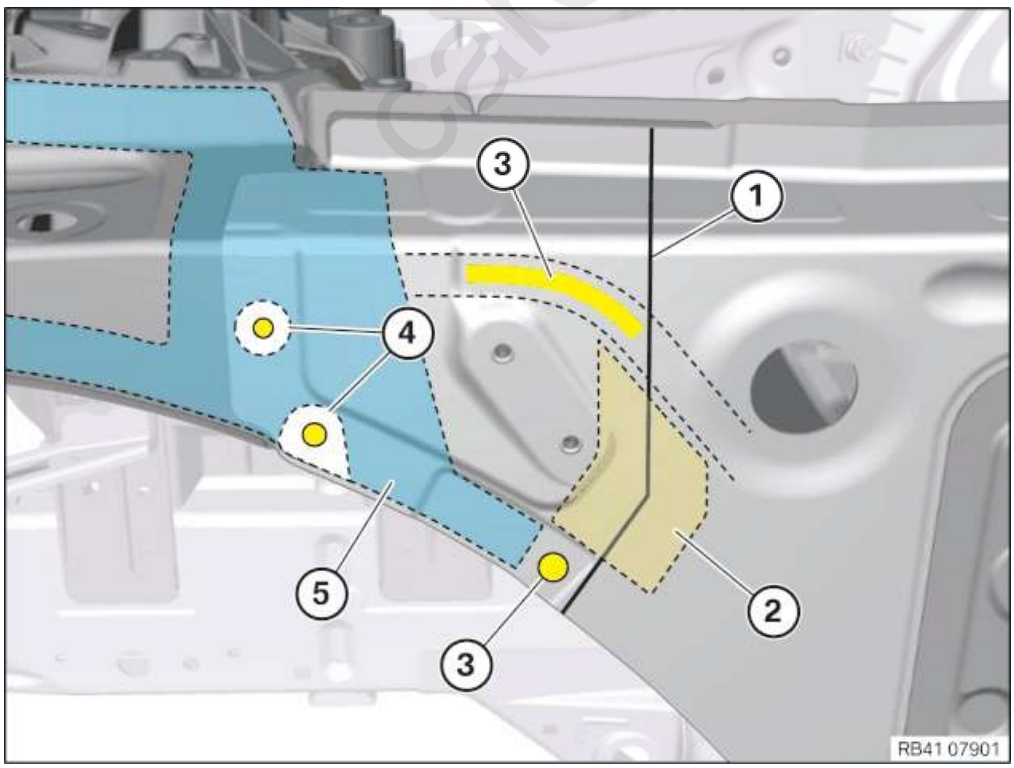
TECHNICAL INFORMATION

For additional information see: 41 00 ... Weld in the reinforcement plates (sheet steel)

- Prepare a reinforcement plate (1) for the separating cut (2).

  Prepare the separating cut (1) and the reinforcement plate (2) for joining by welding.
- Prepare areas (3) for joining by welding.
- In the area of the recess (4), prepare for joining by 2 x spot-welds.

  Note the bonded connection in the area (5).

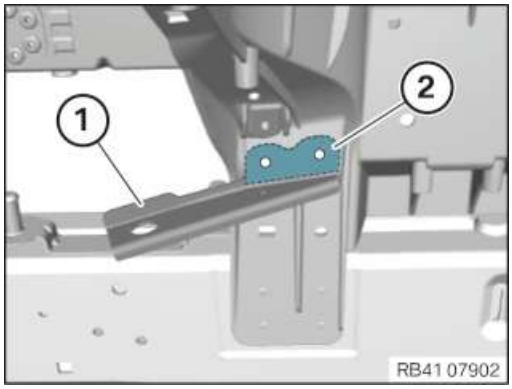


- Prepare a reinforcement plate (1) for the separating cut (2).

  Prepare the separating cut (1) and the reinforcement plate (2) for joining by welding.
- Prepare areas (3) for joining by welding.
- In the recesses (4), prepare for joining by 2 x spot-welds.

  Note the bonded connection in the area (5).

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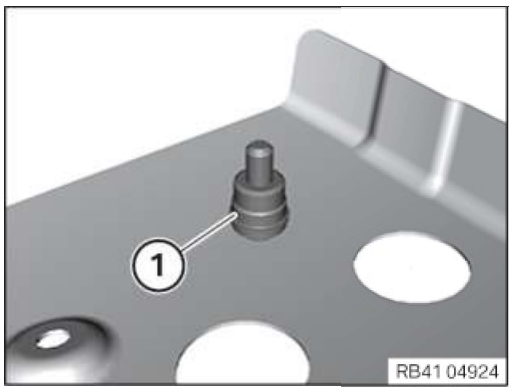
- Position holder (1) for the brake hose on the wheel arch.

  Prepare area (2) for a structural bonding with blind rivets of aluminium to aluminium.
- Drill 2 holes Ø 6.8 mm in area (1) in accordance with the illustration.
- Remove new parts and deburr bore holes.

▸ **Earth pin**

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Check the ground pins (1) for stability and renew where required.

6 – Install wheel arch

- Pre-clean all the bonding surfaces with solvent cleaner R2.

Expendable materials

Cleaning agent R2	500 ml	83190417324

- Clean all bonding surfaces with solvent cleaner R1.

Expendable materials

Cleaning agent R1	100 ml, Bottle	83192211217

- Apply adhesive K1 to bonding surfaces.

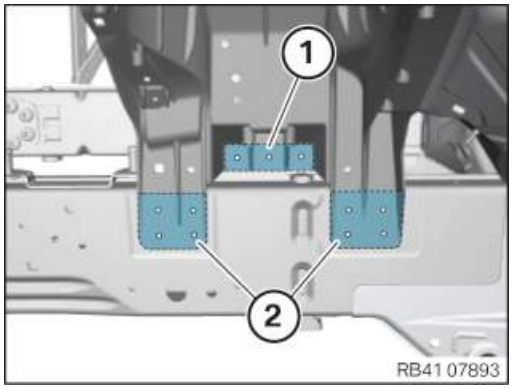
Adhesive

Body adhesive K1	195 ml	83190413015

- Install the new parts with an alignment bracket or a universal mount.

  During installation, ensure that sufficient adhesive has been applied to all bonding surfaces.

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- Rivet the new part in the areas (1) and (2) with blind rivets N2.

Expendable materials

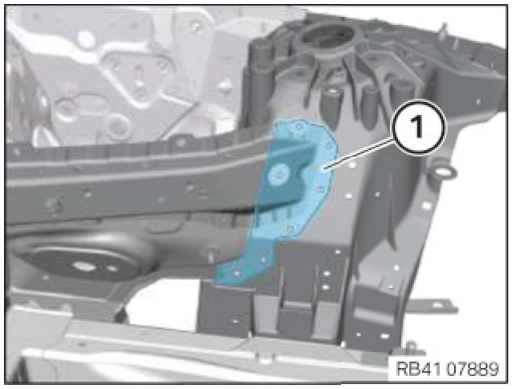
Blind rivet N2 Ø 6.5 mm ; clamping area 4.8-6.8 mm		83190301419



- Rivet the new part in the areas (1) and (2) with blind rivets N1.

Expendable materials

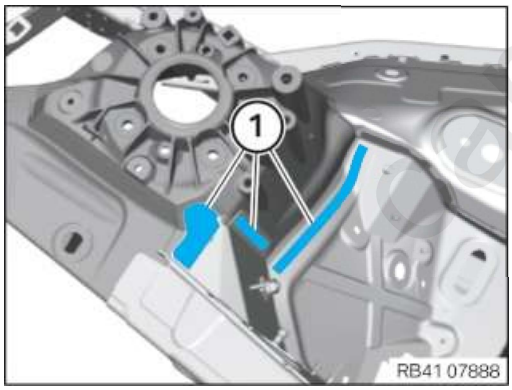
Blind rivet N1 Ø 6.5 mm ; clamping area 2.8-4.8 mm		83190301414



- Rivet the new part in the areas (1) with blind rivets N1.

Expendable materials

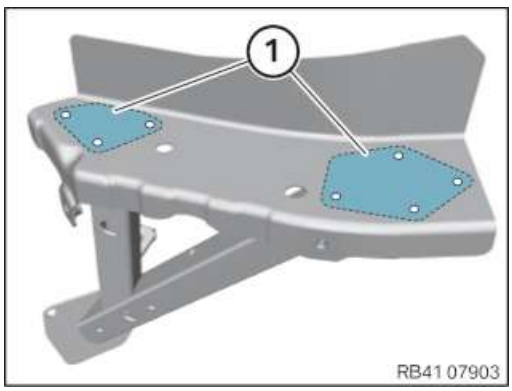
Blind rivet N1 Ø 6.5 mm ; clamping area 2.8-4.8 mm		83190301414



- Rivet the new part in the areas (1) with blind rivets N1.

Expendable materials

Blind rivet N1 Ø 6.5 mm ; clamping area 2.8-4.8 mm		83190301414

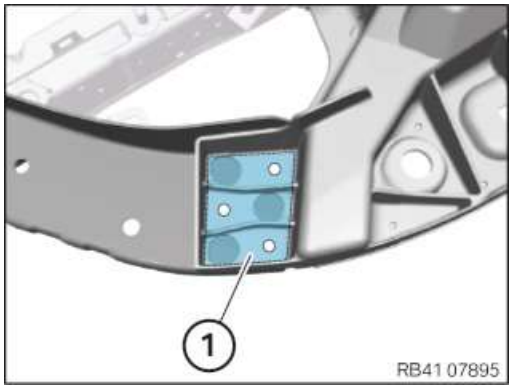


- Clean all bonding surfaces with cleaning agent R2 and R1.

  Apply adhesive K1 to bonding surfaces.
- Join new parts and rivet in areas (1) with blind rivets N1.

Expendable materials

Blind rivet N1 Ø 6.5 mm ; clamping area 2.8-4.8 mm		83190301414

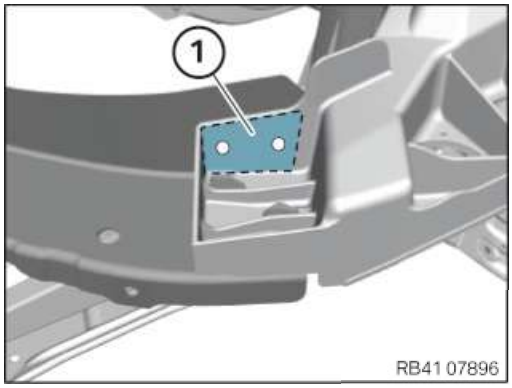


- Clean all bonding surfaces with cleaning agent R2 and R1.

  Apply adhesive K1 to bonding surfaces.
- Install new parts and rivet in area (1) with blind rivets N1.

Expendable materials

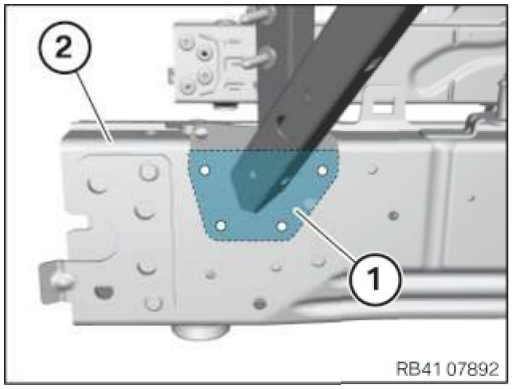
Blind rivet N1 Ø 6.5 mm ; clamping area 2.8-4.8 mm		83190301414



- Rivet the new part in area (1) with blind rivets N1.

Expendable materials

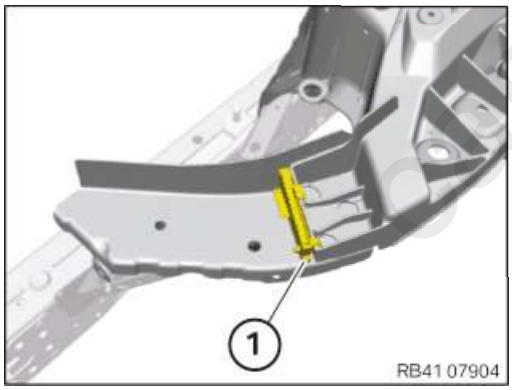
Blind rivet N1 Ø 6.5 mm ; clamping area 2.8-4.8 mm		83190301414



- Rivet the new part in area (1) with blind rivets N2.

Expendable materials

Blind rivet N2 Ø 6.5 mm ; clamping area 4.8-6.8 mm		83190301419



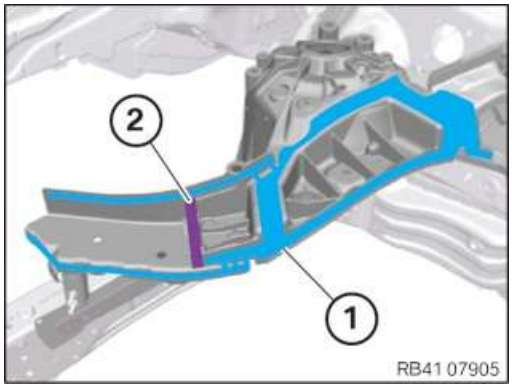
TECHNICAL INFORMATION

For more information see: 41 00 ... Installation of a cavity sealing (not expanding)

- Apply sealing agent D1 to the cavity bulkhead (1) and install cavity bulkhead.

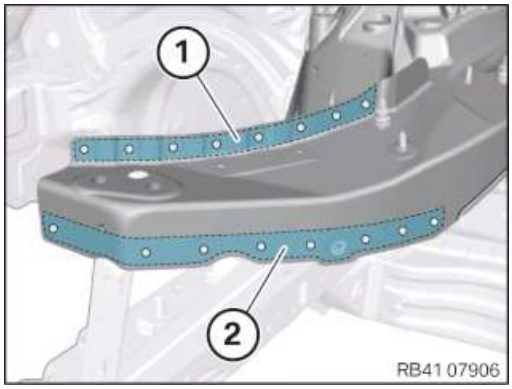
Expendable materials

Sealant D1 (seam sealing)	310 ml	83422409985



- Clean bonding surface (1) with cleaning agent R2 and R1.
- Apply adhesive K1 to the bonding surfaces.
- Apply sealant D1 to cavity sealing (1).

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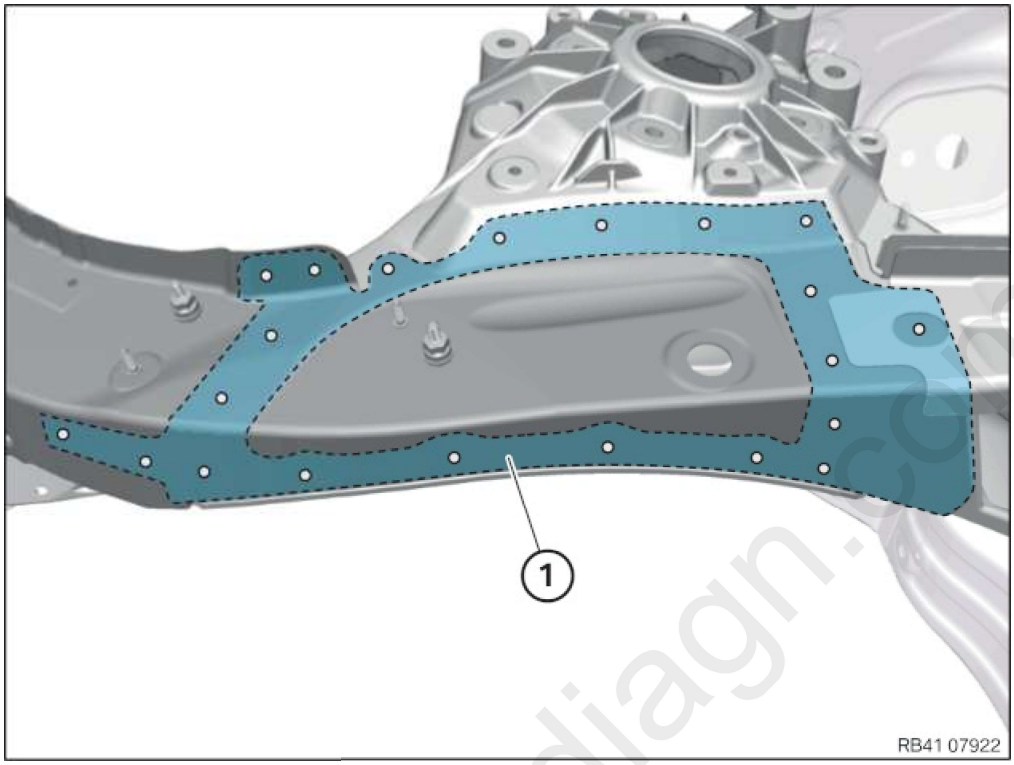


- Install new part and rivet in areas (1) and (2) with 16 self-piercing rivets N4 as show in the diagram.

Area	Description	Number
1	N4	8
2	N4	8

Expendable materials

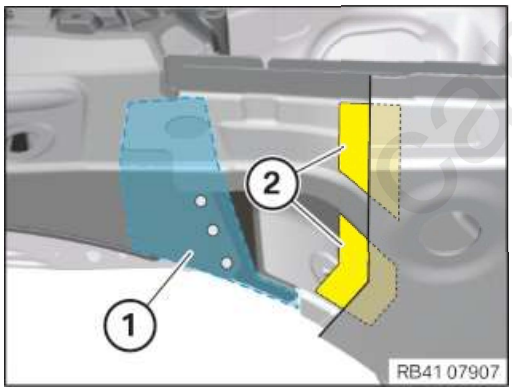
Punch rivet N4 Ø 3 mm ; 4 mm long		83192457307



- Rivet the new part in area (1) with blind rivets N1.

Expendable materials

Blind rivet N1 Ø 6.5 mm ; clamping area 2.8-4.8 mm	83190301414



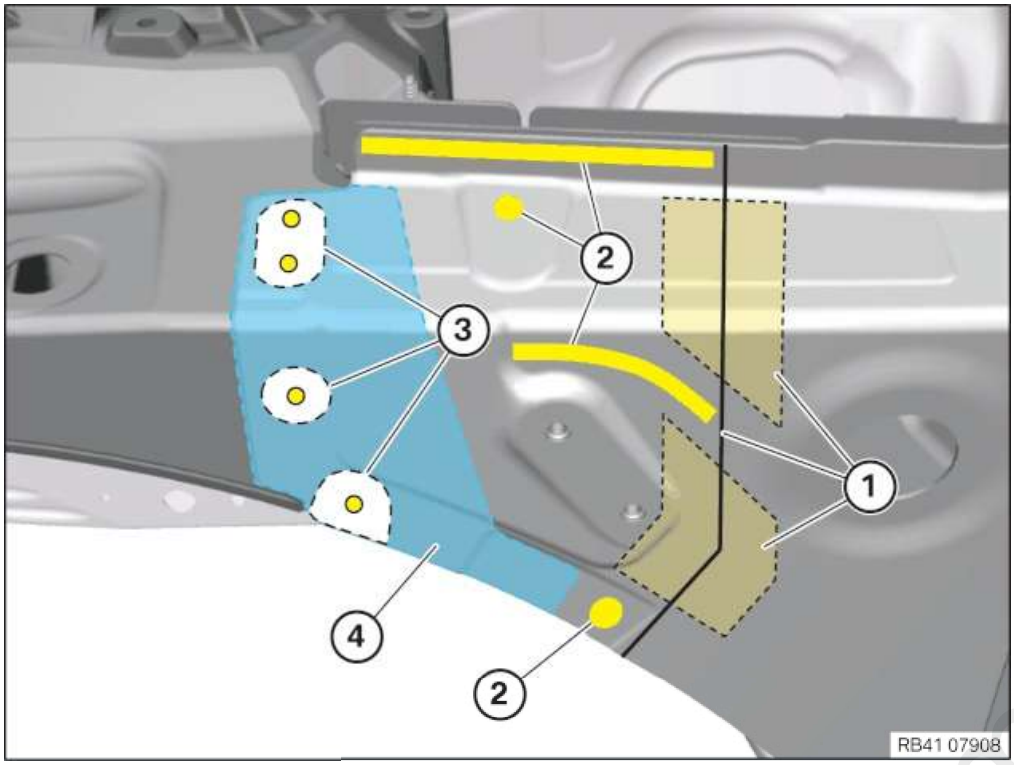
- On the bonding area (1), place 3 self-piercing rivets N4 as shown in the diagram.

Expendable materials

Punch rivet N4 Ø 3 mm ; 4 mm long		83192457307

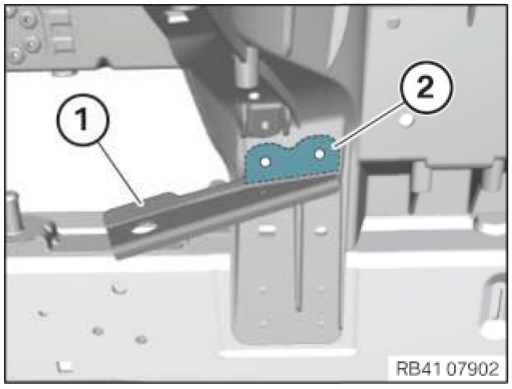
- Install the reinforcement plate (2) and attach by welding.

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- Install new part section and weld in areas (1) to (3).

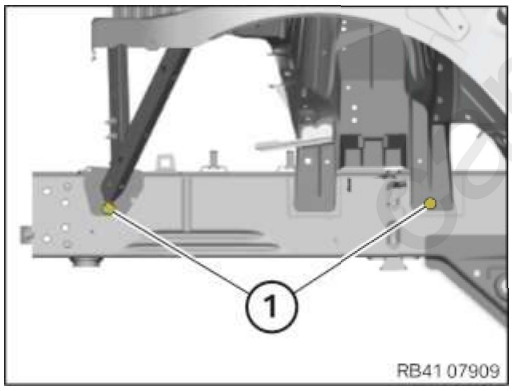
  Pay attention to the bonding area (4) of the aluminium spring strut dome. Avoid applying too much heat in the bonding area.



- Clean bonding surface (2) with cleaning agent R2 and R1.
- Apply adhesive K1 to bonding surfaces (2).
- Install holder (1) and rivet with blind rivets N1.

Expendable materials

Blind rivet N1 Ø 6.5 mm ; clamping area 2.8-4.8 mm		83190301414



- Install two EMC screws in the areas (1).

Expendable materials

Screw EMC screw, SF Plus, M5x15		83190301639

Additional Information

Overview of Special Tools

Links

Repair instructions (PRE)	Used in step
Transferring hole pattern	5

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... Opening bonded connections	4

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41 00 ... Opening rivet connections	4
41 00 ... Spot-weld bonding steel components	4
41 00 ... BMW bonding instructions	5
41 00 ... Installing a cavity sealing with 2-component PU cavity foam	6
41 0 Repair techniques, repair stage 3	

Repair instructions	**Used in step**
41 00 ... Welding in reinforcement plate (sheet steel)	5

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41 14 503 Replacing rear outer wheel arch section with right reinforcement

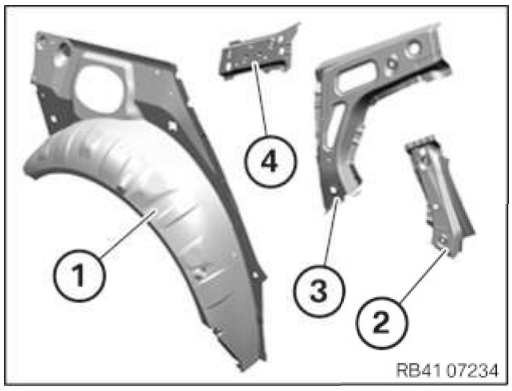
TECHNICAL INFORMATION

- Observe the procedure for repair stage 3.

For additional information see: 41 00 ... Repair method for repair stage 3

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

1 – Supplying the new parts required



- Supply the following new parts (see Electronic Parts Catalogue EPC):

  Outer wheel arch section (1)

  C-pillar support (2)

  C-pillar reinforcement(3)

  Tensioning strap, wheel arch (4)

  Shaped part, C-pillar inner

  Lower C-pillar shaped part

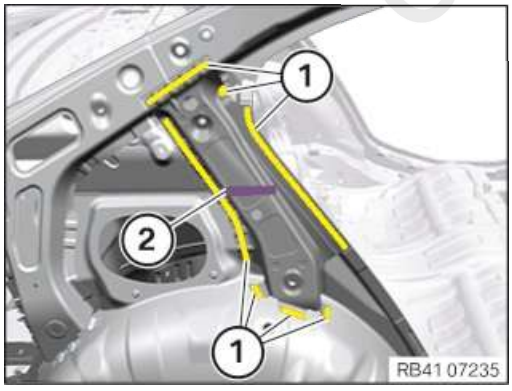
TECHNICAL INFORMATION

For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

- Supply the following consumables:

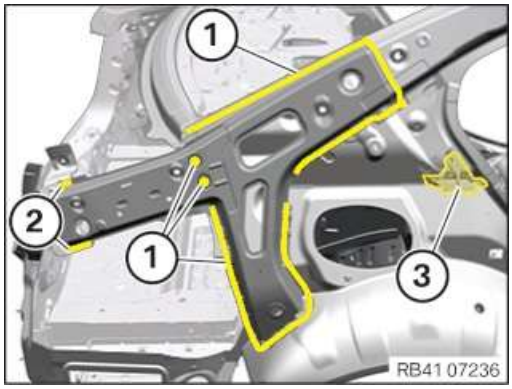
Material	Quantity
Coarse thread bolt	10
Sealant D1	1
Cavity sealing wax remover	

2 – Remove outer wheel arch section with reinforcement

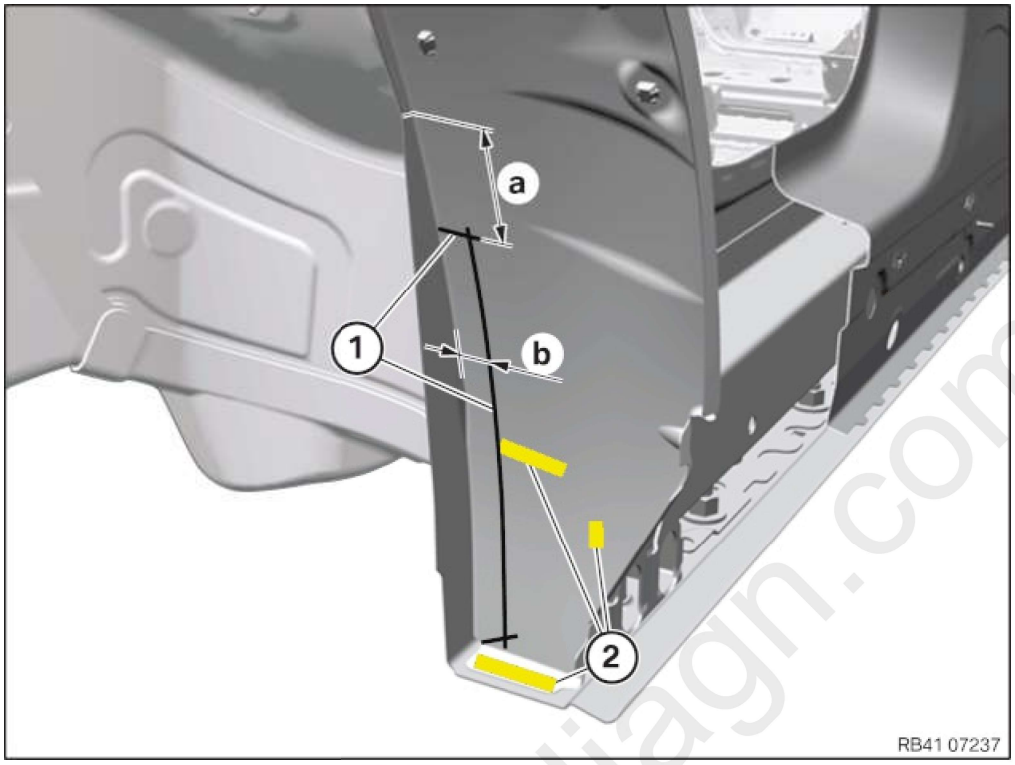


- Release welded connections in areas (1).
- Release the C-pillar support from the cavity sealing (2) and remove.

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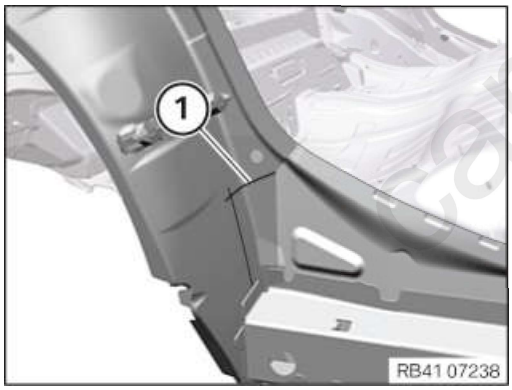
- Open welded connections in areas (1) and (2).
- Remove the reinforcement (2) on the C-pillar.
- Remove cavity sealing (3).



- Mark separating cuts (1) according to the specified dimensions a and b and carry out.

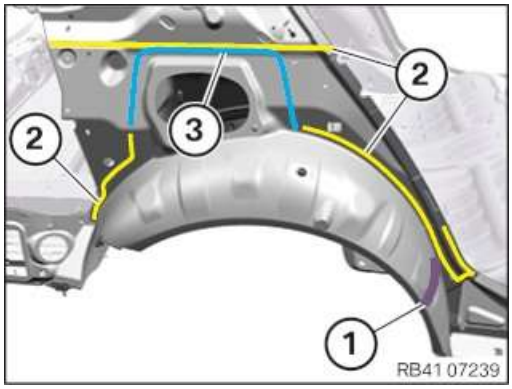
  Dimension a = 60 mm..

  Dimension b = 20 mm.
- Release welded connections in areas (2).



- Continue with the separating cut (1) from the previous operation as shown.

  Thereby disconnect only the outer panel.



- Remove cavity sealing (1).
- Release welded connections in areas (2).

TECHNICAL INFORMATION

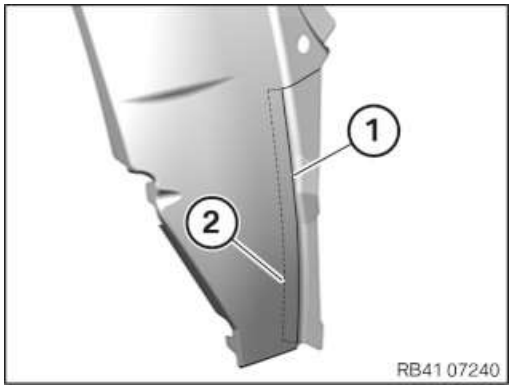
For more information see: 41 00 ... Releasing bonded connections

- Release the spot-welded adhesive joints in area (3).
- Remove outer section of wheel arch.

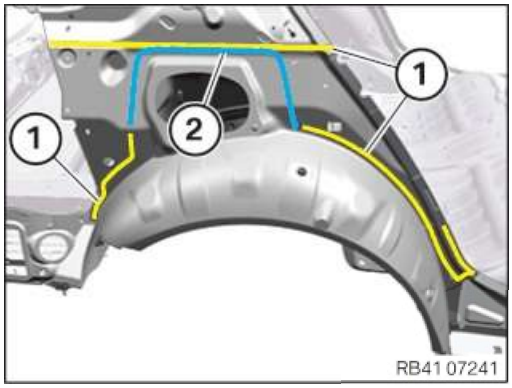
3 – Prepare new part

- Remove adhesive residue on the vehicle flange surfaces.

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- Mark and carry out a separating cut (1) on the outer wheel arch section according to the separating cut (2) on the vehicle with a material allowance of 15 mm.



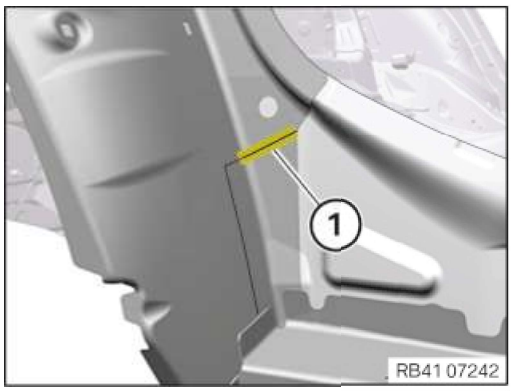
- Adjust the new outer wheel arch section together with the side panel.

  Prepare the new part in areas (1) and (2) for joining by welding.

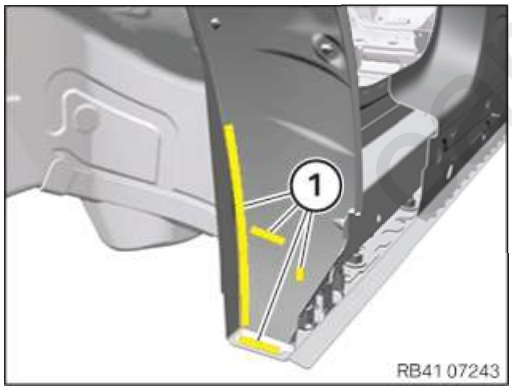
TECHNICAL INFORMATION

For more information see: 41 00... Spot-weld bonding steel components

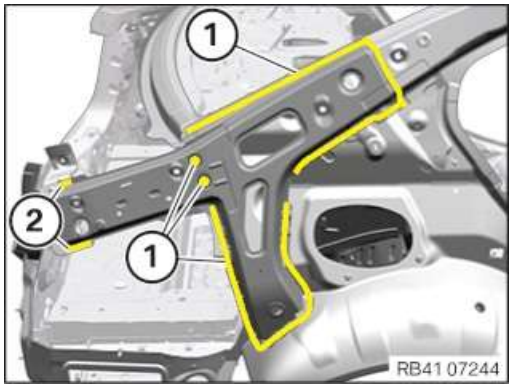
- In area (2), observe the procedure for the replacement of spot-welded adhesive joints for the standard production.



- Prepare area (1) of the separating cut for joining by welding.

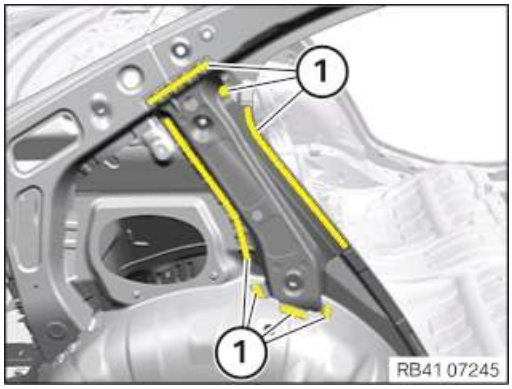


- Prepare areas (1) for joining by welding.



- Adjust new part C-pillar reinforcement .
- Prepare areas (1) and (2) for joining by welding.

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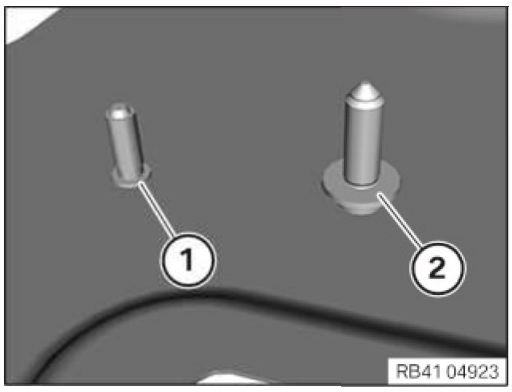


- Adjust new part C-pillar support and prepare in the areas (1) for joining by welding.

▸ **Renewing the coarse thread bolt and threaded weld bolt**

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

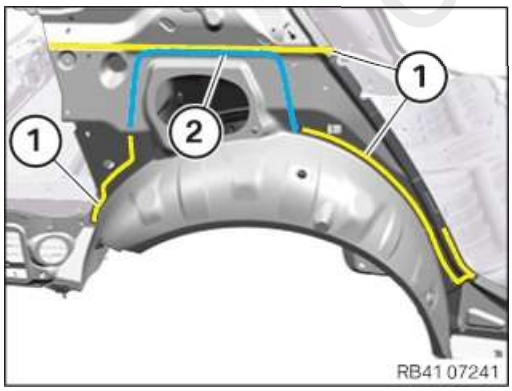


- Take the quantity and position from the component to be replaced.
- Weld the coarse thread bolt (1) and the threaded weld bolt (2) onto the new part.

4 – Install outer wheel arch section with reinforcement

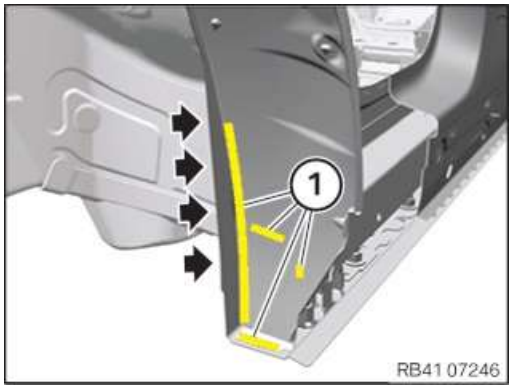
TECHNICAL INFORMATION

Use only approved spot-welding apparatus for repair.
For additional information see: 41 00 ... Workshop equipment



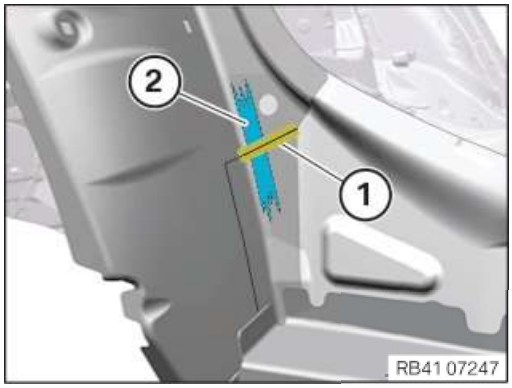
- Install the new outer wheel arch section part in areas (1) and (2) and weld it according to the new part preparation process.

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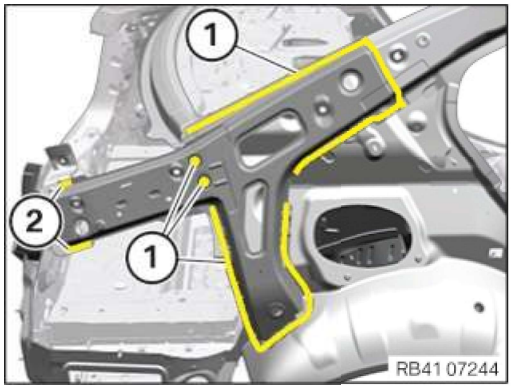
- Weld new part in the areas (1).

  In this process, avoid excessively high heat input in the adjacent adhesive area (arrows).

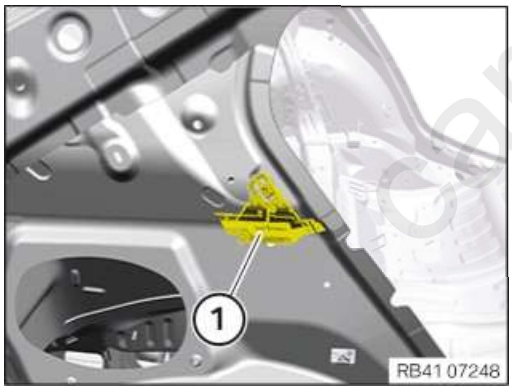


- Weld the new part in the area (1).

  Avoid applying too much heat to the adjacent adhesive area (2).



- Install new part and weld in the areas (1) and (2).



TECHNICAL INFORMATION

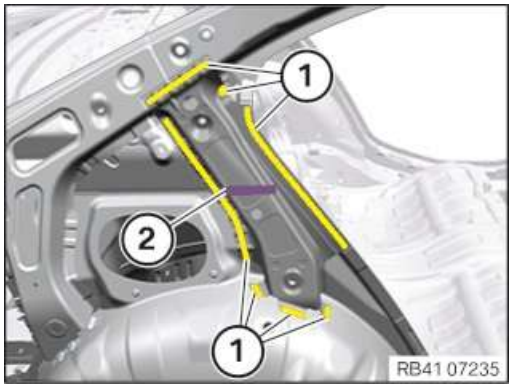
For more information see: 41 00 ... Installation of a cavity sealing (not expanding)

- Apply sealant D1 to cavity sealing (1).

  Install cavity sealing (1).

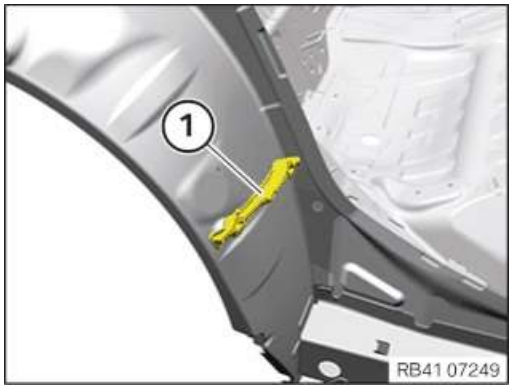
Expendable materials

Sealant D1 (seam sealing)	310 ml	83422409985



- Apply sealant D1 to cavity sealing (2).
- Install new part and weld in the areas (1).

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- Apply sealant D1 to cavity sealing (1).

  Install cavity sealing (1).

Additional Information

Links

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... Opening bonded connections	2
41 00 ... Spot-weld bonding steel components	3
41 00 ... BMW bonding instructions	3
41 00 ... Workshop equipment (BMW and MINI vehicles)	4
41 00 ... Repair techniques, repair stage 3	

Repair instructions	Used in step
41 00 ... Installing cavity sealing (not expanded)	4

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41 ... 0 Notes on the repair technique used in the main group 41

Two different repair techniques are used in body repair.

These are welding and bonding/riveting.

If the repair instructions do not specify a repair technique, then welding must **always** be used.

The bonding/riveting repair technique is **always** described in detail in the repair instructions.

Quality standards must be met.

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41 21 203 Replace outer left B-pillar.

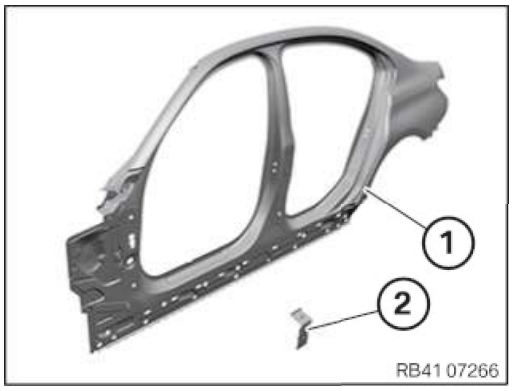
TECHNICAL INFORMATION

- Observe the procedure for repair stage 3.

For additional information see: 41 00 ... Repair method for repair stage 3

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

1 – New parts required



- Supply the following new parts (see Electronic Parts Catalogue EPC):

  Side frames(1)

  Rocker panel repair sheet (2)

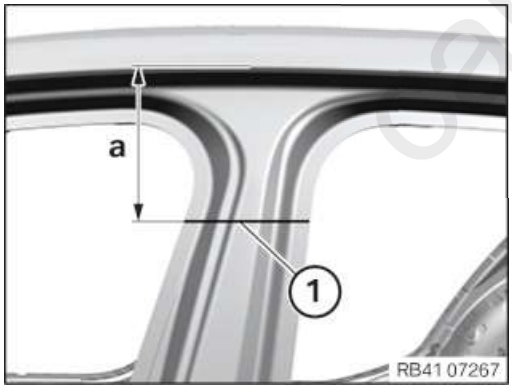
TECHNICAL INFORMATION

For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

- Following consumables are required:

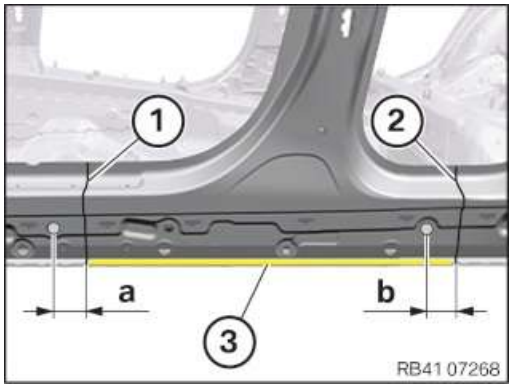
Material	Quantity
Adhesive K5 (50 ml)	1
Cleaning agentR1	1
Cleaning agentR2	1
Sealant D1	1

2 – Remove the outer section of the B-pillar



- Mark a separating cut (1) to dimension a and cut. Thereby disconnect only the outer panel.

  Dimension a = 200 mm from stamped edge.



- Mark and cut the separating cuts (1) and (2) according to the specified dimensions.

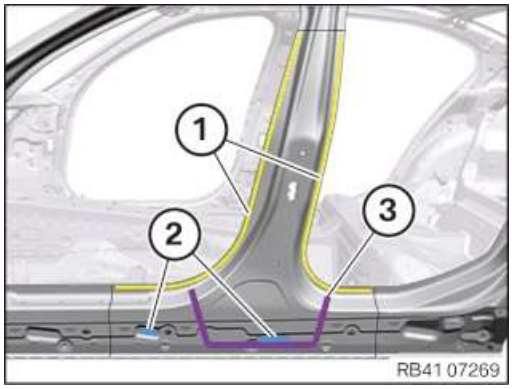
  Thereby disconnect only the outer panel.

  Dimension a = 65 mm from the centre of the Ø 20 mm hole.

  Dimension b = 75 mm from the centre of the Ø 20 mm hole.

- Open welded connections in area (3).

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- Release welded connections in areas (1).

TECHNICAL INFORMATION

For more information see: 41 00 ... Releasing bonded connections

- Open the bonded connections in areas (2).
- Detach the outer section of the B-pillar from the cavity sealing (3) and remove.

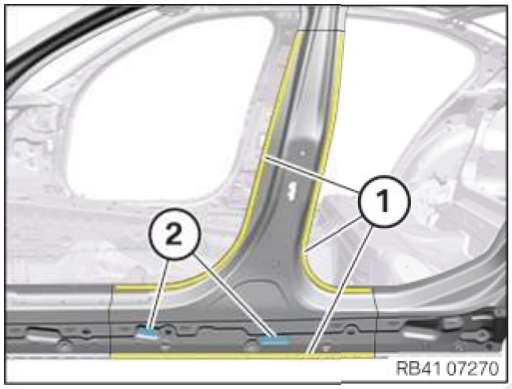
3 – Prepare new part

- Mark severance cuts on new part in accordance with severance cuts on vehicle and cut.

TECHNICAL INFORMATION

For additional information see: 41 00 ... Weld in the reinforcement plates (sheet steel)

- Prepare reinforcement plates at severance cuts.



- Adjust new part and prepare for joining by welding in areas (1).

TECHNICAL INFORMATION

Adhesive technology in the area of the outer skin (not for structural adhesion):

The bonding surfaces of the new parts may not sharpened or ground.

For additional information see: 41 00 ... BMW bonding instructions

- Prepare the areas (2) for joining by bonding technology.

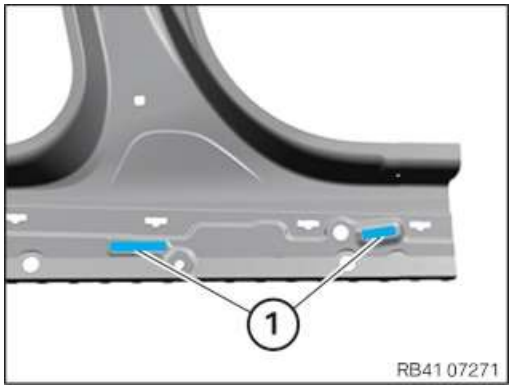
4 – Install the outer section of the B-pillar

TECHNICAL INFORMATION

Use only approved spot-welding apparatus for repair.

For additional information see: 41 00 ... Workshop equipment

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- Pre-clean the bonding surfaces (1) on the new part and vehicle with R2 solvent cleaner.

Expendable materials

Cleaning agent R2	500 ml	83190417324

- Clean the bonding surfaces (1) on the new part and vehicle with R1 solvent cleaner.

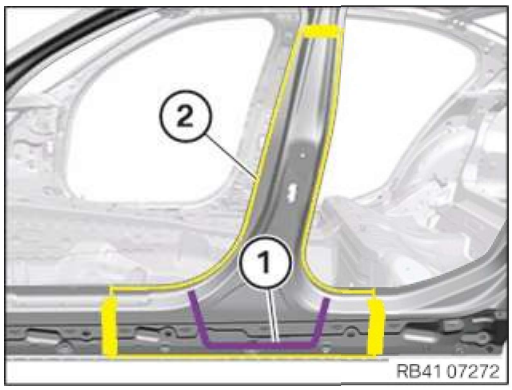
Expendable materials

Cleaning agent R1	100 ml, Bottle	83192211217

- Apply adhesive K5 to the bonding surfaces (1).

Adhesive

Body adhesive K5	50 ml	83192158654



TECHNICAL INFORMATION

For more information see: 41 00 ... Installation of cavity sealing (expanded)

- Apply sealant D1 to cavity sealing (1).

Expendable materials

Sealant D1 (seam sealing)	310 ml	83422409985

- Install the new part and reinforcement plates and weld them in the area (2).

Additional Information

Links

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... Opening bonded connections	2
41 00 ... BMW/MINI bonding instructions	3
41 00 ... Workshop equipment (BMW and MINI vehicles)	4
41 00 ... Repair techniques, repair stage 3	

Repair instructions	Used in step
41 00 ... Welding in reinforcement plate (sheet steel)	3
41 00 ... Installing cavity sealing (expanded)	4

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41 21 003 Replacing A-pillar with reinforcement on left

Prerequisite

- Vehicle is fixed on straightening bench.

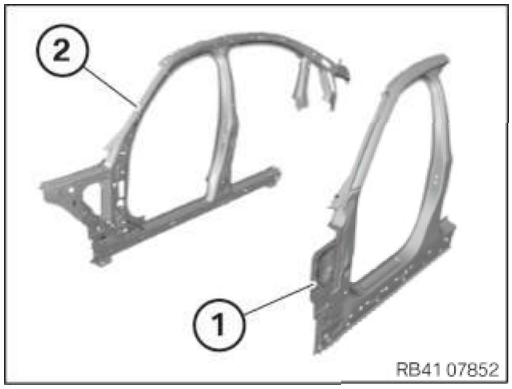
TECHNICAL INFORMATION

- Observe the procedure for repair stage 3.

For additional information see: 41 00 ... Repair method for repair stage 3

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

1 – New parts required



- Supply the following new parts (see Electronic Parts Catalogue EPC):

  A-pillar, outer(1)

  Side frame, centre(2)

  Shaped part A-pillar, bottom, outer

  Shaped part, A-pillar, bottom inner

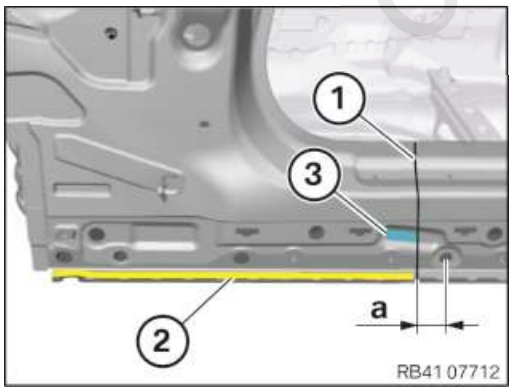
TECHNICAL INFORMATION

For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

- Supply the following consumables:

Material	Quantity
Coarse thread bolt	5
Sealing compound D1	
Cavity sealing wax remover	

2 – Remove A-pillar reinforcement

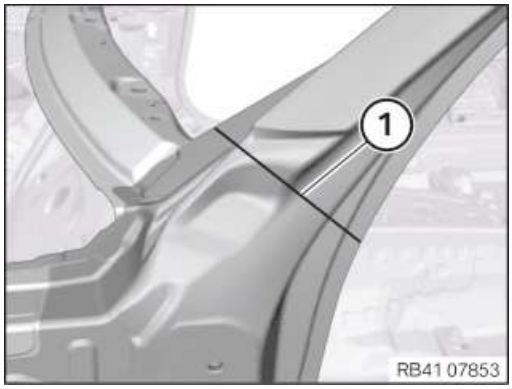


- Mark and carry out the separating cut (1) as per dimension a. Thereby disconnect only the outer panel. Dimension a = 45 mm from the centre of hole Ø 20 mm.
- Open welded connections in area (2).

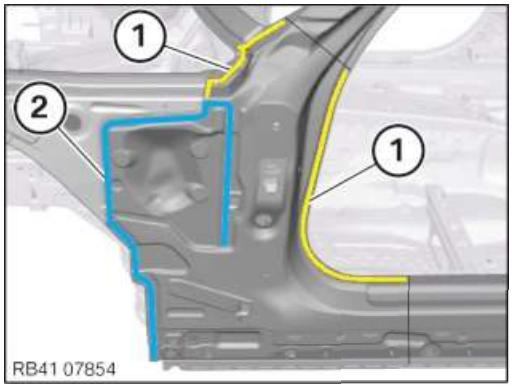
TECHNICAL INFORMATION

For more information see: 41 00 ... Releasing bonded connections

- Release bonded connection in area (3).



- Mark and make the separating cut (1) as shown. Thereby disconnect only the outer panel.

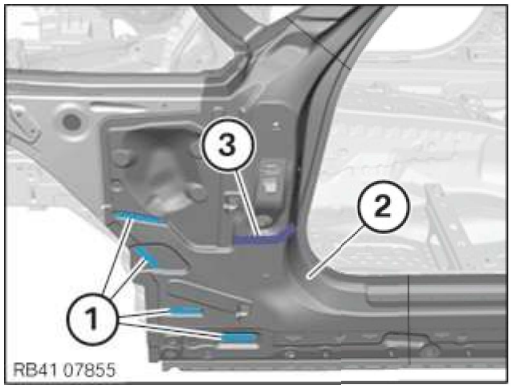


- Release welded connections in areas (1).

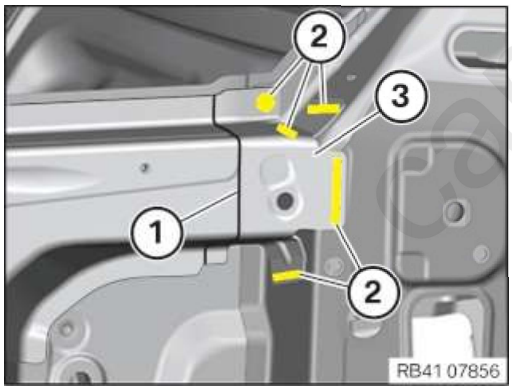
TECHNICAL INFORMATION

For more information see: 41 00 ... Releasing bonded connections

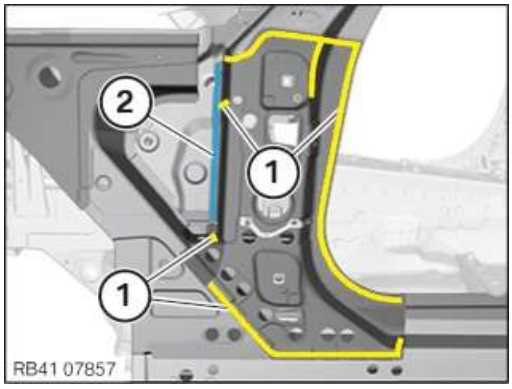
- Release the spot-welded adhesive joints in area (2).



- Release the bonded connection in areas (1).
- Release and remove the outer section of A-pillar (2) from cavity sealing (3).

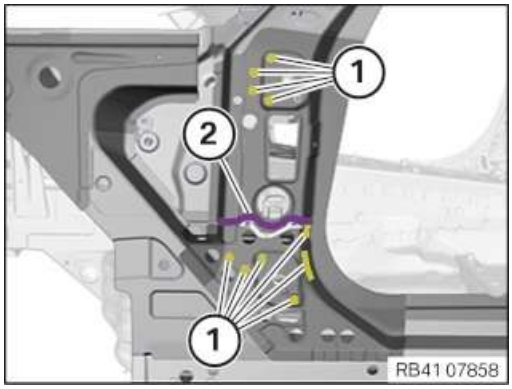


- Remove sheet metal cutout (3) in such a way that it can be reused.
- Mark and make the separating cut (1) as shown.
- Open the welded connections in areas (2) and remove the metal section (3).

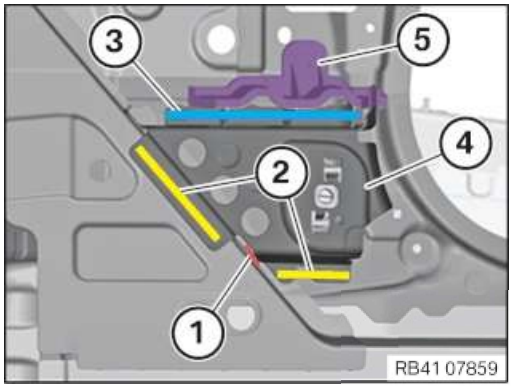


- Release welded connections in areas (1).
- Release the spot-welded adhesive joints in area (2).

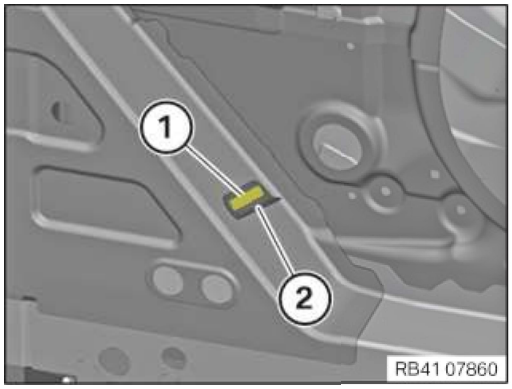
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- Release welded connections in areas (1).
- Detach the reinforcement of the A-pillar from the cavity sealing (2) and remove.



- Make a rough separating cut (1) on the hinge mount.
- Release welded connections in areas (2).
- Release the spot-welded adhesive joints in area (3).
- Remove hinge mount (4) together with cavity sealing (5).



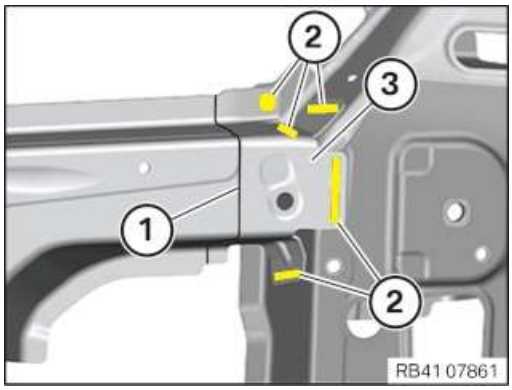
- Remove welded connections in area (1) and remove section (2) of the hinge mount.

3 – Prepare new part

TECHNICAL INFORMATION

For more information see: 41 00... Spot-weld bonding steel components

- Remove adhesive residue from joining surfaces of the vehicle.



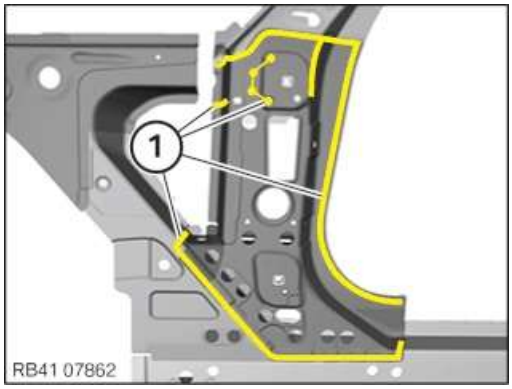
- Remove sheet metal cutout (3) in such a way that it can be reused.
- Make severance cut (1) on the new part in accordance with severance cut on vehicle.

TECHNICAL INFORMATION

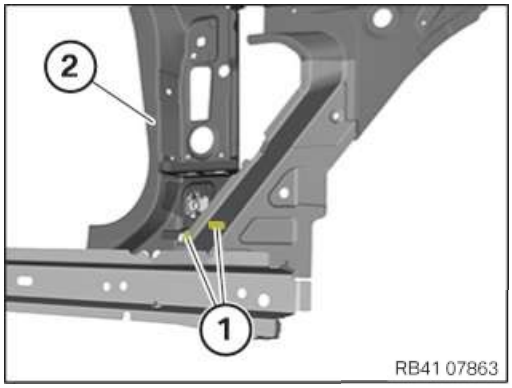
For additional information see: 41 00 ... Weld in the reinforcement plates (sheet steel)

- Prepare a reinforcement plate for the separating cut.
- Open the welded connections in the areas (2) and remove the metal section (3).

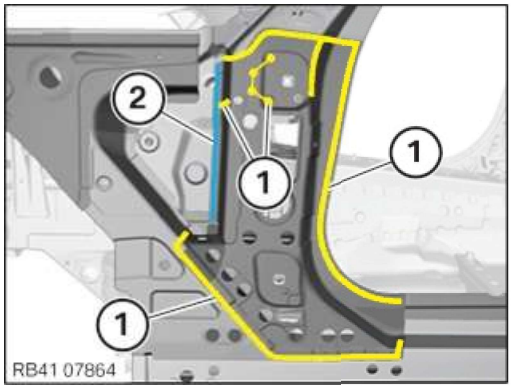
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- Release welded connections in areas (1).



- Release welded connections in areas (1) and remove the A-pillar reinforcement (2).

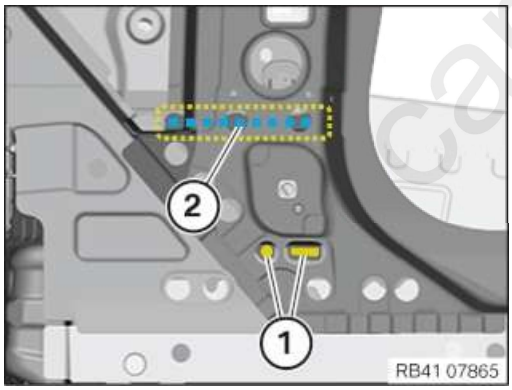


- Adjust the new part using an alignment bracket or a universal fixture and secure it.
- Prepare areas (1) and (2) for joining by welding.

TECHNICAL INFORMATION

For more information see: 41 00... Spot-weld bonding steel components

- In area (2), observe the procedure for the replacement of spot-welded adhesive joints for standard production.



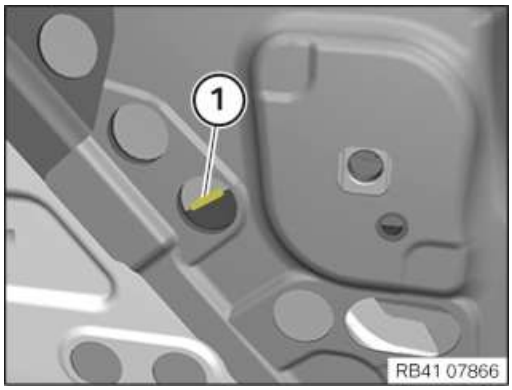
- Prepare areas (1) and (2) for joining by welding.

TECHNICAL INFORMATION

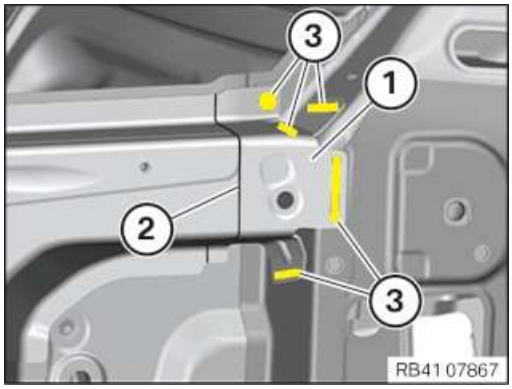
For more information see: 41 00... Spot-weld bonding steel components

- In area (2), observe the procedure for the replacement of spot-welded adhesive joints for standard production.

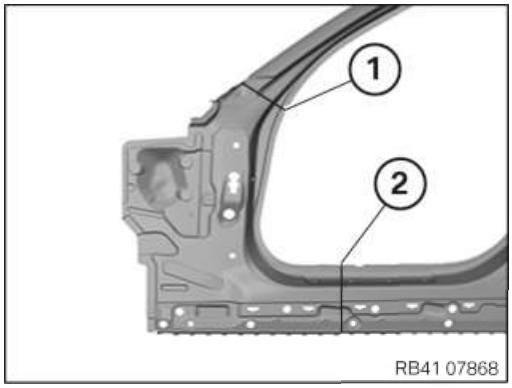
  Prepare additional metal active gas plug weldings from the inside in the area (2).



- In area (1), prepare a MAG weld seam with a length of approx. 20 mm.



- Adjust the section (1).
- Prepare a reinforcement plate for the separating cut (2).
- Prepare areas (3) for joining by welding.

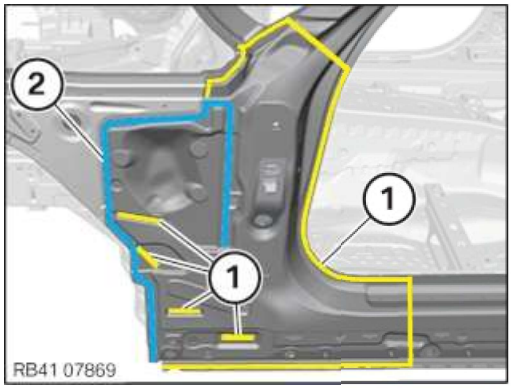


- Mark separating cuts (1) and (2) on the new part in accordance with separating cuts on the vehicle and cut.

TECHNICAL INFORMATION

For additional information see: 41 00 ... Weld in the reinforcement plates (sheet steel)

- For severance cuts (1) and (2), prepare reinforcement plates.



- Adjust reinforcement plates and new part to fit.

TECHNICAL INFORMATION

For more information see: 41 00... Spot-weld bonding steel components

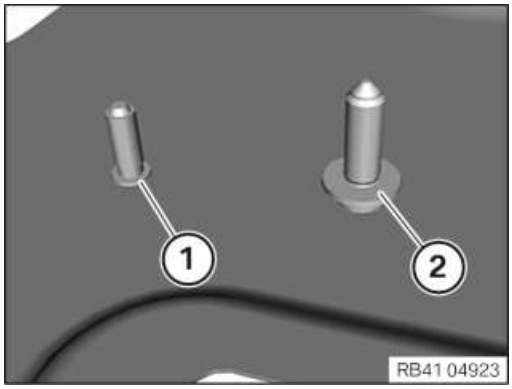
- Prepare the new part in areas (1) and (2) for joining by welding.

  In area (2), observe the procedure for replacing spot-welded adhesive joints for the standard production.

▸ **Renewing the coarse thread bolt and threaded weld bolt**

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

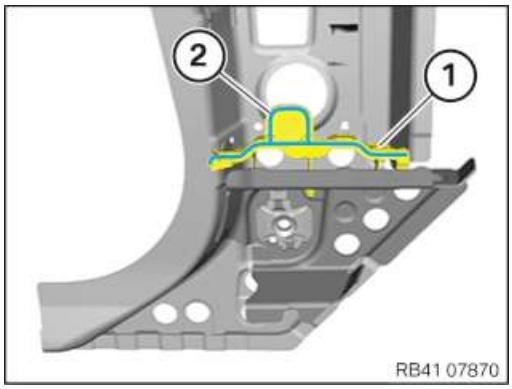


- Take the quantity and position from the component to be replaced.
- Weld the coarse thread bolt (1) and the threaded weld bolt (2) onto the new part.

4 – Install A-pillar reinforcement

TECHNICAL INFORMATION

Use only approved spot-welding apparatus for repair.
For additional information see: 41 00 ... Workshop equipment



TECHNICAL INFORMATION

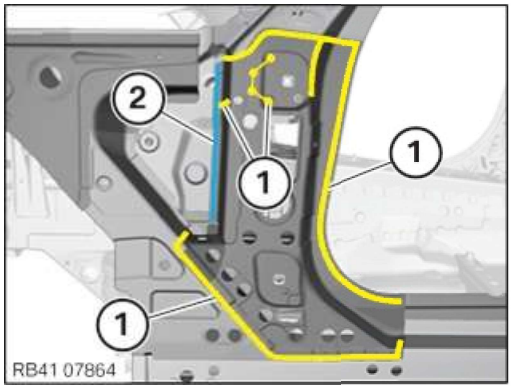
For more information see: 41 00 ... Installation of a cavity sealing (not expanding)

- Apply sealant D1 to the new cavity sealing (1).

Expendable materials

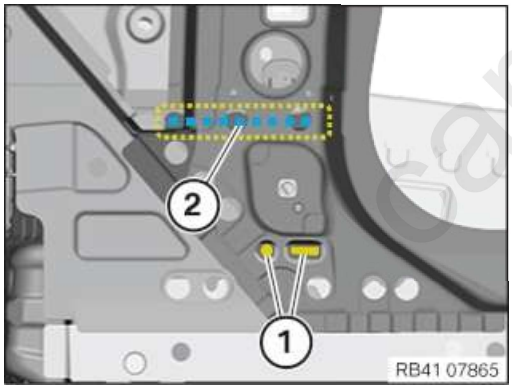
Sealant D1 (seam sealing)	310 ml	83422409985

- Insert the cavity sealing (1) in the new part.
- Apply the sealant D1 on the cavity sealing in the area (2).

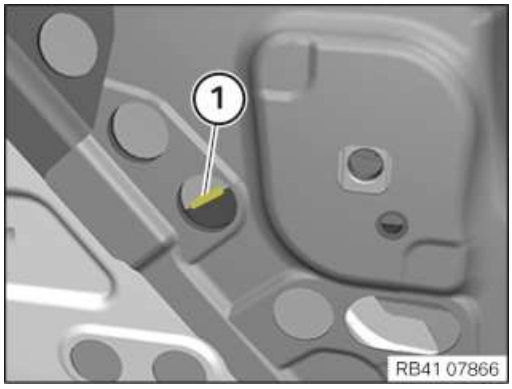


- Install the new part using an alignment bracket or a universal fixture and secure it.

  Weld new part in areas (1) and (2) as per new part preparation processes.

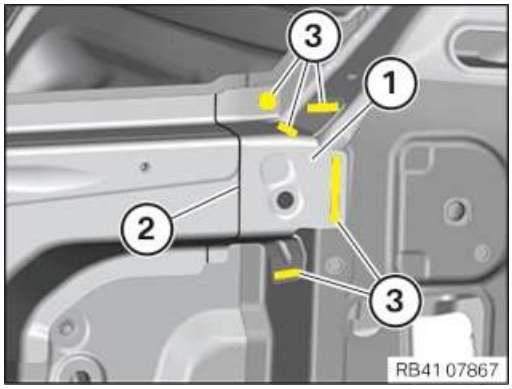


- Weld new part in areas (1) and (2) as per new part preparation processes.

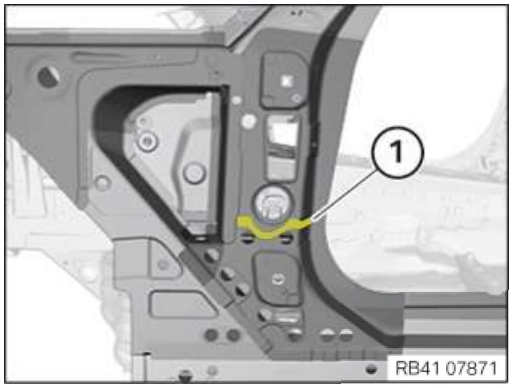


- MAG weld the new part in the area (1).

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- Install the section (1) and the reinforcement plate.
- Weld separating cut (2), the reinforcement plate and the areas (3).



TECHNICAL INFORMATION

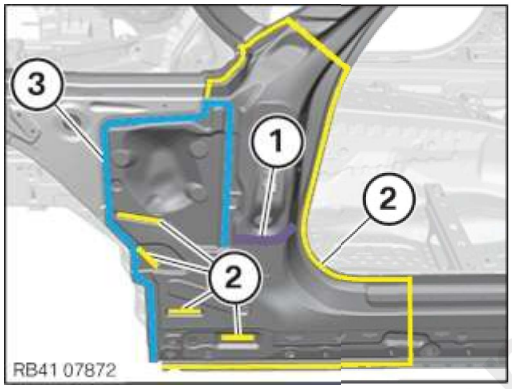
For more information see: 41 00 ... Installation of a cavity sealing (not expanding)

- Apply sealant D1 to the new cavity sealing (1).

Expendable materials

Sealant D1 (seam sealing)	310 ml	83422409985

- Install cavity sealing (1).



- Apply sealant D1 to cavity sealing (1).

Expendable materials

Sealant D1 (seam sealing)	310 ml	83422409985

- Install the new part and the reinforcement plates.
- Weld the new part and reinforcement plates in areas (2) and (3) as per new part preparation processes.

Additional Information

Links

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... Opening bonded connections	2
41 00 ... Spot-weld bonding steel components	3
41 00 ... Workshop equipment (BMW and MINI vehicles)	4
41 0 Repair techniques, repair stage 3	

Repair instructions	Used in step
41 00 ... Welding in reinforcement plate (sheet steel)	3
41 00 ... Installing cavity sealing (not expanded)	4

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41 21 201 Replacing B-pillar with reinforcement on left

Prerequisite

- Vehicle is fixed on straightening bench.

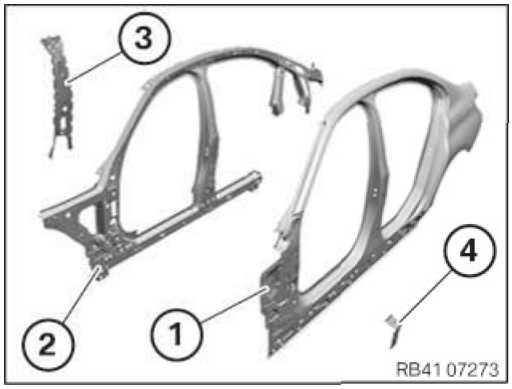
TECHNICAL INFORMATION

- Observe the procedure for repair stage 3.

For additional information see: 41 00 ... Repair method for repair stage 3

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

1 – New parts required



- Supply the following new parts (see Electronic Parts Catalogue EPC):

  Side frame, outer part(1)

  Side frame, centre(2)

  B-pillar, inner section(3)

  Rocker panel repair sheet (4)

  Lower B-pillar shaped part

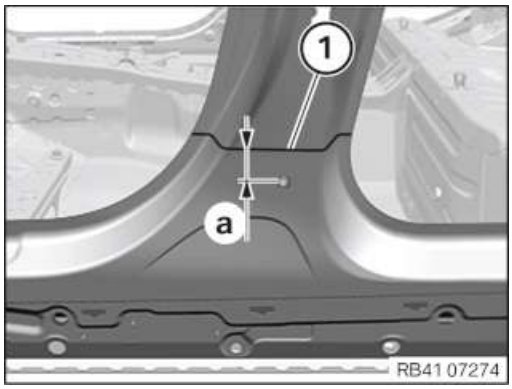
TECHNICAL INFORMATION

For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

- Following consumables are required:

Material	Quantity
Adhesive K5 (50 ml)	1
Cleaning agentR1	1
Cleaning agentR2	1
Sealant D1	1

2 – Remove B-pillar with reinforcement

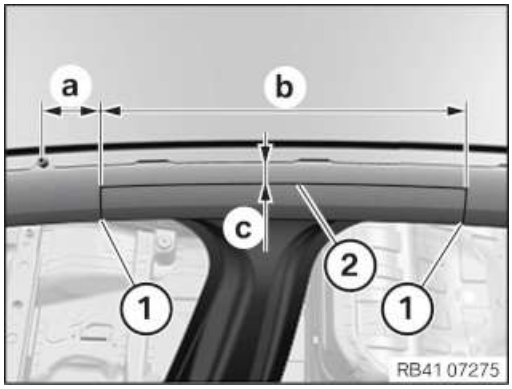


- Mark separating cut (1) according to dimension a.

  Dimension a 1= 55 mm 2 from the centre of the hinge mount.

- Cut through B-pillar completely.

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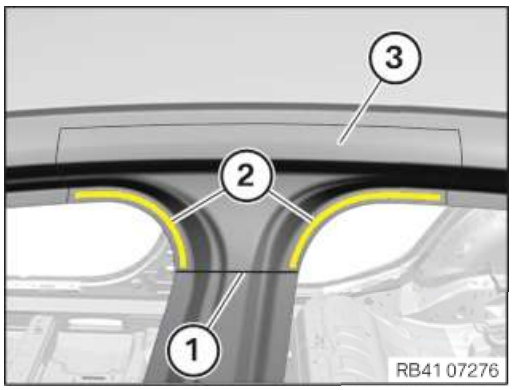
- Mark and carry out the separating cuts (1) and (2) according to the specified dimensions.

  Thereby disconnect only the outer panel.

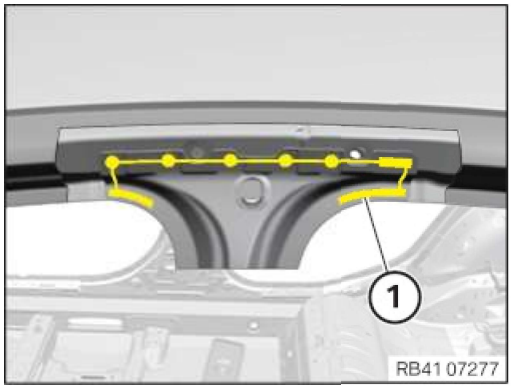
  Dimension a = 80 mm from the centre of the mounting.

  Dimension b= 440 mm from dimension a.

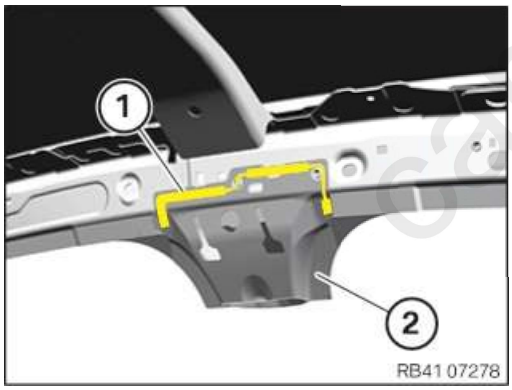
  Dimension c= 25 mm from the component edge of the roof frame.



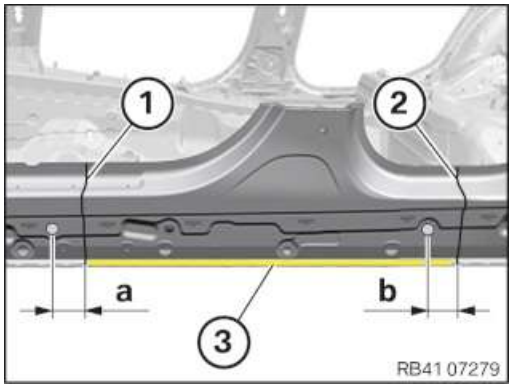
- Start the separating cut (1) as shown and completely cut through the B-pillar.
- Open the welded connections in the areas (2) and remove the section (3).



- Release welded connections in areas (1).



- Open the welded connections in the area (1) and remove the section of the B-pillar (2).



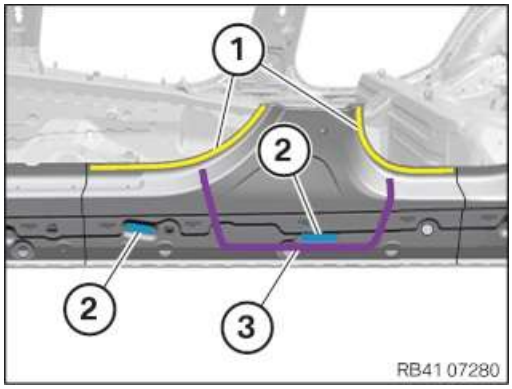
- Mark and cut the separating cuts (1) and (2) according to the specified dimensions.

  Thereby disconnect only the outer panel.

  Dimension a = 65 mm from the centre of the Ø 20 mm hole.

  Dimension b = 75 mm from the centre of the Ø 20 mm hole.
- Open welded connections in area (3).

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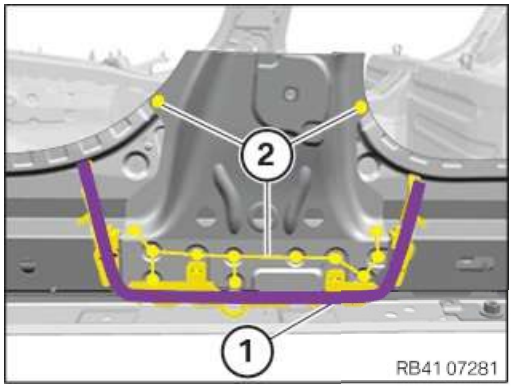


- Release welded connections in areas (1).

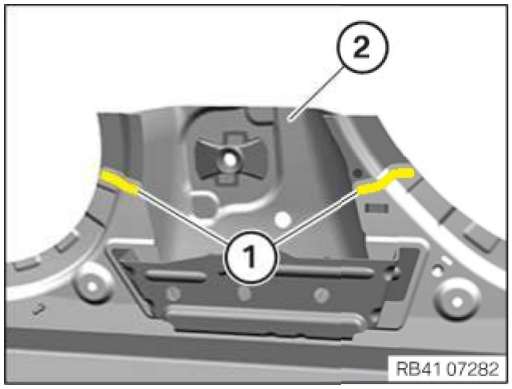
TECHNICAL INFORMATION

For more information see: 41 00 ... Releasing bonded connections

- Open the bonded connections in areas (2).
- Detach the outer section of the B-pillar from the cavity sealing (3) and remove.



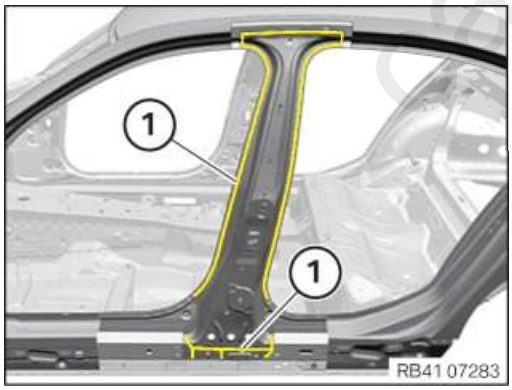
- Remove cavity sealing (1).
- Release welded connections in areas (2).



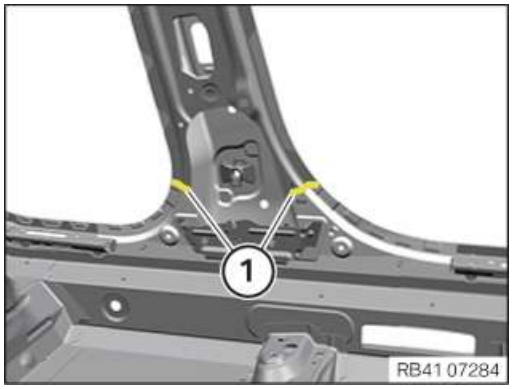
- Release welded connections in areas (1).
- Remove B-pillar reinforcement section (2).

3 – Prepare new part

- Remove unnecessary components from new part.

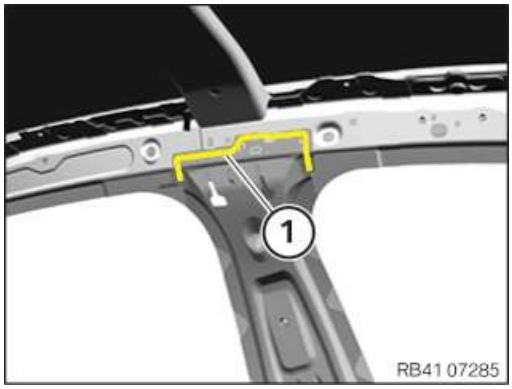


- Prepare the new parts in the areas (1) for joining by welding.



- Prepare the new parts in the areas (1) for joining by welding.

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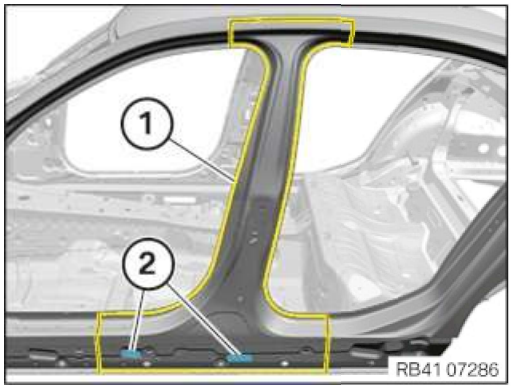
- Prepare the new part in area (1) for joining by welding.

- Mark out and make separating cuts on the new B-pillar outer skin in accordance with the separating cuts on the vehicle.

TECHNICAL INFORMATION

For additional information see: 41 00 ... Weld in the reinforcement plates (sheet steel)

- Prepare the reinforcement plates for the separating cuts.



- Adjust the new part and prepare for joining by welding in the area (1).

TECHNICAL INFORMATION

Adhesive technology in the area of the outer skin (not for structural adhesion):

The bonding surfaces of the new parts may not sharpened or ground.

For additional information see: 41 00 ... BMW bonding instructions

- Prepare the areas (2) for joining by bonding technology.

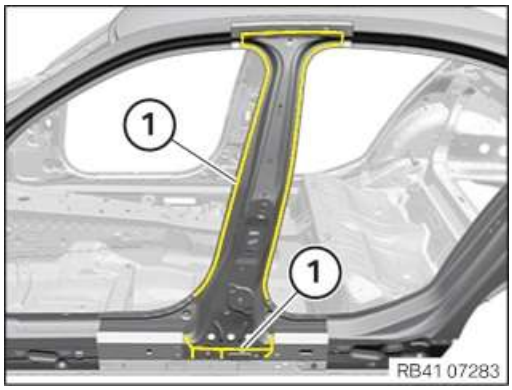
4 – Install B-pillar with reinforcement

TECHNICAL INFORMATION

Use only approved spot-welding apparatus for repair.

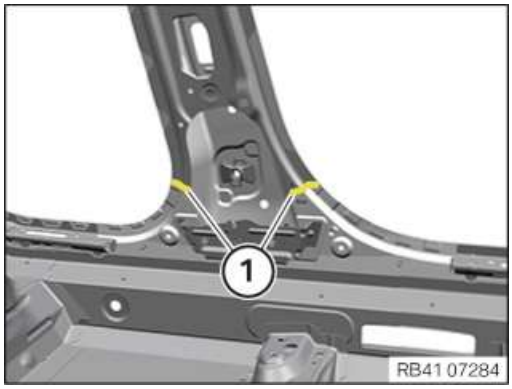
For additional information see: 41 00 ... Workshop equipment

- Install the new B-pillar inner section and B-pillar reinforcement using an alignment bracket or universal fixture and secure in place.

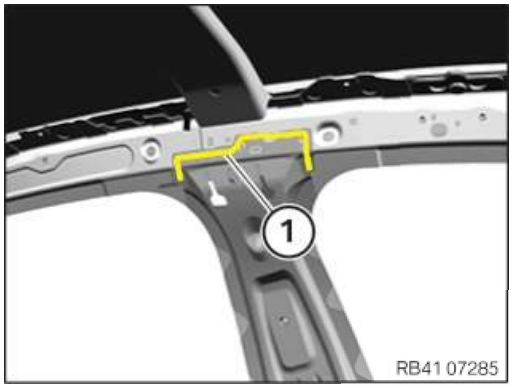


- Weld new part in the area(1).

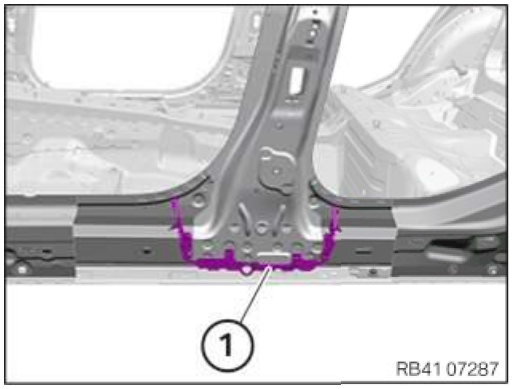
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- Weld new part in the area(1).



- Weld the new parts in the area (1).



TECHNICAL INFORMATION

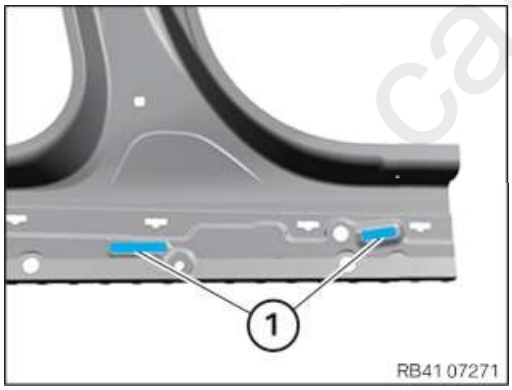
For more information see: 41 00 ... Installation of a cavity sealing (not expanding)

- Apply sealant D1 to cavity sealing (1).

  Install cavity sealing (1).

Expendable materials

Sealant D1 (seam sealing)	310 ml	83422409985



- Pre-clean the bonding surfaces (1) on the new part and vehicle with R2 solvent cleaner.

Expendable materials

Cleaning agent R2	500 ml	83190417324

- Clean the bonding surfaces (1) on the new part and vehicle with R1 solvent cleaner.

Expendable materials

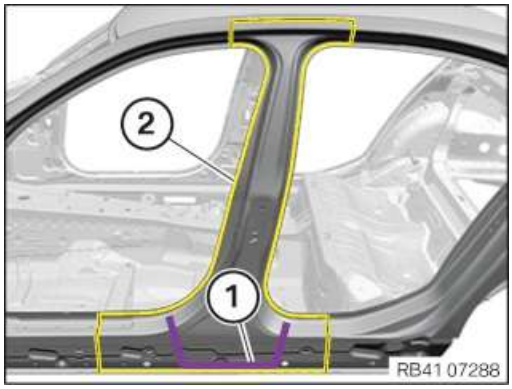
Cleaning agent R1	100 ml, Bottle	83192211217

- Apply adhesive K5 to the bonding surfaces (1).

Adhesive

Body adhesive K5	50 ml	83192158654

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TECHNICAL INFORMATION

For more information see: 41 00 ... Installation of a cavity sealing (not expanding)

- Apply sealant to cavity sealing (1).
- Install the new B-pillar outer skin and the reinforcement plates and weld in the area (2).

Additional Information

Links

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... Opening bonded connections	2
41 00 ... BMW/MINI bonding instructions	3
41 00 ... Workshop equipment (BMW and MINI vehicles)	4
41 0 Repair techniques, repair stage 3	

Repair instructions	Used in step
41 00 ... Welding in reinforcement plate (sheet steel)	3
41 00 ... Installing cavity sealing (not expanded)	4

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41 21 013 Replacing left outer A-pillar

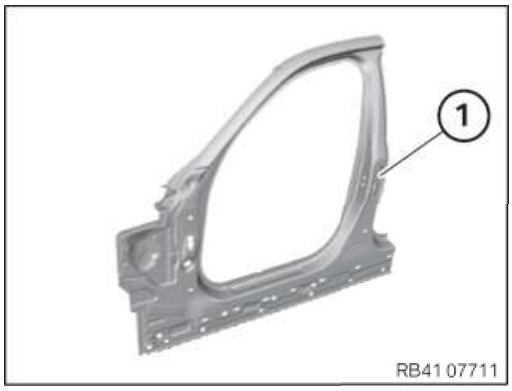
TECHNICAL INFORMATION

- Observe the procedure for repair stage 3.

For additional information see: 41 00 ... Repair method for repair stage 3

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

1 – Supplying the new parts required



- Supply the following new parts (see Electronic Parts Catalogue EPC):

  A-pillar, outer part(1)

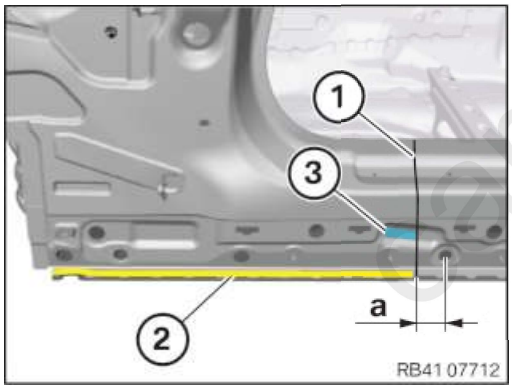
TECHNICAL INFORMATION

For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

- Supply the following consumables:

Material	Quantity
Coarse thread bolt	5
Sealing compound D1	1

2 – Removing the outer section of the A-pillar

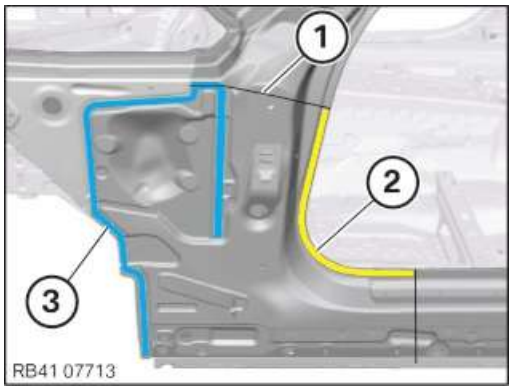


- Mark and carry out the separating cut (1) as per dimension a. Thereby disconnect only the outer panel. Dimension a = 45 mm from centre point of hole of Ø 20 mm.
- Open welded connections in area (2).

TECHNICAL INFORMATION

For more information see: 41 00 ... Releasing bonded connections

- Release bonded connection in area (3).

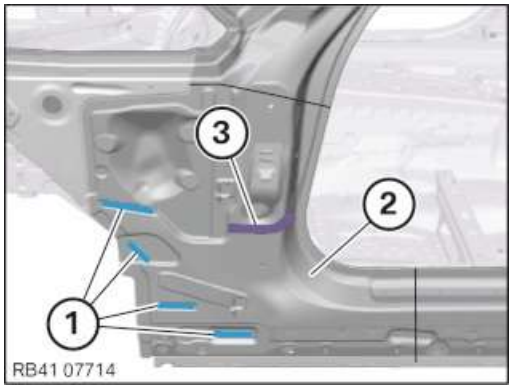


- Mark and make the separating cut (1) as shown.
- Open welded connections in area (2).

TECHNICAL INFORMATION

For more information see: 41 00 ... Releasing bonded connections

- Release the spot-welded adhesive joints in area (3).



- Release bonded connection in areas (1).
- Release the outer section of the A-pillar (2) from the cavity sealing (3) and remove.

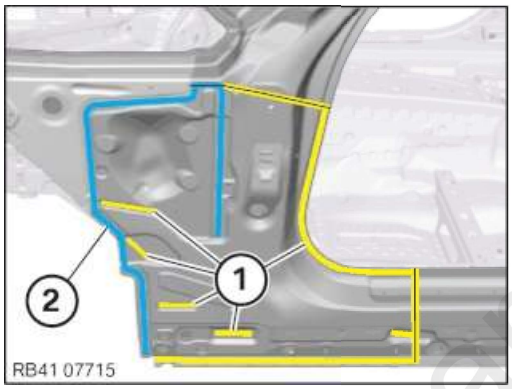
3 – Prepare new part

- Mark severance cuts on new part in accordance with severance cuts on vehicle and cut.
- Remove unneeded components from the new part.

TECHNICAL INFORMATION

For additional information see: 41 00 ... Weld in the reinforcement plates (sheet steel)

- Prepare reinforcement plates at severance cuts.
- Fit in new part.



TECHNICAL INFORMATION

For more information see: 41 00... Spot-weld bonding steel components

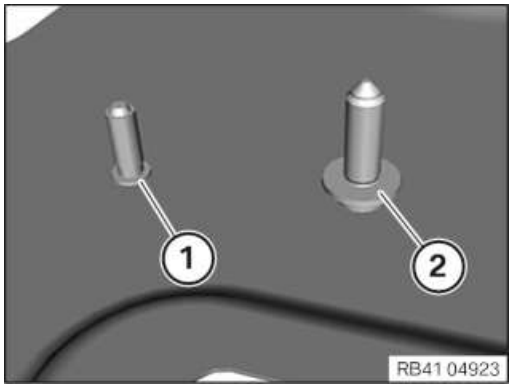
- Prepare the new part in areas (1) and (2) for joining by welding.

  In area (2), observe the procedure for replacing spot-welded adhesive joints for the standard production.

▸ **Renewing the coarse thread bolt and threaded weld bolt**

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



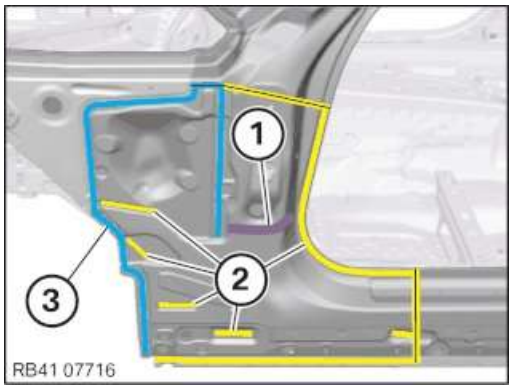
- Take the quantity and position from the component to be replaced.
- Weld the coarse thread bolt (1) and the threaded weld bolt (2) onto the new part.

4 – Install the outer section of the A-pillar

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TECHNICAL INFORMATION

Use only approved spot-welding apparatus for repair.
For additional information see: 41 00 ... Workshop equipment



TECHNICAL INFORMATION

For more information see: 41 00 ... Installation of cavity sealing (expanded)

- Apply sealant D1 to cavity sealing (1).

Expendable materials

Sealant D1 (seam sealing)	310 ml	83422409985

- Install the new part and the reinforcement plates.
- Weld the new part and reinforcement plates in areas (2) and (3) as per new part preparation processes.

Additional Information

Links

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... Opening bonded connections	2
41 00 ... Spot-weld bonding steel components	3
41 00 ... Workshop equipment (BMW and MINI vehicles)	4
41 00 ... Repair techniques, repair stage 3	

Repair instructions	Used in step
41 00 ... Welding in reinforcement plate (sheet steel)	3
41 00 ... Installing cavity sealing (expanded)	4

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41 21 950 Replacing reinforcement for roof frame at rear left

TECHNICAL INFORMATION

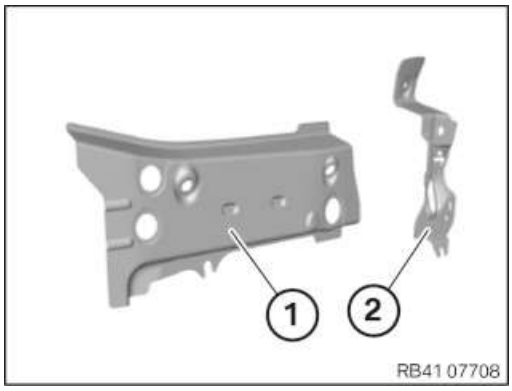
- Observe the procedure for repair stage 3.

For additional information see: 41 00 ... Repair method for repair stage 3

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

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1 – Supplying the new parts required

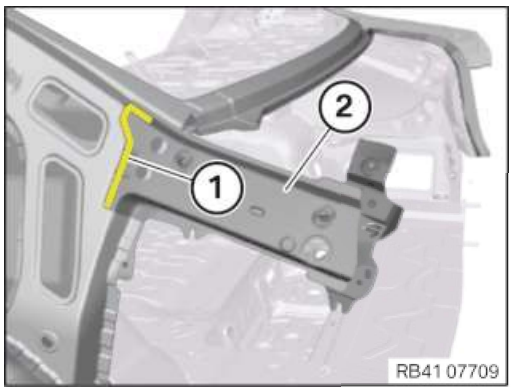


- Supply the following new parts (see Electronic Parts Catalogue EPC):

  Tensioning strap, wheel arch (1)

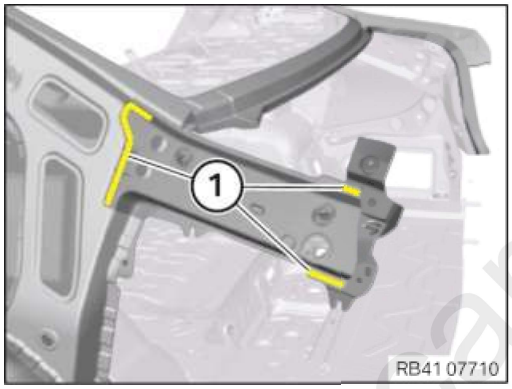
  Fixture for tailgate height tension spring (2)

2 – Removing the rear roof frame reinforcement



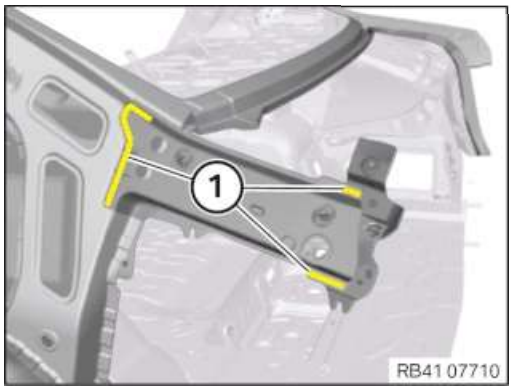
- Release the welded connection in area (1) and remove roof frame reinforcement (2).

3 – Prepare new part



- Adjust the new parts together with the tail panel and the side panel.
- Prepare the new parts in the areas (1) for joining by welding.

4 – Installing reinforcement at rear of roof frame



- Install the new parts and weld in areas (1).

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Additional Information

Links

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... Repair techniques, repair stage 3	

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41 ... 0 Notes on the repair technique used in the main group 41

Two different repair techniques are used in body repair.

These are welding and bonding/riveting.

If the repair instructions do not specify a repair technique, then welding must **always** be used.

The bonding/riveting repair technique is **always** described in detail in the repair instructions.

Quality standards must be met.

cardiagn.com

41 ... 0 Notes on the repair technique used in the main group 41

Two different repair techniques are used in body repair.

These are welding and bonding/riveting.

If the repair instructions do not specify a repair technique, then welding must **always** be used.

The bonding/riveting repair technique is **always** described in detail in the repair instructions.

Quality standards must be met.

cardiagn.com

41 31 000 Replace roof outer skin

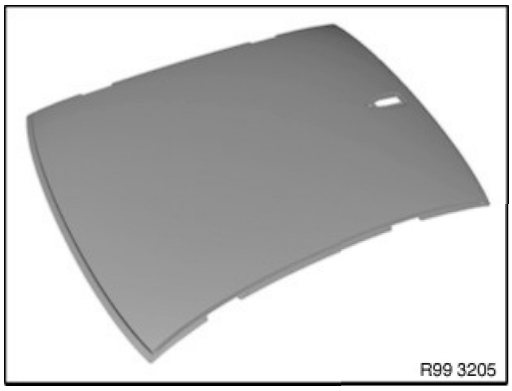
TECHNICAL INFORMATION

- Observe the procedure for repair stage 2.

For additional information see: 41 00 ... Repair method for repair stage 2

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

1 – Supplying the new parts required



- Supply the following new parts (see Electronic Parts Catalogue EPC):

  Roof outer skin (1)

TECHNICAL INFORMATION

For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

- Supply the following consumables:

Material	Quantity
Adhesive K5 (50 ml)	1
Adhesive K5 (195 ml)	1
Punch rivet N5	25
Cleaning agentR1	1
Cleaning agentR2	1
EMC screw	2
Sealant D1	1
Sealant D2	1

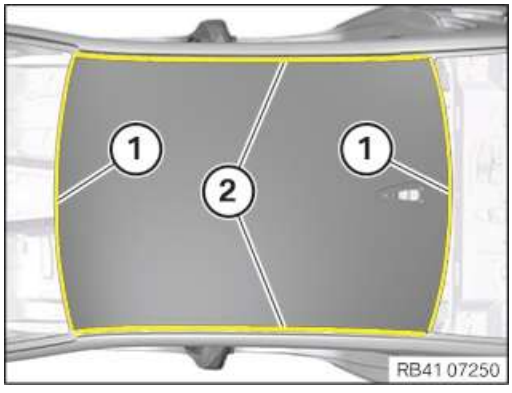
- Tools also required:

  Roof pliers set, order number: 81 43 2 158 707

  See bottom Aftersales Assistance Portal (ASAP), workshop equipment service/technology - Start BMW

  Or at: www.bmwbroup-wep.com

2 – Remove roof outer skin



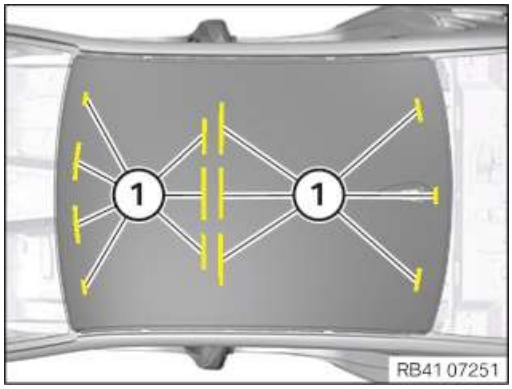
- Release welded connections in areas (1).

TECHNICAL INFORMATION

For more information see: 41 00 ... Releasing bonded connections

- Open spot-welded adhesive joints in areas (2).

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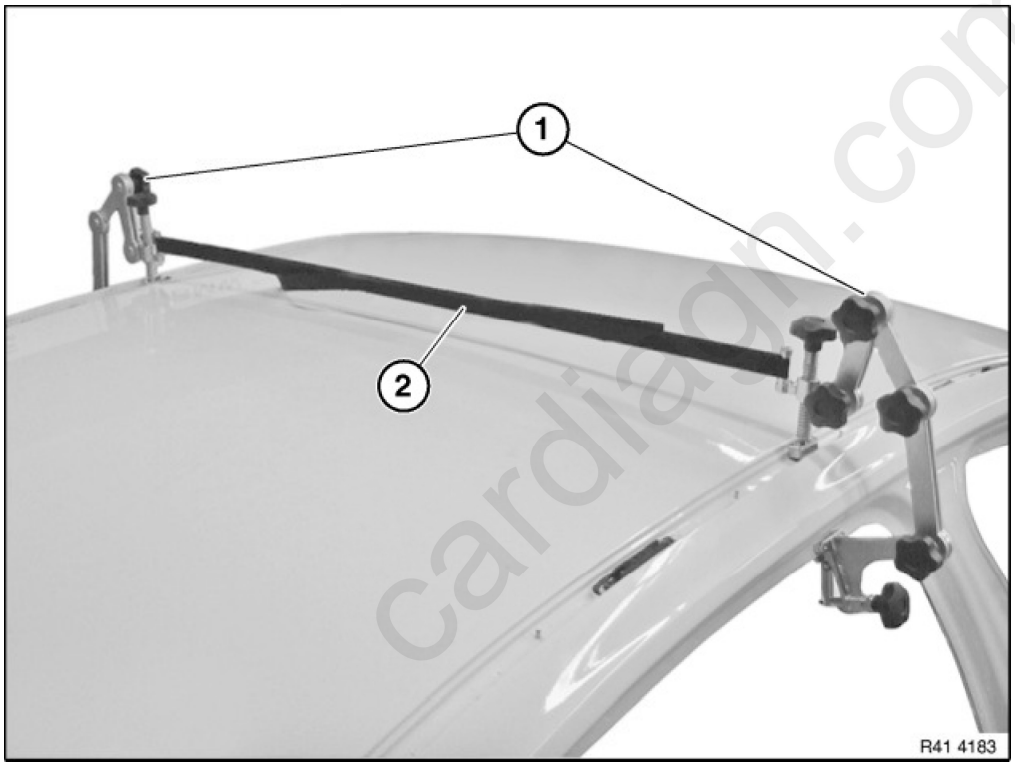


- Open the bonded connections in areas (1).
- Take off roof outer skin.

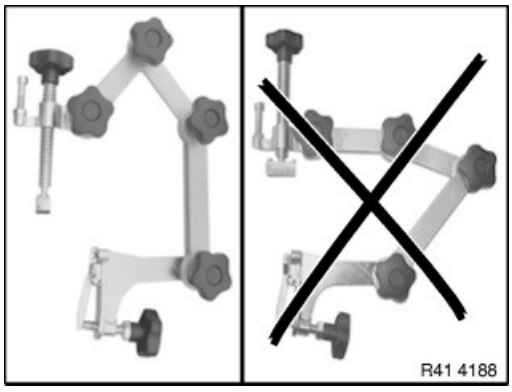
3 – Prepare new part

TECHNICAL INFORMATION

Adhesive technology in the area of the outer skin (not for structural adhesion):
The bonding surfaces of the new parts may not sharpened or ground.
For additional information see: 41 00 ... BMW bonding instructions

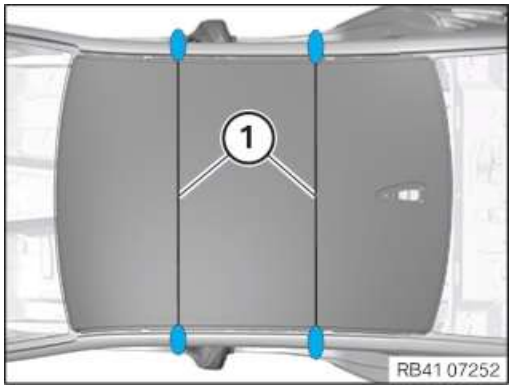


- Place the roof outer skin in position on the vehicle and adjust it to fit together with the roof trim strips.
- Adjust the clamping tools before installation, to maintain the short processing time starting from the adhesive task.
- Mount roof pliers (1) and fix with a tensioning strap (2).



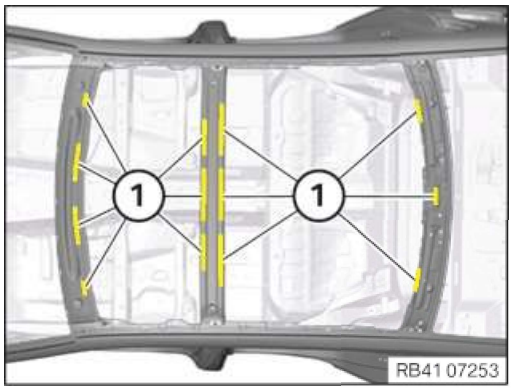
- Adjust roof pliers according to the schematic diagram.

cardiagn.com



- Secure the roof outer skin as shown in 2 areas using roof pliers and tensioning straps (1).
- Release clamping tools and remove roof outer skin.

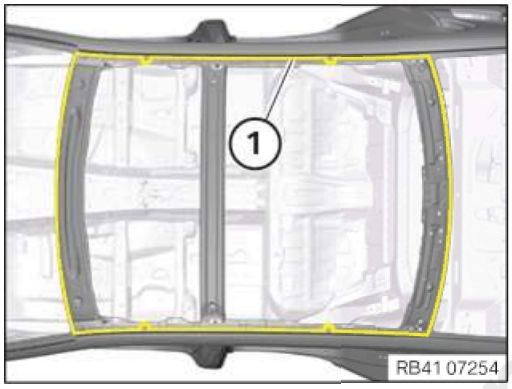
4 – Installing the roof outer skin



- Clean bonding surfaces (1) on vehicle and on new part with solvent cleaner R1.

Expendable materials

Cleaning agent R1	100 ml, Bottle	83192211217



- Clean bonding surfaces (1) on vehicle and on new part with solvent cleaner R2.

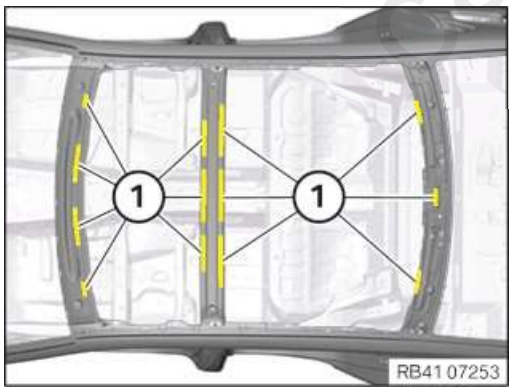
Expendable materials

Cleaning agent R2	500 ml	83190417324

- Clean bonding surfaces (1) on vehicle and on new part with solvent cleaner R1.

Expendable materials

Cleaning agent R1	100 ml, Bottle	83192211217

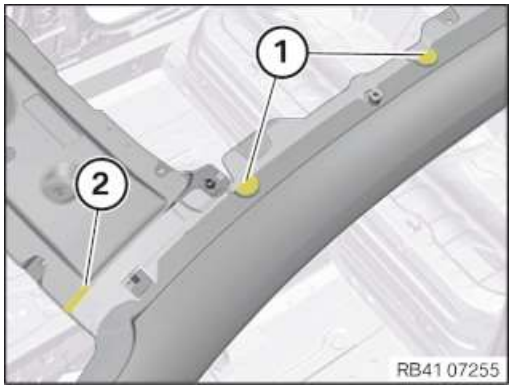


- In areas (1), apply sealant D2 similar to the standard production.

Expendable materials

Sealant D2 (seam sealing, spreadable)	310 ml	83422409986

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- On the left and right roof frame, fill all flange recesses (1) with adhesive K5 and smooth. (levelling)

  Apply adhesive in such a way that all flange recesses are level to the rest of the bonding surface.
- At both level jumps (2), left and right, apply a 25 mm long adhesive bead K5 and smooth. (levelling)

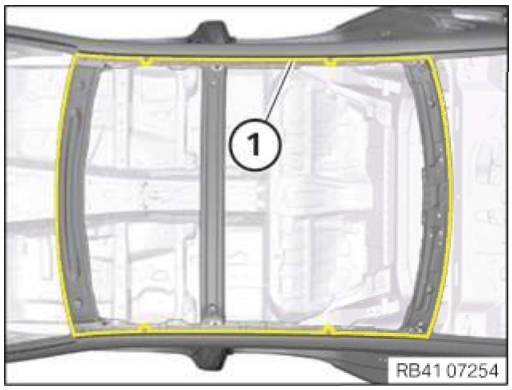
  Apply adhesive in such a way that all the level jumps are level with the rest of the bonding surface.

Adhesive

Body adhesive K5	195 ml	83192157298

Adhesive

Body adhesive K5	50 ml	83192158654



- In areas (1), apply adhesive K5.

  Apply a reference bead of adhesive approx. 100–200 mm length on a suitable surface for later checking.

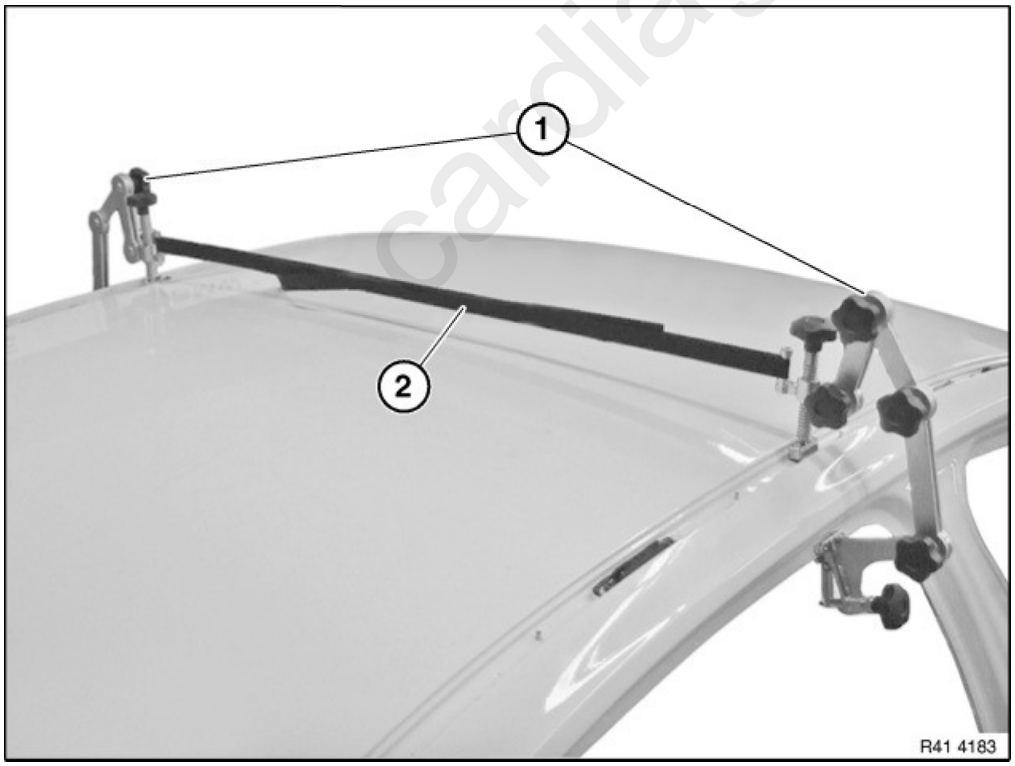
Adhesive

Body adhesive K5	195 ml	83192157298

Adhesive

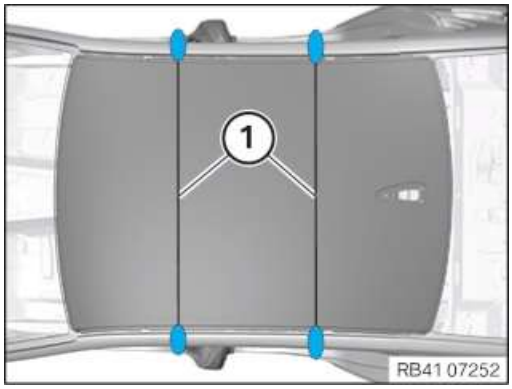
Body adhesive K5	50 ml	83192158654

- Place roof outer skin with helpers evenly and centrally on vehicle and adjust to fit.

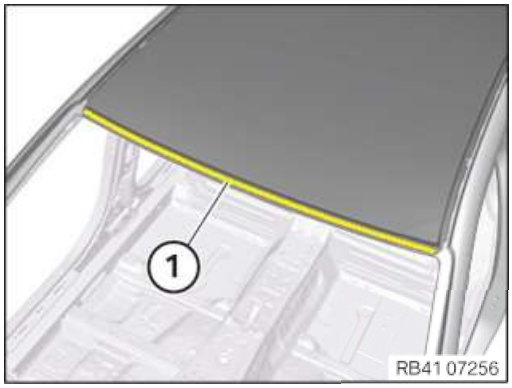


- Mount the roof clamps (1) and fasten with the tensioning strap (2).

autodiagn.com



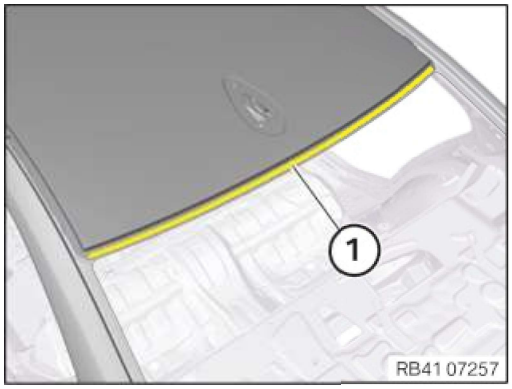
- Fasten the roof outer skin at 2 areas as shown with the roof clamps and tensioning straps (1).



- In area (1), rivet the roof outer skin with 11 punch rivets N5.

Expendable materials

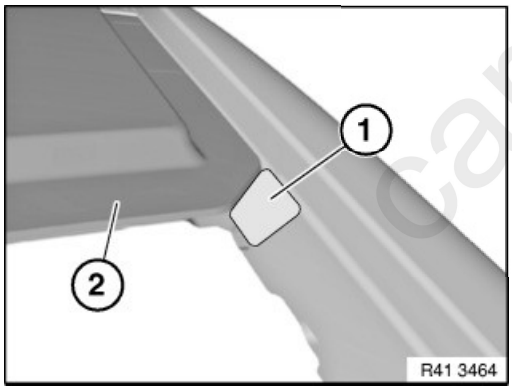
Punch rivet N5 Ø 5 mm ; 5 mm long		83192158079



- In area (1), rivet the roof outer skin with 11 punch rivets N5.

Expendable materials

Punch rivet N5 Ø 5 mm ; 5 mm long		83192158079



- Adhesive at the nodes of the A-pillar and D-pillar: Align the stage (1) between the roof outer skin (2) and the A-pillar or roof outer skin (2) and D-pillar with the emerging adhesive.

  Do not leave any sharp edges as this may compromise the tightness of the subsequent windscreen or rear window bonding.
- Spread excess adhesive in roof trim strip channel. While doing so, the mounting surfaces of roof trim strip mounting elements may not be coated with adhesive.
- Remove excess adhesive. For that do not use any cleaning agent or solvent!

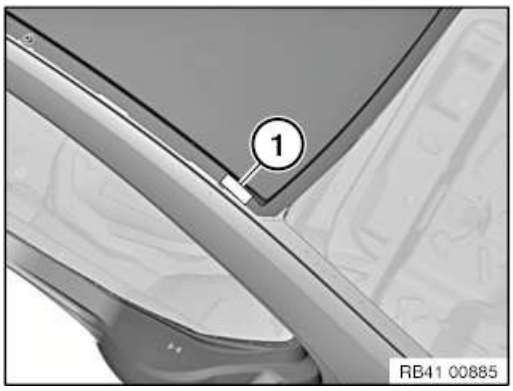
▸ **Install the EMC screw (EMC = electromagnetic compatibility)**

- After adhesive has fully hardened: Drill a hole with a diameter of 4.2 mm.
- Screw in the EMC screw.
- Seal the EMC screw with the sealant D1 .

Expendable materials

Sealant D1 (seam sealing)	310 ml	83422409985

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NOTICE

Perform the operations on the left and right side.

- After the adhesive has hardened in area (1), install an electromagnetic compatibility screw.

  While doing so, bear in mind subsequent installation of roof trim strip.

Expendable materials

Screw EMC screw, SF Plus, M5x15		83190301639

Additional Information

Links

Repair instructions (PRE)	Used in step
EMC screws, general information	4

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... Opening bonded connections	2
41 00 ... BMW/MINI bonding instructions	3
41 00 ... Repair techniques, repair stage 2	

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41 31 100 Replace roof outer skin with slide/tilt sunroof

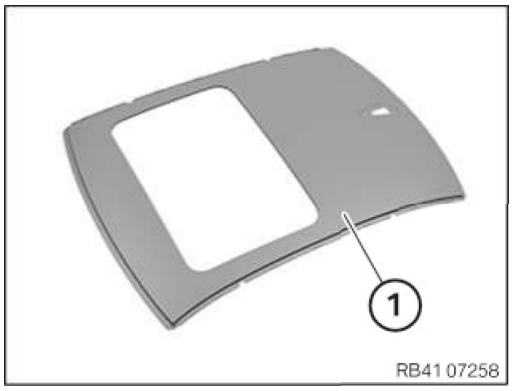
TECHNICAL INFORMATION

- Observe the procedure for repair stage 2.

For additional information see: 41 00 ... Repair method for repair stage 2

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

1 – Supplying the new parts required



- Supply the following new parts (see Electronic Parts Catalogue EPC):

  Roof outer skin (1)

TECHNICAL INFORMATION

For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

- Supply the following consumables:

Material	Quantity
Adhesive K5 (50 ml)	1
Adhesive K5 (195 ml)	1
Punch rivet N5	25
Cleaning agentR1	1
Cleaning agentR2	1
EMC screw	2
Sealant D1	1
Sealant D2	1

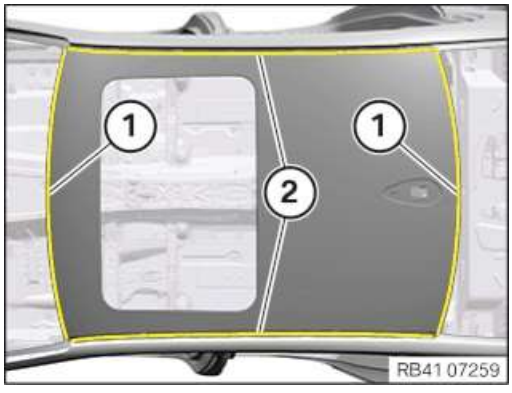
- Tools also required:

  Roof pliers set, order number: 81 43 2 158 707

  See bottom Aftersales Assistance Portal (ASAP), workshop equipment service/technology - Start BMW

  Or at: www.bmwbroup-wep.com

2 – Remove roof outer skin



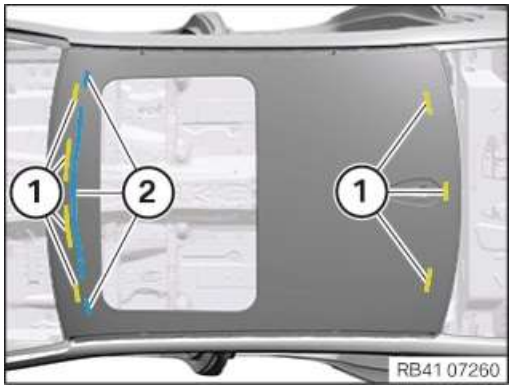
- Release welded connections in areas (1).

TECHNICAL INFORMATION

For more information see: 41 00 ... Releasing bonded connections

- Open spot-welded adhesive joints in areas (2).

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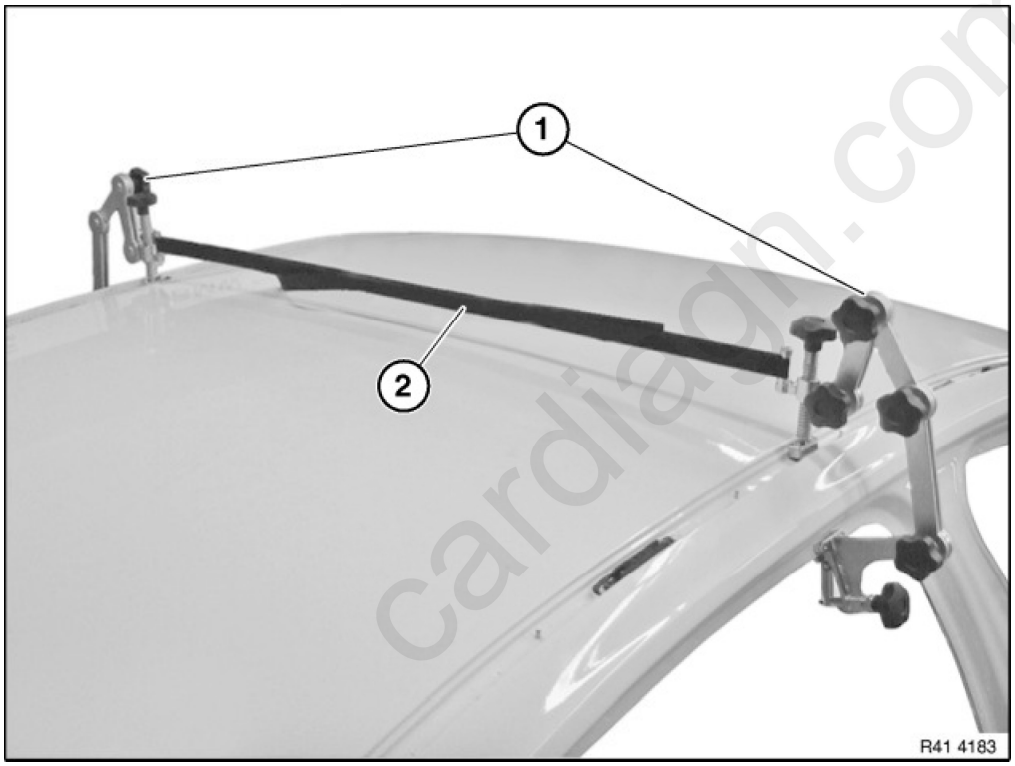


- Remove the adhesive joints (sealant) in the areas (1) .
- Release the bonded connections (adhesive) in areas (2).
- Take off roof outer skin.

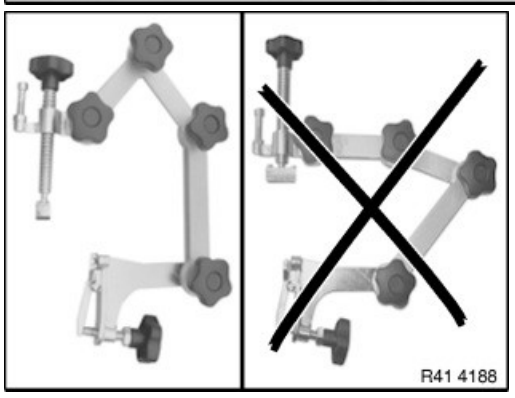
3 – Prepare new part

TECHNICAL INFORMATION

Adhesive technology in the area of the outer skin (not for structural adhesion):
The bonding surfaces of the new parts may not sharpened or ground.
For additional information see: 41 00 ... BMW bonding instructions

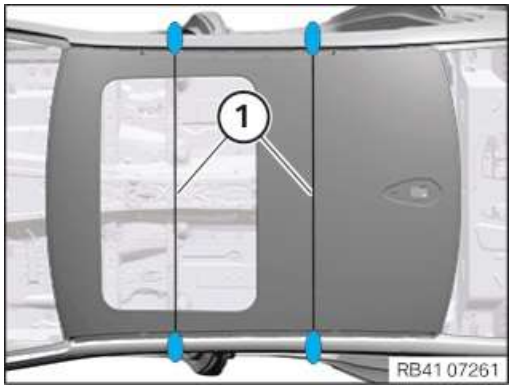


- Place the roof outer skin in position on the vehicle and adjust it to fit together with the roof trim strips.
- Adjust the clamping tools before installation, to maintain the short processing time starting from the adhesive task.
- Mount roof pliers (1) and fix with a tensioning strap (2).



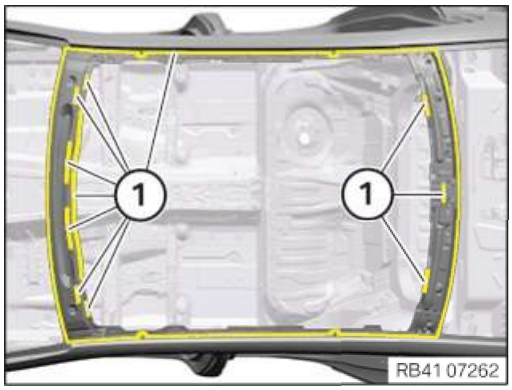
- Adjust roof pliers according to the schematic diagram.

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- Secure the roof outer skin as shown in 2 areas using roof pliers and tensioning straps (1).
- Release clamping tools and remove roof outer skin.

4 – Installing the roof outer skin



- Clean bonding surfaces (1) on vehicle and on new part with solvent cleaner R2.

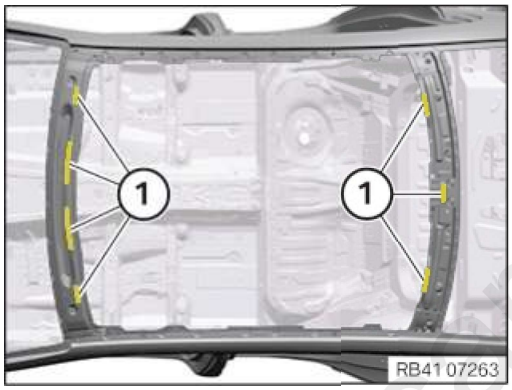
Expendable materials

Cleaning agent R2	500 ml	83190417324

- Clean bonding surfaces (1) on vehicle and on new part with solvent cleaner R1.

Expendable materials

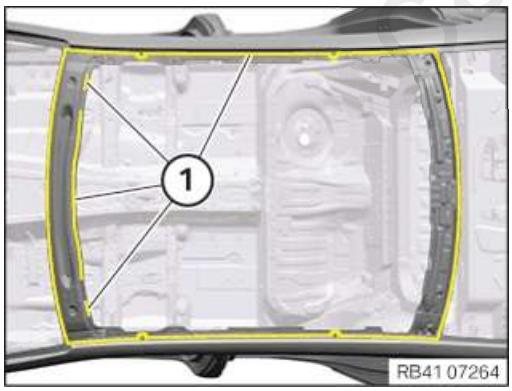
Cleaning agent R1	100 ml, Bottle	83192211217



- In areas (1), apply sealant D2 similar to the standard production.

Expendable materials

Sealant D2 (seam sealing, spreadable)	310 ml	83422409986



- In areas (1), apply adhesive K5.

  Apply a reference bead of adhesive approx. 100 mm long on a suitable support for subsequent control.

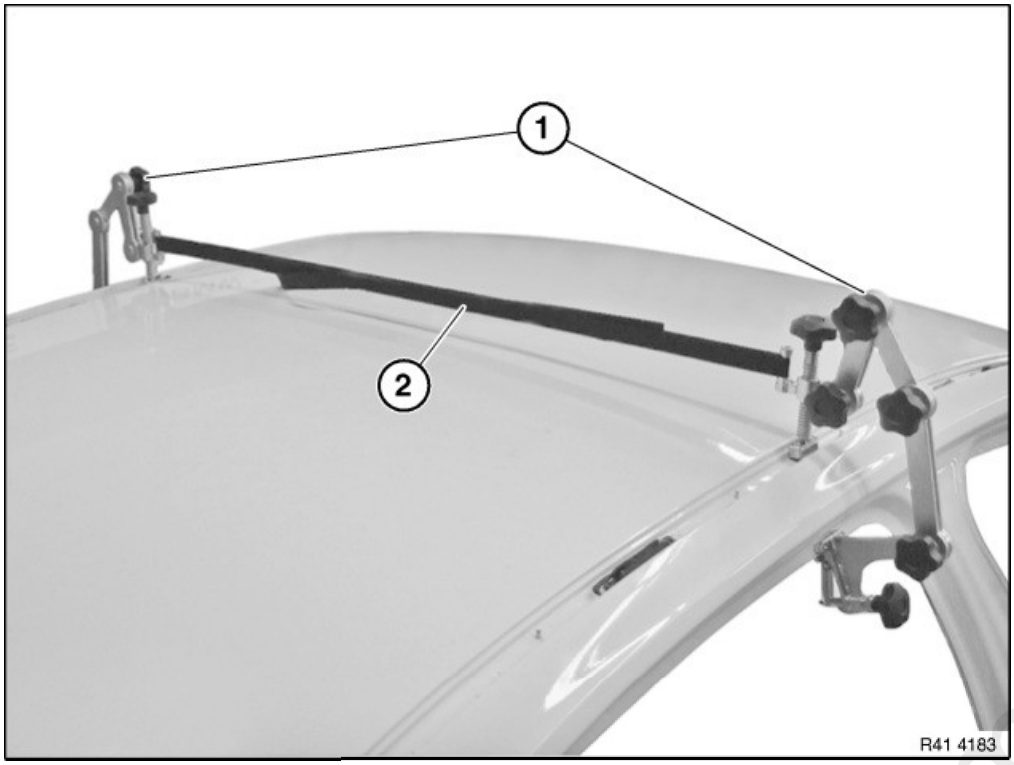
Adhesive

Body adhesive K5	195 ml	83192157298

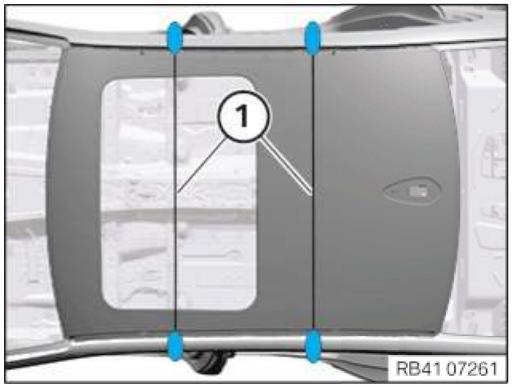
Adhesive

Body adhesive K5	50 ml	83192158654

- Place roof outer skin with helpers evenly and centrally on vehicle and adjust to fit.



- Mount the roof clamps (1) and fasten with the tensioning strap (2).



- Fasten the roof outer skin at 2 areas as shown with the roof clamps and tensioning straps (1).

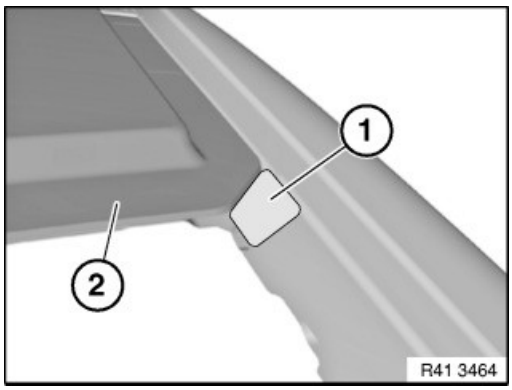


- In the area (1) and (2), rivet the roof outer skin with punch rivets N5.

Area	Number
1	11
2	11

Expendable materials

Punch rivet N5 Ø 5 mm ; 5 mm long		83192158079



- Adhesive at the nodes of the A-pillar and D-pillar: Align the stage (1) between the roof outer skin (2) and the A-pillar or roof outer skin (2) and D-pillar with the emerging adhesive.

  Do not leave any sharp edges as this may compromise the tightness of the subsequent windscreen or rear window bonding.
- Spread excess adhesive in roof trim strip channel. While doing so, the mounting surfaces of roof trim strip mounting elements may not be coated with adhesive.
- Remove excess adhesive. For that do not use any cleaning agent or solvent!

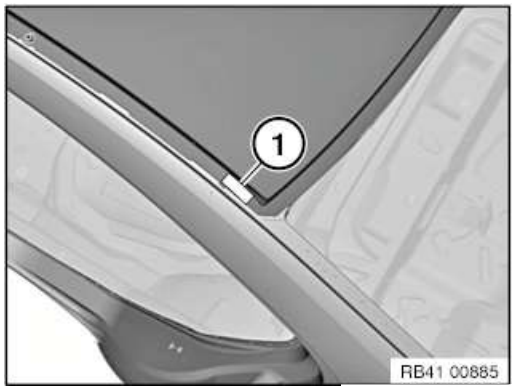
▸ **Install the EMC screw (EMC = electromagnetic compatibility)**

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- After adhesive has fully hardened: Drill a hole with a diameter of 4.2 mm.
- Screw in the EMC screw.
- Seal the EMC screw with the sealant D1 .

Expendable materials

Sealant D1 (seam sealing)	310 ml	83422409985



NOTICE

Perform the operations on the left and right side.

- After the adhesive has hardened in area (1), install an electromagnetic compatibility screw.

  While doing so, bear in mind subsequent installation of roof trim strip.

Expendable materials

Screw EMC screw, SF Plus, M5x15		83190301639

Additional Information

Links

Repair instructions (PRE)	Used in step
EMC screws, general information	4

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... Opening bonded connections	2
41 00 ... BMW/MINI bonding instructions	3
41 00 ... Repair techniques, repair stage 2	

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41 ... 0 Notes on the repair technique used in the main group 41

Two different repair techniques are used in body repair.

These are welding and bonding/riveting.

If the repair instructions do not specify a repair technique, then welding must **always** be used.

The bonding/riveting repair technique is **always** described in detail in the repair instructions.

Quality standards must be met.

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41 ... 0 Notes on the repair technique used in the main group 41

Two different repair techniques are used in body repair.

These are welding and bonding/riveting.

If the repair instructions do not specify a repair technique, then welding must **always** be used.

The bonding/riveting repair technique is **always** described in detail in the repair instructions.

Quality standards must be met.

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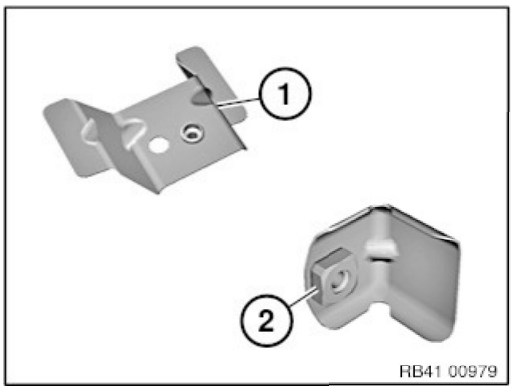
41 33 040 Replacing front left or right side wall holder

Note:
Read contents of Body, General.

Side wall removed.

Transfer the systematic diagram onto the respective holder version.

General information:
Procedure Observe repair stage 2!



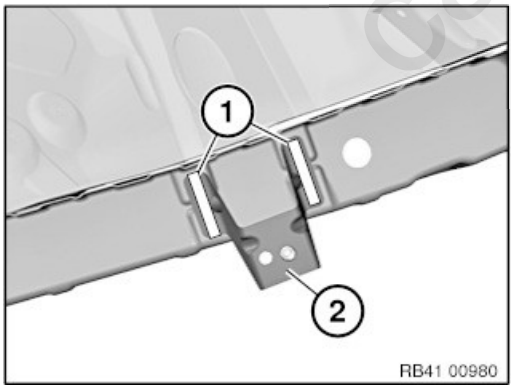
Following new body parts are required (refer to Electronic Parts Catalogue):

- (1) Holder, side wall, front (variant 1)
- (2) Holder, side wall, front (variant 2)

Following consumables are required:

Material	Quantity
Adhesive K5a	1
Blind rivets N3	2
Cleaning agent R1	1

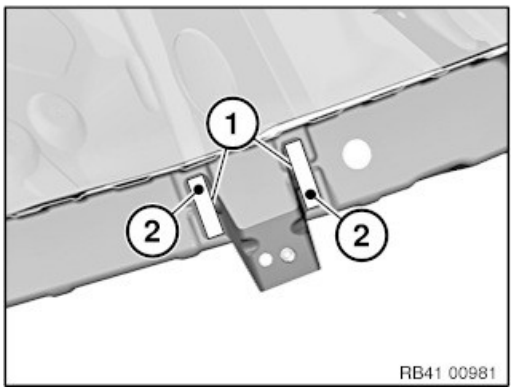
Removal of side wall holder (variant 1):



Release welded connections in areas (1) and remove holder (2).

Preparation of new part:

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Adjust new part in conjunction with side panel in front to fit.

In area of bonding surfaces (1), set 2 4.2 mm dia. bore holes (2) for blind rivetsN3.

Remove new part and deburr holes.

Important!

Do not grind bonding surfaces down or off.

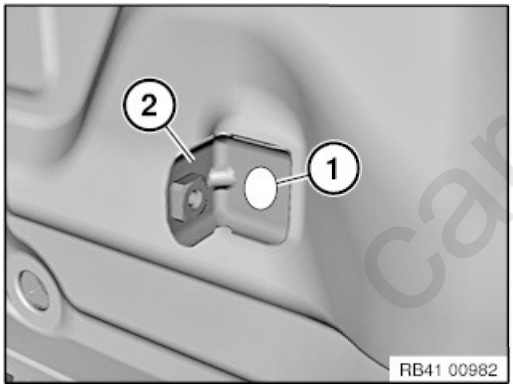
Installation of side wall holder:

Clean all bonding surfaces with cleaning agent R1.

Apply adhesive to bonding surfaces.

Install new part and rivet with blind rivets.

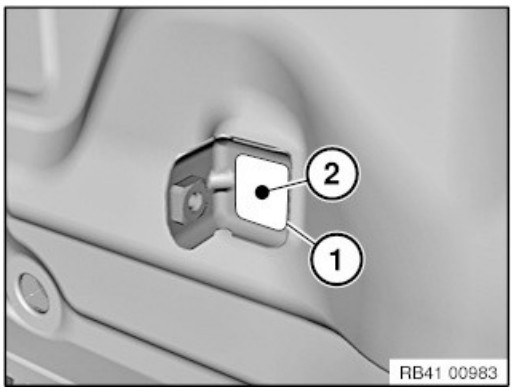
Removal of side wall holder (variant 2):



Release welded connection in area (1) and remove holder (2).

Preparation of new part:

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Fit in new part.

In area of adhesive surface (1), drill a 4.2 mm dia. bore hole (2) for blind rivet N3.

Remove new part and deburr holes.

Important!

Do not grind bonding surfaces down or off.

Installation of side wall holder:

Clean all bonding surfaces with cleaning agent R1.

Apply adhesive to bonding surface.

Install new part and rivet with blind rivet.

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41 ... 0 Notes on the repair technique used in the main group 41

Two different repair techniques are used in body repair.

These are welding and bonding/riveting.

If the repair instructions do not specify a repair technique, then welding must **always** be used.

The bonding/riveting repair technique is **always** described in detail in the repair instructions.

Quality standards must be met.

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41 34 038 Replacing outer tail panel section

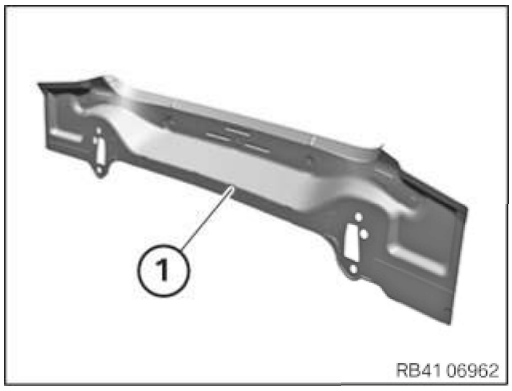
TECHNICAL INFORMATION

- Observe the procedure for repair stage 2.

For additional information see: 41 00 ... Repair method for repair stage 2

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

1 – New parts required



- Supply the following new parts (see Electronic Parts Catalogue EPC):

  Rear trim panel(1)

TECHNICAL INFORMATION

For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

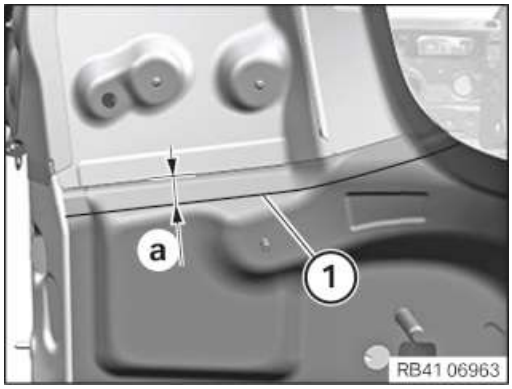
- Supply the following consumables:

Material	Quantity
Adhesive K5 (195 ml)	1
Blind rivet N3	35
Punch rivet N4	15
Punch rivet N5	10
Cleaning agentR1	1
Cleaning agentR2	1
EMC screw	6
Sealant D1	
Cavity sealing wax remover	

2 – Remove rear trim panel

NOTICE

Perform the operations on the left and right side.

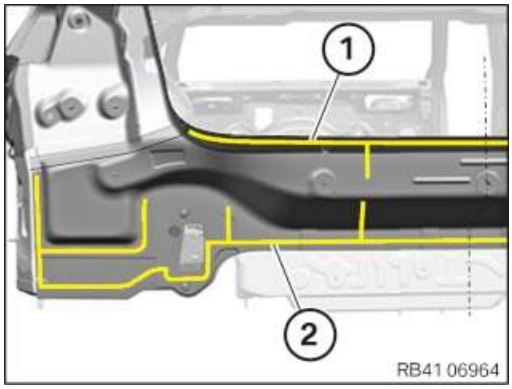


- Mark severance cut (1) in accordance with dimension and disconnect. Disconnect only the outer panel.

  Dimension a = approx. 23 mm below the component edge of the rear light fixture.

Note: Install new part overlapping in area of severance cut.

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- Open welded connections in areas (1) and (2).

3 – Prepare new part

RISK OF DAMAGE

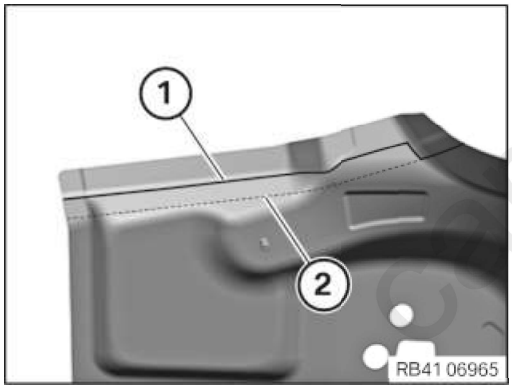
Damage to the spindle drive.

Moving the tailgate manually can damage the spindle drive.

- only move rear lid slowly by hand.

TECHNICAL INFORMATION

Adhesive technology in the area of the outer skin (not for structural adhesion):
The bonding surfaces of the new parts may not sharpened or ground.
For additional information see: 41 00 ... BMW bonding instructions

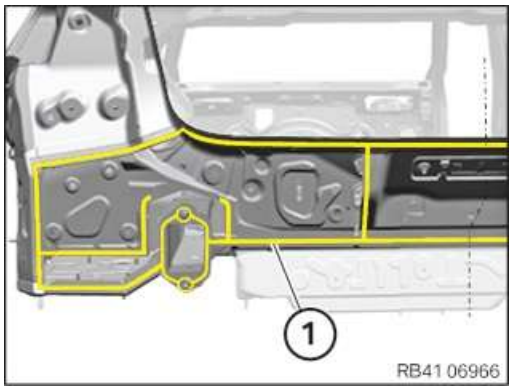


NOTICE

Perform the operations on the left and right side.

- Mark the separating cut (1) on the new part according to the separating cut on the vehicle + approx. 15 - 20 mm material allowance and cut.

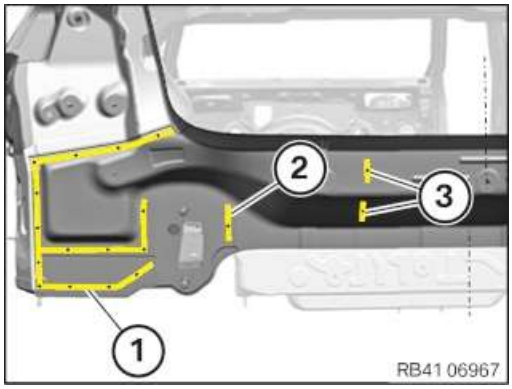
  (2) = Separating cut on the vehicle



NOTICE

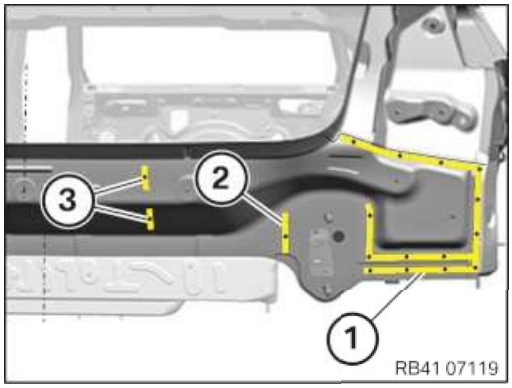
Perform the operations on the left and right side.

- Prepare areas (1) on the new part and on the body for joining using the bonded rivet method.



- Adjust rear trim panel in combination with tailgate and rear lamps and secure.
- In the area (1) to (3), set bore holes Ø 4.2 mm for blind rivets.

Area	Number
1	15
2	1
3	2

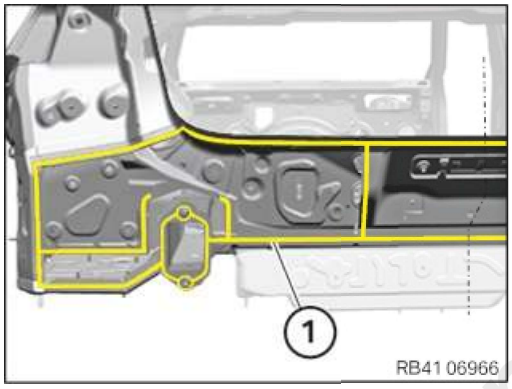


- In the area (1) to (3), set bore holes Ø 4.2 mm for blind rivets.

Area	Number
1	14
2	1
3	2

- Remove new part and deburr holes.

4 – Install rear trim panel



NOTICE

Perform the operations on the left and right side.

- Clean bonding surfaces (1) on vehicle and on new part with solvent cleaner R2.

Expendable materials

Cleaning agent R2	500 ml	83190417324

- Clean bonding surfaces (1) on vehicle and on new part with solvent cleaner R1.

Expendable materials

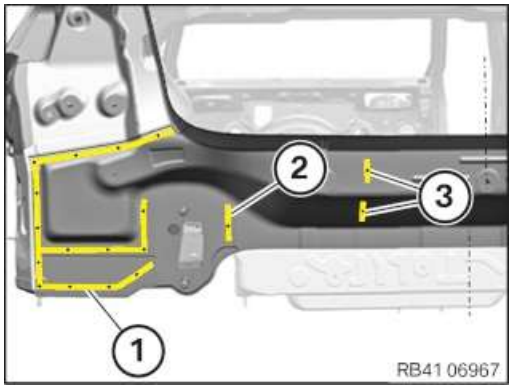
Cleaning agent R1	100 ml, Bottle	83192211217

- Apply adhesive K5 to bonding surfaces (1).

Adhesive

Body adhesive K5	195 ml	83192157298

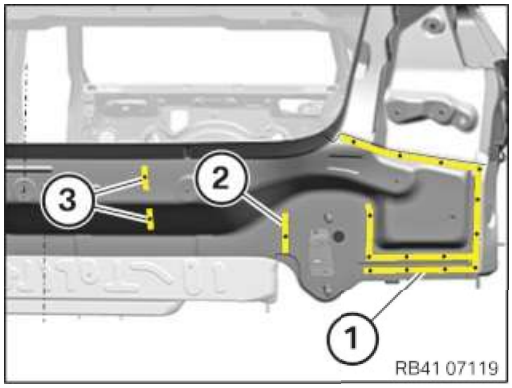
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- Install the new part and rivet in areas (1) to (3) with blind rivets N3.

Expendable materials

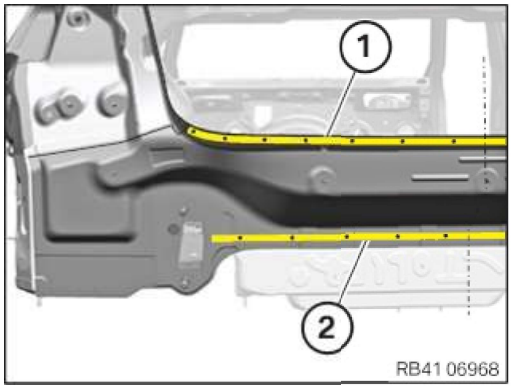
Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421



- Rivet the new part in areas (1) to (3) with blind rivets N3.

Expendable materials

Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421



NOTICE

Perform the operations on the left and right side.

- Rivet the rear trim panel in areas (1) and (2) with punch rivets N4 and N5.

Area	Description	Number
1	N4	total of 14
2	N5	total of 10

Expendable materials

Punch rivet N4 Ø 3 mm ; 4 mm long		83192457307

Expendable materials

Punch rivet N5 Ø 5 mm ; 5 mm long		83192158079

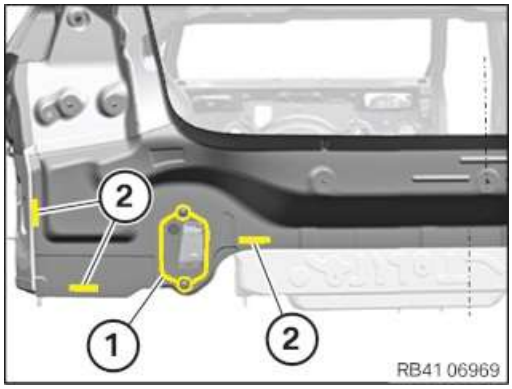
▸ **Install the EMC screw (EMC = electromagnetic compatibility)**

- After adhesive has fully hardened: Drill a hole with a diameter of 4.2 mm.
- Screw in the EMC screw.
- Seal the EMC screw with the sealant D1 .

Expendable materials

Sealant D1 (seam sealing)	310 ml	83422409985

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NOTICE

Perform the operations on the left and right side.

TECHNICAL INFORMATION

Prevent escaping adhesive from coming into contact with support for bumper panel. Do not use any cleaning agents containing solvents.

- Press in the rear trim panel in area (1) and remove the emerging adhesive.
- Attach the support for bumper panel.
- After the adhesive has hardened, install 3 EMC screws in the areas (2) shown.

Expendable materials

Screw EMC screw, SF Plus, M5x15		83190301639

Additional Information

Links

Repair instructions (PRE)	Used in step
EMC screws, general information	4

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... BMW/MINI bonding instructions	3
41 00 ... Repair techniques, repair stage 2	

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41 34 041 Replacing tail panel

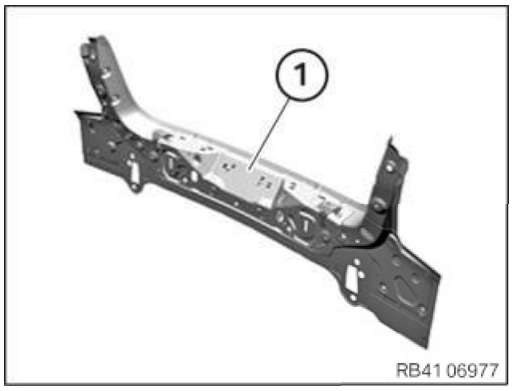
TECHNICAL INFORMATION

- Observe the procedure for repair stage 2.

For additional information see: 41 00 ... Repair method for repair stage 2

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

1 – New parts required



- Supply the following new parts (see Electronic Parts Catalogue EPC):

  Rear trim panel, complete(1)

TECHNICAL INFORMATION

For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

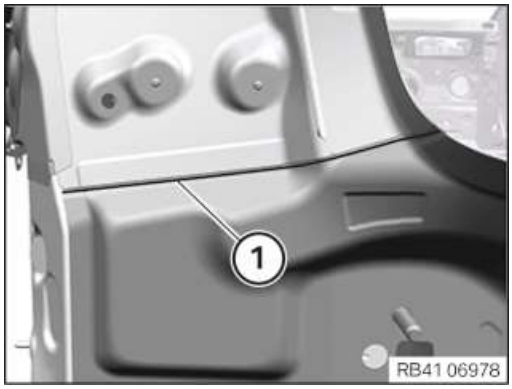
- Supply the following consumables:

Material	Quantity
Adhesive K5 (195 ml)	1
Blind rivet N3	40
Punch rivet N4	15
Punch rivet N5	10
Cleaning agentR1	1
Cleaning agentR2	1
EMC screw	6
Sealant D1	
Cavity sealing wax remover	

2 – Removing the tail panel

NOTICE

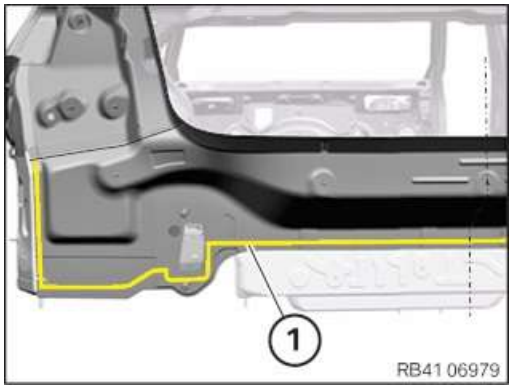
Perform the operations on the left and right side.



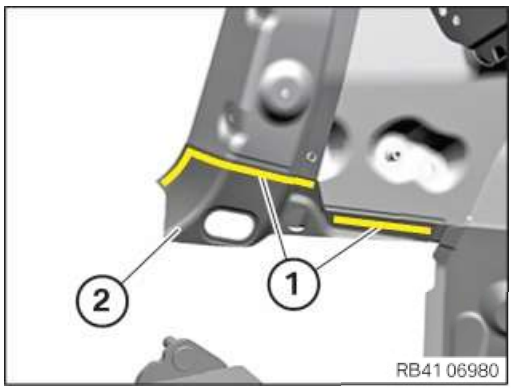
- Carry out rough cut (1) immediately below the rear light holder.

  Fully cut through the tail panel.

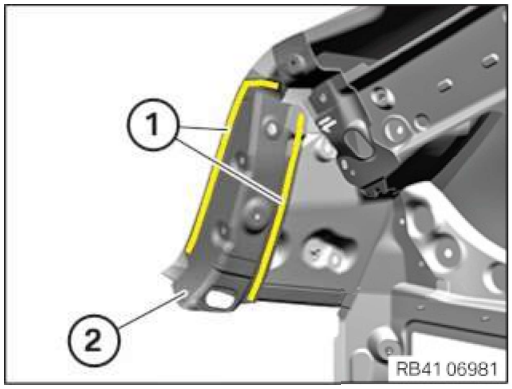
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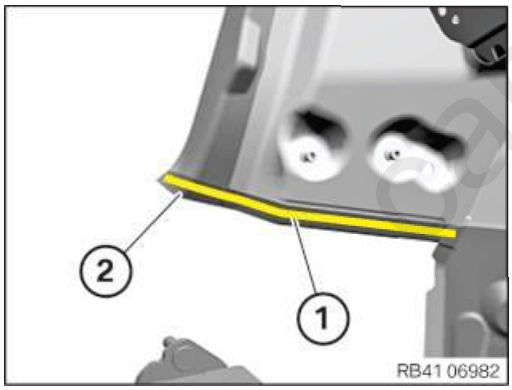
- Open the welded connections in area (1) and remove the tail panel.



- Release the welded connections in areas (1) and remove the section (2).



- Release the welded connections in areas (1) and remove the section (2).



- Release the welded connections in the area (1) and remove the section (2).

3 – Prepare new part

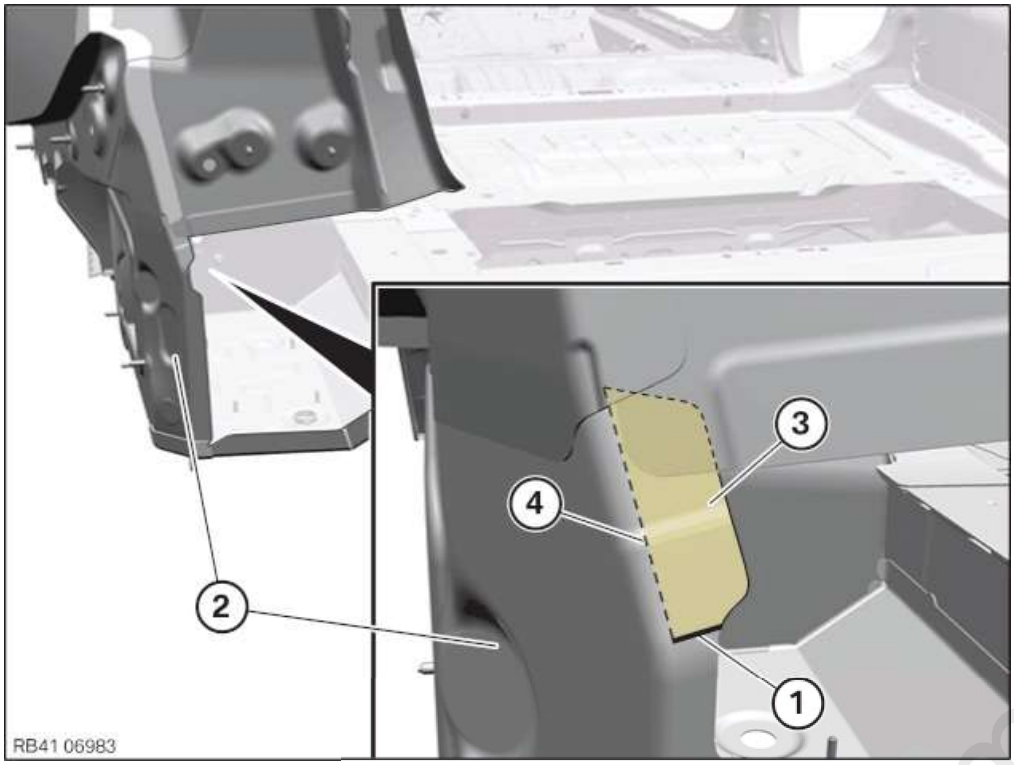
TECHNICAL INFORMATION

Adhesive technology in the area of the outer skin (not for structural adhesion):
The bonding surfaces of the new parts may not sharpened or ground.
For additional information see: 41 00 ... BMW bonding instructions

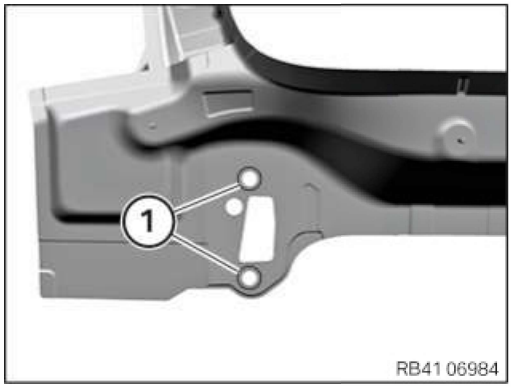
NOTICE

Perform the operations on the left and right side.

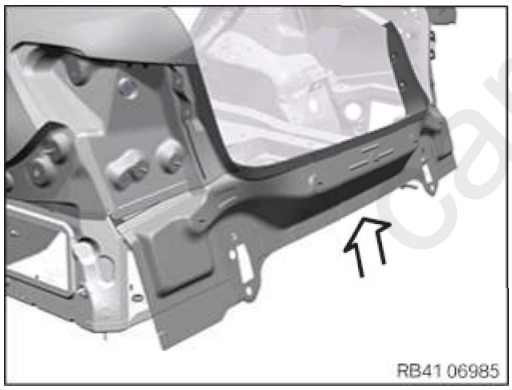
cardiagn.com



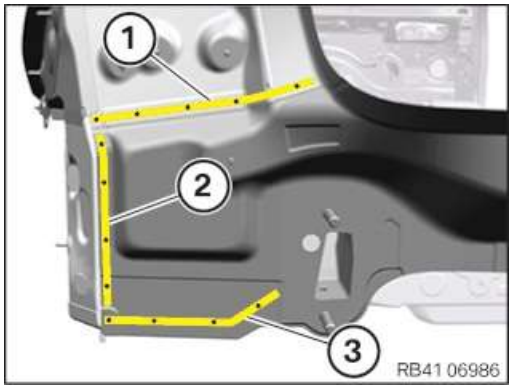
- Make separating cut (1) in the side wall of luggage compartment (2) as shown.
- Bend cut (3) inwards at bend line (4).



- If necessary, increase size of bore holes (1) by a maximum of 10 mm in diameter.



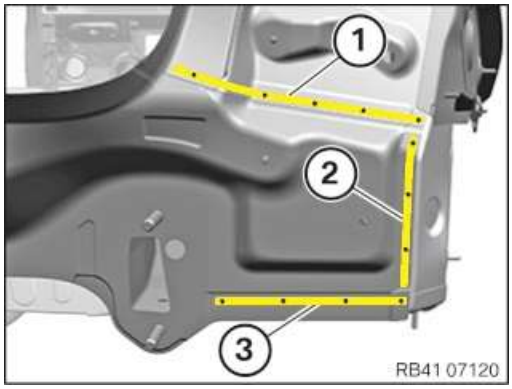
- Adjust rear trim panel in combination with tailgate and rear lamps and secure.



- Areas (1) to (3): Set diameter of bore holes to 4.2 mm for blind rivet.

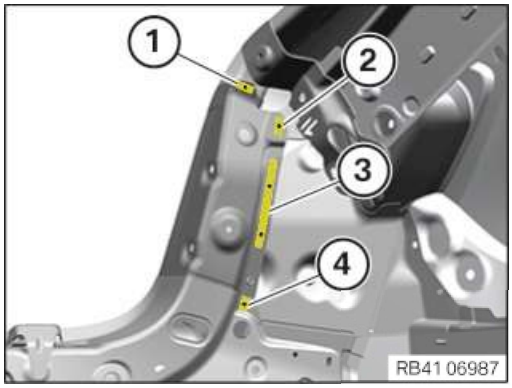
Area	Number
1	5
2	4
3	4

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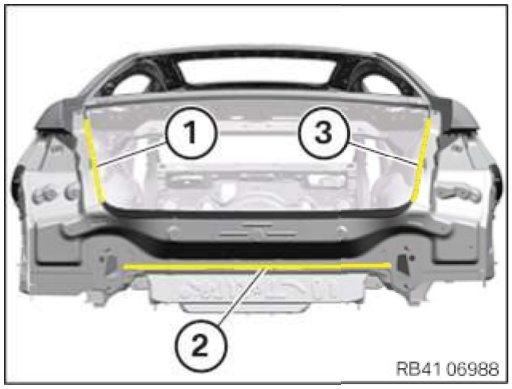
- Areas (1) to (3): Set diameter of bore holes to 4.2 mm for blind rivet.

Area	Number
1	5
2	3
3	4



- Areas (1) to (4): Position the bore holes with Ø 4.2 mm for the blind rivets.

Area	Number
1	1
2	1
3	2
4	1



- Prepare areas (1) to (3) for joining using the bonded rivet method (punch rivets).
- Remove new parts and deburr bore holes.

4 – Installing the tail panel

NOTICE

Perform the operations on the left and right side.

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- Clean bonding surfaces on vehicle and on new part with solvent cleaner R2.

Expendable materials

Cleaning agent R2	500 ml	83190417324

- Clean bonding surfaces on vehicle and on new part with solvent cleaner R1.

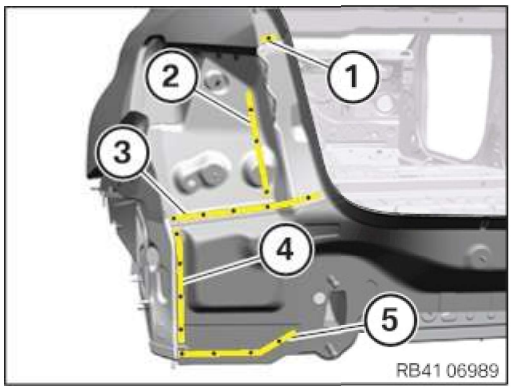
Expendable materials

Cleaning agent R1	100 ml, Bottle	83192211217

- Apply adhesive K5 to bonding surfaces .

Adhesive

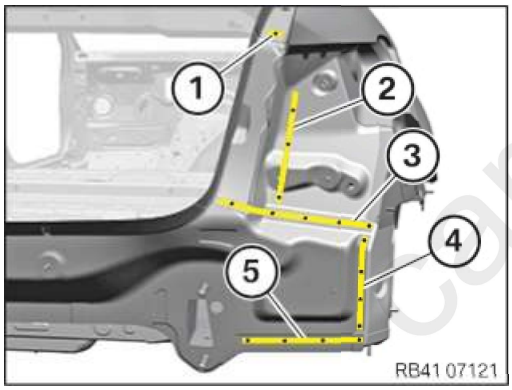
Body adhesive K5	195 ml	83192157298



- Install the rear trim panel and rivet in the areas (1) to (5) with blind rivets N3.

Expendable materials

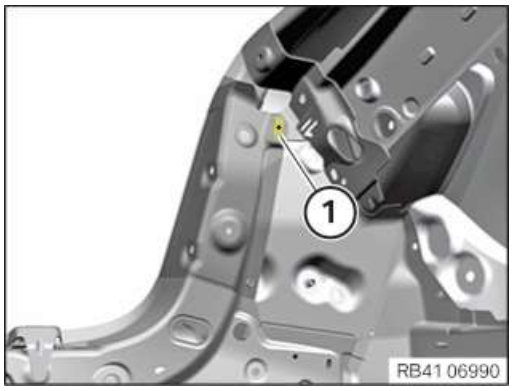
Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421



- Rivet the rear trim panel in the areas (1) to (5) with blind rivets N3.

Expendable materials

Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421

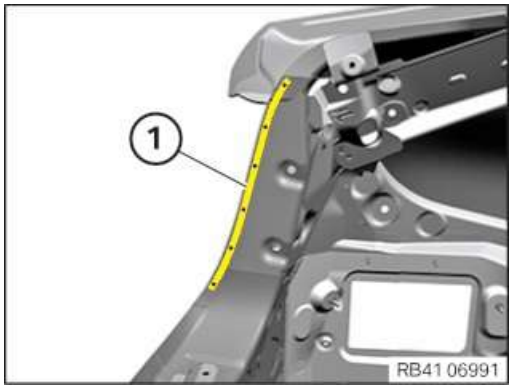


- In area (1), use blind rivet N3.

Expendable materials

Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421

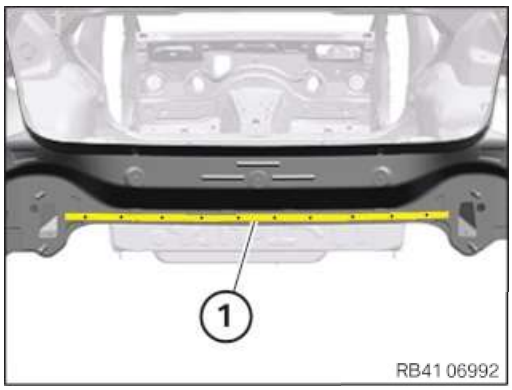
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- Use 6 punch rivets N4 in the area (1).

Expendable materials

Punch rivet N4 Ø 3 mm ; 4 mm long		83192457307



- Use 10 punch rivets N5 in the area (1).
- Observe three-sheet connection:

  Observe seating direction of the punch rivets: Position the punch rivets from the inside to the outside.

Expendable materials

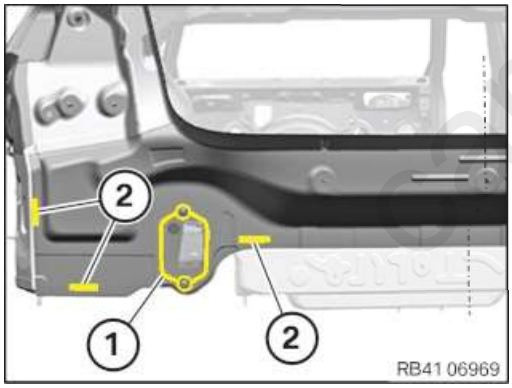
Punch rivet N5 Ø 5 mm ; 5 mm long		83192158079

▸ **Install the EMC screw (EMC = electromagnetic compatibility)**

- After adhesive has fully hardened: Drill a hole with a diameter of 4.2 mm.
- Screw in the EMC screw.
- Seal the EMC screw with the sealant D1 .

Expendable materials

Sealant D1 (seam sealing)	310 ml	83422409985



TECHNICAL INFORMATION

Prevent escaping adhesive from coming into contact with support for bumper panel. Do not use any cleaning agents containing solvents.

- Press in the rear trim panel in area (1) and remove the emerging adhesive.
- Before the adhesive hardens, install the support for the bumper panel.
- After the adhesive has hardened, install 3 EMC screws in the areas (2) shown.

Expendable materials

Screw EMC screw, SF Plus, M5x15		83190301639

Additional Information

Links

Repair instructions (PRE)	Used in step
EMC screws, general information	4

General repair instructions	Used in step

41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... BMW/MINI bonding instructions	3
41 00 ... Repair techniques, repair stage 2	

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41 ... 0 Notes on the repair technique used in the main group 41

Two different repair techniques are used in body repair.

These are welding and bonding/riveting.

If the repair instructions do not specify a repair technique, then welding must **always** be used.

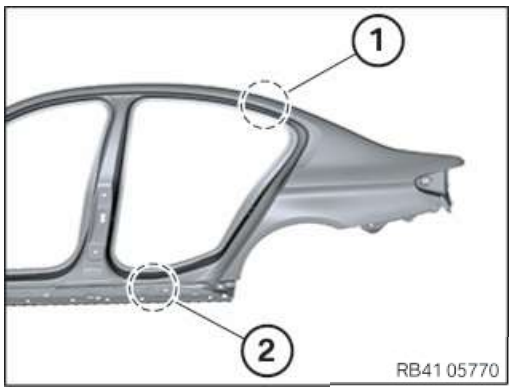
The bonding/riveting repair technique is **always** described in detail in the repair instructions.

Quality standards must be met.

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41 00 ... Reinforcement plate with stud bolt (bonded or welded)

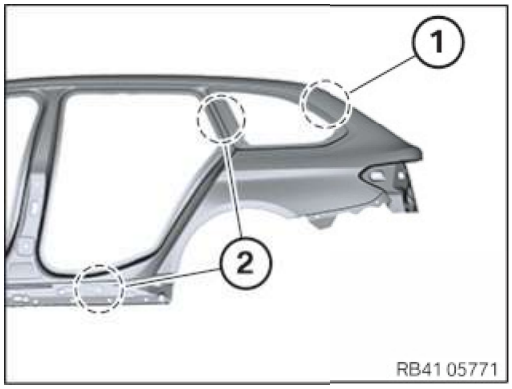
When replacing the rear side panel, reinforcement plates are bonded or welded on the separation points.



Applicable to Saloon, hatchback, Coupé.

Welding is done in area (1) (incl. water channel).

Bonding is done in area (2).

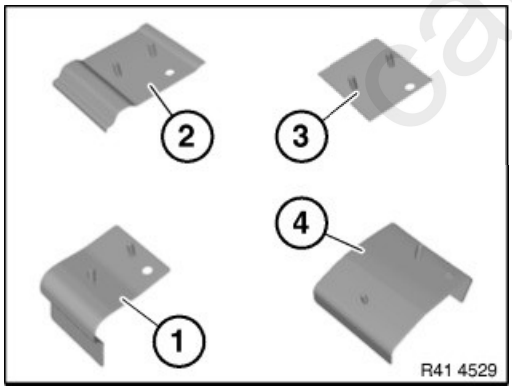


Applicable to Touring, X models, Gran Coupé, Gran Turismo.

Welding is done in area (1) (incl. water channel).

Bonding is done in areas (2).

Note:
The following graphics serve as general illustrations of reinforcement plate repair work. They apply to sectional repairs on the outer skin which are produced using the adhesive joining method.



Overview of the reinforcement plates (for sourcing reference, see Electronic Parts Catalogue):

(1) Reinforcement plate, sill

(2) Reinforcement plate, C-pillar

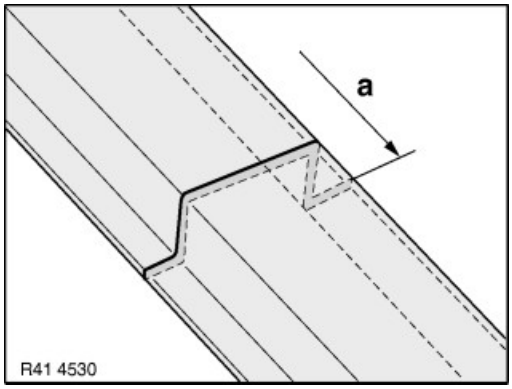
(3) Reinforcement plate, universal

(4) Reinforcement plate, C- or D-pillar

(5) Nuts (not shown)

- Plastic nut dia. 18 mm, part number 07 14 1 943 122
- Plastic nut ⌀ 22 mm, part number 07 14 7 169 847

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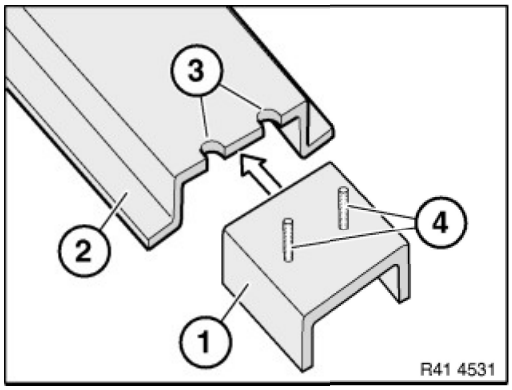


Mark side panel according to dimension a and detach it.

Preparation of the reinforcement plate (bonded or welded)

Some reinforcement plates are oversized.

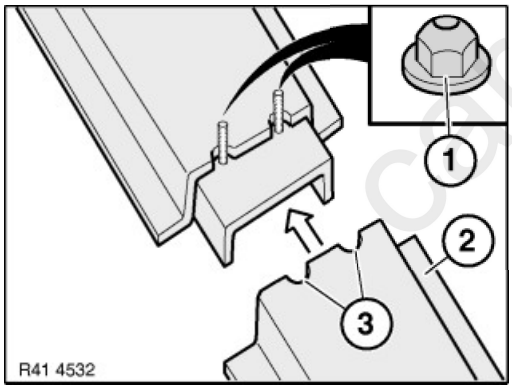
It may be necessary to rework the reinforcement plates at the edges or cut them to size until they rest against the outer skin free of tension.



Adjust reinforcement plate (1) to fit in component (2) on vehicle.

Make semicircular recesses (3) for the stud bolts (4).

Diameter of recesses approx. 10 - 12 mm.



Fix the reinforcement plate using plastic nuts (1).

Fit new part (2).

Make semi-circular recesses (3) in the new part.

Diameter of recesses approx. 10 - 12 mm.

Remove reinforcement plate.

Note:

Bonded reinforcement plates:

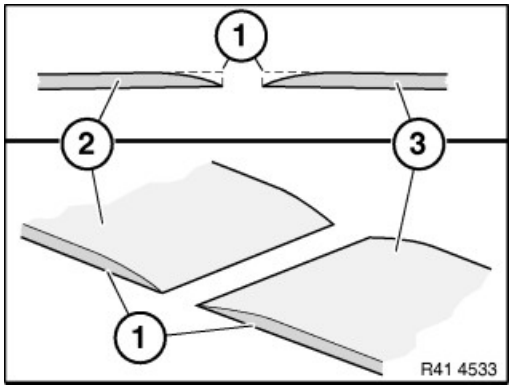
Width of joint between new part and component on vehicle approx. 5 - 8 mm (at least 30 mm flange width per side).

Welded reinforcement plates:

Width of joint between new part and component on vehicle approx. 2 - 3 mm.

Grind down to the metal in the area of the joint.

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Carry out the following step only if the reinforcement plates are bonded.

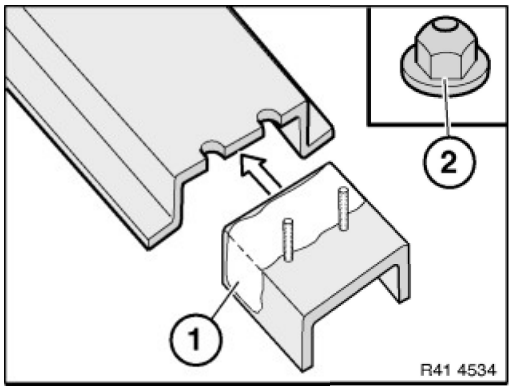
Chamfer cutting edges (1) on joint by grinding.

(2) Component on vehicle

(3) New part

If the cutting edges have not been sufficiently chamfered, there may be voids in the paintwork after painting.

Installing bonded reinforcement plate



Clean <u>all</u> bonding surfaces.

Apply the adhesive in area (1) on the reinforcement plate.

Apply more adhesive in the radii to avoid air pockets.

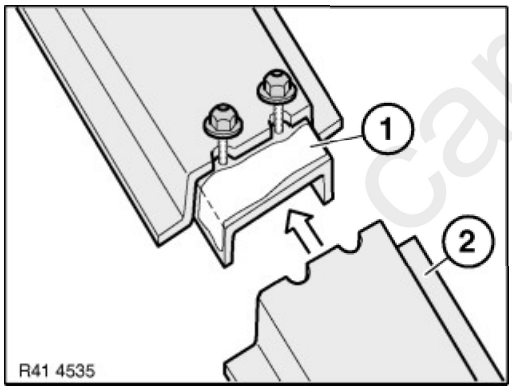
Apply additional adhesive to the outer skin around radii.

Slide the reinforcement plate carefully into the component on the vehicle and fix plastic nuts (2).

Screw on the nuts with only a few turns.

Attention!

When joining the reinforcement plate, make sure that there is sufficient adhesive on the bonding surfaces!



Apply the adhesive on bonding surface (1) of the reinforcement plate.

Apply more adhesive in the radii to avoid air pockets.

Apply additional adhesive to the outer skin around radii.

Fit new part (2).

Align new part to adjoining component and secure with gripping pliers.

First tighten the plastic nuts at the radii.

Only then tighten all the plastic nuts in the flat areas.

Tightening torque 41 14 1AZ.

Attention!

Check that the transition of the components is OK at the separation point. Corrections can only be made <u>before</u> the adhesive has hardened. Straightening at a later stage is not possible.

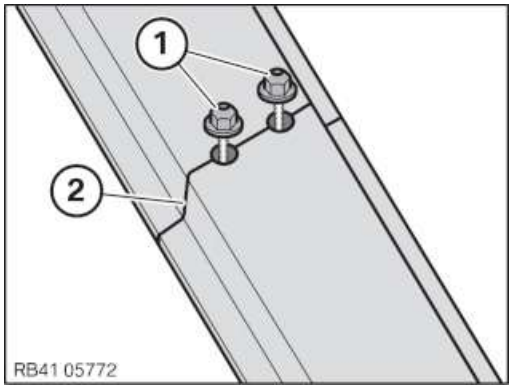
<u>After adhesive has hardened:</u>

Grind off stud bolts and surplus adhesive flush.

Paint area as specified in BMW Painting Handbook.

Installing welded reinforcement plate

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Attention!

Risk of damage!

Protect the adjacent components from heat and flying sparks.

Align new part to adjoining component and secure with gripping pliers.

First tighten the plastic nuts at the radii.

Only then tighten all the plastic nuts in the flat areas.

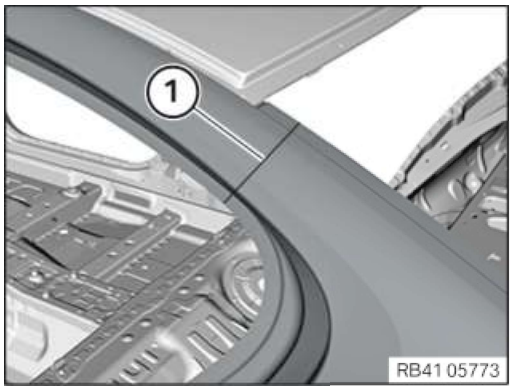
Tightening torque 41 14 1AZ.

Weld joint (2) between plastic nuts (1).

Release plastic nuts (1).

Grind down stud bolt until flush.

Weld joint (2) in the remaining areas.



Grind weld seam (1) until flush.

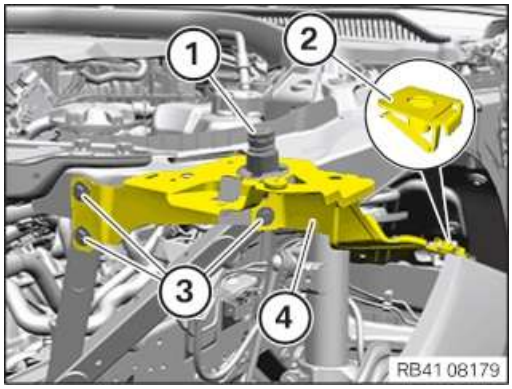
If necessary, straighten area (1) and level it with a multi-functional spatula.

Paint area as specified in BMW Painting Handbook.

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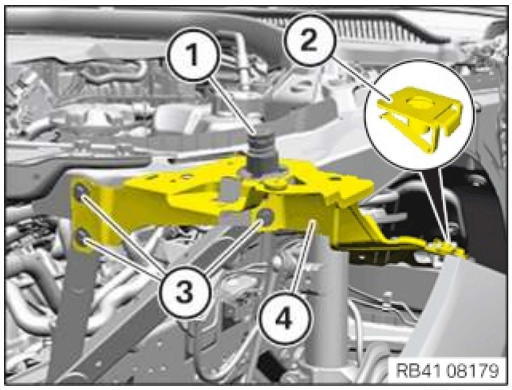
41 35 600 Replace a holder for the front side panel

1 – Removing the front holder



- Remove the adjustment buffer (1) and sheet metal nuts (2).
- Release screws(3) and remove holder (2).

2 – Installing the front holder



- Position holder (4) and tighten screws (3).

Front side panel holder to body

M6 screw		Tightening torque	8 Nm

- Secure adjustment plate (1) and sheet metal nuts (2) to holder (4).

Additional Information

Overview of Tightening Torques

Front side panel holder to body Used in step 2

M6 screw		Tightening torque	8 Nm

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41 35 055 Replace right front side panel

WARNING

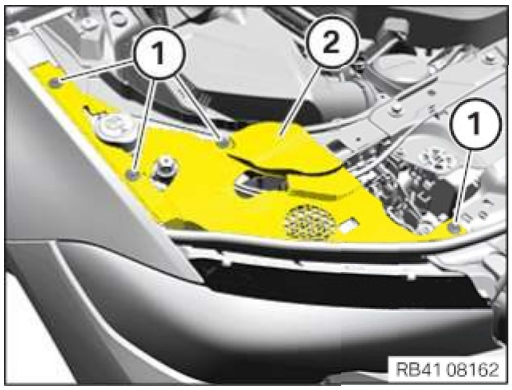
Vehicle may slip off the vehicle hoist if the vehicle hoist is handled incorrectly.

Danger! Life-threatening injuries!

- Observe safety information on raising the vehicle using a vehicle hoist.
- For additional information see: 00 ... Raising the vehicle using a vehicle hoist.

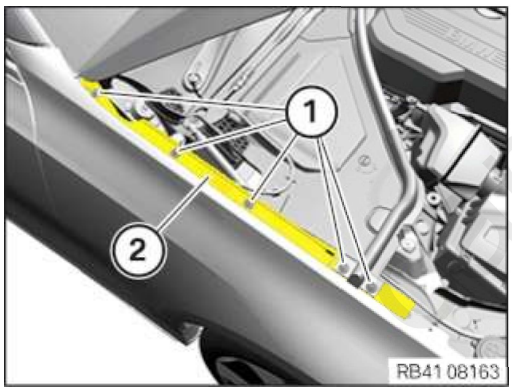
PRELIMINARY WORK

1 – Remove the cover in the engine compartment on top



- Loosen the expanding rivet (1).
- Remove the cover in the engine compartment on top (2) partially.

2 – Removing the cover in the engine compartment on the top rear



- Loosen the expanding rivet (1).
- Remove the cover in the engine compartment (2).

3 – Removing the wheel



- In vehicles with M Carbon ceramic brake: The wheel assembly jack must be used to remove the wheel (see workshop equipment).

  This process is intended to prevent damage to the brake disc.



- If several wheels are removed simultaneously: Use a piece of chalk to mark on each tyre the axle and side on which the corresponding wheel is fitted.
- Release the wheel bolts (arrows) crosswise and remove the wheel.
- To release and tighten wheel bolts with a security code: Use a suitable adapter from the tool set .

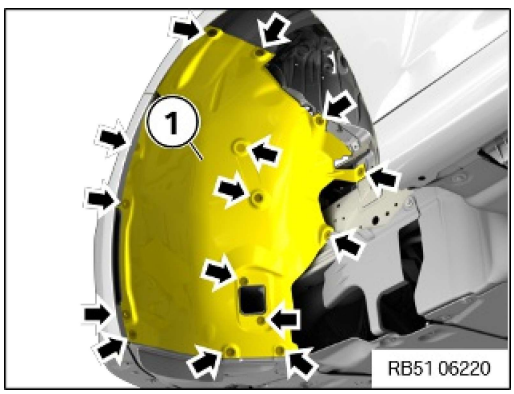
4 – Removing the front right wheel arch cover front section

NOTICE

Description is for left component only. Procedure on the right side is identical.

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.



- Remove screws (arrows).
- Remove front section of the front wheel arch cover (1) .

5 – Remove rear section of the front right wheel arch cover

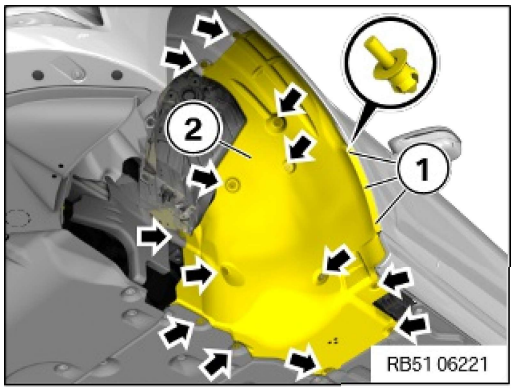
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NOTICE

Description is for left component only. Procedure on the right side is identical.

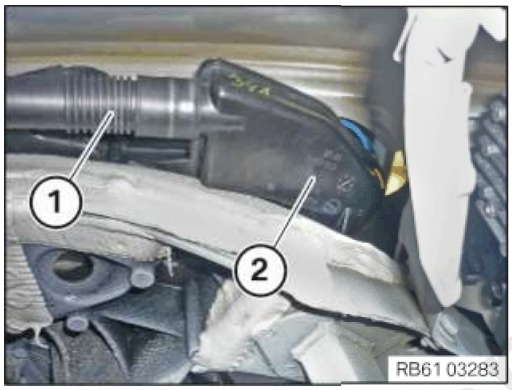
NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

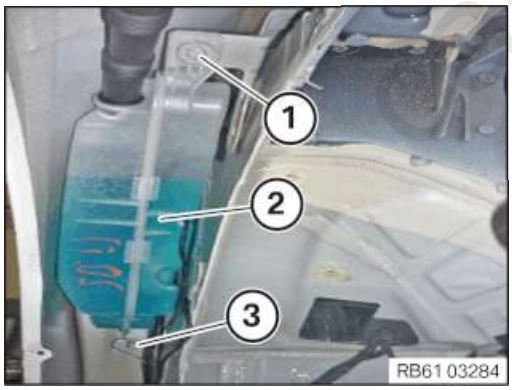


- Loosen the expanding rivet (1).
- Remove screws (arrows).
- Remove the rear section of the front wheel arch cover (2) .

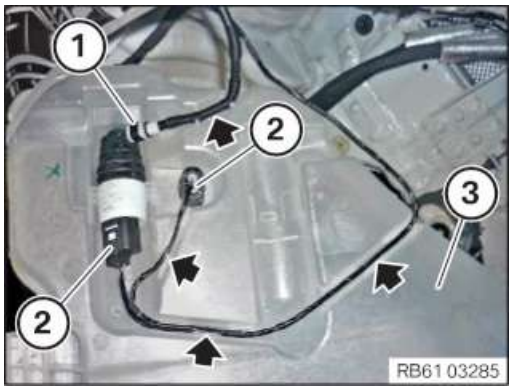
6 – Remove washer fluid reservoir



- Pull off filler channel (1) from fuel filler neck (2).

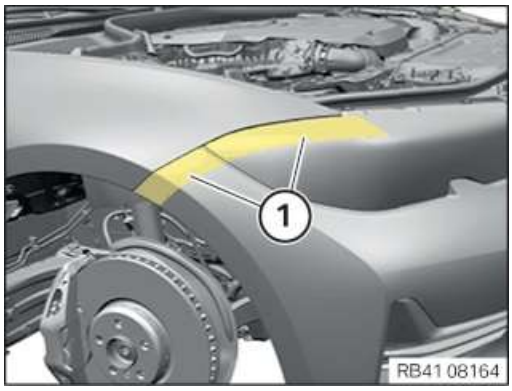


- Loosen screw (1).
- Guide out washer fluid reservoir (2) from holder (3).

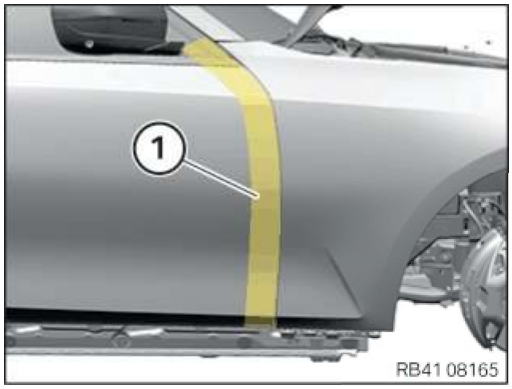


- Unlock hose pipe (1) and disconnect.
- Unclip the hose pipe (1) from the washer fluid hose (3) (arrow).
- Unlock and disconnect connector (2).
- Unclip the cable from the washer fluid reservoir (3) (arrows).

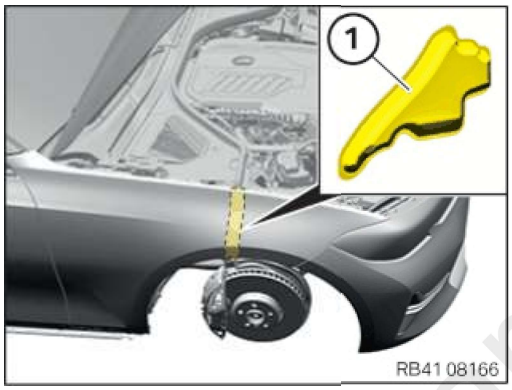
7 – Removing the front side panel on the right



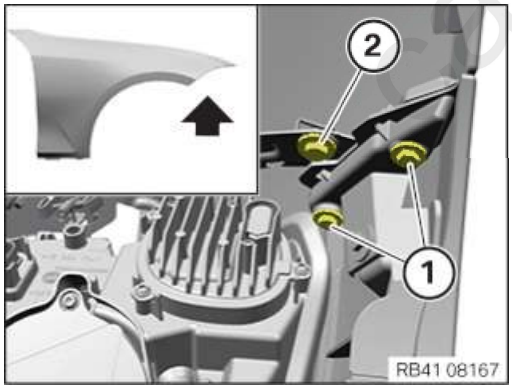
- Mask areas (1) with a plastic adhesive tape.



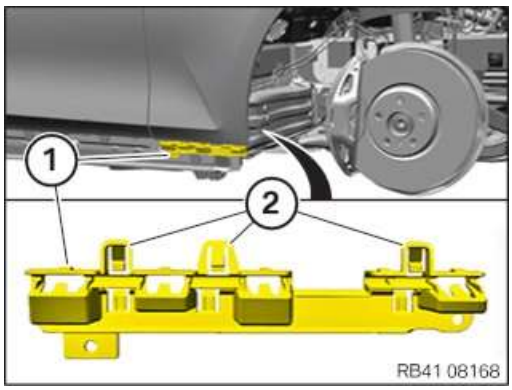
- Mask area (1) with a plastic adhesive tape.



- Remove the sound insulation (1).

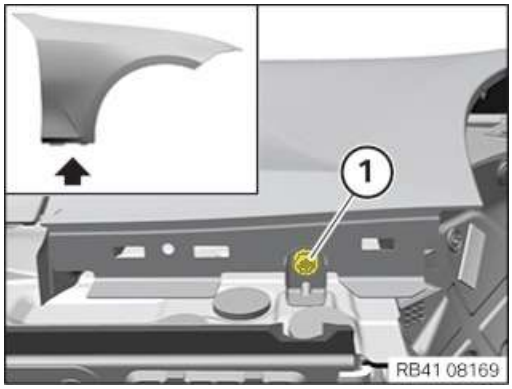


- Release screws (1) and (2).

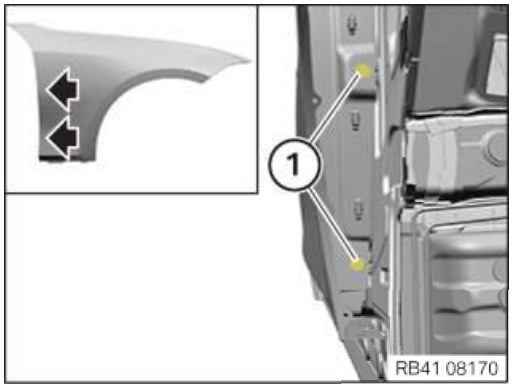


- Release the holder (1) at the latch mechanisms (2) and remove.

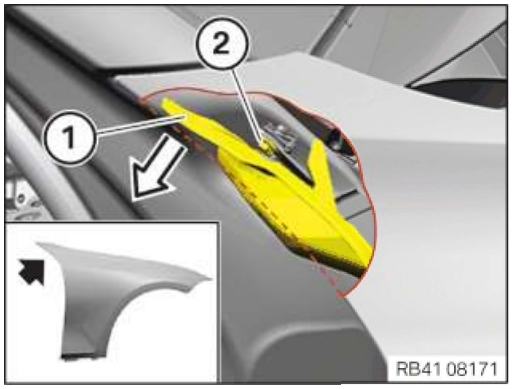
carsdiagn.com



- Loosen screw (1).

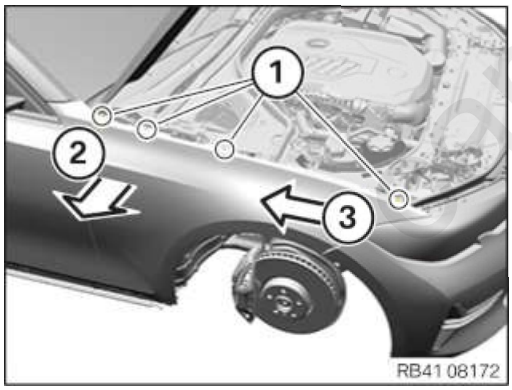


- Loosen screws (1).



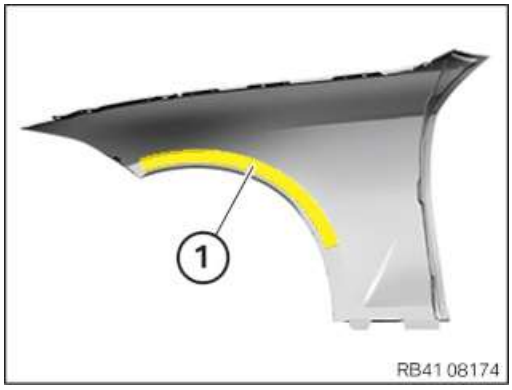
- Open the front door.

  Pull sealing (1) downwards a bit in direction of arrow.
- Loosen screw (2).
- Close front door.



- Loosen screws (1).
- Loosen side panel in the sequence and direction shown with the aid of a second person.
- Pull side panel in the upper area of the A-pillar outwards (2).
- Pull side panel to the rear (3) and remove it.

8 – Prepare new part



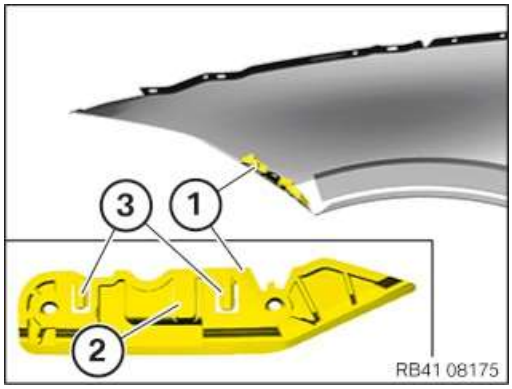
- Coat the side panel before painting in the areas (1) with a sealant D1.

Expendable materials

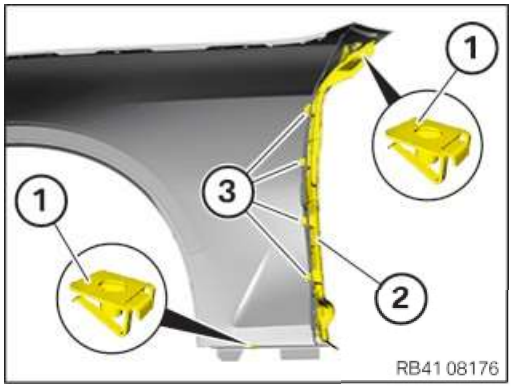
Sealant D1 (seam sealing)	310 ml	83422409985

- Paint side panel.

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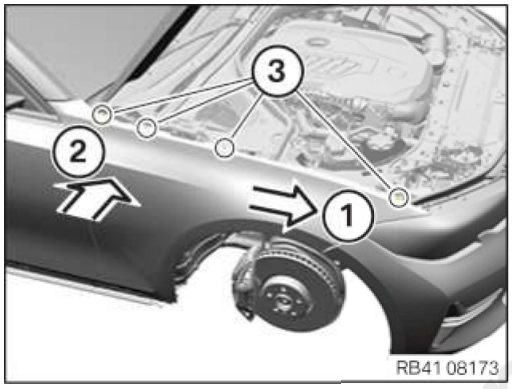
- Remove the guide (1) from the side panel to be replaced.
- Check the lock (2) and holder (3) for damage. If necessary, replace the guide.
- Fit the guide (1) to the new part.



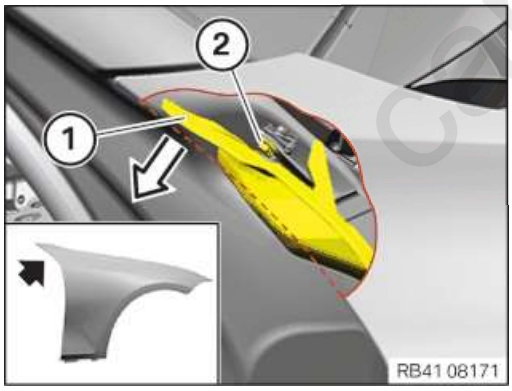
- Remount the sheet metal nuts (1) on the new part.

  Release the seal (2) on the locking units (3) and remount on the new part.

9 – Installing the front side panel on the right

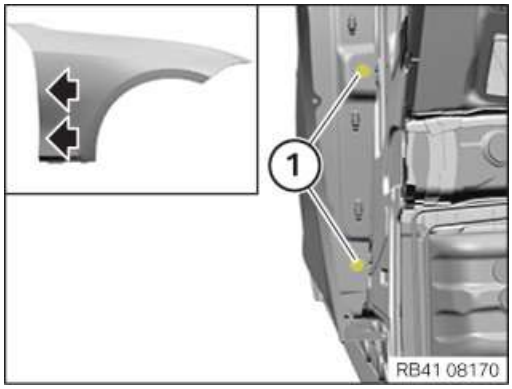


- With the help of a second person, guide the side panel diagonally from the rear to the front to the vehicle.
- Position the side panel in the area of the headlight (1) and bring it to the system in the area of the A-pillar (2).
- Join the screws (1).



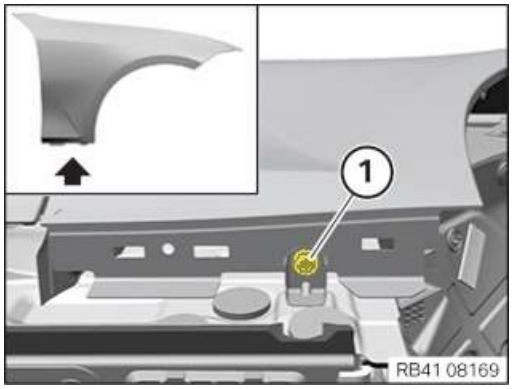
- Open the front door.

  Pull sealing (1) downwards a bit in direction of arrow.
- Join the screw (2).
- Close front door.

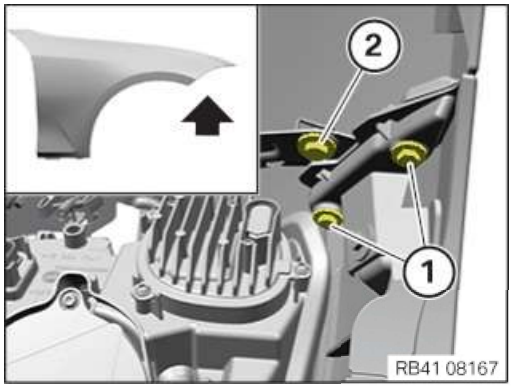


- Join the screws (1).

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- Join the screw (1).



- Tighten the screws (1).

Front bumper panel to front side panel

Torx screw 5x35		Tightening torque	3 Nm

- Join the screw (2).

TECHNICAL INFORMATION

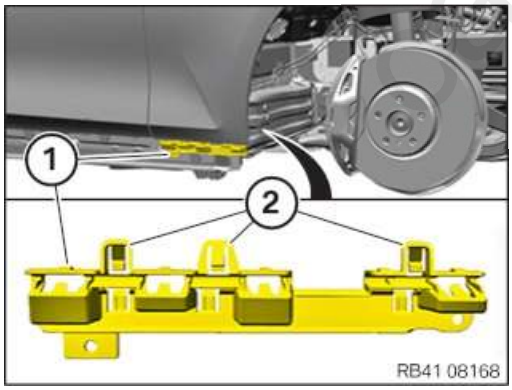
The gap dimensions form the basis for these repair instructions and must be observed without fail.

For more information see: 41 00 ... Gap dimensions for body

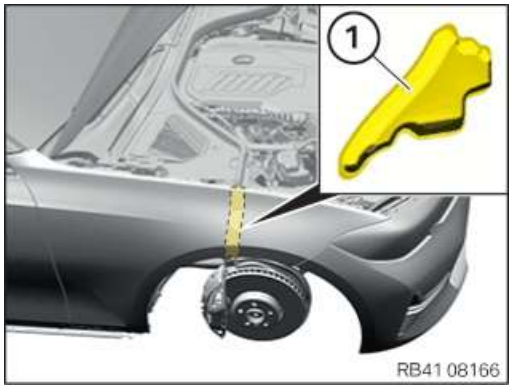
- Adjust gap dimensions.
- Tighten all screws of the side panel.

Front side panel to holder for front side panel

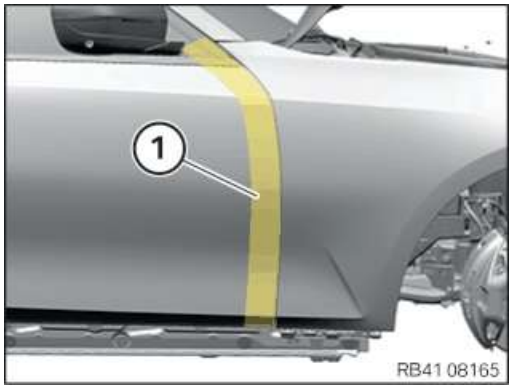
M6 screw		Tightening torque	8 Nm



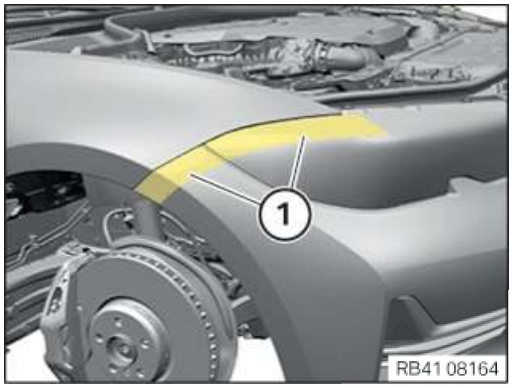
- Install holder (1) and clip it into latch mechanisms (2).



- Install the sound insulation (1).



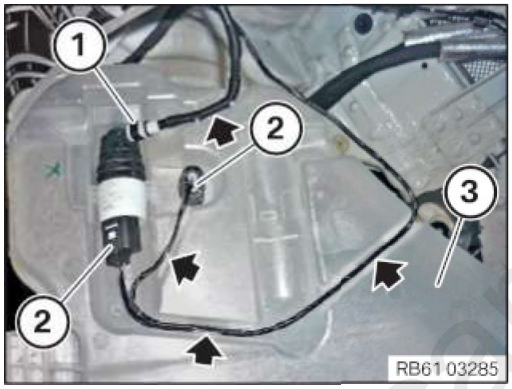
- Remove protective film (1).



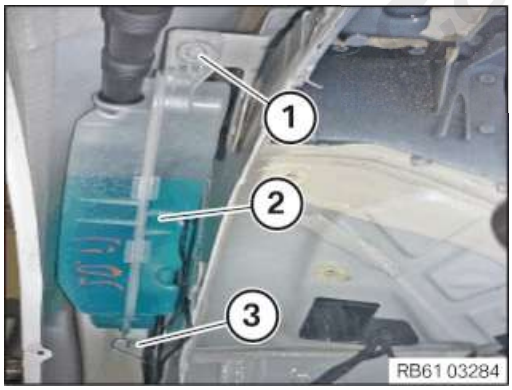
- Remove the protective films (1).

POSTPROCESSES

10 – Installing washer fluid reservoir



- Connect connector (2).
- Clip the cable into the washer fluid reservoir (3) (arrows).
- Connect and lock hose pipe (2).
- Clip the hose pipe (2) into the washer fluid reservoir (3) (arrow).

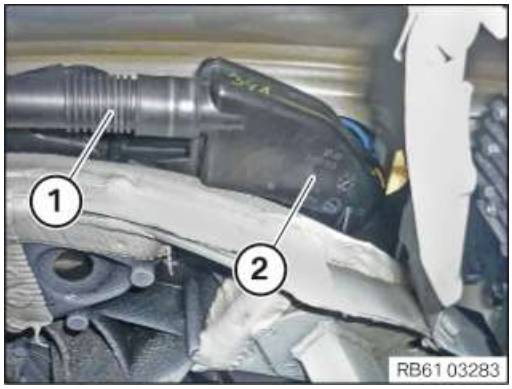


- Position the washer fluid reservoir (2) and feed towards the rear into the holder (3).
- Tighten down screw (1).

Washer fluid reservoir

	Tightening torque	8 Nm

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- Connect filler channel (1) with the fuel filler neck (2).

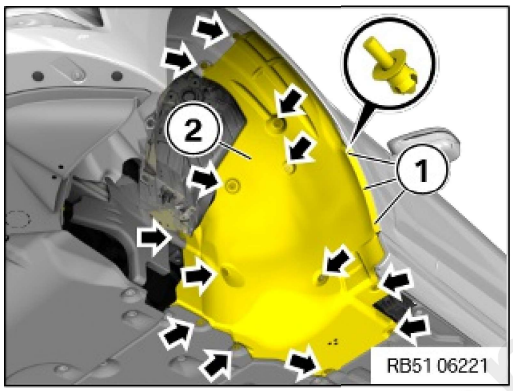
11 – Install rear section of the front right wheel arch cover

NOTICE

Description is for left component only. Procedure on the right side is identical.

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.



- Install therear section of the front wheel arch cover (2) .
- Tighten screws (arrows).

Wheel arch trim panel, front

Thermoplastic hexagon screw	Tightening torque	2,6 Nm

- Secure expanding rivet (1).

12 – Installing the front section of the front right wheel arch cover

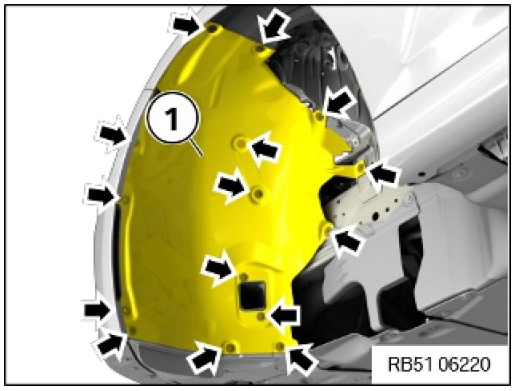
NOTICE

Description is for left component only. Procedure on the right side is identical.

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

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- Install the front section of the front wheel arch cover (1) .
- Tighten screws (arrows).

Wheel arch trim panel, front

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

13 – Mounting the wheel



TECHNICAL INFORMATION

The contact surface between the brake disc and the wheel rim must be clean and free from oil and grease. There is otherwise a risk of the wheel becoming loose at a later time.

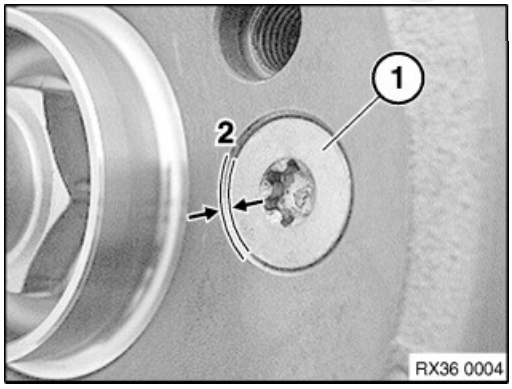
- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool 2 344 011.

  Do not operate special tool 2 344 011 with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).
- In the event of grease residue in the area of the wheel bolt holes, remove and clean the brake disc.



- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool 2 344 011.

  Do not operate special tool 2 344 011 with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).



- Check that the mounting bolt (1) for the brake disc is securely seated.

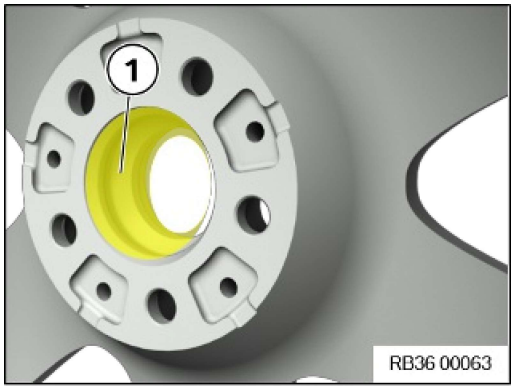
  The mounting bolt (1) for the brake disc may not protrude under any circumstances on the contact surface (2) between the brake disc and the wheel rim.

Brake disc to front wheel hub

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to rear wheel hub

M8	Renew screw.	Tightening torque	16 Nm



- Thinly grease the wheel centring (1) in the wheel rim.

Expendable materials

Brake block paste * TU = Trade Unit. TU numbers cannot be ordered! For invoicing purposes only.	3 g, Bag	83192158851
	100 g, Tube	83192158852
	5 g, TU*	83230140233



- Lightly grease the front and rear wheel hubs in this area (1) to protect from corrosion.

Expendable materials

Brake block paste * TU = Trade Unit. TU numbers cannot be ordered! For invoicing purposes only.	3 g, Bag	83192158851
	100 g, Tube	83192158852
	5 g, TU*	83230140233



- In vehicles with M Carbon ceramic brake: The wheel assembly jack must be used to install the wheel (see workshop equipment).

  This process is intended to prevent damage to the brake disc.

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TECHNICAL INFORMATION

Never use impact screwdrivers or electric screwdrivers to screw in and tighten the wheel bolts.

The wheel rim must rest uniformly against the brake disc.

In the case of non-original BMW wheel bolts/wheel rims, it may be necessary to retighten the wheel bolts on account of setting properties (refer to the documentation from the manufacturer).

Do not apply oil to new wheel bolts.

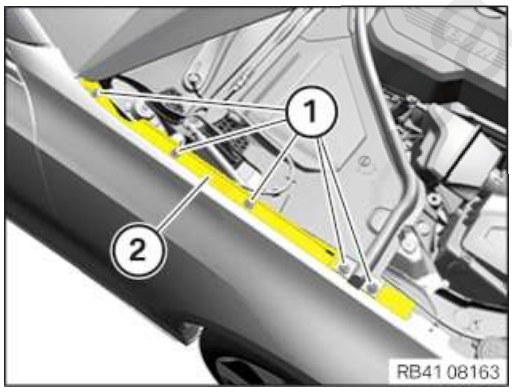
- Renew corroded wheel bolts.

  Parts: Wheel bolts
- Clean the wheel bolts.
- Check wheel bolts and threads for damage, renew the wheel bolts if necessary.
- Join and tighten the wheel bolts (arrows).

Wheel bolts

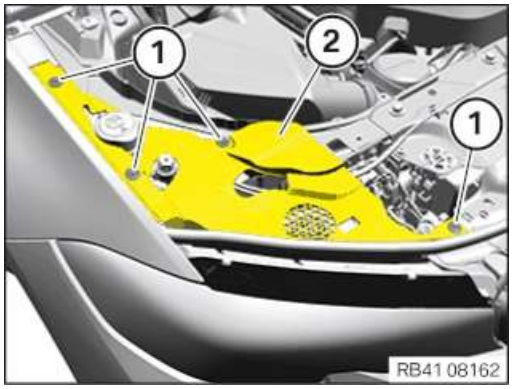
M14 / SW17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

14 – Installing the cover in the engine compartment at the top rear



- Install the cover in the engine compartment on top (2).
- Secure expanding rivet (1).

15 – Install the cover in the engine compartment on top



- Install the cover in the engine compartment on top (2).
- Secure expanding rivet (1).

16 – Resetting the RDC

TECHNICAL INFORMATION

The tyre pressure control monitors the tyre pressure in all four wheels.
Each tyre incorporates a wheel electronics module, which constantly monitors the tyre pressure.
The system signals when the tyre pressure drops in one or more tyres.
The reset must be carried out in each case immediately after tyre pressure has been corrected, after tyres/wheels have been changed and after repairs to the air spring system.
Please refer to the corresponding motor vehicle's Owner's Handbook for details on the reset procedure.

- Reset the RDC.

Additional Information

Overview of Tightening Torques

Front bumper panel to front side panel — Used in step 9

Torx screw 5x35		Tightening torque	3 Nm

Front side panel to holder for front side panel — Used in step 9

M6 screw		Tightening torque	8 Nm

Washer fluid reservoir — Used in step 10

		Tightening torque	8 Nm

Wheel arch trim panel, front — Used in step 1112

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

Brake disc to front wheel hub — Used in step 13

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to rear wheel hub — Used in step 13

M8	Renew screw.	Tightening torque	16 Nm

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Wheel bolts			Used in step 13
M14 / SW17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

Overview of Special Tools

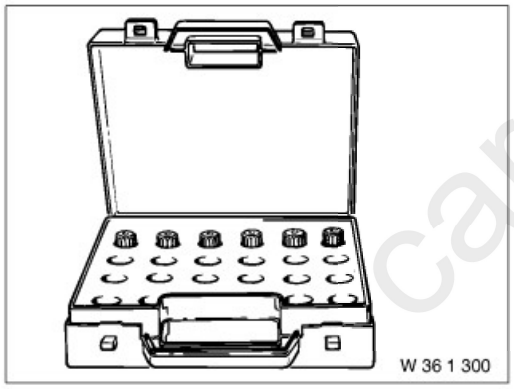
2 344 011 Tool



Common	Used in step 13
Usage	Tool (wheel hub grinder) for cleaning the connection of the wheel rim (wheel contact face) to the wheel hub.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	08 08 12 (872)

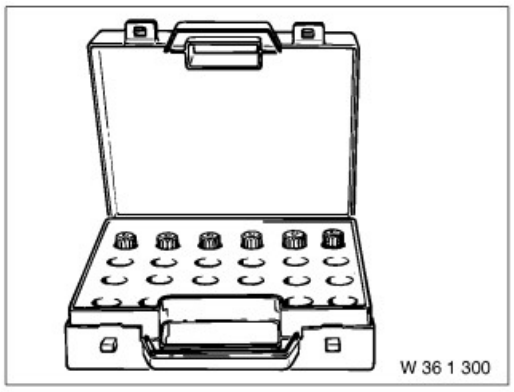
Replacement tools:

0 495 221 (36 1 323) Wheel stud



Common	Used in step 3
Usage	(Code 30) Code 39 available separately, (see EPC) under 36 13 1 181 259
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 224 (36 1 326) Wheel stud



Common	Used in step 3
Usage	(Code 33) With centring bore available separately, (see EPC) under 36 13 6 765 546
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

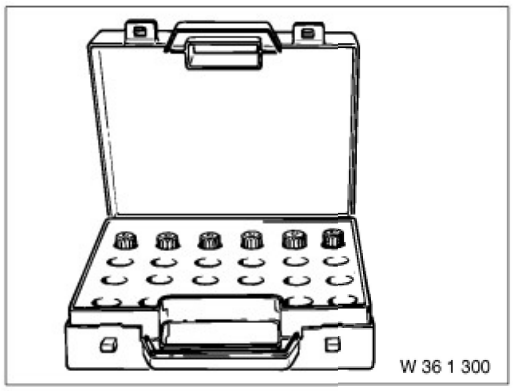
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0 495 225 (36 1 327) Wheel stud



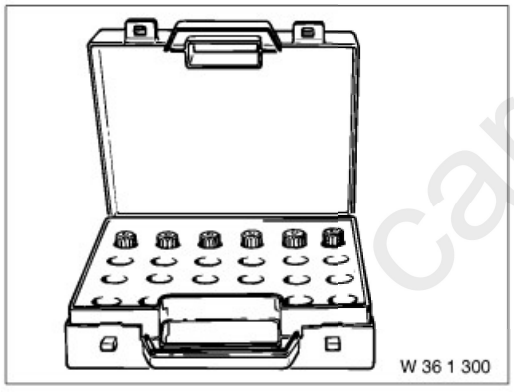
Common	Used in step 3
Usage	(Code 34) With centring bore available separately (see EPC) under 36 13 6 765 547
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 226 (36 1 328) Wheel stud



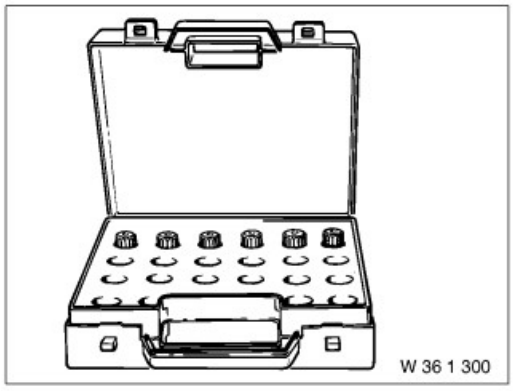
Common	Used in step 3
Usage	(Code 35) With centring bore available separately, (see EPC) under 36 13 6 762 340
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 227 (36 1 329) Wheel stud



Common	Used in step 3
Usage	(Code 36) With centring bore available separately (see EPC) under 36 13 6 762 341
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 228 (36 1 331) Wheel stud



Common	Used in step 3
Usage	(Code 37) With centring bore available separately (see EPC) under 36 13 6 762 342
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

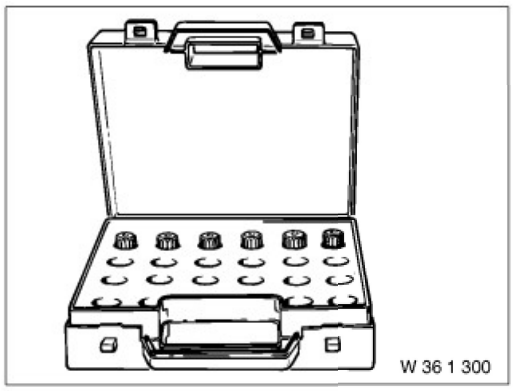
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0 495 229 (36 1 332) Wheel stud



Common	Used in step 3
Usage	(Code 38) With centring bore available separately (see EPC) under 36 13 6 762 343
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 230 (36 1 333) Wheel stud



Common	Used in step 3
Usage	(Code 40) With centring bore available separately (see EPC) under 36 13 6 762 344
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

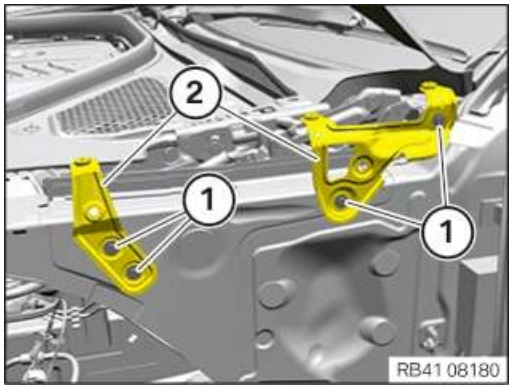
Links

Repair instructions (PRE)	Used in step
Gap dimensions, body	9

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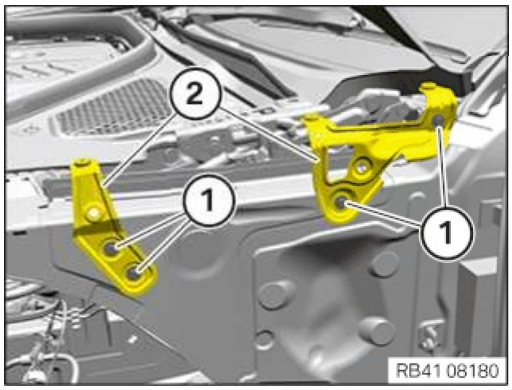
41 35 610 Replace three holders for the front side panel

1 – Removing the rear holder



- Loosen screws (1) and remove the holder (2).

2 – Installing the rear holder



- Position holder (2).
- Tighten the screws (1).

Front side panel holder to body

M6 screw		Tightening torque	8 Nm

Additional Information

Overview of Tightening Torques

Front side panel holder to body Used in step 2

M6 screw		Tightening torque	8 Nm

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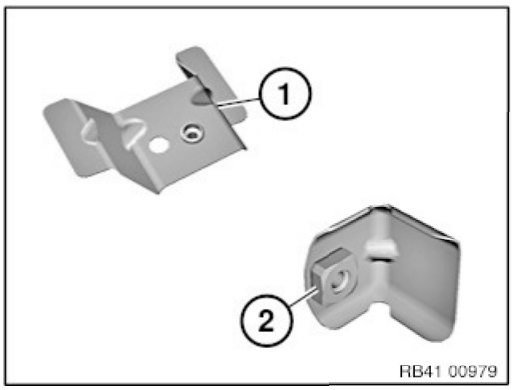
41 33 040 Replacing front left or right side wall holder

Note:
Read contents of Body, General.

Side wall removed.

Transfer the systematic diagram onto the respective holder version.

General information:
Procedure Observe repair stage 2!



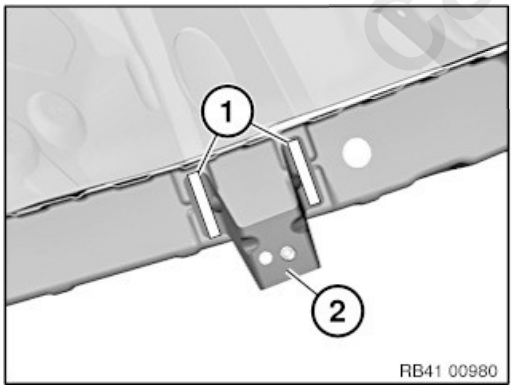
Following new body parts are required (refer to Electronic Parts Catalogue):

- (1) Holder, side wall, front (variant 1)
- (2) Holder, side wall, front (variant 2)

Following consumables are required:

Material	Quantity
Adhesive K5a	1
Blind rivets N3	2
Cleaning agent R1	1

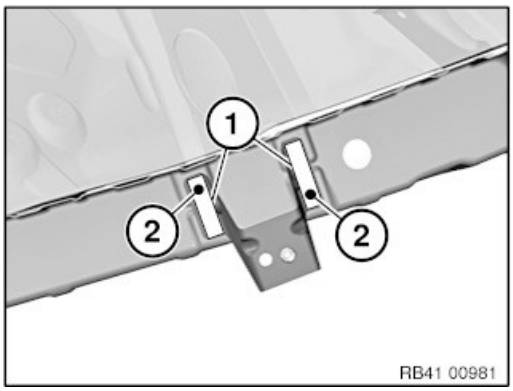
Removal of side wall holder (variant 1):



Release welded connections in areas (1) and remove holder (2).

Preparation of new part:

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Adjust new part in conjunction with side panel in front to fit.

In area of bonding surfaces (1), set 2 4.2 mm dia. bore holes (2) for blind rivetsN3.

Remove new part and deburr holes.

Important!

Do not grind bonding surfaces down or off.

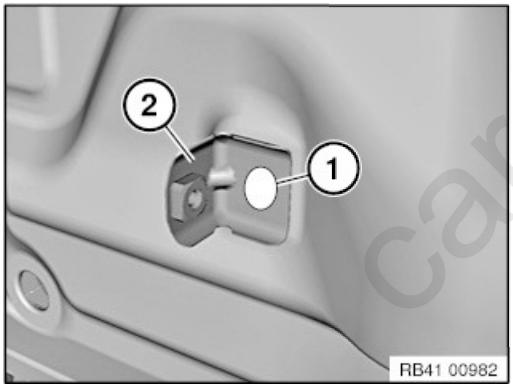
Installation of side wall holder:

Clean all bonding surfaces with cleaning agent R1.

Apply adhesive to bonding surfaces.

Install new part and rivet with blind rivets.

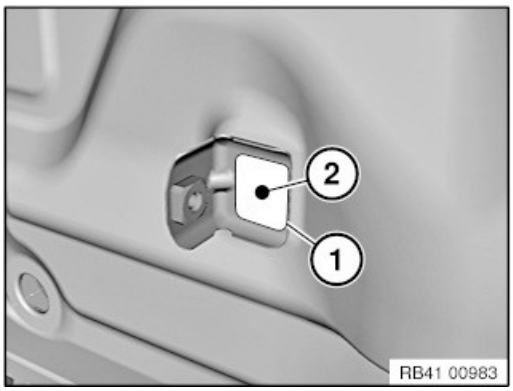
Removal of side wall holder (variant 2):



Release welded connection in area (1) and remove holder (2).

Preparation of new part:

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Fit in new part.

In area of adhesive surface (1), drill a 4.2 mm dia. bore hole (2) for blind rivet N3.

Remove new part and deburr holes.

Important!

Do not grind bonding surfaces down or off.

Installation of side wall holder:

Clean all bonding surfaces with cleaning agent R1.

Apply adhesive to bonding surface.

Install new part and rivet with blind rivet.

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41 35 050 Replacing left front side panel

WARNING

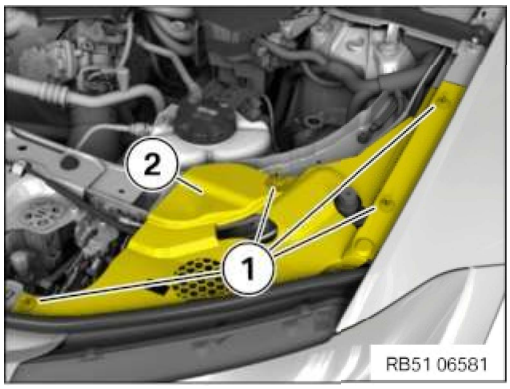
Vehicle may slip off the vehicle hoist if the vehicle hoist is handled incorrectly.

Danger! Life-threatening injuries!

- Observe safety information on raising the vehicle using a vehicle hoist.
- For additional information see: 00 ... Raising the vehicle using a vehicle hoist.

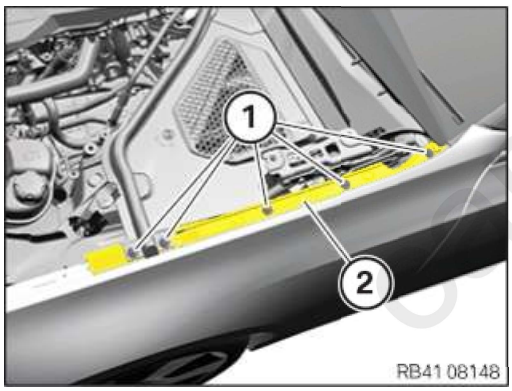
PRELIMINARY WORK

1 – Remove the cover in the engine compartment on top



- Loosen the expanding rivet (1).
- Remove the cover in the engine compartment on top (2) partially.

2 – Removing the cover in engine compartment which is behind at the top



- Loosen the expanding rivet (1).
- Remove the cover in the engine compartment (2).

3 – Removing the wheel

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- In vehicles with M Carbon ceramic brake: The wheel assembly jack must be used to remove the wheel (see workshop equipment).

  This process is intended to prevent damage to the brake disc.

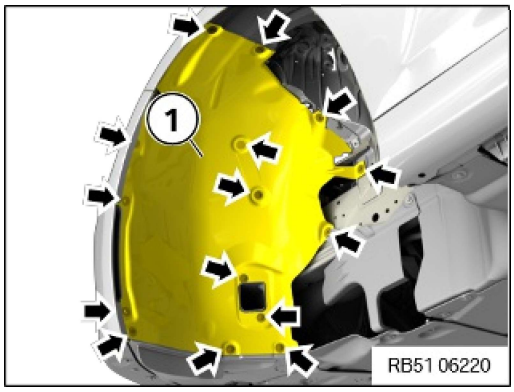


- If several wheels are removed simultaneously: Use a piece of chalk to mark on each tyre the axle and side on which the corresponding wheel is fitted.
- Release the wheel bolts (arrows) crosswise and remove the wheel.
- To release and tighten wheel bolts with a security code: Use a suitable adapter from the tool set .

4 – Removing the front section of the front wheel arch cover

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.



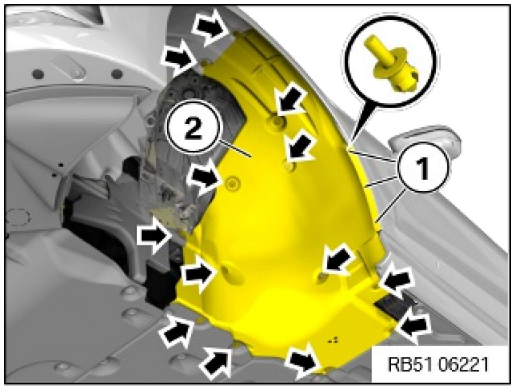
- Remove screws (arrows).
- Remove front section of the front wheel arch cover (1).

5 – Removing the rear section of the front wheel arch cover front

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

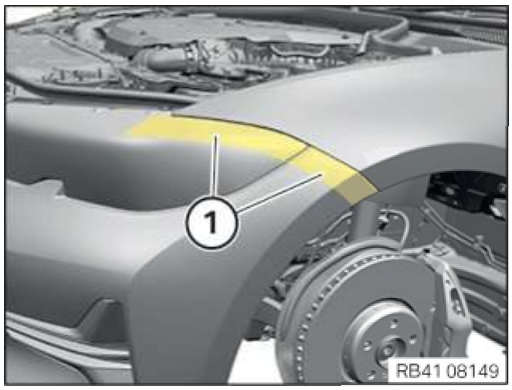
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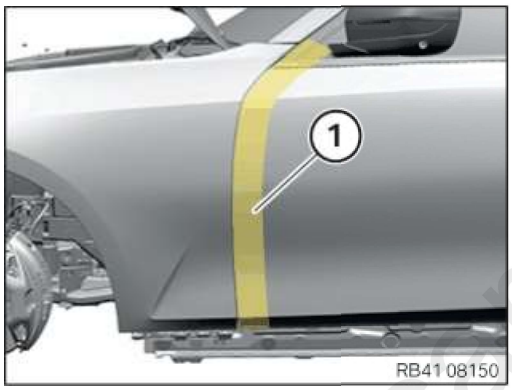
- Loosen the expanding rivet (1).
- Remove screws (arrows).
- Remove the rear section of the front wheel arch cover (2).

MAIN WORK

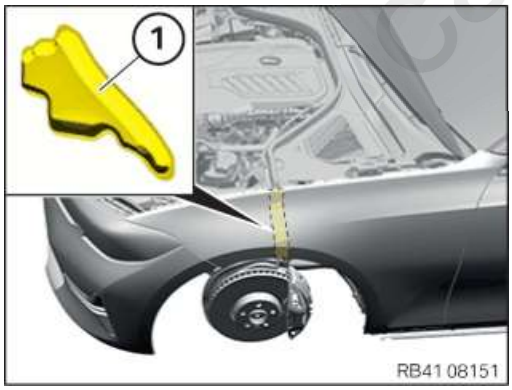
6 – Removing the front left side panel



- Mask areas (1) with a plastic adhesive tape.

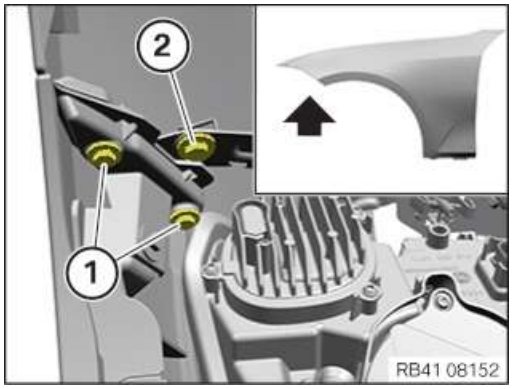


- Mask area (1) with plastic adhesive tape.

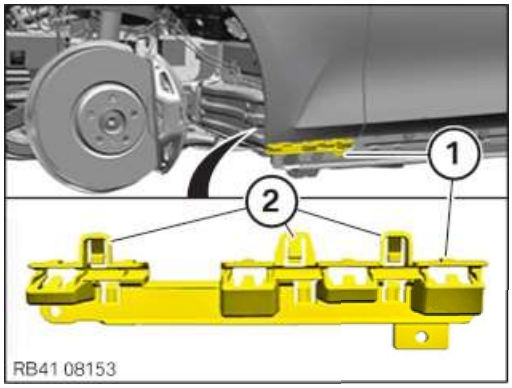


- Remove the sound insulation (1).

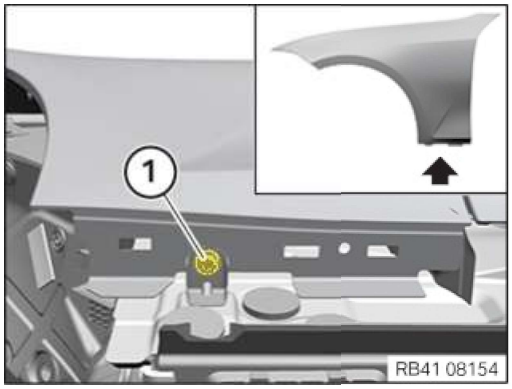
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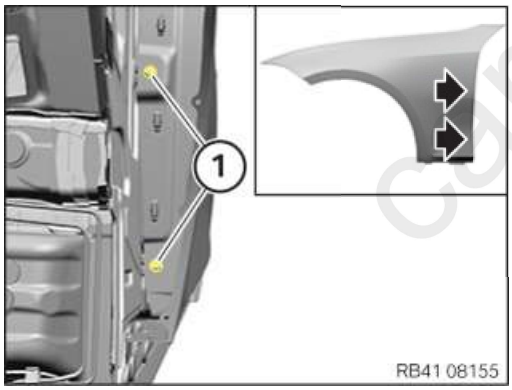
- Release screws (1) and (2).



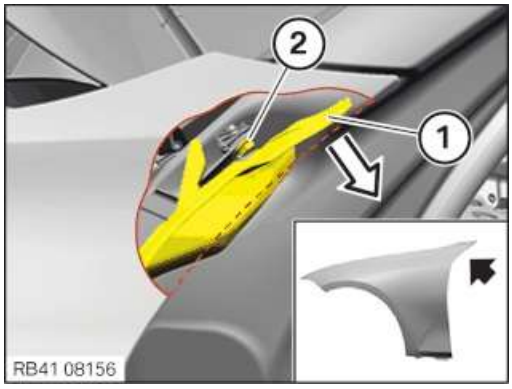
- Release the holder (1) at the latch mechanisms (2) and remove.



- Loosen screw (1).



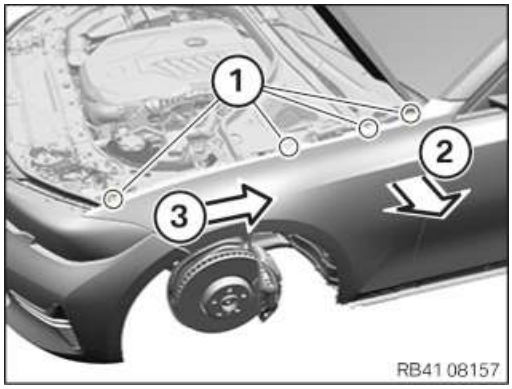
- Loosen screws (1).



- Open the front door.

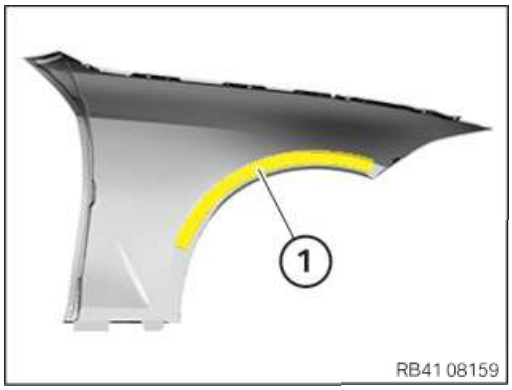
  Pull sealing (1) downwards a bit in direction of arrow.
- Loosen screw (2).
- Close front door.

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- Loosen screws (1).
- Loosen side panel in the sequence and direction shown with the aid of a second person.
- Pull side panel in the upper area of the A-pillar outwards (2).
- Pull side panel to the rear (3) and remove it.

7 – Prepare new part

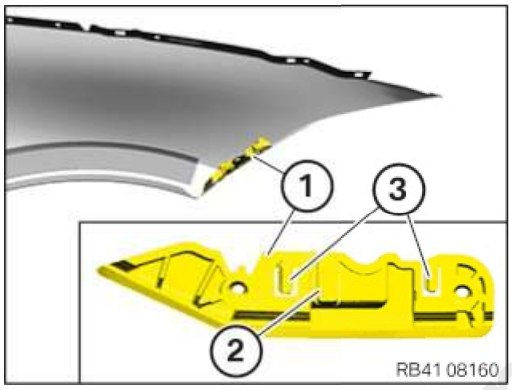


- Coat side panel before painting in the areas (1) with the sealant D1.

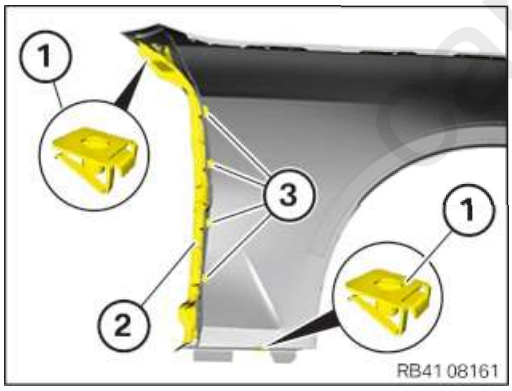
Expendable materials

Sealant D1 (seam sealing)	310 ml	83422409985

- Paint side panel.



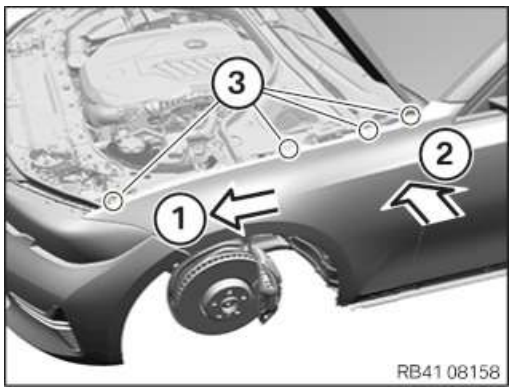
- Remove guide (1) from the side panel to be replaced.
- Check lock (2) and holder (3) for damage. If necessary, replace the guide.
- Fit guide (1) on the new part.



- Remount sheet metal nuts (1) on to the new part.

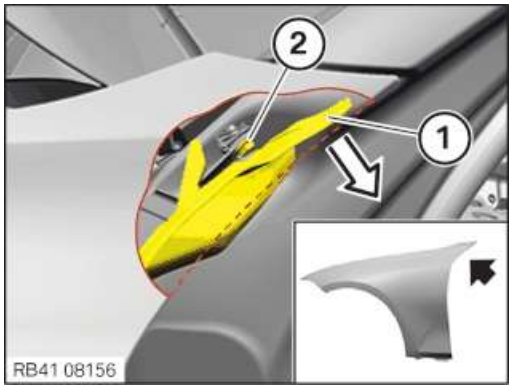
  Release sealing (2) on the latch mechanisms (3) and remount it on the new part.

8 – Installing the left front side panel



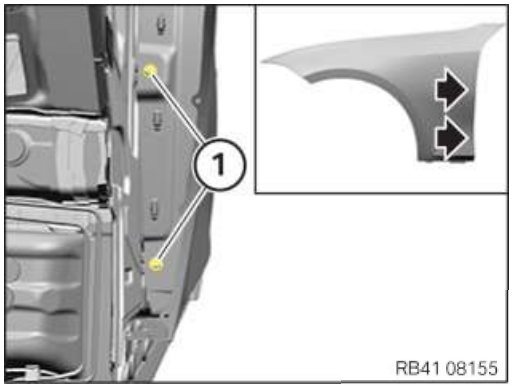
- With a second person, bring the side panel towards the front of the vehicle at an angle, moving from the back to the front.
- Position the side panel in the area of the headlight (1) and move up against in the area of A-pillar (2).
- Join the screws (1).

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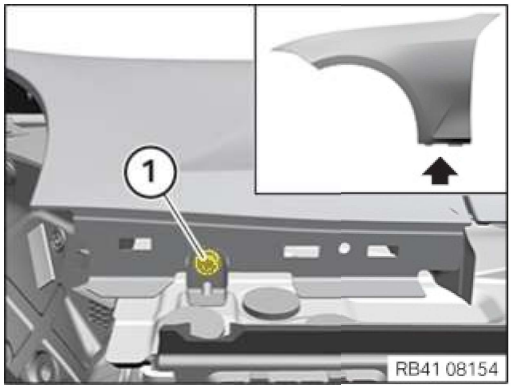


- Open the front door.

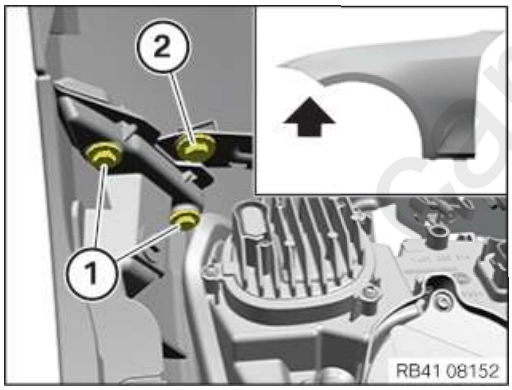
  Pull sealing (1) downwards a bit in direction of arrow.
- Join the screw (2).
- Close front door.



- Join the screws (1).



- Join the screw (1).



- Join the screw (2).
- Tighten the screws (1).

Front bumper panel to front side panel

Torx screw 5x35		Tightening torque	3 Nm

TECHNICAL INFORMATION

The gap dimensions form the basis for these repair instructions and must be observed without fail.

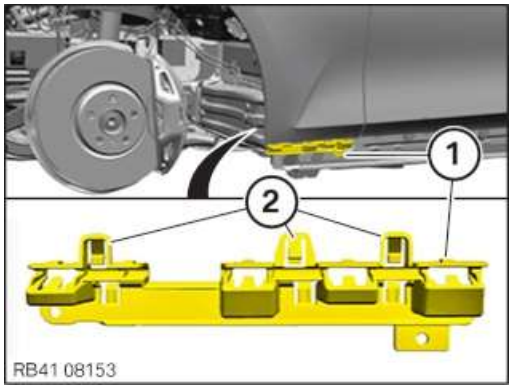
For more information see: 41 00 ... Gap dimensions for body

- Adjust gap dimensions.
- Tighten all the screws of the side panel.

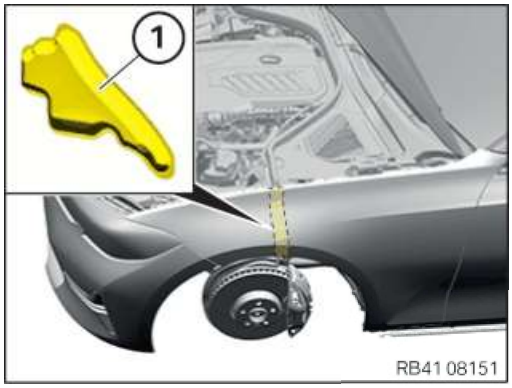
Front side panel to holder for front side panel

M6 screw		Tightening torque	8 Nm

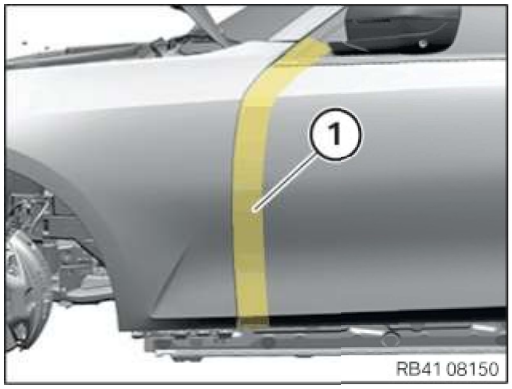
carsdiagn.com



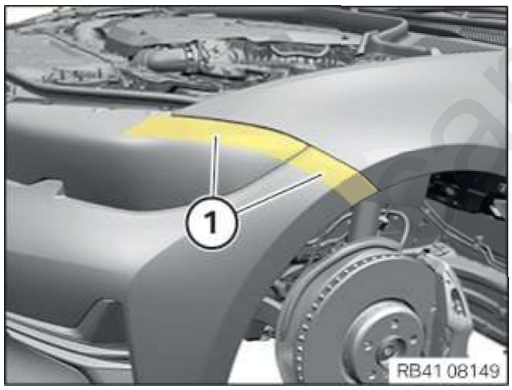
- Install the holder (2) and clip it in on the locking units (1).



- Install the acoustic insulation (1).



- Remove protective film (1).



- Remove the protective films (1).

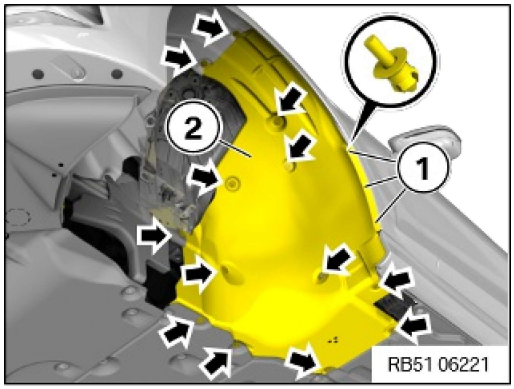
POSTPROCESSES

9 – Install the rear section of the front wheel arch cover

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

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- Install the rear section of the front wheel arch cover(2) .
- Tighten screws (arrows).

Wheel arch trim panel, front

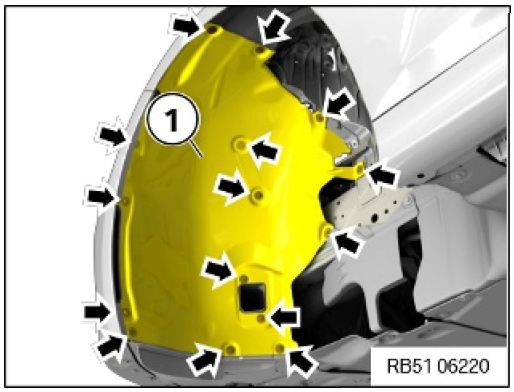
Thermoplastic hexagon screw		Tightening torque	2,6 Nm

- Secure expanding rivet (1).

10 – Install the front section of the front wheel arch cover

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.



- Install the front section of the front wheel arch cover (1).
- Tighten screws (arrows).

Wheel arch trim panel, front

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

11 – Mounting the wheel



TECHNICAL INFORMATION

The contact surface between the brake disc and the wheel rim must be clean and free from oil and grease. There is otherwise a risk of the wheel becoming loose at a later time.

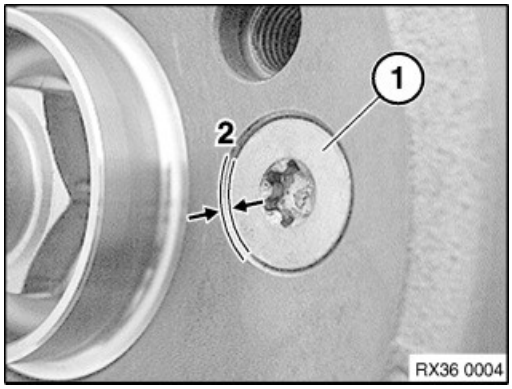
- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool 2 344 011.

  Do not operate special tool 2 344 011 with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).
- In the event of grease residue in the area of the wheel bolt holes, remove and clean the brake disc.



- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool 2 344 011.

  Do not operate special tool 2 344 011 with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).



- Check that the mounting bolt (1) for the brake disc is securely seated.

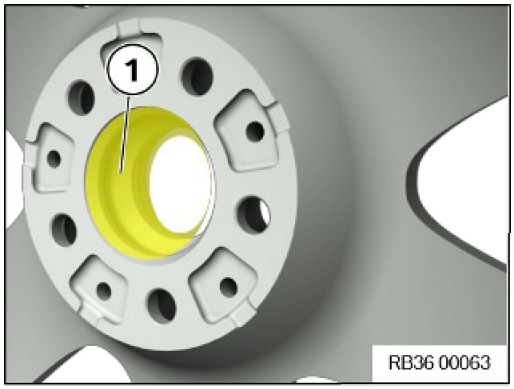
  The mounting bolt (1) for the brake disc may not protrude under any circumstances on the contact surface (2) between the brake disc and the wheel rim.

Brake disc to front wheel hub

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to rear wheel hub

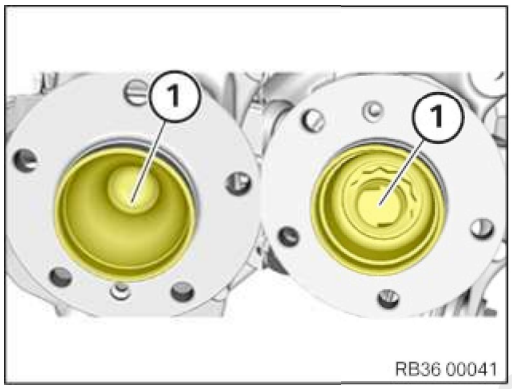
M8	Renew screw.	Tightening torque	16 Nm



- Thinly grease the wheel centring (1) in the wheel rim.

Expendable materials

Brake block paste * TU = Trade Unit. TU numbers cannot be ordered! For invoicing purposes only.	3 g, Bag	83192158851
	100 g, Tube	83192158852
	5 g, TU*	83230140233



- Lightly grease the front and rear wheel hubs in this area (1) to protect from corrosion.

Expendable materials

Brake block paste * TU = Trade Unit. TU numbers cannot be ordered! For invoicing purposes only.	3 g, Bag	83192158851
	100 g, Tube	83192158852
	5 g, TU*	83230140233



- In vehicles with M Carbon ceramic brake: The wheel assembly jack must be used to install the wheel (see workshop equipment).

  This process is intended to prevent damage to the brake disc.

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TECHNICAL INFORMATION

Never use impact screwdrivers or electric screwdrivers to screw in and tighten the wheel bolts.

The wheel rim must rest uniformly against the brake disc.

In the case of non-original BMW wheel bolts/wheel rims, it may be necessary to retighten the wheel bolts on account of setting properties (refer to the documentation from the manufacturer).

Do not apply oil to new wheel bolts.

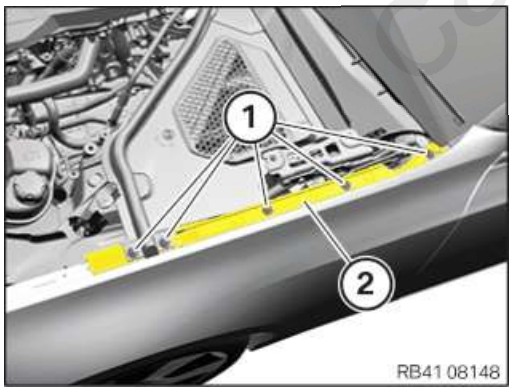
- Renew corroded wheel bolts.

  Parts: Wheel bolts
- Clean the wheel bolts.
- Check wheel bolts and threads for damage, renew the wheel bolts if necessary.
- Join and tighten the wheel bolts (arrows).

Wheel bolts

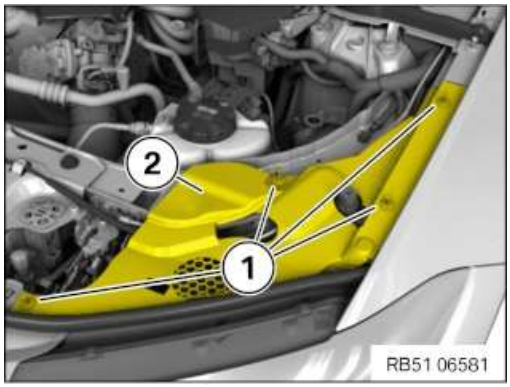
M14 / SW17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

12 – Installing the cover in the engine compartment on the top right



- Install the cover in the engine compartment on top (2).
- Secure expanding rivet (1).

13 – Install the cover in the engine compartment on top



- Install the cover in the engine compartment on top (2).
- Secure expanding rivet (1).

14 – Resetting the RDC

TECHNICAL INFORMATION

The tyre pressure control monitors the tyre pressure in all four wheels.
Each tyre incorporates a wheel electronics module, which constantly monitors the tyre pressure.
The system signals when the tyre pressure drops in one or more tyres.
The reset must be carried out in each case immediately after tyre pressure has been corrected, after tyres/wheels have been changed and after repairs to the air spring system.
Please refer to the corresponding motor vehicle's Owner's Handbook for details on the reset procedure.

- Reset the RDC.

Additional Information

Overview of Tightening Torques

Front bumper panel to front side panel — Used in step 8

Torx screw 5x35		Tightening torque	3 Nm

Front side panel to holder for front side panel — Used in step 8

M6 screw		Tightening torque	8 Nm

Wheel arch trim panel, front — Used in step 910

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

Brake disc to front wheel hub — Used in step 11

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to rear wheel hub — Used in step 11

M8	Renew screw.	Tightening torque	16 Nm

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Wheel bolts Used in step 11

M14 / SW17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

Overview of Special Tools

2 344 011 Tool

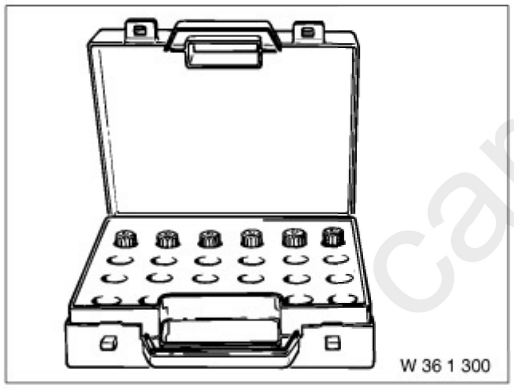


Common Used in step 11

Usage	Tool (wheel hub grinder) for cleaning the connection of the wheel rim (wheel contact face) to the wheel hub.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	08 08 12 (872)

Replacement tools:

0 495 221 (36 1 323) Wheel stud



Common Used in step 3

Usage	(Code 30) Code 39 available separately, (see EPC) under 36 13 1 181 259
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 224 (36 1 326) Wheel stud



Common Used in step 3

Usage	(Code 33) With centring bore available separately, (see EPC) under 36 13 6 765 546
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

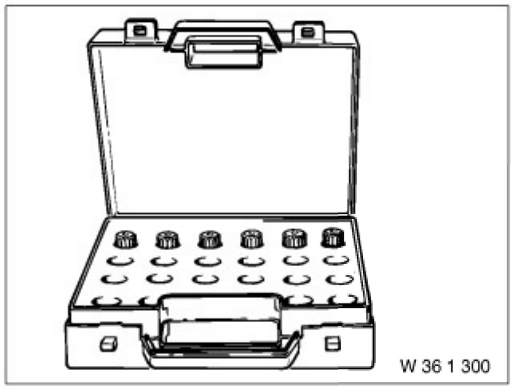
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0 495 225 (36 1 327) Wheel stud



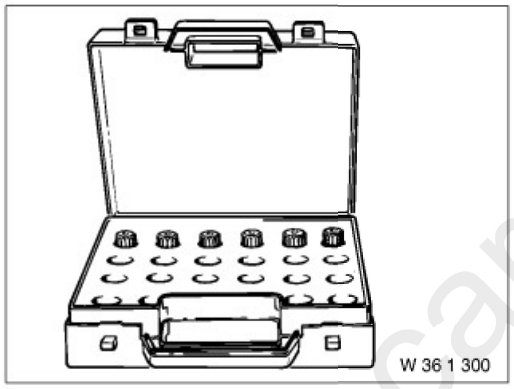
Common	Used in step 3
Usage	(Code 34) With centring bore available separately (see EPC) under 36 13 6 765 547
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 226 (36 1 328) Wheel stud



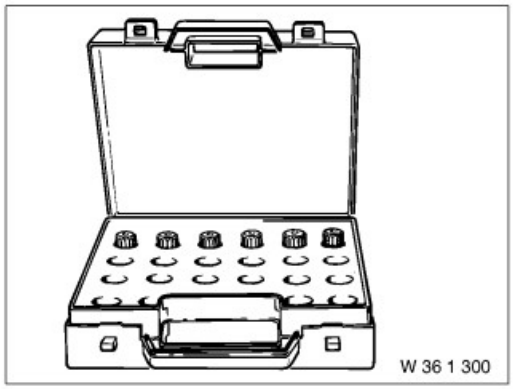
Common	Used in step 3
Usage	(Code 35) With centring bore available separately, (see EPC) under 36 13 6 762 340
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 227 (36 1 329) Wheel stud



Common	Used in step 3
Usage	(Code 36) With centring bore available separately (see EPC) under 36 13 6 762 341
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 228 (36 1 331) Wheel stud



Common	Used in step 3
Usage	(Code 37) With centring bore available separately (see EPC) under 36 13 6 762 342
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

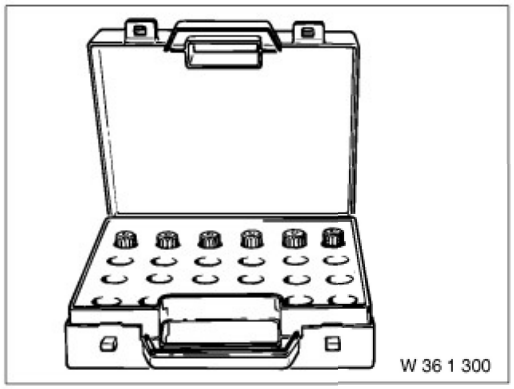
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0 495 229 (36 1 332) Wheel stud



Common	Used in step 3
Usage	(Code 38) With centring bore available separately (see EPC) under 36 13 6 762 343
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 230 (36 1 333) Wheel stud



Common	Used in step 3
Usage	(Code 40) With centring bore available separately (see EPC) under 36 13 6 762 344
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

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Links

Repair instructions (PRE)	Used in step
Gap dimensions, body	8

41 35 101 Replacing rear left side panel

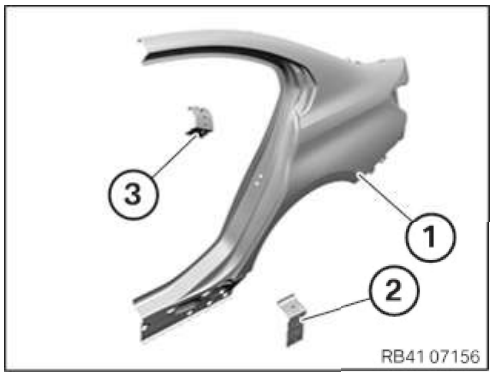
TECHNICAL INFORMATION

- Observe the procedure for repair stage 2.

For additional information see: 41 00 ... Repair method for repair stage 2

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

1 – New parts required



- Supply the following new parts (see Electronic Parts Catalogue EPC):

  Rear side wall(1)

  Rocker panel repair sheet (2)

  C-pillar repair sheet (3)

  Plastic nut

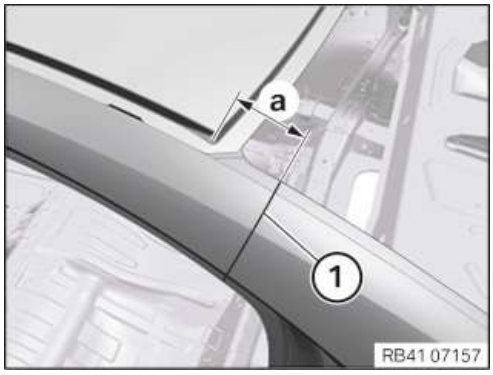
TECHNICAL INFORMATION

For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

- Supply the following consumables:

Material	Quantity
Adhesive K5 (195 ml)	1
Adhesive K5 (50 ml)	1
Blind rivet N3	20
Punch rivet N4	20
Punch rivet N5	30
EMC screw	3
Cleaning agentR1	1
Cleaning agentR2	1
Cavity sealing wax remover	
Sealant D1	

2 – Removing the rear left side panel

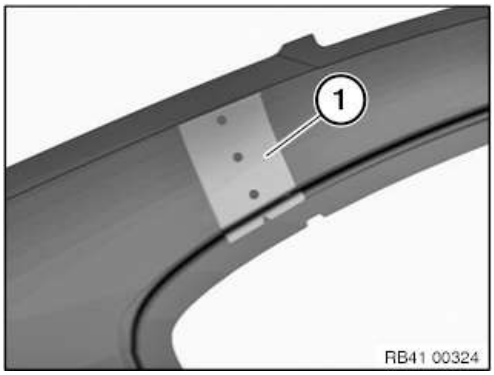


- Mark the separating cut (1) on the C-pillar according to the dimensions and cut. Disconnect only the outer panel.

  Dimension a = 85 mm from the corner of the roof outer skin.

- Compare position of severance cut with reinforcement plate.

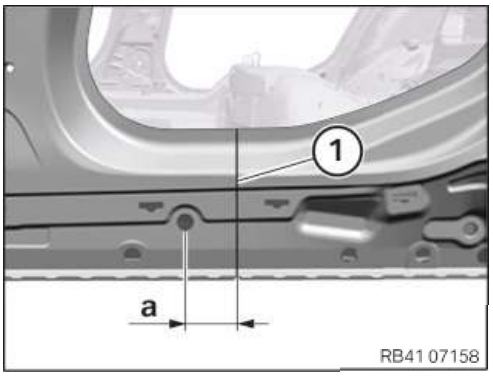
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TECHNICAL INFORMATION

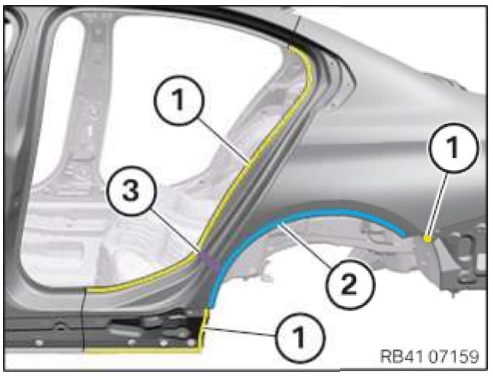
For more information see: 41 00 ... Determination of separating cut using a template

- Determine position of the severance cut in addition to the dimensions with the aid of a template (1).



- Mark the separating cut (1) on the side sill according to dimensions and disconnect. Disconnect only the outer panel.

  Dimension = 75 mm from the centre of the Ø 20 mm hole.
- Compare position of severance cut with reinforcement plate.

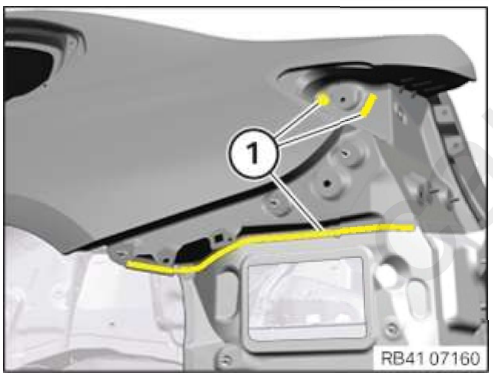


- Release welded connections in areas (1).

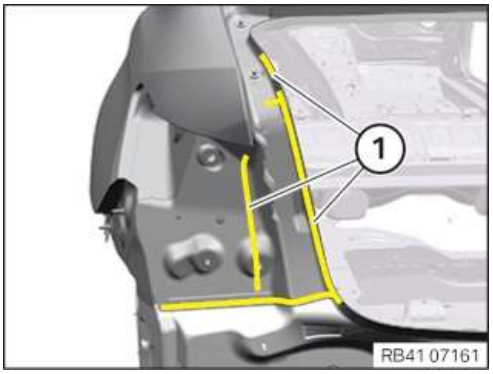
TECHNICAL INFORMATION

For more information see: 41 00 ... Releasing bonded folded joints

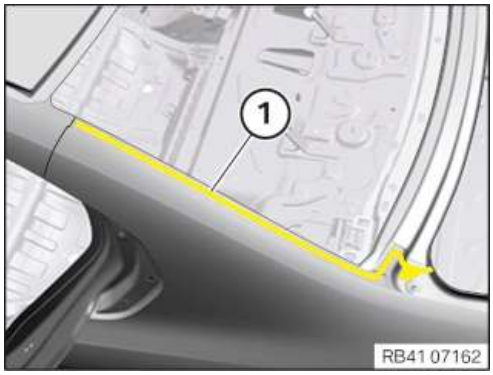
- Release joint adhesive connection in the area (2).
- Detach the side panel from the cavity sealing (3).



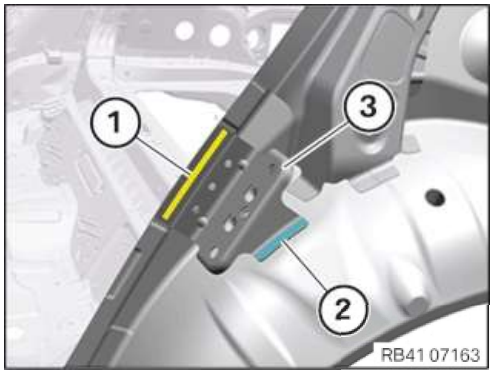
- Release welded connections in areas (1).



- Release welded connections in areas (1).



- Open welded connections in area (1). Remove side wall.



- Open welded connections in area (1).

TECHNICAL INFORMATION

For more information see: 41 00 ... Releasing bonded connections

- Release the bonded connection (2).
- Remove lock striker reinforcement (3).

3 – Prepare new part

TECHNICAL INFORMATION

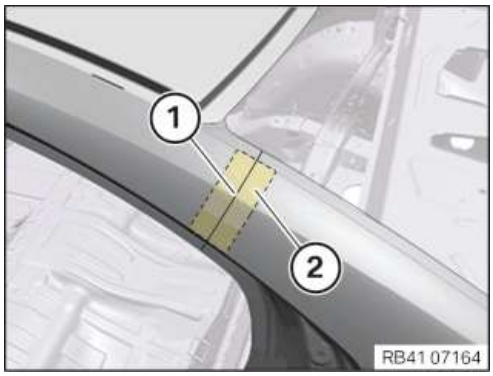
Adhesive technology in the area of the outer skin (not for structural adhesion):
The bonding surfaces of the new parts may not sharpened or ground.
For additional information see: 41 00 ... BMW bonding instructions

- Mark and make the separating cuts on the new part in accordance with the separating cuts on the vehicle.

TECHNICAL INFORMATION

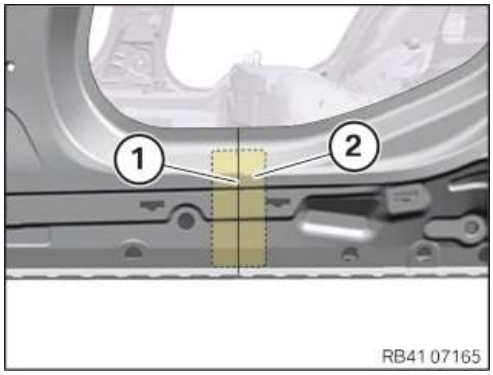
For additional information see: 41 00 ... Reinforcement plate with stud bolt (bonded or welded)

- Prepare the reinforcement plates at the separating cuts for the welded connection and the bonded connection.

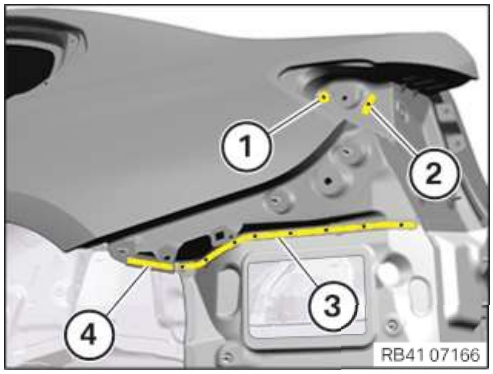


- At the separating cut (1) of the C-pillar, adjust the reinforcement plate (2) together with the new part.
- Prepare the separating cut (1) and the reinforcement plate (2) for joining by welding.

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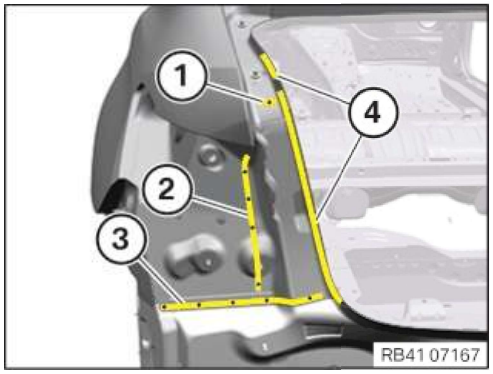
- Prepare the separating cut (1)and the reinforcement plate (2) for joining by the bonding method in rocker panel area.



- Areas (1) to (3): Drill bore holes with ⌀ 4.2 mm for blind rivets.

Area	Number
1	1
2	1
3	8

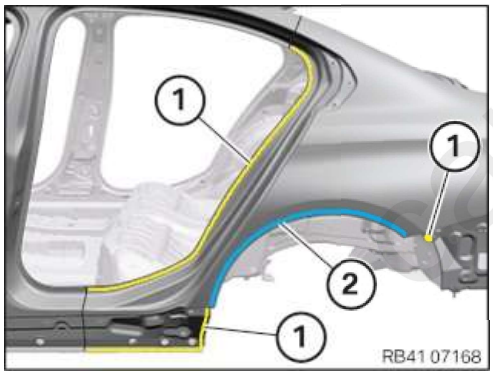
- Prepare area (4) for joining by bonded rivet method (punch rivets).



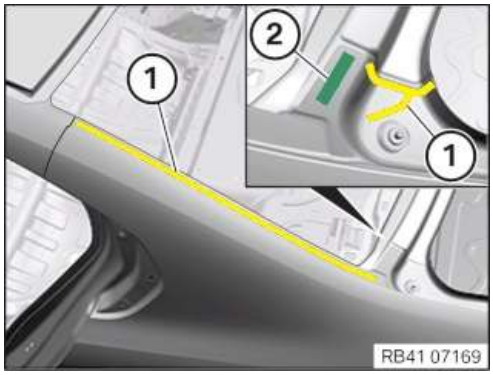
- Areas (1) to (3): Drill ⌀ 4.2 mm bore holes for blind rivets.

Area	Number
1	1
2	4
3	5

- Prepare areas (4) for joining through bonded rivet method (punch rivets).



- Prepare areas (1) for joining through bonded rivet method (punch rivets).
- Prepare area (2) for adhesive technology (bordering).

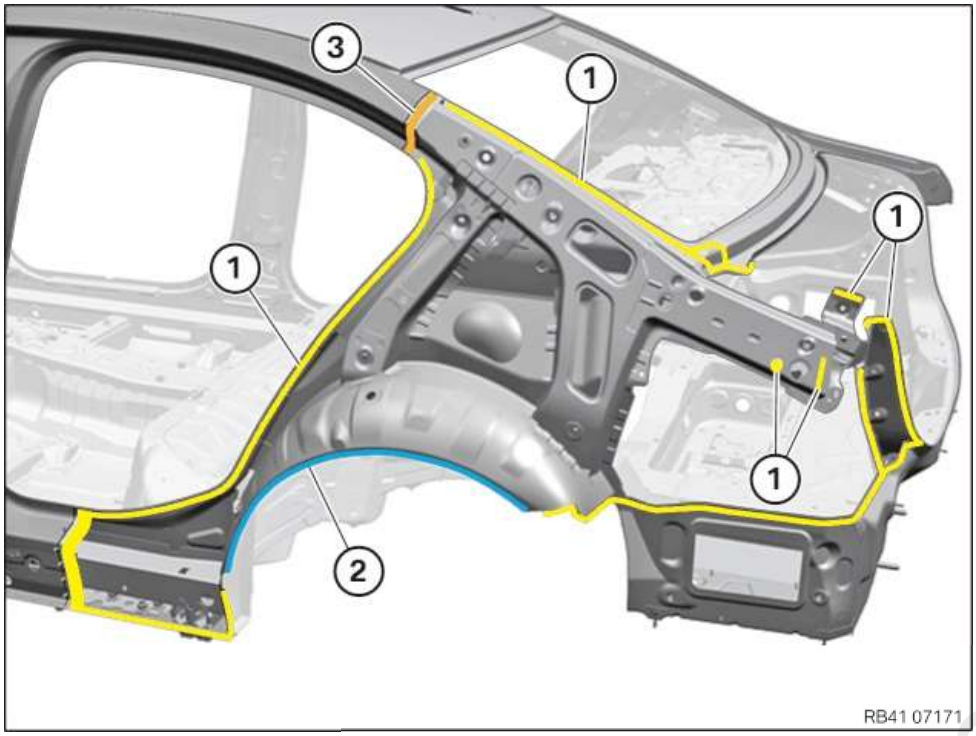


- Prepare the areas (1) for joining using the bonded rivet method with punch rivets.
- Prepare area (2) for joining by adhesive technology.
- Remove new part and deburr holes.

4 – Installing the rear left side panel

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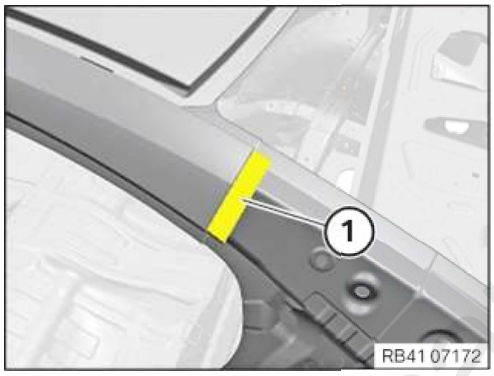
Overview of joining method



1 Bonded rivet method

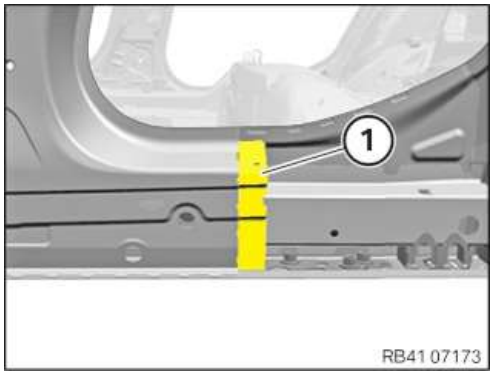
2 Adhesive bonding method (border)

3 Welding method



- Install the reinforcement plate (1) and attach by welding.

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- Pre-clean the bonding surfaces of the reinforcement plate (1) and the body using R2 solvent cleaner.

Expendable materials

Cleaning agent R2	500 ml	83190417324

- Clean the bonding surfaces of the reinforcement plate (1) and the body using R1 solvent cleaner.

Expendable materials

Cleaning agent R1	100 ml, Bottle	83192211217

- Apply K5 adhesive to the reinforcement plate (1).

Adhesive

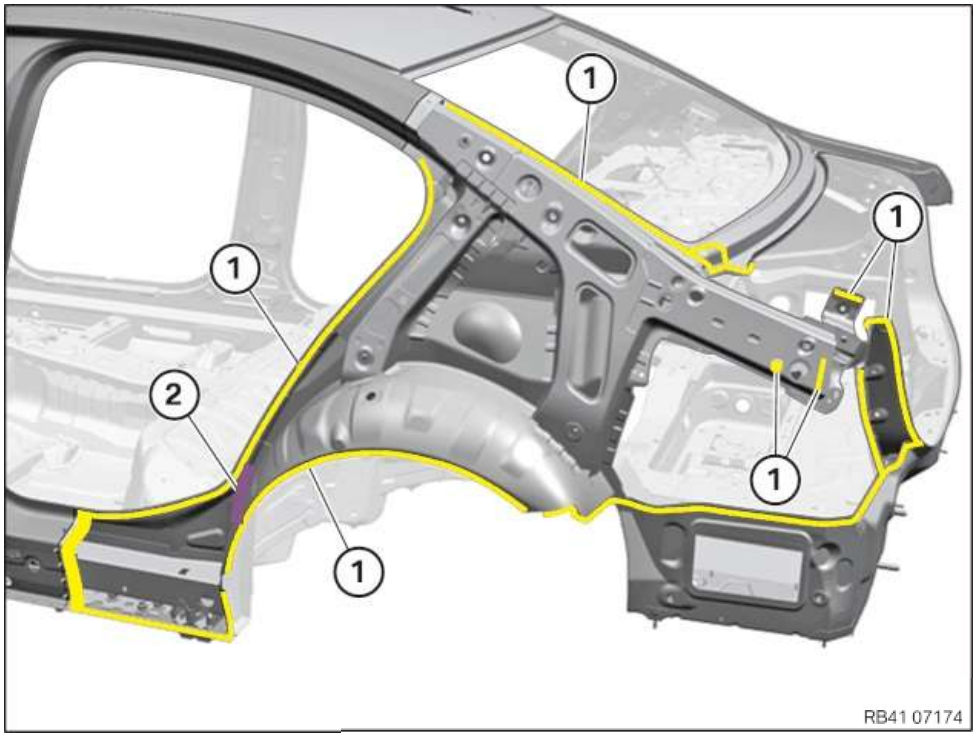
Body adhesive K5	50 ml	83192158654

Adhesive

Body adhesive K5	195 ml	83192157298

- Install the reinforcement plate (1).

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- Clean bonding surfaces (1) on vehicle and on new part with solvent cleaner R2.

Expendable materials

Cleaning agent R2	500 ml	8319041732

- Clean bonding surfaces (1) on vehicle and on the new part with cleaning agent R1.

Expendable materials

Cleaning agent R1	100 ml, Bottle	8319221121

- Apply adhesive K5 to the bonding surfaces (1).

Adhesive

Body adhesive K5	50 ml	83192158654

Adhesive

Body adhesive K5	195 ml	8319215729

TECHNICAL INFORMATION

For more information see: 41 00 ... Installation of cavity sealing (expanded)

- Apply sealant D2 to cavity sealing (2).

Expendable materials

Sealant D2 (seam sealing, spreadable)	310 ml	8342240998



- Pre-clean the bonding surface (1) on the vehicle and the new part with solvent cleaner R2.

  Clean the bonding surface (1) on the vehicle and the new part with solvent cleaner R1.

  In area (1), apply adhesive K5 to the lock striker reinforcement.

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- Install the side panel with the help of a second person.

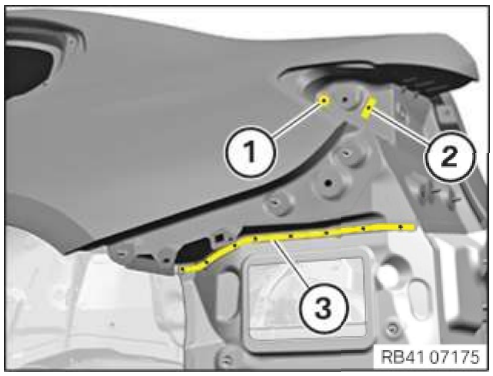
  During installation, ensure that sufficient adhesive has been applied to all bonding surfaces.
- Align the side wall in the areas of the separating cuts and secure it with locking pliers.
- Tighten the nuts on the reinforcement plate .

Expendable materials

Plastic nut	⌀18 mm	51161943122

Expendable materials

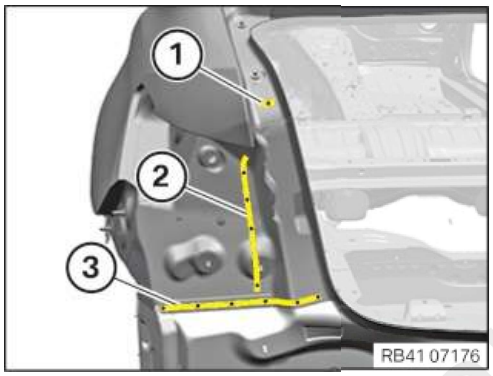
Plastic nut	⌀22 mm	07147169847



- Rivet the side panel in areas (1) to (3) with blind rivets N3.

Expendable materials

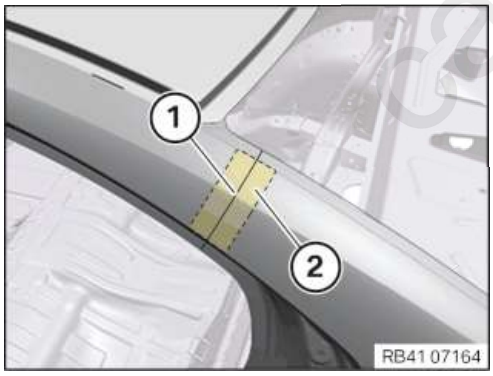
Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421



- Rivet the side panel in areas (1) to (3) with blind rivets N3.

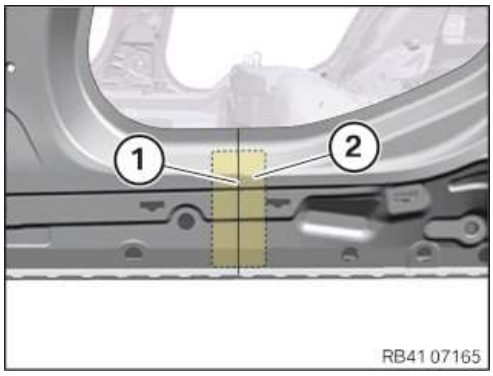
Expendable materials

Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421



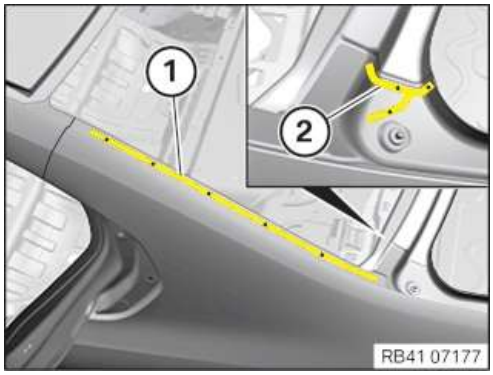
- Attach the separating cut (1) and the reinforcement plate (2) by welding.

  Only finish welding the separating cut and reinforcement plate once the punch rivet is installed.



- At the separating cut (1), tighten the nuts of the reinforcement plate (2).

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- Rivet the side panel in the areas (1) and (2) with punch rivets N4 and N5.

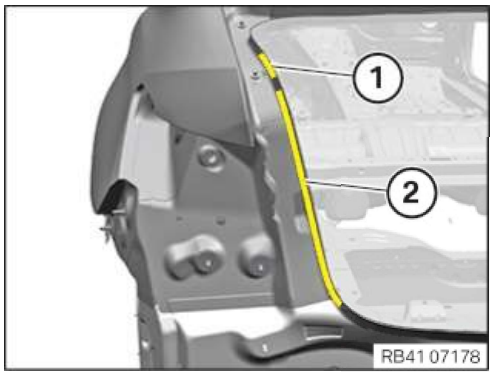
Area	Number	Punch rivet
1	5	N5
2	3	N4

Expendable materials

Punch rivet N4 Ø 3 mm ; 4 mm long		83192457307

Expendable materials

Punch rivet N5 Ø 5 mm ; 5 mm long		83192158079



- Rivet the side panel in the areas (1) and (2) with punch rivets N4 and N5.

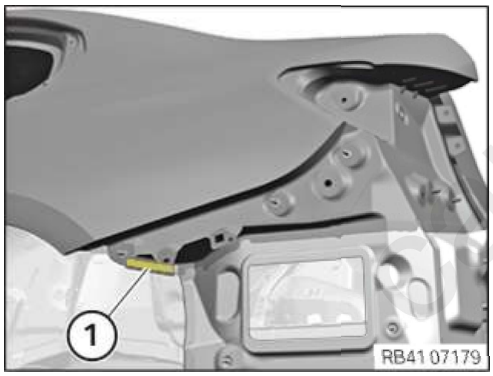
Area	Number	Punch rivet
1	2	N5
2	6	N4

Expendable materials

Punch rivet N4 Ø 3 mm ; 4 mm long		83192457307

Expendable materials

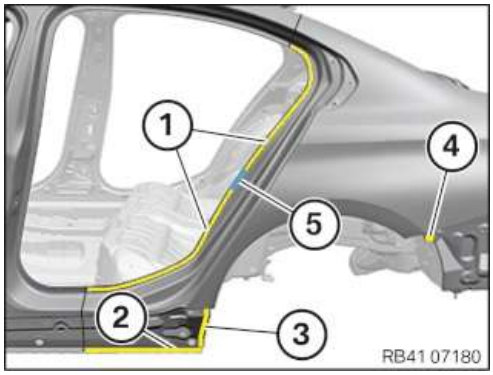
Punch rivet N5 Ø 5 mm ; 5 mm long		83192158079



- Rivet side panel in area (1) with 3 punch rivets N4.

Expendable materials

Punch rivet N4 Ø 3 mm ; 4 mm long		83192457307



- Rivet the side panel in the areas (1) to (4) with punch rivets N4 and N5.

Area	Number	Punch rivet
1	16	N5
2	5	N5
3	4	N4
4	1	N4

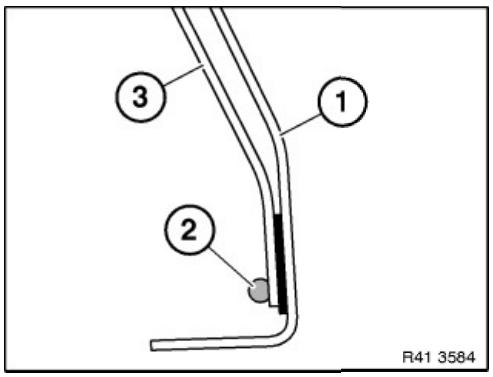
Expendable materials

Punch rivet N4 Ø 3 mm ; 4 mm long		83192457307

Expendable materials

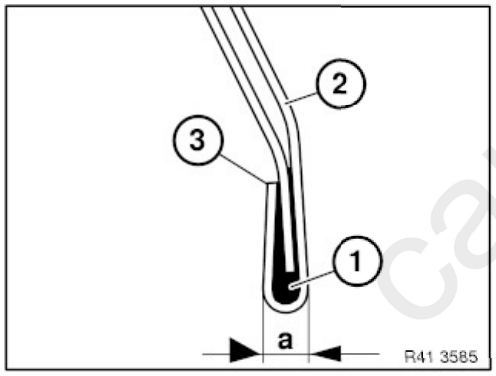
Punch rivet N5 Ø 5 mm ; 5 mm long		83192158079

- Use locking pliers to secure the side panel in the area (5) of the lock striker reinforcement until the adhesive has hardened.



- Also apply adhesive K5 (2) to the outer wheel arch section (3).

  (1) = rear side panel.



- Flange the edge of wheel arch (3) of the side panel flush to the outer wheel arch section.
- Do not create sharp edges when flanging because the flange edge may otherwise begin to tear.
- Fill flange edge fully with adhesive.

  Dimension (a) = 5 mm

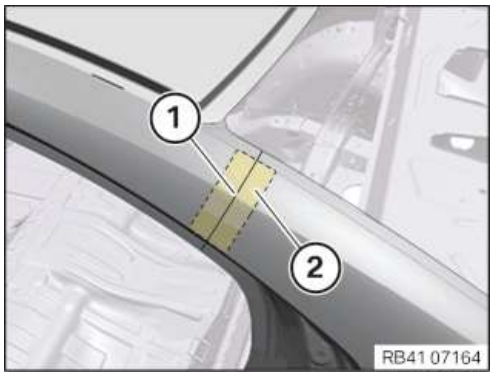
  (1) = adhesive.

  (2) = rear side panel.
- Seal new part in a manner similar to the standard production with sealant D1.

  Seal area (3) with sealant D1 according to standard.

Expendable materials

Sealant D1 (seam sealing)	310 ml	83422409985



- Weld separating cut (1) and reinforcement plate (2).

  Avoid excessive heat input at the adjacent adhesive areas.

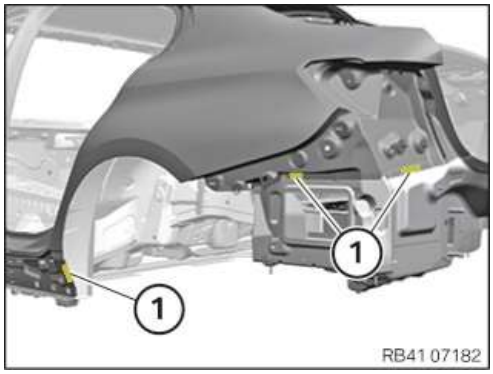
▸ **Install the EMC screw (EMC = electromagnetic compatibility)**

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- After adhesive has fully hardened: Drill a hole with a diameter of 4.2 mm.
- Screw in the EMC screw.
- Seal the EMC screw with the sealant D1 .

Expendable materials

Sealant D1 (seam sealing)	310 ml	83422409985



- After the adhesive has hardened, install 3 EMC screws in the areas (1).

Expendable materials

Screw EMC screw, SF Plus, M5x15		83190301639

Additional Information

Links

Repair instructions (PRE)	Used in step
EMC screws, general information	4

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 05 800 Releasing bonded folded seam connections	2
41 00 ... Opening bonded connections	2
41 00 ... BMW/MINI bonding instructions	3
41 00 ... Repair techniques, repair stage 2	

Repair instructions	Used in step
41 00 ... Separating cut determination with a template	2
41 00 ... Reinforcement plate with stud bolt (bonded or welded)	3
41 00 ... Installing cavity sealing (expanded)	4

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41 35 111 Replacing rear right side panel

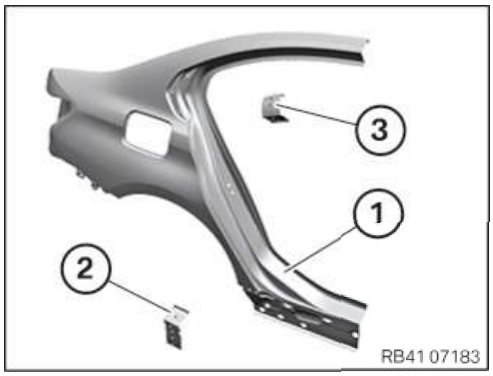
TECHNICAL INFORMATION

- Observe the procedure for repair stage 2.

For additional information see: 41 00 ... Repair method for repair stage 2

- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

1 – New parts required



- Supply the following new parts (see Electronic Parts Catalogue EPC):

  Rear side wall(1)

  Rocker panel repair sheet (2)

  C-pillar repair sheet (3)

  Plastic nut

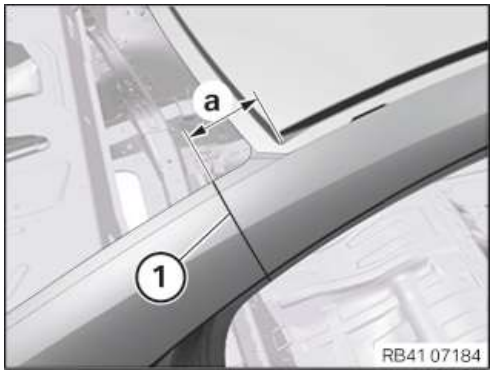
TECHNICAL INFORMATION

For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

- Supply the following consumables:

Material	Quantity
Adhesive K5 (195 ml)	1
Adhesive K5 (50 ml)	1
Blind rivet N3	20
Punch rivet N4	20
Punch rivet N5	30
EMC screw	3
Cleaning agentR1	1
Cleaning agentR2	1
Cavity sealing wax remover	
Sealant D1	

2 – Remove the right rear side panel

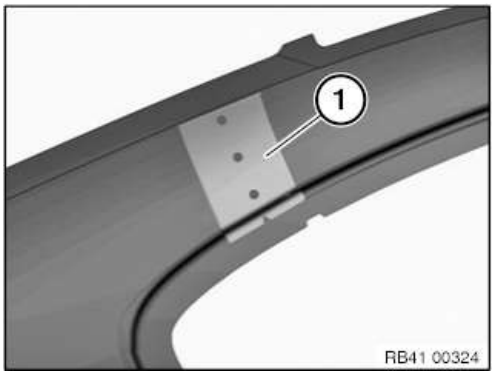


- Mark the separating cut (1) on the C-pillar according to the dimensions and cut. Disconnect only the outer panel.

  Dimension a = 85 mm from the corner of the roof outer skin.

- Compare position of severance cut with reinforcement plate.

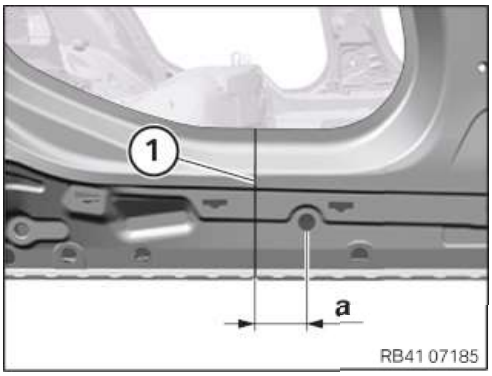
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TECHNICAL INFORMATION

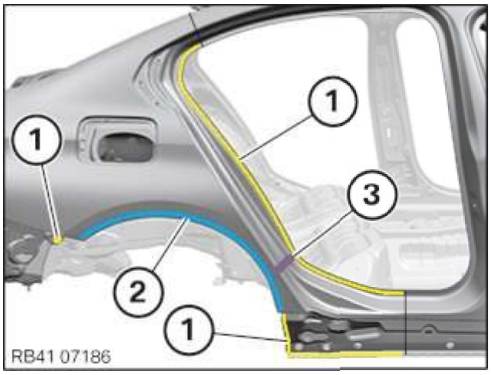
For more information see: 41 00 ... Determination of separating cut using a template

- Determine position of the severance cut in addition to the dimensions with the aid of a template (1).



- Mark the separating cut (1) on the side sill according to dimensions and disconnect. Disconnect only the outer panel.

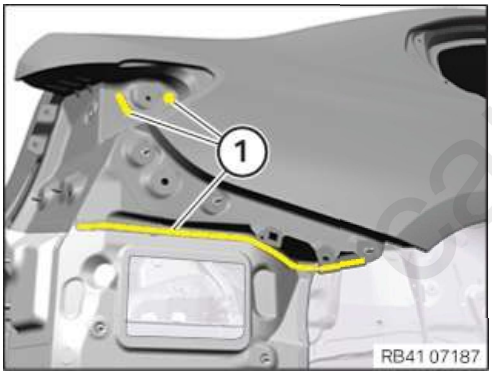
  Dimension = 75 mm from the centre of the Ø 20 mm hole.
- Compare position of severance cut with reinforcement plate.



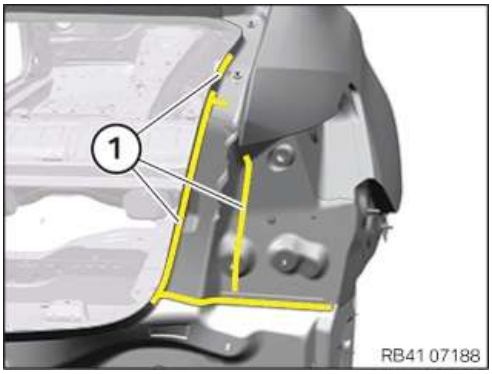
TECHNICAL INFORMATION

For more information see: 41 00 ... Releasing bonded folded joints

- Release welded connections in areas (1).
- Release joint adhesive connection in the area (2).
- Detach the side panel from the cavity sealing (3).

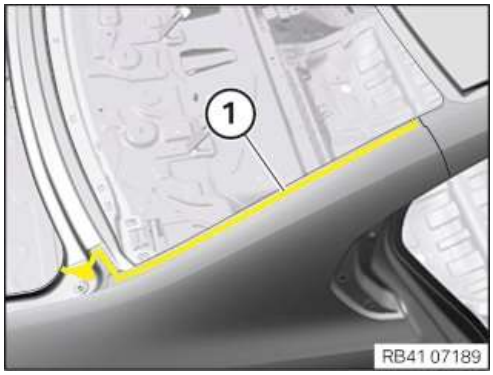


- Release welded connections in areas (1).

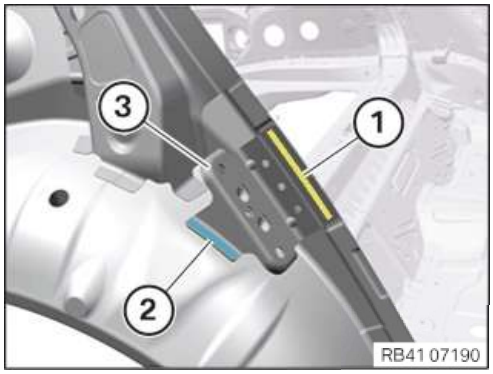


- Release welded connections in areas (1).

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- Open welded connections in area (1). Remove side wall.



- Open welded connections in area (1).
- Release the bonded connection (2).
- Remove lock striker reinforcement (3).

3 – Prepare new part

TECHNICAL INFORMATION

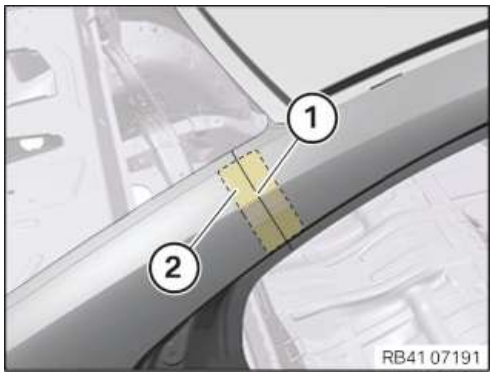
Adhesive technology in the area of the outer skin (not for structural adhesion):
The bonding surfaces of the new parts may not sharpened or ground.
For additional information see: 41 00 ... BMW bonding instructions

- Mark and make the separating cuts on the new part in accordance with the separating cuts on the vehicle.

TECHNICAL INFORMATION

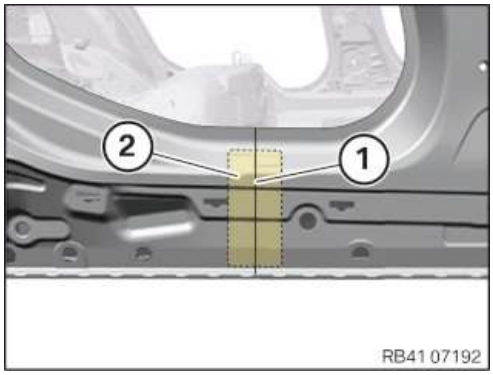
For additional information see: 41 00 ... Reinforcement plate with stud bolt (bonded or welded)

- Prepare the reinforcement plates at the separating cuts for the welded connection and the bonded connection.

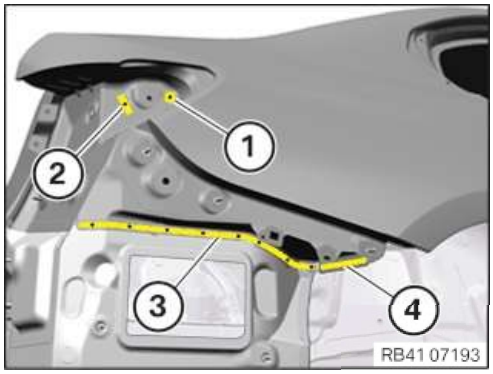


- At the separating cut (1) of the C-pillar, adjust the reinforcement plate (2) together with the new part.
- Prepare the separating cut (1) and the reinforcement plate (2) for joining by welding.

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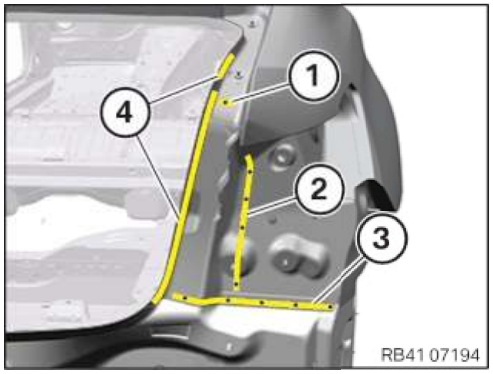
- Prepare the separating cut (1)and the reinforcement plate (2) for joining by the bonding method in rocker panel area.



- Areas (1) to (3): Drill bore holes with ⌀ 4.2 mm for blind rivets.

Area	Number
1	1
2	1
3	8

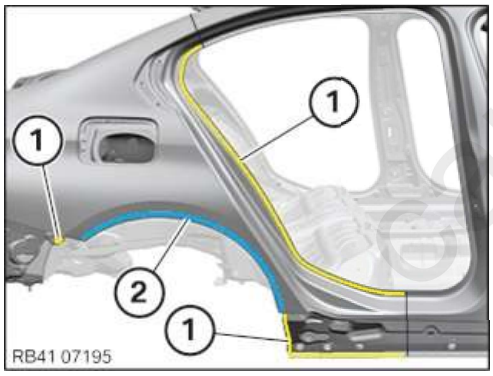
- Prepare area (4) for joining using the bonded rivet method with punch rivets.



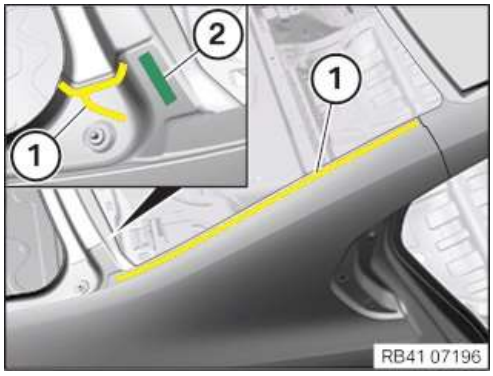
- Areas (1) to (3): Drill ⌀ 4.2 mm bore holes for blind rivets.

Area	Number
1	1
2	4
3	5

- Prepare the areas (4) for joining using the bonded rivet method with punch rivets.



- Prepare areas (1) for joining through bonded rivet method (punch rivets).
- Prepare area (2) for adhesive technology (bordering).

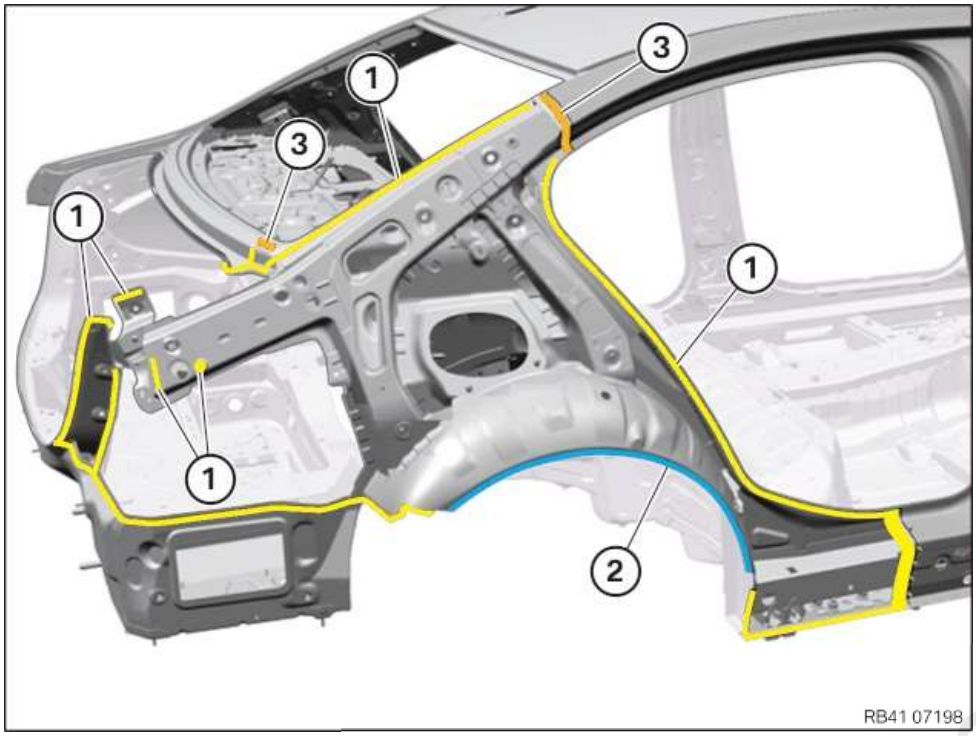


- Prepare areas (1) for joining through bonded rivet method (punch rivets).
- Prepare area (2) for joining by welding.
- Remove new part and deburr bore holes.

4 – Installing the rear side panel on the right

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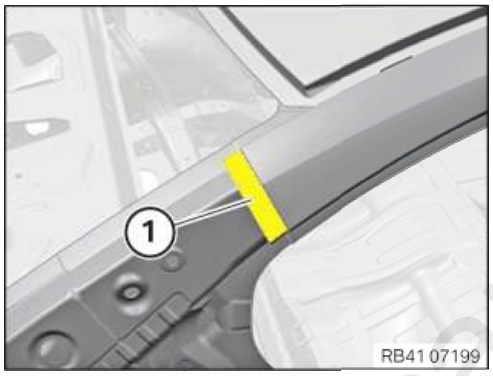
Overview of joining method



1 Bonded rivet method

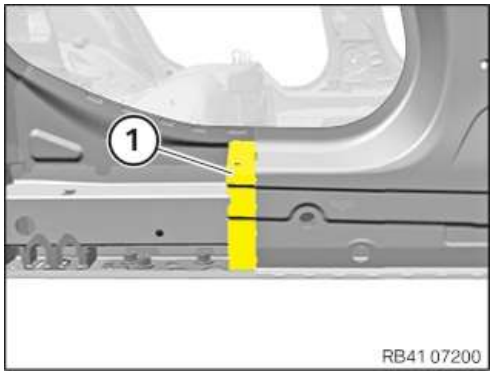
2 Adhesive bonding method (border)

3 Welding method



- Install the reinforcement plate (1) and attach by welding.

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- Pre-clean the bonding surfaces of the reinforcement plate (1) and the body using R2 solvent cleaner.

Expendable materials

Cleaning agent R2	500 ml	83190417324

- Clean the bonding surfaces of the reinforcement plate (1) and the body using R1 solvent cleaner.

Expendable materials

Cleaning agent R1	100 ml, Bottle	83192211217

- Apply K5 adhesive to the reinforcement plate (1).

Adhesive

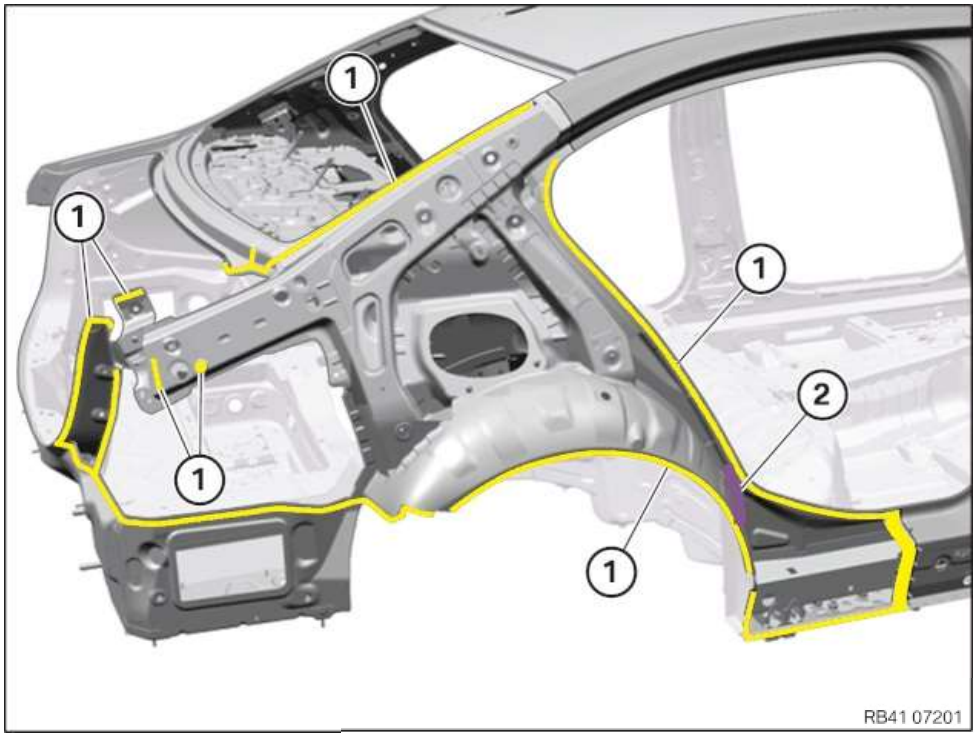
Body adhesive K5	50 ml	83192158654

Adhesive

Body adhesive K5	195 ml	83192157298

- Install the reinforcement plate (1).

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- Clean bonding surfaces (1) on vehicle and on new part with solvent cleaner R2.

Expendable materials

Cleaning agent R2	500 ml	8319041732

- Clean bonding surfaces (1) on vehicle and on new part with solvent cleaner R1.

Expendable materials

Cleaning agent R1	100 ml, Bottle	8319221121

- Apply adhesive K5 to the bonding surfaces (1).

Adhesive

Body adhesive K5	50 ml	83192158654

Adhesive

Body adhesive K5	195 ml	8319215729

TECHNICAL INFORMATION

For more information see: 41 00 ... Installation of cavity sealing (expanded)

- Apply sealant D2 to cavity sealing (2).

Expendable materials

Sealant D2 (seam sealing, spreadable)	310 ml	8342240998



- Pre-clean the bonding surface (1) on the vehicle and the new part with solvent cleaner R2.

  Clean the bonding surface (1) on the vehicle and the new part with solvent cleaner R1.

  In area (1), apply adhesive K5 to the lock striker reinforcement.

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- Install the side panel with the help of a second person.

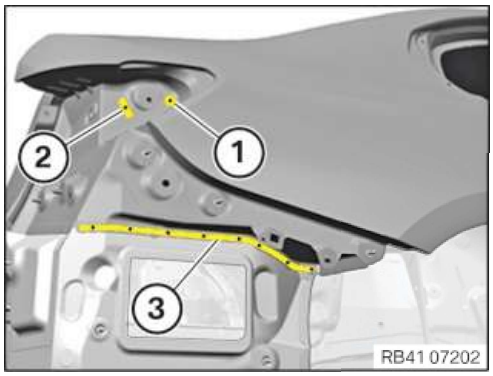
  During installation, ensure that sufficient adhesive has been applied to all bonding surfaces.
- Align the side wall in the areas of the separating cuts and secure it with locking pliers.
- Tighten the nuts on the reinforcement plate .

Expendable materials

Plastic nut	⌀18 mm	51161943122

Expendable materials

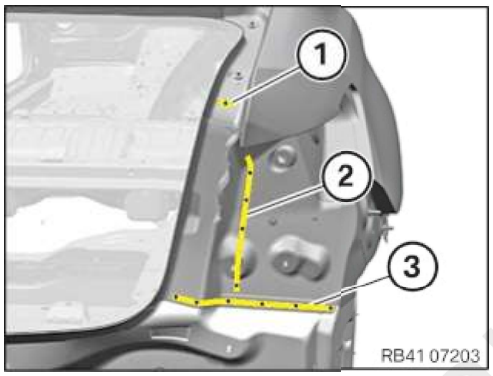
Plastic nut	⌀22 mm	07147169847



- Rivet the side panel in areas (1) to (3) with blind rivets N3.

Expendable materials

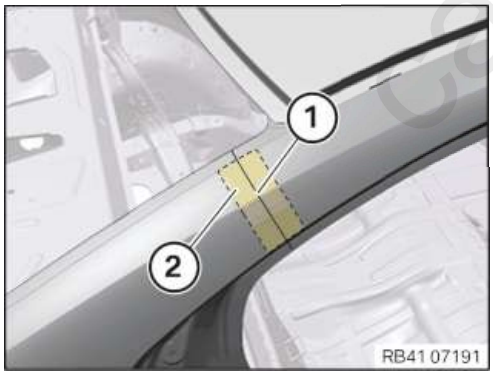
Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421



- Rivet the side panel in areas (1) to (3) with blind rivets N3.

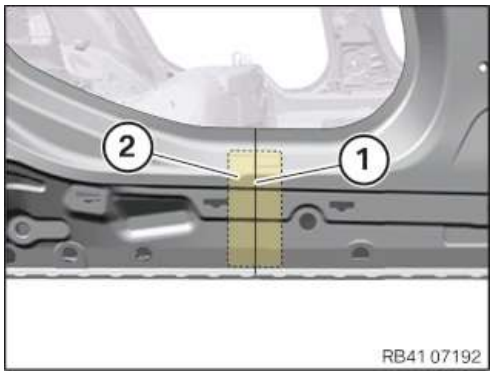
Expendable materials

Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421



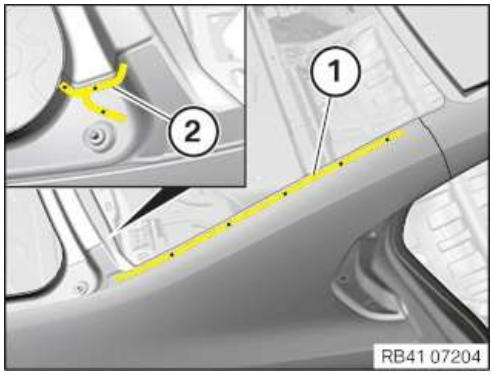
- Attach the separating cut (1) and the reinforcement plate (2) by welding.

  Only finish welding the separating cut and reinforcement plate once the punch rivet is installed.



- At the separating cut (1), tighten the nuts of the reinforcement plate (2).

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- Rivet the side panel in the areas (1) and (2) with punch rivets N4 and N5.

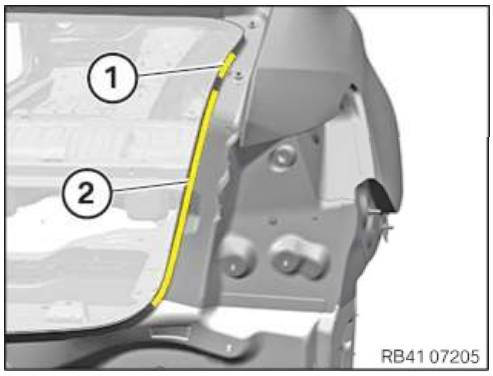
Area	Number	Punch rivet
1	5	N5
2	3	N4

Expendable materials

Punch rivet N5 Ø 5 mm ; 5 mm long		83192158079

Expendable materials

Punch rivet N4 Ø 3 mm ; 4 mm long		83192457307



- Rivet the side panel in the areas (1) and (2) with punch rivets N4 and N5.

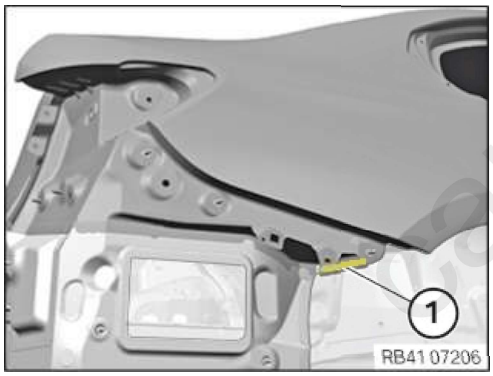
Area	Number	Punch rivet
1	2	N5
2	6	N4

Expendable materials

Punch rivet N5 Ø 5 mm ; 5 mm long		83192158079

Expendable materials

Punch rivet N4 Ø 3 mm ; 4 mm long		83192457307

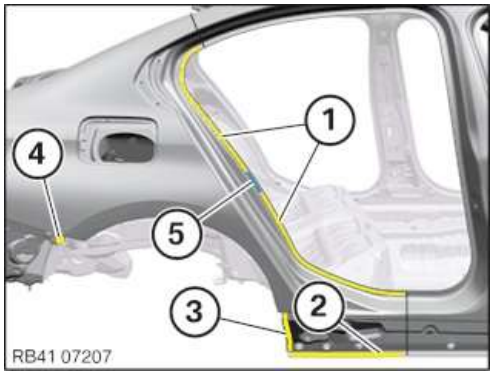


- Rivet side panel in area (1) with 3 punch rivets N4.

Expendable materials

Punch rivet N4 Ø 3 mm ; 4 mm long		83192457307

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- Rivet the side panel in the areas (1) to (4) with punch rivets N4 and N5.

Area	Number	Punch rivet
1	16	N5
2	5	N5
3	4	N4
4	1	N4

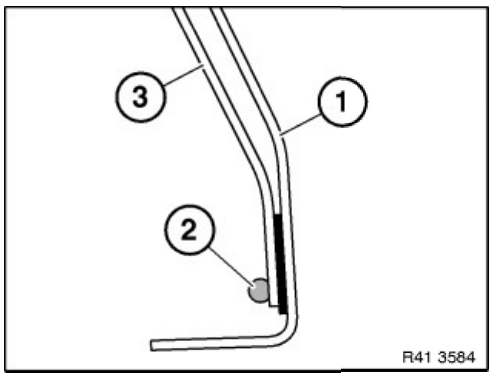
Expendable materials

Punch rivet N4 Ø 3 mm ; 4 mm long		83192457307

Expendable materials

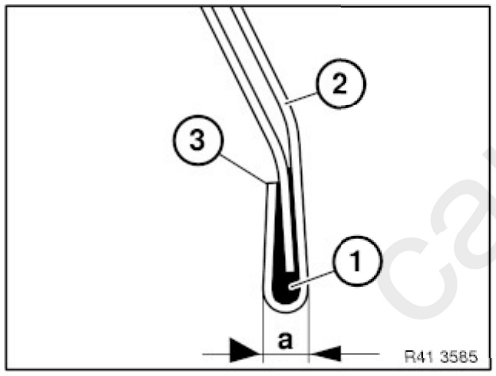
Punch rivet N5 Ø 5 mm ; 5 mm long		83192158079

- Use locking pliers to secure the side panel in the area (4) of the lock striker reinforcement until the adhesive has hardened.



- Also apply K5 adhesive (2) to the outer wheel arch section (3).

  (1) = rear side panel.



- Flange the edge of wheel arch (3) of the side panel flush to the outer wheel arch section.
- Do not create sharp edges when flanging because the flange edge may otherwise begin to tear.
- Fill flange edge fully with adhesive.

  Dimension (a) = 5 mm

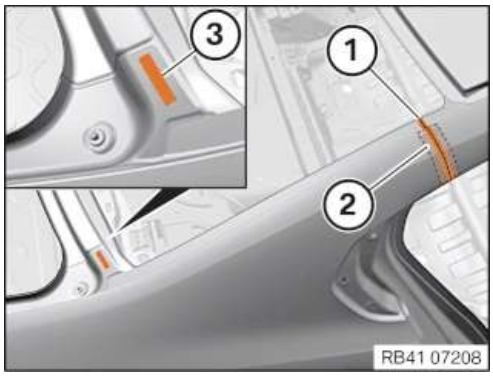
  (1) = adhesive.

  (2) = rear side panel.
- Seal new part in a manner similar to the standard production with sealant D1.

  Seal area (3) with sealant D1 according to standard.

Expendable materials

Sealant D1 (seam sealing)	310 ml	83422409985



- Weld the separating cut (1), the reinforcement plate (2) and area (3).

  Avoid excessive heat input at the adjacent adhesive areas.

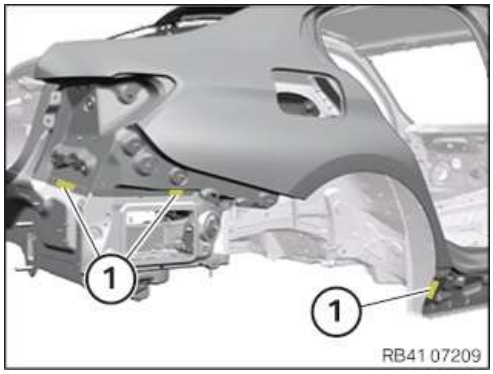
▸ **Install the EMC screw (EMC = electromagnetic compatibility)**

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- After adhesive has fully hardened: Drill a hole with a diameter of 4.2 mm.
- Screw in the EMC screw.
- Seal the EMC screw with the sealant D1 .

Expendable materials

Sealant D1 (seam sealing)	310 ml	83422409985



- After the adhesive has hardened, install 3 EMC screws in the areas (1).

Expendable materials

Screw EMC screw, SF Plus, M5x15		83190301639

Additional Information

Links

Repair instructions (PRE)	Used in step
EMC screws, general information	4

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... Opening bonded connections	2
41 05 800 Releasing bonded folded seam connections	2
41 00 ... BMW/MINI bonding instructions	3
41 00 ... Repair techniques, repair stage 2	

Repair instructions	Used in step
41 00 ... Separating cut determination with a template	2
41 00 ... Reinforcement plate with stud bolt (bonded or welded)	3
41 00 ... Installing cavity sealing (expanded)	4

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41 51 004 Adjusting front left or right door

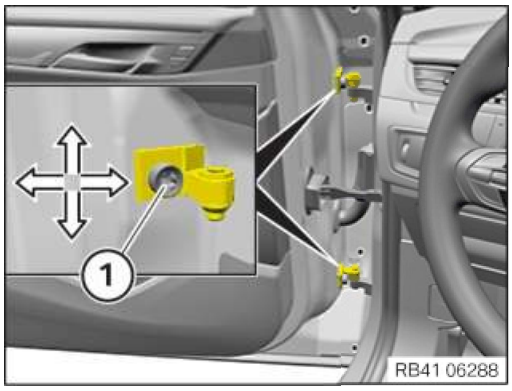
1 – Adjusting left front door

TECHNICAL INFORMATION

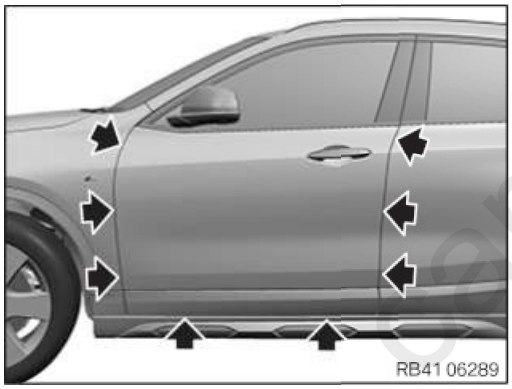
The gap dimensions form the basis for these repair instructions and must be observed without fail.
For more information see: 41 00 ... Gap dimensions for body

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Open the front door.
- Slacken screws (1) until the door can be moved.
- Adjust height of door (Z).
- Adjust door width (Y).



Check

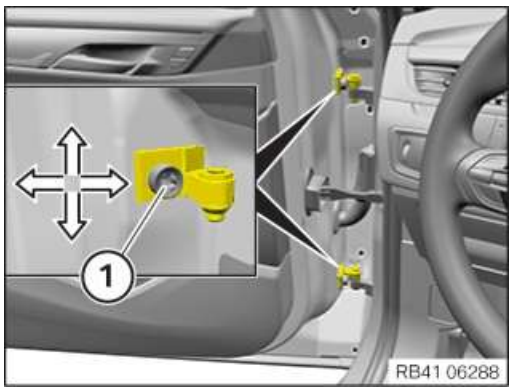
- Check gap dimension between door and the adjacent body components.

Result

» Gap dimensions do not correspond to the specifications.

Measure

- Adjust door.



- Tighten the screws (1).

Front door to door hinge

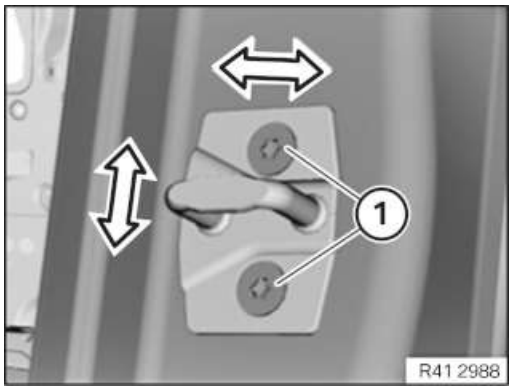
Screw		Tightening torque	40 Nm

▸ **Adjust lock striker**

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Prerequisite

The screws on lock striker are loosened so far that the lock striker can still be moved.



TECHNICAL INFORMATION

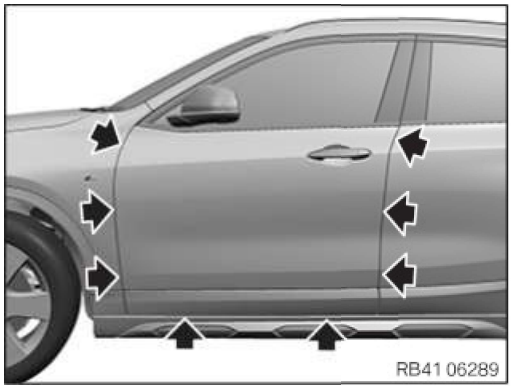
The gap dimensions form the basis for these repair instructions and must be observed without fail.

For more information see: 41 00 ... Gap dimensions for body

- Adjust the lock striker's height such that the door lock does not bump or rub against anything.
- Move lock striker sideways in order to adjust the gap dimensions between door and rear side panel.
- Tighten the screws (1).

Lock striker

Screw		Tightening torque	21 Nm



Check

- Check gap dimension between door and the adjacent body components.

Result

» Gap dimensions do not correspond to the specifications.

Measure

- Adjust door.

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Additional Information

Overview of Tightening Torques

Front door to door hinge — Used in step 1

Screw		Tightening torque	40 Nm

Lock striker — Used in step 1

Screw		Tightening torque	21 Nm

Links

Repair instructions (PRE)	Used in step
Gap dimensions, body	1
Gap dimensions, body	1
Gap dimensions, body	1
Gap dimensions, body	1

Gap dimensions, body	1
Gap dimensions, body	1
Gap dimensions, body	1
Gap dimensions, body	1
Gap dimensions, body	1

Repair instructions	**Used in step**
41 00 ... Gap dimensions, body	1

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41 51 ... Notes on replacing the door



Important!

For production reasons the side impact beam is only screwed loosely.

Tighten screws of side impact beam.



Remount all components on the new door.

If necessary, replace damaged components.

The procedure is described in the repair instructions of the components.

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41 51 080 Removing and installing left or right front door

WARNING

Working on 12 V vehicle electrical system.

Risk of short circuits! Risk of fire!

- Detach battery earth lead from battery.
- For additional batteries: Detach all battery earth leads from additional batteries.

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

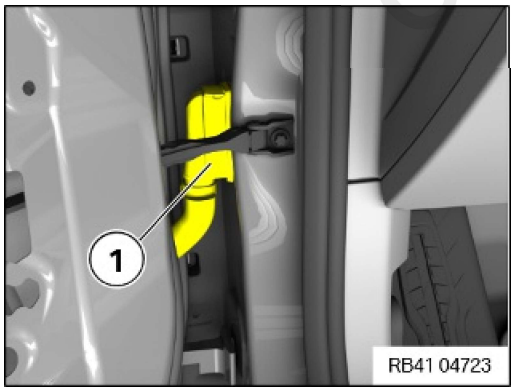
1 – Disconnecting all battery earth leads



- See additional information.

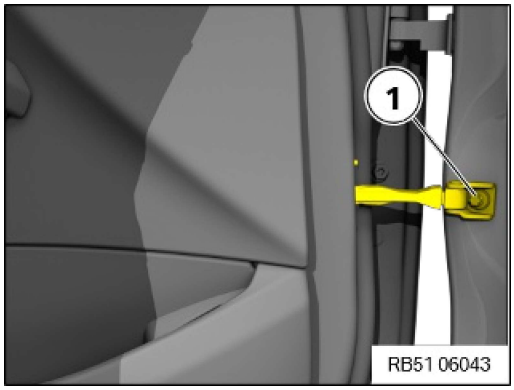
MAIN WORK

2 – Removing the front door



- Unlock plug connection (1) and disconnect.

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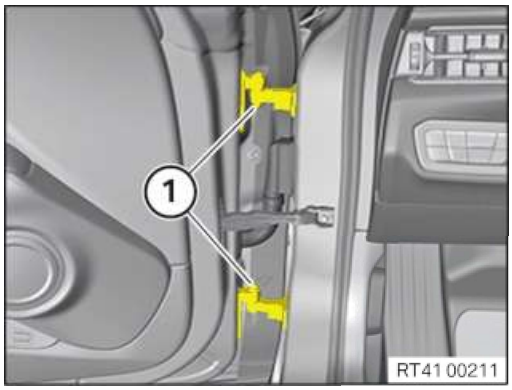
RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.

- Loosen screw (1).



RISK OF DAMAGE

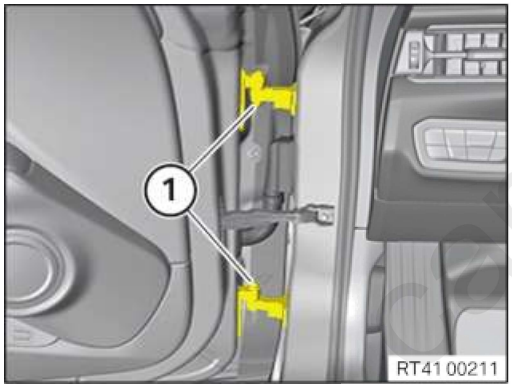
Paint damage.

Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.

- Loosen the screws (1) on both hinge halves at the top and bottom.
- Detach the front door in upward direction and set down on a suitable surface.

3 – Installing the front door



RISK OF DAMAGE

Paint damage.

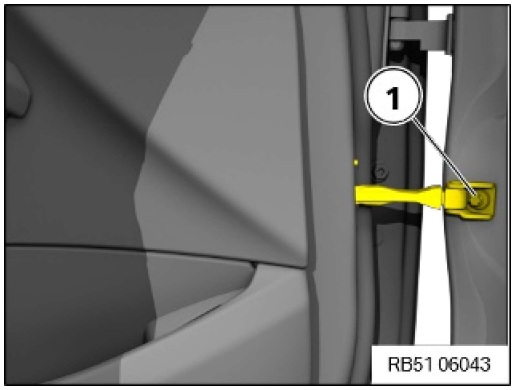
Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.

- Attach the front door from the top.
- Tighten the screws (1).

Screw connection, hinge parts

Screw		Tightening torque	27 Nm



RISK OF DAMAGE

Paint damage.

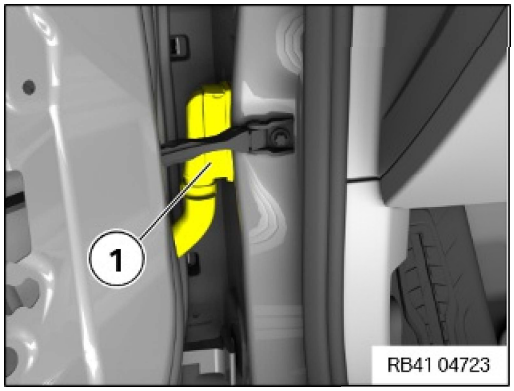
Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.

- Position the door brake on the body.
- Tighten down screw (1).

Door stop to pillar

Screw		Tightening torque	28 Nm



- Connect connectors (1) and lock.

POSTPROCESSES

4 – Disconnecting all battery earth leads



- See additional information.

Additional Information

Overview of Tightening Torques

Screw connection, hinge parts Used in step 3

Screw		Tightening torque	27 Nm

Door stop to pillar Used in step 3

Screw		Tightening torque	28 Nm

Links

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Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	14
61 20 900 Disconnecting and connecting battery earth lead	14
61 20 900 Disconnecting and connecting battery earth lead	14
61 20 900 Disconnecting and connecting battery earth lead	14
61 20 900 Disconnecting and connecting battery earth lead	14
61 20 900 Disconnecting and connecting battery earth lead	14
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	14
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	14
61 20 900 Disconnecting and connecting battery earth lead	14
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	14
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	14
61 20 900 Disconnecting and connecting battery earth lead	14
61 20 900 Disconnecting and connecting battery earth lead	14
61 20 900 Disconnecting and connecting battery earth lead	14
61 20 900 Disconnecting and connecting battery earth lead	14
61 20 900 Disconnecting and connecting battery earth lead	14
61 20 900 Disconnecting and connecting battery earth lead	14
61 20 900 Disconnecting and connecting battery earth lead	14
61 20 900 Disconnecting and connecting battery earth lead	14
61 20 900 Disconnecting and connecting battery earth lead	14
61 20 900 Disconnecting and connecting battery earth lead	14
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	14
61 20 900 Disconnecting and connecting battery earth lead	14
61 20 900 Disconnecting and connecting battery earth lead	14
61 20 900 Disconnecting and connecting battery earth lead	14
61 20 900 Disconnecting and connecting battery earth lead	14
61 20 900 Disconnecting and connecting battery earth lead	14
61 20 900 Disconnecting and connecting battery earth lead	14
61 20 900 Disconnecting and connecting battery earth lead	14

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41 51 101 Replace front left or right door

WARNING

Working on 12 V vehicle electrical system.

Risk of short circuits! Risk of fire!

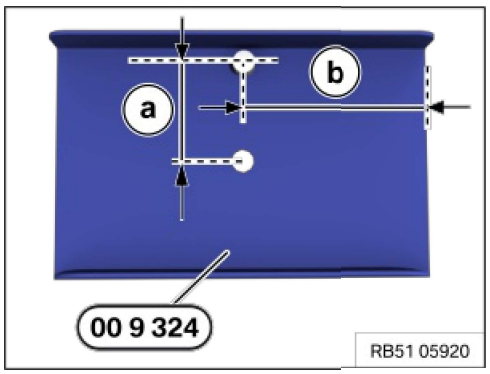
- Detach battery earth lead from battery.
- For additional batteries: Detach all battery earth leads from additional batteries.

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

1 – Preparing the special tool



- **Do this only if the upper bore hole is missing.**
- Mark and make the bore hole on the special tool 0 495 484 (00 9 324) according to the specified dimensions.

  Make a bore hole on the side with the long shank.

  The diameter of the bore hole is 6 mm.

  Dimension (a) = 25 mm from the centre of the existing bore hole

  Dimension (b) = 50 mm from the outer edge of the special tool

2 – Remove the outside door handle

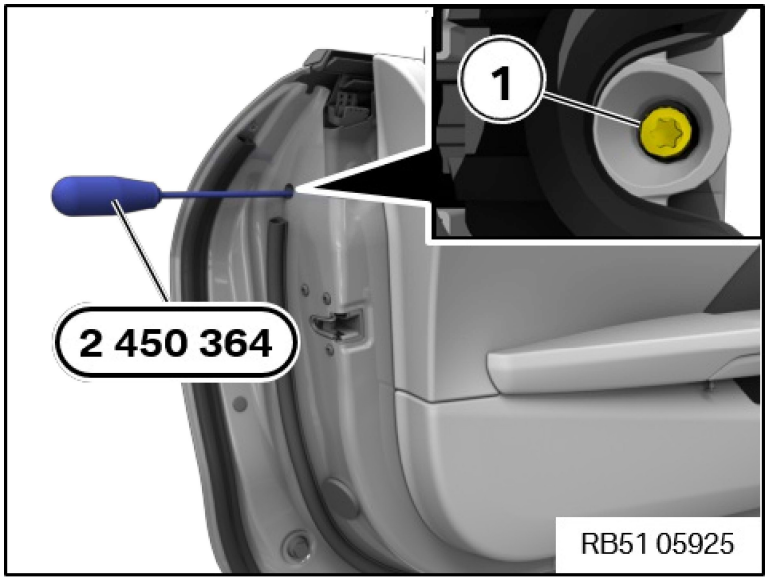
NOTICE

Description is for left component only. Procedure on the right side is identical.

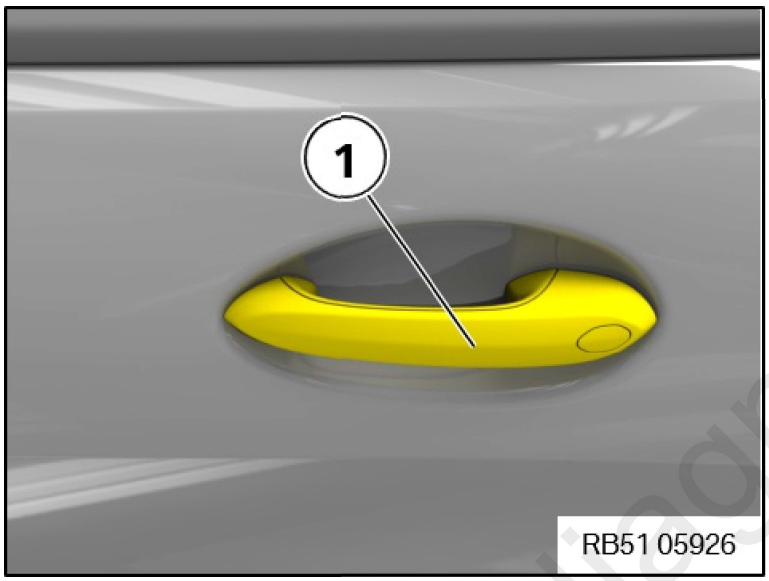


- Remove the seal plug (1).

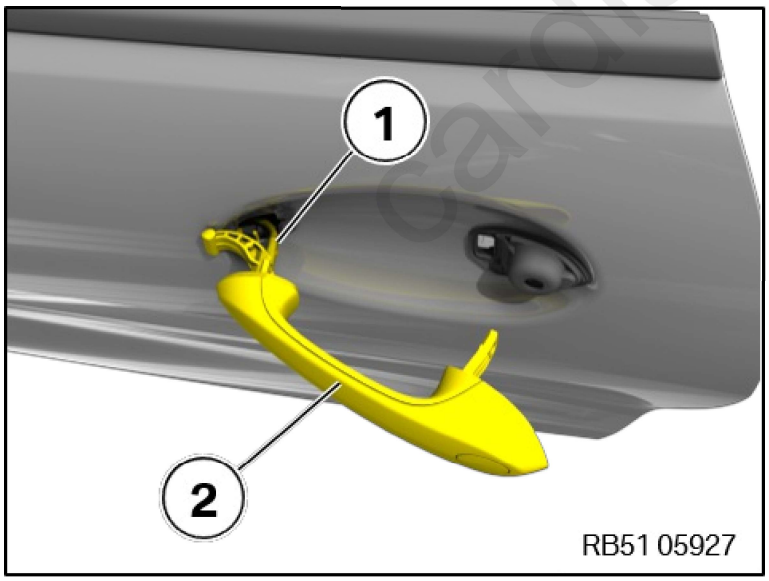
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- Release the clamping bolt (1) from the outside door handle support with the special tool 2 450 364.

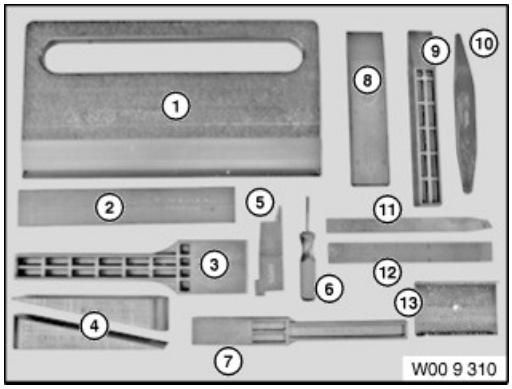


- Pull the rear outside door handle (1) to the outside and remove it in the process.
- Pivot the outside door handle (1) further towards the outside and in this process, remove it at the front.

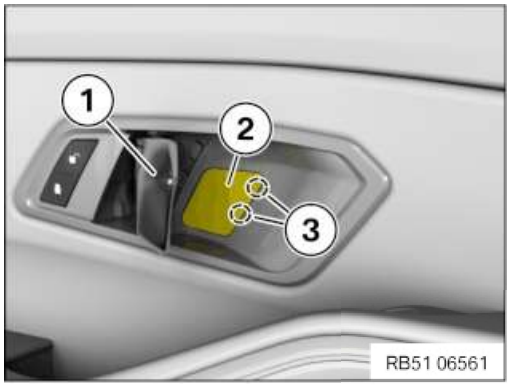


- Unlock and disconnect plug connections (1).
- Remove the outside door handle (2).

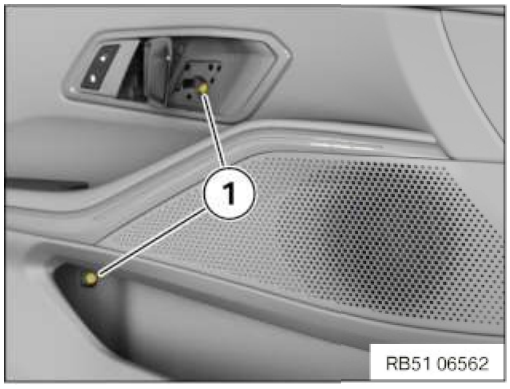
3 – Remove door trim panel



- Have the set of special tools 0 493 752 (00 9 329) ready.



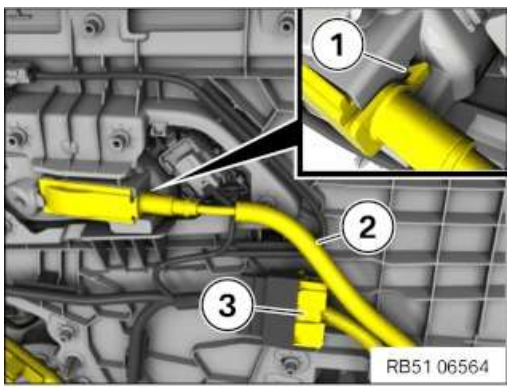
- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).



- Loosen screws (1).



- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).

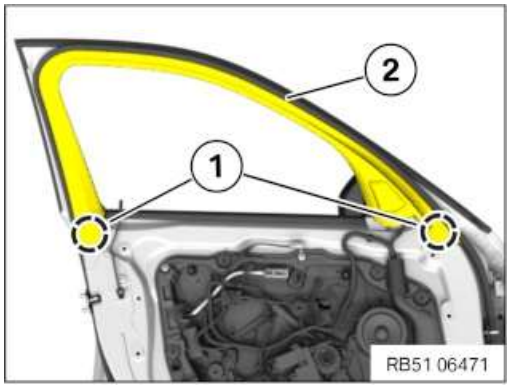


- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

4 – Removing the cover on the window frame

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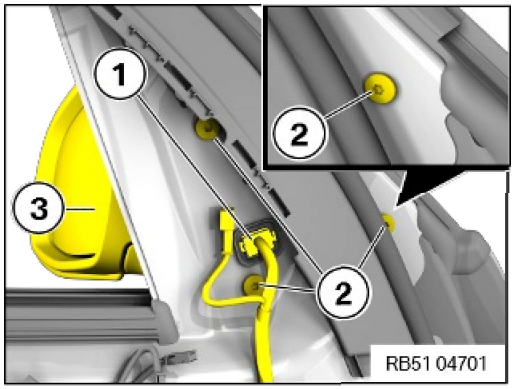


NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

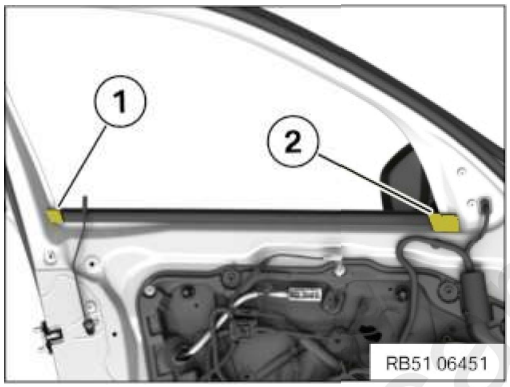
- Unclip clips (1).
- Release and remove the cover all around inner window frame (2), starting from the rear.
- If necessary, unlock and disconnect the plug connection on the speaker.

5 – Removing the exterior mirror



- Unlock plug connection (1) and disconnect.
- Release the screws (2) and remove the exterior rearview mirror (3).

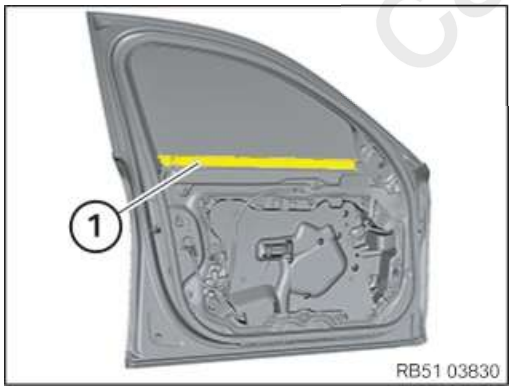
6 – Remove inner weather strip



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

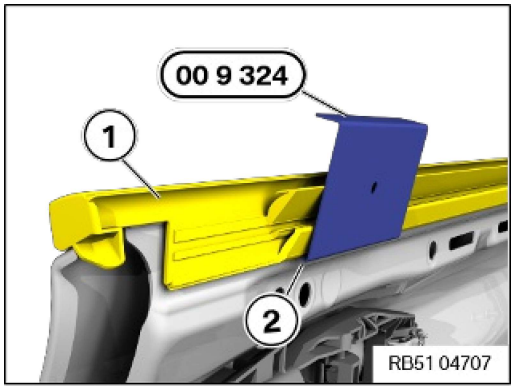
- Release sealings (1) and (2).



- Pull off inner weather strip (1) towards the top.

7 – Removing the outer weather strip

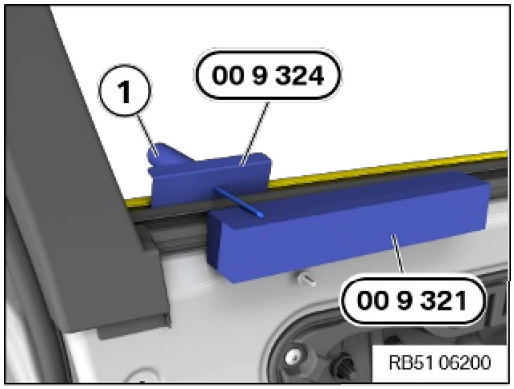
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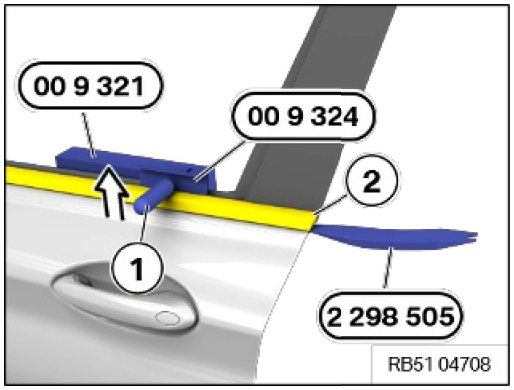
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Insert the special tool 0 495 484 (00 9 324) at the front (on A-pillar) into the window cavity and slide it toward the back.
- Position the special tool 0 495 484 (00 9 324) as shown at the lower edge of the outer weather strip (1) with the short shank (2).



- Place the special tool 0 490 538 (00 9 321) on the inner door panel.
- Thread a suitable tool (1) through the opening in the special tool 0 495 484 (00 9 324).



RISK OF DAMAGE

Scratches.

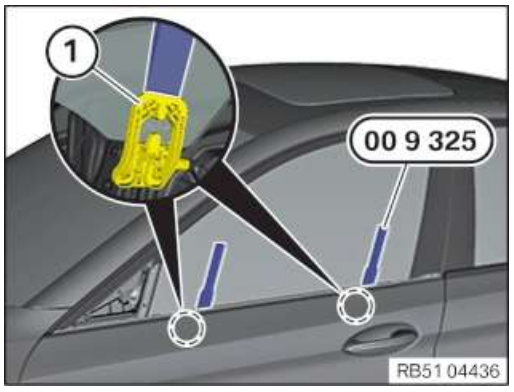
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Lift up the outer rear weather strip (2) with the special tool 2 298 505 as shown; maximum 5 mm.
- With a suitable tool (1), move the lever in the direction of arrow using the special tool 0 490 538 (00 9 321) for support.

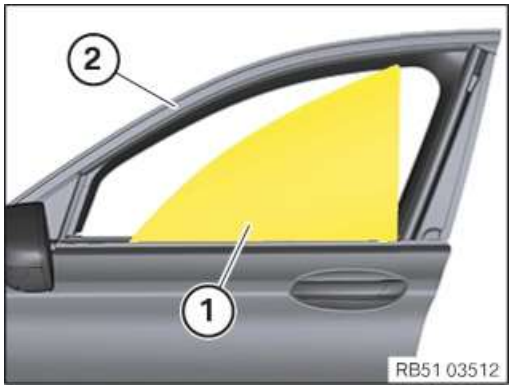
  When this happens, the special tool 0 495 484 (00 9 324) lifts the outer weather strip (2) upwards.
- Repeat this process step by step until the outer weather strip(2) is completely disassembled.

8 – Remove front door window glass



- Attach the front door window glass when closed using adhesive tape.
- Spread both holders (1) on the front door window glass simultaneously using special tool 0 496 569 (00 9 325) until it is possible to detach the front door window glass.
- Move the power window down.

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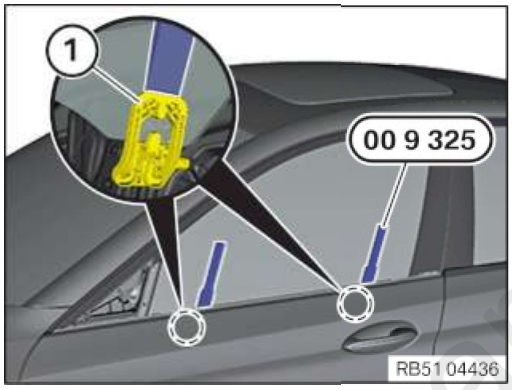
- Remove adhesive tape from the front door window glass (1).
- Slide the front door window glass (1) down.
- Twist the front door window glass (1) in the door frame (2).
- Guide the front door window glass (1) out to the top.

9 – Disconnecting all battery earth leads



- See additional information.

10 – Removing front module carrier



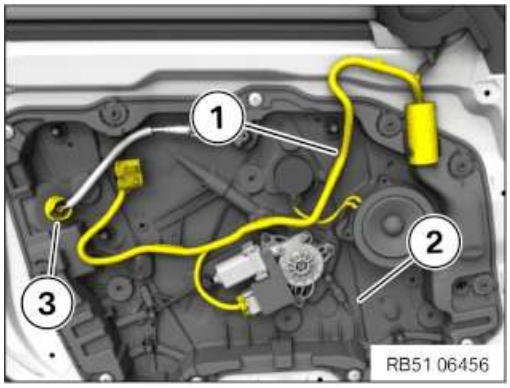
- Secure the door window glass to the door frame when it is closed using adhesive tape.
- Spread both holders (1) on the door window glass simultaneously using special tool 0 496 569 (00 9 325) until it is possible to detach the door window glass.
- Move the power window down.

▶ **Disconnecting all battery earth leads**

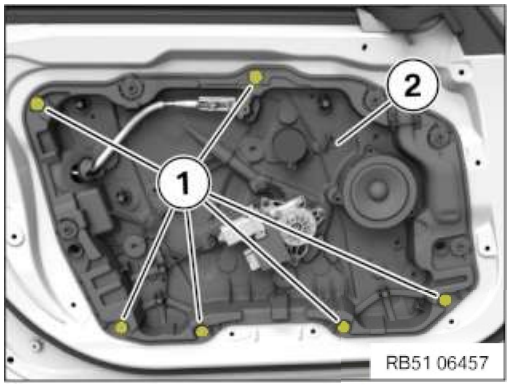


- See additional information.

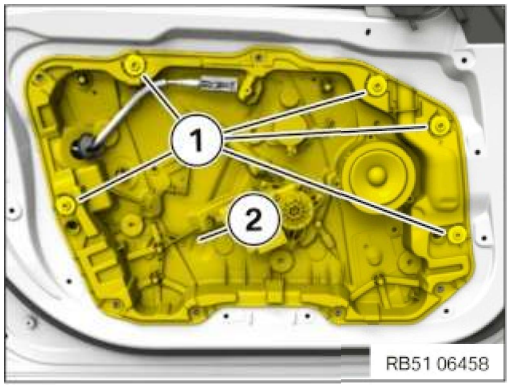
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- Unlock and disconnect all the electrical plug connections.
- Unclip wiring harness (1) on front module carrier (2).
- Release the rubber grommet of the Bowden cable for the inner door opener (3).

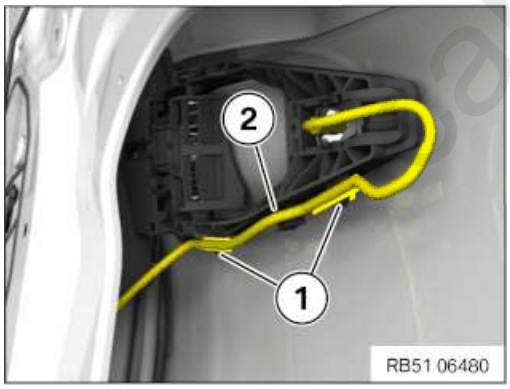


- Release screws (1) on front module carrier (2).

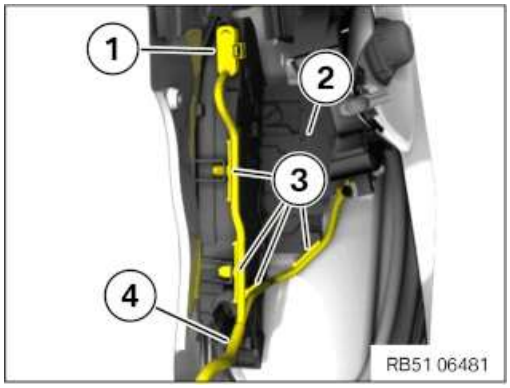


- Open bayonet fitting (1) by twisting and remove front module carrier (2).

11 – Removing the outer door handle support



- Unclip clips (1) and place wiring harness (2) aside.

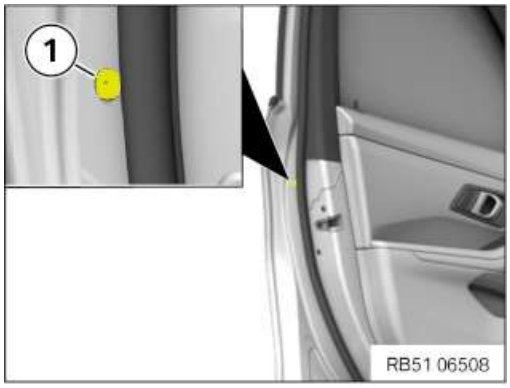


NOTICE

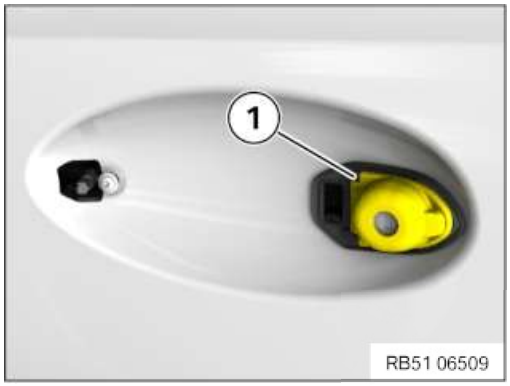
To provide a better overview: Schematic diagram with partially hidden components.

- Unlock and disconnect the plug connection (1)on the door lock (2).
- Unclip clips (3).
- Remove the wiring harness (4) and put to one side.

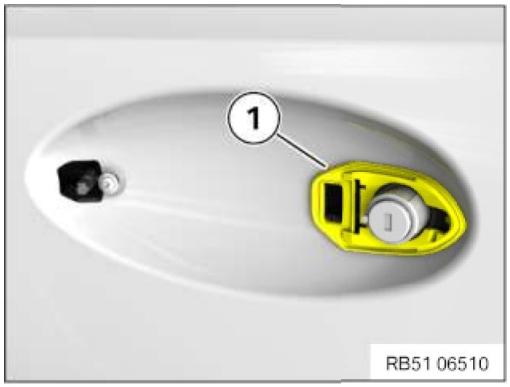
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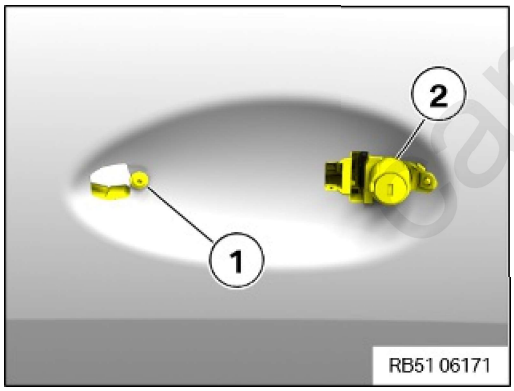
- Loosen screw (1).



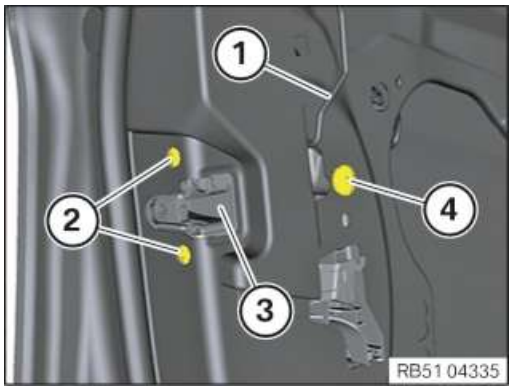
- Remove the cover (1).



- Remove seal (1) for the outside door handle.

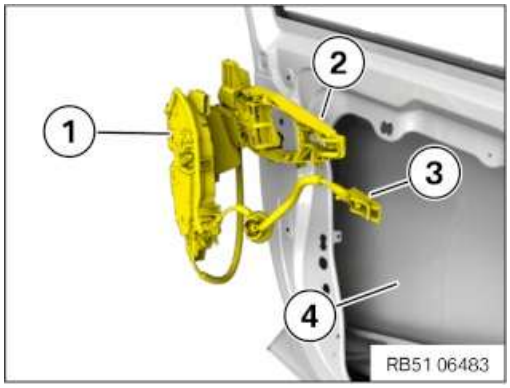


- Loosen screw (1).
- Slide the outside door handle support (2) forward and thread out to the inside.



- Unclip locking rod (1).
- Release screws (2) and (4) of the door lock (3).

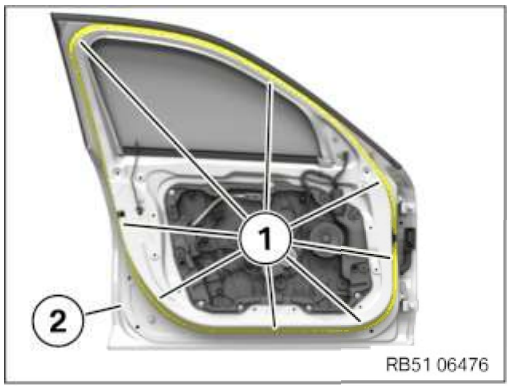
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- Thread out door lock (1) together with the outside door handle support (2) and the Bowden cable for inner door opener (3) from the door (4).

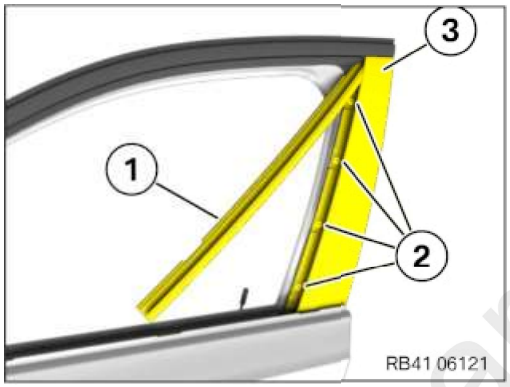
  Make sure that the seal of door lock (1) is not damaged.

12 – Removing the sealing



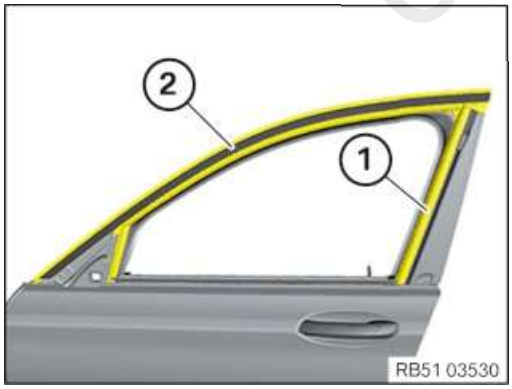
- Pull off the sealing (1) on the front door (2).

13 – Remove the window frame trim from the front door



- Carefully remove the rubber window seal (1) in the working area.
- Loosen screws (2).
- Fold the front window frame trim (3) back slightly and guide it out to the top.

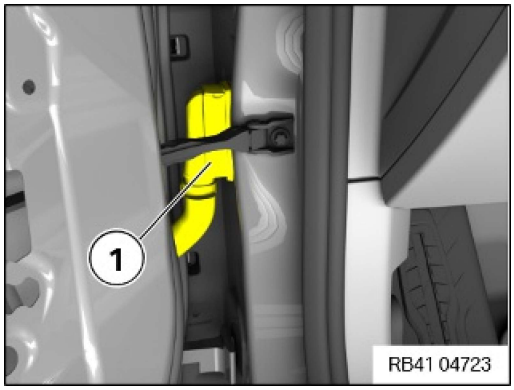
14 – Remove rubber window seal



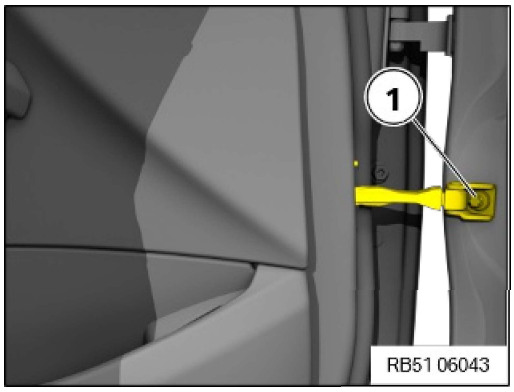
- Remove rubber window seal (1) in the top area of the trim strip (2).
- Guide the rubber window seal (1) out together with the trim strip (2).

15 – Removing the front door

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- Unlock plug connection (1) and disconnect.



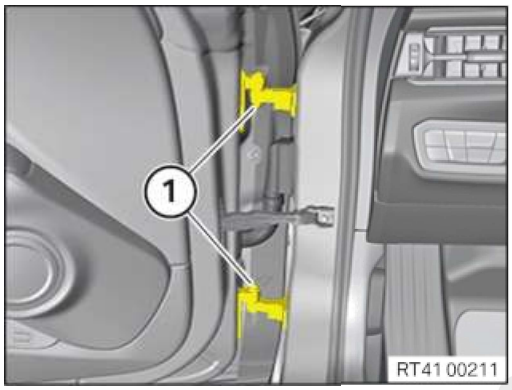
RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.

- Loosen screw (1).



RISK OF DAMAGE

Paint damage.

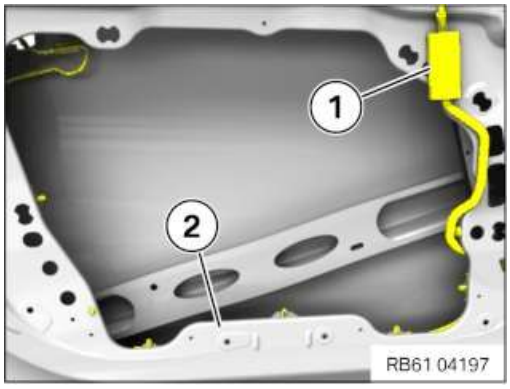
Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.

- Loosen the screws (1) on both hinge halves at the top and bottom.
- Detach the front door in upward direction and set down on a suitable surface.

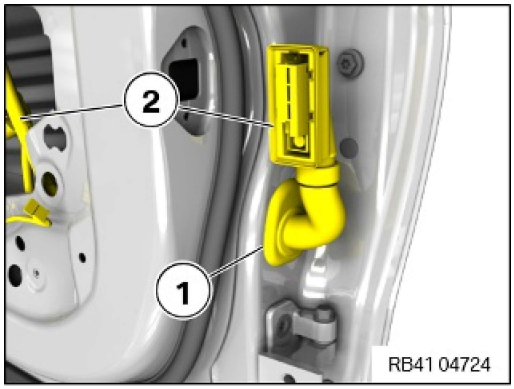
MAIN WORK

16 – Replacing the front door

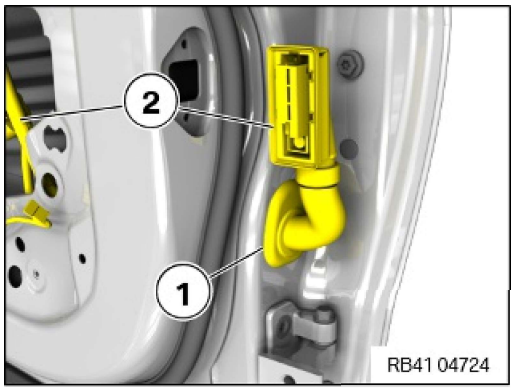


- Unclip wiring harness (1) on inner door panel of the front door (2).

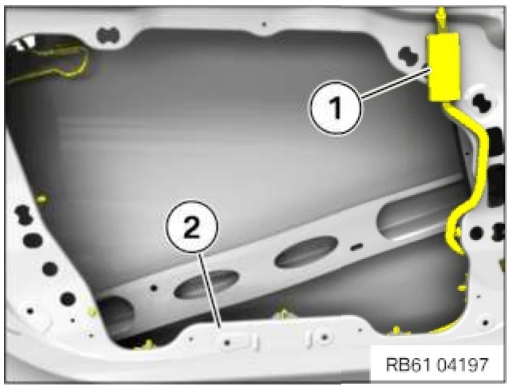
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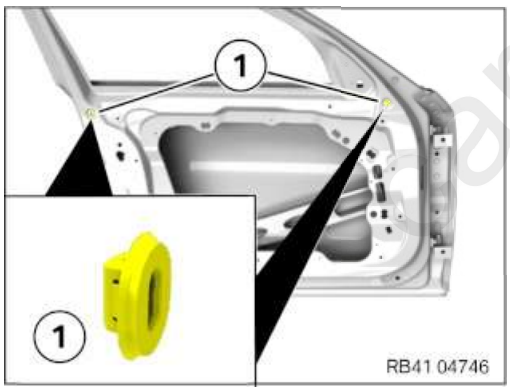
- Release the rubber grommet (1) and feed the door wiring harness (2) out of the front door.



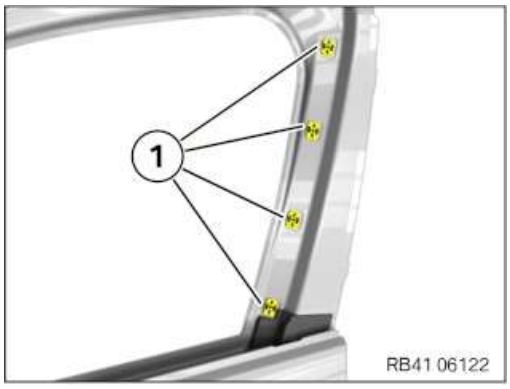
- Feed the door wiring harness (2) into the new front door.
- Fasten the rubber grommet (1)and check for correct fit.



- Clip in wiring harness (1) to inner door panel of the new front door (2).

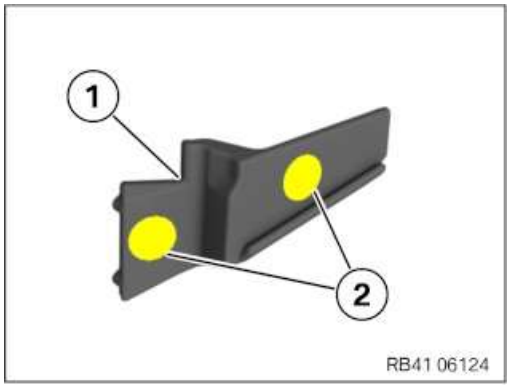


- Remount holding clips (1).

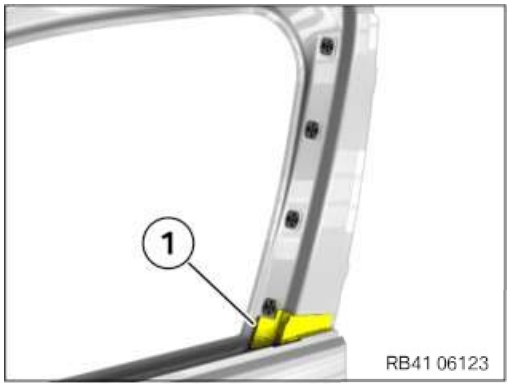


- Remount clips (1) of the window frame cover.

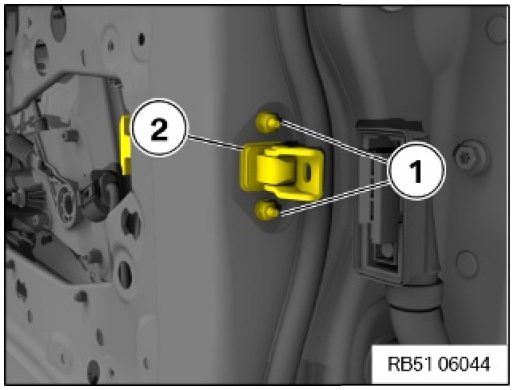
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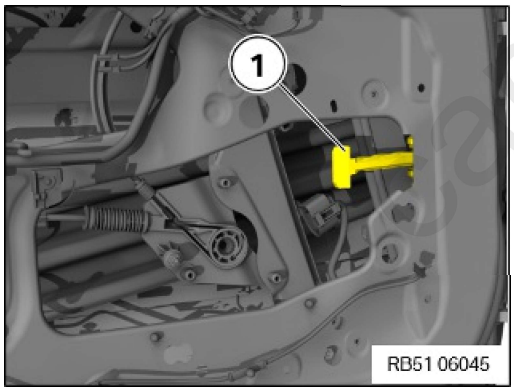
- Pull off liner (2) from the sealing of window frame cover (1).



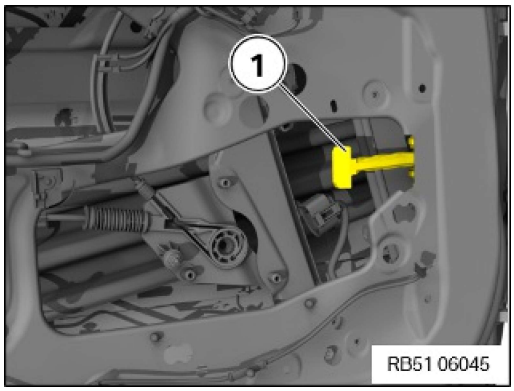
- Position the sealing of window frame cover (1) correctly and bond it to the new front door .



- Loosen nuts (1).
- Loosen cover (2).

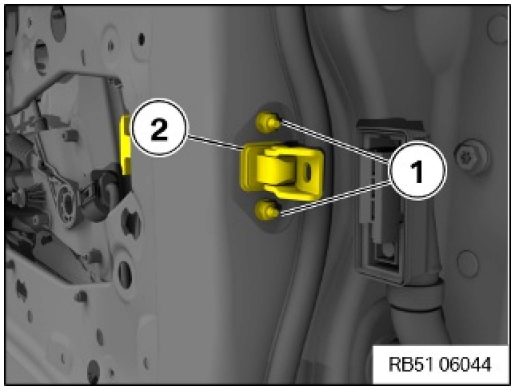


- Remove the door brake of front door (1) through the aperture in the door.



- Install the door brake of front door (1) through the aperture in the new door.

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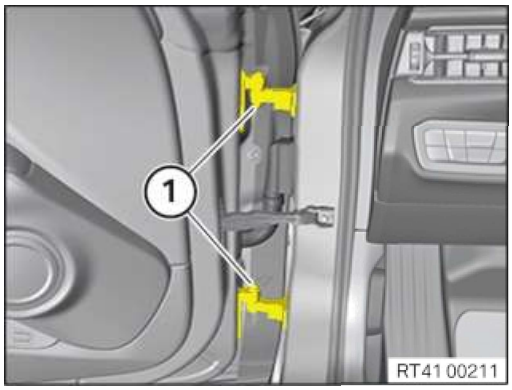
- Install the cover (2) .
- Tighten nuts (1).

Door retainer to door

Hexagon nut		Tightening torque	8 Nm

POSTPROCESSES

17 – Installing the front door



RISK OF DAMAGE

Paint damage.

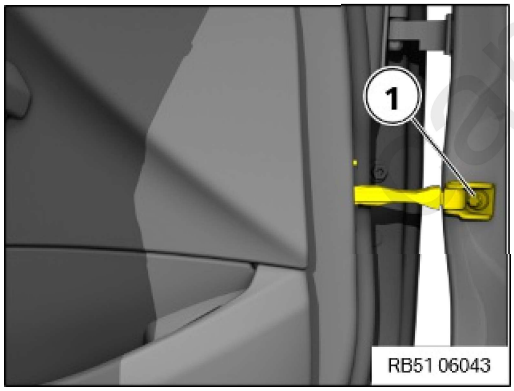
Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.

- Attach the front door from the top.
- Tighten the screws (1).

Screw connection, hinge parts

Screw		Tightening torque	27 Nm



RISK OF DAMAGE

Paint damage.

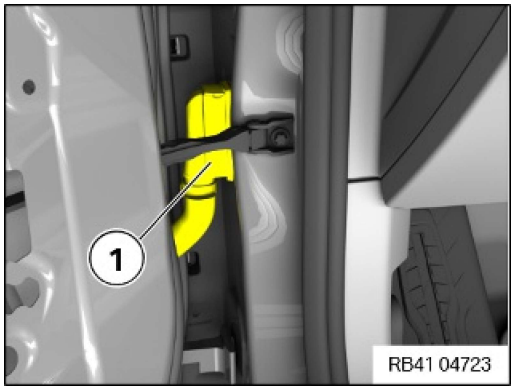
Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.

- Position the door brake on the body.
- Tighten down screw (1).

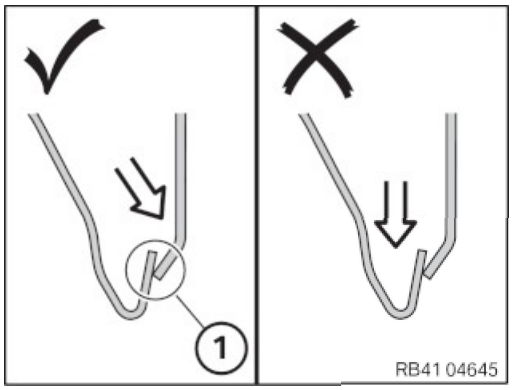
Door stop to pillar

Screw		Tightening torque	28 Nm



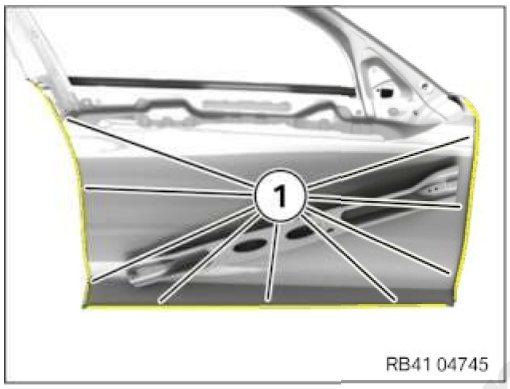
- Connect connectors (1) and lock.

18 – Preserving the front door



- Protect the weld seam from corrosion with the cavity preservation.

  The inner door panel is welded with the door outer skin in the area (1).



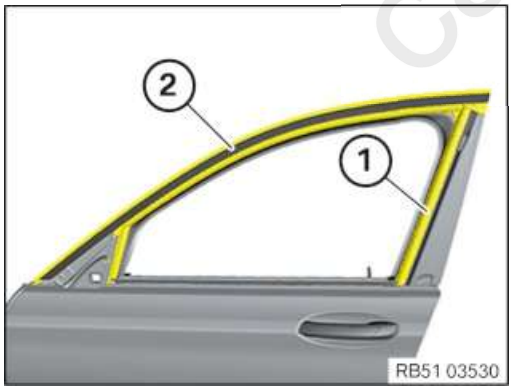
NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

- Preserve the laser weld seam (1) between the inner door panel and the door outer skin.
- Apply cavity preservation from the inner all around.

  Remove any cavity preservation which emerges.

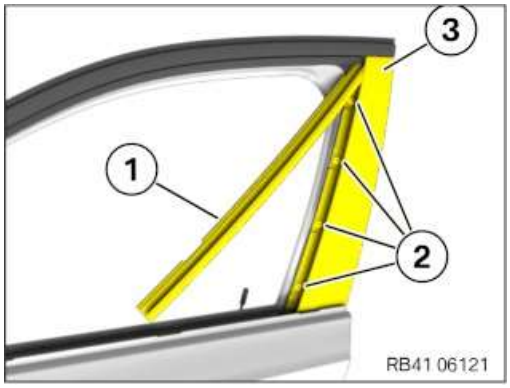
19 – Install the rubber window seal



- Feed in rubber window seal (1) together with the top trim strip (2) on the door frame.
- Mount rubber window seal (1) on the trim strip (2).
- Coat rubber window seal (1) with suitable lubricant.
- Retract rubber window seal (1), front and rear in the window guide.
- Make sure the position of the rubber window seal (1) is correct!

20 – Install the window frame trim of the front door

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- Insert the window frame trim (3) towards the bottom and attach it to the door frame.
- Tighten the screws (2).

Window frame trim to door frame

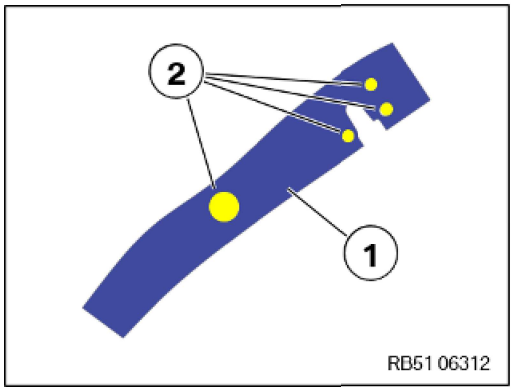
Oval-head screw for thermoplastic		Tightening torque	2,3 Nm

- Coat rubber window seal (1) with water before the installation.
- Carefully insert the rubber window seal (1).

21 – Installing the seal

TECHNICAL INFORMATION

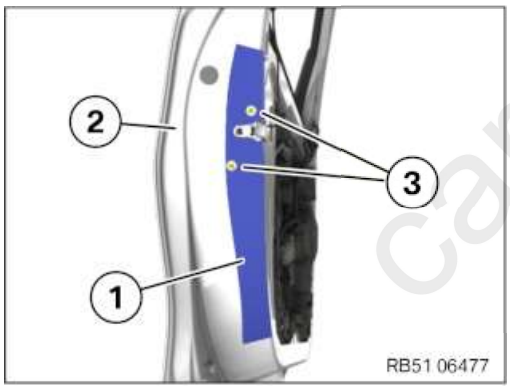
The repair instructions of bonded seals form the basis for these repair instructions and must be observed without fail.
For more information see: 54 10 ... Repair instructions for bonded seals



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Clean the bonding surfaces on the inner door panel with adhesive remover (sourcing reference: BMW Group Parts).
- If necessary, separate the pre-punched apertures (2) for the screws and the openings from the template (1).

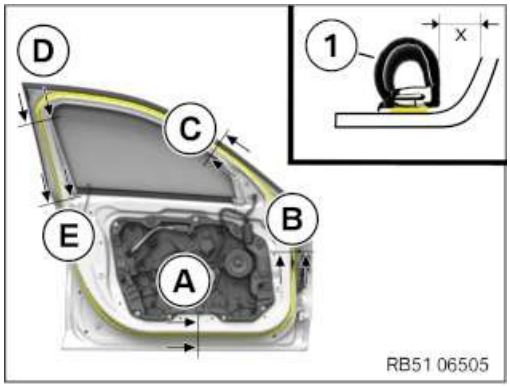


- Prior to bonding, align the template (1) on the inner door panel (2).

  The edge of template (1) and the bending radius of inner door panel(2) must be in parallel.

  The marks or cut-outs (3) of template (1) must align with the respective bore hole on inner door panel (2).

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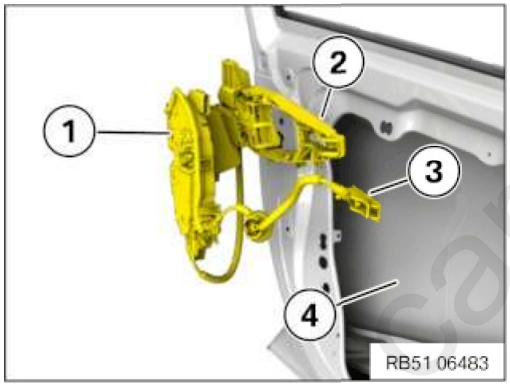


- Hang the seal (1) over the door with the open lip facing inwards.
- Sealing joint in area (A) position.
- Glue seal as follows:
  - Gradually pull off protective film
  - Align sealing (1) to match the specified dimensions (X) or the template and press on it lightly
  - Check the position of the sealing (1) and correct if necessary
  - Do not overstretch or compress the sealing (1) when positioning it
  - Maximum permissible sag of the seal (1) during the positioning process is 30 mm
  - Always apply pressure perpendicular to the bonding surface to affix the sealing (1)
  - Affix sealing (1) with firm thumb pressure

Area	Dimension X
A	16 mm
B	15 mm
C	5 mm
D	6 mm
E	41 mm

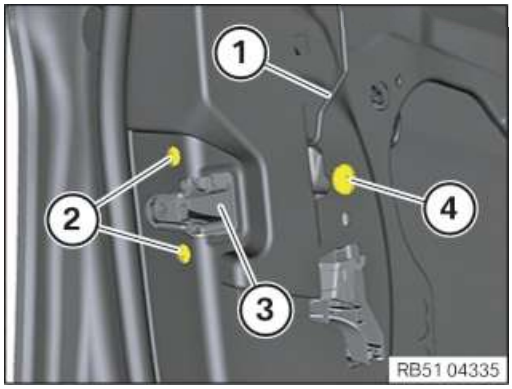
- Create a sealing joint in area (A), and shorten the seal (1) accordingly as needed.

22 – Installing the outer door handle support



- Guide door lock (1) together with outside door handle support (2) and the Bowden cable for inner door opener (3) into door (4).

  Make sure that the seal of door lock (1) is not damaged.



- Screw in screws (2) and (4) a few turns.
- Tighten down screws (2).

Door lock to door

Screw		Tightening torque	8,8 Nm

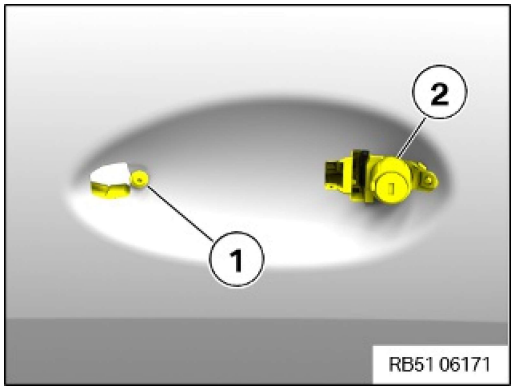
- Tighten down screw (4).

Door lock to door

Screw		Tightening torque	8,8 Nm

- Clip in locking rod (1).

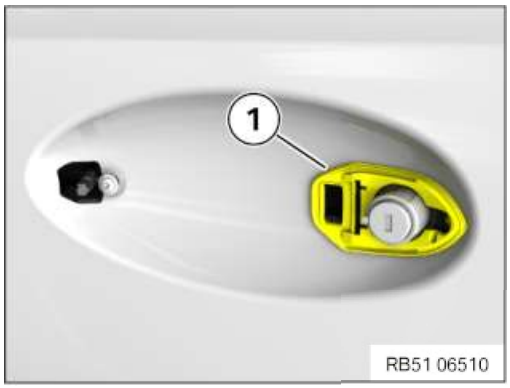
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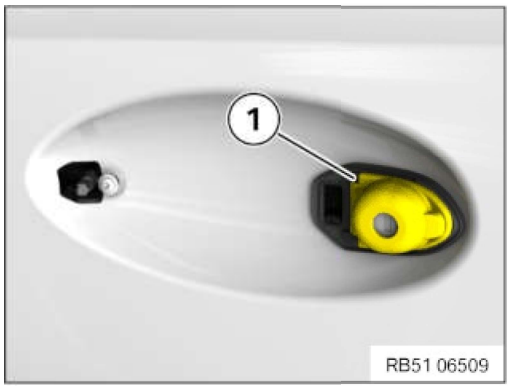
- Feed in outside door handle support (2) and position correctly.
- Tighten down screw (1).

Outside door handle support to door

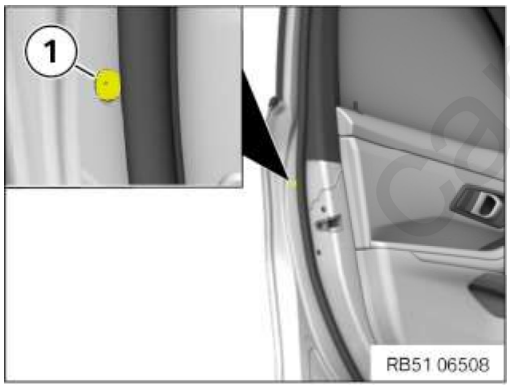
Screw		Tightening torque	2,6 Nm



- Install seal (1) for the outside door handle.



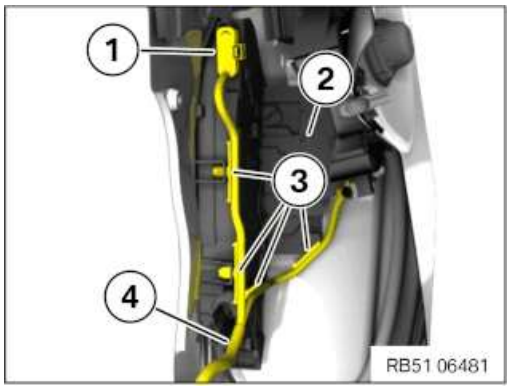
- Install the cover (1).



- Tighten down screw (1).

Attachment bell to outside door handle support

Screw		Tightening torque	3 Nm

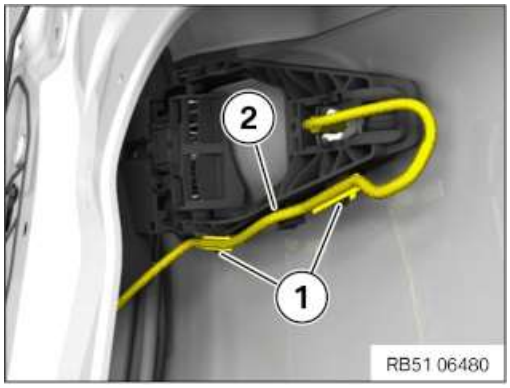


NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

- Insert the wiring harness (4).
- Connect connector (1) at the door lock (2) and lock.
- Clip in clips (3).

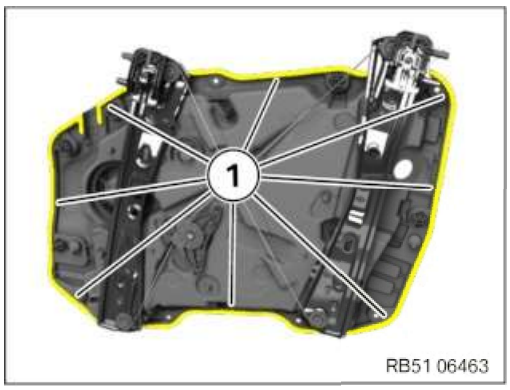
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- Route the wiring harness (2) correctly.
- Clip in clips (1).

23 – Installing front module carrier

Check



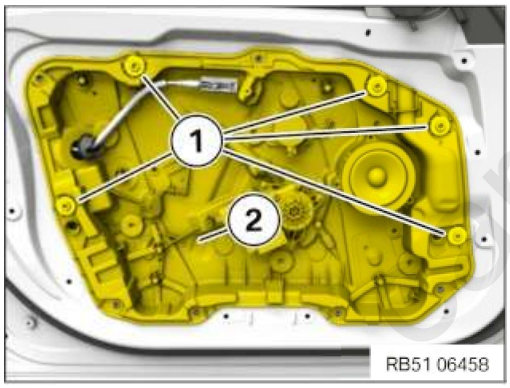
- Check seal (1) of the front module carrier for damage.

Result

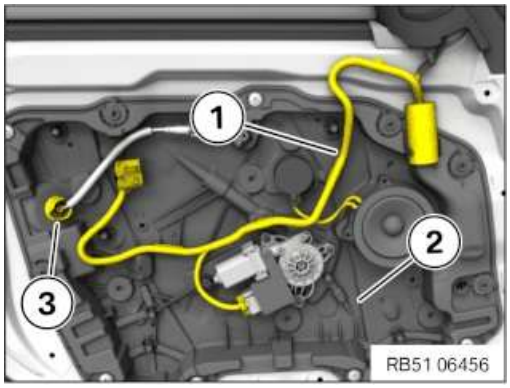
» Seal of the front module carrier is damaged.

Measure

- Renew the front module carrier.



- Position front module carrier (2) on the door.
- Lock bayonet fittings (1) by twisting them.



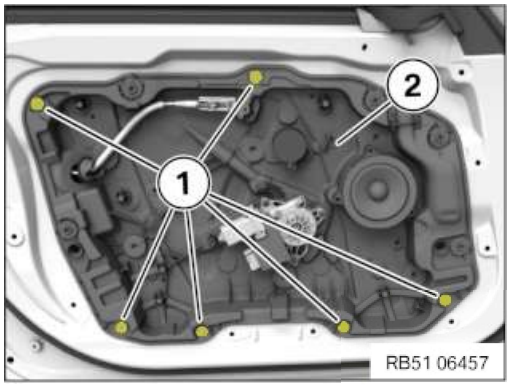
- Connect all electrical connectors and lock.
- Clip in wiring harness (1) on front module carrier (2).
- Install rubber grommet of the Bowden cable for the inner door opener (3).
- Check rubber grommet of the Bowden cable for the inner door handle (3) for correct seating.

► **Disconnecting all battery earth leads**

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- See additional information.



- Tighten screws (1) of the front module carrier (2).

Module carrier to front door

Torx socket M5x12		Tightening torque	8 Nm

- Move the power window upwards until the fixed side window glass correctly engages in both holders.

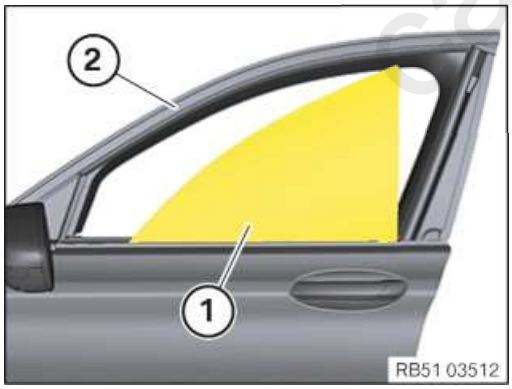
  Remove adhesive tape.

24 – Disconnecting all battery earth leads



- See additional information.

25 – Installing front door window glass

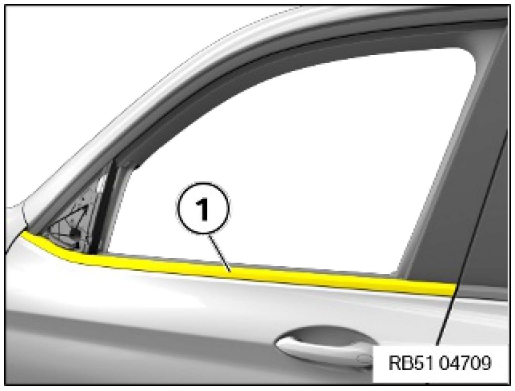


- Insert the twisted front door window glass (1) into the door frame (2).
- Insert the front door window glass (1) into the rubber window seals by twisting it.

  The front door window glass (1) must be positioned correctly in the rubber window seal.
- Push the front door window glass (1) fully upwards and secure it to the door frame (2) using adhesive tape.
- Shift the power windows upwards until the front door window glass (1) correctly engages in both holders.
- Remove adhesive tape.

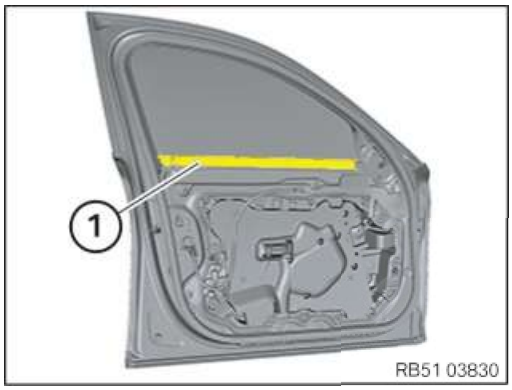
26 – Install outer weather strip

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- Check outer weather strip (1) for damage, renew the outer weather strip (1) if required.
- Coat the outer weather strip (1) with a suitable lubricant prior to installation.
- Fit outer weather strip (1) on the front door.
- Press down the outer weather strip (1) across its entire length.

27 – Installing inner weather strip



NOTICE

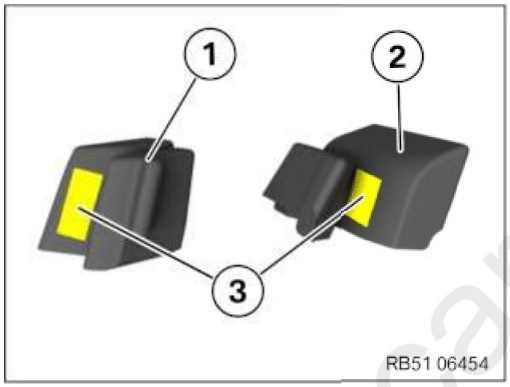
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Coat the area of the inner weather strip (1) with approved lubricant.

Expendable materials

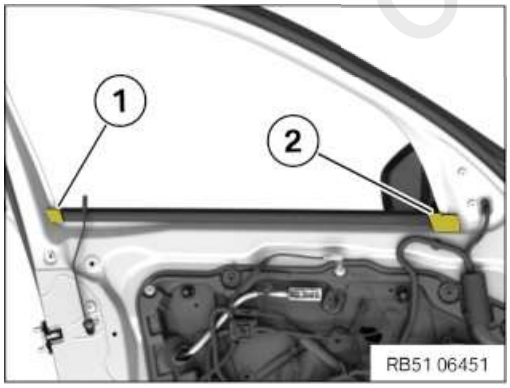
Fitting aid (Circo Light; lubricant)	250 ml, Bottle	83192405829

- Position the inner weather strip (1) correctly and connect.



- Renew sealings (1) and (2).

  Parts: Seal
- Pull liner (3) off at the new sealings (1) and (2).

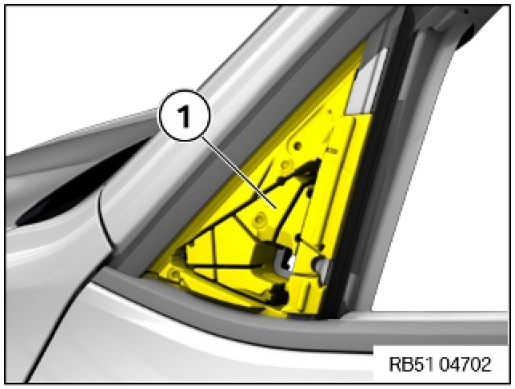


- Position the new sealings (1) and (2) correctly and bond.

28 – Installing the exterior mirror

Check

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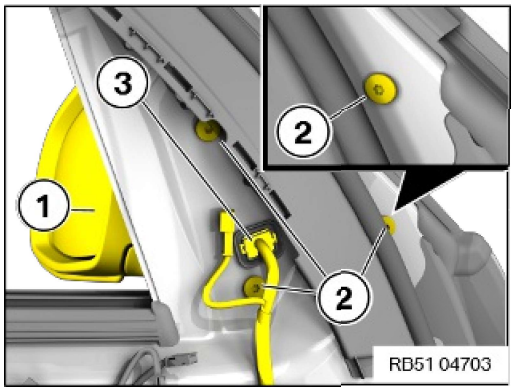
- Check mirror triangle seal (1) for damage.

Result

» The mirror triangle seal is damaged.

Measure

- Replace mirror triangle seal .



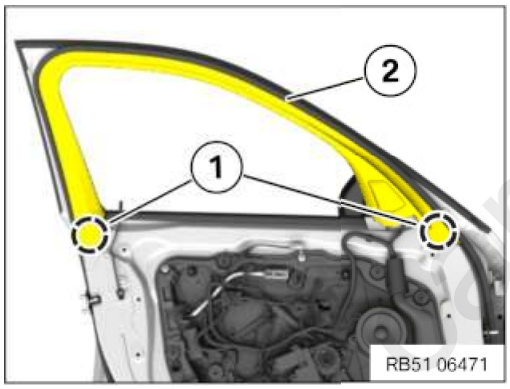
- Position exterior rearview mirror (1) and tighten screws (2).

Exterior mirror to door

Thread-tapping hexagon screw		Tightening torque	10 Nm

- Connect connectors (3) and lock.

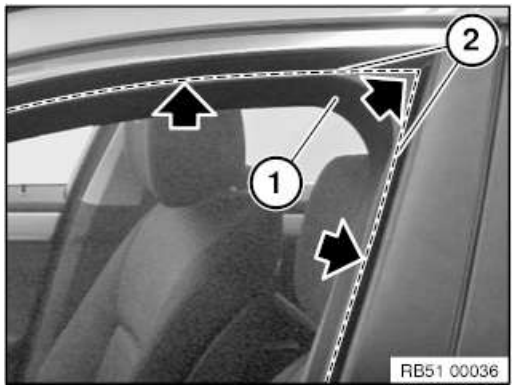
29 – Installing the cover on the inside of the window frame



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

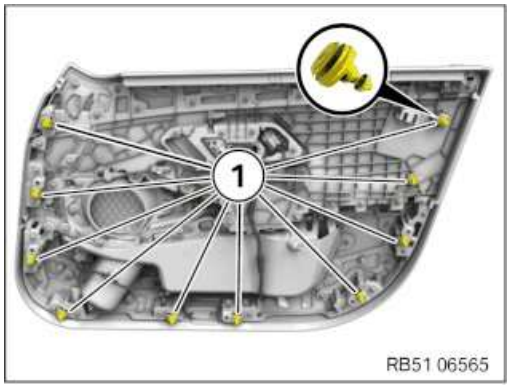
- If necessary, connect and lock the connector of the speaker.
- Guide in the cover all around the inner window frame (2) starting from the rear and position it correctly.
- Clip in clips (1).



- Insert the cover on the inner window frame (1) into the gap of the rubber window seal(2) .

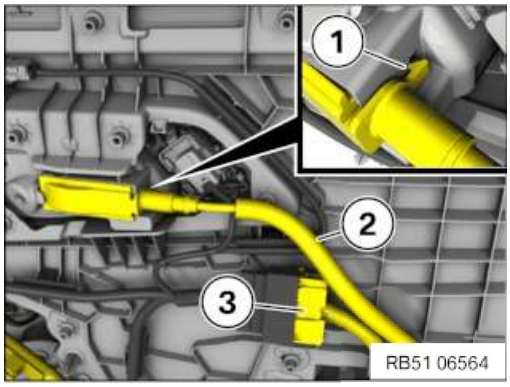
  While doing so, pay attention to the correct position of the cover on the inner window frame (1) on the door seal.

30 – Install door trim panel

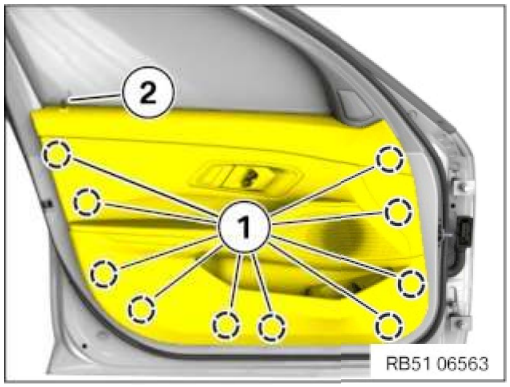


- Renew the clips (1).

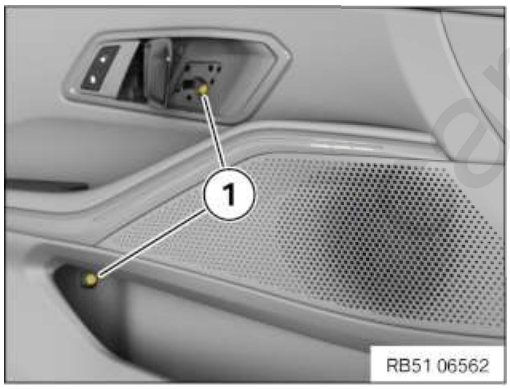
  Parts: Clips



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



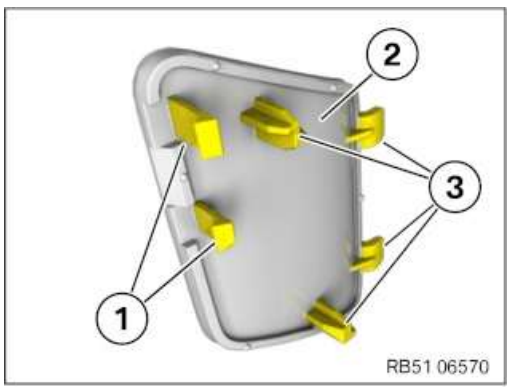
- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).



- Tighten the screws (1).

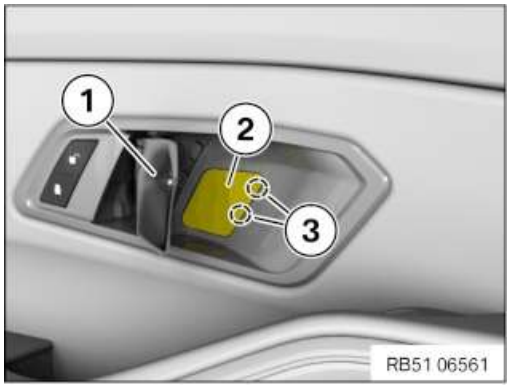
Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).

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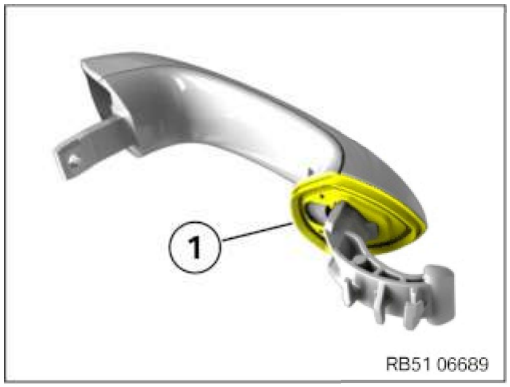


- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

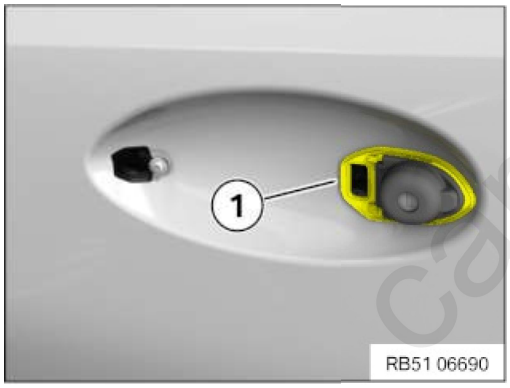
31 – Installing the outside door handle

NOTICE

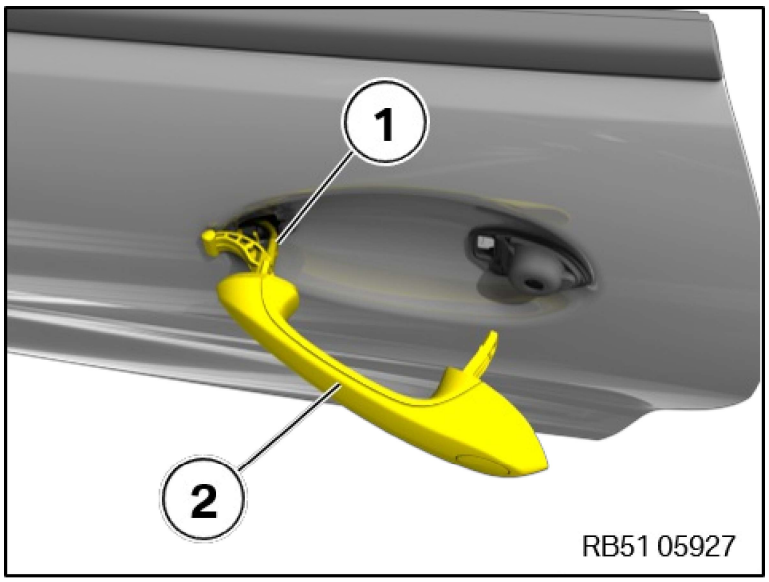
Description is for left component only. Procedure on the right side is identical.



- Check the seal (1) for damage and renew if necessary.

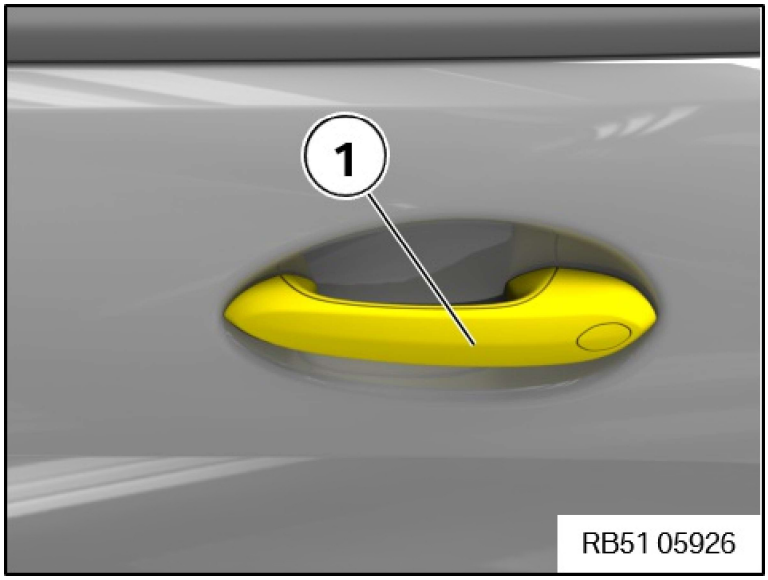


- Check the seal (1) for damage and renew if necessary.

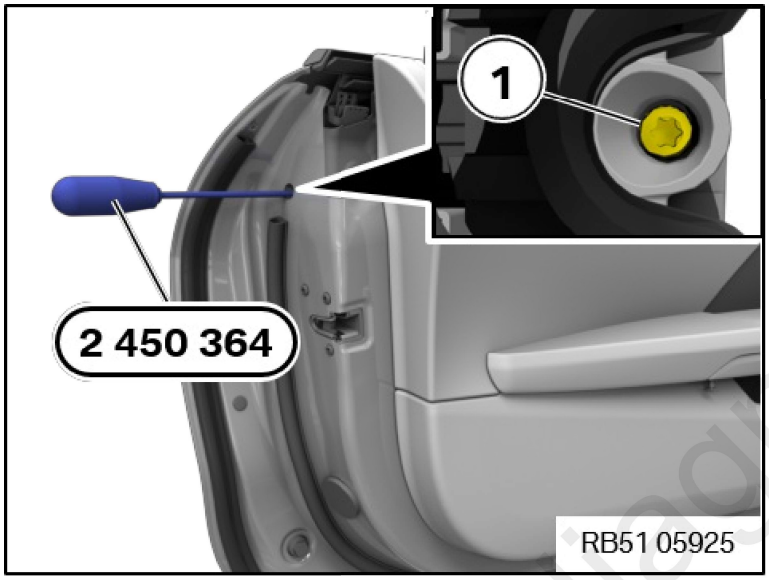


- Insert the front outside door handle (2).
- Connect connectors (1) and lock.

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- Insert the rear outside door handle (1).



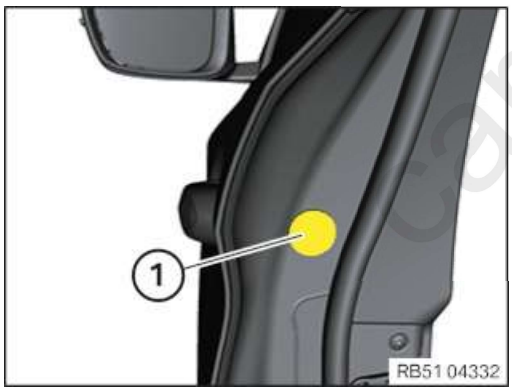
NOTICE

Schematic diagram is for example purposes.
Some parts may differ in certain details.

- Tighten the clamping bolt (1) on the outside door handle support with the special tool 2 450 364.

Clamping bolt for door handle

Screw		Tightening torque	2 Nm



- Install seal plug (1).

Additional Information

Overview of Tightening Torques

Door retainer to door — Used in step 16

Hexagon nut		Tightening torque	8 Nm

Screw connection, hinge parts — Used in step 17

Screw		Tightening torque	27 Nm

Door stop to pillar — Used in step 17

Screw		Tightening torque	28 Nm

Window frame trim to door frame			Used in step 20
Oval-head screw for thermoplastic		Tightening torque	2,3 Nm

Door lock to door			Used in step 22
Screw		Tightening torque	8,8 Nm

Outside door handle support to door			Used in step 22
Screw		Tightening torque	2,6 Nm

Attachment bell to outside door handle support			Used in step 22
Screw		Tightening torque	3 Nm

Module carrier to front door			Used in step 23
Torx socket M5x12		Tightening torque	8 Nm

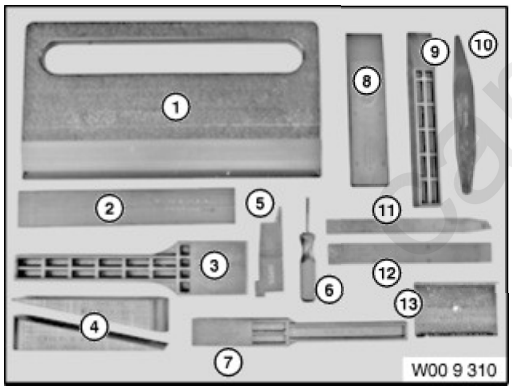
Exterior mirror to door			Used in step 28
Thread-tapping hexagon screw		Tightening torque	10 Nm

Door trim panel to door			Used in step 30
Screw TS5x20		Tightening torque	2,6 Nm

Clamping bolt for door handle			Used in step 31
Screw		Tightening torque	2 Nm

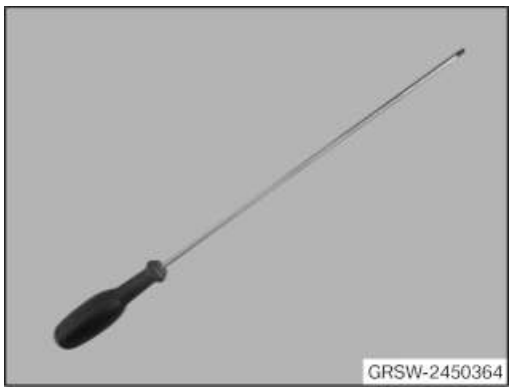
Overview of Special Tools

0 495 484 (00 9 324) Panel wedge



Common		Used in step 17
Usage	(Panel wedge (panel)) For removing cavity strips on the doors from E60	
Included in the tool or work	0 490 527	
Storage location	Individual	
Replaced by		
In connection with		
SI-Number	01 25 05 (230)	

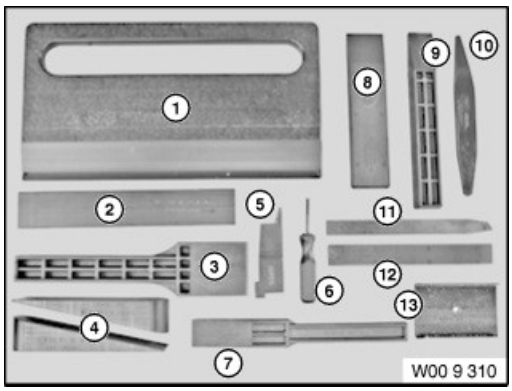
2 450 364 Torx



Common		Used in step 231
Usage	for releasing the outside door handles	
Included in the tool or work		
Storage location	A5	
Replaced by		
In connection with		
SI-Number	01 22 16 (440)	

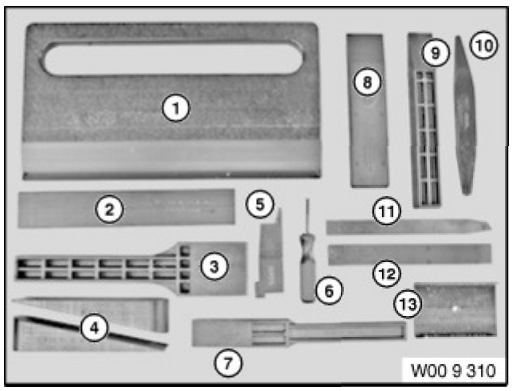
bmwdiagn.com

0 493 752 (00 9 329) Case



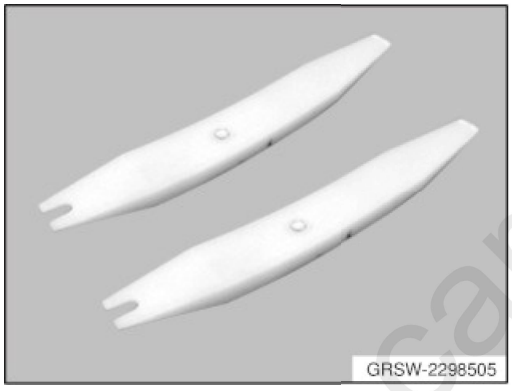
Common	Used in step 3
Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

0 490 538 (00 9 321) Folding stick



Common	Used in step 7
Usage	
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

2 298 505 Wedge



Common	Used in step 7
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

0 496 569 (00 9 325) Wedge



Common	Used in step 810
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	9102324

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61 20 900 Disconnecting and connecting battery earth lead	9102324
61 20 900 Disconnecting and connecting battery earth lead	9102324
61 20 900 Disconnecting and connecting battery earth lead	9102324
61 20 900 Disconnecting and connecting battery earth lead	9102324
61 20 900 Disconnecting and connecting battery earth lead	9102324
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	9102324
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	9102324
61 20 900 Disconnecting and connecting battery earth lead	9102324
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	9102324
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	9102324
61 20 900 Disconnecting and connecting battery earth lead	9102324
61 20 900 Disconnecting and connecting battery earth lead	9102324
61 20 900 Disconnecting and connecting battery earth lead	9102324
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61 20 900 Disconnecting and connecting battery earth lead	9102324
61 20 900 Disconnecting and connecting battery earth lead	9102324
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	9102324
61 20 900 Disconnecting and connecting battery earth lead	9102324
61 20 900 Disconnecting and connecting battery earth lead	9102324
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61 20 900 Disconnecting and connecting battery earth lead	9102324
61 20 900 Disconnecting and connecting battery earth lead	9102324
61 20 900 Disconnecting and connecting battery earth lead	9102324

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41 51 ... Notes on replacing the door



Important!

For production reasons the side impact beam is only screwed loosely.

Tighten screws of side impact beam.



Remount all components on the new door.

If necessary, replace damaged components.

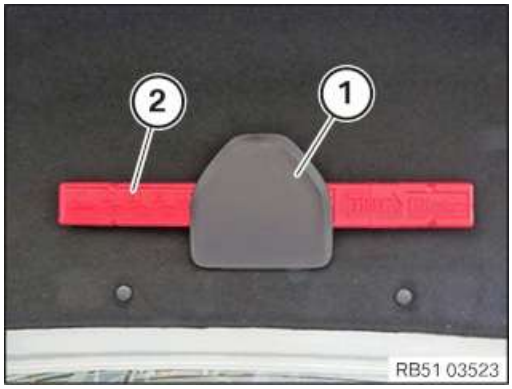
The procedure is described in the repair instructions of the components.

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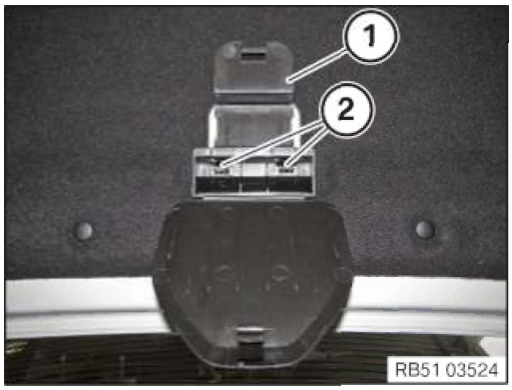
41 62 014 Adjusting tailgate

PRELIMINARY WORK

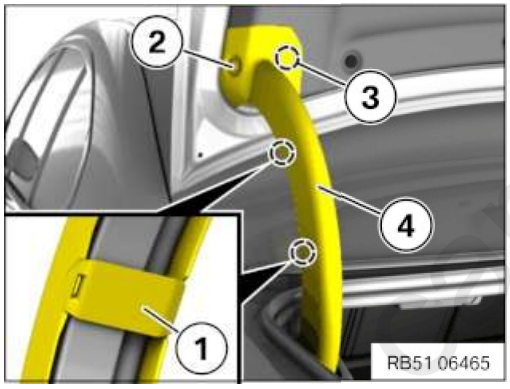
1 – Remove tailgate trim panel



- Fold the cover (1) towards the bottom.
- Remove the warning triangle (2).



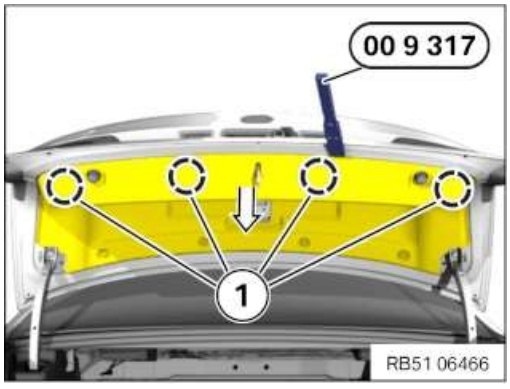
- Detach the warning triangle holder (1) from the latch mechanisms (2) and slide downwards.



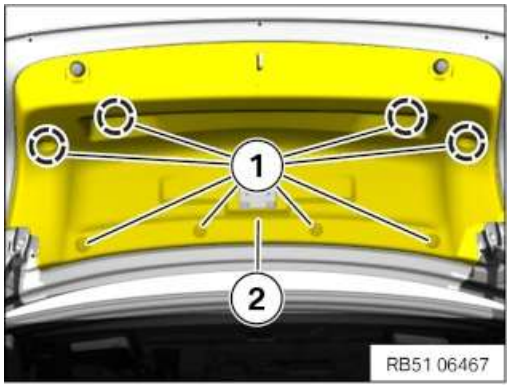
NOTICE

Description is for left component only. Procedure on the right side is identical.

- Unclip the tabs (1).
- Loosen expanding rivet (2).
- To avoid damage, release the trim panel for the hinge of the tailgate (4) without using a tool by jerking it along the hinge bracket and out of the clip fastening (3).



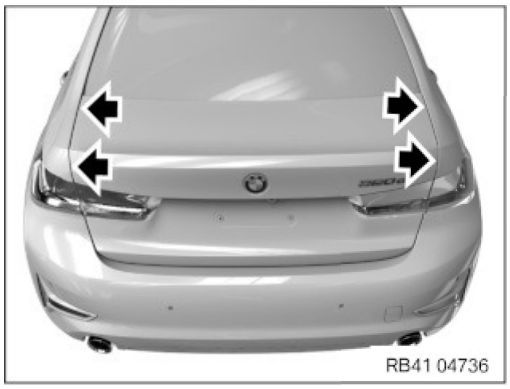
- Unclip clips (1) with special tool 0 490 534 (00 9 317) in the direction of arrow.



- Release expanding rivet (1) on the tailgate trim panel (2).
- Remove tailgate trim panel (2).
- **If installed**: Unlock plug connection of the switch for the tailgate lift and disconnect.

MAIN WORK

2 – Adjusting tailgate

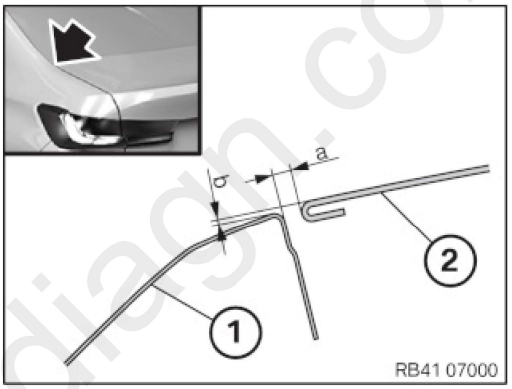


Check

- Check the gap dimensions (arrows) between tailgate and rear side panels.

Gap dimension rear side panel to tailgate

1 rear side panel; 2 tailgate	
a	3,5 (2,5 - 4,5) mm
b	3,2 (1,8 - 4,6) mm



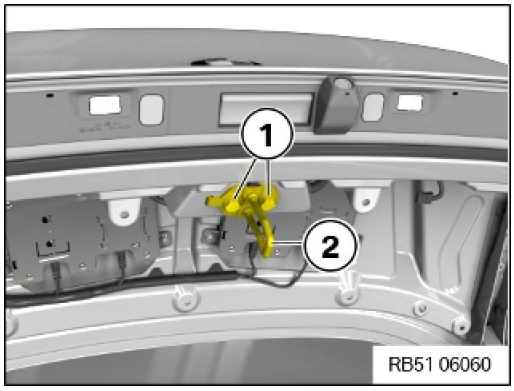
Result

» Gap dimensions between tailgate and rear side panels do not correspond to the specifications.

Measure

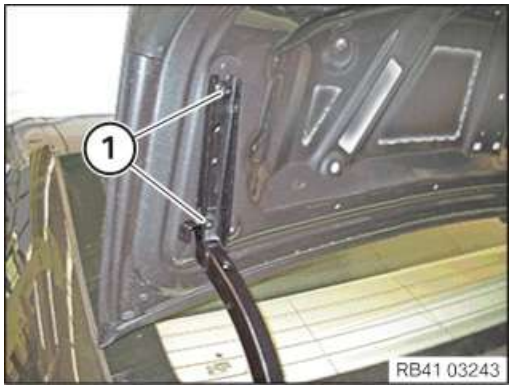
- Adjust tailgate on the tailgate hinge.

▸ **Remove the striker for the tailgate catch**



- Loosen screws (1).
- Remove the striker for the tailgate catch (2).

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NOTICE

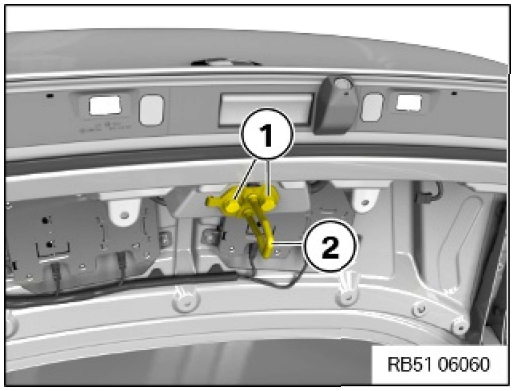
Perform the operations on the left and right side.

- Loosen screws (1) on the tailgate hinge until the tailgate can be moved.
- Move the tailgate lengthwise and laterally until the tailgate has reached the specified gap dimension to the side panel.
- Tighten screws (1) on the tailgate hinge.

Tailgate hinge to tailgate

Hexagon screw M8 x 18		Tightening torque	19 Nm

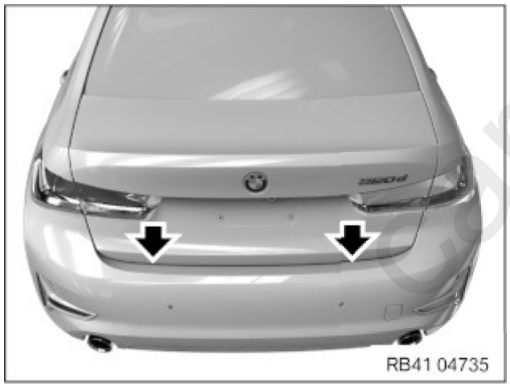
▸ **Install striker for the tailgate catch**



- Position the striker for the tailgate catch (2) and tighten the screws (1).

▸ **Installing the lower section of the tailgate lock**

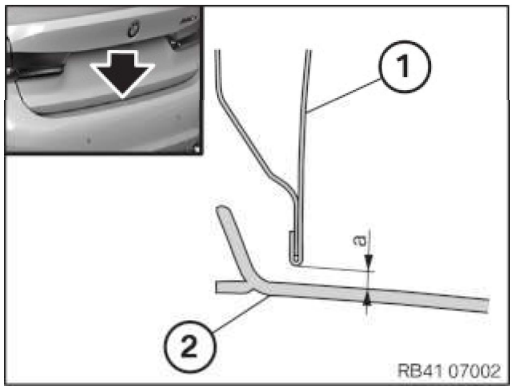
Check



- Check the gap dimensions between the tailgate and bumper panel (arrows).

Gap dimension tailgate to rear bumper panel

1 tailgate; 2 rear bumper panel	
a	5,1 (3,3 - 6,9) mm



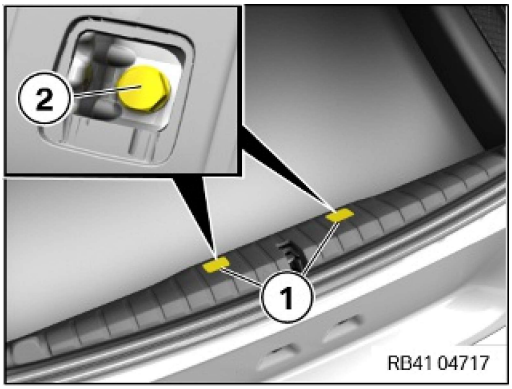
Result

» Gap dimension does not correspond to specifications.

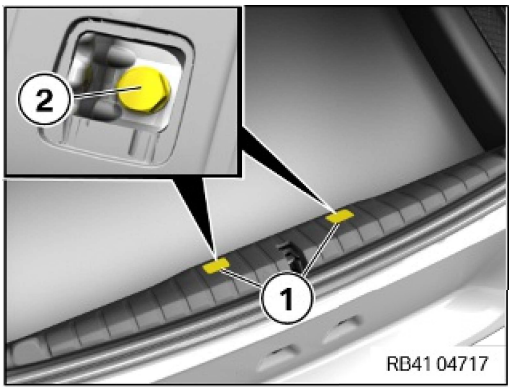
Measure

- Adjusting tailgate lock.

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- Lever out the covers (1) with a suitable screwdriver and remove.
- Loosen screws (2) until the tailgate lock can be moved.
- Adjust tailgate lock so that the tailgate has the specified gap dimension to the bumper panel.

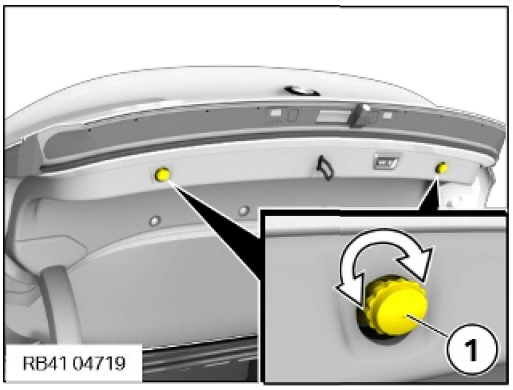


- Tighten the screws (2).

Tailgate lock to body

Hexagon screw M8x20		Tightening torque	19 Nm

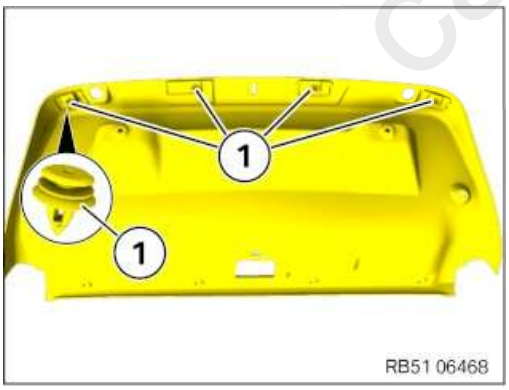
- Install and clip in the covers (1).



- Adjust the stop pad (1) by twisting in arrow direction.

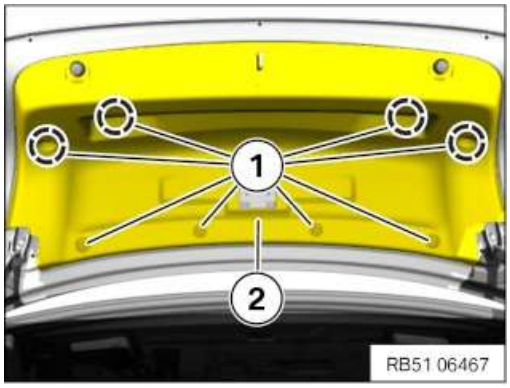
POSTPROCESSES

3 – Installing the tailgate trim panel

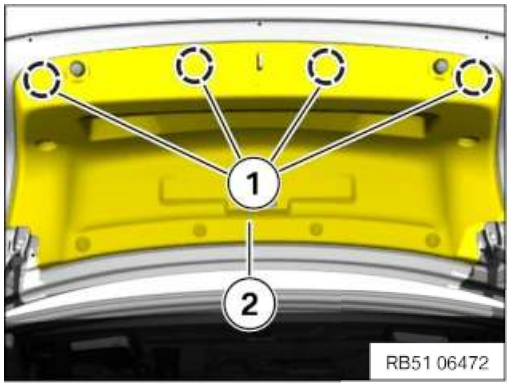


- Check the clips (1) for damage and renew if necessary.

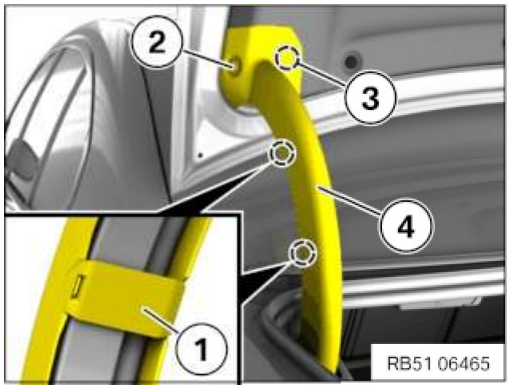
cardiagn.com



- Fit the tailgate trim panel (2) and fasten in place with the expanding rivets (1).
- **If installed**: Connect and lock plug connection on the switch for the tailgate lift.



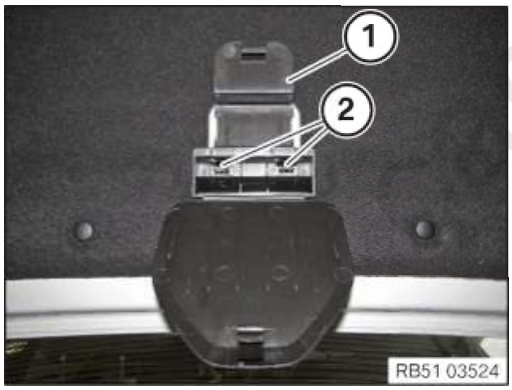
- Clip in the tailgate trim panel (2) with the clips (1).



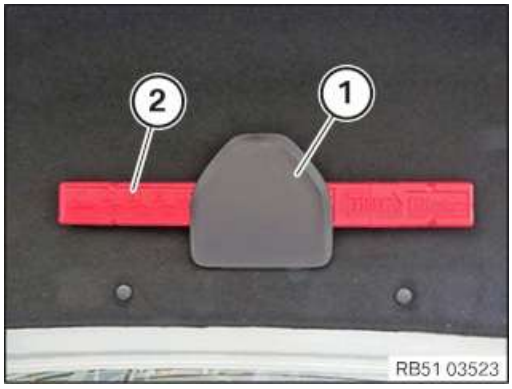
NOTICE

Description is for left component only. Procedure on the right side is identical.

- Clip in the trim panel for the hinge of the tailgate (4) to the clip fastening (3).
- Fasten expanding rivet (2).
- Clip in tabs (1).



- Position the warning triangle holder (1) and snap into the latch mechanisms (2).



- Install the warning triangle (2).
- Clip in the cover (1).

Additional Information

Overview of Tightening Torques

Overview of Tightening Torques

Tailgate hinge to tailgate — Used in step 2

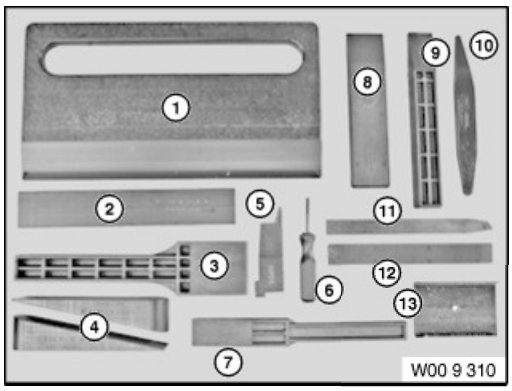
Hexagon screw M8 x 18		Tightening torque	19 Nm

Tailgate lock to body — Used in step 2

Hexagon screw M8x20		Tightening torque	19 Nm

Overview of Special Tools

0 490 534 (00 9 317) Wedge



Common — Used in step 1

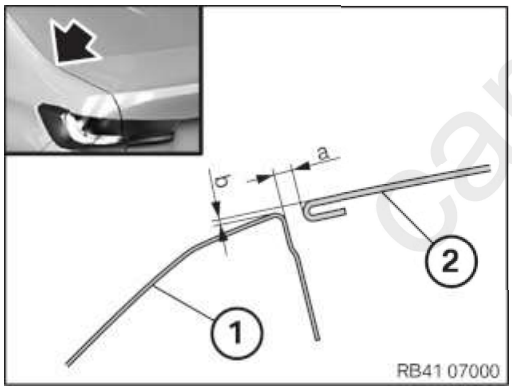
Usage	(Trim wedge) Replaced by special tool 00 9 325 from 11/2008 (quality improvement due to new material) Replaced by 00 9 325 (0 496 569)
Included in the tool or work	0 490 527
Storage location	
Replaced by	
In connection with	
SI-Number	

Overview Technical Data

Gap dimension rear side panel to tailgate — Used in step 2

1 rear side panel; 2 tailgate

a	3,5 (2,5 - 4,5) mm
b	3,2 (1,8 - 4,6) mm

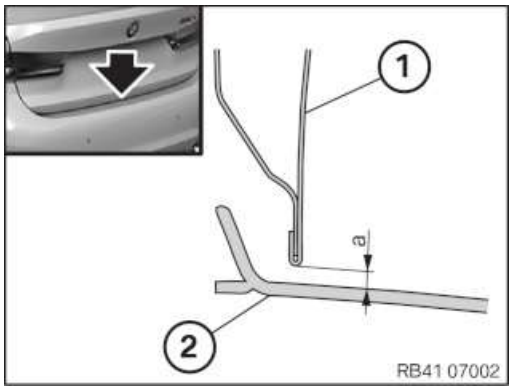


Gap dimension tailgate to rear bumper panel — Used in step 2

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1 tailgate; 2 rear bumper panel

a	5,1 (3,3 - 6,9) mm

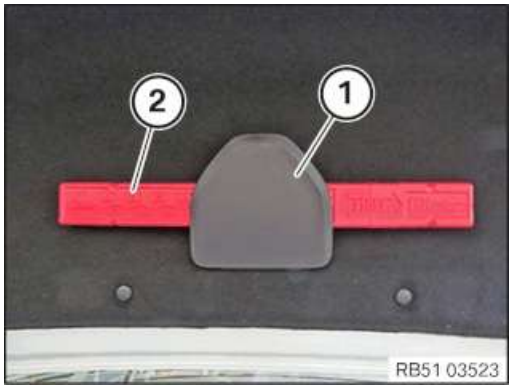


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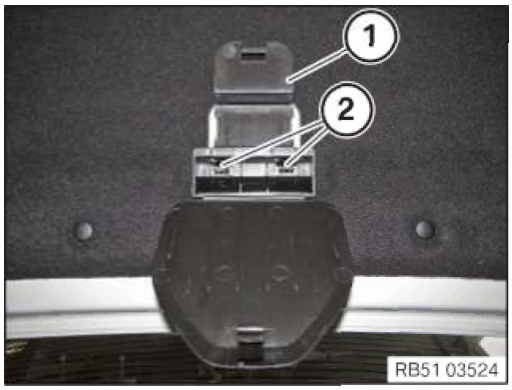
41 62 000 Removing and installing rear lid

PRELIMINARY WORK

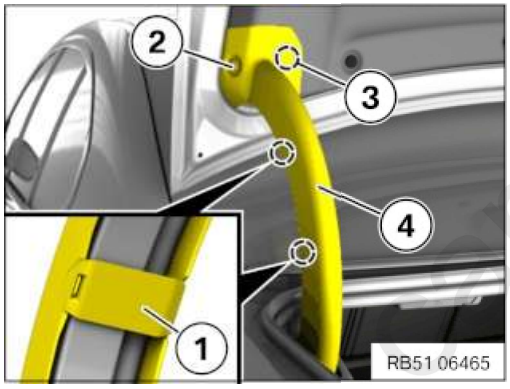
1 – Remove tailgate trim panel



- Fold the cover (1) towards the bottom.
- Remove the warning triangle (2).



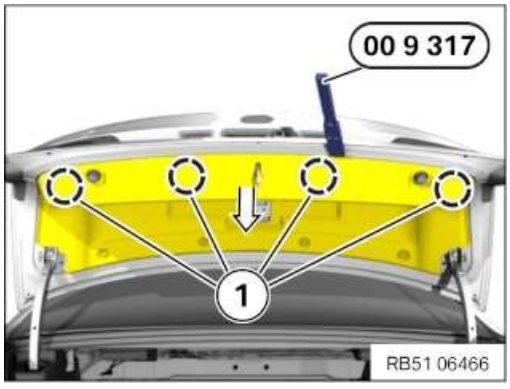
- Detach the warning triangle holder (1) from the latch mechanisms (2) and slide downwards.



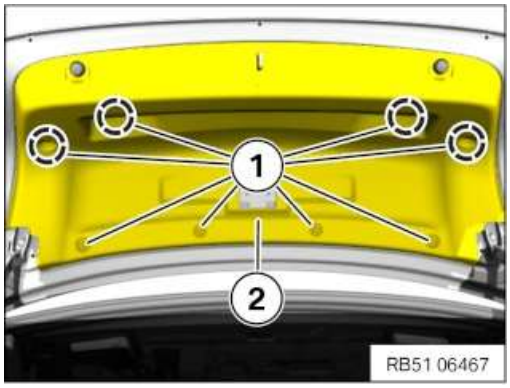
NOTICE

Description is for left component only. Procedure on the right side is identical.

- Unclip the tabs (1).
- Loosen expanding rivet (2).
- To avoid damage, release the trim panel for the hinge of the tailgate (4) without using a tool by jerking it along the hinge bracket and out of the clip fastening (3).



- Unclip clips (1) with special tool 0 490 534 (00 9 317) in the direction of arrow.

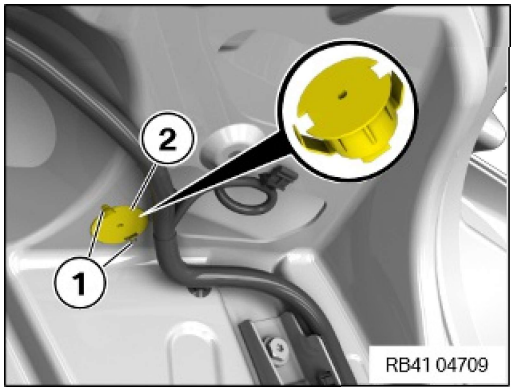


- Release expanding rivet (1) on the tailgate trim panel (2).
- Remove tailgate trim panel (2).
- **If installed**: Unlock plug connection of the switch for the tailgate lift and disconnect.

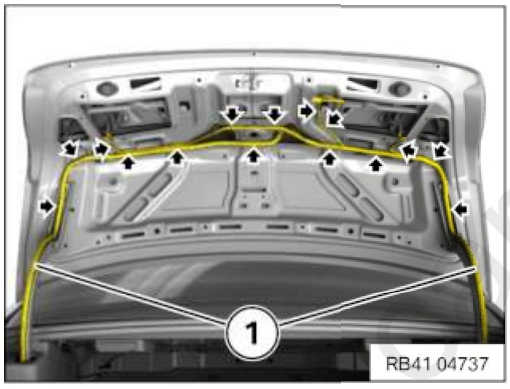
MAIN WORK

2 – Remove tailgate

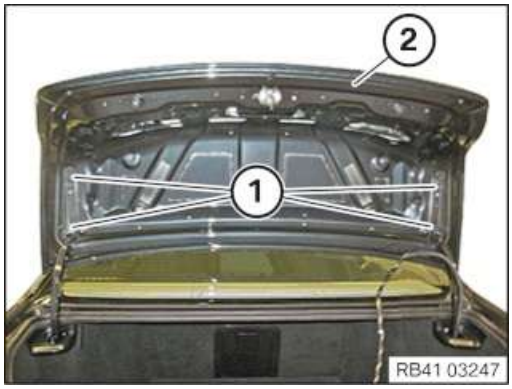
▸ **If installed: Remove acoustic transmitter**



- Press together the latch mechanisms (1) and remove the acoustic sensor (2).
- Remove associated plug connection and the acoustic transmitter (2).



- Unlock and disconnect all plug connections of the wiring harness (1) on the tailgate.
- Detach the tailgate wiring harness (1) with all holders (arrow) from the tailgate and put to one side.



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

RISK OF DAMAGE

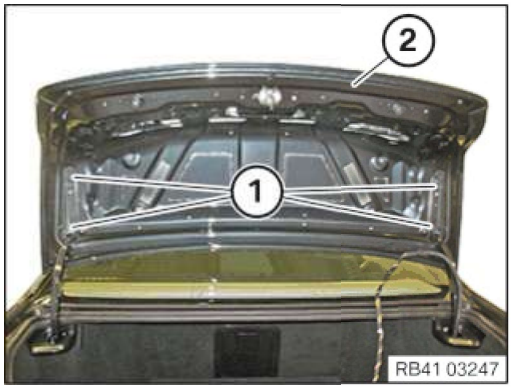
Paint damage.

Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.

- Loosen tailgate hinge screws (1).
- Remove tailgate (2).

3 – Installing tailgate



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

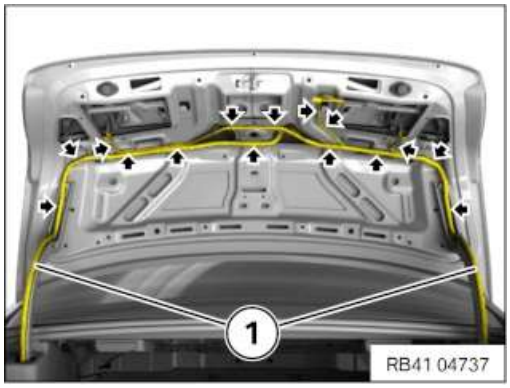
RISK OF DAMAGE

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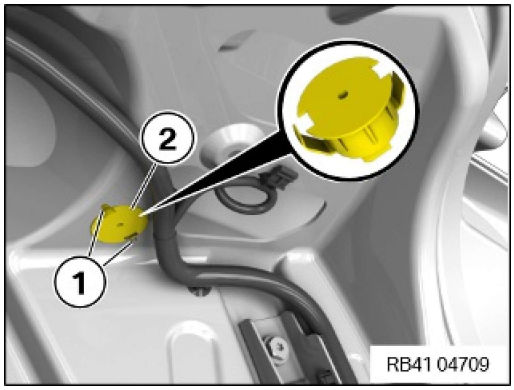
- Position tailgate (2) on the tailgate hinge.
- Hand-tighten the bolts (1).



- Clip in wiring harnesses (1) with all brackets (arrows).
- Connect and lock all connectors of the wiring harnesses (1) on the tailgate.

▸ **If installed: Install the acoustic transmitter**

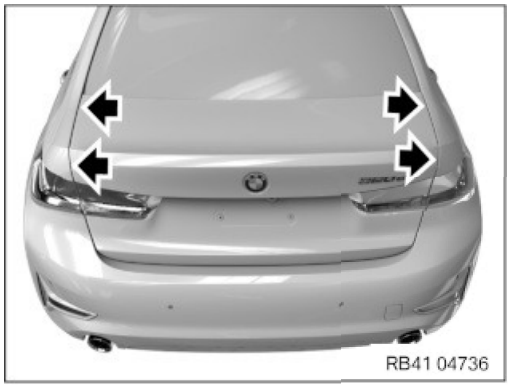
carmagn.com



- Connect and lock the acoustic transmitter connector (2) .
- Install the acoustic transmitter in the tailgate (2) and lock in place using the latch mechanisms (1) .

▸ **Adjusting tailgate**

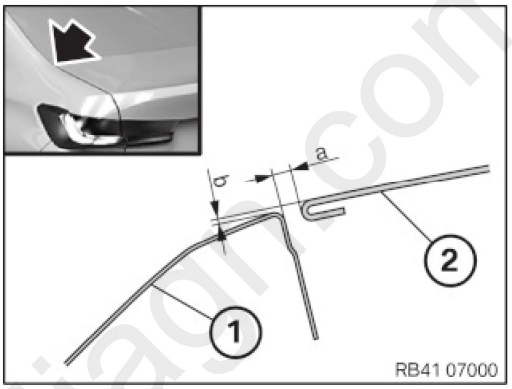
Check



- Check the gap dimensions (arrows) between tailgate and rear side panels.

Gap dimension rear side panel to tailgate

1 rear side panel; 2 tailgate	
a	3,5 (2,5 - 4,5) mm
b	3,2 (1,8 - 4,6) mm



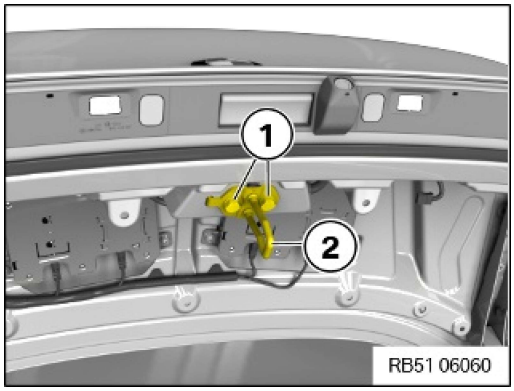
Result

» Gap dimensions between tailgate and rear side panels do not correspond to the specifications.

Measure

- Adjust tailgate on the tailgate hinge.

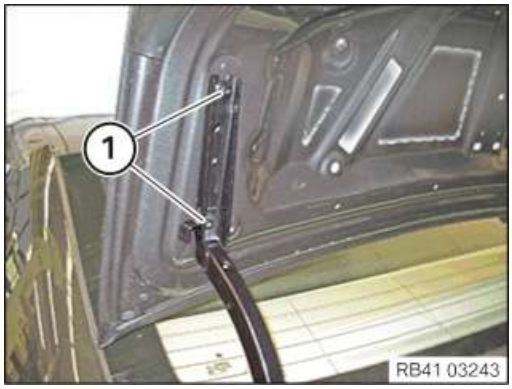
▹ **Remove the striker for the tailgate catch**



- Loosen screws (1).
- Remove the striker for the tailgate catch (2).

◃

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NOTICE

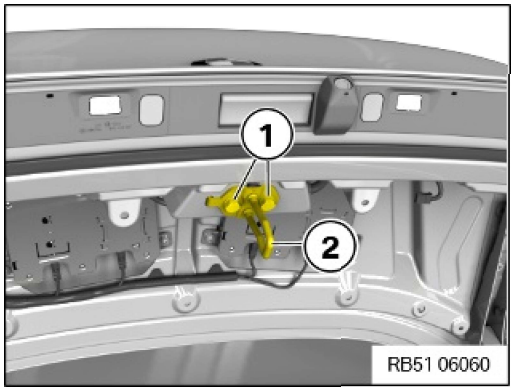
Perform the operations on the left and right side.

- Loosen screws (1) on the tailgate hinge until the tailgate can be moved.
- Move the tailgate lengthwise and laterally until the tailgate has reached the specified gap dimension to the side panel.
- Tighten screws (1) on the tailgate hinge.

Tailgate hinge to tailgate

Hexagon screw M8 x 18		Tightening torque	19 Nm

▷ **Install striker for the tailgate catch**



- Position the striker for the tailgate catch (2) and tighten the screws (1).

◁

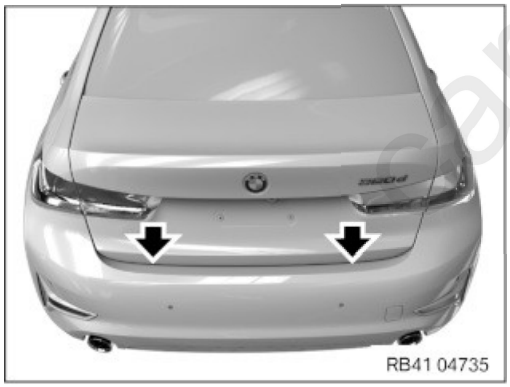
▷ **Installing the lower section of the tailgate lock**

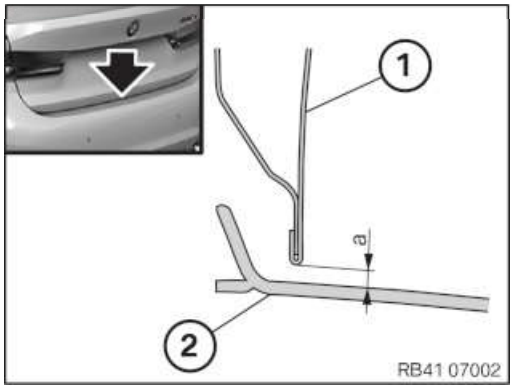
Check

- Check the gap dimensions between the tailgate and bumper panel (arrows).

Gap dimension tailgate to rear bumper panel

1 tailgate; 2 rear bumper panel	
a	5,1 (3,3 - 6,9) mm





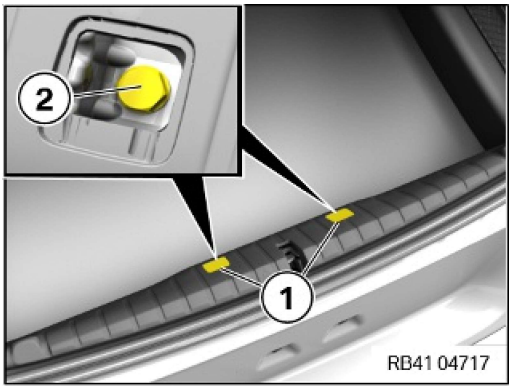
Result

» Gap dimension does not correspond to specifications.

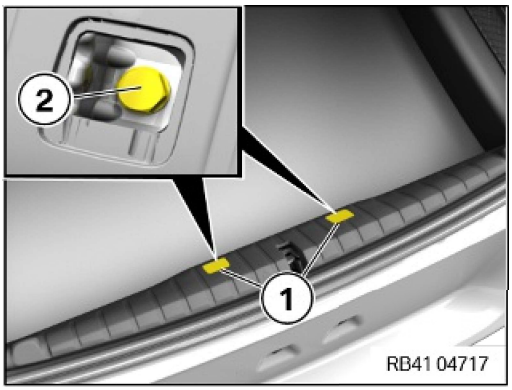
Measure

- Adjusting tailgate lock.

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- Lever out the covers (1) with a suitable screwdriver and remove.
- Loosen screws (2) until the tailgate lock can be moved.
- Adjust tailgate lock so that the tailgate has the specified gap dimension to the bumper panel.

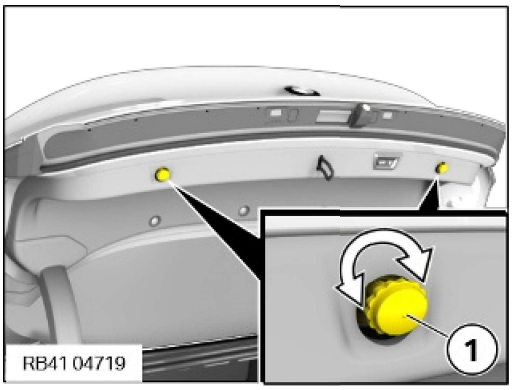


- Tighten the screws (2).

Tailgate lock to body

Hexagon screw M8x20		Tightening torque	19 Nm

- Install and clip in the covers (1).

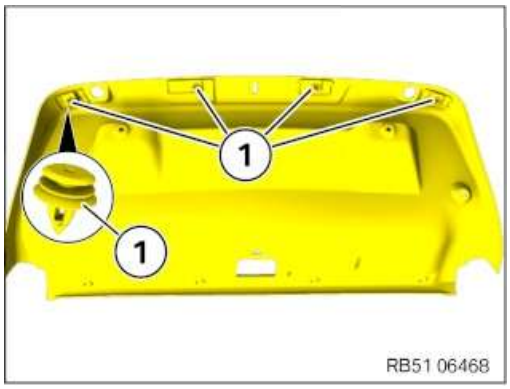


- Adjust the stop pad (1) by twisting in arrow direction.

◁

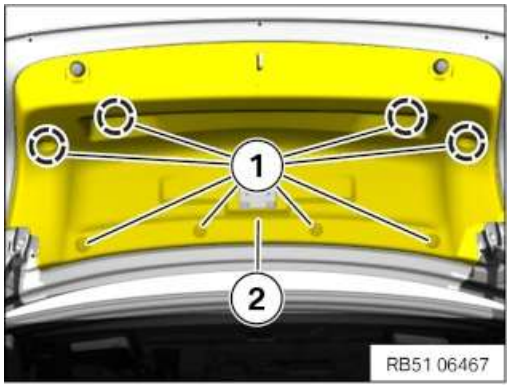
POSTPROCESSES

4 – Installing the tailgate trim panel

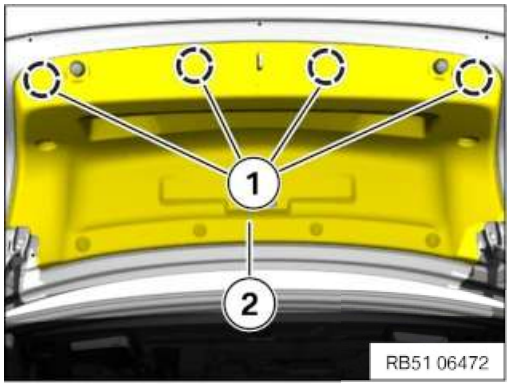


- Check the clips (1) for damage and renew if necessary.

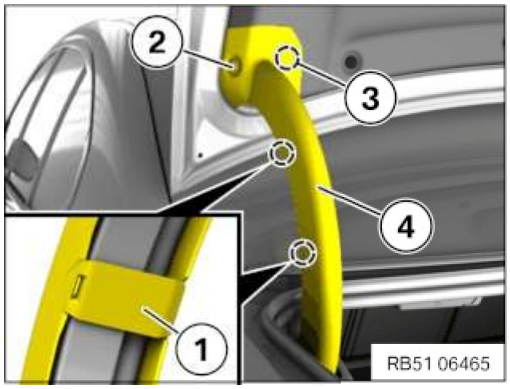
cardiagn.com



- Fit the tailgate trim panel (2) and fasten in place with the expanding rivets (1).
- **If installed**: Connect and lock plug connection on the switch for the tailgate lift.



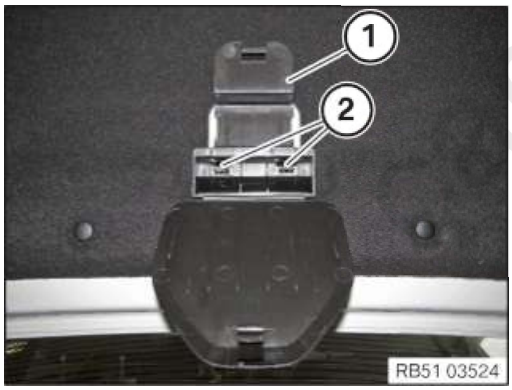
- Clip in the tailgate trim panel (2) with the clips (1).



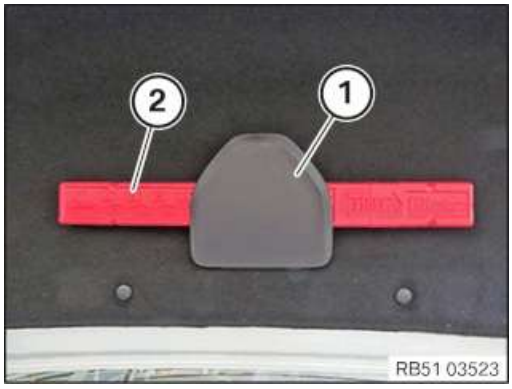
NOTICE

Description is for left component only. Procedure on the right side is identical.

- Clip in the trim panel for the hinge of the tailgate (4) to the clip fastening (3).
- Fasten expanding rivet (2).
- Clip in tabs (1).



- Position the warning triangle holder (1) and snap into the latch mechanisms (2).



- Install the warning triangle (2).
- Clip in the cover (1).

Additional Information

Overview of Tightening Torques

Overview of Tightening Torques

Tailgate hinge to tailgate — Used in step 3

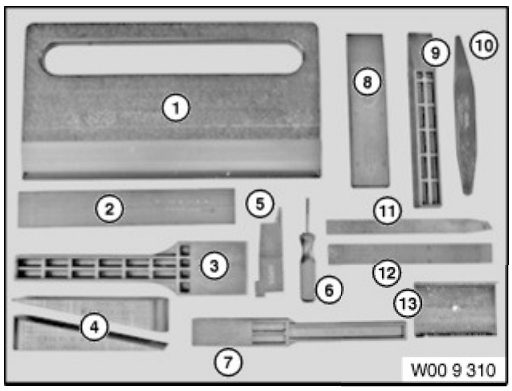
Hexagon screw M8 x 18		Tightening torque	19 Nm

Tailgate lock to body — Used in step 3

Hexagon screw M8x20		Tightening torque	19 Nm

Overview of Special Tools

0 490 534 (00 9 317) Wedge



Common — Used in step 1

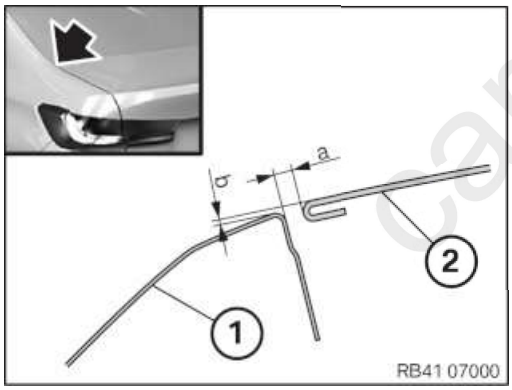
Usage	(Trim wedge) Replaced by special tool 00 9 325 from 11/2008 (quality improvement due to new material) Replaced by 00 9 325 (0 496 569)
Included in the tool or work	0 490 527
Storage location	
Replaced by	
In connection with	
SI-Number	

Overview Technical Data

Gap dimension rear side panel to tailgate — Used in step 3

1 rear side panel; 2 tailgate

a	3,5 (2,5 - 4,5) mm
b	3,2 (1,8 - 4,6) mm

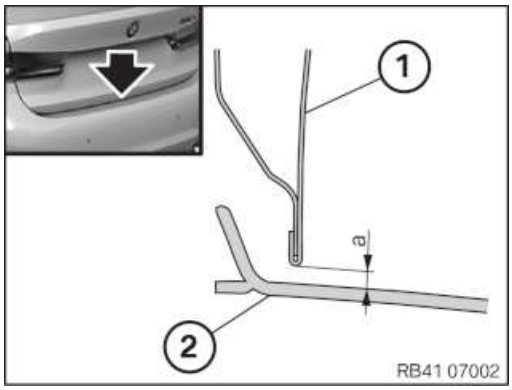


Gap dimension tailgate to rear bumper panel — Used in step 3

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1 tailgate; 2 rear bumper panel

a	5,1 (3,3 - 6,9) mm

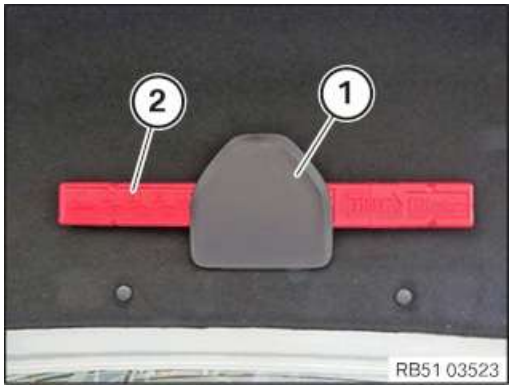


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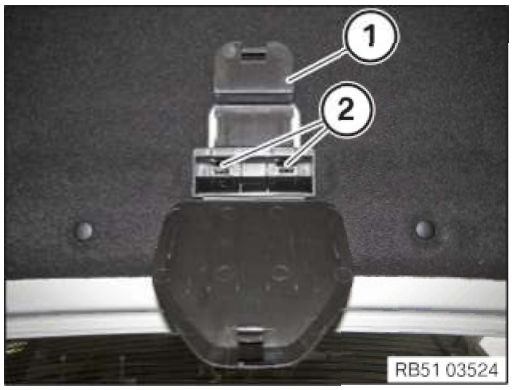
41 62 001 Replacing tailgate

PRELIMINARY WORK

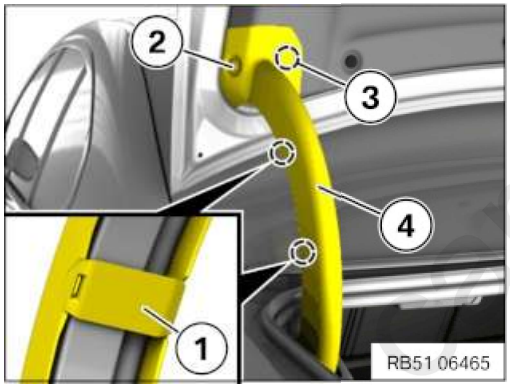
1 – Remove tailgate trim panel



- Fold the cover (1) towards the bottom.
- Remove the warning triangle (2).



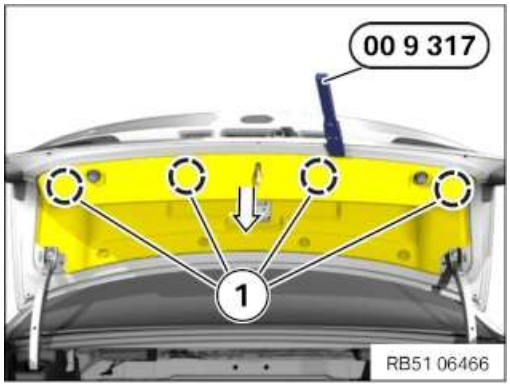
- Detach the warning triangle holder (1) from the latch mechanisms (2) and slide downwards.



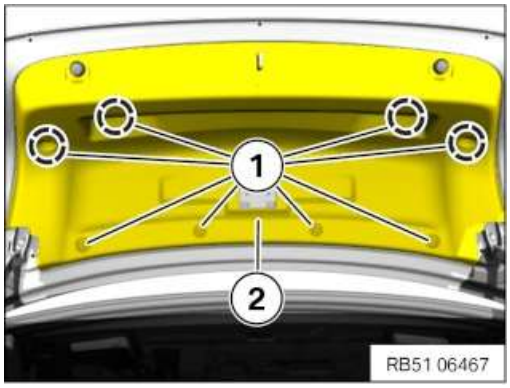
NOTICE

Description is for left component only. Procedure on the right side is identical.

- Unclip the tabs (1).
- Loosen expanding rivet (2).
- To avoid damage, release the trim panel for the hinge of the tailgate (4) without using a tool by jerking it along the hinge bracket and out of the clip fastening (3).



- Unclip clips (1) with special tool 0 490 534 (00 9 317) in the direction of arrow.



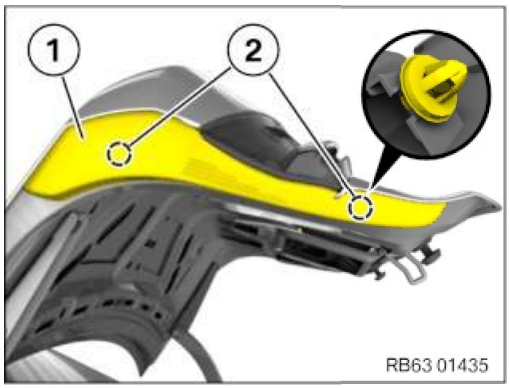
- Release expanding rivet (1) on the tailgate trim panel (2).
- Remove tailgate trim panel (2).
- **If installed**: Unlock plug connection of the switch for the tailgate lift and disconnect.

2 – Remove both rear lights from the tailgate

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the rear light on the tailgate**



- Unclip cover (1) with the clips (2).

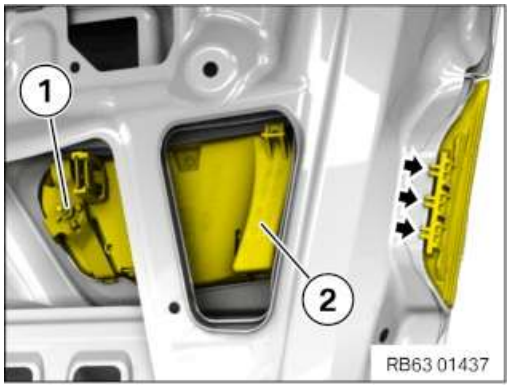


TECHNICAL INFORMATION

Observe note on unlocking and disconnecting plug connections.

For additional information see: 6113 ... Unlocking and disconnecting different plug connections

- Unlock and disconnect the plug connection (1) as described in position #11 in the additional information.



- Loosen nut (1).
- Release and remove rear light on the tailgate (2) at the guides (arrows).

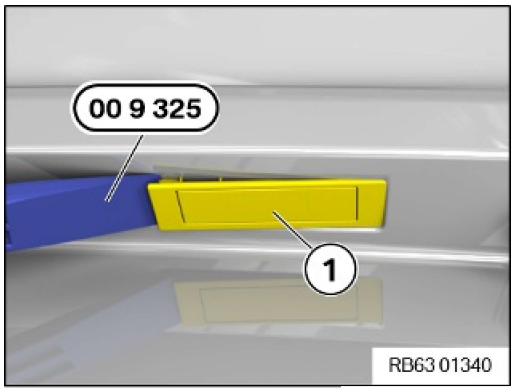
3 – Remove both number plate lights

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NOTICE

Description is for left component only. Procedure on the right side is identical.

▶ **Remove number plate light**



- Remove the number plate light (1) with the special tool 0 496 569 (00 9 325).
- Unlock plug connection and disconnect.

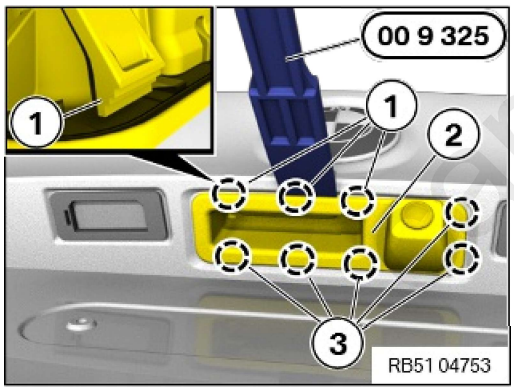
4 – Remove tailgate pushbutton

RISK OF DAMAGE

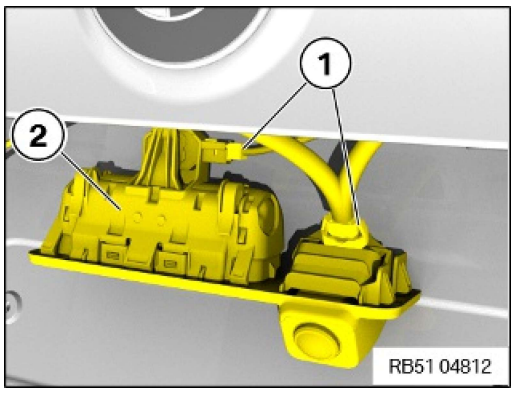
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Mount special tool 0 496 569 (00 9 325) as illustrated.
- Open the latch mechanisms (1) of the tailgate button (2) by carefully knocking onto the special tool 0 496 569 (00 9 325).
- Disengage the latch mechanisms (3) from the inside unclip the tailgate button (2) toward the bottom.

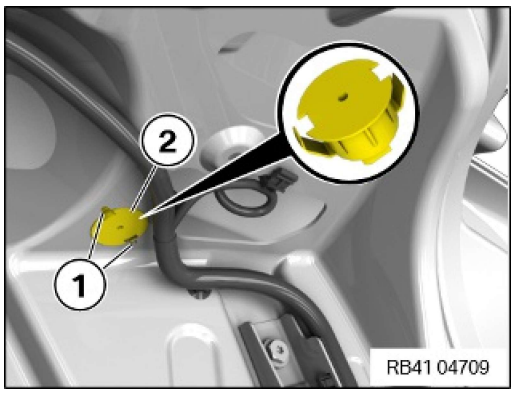


- Disconnect the connector (1) and remove the tailgate button (2).
- If necessary, remove broken off parts of the tailgate button (2) from the tailgate.

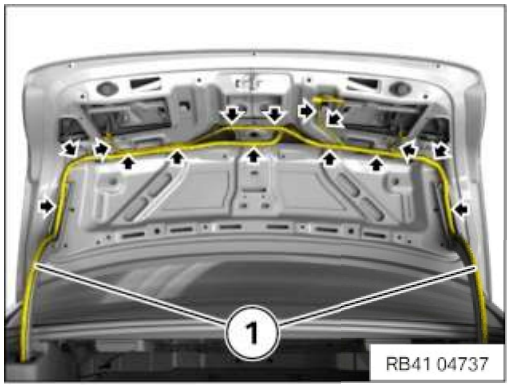
MAIN WORK

5 – Remove tailgate

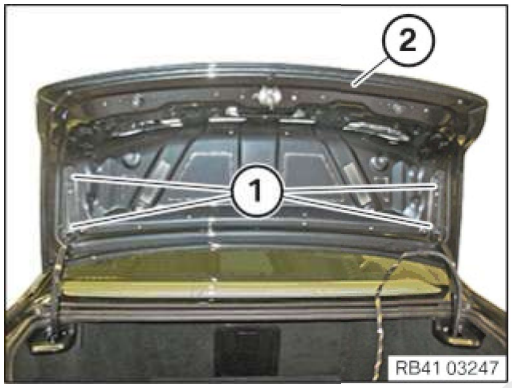
▶ **If installed: Remove acoustic transmitter**



- Press together the latch mechanisms (1) and remove the acoustic sensor (2).
- Remove associated plug connection and the acoustic transmitter (2).



- Unlock and disconnect all plug connections of the wiring harness (1) on the tailgate.
- Detach the tailgate wiring harness (1) with all holders (arrow) from the tailgate and put to one side.



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

RISK OF DAMAGE

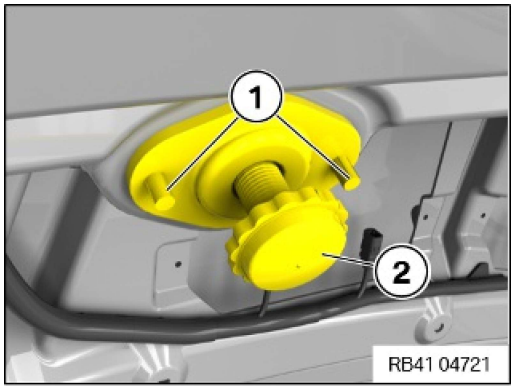
Paint damage.

Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.

- Loosen tailgate hinge screws (1).
- Remove tailgate (2).

6 – Replacing tailgate

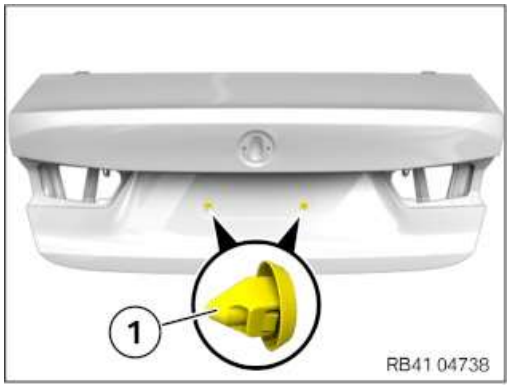


NOTICE

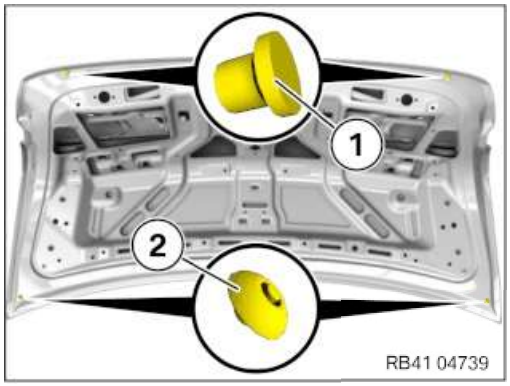
Perform the operations on the left and right side.

- Press in the pins (1) of the stop pad (2) and remove the stop pad (2).
- Fit the stop pad (2) on the new tailgate.
- Drive in the pins (1) of the stop pad (2) until they are flush.

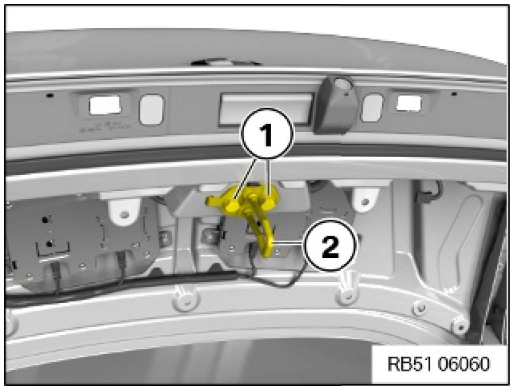
carmagn.com



- Remount clips (1) for the number plate.



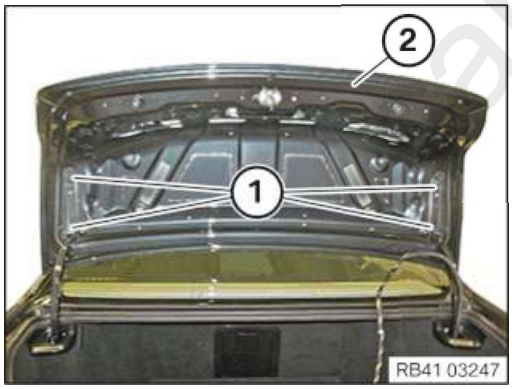
- Remount the seal plug (1) and (2).



- Loosen screws (1).
- Remount striker (2)t.
- Hand-tighten the bolts (1).

Note: Install striker only after adjusting the tailgate.

7 – Installing tailgate



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

RISK OF DAMAGE

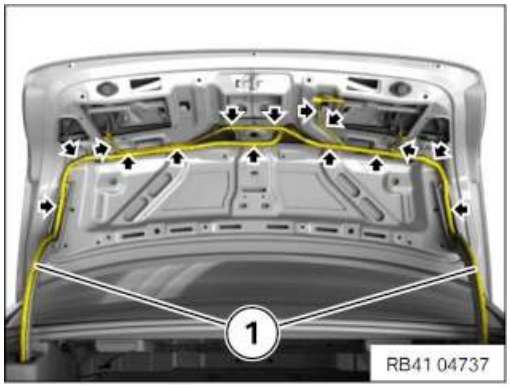
Paint damage.

Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.

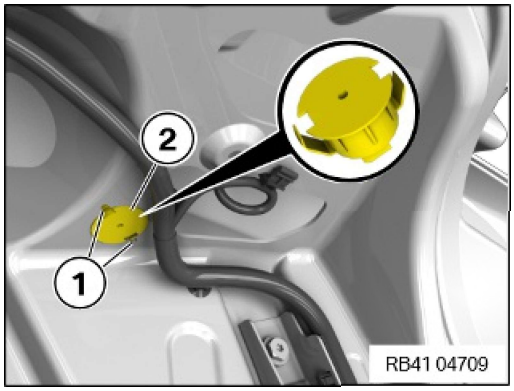
- Position tailgate (2) on the tailgate hinge.
- Hand-tighten the bolts (1).

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- Clip in wiring harnesses (1) with all brackets (arrows).
- Connect and lock all connectors of the wiring harnesses (1) on the tailgate.

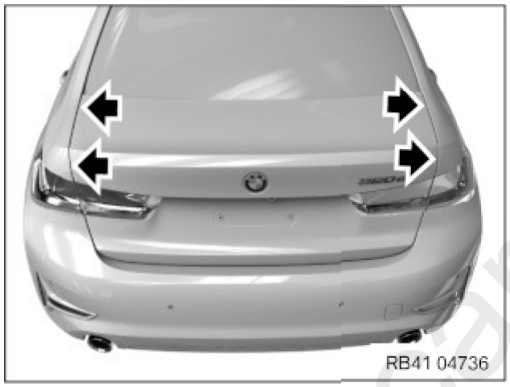
▸ **If installed: Install the acoustic transmitter**



- Connect and lock the acoustic transmitter connector (2) .
- Install the acoustic transmitter in the tailgate (2) and lock in place using the latch mechanisms (1) .

▸ **Adjusting tailgate**

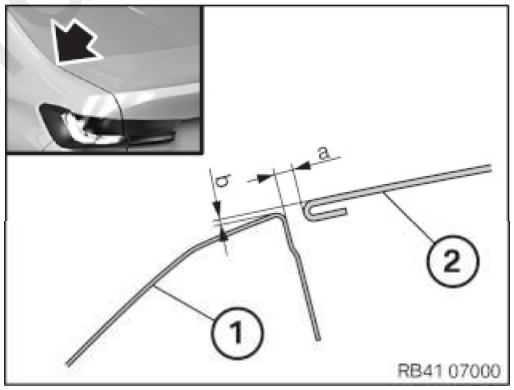
Check



- Check the gap dimensions (arrows) between tailgate and rear side panels.

Gap dimension rear side panel to tailgate

1 rear side panel; 2 tailgate	
a	3,5 (2,5 - 4,5) mm
b	3,2 (1,8 - 4,6) mm



Result

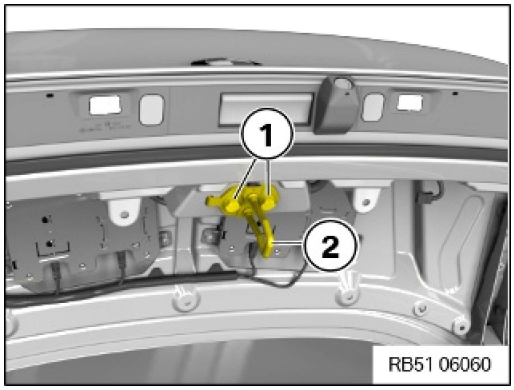
» Gap dimensions between tailgate and rear side panels do not correspond to the specifications.

Measure

- Adjust tailgate on the tailgate hinge.

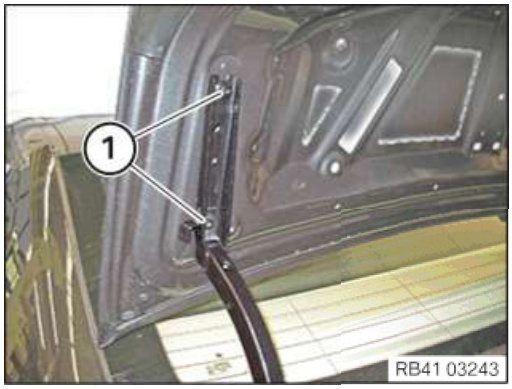
▹ **Remove the striker for the tailgate catch**

carglass.com



- Loosen screws (1).
- Remove the striker for the tailgate catch (2).

◁



NOTICE

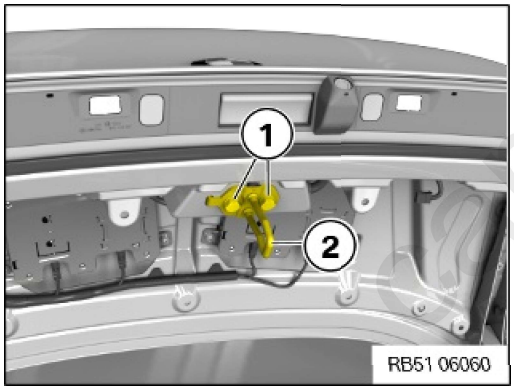
Perform the operations on the left and right side.

- Loosen screws (1) on the tailgate hinge until the tailgate can be moved.
- Move the tailgate lengthwise and laterally until the tailgate has reached the specified gap dimension to the side panel.
- Tighten screws (1) on the tailgate hinge.

Tailgate hinge to tailgate

Hexagon screw M8 x 18		Tightening torque	19 Nm

▷ **Install striker for the tailgate catch**



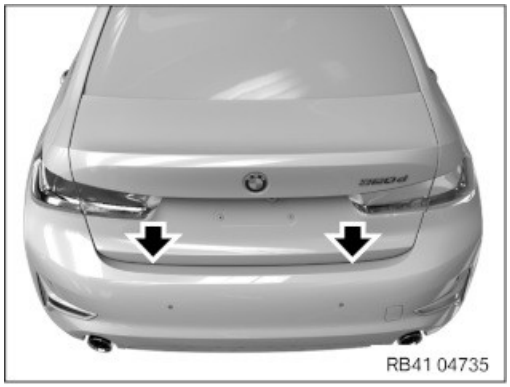
- Position the striker for the tailgate catch (2) and tighten the screws (1).

◁

▷ **Installing the lower section of the tailgate lock**

Check

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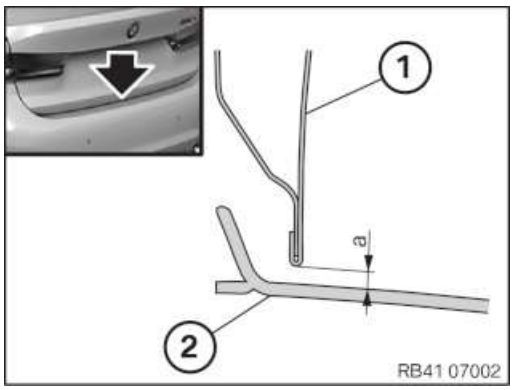


- Check the gap dimensions between the tailgate and bumper panel (arrows).

Gap dimension tailgate to rear bumper panel

1 tailgate; 2 rear bumper panel

a	5,1 (3,3 - 6,9) mm

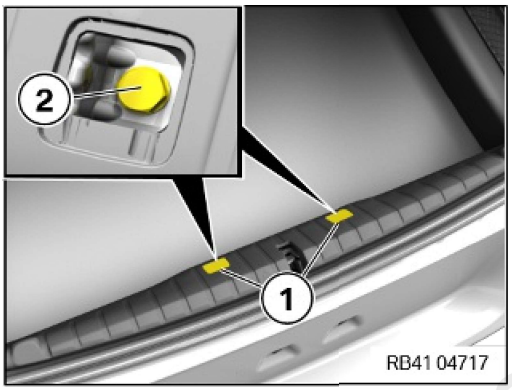


Result

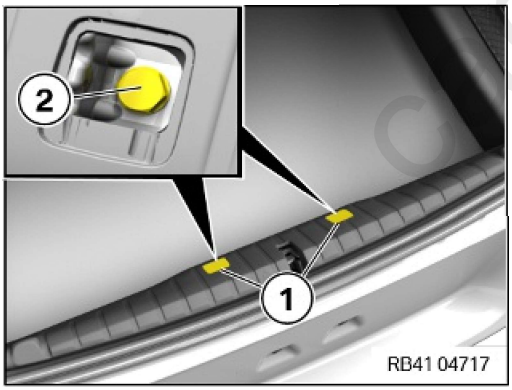
» Gap dimension does not correspond to specifications.

Measure

- Adjusting tailgate lock.



- Lever out the covers (1) with a suitable screwdriver and remove.
- Loosen screws (2) until the tailgate lock can be moved.
- Adjust tailgate lock so that the tailgate has the specified gap dimension to the bumper panel.

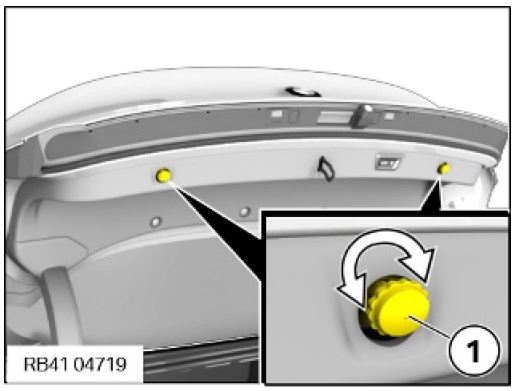


- Tighten the screws (2).

Tailgate lock to body

Hexagon screw M8x20		Tightening torque	19 Nm

- Install and clip in the covers (1).

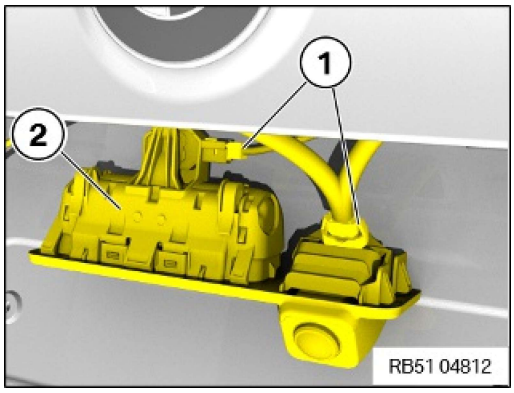


- Adjust the stop pad (1) by twisting in arrow direction.

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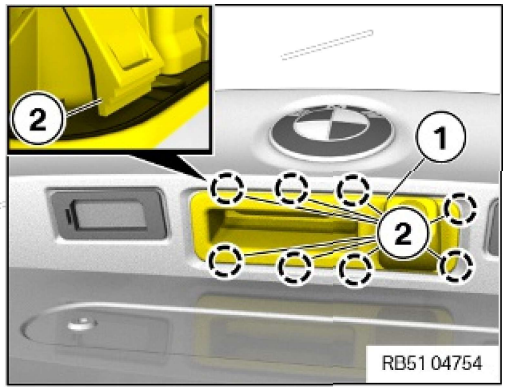
◁

8 – Install the tailgate button



- Renew the tailgate button (2).

  Parts: Tailgate button
- Check the tailgate in the area of the tailgate button (2) for damage and repair where required.
- Connect the connector (1) with the tailgate button (2).



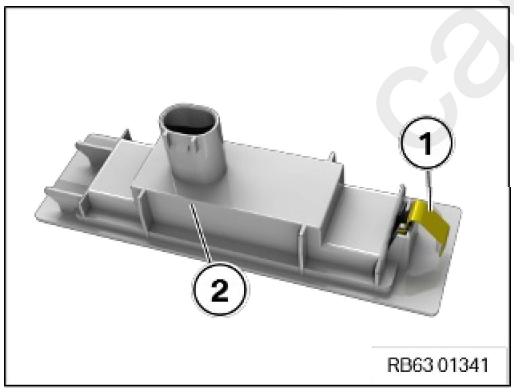
- Insert the tailgate button (1) in the tailgate and clip it into the latch mechanisms (2).

9 – Install both number plate lights

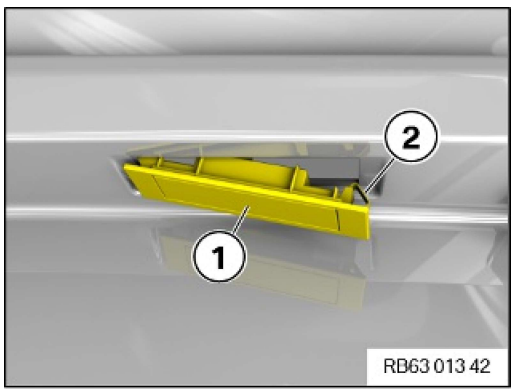
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ Installing number plate light



- Check the clamp (1) on the number plate light (2) for damage.



- Connect connectors and lock.
- Position the number plate light (1) and clip it in with the clamp (2).

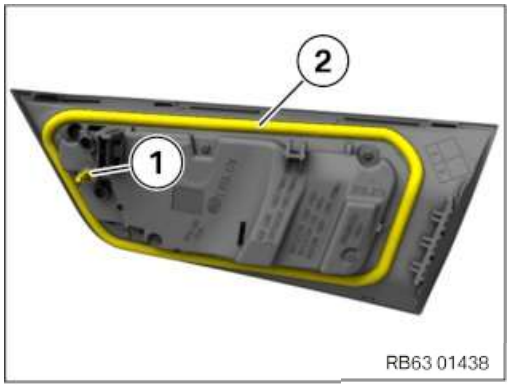
10 – Install both rear lights on the tailgate

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NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ Install the rear light on the tailgate



Check

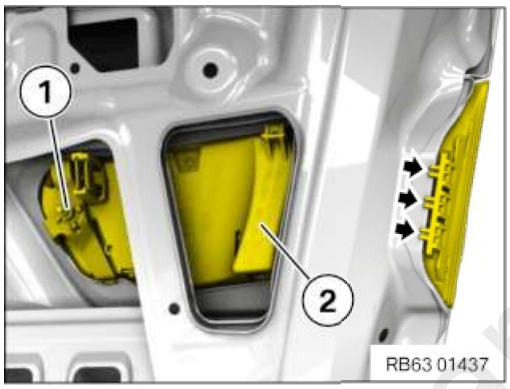
- Check the threaded bolt (1) and the seal (2) on the rear light on the tailgate for damage.

Result

» Threaded bolt or seal is damaged.

Measure

- Renew the rear light on the tailgate.



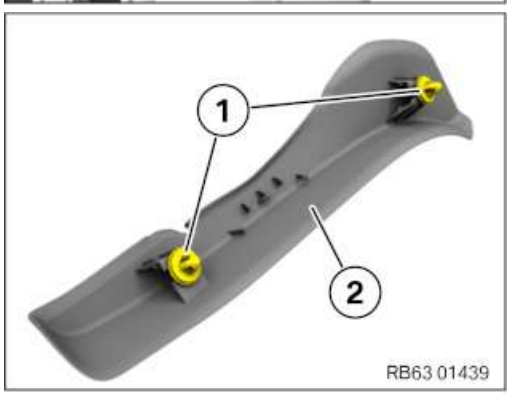
- Position rear light on the tailgate (2) at the guides (arrows).
- Position clamping claw and tighten the nut (1).

Rear light at tailgate

Nut M5	Tightening torque	3 Nm

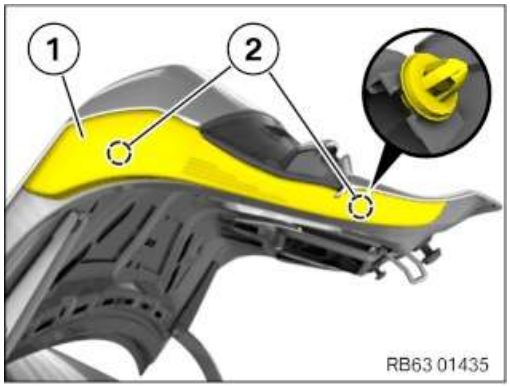


- Connect connectors (1) and lock.



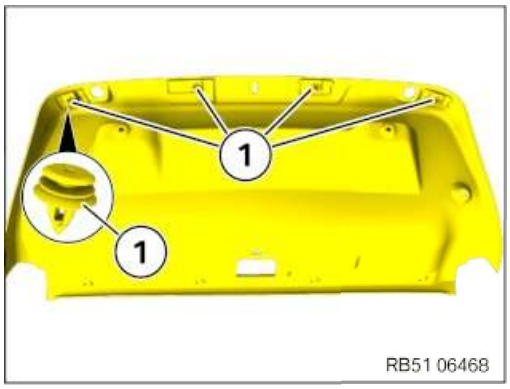
- Check clips of the (1) cover (2) for damage, renew if necessary.

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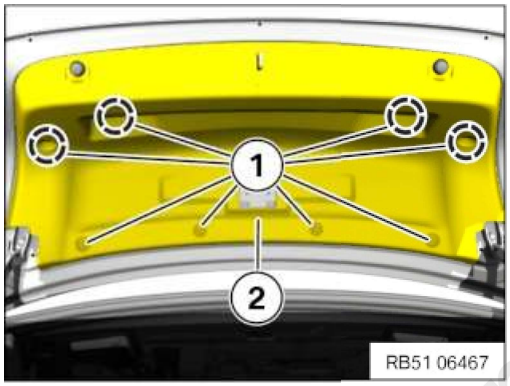


- Position the cover (1) and clip it in with the clips .

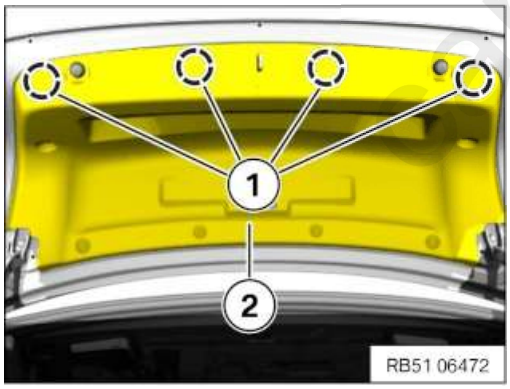
11 – Installing the tailgate trim panel



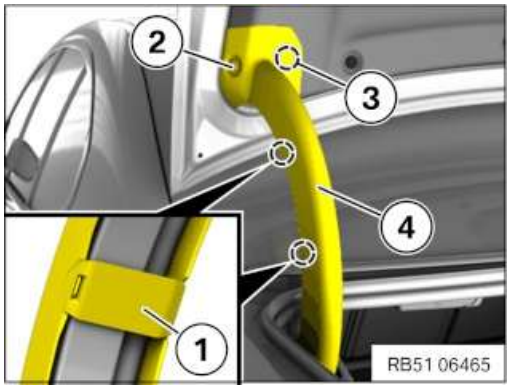
- Check the clips (1) for damage and renew if necessary.



- Fit the tailgate trim panel (2) and fasten in place with the expanding rivets (1).
- **If installed**: Connect and lock plug connection on the switch for the tailgate lift.



- Clip in the tailgate trim panel (2) with the clips (1).

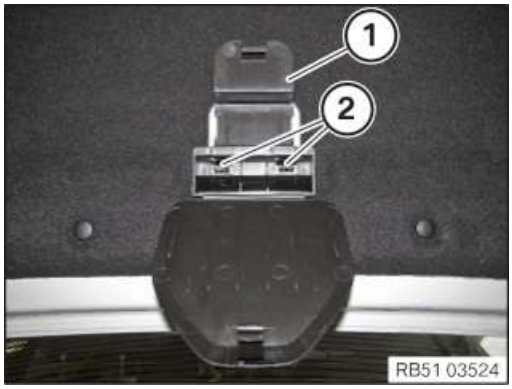


NOTICE

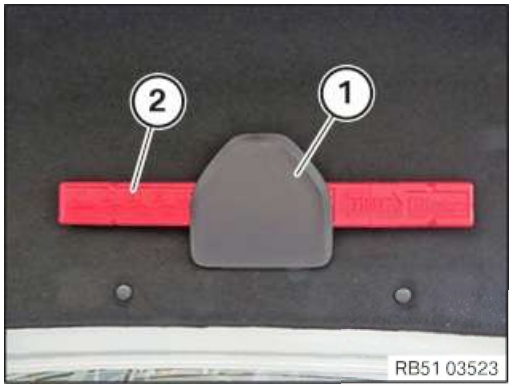
Description is for left component only. Procedure on the right side is identical.

- Clip in the trim panel for the hinge of the tailgate (4) to the clip fastening (3).
- Fasten expanding rivet (2).
- Clip in tabs (1).

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- Position the warning triangle holder (1) and snap into the latch mechanisms (2).



- Install the warning triangle (2).
- Clip in the cover (1).

12 – Fitting rear model designation

CAUTION

Laser beam.

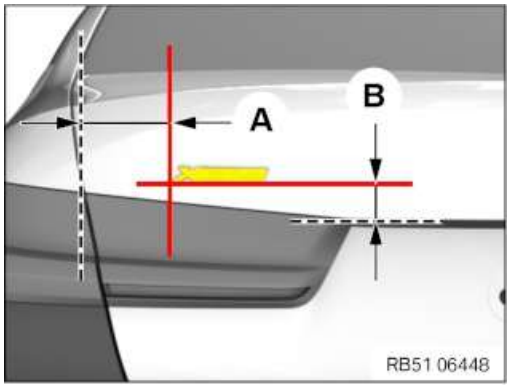
Danger of injury!

- Do not look into the laser beam.



- Park the vehicle and the special tool 2 407 566 on a flat and even surface.
- Mount the laser on the tripod.
- Switch on laser (Position without automatic level).
- Activate laser horizontally and vertically.

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- Position and centre align the special tool behind the vehicle.
- Align the vertical laser beam (A) as per specified dimensions.

Model designation left on tailgate

Dimension **A** from corner of tailgate	90 mm

- Align the horizontal laser beam (B) as per specified dimensions.

Model designation left on tailgate

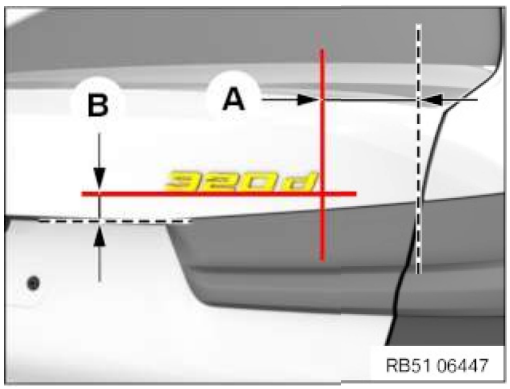
Dimension **B** from horizontal lower edge of tailgate	34 mm

- Clean the adhesive area with cleaning agent R2.

Expendable materials

Cleaning agent R2	500 ml	83190417324

- Adhere to the air drying time of 2 minutes.
- Pull off the liner from the adhesive strip of the left model designation.
- Align the left model designation with the laser beams as shown, position it on the tailgate and press on it.



- Position the special tool behind the vehicle.
- Align the vertical laser beam (A) as per specified dimensions.

Model designation right on tailgate

Dimension **A** from corner of tailgate	98 mm

- Align the horizontal laser beam (B) as per specified dimensions.

Model designation right on tailgate

Dimension **B** from horizontal lower edge of tailgate	34 mm

- Pull off the liner from the adhesive strip of the right model designation.
- Clean the adhesive area with cleaning agent R2.

Expendable materials

Cleaning agent R2	500 ml	83190417324

- Adhere to the air drying time of 2 minutes.
- Align the right model designation with the laser beams as shown, position it on the tailgate and press on it.

13 – Attaching the rear BMW badge

Check

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- Check the guide pins (1) and the grommets (2) for damage.

Result

» The guide pins (1) are damaged.

Measure

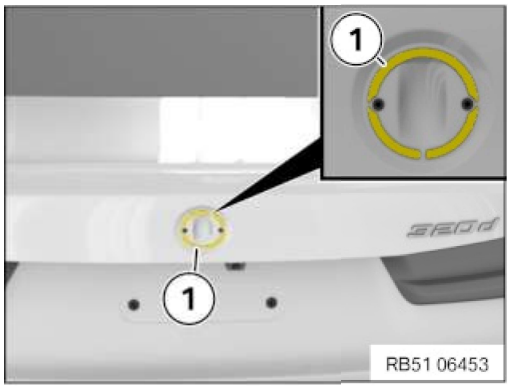
- Renew the BMW badge.

Result

» The grommets (2) are damaged.

Measure

- Renew the grommets (2).



- Remove adhesive residue from the tailgate.
- Clean adhesive area (1) with cleaning agent R2.

Expendable materials

Cleaning agent R2	500 ml	83190417324

- Observe the air drying time of 2 minutes.



- Coat guide pins (2) of the BMW badge (1) with lubricant.

Assembly aids

Lubricants G14	900 ml, Can	83232360412

- Pull off the liner from the bonding surfaces of the BMW badge (1).
- Position the BMW badge (1) with guide pins (2) in the grommets and press on it all the way around.

Additional Information

Overview of Tightening Torques

Tailgate hinge to tailgate — Used in step 7

Hexagon screw M8 x 18		Tightening torque	19 Nm

Tailgate lock to body — Used in step 7

Hexagon screw M8x20		Tightening torque	19 Nm

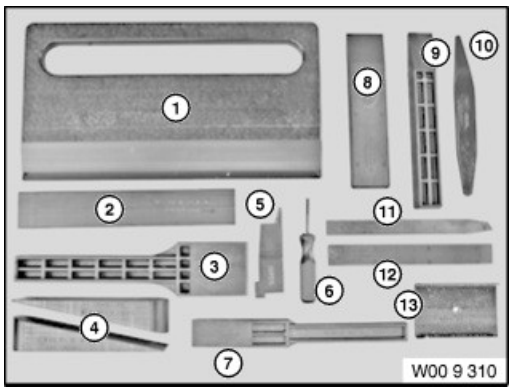
Rear light at tailgate — Used in step 10

Nut M5		Tightening torque	3 Nm

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Overview of Special Tools

0 490 534 (00 9 317) Wedge



Common	Used in step 1
Usage	(Trim wedge) Replaced by special tool 00 9 325 from 11/2008 (quality improvement due to new material) Replaced by 00 9 325 (0 496 569)
Included in the tool or work	0 490 527
Storage location	
Replaced by	
In connection with	
SI-Number	

0 496 569 (00 9 325) Wedge



Common	Used in step 34
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

2 407 566 Laser



Common	Used in step 12
Usage	For aligning a number plate or a support for a number plate on the vehicle (front bumper). Delivery specification 1 x Kreuz-laser and 1 x tripod.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	01 05 15 (235)

Overview Technical Data

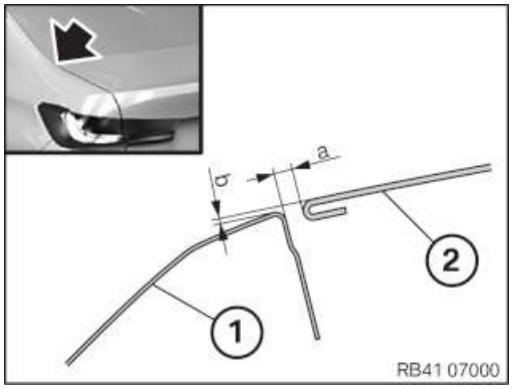
Gap dimension rear side panel to tailgate

Used in step 7

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1 rear side panel; 2 tailgate

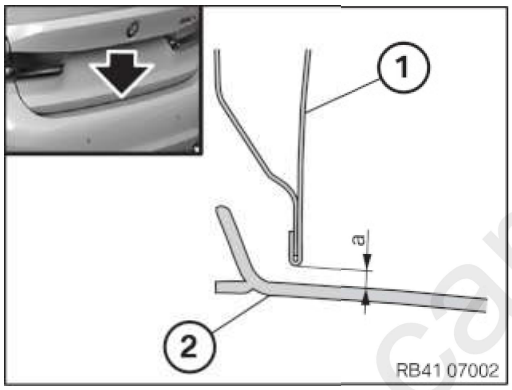
a	3,5 (2,5 - 4,5) mm
b	3,2 (1,8 - 4,6) mm



Gap dimension tailgate to rear bumper panel Used in step 7

1 tailgate; 2 rear bumper panel

a	5,1 (3,3 - 6,9) mm



Model designation left on tailgate Used in step 12

Dimension **A** from corner of tailgate	90 mm

Model designation left on tailgate Used in step 12

Dimension **B** from horizontal lower edge of tailgate	34 mm

Model designation right on tailgate Used in step 12

Dimension **A** from corner of tailgate	98 mm

Model designation right on tailgate Used in step 12

Dimension **B** from horizontal lower edge of tailgate	34 mm

Links

Repair instructions	Used in step
61 13 ... Unlocking and disconnecting different plug connections	2

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41 ... 0 Notes on the repair technique used in the main group 41

Two different repair techniques are used in body repair.

These are welding and bonding/riveting.

If the repair instructions do not specify a repair technique, then welding must **always** be used.

The bonding/riveting repair technique is **always** described in detail in the repair instructions.

Quality standards must be met.

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64 00 ... Information on using cleaning agent/paints (personal protection equipment)



Warning!

Use of cleaning agents/paints not compliant with instructions can cause serious injuries or burns!

Handling cleaning agents/paints can trigger allergic skin and respiratory reactions!



Important!

Observe following instructions:

- Store cleaning agents/paints only in a secure cabinet.
- Keep cleaning agents/paints away from naked flames and other sources of ignition.
- Protect cleaning agents/paints from high temperatures and direct sunlight.
- Always keep an eye douche on hand, change the water regularly (once a month).



Important!

Observe following instructions before use:

- Manufacturer's instructions (on container/packaging)
- Hazard warnings (on container/packaging)
- Manufacturer's instructions on package insert
- Material safety data sheet of manufacturer
- Product information in EPC
- National market regulations



Important!

Observe following instructions during use:

- Do not eat, drink or smoke while working with these products.
- Avoid direct contact with skin and eyes.
- Wear personal protective clothing/equipment.
- Ensure that all enclosed areas are well ventilated or extract fumes directly.
- Immediately change working clothes soiled with cleaning agent/paint.
- After finishing work, wash your hands and apply protective skin cream.



Important!

Follow hazard warnings and wear personal protection equipment!

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First Aid:

- If product comes in contact with eyes, immediately flush with running water for about 10 - 15 minutes. Seek the advice of eye specialist.
- In the event of skin contact and where applicable an allergic skin reaction, clean the affected areas immediately with soap and water and then apply silicone-free skin cream. Seek advice of physician.
- If an adhesive product is swallowed, rinse mouth/parts of mouth thoroughly with running water. Drink 1-2 glasses of water. Do not induce vomiting. Consult a doctor.
- After inhaling vapours ensure ample supply of fresh air. Keep calm, keep respiratory tracks clear and call doctor.



Recycling:

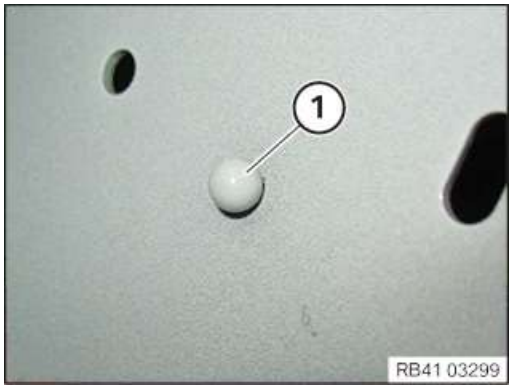
Dispose of cleaning agents/paints in a professional manner!

Observe national/country-specific disposal regulations.

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41 00 513 Fix bolts on the new part

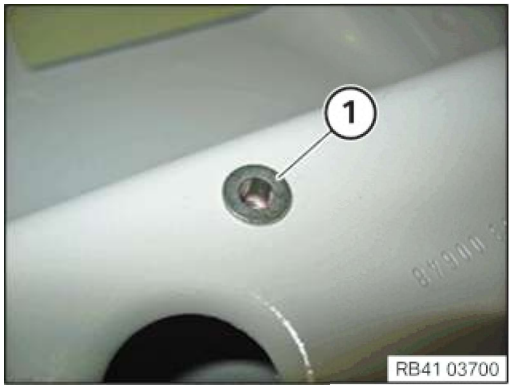
Note: On BMW and MINI bodies, various welded and pushed in bolts are being used.



Single ball/double ball (version 1):

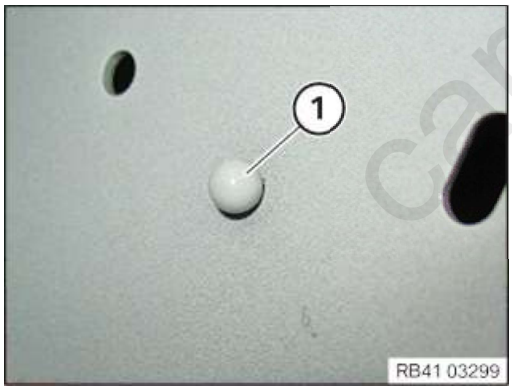
Grind off any residues of the single ball (1), if applicable.

Drill hole with diameter 7 mm.



Set blind rivet nut (1).

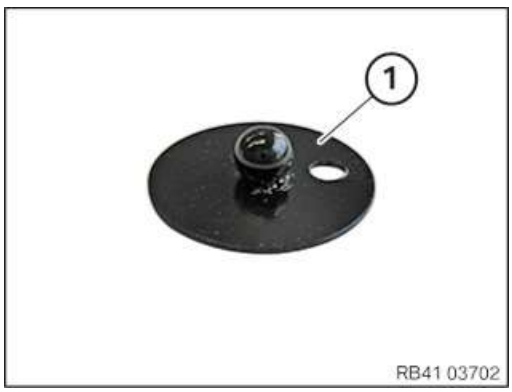
Screw in single ball with thread until a height of 5 mm (double ball 10 mm) is reached.



Single ball/double ball (version 2):

Grind off any residues of the single ball (1), if applicable.

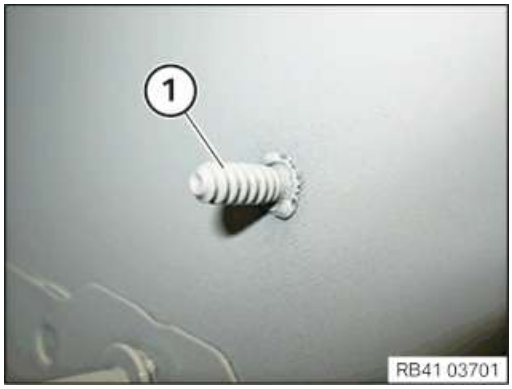
Clean area with solvent cleaner R1.



Clean bonding surface of repair element single ball (1) with solvent cleaner R1.

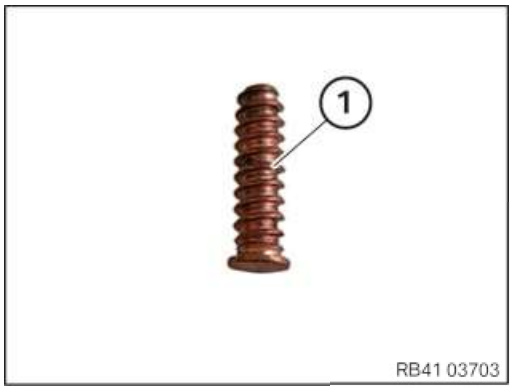
Bond repair element optionally with adhesive K1, K5 or window pane adhesive at the same position.

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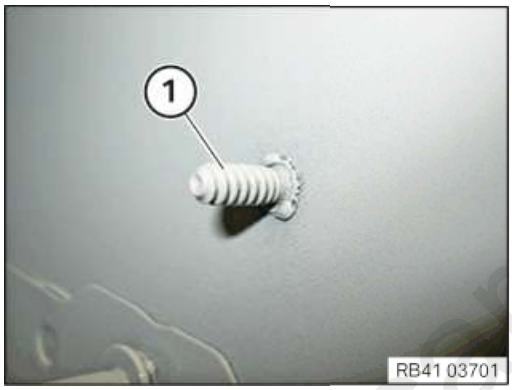


Coarse threaded bolt (version 1):

Grind off any residues of the coarse threaded bolt (1), if applicable.



Spot weld coarse threaded bolt to same position.



Coarse threaded bolt (version 2):

Grind off any residues of the coarse threaded bolt (1), if applicable.

Drill hole with diameter 7 mm.

Set blind rivet coarse threaded bolt using riveting pliers.

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51 00 ... Notes on component bonding with adhesive tape

Unless specified otherwise in vehicle-specific or component-specific instructions, the following notes apply.

Follow repair notes for bonded gaskets for rubber seals.

1. General notes

- Bonding at room and object temperature of >+18 °C.
- Newly painted parts may only be bonded after a drying time of at least 24 hours.
- Optimal bonding/attachment to the background surface is achieved after approx. 48 hours. Components must not be exposed to mechanical strain beforehand (car wash, strength test, etc.).
- Do not touch bonding area.
- It is not the length of time that pressure is applied but rather the force of pressure applied that is crucial.
- Detaching the adhesive tape after pressing destroys the adhesive layer.

2. Auxiliary materials and tools

- Cleaning agent R1 or cleaning agent R2
- Sika Activator 205
- Fluff-free cleaning cloths
- Pressure roller

3. Preparations

- Remove all adhesive residue or clean new part thoroughly
- Clean the areas to be bonded immediately before bonding to remove silicone and grease residues.
- Treat adhesive strips on glass or painted surfaces with Sika activator 205.

Note:

Sika activator 205 **apply extremely thinly. It must not be coated beyond the bonding surface**.

Note: air drying time: ≥ 1 minute

4. Bonding

4.1 Components without preassembled adhesive tape

- Pull off liner* from adhesive tape
- Position adhesive tape on component and stick on
- Press down adhesive tape over entire adhesive area
- Continue with Point 4.2

* Liner is the protective film on the adhesive tape.

4.2 Components with pre-fitted adhesive tape

- Pull off liner* from adhesive side (if adhesive area is large, do not pull off liner completely)
- Align component in correct position on vehicle
- Press down component over entire adhesive area
  Minimum contact pressure ≥ 15 N/cm² (firm thumb pressure reaches approx. 35 N/cm².)

* Liner is the protective film on the adhesive tape.

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61 35 ... Overview of additional work for the removal and installation or replacement of electronic components in the body area/windscreen

Component	**Removal and installation** Calibration/Initialisation required **(diagnosis system must be connected)**	**Removal and installation** Use of the Special tool necessary	**Replacement** Programming/encoding Calibration/Initialisation required **(diagnosis system must be connected)**	**Replacement** Use of the Special tool necessary	Remarks
Front section: (including bumper panel)					
ACC sensor	Yes	Yes	Yes	Yes	
Night vision camera	No	No	Yes	Yes*	*conventional workshop headlight adjusting device
PDC ultrasonic sensor	No	No	No	No	
PMA ultrasonic sensor	No	No	No	No	
Sensor, lane change warning	no*	No	Yes	No	*Required after a body repair in the surrounding area of the sensor. **Comply with the regulations for repainting!**
Sensor for active pedestrian protection	No	No	No	No	Must be replaced after the active pedestrian protection has been activated! **Impact absorber** must also be replaced!
Actuator for active pedestrian protection	No	No	No	No	Must be replaced after the active pedestrian protection has been activated!
Front camera	No	No	Yes	No	
Side section:					

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Top view camera (in the exterior mirror)	No	No	Yes	No	
Rear area: (including bumper panel):					
reversing camera (with Surround View)	No	No	Yes	No	
reversing camera (without Surround View)	No	No	Yes	No	
PDC ultrasonic sensor	No	No	No	No	
PMA ultrasonic sensor	No	No	No	No	
Sensor, lane change warning	no*	No	Yes	No	*Required after a body repair in the surrounding area of the sensor. **Comply with the regulations for repainting!**
Windscreen:					
Camera-based driver support systems camera	no*	No	Yes	No	*Necessary after **replacement of the windscreen**
Rain sensor (separate document)					

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51 00 ... Overview of consumables (Electronic Parts Catalogue)

Designation, repair instructions	Designation, Electronic Parts Catalogue	Part number, Electronic Parts Catalogue	Remarks
Cleaning agent R2	Cleaning agent R2	83 19 0 417 324	500 ml
Lubricants G14	Lubricants G14	83 23 2 360 412	900 ml / Notes
Sika Activator 205	Aktivator 205	83 19 0 030 155	250 ml
Yellow plastic adhesive tape	Adhesive tape	83 19 9 410 979	A = 66 mm; B = 50 mm
Double-sided adhesive tape	Adhesive tape	54 11 2 290 978	L = 50 mm/W = 12 mm
Masking tape	Masking tape	81 22 9 400 181	L = 50 mm / W = 19 mm
Masking tape	Masking tape	81 22 9 400 388	L = 50 mm / W = 30 mm
Eraser disk	Scotch Brite eraser disk	51 91 0 402 946	with shaft
Cutting cord	Cutting cord	81 43 2 344 272	Notes
Adhesive set K6	Adhesive set K6	83 19 2 317 925	
Window glass adhesive	Window glass adhesive, cold, 1 hour	83 19 2 289 286	
Profile rubber adhesive		83 19 2 232 322	
Set of felt pads	Set of felt pads	51 45 2 353 024	

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41 00 ... Replacing blind rivets

Special tools required:

- 2 348 128
- 72 1 210

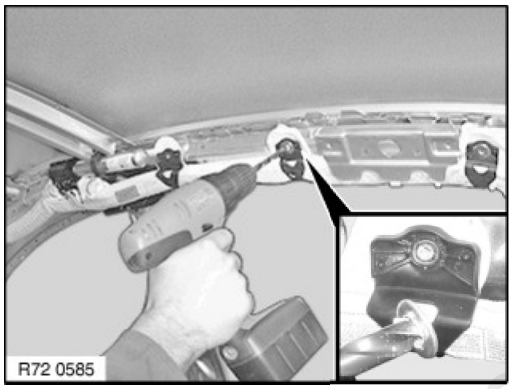


Important!

Lay out protective mats to protect the interior equipment against swarf from the drilled-out rivets and damage.

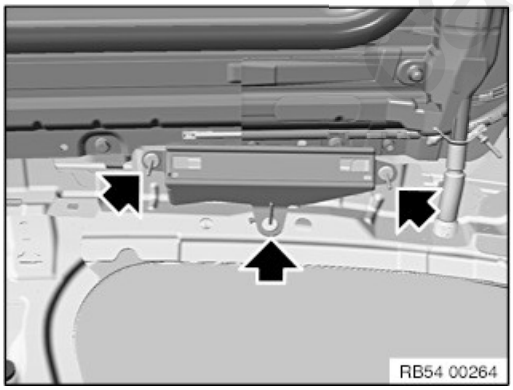
Lay out protective mats in the relevant working area:

- Instrument panel
- Entrance area
- Passenger compartment



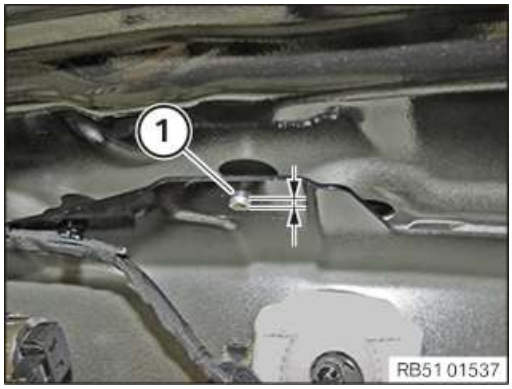
Schematic diagram of folding pack holder for head airbag:

Drill off rivet plate down to rivet shank with a 10 mm twist drill bit.



Described for grab handle holder:

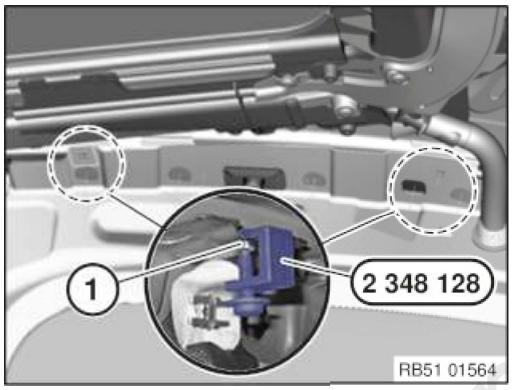
Drill off rivet plate down to rivet shank with a 10 mm twist drill bit.



Drill out all blind rivet protusions (1) up to the body.

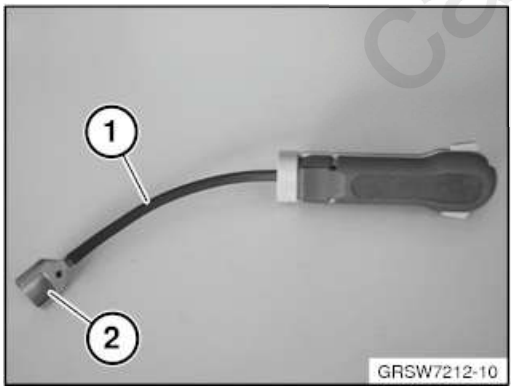
Installation note:
Apply primer to paintwork damages on side frame.
Note:
Depending on accessibility, the rivet heads will have to be removed using special tool 2 348 128 or 72 1 210 .

In areas that cannot be reached using special tools, cavity foam HS3must first be applied around the rivet head before the rivet head is then punched out immediately..



Removal of rivet head with special tool 2 348 128:

Press off rivet heads (1) using special tool 2 348 128 and remove.



Removal of rivet head with special tool 72 1 210:

Shank (1) of special tool 72 1 210 is flexible and can be adapted to the relevant body contours.

Note:
Insert butyl in the collecting tray (2) to secure rivet heads and prevent them from falling out.

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Insert special tool 72 1 210 through bore hole in body next to attachment points.

Position special tool from rear on rivet head in cavity.

Note:
A second person will be needed to help hold the special tool on the rivet head during the driving-out operation.

Make sure collecting tray is correctly fitted on rivet head.

Drive out stem with hammer and 6 mm punch.

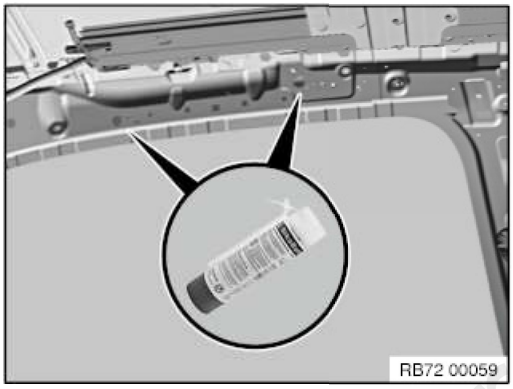
Carefully feed special tool out of body so that rivet head does not fall out of collecting tray.

Note:
If the rivet falls out of the collecting tray into the side frame when the special tool is fed out, this area must be generously filled with foam.

For details of procedure for filling cavities with foam, see further operations.

Use cavity preservation (refer to BMW Group Parts) for foam filling.

Cavity foam (refer to BMW Group Parts) may also be used if required.



Fit tube to foam can.

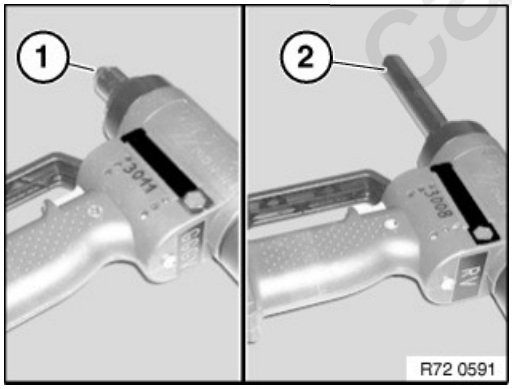
Push the hose in through the pillar holes.

Fill cavity with a filling material.

Warning!

Empty foam can completely onto cardboard and after hardening dispose of foam and can in residual waste.

Can may burst if not completely emptied.



<u>Overview of rivet gun:</u>

Riveting of gas generator housing and holders for folding pack with rivet gun (refer to BMW Workshop Catalogue).

The interchangeable head is changed for the different work operations.

Riveting of gas generator housing with:

1.) 17/36 nosepiece and short shank

Riveting of holders for folding pack:

2.) 17/40 nosepiece and long shank

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00 Safety information for working on vehicles with automatic engine start-stop function (MSA)

Warning!

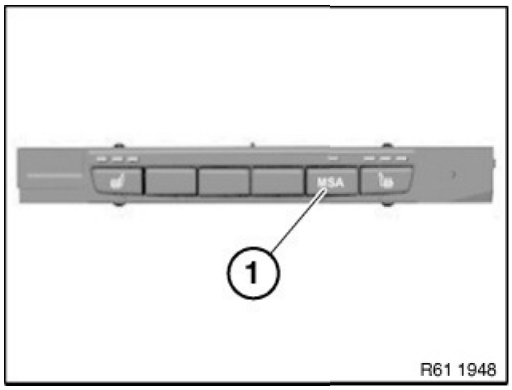
If the engine hood/bonnet contact is pulled upwards (workshop mode), the information "switch closed" is output. The automatic engine start-stop function is active.

An automatic engine start is possible.

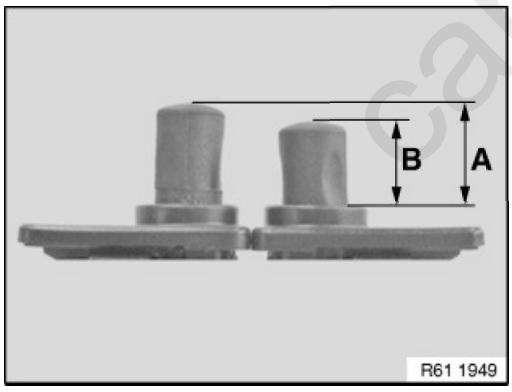
Observe safety precautions when working on MSA vehicles.

Before carrying out practical work on the engine, always ensure that the MSA functionality is deactivated so as to prevent automatic engine starting while work is being carried out in the engine compartment.

MSA function is deactivated by:



- Deactivate MSA by means of button (1) in passenger compartment
- Open seat belt buckle and driver's door



- Open engine bonnet/hood and ensure that engine hood/bonnet contact is not in workshop mode
  - Workshop mode

    A = 10 mm
  - Basic setting (engine hood/bonnet open)

    B = 7 mm

  To make sure that the engine hood/bonnet contact is at the basic setting, if necessary press the hood/bonnet contact up to the limit position before starting work and slowly release.

When working with diagnosis tools:

- Observe instructions in diagnosis tool

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Note:
For further information on automatic engine start-stop function (MSA):

- Refer to the Service Information (bulletin) (for manual transmissions) Service Information (bulletin) 61 01 07 335
- Refer to the Service Information (bulletin) (for automatic transmissions or twin-clutch gearboxes) Service Information (bulletin) 61 01 10 629

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51 00 ... Safety instructions for working on cars with airbag systems



Warning!

If work is carried out in area of airbag systems, e.g. on:

- Door trim panels
- Interior trims
- Instrument panel etc.

the ignition must be turned off in each case.

- The ignition must always be off.
- The ignition key must be removed from the ignition lock.

This eliminates the risk of injury.

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51 11 993 Additional work: mounting the number plate baseplate/number plate

1 – Install the number plate baseplate for the number plate

WARNING

Malfunction of the sensors of the driver assistance systems.

Incorrect assembly of the number plate leads to a malfunction of the sensors of the driver assistance systems.

- Fix number plate and number plate baseplate only according to the dimensions specified in the repair instructions.
- Secure number plate and number plate baseplate on the bumper panel **without pre-drilling** , otherwise there is a risk of damage to the underlying cables.
- Only use number plate baseplates that have been approved for the vehicle type.

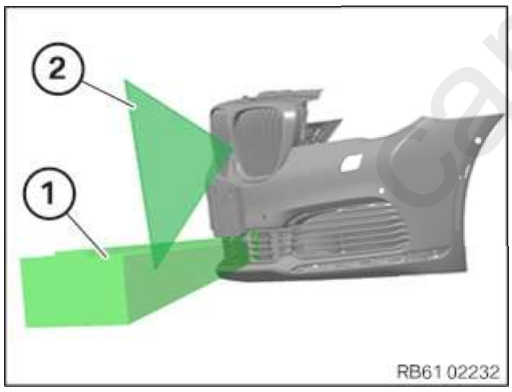
TECHNICAL INFORMATION

The number plate must be precisely mounted on the number plate baseplate and must not protrude on the underside.

The number plate carrier must not be installed on the front bumper.

TECHNICAL INFORMATION

In the European version with basic bumper panel, the number plate is installed without number plate baseplate.



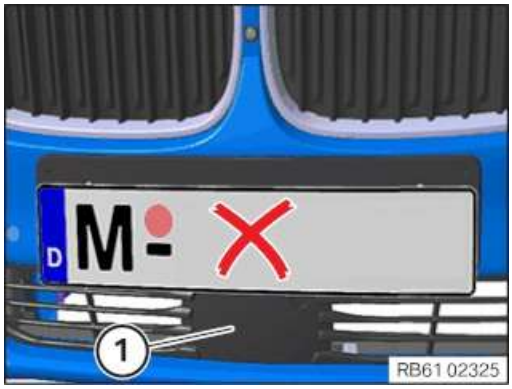
▸ **Positioning the number plate**

- Position the number plate or number plate baseplate correctly.
- Make sure that the angle of radiation of the ACC sensor (1) is not obstructed.
- Make sure that the angle of radiation of the front camera (2) is not obstructed.

▹ **Detect possible fault pattern due to incorrect assembly and rectify**

Check

- Check number plate for correct position.



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Result

» The number plate is positioned too low.

» The angle of radiation of the ACC sensor (1) is partially covered.

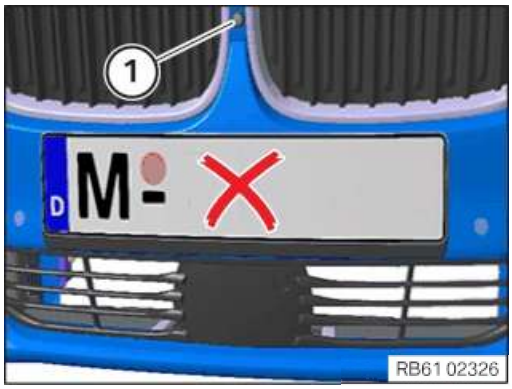
» Malfunction of the ACC sensor (1) is possible.

Measure

- Position the number plate correctly.

Check

- Check number plate for correct position.



Result

» The number plate is positioned too high.

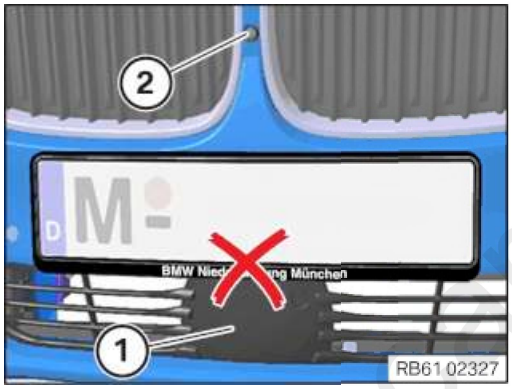
» The angle of radiation of the front camera (1) is partially covered.

Measure

- Position the number plate correctly.

Check

- Check installation of the number plate carrier.



Result

» The angle of radiation of the ACC sensor (1) is partially covered.

» Malfunction of the ACC sensor (1) is possible.

» The angle of radiation of the front camera (2) is partially covered.

Measure

- Remove the number plate carrier.



- With Check Control messages due to incorrect assembly of the number plate or the number plate baseplate: Position the number plate or the number plate baseplate correctly.

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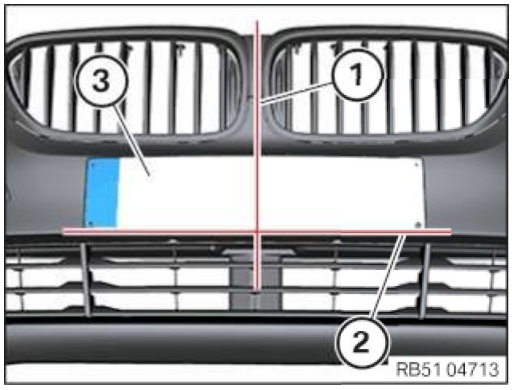
CAUTION

Laser beam.

Danger of injury!

- Do not look into the laser beam.

- Park the vehicle and the special tool 2 407 566 on a flat and even surface.
- Mount the laser on the tripod.
- Switch on laser (Position without automatic level).
- Activate laser horizontally and vertically.



TECHNICAL INFORMATION

In the European version with basic bumper panel, the number plate is installed without number plate baseplate.

- **With European version with bumper panel (Basic):**

  Mark the centre of the number plate (3).

  Position and centre align the special tool for the vehicle.

  Align the vertical laser beam (1) with the centre of the vehicle (e.g. BMW badge).

  Align the horizontal laser beam (2) at two symmetrical corners on the vehicle.

  Align the horizontal laser beam (2) with the edge of the bumper panel.

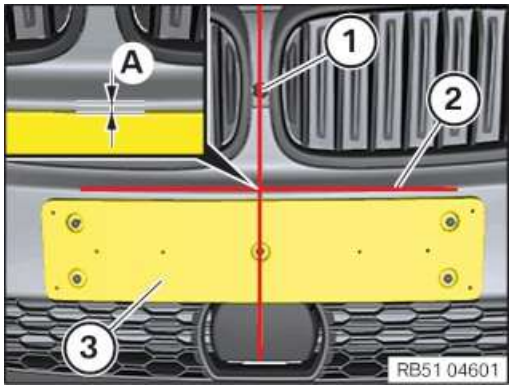
  Align the number plate (3) on both laser beams (1) and (2) and mark the attachment points in all four corners.

  Screw down the number plate (3) at the marked attachment points **without pre-drilling**. Use only short screws (TS 5x13) for this purpose.

Car registration number

Screw TS 5x13		Tightening torque	0,7 Nm

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- **With European version with M Aerodynamic package:**

  Position and centre align the special tool for the vehicle.

  Align the vertical laser beam (1) with the centre of the vehicle (e.g. BMW badge).

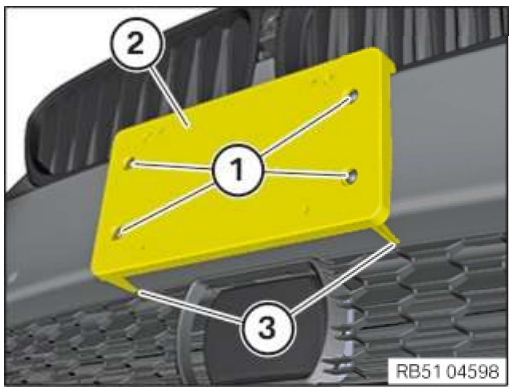
  Align the horizontal laser beam (2) at two symmetrical corners on the vehicle.

  Align the horizontal laser beam (2) as shown.

  Move the horizontal laser beam (2) vertically down by dimension (A).
- Align the number plate baseplate (3) on the horizontal laser beam and mark the attachment points.
- Screw down the number plate baseplate (3) at the marked attachment points **without pre-drilling**.

License plate baseplate

Screw TS 5x16		Tightening torque	0,7 Nm



- **With US version, Chinese version and Japanese version:**

  Attach the number plate baseplate (2) with the guides (3) in the bumper panel.

  Align the number plate baseplate (3) on the bumper panel.

  Screw down the screws (1) **without pre-drilling**.

License plate baseplate

Screw TS 5x16		Tightening torque	0,7 Nm

Additional Information

Overview of Tightening Torques

Car registration number — Used in step 1

Screw TS 5x13		Tightening torque	0,7 Nm

License plate baseplate — Used in step 1

Screw TS 5x16		Tightening torque	0,7 Nm

Overview of Special Tools

2 407 566 Laser



Common — Used in step 1

Usage	For aligning a number plate or a support for a number plate on the vehicle (front bumper). Delivery specification 1 x Kreuz-laser and 1 x tripod.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	01 05 15 (235)

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Overview Technical Data

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51 11 156 Remove and install front bumper panel

RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.

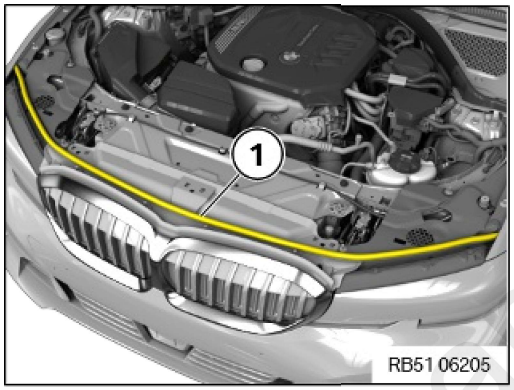
TECHNICAL INFORMATION

To guarantee the system function in vehicles with lane change warning sensor (optional equipment S5ASA, 05AS, S5ATA, 05AT, S5AUA and 05AU), repainting the bumper panel may not be repainted either in paint stage 1 or paint stage 3.

Do not attach labels in the sampling range of the sensor.

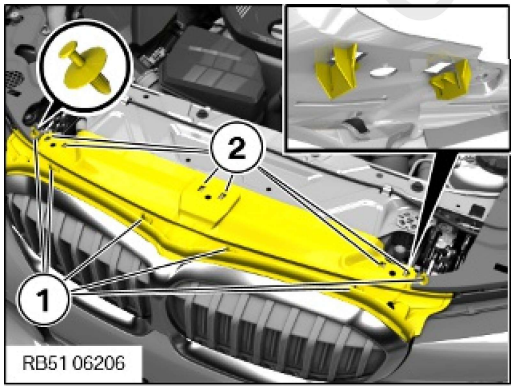
PRELIMINARY WORK

1 – Remove the seal for the bonnet in front



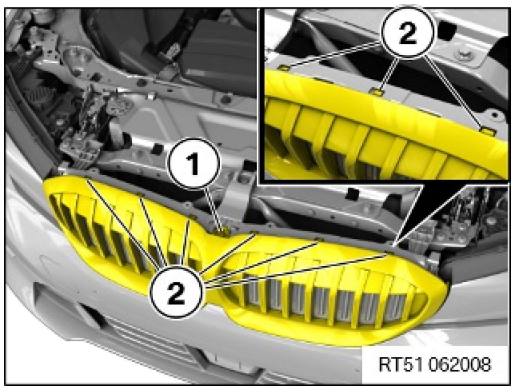
- Pull off front bonnet seal (1) upwards.

2 – Removing the centre engine compartment cover



- Detach all expanding rivets (1).
- Release the cover of the centre engine compartment with the latch mechanisms (2) .
- Feed the cover for the centre engine compartment out to the rear.

3 – Remove centre radiator ornamental grille



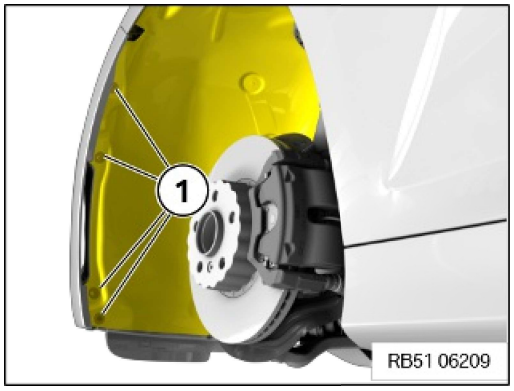
- Loosen screw (1).
- Release the centre front ornamental grille from the latch mechanisms (2).
- Release the centre front ornamental grille from the remaining latch mechanism towards the front and remove it.
- Unlock and disconnect plug connections according to the equipment.

4 – Partially remove both front wheel arch trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially removing front wheel arch trim panel**

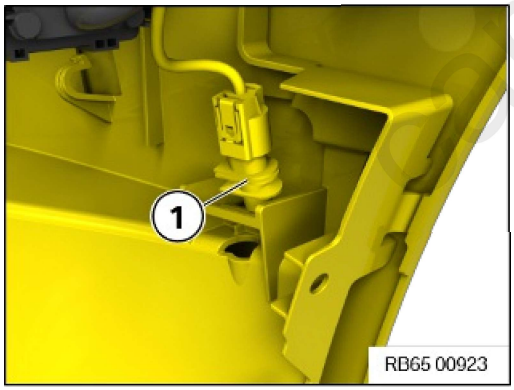


NOTICE

To provide a better overview: Schematic diagram without front wheel.

- Loosen screws (1).
- Fold the front wheel arch trim panel to one side.

5 – Partially removing the temperature sensor

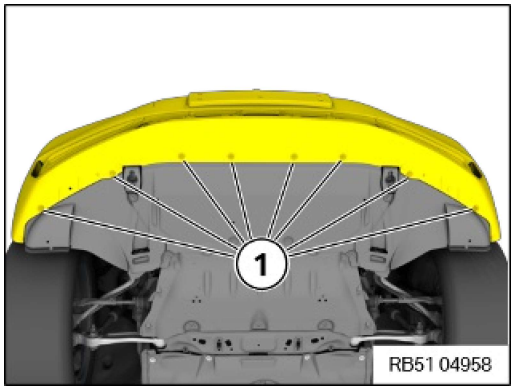


- Unclip temperature sensor (1) from the front bumper panel to the top.

MAIN WORK

6 – Remove front bumper panel

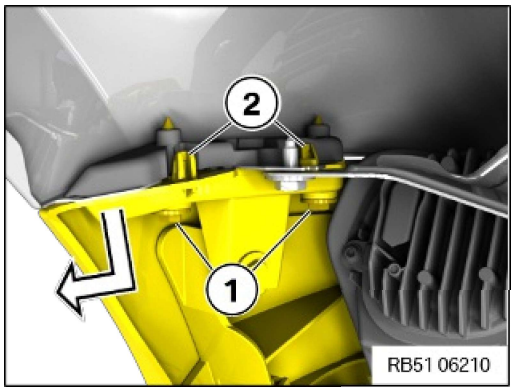
erdiagn.com



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

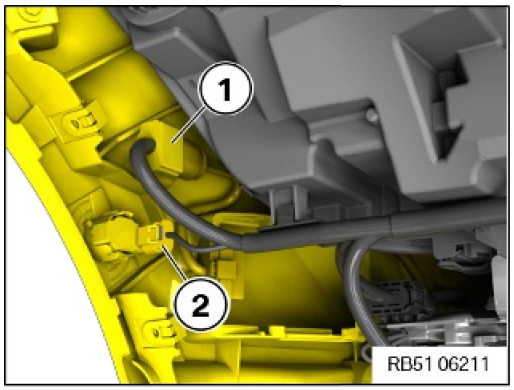
- Loosen screws (1).



NOTICE

Perform the operations on the left and right side.

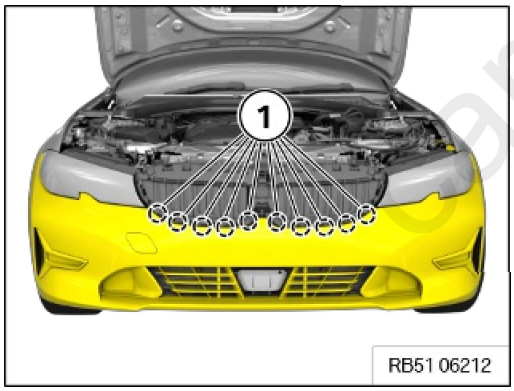
- Loosen screws (1).
- Release the front bumper panel along with the latch mechanisms (2) and feed out in the direction of arrow out of the guide.



NOTICE

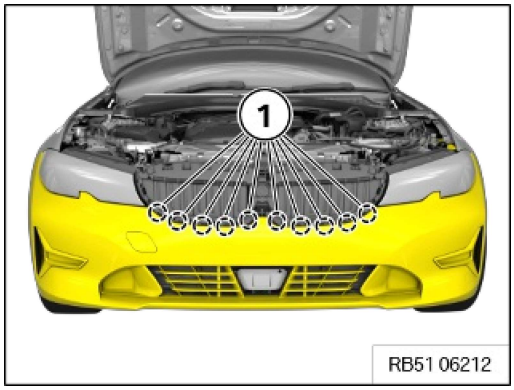
Perform the operations on the left and right side.

- Unlock plug connection (1) and disconnect.
- If necessary, unlock plug connection (2) and disconnect.



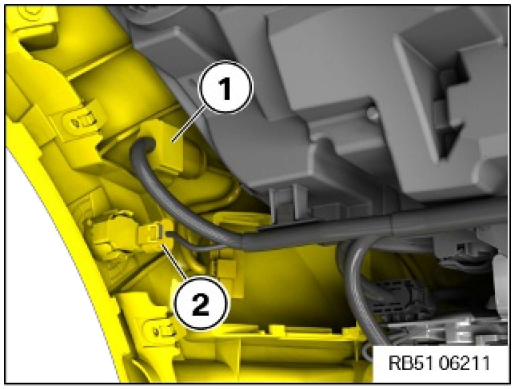
- Release the front bumper panel from the latch mechanisms (1) towards the front.
- Remove the front bumper panel.

7 – Install bumper panel, front



- Position the front bumper panel.
- Clip the front bumper panel into latch mechanisms (1).

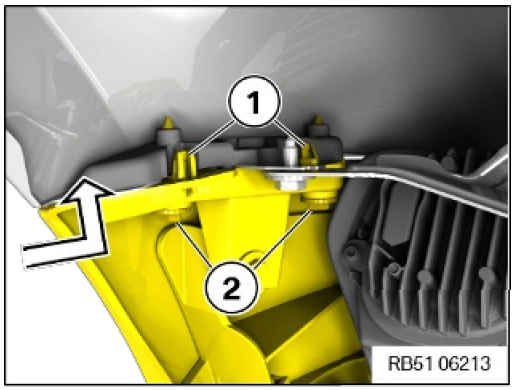
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NOTICE

Perform the operations on the left and right side.

- Connect connectors (1) and lock.
- If necessary, connect the connector (2) and lock it.



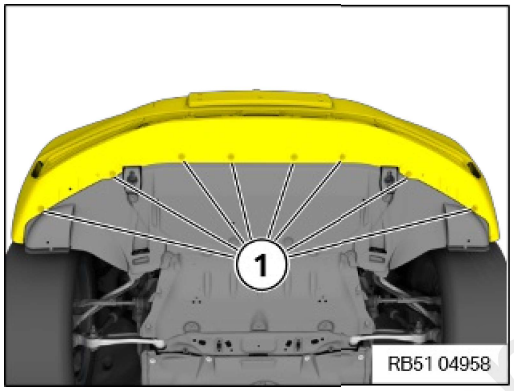
NOTICE

Perform the operations on the left and right side.

- Feed the bumper panel in arrow direction into the guide and clip in with the latch mechanism(1).
- Tighten down screws (2).

Front bumper panel to front side panel

Torx screw 5x35		Tightening torque	3 Nm



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

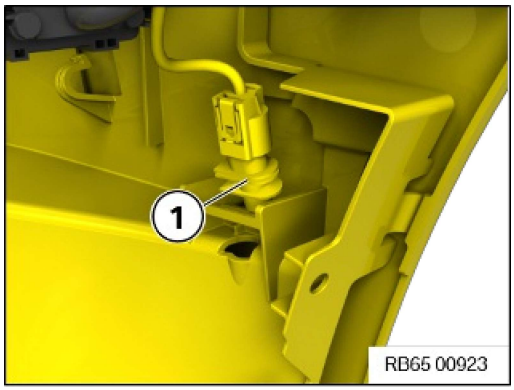
- Tighten the screws (1).

Front bumper panel to underbody protection

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

POSTPROCESSES

8 – Partially installing the temperature sensor



- Clip the temperature sensor (1) downwards into the front bumper panel.

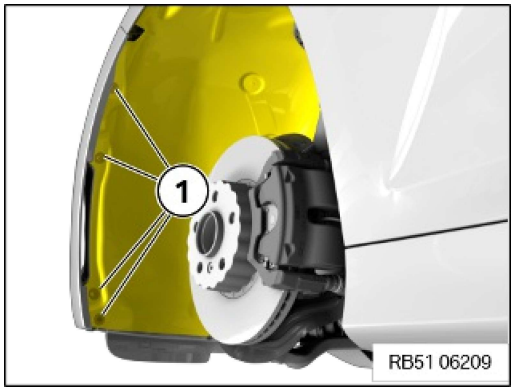
9 – Partially installing both front wheel arch trim panels

carlagn.com

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially installing front wheel arch trim panel**



NOTICE

To provide a better overview: Schematic diagram without front wheel.

- Fold back the front wheel arch trim panel.
- Tighten the screws (1).

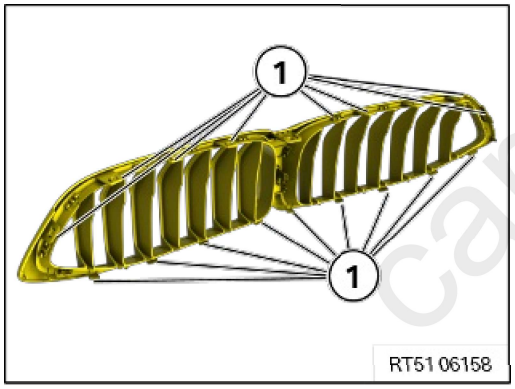
Wheel arch trim panel, front

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

10 – Install centre radiator grille

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



Check

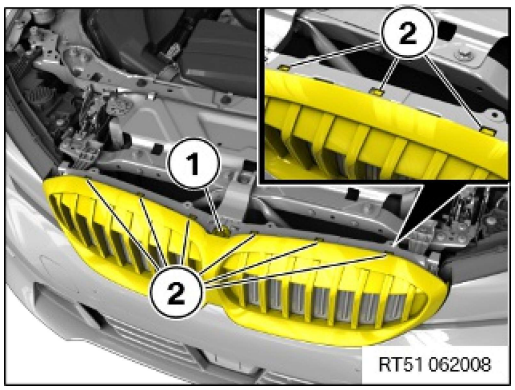
- Check latch mechanisms (1) for damage.

Result

» The latch mechanism (1) is damaged.

Measure

- Renew the front ornamental grille, centre.



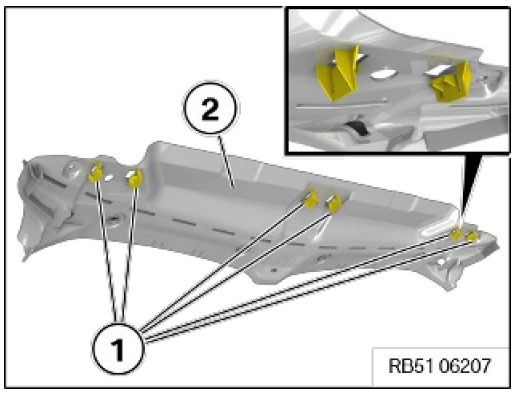
- Depending on the equipment, connect and lock connectors.
- Position the front ornamental grille, centre and clip in all latch mechanisms (2) from the front.
- Tighten down screw (1).

Centre of front ornamental grille to top air flap control

Oval-head screwM6		Tightening torque	4,6 Nm

11 – Installing cover for engine compartment centre

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Check

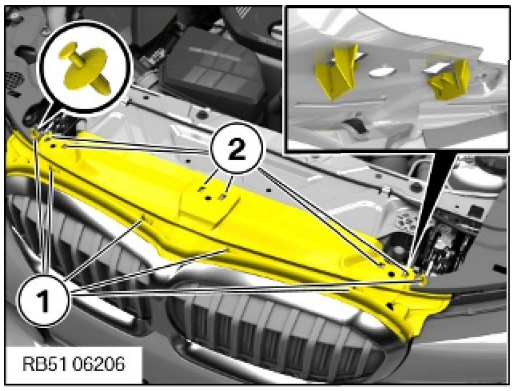
- Check latch mechanisms (1) of cover for engine compartment centre (2) for damage.

Result

» The latch mechanism (1) is damaged.

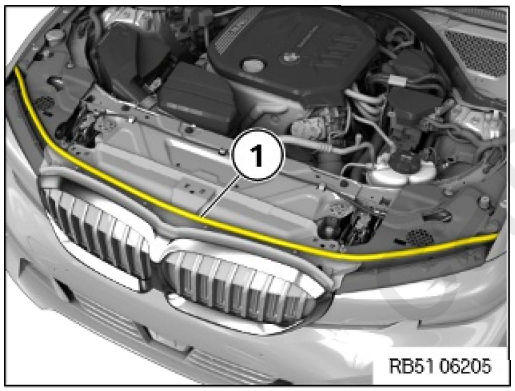
Measure

- Renew cover for engine compartment centre (2).



- Guide in the cover for the engine compartment centre from the rear and position it.
- Clip in the cover for the engine compartment centre with latch mechanisms (2).
- Mount all expanding rivets (1).

12 – Install the seal for the front bonnet



- Position the bonnet seal(1) and connect it on the mounting on the bumper and on the headlights.

Additional Information

Overview of Tightening Torques

Front bumper panel to front side panel — Used in step 7

Torx screw 5x35		Tightening torque	3 Nm

Front bumper panel to underbody protection — Used in step 7

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

Wheel arch trim panel, front — Used in step 9

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

Centre of front ornamental grille to top air flap control Used in step 10

Oval-head screwM6		Tightening torque	4,6 Nm

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51 11 050 Removing and installing/replacing support for front bumper panel

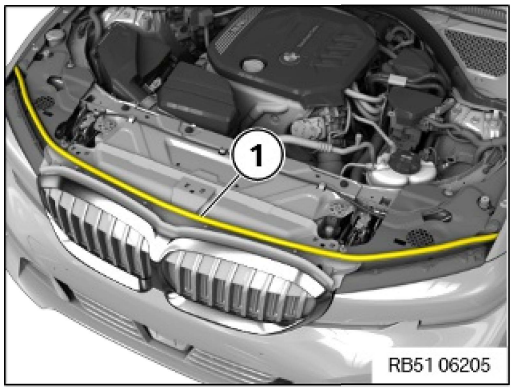
PRELIMINARY WORK

1 – Disconnecting all battery earth leads



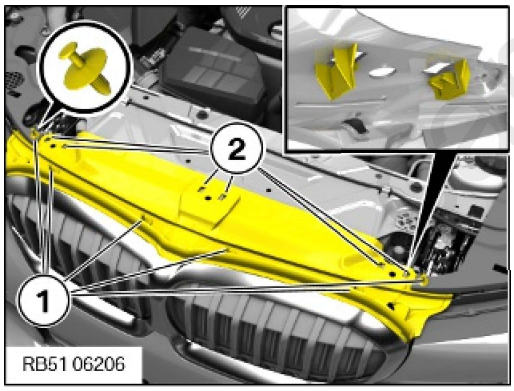
- See additional information.

2 – Remove the seal for the bonnet in front



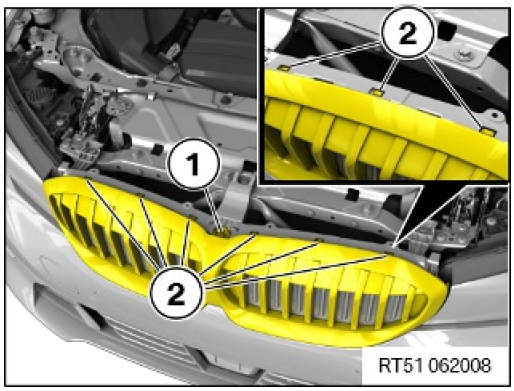
- Pull off front bonnet seal (1) upwards.

3 – Removing the centre engine compartment cover



- Detach all expanding rivets (1).
- Release the cover of the centre engine compartment with the latch mechanisms (2) .
- Feed the cover for the centre engine compartment out to the rear.

4 – Remove centre radiator ornamental grille



- Loosen screw (1).
- Release the centre front ornamental grille from the latch mechanisms (2).
- Release the centre front ornamental grille from the remaining latch mechanism towards the front and remove it.
- Unlock and disconnect plug connections according to the equipment.

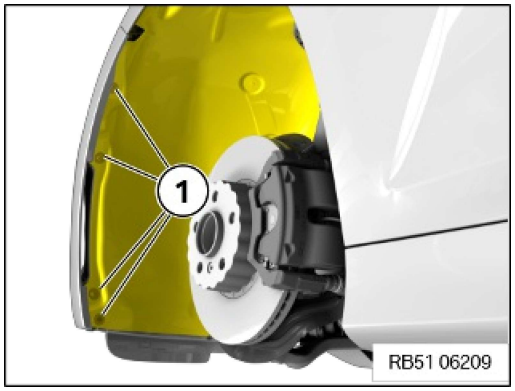
5 – Partially remove both front wheel arch trim panels

.com

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially removing front wheel arch trim panel**

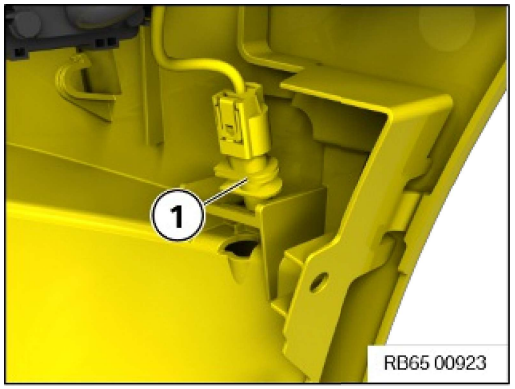


NOTICE

To provide a better overview: Schematic diagram without front wheel.

- Loosen screws (1).
- Fold the front wheel arch trim panel to one side.

6 – Partially removing the temperature sensor



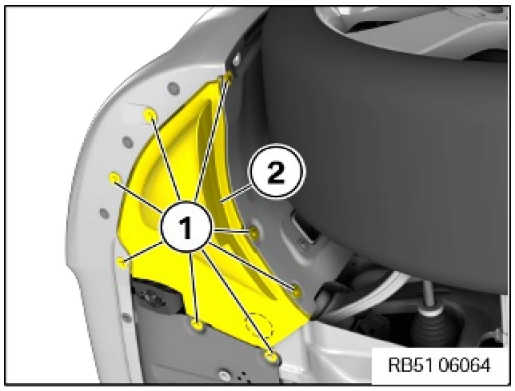
- Unclip temperature sensor (1) from the front bumper panel to the top.

7 – Removing both front bottom covers at side

NOTICE

Description is for left component only. Procedure on the right side is identical.

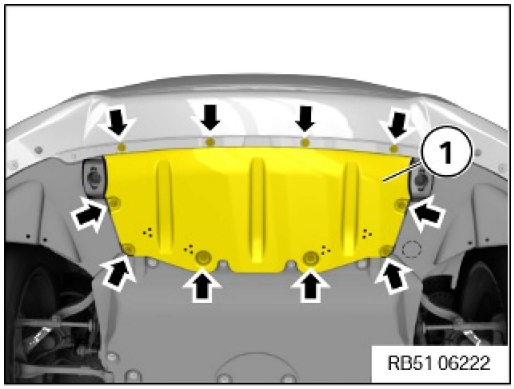
▸ **Removing the lower front cover at the side**



- Loosen screws (1).
- Removing the lower front cover at the side (2).

8 – Removing the front underbody protection

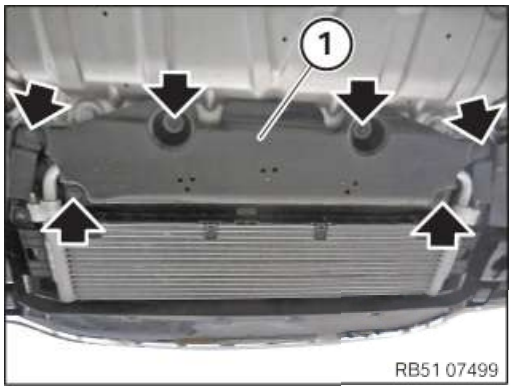
cardiagn.com



- **Version 1:**

  Remove screws (arrows).

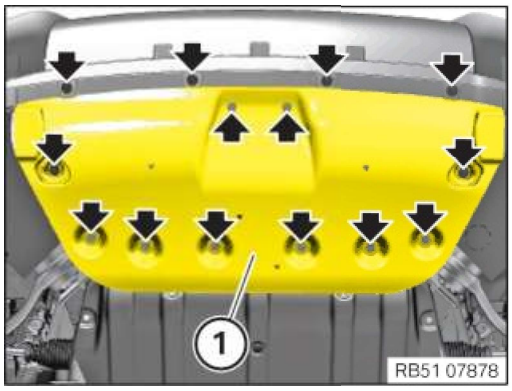
  Feed front underbody protection (1) backwards out of the bumper panel.



- **Version 2:**

  Remove screws (arrows).

  Guide out front underbody protection (1) and remove it.

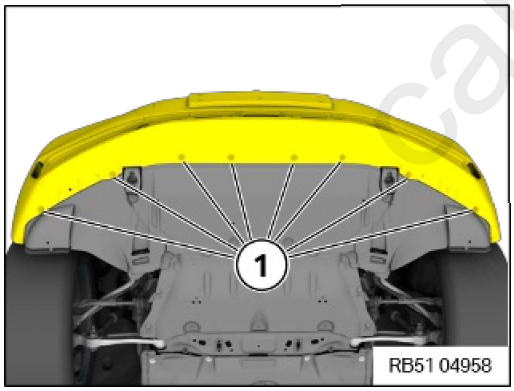


- **Version 3:**

  Remove screws (arrows).

  Guide out front underbody protection (1) and remove it.

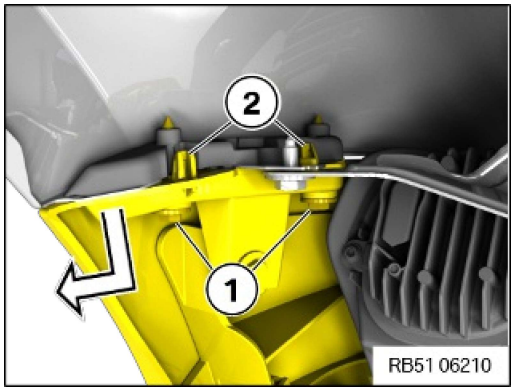
9 – Remove front bumper panel



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Loosen screws (1).

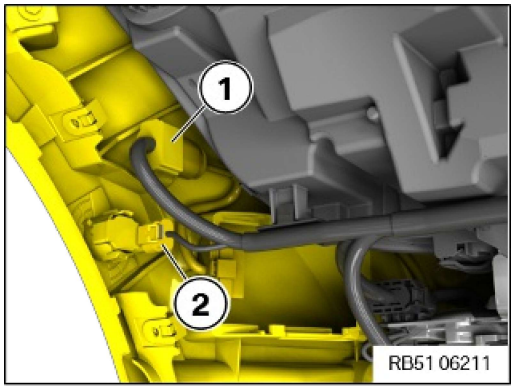


NOTICE

Perform the operations on the left and right side.

- Loosen screws (1).
- Release the front bumper panel along with the latch mechanisms (2) and feed out in the direction of arrow out of the guide.

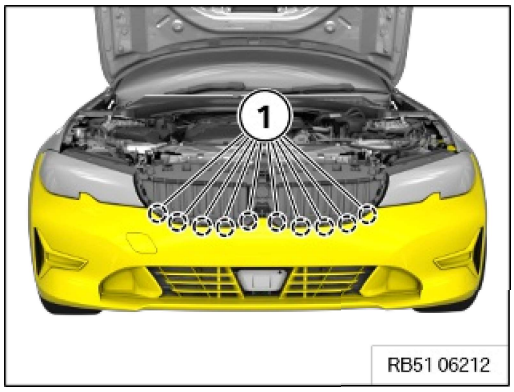
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NOTICE

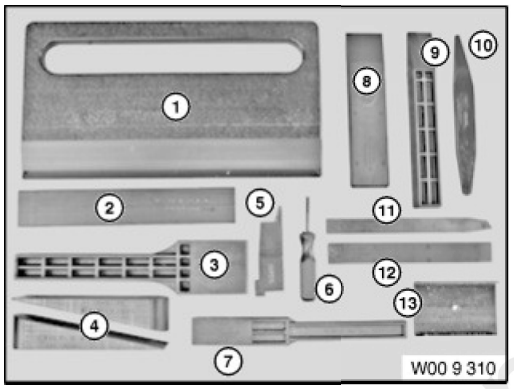
Perform the operations on the left and right side.

- Unlock plug connection (1) and disconnect.
- If necessary, unlock plug connection (2) and disconnect.

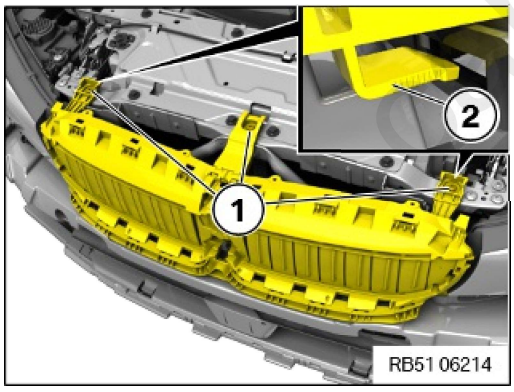


- Release the front bumper panel from the latch mechanisms (1) towards the front.
- Remove the front bumper panel.

10 – Remove top automatic air flap control



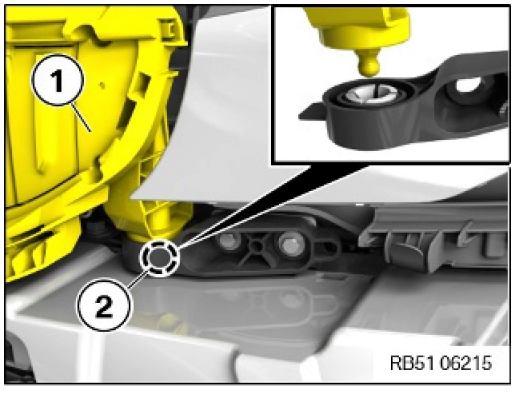
- Have the set of special tools 0 493 752 (00 9 329) ready.



- Loosen screws (1).
- Carefully release the top air flap control towards the front with the latch mechanisms(2).

NOTICE

The operations shown only for one side must be carried out on both sides.



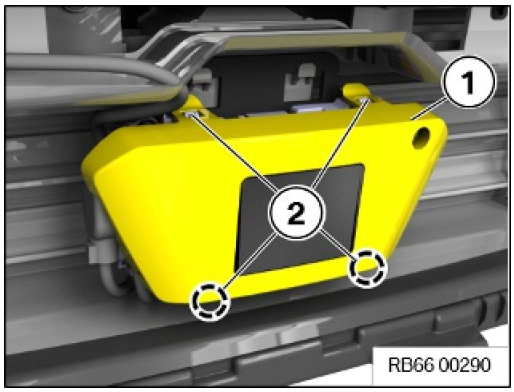
- Release the top air flap control (1)with a suitable special tool.

  Lever out the ball head (2) upwards.
- Feed out the top air flap control (1)upwards.
- Unlock associated plug connections and disconnect.

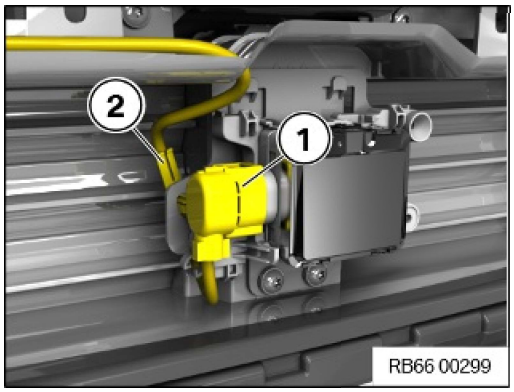
11 – If installed: Removing the front radar sensor (FRS)

NOTICE

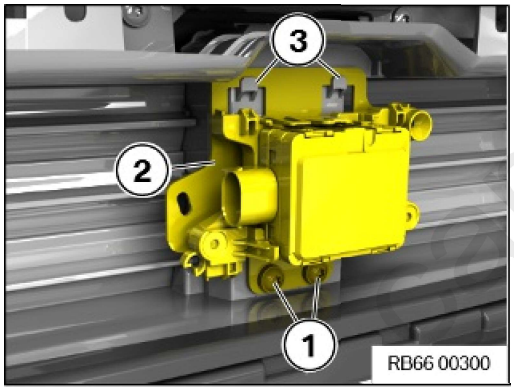
Schematic diagram is for example purposes. Some parts may differ in certain details.



- Release cover (1) from the latch mechanisms (2) and remove it to the front.

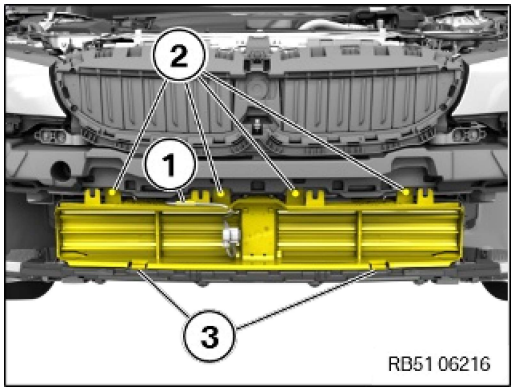


- Unlock plug connection (1) and disconnect.
- Unclip the vehicle wiring harness with the bracket (2) and place aside.



- Loosen screws (1).
- Guide out and remove the front radar sensor (FRS) with holder (2) out of tabs (3) .

12 – Removing the bottom automatic air flap control



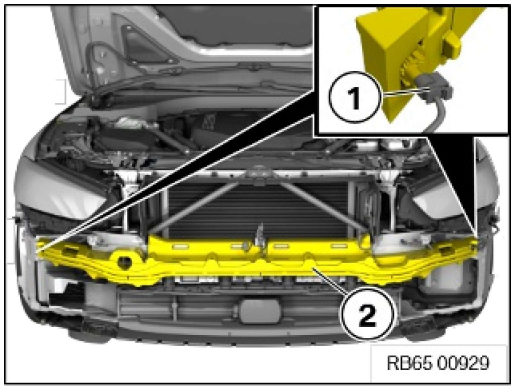
- If necessary, release the wiring harness from holder (1).
- Loosen screws (2).
- Guide out the bottom air flap control with guides (3) to the front.
- Unlock associated plug connection and disconnect.

13 – Removing pedestrian protection sensor

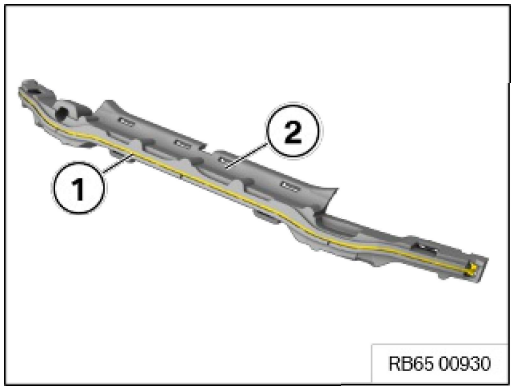
autodiagn.com

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Unlock and disconnect plug connections (1).
- Remove the impact absorber (2).



- Remove pedestrian protection sensor (1) from impact absorber (2).

  Impact absorber (2) must not be reused.
- Dispose of the impact absorber (2).

14 – Remove both fanfares

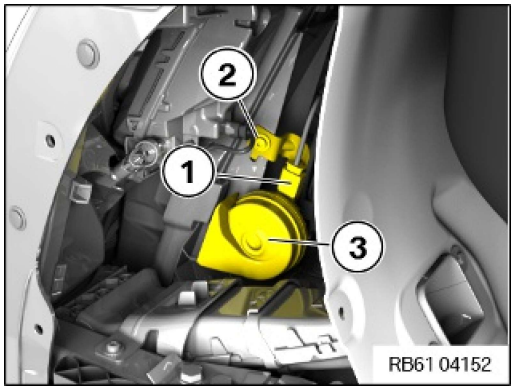
NOTICE

Description is for left component only. Procedure on the right side is identical.

▶ **Removing the fanfare on the left**

TECHNICAL INFORMATION

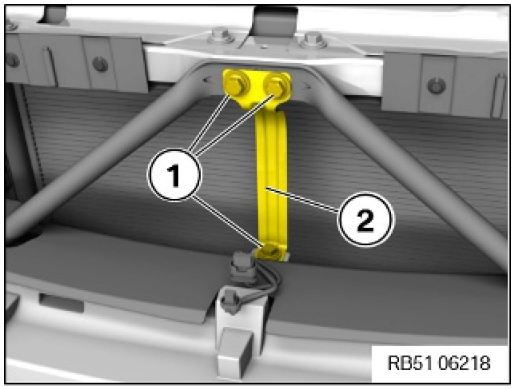
Replace the fanfare only complete with the holder.



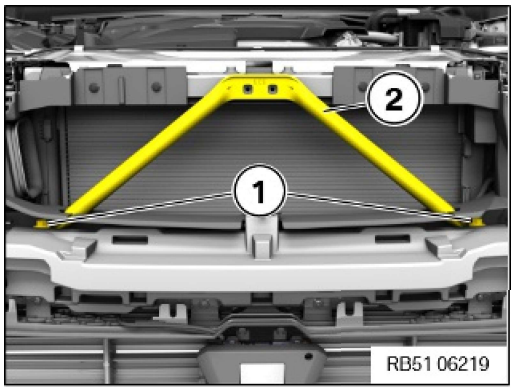
- Unlock plug connection (1) and disconnect.
- Release the screw (2) and remove the left fanfare horn (3) with the bracket.

15 – Remove stiffening strut

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- Loosen screws (1).
- Remove the support (2).



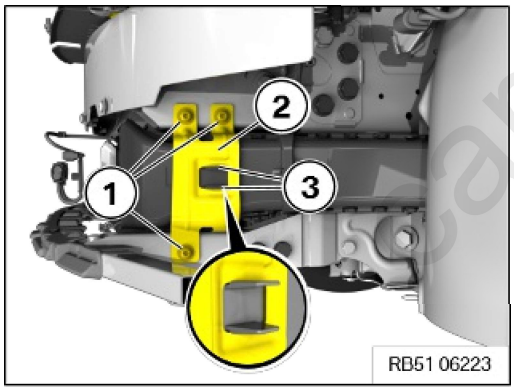
- Loosen screws (1).
- Remove the bracing strut (2).

16 – Removing both brake air ducts

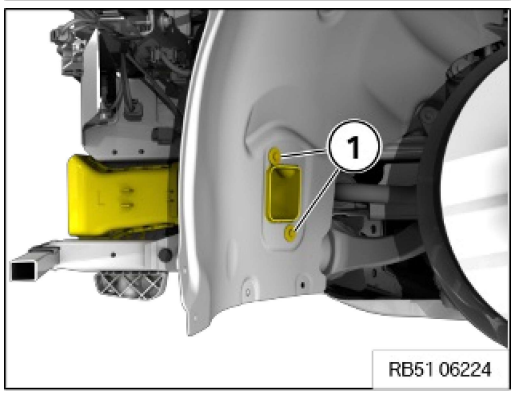
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the brake air duct**



- Loosen screws (1).
- Release and remove the vertical connection (2) from the latch mechanisms (3).

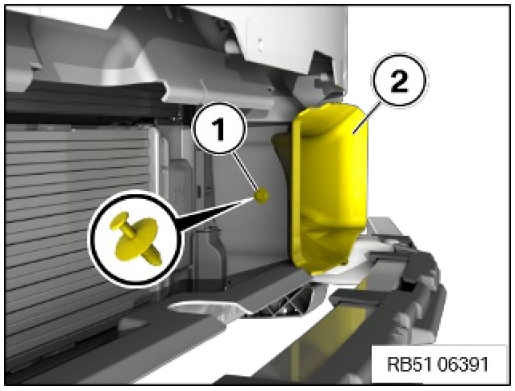


NOTICE

To provide a better overview: Schematic diagram without front wheel.

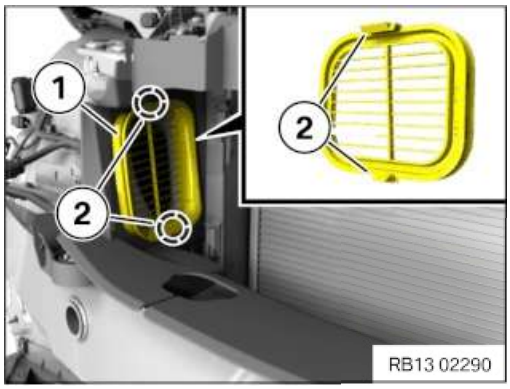
- Loosen screws (1).

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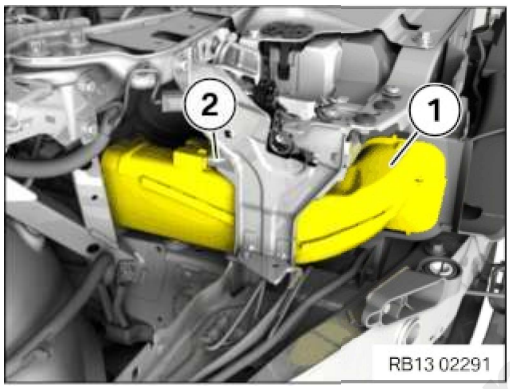


- Loosen expanding rivet (1).
- Feed out the brake air duct (2) toward the front.

17 – Removing intake port



- Release and remove the grille (1) with the latch mechanisms (2).

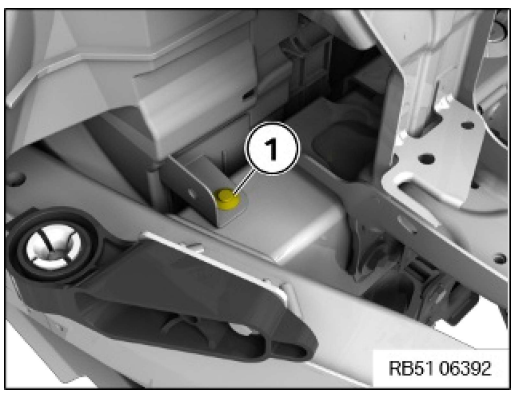


- Feed intake port (1) backward out of the guide (2) on the lock support.
- Remove the intake port (1) to the rear.

18 – Partially remove air duct of radiator

NOTICE

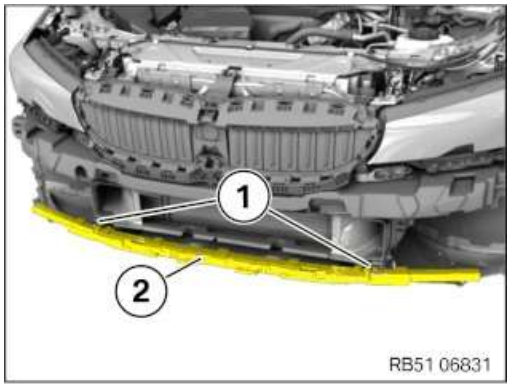
The operations shown only for one side must be carried out on both sides.



- Loosen expanding rivet (1).

19 – Remove support for bumper panel at front bottom

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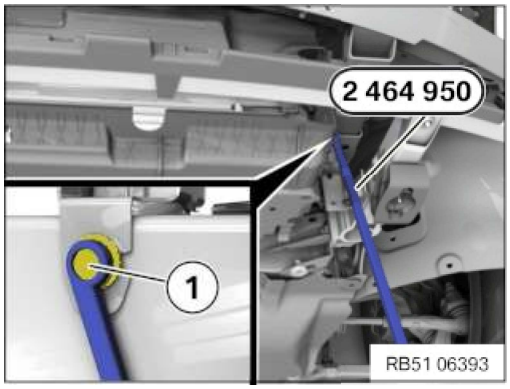
- Loosen screws (1).
- Work the support for front bottom bumper panel(2) out and remove it.

MAIN WORK

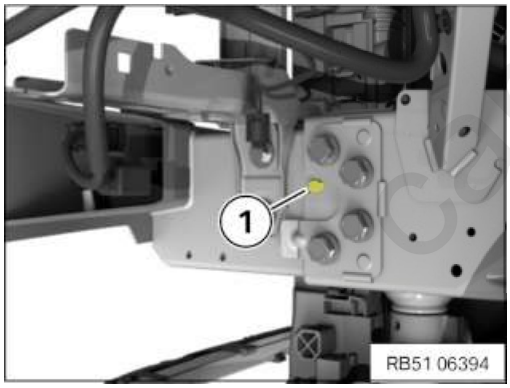
20 – Removing the support for bumper panel

NOTICE

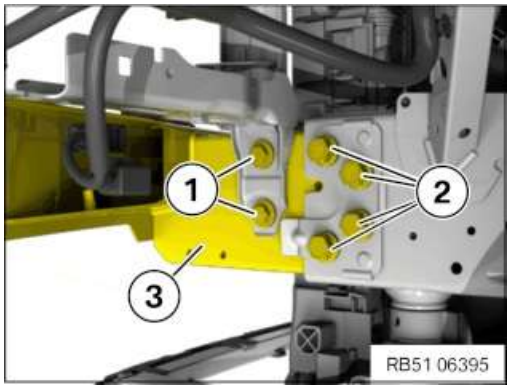
The operations shown only for one side must be carried out on both sides.



- Release the screw (1) using the special tool .



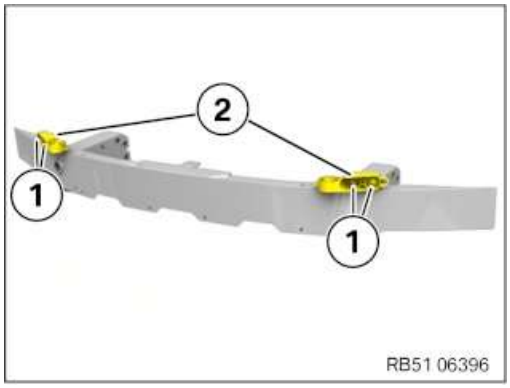
- Drill out the guide pin (1).
  - Ø = 8 mm



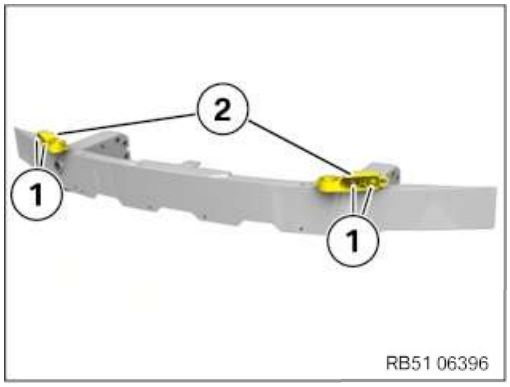
- Loosen screws (1) and (2).
- Remove the support for the bumper panel (3)towards the front.

21 – Replacement: Remounting holder of the upper air flap control

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- Release screws (1) and remove holder of the upper air flap control (2).

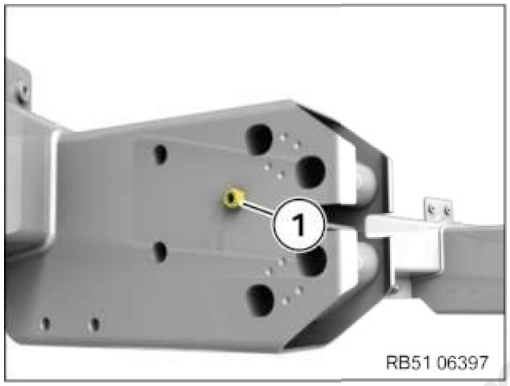


- Position holder of the upper air flap control (2) and tighten screws (1).

Air flap control holder

M6x20		Tightening torque	8 Nm

22 – Preparing support for the bumper panel



NOTICE

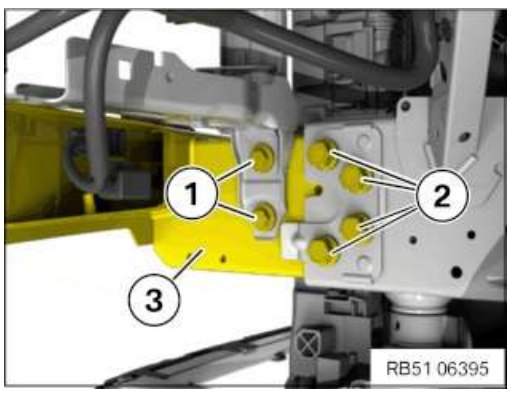
The operations shown only for one side must be carried out on both sides.

- Drill out guide pin (1) on the new part.
  - Ø = 8 mm

23 – Install the support for the bumper panel

NOTICE

The operations shown only for one side must be carried out on both sides.



- Feed in and position the support for the bumper panel (3) from the front.
- Renew screws (2) and tighten.

Front bumper support to engine support

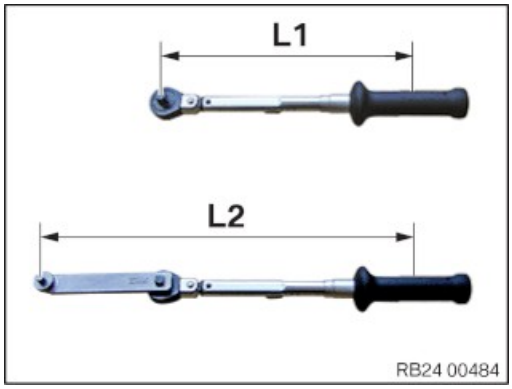
Hexagon screw with flange		Jointing torque Angle of rotation	100 Nm 180 °

- Tighten the screws (1).

Vertical connection to deformation element

Hexagon screw		Tightening torque	21 Nm

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TECHNICAL INFORMATION

The setpoint torque deviates from the torque to be set when using special tool 2 464 950.

NOTICE

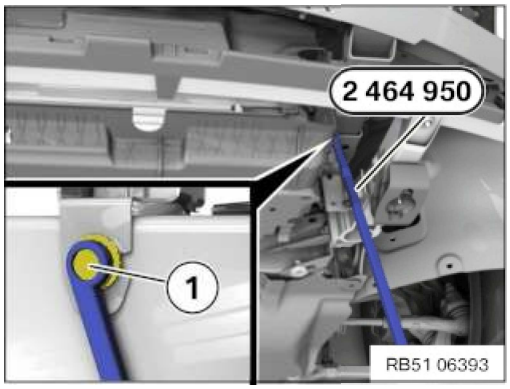
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Converting the setpoint torque into the torque to be set:

  (Setpoint torque * L1) / L2 = Torque to be set

  L1 = Length from the centre of the handle to the reversible ratchet head

  L2 = Length from the centre of the handle to the centre of the ring on the special tool



- Tighten bolt (1) with special tool and the torque wrench.

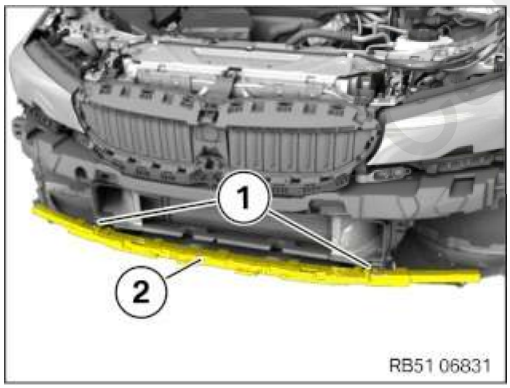
  While doing so, the special tool and the torque wrench must align while tightening.

Vertical connection to deformation element

Hexagon screw		Setpoint torque	21 Nm

POSTPROCESSES

24 – Install support for bumper panel at front bottom



- Pull in support for bumper panel at front bottom (2) and position.
- Tighten the screws (1).

Support for bumper panel, bottom front on deformation element

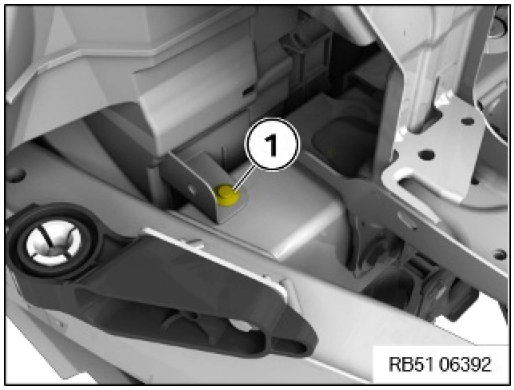
Combination oval-head machine screw		Tightening torque	10 Nm

25 – Partially installing air duct radiator

NOTICE

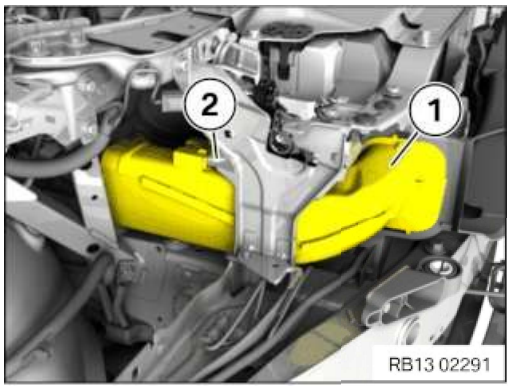
The operations shown only for one side must be carried out on both sides.

erdiagn.com

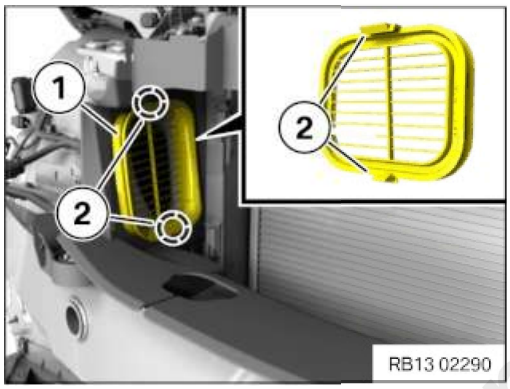


- Fasten expanding rivet (1).

26 – Installing intake port



- Guide in intake port (1) from the rear.
- Slide intake port (1) onto guide (2) on the lock support.



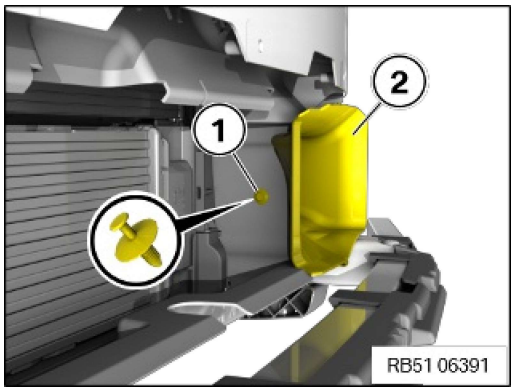
- Check latch mechanisms (2) for damage and, if necessary, renew them.
- Position grille (1) and clip it into latch mechanisms (2) .

27 – Install both brake air ducts

NOTICE

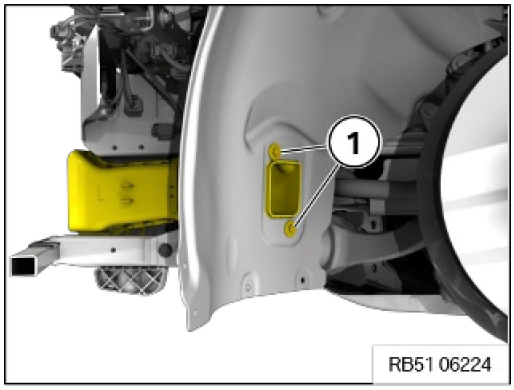
Description is for left component only. Procedure on the right side is identical.

▶ **Install the brake air duct**



- Guide in and position brake air duct (2).
- Fasten expanding rivet (1).

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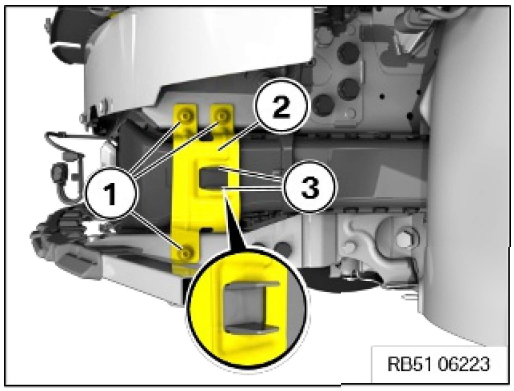
NOTICE

To provide a better overview: Schematic diagram without front wheel.

- Tighten the screws (1).

Brake air duct to front wheel arch cover of front section

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

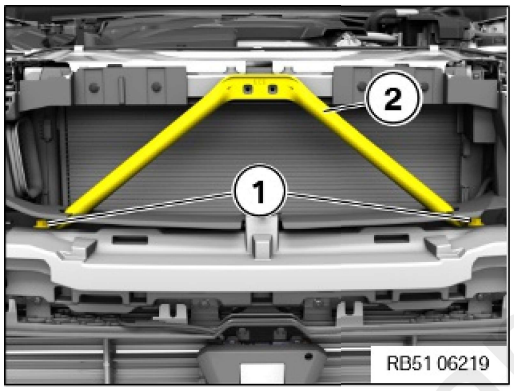


- Position vertical connection (2) and clip it into latch mechanism (3).
- Tighten the screws (1).

Vertical connection to deformation element

Flat-head screw M6x20		Tightening torque	11,8 Nm

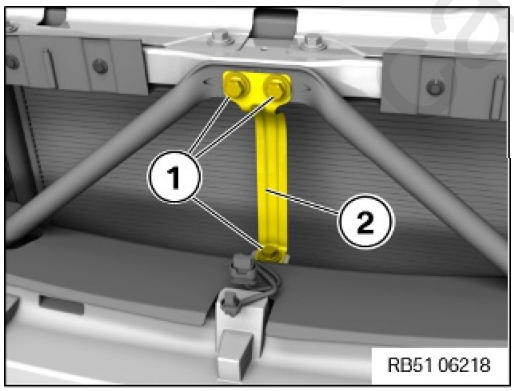
28 – Install bracing strut



- Install the bracing strut (2).
- Tighten the screws (1).

Bracing strut on support for top bumper panel

Hexagon screw		Tightening torque	28 Nm



- Install support (2).
- Tighten the screws (1).

Strut on front end

Hexagon screw		Tightening torque	28 Nm

29 – Install both fanfares

NOTICE

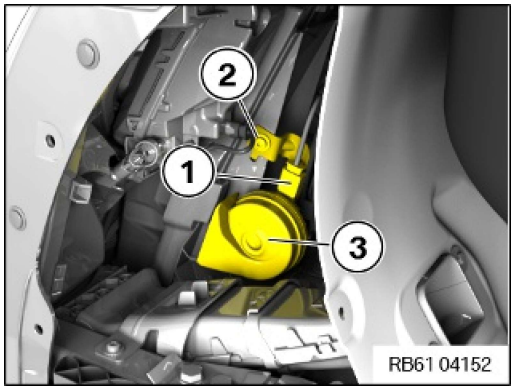
Description is for left component only. Procedure on the right side is identical.

▸ **Installing the fanfare on the left**

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TECHNICAL INFORMATION

Replace the fanfare only complete with the holder.



- Correctly position the left fanfare horn (3) and tighten screw(2) .

Fanfare to support for bumper panel

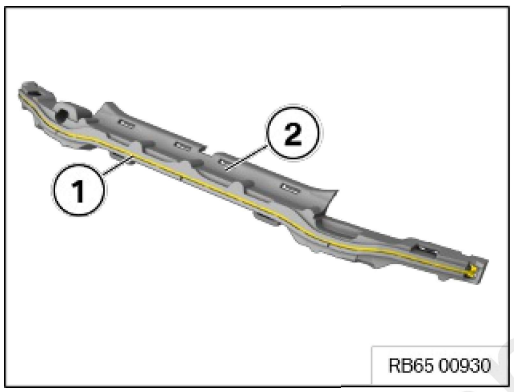
M6x20 screw		Tightening torque	8,8 Nm

- Connect connectors (1) and lock.

30 – Installing the pedestrian protection sensor

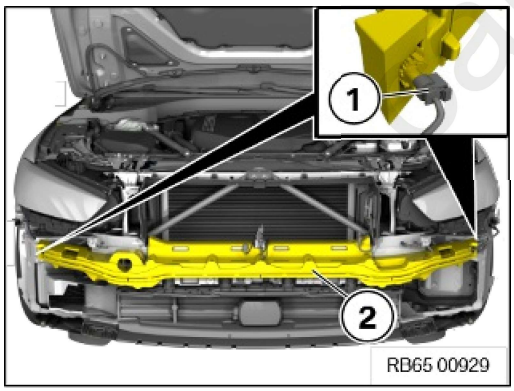
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Renew the impact absorber (2).

  Parts: Impact absorber
- Carefully insert pedestrian protection (1) in the impact absorber (2).

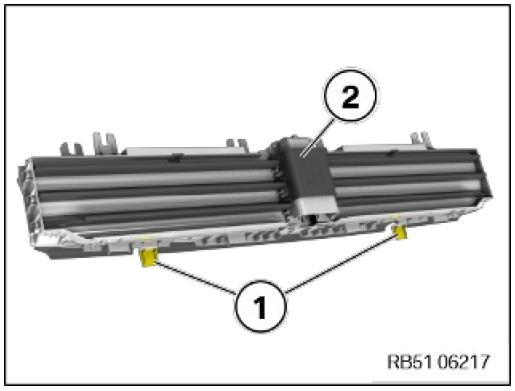


- Connect connectors (1) and lock.
- Attach impact absorber (2) at the bottom and then press it upwards.

31 – Installing the bottom automatic air flap control

Check

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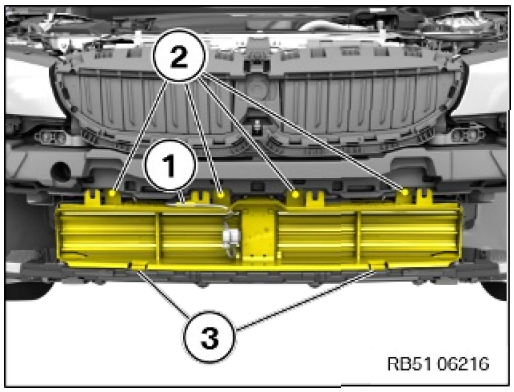
- Check the guides (1) on the bottom air flap control (2)for damage.

Result

» Guide is damaged.

Measure

- Renew the bottom air flap control.



- Connect and lock corresponding connectors.
- Fit the bottom air flap control and feed in with the guides (3).
- Tighten down screws (2).

Bottom air flap control on top bumper panel support

Oval-head screw		Tightening torque	4,6 Nm

- If applicable, clip in the vehicle wiring harness with the holder (1).

32 – Disconnecting all battery earth leads

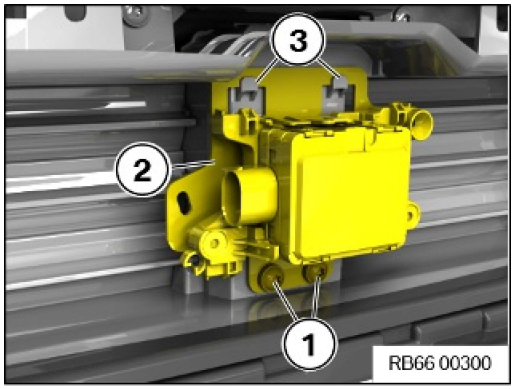


- See additional information.

33 – If installed: Installing the front radar sensor (FRS)

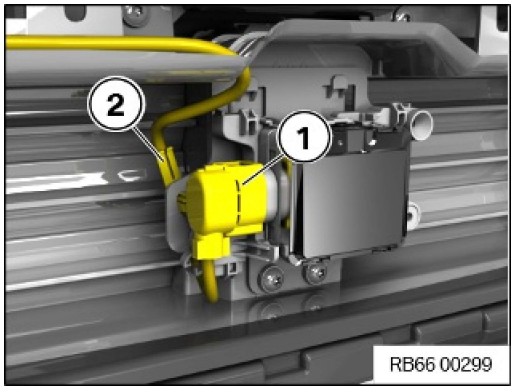
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



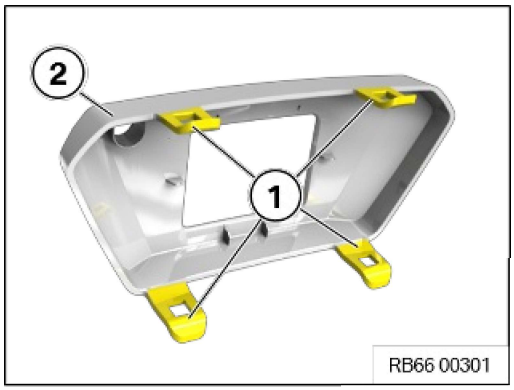
- Fit the front radar sensor (FRS) with the holder (2) in the tabs(3) .
- Tighten the screws (1).

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- Clip in the vehicle wiring harness including bracket. (2)
- Connect connectors (1) and lock.

Check



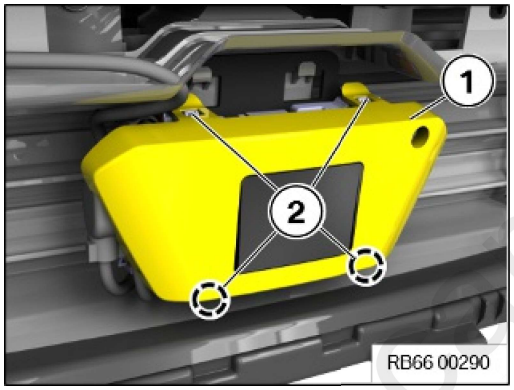
- Check tabs (1) on cover(2) for damage.

Result

» The tab is damaged.

Measure

- Renew the cover.



- Position cover (1) and clip it into latch mechanisms .

▸ **Adjusting front radar sensor (FRS)**

TECHNICAL INFORMATION

Notes on adjusting the ACC sensor are a fundamental requirement for these repair instructions and must be complied with at all times.

For additional information see: 66 31 ... Notes on adjusting the ACC sensor

TECHNICAL INFORMATION

If there is a "Sensor misaligned" fault memory entry and the sensor cannot be aligned correctly using the adjusting screw, a front impact damage may be suspected.

In this case, the vehicle must be inspected thoroughly for damage. Damaged parts must be renewed if necessary. Then adjust the ACC sensor again.

A damaged/bent holder indicates mechanical misuse of the vehicle and must not be charged as a warranty case.

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▷ **Checking vehicle and components for damage**

Check

- In the visible areas, visually check for:
  - damage
  - Deformation

Result

» Damage or deformation.

Measure

- Identify and renew damaged, deformed vehicle parts.

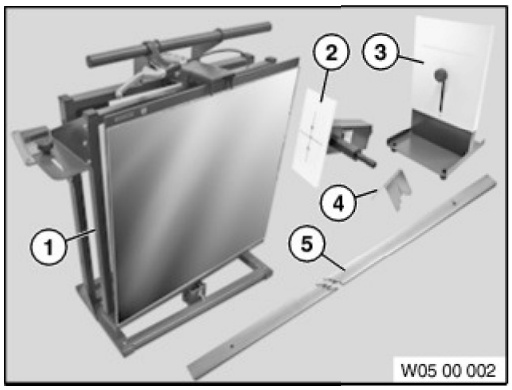
Result

» No damage or deformation

Measure

- Adjust the front radar sensor (FRS).

◁



- Stage special tools 0 442 898 and 2 338 466.
- Set up special tool as per enclosed operating instructions.



- Connect diagnosis system.
  - Service functions
  - Driver assistance
  - Front radar sensor (FRS)
  - Front radar sensor start-up (FRS)



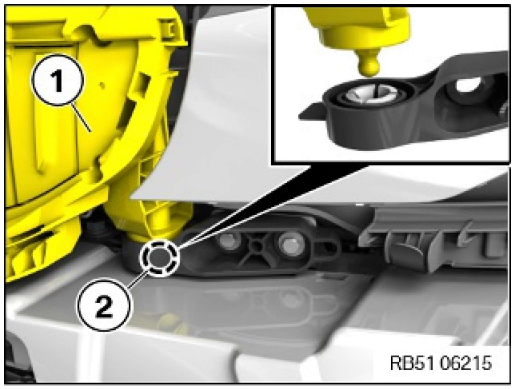
34 – Insert top automatic air flap control

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- To adjust the front radar sensor (FRS), twist screw (1) with special tool .

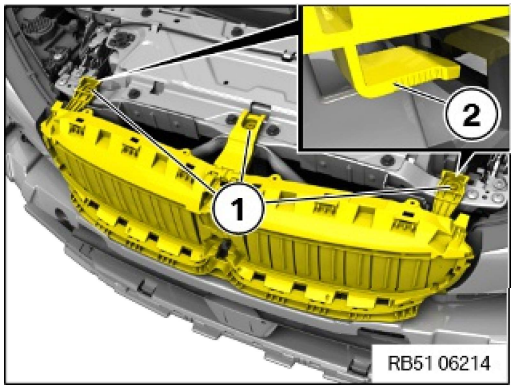
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NOTICE

The operations shown only for one side must be carried out on both sides.

- Position top air flap control (1).
- Connect and lock the relevant connectors.
- Feed in the top air flap control (1) and clip in with the ball head(2) .

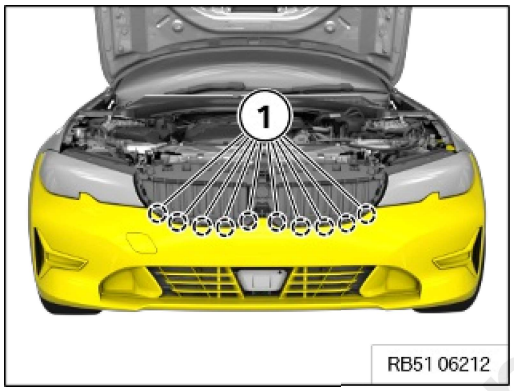


- Clip the top air flap control in the latch mechanisms(2) .
- Tighten the screws (1).

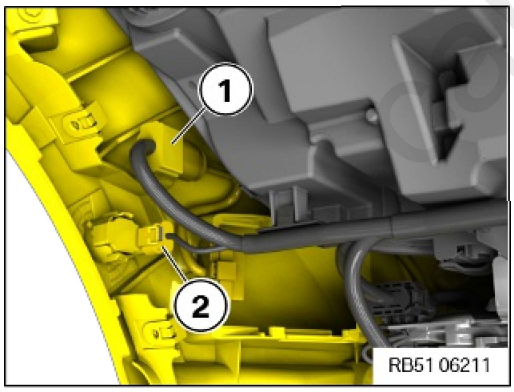
Air flap control to front end

Oval-head screw with spring washer		Tightening torque	4,6 Nm

35 – Install bumper panel, front



- Position the front bumper panel.
- Clip the front bumper panel into latch mechanisms (1).

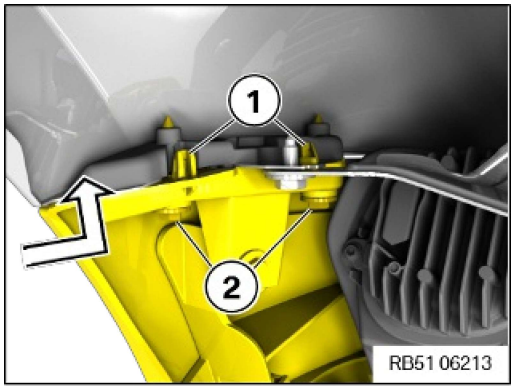


NOTICE

Perform the operations on the left and right side.

- Connect connectors (1) and lock.
- If necessary, connect the connector (2) and lock it.

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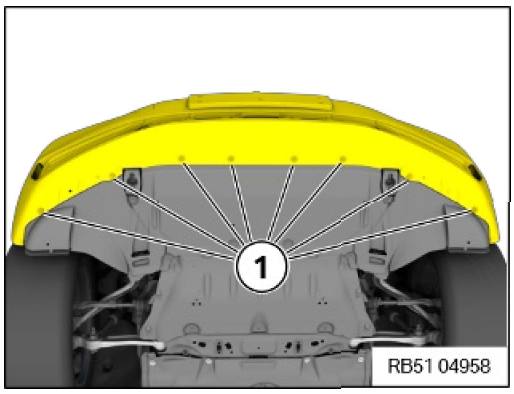
NOTICE

Perform the operations on the left and right side.

- Feed the bumper panel in arrow direction into the guide and clip in with the latch mechanism(1).
- Tighten down screws (2).

Front bumper panel to front side panel

Torx screw 5x35		Tightening torque	3 Nm



NOTICE

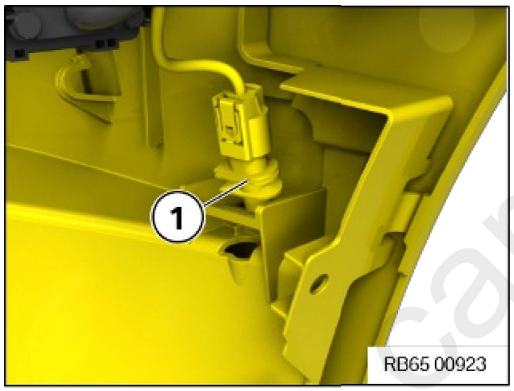
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Tighten the screws (1).

Front bumper panel to underbody protection

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

36 – Partially installing the temperature sensor



- Clip the temperature sensor (1) downwards into the front bumper panel.

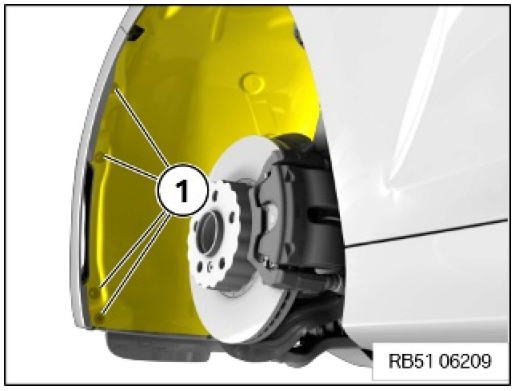
37 – Partially installing both front wheel arch trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially installing front wheel arch trim panel**

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NOTICE

To provide a better overview: Schematic diagram without front wheel.

- Fold back the front wheel arch trim panel.
- Tighten the screws (1).

Wheel arch trim panel, front

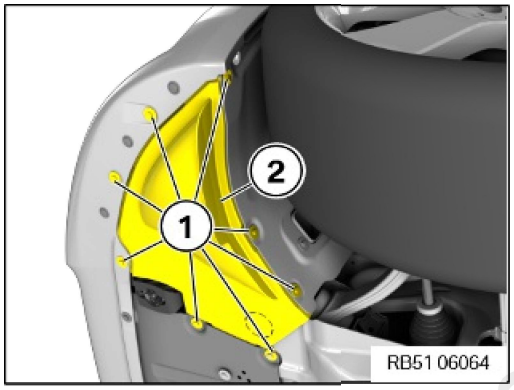
Thermoplastic hexagon screw		Tightening torque	2,6 Nm

38 – Install both lower front covers at the side

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the lower front cover at the side**

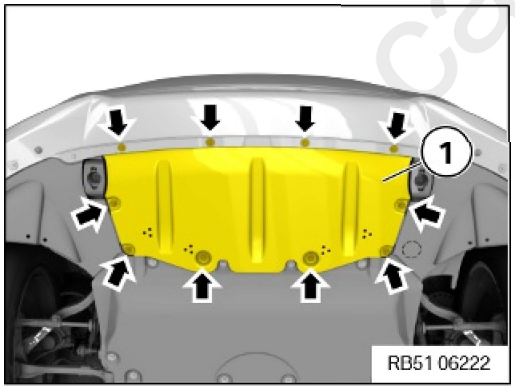


- Install front bottom side cover(2).
- Tighten the screws (1).

Cover, front bottom on side

Hexagon screw for thermoplastic		Tightening torque	3 Nm

39 – Installing the front underbody protection



- **Version 1:**

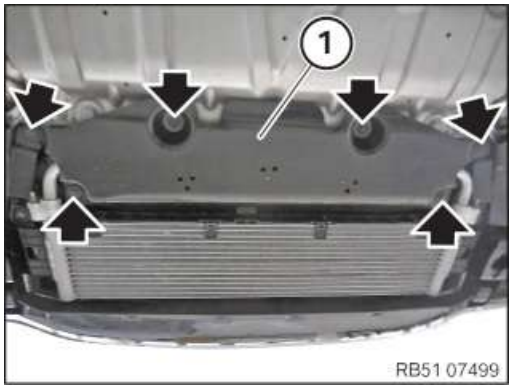
  Feed in the front underbody protection (1) towards the front under the bumper panel and position.

  Tighten screws (arrows).

Underbody protection front

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm
Hexagon screw M6x20		Tightening torque	8 Nm

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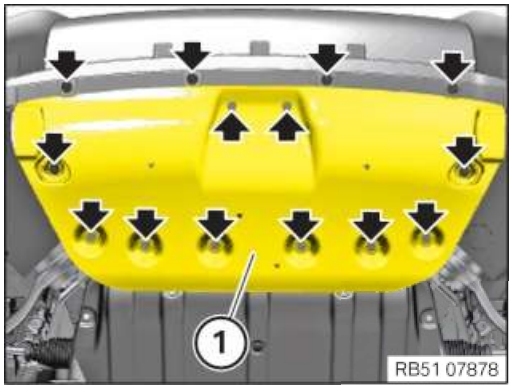
- **Version 2:**

  Feed in and position the front underbody protection (1).

  Tighten screws (arrows).

Underbody protection front

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm
Hexagon screw M6x20		Tightening torque	8 Nm



- **Version 3:**

  Feed in and install front underbody protection (1).

  Tighten screws (arrows).

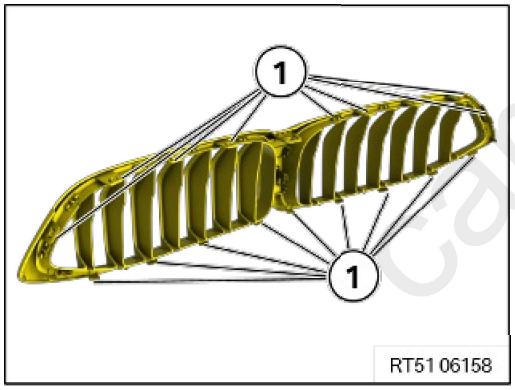
Underbody protection front

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm
Hexagon screw M6x20		Tightening torque	8 Nm

40 – Install centre radiator grille

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



Check

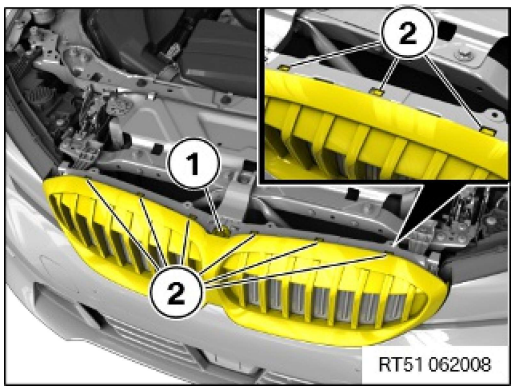
- Check latch mechanisms (1) for damage.

Result

» The latch mechanism (1) is damaged.

Measure

- Renew the front ornamental grille, centre.



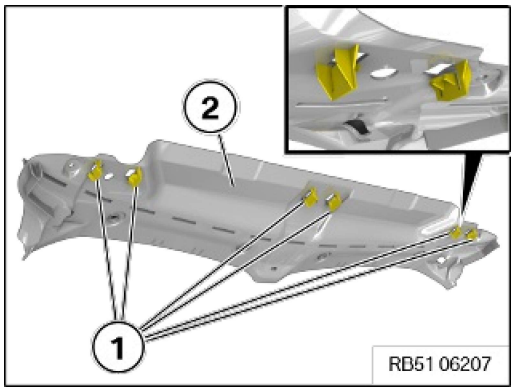
- Depending on the equipment, connect and lock connectors.
- Position the front ornamental grille, centre and clip in all latch mechanisms (2) from the front.
- Tighten down screw (1).

Centre of front ornamental grille to top air flap control

Oval-head screwM6		Tightening torque	4,6 Nm

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41 – Installing cover for engine compartment centre



Check

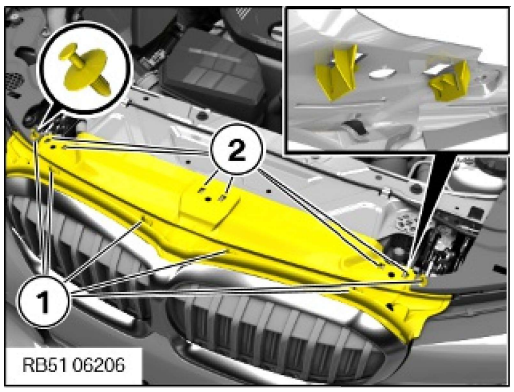
- Check latch mechanisms (1) of cover for engine compartment centre (2) for damage.

Result

» The latch mechanism (1) is damaged.

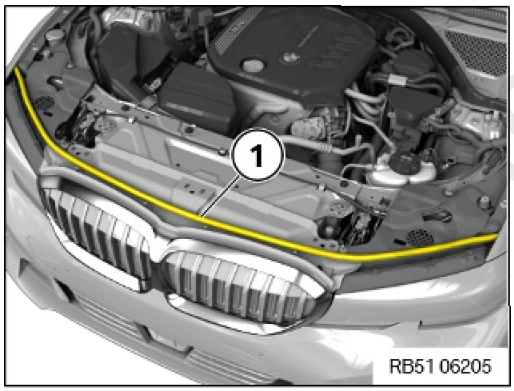
Measure

- Renew cover for engine compartment centre (2).



- Guide in the cover for the engine compartment centre from the rear and position it.
- Clip in the cover for the engine compartment centre with latch mechanisms (2).
- Mount all expanding rivets (1).

42 – Install the seal for the front bonnet



- Position the bonnet seal(1) and connect it on the mounting on the bumper and on the headlights.

43 – Adjusting headlights

TECHNICAL INFORMATION

Notes on headlight adjustment are a fundamental requirement for these repair instructions and must be complied with at all times.

For additional information see: 6310 ... Test prerequisite for adjusting headlights

NOTICE

Description is for left component only. Procedure on the right side is identical.

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- If necessary, remove the cover over the adjusting screws for headlight adjustment.
- Adjust the height at the adjusting screw (1).
- **US version:** Set the lateral adjustment only if the plug on the adjusting screw for lateral adjustment is missing or damaged.

  Remove damaged plug if necessary (refer to additional information).
- Turn adjusting screw (2) for a correct lateral adjustment.
- **US version:** If the lateral adjustment has been checked or corrected: Renew plugs and push into the adjusting screw for the lateral adjustment **without damaging it** (see additional information).
- If necessary, fit a cover over the adjusting screws for headlight adjustment.

Additional Information

Overview of Tightening Torques

Air flap control holder			Used in step 21
M6x20		Tightening torque	8 Nm

Front bumper support to engine support			Used in step 23
Hexagon screw with flange		Jointing torque	100 Nm
		Angle of rotation	180 °

Vertical connection to deformation element			Used in step 23
Hexagon screw		Tightening torque	21 Nm

Vertical connection to deformation element			Used in step 23
Hexagon screw		Setpoint torque	21 Nm

Support for bumper panel, bottom front on deformation element			Used in step 24
Combination oval-head machine screw		Tightening torque	10 Nm

Brake air duct to front wheel arch cover of front section			Used in step 27
Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

Vertical connection to deformation element			Used in step 27
Flat-head screw M6x20		Tightening torque	11,8 Nm

Bracing strut on support for top bumper panel			Used in step 28
Hexagon screw		Tightening torque	28 Nm

Strut on front end			Used in step 28
Hexagon screw		Tightening torque	28 Nm

Fanfare to support for bumper panel			Used in step 29
M6x20 screw		Tightening torque	8,8 Nm

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Bottom air flap control on top bumper panel support — Used in step 31

Oval-head screw		Tightening torque	4,6 Nm

Air flap control to front end — Used in step 34

Oval-head screw with spring washer		Tightening torque	4,6 Nm

Front bumper panel to front side panel — Used in step 35

Torx screw 5x35		Tightening torque	3 Nm

Front bumper panel to underbody protection — Used in step 35

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

Wheel arch trim panel, front — Used in step 37

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

Cover, front bottom on side — Used in step 38

Hexagon screw for thermoplastic		Tightening torque	3 Nm

Underbody protection front — Used in step 39

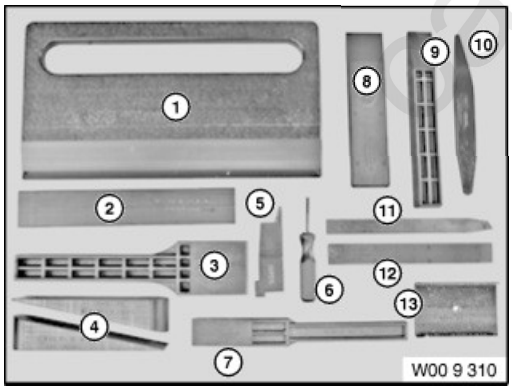
Hexagon screw for thermoplastic		Tightening torque	2,6 Nm
Hexagon screw M6x20		Tightening torque	8 Nm

Centre of front ornamental grille to top air flap control — Used in step 40

Oval-head screwM6		Tightening torque	4,6 Nm

Overview of Special Tools

0 493 752 (00 9 329) Case

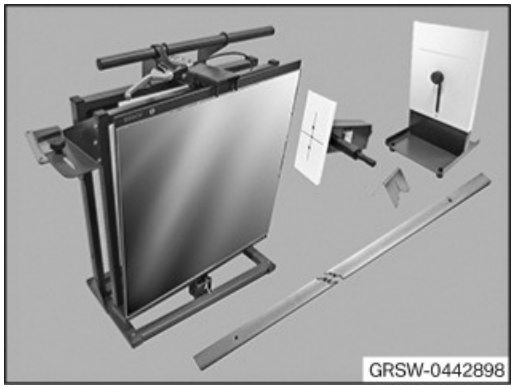


Common — Used in step 10

Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

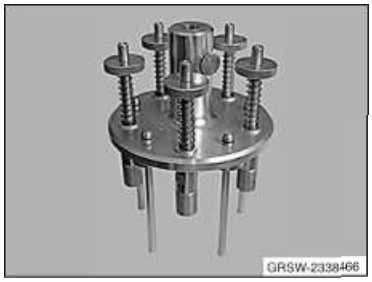
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0 442 898 Measuring device



Common	Used in step 33
Usage	ACC adjusting device. Using this adjusting device, an ACC sensor built into the vehicle can be adjusted in the workshop. Prerequisite is a suitable measuring station.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	02 04 05 (208)

2 338 466 Holder



Common	Used in step 33
Usage	Replacement for holder 36 1 100 (0493771). Holder has longer guide pins and lengthened magnetic guides.
Included in the tool or work	
Storage location	Individual
Replaced by	
In connection with	
SI-Number	

Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	132
61 20 900 Disconnecting and connecting battery earth lead	132
61 20 900 Disconnecting and connecting battery earth lead	132
61 20 900 Disconnecting and connecting battery earth lead	132
61 20 900 Disconnecting and connecting battery earth lead	132
61 20 900 Disconnecting and connecting battery earth lead	132
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	132
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	132
61 20 900 Disconnecting and connecting battery earth lead	132
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	132
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	132
61 20 900 Disconnecting and connecting battery earth lead	132
61 20 900 Disconnecting and connecting battery earth lead	132
61 20 900 Disconnecting and connecting battery earth lead	132
61 20 900 Disconnecting and connecting battery earth lead	132
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61 20 900 Disconnecting and connecting battery earth lead	132
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61 20 900 Disconnecting and connecting battery earth lead	132
61 20 900 Disconnecting and connecting battery earth lead	132

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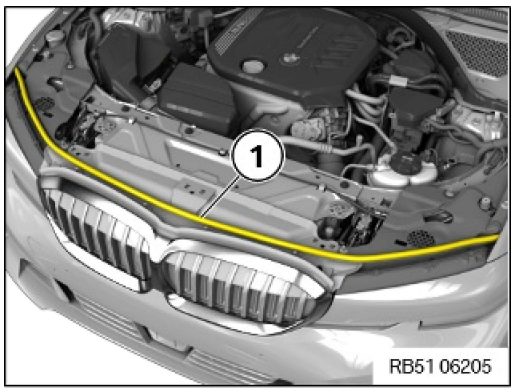
61 20 900 Disconnecting and connecting battery earth lead	132
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	132
61 20 900 Disconnecting and connecting battery earth lead	132
61 20 900 Disconnecting and connecting battery earth lead	132
61 20 900 Disconnecting and connecting battery earth lead	132
61 20 900 Disconnecting and connecting battery earth lead	132
61 20 900 Disconnecting and connecting battery earth lead	132
61 20 900 Disconnecting and connecting battery earth lead	132
61 20 900 Disconnecting and connecting battery earth lead	132
66 31 010 Instructions for ACC adjusting device	33
63 10 ... Test requirements for headlights vertical aim adjustment	43

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51 11 060 Removing and installing/replacing support for front lower bumper panel

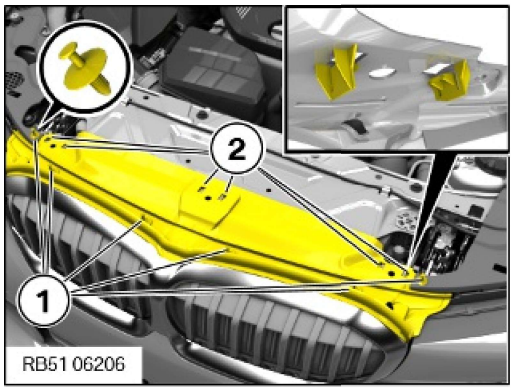
PRELIMINARY WORK

1 – Remove the seal for the bonnet in front



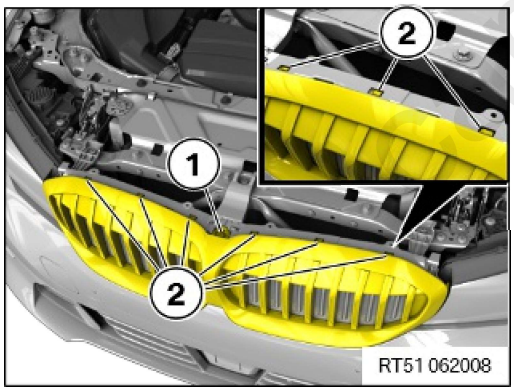
- Pull off front bonnet seal (1) upwards.

2 – Removing the centre engine compartment cover



- Detach all expanding rivets (1).
- Release the cover of the centre engine compartment with the latch mechanisms (2) .
- Feed the cover for the centre engine compartment out to the rear.

3 – Remove centre radiator ornamental grille



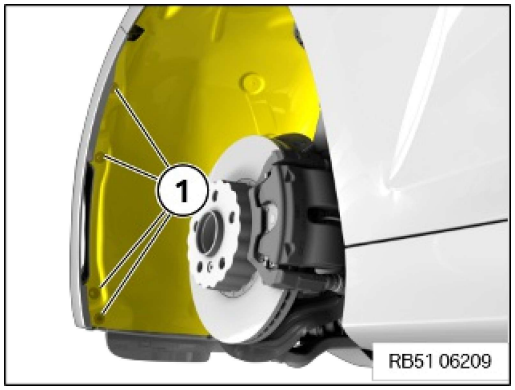
- Loosen screw (1).
- Release the centre front ornamental grille from the latch mechanisms (2).
- Release the centre front ornamental grille from the remaining latch mechanism towards the front and remove it.
- Unlock and disconnect plug connections according to the equipment.

4 – Partially remove both front wheel arch trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially removing front wheel arch trim panel**

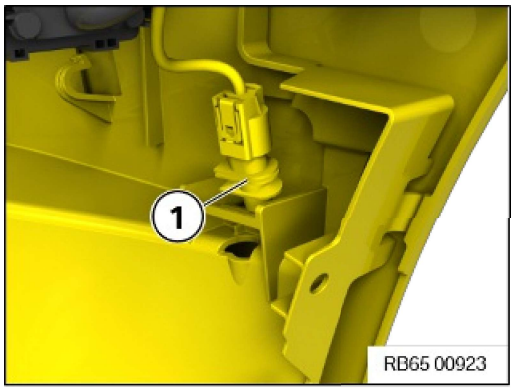


NOTICE

To provide a better overview: Schematic diagram without front wheel.

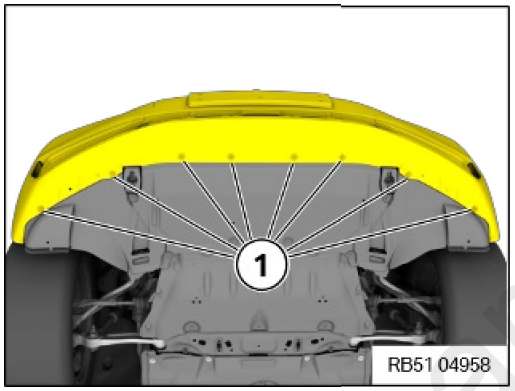
- Loosen screws (1).
- Fold the front wheel arch trim panel to one side.

5 – Partially removing the temperature sensor



- Unclip temperature sensor (1) from the front bumper panel to the top.

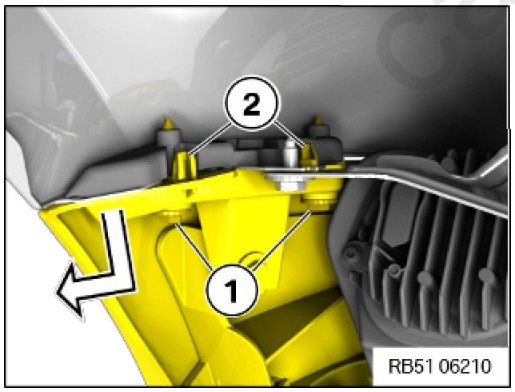
6 – Remove front bumper panel



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

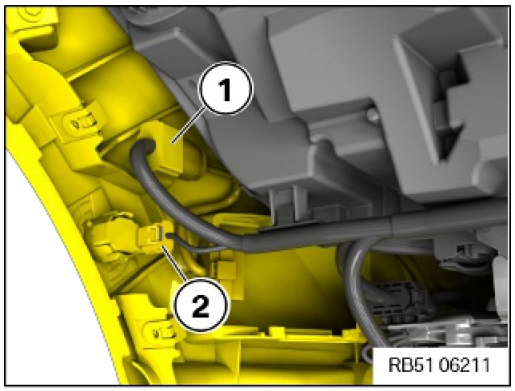
- Loosen screws (1).



NOTICE

Perform the operations on the left and right side.

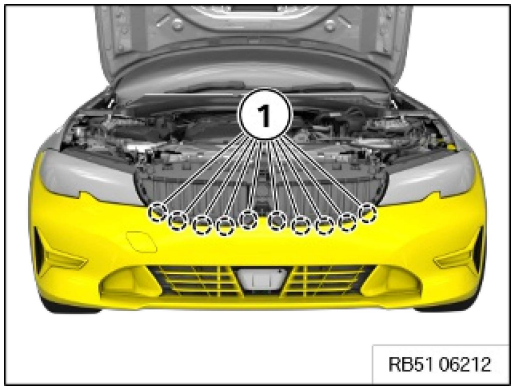
- Loosen screws (1).
- Release the front bumper panel along with the latch mechanisms (2) and feed out in the direction of arrow out of the guide.



NOTICE

Perform the operations on the left and right side.

- Unlock plug connection (1) and disconnect.
- If necessary, unlock plug connection (2) and disconnect.

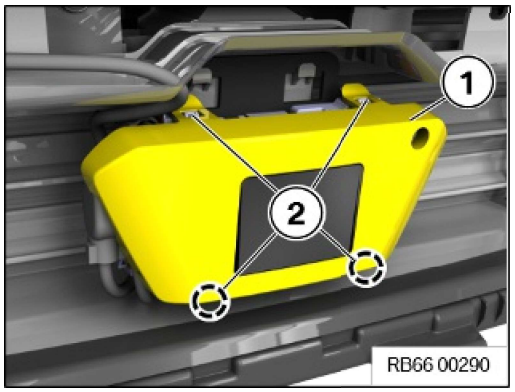


- Release the front bumper panel from the latch mechanisms (1) towards the front.
- Remove the front bumper panel.

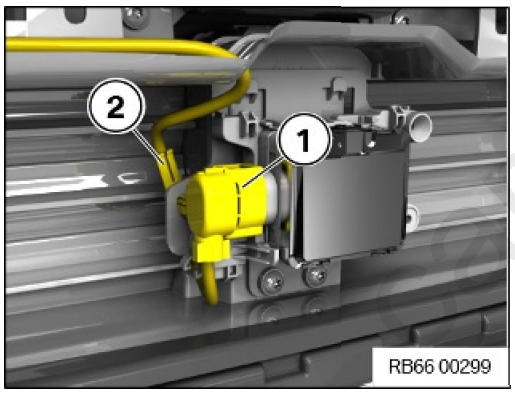
7 – If installed: Removing the front radar sensor (FRS)

NOTICE

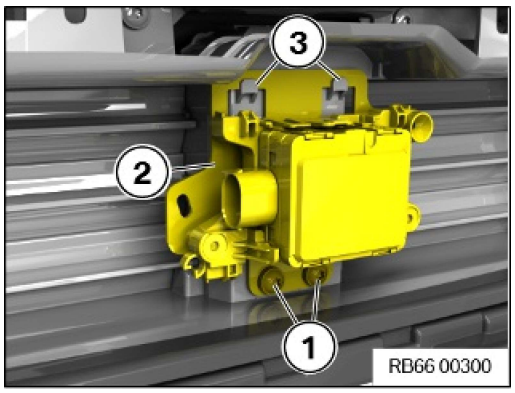
Schematic diagram is for example purposes. Some parts may differ in certain details.



- Release cover (1) from the latch mechanisms (2) and remove it to the front.

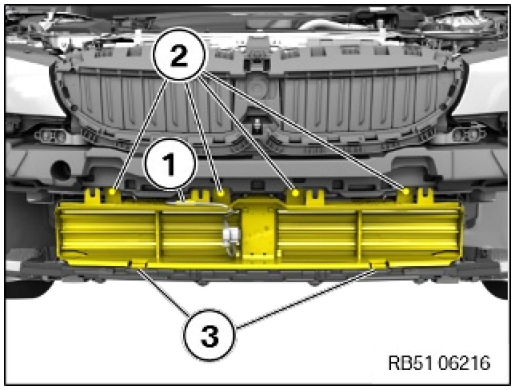


- Unlock plug connection (1) and disconnect.
- Unclip the vehicle wiring harness with the bracket (2) and place aside.



- Loosen screws (1).
- Guide out and remove the front radar sensor (FRS) with holder (2) out of tabs (3) .

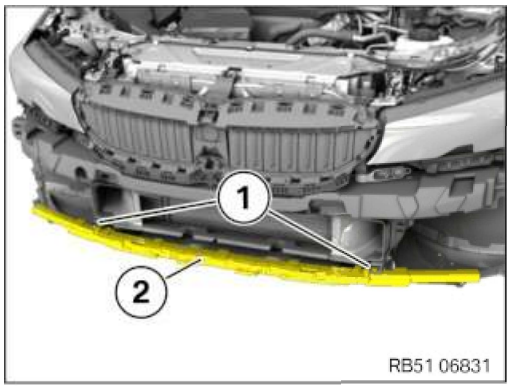
8 – Removing the bottom automatic air flap control



- If necessary, release the wiring harness from holder (1).
- Loosen screws (2).
- Guide out the bottom air flap control with guides (3) to the front.
- Unlock associated plug connection and disconnect.

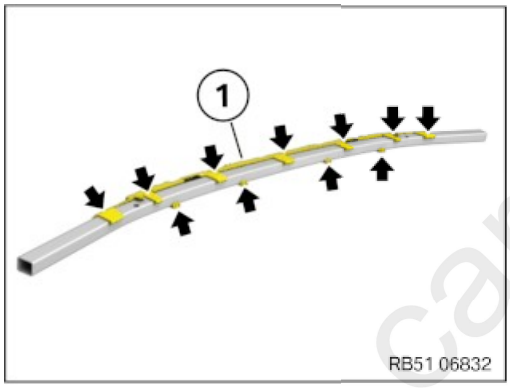
MAIN WORK

9 – Remove support for bumper panel at front bottom



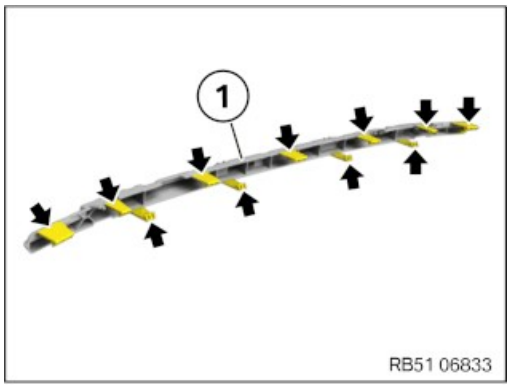
- Loosen screws (1).
- Work the support for front bottom bumper panel(2) out and remove it.

10 – Replacement: Support for the front bottom bumper panel



- Release impact absorber (1) with all latch mechanisms (arrows) and remove.

Check



- Check all latch mechanisms (arrows) on impact absorber (1) for damage.

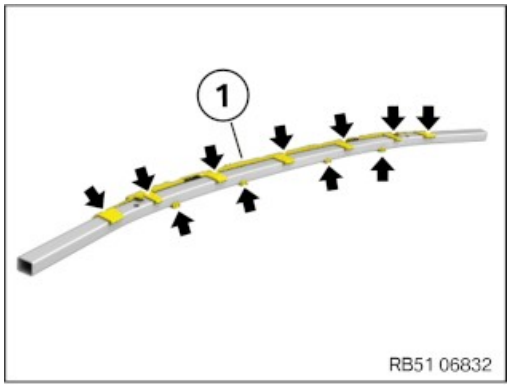
Result

» The latch mechanism is damaged.

Measure

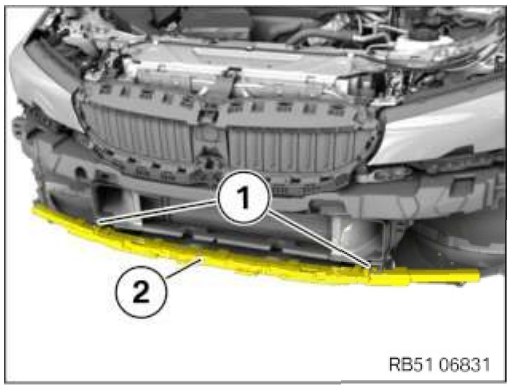
- Renew impact absorber.

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- Position impact absorber (1) and clip in with all latch mechanisms (arrows).

11 – Install support for bumper panel at front bottom



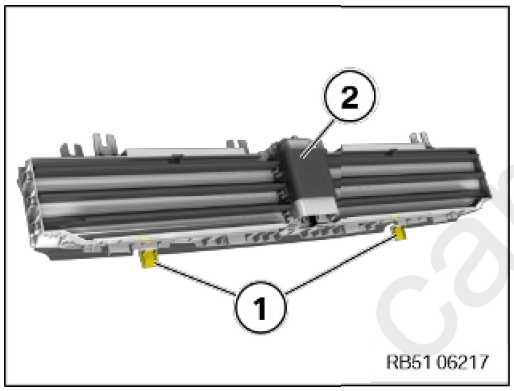
- Pull in support for bumper panel at front bottom (2) and position.
- Tighten the screws (1).

Support for bumper panel, bottom front on deformation element

Combination oval-head machine screw		Tightening torque	10 Nm

POSTPROCESSES

12 – Installing the bottom automatic air flap control



Check

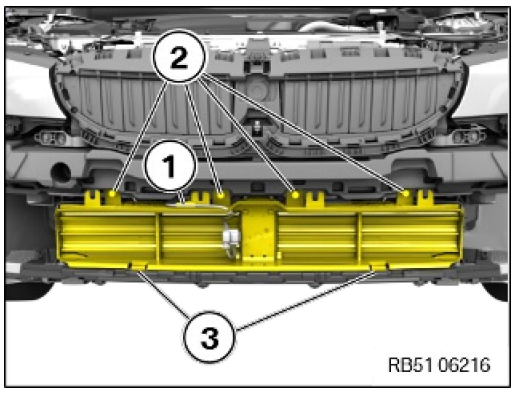
- Check the guides (1) on the bottom air flap control (2)for damage.

Result

» Guide is damaged.

Measure

- Renew the bottom air flap control.



- Connect and lock corresponding connectors.
- Fit the bottom air flap control and feed in with the guides (3).
- Tighten down screws (2).

Bottom air flap control on top bumper panel support

Oval-head screw		Tightening torque	4,6 Nm

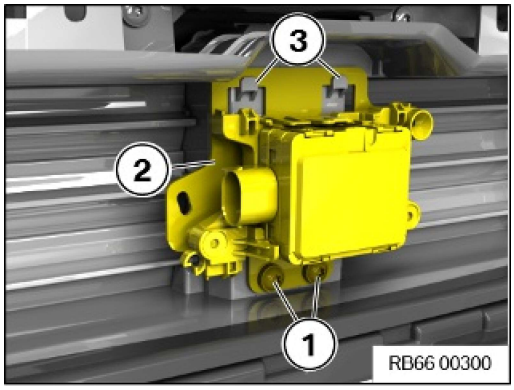
- If applicable, clip in the vehicle wiring harness with the holder (1).

13 – If installed: Installing the front radar sensor (FRS)

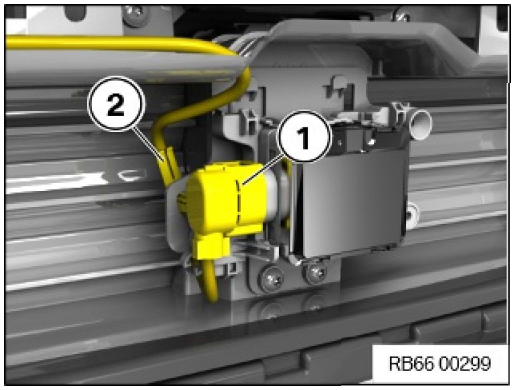
cardiagn.com

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

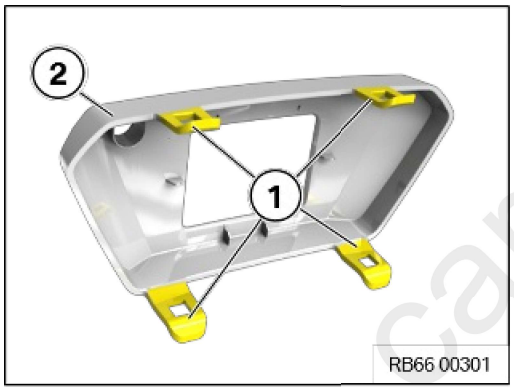


- Fit the front radar sensor (FRS) with the holder (2) in the tabs(3) .
- Tighten the screws (1).



- Clip in the vehicle wiring harness including bracket. (2)
- Connect connectors (1) and lock.

Check



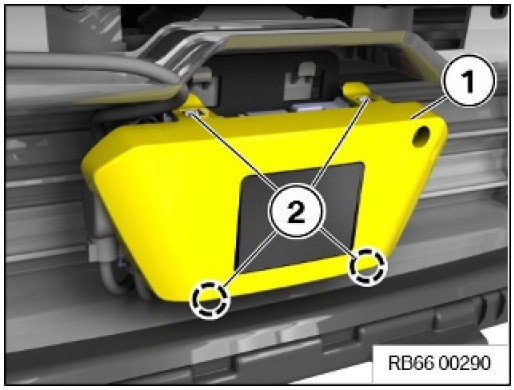
- Check tabs (1) on cover(2) for damage.

Result

» The tab is damaged.

Measure

- Renew the cover.



- Position cover (1) and clip it into latch mechanisms .

▸ **Adjusting front radar sensor (FRS)**

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TECHNICAL INFORMATION

Notes on adjusting the ACC sensor are a fundamental requirement for these repair instructions and must be complied with at all times.

For additional information see: 66 31 ... Notes on adjusting the ACC sensor

TECHNICAL INFORMATION

If there is a "Sensor misaligned" fault memory entry and the sensor cannot be aligned correctly using the adjusting screw, a front impact damage may be suspected.

In this case, the vehicle must be inspected thoroughly for damage. Damaged parts must be renewed if necessary. Then adjust the ACC sensor again.

A damaged/bent holder indicates mechanical misuse of the vehicle and must not be charged as a warranty case.

▷ **Checking vehicle and components for damage**

Check

- In the visible areas, visually check for:
  - damage
  - Deformation

Result

» Damage or deformation.

Measure

- Identify and renew damaged, deformed vehicle parts.

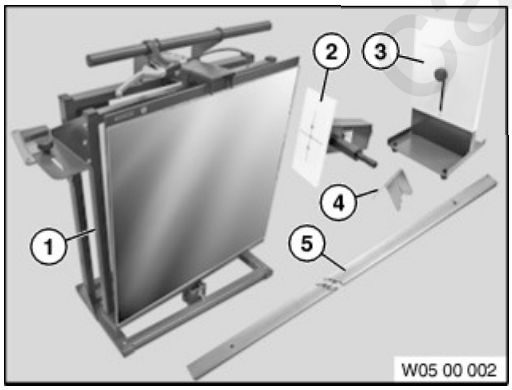
Result

» No damage or deformation

Measure

- Adjust the front radar sensor (FRS).

◁





- Stage special tools 0 442 898 and 2 338 466.
- Set up special tool as per enclosed operating instructions.
- Connect diagnosis system.
  - Service functions
  - Driver assistance
  - Front radar sensor (FRS)
  - Front radar sensor start-up (FRS)

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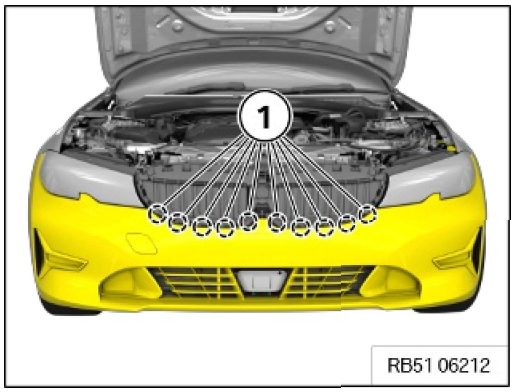


NOTICE

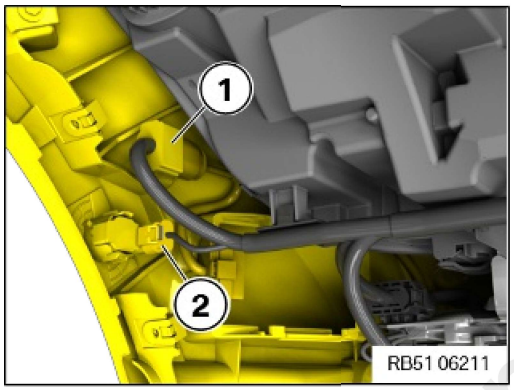
Schematic diagram is for example purposes. Some parts may differ in certain details.

- To adjust the front radar sensor (FRS), twist screw (1) with special tool .

14 – Install bumper panel, front



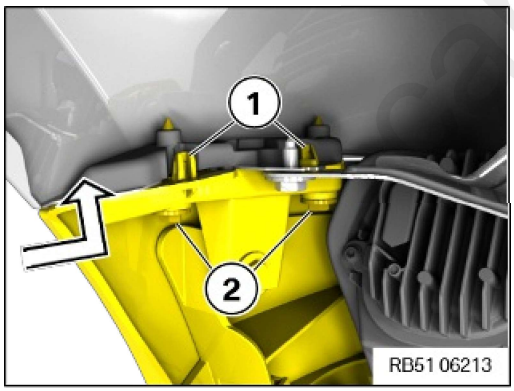
- Position the front bumper panel.
- Clip the front bumper panel into latch mechanisms (1).



NOTICE

Perform the operations on the left and right side.

- Connect connectors (1) and lock.
- If necessary, connect the connector (2) and lock it.



NOTICE

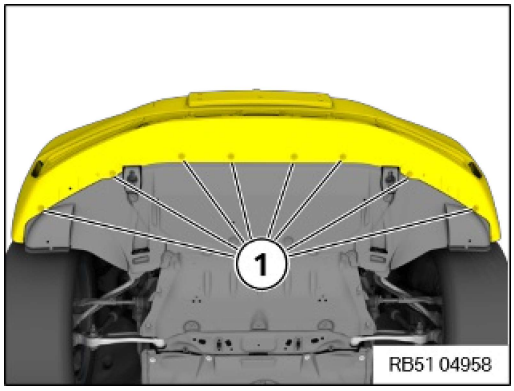
Perform the operations on the left and right side.

- Feed the bumper panel in arrow direction into the guide and clip in with the latch mechanism(1).
- Tighten down screws (2).

Front bumper panel to front side panel

Torx screw 5x35		Tightening torque	3 Nm

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NOTICE

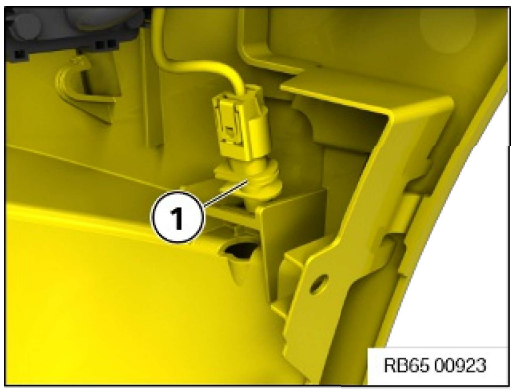
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Tighten the screws (1).

Front bumper panel to underbody protection

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

15 – Partially installing the temperature sensor



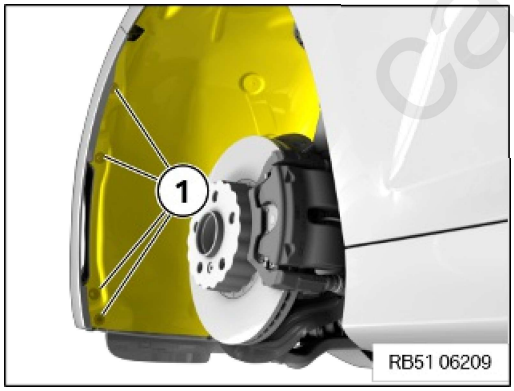
- Clip the temperature sensor (1) downwards into the front bumper panel.

16 – Partially installing both front wheel arch trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially installing front wheel arch trim panel**



NOTICE

To provide a better overview: Schematic diagram without front wheel.

- Fold back the front wheel arch trim panel.
- Tighten the screws (1).

Wheel arch trim panel, front

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

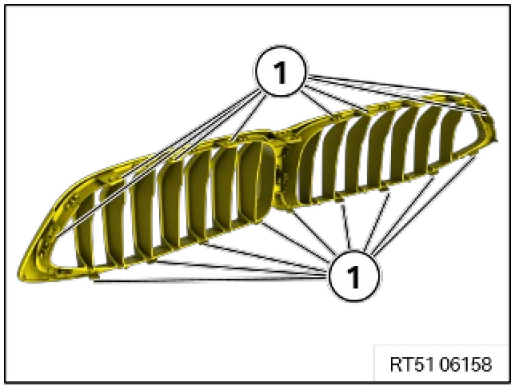
17 – Install centre radiator grille

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

Check

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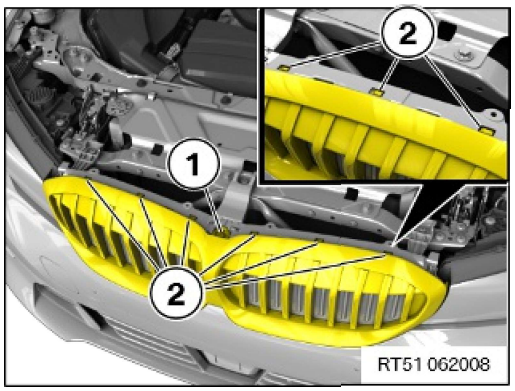
- Check latch mechanisms (1) for damage.

Result

» The latch mechanism (1) is damaged.

Measure

- Renew the front ornamental grille, centre.

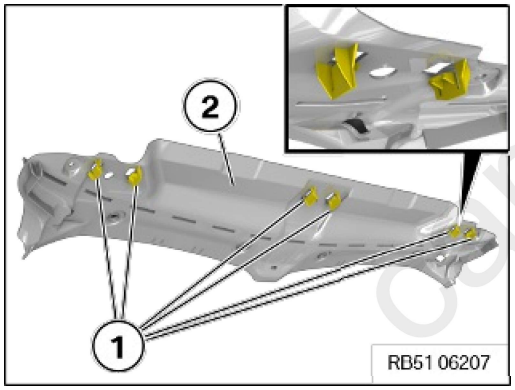


- Depending on the equipment, connect and lock connectors.
- Position the front ornamental grille, centre and clip in all latch mechanisms (2) from the front.
- Tighten down screw (1).

Centre of front ornamental grille to top air flap control

Oval-head screwM6		Tightening torque	4,6 Nm

18 – Installing cover for engine compartment centre



Check

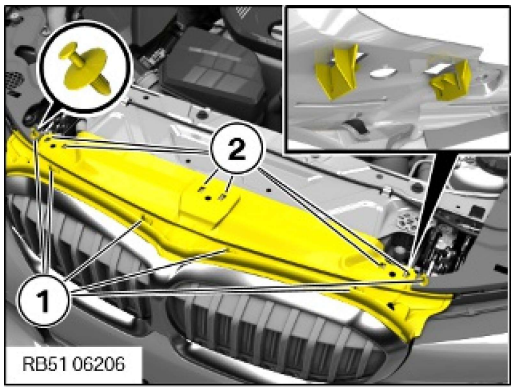
- Check latch mechanisms (1) of cover for engine compartment centre (2) for damage.

Result

» The latch mechanism (1) is damaged.

Measure

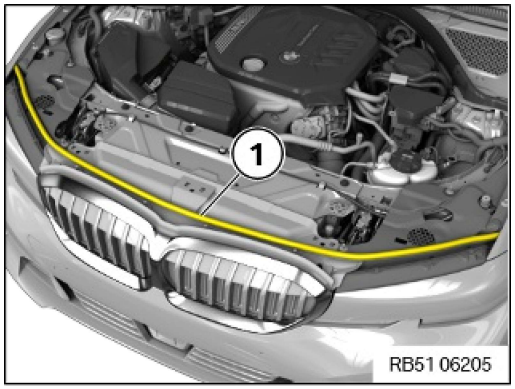
- Renew cover for engine compartment centre (2).



- Guide in the cover for the engine compartment centre from the rear and position it.
- Clip in the cover for the engine compartment centre with latch mechanisms (2).
- Mount all expanding rivets (1).

19 – Install the seal for the front bonnet

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- Position the bonnet seal(1) and connect it on the mounting on the bumper and on the headlights.

20 – Adjusting front radar sensor (FRS)

TECHNICAL INFORMATION

Notes on adjusting the ACC sensor are a fundamental requirement for these repair instructions and must be complied with at all times.

For additional information see: 66 31 ... Notes on adjusting the ACC sensor

TECHNICAL INFORMATION

If there is a "Sensor misaligned" fault memory entry and the sensor cannot be aligned correctly using the adjusting screw, a front impact damage may be suspected.

In this case, the vehicle must be inspected thoroughly for damage. Damaged parts must be renewed if necessary. Then adjust the ACC sensor again.

A damaged/bent holder indicates mechanical misuse of the vehicle and must not be charged as a warranty case.

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▸ **Checking vehicle and components for damage**

Check

- In the visible areas, visually check for:
  - damage
  - Deformation

Result

» Damage or deformation.

Measure

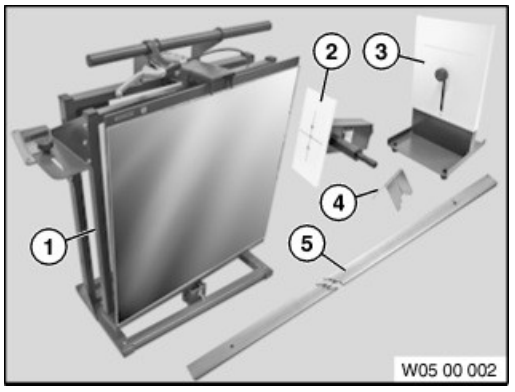
- Identify and renew damaged, deformed vehicle parts.

Result

» No damage or deformation

Measure

- Adjust the front radar sensor (FRS).



- Stage special tools 0 442 898 and 2 338 466.
- Set up special tool as per enclosed operating instructions.

- Connect diagnosis system.
  - Service functions
  - Driver assistance
  - Front radar sensor (FRS)
  - Front radar sensor start-up (FRS)



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- To adjust the front radar sensor (FRS), twist screw (1) with special tool .

Additional Information

Overview of Tightening Torques

Support for bumper panel, bottom front on deformation element — Used in step 11

Combination oval-head machine screw		Tightening torque	10 Nm

Bottom air flap control on top bumper panel support — Used in step 12

Oval-head screw		Tightening torque	4,6 Nm

Front bumper panel to front side panel — Used in step 14

Torx screw 5x35		Tightening torque	3 Nm

Front bumper panel to underbody protection — Used in step 14

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

Wheel arch trim panel, front — Used in step 16

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

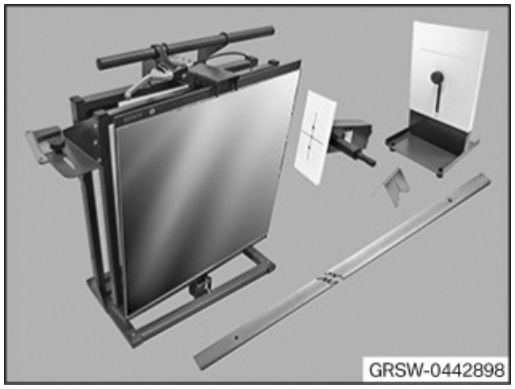
Centre of front ornamental grille to top air flap control — Used in step 17

Oval-head screwM6		Tightening torque	4,6 Nm

Overview of Special Tools

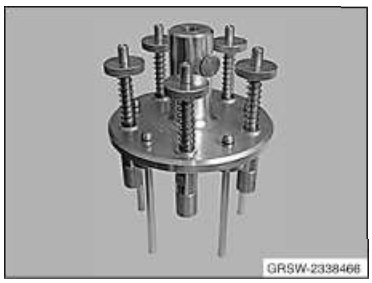
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0 442 898 Measuring device



Common	Used in step 1320
Usage	ACC adjusting device. Using this adjusting device, an ACC sensor built into the vehicle can be adjusted in the workshop. Prerequisite is a suitable measuring station.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	02 04 05 (208)

2 338 466 Holder



Common	Used in step 1320
Usage	Replacement for holder 36 1 100 (0493771). Holder has longer guide pins and lengthened magnetic guides.
Included in the tool or work	
Storage location	Individual
Replaced by	
In connection with	
SI-Number	

Links

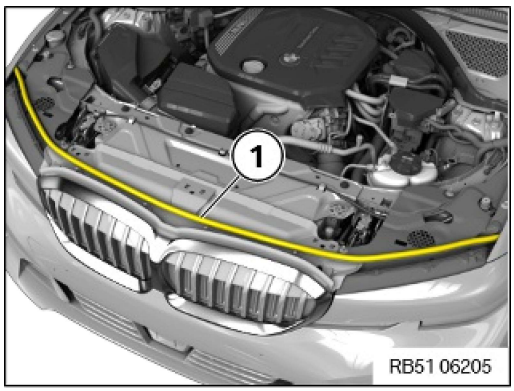
Repair instructions	Used in step
66 31 010 Instructions for ACC adjusting device	1320

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51 11 180 Removing and installing/replacing the ornamental grille in the front bumper panel

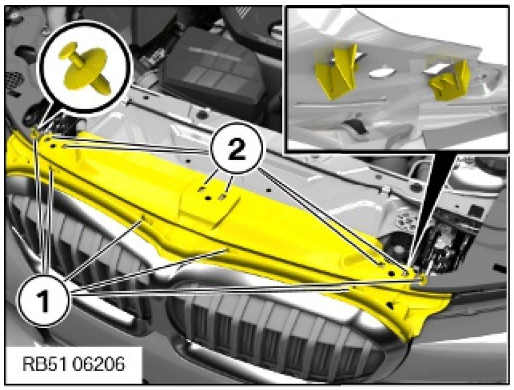
PRELIMINARY WORK

1 – Remove the seal for the bonnet in front



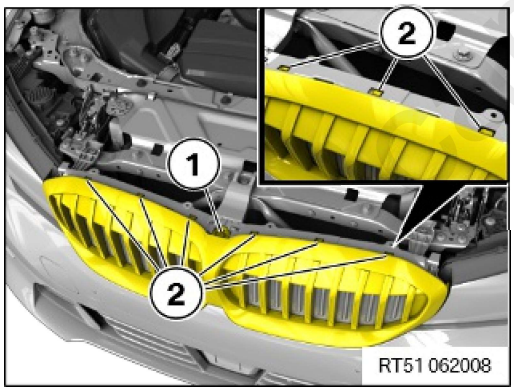
- Pull off front bonnet seal (1) upwards.

2 – Removing the centre engine compartment cover



- Detach all expanding rivets (1).
- Release the cover of the centre engine compartment with the latch mechanisms (2) .
- Feed the cover for the centre engine compartment out to the rear.

3 – Remove centre radiator ornamental grille



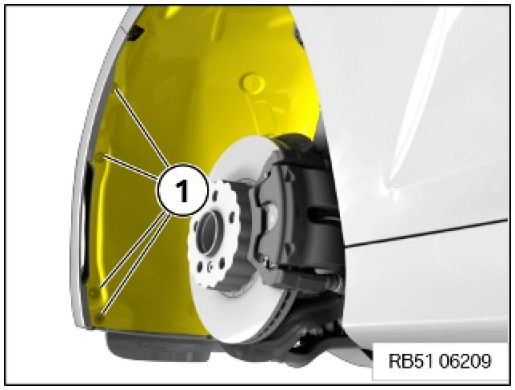
- Loosen screw (1).
- Release the centre front ornamental grille from the latch mechanisms (2).
- Release the centre front ornamental grille from the remaining latch mechanism towards the front and remove it.
- Unlock and disconnect plug connections according to the equipment.

4 – Partially remove both front wheel arch trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially removing front wheel arch trim panel**

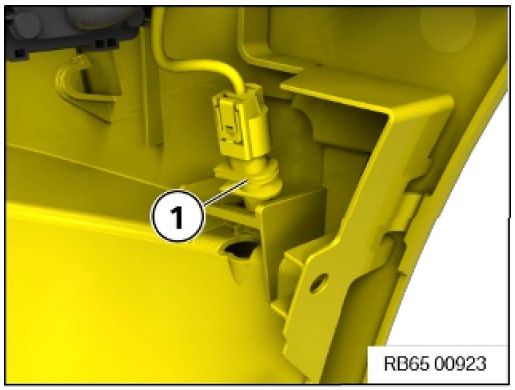


NOTICE

To provide a better overview: Schematic diagram without front wheel.

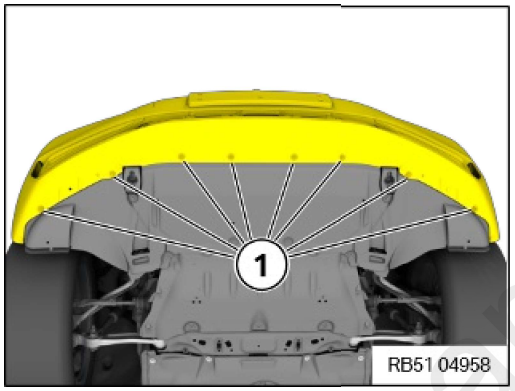
- Loosen screws (1).
- Fold the front wheel arch trim panel to one side.

5 – Partially removing the temperature sensor



- Unclip temperature sensor (1) from the front bumper panel to the top.

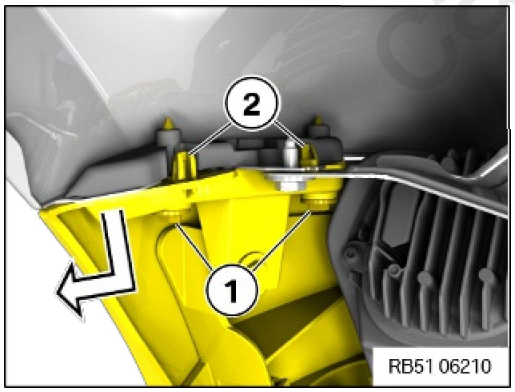
6 – Remove front bumper panel



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

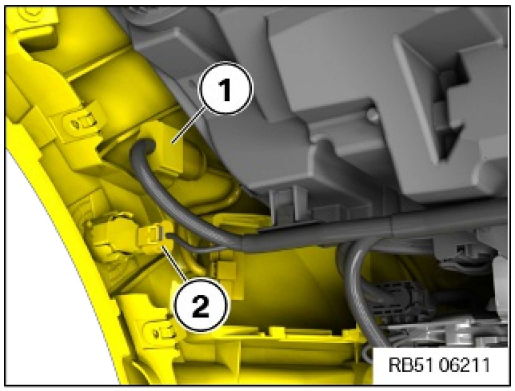
- Loosen screws (1).



NOTICE

Perform the operations on the left and right side.

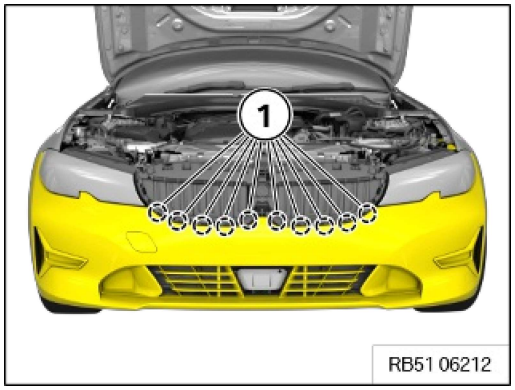
- Loosen screws (1).
- Release the front bumper panel along with the latch mechanisms (2) and feed out in the direction of arrow out of the guide.



NOTICE

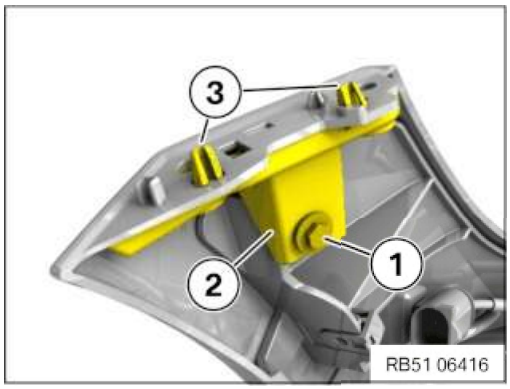
Perform the operations on the left and right side.

- Unlock plug connection (1) and disconnect.
- If necessary, unlock plug connection (2) and disconnect.



- Release the front bumper panel from the latch mechanisms (1) towards the front.
- Remove the front bumper panel.

7 – Partially removing left bumper mounting



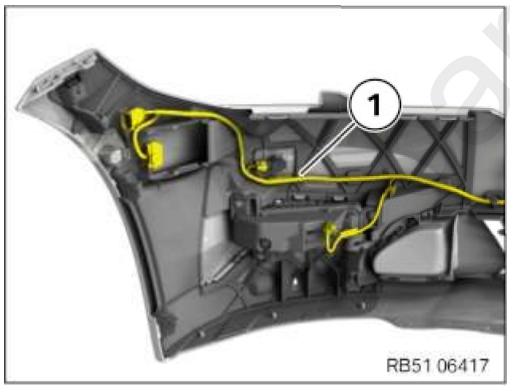
- Loosen screw (1).
- Release left bumper mounting (2) with latch mechanisms (3) and guide it downwards.

8 – Remove both fog light supports

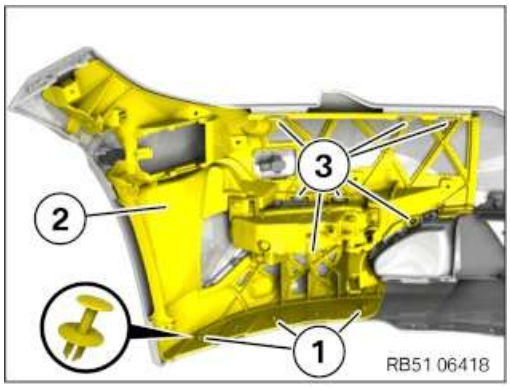
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the fog light support**



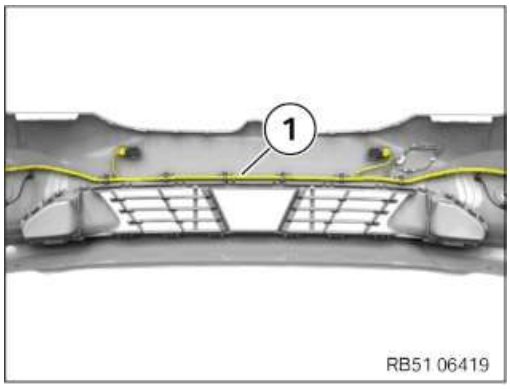
- Unlock all plug connections and disconnect.
- Release the vehicle wiring harness (1) with all the clips and remove from the working area.



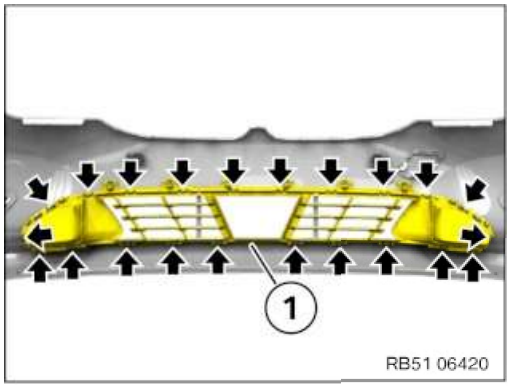
- Loosen the expanding rivet (1).
- Release and remove the fog light support (2) from the latch mechanisms(3).

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9 – Remove middle ornamental grille



- Detach wiring harness (1) from the ornamental grille centre.



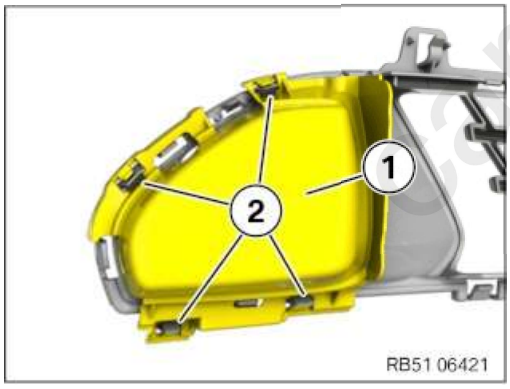
- Release and remove ornamental grille centre (1) from all the latch mechanisms (arrows).

10 – Install the ornamental grille centre section

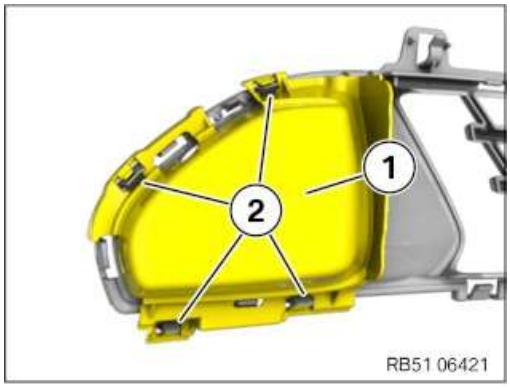
▸ **Replacement: Remount the lid**

NOTICE

Description is for left component only. Procedure on the right side is identical.



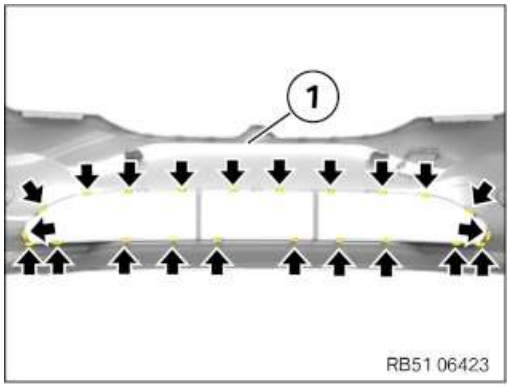
- Release lid (1) from the latch mechanisms (2) and remove.



- Position lid (1) and clip into the latch mechanisms (2) of the new part.

Check

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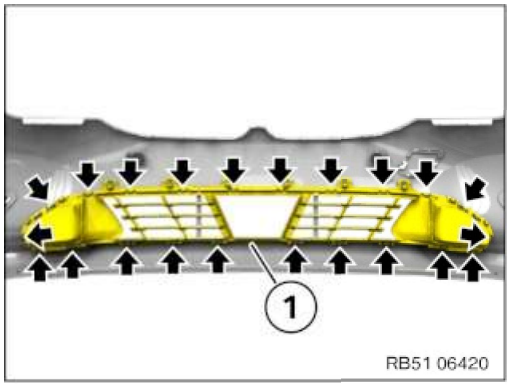
- Check all latch mechanisms (arrows) on the bumper panel (1)for damage.

Result

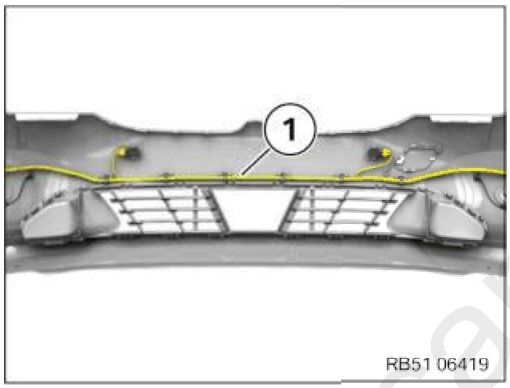
» The latch mechanism is damaged.

Measure

- Renew the bumper panel.



- Fit the centre ornamental grille (1).
- Clip the centre ornamental grille (1) into all the latch mechanisms (arrows).



- Position the vehicle wiring harness (1) and attach in the centre ornamental grille .

POSTPROCESSES

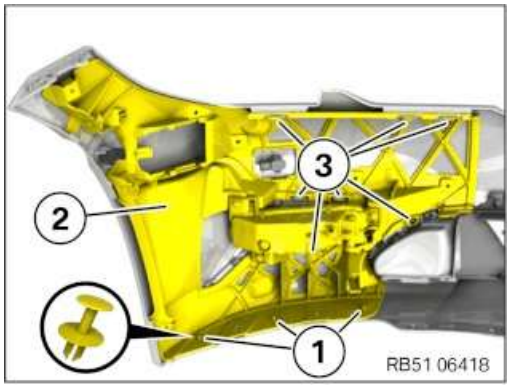
11 – Install both fog light supports

NOTICE

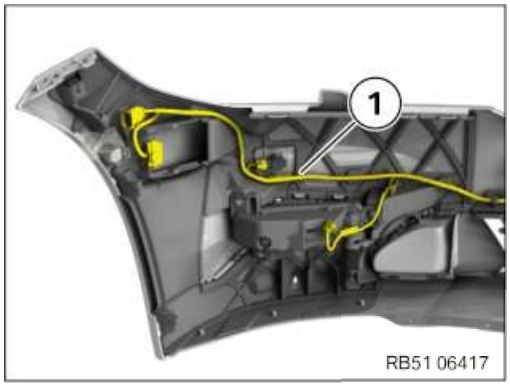
Description is for left component only. Procedure on the right side is identical.

▸ **Install the fog light support**

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- Place and position the fog light support (2).
- Clip fog light support (2) into the latch mechanisms (3).
- Secure expanding rivet (1).

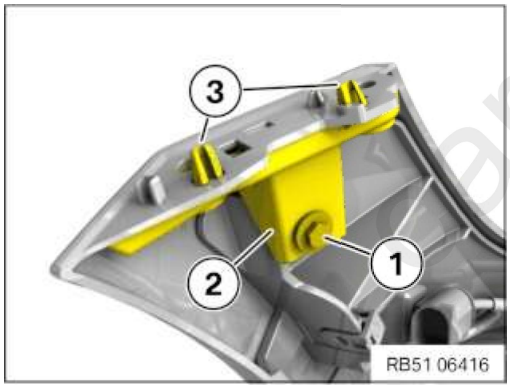


- Position wiring harness (1) and secure using all clips.
- Connect all connectors and lock.

12 – Partially installing both bumper mountings

NOTICE

Description is for left component only. Procedure on the right side is identical.



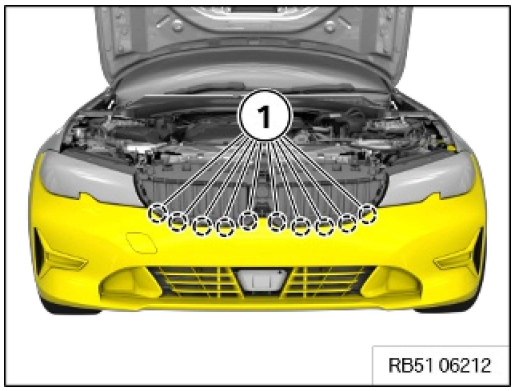
▸ **Installing left bumper mounting partially**

- Insert left bumper mounting (2) from the bottom and clip in with the latch mechanisms (3).
- Tighten down screw (1).

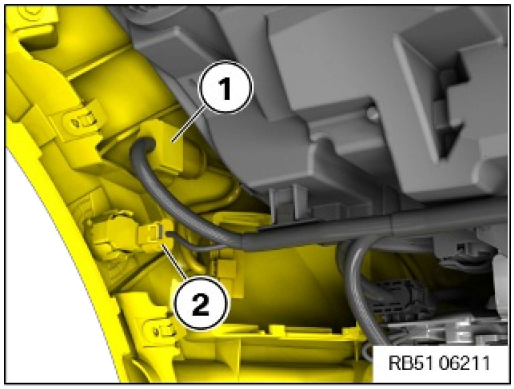
Bumper mounting, side front

Screw		Tightening torque	3 Nm

13 – Install bumper panel, front



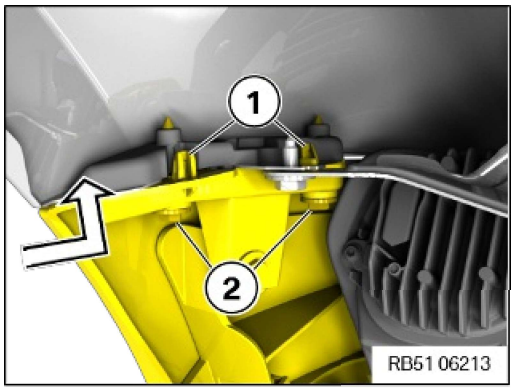
- Position the front bumper panel.
- Clip the front bumper panel into latch mechanisms (1).



NOTICE

Perform the operations on the left and right side.

- Connect connectors (1) and lock.
- If necessary, connect the connector (2) and lock it.



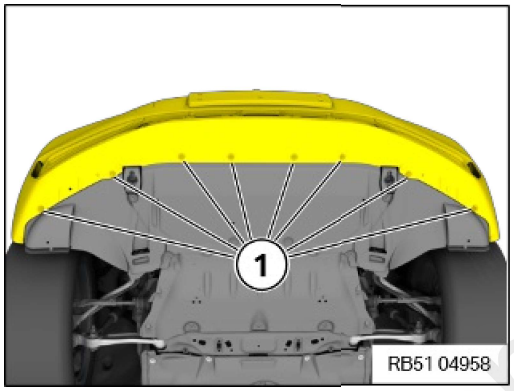
NOTICE

Perform the operations on the left and right side.

- Feed the bumper panel in arrow direction into the guide and clip in with the latch mechanism(1).
- Tighten down screws (2).

Front bumper panel to front side panel

Torx screw 5x35		Tightening torque	3 Nm



NOTICE

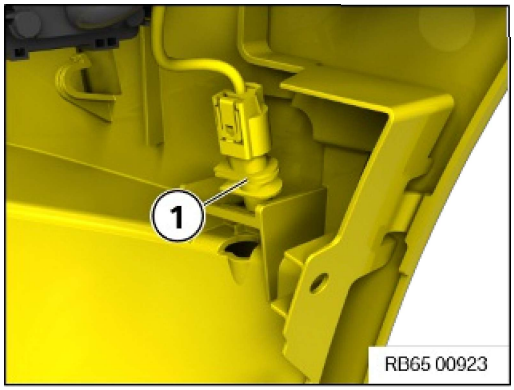
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Tighten the screws (1).

Front bumper panel to underbody protection

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

14 – Partially installing the temperature sensor



- Clip the temperature sensor (1) downwards into the front bumper panel.

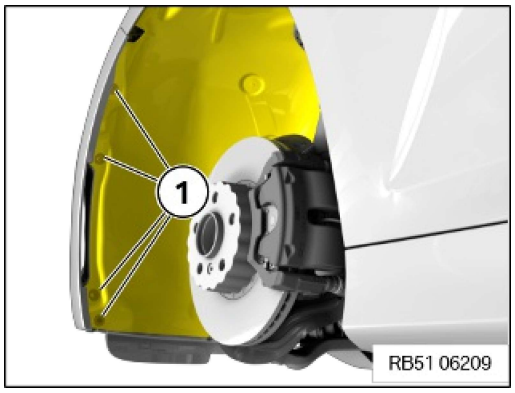
15 – Partially installing both front wheel arch trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

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▸ **Partially installing front wheel arch trim panel**



NOTICE

To provide a better overview: Schematic diagram without front wheel.

- Fold back the front wheel arch trim panel.
- Tighten the screws (1).

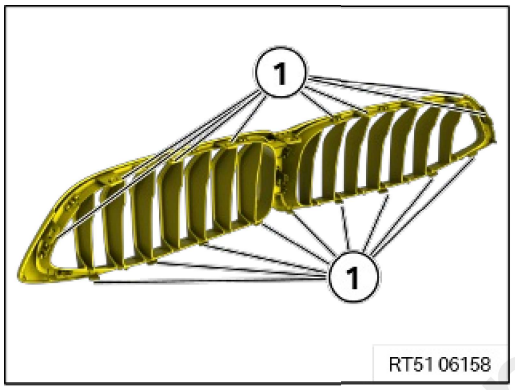
Wheel arch trim panel, front

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

16 – Install centre radiator grille

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



Check

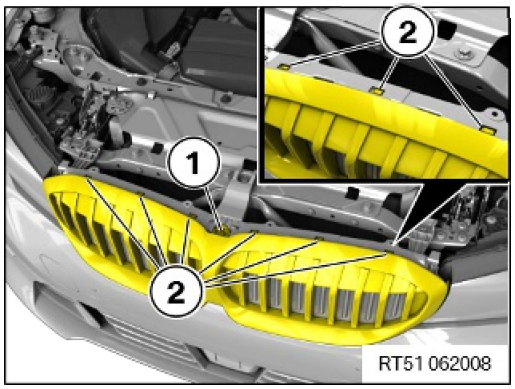
- Check latch mechanisms (1) for damage.

Result

» The latch mechanism (1) is damaged.

Measure

- Renew the front ornamental grille, centre.



- Depending on the equipment, connect and lock connectors.
- Position the front ornamental grille, centre and clip in all latch mechanisms (2) from the front.
- Tighten down screw (1).

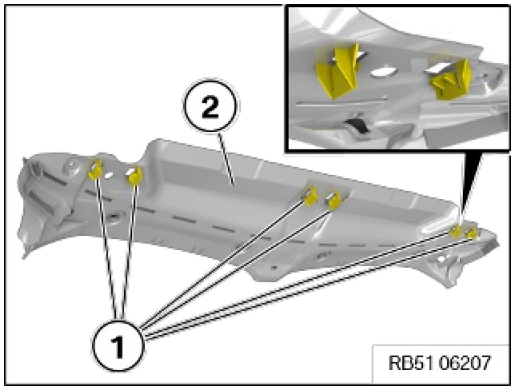
Centre of front ornamental grille to top air flap control

Oval-head screwM6		Tightening torque	4,6 Nm

17 – Installing cover for engine compartment centre

Check

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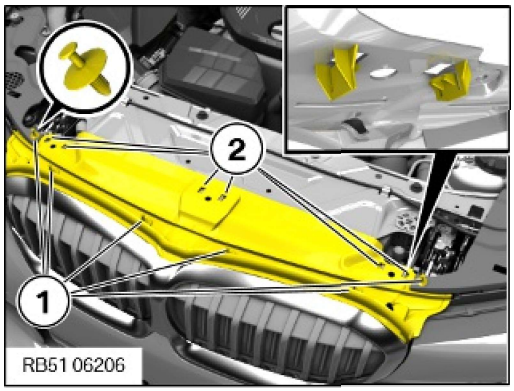
- Check latch mechanisms (1) of cover for engine compartment centre (2) for damage.

Result

» The latch mechanism (1) is damaged.

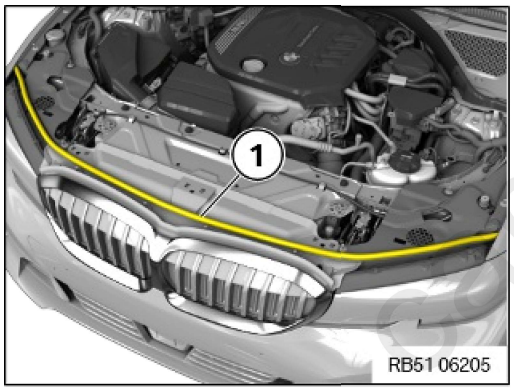
Measure

- Renew cover for engine compartment centre (2).



- Guide in the cover for the engine compartment centre from the rear and position it.
- Clip in the cover for the engine compartment centre with latch mechanisms (2).
- Mount all expanding rivets (1).

18 – Install the seal for the front bonnet



- Position the bonnet seal(1) and connect it on the mounting on the bumper and on the headlights.

Additional Information

Overview of Tightening Torques

Bumper mounting, side front — Used in step 12

Screw		Tightening torque	3 Nm

Front bumper panel to front side panel — Used in step 13

Torx screw 5x35		Tightening torque	3 Nm

Front bumper panel to underbody protection — Used in step 13

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

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Wheel arch trim panel, front Used in step 15

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

Centre of front ornamental grille to top air flap control Used in step 16

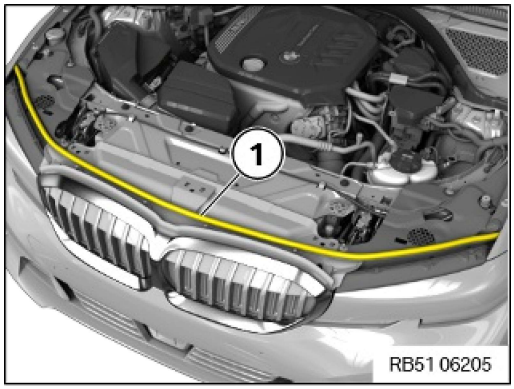
Oval-head screwM6		Tightening torque	4,6 Nm

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51 11 157 Replace bumper panel, front

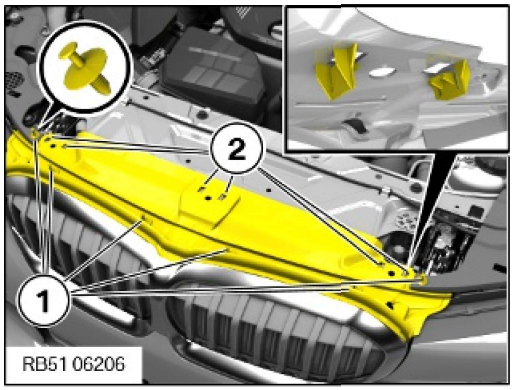
PRELIMINARY WORK

1 – Remove the seal for the bonnet in front



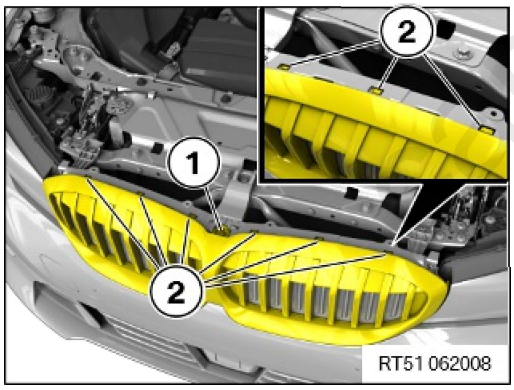
- Pull off front bonnet seal (1) upwards.

2 – Removing the centre engine compartment cover



- Detach all expanding rivets (1).
- Release the cover of the centre engine compartment with the latch mechanisms (2) .
- Feed the cover for the centre engine compartment out to the rear.

3 – Remove centre radiator ornamental grille



- Loosen screw (1).
- Release the centre front ornamental grille from the latch mechanisms (2).
- Release the centre front ornamental grille from the remaining latch mechanism towards the front and remove it.
- Unlock and disconnect plug connections according to the equipment.

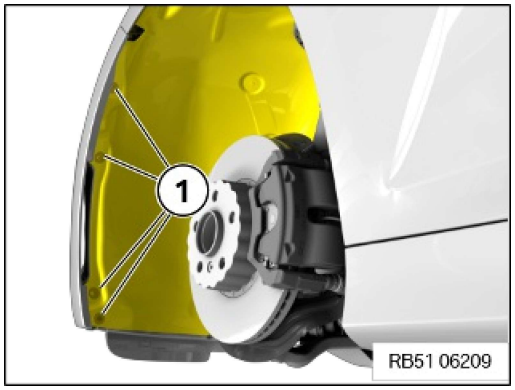
4 – Partially remove both front wheel arch trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially removing front wheel arch trim panel**

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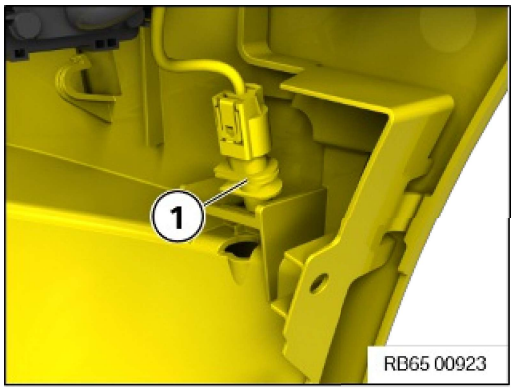


NOTICE

To provide a better overview: Schematic diagram without front wheel.

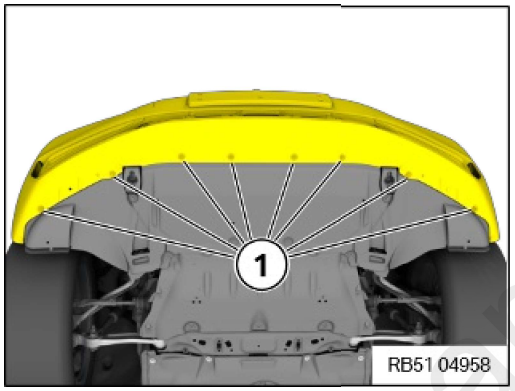
- Loosen screws (1).
- Fold the front wheel arch trim panel to one side.

5 – Partially removing the temperature sensor



- Unclip temperature sensor (1) from the front bumper panel to the top.

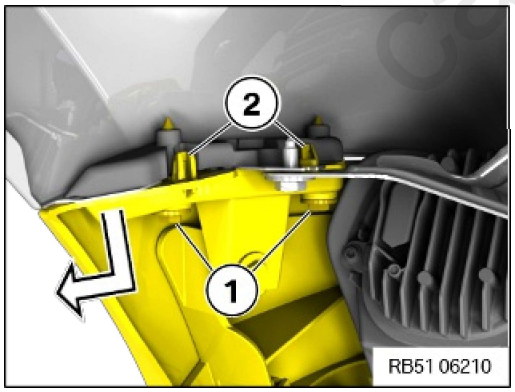
6 – Remove front bumper panel



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

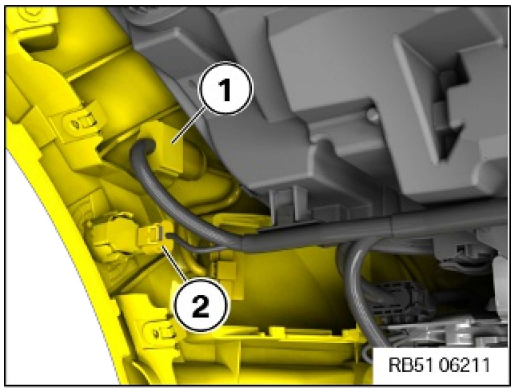
- Loosen screws (1).



NOTICE

Perform the operations on the left and right side.

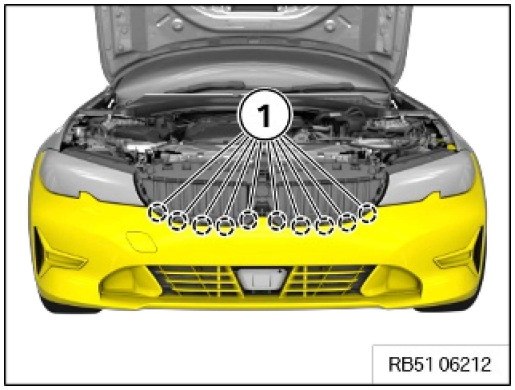
- Loosen screws (1).
- Release the front bumper panel along with the latch mechanisms (2) and feed out in the direction of arrow out of the guide.



NOTICE

Perform the operations on the left and right side.

- Unlock plug connection (1) and disconnect.
- If necessary, unlock plug connection (2) and disconnect.



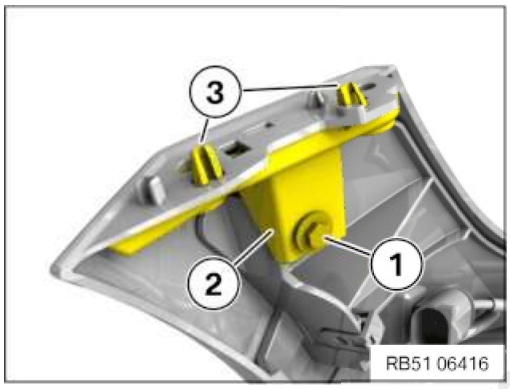
- Release the front bumper panel from the latch mechanisms (1) towards the front.
- Remove the front bumper panel.

MAIN WORK

7 – Partially removing both bumper mountings

NOTICE

Description is for left component only. Procedure on the right side is identical.



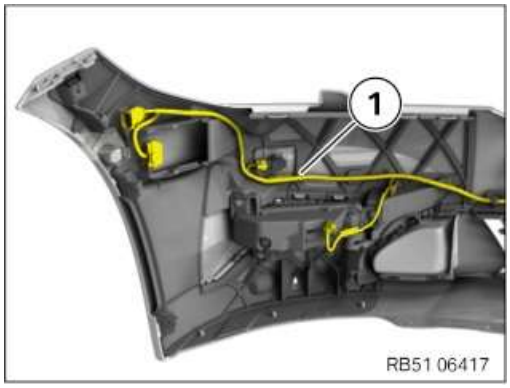
▸ **Partially removing left bumper mounting**

- Loosen screw (1).
- Release left bumper mounting (2) with latch mechanisms (3) and guide it downwards.

8 – Remove both fog light supports

NOTICE

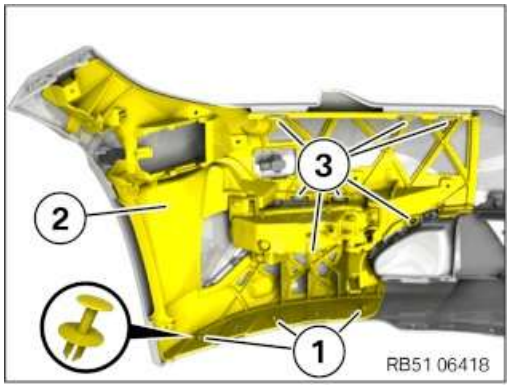
Description is for left component only. Procedure on the right side is identical.



▸ **Remove the fog light support**

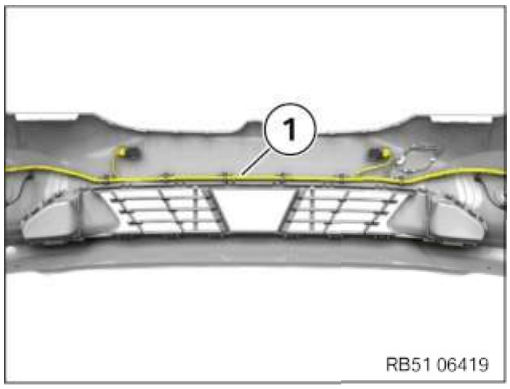
- Unlock all plug connections and disconnect.
- Release the vehicle wiring harness (1) with all the clips and remove from the working area.

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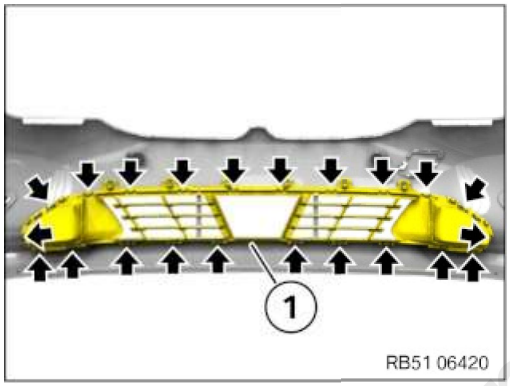


- Loosen the expanding rivet (1).
- Release and remove the fog light support (2) from the latch mechanisms(3).

9 – Remove middle ornamental grille



- Detach wiring harness (1) from the ornamental grille centre.



- Release and remove ornamental grille centre (1) from all the latch mechanisms (arrows).

10 – Remove the number plate baseplate for the number plate

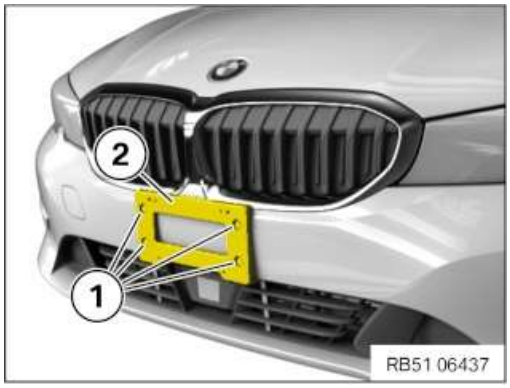
▸ Remove the number plate baseplate for the number plate (European version)

TECHNICAL INFORMATION

In the European version with basic bumper panel, the number plate is installed without number plate baseplate.

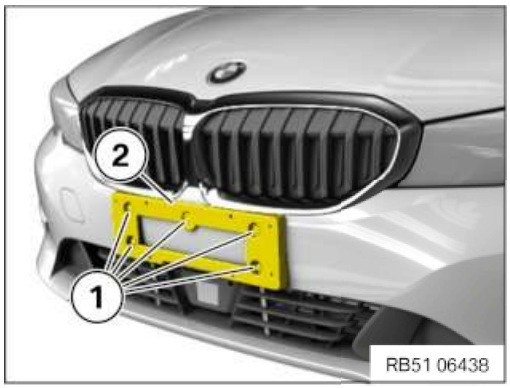
▸ Removing the number plate baseplate for the number plate (US version or Japanese version)

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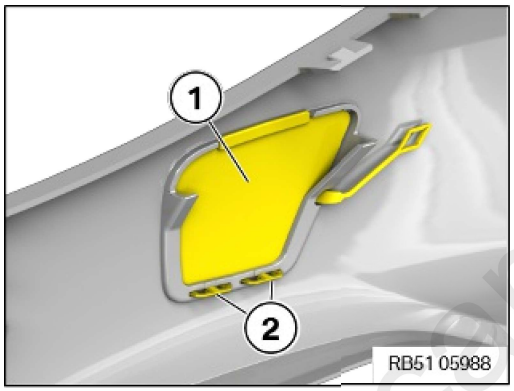
- Loosen screws (1).
- Remove the number plate baseplate for number plate (2) to the front.

▸ Removing the number plate baseplate for the number plate (Chinese version)



- Loosen screws (1).
- Remove the number plate baseplate for number plate (2) to the front.

11 – Removing towing eye cover



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

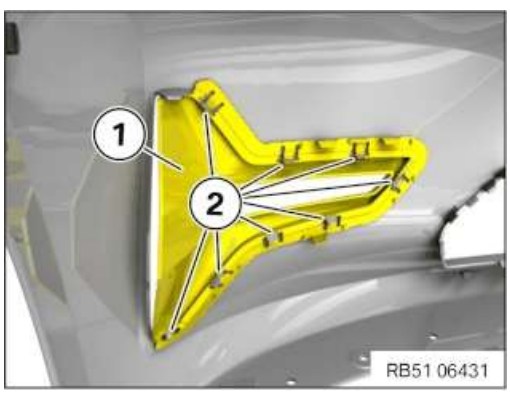
- Unclip the cover of the towing eye (1) with the latch mechanisms (2).
- Feed out the tether and remove the cover of the towing eye (1).

12 – Removing both trims of bumper panel

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ Removing the trim of the left bumper panel



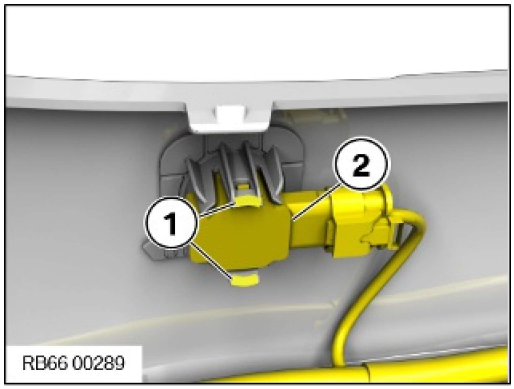
- Release and remove the trim of the left bumper panel (1)from the latch mechanisms(2).

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13 – Partially removing the ultrasonic sensor

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



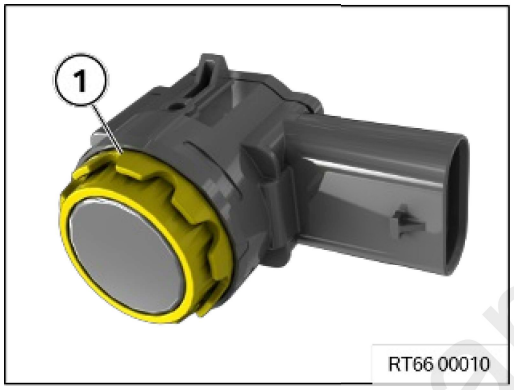
- Unlock latch mechanisms (1) and release ultrasonic sensor(2) from the bumper panel.

  The ultrasonic sensor (2) remains connected to the vehicle wiring harness.
- Perform the step on all the other ultrasonic sensors.
- Remove the wiring harness with the connected ultrasonic sensors.

14 – Partially install the ultrasonic sensor

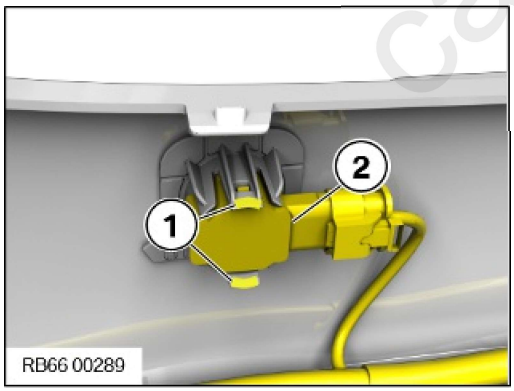
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Check the decoupling ring (1) for damage and renew the decoupling ring as needed.

  The decoupling ring must not be missing.



- Position the wiring harness with the associated ultrasonic sensors.
- Insert the ultrasonic sensor (2) and clip in to the latch mechanisms.(1)
- Perform the step on all the other ultrasonic sensors.

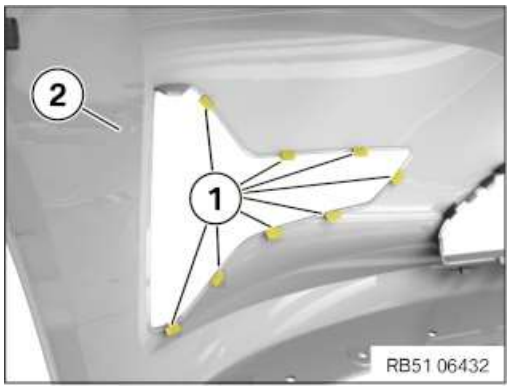
15 – Install both trims of the bumper panel

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Installing the trim of the left bumper panel**

cardiagn.com



Check

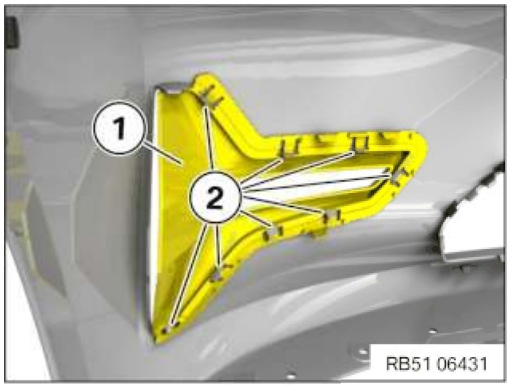
- Check the latch mechanisms (1) on the bumper panel (2) for damage.

Result

» The latch mechanism is damaged.

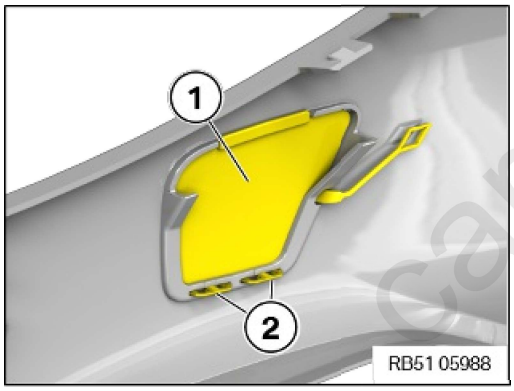
Measure

- Renew the bumper panel.



- Fit the trim of the left bumper panel (1)and clip into the latch mechanism(2).

16 – Installing the cover of the towing eye



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Guide in tether.
- Insert the cover of the towing eye (1) and clip into place with the latch mechanisms (2).

17 – Install the number plate baseplate for the number plate

WARNING

Malfunction of the sensors of the driver assistance systems.

Incorrect assembly of the number plate leads to a malfunction of the sensors of the driver assistance systems.

- Fix number plate and number plate baseplate only according to the dimensions specified in the repair instructions.
- Secure number plate and number plate baseplate on the bumper panel **without pre-drilling** , otherwise there is a risk of damage to the underlying cables.
- Only use number plate baseplates that have been approved for the vehicle type.

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CAUTION

Laser beam.

Danger of injury!

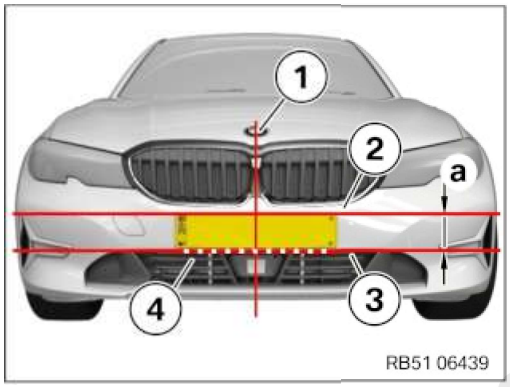
- Do not look into the laser beam.

- Park the vehicle and the special tool 2 407 566 on a flat and even surface.
- Mount the laser on the tripod.
- Switch on laser (Position without automatic level).
- Activate the horizontal and vertical laser.

▸ Installing the number plate baseplate for the number plate (European version)

TECHNICAL INFORMATION

In the European version with basic bumper panel, the number plate is installed without number plate baseplate.



- Mark the centre of the number plate .
- Position and centre align the special tool for the vehicle.
- Align vertical laser beam (1) with the centre of the vehicle (e.g. BMW badge).
- Align horizontal laser beam (2) on the upper edge of the side trims of the bumper panel.
- Move horizontal laser beam (2) down by dimension (a).
  - Dimension **a** = 81 mm
- Align number plate with both the laser beams(1) and (3).
- Mark the attachment points on the corners.
- Screw the number plate tight without pre-drilling on the bumper panel.

Car registration number

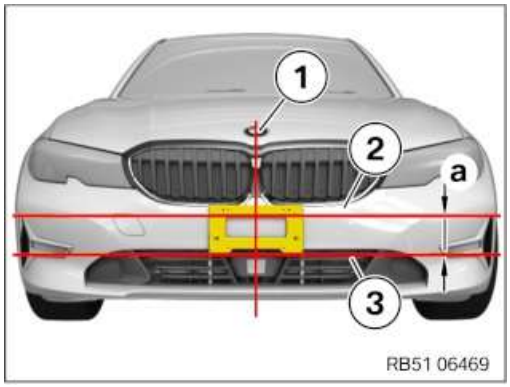
Screw TS 5x13		Tightening torque	0,7 Nm

- **Risk of damage!**

  The screw connection of the number plate in area (4)is not permitted.

▸ Installing the number plate baseplate for the license plate (US version or Japanese version)

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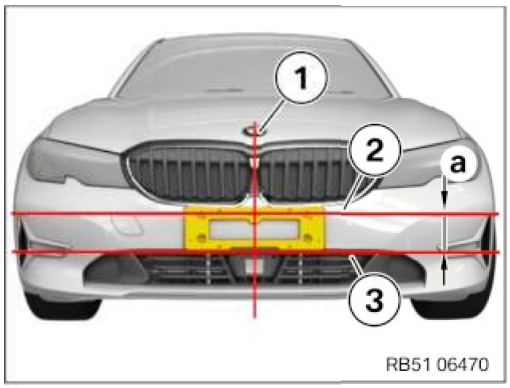


- Mark the centre of the number plate baseplate for the number plate.
- Position and centre align the special tool for the vehicle.
- Align vertical laser beam (1) with the centre of the vehicle (e.g. BMW badge).
- Align horizontal laser beam (2) on the upper edge of the side trims of the bumper panel.
- Move horizontal laser beam (2) down by dimension (a).
  - Dimension **a** = 105 mm
- Align number plate baseplate for the number plate with both laser beams (1) and (3).
- Mark the attachment points on the corners.
- Screw in the number plate baseplate for the number plate tightly without pre-drilling on the bumper panel.

License plate baseplate

Screw TS 5x16		Tightening torque	0,7 Nm

▸ Installing number plate baseplate for the number plate (Chinese version)



- Mark the centre of the number plate baseplate for the number plate.
- Position and centre align the special tool for the vehicle.
- Align vertical laser beam (1) with the centre of the vehicle (e.g. BMW badge).
- Align horizontal laser beam (2) on the upper edge of the side trims of the bumper panel.
- Move horizontal laser beam (2) down by dimension (a).
  - Dimension **(a)** = 95 mm
- Align number plate baseplate for the number plate with both laser beams (1) and (3).
- Mark the attachment points on the corners.
- Screw in the number plate baseplate for the number plate tightly without pre-drilling on the bumper panel.

License plate baseplate

Screw TS 5x16		Tightening torque	0,7 Nm

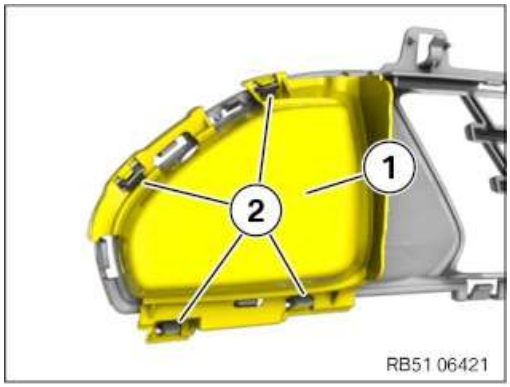
18 – Install the ornamental grille centre section

▸ Replacement: Remount the lid

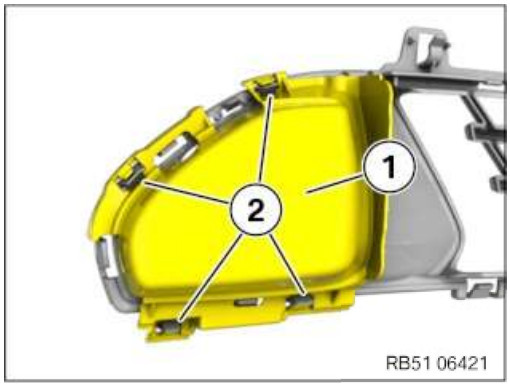
NOTICE

Description is for left component only. Procedure on the right side is identical.

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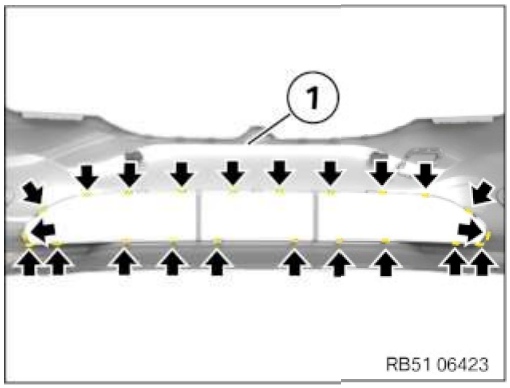


- Release lid (1) from the latch mechanisms (2) and remove.



- Position lid (1) and clip into the latch mechanisms (2) of the new part.

Check



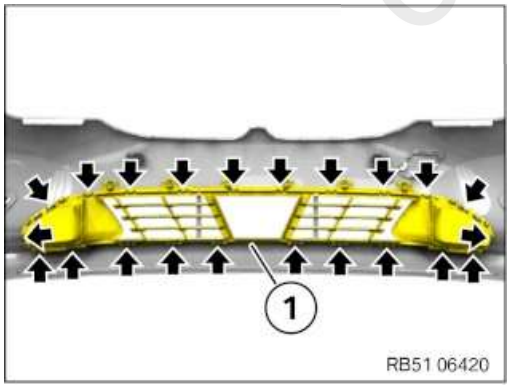
- Check all latch mechanisms (arrows) on the bumper panel (1)for damage.

Result

» The latch mechanism is damaged.

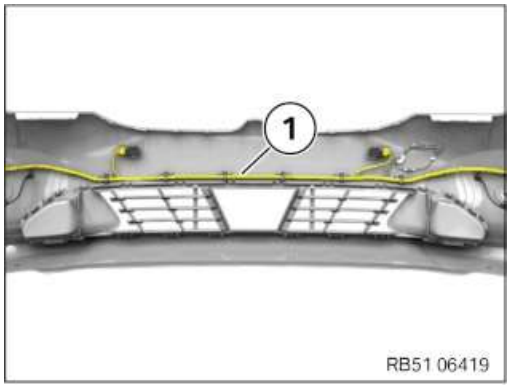
Measure

- Renew the bumper panel.



- Fit the centre ornamental grille (1).
- Clip the centre ornamental grille (1) into all the latch mechanisms (arrows).

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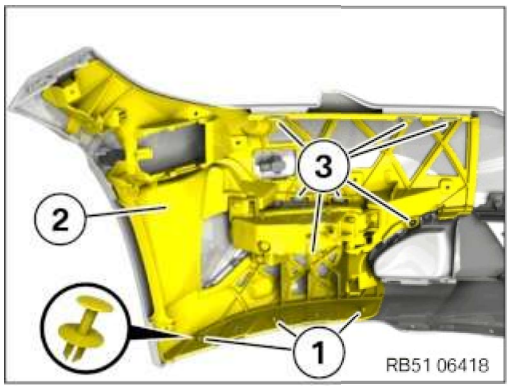
- Position the vehicle wiring harness (1) and attach in the centre ornamental grille .

19 – Install both fog light supports

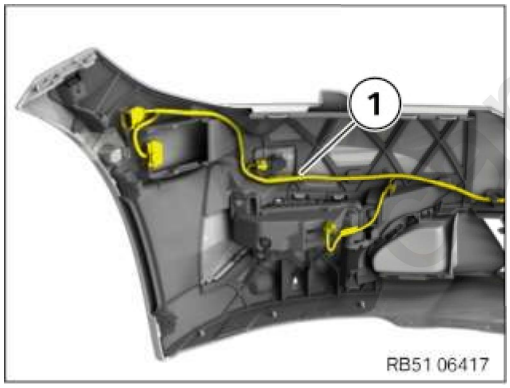
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the fog light support**



- Place and position the fog light support (2).
- Clip fog light support (2) into the latch mechanisms (3).
- Secure expanding rivet (1).



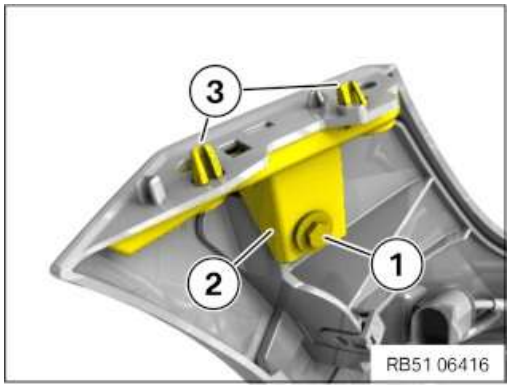
- Position wiring harness (1) and secure using all clips.
- Connect all connectors and lock.

20 – Partially installing both bumper mountings

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Installing left bumper mounting partially**



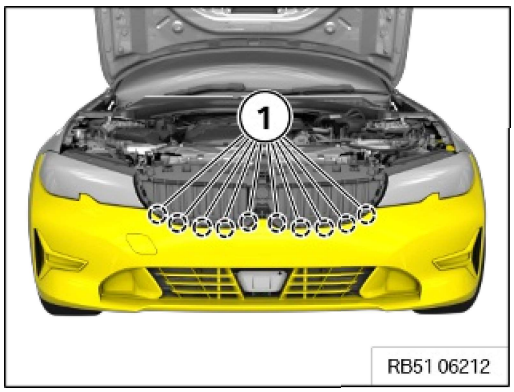
- Insert left bumper mounting (2) from the bottom and clip in with the latch mechanisms (3).
- Tighten down screw (1).

Bumper mounting, side front

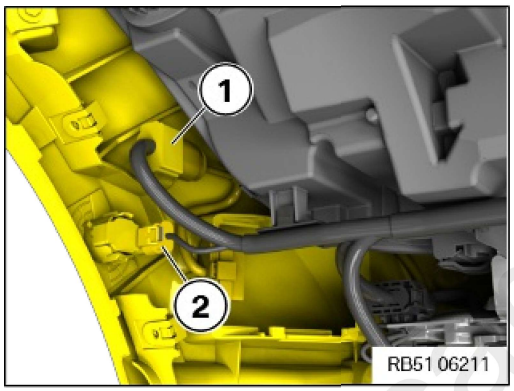
Screw		Tightening torque	3 Nm

POSTPROCESSES

21 – Install bumper panel, front



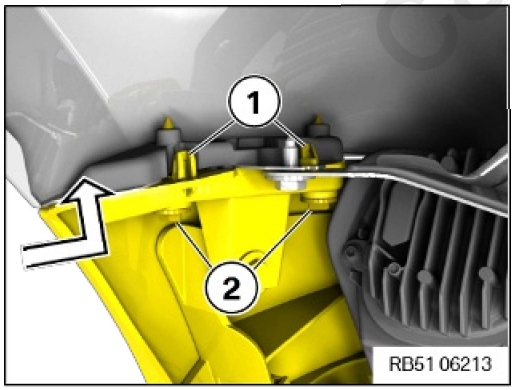
- Position the front bumper panel.
- Clip the front bumper panel into latch mechanisms (1).



NOTICE

Perform the operations on the left and right side.

- Connect connectors (1) and lock.
- If necessary, connect the connector (2) and lock it.



NOTICE

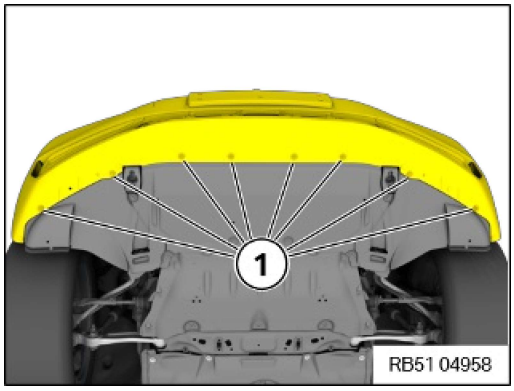
Perform the operations on the left and right side.

- Feed the bumper panel in arrow direction into the guide and clip in with the latch mechanism(1).
- Tighten down screws (2).

Front bumper panel to front side panel

Torx screw 5x35		Tightening torque	3 Nm

carfdiag.com



NOTICE

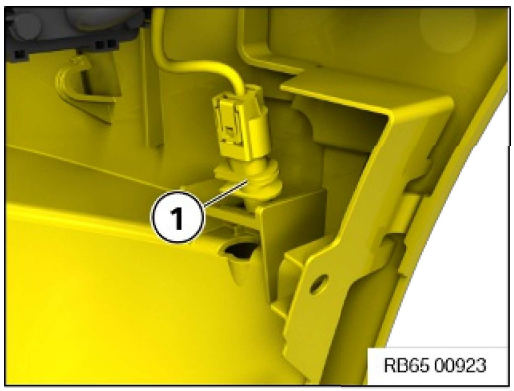
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Tighten the screws (1).

Front bumper panel to underbody protection

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

22 – Partially installing the temperature sensor



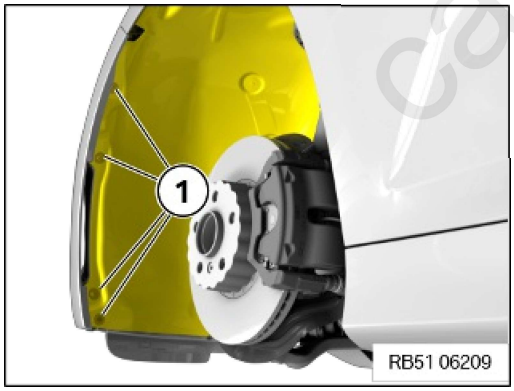
- Clip the temperature sensor (1) downwards into the front bumper panel.

23 – Partially installing both front wheel arch trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially installing front wheel arch trim panel**



NOTICE

To provide a better overview: Schematic diagram without front wheel.

- Fold back the front wheel arch trim panel.
- Tighten the screws (1).

Wheel arch trim panel, front

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

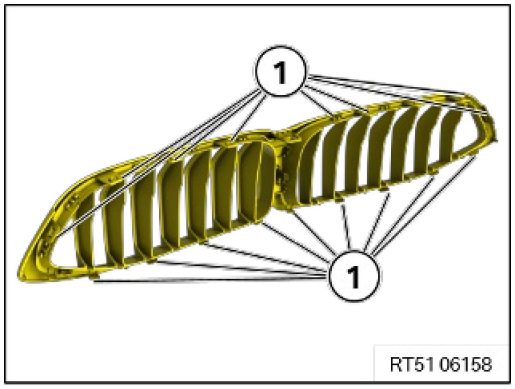
24 – Install centre radiator grille

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

Check

cardiagn.com



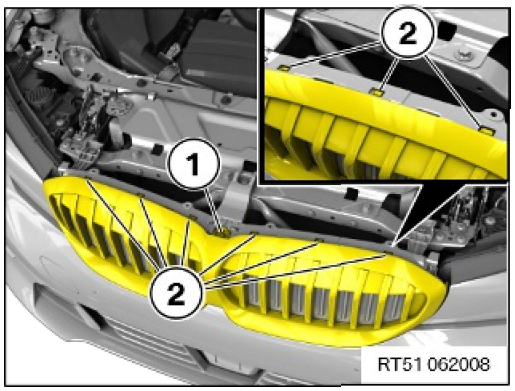
- Check latch mechanisms (1) for damage.

Result

» The latch mechanism (1) is damaged.

Measure

- Renew the front ornamental grille, centre.

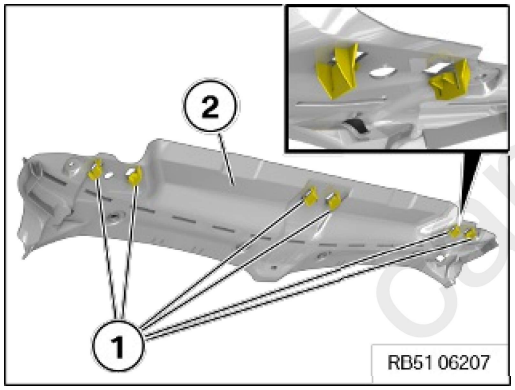


- Depending on the equipment, connect and lock connectors.
- Position the front ornamental grille, centre and clip in all latch mechanisms (2) from the front.
- Tighten down screw (1).

Centre of front ornamental grille to top air flap control

Oval-head screwM6		Tightening torque	4,6 Nm

25 – Installing cover for engine compartment centre



Check

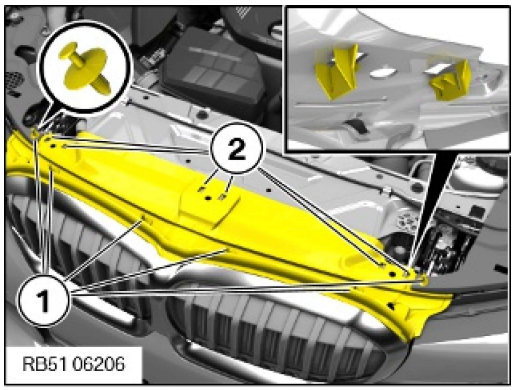
- Check latch mechanisms (1) of cover for engine compartment centre (2) for damage.

Result

» The latch mechanism (1) is damaged.

Measure

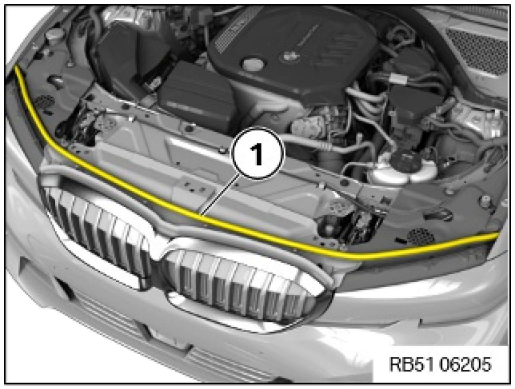
- Renew cover for engine compartment centre (2).



- Guide in the cover for the engine compartment centre from the rear and position it.
- Clip in the cover for the engine compartment centre with latch mechanisms (2).
- Mount all expanding rivets (1).

26 – Install the seal for the front bonnet

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- Position the bonnet seal(1) and connect it on the mounting on the bumper and on the headlights.

Additional Information

Overview of Tightening Torques

Car registration number			Used in step 17
Screw TS 5x13		Tightening torque	0,7 Nm

License plate baseplate			Used in step 17
Screw TS 5x16		Tightening torque	0,7 Nm

Bumper mounting, side front			Used in step 20
Screw		Tightening torque	3 Nm

Front bumper panel to front side panel			Used in step 21
Torx screw 5x35		Tightening torque	3 Nm

Front bumper panel to underbody protection			Used in step 21
Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

Wheel arch trim panel, front			Used in step 23
Thermoplastic hexagon screw		Tightening torque	2,6 Nm

Centre of front ornamental grille to top air flap control			Used in step 24
Oval-head screwM6		Tightening torque	4,6 Nm

Overview of Special Tools

2 407 566 Laser



Common	Used in step 17
Usage	For aligning a number plate or a support for a number plate on the vehicle (front bumper). Delivery specification 1 x Kreuz-laser and 1 x tripod.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	01 05 15 (235)

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51 11 158 Replacing the number plate baseplate for the number plate

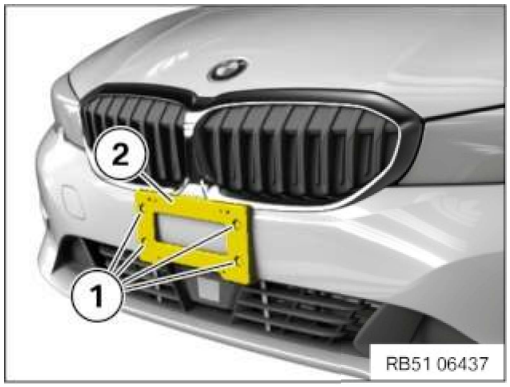
1 – Remove the number plate baseplate for the number plate

▸ Remove the number plate baseplate for the number plate (European version)

TECHNICAL INFORMATION

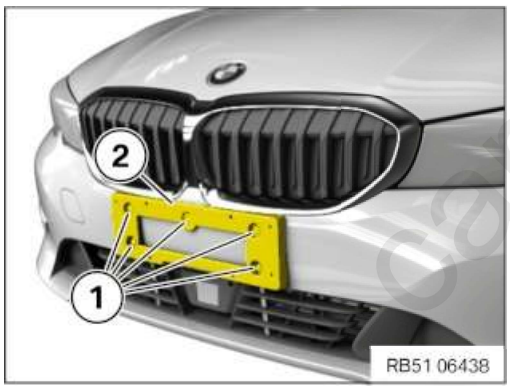
In the European version with basic bumper panel, the number plate is installed without number plate baseplate.

▸ Removing the number plate baseplate for the number plate (US version or Japanese version)



- Loosen screws (1).
- Remove the number plate baseplate for number plate (2) to the front.

▸ Removing the number plate baseplate for the number plate (Chinese version)



- Loosen screws (1).
- Remove the number plate baseplate for number plate (2) to the front.

2 – Install the number plate baseplate for the number plate

WARNING

Malfunction of the sensors of the driver assistance systems.

Incorrect assembly of the number plate leads to a malfunction of the sensors of the driver assistance systems.

- Fix number plate and number plate baseplate only according to the dimensions specified in the repair instructions.
- Secure number plate and number plate baseplate on the bumper panel **without pre-drilling** , otherwise there is a risk of damage to the underlying cables.
- Only use number plate baseplates that have been approved for the vehicle type.

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CAUTION

Laser beam.

Danger of injury!

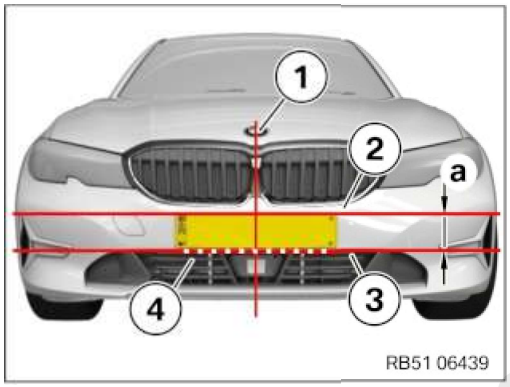
- Do not look into the laser beam.

- Park the vehicle and the special tool 2 407 566 on a flat and even surface.
- Mount the laser on the tripod.
- Switch on laser (Position without automatic level).
- Activate the horizontal and vertical laser.

▸ Installing the number plate baseplate for the number plate (European version)

TECHNICAL INFORMATION

In the European version with basic bumper panel, the number plate is installed without number plate baseplate.



- Mark the centre of the number plate .
- Position and centre align the special tool for the vehicle.
- Align vertical laser beam (1) with the centre of the vehicle (e.g. BMW badge).
- Align horizontal laser beam (2) on the upper edge of the side trims of the bumper panel.
- Move horizontal laser beam (2) down by dimension (a).
  - Dimension **a** = 81 mm
- Align number plate with both the laser beams(1) and (3).
- Mark the attachment points on the corners.
- Screw the number plate tight without pre-drilling on the bumper panel.

Car registration number

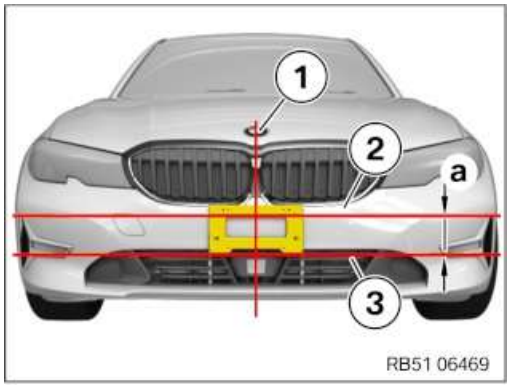
Screw TS 5x13		Tightening torque	0,7 Nm

- **Risk of damage!**

  The screw connection of the number plate in area (4)is not permitted.

▸ Installing the number plate baseplate for the license plate (US version or Japanese version)

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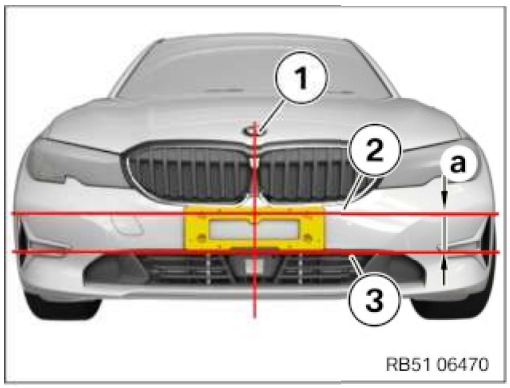


- Mark the centre of the number plate baseplate for the number plate.
- Position and centre align the special tool for the vehicle.
- Align vertical laser beam (1) with the centre of the vehicle (e.g. BMW badge).
- Align horizontal laser beam (2) on the upper edge of the side trims of the bumper panel.
- Move horizontal laser beam (2) down by dimension (a).
  - Dimension **a** = 105 mm
- Align number plate baseplate for the number plate with both laser beams (1) and (3).
- Mark the attachment points on the corners.
- Screw in the number plate baseplate for the number plate tightly without pre-drilling on the bumper panel.

License plate baseplate

Screw TS 5x16		Tightening torque	0,7 Nm

▸ Installing number plate baseplate for the number plate (Chinese version)



- Mark the centre of the number plate baseplate for the number plate.
- Position and centre align the special tool for the vehicle.
- Align vertical laser beam (1) with the centre of the vehicle (e.g. BMW badge).
- Align horizontal laser beam (2) on the upper edge of the side trims of the bumper panel.
- Move horizontal laser beam (2) down by dimension (a).
  - Dimension **(a)** = 95 mm
- Align number plate baseplate for the number plate with both laser beams (1) and (3).
- Mark the attachment points on the corners.
- Screw in the number plate baseplate for the number plate tightly without pre-drilling on the bumper panel.

License plate baseplate

Screw TS 5x16		Tightening torque	0,7 Nm

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Additional Information

Overview of Tightening Torques

Car registration number Used in step 2

Screw TS 5x13		Tightening torque	0,7 Nm

License plate baseplate Used in step 2

Screw TS 5x16		Tightening torque	0,7 Nm

Overview of Special Tools

2 407 566 Laser



Common	Used in step 2
Usage	For aligning a number plate or a support for a number plate on the vehicle (front bumper). Delivery specification 1 x Kreuz-laser and 1 x tripod.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	01 05 15 (235)

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51 00 ... Overview of consumables (Electronic Parts Catalogue)

Designation, repair instructions	Designation, Electronic Parts Catalogue	Part number, Electronic Parts Catalogue	Remarks
Cleaning agent R2	Cleaning agent R2	83 19 0 417 324	500 ml
Lubricants G14	Lubricants G14	83 23 2 360 412	900 ml / Notes
Sika Activator 205	Aktivator 205	83 19 0 030 155	250 ml
Yellow plastic adhesive tape	Adhesive tape	83 19 9 410 979	A = 66 mm; B = 50 mm
Double-sided adhesive tape	Adhesive tape	54 11 2 290 978	L = 50 mm/W = 12 mm
Masking tape	Masking tape	81 22 9 400 181	L = 50 mm / W = 19 mm
Masking tape	Masking tape	81 22 9 400 388	L = 50 mm / W = 30 mm
Eraser disk	Scotch Brite eraser disk	51 91 0 402 946	with shaft
Cutting cord	Cutting cord	81 43 2 344 272	Notes
Adhesive set K6	Adhesive set K6	83 19 2 317 925	
Window glass adhesive	Window glass adhesive, cold, 1 hour	83 19 2 289 286	
Profile rubber adhesive		83 19 2 232 322	
Set of felt pads	Set of felt pads	51 45 2 353 024	

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51 12 156 Removing and installing rear bumper panel

RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.

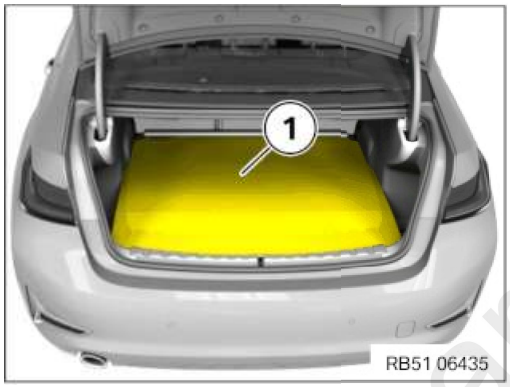
TECHNICAL INFORMATION

To guarantee the system function in vehicles with lane change warning sensor (optional equipment S5ASA, 05AS, S5ATA, 05AT, S5AUA and 05AU), repainting the bumper panel may not be repainted either in paint stage 1 or paint stage 3.

Do not attach labels in the sampling range of the sensor.

PRELIMINARY WORK

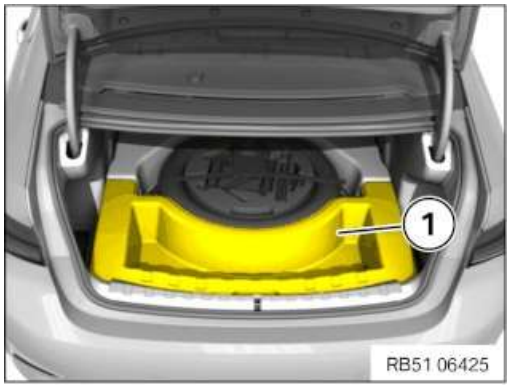
1 – Removing the luggage compartment floor trim panel



- Remove luggage compartment floor trim panel (1).

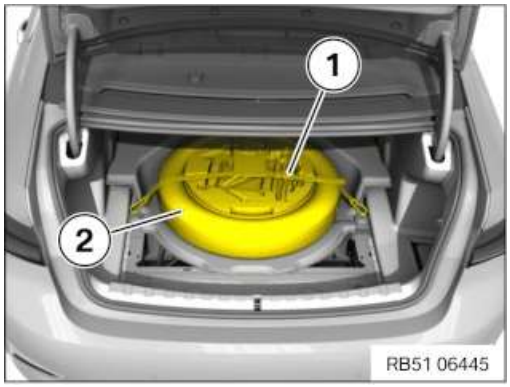
2 – If installed: Removing the compact spare wheel

▸ **Removing rear luggage compartment well**



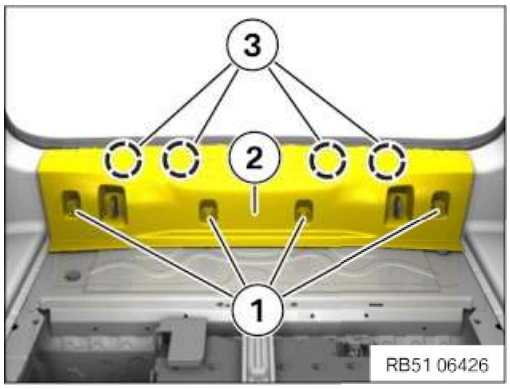
- Remove rear luggage compartment well (1).

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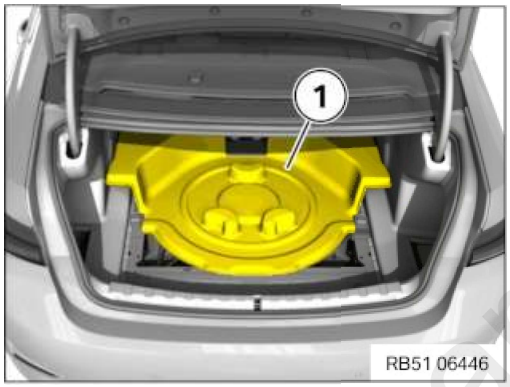
- Open buckle on seat belt strap (1) and set it aside.
- Remove emergency wheel (2) with the insert.

3 – Removing the loading edge trim



- Loosen the expanding rivet (1).
- Unclip loading edge trim(2) upwards from latch mechanisms (3).
- Guide out and remove loading edge trim (2) under the sealing lip of the tailgate seal.

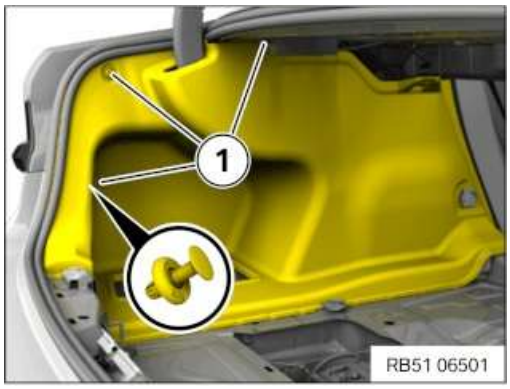
4 – Removing front luggage compartment well



- Guide out and remove front luggage compartment well (1) on the seat belt strap.

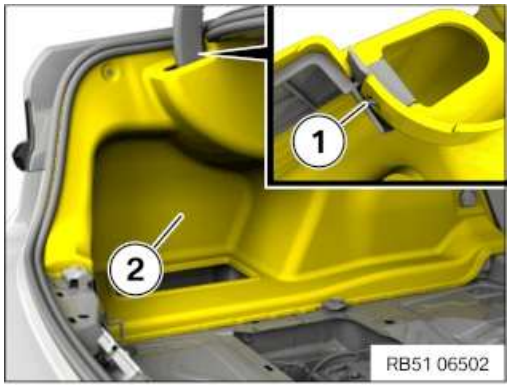
5 – Removing both luggage compartment wheel arch trim panels partially

▸ **Partially remove luggage compartment wheel arch trim on left**



- Loosen the expanding rivet (1).

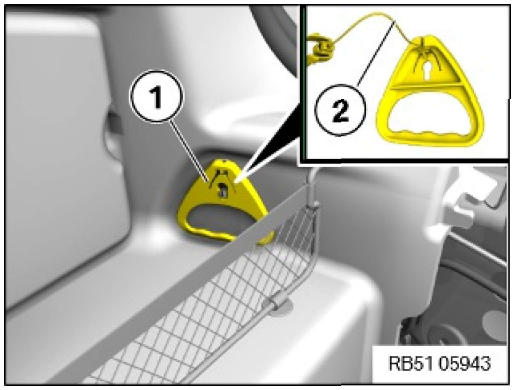
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- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip of the tailgate seal and release it in the rear area.

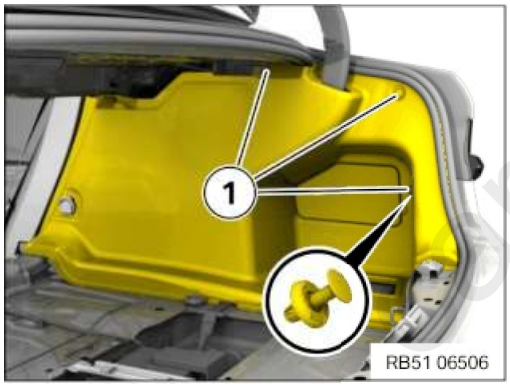
▶ Partially remove luggage compartment wheel arch panel on right

▷ If installed: Remove the emergency release handle for the tailgate (additional work in the US version)

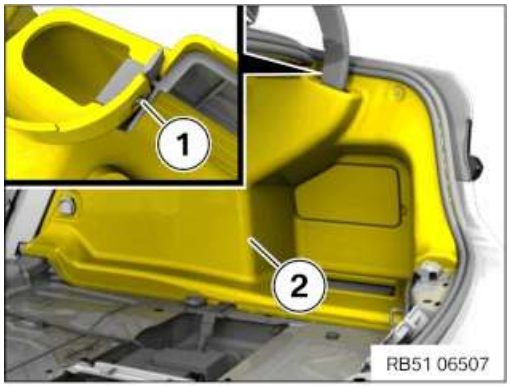


- Release the emergency release handle for tailgate (1) from the holder.
- Detach Bowden cable (2) and remove the emergency release handle for tailgate (1).

◁



- Loosen the expanding rivet (1).



- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip of the tailgate seal and release it in the rear area.

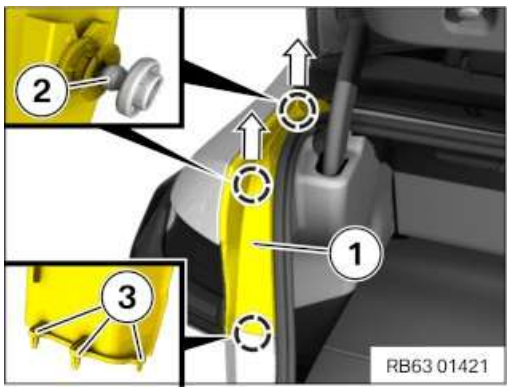
6 – Removing both trims of water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.

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▶ **Remove the trim in the water channel**



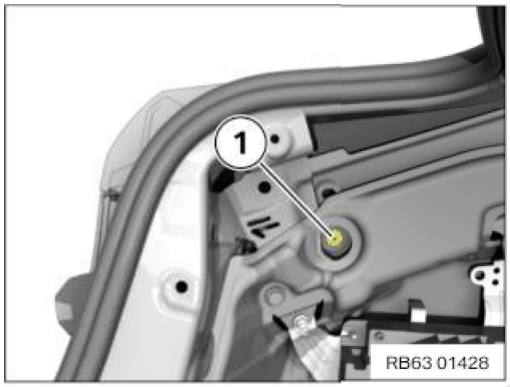
- Unclip the trim in the water channel (1) from the ball pins (2) towards the top.
- Release the trim in the water channel (1) from the guides (3) and remove it.

7 – Remove both rear lights from the side panel

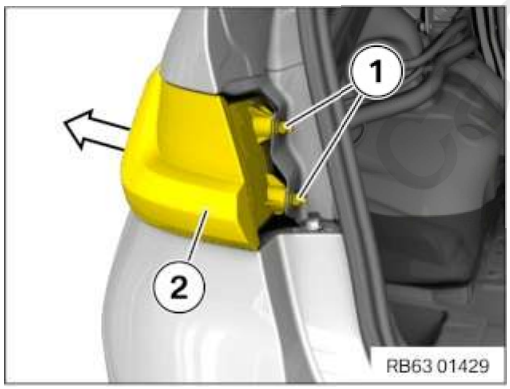
NOTICE

Description is for left component only. Procedure on the right side is identical.

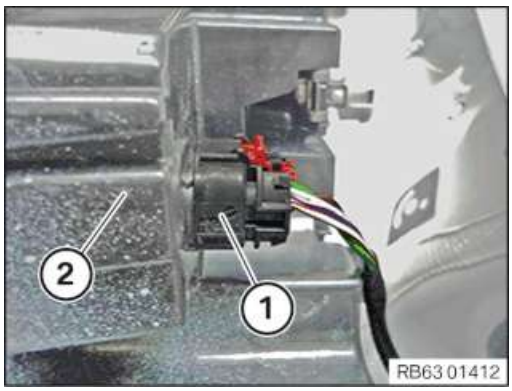
▶ **Remove the rear light on the side panel**



- Loosen nut (1).



- Release the nuts (1) and feed out the rear light on the side panel (2) in the direction of arrow.



TECHNICAL INFORMATION

Observe note on unlocking and disconnecting plug connections.

For additional information see: 6113 ... Unlocking and disconnecting different plug connections

- Unlock and disconnect plug connection (1) as described in position #28 in additional information.
- Remove the rear light on the side panel (2).

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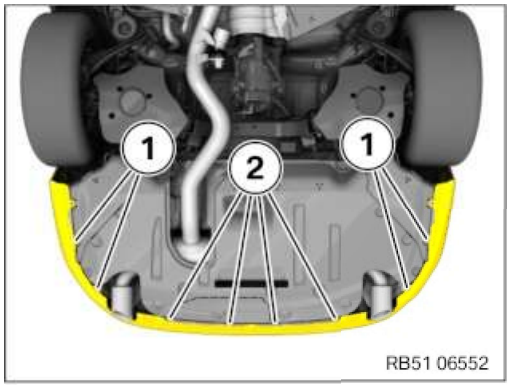
8 – Remove rear bumper panel



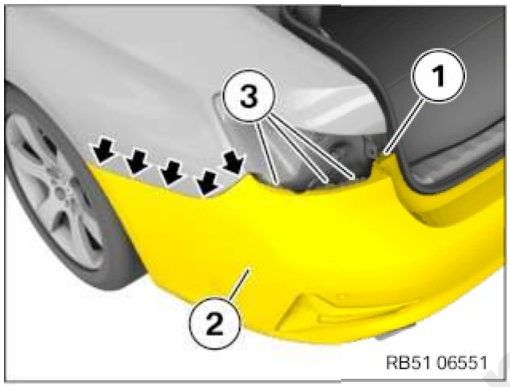
NOTICE

Perform the operations on the left and right side.

- Loosen screws (1).



- Loosen screws (1).
- Release the bumper panel on latch mechanisms (2) with a suitable tool.



NOTICE

Perform the operations on the left and right side.

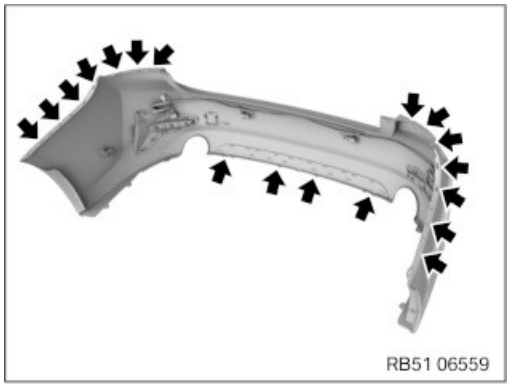
- Loosen screw (1).
- Release bumper panel (2) in the area of the rear light housing from latch mechanisms (3) with a suitable tool.
- Release side bumper panel (2) from the remaining latch mechanisms (arrows).



- Remove bumper panel (2) straight to the rear with the help of an auxiliary person.
- Unlock all plug connections and disconnect.
- Remove the bumper panel (1).

9 – Install rear bumper panel

Check



- Check the latch mechanisms (arrows) for damage.

Result

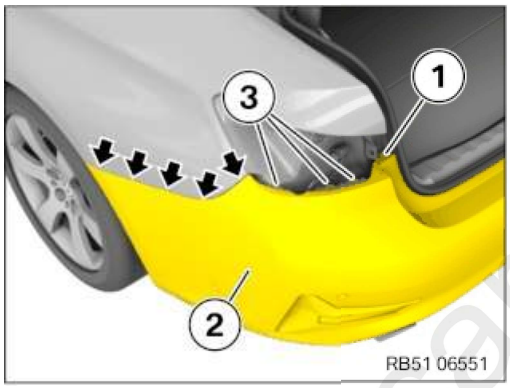
» Latch mechanisms are damaged.

Measure

- Renew the bumper panel.



- Position the bumper panel (1) straight with the help of another person.
- Connect all connectors and lock.



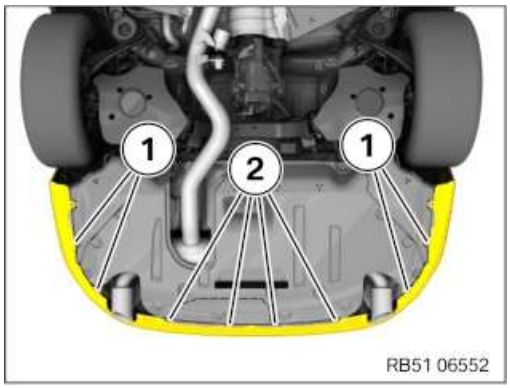
NOTICE

Perform the operations on the left and right side.

- Clip bumper panel (2) on the side in the latch mechanisms (arrows).
- Clip bumper panel (2) in the area of the rear light housing in latch mechanisms (3).
- Tighten down screw (1).

Rear bumper panel guide on rear centre guide

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm



- Clip bumper panel into latch mechanisms (2).
- Tighten the screws (1).

Mounting for rear bumper panel on support for rear bumper panel

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

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NOTICE

Perform the operations on the left and right side.

- Tighten the screws (1).

Rear bumper panel to rear side panel

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

POSTPROCESSES

10 – Install both rear lights on the side panel

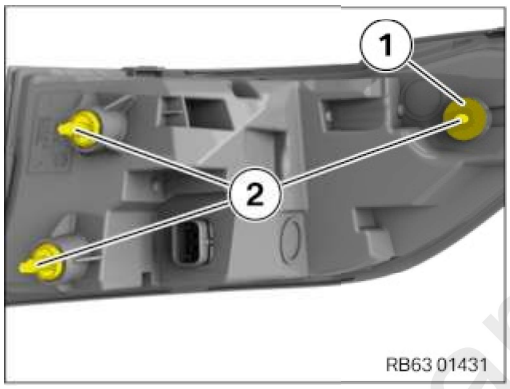
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the rear light on the side panel**

Check

- Check the seal (1) for damage and renew if necessary.
- Check the threaded inserts (2) for damage.

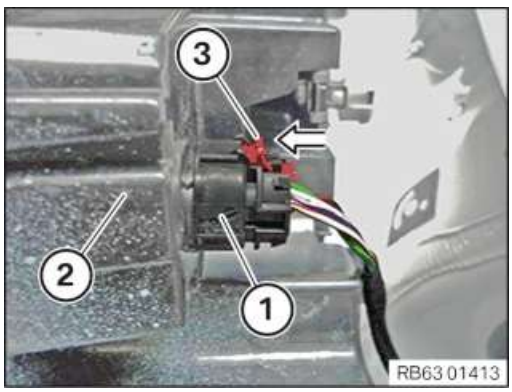


Result

» The threaded inserts are damaged.

Measure

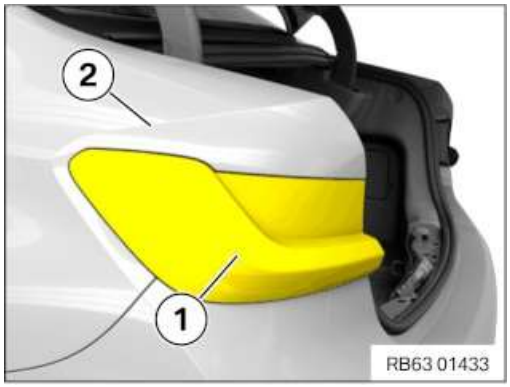
- Replace rear light.



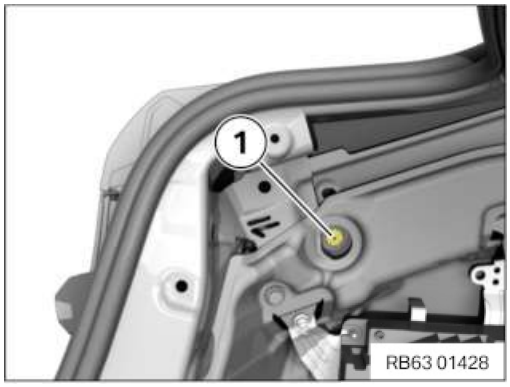
- Connect the connector (1) to the rear light on the side panel (2).

  The connector (1) must engage audibly.
- Lock the lock in direction of arrow (3).

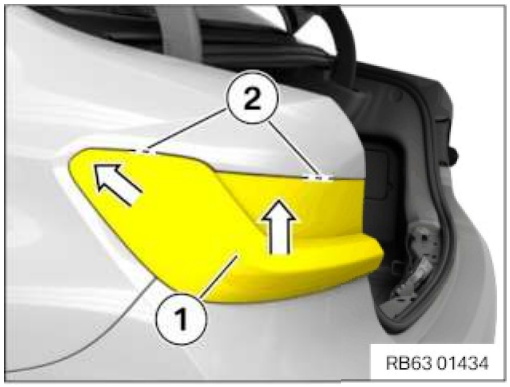
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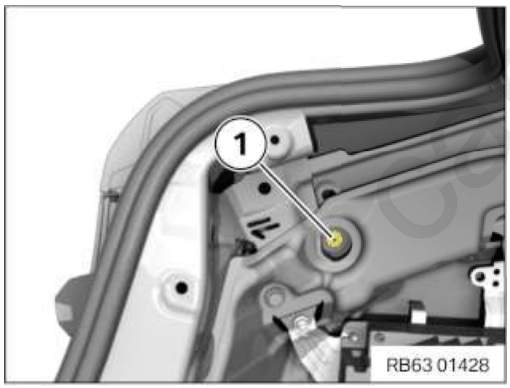
- Position the rear light on the side panel (1) on the side panel (2).



- Position the nut (1).



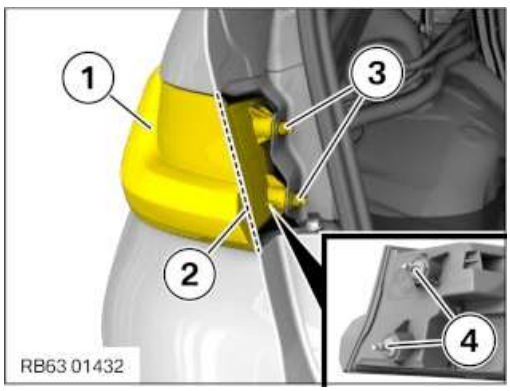
- Position the rear light on the side panel (1) to the front at the top.
- Move the contact surfaces (2) of the rear light on the side panel (1) upwards (arrow) so that they are in place.
- Hold the rear light on the side panel (1) in position.



- Tighten nut (1).

Rear light to side panel

Nut M5, AF 8		Tightening torque	3 Nm



- Position nuts (3).
- Align rear light on the side panel (1) with the connecting line (2).

  The alignment is done through threaded inserts (4) on the rear light on the side panel (2).
- If necessary, correct the position of the rear light on the side panel (1) by twisting threaded inserts (4).
- Tighten nuts (3).

Rear light to side panel

Nut M5, AF 10		Tightening torque	4 Nm

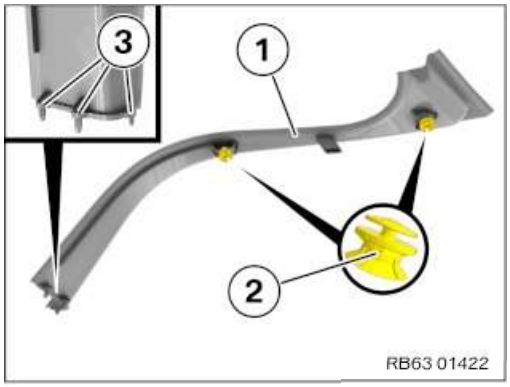
11 – Installing both trims of the water channel

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NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the trim in the water channel**



Check

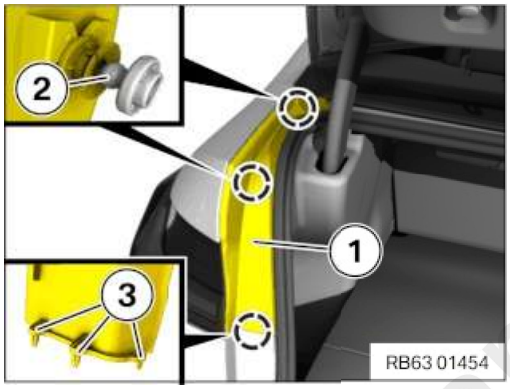
- Check the clips (2) for damage and renew if necessary.
- Check the guides (3) for damage.

Result

» The guides are damaged.

Measure

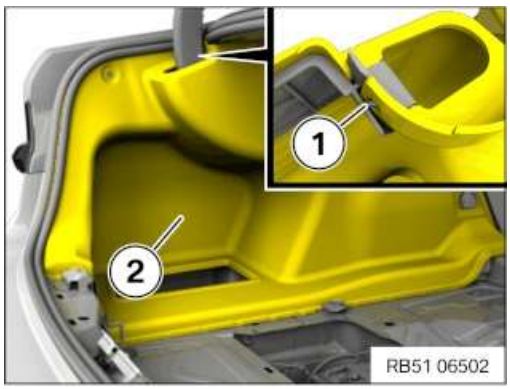
- Renew trim in the water channel .



- Insert the trim in the water channel (1) in the guides (3).
- Clip in the water channel trim (1) from the front into the ball pin (2).

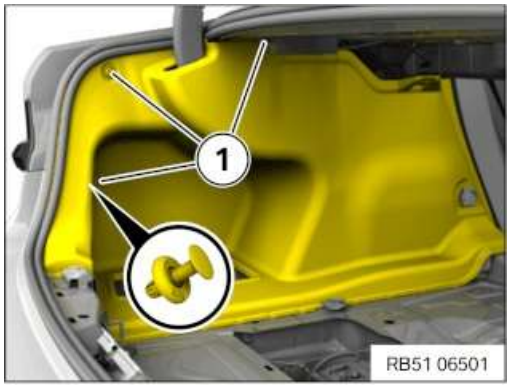
12 – Installing both luggage compartment wheel arch trim panels partially

▸ **Partially installing the left luggage compartment wheel arch trim panel**



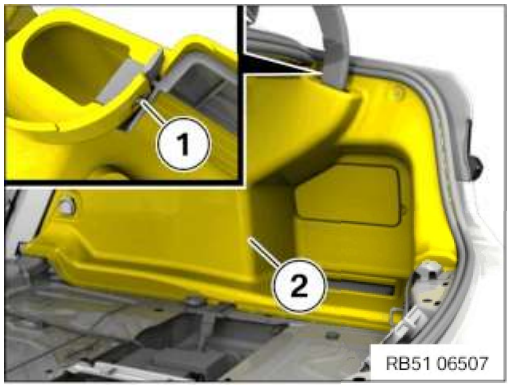
- Feed the luggage compartment wheel arch trim panel (2) in the rear area under the sealing lip of the seal of the tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).

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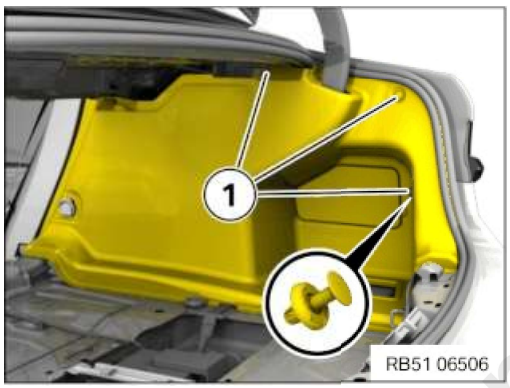


- Secure expanding rivet (1).

▶ **Partially installing right luggage compartment wheel arch trim panel**

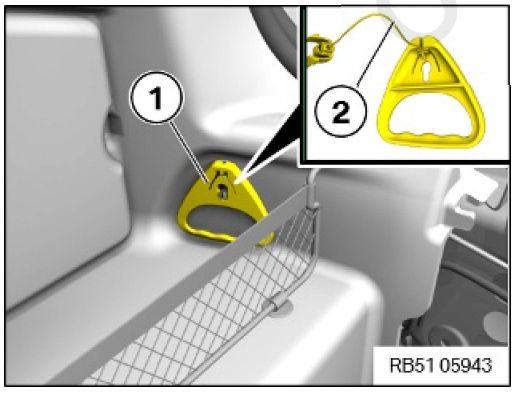


- Guide luggage compartment wheel arch trim panel (2) in the rear area under the sealing lip of the seal for tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).



- Secure expanding rivet (1).

▷ **If installed: Installing the emergency tailgate release handle (additional work for US version)**

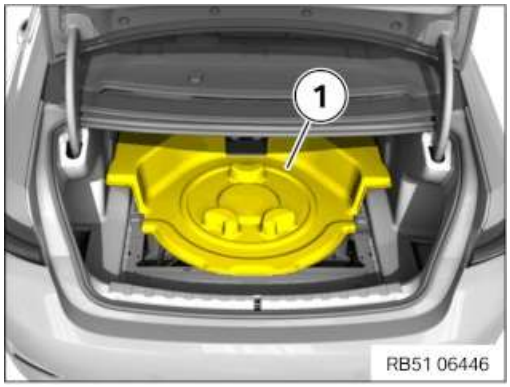


- Attach the Bowden cable (2).
- Fasten emergency tailgate release handle (1) to the bracket.

◁

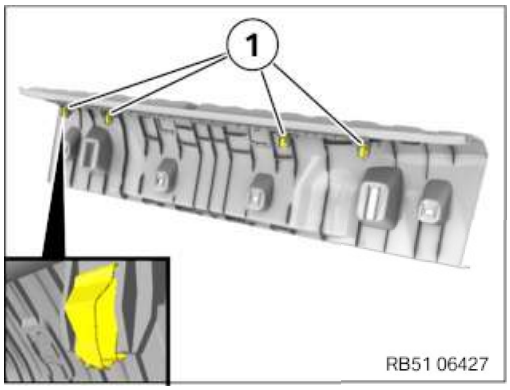
13 – Install the luggage compartment well in front

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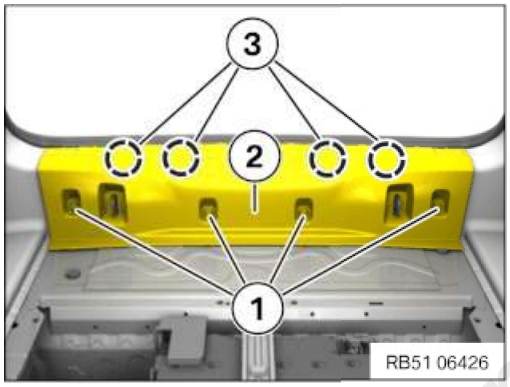


- Feed in and insert front luggage compartment well (1) on the seat belt strap.

14 – Installing loading edge trim

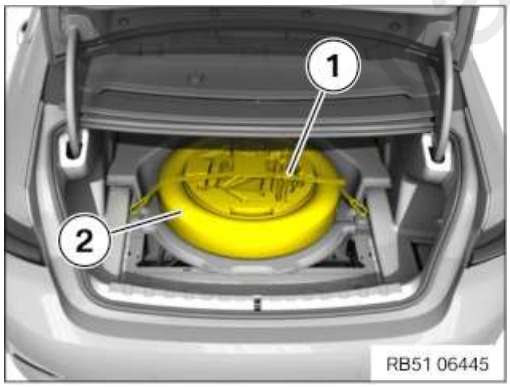


- Check the clamps (1) for damage and renew if necessary.



- Insert the loading edge trim (2) under the sealing lip of the tailgate seal.
- Fit the trim of the loading edge (2) at the latch mechanisms (3) and clip it in to the bottom.
- Secure expanding rivet (1).

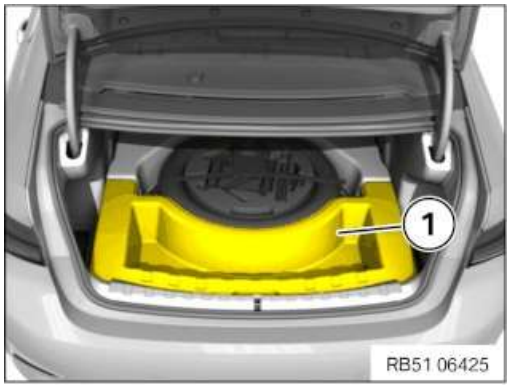
15 – If installed: Install the emergency wheel



- Install the emergency wheel (2) with the insert.
- Position the seat belt strap above the emergency wheel and close the buckle on the seat belt strap (1).

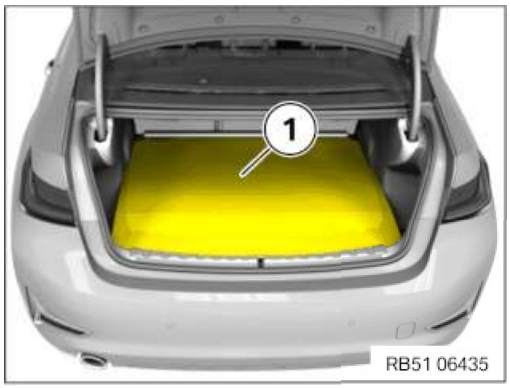
► **Installing rear luggage compartment well**

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- Install rear luggage compartment well (1).

16 – Installing the luggage compartment floor trim panel



- Insert the luggage compartment floor trim panel (1).

Additional Information

Overview of Tightening Torques

Rear bumper panel guide on rear centre guide			Used in step 9
Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

Mounting for rear bumper panel on support for rear bumper panel			Used in step 9
Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

Rear bumper panel to rear side panel			Used in step 9
Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

Rear light to side panel			Used in step 10
Nut M5, AF 8		Tightening torque	3 Nm

Rear light to side panel			Used in step 10
Nut M5, AF 10		Tightening torque	4 Nm

Links

Repair instructions	**Used in step**
61 13 ... Unlocking and disconnecting different plug connections	7

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51 12 080 Removing and installing/replacing cover on rear bumper panel

PRELIMINARY WORK

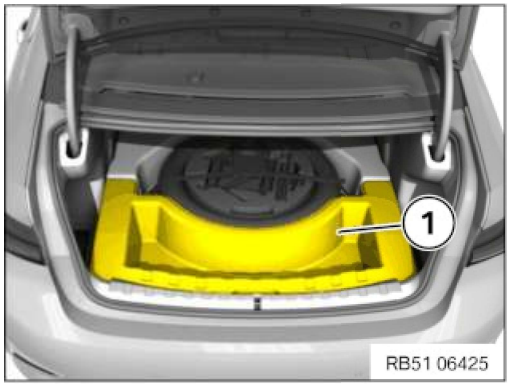
1 – Removing the luggage compartment floor trim panel



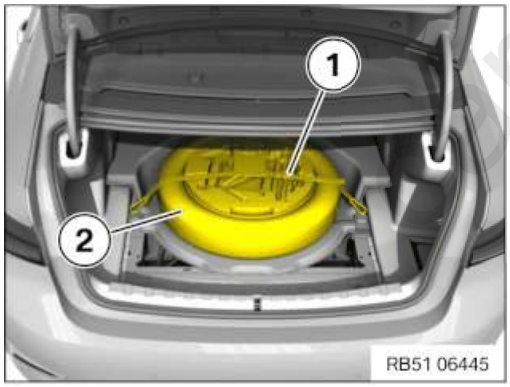
- Remove luggage compartment floor trim panel (1).

2 – If installed: Removing the compact spare wheel

▸ **Removing rear luggage compartment well**

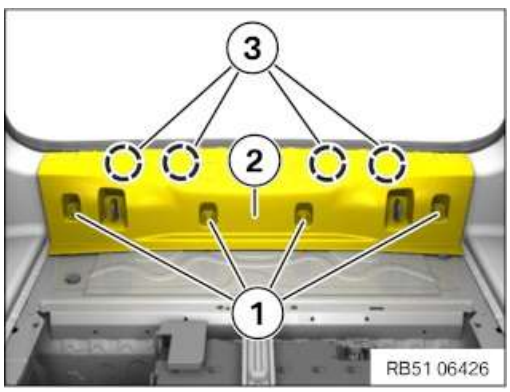


- Remove rear luggage compartment well (1).



- Open buckle on seat belt strap (1) and set it aside.
- Remove emergency wheel (2) with the insert.

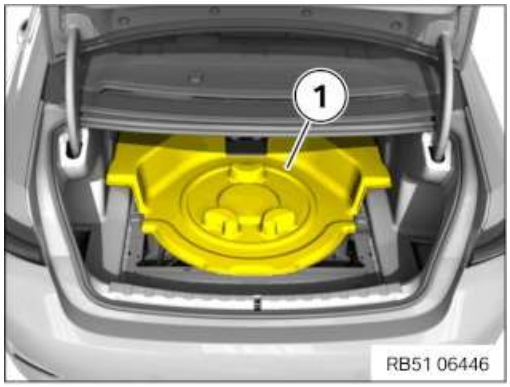
3 – Removing the loading edge trim



- Loosen the expanding rivet (1).
- Unclip loading edge trim(2) upwards from latch mechanisms (3).
- Guide out and remove loading edge trim (2) under the sealing lip of the tailgate seal.

4 – Removing front luggage compartment well

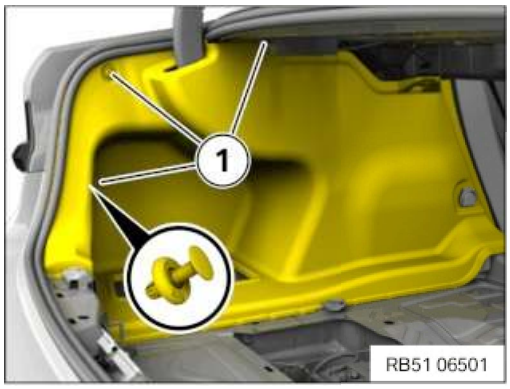
ardiagn.com



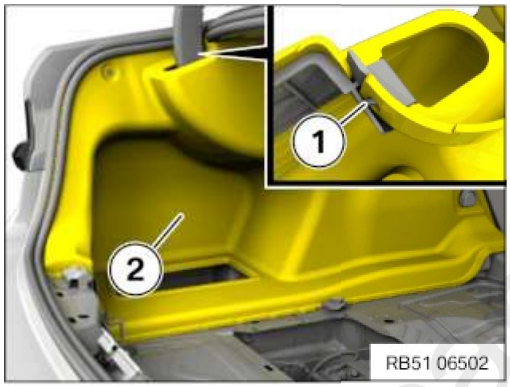
- Guide out and remove front luggage compartment well (1) on the seat belt strap.

5 – Removing both luggage compartment wheel arch trim panels partially

▶ Partially remove luggage compartment wheel arch trim on left



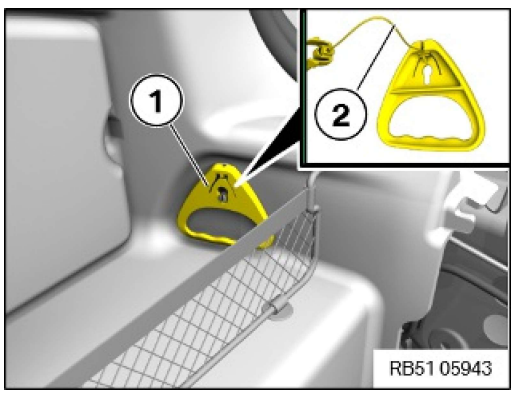
- Loosen the expanding rivet (1).



- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip of the tailgate seal and release it in the rear area.

▶ Partially remove luggage compartment wheel arch panel on right

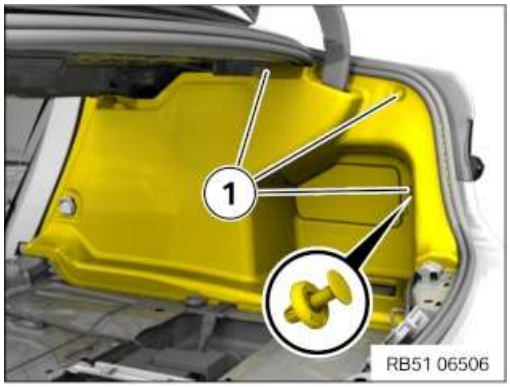
▷ If installed: Remove the emergency release handle for the tailgate (additional work in the US version)



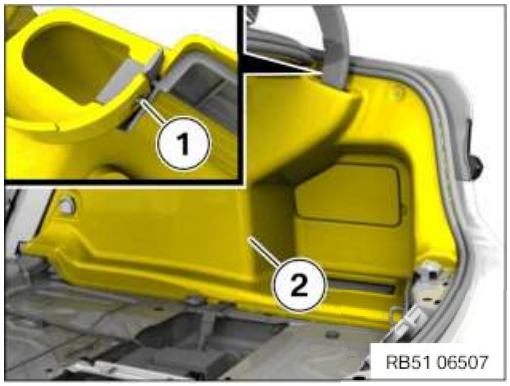
- Release the emergency release handle for tailgate (1) from the holder.
- Detach Bowden cable (2) and remove the emergency release handle for tailgate (1).

◁

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- Loosen the expanding rivet (1).



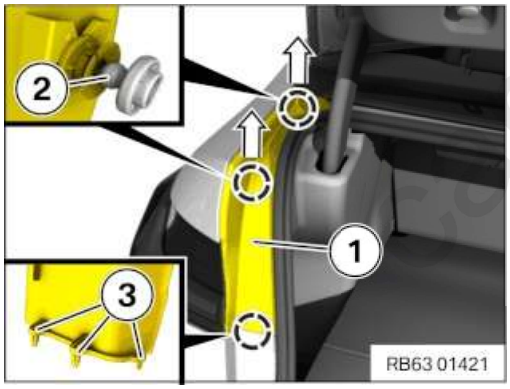
- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip of the tailgate seal and release it in the rear area.

6 – Removing both trims of water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the trim in the water channel**



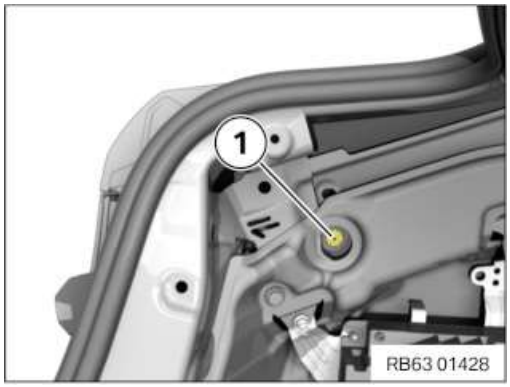
- Unclip the trim in the water channel (1) from the ball pins (2) towards the top.
- Release the trim in the water channel (1) from the guides (3) and remove it.

7 – Remove both rear lights from the side panel

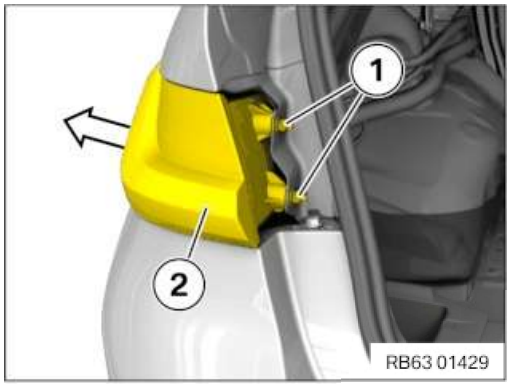
NOTICE

Description is for left component only. Procedure on the right side is identical.

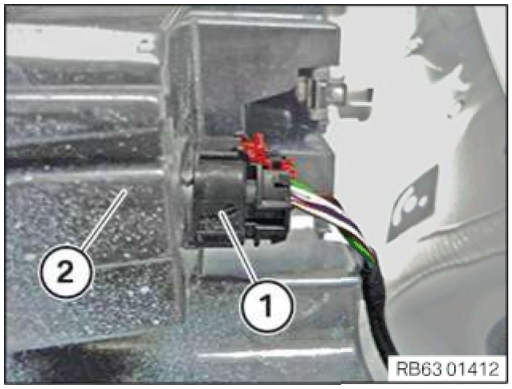
▸ **Remove the rear light on the side panel**



- Loosen nut (1).



- Release the nuts (1) and feed out the rear light on the side panel (2) in the direction of arrow.



TECHNICAL INFORMATION

Observe note on unlocking and disconnecting plug connections.
For additional information see: 6113 ... Unlocking and disconnecting different plug connections

- Unlock and disconnect plug connection (1) as described in position #28 in additional information.
- Remove the rear light on the side panel (2).

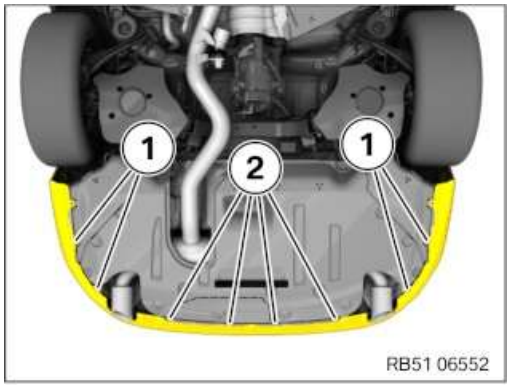
8 – Remove rear bumper panel



NOTICE

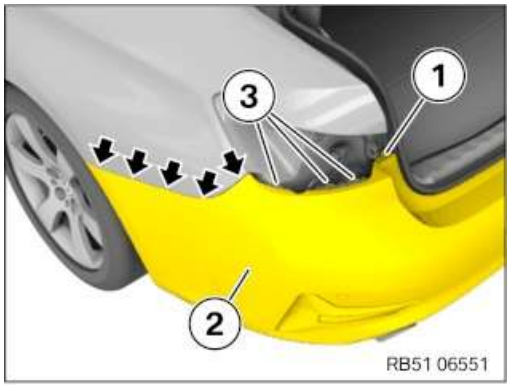
Perform the operations on the left and right side.

- Loosen screws (1).



- Loosen screws (1).
- Release the bumper panel on latch mechanisms (2) with a suitable tool.

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NOTICE

Perform the operations on the left and right side.

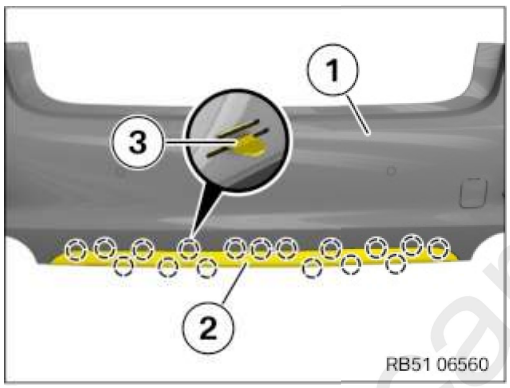
- Loosen screw (1).
- Release bumper panel (2) in the area of the rear light housing from latch mechanisms (3) with a suitable tool.
- Release side bumper panel (2) from the remaining latch mechanisms (arrows).



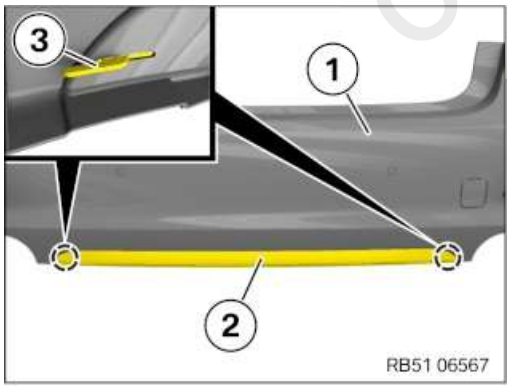
- Remove bumper panel (2) straight to the rear with the help of an auxiliary person.
- Unlock all plug connections and disconnect.
- Remove the bumper panel (1).

MAIN WORK

9 – Removing the trim on the rear bumper panel



- Unclip the trim of the rear bumper panel (2) from all the latch mechanisms (3) of the rear bumper panel (1).

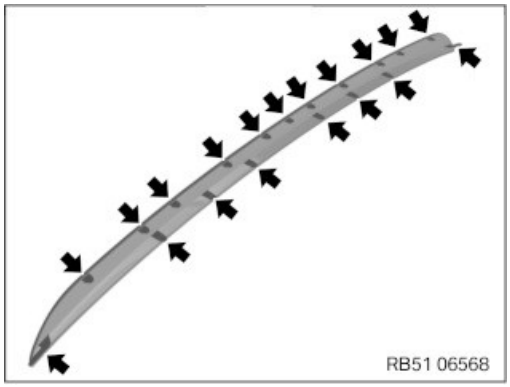


- Release the trim of the rear bumper panel (2) from the guides (3) at left and right and feed out of the rear bumper panel (1).

10 – Installing the trim of the rear bumper panel

Check

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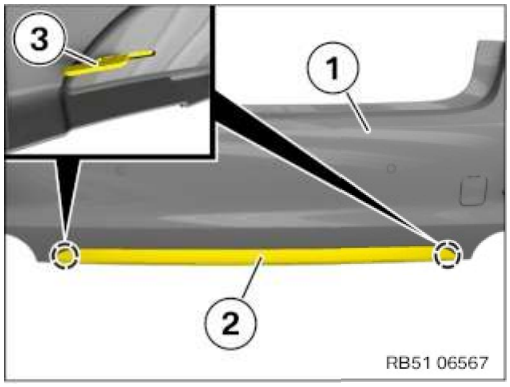
- Check the latch mechanisms (arrows) for damage.

Result

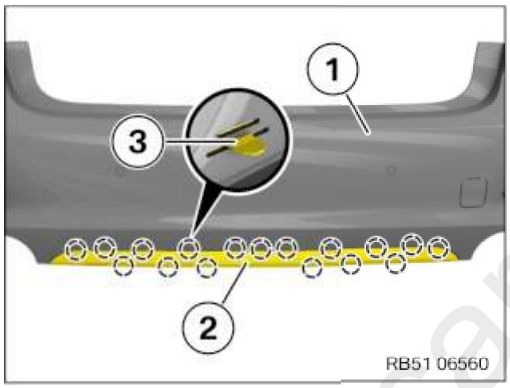
» The latch mechanism is damaged.

Measure

- Renew the trim of the rear bumper panel.



- Position the trim of the rear bumper panel (2) on the rear bumper panel (1) and feed into the guides (3) on the left and right.

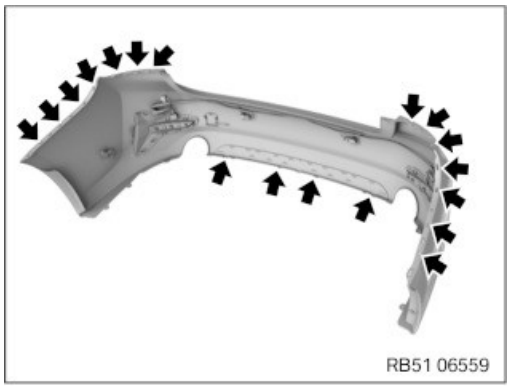


- Clip the trim of the rear bumper panel (2) in all the latch mechanisms (3) on the rear bumper panel (1).

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POSTPROCESSES

11 – Install rear bumper panel



Check

- Check the latch mechanisms (arrows) for damage.

Result

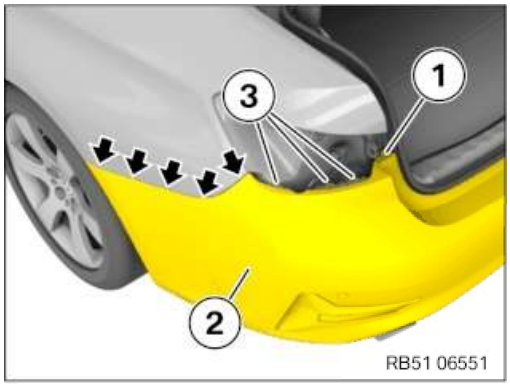
» Latch mechanisms are damaged.

Measure

- Renew the bumper panel.



- Position the bumper panel (1) straight with the help of another person.
- Connect all connectors and lock.



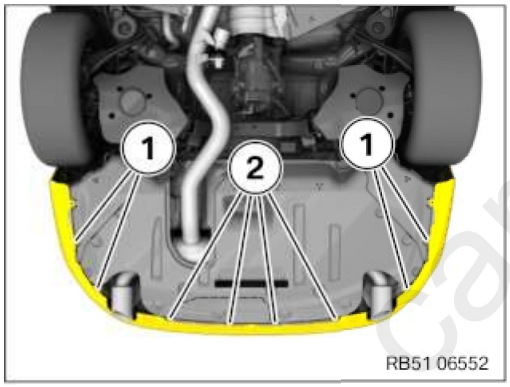
NOTICE

Perform the operations on the left and right side.

- Clip bumper panel (2) on the side in the latch mechanisms (arrows).
- Clip bumper panel (2) in the area of the rear light housing in latch mechanisms (3).
- Tighten down screw (1).

Rear bumper panel guide on rear centre guide

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm



- Clip bumper panel into latch mechanisms (2).
- Tighten the screws (1).

Mounting for rear bumper panel on support for rear bumper panel

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm



NOTICE

Perform the operations on the left and right side.

- Tighten the screws (1).

Rear bumper panel to rear side panel

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

12 – Install both rear lights on the side panel

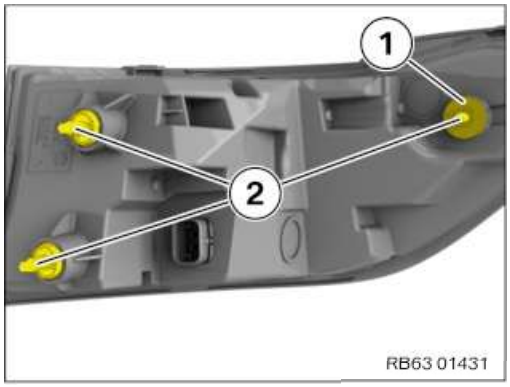
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NOTICE

Description is for left component only. Procedure on the right side is identical.

▶ **Install the rear light on the side panel**

Check



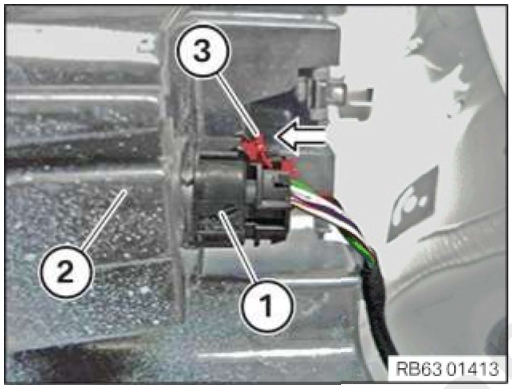
- Check the seal (1) for damage and renew if necessary.
- Check the threaded inserts (2) for damage.

Result

» The threaded inserts are damaged.

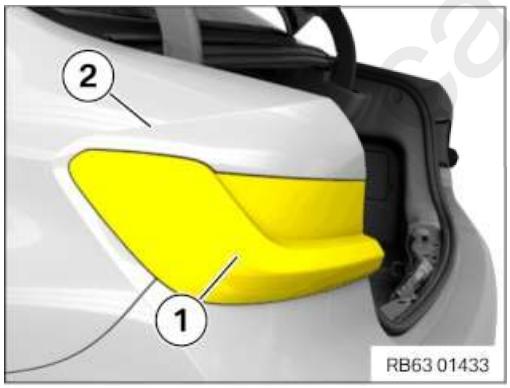
Measure

- Replace rear light.

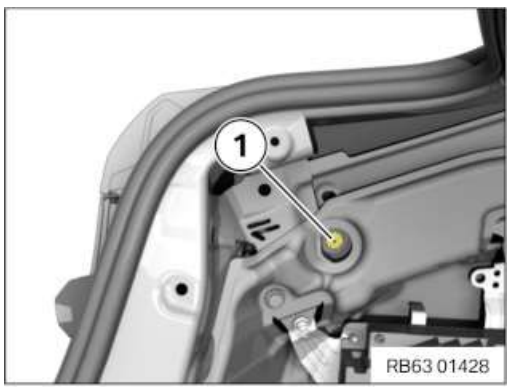


- Connect the connector (1) to the rear light on the side panel (2).

  The connector (1) must engage audibly.
- Lock the lock in direction of arrow (3).

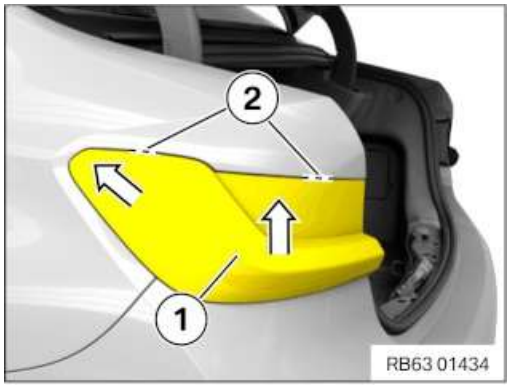


- Position the rear light on the side panel (1) on the side panel (2).

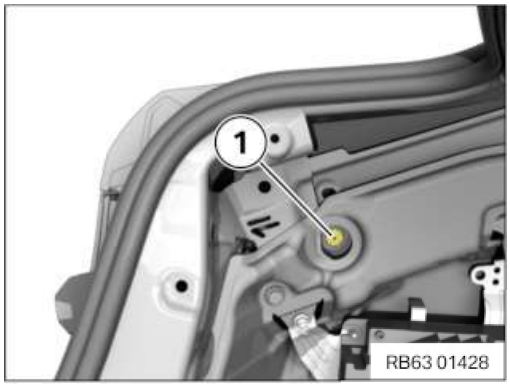


- Position the nut (1).

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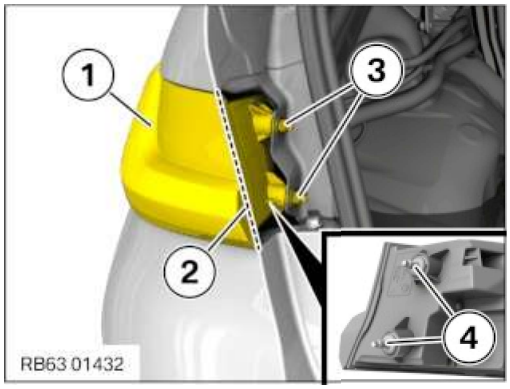
- Position the rear light on the side panel (1) to the front at the top.
- Move the contact surfaces (2) of the rear light on the side panel (1) upwards (arrow) so that they are in place.
- Hold the rear light on the side panel (1) in position.



- Tighten nut (1).

Rear light to side panel

Nut M5, AF 8		Tightening torque	3 Nm



- Position nuts (3).
- Align rear light on the side panel (1) with the connecting line (2).

  The alignment is done through threaded inserts (4) on the rear light on the side panel (2).
- If necessary, correct the position of the rear light on the side panel (1) by twisting threaded inserts (4).
- Tighten nuts (3).

Rear light to side panel

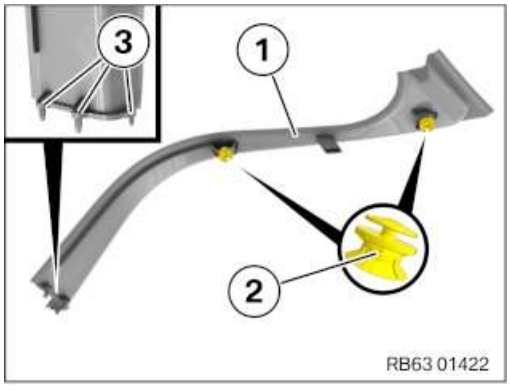
Nut M5, AF 10		Tightening torque	4 Nm

13 – Installing both trims of the water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the trim in the water channel**



Check

- Check the clips (2) for damage and renew if necessary.
- Check the guides (3) for damage.

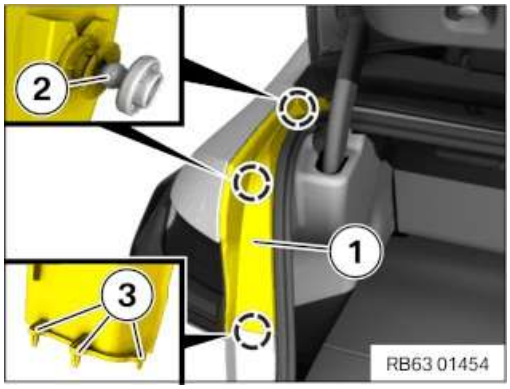
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Result

» The guides are damaged.

Measure

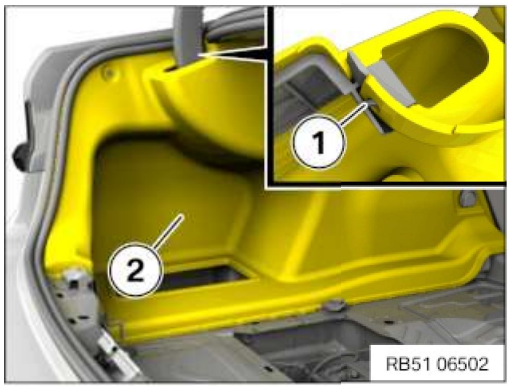
- Renew trim in the water channel .



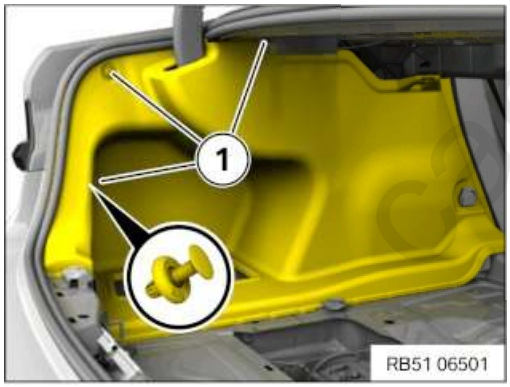
- Insert the trim in the water channel (1) in the guides (3).
- Clip in the water channel trim (1) from the front into the ball pin (2).

14 – Installing both luggage compartment wheel arch trim panels partially

▸ Partially installing the left luggage compartment wheel arch trim panel

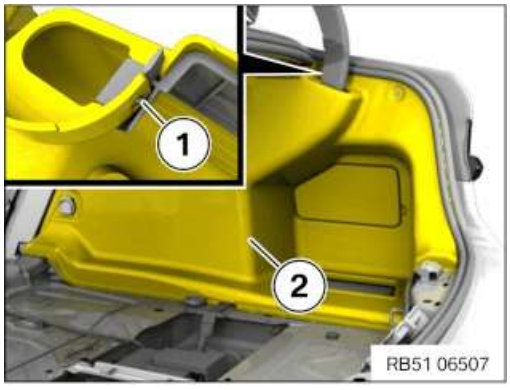


- Feed the luggage compartment wheel arch trim panel (2) in the rear area under the sealing lip of the seal of the tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).



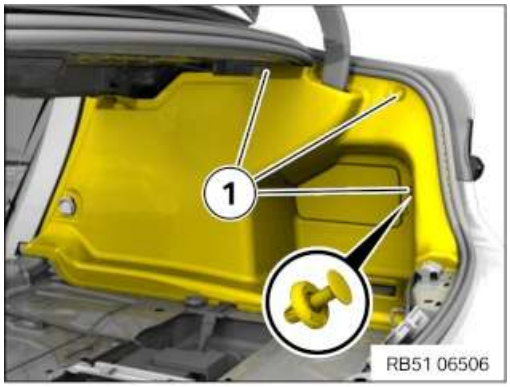
- Secure expanding rivet (1).

▸ Partially installing right luggage compartment wheel arch trim panel



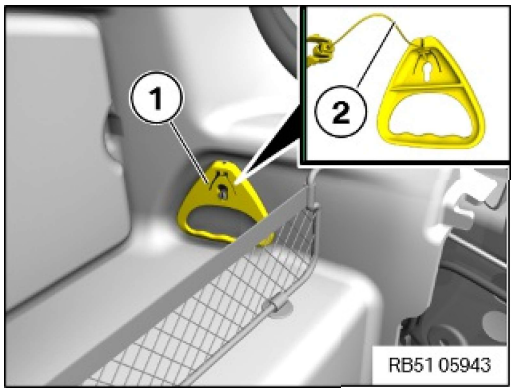
- Guide luggage compartment wheel arch trim panel (2) in the rear area under the sealing lip of the seal for tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).

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- Secure expanding rivet (1).

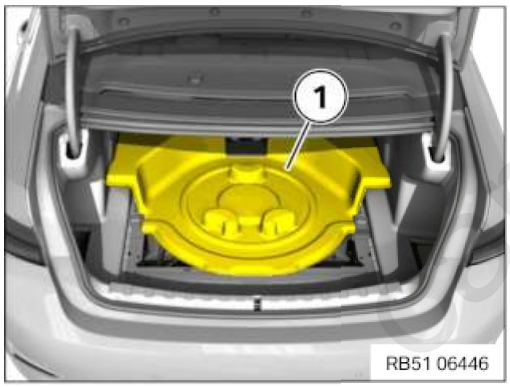
▷ **If installed: Installing the emergency tailgate release handle (additional work for US version)**



- Attach the Bowden cable (2).
- Fasten emergency tailgate release handle (1) to the bracket.

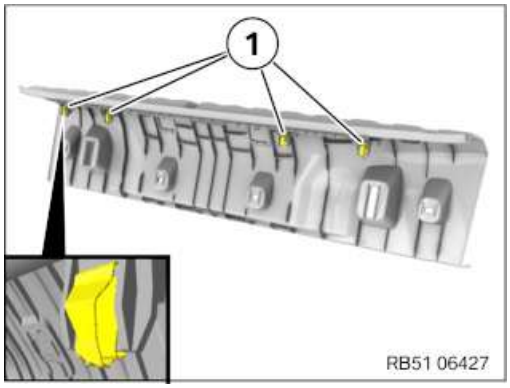
◁

15 – Install the luggage compartment well in front



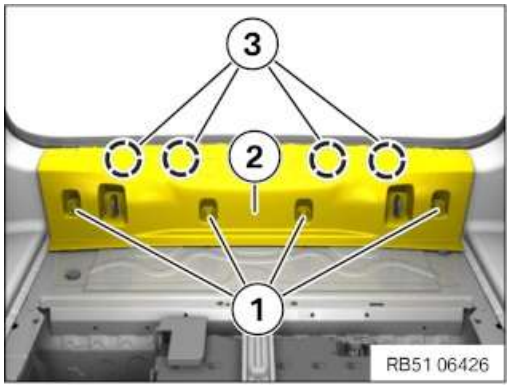
- Feed in and insert front luggage compartment well (1) on the seat belt strap.

16 – Installing loading edge trim



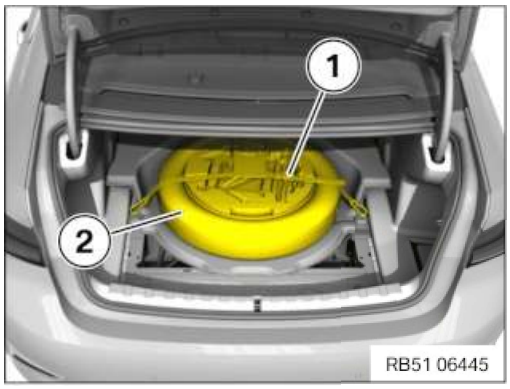
- Check the clamps (1) for damage and renew if necessary.

carfdiagn.com



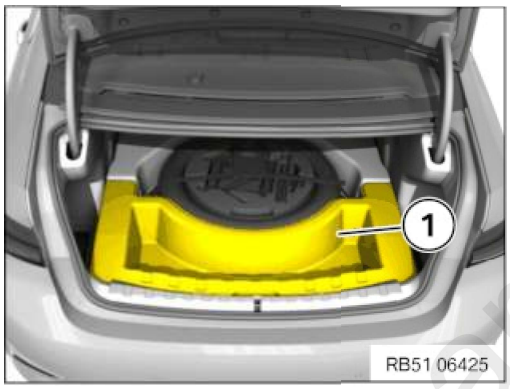
- Insert the loading edge trim (2) under the sealing lip of the tailgate seal.
- Fit the trim of the loading edge (2) at the latch mechanisms (3) and clip it in to the bottom.
- Secure expanding rivet (1).

17 – If installed: Install the emergency wheel



- Install the emergency wheel (2) with the insert.
- Position the seat belt strap above the emergency wheel and close the buckle on the seat belt strap (1).

▶ **Installing rear luggage compartment well**



- Install rear luggage compartment well (1).

18 – Installing the luggage compartment floor trim panel



- Insert the luggage compartment floor trim panel (1).

Additional Information

Overview of Tightening Torques

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Rear bumper panel guide on rear centre guide Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

Mounting for rear bumper panel on support for rear bumper panel Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

Rear bumper panel to rear side panel Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

Rear light to side panel Used in step 12

Nut M5, AF 8		Tightening torque	3 Nm

Rear light to side panel Used in step 12

Nut M5, AF 10		Tightening torque	4 Nm

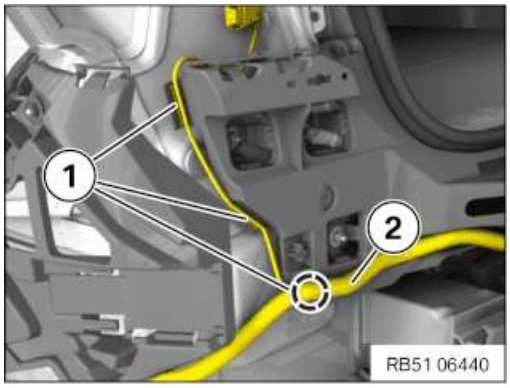
Links

Repair instructions	Used in step
61 13 ... Unlocking and disconnecting different plug connections	7

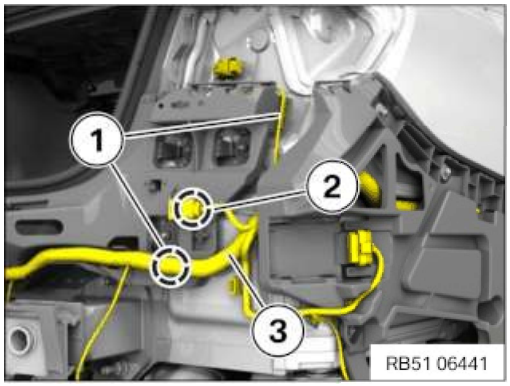
cardiagn.com

51 12 825 Removing and installing/replacing rear centre bumper guide

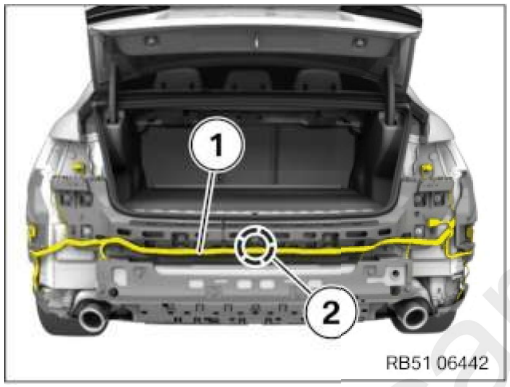
1 – Removing guide for the rear centre bumper panel



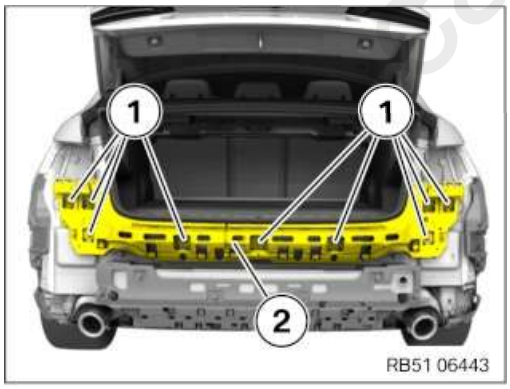
- Unclip clips (1).
- Release wiring harness (2) on the left side of the guide for the rear centre bumper panel.



- Unclip the connector housing (2).
- Unclip clips (1).
- Release wiring harness (3) on the right side of the guide for the rear centre bumper panel.



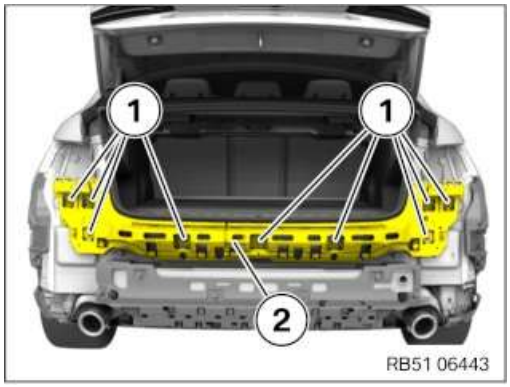
- Release wiring harness (1) from all the brackets.
- Unclip clip (2).



- Loosen nuts (1).
- Remove the guide for the rear centre bumper panel (2).

2 – Installing the guide for the rear centre bumper panel

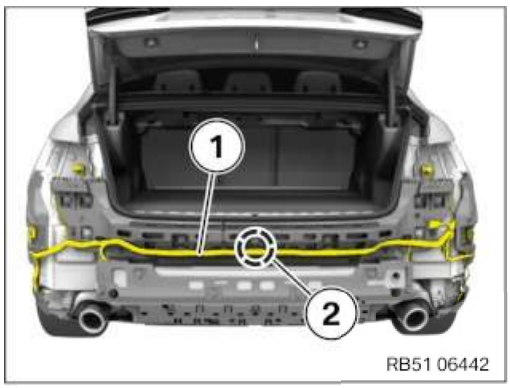
cardiagn.com



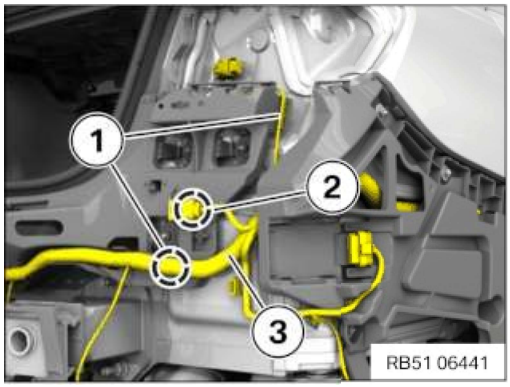
- Position the guide for the rear centre (2) bumper panel.
- Tighten nuts (1).

Rear centre bumper panel guide on body

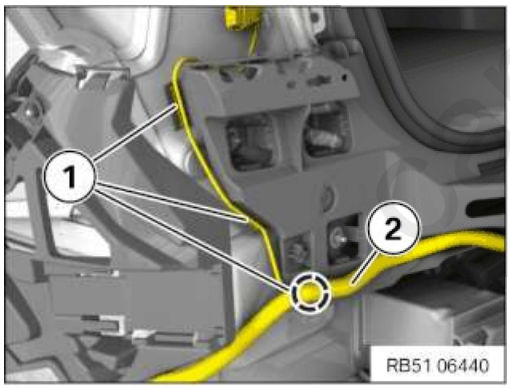
Multi-purpose nut with paint scrape groove		Tightening torque	5 Nm



- Clip in the clip (2).
- Attach the vehicle wiring harness (1) in all the brackets.



- Position the vehicle wiring harness (3) on the right side of the guide for the rear centre bumper panel.
- Clip in the connector housing (2).
- Clip in clips (1).



- Position the vehicle wiring harness (2) on the left side of the guide for the rear centre bumper panel.
- Clip in clips (1).

Additional Information

Overview of Tightening Torques

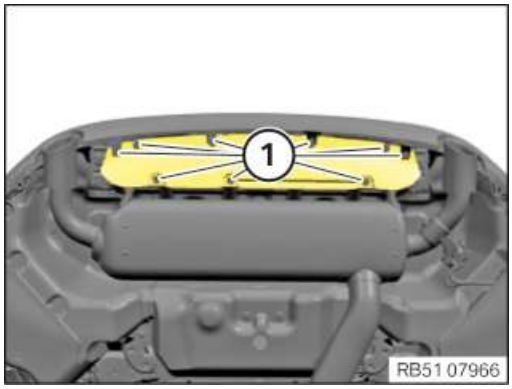
Rear centre bumper panel guide on body Used in step 2

Multi-purpose nut with paint scrape groove		Tightening torque	5 Nm

erdiagn.com

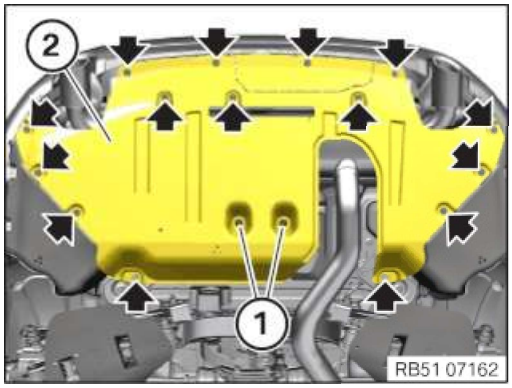
51 12 315 Removing and installing/replacing rear diffuser

1 – Removing the rear diffuser



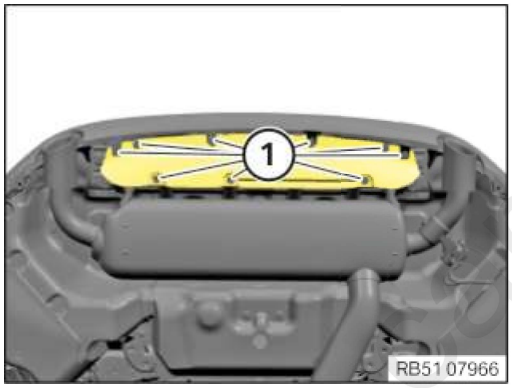
- **Version 1:**
- Release screws and nuts (1).

  Remove the diffuser.



- **Version 2:**
- Loosen nuts (1).
- Remove screws (arrows).
- Guide out and remove rear diffuser (2).

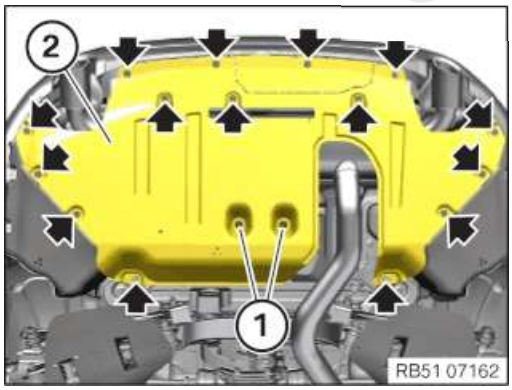
2 – Installing the rear diffuser



- **Version 1:**
- Install diffuser and tighten the nuts.

Diffuser

Nut and screws		Tightening torque	3 Nm



- **Version 2:**
- Feed in and position the diffuser (2)
- Tighten screws (arrows).

Diffuser

Nut and screws		Tightening torque	3 Nm

- Tighten nuts (1).

Diffuser

Nut and screws		Tightening torque	3 Nm

Additional Information

Overview of Tightening Torques

ecdiagn.com

Diffuser Used in step 2

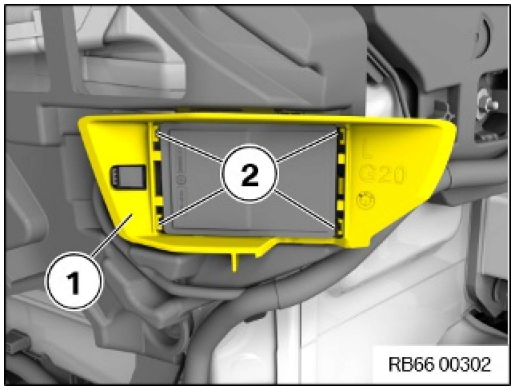
Nut and screws		Tightening torque	3 Nm

cardiagn.com

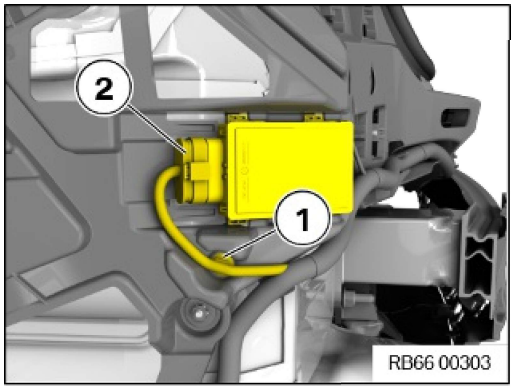
51 12 828 Removing and installing/replacing rear left or right bumper guide

PRELIMINARY WORK

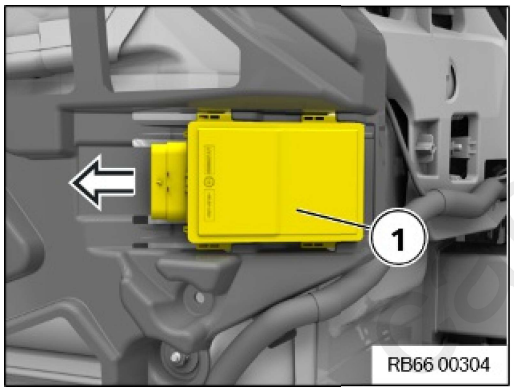
1 – If installed: Removing the lane change warning sensor



- Unlock and remove funnel (1) from retaining lugs (2).



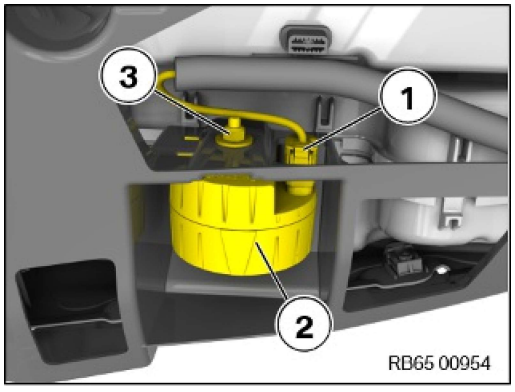
- Unlock plug connection (2) and disconnect.
- Unclip clip (1).
- Place wiring harness to one side.



- Release the latch mechanisms and remove the lane change warning sensor (1) in the direction of arrow.

2 – If installed: Removing emergency power siren (additional work in alarm system)

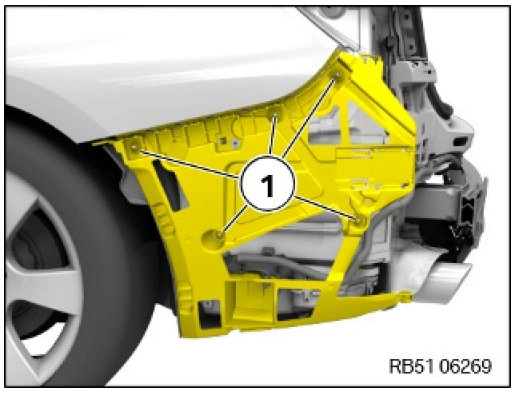
▸ **Removing the emergency power siren with tilt sensor**



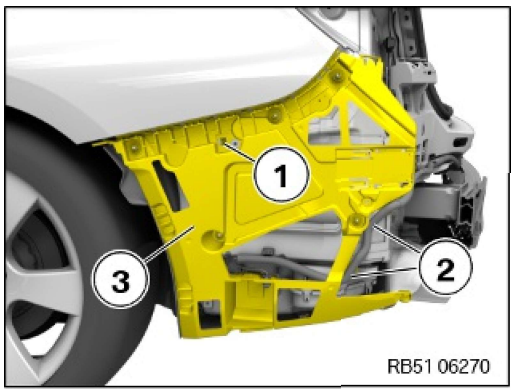
- Unlock plug connection (1) and disconnect.
- Loosen nut (3).
- Remove the emergency power siren with tilt alarm sensor (2).

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3 – Remove the guide for the rear bumper panel on the side

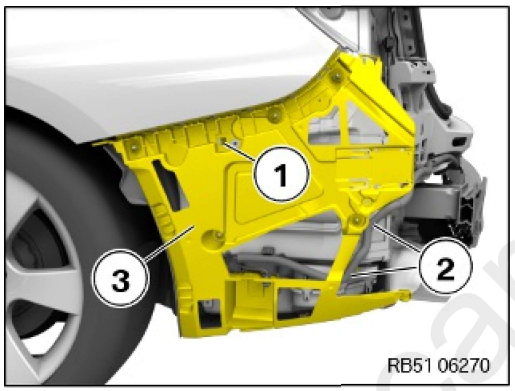


- Loosen nuts (1).

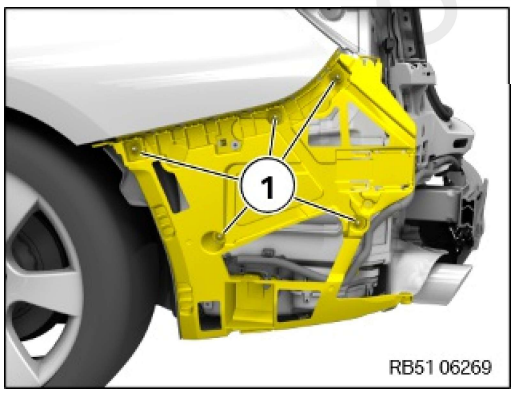


- Open lock (1).
- Release the clips (2) of the vehicle wiring harness and the place the wiring harness aside.
- Remove the guide (3) for the rear bumper panel on the side.

4 – Installing the guide for the rear bumper panel at the side



- Position the guide for rear side bumper panel (3).
- Lock (1) must engage audibly.
- Clip in clips (2) of the wiring harness.



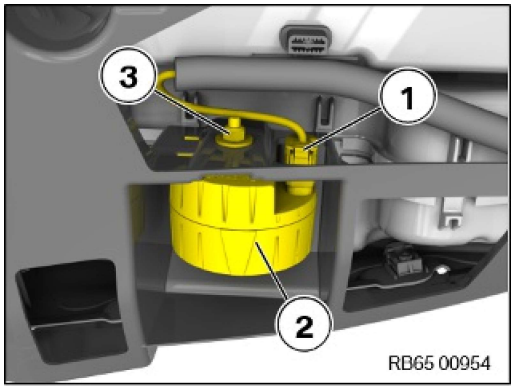
- Tighten nuts (1).

Rear bumper panel guide on body at the side

Multi-purpose nut with paint scrape groove		Tightening torque	5 Nm

boardiagn.com

5 – If installed: Installing emergency power siren (additional work for alarm system)



▶ **Installing the emergency power siren with tilt sensor**

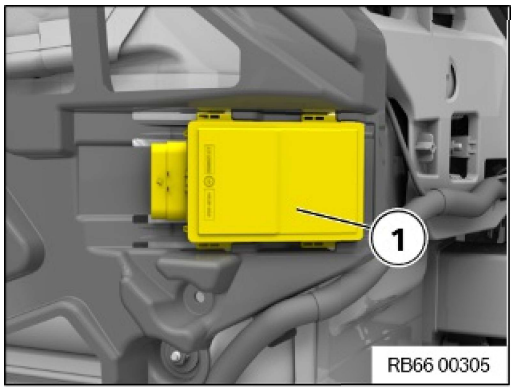
- Position the emergency power siren with tilt alarm sensor (2).
- Tighten nut (3).

Emergency power siren with tilt sensor

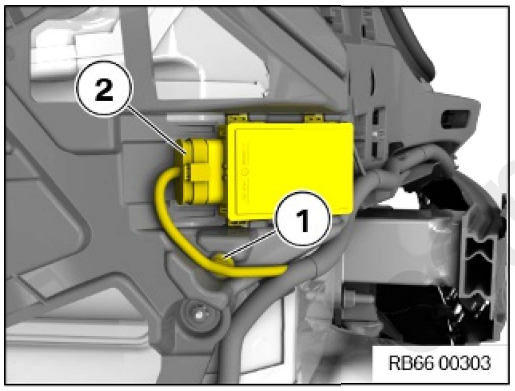
Hexagon nut M6x8		Tightening torque	6 Nm

- Connect plug connection (1) and lock.

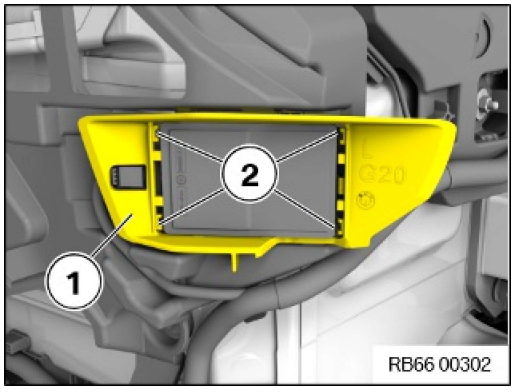
6 – If installed: Installing the lane change warning sensor



- Push in the lane change warning sensor (1) until the latch mechanism engages audibly.



- Connect connectors (2) and lock.
- Position the wiring harness and clip it in with clip (1).



- Position funnel (1) and lock it with the retaining lugs (2).

Additional Information

Overview of Tightening Torques

Rear bumper panel guide on body at the side Used in step 4

Multi-purpose nut with paint scrape groove		Tightening torque	5 Nm

Emergency power siren with tilt sensor Used in step 5

Hexagon nut M6x8		Tightening torque	6 Nm

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51 12 050 Removing and installing/replacing support for rear bumper panel

PRELIMINARY WORK

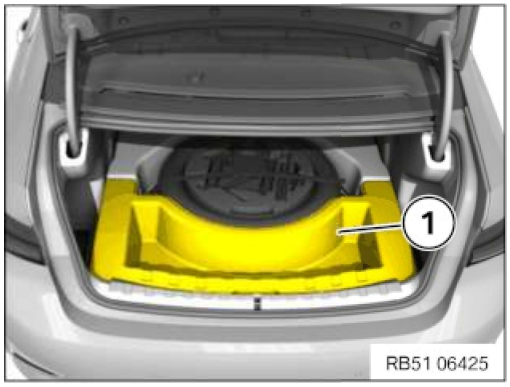
1 – Removing the luggage compartment floor trim panel



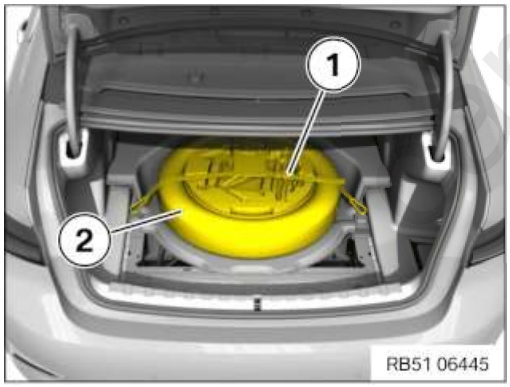
- Remove luggage compartment floor trim panel (1).

2 – If installed: Removing the compact spare wheel

▸ **Removing rear luggage compartment well**

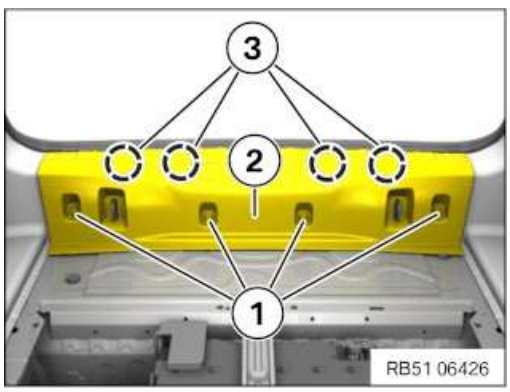


- Remove rear luggage compartment well (1).



- Open buckle on seat belt strap (1) and set it aside.
- Remove emergency wheel (2) with the insert.

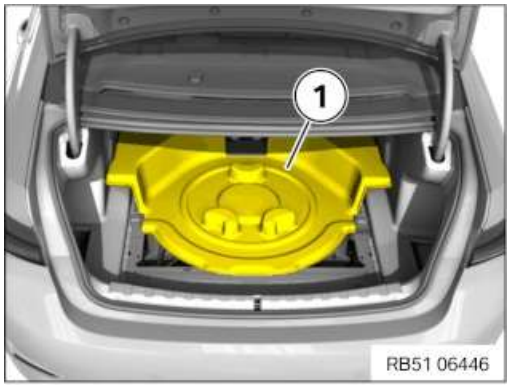
3 – Removing the loading edge trim



- Loosen the expanding rivet (1).
- Unclip loading edge trim(2) upwards from latch mechanisms (3).
- Guide out and remove loading edge trim (2) under the sealing lip of the tailgate seal.

4 – Removing front luggage compartment well

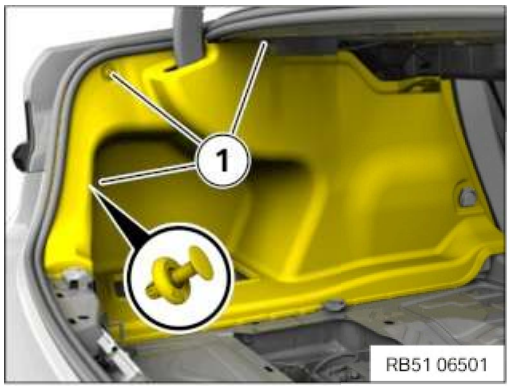
ardiagn.com



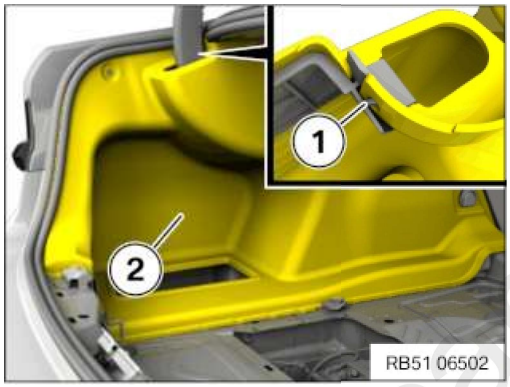
- Guide out and remove front luggage compartment well (1) on the seat belt strap.

5 – Removing both luggage compartment wheel arch trim panels partially

▶ Partially remove luggage compartment wheel arch trim on left



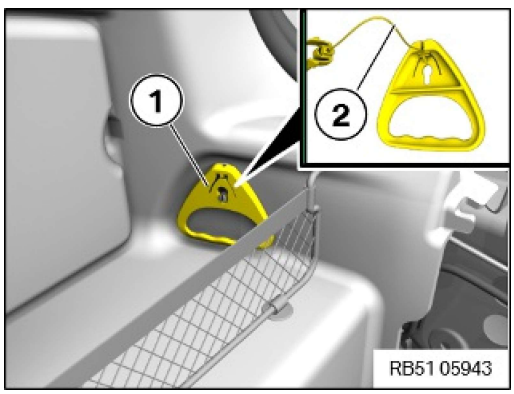
- Loosen the expanding rivet (1).



- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip of the tailgate seal and release it in the rear area.

▶ Partially remove luggage compartment wheel arch panel on right

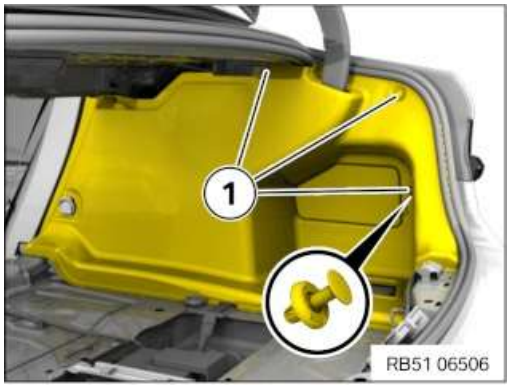
▷ If installed: Remove the emergency release handle for the tailgate (additional work in the US version)



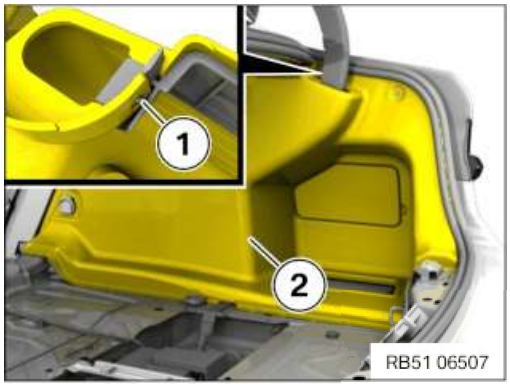
- Release the emergency release handle for tailgate (1) from the holder.
- Detach Bowden cable (2) and remove the emergency release handle for tailgate (1).

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- Loosen the expanding rivet (1).



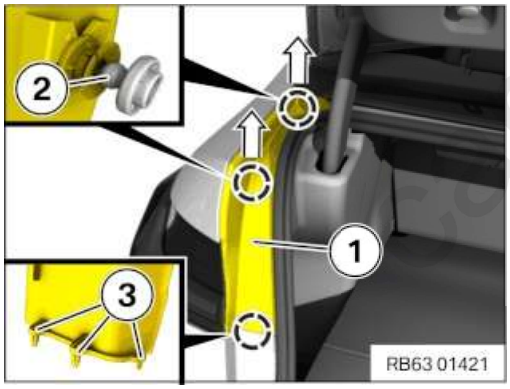
- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip of the tailgate seal and release it in the rear area.

6 – Removing both trims of water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the trim in the water channel**



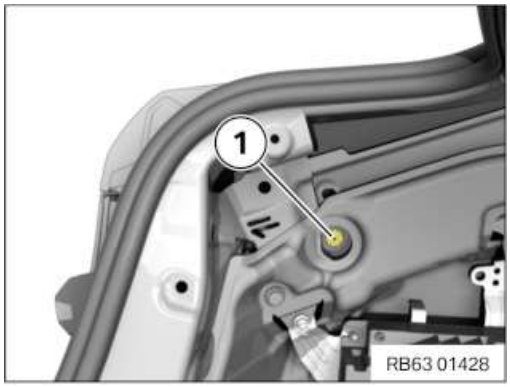
- Unclip the trim in the water channel (1) from the ball pins (2) towards the top.
- Release the trim in the water channel (1) from the guides (3) and remove it.

7 – Remove both rear lights from the side panel

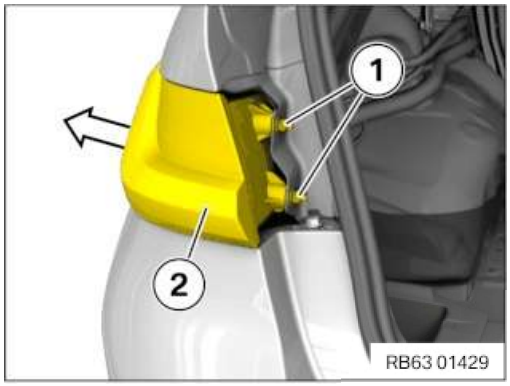
NOTICE

Description is for left component only. Procedure on the right side is identical.

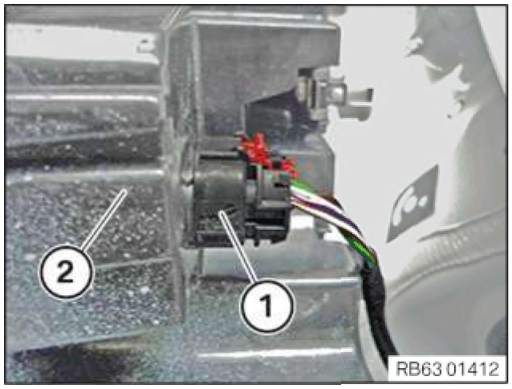
▸ **Remove the rear light on the side panel**



- Loosen nut (1).



- Release the nuts (1) and feed out the rear light on the side panel (2) in the direction of arrow.



TECHNICAL INFORMATION

Observe note on unlocking and disconnecting plug connections.
For additional information see: 6113 ... Unlocking and disconnecting different plug connections

- Unlock and disconnect plug connection (1) as described in position #28 in additional information.
- Remove the rear light on the side panel (2).

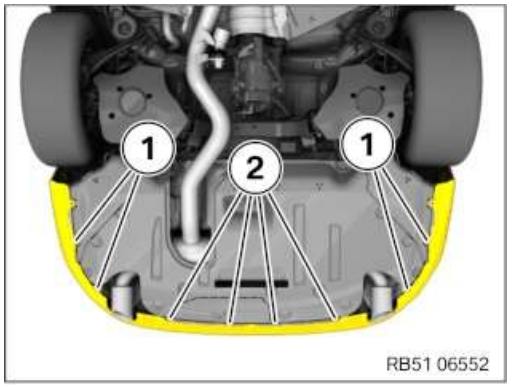
8 – Remove rear bumper panel



NOTICE

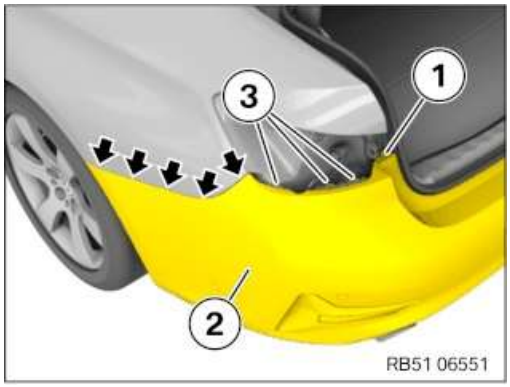
Perform the operations on the left and right side.

- Loosen screws (1).



- Loosen screws (1).
- Release the bumper panel on latch mechanisms (2) with a suitable tool.

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NOTICE

Perform the operations on the left and right side.

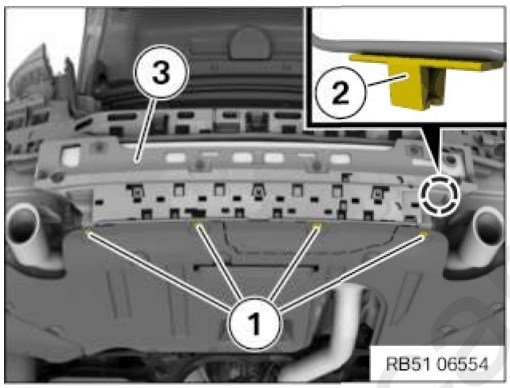
- Loosen screw (1).
- Release bumper panel (2) in the area of the rear light housing from latch mechanisms (3) with a suitable tool.
- Release side bumper panel (2) from the remaining latch mechanisms (arrows).



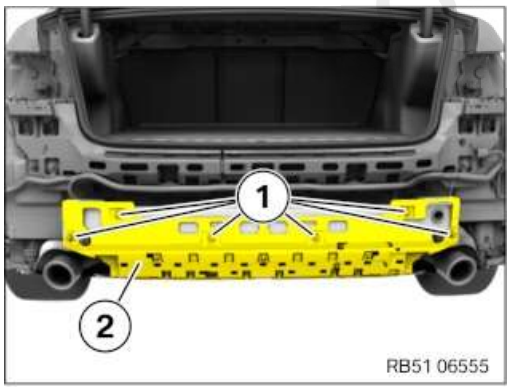
- Remove bumper panel (2) straight to the rear with the help of an auxiliary person.
- Unlock all plug connections and disconnect.
- Remove the bumper panel (1).

MAIN WORK

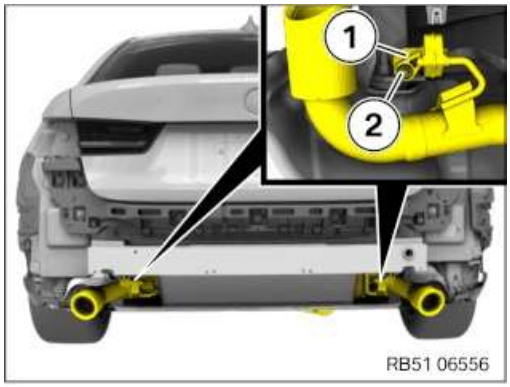
9 – Remove support for the rear bumper panel



- Loosen screws (1).
- Unclip the cable clip (2) on the inside of the brace for the rear bumper (3).



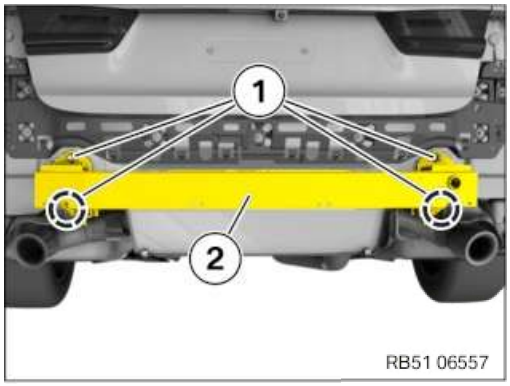
- Open the expanding rivets (1) and remove the brace for the rear bumper (2).



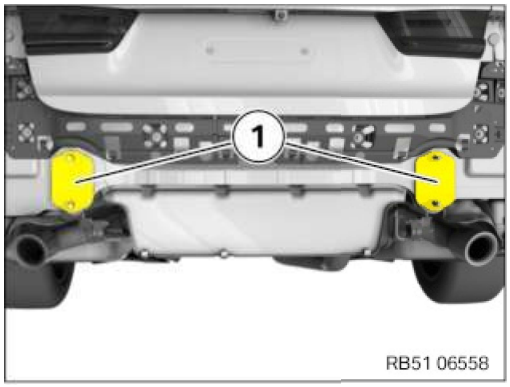
NOTICE

Perform the operations on the left and right side.

- Loosen nut (2).
- Remove the rear silencer with holder (1) downwards from the support for the rear bumper panel.

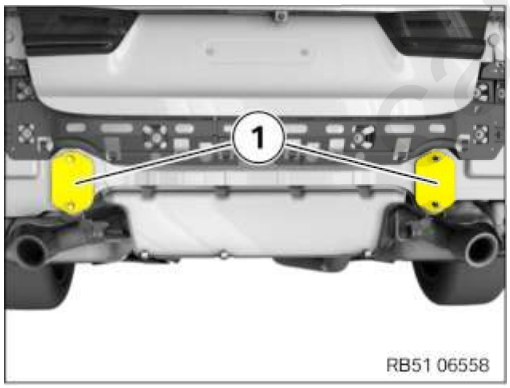


- Loosen nuts (1).
- Remove the support for rear bumper panel (2).



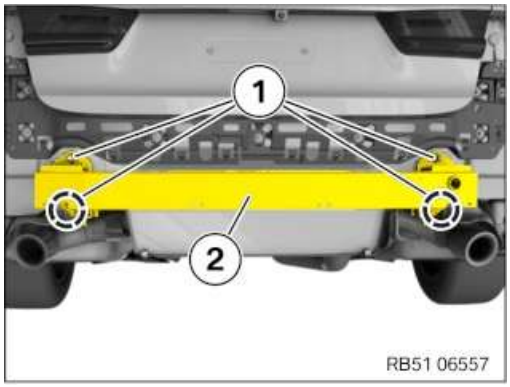
- Remove seals (1).

10 – Install support for the rear bumper panel



- Renew gaskets (1).

  Parts: Gasket

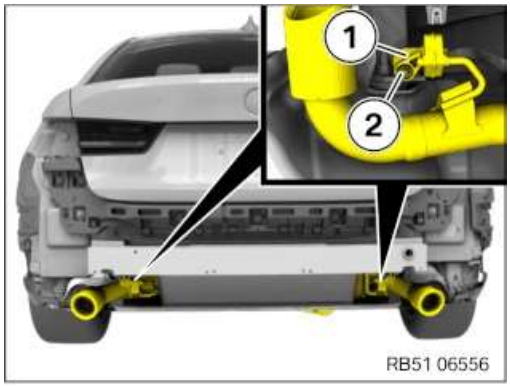


- Position the support for the rear bumper panel (2).
- Tighten nuts (1).

Support for rear bumper panel to body

Nut M12		Tightening torque	108 Nm

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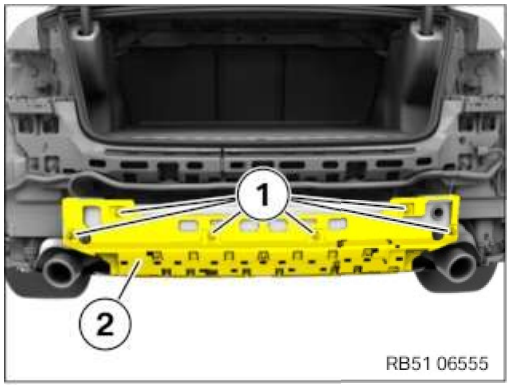
NOTICE

Perform the operations on the left and right side.

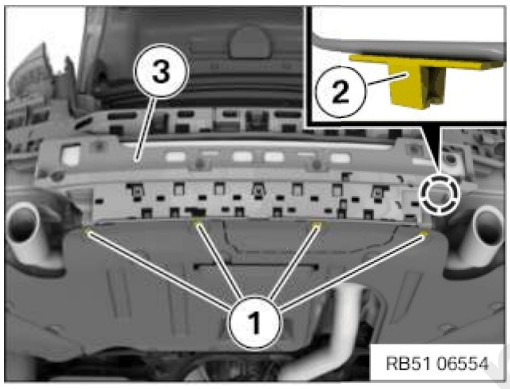
- Position rear silencer with the bracket (1) upwards at the support for the rear bumper panel.
- Tighten nuts (2).

Rear silencer on support for rear bumper panel

Nut M8		Tightening torque	19 Nm



- Position brace for the rear bumper (2) on the support.
- Mount the expanding rivets (1).



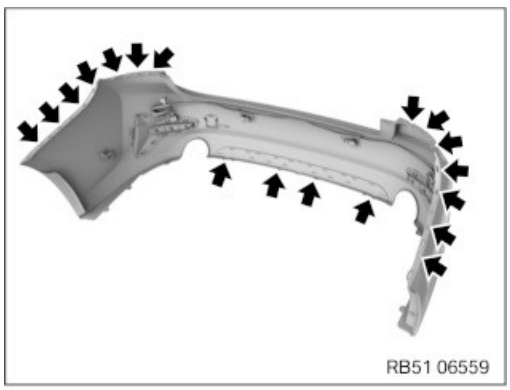
- Clip in the cable clip (2) on the inside of the brace for the rear bumper (3).
- Tighten the screws (1).

Mounting for rear bumper panel on support for rear bumper panel

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

POSTPROCESSES

11 – Install rear bumper panel



Check

- Check the latch mechanisms (arrows) for damage.

Result

» Latch mechanisms are damaged.

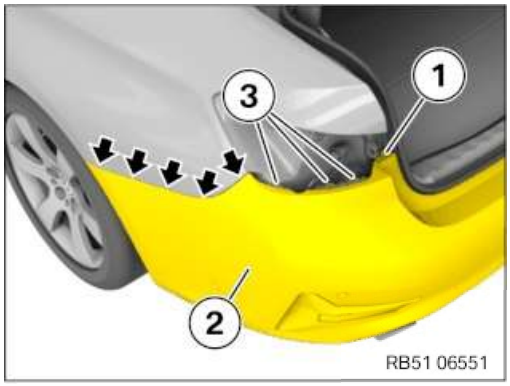
Measure

- Renew the bumper panel.

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- Position the bumper panel (1) straight with the help of another person.
- Connect all connectors and lock.



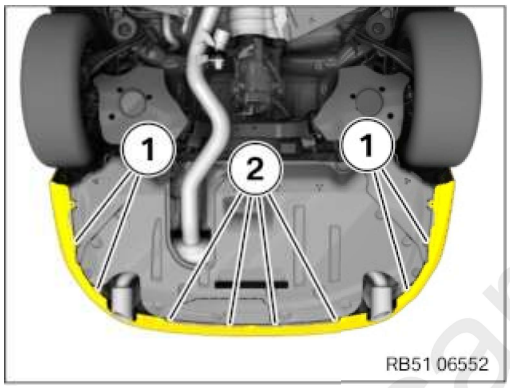
NOTICE

Perform the operations on the left and right side.

- Clip bumper panel (2) on the side in the latch mechanisms (arrows).
- Clip bumper panel (2) in the area of the rear light housing in latch mechanisms (3).
- Tighten down screw (1).

Rear bumper panel guide on rear centre guide

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm



- Clip bumper panel into latch mechanisms (2).
- Tighten the screws (1).

Mounting for rear bumper panel on support for rear bumper panel

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm



NOTICE

Perform the operations on the left and right side.

- Tighten the screws (1).

Rear bumper panel to rear side panel

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

12 – Install both rear lights on the side panel

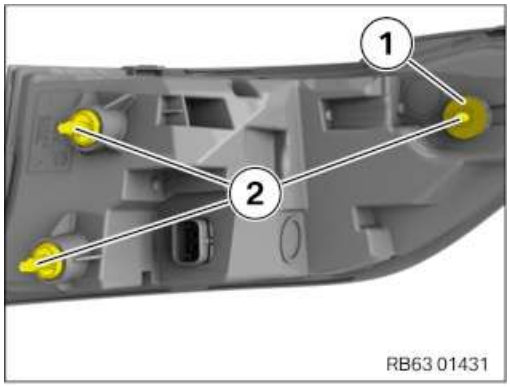
NOTICE

Description is for left component only. Procedure on the right side is identical.

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▸ **Install the rear light on the side panel**

Check



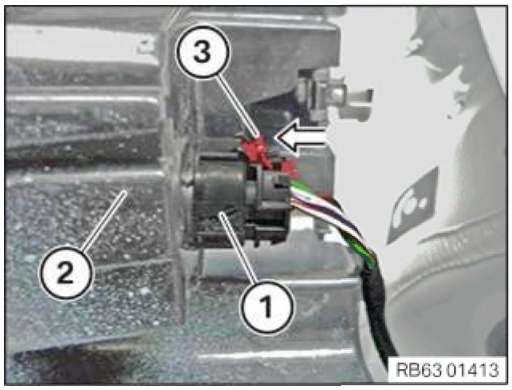
- Check the seal (1) for damage and renew if necessary.
- Check the threaded inserts (2) for damage.

Result

» The threaded inserts are damaged.

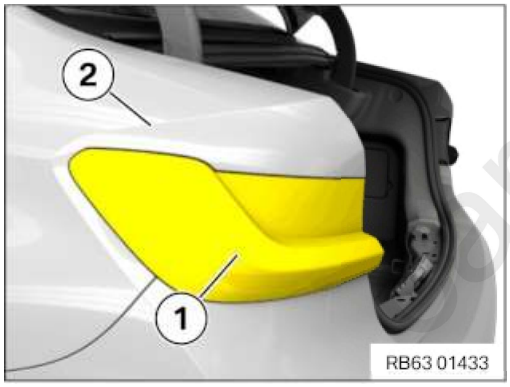
Measure

- Replace rear light.

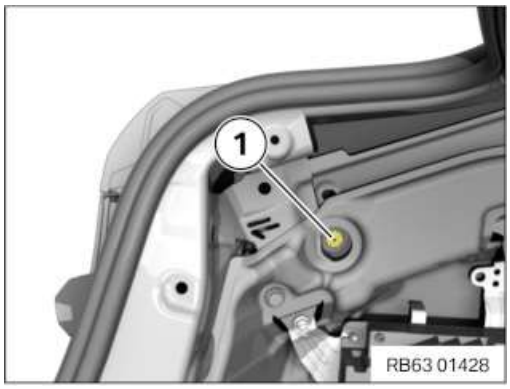


- Connect the connector (1) to the rear light on the side panel (2).

  The connector (1) must engage audibly.
- Lock the lock in direction of arrow (3).

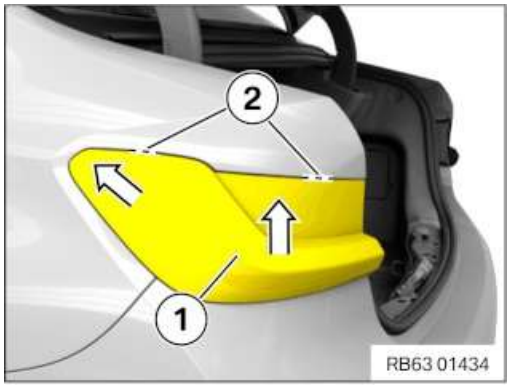


- Position the rear light on the side panel (1) on the side panel (2).

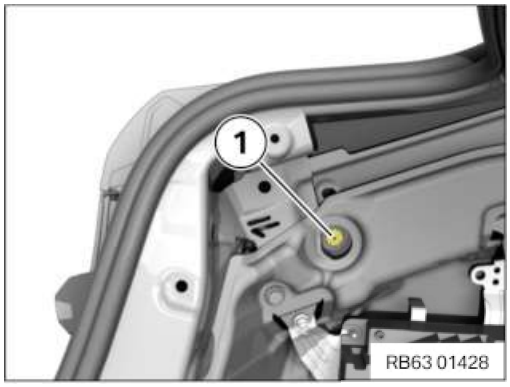


- Position the nut (1).

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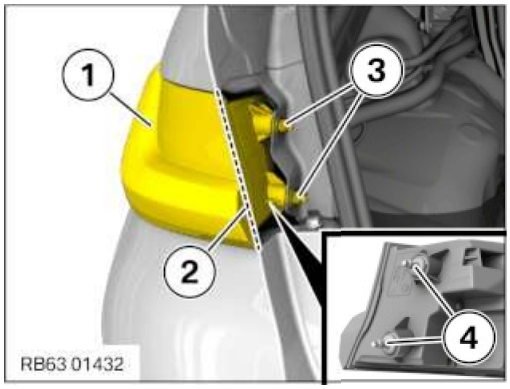
- Position the rear light on the side panel (1) to the front at the top.
- Move the contact surfaces (2) of the rear light on the side panel (1) upwards (arrow) so that they are in place.
- Hold the rear light on the side panel (1) in position.



- Tighten nut (1).

Rear light to side panel

Nut M5, AF 8		Tightening torque	3 Nm



- Position nuts (3).
- Align rear light on the side panel (1) with the connecting line (2).

  The alignment is done through threaded inserts (4) on the rear light on the side panel (2).
- If necessary, correct the position of the rear light on the side panel (1) by twisting threaded inserts (4).
- Tighten nuts (3).

Rear light to side panel

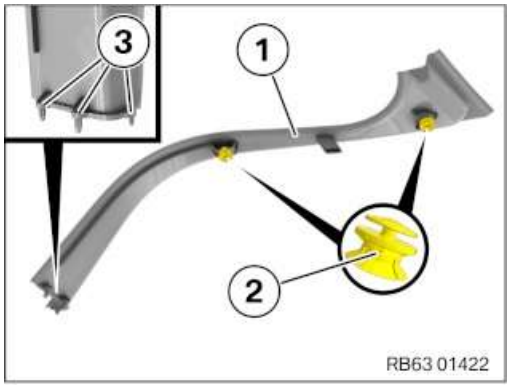
Nut M5, AF 10		Tightening torque	4 Nm

13 – Installing both trims of the water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the trim in the water channel**



Check

- Check the clips (2) for damage and renew if necessary.
- Check the guides (3) for damage.

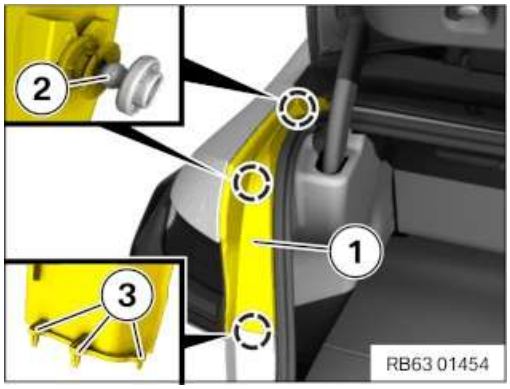
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Result

» The guides are damaged.

Measure

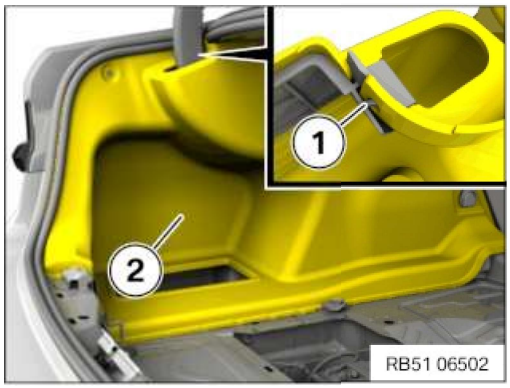
- Renew trim in the water channel .



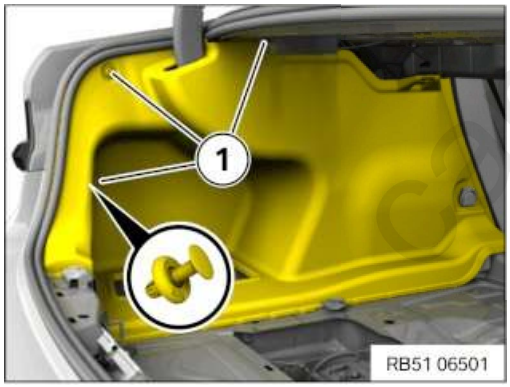
- Insert the trim in the water channel (1) in the guides (3).
- Clip in the water channel trim (1) from the front into the ball pin (2).

14 – Installing both luggage compartment wheel arch trim panels partially

▸ Partially installing the left luggage compartment wheel arch trim panel

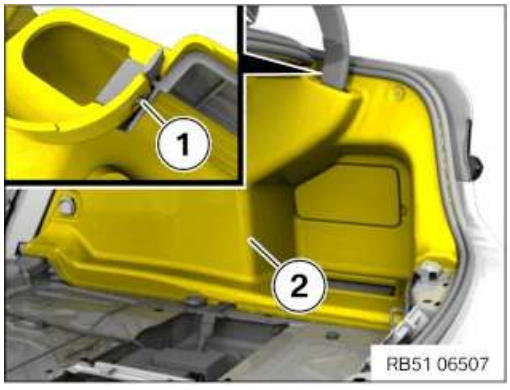


- Feed the luggage compartment wheel arch trim panel (2) in the rear area under the sealing lip of the seal of the tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).



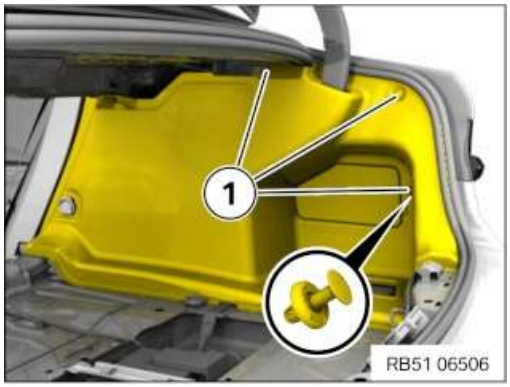
- Secure expanding rivet (1).

▸ Partially installing right luggage compartment wheel arch trim panel



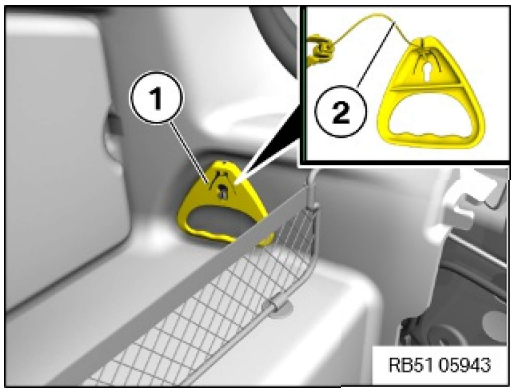
- Guide luggage compartment wheel arch trim panel (2) in the rear area under the sealing lip of the seal for tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).

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- Secure expanding rivet (1).

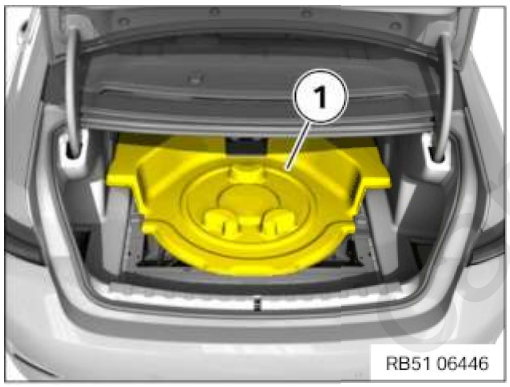
▷ **If installed: Installing the emergency tailgate release handle (additional work for US version)**



- Attach the Bowden cable (2).
- Fasten emergency tailgate release handle (1) to the bracket.

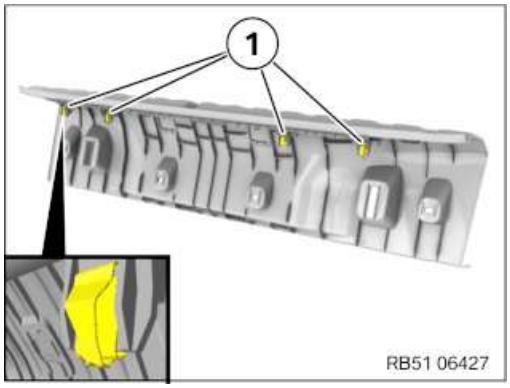
◁

15 – Install the luggage compartment well in front



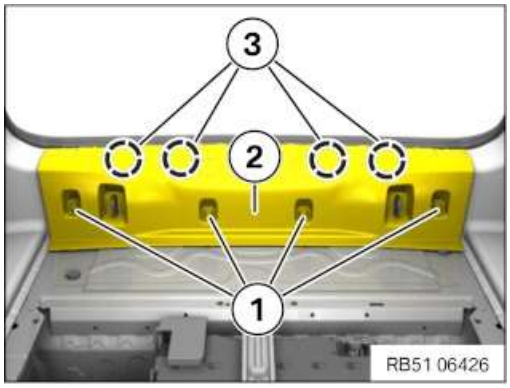
- Feed in and insert front luggage compartment well (1) on the seat belt strap.

16 – Installing loading edge trim



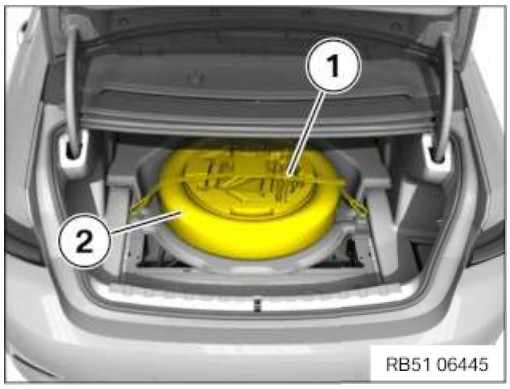
- Check the clamps (1) for damage and renew if necessary.

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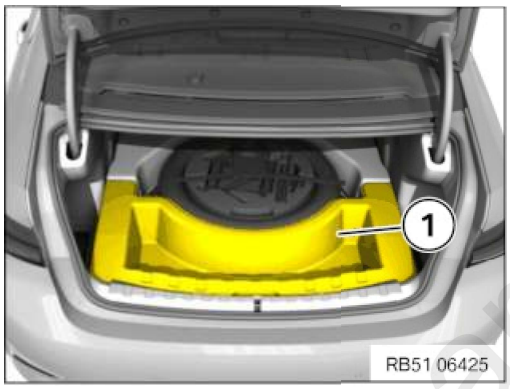
- Insert the loading edge trim (2) under the sealing lip of the tailgate seal.
- Fit the trim of the loading edge (2) at the latch mechanisms (3) and clip it in to the bottom.
- Secure expanding rivet (1).

17 – If installed: Install the emergency wheel



- Install the emergency wheel (2) with the insert.
- Position the seat belt strap above the emergency wheel and close the buckle on the seat belt strap (1).

▶ **Installing rear luggage compartment well**



- Install rear luggage compartment well (1).

18 – Installing the luggage compartment floor trim panel



- Insert the luggage compartment floor trim panel (1).

Additional Information

Overview of Tightening Torques

Support for rear bumper panel to body Used in step 10

Nut M12		Tightening torque	108 Nm

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Rear silencer on support for rear bumper panel			Used in step 10
Nut M8		Tightening torque	19 Nm

Mounting for rear bumper panel on support for rear bumper panel			Used in step 1011
Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

Rear bumper panel guide on rear centre guide			Used in step 11
Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

Rear bumper panel to rear side panel			Used in step 11
Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

Rear light to side panel			Used in step 12
Nut M5, AF 8		Tightening torque	3 Nm

Rear light to side panel			Used in step 12
Nut M5, AF 10		Tightening torque	4 Nm

Links

Repair instructions	Used in step
61 13 ... Unlocking and disconnecting different plug connections	7

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51 12 157 Replace rear bumper panel

PRELIMINARY WORK

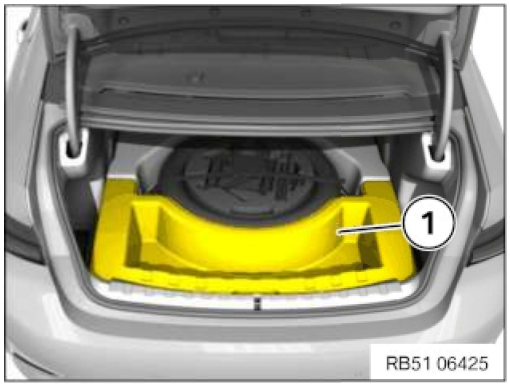
1 – Removing the luggage compartment floor trim panel



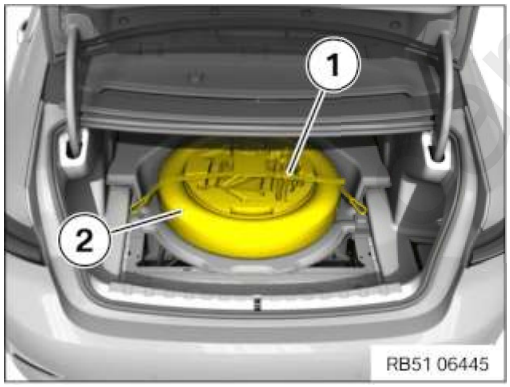
- Remove luggage compartment floor trim panel (1).

2 – If installed: Removing the compact spare wheel

▸ **Removing rear luggage compartment well**

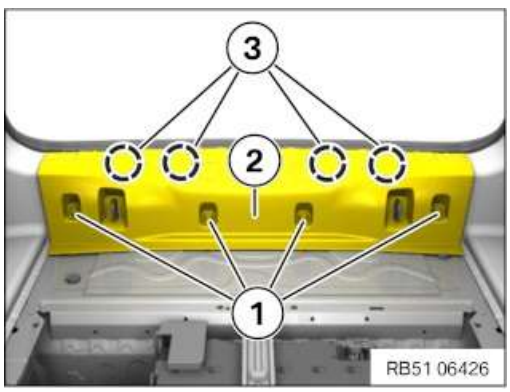


- Remove rear luggage compartment well (1).



- Open buckle on seat belt strap (1) and set it aside.
- Remove emergency wheel (2) with the insert.

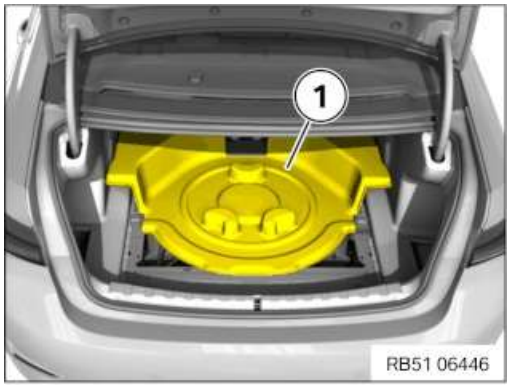
3 – Removing the loading edge trim



- Loosen the expanding rivet (1).
- Unclip loading edge trim(2) upwards from latch mechanisms (3).
- Guide out and remove loading edge trim (2) under the sealing lip of the tailgate seal.

4 – Removing front luggage compartment well

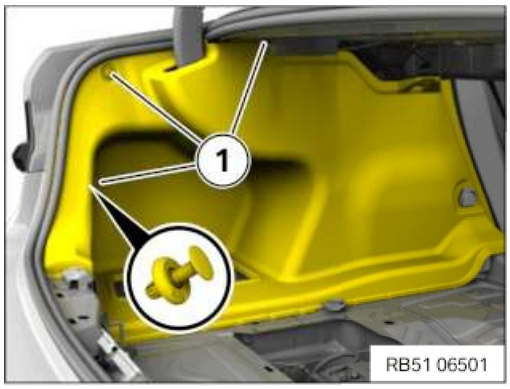
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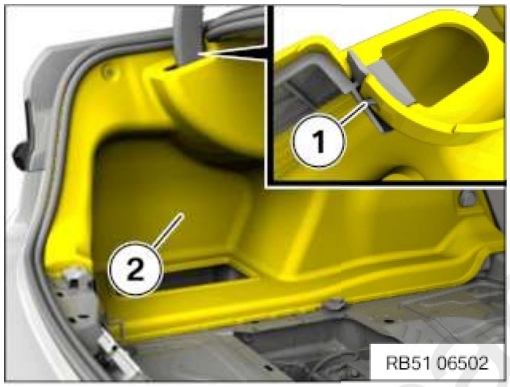
- Guide out and remove front luggage compartment well (1) on the seat belt strap.

5 – Removing both luggage compartment wheel arch trim panels partially

▶ Partially remove luggage compartment wheel arch trim on left



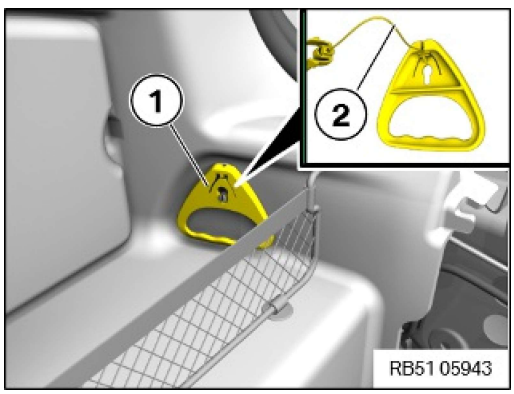
- Loosen the expanding rivet (1).



- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip of the tailgate seal and release it in the rear area.

▶ Partially remove luggage compartment wheel arch panel on right

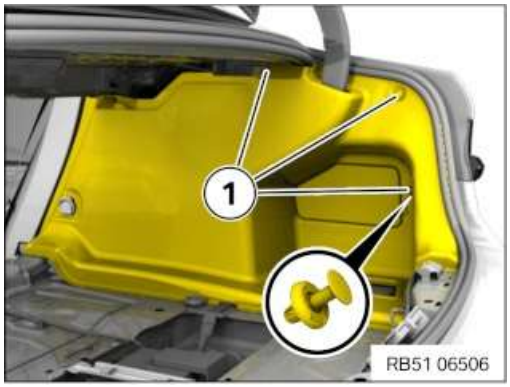
▷ If installed: Remove the emergency release handle for the tailgate (additional work in the US version)



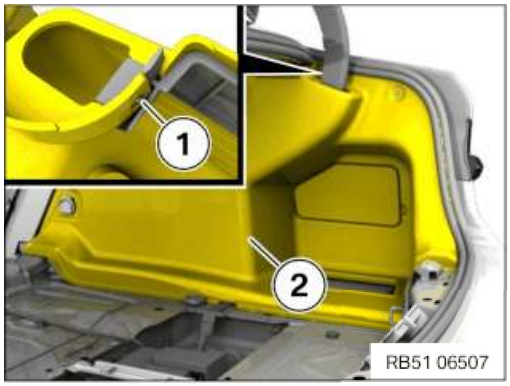
- Release the emergency release handle for tailgate (1) from the holder.
- Detach Bowden cable (2) and remove the emergency release handle for tailgate (1).

◁

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- Loosen the expanding rivet (1).



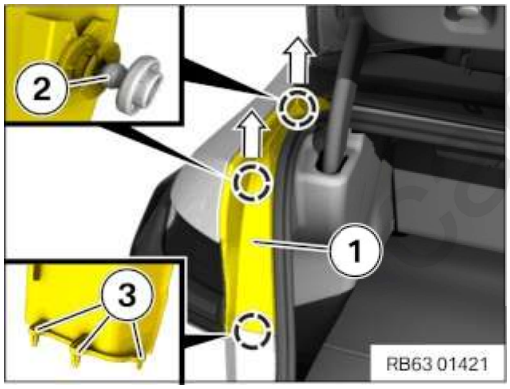
- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip of the tailgate seal and release it in the rear area.

6 – Removing both trims of water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the trim in the water channel**



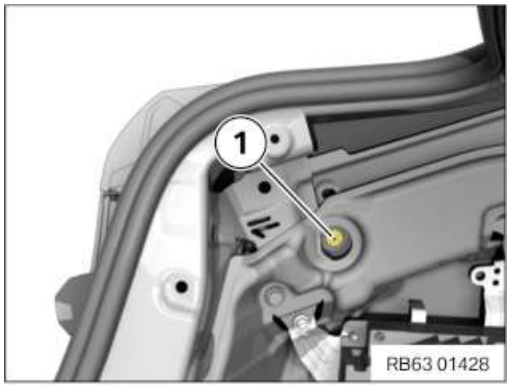
- Unclip the trim in the water channel (1) from the ball pins (2) towards the top.
- Release the trim in the water channel (1) from the guides (3) and remove it.

7 – Remove both rear lights from the side panel

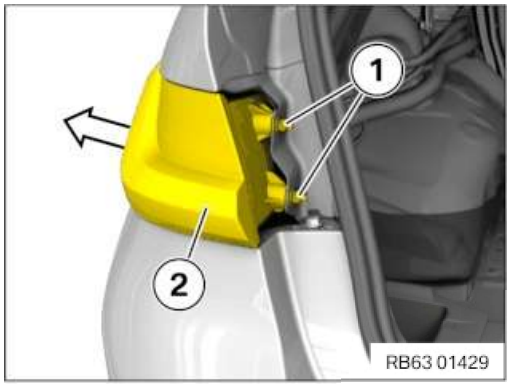
NOTICE

Description is for left component only. Procedure on the right side is identical.

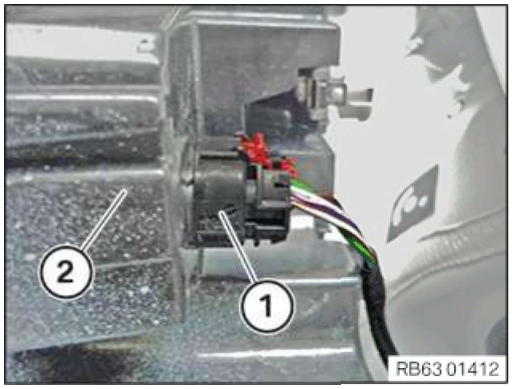
▸ **Remove the rear light on the side panel**



- Loosen nut (1).



- Release the nuts (1) and feed out the rear light on the side panel (2) in the direction of arrow.



TECHNICAL INFORMATION

Observe note on unlocking and disconnecting plug connections.
For additional information see: 6113 ... Unlocking and disconnecting different plug connections

- Unlock and disconnect plug connection (1) as described in position #28 in additional information.
- Remove the rear light on the side panel (2).

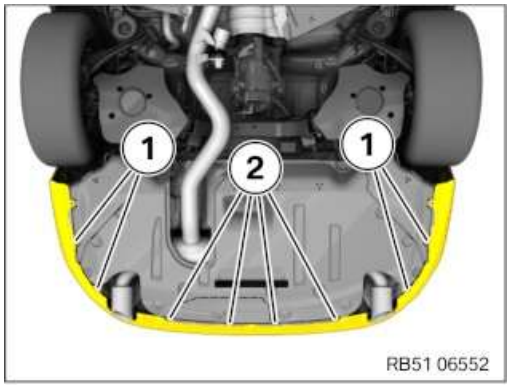
8 – Remove rear bumper panel



NOTICE

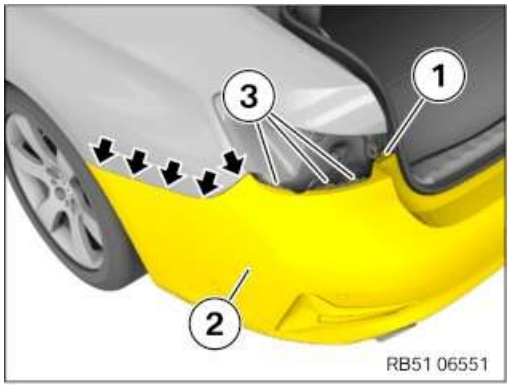
Perform the operations on the left and right side.

- Loosen screws (1).



- Loosen screws (1).
- Release the bumper panel on latch mechanisms (2) with a suitable tool.

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NOTICE

Perform the operations on the left and right side.

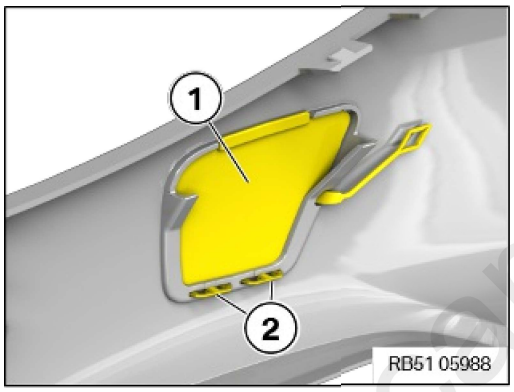
- Loosen screw (1).
- Release bumper panel (2) in the area of the rear light housing from latch mechanisms (3) with a suitable tool.
- Release side bumper panel (2) from the remaining latch mechanisms (arrows).



- Remove bumper panel (2) straight to the rear with the help of an auxiliary person.
- Unlock all plug connections and disconnect.
- Remove the bumper panel (1).

MAIN WORK

9 – Removing towing eye cover



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Unclip the cover of the towing eye (1) with the latch mechanisms (2).
- Feed out the tether and remove the cover of the towing eye (1).

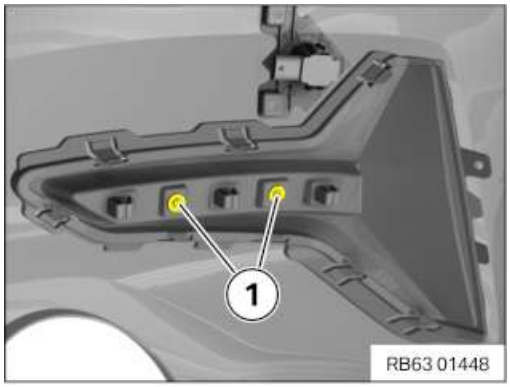
10 – Removing both rear reflectors in the rear

▸ **Removing the rear rear reflector**

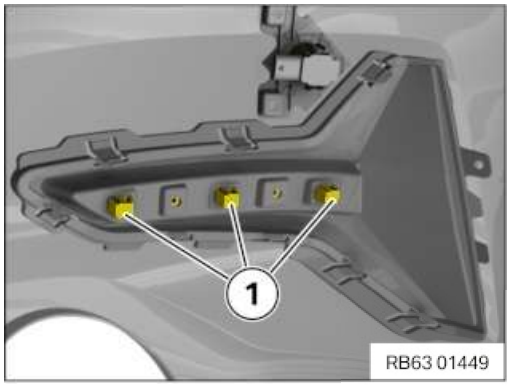
NOTICE

Description is for left component only. Procedure on the right side is identical.

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- Loosen screws (1).

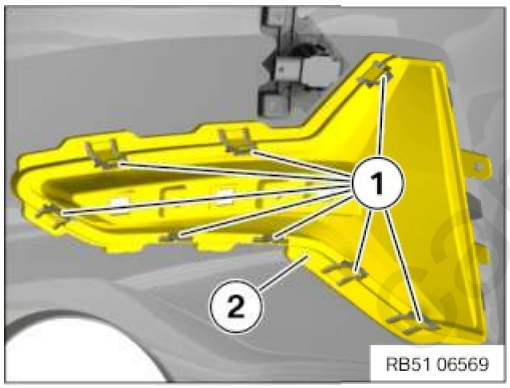


- Unlock clamps (1) and remove the rear reflector form the trim.

11 – Removing both trims of the rear reflector at rear

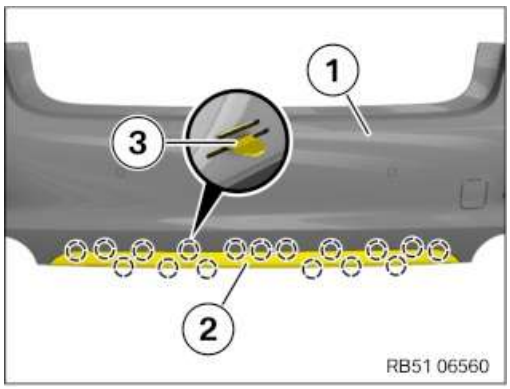
NOTICE

Description is for left component only. Procedure on the right side is identical.

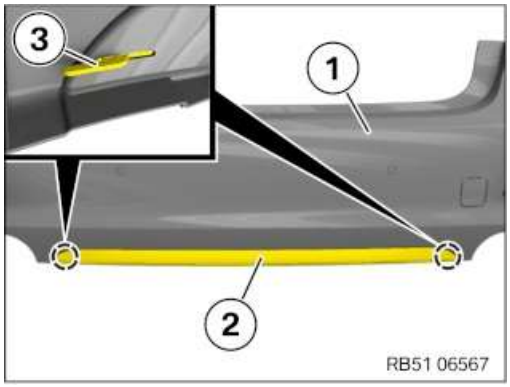


- Unclip the latch mechanisms (1).
- Feed the trim of the rear reflector at rear(2) out of the rear bumper.

12 – Removing the trim on the rear bumper panel



- Unclip the trim of the rear bumper panel (2) from all the latch mechanisms (3) of the rear bumper panel (1).

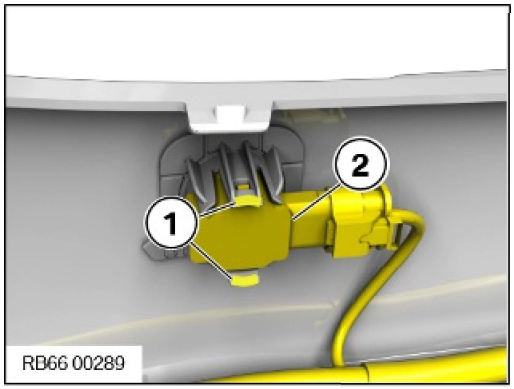


- Release the trim of the rear bumper panel (2) from the guides (3) at left and right and feed out of the rear bumper panel (1).

13 – Partially removing the ultrasonic sensor

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



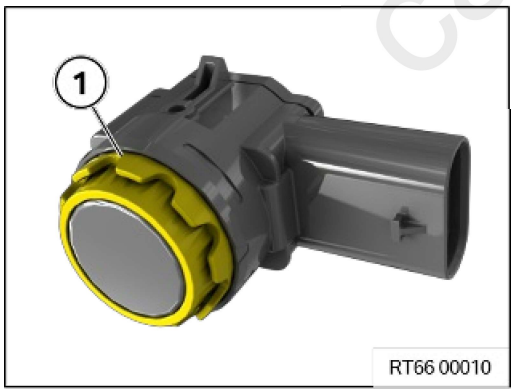
- Unlock latch mechanisms (1) and release ultrasonic sensor(2) from the bumper panel.

  The ultrasonic sensor (2) remains connected to the vehicle wiring harness.
- Perform the step on all the other ultrasonic sensors.
- Remove the wiring harness with the connected ultrasonic sensors.

14 – Partially install the ultrasonic sensor

NOTICE

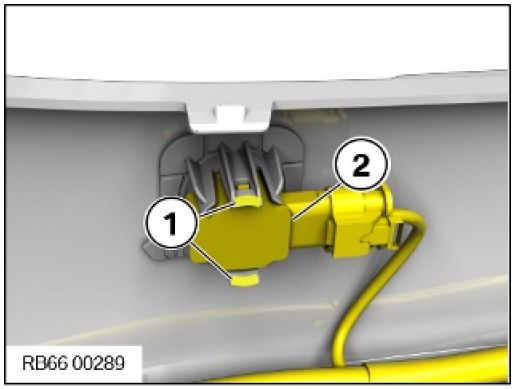
Schematic diagram is for example purposes. Some parts may differ in certain details.



- Check the decoupling ring (1) for damage and renew the decoupling ring as needed.

  The decoupling ring must not be missing.

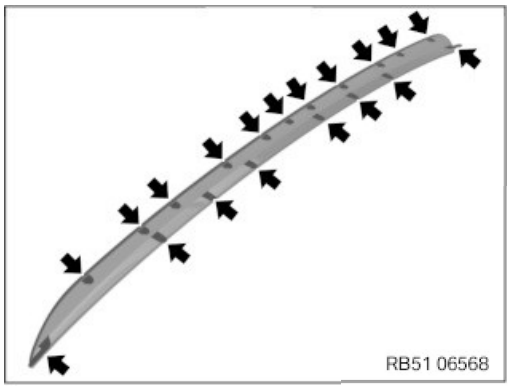
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- Position the wiring harness with the associated ultrasonic sensors.
- Insert the ultrasonic sensor (2) and clip in to the latch mechanisms.(1)
- Perform the step on all the other ultrasonic sensors.

15 – Installing the trim of the rear bumper panel

Check



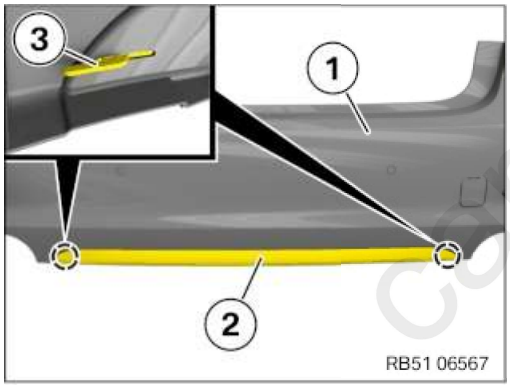
- Check the latch mechanisms (arrows) for damage.

Result

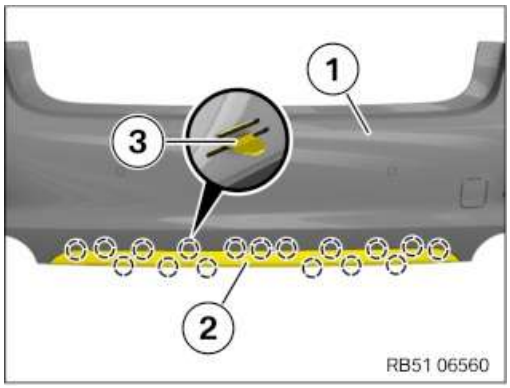
» The latch mechanism is damaged.

Measure

- Renew the trim of the rear bumper panel.



- Position the trim of the rear bumper panel (2) on the rear bumper panel (1) and feed into the guides (3) on the left and right.



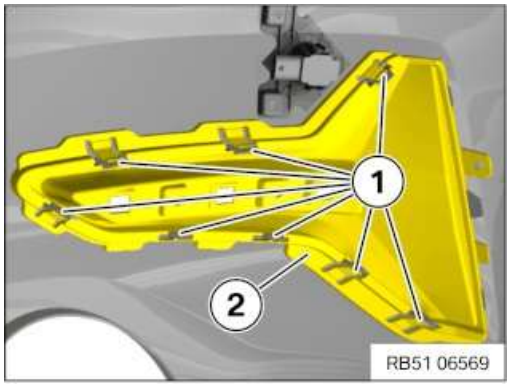
- Clip the trim of the rear bumper panel (2) in all the latch mechanisms (3) on the rear bumper panel (1).

16 – Installing both trims of rear reflector

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NOTICE

Description is for left component only. Procedure on the right side is identical.



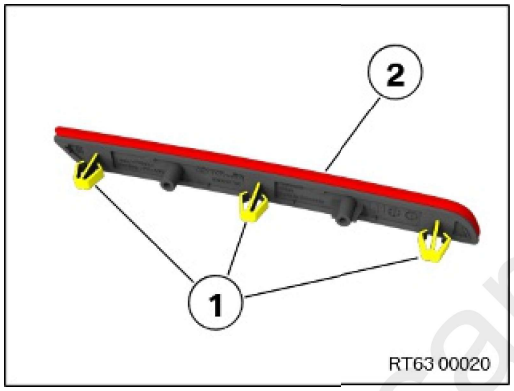
- Position trim (2) correctly on the rear bumper panel and clip in latch mechanisms (1).

17 – Installing both rear reflectors

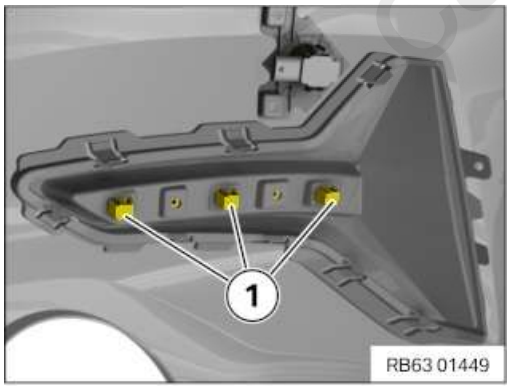
▸ **Installing the rear rear reflector**

NOTICE

Description is for left component only. Procedure on the right side is identical.

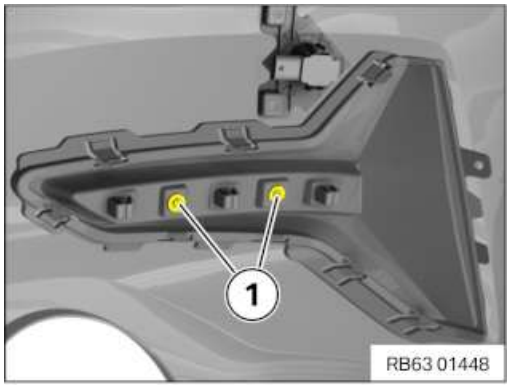


- Check clamps (1) on rear reflector (2) for damage and, if necessary, renew them.



- Position rear reflector in the rear bumper panel and clip it in with clamps (1).

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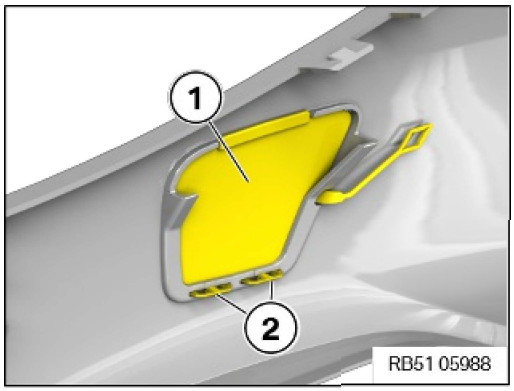


- Tighten the screws (1).

Rear reflector to rear bumper panel

Screw for thermoplastic		Tightening torque	3 Nm

18 – Installing the cover of the towing eye



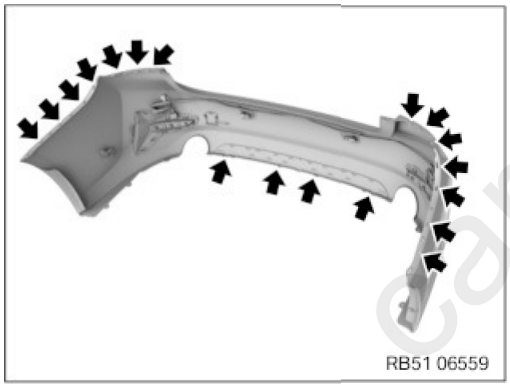
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Guide in tether.
- Insert the cover of the towing eye (1) and clip into place with the latch mechanisms (2).

POSTPROCESSES

19 – Install rear bumper panel



Check

- Check the latch mechanisms (arrows) for damage.

Result

» Latch mechanisms are damaged.

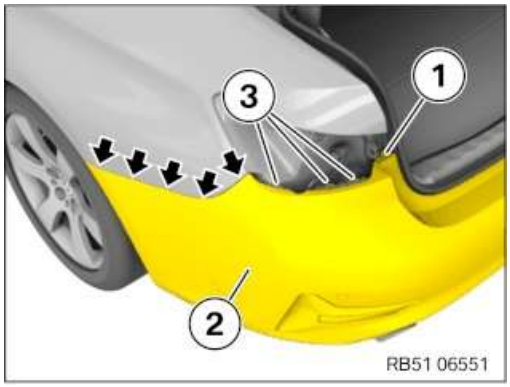
Measure

- Renew the bumper panel.



- Position the bumper panel (1) straight with the help of another person.
- Connect all connectors and lock.

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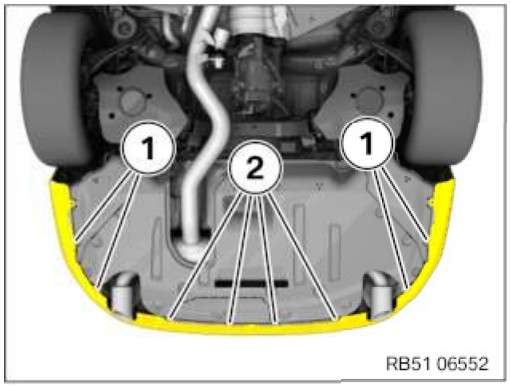
NOTICE

Perform the operations on the left and right side.

- Clip bumper panel (2) on the side in the latch mechanisms (arrows).
- Clip bumper panel (2) in the area of the rear light housing in latch mechanisms (3).
- Tighten down screw (1).

Rear bumper panel guide on rear centre guide

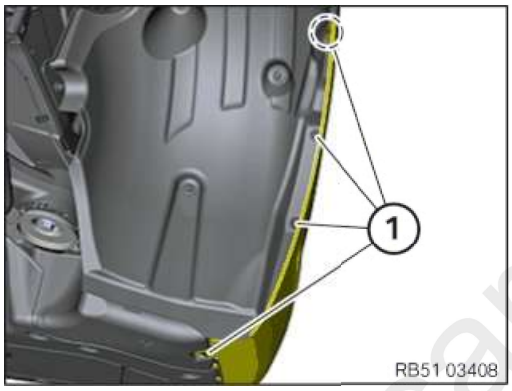
Hexagon screw for thermoplastic		Tightening torque	2,5 Nm



- Clip bumper panel into latch mechanisms (2).
- Tighten the screws (1).

Mounting for rear bumper panel on support for rear bumper panel

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm



NOTICE

Perform the operations on the left and right side.

- Tighten the screws (1).

Rear bumper panel to rear side panel

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

20 – Install both rear lights on the side panel

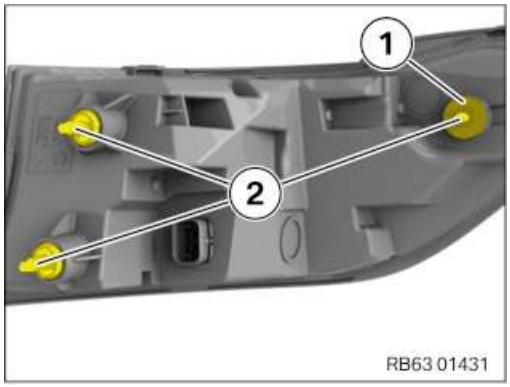
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the rear light on the side panel**

Check

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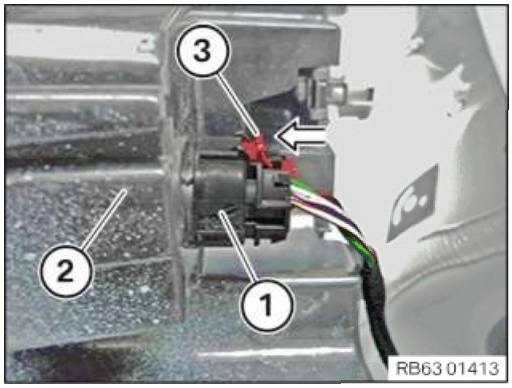
- Check the seal (1) for damage and renew if necessary.
- Check the threaded inserts (2) for damage.

Result

» The threaded inserts are damaged.

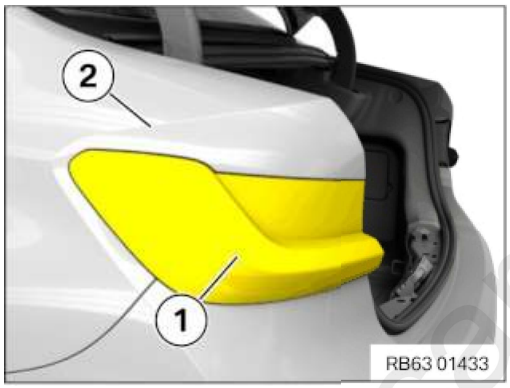
Measure

- Replace rear light.

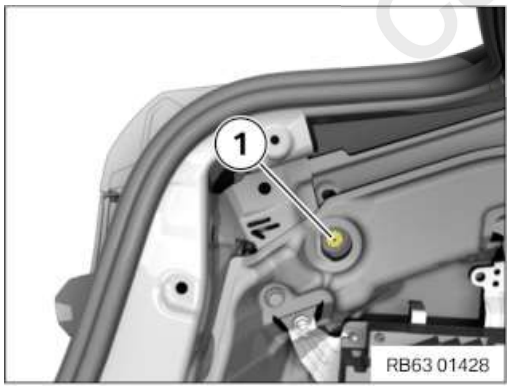


- Connect the connector (1) to the rear light on the side panel (2).

  The connector (1) must engage audibly.
- Lock the lock in direction of arrow (3).

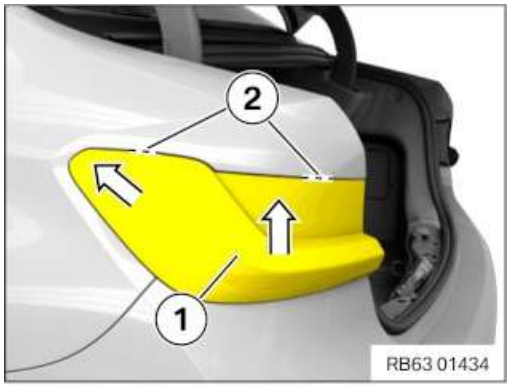


- Position the rear light on the side panel (1) on the side panel (2).

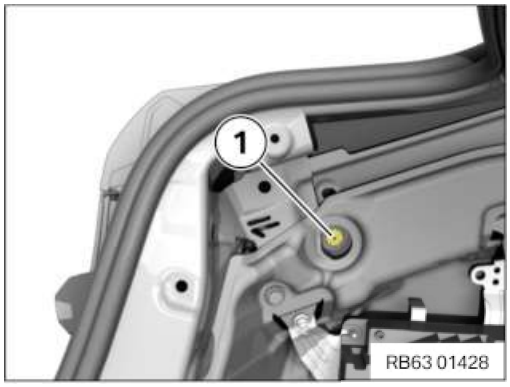


- Position the nut (1).

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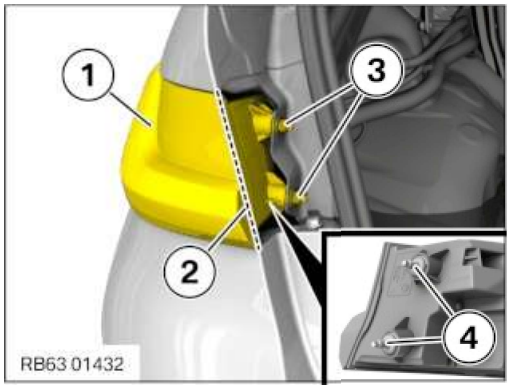
- Position the rear light on the side panel (1) to the front at the top.
- Move the contact surfaces (2) of the rear light on the side panel (1) upwards (arrow) so that they are in place.
- Hold the rear light on the side panel (1) in position.



- Tighten nut (1).

Rear light to side panel

Nut M5, AF 8		Tightening torque	3 Nm



- Position nuts (3).
- Align rear light on the side panel (1) with the connecting line (2).

  The alignment is done through threaded inserts (4) on the rear light on the side panel (2).
- If necessary, correct the position of the rear light on the side panel (1) by twisting threaded inserts (4).
- Tighten nuts (3).

Rear light to side panel

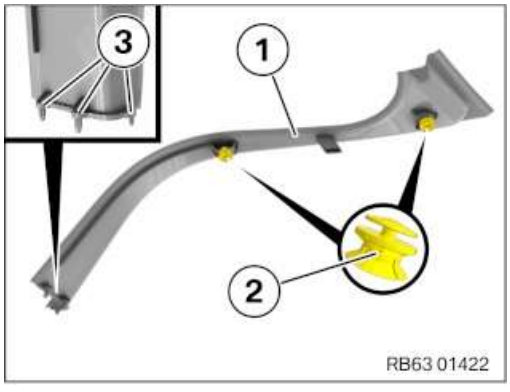
Nut M5, AF 10		Tightening torque	4 Nm

21 – Installing both trims of the water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the trim in the water channel**



Check

- Check the clips (2) for damage and renew if necessary.
- Check the guides (3) for damage.

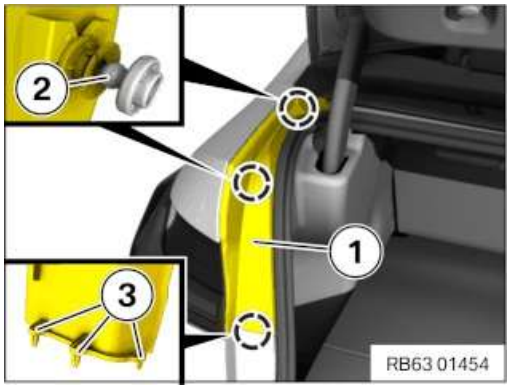
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Result

» The guides are damaged.

Measure

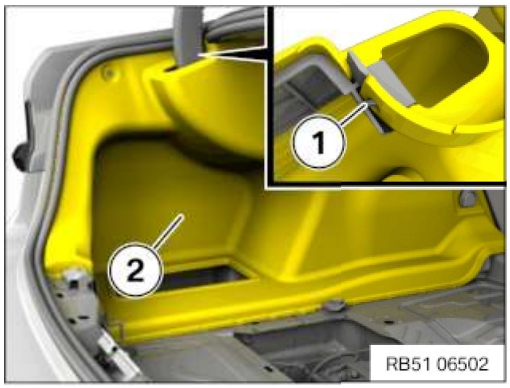
- Renew trim in the water channel .



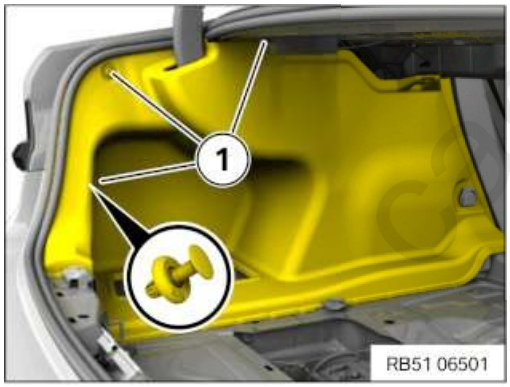
- Insert the trim in the water channel (1) in the guides (3).
- Clip in the water channel trim (1) from the front into the ball pin (2).

22 – Installing both luggage compartment wheel arch trim panels partially

▸ Partially installing the left luggage compartment wheel arch trim panel

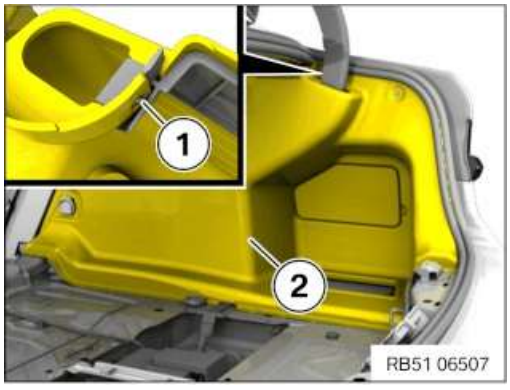


- Feed the luggage compartment wheel arch trim panel (2) in the rear area under the sealing lip of the seal of the tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).



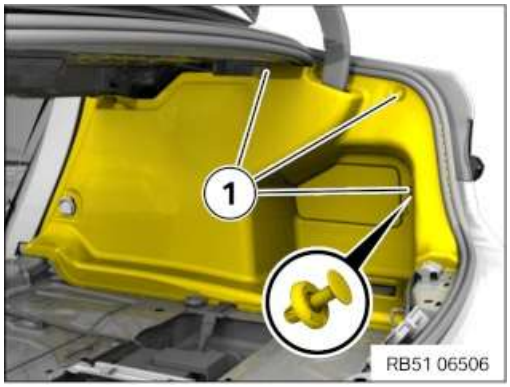
- Secure expanding rivet (1).

▸ Partially installing right luggage compartment wheel arch trim panel



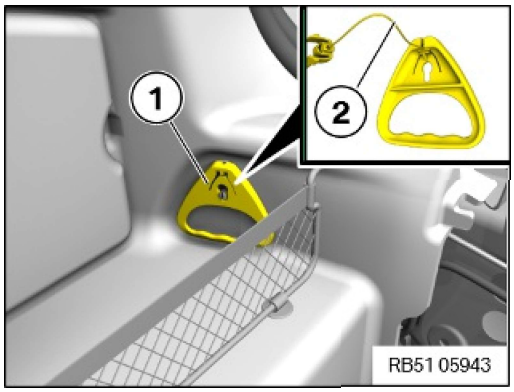
- Guide luggage compartment wheel arch trim panel (2) in the rear area under the sealing lip of the seal for tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).

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- Secure expanding rivet (1).

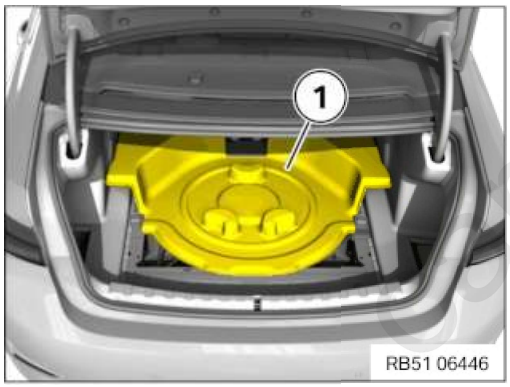
▷ **If installed: Installing the emergency tailgate release handle (additional work for US version)**



- Attach the Bowden cable (2).
- Fasten emergency tailgate release handle (1) to the bracket.

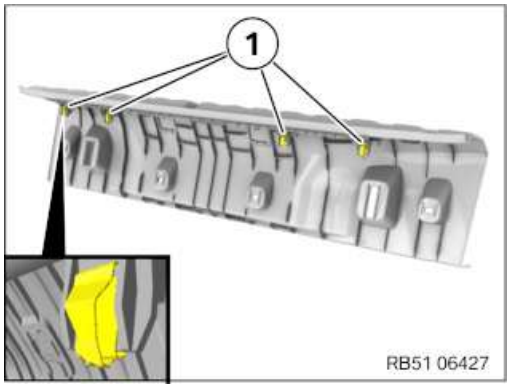
◁

23 – Install the luggage compartment well in front



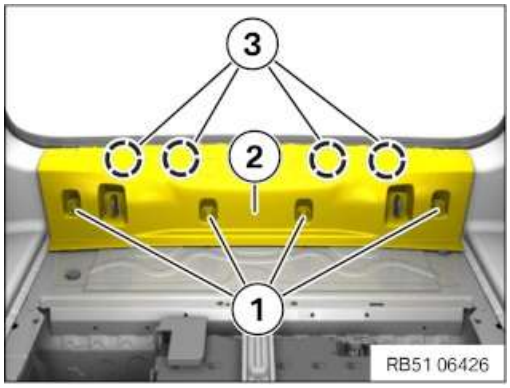
- Feed in and insert front luggage compartment well (1) on the seat belt strap.

24 – Installing loading edge trim



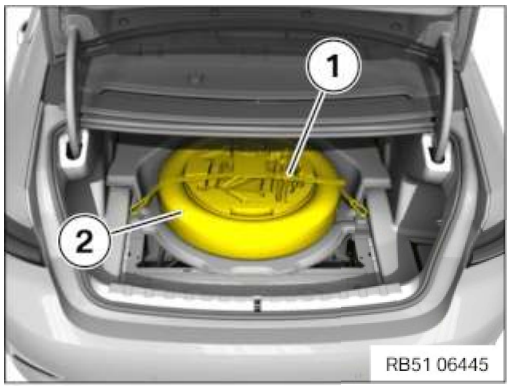
- Check the clamps (1) for damage and renew if necessary.

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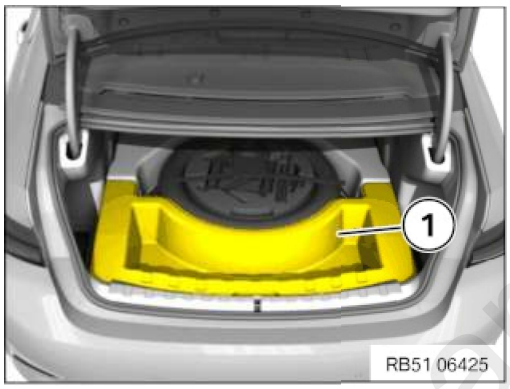
- Insert the loading edge trim (2) under the sealing lip of the tailgate seal.
- Fit the trim of the loading edge (2) at the latch mechanisms (3) and clip it in to the bottom.
- Secure expanding rivet (1).

25 – If installed: Install the emergency wheel



- Install the emergency wheel (2) with the insert.
- Position the seat belt strap above the emergency wheel and close the buckle on the seat belt strap (1).

▶ **Installing rear luggage compartment well**



- Install rear luggage compartment well (1).

26 – Installing the luggage compartment floor trim panel



- Insert the luggage compartment floor trim panel (1).

Additional Information

Overview of Tightening Torques

Rear reflector to rear bumper panel Used in step 17

Screw for thermoplastic		Tightening torque	3 Nm

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Rear bumper panel guide on rear centre guide			Used in step 19
Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

Mounting for rear bumper panel on support for rear bumper panel			Used in step 19
Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

Rear bumper panel to rear side panel			Used in step 19
Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

Rear light to side panel			Used in step 20
Nut M5, AF 8		Tightening torque	3 Nm

Rear light to side panel			Used in step 20
Nut M5, AF 10		Tightening torque	4 Nm

Links

Repair instructions	Used in step
61 13 ... Unlocking and disconnecting different plug connections	7

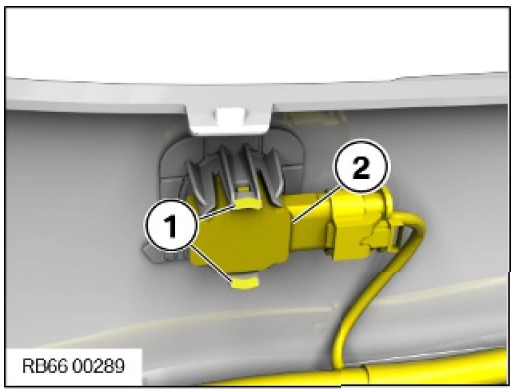
cardiagn.com

51 12 657 Replacing rear bumper panel (bumper removed)

1 – Partially removing the ultrasonic sensor

NOTICE

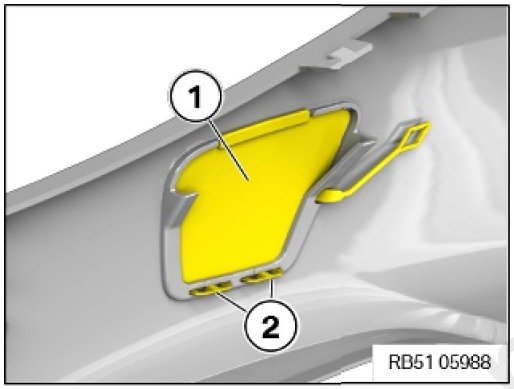
Schematic diagram is for example purposes. Some parts may differ in certain details.



- Unlock latch mechanisms (1) and release ultrasonic sensor(2) from the bumper panel.

  The ultrasonic sensor (2) remains connected to the vehicle wiring harness.
- Perform the step on all the other ultrasonic sensors.
- Remove the wiring harness with the connected ultrasonic sensors.

2 – Removing towing eye cover

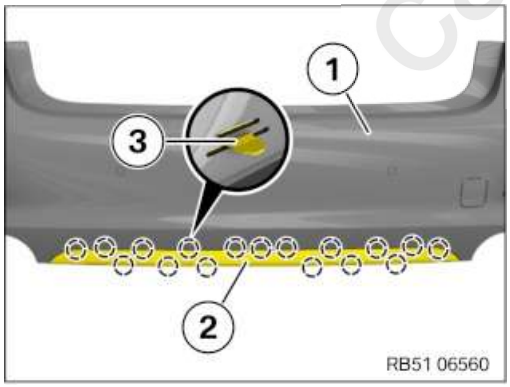


NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

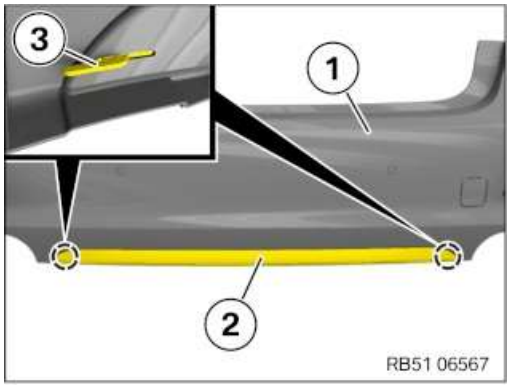
- Unclip the cover of the towing eye (1) with the latch mechanisms (2).
- Feed out the tether and remove the cover of the towing eye (1).

3 – Removing the trim on the rear bumper panel



- Unclip the trim of the rear bumper panel (2) from all the latch mechanisms (3) of the rear bumper panel (1).

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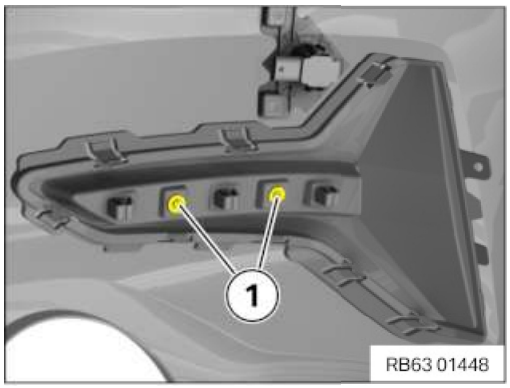
- Release the trim of the rear bumper panel (2) from the guides (3) at left and right and feed out of the rear bumper panel (1).

4 – Removing both rear reflectors in the rear

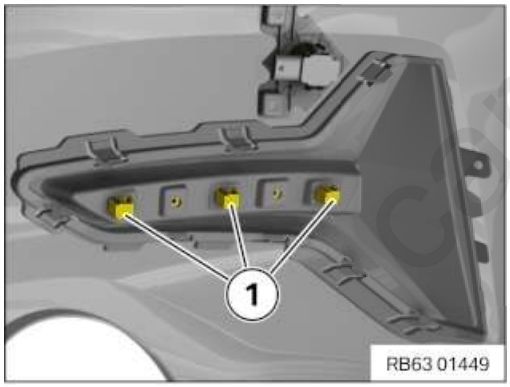
▸ **Removing the rear rear reflector**

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Loosen screws (1).

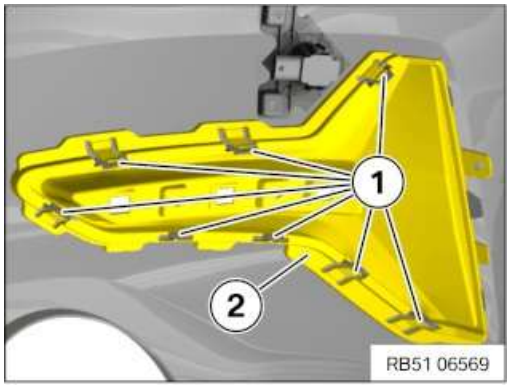


- Unlock clamps (1) and remove the rear reflector form the trim.

5 – Removing both trims of the rear reflector at rear

NOTICE

Description is for left component only. Procedure on the right side is identical.

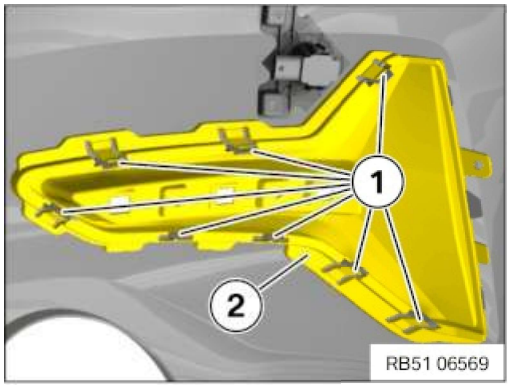


- Unclip the latch mechanisms (1).
- Feed the trim of the rear reflector at rear(2) out of the rear bumper.

6 – Installing both trims of rear reflector

NOTICE

Description is for left component only. Procedure on the right side is identical.



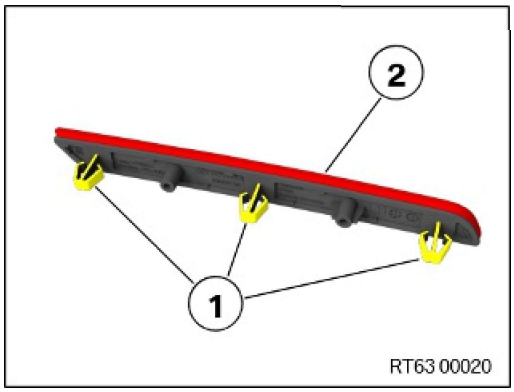
- Position trim (2) correctly on the rear bumper panel and clip in latch mechanisms (1).

7 – Installing both rear reflectors

▸ **Installing the rear rear reflector**

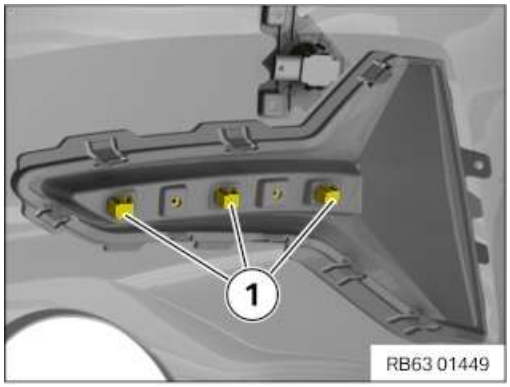
NOTICE

Description is for left component only. Procedure on the right side is identical.

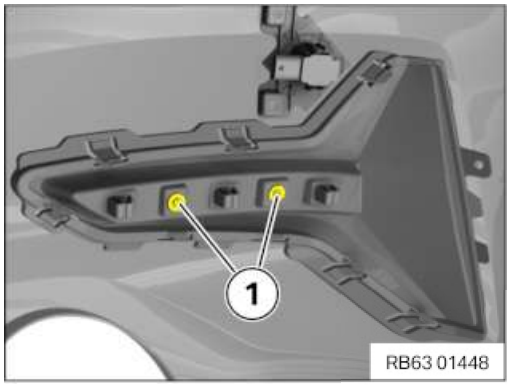


- Check clamps (1) on rear reflector (2) for damage and, if necessary, renew them.

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- Position rear reflector in the rear bumper panel and clip it in with clamps (1).

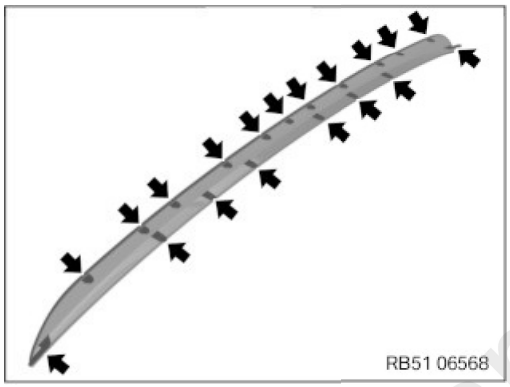


- Tighten the screws (1).

Rear reflector to rear bumper panel

Screw for thermoplastic		Tightening torque	3 Nm

8 – Installing the trim of the rear bumper panel



Check

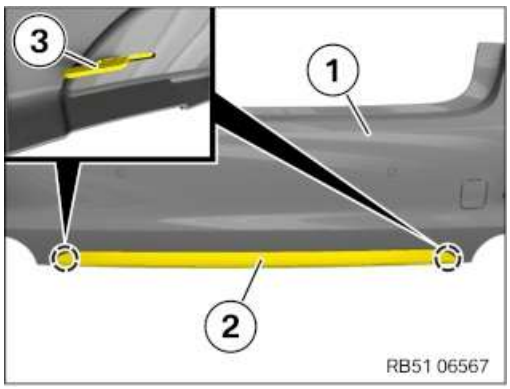
- Check the latch mechanisms (arrows) for damage.

Result

» The latch mechanism is damaged.

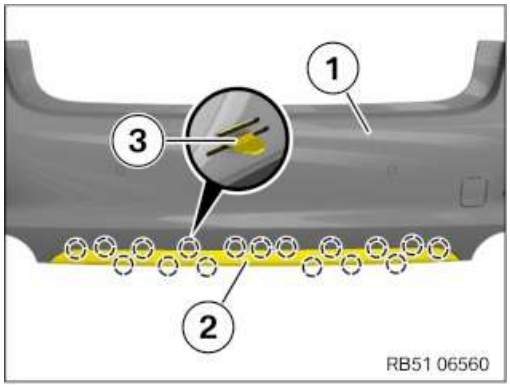
Measure

- Renew the trim of the rear bumper panel.



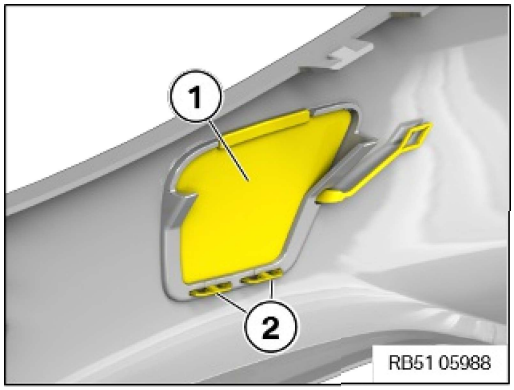
- Position the trim of the rear bumper panel (2) on the rear bumper panel (1) and feed into the guides (3) on the left and right.

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- Clip the trim of the rear bumper panel (2) in all the latch mechanisms (3) on the rear bumper panel (1).

9 – Installing the cover of the towing eye



NOTICE

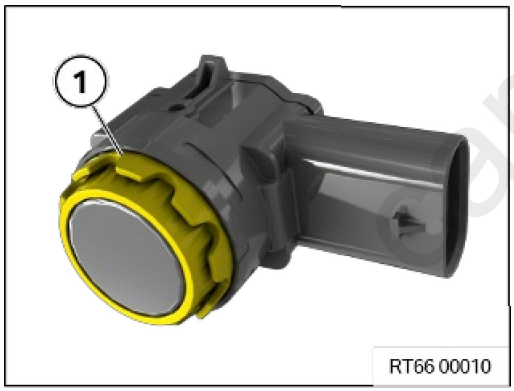
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Guide in tether.
- Insert the cover of the towing eye (1) and clip into place with the latch mechanisms (2).

10 – Partially install the ultrasonic sensor

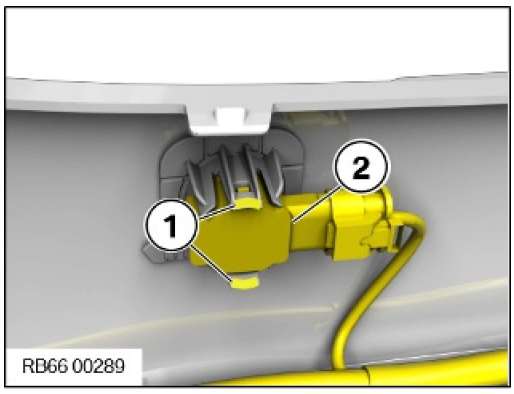
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Check the decoupling ring (1) for damage and renew the decoupling ring as needed.

  The decoupling ring must not be missing.



- Position the wiring harness with the associated ultrasonic sensors.
- Insert the ultrasonic sensor (2) and clip in to the latch mechanisms.(1)
- Perform the step on all the other ultrasonic sensors.

Additional Information

Overview of Tightening Torques

Rear reflector to rear bumper panel Used in step 7

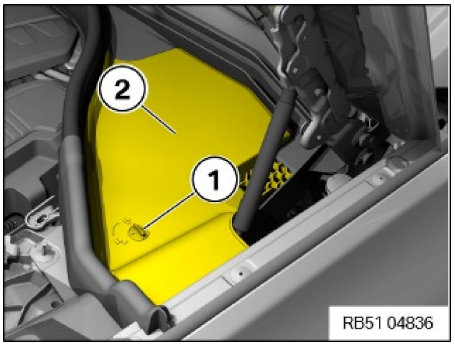
Screw for thermoplastic		Tightening torque	3 Nm

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51 13 116 Remove and install cowl panel cover

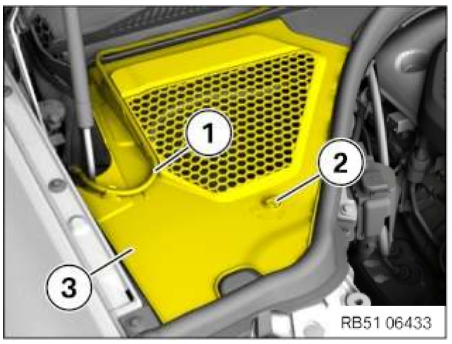
PRELIMINARY WORK

1 – Remove the cover of the engine compartment at the rear left



- Loosen the lock (1).
- Remove rear left cover of engine compartment (2).

2 – Remove the cover of the rear right engine compartment



- Release washer fluid hose (1) from the guides.
- Loosen the lock (2).
- Remove the cover of rear right engine compartment (3).

3 – Removing both wiper arms

NOTICE

Description is for left component only. Procedure on the right side is identical.

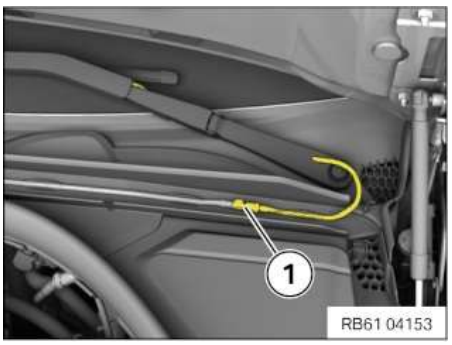
▸ **Remove the wiper arm**

RISK OF DAMAGE

Damage to wiper console

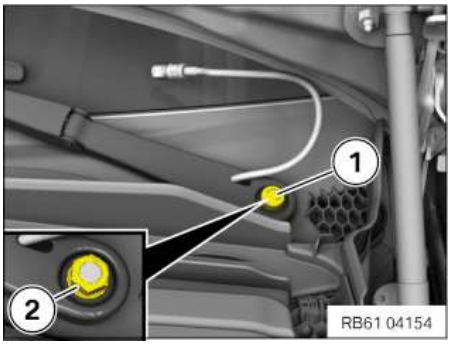
While removing the wiper arms without using special tool, the wiper console can break.

- Removing the wiper arms must be carried out only using the prescribed special tool.
- Do not lift off wiper arm, else the wiper console may break on the predetermined breaking point for the pedestrian protection.

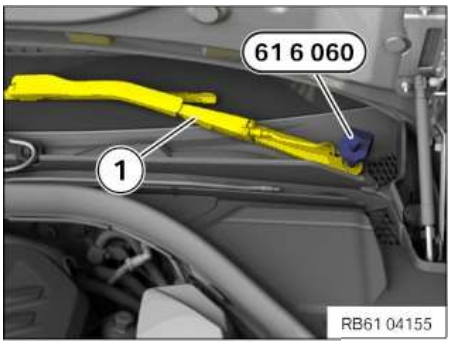


- Disconnect the windscreen wash hose(1) at the separation point and remove from the cowl guide.

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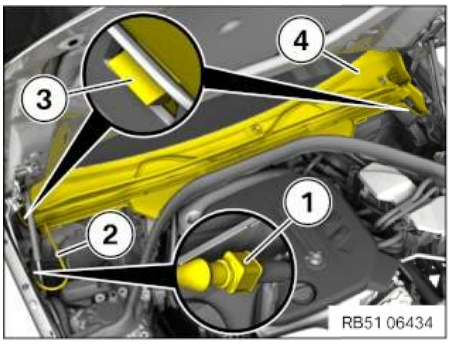
- Remove the protective cap (1).
- Loosen nut (2).



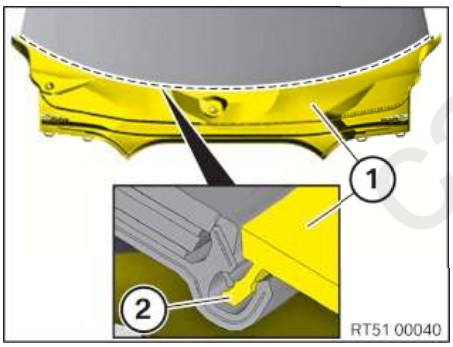
- Pull off the wiper arm (1) using special tool .

MAIN WORK

4 – Remove cowl panel cover



- Release snap fastener of the washer fluid hose (1) and put the washer fluid hose(2) to one side.
- Unclip clips (3) on the cowl panel cover (4).



- Pull the cowl panel cover (1) upward out of the latch mechanism (2) beginning on the side.

5 – Installing cowl panel cover

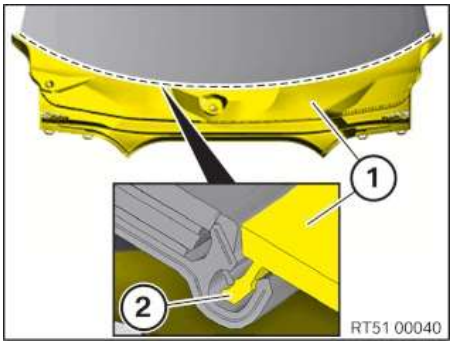
RISK OF DAMAGE

Damage caused by water ingress into the vehicle.

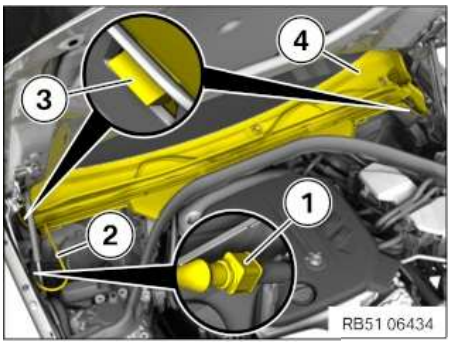
Water ingress into the vehicle may result in damage to components, malfunctions and corrosion.

- Ensure correct installation of the components.
- Only use undamaged components.

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- Push the cowl panel cover (1) into the latch mechanism (2) beginning on the side.



- Clip cowl panel cover (4)in by means of the latch mechanisms (3).
- Position windscreen wash hose (2) and connect windscreen wash hose (1)quick lock.

POSTPROCESSES

6 – Installing both wiper arms

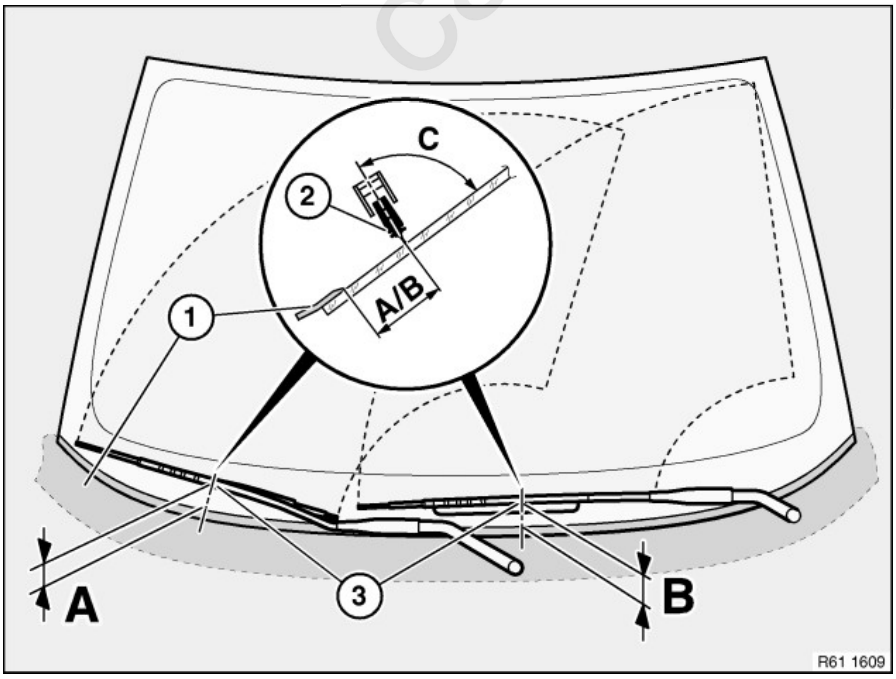
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the wiper arm**

TECHNICAL INFORMATION

The wiper system must be in zero position.
After installing the cowl panel cover and before fitting the wiper arm:
Activate the wiper system once to ensure that it has the correct installation position.

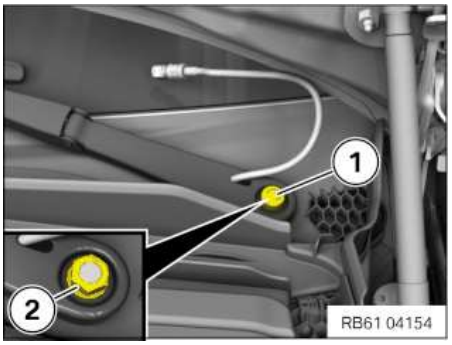


- Connect the wiper arm (3).
- Correctly position the wiper arm (2) in relation to the window edge (1).

Distance from window pane edge to wiper blade

Wiper arm right (A)	57,5 ± 5 mm
Wiper arm left (B)	63,3 ± 4 mm

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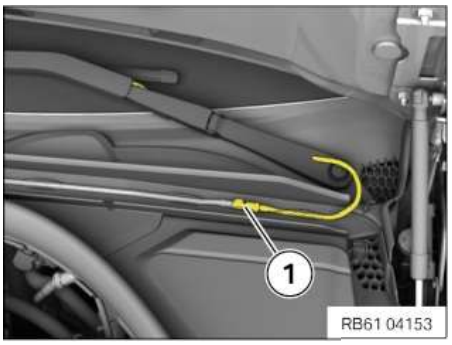


- Tighten nut (2).

Windscreen wiper arm

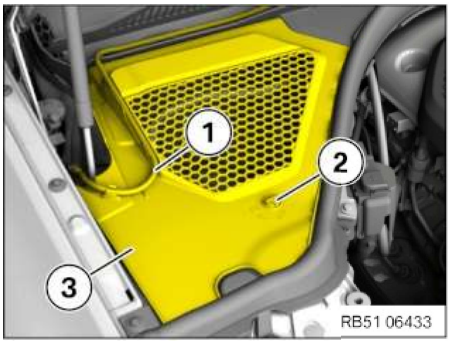
Combination hexagon nut		Tightening torque	35 Nm

- Connect the protective cap (1).



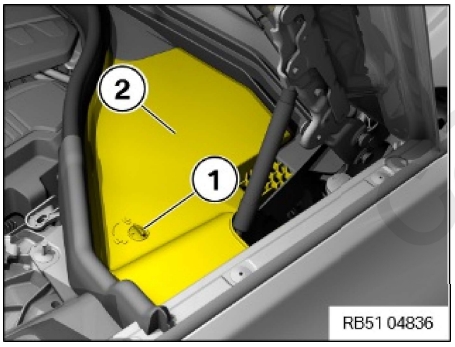
- Insert windscreen wash hose (1) into the cowl and connect at the separating point.

7 – Install the rear right engine compartment cover



- Position the cover of the engine compartment on the rear right (3).
- Close lock (2).
- Insert washer fluid hose (1) into the guides.

8 – Install the cover of the engine compartment on the rear left



- Position the engine compartment cover at the rear left (2) .
- Close lock (1).

Additional Information

Overview of Tightening Torques

Windscreen wiper arm Used in step 6

Combination hexagon nut		Tightening torque	35 Nm

Overview of Special Tools

Overview Technical Data

Distance from window pane edge to wiper blade Used in step 6

Wiper arm right (A)	57,5 ± 5 mm
Wiper arm left (B)	63,3 ± 4 mm

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51 13 280 Removing and installing left or right roof trim strip

RISK OF DAMAGE

Scratches.

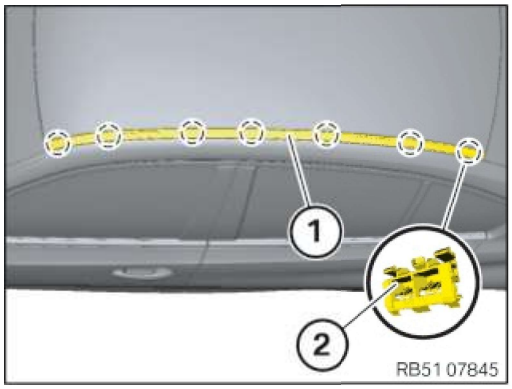
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

NOTICE

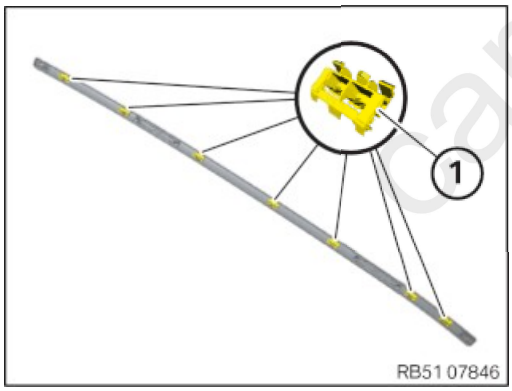
Description is for left component only. Procedure on the right side is identical.

1 – Remove the roof trim strip



- Starting from the rear, lever out the roof trim strip (1) on the roof frame from the clamps (2) to the top with the special tool 0 496 569 (00 9 325).
- Remove the roof trim strip (1).
- Remove the clips remaining on the roof (2) and assemble on the roof trim strip.

2 – Installing the roof trim strip

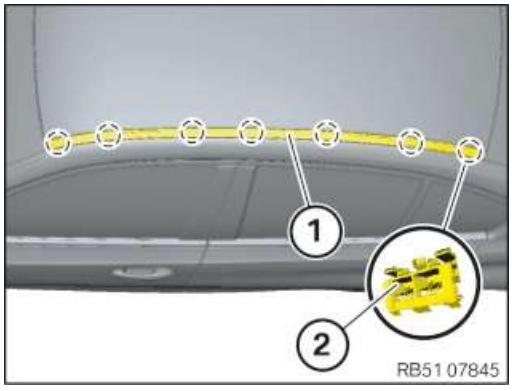


- Check clamps (1) for damage.

  Replace broken or missing clamps (1).
- Position the roof trim strip on the roof.

  The position of the clamps (1) must agree with the corresponding holder on the roof.

  Move clamps on the roof trim strip if required.



- Engage the roof trim strip (1) in the clamps (2) on the roof frame, starting from the front.

Additional Information

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Overview of Special Tools

0 496 569 (00 9 325) Wedge



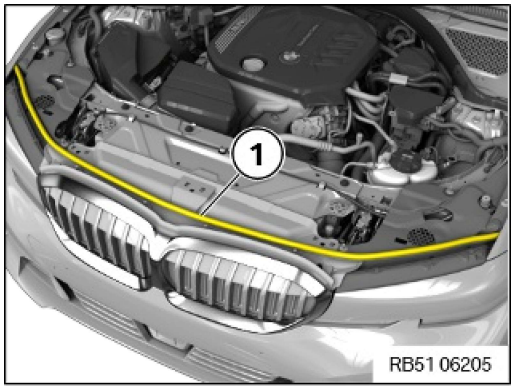
Common	Used in step 1
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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51 13 000 Removing and installing/replacing front grill centre section

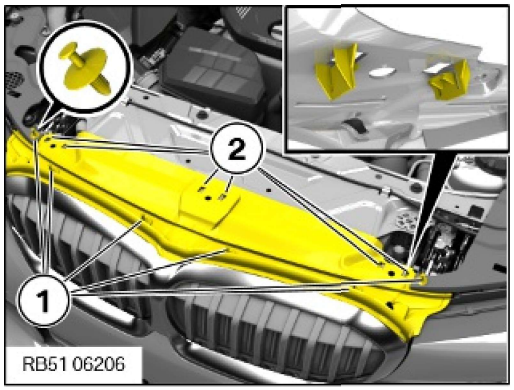
PRELIMINARY WORK

1 – Remove the seal for the bonnet in front



- Pull off front bonnet seal (1) upwards.

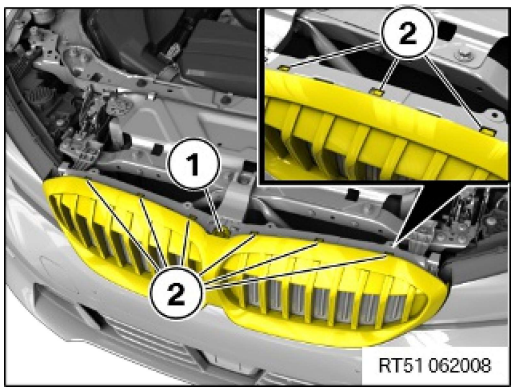
2 – Removing the centre engine compartment cover



- Detach all expanding rivets (1).
- Release the cover of the centre engine compartment with the latch mechanisms (2) .
- Feed the cover for the centre engine compartment out to the rear.

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3 – Remove centre radiator ornamental grille

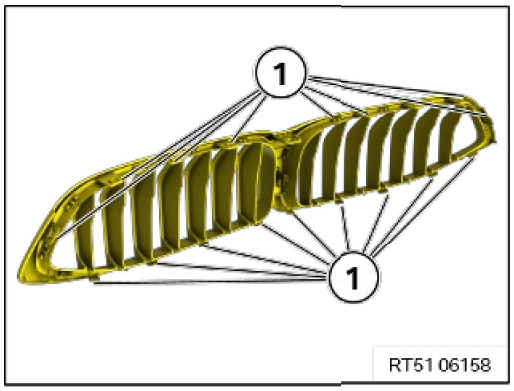


- Loosen screw (1).
- Release the centre front ornamental grille from the latch mechanisms (2).
- Release the centre front ornamental grille from the remaining latch mechanism towards the front and remove it.
- Unlock and disconnect plug connections according to the equipment.

4 – Install centre radiator grille

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



Check

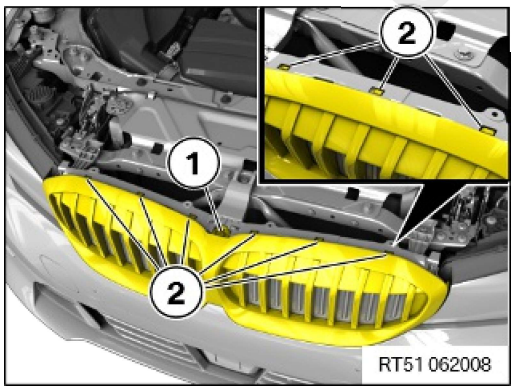
- Check latch mechanisms (1) for damage.

Result

» The latch mechanism (1) is damaged.

Measure

- Renew the front ornamental grille, centre.



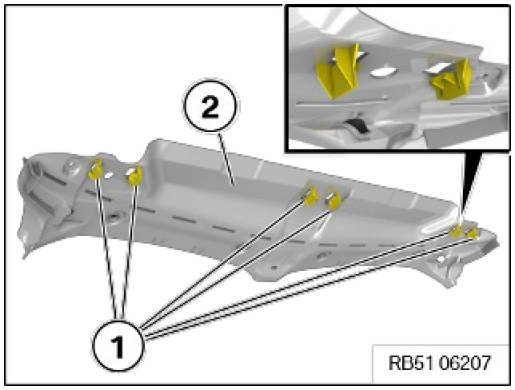
- Depending on the equipment, connect and lock connectors.
- Position the front ornamental grille, centre and clip in all latch mechanisms (2) from the front.
- Tighten down screw (1).

Centre of front ornamental grille to top air flap control

Oval-head screwM6		Tightening torque	4,6 Nm

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5 – Installing cover for engine compartment centre



Check

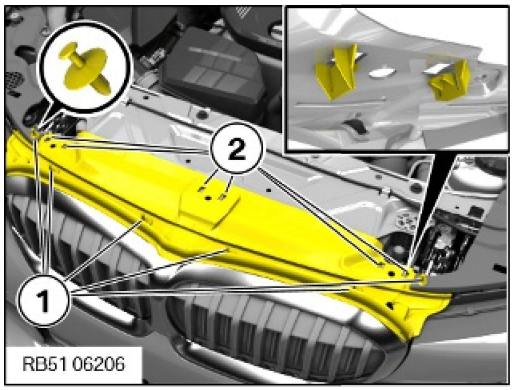
- Check latch mechanisms (1) of cover for engine compartment centre (2) for damage.

Result

» The latch mechanism (1) is damaged.

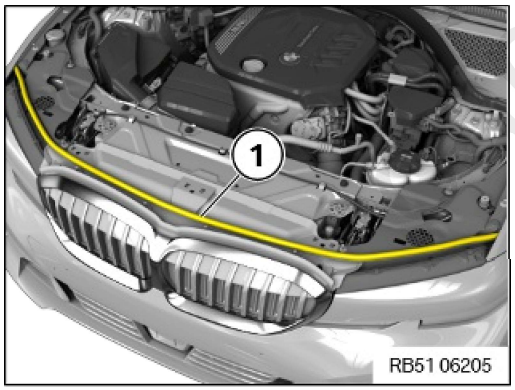
Measure

- Renew cover for engine compartment centre (2).



- Guide in the cover for the engine compartment centre from the rear and position it.
- Clip in the cover for the engine compartment centre with latch mechanisms (2).
- Mount all expanding rivets (1).

6 – Install the seal for the front bonnet



- Position the bonnet seal(1) and connect it on the mounting on the bumper and on the headlights.

Additional Information

Overview of Tightening Torques

Centre of front ornamental grille to top air flap control Used in step 4

Oval-head screwM6		Tightening torque	4,6 Nm

51 13 043 Removing and installing/replacing the trim on the rear left or right side panel

NOTICE

Description is for left component only. Procedure on the right side is identical.

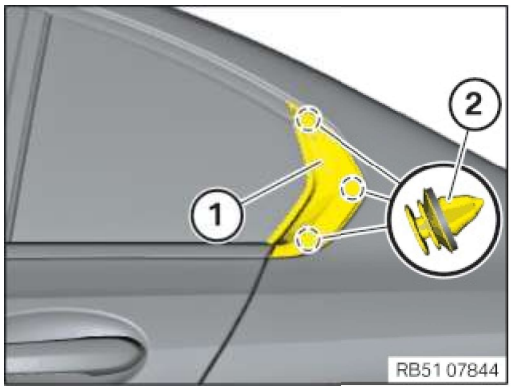
1 – Removing trim on rear side panel

RISK OF DAMAGE

Scratches.

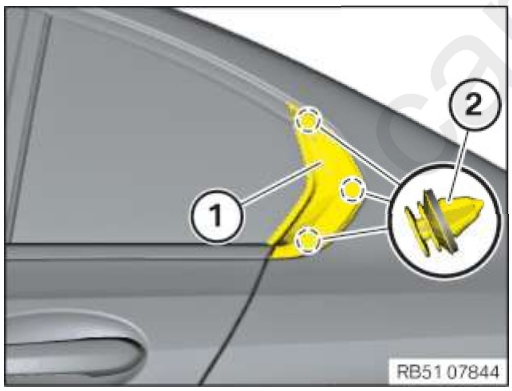
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Carefully release trim on the rear side panel (1) using the special tool 0 496 569 (00 9 325) from clips (2) and remove.

2 – Installing the trim at the rear side panel



- Check the clips (2).

  Replace broken for missing clips (2).
- Position the trim on the side panel (1) correctly and clip onto the clips (2).

Additional Information

Overview of Special Tools

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0 496 569 (00 9 325) Wedge



Common	Used in step 1
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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51 14 ... General notes for labelling with adhesive films

In the event of a repair the adhesive films must be partially or completely replaced. The basic procedure for all areas of the vehicle is described below.

In addition, vehicle-specific repair instructions are available.

1. Preparation:

Wash and dry vehicle. Rework with compressed air as required in area of joints.

Clean complete component surface with glass cleaner (BMW part number 83 12 0 396 775). Also clean the inside of the component in areas, in which adhesive films are applied.

Only carry out repair work with clean hands!

Important!

Labels can only be applied to recently painted components after a waiting period of **2 weeks**. The paint hardening is only fully completed after this time.

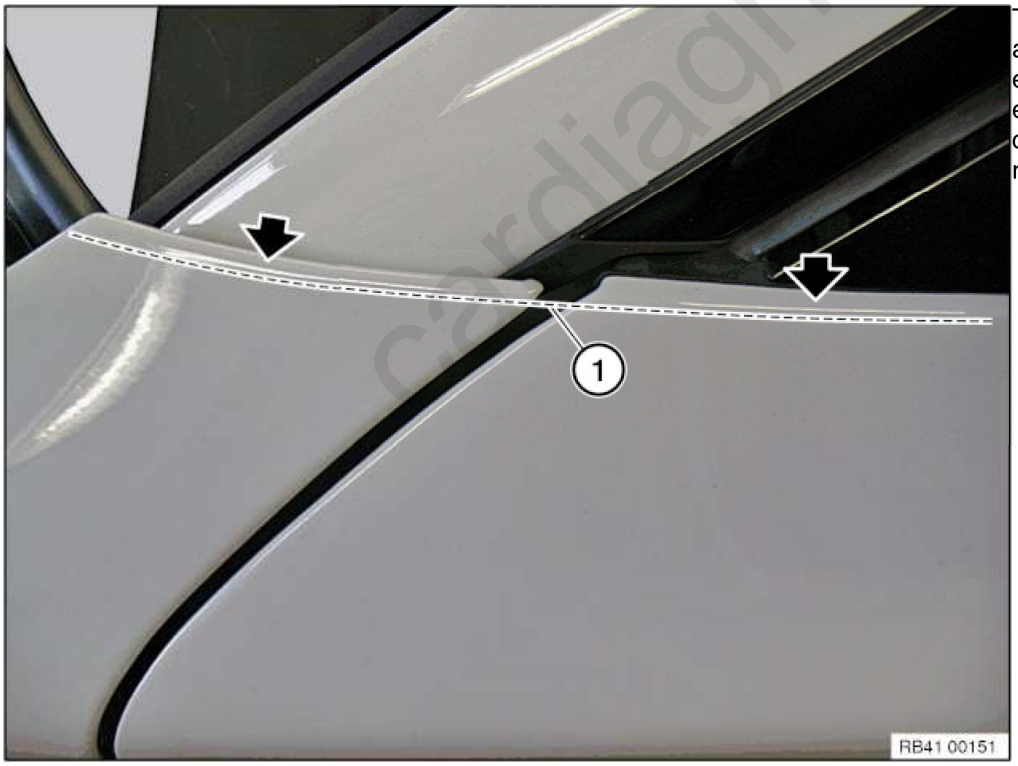
2. Procedure for applying labels:

All adhesive films in the repair kit are marked with numbers. Prepare the required plastic films prior to start of repairs.

The templates included in the repair kit assist orientation. A straight line running over the different components is the top priority.

Pull off the templates positioning of the adhesive films.

Only throw away templates after completion of all repair work, as some templates are used several times.



Templates are always applied along the light edge (1). The light edge is the reflection of the light source in radius (see arrow).

Roughly align the adhesive film using a template.

For large adhesive films, pull off the first 20 cm of protective film and fold back the edge.

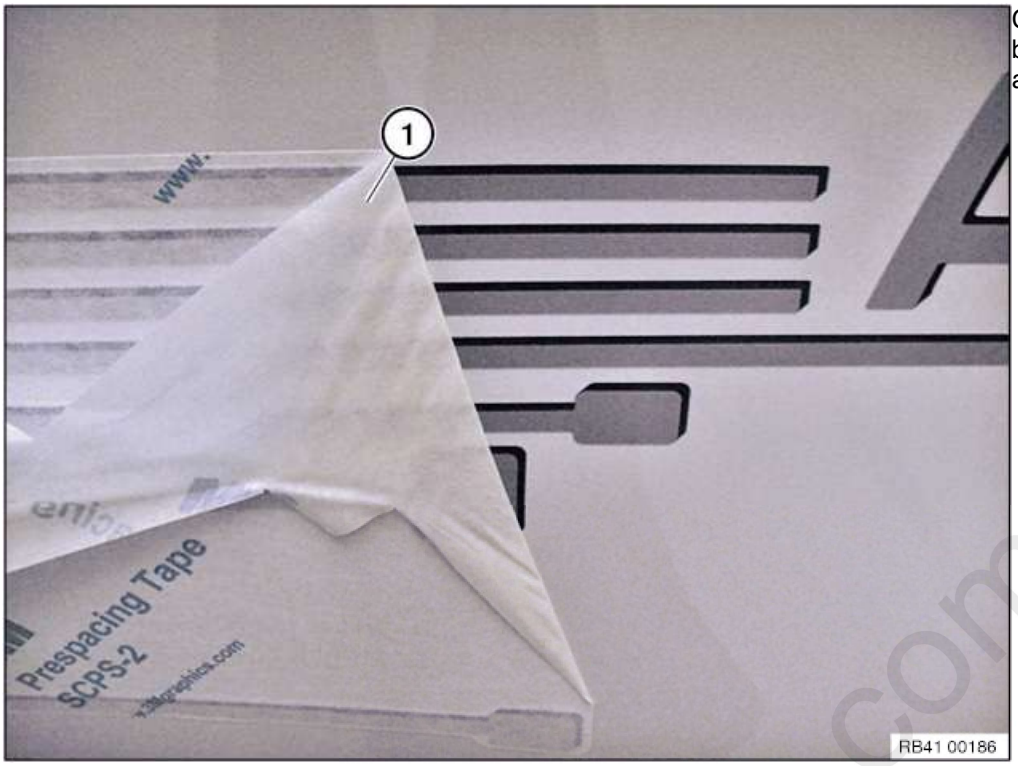
Align and lightly press down the adhesive film. Use only one finger for this and not the entire hand so that air pockets are unable to form under the adhesive film.

Pull off the remaining protective film and press down the adhesive film from front to rear and from inside to outside.

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If faults are made in applying the adhesive film, it can be pulled off and repositioned several times. When no further corrections have to be made, use a squeegee to press down the adhesive film firmly from inside to outside.

Lay protruding ends of the adhesive film around the component edge and press down firmly.



Carefully pull off backing film (1) at an acute angle.

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51 14 000 Removing and installing/replacing front BMW badge

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

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1 – Removing the front BMW badge

RISK OF DAMAGE

Scratches.

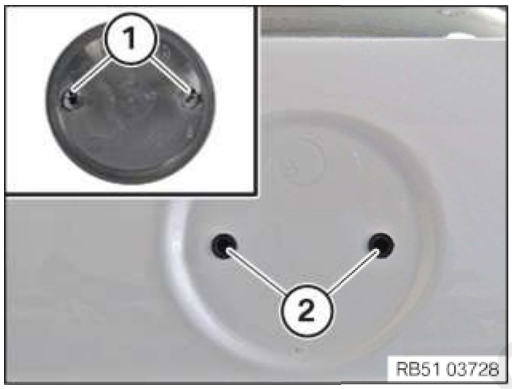
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- To avoid paint damage: Mask off working area with plastic adhesive tape.
- Lever out the BMW badge (1) with the special tool 0 496 571 (00 9 327) from the guide pins (2) beginning from the lower area and remove.

2 – Installing the BMW badge at the front



- Check the guide pins (1) and the grommets (2) and renew where required.

  The guide pins (1) and grommets (2) must not be damaged or missing.
- Coat the guide pins (2) using lubricant.

Assembly aids

Lubricants G14	900 ml, Can	83232360412



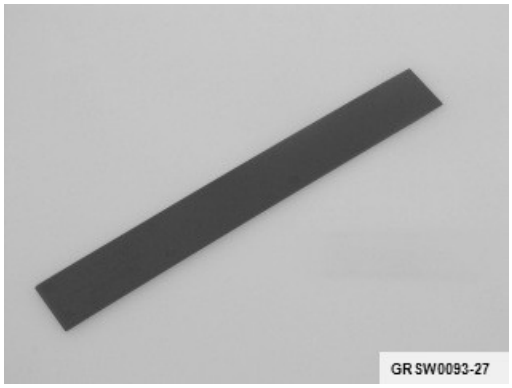
- Press the BMW badge (1) onto the guide pins (2).

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Additional Information

Overview of Special Tools

0 496 571 (00 9 327) Wedge

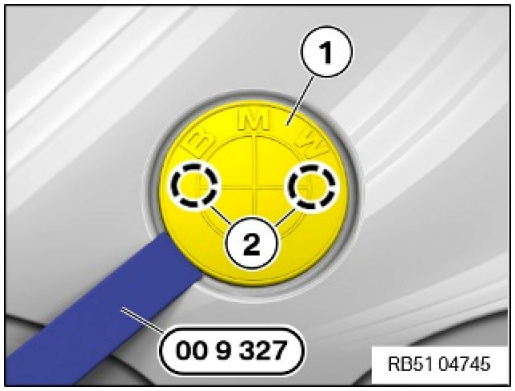


Common	Used in step 1
Usage	(Cleaning wedge) From 11/2008 this special tool replaces panel wedge 00 9 323 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

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51 14 010 Removing and installing/replacing rear BMW badge

1 – Removing the rear BMW badge



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- **To prevent paint damage:** Mask off working area with plastic adhesive tape.
- Heat the BMW badge (1)carefully with a hot air blower and release it from the adhesive strip with the special tool 0 496 571 (00 9 327).

Heating using hot air blower

Surface temperature	40 °C ... 50 °C

- Carefully lever off the BMW badge (1) at the guide pins (2) and remove.

  BMW badge (1) must be renewed without fail after the removal.
- Remove the adhesive residue on the tailgate and clean the adhesive area with solvent cleaner R2.

Expendable materials

Cleaning agent R2	500 ml	83190417324

2 – Attaching the rear BMW badge



Check

- Check the guide pins (1) and the grommets (2) for damage.

Result

» The guide pins (1) are damaged.

Measure

- Renew the BMW badge.

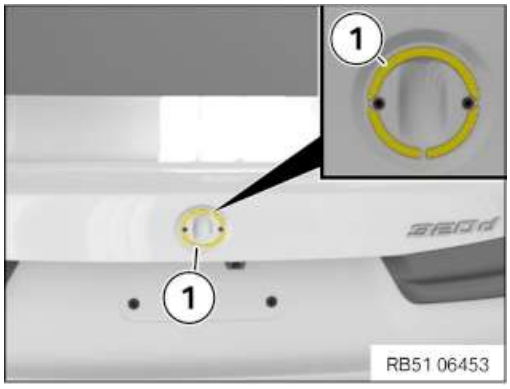
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Result

» The grommets (2) are damaged.

Measure

- Renew the grommets (2).



- Remove adhesive residue from the tailgate.
- Clean adhesive area (1) with cleaning agent R2.

Expendable materials

Cleaning agent R2	500 ml	83190417324

- Observe the air drying time of 2 minutes.



- Coat guide pins (2) of the BMW badge (1) with lubricant.

Assembly aids

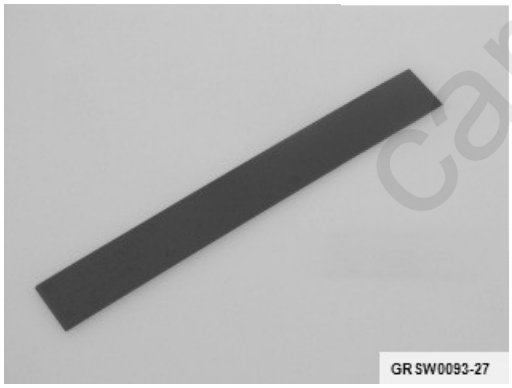
Lubricants G14	900 ml, Can	83232360412

- Pull off the liner from the bonding surfaces of the BMW badge (1).
- Position the BMW badge (1) with guide pins (2) in the grommets and press on it all the way around.

Additional Information

Overview of Special Tools

0 496 571 (00 9 327) Wedge



Common	Used in step 1
Usage	(Cleaning wedge) From 11/2008 this special tool replaces panel wedge 00 9 323 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

Overview Technical Data

Heating using hot air blower	Used in step 1
Surface temperature	40 °C ... 50 °C

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51 14 111 Replacing model name plate, rear

Note:
This document describes a general procedure for replacement and new bonding of model designations/lettering using the 335i (F30) as an example.

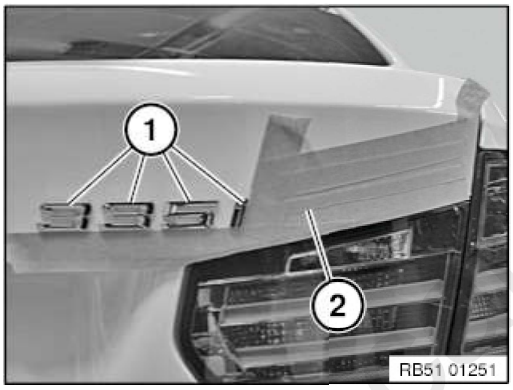
The procedure can be used for all models, positions and installation locations.

The model designation is attached with adhesive and can not be reused.

Refer to instructions for securing components with adhesive tape!

Consumables:

Cutting cord
Masking tape 19 mm or 30 mm
Yellow plastic adhesive tape
Eraser disk
Cleaning agent R2



Replacing model designation (new or newly painted tailgate):

Note:
Transfer position of model designation (1) from old tailgate by making an adhesive tape template.

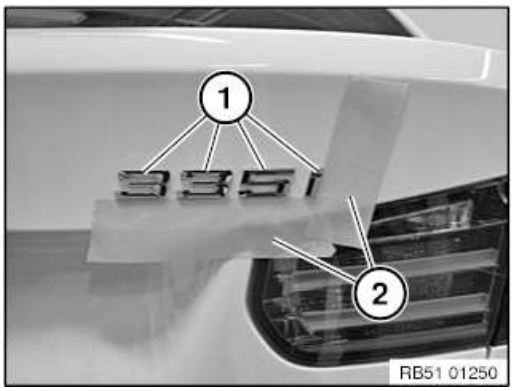
For paintwork, keep adhesive tape template up to installation.

Stick masking tape (2) to nearby reference edges of tailgate and therefore determine position of model designation (1).

Pull off masking tape (2) completely and stick to same reference edges of new/painted tailgate.

Check position, realign if required.

Refer to "**Installation**" operation for further procedure.



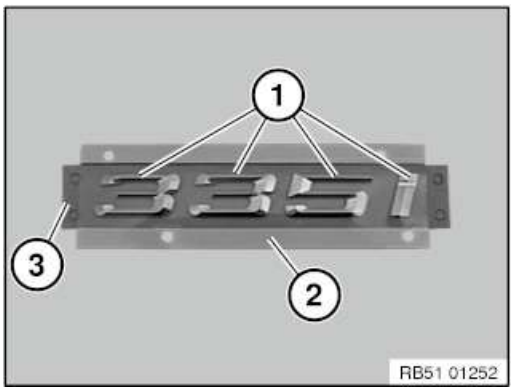
Replacing model designation:

Mark position of model designation (1) with yellow plastic adhesive tape (2).

Coat separating string or strong yarn with tensides (e.g. washing-up liquid).

Cut through adhesive layer and remove model designation (1).

Refer to "**Installation**" operation for further procedure.



Installation:

If required, remove adhesive layer residues with grinding wheel and/or cleaning agent R2.

Clean the adhesive area.

Number and letter combinations (1) of the model designation are not connected to each other and are supplied on a backing film (2).

Remove liner (3) (protective film for bonding surface).

Place model designation at marked position and press down firmly.

Remove backing film (2) and template.

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51 14 111 Replacing the model inscription, rear

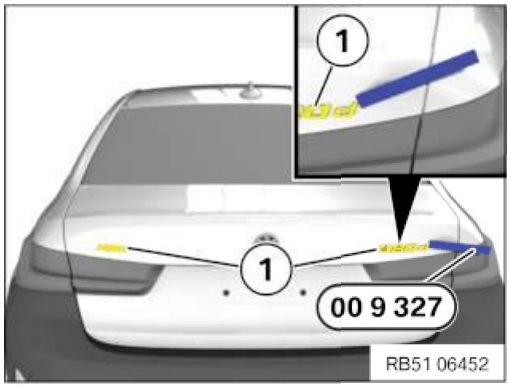
1 – Removing rear model designation

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Tape off working area with adhesive tape.
- Heat the rear model designations (1) carefully with a hot air blower and release from the tailgate with the special tool 0 496 571 (00 9 327).

Heating using hot air blower

Surface temperature	40 °C ... 50 °C

- Remove the adhesive residue on the tailgate and clean the adhesive area with the cleaning agent R2.

Expendable materials

Cleaning agent R2	500 ml	83190417324

2 – Fitting rear model designation

CAUTION

Laser beam.

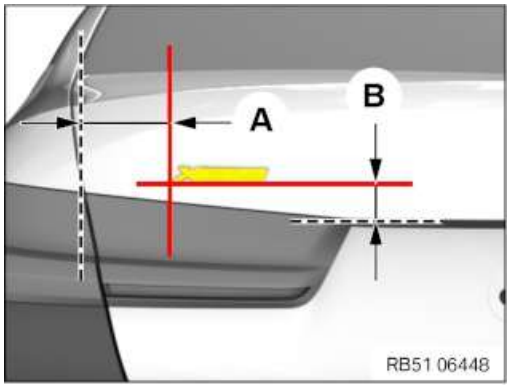
Danger of injury!

- Do not look into the laser beam.



- Park the vehicle and the special tool 2 407 566 on a flat and even surface.
- Mount the laser on the tripod.
- Switch on laser (Position without automatic level).
- Activate laser horizontally and vertically.

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- Position and centre align the special tool behind the vehicle.
- Align the vertical laser beam (A) as per specified dimensions.

Model designation left on tailgate

Dimension **A** from corner of tailgate	90 mm

- Align the horizontal laser beam (B) as per specified dimensions.

Model designation left on tailgate

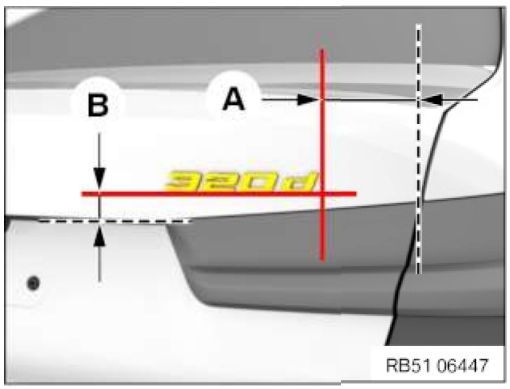
Dimension **B** from horizontal lower edge of tailgate	34 mm

- Clean the adhesive area with cleaning agent R2.

Expendable materials

Cleaning agent R2	500 ml	83190417324

- Adhere to the air drying time of 2 minutes.
- Pull off the liner from the adhesive strip of the left model designation.
- Align the left model designation with the laser beams as shown, position it on the tailgate and press on it.



- Position the special tool behind the vehicle.
- Align the vertical laser beam (A) as per specified dimensions.

Model designation right on tailgate

Dimension **A** from corner of tailgate	98 mm

- Align the horizontal laser beam (B) as per specified dimensions.

Model designation right on tailgate

Dimension **B** from horizontal lower edge of tailgate	34 mm

- Pull off the liner from the adhesive strip of the right model designation.
- Clean the adhesive area with cleaning agent R2.

Expendable materials

Cleaning agent R2	500 ml	83190417324

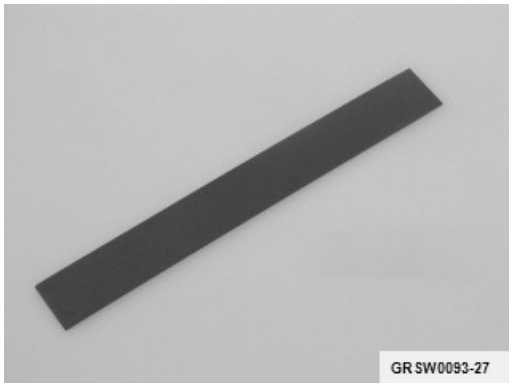
- Adhere to the air drying time of 2 minutes.
- Align the right model designation with the laser beams as shown, position it on the tailgate and press on it.

Additional Information

Overview of Special Tools

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0 496 571 (00 9 327) Wedge



Common	Used in step 1
Usage	(Cleaning wedge) From 11/2008 this special tool replaces panel wedge 00 9 323 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

2 407 566 Laser



Common	Used in step 2
Usage	For aligning a number plate or a support for a number plate on the vehicle (front bumper). Delivery specification 1 x Kreuz-laser and 1 x tripod.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	01 05 15 (235)

Overview Technical Data

Heating using hot air blower	Used in step 1
Surface temperature	40 °C ... 50 °C

Model designation left on tailgate	Used in step 2
Dimension **A** from corner of tailgate	90 mm

Model designation left on tailgate	Used in step 2
Dimension **B** from horizontal lower edge of tailgate	34 mm

Model designation right on tailgate	Used in step 2
Dimension **A** from corner of tailgate	98 mm

Model designation right on tailgate	Used in step 2

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Dimension **B** from horizontal lower edge of tailgate	34 mm

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51 16 150 Remove and install the front storage compartment

PRELIMINARY WORK

1 – Remove cupholder

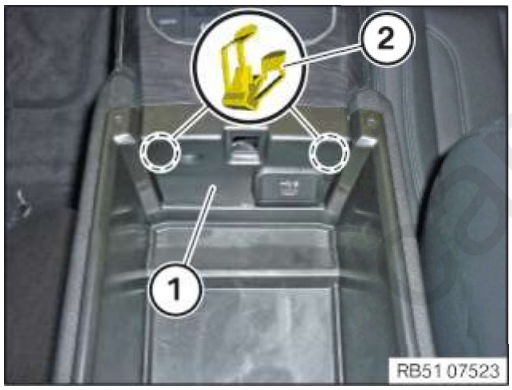


- Remove the insert (1).

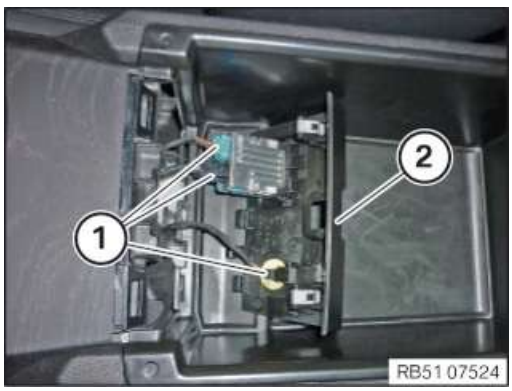


- Loosen screws (1).
- Feed the cup holder (2) out to the top.
- Unlock associated plug connections and disconnect.

2 – Removing the trim in the storage compartment on the centre armrest



- Lever out the trim (1) with the special tool (2) toward the rear from the clamps 2 298 505.



- Unlock and disconnect the plug connections (1) and remove the trim (2) .

3 – Remove the centre console trim

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RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



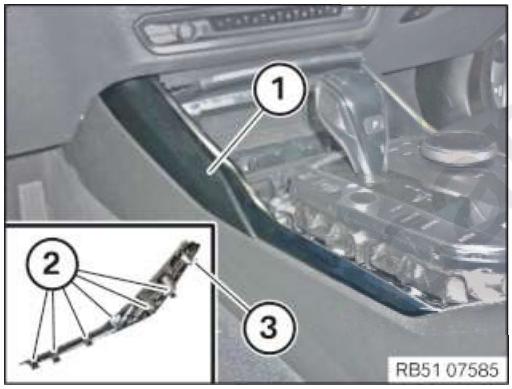
- Release and remove the centre console trim upwards (1) as shown using the special tool 2 298 505 from the latch mechanisms.

4 – Removing the decorative trim on the centre console trim on the left and right

▶ **Remove decorative trim on centre console**

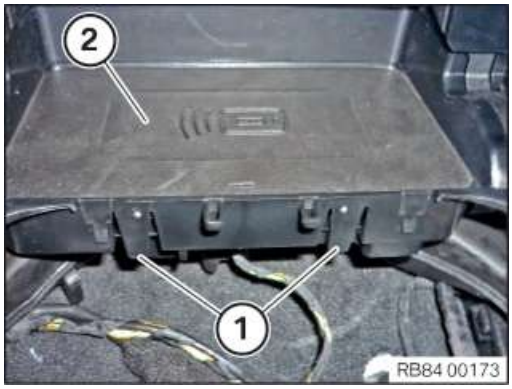
NOTICE

Description is for left component only. Procedure on the right side is identical.

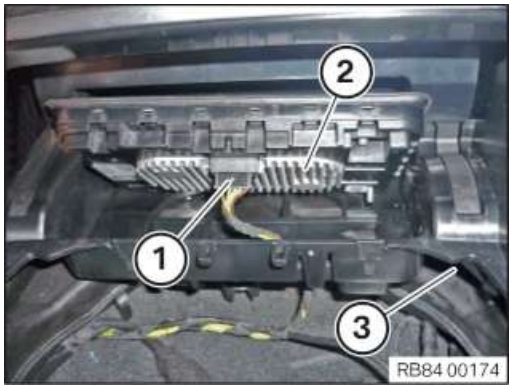


- Lever out the rear decorative trim (1) from the latch mechanisms (2) starting from the top.
- Feed out the decorative trim (1) backwards out of the guide (3) and remove.

5 – Removing the wireless charging station



- Loosen the latch mechanisms (1) and push out the wireless charging station (2) upwards.



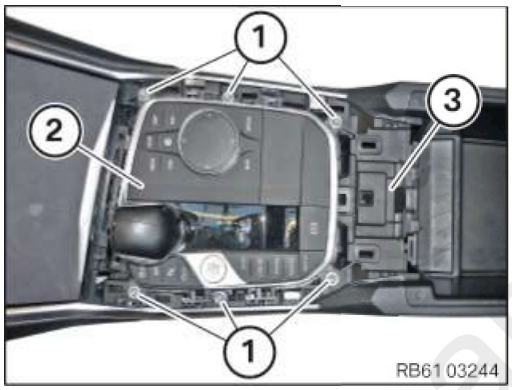
- Disconnect the connector (1) and remove the wireless charging station (2) from the centre console (3).

6 – Remove the operating facility in the centre console

► **Disconnecting all battery earth leads**



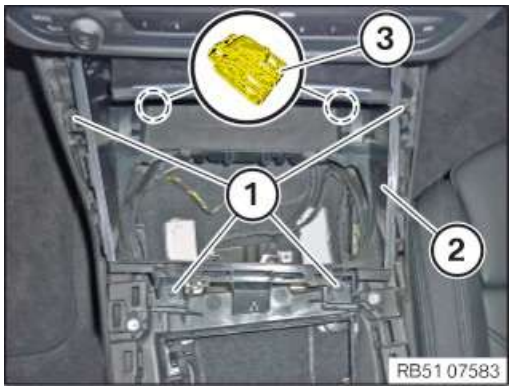
- See additional information.



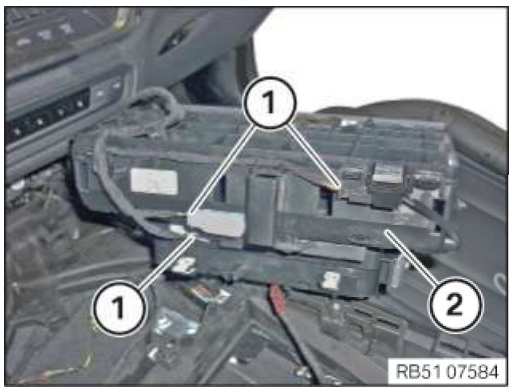
- Loosen screws (1).
- Remove the operating facility in the centre console (2) from the centre console (3).

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7 – Removing the storage compartment of the front centre console

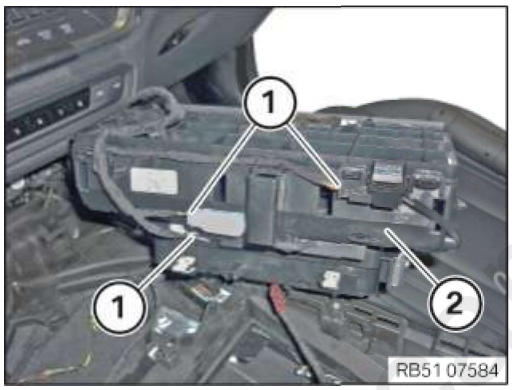


- Loosen screws (1).
- Remove storage compartment trim (2) backwards out of clamps (3).

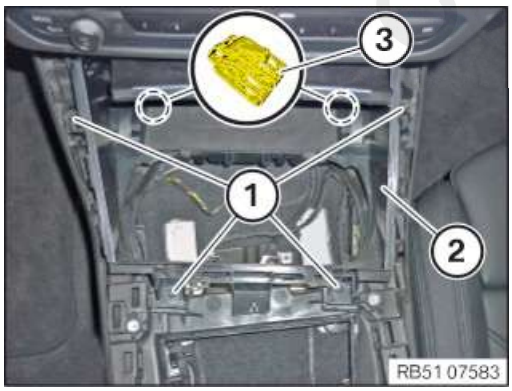


- Unlock and disconnect all the plug connections (1) and remove the storage compartment (2).

8 – Installing the storage compartment of the front centre console



- Mount the storage compartment (2) and connect connectors (1).

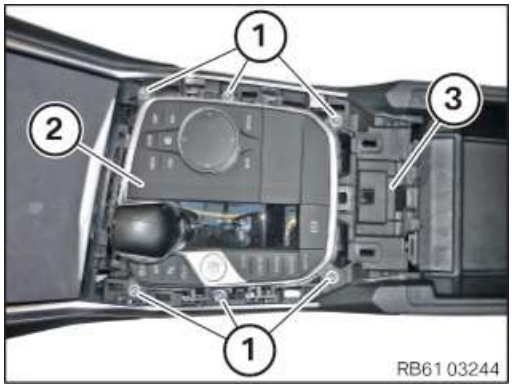


- Engage rear storage compartment trim (2) into clamps (3).
- Tighten the screws (1).

Storage compartment to centre console

Oval-head screw		Tightening torque	1,8 Nm

9 – Install the operating facility in the centre console



- Position operating facility (2) in the centre console (3).
- Tighten the screws (1).

Gear selector switch to centre console trim

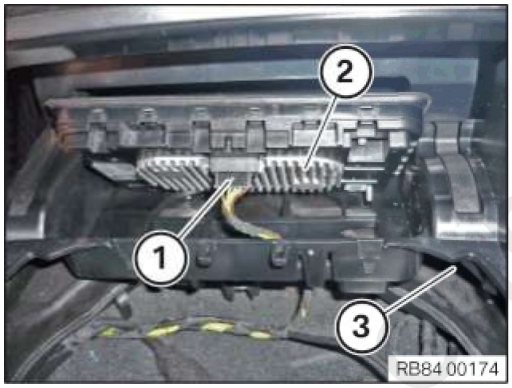
Screw		Tightening torque	1,8 Nm

▶ **Disconnecting all battery earth leads**

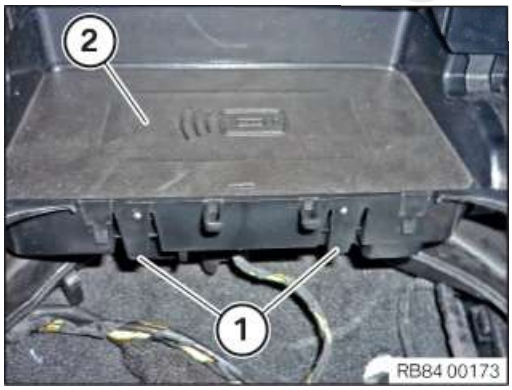


- See additional information.

10 – Installing the wireless charging station



- Connect connector (1).
- Position the wireless charging station (2) in the centre console (3).



- Press the wireless charging station (2) down till the locking units (1) are engaged correctly.

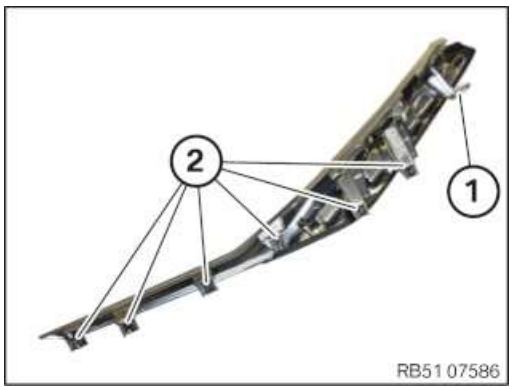
11 – Install decorative trim on centre console on left and right

▶ **Installing the decorative trim to centre console**

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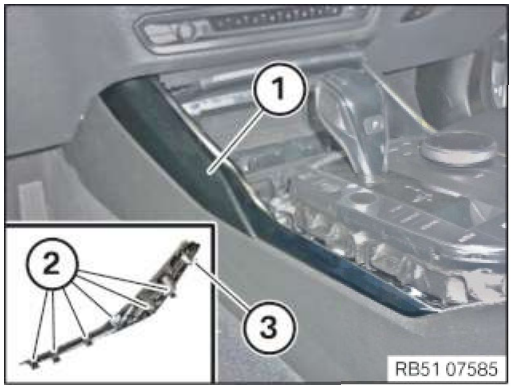
NOTICE

Description is for left component only. Procedure on the right side is identical.



- Check guide (1) and the latch mechanisms (2).

  Renew defective decorative trim.



- Feed in the decorative trim (1) forward in the guide (3).
- Engage decorative trim (1) in latch mechanisms (2).

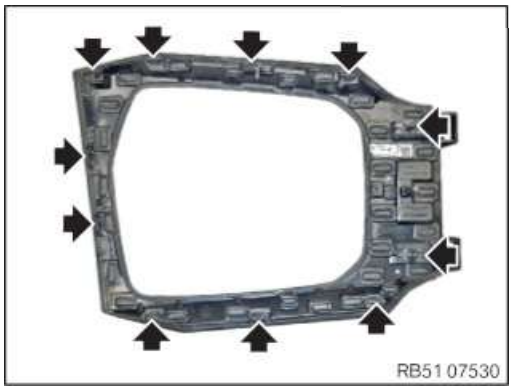
12 – Installing the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



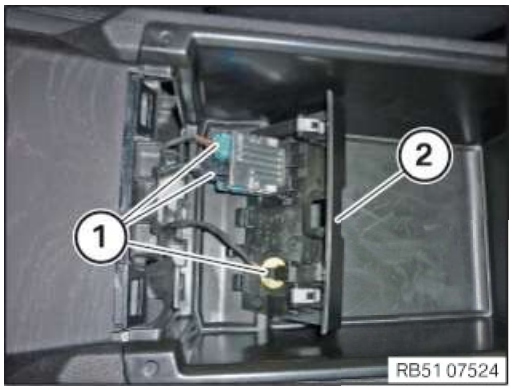
- Check all the latch mechanisms or clamps (arrows).
- In case the latch mechanisms or the clamps (arrows) are faulty, renew the centre console trim .

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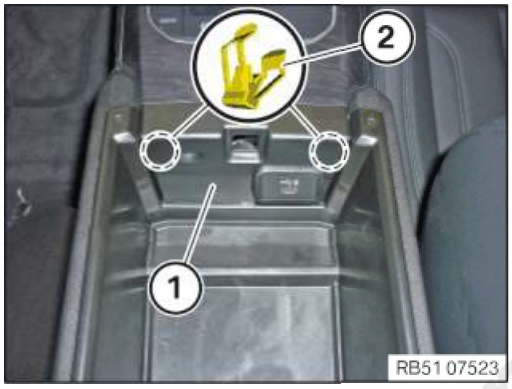


- Correctly position the centre console trim (1) and engage at the latch mechanisms.

13 – Installing the trim in the storage compartment of the centre armrest



- Mount the trim (2) and connect connector (1) and lock.



- Correctly position trim (1) and snap into the clamps (2).

14 – Install the cup holder



- Fix the cup holder (1) and the belonging connectors.
- Correctly position cup holder (1).
- Tighten the screws (2).

Cup holder to centre console

Oval-head screw		Tightening torque	1,8 Nm



- Insert the insert (1).

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Additional Information

Overview of Tightening Torques

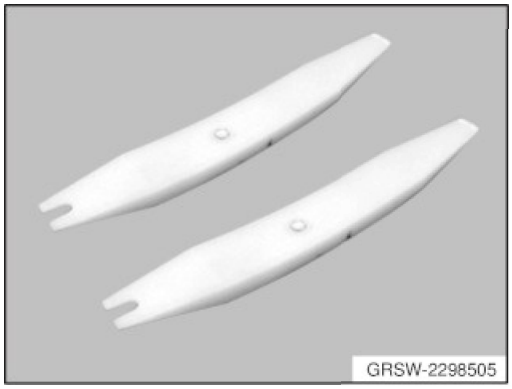
Storage compartment to centre console			Used in step 8
Oval-head screw		Tightening torque	1,8 Nm

Gear selector switch to centre console trim			Used in step 9
Screw		Tightening torque	1,8 Nm

Cup holder to centre console			Used in step 14
Oval-head screw		Tightening torque	1,8 Nm

Overview of Special Tools

2 298 505 Wedge



Common		Used in step 23
Usage	Set (delivery of 2 pieces)	
Included in the tool or work		
Storage location	C34	
Replaced by		
In connection with		
SI-Number	01 03 12 (792)	

Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	69
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	69
61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	69
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	69
61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting battery earth lead	69
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61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	69
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61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting battery earth lead	69

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51 16 163 Remove and install the rear centre console trim

1 – Removing the rear centre console trim

RISK OF DAMAGE

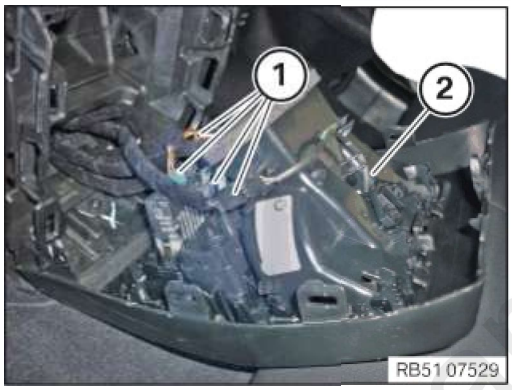
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

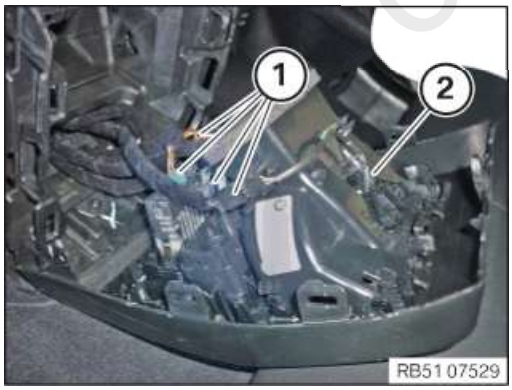


- Release centre console trim (1) backwards from the latch mechanisms at the side and pull it a little way towards the rear.



- Unlock and disconnect plug connections (1).
- Remove the centre console trim (2).

2 – Installing the rear centre console trim



- Install the centre console trim (2).
- Connect connectors (1) and lock.

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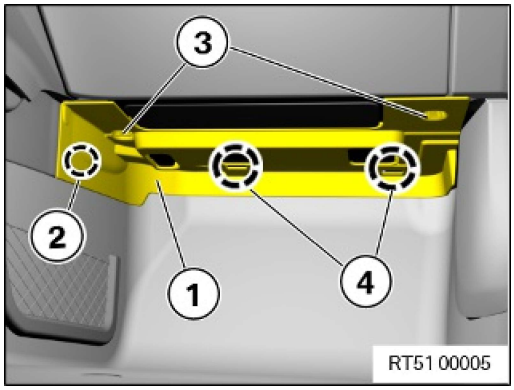
- Position centre console trim (1) and engage at the latch mechanisms at the side.

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51 16 341 Remove and install/replace lock barrel for glove box

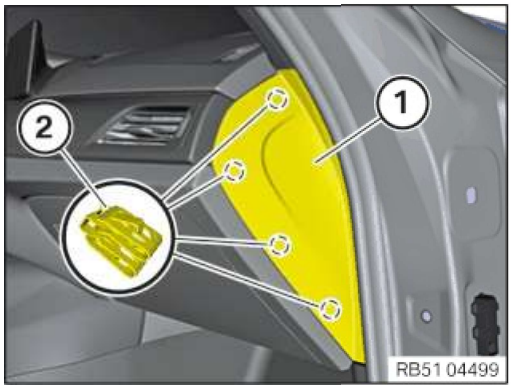
PRELIMINARY WORK

1 – Remove the right footwell trim



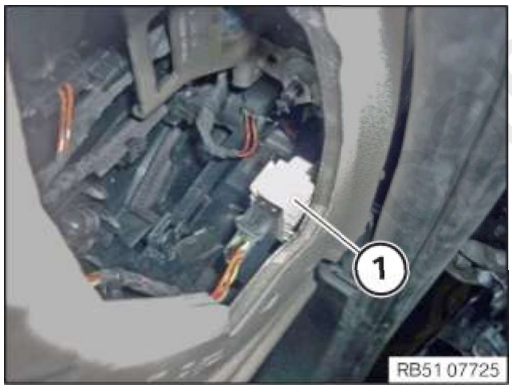
- Turn the locks (3) by 90°.
- Feed the footwell trim (1) out of the guide (2).
- Detach the footwell trim (1) inward out of the guides (4).
- Unlock associated plug connection and disconnect.

2 – Remove the side panel on the right instrument panel

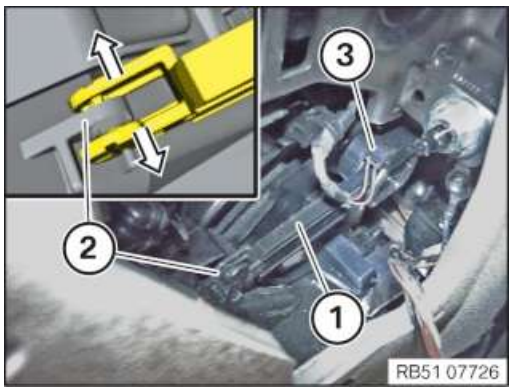


- Unclip and remove the side panel (1) towards the outside from the clamps (2).
- If necessary, unlock associated plug connection and disconnect.

3 – Remove glove box damper



- Release plug connection (1) from the instrument panel and pull to the outside.



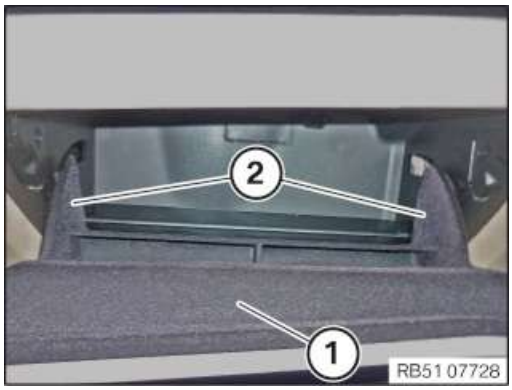
- Release damper (1) from retaining bracket (2) (spread slightly in the direction of the arrow).
- Open glove box cover.
- Twist damper (1) slightly in the clockwise direction and remove it outwards.
- Feed damper (1) out of the instrument panel.
- Disconnect plug connection (3).

4 – Remove glove box lid

Prerequisite

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The glove box lid is open.



- Raise the glove box lid (1) slightly.
- Carefully bend the side section (2)of glove box lid (1) inside so that the glove box lid (1) can be fed out of the instrument panel .
- Swivel the glove box lid (1) further down until it feeds out of the hinges.

MAIN WORK

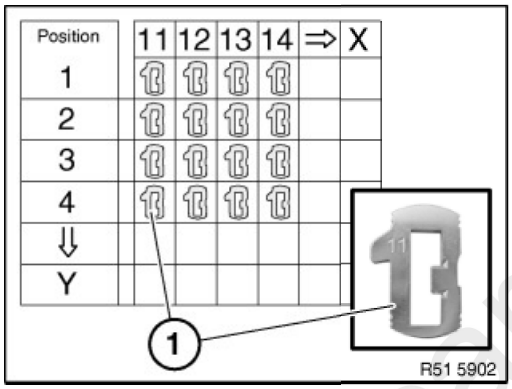
5 – Replacing lock barrel

Note: The lock cylinder and the opener must always be replaced as they cannot be removed from the glove box lid.

▸ Assembling the lock barrel

NOTICE

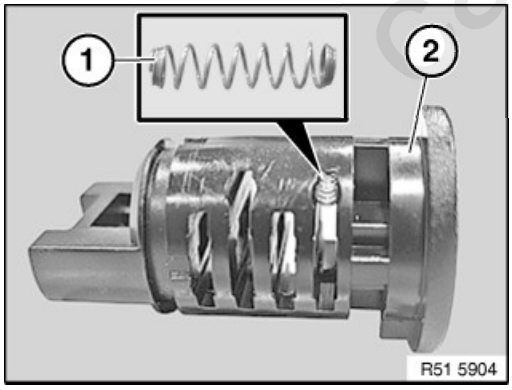
Schematic diagram is for example purposes. Some parts may differ in certain details.



- Sort the enclosed retainers (1) as per the graphic.

  X = number embossed on the retainer (1)

  Y = installation position in the lock barrel

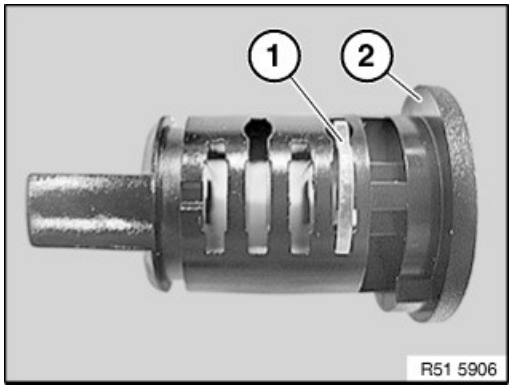


NOTICE

The description is for one component only. The procedure is identical for all further components.

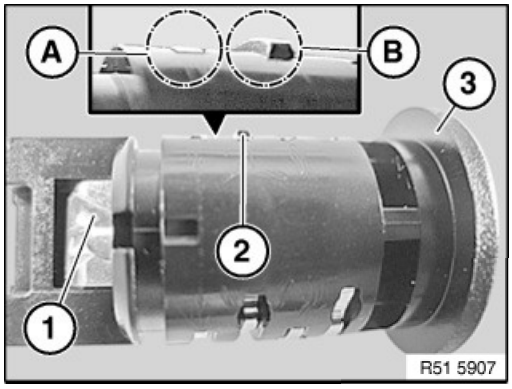
- Insert the spring (1) into the lock barrel (2).

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- Insert and engage the retainer (1) with the lowest embossed number **X** into position **Y** of the lock barrel (2).

  The retainer engages audibly.



Check

- Insert the ignition key (1) into the lock barrel (3).
- Check whether the retainer (2) is flush with the housing.

Result

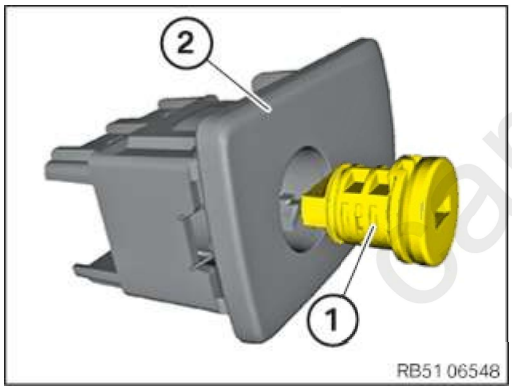
» The retainer (2) is not flush with the housing (B).

Measure

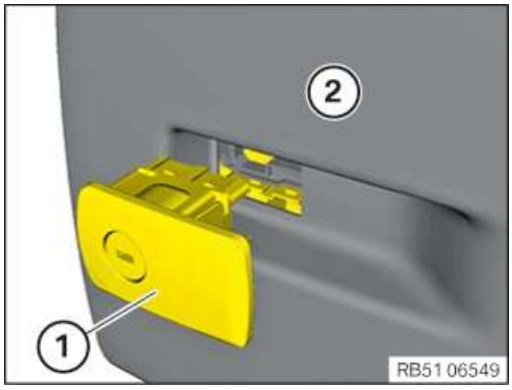
- Press out the retainer (2) from the lock barrel (3) using a suitable tool.

Measure

- Repeat the operations using the retainer with the next higher number **X**, until the retainer is flush with the housing (A).



- Insert the locking cylinder (1) with the vehicle key into the glove box lock (2) and press to snap into place.



- Carefully insert the glove box lock (1) in the glove box lid (2) and lock.

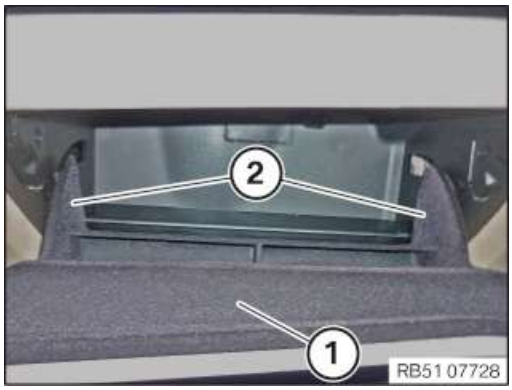
POSTPROCESSES

6 – Install glovebox cover

Prerequisite

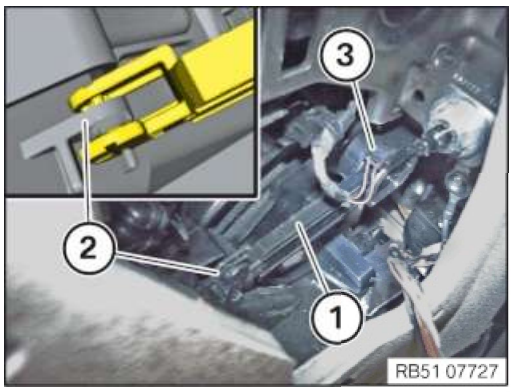
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The glove box lid is open.

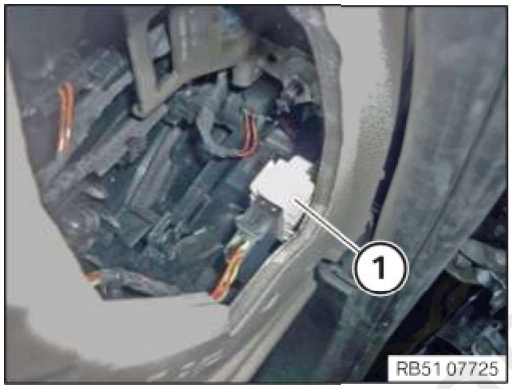


- Insert glove box lid (1) on the hinges and swivel to the top.
- Bend the side section (2) of the glove box lid (1) carefully inward and feed in at the instrument panel.

7 – Installing glove box damper

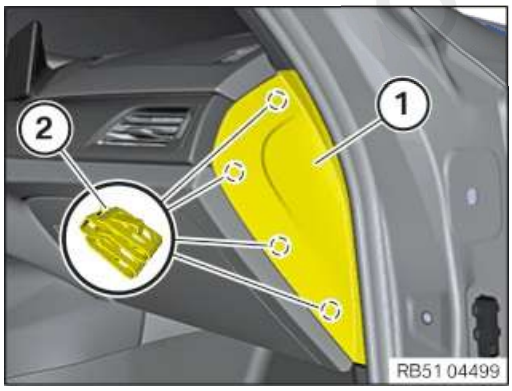


- Connect connector (3).
- Insert damper (1) in instrument panel.
- Open glove box cover.
- Install damper (1) and twist it slightly in the anticlockwise direction.
- Engage the damper (1) in the retaining bracket (2).



- Install plug connection (1) and secure at the instrument panel.

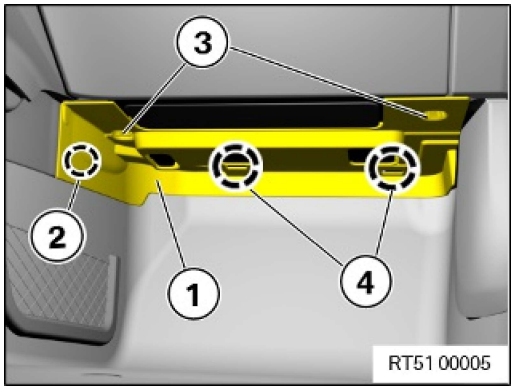
8 – Install the side panel on instrument panel on the right



- If required, connect the associated connector.
- Feed in the side panel (1) and clip it in at the clamps (2).

9 – Install the right footwell trim panel

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- Connect associated connector.
- Attach the footwell trim (1) to the guides (4) and fold up.
- Guide the footwell trim (1) into the guide (2) of the centre console.
- Position locks (3) correctly and turn by 90°.

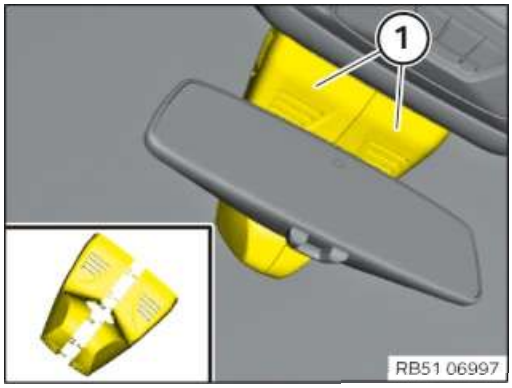
cardiagn.com

51 16 063 Remove and install/replace the interior mirror

PRELIMINARY WORK

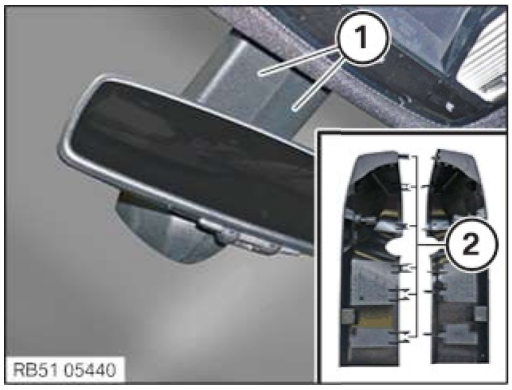
1 – Removing the covers for the interior mirror

- **Version A:**



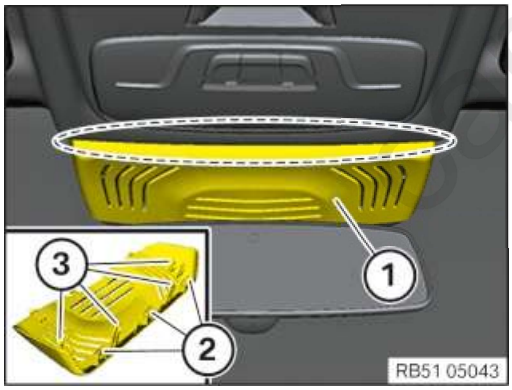
- Release the cover (1) at the centre from the latch mechanisms (2) with a suitable plastic wedge and remove.

- **Version B:**

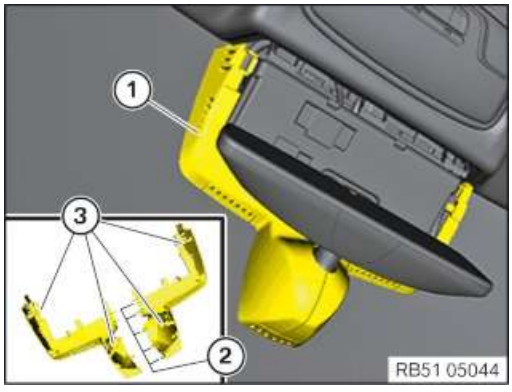


- Release the cover (1) from the latch mechanisms (2) with a suitable plastic wedge and remove sideways.

- **Version C:**



- Detach cover (1) from the clamps (2) in the marked area using a suitable plastic wedge and pull down a certain distance.
- Release cover (1) at the retaining lugs (3) and remove from the guides to the rear.

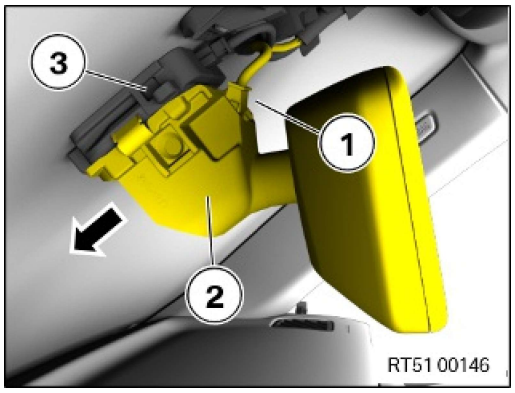


- Release cover (1) from the latch mechanisms (2) and (3) and remove sideways.
- Remove cover (1) from mirror base (2).

carmanualsdiagn.com

MAIN WORK

2 – Remove inside mirror



TECHNICAL INFORMATION

Carry out the work at temperatures between 18 °C and 23 °C only.

- Unlock plug connection (1) and disconnect.

RISK OF DAMAGE

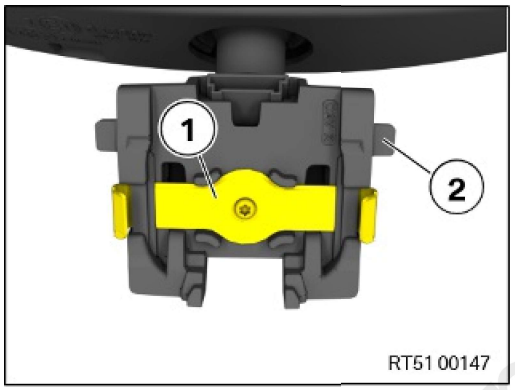
Damage to the component.

Excessive force may damage the component.

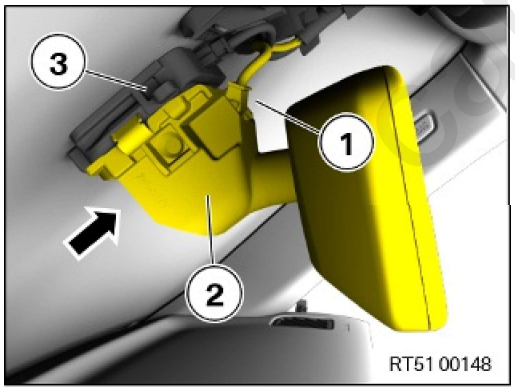
- Handle component carefully.

- Jerk and pull off the interior mirror (2) in the direction of the arrow from the mirror base (3).

3 – Install interior mirror



- Check the clamp (1) on both sides of the mirror base (2) for damage and renew as needed.



TECHNICAL INFORMATION

Carry out the work at temperatures between 18 °C and 23 °C only.

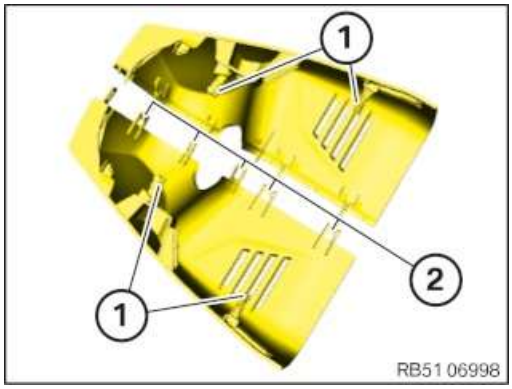
- Position the interior mirror (2) at the mirror base and slide it on in direction of the arrow.
- Check the correct installation position of the interior mirror (2) at the mirror base (3).
- Connect connectors (1) and lock.

POSTPROCESSES

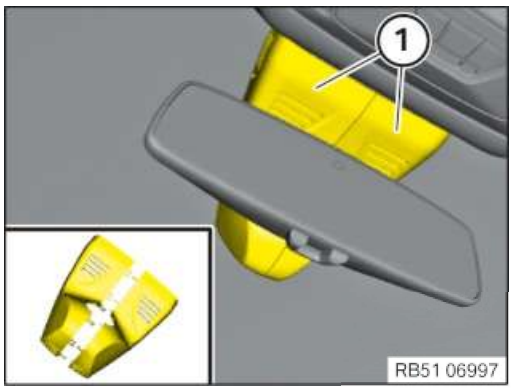
4 – Installing the covers for the interior mirror

- **Version A:**

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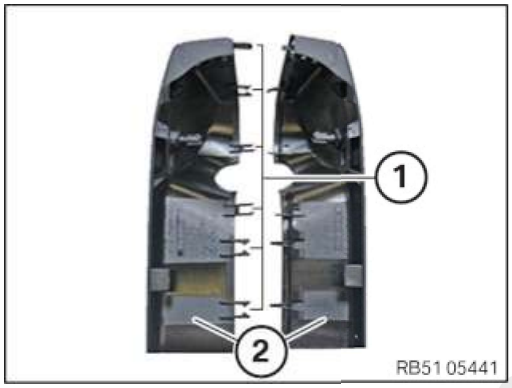


- Check latch mechanisms (1) and (2).
- If the latch mechanisms (1) or (2) are faulty, renew the covers.



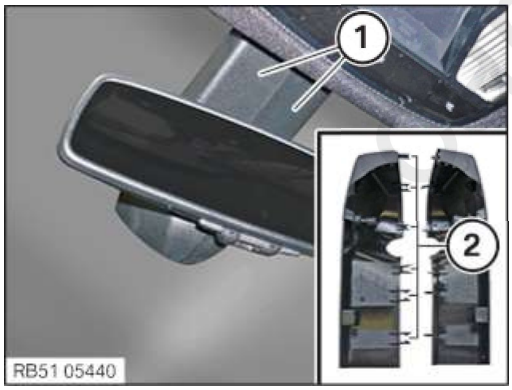
- Feed cover (1) in and lock.

- **Version B:**



- Check the latch mechanisms (1) on the two covers (2) for damage, renew the covers (2) if necessary.

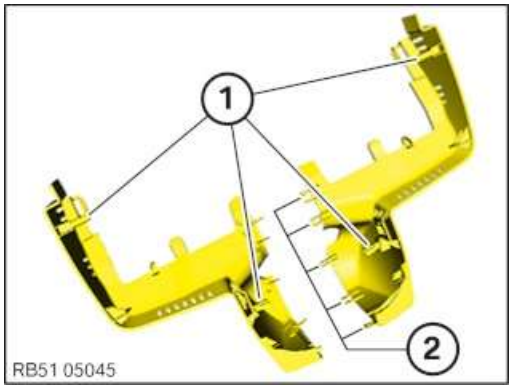
  The covers (2) must not be damaged or missing.



- Position the covers (1) correctly on the mirror and engage with the latch mechanisms (2).

- **Version C:**

Check



- Check the latch mechanisms (1) and (2) of the covers for damage.

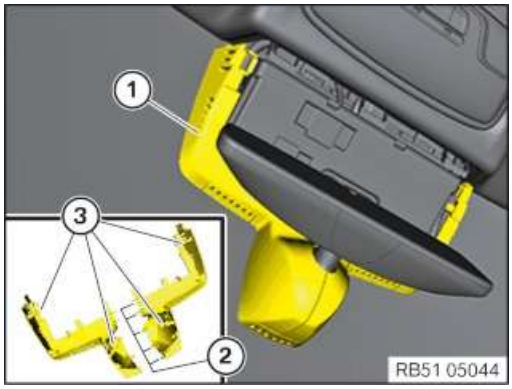
mdiagn.com

Result

» The latch mechanism is damaged.

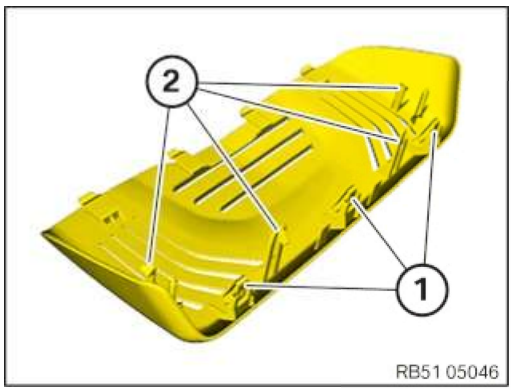
Measure

- Renew the cover.



- Guide in cover (1) on left and right and engage using latch mechanisms (2) and (3).

Check



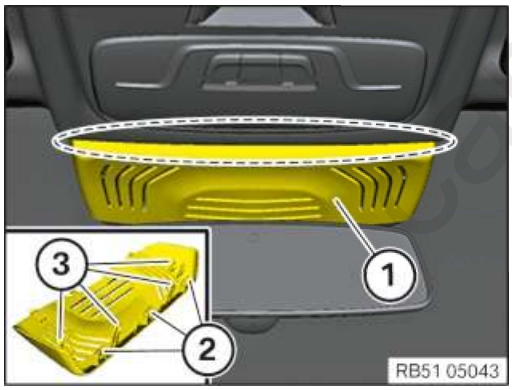
- Check clamps (1) for damage; renew if necessary.
- Check latch mechanisms (2) for damage.

Result

» The latch mechanism is damaged.

Measure

- Renew the cover.



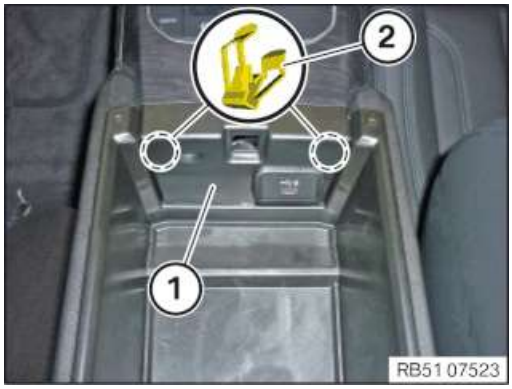
- Guide cover (1) into front guides and engage using retaining lugs (3) and clamps (2).

carlagn.com

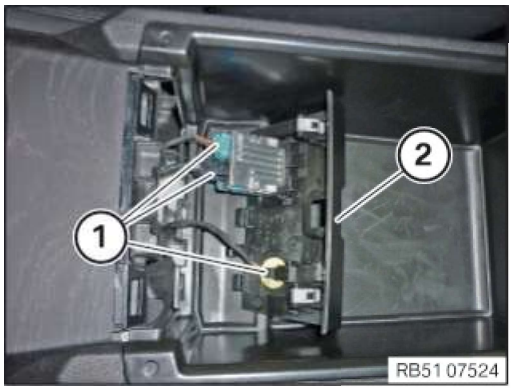
51 16 160 Removing and installing center console trim

PRELIMINARY WORK

1 – Removing the trim in the storage compartment on the centre armrest



- Lever out the trim (1) with the special tool (2) toward the rear from the clamps 2 298 505.



- Unlock and disconnect the plug connections (1) and remove the trim (2) .

MAIN WORK

2 – Remove the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Release and remove the centre console trim upwards (1) as shown using the special tool 2 298 505 from the latch mechanisms.

3 – Installing the centre console trim

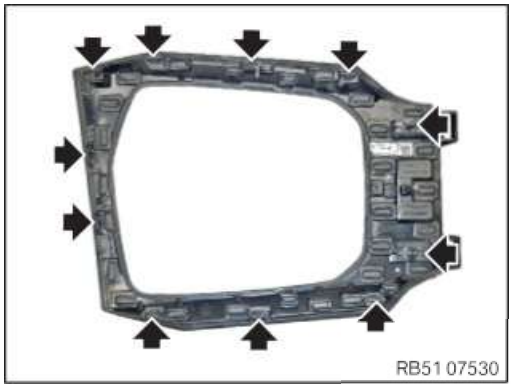
cardiagn.com

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



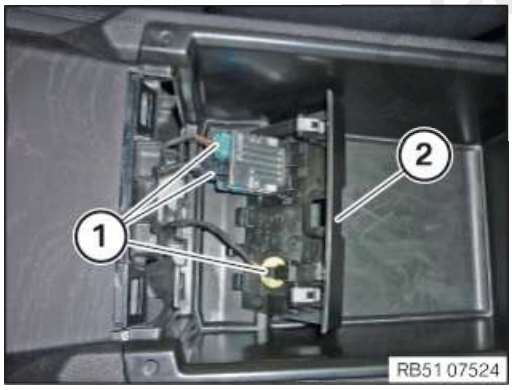
- Check all the latch mechanisms or clamps (arrows).
- In case the latch mechanisms or the clamps (arrows) are faulty, renew the centre console trim .



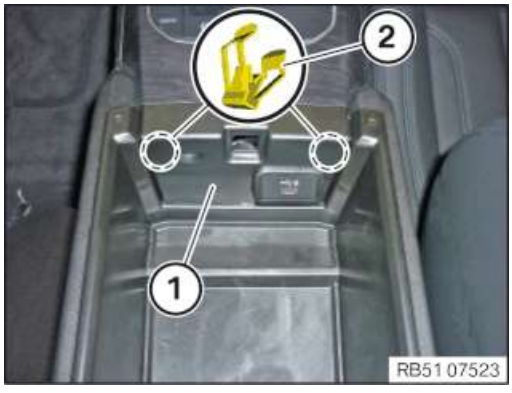
- Correctly position the centre console trim (1) and engage at the latch mechanisms.

POSTPROCESSES

4 – Installing the trim in the storage compartment of the centre armrest



- Mount the trim (2) and connect connector (1) and lock.



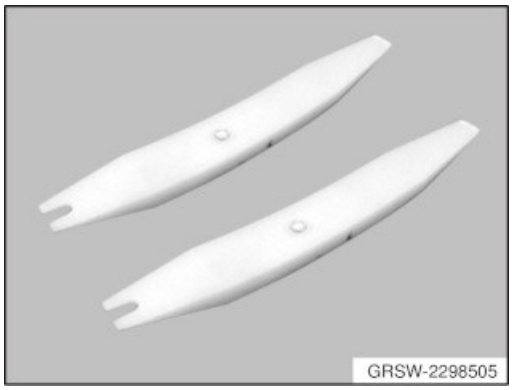
- Correctly position trim (1) and snap into the clamps (2).

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Additional Information

Overview of Special Tools

2 298 505 Wedge



Common	Used in step 12
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

cardiagn.com

51 16 165 Removing and installing complete centre console

PRELIMINARY WORK

1 – Remove cupholder

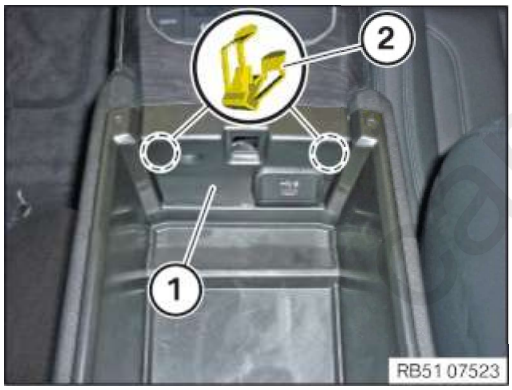


- Remove the insert (1).

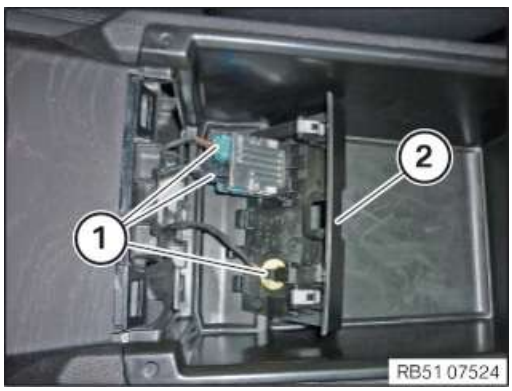


- Loosen screws (1).
- Feed the cup holder (2) out to the top.
- Unlock associated plug connections and disconnect.

2 – Removing the trim in the storage compartment on the centre armrest



- Lever out the trim (1) with the special tool (2) toward the rear from the clamps 2 298 505.



- Unlock and disconnect the plug connections (1) and remove the trim (2) .

3 – Remove the centre console trim

eardiagn.com

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



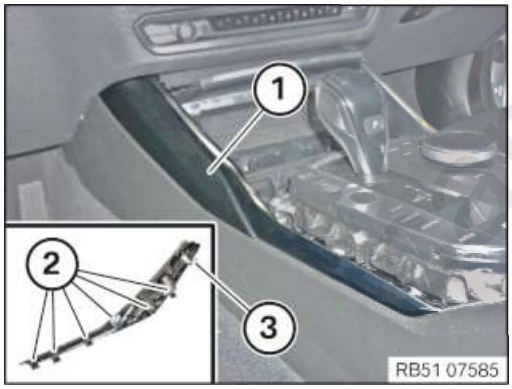
- Release and remove the centre console trim upwards (1) as shown using the special tool 2 298 505 from the latch mechanisms.

4 – Removing the decorative trim on the centre console trim on the left and right

▶ **Remove decorative trim on centre console**

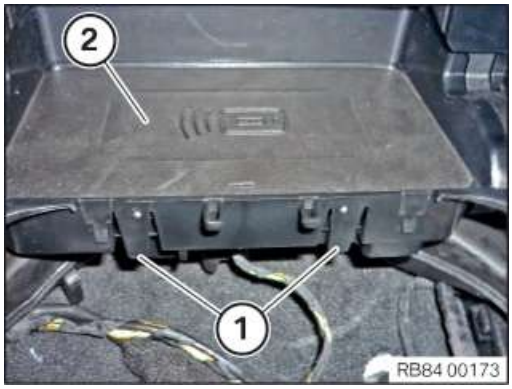
NOTICE

Description is for left component only. Procedure on the right side is identical.

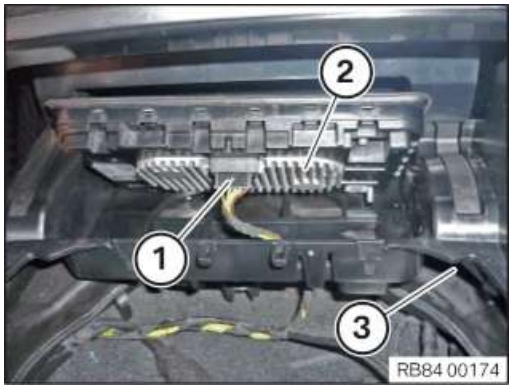


- Lever out the rear decorative trim (1) from the latch mechanisms (2) starting from the top.
- Feed out the decorative trim (1) backwards out of the guide (3) and remove.

5 – Removing the wireless charging station



- Loosen the latch mechanisms (1) and push out the wireless charging station (2) upwards.



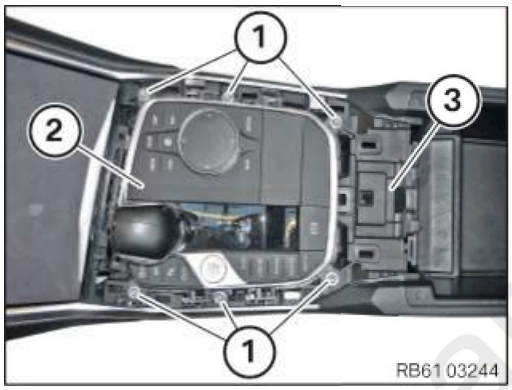
- Disconnect the connector (1) and remove the wireless charging station (2) from the centre console (3).

6 – Remove the operating facility in the centre console

► **Disconnecting all battery earth leads**

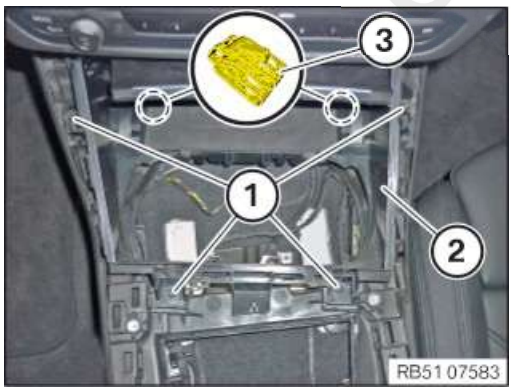


- See additional information.



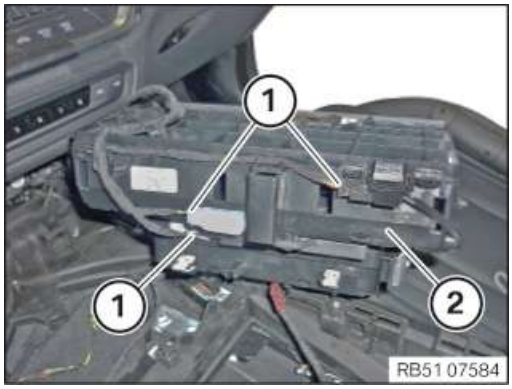
- Loosen screws (1).
- Remove the operating facility in the centre console (2) from the centre console (3).

7 – Removing the storage compartment of the front centre console



- Loosen screws (1).
- Remove storage compartment trim (2) backwards out of clamps (3).

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- Unlock and disconnect all the plug connections (1) and remove the storage compartment (2).

8 – Removing the rear centre console trim

RISK OF DAMAGE

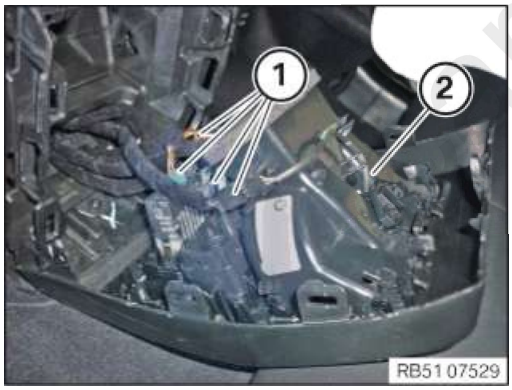
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Release centre console trim (1) backwards from the latch mechanisms at the side and pull it a little way towards the rear.



- Unlock and disconnect plug connections (1).
- Remove the centre console trim (2).

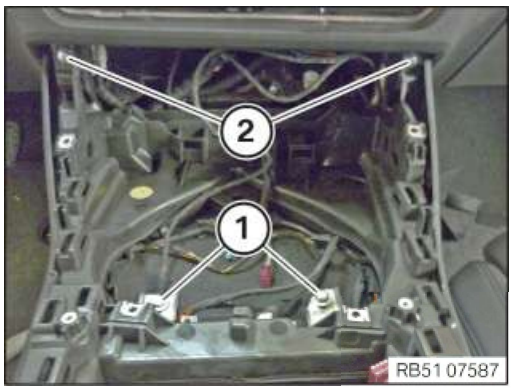
MAIN WORK

9 – Removing the centre console

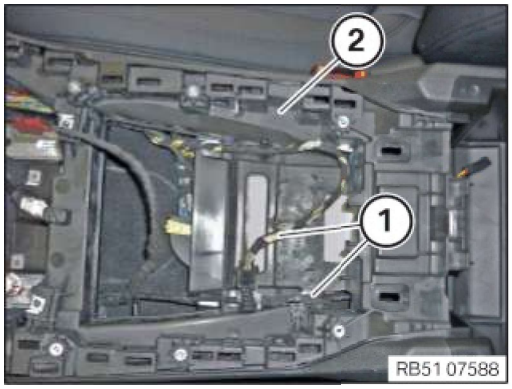
rdiagn.com



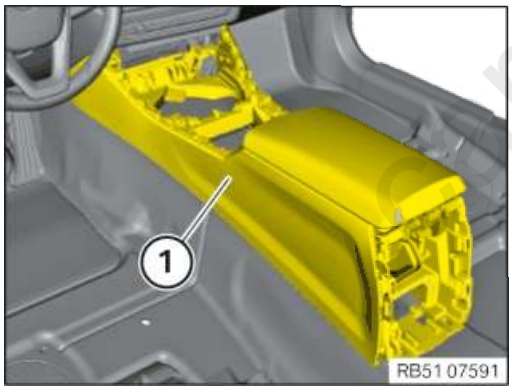
- Loosen screws (1).



- Loosen screws (1) and (2).



- Release the wiring harness (1) from the centre console (2).

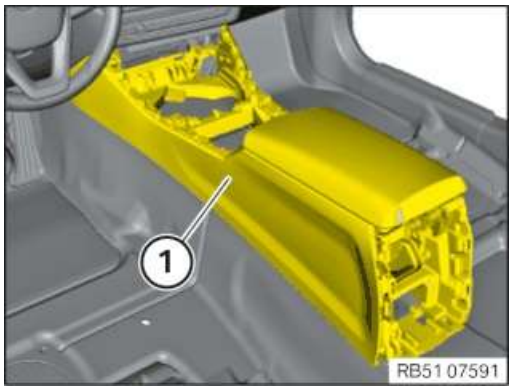


NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

- Carefully raise rear centre console (1).
- Feed out wiring harness from the centre console (1) and unlock and disconnect existing plug connections, if required.
- Feed out and remove the centre console (1) on the instrument panel .

10 – Installing the centre console

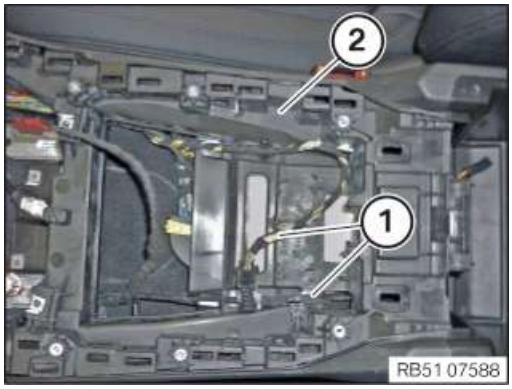


NOTICE

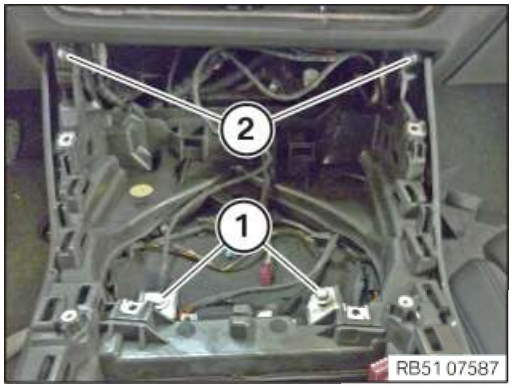
To provide a better overview: Schematic diagram with partially hidden components.

- Install centre console (1) and thereby feed in the wiring harness.
- Feed in the centre console (1) to the instrument panel and position correctly.

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- Secure the wiring harness to the centre console (1) and connect and lock the existing plug connections.



- Tighten the screws (1).

Centre console on tunnel

M6x18 Hexagon screw		Tightening torque	4,6 Nm

- Tighten the screws (2).

Centre console to instrument panel

Oval-head screw		Tightening torque	1,8 Nm



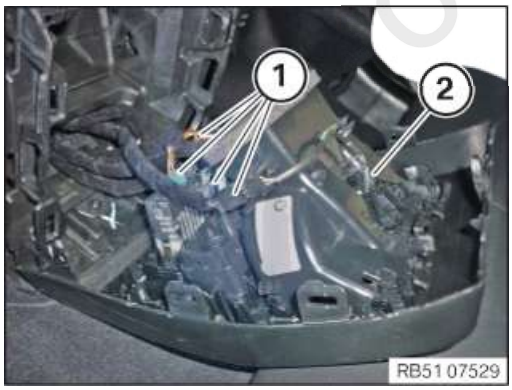
- Tighten the screws (1).

Centre console on tunnel

M6x18 Hexagon screw		Tightening torque	4,6 Nm

POSTPROCESSES

11 – Installing the rear centre console trim



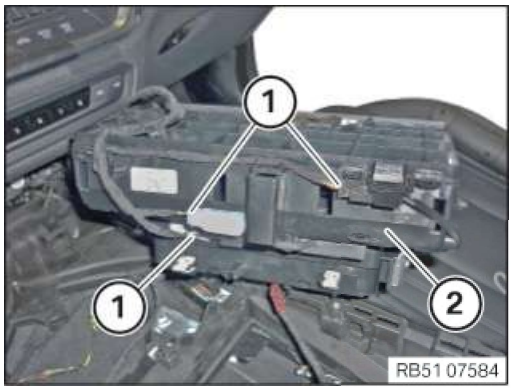
- Install the centre console trim (2).
- Connect connectors (1) and lock.

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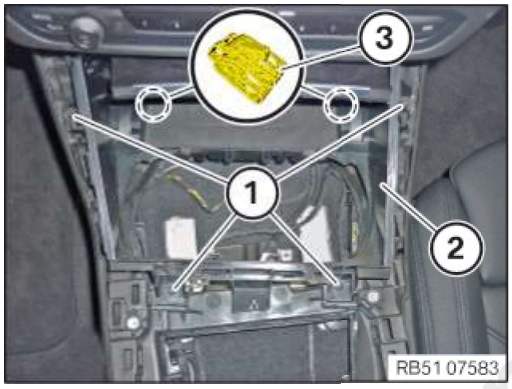


- Position centre console trim (1) and engage at the latch mechanisms at the side.

12 – Installing the storage compartment of the front centre console



- Mount the storage compartment (2) and connect connectors (1).

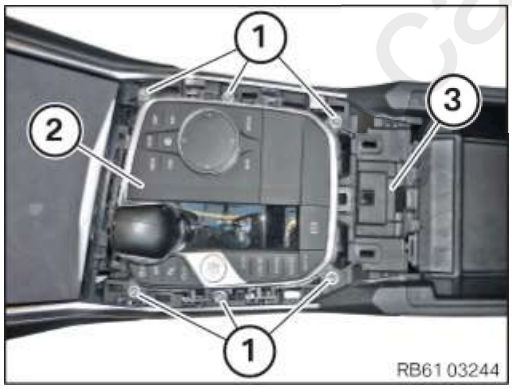


- Engage rear storage compartment trim (2) into clamps (3).
- Tighten the screws (1).

Storage compartment to centre console

Oval-head screw		Tightening torque	1,8 Nm

13 – Install the operating facility in the centre console



- Position operating facility (2) in the centre console (3).
- Tighten the screws (1).

Gear selector switch to centre console trim

Screw		Tightening torque	1,8 Nm

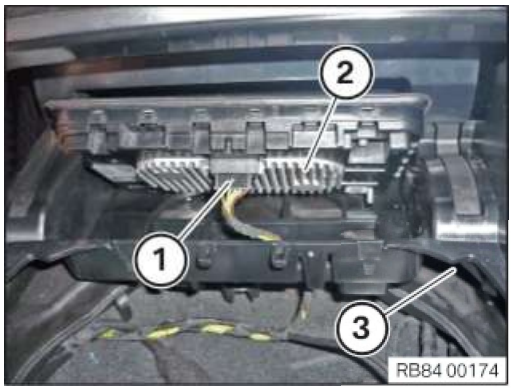
► **Disconnecting all battery earth leads**

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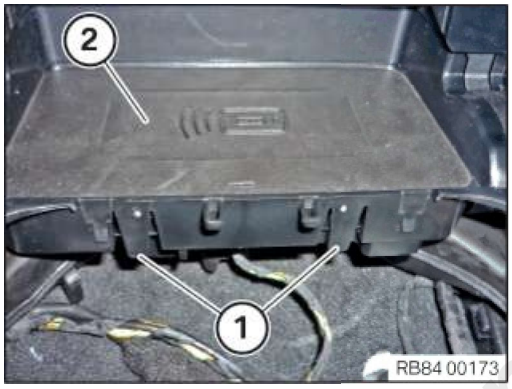


- See additional information.

14 – Installing the wireless charging station



- Connect connector (1).
- Position the wireless charging station (2) in the centre console (3).



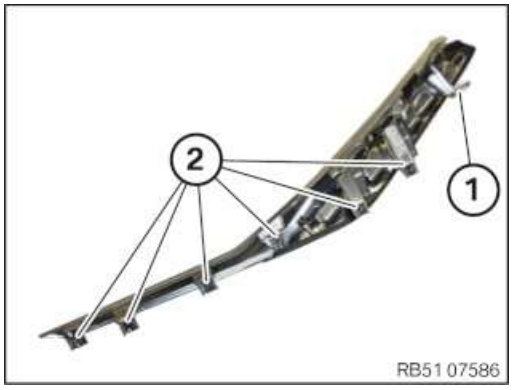
- Press the wireless charging station (2) down till the locking units (1) are engaged correctly.

15 – Install decorative trim on centre console on left and right

▸ **Installing the decorative trim to centre console**

NOTICE

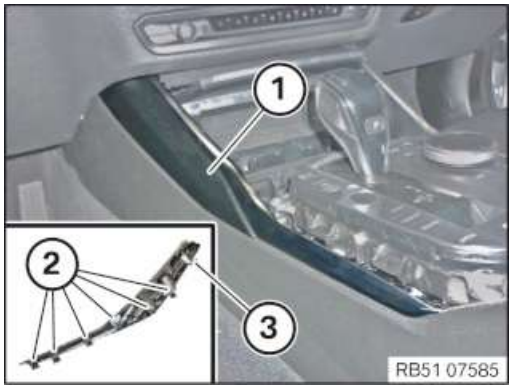
Description is for left component only. Procedure on the right side is identical.



- Check guide (1) and the latch mechanisms (2).

  Renew defective decorative trim.

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- Feed in the decorative trim (1) forward in the guide (3).
- Engage decorative trim (1) in latch mechanisms (2).

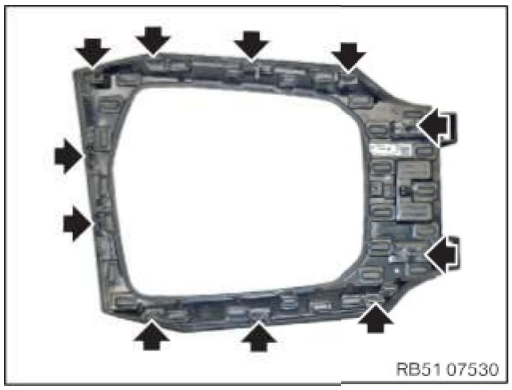
16 – Installing the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

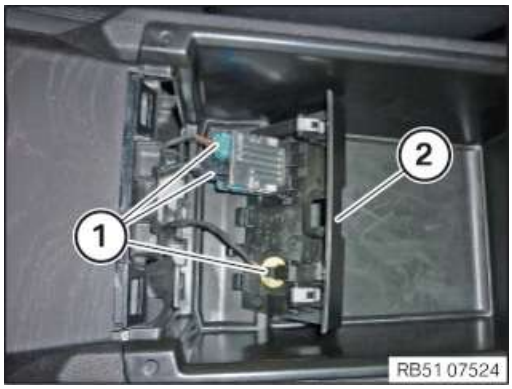


- Check all the latch mechanisms or clamps (arrows).
- In case the latch mechanisms or the clamps (arrows) are faulty, renew the centre console trim .



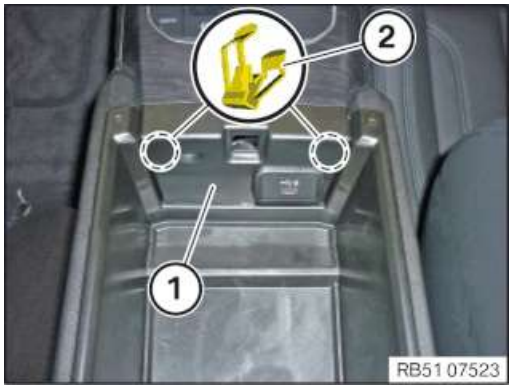
- Correctly position the centre console trim (1) and engage at the latch mechanisms.

17 – Installing the trim in the storage compartment of the centre armrest



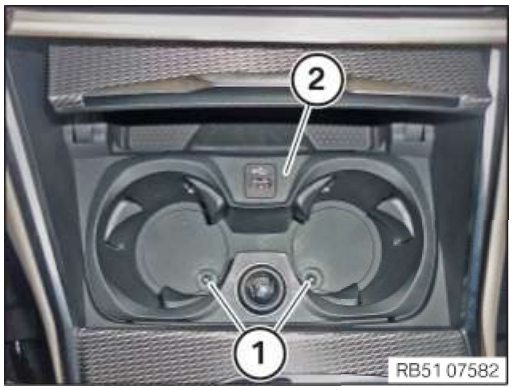
- Mount the trim (2) and connect connector (1) and lock.

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- Correctly position trim (1) and snap into the clamps (2).

18 – Install the cup holder



- Fix the cup holder (1) and the belonging connectors.
- Correctly position cup holder (1).
- Tighten the screws (2).

Cup holder to centre console

Oval-head screw		Tightening torque	1,8 Nm



- Insert the insert (1).

Additional Information

Overview of Tightening Torques

Centre console on tunnel — Used in step 10

M6x18 Hexagon screw		Tightening torque	4,6 Nm

Centre console to instrument panel — Used in step 10

Oval-head screw		Tightening torque	1,8 Nm

Storage compartment to centre console — Used in step 12

Oval-head screw		Tightening torque	1,8 Nm

Gear selector switch to centre console trim — Used in step 13

Screw		Tightening torque	1,8 Nm

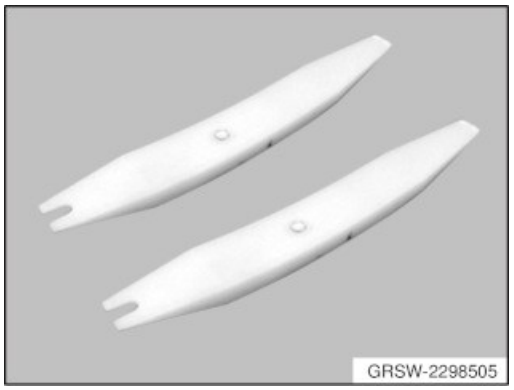
Cup holder to centre console — Used in step 18

Oval-head screw		Tightening torque	1,8 Nm

Overview of Special Tools

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2 298 505 Wedge



Common	Used in step 23
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

Links

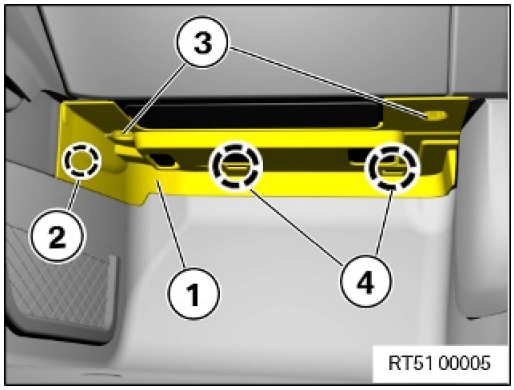
Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	613
61 20 900 Disconnecting and connecting battery earth lead	613
61 20 900 Disconnecting and connecting battery earth lead	613
61 20 900 Disconnecting and connecting battery earth lead	613
61 20 900 Disconnecting and connecting battery earth lead	613
61 20 900 Disconnecting and connecting battery earth lead	613
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	613
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	613
61 20 900 Disconnecting and connecting battery earth lead	613
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	613
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	613
61 20 900 Disconnecting and connecting battery earth lead	613
61 20 900 Disconnecting and connecting battery earth lead	613
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51 16 376 Removing and installing glove box lid

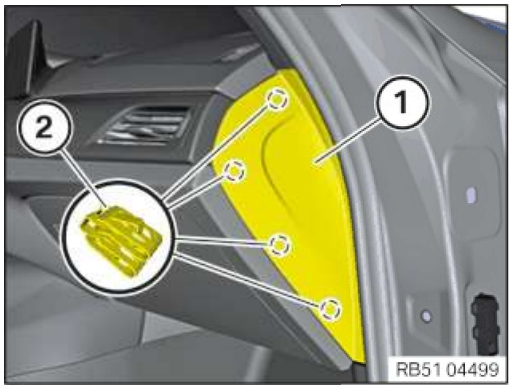
PRELIMINARY WORK

1 – Remove the right footwell trim



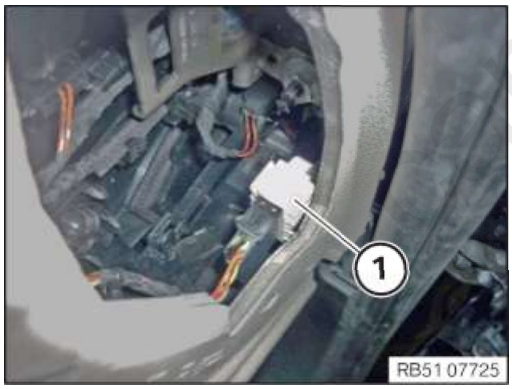
- Turn the locks (3) by 90°.
- Feed the footwell trim (1) out of the guide (2).
- Detach the footwell trim (1) inward out of the guides (4).
- Unlock associated plug connection and disconnect.

2 – Remove the side panel on the right instrument panel

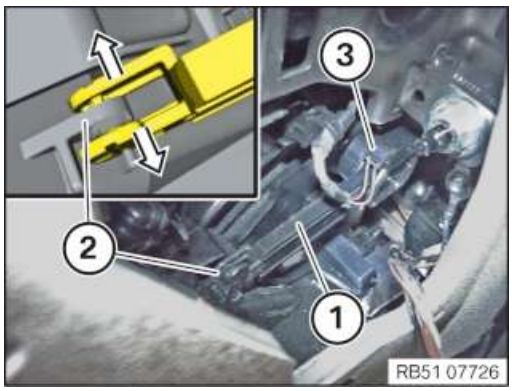


- Unclip and remove the side panel (1) towards the outside from the clamps (2).
- If necessary, unlock associated plug connection and disconnect.

3 – Remove glove box damper



- Release plug connection (1) from the instrument panel and pull to the outside.



- Release damper (1) from retaining bracket (2) (spread slightly in the direction of the arrow).
- Open glove box cover.
- Twist damper (1) slightly in the clockwise direction and remove it outwards.
- Feed damper (1) out of the instrument panel.
- Disconnect plug connection (3).

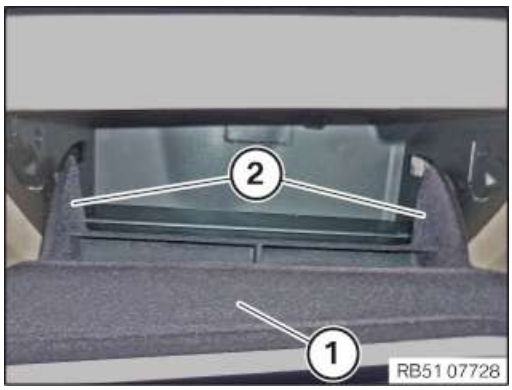
rdiagn.com

MAIN WORK

4 – Remove glove box lid

Prerequisite

The glove box lid is open.

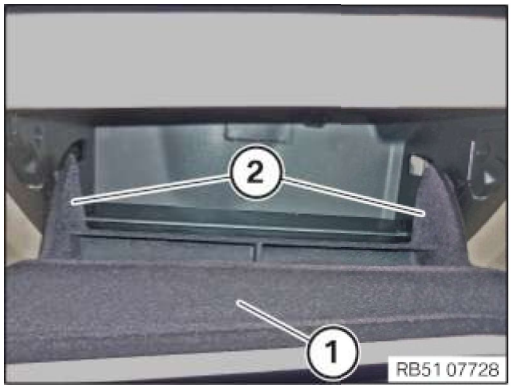


- Raise the glove box lid (1) slightly.
- Carefully bend the side section (2)of glove box lid (1) inside so that the glove box lid (1) can be fed out of the instrument panel .
- Swivel the glove box lid (1) further down until it feeds out of the hinges.

5 – Install glovebox cover

Prerequisite

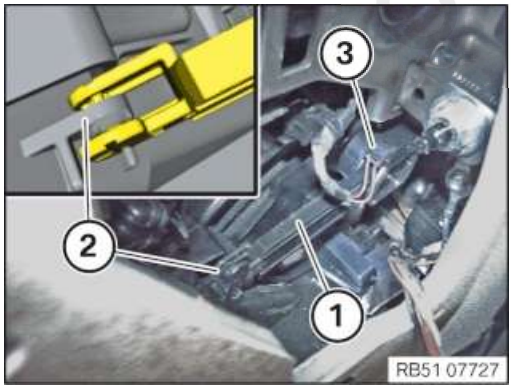
The glove box lid is open.



- Insert glove box lid (1) on the hinges and swivel to the top.
- Bend the side section (2) of the glove box lid (1) carefully inward and feed in at the instrument panel.

POSTPROCESSES

6 – Installing glove box damper



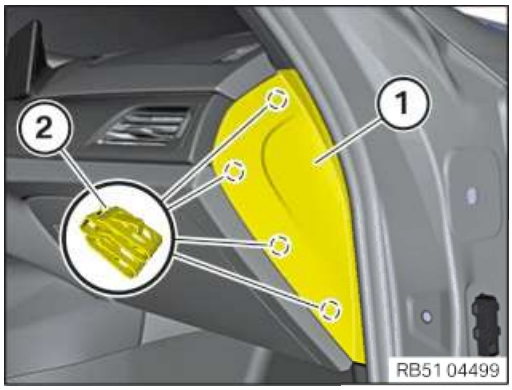
- Connect connector (3).
- Insert damper (1) in instrument panel.
- Open glove box cover.
- Install damper (1) and twist it slightly in the anticlockwise direction.
- Engage the damper (1) in the retaining bracket (2).

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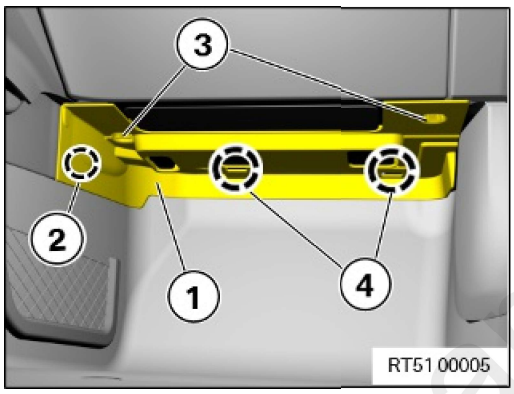
- Install plug connection (1) and secure at the instrument panel.

7 – Install the side panel on instrument panel on the right



- If required, connect the associated connector.
- Feed in the side panel (1) and clip it in at the clamps (2).

8 – Install the right footwell trim panel



- Connect associated connector.
- Attach the footwell trim (1) to the guides (4) and fold up.
- Guide the footwell trim (1) into the guide (2) of the centre console.
- Position locks (3) correctly and turn by 90°.

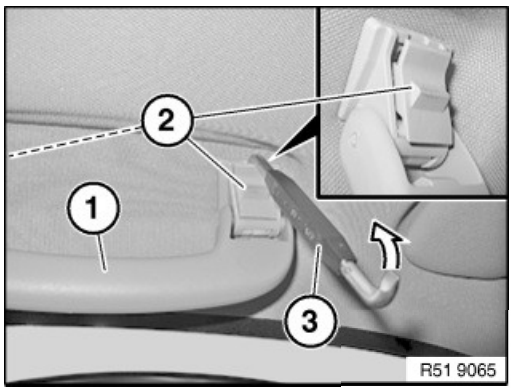
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51 16 480 Removing and installing or replacing front grab handle

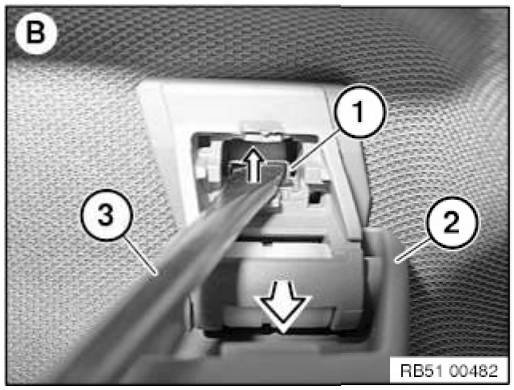
NOTICE

Description is for left component only. Procedure on the right side is identical.

1 – Removing the grab handle

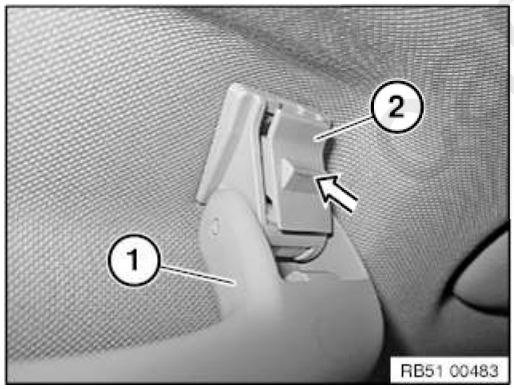


- Expand the grab handle (1) towards the bottom.
- Disengage and remove the locking insert (2) with an angle screwdriver (3) as shown.



- Pull the grab handle (2) slightly to the inside and hold it.
- Use a suitable screwdriver (3) to detach the upper and lower release tabs (1).
- Guide the grab handle (2) out.
- Repeat the operation on the other side of the grab handle (2).

2 – Installing the grab handle



- Insert the grab handle (1) into body.
- Correctly clamp in the grab handle (1), as otherwise the locking inserts (2) on the grab handle (1) cannot correctly engage.
- Engage the locking inserts (2) on both sides of the grab handle (1).

51 16 045 Removing and installing or replacing retaining ring on left or right exterior mirror

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

1 – Removing the mirror glass

CAUTION

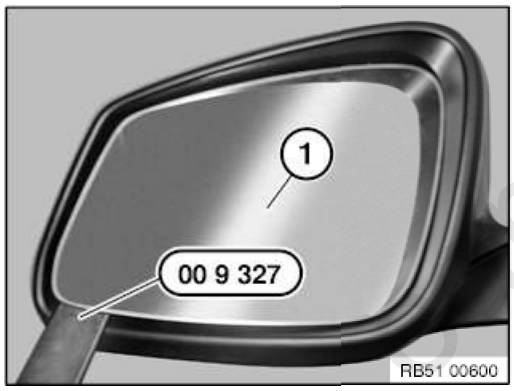
Glass splinters.

Danger of injury!

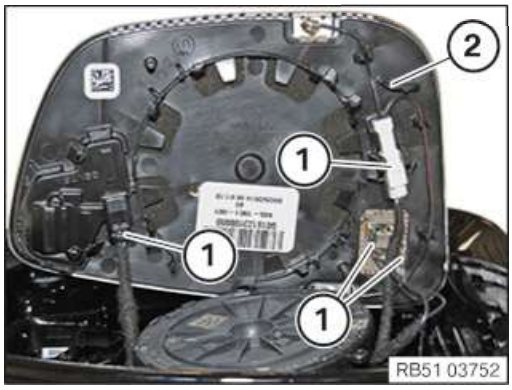
- If the mirror glass is damaged, wear safety goggles and protective gloves.

TECHNICAL INFORMATION

Carry out the work at temperatures between 18 °C and 23 °C only.



- Manually press the mirror glass (1) on the side of vehicle up to the end stop.
- Unclip the mirror glass (1) using special tool 0 496 571 (00 9 327) all the way around, starting with the outer side.



- Disconnect plug connection (1).
- Remove mirror glass (2).

2 – Removing the protective cap of the exterior mirror

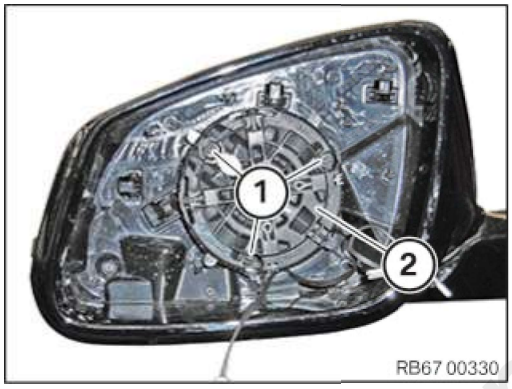


- Spread and release the latch mechanisms (1) of the protective cap on the exterior mirror.



- Remove the protective cap (1) in the direction of the arrow.
- Disconnect associated plug connection.

3 – Removing the drive for exterior mirror adjustment



- **Version A**
- Release the screws (1) and pull out the drive for exterior mirror adjustment (2) a little.



- **Version B**
- Loosen screw (1).
- Pull off the drive for exterior mirror adjustment (2).

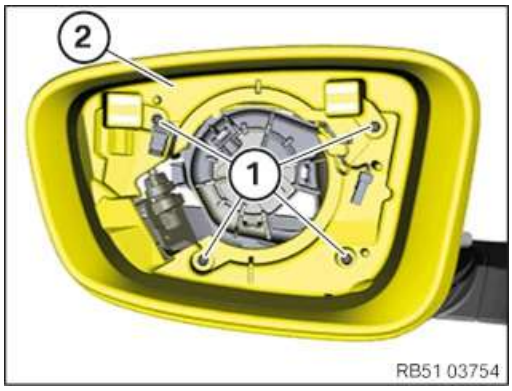


- Unlock plug connection (1) and disconnect and remove the drive for exterior mirror adjustment (2) .

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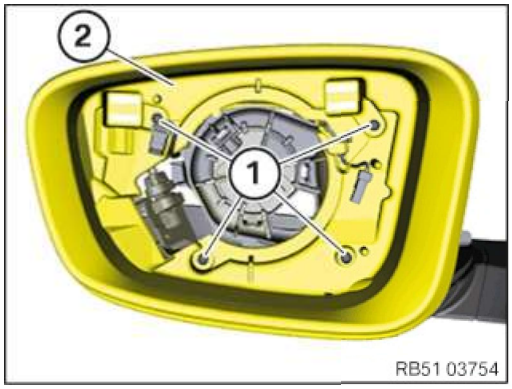
MAIN WORK

4 – Removing retaining ring from exterior rearview mirror



- Loosen screws (1).
- If necessary, feed out cable.
- Guide out retaining ring of exterior rearview mirror (2) in forward direction.

5 – Installing the retaining ring on the exterior rearview mirror



- Feed in the retaining ring on the exterior rearview mirror (2).
- If necessary, feed in cable.
- Tighten the screws (1).

POSTPROCESSES

6 – Installing the drive for exterior mirror adjustment



- Position drive for exterior mirror adjustment (2).
- Connect connectors (1) and lock.



- **Version A**
- Position drive for exterior mirror adjustment (2) correctly.
- Tighten the screws (1).

Drive for exterior mirror adjustment

	Tightening torque	1,2 Nm

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- **Version B**
- Correctly position the drive for exterior mirror adjustment (2) and press it in.
- Tighten down screw (1).

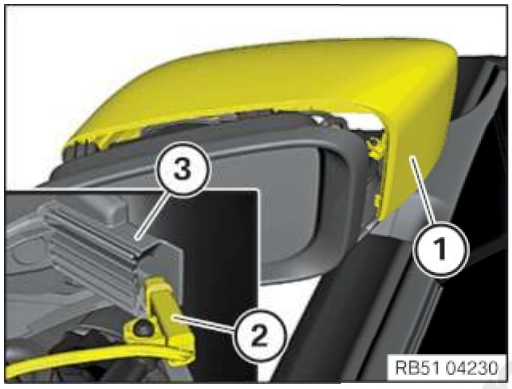
Drive for exterior mirror adjustment

	Tightening torque	1,2 Nm

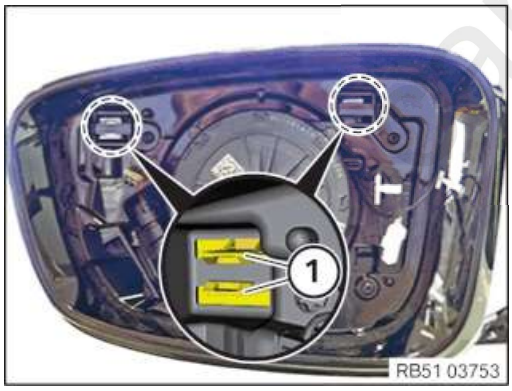
7 – Installing the protective cap of the exterior mirror



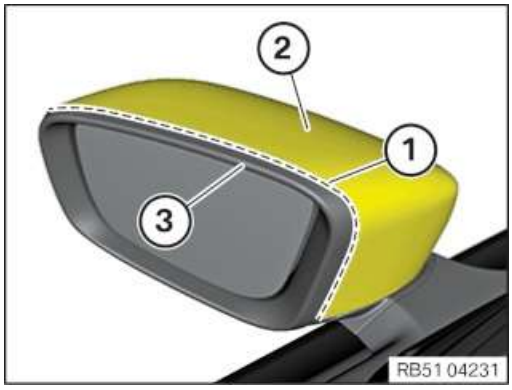
- Position the connector (1) on the mounting (2).
- Position connector (1) as shown.



- Position the protective cap (1) on the exterior mirror.
- Feed in the connector (2) for the side repeater (3).
- Push protective cap (1) on exterior mirror and lock.

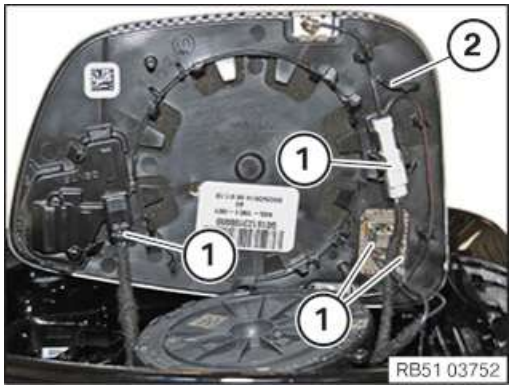


- Make sure that the latch mechanisms (1) are correctly fitted.

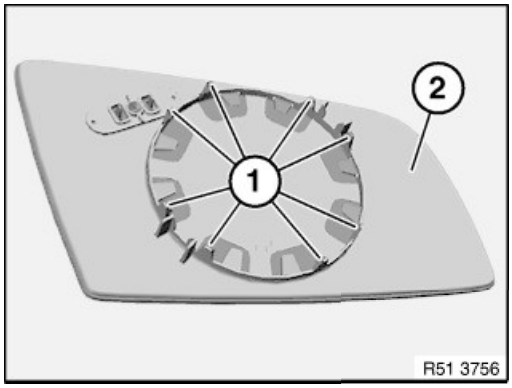


- Check the correct seating of the protective cap (2) on retaining ring (3) around (1).

8 – Installing the mirror glass



- Position mirror glass (2).
- Connect plug connections (1).



- Check whether retaining lugs (1) are missing or damaged and, if required, renew the mirror glass.
- Position the mirror glass (2) with the retaining lugs (1) flush with the drive for exterior mirror adjustment and clip in.
- Ensure correct locking.
- Check if the drive for exterior mirror adjustment is functioning correctly.

Additional Information

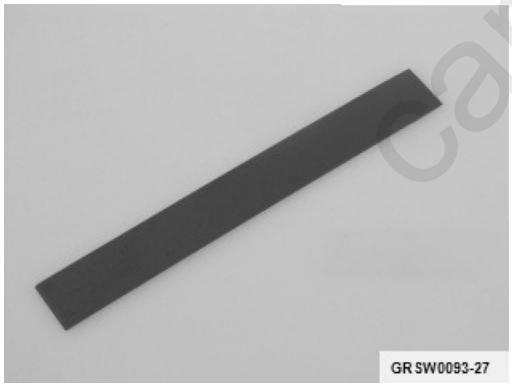
Overview of Tightening Torques

Drive for exterior mirror adjustment — Used in step 6

	Tightening torque	1,2 Nm

Overview of Special Tools

0 496 571 (00 9 327) Wedge



Common — Used in step 1

Usage	(Cleaning wedge) From 11/2008 this special tool replaces panel wedge 00 9 323 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

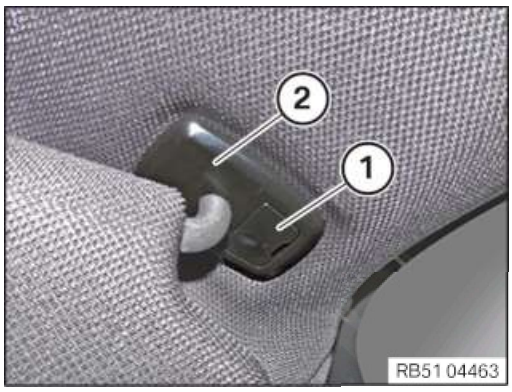
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51 16 080 Removing and installing or replacing sun visor and left or right counter support

NOTICE

Description is for left component only. Procedure on the right side is identical.

1 – Remove sun visor



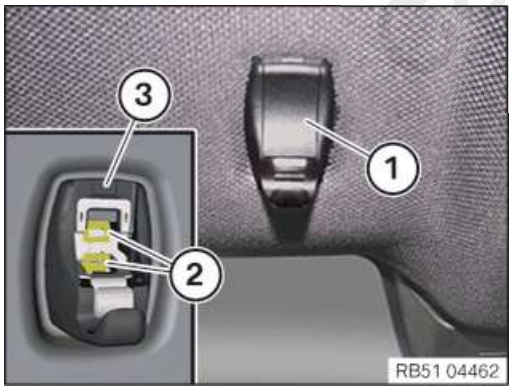
- Pull out the cover (1).
- Detach the sun visor (2) from the counter support .
- Disengage the sun visor (2) in front to the bottom and thread it out of the headlining at the rear.
- Unlock associated plug connection and disconnect.

2 – Remove the counter support for the sun visor



- Pull out the cover (1).
- Push the clamps (2) together and pull the counter support (3) out of the headlining.

3 – Install the counter support for the sun visor



- Insert the counter support (3) into the headlining.
- Make sure the clamps (2) are engaged correctly.
- Use cover (1).

4 – Install the sun visor



- Connect the sun visor (2) with the corresponding connector.
- Guide the sun visor (2) into the headlining.
- Use cover (1).
- Attach the sun visor (2) on the counter support.

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51 16 172 Removing and installing the centre armrest storage compartment

PRELIMINARY WORK

1 – Removing the rear centre console trim

RISK OF DAMAGE

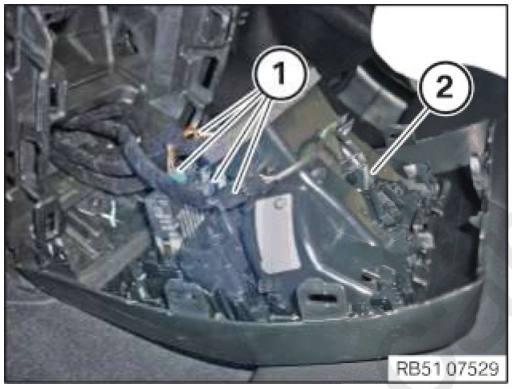
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

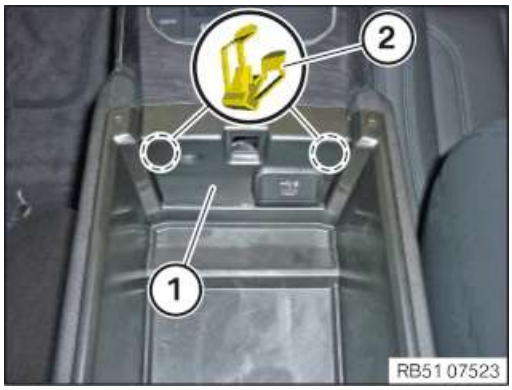


- Release centre console trim (1) backwards from the latch mechanisms at the side and pull it a little way towards the rear.

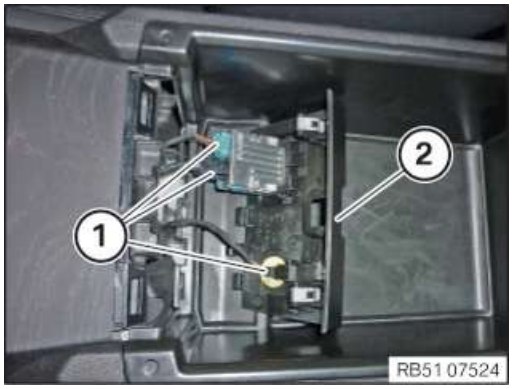


- Unlock and disconnect plug connections (1).
- Remove the centre console trim (2).

2 – Removing the trim in the storage compartment on the centre armrest



- Lever out the trim (1) with the special tool (2) toward the rear from the clamps 2 298 505.



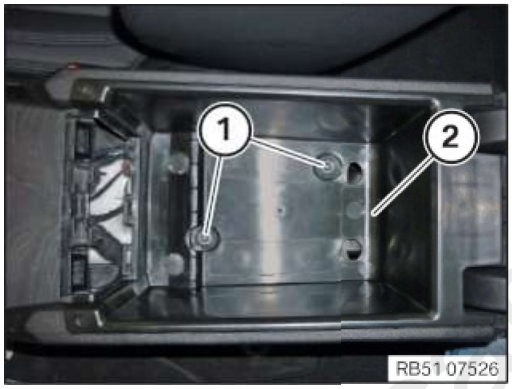
- Unlock and disconnect the plug connections (1) and remove the trim (2) .

MAIN WORK

3 – Removing the centre armrest storage compartment



- Remove the insert (1) forward out of the storage compartment .



- Loosen screws (1).
- Lever out storage compartment (2) using special tool 2 298 505 to the top and remove.

4 – Installing the centre armrest storage compartment



- Install the storage compartment (2).
- Tighten the screws (1).

Storage compartment to centre console

Oval-head screw		Tightening torque	1,8 Nm

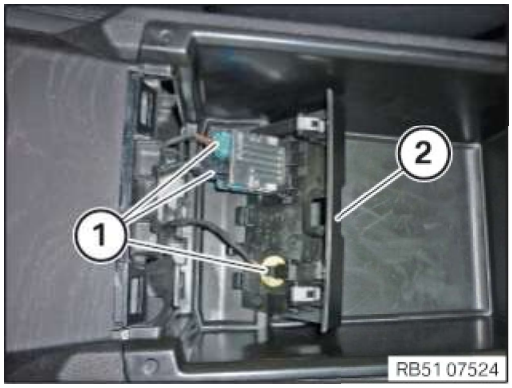
Cardiagn.com



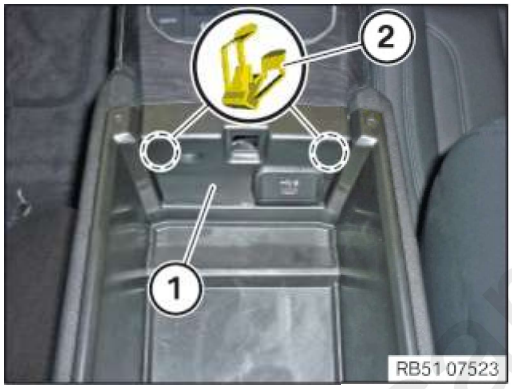
- Install insert (1) in storage compartment.

POSTPROCESSES

5 – Installing the trim in the storage compartment of the centre armrest

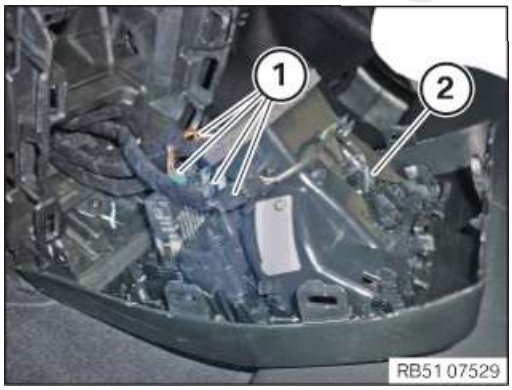


- Mount the trim (2) and connect connector (1) and lock.



- Correctly position trim (1) and snap into the clamps (2).

6 – Installing the rear centre console trim



- Install the centre console trim (2).
- Connect connectors (1) and lock.

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- Position centre console trim (1) and engage at the latch mechanisms at the side.

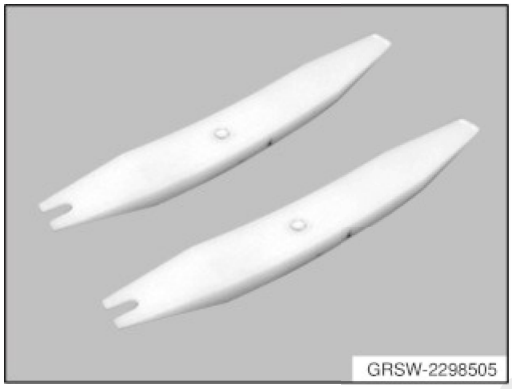
Additional Information

Overview of Tightening Torques

Storage compartment to centre console			Used in step 4
Oval-head screw		Tightening torque	1,8 Nm

Overview of Special Tools

2 298 505 Wedge



Common	Used in step 23
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

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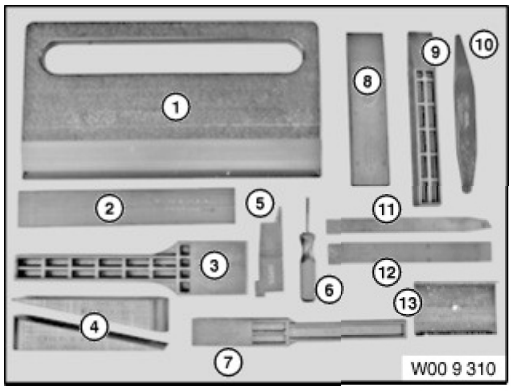
51 16 001 Removing and installing the exterior mirror on left or right front door

NOTICE

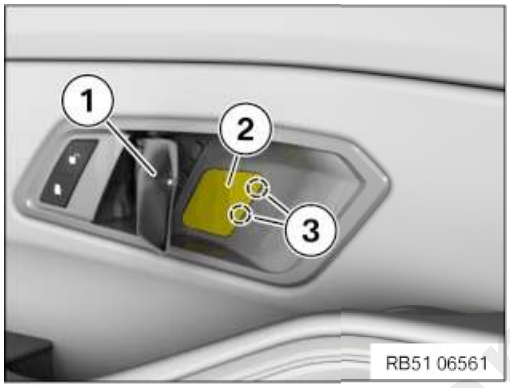
Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

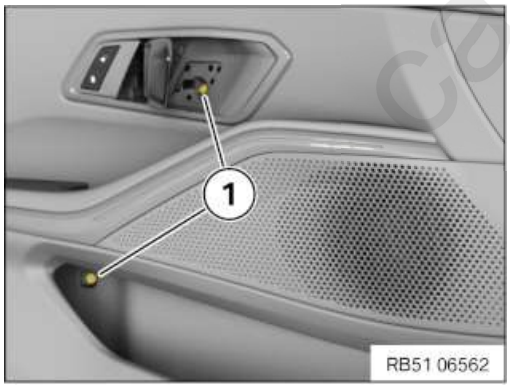
1 – Remove door trim panel



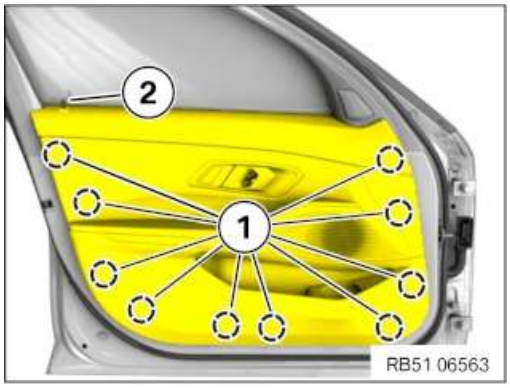
- Have the set of special tools 0 493 752 (00 9 329) ready.



- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

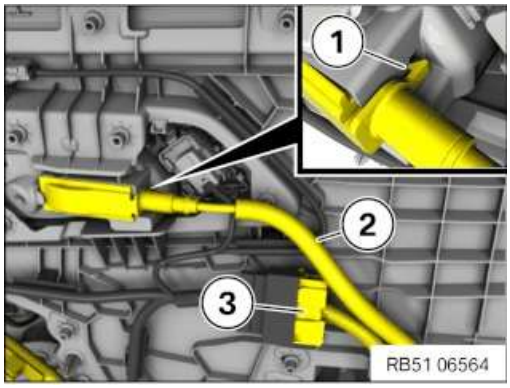


- Loosen screws (1).



- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).

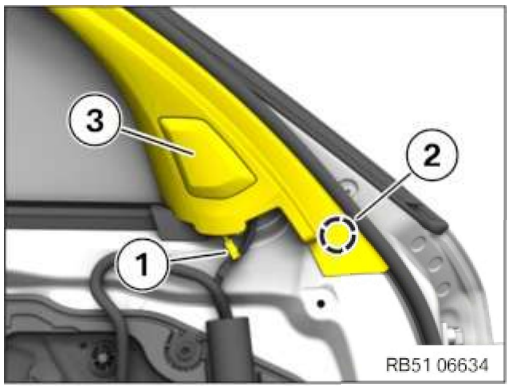
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- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

2 – Partially removing the cover on the inner window frame

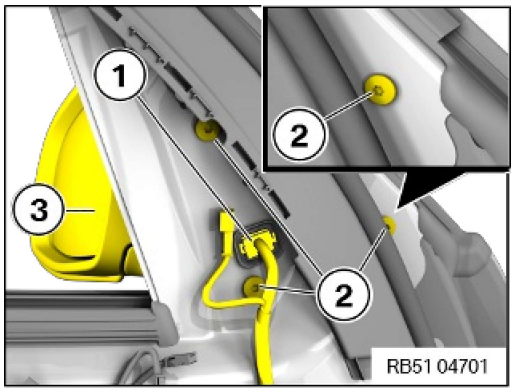


- If necessary, unlock and disconnect the plug connection (1).
- Unclip clip (2).
- Release the cover on inner window frame (3) in the area of the exterior rearview mirror.

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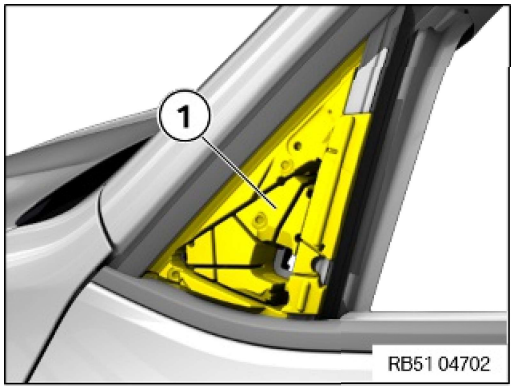
MAIN WORK

3 – Removing the exterior mirror



- Unlock plug connection (1) and disconnect.
- Release the screws (2) and remove the exterior rearview mirror (3).

4 – Installing the exterior mirror



Check

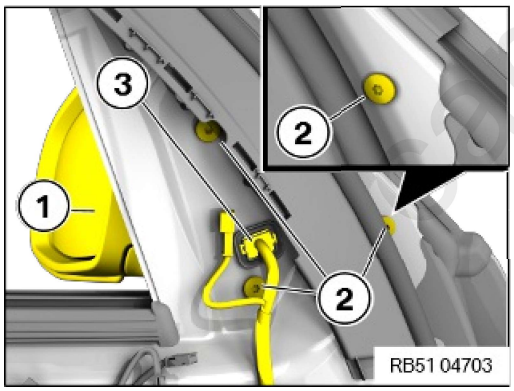
- Check mirror triangle seal (1) for damage.

Result

» The mirror triangle seal is damaged.

Measure

- Replace mirror triangle seal .



- Position exterior rearview mirror (1) and tighten screws (2).

Exterior mirror to door

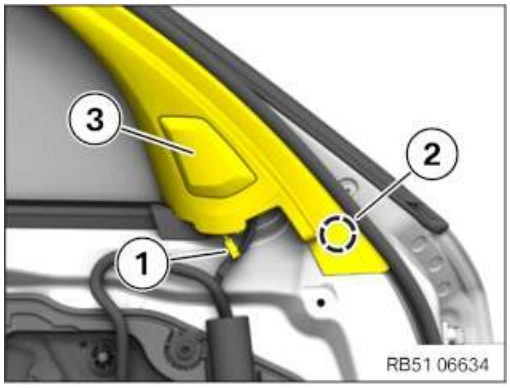
Thread-tapping hexagon screw		Tightening torque	10 Nm

- Connect connectors (3) and lock.

POSTPROCESSES

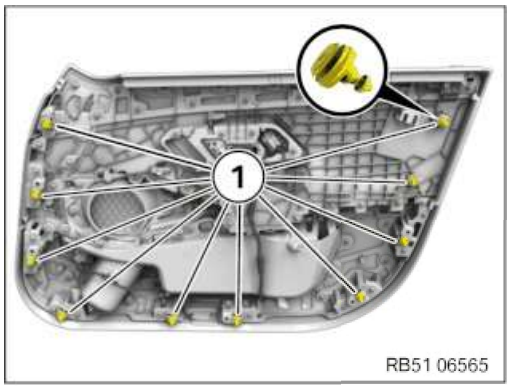
5 – Installing the cover on the inside of the window frame partially

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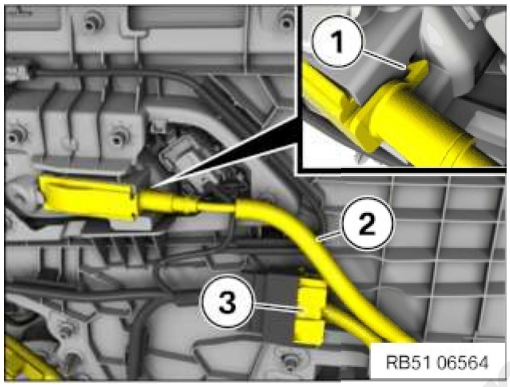
- Mount cover on the inner window frame (3) in the area of the exterior rearview mirror.
- Clip in the clip (2).
- If necessary, connect the connector (1) and lock it.

6 – Install door trim panel

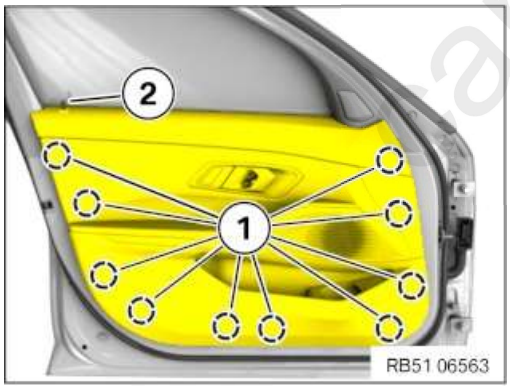


- Renew the clips (1).

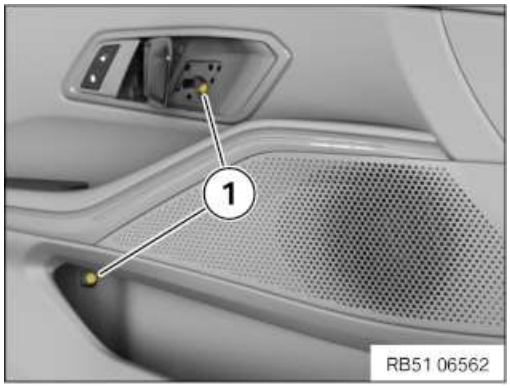
  Parts: Clips



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).

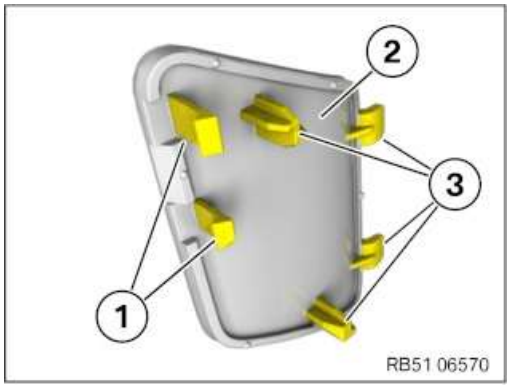


- Tighten the screws (1).

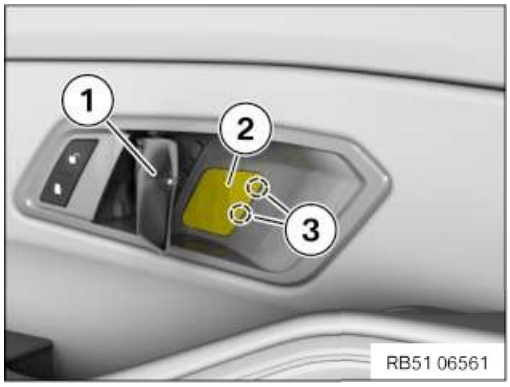
Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm

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- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

Exterior mirror to door — Used in step 4

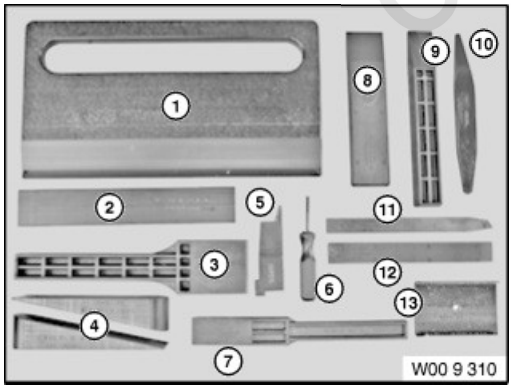
Thread-tapping hexagon screw		Tightening torque	10 Nm

Door trim panel to door — Used in step 6

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

0 493 752 (00 9 329) Case



Common — Used in step 1

Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

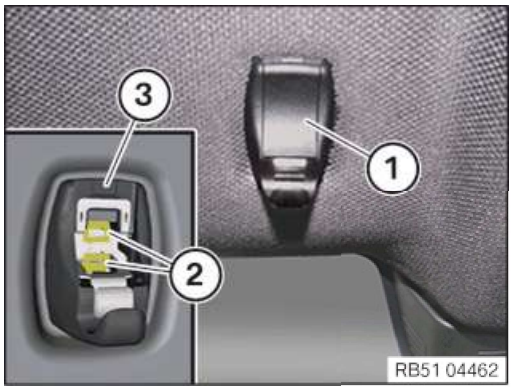
cardiagn.com

51 16 100 Removing and installing/replacing both sun visors and counter supports

1 – Remove both counter supports for the sun visors

NOTICE

Description is for left component only. Procedure on the right side is identical.



▸ **Remove the counter support for the sun visor**

- Pull out the cover (1).
- Push the clamps (2) together and pull the counter support (3) out of the headlining.

2 – Remove both sun visors

NOTICE

Description is for left component only. Procedure on the right side is identical.



▸ **Remove sun visor**

- Pull out the cover (1).
- Detach the sun visor (2) from the counter support .
- Disengage the sun visor (2) in front to the bottom and thread it out of the headlining at the rear.
- Unlock associated plug connection and disconnect.

3 – Install both sun visors

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the sun visor**

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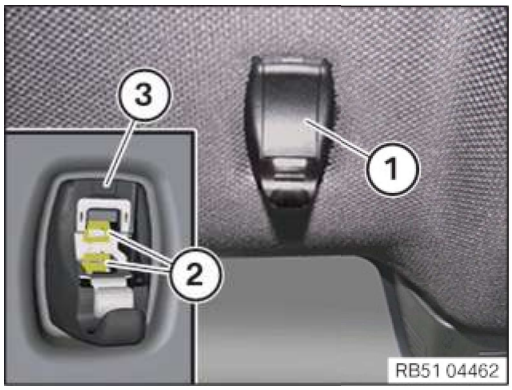


- Connect the sun visor (2) with the corresponding connector.
- Guide the sun visor (2) into the headlining.
- Use cover (1).
- Attach the sun visor (2) on the counter support.

4 – Install both counter supports for the sun visors

NOTICE

Description is for left component only. Procedure on the right side is identical.



▸ **Install the counter support for the sun visor**

- Insert the counter support (3) into the headlining.
- Make sure the clamps (2) are engaged correctly.
- Use cover (1).

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51 16 206 Removing and installing/replacing centre armrest

PRELIMINARY WORK

1 – Removing the rear centre console trim

RISK OF DAMAGE

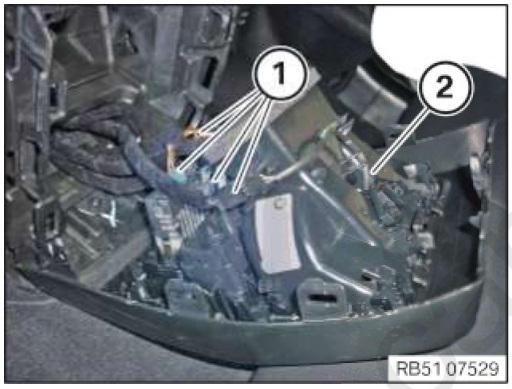
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Release centre console trim (1) backwards from the latch mechanisms at the side and pull it a little way towards the rear.



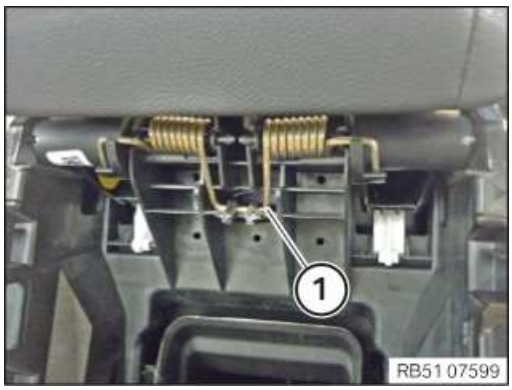
- Unlock and disconnect plug connections (1).
- Remove the centre console trim (2).

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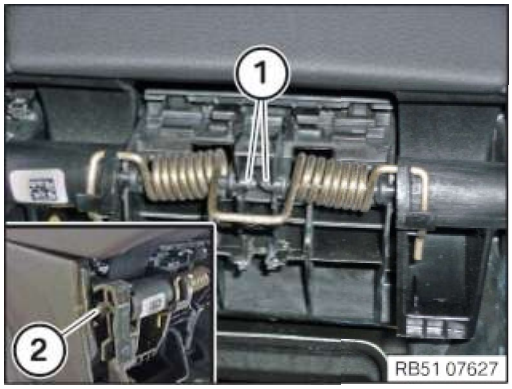
2 – Removing the centre armrest

Prerequisite

Centre armrest is open.

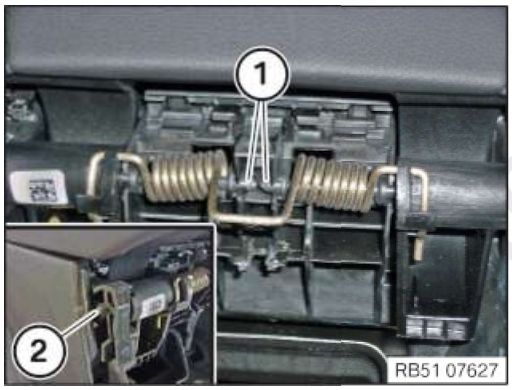


- Open the centre-armrest so that the spring is relaxed (1).
- Lift the spring (1) with long-nose pliers above the retaining lugs and detach.

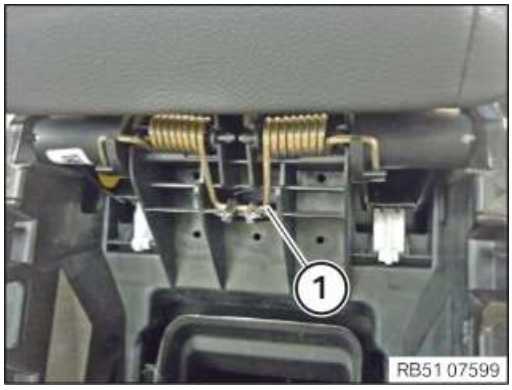


- Press pins (1) with a screwdriver outwards.
- Completely pull out the pins (1) with the long-nose pliers on the gearing (2) from the centre console.
- Feed out the centre armrest towards rear from the centre console and remove.

3 – Installing the centre armrest



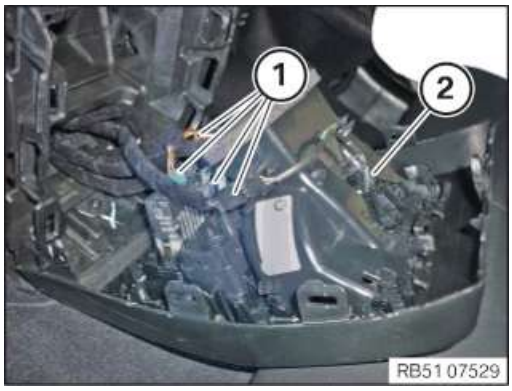
- Feed the centre-armrest into the centre console and position correctly.
- Insert pins (1) and insert into the centre console using gearing (2).



- Open the centre-armrest (1) so that the spring is relaxed.
- Lift and mount spring (1) with long-nose pliers above the retaining lugs.

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4 – Installing the rear centre console trim



- Install the centre console trim (2).
- Connect connectors (1) and lock.



- Position centre console trim (1) and engage at the latch mechanisms at the side.

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51 16 041 Removing and installing/replacing cover cap on left or right exterior mirror

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

1 – Removing the mirror glass

CAUTION

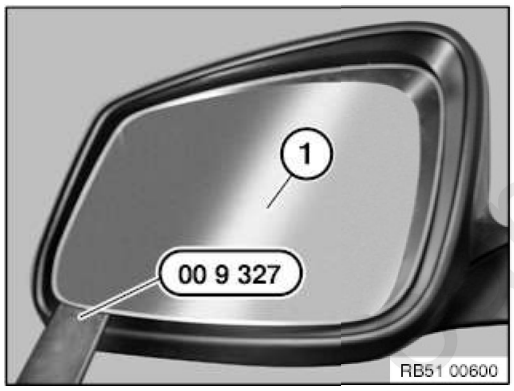
Glass splinters.

Danger of injury!

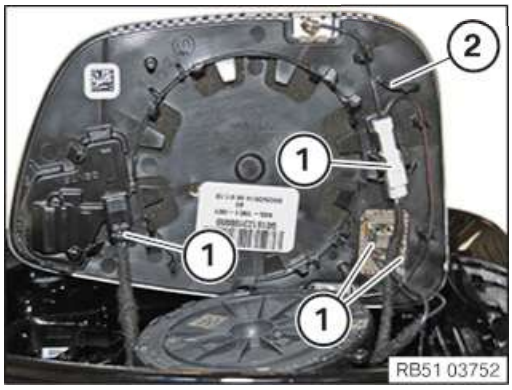
- If the mirror glass is damaged, wear safety goggles and protective gloves.

TECHNICAL INFORMATION

Carry out the work at temperatures between 18 °C and 23 °C only.



- Manually press the mirror glass (1) on the side of vehicle up to the end stop.
- Unclip the mirror glass (1) using special tool 0 496 571 (00 9 327) all the way around, starting with the outer side.



- Disconnect plug connection (1).
- Remove mirror glass (2).

MAIN WORK

2 – Removing the protective cap of the exterior mirror



- Spread and release the latch mechanisms (1) of the protective cap on the exterior mirror.

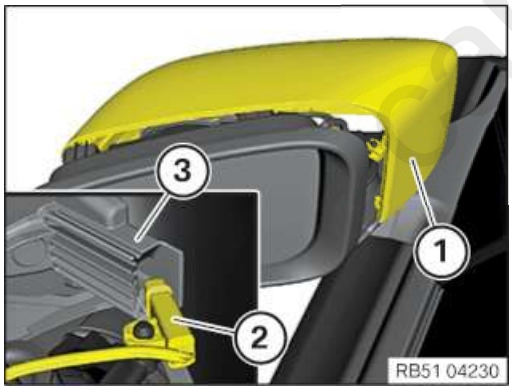


- Remove the protective cap (1) in the direction of the arrow.
- Disconnect associated plug connection.

3 – Installing the protective cap of the exterior mirror



- Position the connector (1) on the mounting (2).
- Position connector (1) as shown.

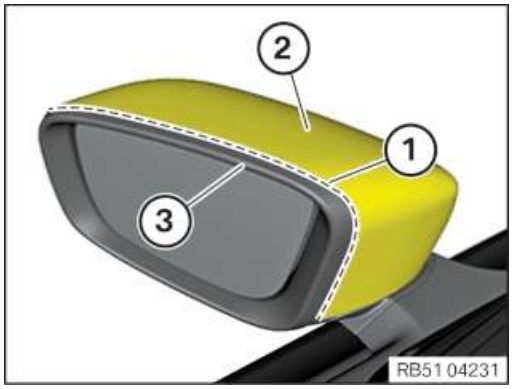


- Position the protective cap (1) on the exterior mirror.
- Feed in the connector (2) for the side repeater (3).
- Push protective cap (1) on exterior mirror and lock.



- Make sure that the latch mechanisms (1) are correctly fitted.

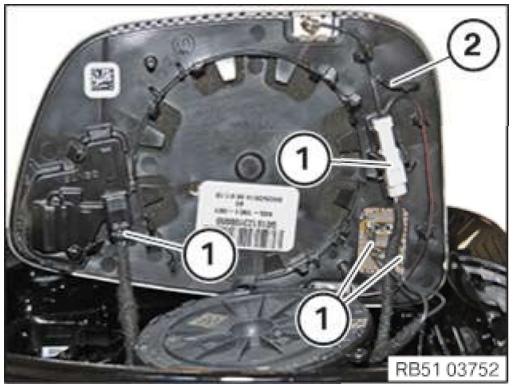
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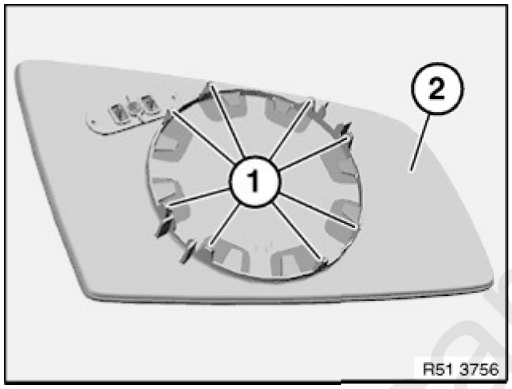
- Check the correct seating of the protective cap (2) on retaining ring (3) around (1).

POSTPROCESSES

4 – Installing the mirror glass



- Position mirror glass (2).
- Connect plug connections (1).



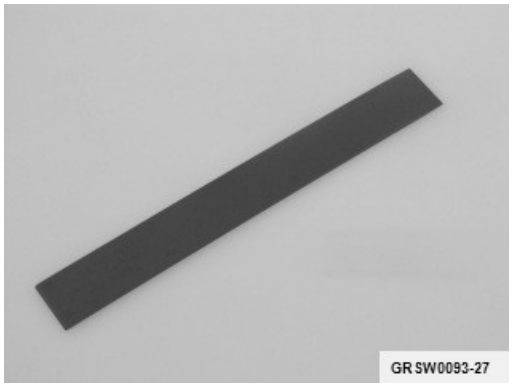
- Check whether retaining lugs (1) are missing or damaged and, if required, renew the mirror glass.
- Position the mirror glass (2) with the retaining lugs (1) flush with the drive for exterior mirror adjustment and clip in.
- Ensure correct locking.
- Check if the drive for exterior mirror adjustment is functioning correctly.

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Additional Information

Overview of Special Tools

0 496 571 (00 9 327) Wedge

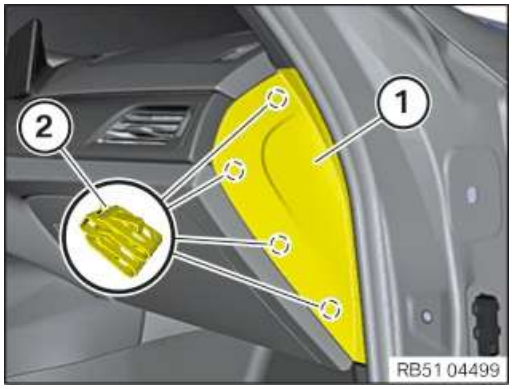


Common	Used in step 1
Usage	(Cleaning wedge) From 11/2008 this special tool replaces panel wedge 00 9 323 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

51 16 383 Removing and installing/replacing damper for glove box

PRELIMINARY WORK

1 – Remove the side panel on the right instrument panel



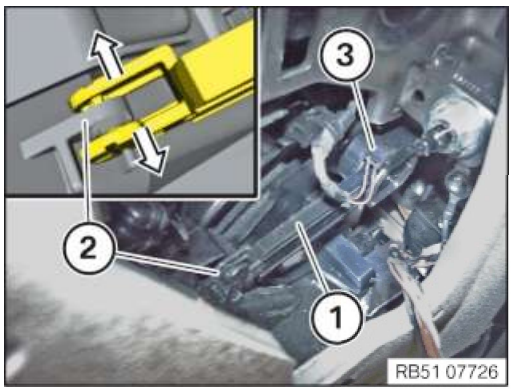
- Unclip and remove the side panel (1) towards the outside from the clamps (2).
- If necessary, unlock associated plug connection and disconnect.

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2 – Remove glove box damper

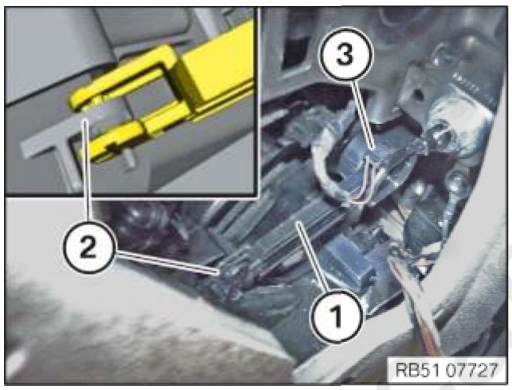


- Release plug connection (1) from the instrument panel and pull to the outside.



- Release damper (1) from retaining bracket (2) (spread slightly in the direction of the arrow).
- Open glove box cover.
- Twist damper (1) slightly in the clockwise direction and remove it outwards.
- Feed damper (1) out of the instrument panel.
- Disconnect plug connection (3).

3 – Installing glove box damper

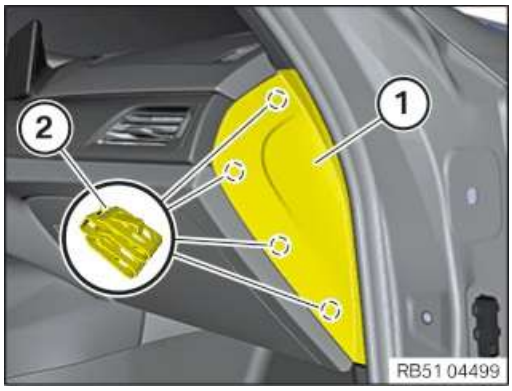


- Connect connector (3).
- Insert damper (1) in instrument panel.
- Open glove box cover.
- Install damper (1) and twist it slightly in the anticlockwise direction.
- Engage the damper (1) in the retaining bracket (2).



- Install plug connection (1) and secure at the instrument panel.

4 – Install the side panel on instrument panel on the right



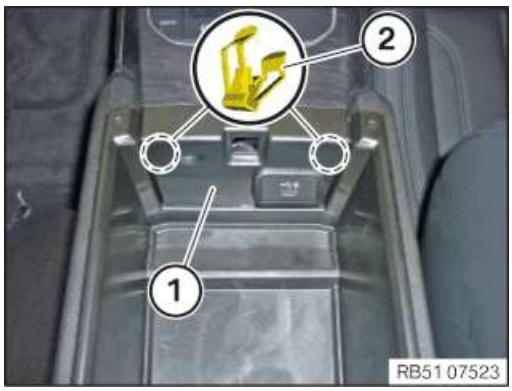
- If required, connect the associated connector.
- Feed in the side panel (1) and clip it in at the clamps (2).

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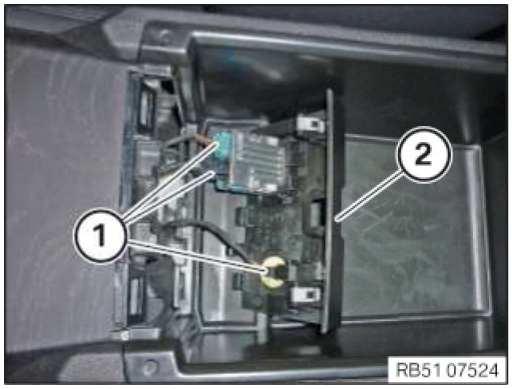
51 16 225 Removing and installing/replacing decorative trim on centre console on left or right

PRELIMINARY WORK

1 – Removing the trim in the storage compartment on the centre armrest



- Lever out the trim (1) with the special tool (2) toward the rear from the clamps 2 298 505.



- Unlock and disconnect the plug connections (1) and remove the trim (2) .

2 – Remove the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Release and remove the centre console trim upwards (1) as shown using the special tool 2 298 505 from the latch mechanisms.

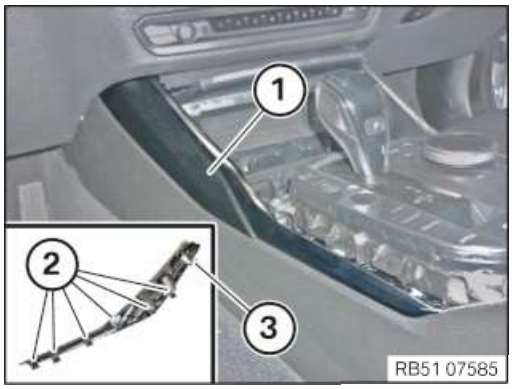
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MAIN WORK

3 – Remove decorative trim on centre console

NOTICE

Description is for left component only. Procedure on the right side is identical.

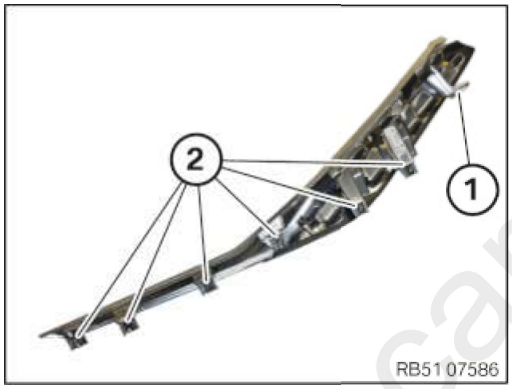


- Lever out the rear decorative trim (1) from the latch mechanisms (2) starting from the top.
- Feed out the decorative trim (1) backwards out of the guide (3) and remove.

4 – Installing the decorative trim to centre console

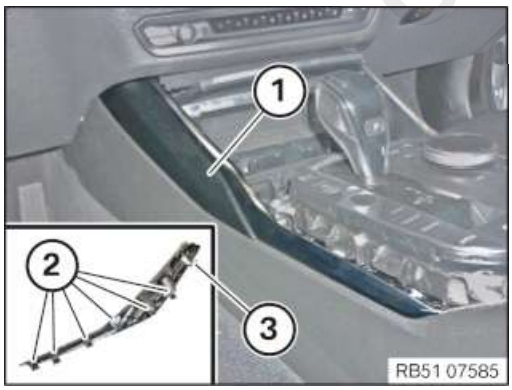
NOTICE

Description is for left component only. Procedure on the right side is identical.



- Check guide (1) and the latch mechanisms (2).

  Renew defective decorative trim.



- Feed in the decorative trim (1) forward in the guide (3).
- Engage decorative trim (1) in latch mechanisms (2).

POSTPROCESSES

5 – Installing the centre console trim

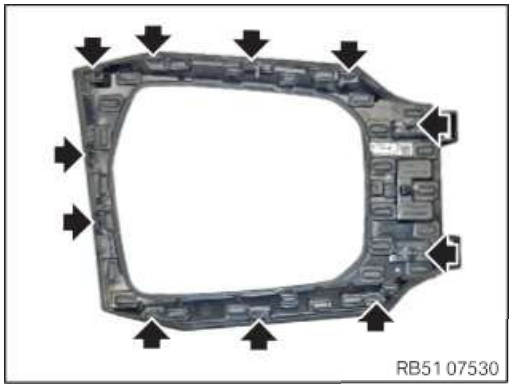
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RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

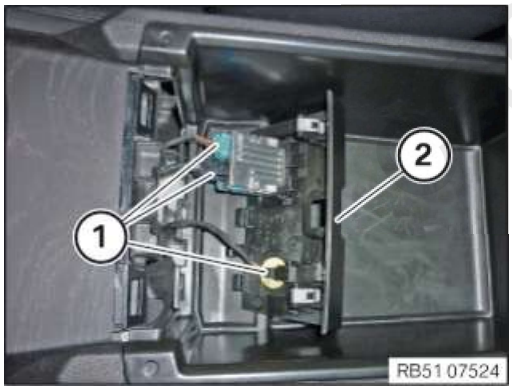


- Check all the latch mechanisms or clamps (arrows).
- In case the latch mechanisms or the clamps (arrows) are faulty, renew the centre console trim .

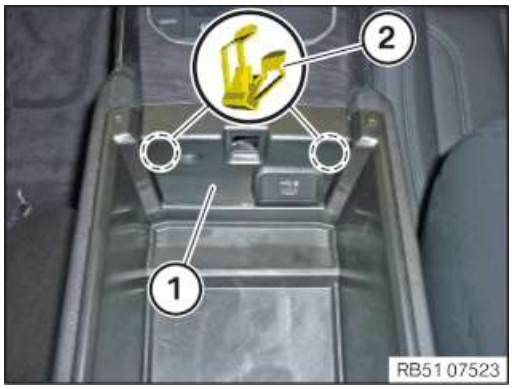


- Correctly position the centre console trim (1) and engage at the latch mechanisms.

6 – Installing the trim in the storage compartment of the centre armrest



- Mount the trim (2) and connect connector (1) and lock.

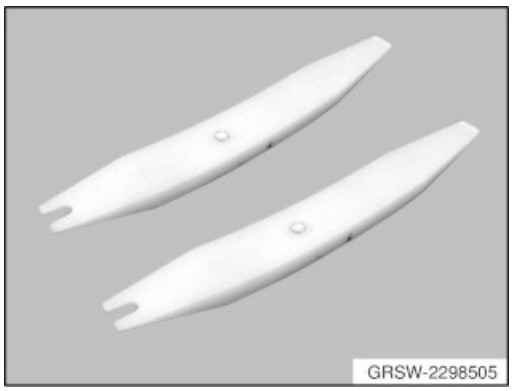


- Correctly position trim (1) and snap into the clamps (2).

Additional Information

Overview of Special Tools

2 298 505 Wedge



Common Used in step 12

Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

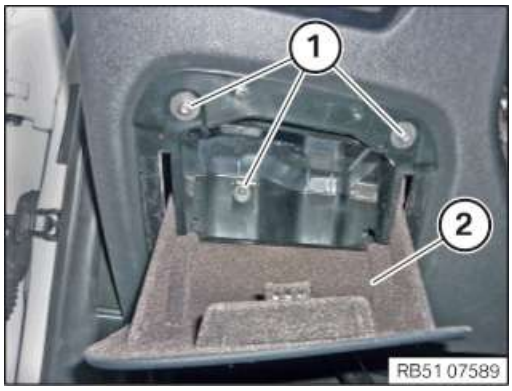
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51 16 355 Removing and installing/replacing driver's side fold-down compartment

Prerequisite

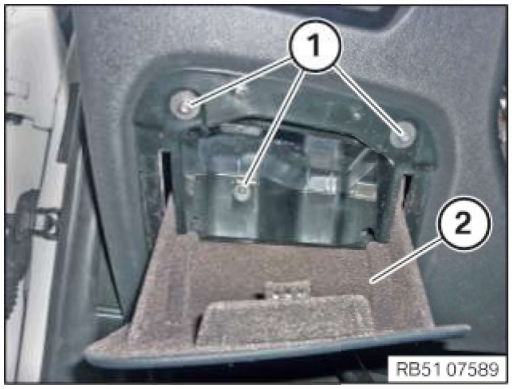
- The fold-down compartment is open.

1 – Removing the left fold-down compartment



- Loosen screws (1).
- Remove the fold-down compartment (2) toward the bottom.

2 – Installing the left fold-down compartment



- Install the fold-down compartment (2).
- Tighten the screws (1).

Fold-down compartment to instrument panel

Oval-head screw		Tightening torque	1,8 Nm

Additional Information

Overview of Tightening Torques

Fold-down compartment to instrument panel Used in step 2

Oval-head screw		Tightening torque	1,8 Nm

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51 16 202 Removing and installing/replacing front cup holder

Prerequisite

- The lid of the front storage compartment is open.

1 – Remove cupholder



- Remove the insert (1).



- Loosen screws (1).
- Feed the cup holder (2) out to the top.
- Unlock associated plug connections and disconnect.

2 – Install the cup holder



- Fix the cup holder (1) and the belonging connectors.
- Correctly position cup holder (1).
- Tighten the screws (2).

Cup holder to centre console

Oval-head screw		Tightening torque	1,8 Nm



- Insert the insert (1).

Additional Information

Overview of Tightening Torques

Cup holder to centre console Used in step 2

Oval-head screw		Tightening torque	1,8 Nm

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51 16 040 Removing and installing/replacing housing on left or right exterior mirror

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

1 – Removing the mirror glass

CAUTION

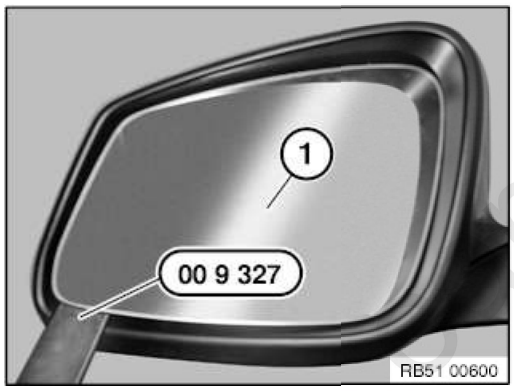
Glass splinters.

Danger of injury!

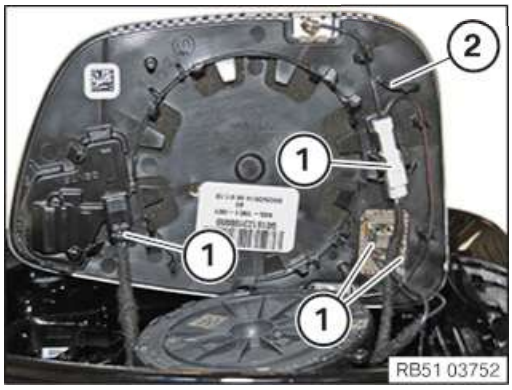
- If the mirror glass is damaged, wear safety goggles and protective gloves.

TECHNICAL INFORMATION

Carry out the work at temperatures between 18 °C and 23 °C only.



- Manually press the mirror glass (1) on the side of vehicle up to the end stop.
- Unclip the mirror glass (1) using special tool 0 496 571 (00 9 327) all the way around, starting with the outer side.



- Disconnect plug connection (1).
- Remove mirror glass (2).

2 – Removing the protective cap of the exterior mirror

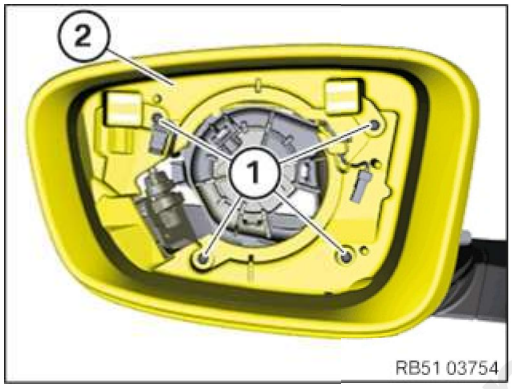


- Spread and release the latch mechanisms (1) of the protective cap on the exterior mirror.



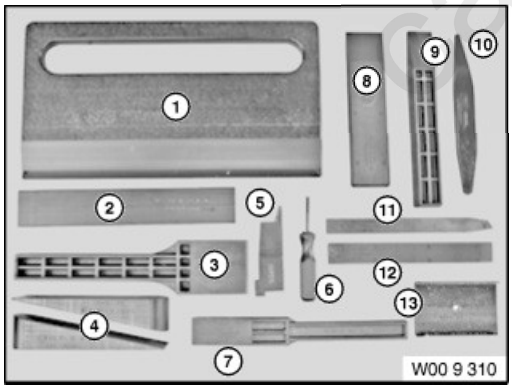
- Remove the protective cap (1) in the direction of the arrow.
- Disconnect associated plug connection.

3 – Removing retaining ring from exterior rearview mirror

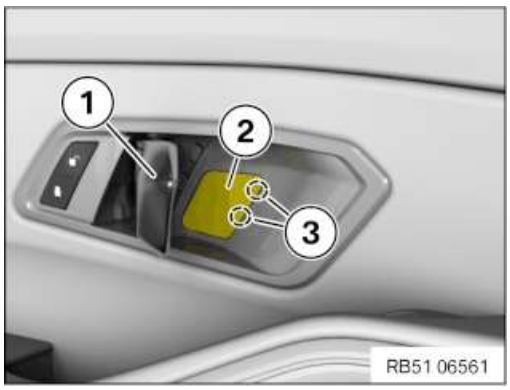


- Loosen screws (1).
- If necessary, feed out cable.
- Guide out retaining ring of exterior rearview mirror (2) in forward direction.

4 – Remove door trim panel

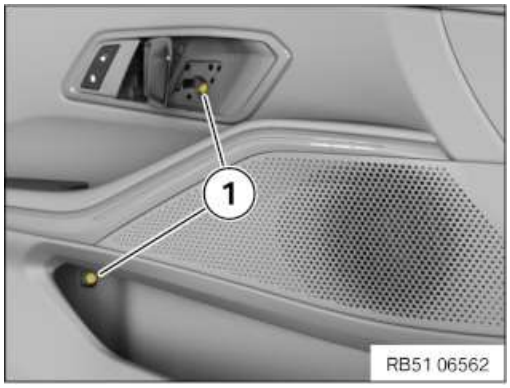


- Have the set of special tools 0 493 752 (00 9 329) ready.

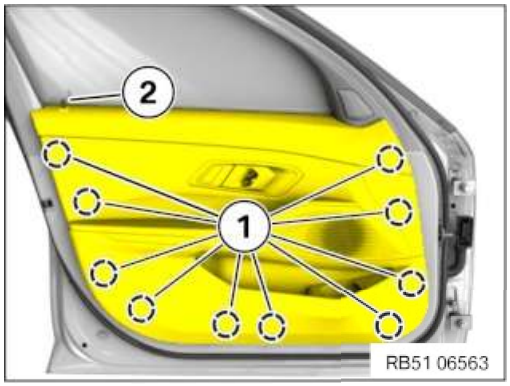


- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

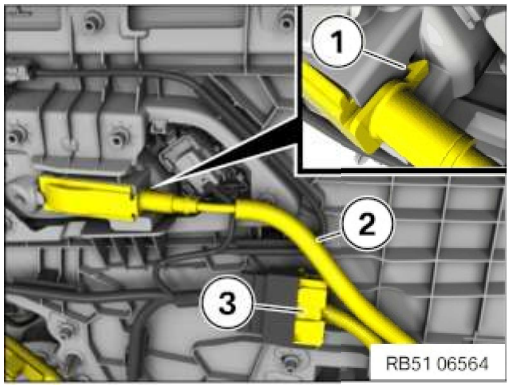
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- Loosen screws (1).



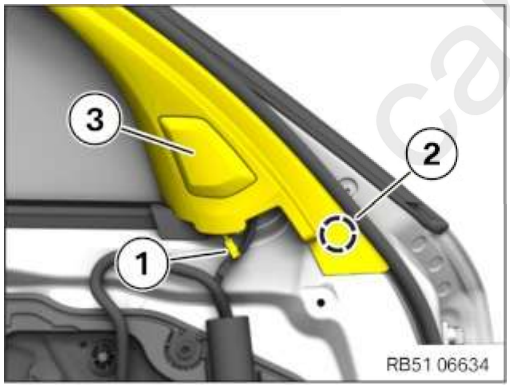
- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).



- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

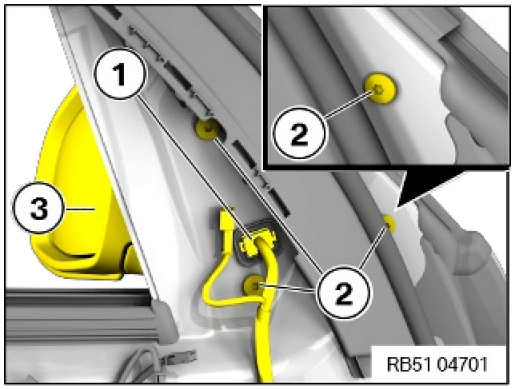
  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

5 – Partially removing the cover on the inner window frame



- If necessary, unlock and disconnect the plug connection (1).
- Unclip clip (2).
- Release the cover on inner window frame (3) in the area of the exterior rearview mirror.

6 – Removing the exterior mirror



- Unlock plug connection (1) and disconnect.
- Release the screws (2) and remove the exterior rearview mirror (3).

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7 – Disassemble exterior mirrors

RISK OF DAMAGE

Electrostatic discharge.

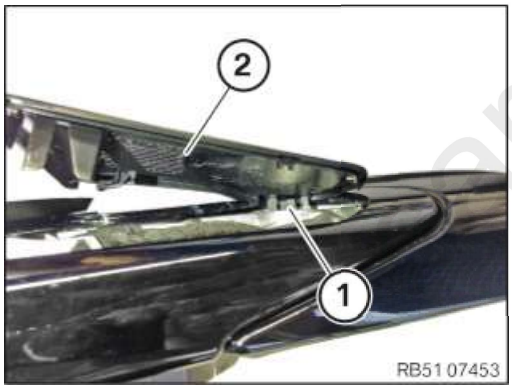
Damage to or destruction of electrical components.

- Leave electrical components in original packaging until just before they are installed. Use the original packaging only for any return shipments. Always package removed components straight away.
- Read and comply with user information on using the associated special tool 12 7 060.
- Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.
- Wear electrically conductive clothing and antistatic shoes (with ESD symbol).
- For additional information see: 61 35 Information on electrostatic discharge (ESD) protection.

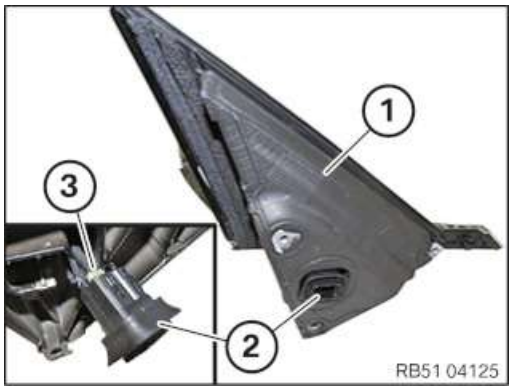
▸ **Remove cover on the mirror base**



- Release cover (1), beginning at the arrow, from the latch mechanisms along the dashed lines and lift slightly.



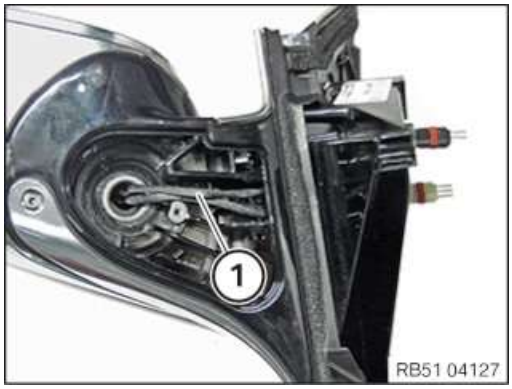
- Carefully release retaining lug (1) to the top with a small screwdriver and remove cover (2).



- Remove sound insulation (1).
- Pull out connector housing (2).
- Unpin connector (3) from the connector housing (2).

  The number of connectors (3) varies depending on the equipment specification.

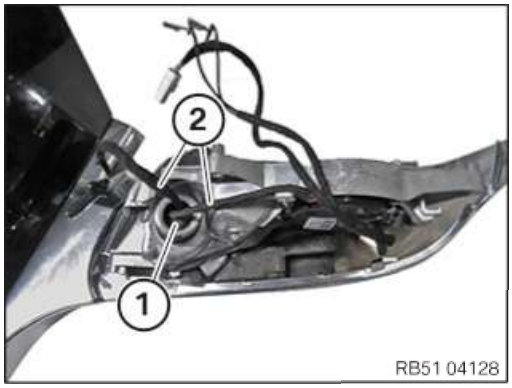
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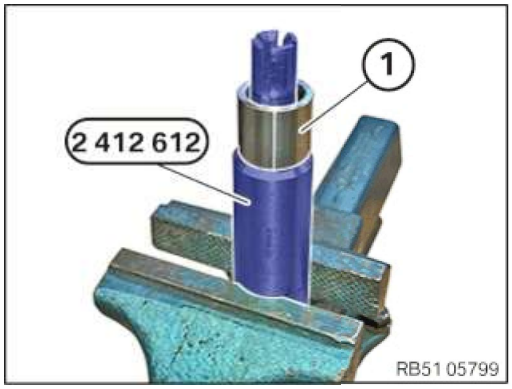
- Carefully feed out cables (1) individually.

  The pins on the cables (1) must not be damaged.

  The number of cables (1) varies depending on the equipment specification.

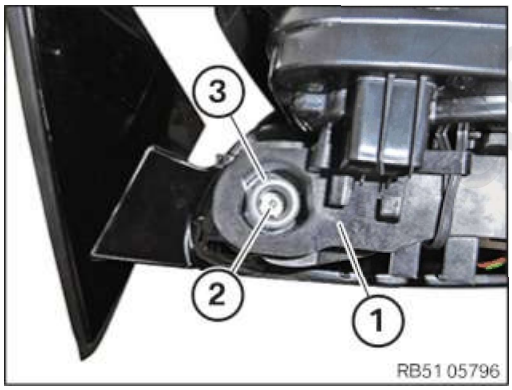


- Pull out foam insert (1) and the cables (2) from the mirror.

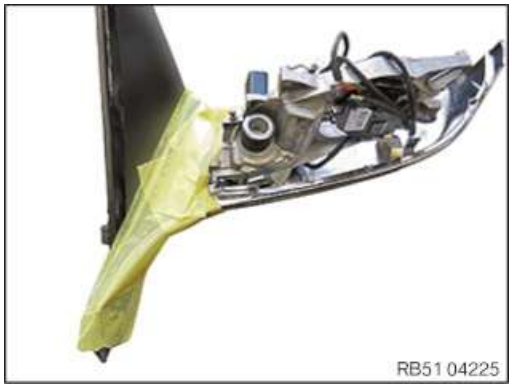


- Place special tool in the vice as shown and mount the adapter (1).

  Adapter (1) can be found in the repair kit.

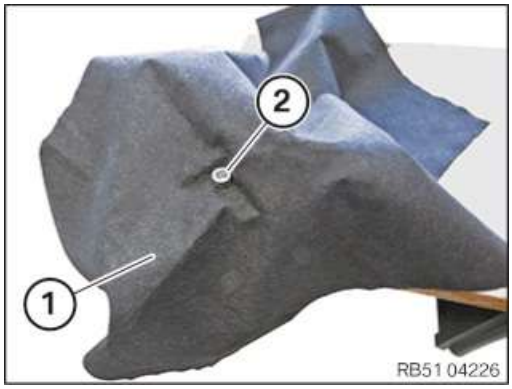


- Set up exterior mirror (1) from the special tool .
- Screw in countersunk screw (2) into the special tool and brace the sleeve (3).



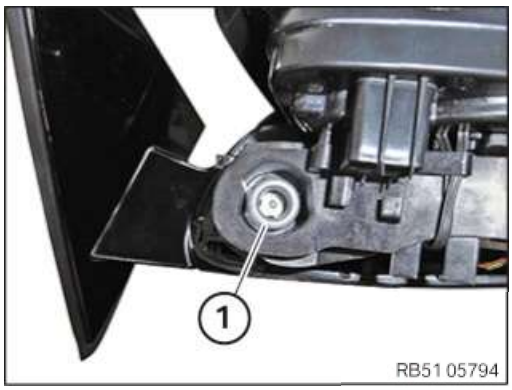
- To prevent swarf entering the joints: mask exterior rearview mirror with adhesive tape.

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- To prevent entry of swarf: cover exterior rearview mirror with a cloth.

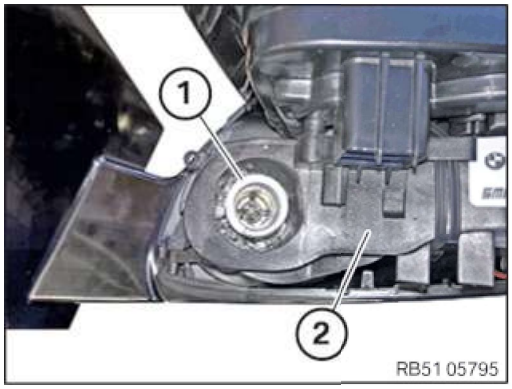
  The cloth (1) must have a minimum size of 70x70 cm and have an opening in the middle with a maximum size of 3x3 cm.
- Position the cloth (1) over the spring (2) of the exterior rearview mirror.
- Cover exterior rearview mirror with the prepared cloth.



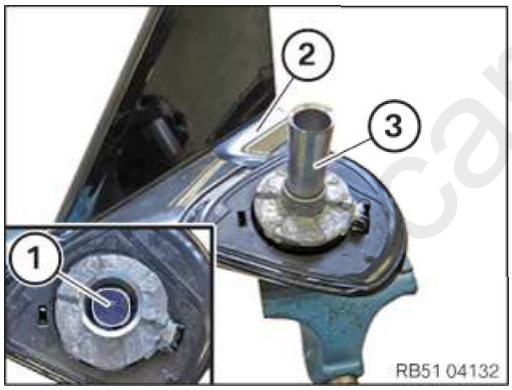
- Ask an auxiliary person to secure the exterior mirror.
- Drill out sleeve (1) with the taper bore.

  The spring has only one slight preload.

Note: The exterior rearview mirror is shown here without cloth for clarity.



- Remove all swarf with the vacuum cleaner.
- Remove cloth from the exterior rearview mirror.
- Remove spring (1) and upper mirror (2).



CAUTION

Sharp edges on the drilled out component.

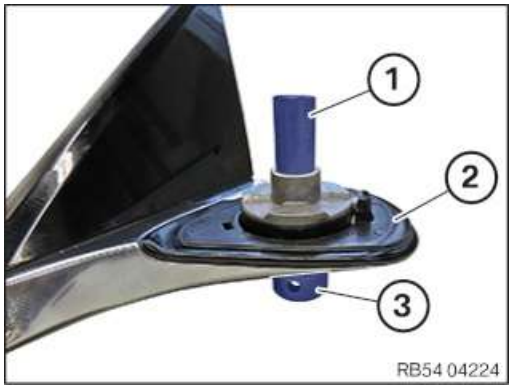
Danger of injury!

- Do not touch sharp edges.

- Make sure there is no swarf on the exterior rearview mirror.
- Release countersunk screw (1).
- Remove bottom mirror section (2) from the special tool.
- Clean swarfs from the threads in special tool .
- Remove sleeve (3) from bottom mirror section.

Note: If necessary, remove the burr at the top of the sleeve so that it is possible to pull the sleeve out of the bottom mirror section.

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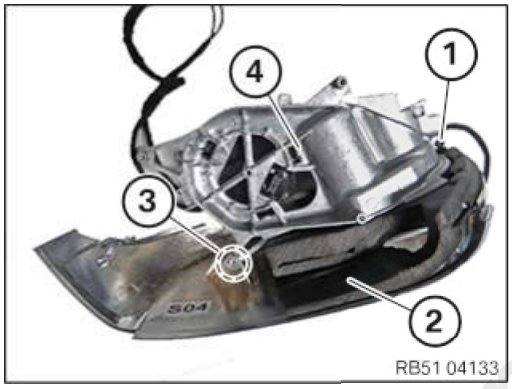


- If the sleeve (1) is jammed, use a suitable tool (3) (e.g. size 22 wrench socket) and position it under the sleeve (1).
- Remove the sleeve (1) from the exterior mirror (2) using a rubber mallet.



- Loosen screw (1).
- Detach cover (2) in area (3) and thread out from mirror housing (4).

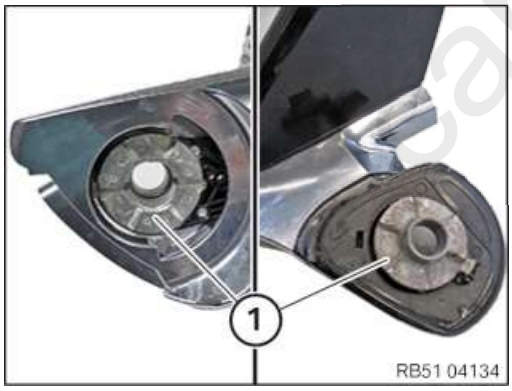
8 – Assemble exterior mirror



- Thread in cover (2) into the mirror housing (4) and attach in area(3).
- Tighten the screws (1).

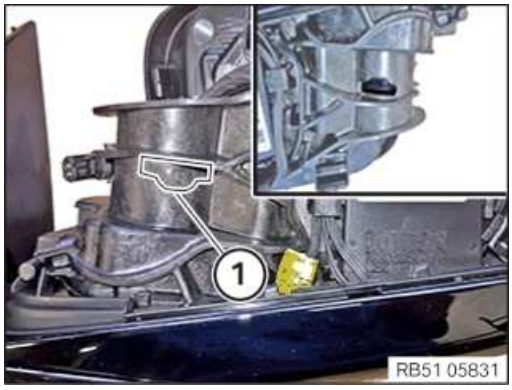
Housing to exterior mirror

	Tightening torque	0,85 Nm



- Clean the mirror contact surfaces (1).

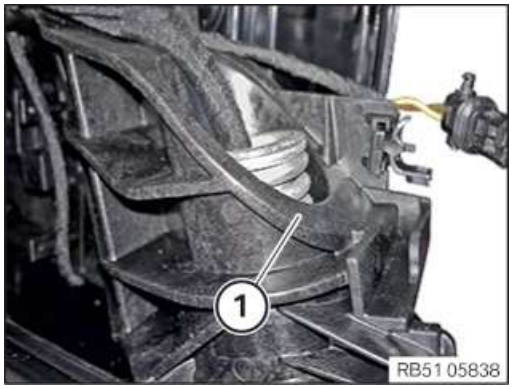
  There must not be any swarf on the contact surfaces (1).
- Coat the contact surfaces (1) with grease.



- **Perform the step only on mirror with fold-in function.**
- Drill out marked area (1) with a drill of **dia. 5mm**. Expose the area (1) completely as shown in the small image.

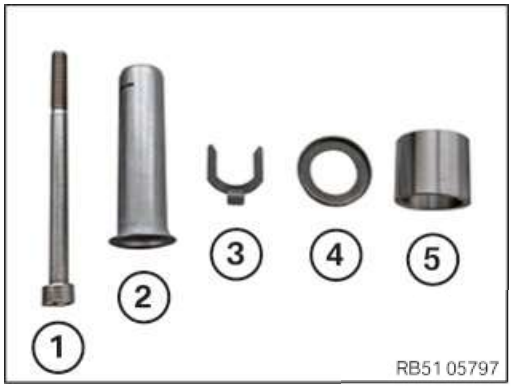
  The fuse is installed later through the opening.

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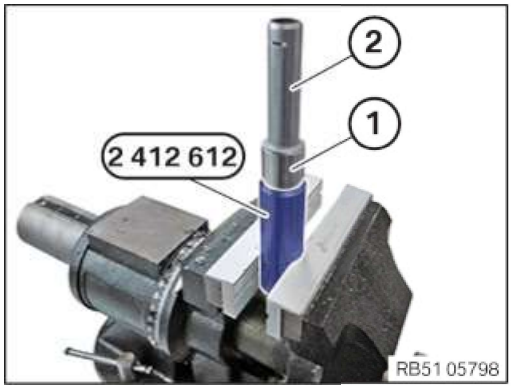


- In the basic version of the exterior mirror, the spring is accessible as shown.

  As a result, the fuse is installed later from the outside through the chamfer (1).

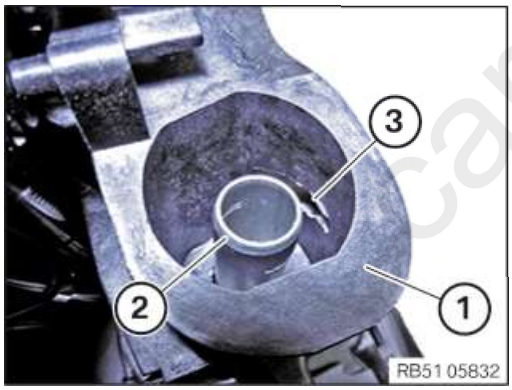


- Repair kit for the exterior mirror:
  - **1** Screw
  - **2** Holding sleeve
  - **3** Fuse
  - **4** Cup wheel
  - **5** Adapter

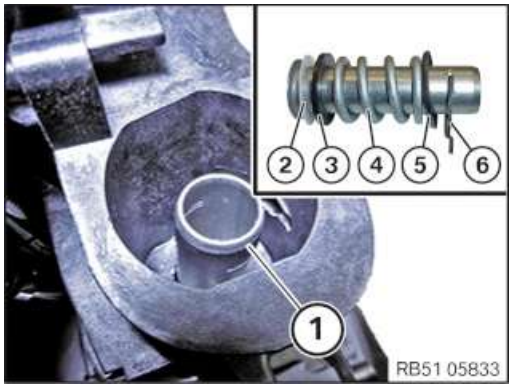


- Connect adapter (1) and the new sleeve (2) as shown on the special tool .

  Adapter (1) can be found in the repair kit.
- Fit the mirror base on the special tool .



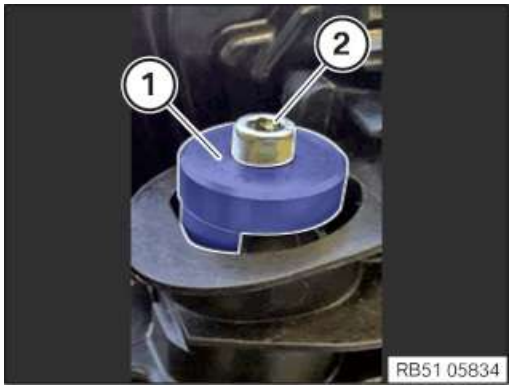
- Connect mirror (1) on the sleeve (2) and position it in such a way that the slots of the sleeve (2) are accessible through the opening (3).



- Comply with installation sequence on the sleeve (1) of the following parts.

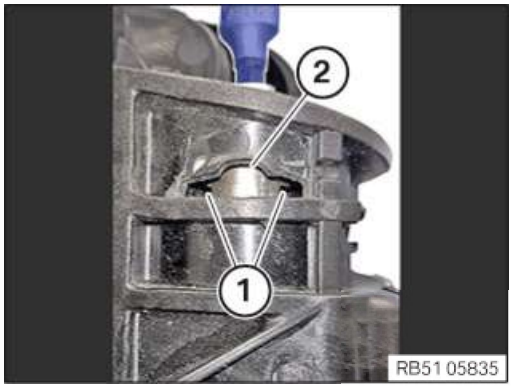
  Use new parts from the repair kit only.
- Attach the Teflon washer (1).
- Set up spring (2).
- Position the cup wheel (3) with the outline facing up.
- Fuse (4) is installed only in one of the following steps.

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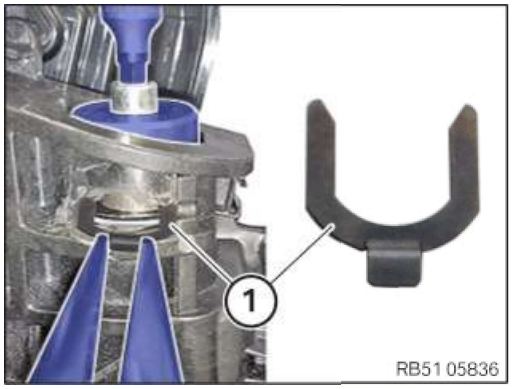


- Set up the fitting aid (1) on the cup wheel and fasten with the hexagon socket screw (2).

  Hexagon socket screw (2) can be found in the repair kit.



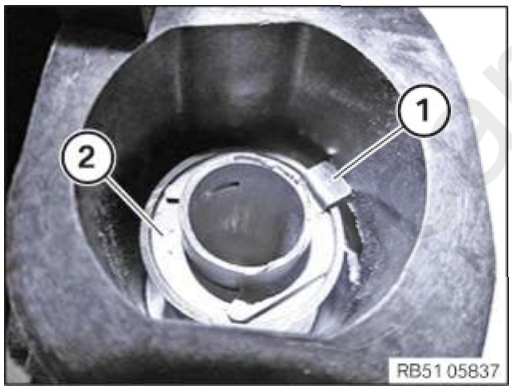
- Loosen spring carefully using the fitting aid until the slots of the sleeve (1) above the cup wheel are visible through the available opening (2).
- Twist fitting aid until the fuse can be fitted into the slots of the sleeve (2).



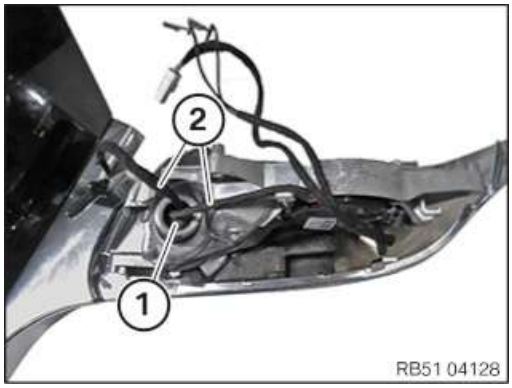
- Install fuse (1) with long-nose pliers in the slots of the sleeve.

  The crank of the fuse (1) must point up.

  Fuse (1) must engage completely into the cup wheel.



- Fuse (1) must lie in the cup wheel (2) as shown.

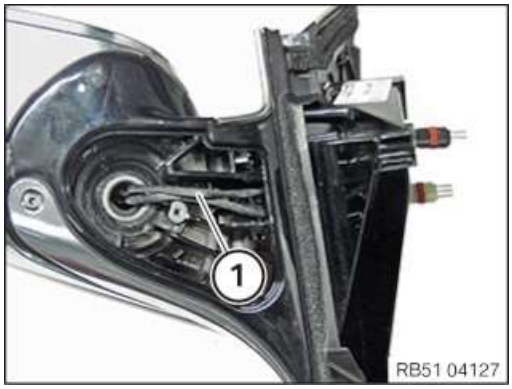


- Thread in cable (2) into the mirror.

  The pins on the cables (2) must not be damaged.

  The number of cables (2) varies depending on the equipment.
- Use foam inserts (1).

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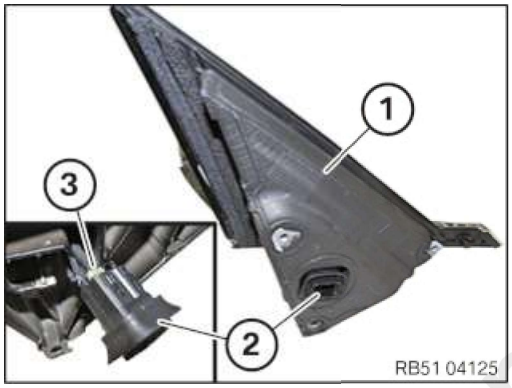
- Feed in cable (1).

▸ **Install the cover on the mirror base**



- Check the latch mechanisms on the cover (1) .

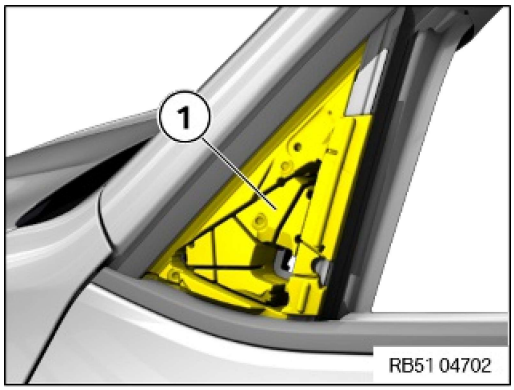
  Renew the cover (1) if the latch mechanisms are defective.
- Correctly position and engage the cover (1).



- Pin connector (3) into the connector housing (2).
- Use connector housing (2).
- Use sound insulation (1).

POSTPROCESSES

9 – Installing the exterior mirror



Check

- Check mirror triangle seal (1) for damage.

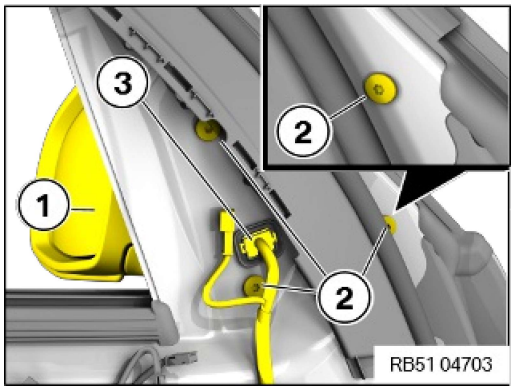
Result

» The mirror triangle seal is damaged.

Measure

- Replace mirror triangle seal .

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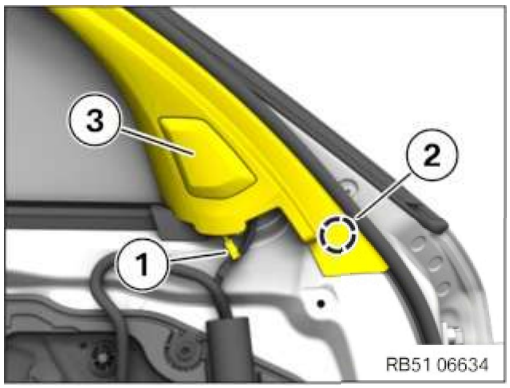
- Position exterior rearview mirror (1) and tighten screws (2).

Exterior mirror to door

Thread-tapping hexagon screw		Tightening torque	10 Nm

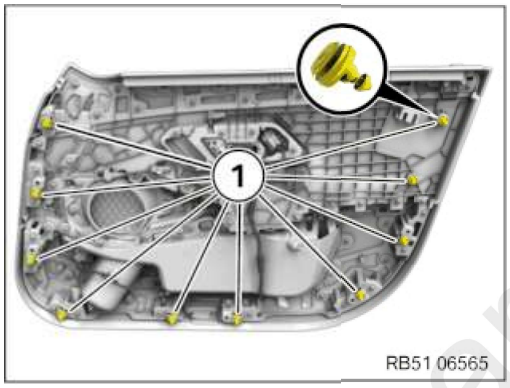
- Connect connectors (3) and lock.

10 – Installing the cover on the inside of the window frame partially



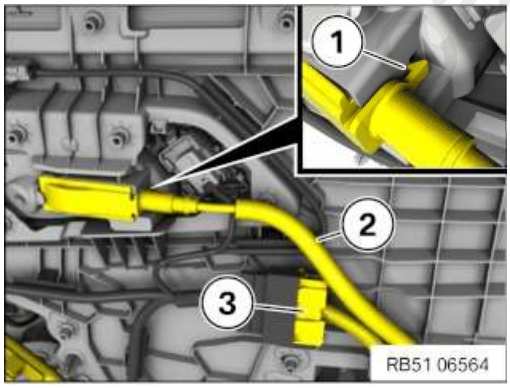
- Mount cover on the inner window frame (3) in the area of the exterior rearview mirror.
- Clip in the clip (2).
- If necessary, connect the connector (1) and lock it.

11 – Install door trim panel

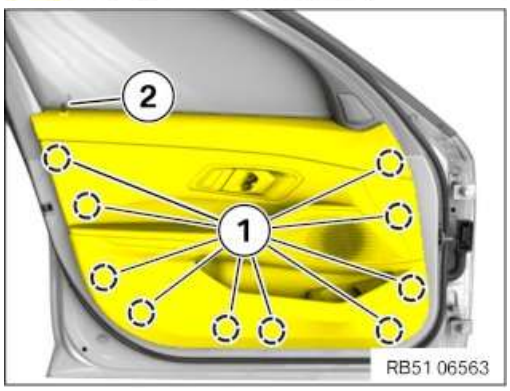


- Renew the clips (1).

  Parts: Clips

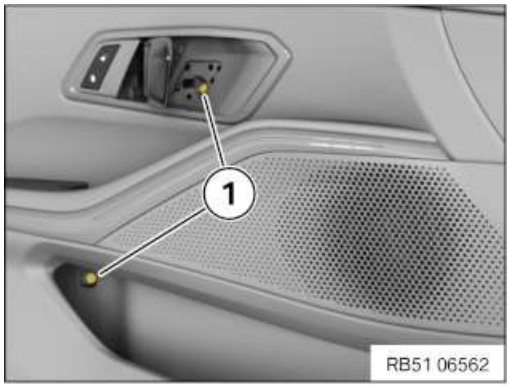


- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).

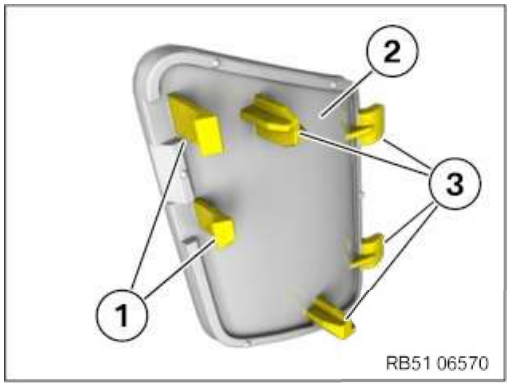
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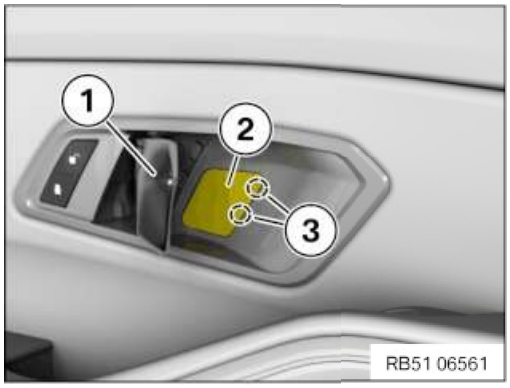
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm

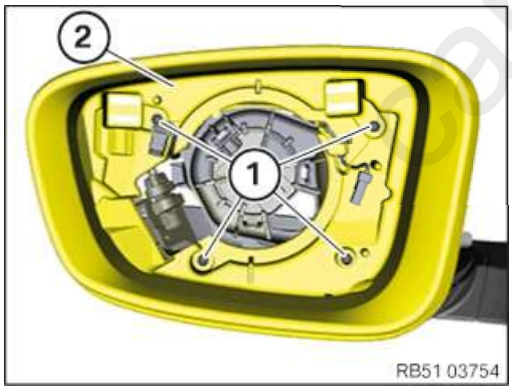


- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

12 – Installing the retaining ring on the exterior rearview mirror



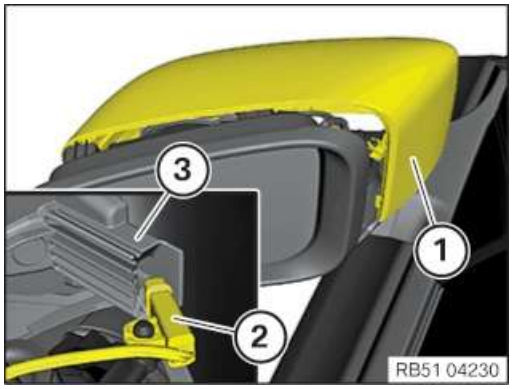
- Feed in the retaining ring on the exterior rearview mirror (2).
- If necessary, feed in cable.
- Tighten the screws (1).

13 – Installing the protective cap of the exterior mirror

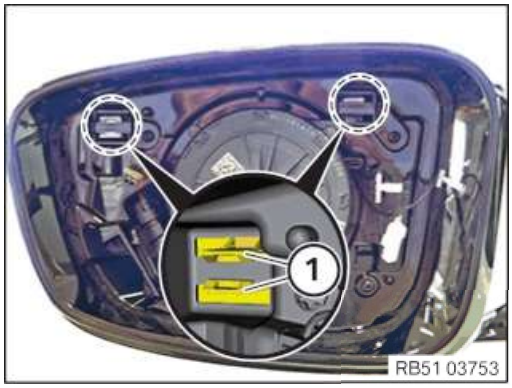


- Position the connector (1) on the mounting (2).
- Position connector (1) as shown.

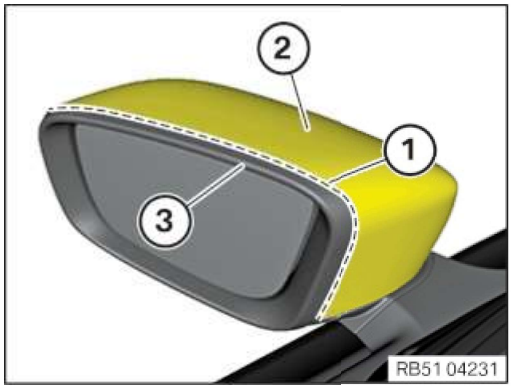
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- Position the protective cap (1) on the exterior mirror.
- Feed in the connector (2) for the side repeater (3).
- Push protective cap (1) on exterior mirror and lock.

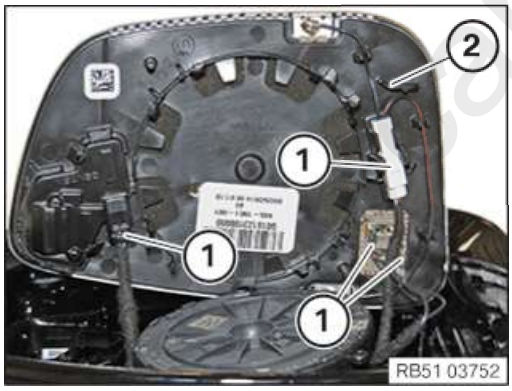


- Make sure that the latch mechanisms (1) are correctly fitted.

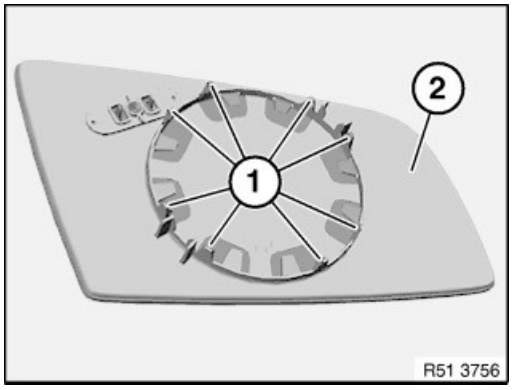


- Check the correct seating of the protective cap (2) on retaining ring (3) around (1).

14 – Installing the mirror glass



- Position mirror glass (2).
- Connect plug connections (1).



- Check whether retaining lugs (1) are missing or damaged and, if required, renew the mirror glass.
- Position the mirror glass (2) with the retaining lugs (1) flush with the drive for exterior mirror adjustment and clip in.
- Ensure correct locking.
- Check if the drive for exterior mirror adjustment is functioning correctly.

15 – Check the functions of the exterior rearview mirror

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- Check all functions of the exterior rearview mirror.

  Depending on the equipment specification, an exterior rearview mirror has various functions.

  - Fold-in function
  - Turn indicators
  - Adjustment of the mirror glass
  - Top View

Additional Information

Overview of Tightening Torques

Housing to exterior mirror — Used in step 8

		Tightening torque	0,85 Nm

Exterior mirror to door — Used in step 9

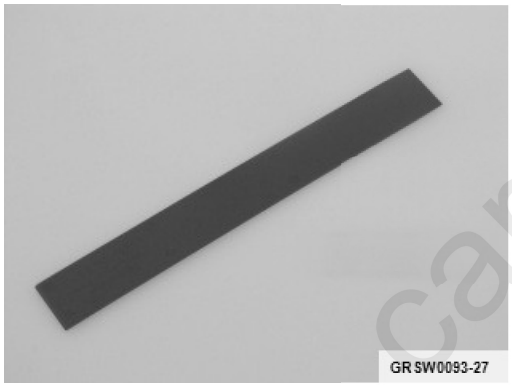
Thread-tapping hexagon screw		Tightening torque	10 Nm

Door trim panel to door — Used in step 11

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

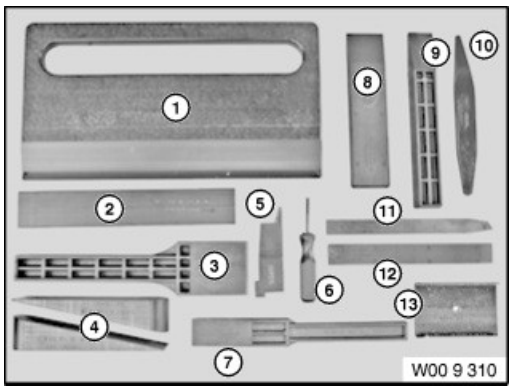
0 496 571 (00 9 327) Wedge



Common — Used in step 1

Usage	(Cleaning wedge) From 11/2008 this special tool replaces panel wedge 00 9 323 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

0 493 752 (00 9 329) Case



Common — Used in step 4

Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

Links

Repair instructions	Used in step

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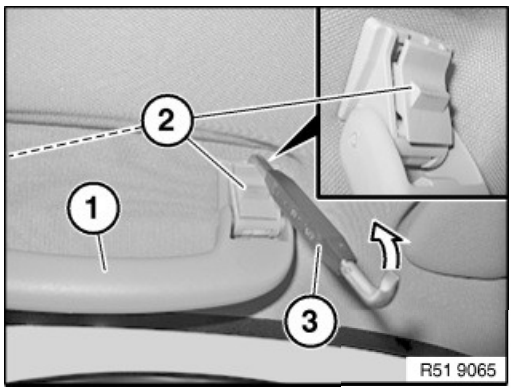
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51 16 450 Removing and installing/replacing rear left/right grab handle

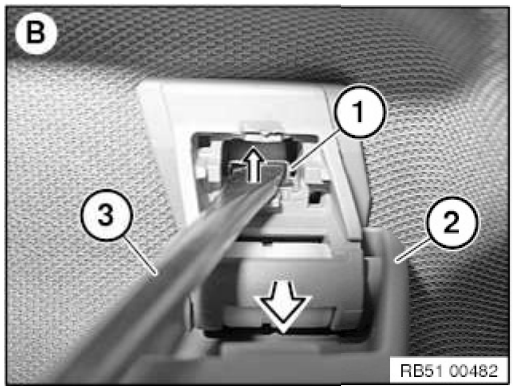
NOTICE

Description is for left component only. Procedure on the right side is identical.

1 – Removing the grab handle

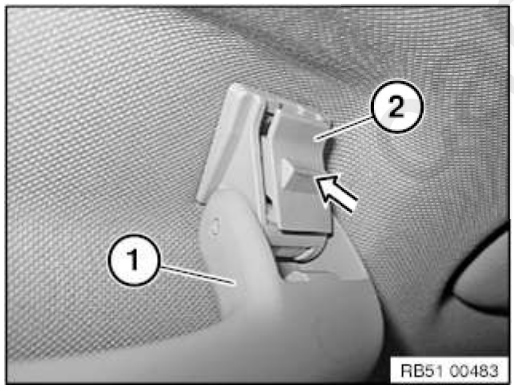


- Expand the grab handle (1) towards the bottom.
- Disengage and remove the locking insert (2) with an angle screwdriver (3) as shown.



- Pull the grab handle (2) slightly to the inside and hold it.
- Use a suitable screwdriver (3) to detach the upper and lower release tabs (1).
- Guide the grab handle (2) out.
- Repeat the operation on the other side of the grab handle (2).

2 – Installing the grab handle



- Insert the grab handle (1) into body.
- Correctly clamp in the grab handle (1), as otherwise the locking inserts (2) on the grab handle (1) cannot correctly engage.
- Engage the locking inserts (2) on both sides of the grab handle (1).

51 16 169 Replace centre console trim to the rear inside

PRELIMINARY WORK

1 – Removing the rear centre console trim

RISK OF DAMAGE

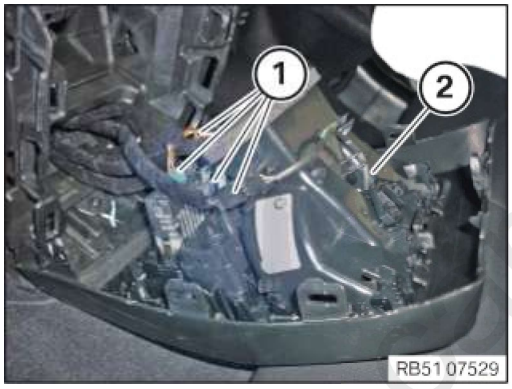
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Release centre console trim (1) backwards from the latch mechanisms at the side and pull it a little way towards the rear.



- Unlock and disconnect plug connections (1).
- Remove the centre console trim (2).

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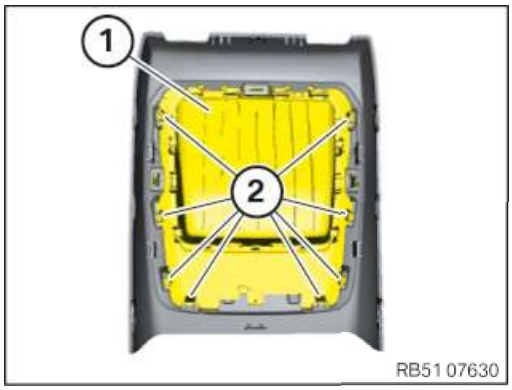
2 – Remove the rear centre console trim inwards

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Release the centre console trim (1) at the latch mechanisms (2) and remove.

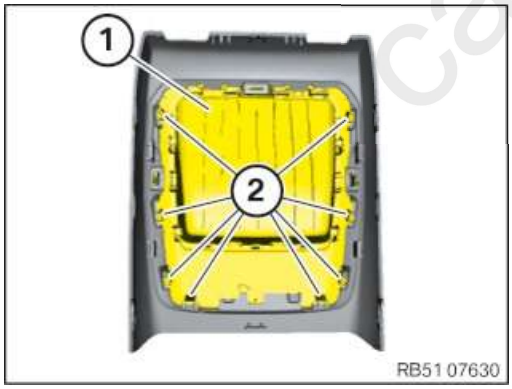
3 – Install the rear centre console trim inwards

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

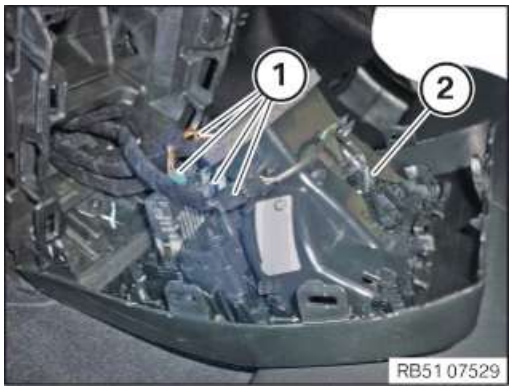
- Protect working area.
- Handle tools and components carefully.



- Install the centre console trim (1) and engage it at the latch mechanisms (2).

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4 – Installing the rear centre console trim



- Install the centre console trim (2).
- Connect connectors (1) and lock.



- Position centre console trim (1) and engage at the latch mechanisms at the side.

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51 16 151 Replace front storage compartment

PRELIMINARY WORK

1 – Remove cupholder

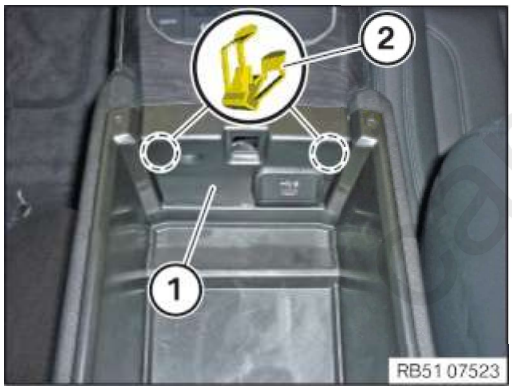


- Remove the insert (1).

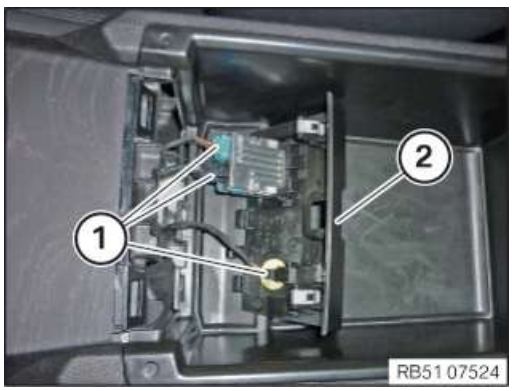


- Loosen screws (1).
- Feed the cup holder (2) out to the top.
- Unlock associated plug connections and disconnect.

2 – Removing the trim in the storage compartment on the centre armrest



- Lever out the trim (1) with the special tool (2) toward the rear from the clamps 2 298 505.



- Unlock and disconnect the plug connections (1) and remove the trim (2) .

3 – Remove the centre console trim

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RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



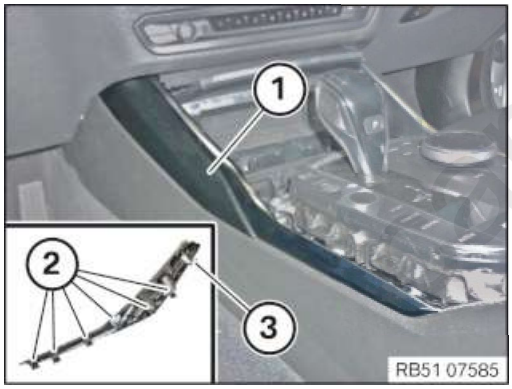
- Release and remove the centre console trim upwards (1) as shown using the special tool 2 298 505 from the latch mechanisms.

4 – Removing the decorative trim on the centre console trim on the left and right

▶ **Remove decorative trim on centre console**

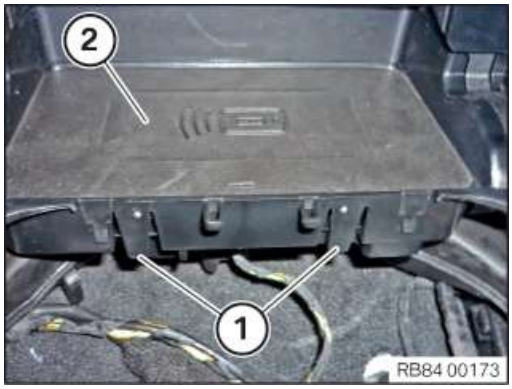
NOTICE

Description is for left component only. Procedure on the right side is identical.

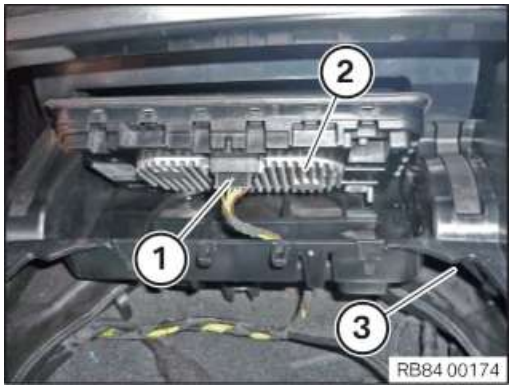


- Lever out the rear decorative trim (1) from the latch mechanisms (2) starting from the top.
- Feed out the decorative trim (1) backwards out of the guide (3) and remove.

5 – Removing the wireless charging station



- Loosen the latch mechanisms (1) and push out the wireless charging station (2) upwards.



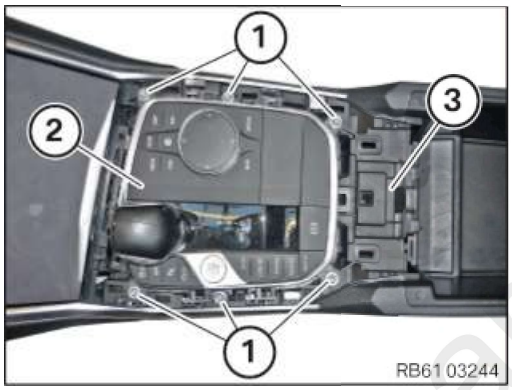
- Disconnect the connector (1) and remove the wireless charging station (2) from the centre console (3).

6 – Remove the operating facility in the centre console

► **Disconnecting all battery earth leads**

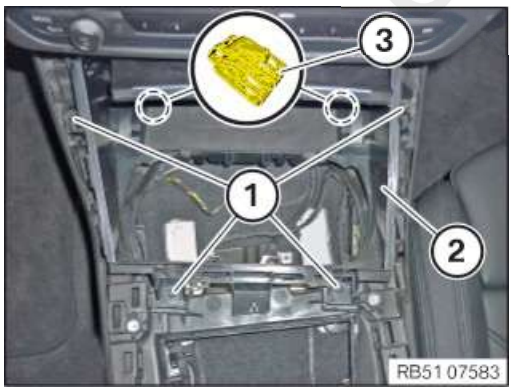


- See additional information.



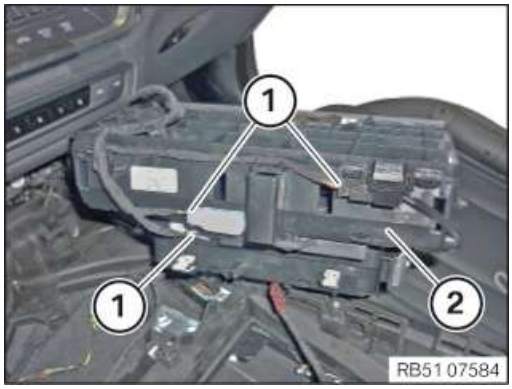
- Loosen screws (1).
- Remove the operating facility in the centre console (2) from the centre console (3).

7 – Removing the storage compartment of the front centre console



- Loosen screws (1).
- Remove storage compartment trim (2) backwards out of clamps (3).

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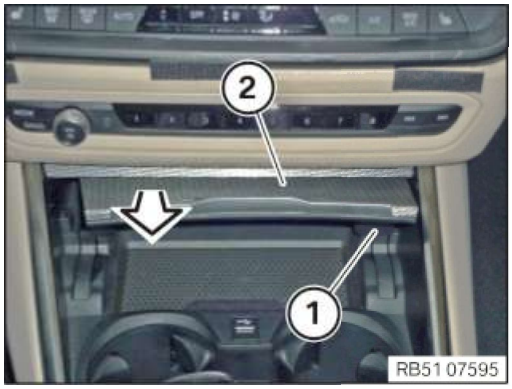


- Unlock and disconnect all the plug connections (1) and remove the storage compartment (2).

MAIN WORK

8 – When replacing the storage compartment, remount the front centre console

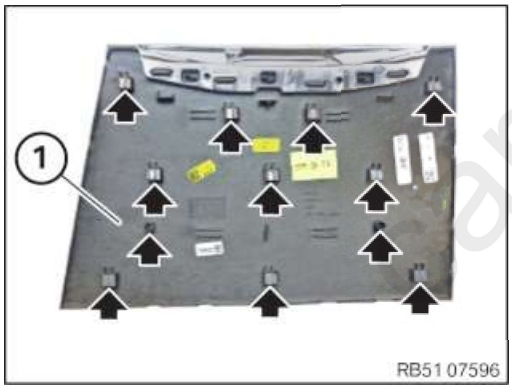
▸ **Removing the front storage compartment trim**



- Hold down the lower section (1) and move the storage compartment trim (2) slightly to the rear in direction of arrow.

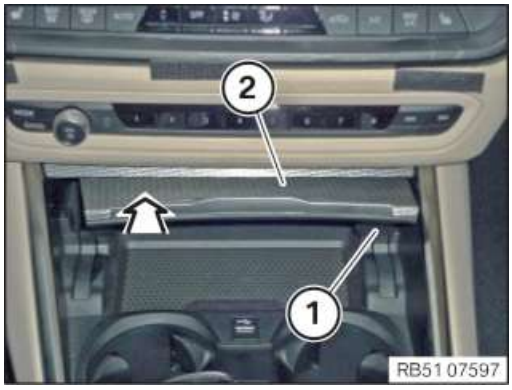
  Guide out the storage compartment trim (2) toward the top and remove it.

▸ **Installing front storage compartment trim**



- Check all the guides or latch mechanisms (arrows).

  If there are damaged guides or latch mechanisms, renew the storage compartment trim (1).



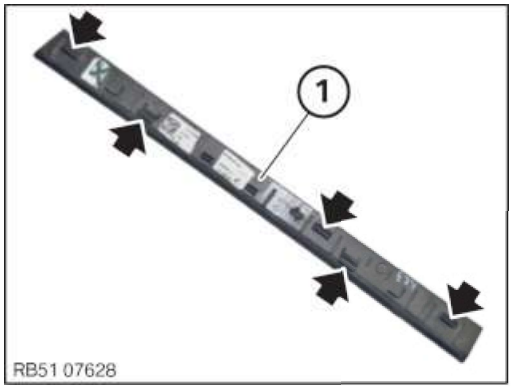
- Position and clip in storage compartment trim (2) on the lower section (1) in the direction of arrow.

▸ **Remove centre stack trim**

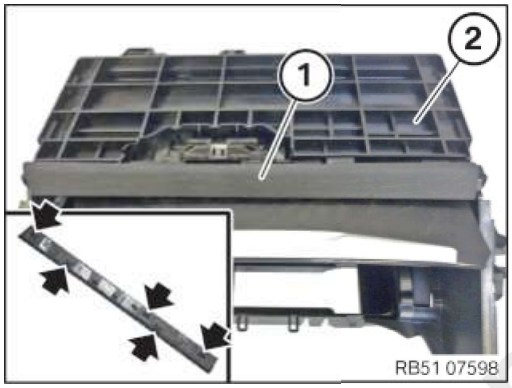


- Release centre stack trim (1) backwards from the latch mechanisms (arrows) and remove from the storage compartment (2).

▸ **Installing centre stack trim**

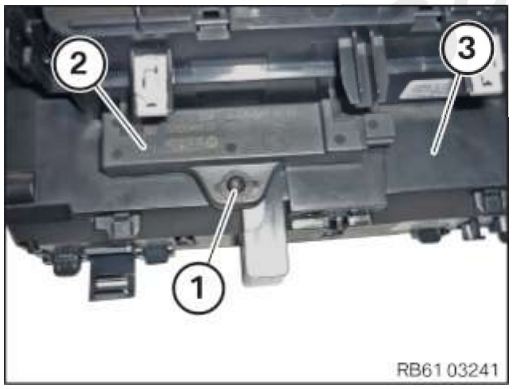


- Check the latch mechanisms (arrows).
- In case of faulty latch mechanisms, renew the centre stack trim (1).



- Position the centre stack trim (1) correctly on storage compartment (2) and engage into latch mechanisms (arrows).

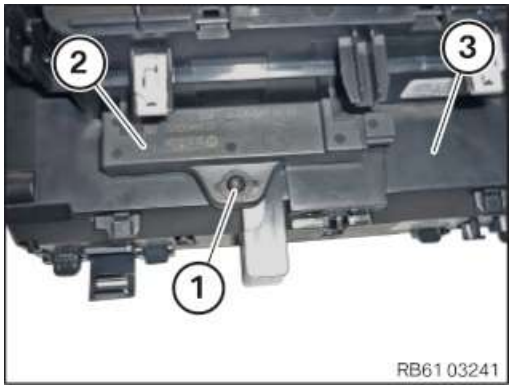
▸ **Removing interior aerial on the front storage compartment**



- Loosen screw (1).
- Detach the interior aerial (2) from the storage compartment (3) and remove.

▸ **Install front interior aerial on storage compartment**

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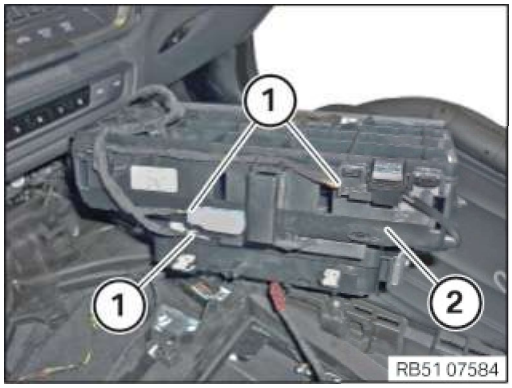
- Position interior aerial (2) on storage compartment (3) and tighten into the screw (1).

Front interior aerial

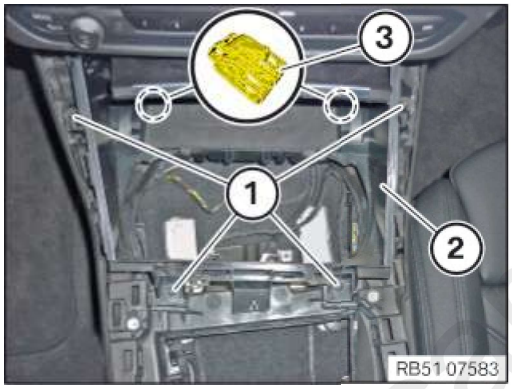
Screw		Tightening torque	2,3 Nm

POSTPROCESSES

9 – Installing the storage compartment of the front centre console



- Mount the storage compartment (2) and connect connectors (1).

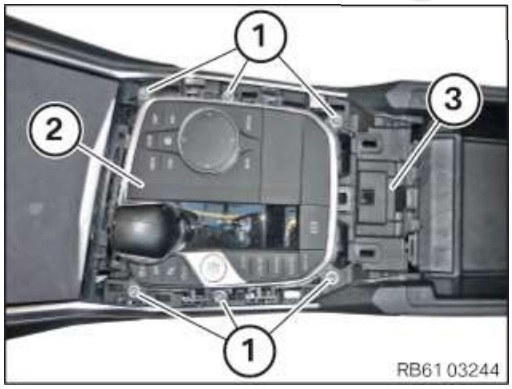


- Engage rear storage compartment trim (2) into clamps (3).
- Tighten the screws (1).

Storage compartment to centre console

Oval-head screw		Tightening torque	1,8 Nm

10 – Install the operating facility in the centre console



- Position operating facility (2) in the centre console (3).
- Tighten the screws (1).

Gear selector switch to centre console trim

Screw		Tightening torque	1,8 Nm

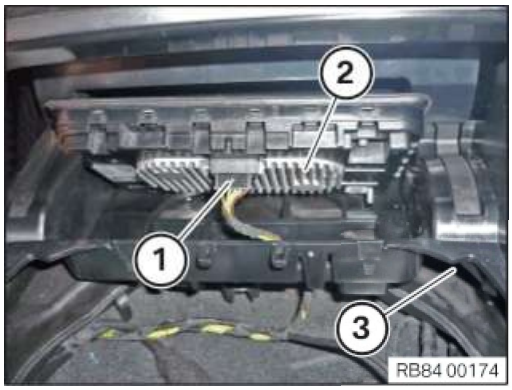
▸ **Disconnecting all battery earth leads**

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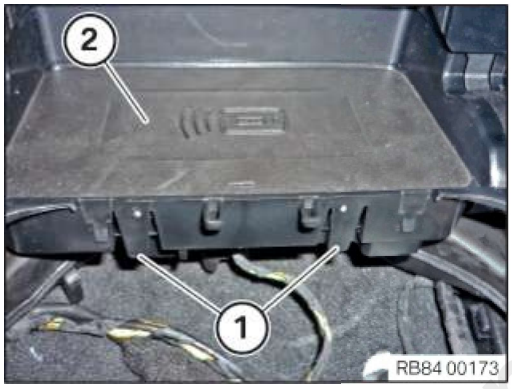


- See additional information.

11 – Installing the wireless charging station



- Connect connector (1).
- Position the wireless charging station (2) in the centre console (3).



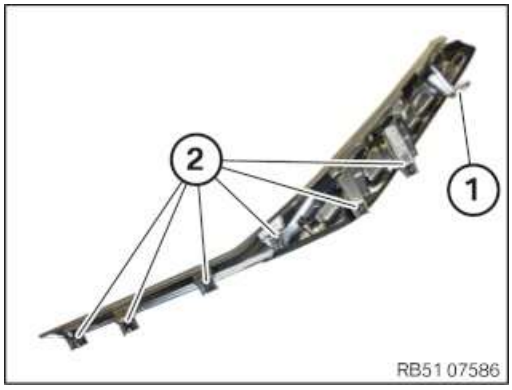
- Press the wireless charging station (2) down till the locking units (1) are engaged correctly.

12 – Install decorative trim on centre console on left and right

▸ **Installing the decorative trim to centre console**

NOTICE

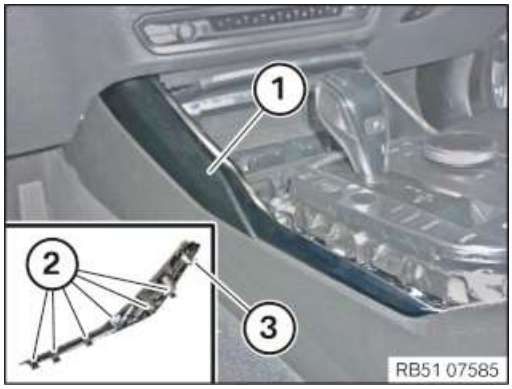
Description is for left component only. Procedure on the right side is identical.



- Check guide (1) and the latch mechanisms (2).

  Renew defective decorative trim.

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- Feed in the decorative trim (1) forward in the guide (3).
- Engage decorative trim (1) in latch mechanisms (2).

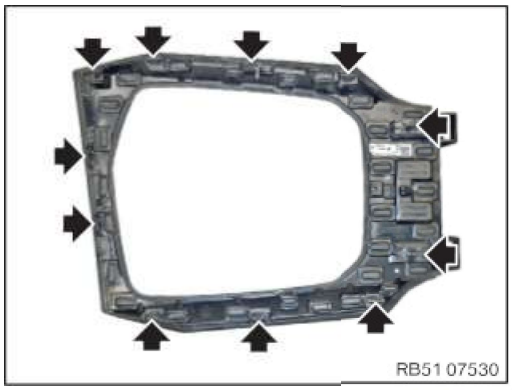
13 – Installing the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

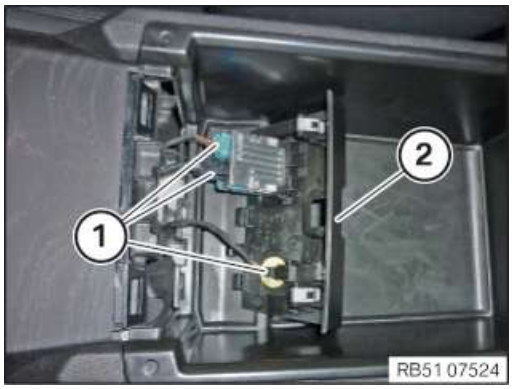


- Check all the latch mechanisms or clamps (arrows).
- In case the latch mechanisms or the clamps (arrows) are faulty, renew the centre console trim .



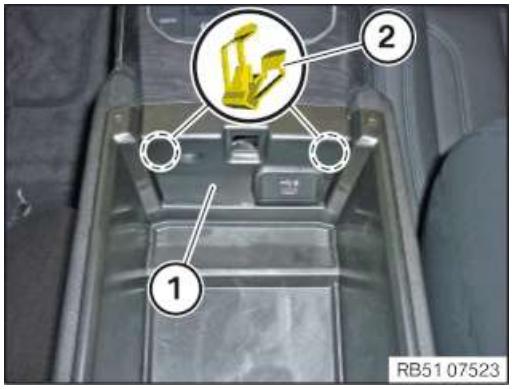
- Correctly position the centre console trim (1) and engage at the latch mechanisms.

14 – Installing the trim in the storage compartment of the centre armrest



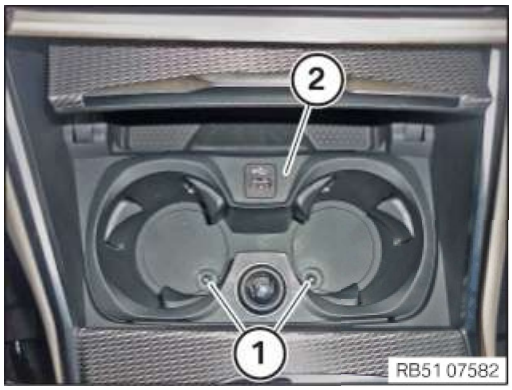
- Mount the trim (2) and connect connector (1) and lock.

mdiagn.com



- Correctly position trim (1) and snap into the clamps (2).

15 – Install the cup holder



- Fix the cup holder (1) and the belonging connectors.
- Correctly position cup holder (1).
- Tighten the screws (2).

Cup holder to centre console

Oval-head screw		Tightening torque	1,8 Nm



- Insert the insert (1).

Additional Information

Overview of Tightening Torques

Front interior aerial Used in step 8

Screw		Tightening torque	2,3 Nm

Storage compartment to centre console Used in step 9

Oval-head screw		Tightening torque	1,8 Nm

Gear selector switch to centre console trim Used in step 10

Screw		Tightening torque	1,8 Nm

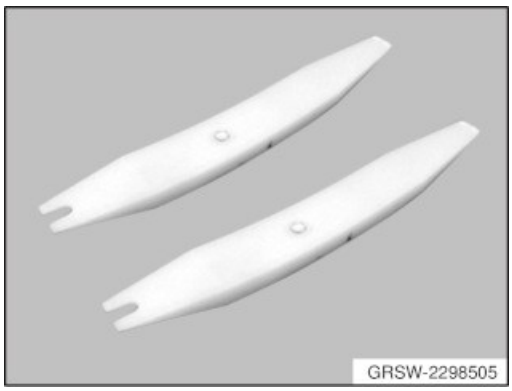
Cup holder to centre console Used in step 15

Oval-head screw		Tightening torque	1,8 Nm

Overview of Special Tools

cardiagn.com

2 298 505 Wedge



Common	Used in step 23
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	610
61 20 900 Disconnecting and connecting battery earth lead	610
61 20 900 Disconnecting and connecting battery earth lead	610
61 20 900 Disconnecting and connecting battery earth lead	610
61 20 900 Disconnecting and connecting battery earth lead	610
61 20 900 Disconnecting and connecting battery earth lead	610
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	610
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	610
61 20 900 Disconnecting and connecting battery earth lead	610
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	610
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	610
61 20 900 Disconnecting and connecting battery earth lead	610
61 20 900 Disconnecting and connecting battery earth lead	610
61 20 900 Disconnecting and connecting battery earth lead	610
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61 20 900 Disconnecting and connecting battery earth lead	610
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	610
61 20 900 Disconnecting and connecting battery earth lead	610
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61 20 900 Disconnecting and connecting battery earth lead	610
61 20 900 Disconnecting and connecting battery earth lead	610
61 20 900 Disconnecting and connecting battery earth lead	610
61 20 900 Disconnecting and connecting battery earth lead	610

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51 16 164 Replace the rear centre console trim

PRELIMINARY WORK

1 – Removing the rear centre console trim

RISK OF DAMAGE

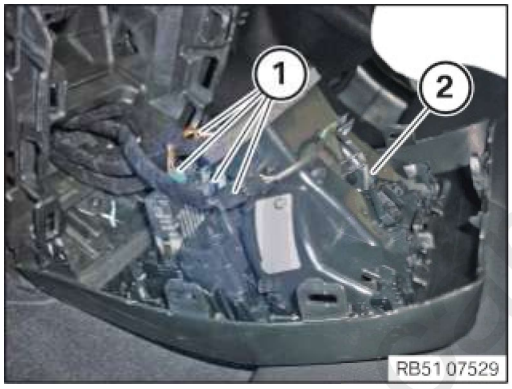
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Release centre console trim (1) backwards from the latch mechanisms at the side and pull it a little way towards the rear.

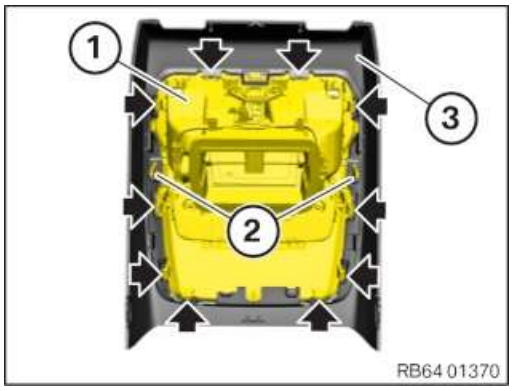


- Unlock and disconnect plug connections (1).
- Remove the centre console trim (2).

carsdiagn.com

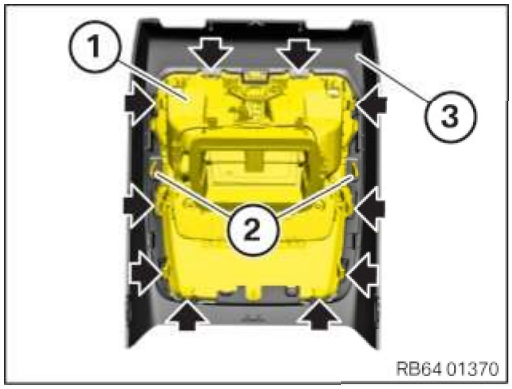
MAIN WORK

2 – Remove the fresh air grille of the rear passenger compartment



- Release fresh air grille (1) at the latch mechanisms (arrows).
- Feed out fresh air grille (1) on the guides (2) and remove from the decorative strip (3).

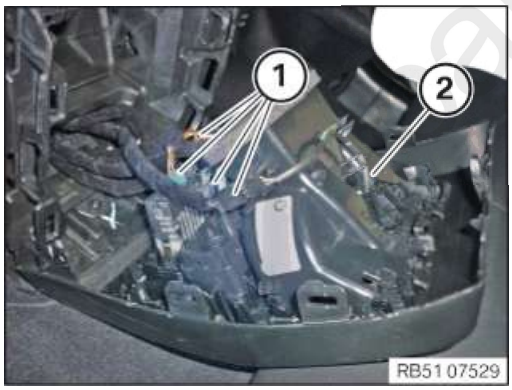
3 – Install the fresh air grille of the rear passenger compartment



- Guide the fresh air grille (1) with the guides (2) into the decorative strip (3) .
- Engage latch mechanisms (arrows) at the decorative strip (3) .

POSTPROCESSES

4 – Installing the rear centre console trim



- Install the centre console trim (2).
- Connect connectors (1) and lock.



- Position centre console trim (1) and engage at the latch mechanisms at the side.

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51 16 166 Replacing centre console

PRELIMINARY WORK

1 – Remove cupholder

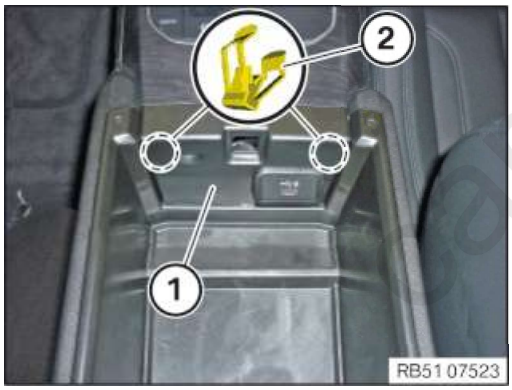


- Remove the insert (1).

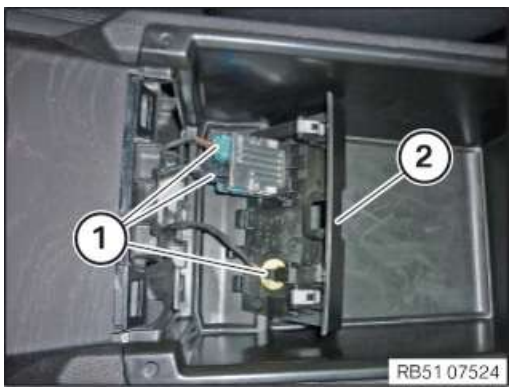


- Loosen screws (1).
- Feed the cup holder (2) out to the top.
- Unlock associated plug connections and disconnect.

2 – Removing the trim in the storage compartment on the centre armrest



- Lever out the trim (1) with the special tool (2) toward the rear from the clamps 2 298 505.



- Unlock and disconnect the plug connections (1) and remove the trim (2) .

3 – Remove the centre console trim

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RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



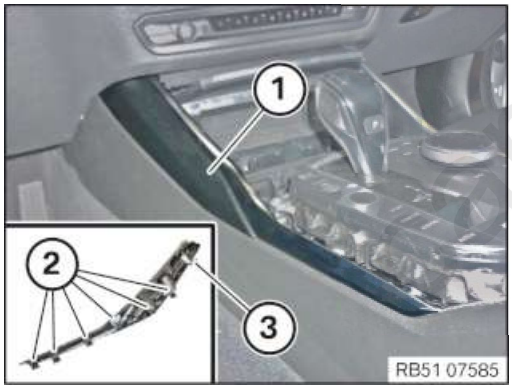
- Release and remove the centre console trim upwards (1) as shown using the special tool 2 298 505 from the latch mechanisms.

4 – Removing the decorative trim on the centre console trim on the left and right

▶ **Remove decorative trim on centre console**

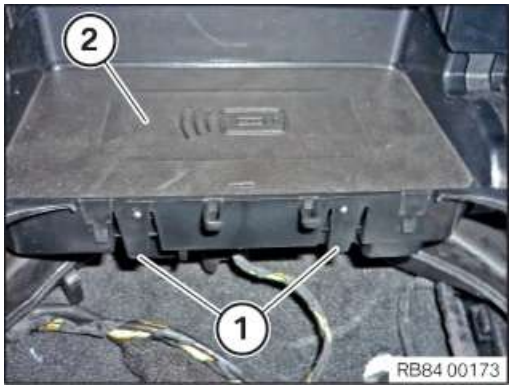
NOTICE

Description is for left component only. Procedure on the right side is identical.

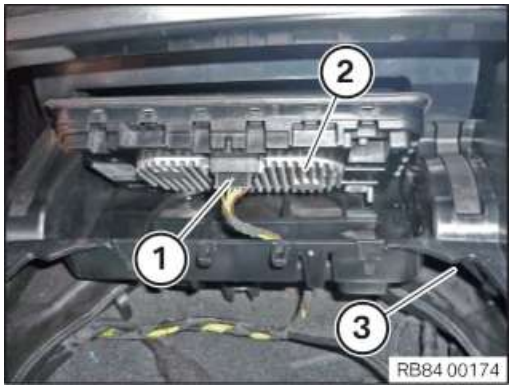


- Lever out the rear decorative trim (1) from the latch mechanisms (2) starting from the top.
- Feed out the decorative trim (1) backwards out of the guide (3) and remove.

5 – Removing the wireless charging station



- Loosen the latch mechanisms (1) and push out the wireless charging station (2) upwards.



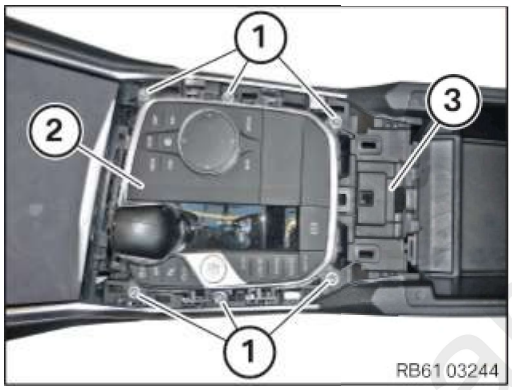
- Disconnect the connector (1) and remove the wireless charging station (2) from the centre console (3).

6 – Remove the operating facility in the centre console

► **Disconnecting all battery earth leads**

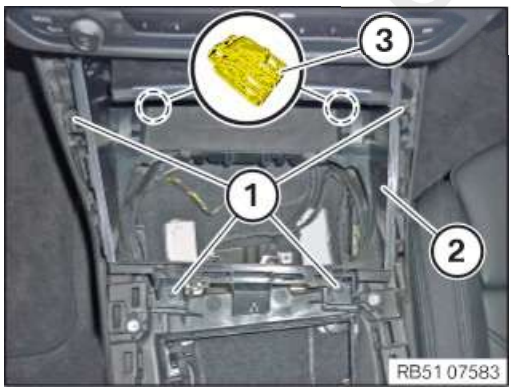


- See additional information.



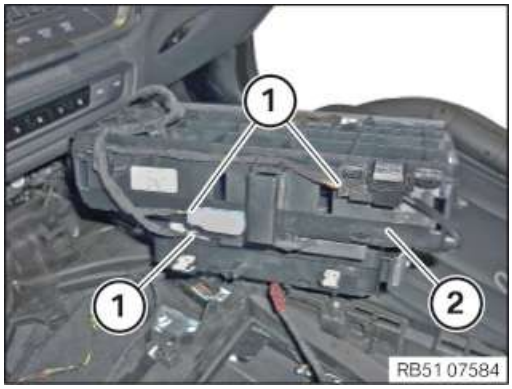
- Loosen screws (1).
- Remove the operating facility in the centre console (2) from the centre console (3).

7 – Removing the storage compartment of the front centre console



- Loosen screws (1).
- Remove storage compartment trim (2) backwards out of clamps (3).

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- Unlock and disconnect all the plug connections (1) and remove the storage compartment (2).

8 – Removing the rear centre console trim

RISK OF DAMAGE

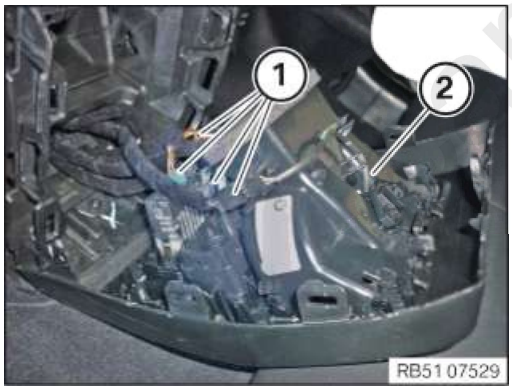
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Release centre console trim (1) backwards from the latch mechanisms at the side and pull it a little way towards the rear.



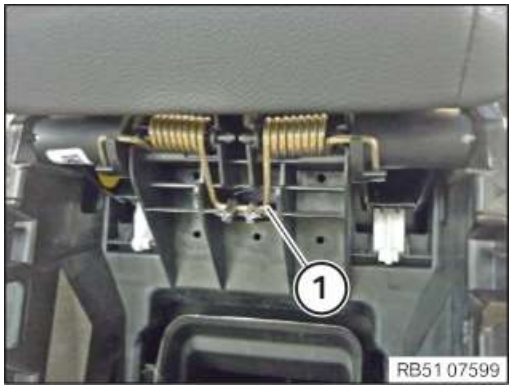
- Unlock and disconnect plug connections (1).
- Remove the centre console trim (2).

9 – Removing the centre armrest

Prerequisite

Centre armrest is open.

rdiagn.com



- Open the centre-armrest so that the spring is relaxed (1).
- Lift the spring (1) with long-nose pliers above the retaining lugs and detach.

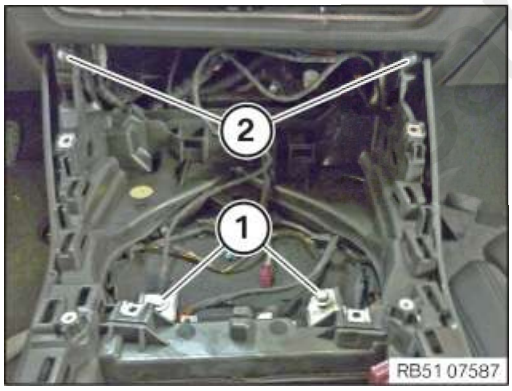


- Press pins (1) with a screwdriver outwards.
- Completely pull out the pins (1) with the long-nose pliers on the gearing (2) from the centre console.
- Feed out the centre armrest towards rear from the centre console and remove.

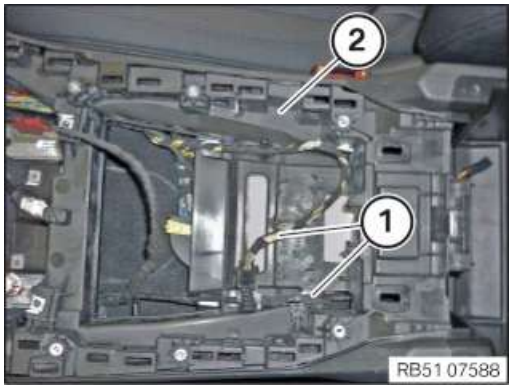
10 – Removing the centre console



- Loosen screws (1).

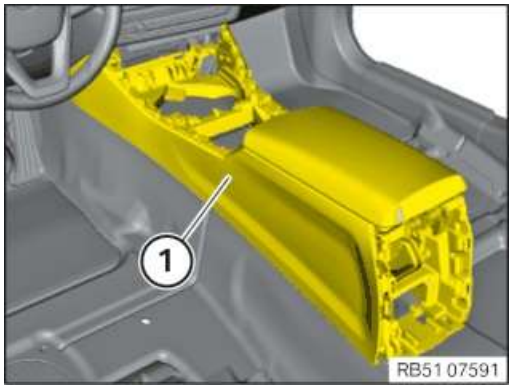


- Loosen screws (1) and (2).



- Release the wiring harness (1) from the centre console (2).

mdiagn.com



NOTICE

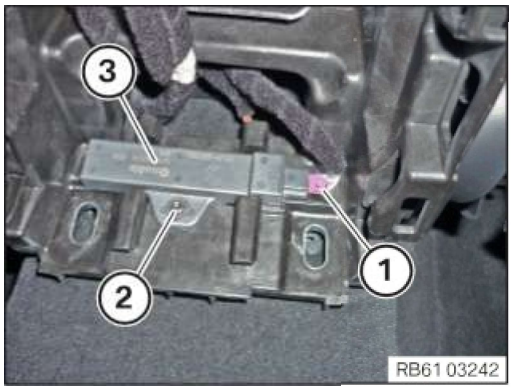
To provide a better overview: Schematic diagram with partially hidden components.

- Carefully raise rear centre console (1).
- Feed out wiring harness from the centre console (1) and unlock and disconnect existing plug connections, if required.
- Feed out and remove the centre console (1) on the instrument panel .

MAIN WORK

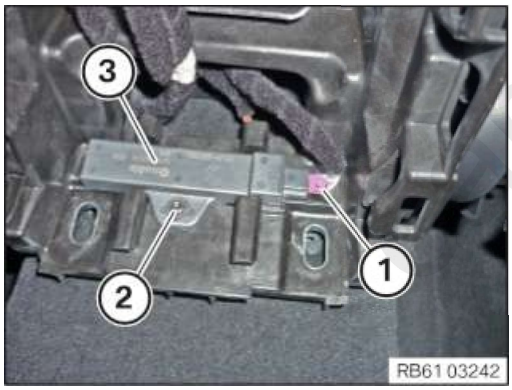
11 – Remounting when replacing the centre console trim

▸ **Removing the interior aerial from the rear centre console**



- Disconnect plug connection (1).
- Loosen screw (2).
- Remove the interior aerial (3).

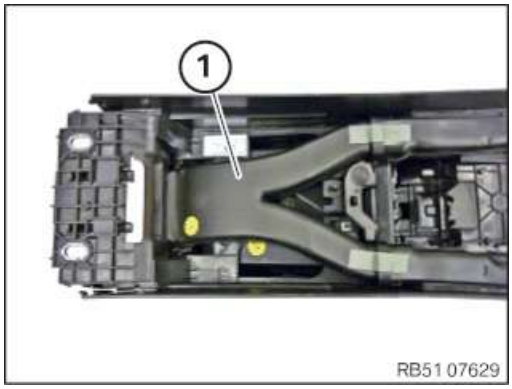
▸ **Install the interior aerial on the rear centre console**



- Connect connector (1).
- Position interior aerial (3) correctly and tighten the screw (2).

Front interior aerial

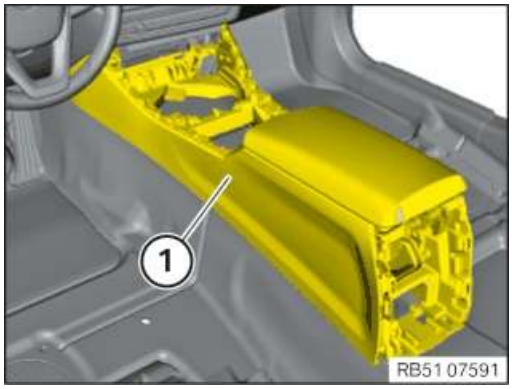
Screw		Tightening torque	2,3 Nm



- Remove air duct (1) and remount it on the new centre console.

POSTPROCESSES

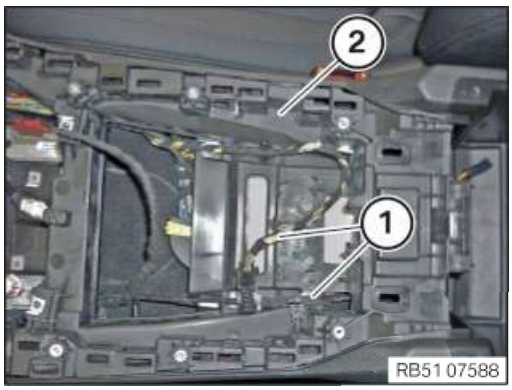
12 – Installing the centre console



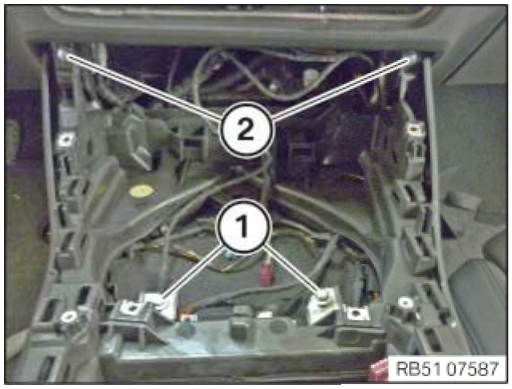
NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

- Install centre console (1) and thereby feed in the wiring harness.
- Feed in the centre console (1) to the instrument panel and position correctly.



- Secure the wiring harness to the centre console (1) and connect and lock the existing plug connections.



- Tighten the screws (1).

Centre console on tunnel

M6x18 Hexagon screw		Tightening torque	4,6 Nm

- Tighten the screws (2).

Centre console to instrument panel

Oval-head screw		Tightening torque	1,8 Nm



- Tighten the screws (1).

Centre console on tunnel

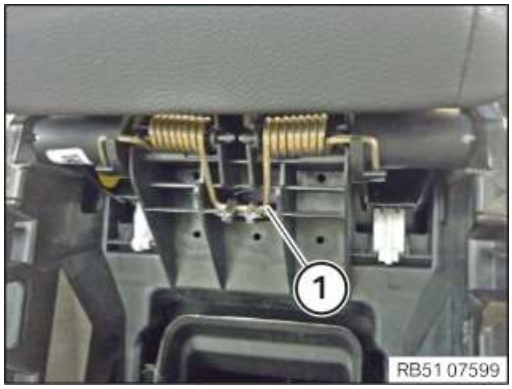
M6x18 Hexagon screw		Tightening torque	4,6 Nm

13 – Installing the centre armrest



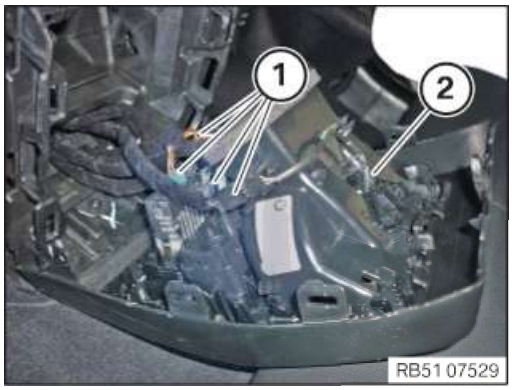
- Feed the centre-armrest into the centre console and position correctly.
- Insert pins (1) and insert into the centre console using gearing (2).

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- Open the centre-armrest (1) so that the spring is relaxed.
- Lift and mount spring (1) with long-nose pliers above the retaining lugs.

14 – Installing the rear centre console trim

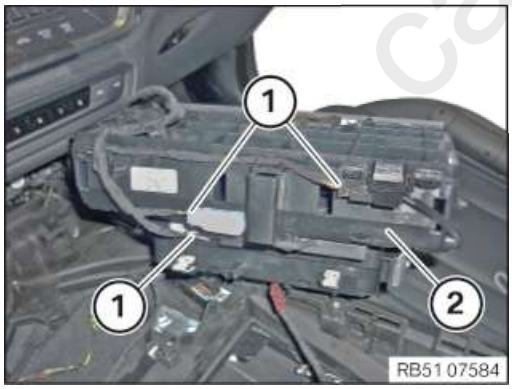


- Install the centre console trim (2).
- Connect connectors (1) and lock.

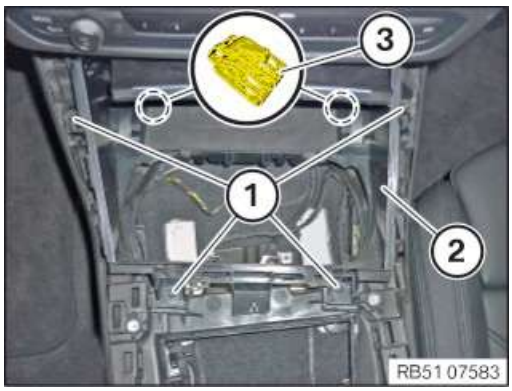


- Position centre console trim (1) and engage at the latch mechanisms at the side.

15 – Installing the storage compartment of the front centre console



- Mount the storage compartment (2) and connect connectors (1).



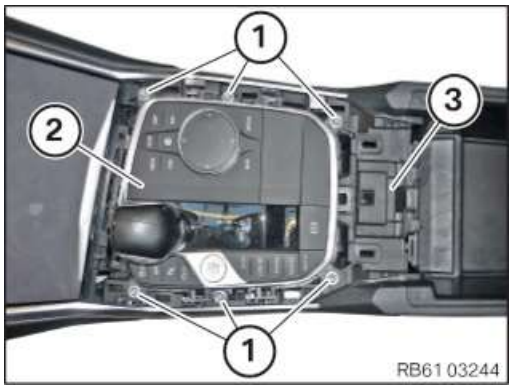
- Engage rear storage compartment trim (2) into clamps (3).
- Tighten the screws (1).

Storage compartment to centre console

Oval-head screw		Tightening torque	1,8 Nm

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16 – Install the operating facility in the centre console



- Position operating facility (2) in the centre console (3).
- Tighten the screws (1).

Gear selector switch to centre console trim

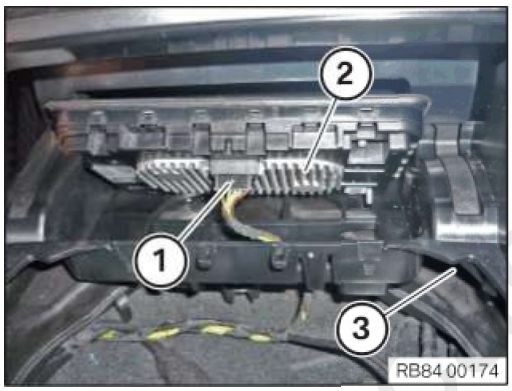
Screw		Tightening torque	1,8 Nm

► **Disconnecting all battery earth leads**

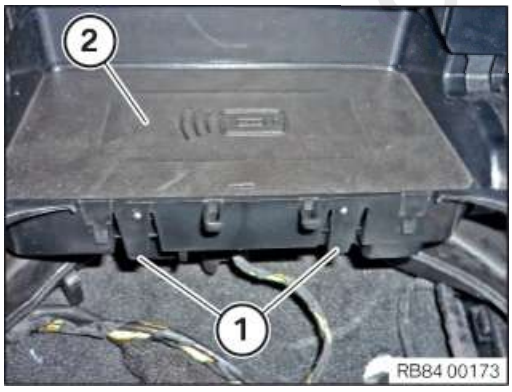


- See additional information.

17 – Installing the wireless charging station



- Connect connector (1).
- Position the wireless charging station (2) in the centre console (3).



- Press the wireless charging station (2) down till the locking units (1) are engaged correctly.

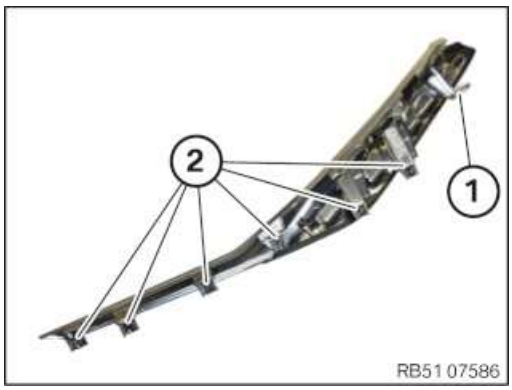
18 – Install decorative trim on centre console on left and right

► **Installing the decorative trim to centre console**

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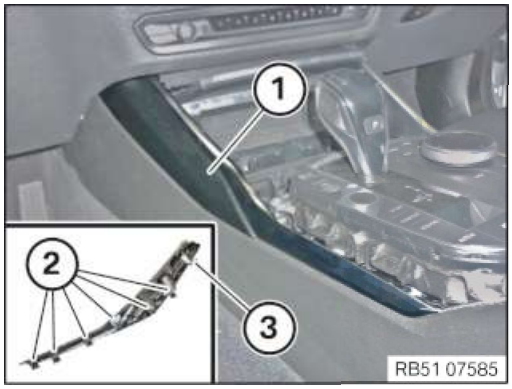
NOTICE

Description is for left component only. Procedure on the right side is identical.



- Check guide (1) and the latch mechanisms (2).

  Renew defective decorative trim.



- Feed in the decorative trim (1) forward in the guide (3).
- Engage decorative trim (1) in latch mechanisms (2).

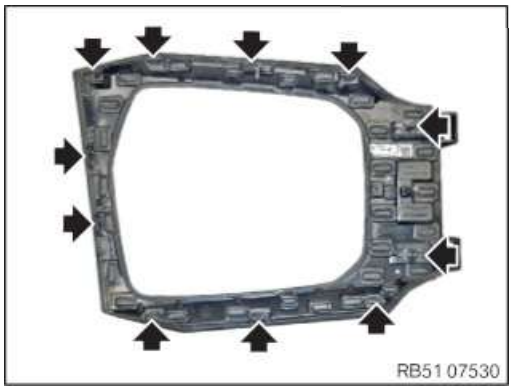
19 – Installing the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



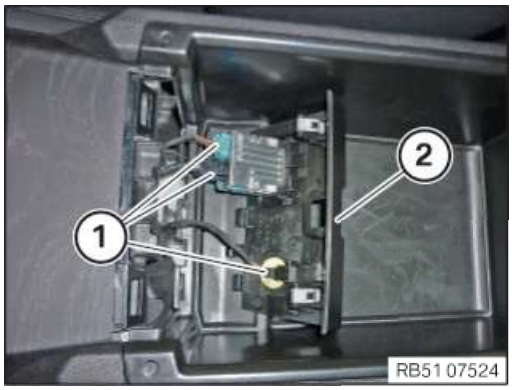
- Check all the latch mechanisms or clamps (arrows).
- In case the latch mechanisms or the clamps (arrows) are faulty, renew the centre console trim .

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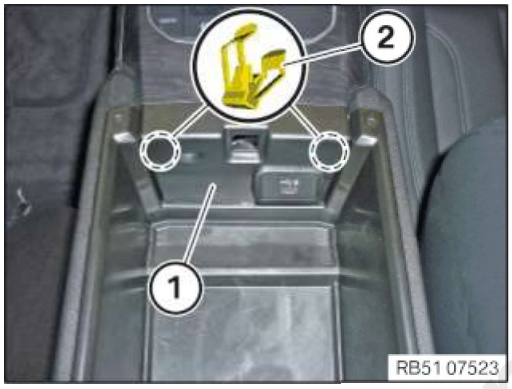


- Correctly position the centre console trim (1) and engage at the latch mechanisms.

20 – Installing the trim in the storage compartment of the centre armrest



- Mount the trim (2) and connect connector (1) and lock.



- Correctly position trim (1) and snap into the clamps (2).

21 – Install the cup holder



- Fix the cup holder (1) and the belonging connectors.
- Correctly position cup holder (1).
- Tighten the screws (2).

Cup holder to centre console

Oval-head screw		Tightening torque	1,8 Nm



- Insert the insert (1).

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Additional Information

Overview of Tightening Torques

Front interior aerial			Used in step 11
Screw		Tightening torque	2,3 Nm

Centre console on tunnel			Used in step 12
M6x18 Hexagon screw		Tightening torque	4,6 Nm

Centre console to instrument panel			Used in step 12
Oval-head screw		Tightening torque	1,8 Nm

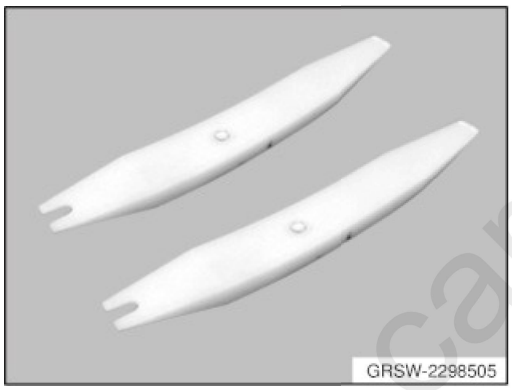
Storage compartment to centre console			Used in step 15
Oval-head screw		Tightening torque	1,8 Nm

Gear selector switch to centre console trim			Used in step 16
Screw		Tightening torque	1,8 Nm

Cup holder to centre console			Used in step 21
Oval-head screw		Tightening torque	1,8 Nm

Overview of Special Tools

2 298 505 Wedge



Common		Used in step 23
Usage	Set (delivery of 2 pieces)	
Included in the tool or work		
Storage location	C34	
Replaced by		
In connection with		
SI-Number	01 03 12 (792)	

Links

Repair instructions	**Used in step**
61 20 900 Disconnecting and connecting battery earth lead	616
61 20 900 Disconnecting and connecting battery earth lead	616
61 20 900 Disconnecting and connecting battery earth lead	616
61 20 900 Disconnecting and connecting battery earth lead	616
61 20 900 Disconnecting and connecting battery earth lead	616
61 20 900 Disconnecting and connecting battery earth lead	616
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	616
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	616
61 20 900 Disconnecting and connecting battery earth lead	616
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	616
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	616

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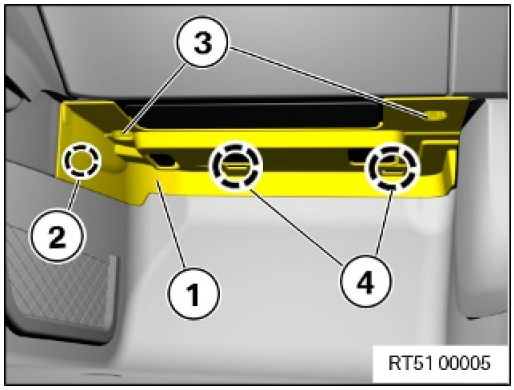
61 20 900 Disconnecting and connecting battery earth lead	616
61 20 900 Disconnecting and connecting battery earth lead	616
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61 20 900 Disconnecting and connecting battery earth lead	616
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	616
61 20 900 Disconnecting and connecting battery earth lead	616
61 20 900 Disconnecting and connecting battery earth lead	616
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61 20 900 Disconnecting and connecting battery earth lead	616
61 20 900 Disconnecting and connecting battery earth lead	616
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61 20 900 Disconnecting and connecting battery earth lead	616

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51 16 377 Replacing glove box lid

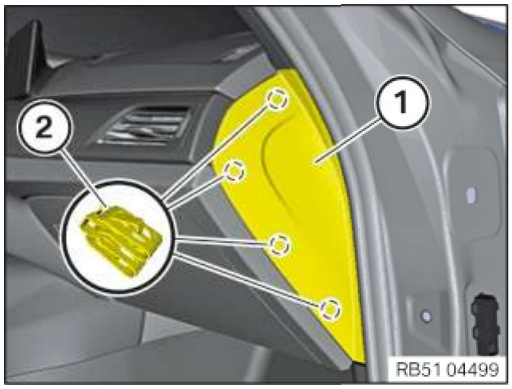
PRELIMINARY WORK

1 – Remove the right footwell trim



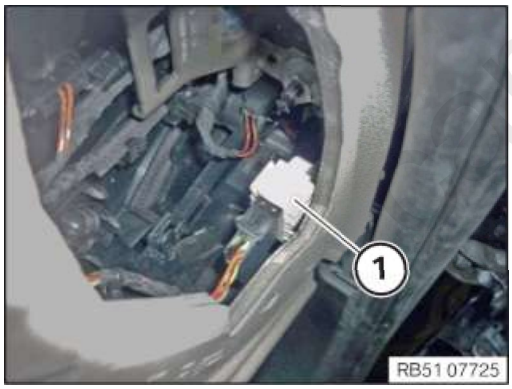
- Turn the locks (3) by 90°.
- Feed the footwell trim (1) out of the guide (2).
- Detach the footwell trim (1) inward out of the guides (4).
- Unlock associated plug connection and disconnect.

2 – Remove the side panel on the right instrument panel

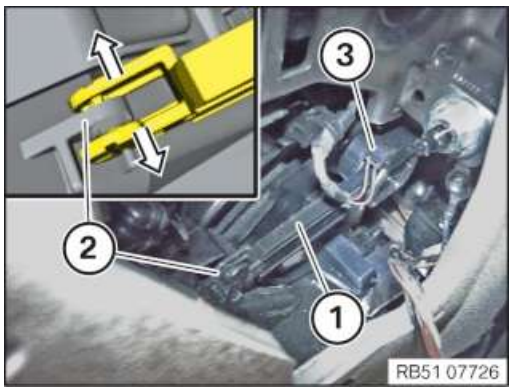


- Unclip and remove the side panel (1) towards the outside from the clamps (2).
- If necessary, unlock associated plug connection and disconnect.

3 – Remove glove box damper



- Release plug connection (1) from the instrument panel and pull to the outside.



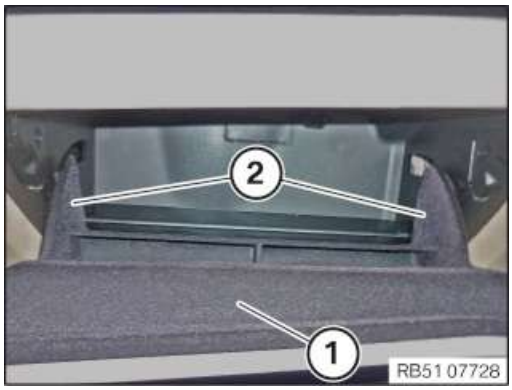
- Release damper (1) from retaining bracket (2) (spread slightly in the direction of the arrow).
- Open glove box cover.
- Twist damper (1) slightly in the clockwise direction and remove it outwards.
- Feed damper (1) out of the instrument panel.
- Disconnect plug connection (3).

4 – Remove glove box lid

Prerequisite

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The glove box lid is open.



- Raise the glove box lid (1) slightly.
- Carefully bend the side section (2)of glove box lid (1) inside so that the glove box lid (1) can be fed out of the instrument panel .
- Swivel the glove box lid (1) further down until it feeds out of the hinges.

MAIN WORK

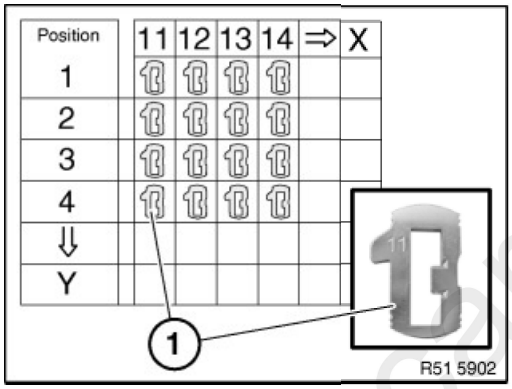
5 – When replacing the glove box lid

- **The closure of the glove box lid and the lock barrel cannot be removed without destroying them and must always be renewed.**

▸ **Assembling the lock barrel**

NOTICE

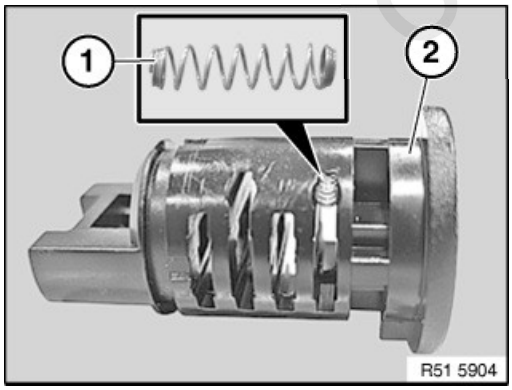
Schematic diagram is for example purposes. Some parts may differ in certain details.



- Sort the enclosed retainers (1) as per the graphic.

  X = number embossed on the retainer (1)

  Y = installation position in the lock barrel

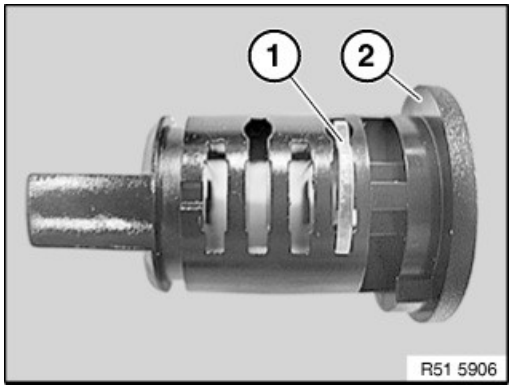


NOTICE

The description is for one component only. The procedure is identical for all further components.

- Insert the spring (1) into the lock barrel (2).

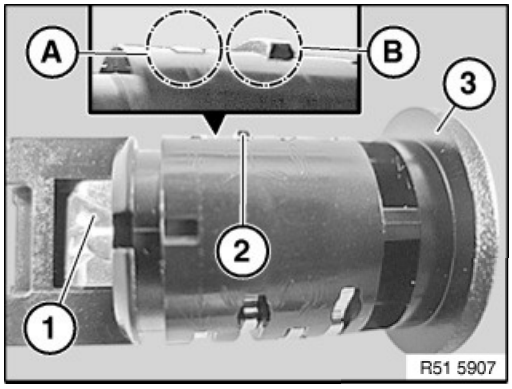
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- Insert and engage the retainer (1) with the lowest embossed number **X** into position **Y** of the lock barrel (2).

  The retainer engages audibly.

Check



- Insert the ignition key (1) into the lock barrel (3).
- Check whether the retainer (2) is flush with the housing.

Result

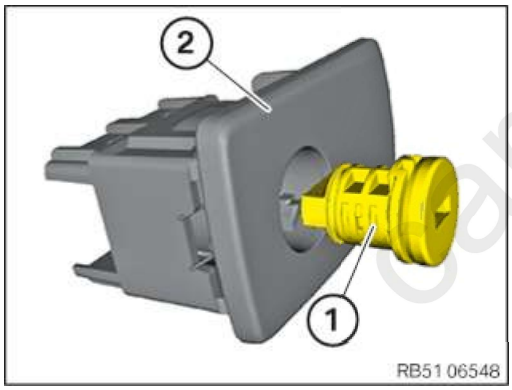
» The retainer (2) is not flush with the housing (B).

Measure

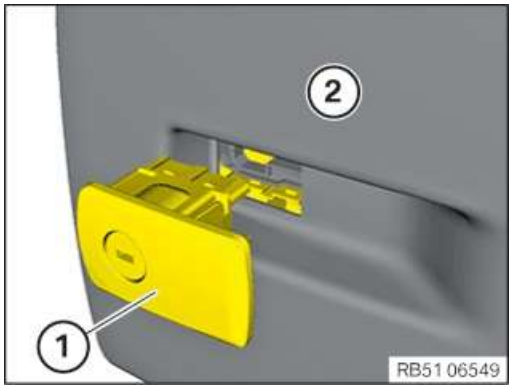
- Press out the retainer (2) from the lock barrel (3) using a suitable tool.

Measure

- Repeat the operations using the retainer with the next higher number **X**, until the retainer is flush with the housing (A).



- Insert the lock barrel (1) with the ignition key in the glove box lock (2) and engage via pressure.



- Carefully insert the glove box lock (1) in the glove box lid (2) and lock.

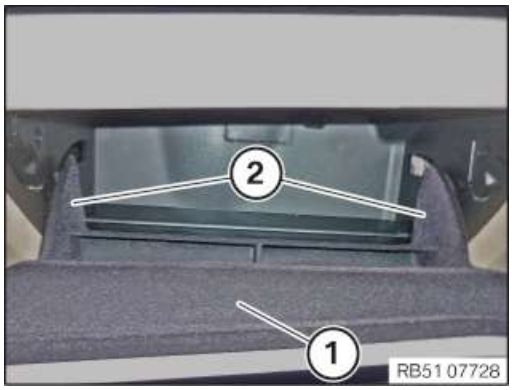
POSTPROCESSES

6 – Install glovebox cover

Prerequisite

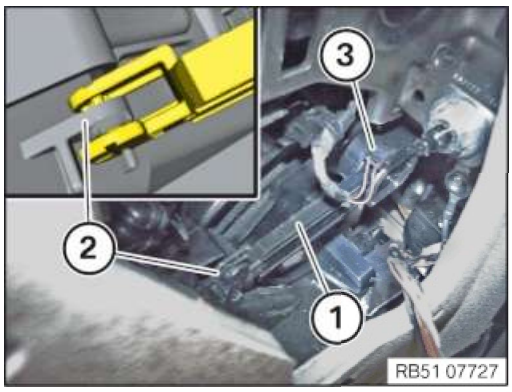
cardiagn.com

The glove box lid is open.

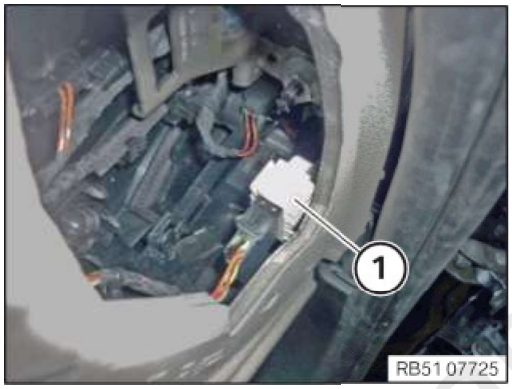


- Insert glove box lid (1) on the hinges and swivel to the top.
- Bend the side section (2) of the glove box lid (1) carefully inward and feed in at the instrument panel.

7 – Installing glove box damper

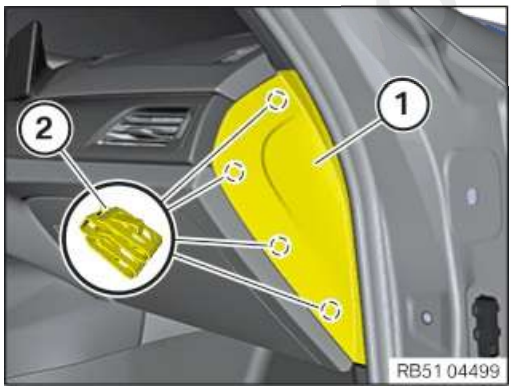


- Connect connector (3).
- Insert damper (1) in instrument panel.
- Open glove box cover.
- Install damper (1) and twist it slightly in the anticlockwise direction.
- Engage the damper (1) in the retaining bracket (2).



- Install plug connection (1) and secure at the instrument panel.

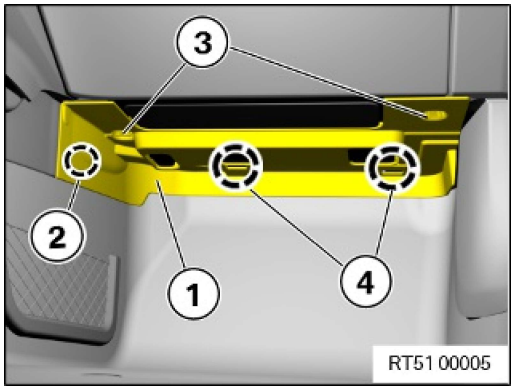
8 – Install the side panel on instrument panel on the right



- If required, connect the associated connector.
- Feed in the side panel (1) and clip it in at the clamps (2).

9 – Install the right footwell trim panel

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- Connect associated connector.
- Attach the footwell trim (1) to the guides (4) and fold up.
- Guide the footwell trim (1) into the guide (2) of the centre console.
- Position locks (3) correctly and turn by 90°.

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51 16 026 Replacing mirror glass for exterior mirror

NOTICE

Description is for left component only. Procedure on the right side is identical.

1 – Removing the mirror glass

CAUTION

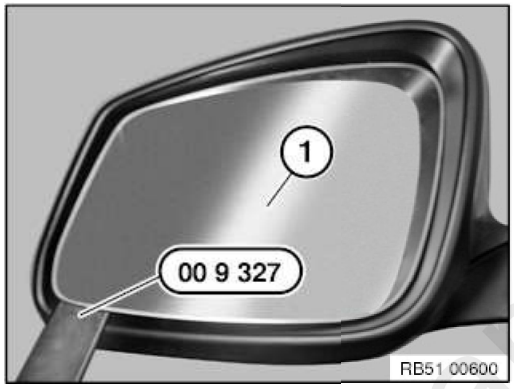
Glass splinters.

Danger of injury!

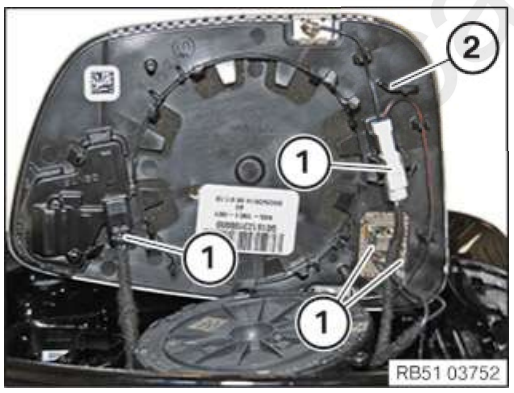
- If the mirror glass is damaged, wear safety goggles and protective gloves.

TECHNICAL INFORMATION

Carry out the work at temperatures between 18 °C and 23 °C only.



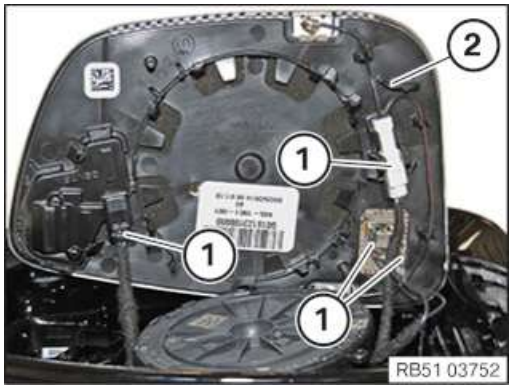
- Manually press the mirror glass (1) on the side of vehicle up to the end stop.
- Unclip the mirror glass (1) using special tool 0 496 571 (00 9 327) all the way around, starting with the outer side.



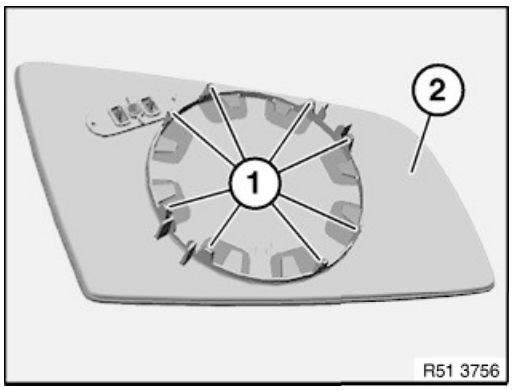
- Disconnect plug connection (1).
- Remove mirror glass (2).

2 – Installing the mirror glass

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- Position mirror glass (2).
- Connect plug connections (1).

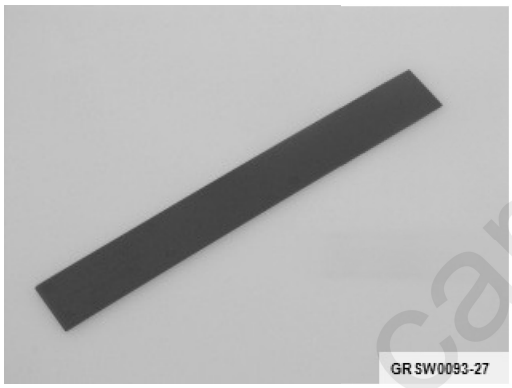


- Check whether retaining lugs (1) are missing or damaged and, if required, renew the mirror glass.
- Position the mirror glass (2) with the retaining lugs (1) flush with the drive for exterior mirror adjustment and clip in.
- Ensure correct locking.
- Check if the drive for exterior mirror adjustment is functioning correctly.

Additional Information

Overview of Special Tools

0 496 571 (00 9 327) Wedge

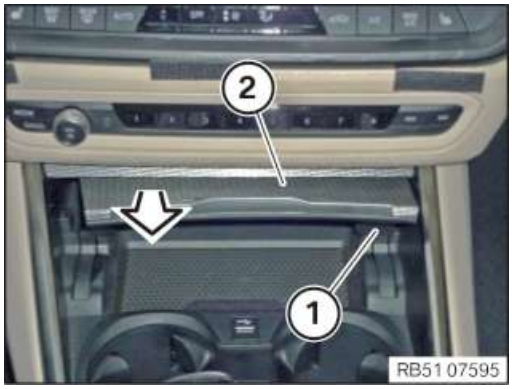


Common	Used in step 1
Usage	(Cleaning wedge) From 11/2008 this special tool replaces panel wedge 00 9 323 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

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51 16 213 Replacing storage compartment trim

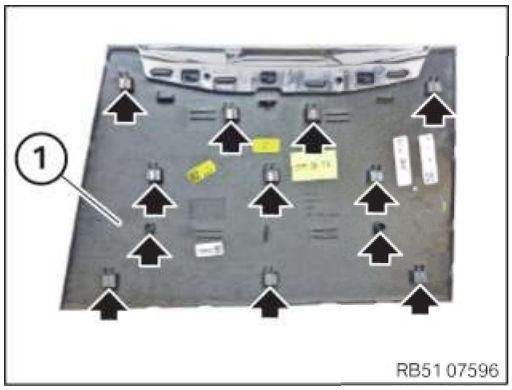
1 – Removing the front storage compartment trim



- Hold down the lower section (1) and move the storage compartment trim (2) slightly to the rear in direction of arrow.

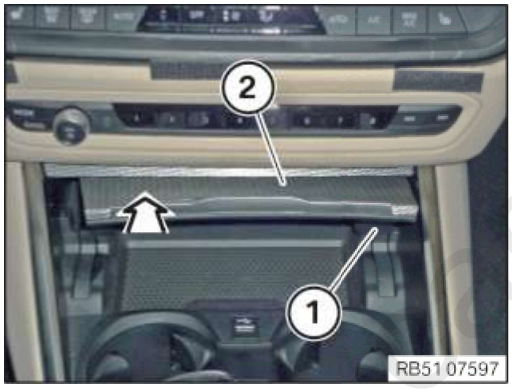
  Guide out the storage compartment trim (2) toward the top and remove it.

2 – Installing front storage compartment trim



- Check all the guides or latch mechanisms (arrows).

  If there are damaged guides or latch mechanisms, renew the storage compartment trim (1).



- Position and clip in storage compartment trim (2) on the lower section (1) in the direction of arrow.

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51 16 220 Replacing storage compartment trim

PRELIMINARY WORK

1 – Remove cupholder

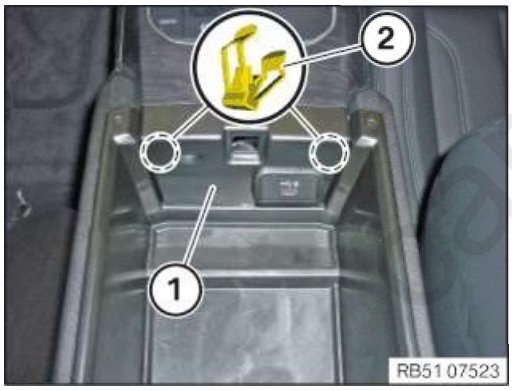


- Remove the insert (1).

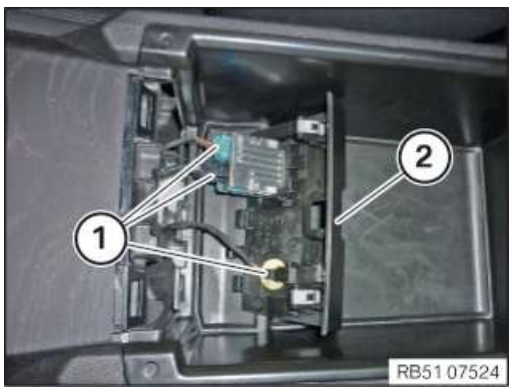


- Loosen screws (1).
- Feed the cup holder (2) out to the top.
- Unlock associated plug connections and disconnect.

2 – Removing the trim in the storage compartment on the centre armrest



- Lever out the trim (1) with the special tool (2) toward the rear from the clamps 2 298 505.



- Unlock and disconnect the plug connections (1) and remove the trim (2) .

3 – Remove the centre console trim

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RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



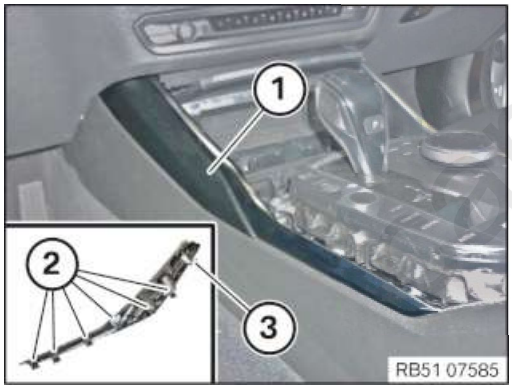
- Release and remove the centre console trim upwards (1) as shown using the special tool 2 298 505 from the latch mechanisms.

4 – Removing the decorative trim on the centre console trim on the left and right

▶ **Remove decorative trim on centre console**

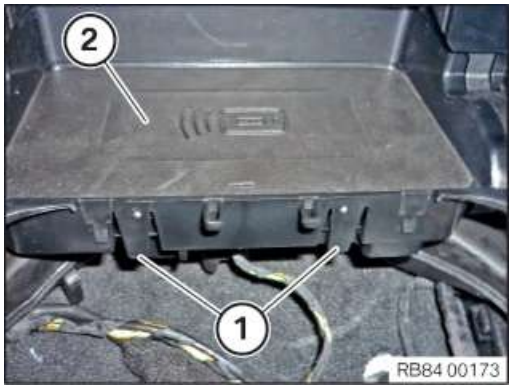
NOTICE

Description is for left component only. Procedure on the right side is identical.

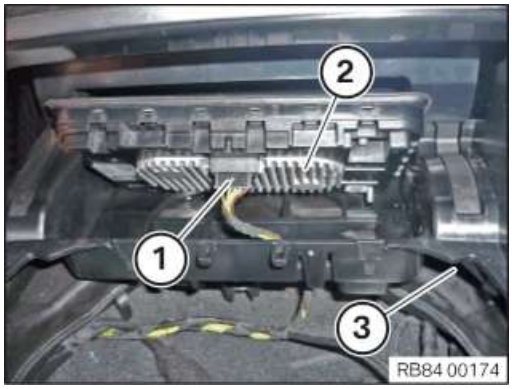


- Lever out the rear decorative trim (1) from the latch mechanisms (2) starting from the top.
- Feed out the decorative trim (1) backwards out of the guide (3) and remove.

5 – Removing the wireless charging station



- Loosen the latch mechanisms (1) and push out the wireless charging station (2) upwards.



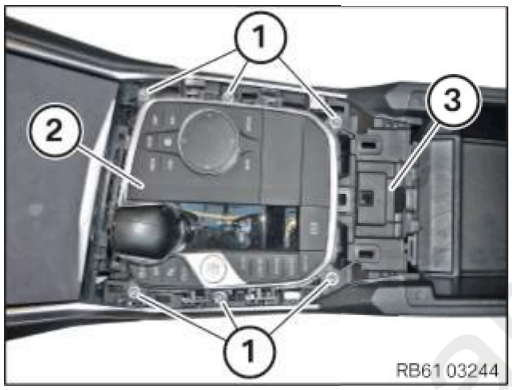
- Disconnect the connector (1) and remove the wireless charging station (2) from the centre console (3).

6 – Remove the operating facility in the centre console

► **Disconnecting all battery earth leads**

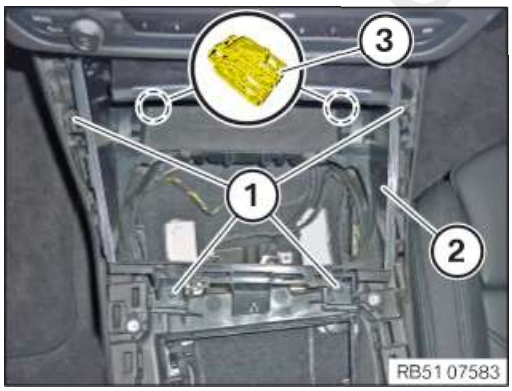


- See additional information.



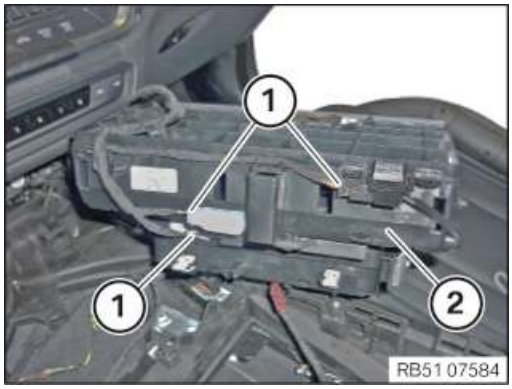
- Loosen screws (1).
- Remove the operating facility in the centre console (2) from the centre console (3).

7 – Removing the storage compartment of the front centre console



- Loosen screws (1).
- Remove storage compartment trim (2) backwards out of clamps (3).

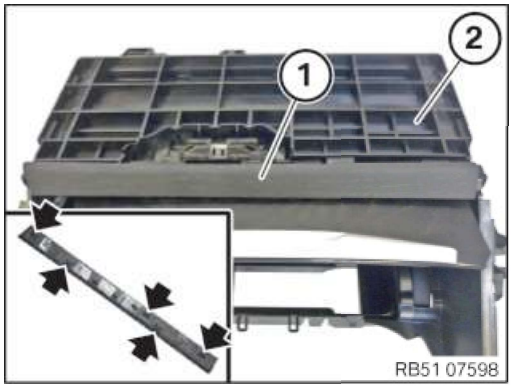
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- Unlock and disconnect all the plug connections (1) and remove the storage compartment (2).

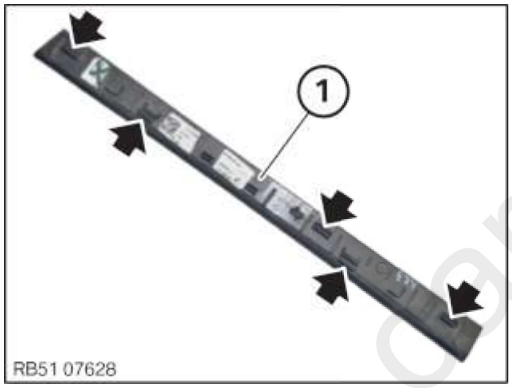
MAIN WORK

8 – Remove centre stack trim



- Release centre stack trim (1) backwards from the latch mechanisms (arrows) and remove from the storage compartment (2).

9 – Installing centre stack trim



- Check the latch mechanisms (arrows).
- In case of faulty latch mechanisms, renew the centre stack trim (1).

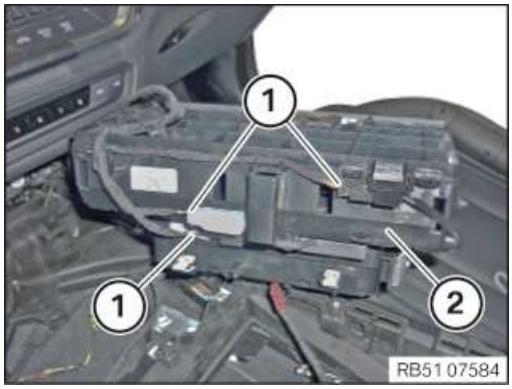


- Position the centre stack trim (1) correctly on storage compartment (2) and engage into latch mechanisms (arrows).

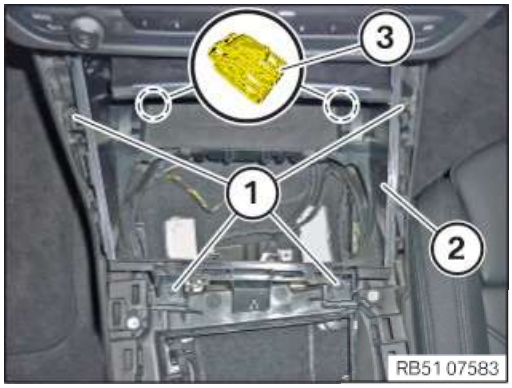
POSTPROCESSES

10 – Installing the storage compartment of the front centre console

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- Mount the storage compartment (2) and connect connectors (1).

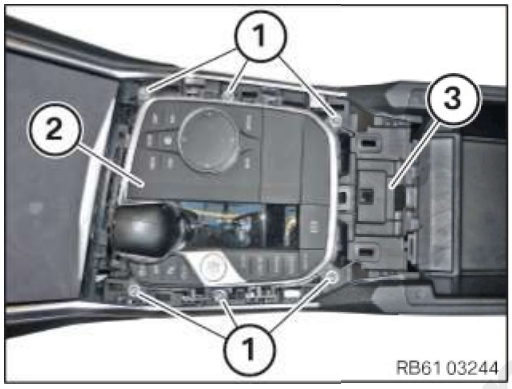


- Engage rear storage compartment trim (2) into clamps (3).
- Tighten the screws (1).

Storage compartment to centre console

Oval-head screw		Tightening torque	1,8 Nm

11 – Install the operating facility in the centre console



- Position operating facility (2) in the centre console (3).
- Tighten the screws (1).

Gear selector switch to centre console trim

Screw		Tightening torque	1,8 Nm

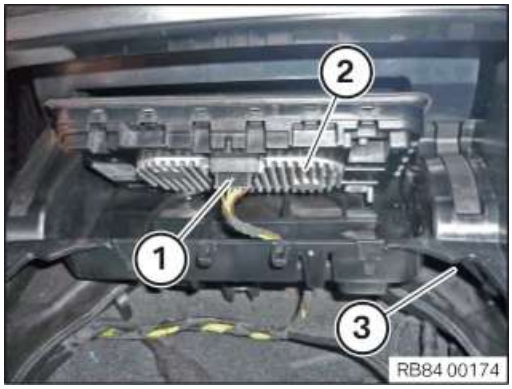
▶ **Disconnecting all battery earth leads**



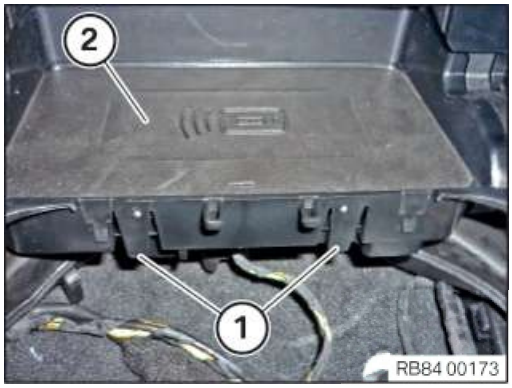
- See additional information.

12 – Installing the wireless charging station

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- Connect connector (1).
- Position the wireless charging station (2) in the centre console (3).



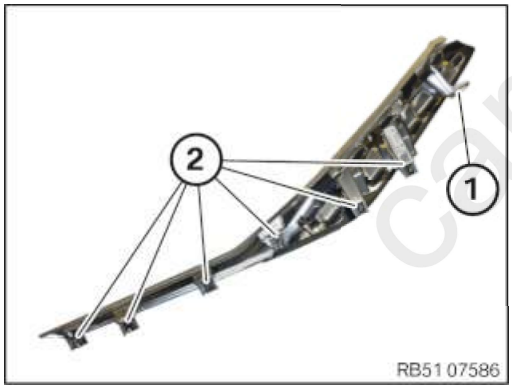
- Press the wireless charging station (2) down till the locking units (1) are engaged correctly.

13 – Install decorative trim on centre console on left and right

▸ **Installing the decorative trim to centre console**

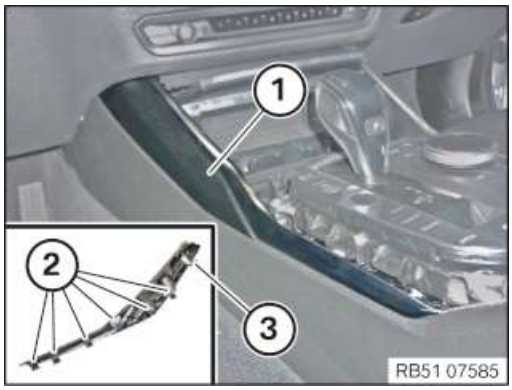
NOTICE

Description is for left component only. Procedure on the right side is identical.



- Check guide (1) and the latch mechanisms (2).

  Renew defective decorative trim.



- Feed in the decorative trim (1) forward in the guide (3).
- Engage decorative trim (1) in latch mechanisms (2).

14 – Installing the centre console trim

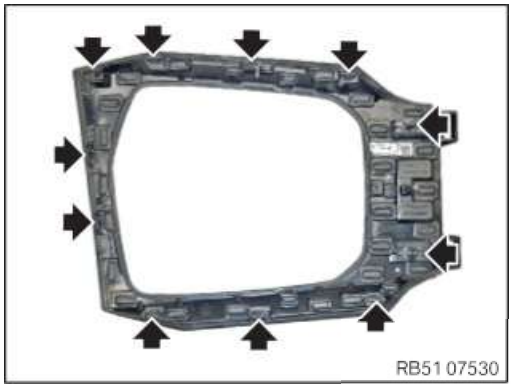
cardiagn.com

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

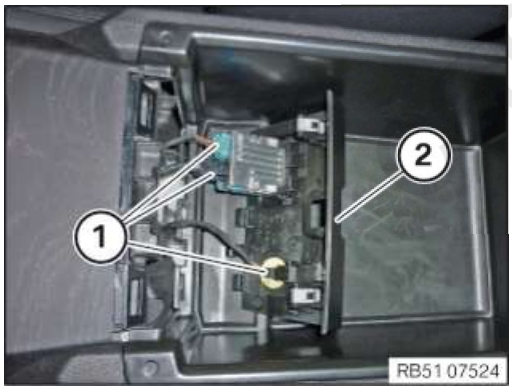


- Check all the latch mechanisms or clamps (arrows).
- In case the latch mechanisms or the clamps (arrows) are faulty, renew the centre console trim .

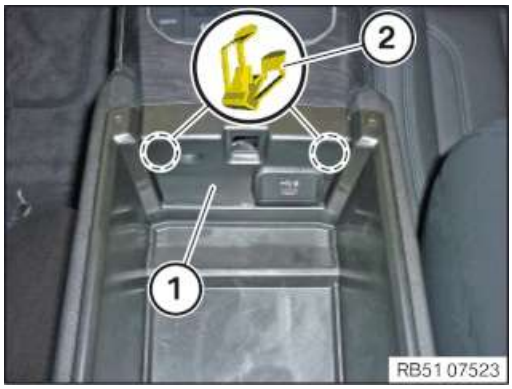


- Correctly position the centre console trim (1) and engage at the latch mechanisms.

15 – Installing the trim in the storage compartment of the centre armrest



- Mount the trim (2) and connect connector (1) and lock.



- Correctly position trim (1) and snap into the clamps (2).

16 – Install the cup holder



- Fix the cup holder (1) and the belonging connectors.
- Correctly position cup holder (1).
- Tighten the screws (2).

Cup holder to centre console

Oval-head screw		Tightening torque	1,8 Nm



- Insert the insert (1).

Additional Information

Overview of Tightening Torques

Storage compartment to centre console Used in step 10

Oval-head screw		Tightening torque	1,8 Nm

Gear selector switch to centre console trim Used in step 11

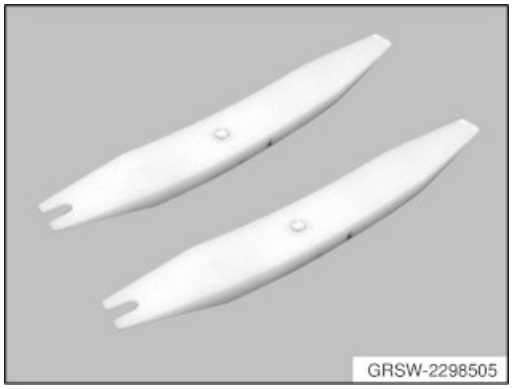
Screw		Tightening torque	1,8 Nm

Cup holder to centre console Used in step 16

Oval-head screw		Tightening torque	1,8 Nm

Overview of Special Tools

2 298 505 Wedge



Common Used in step 23

Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	611

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61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	611
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	611
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	611
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	611
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting battery earth lead	611
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61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	611
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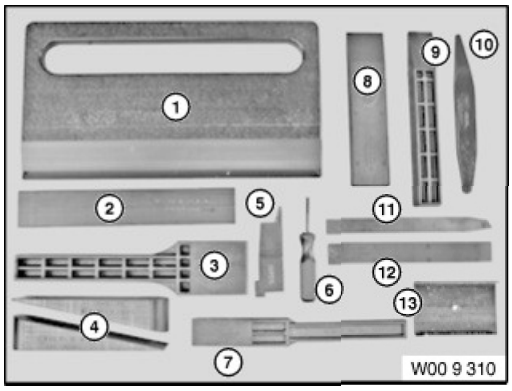
51 16 002 Replacing the exterior rearview mirror on the front door on the left or right

NOTICE

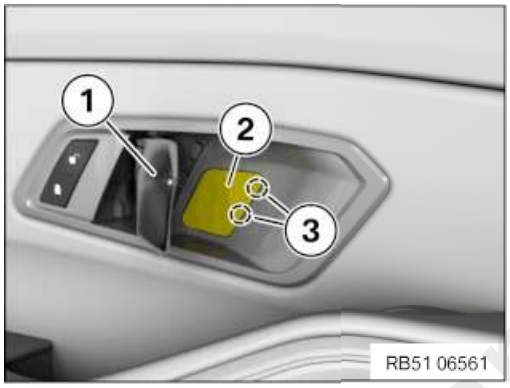
Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

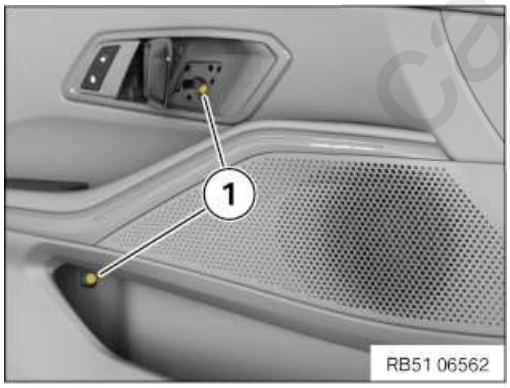
1 – Remove door trim panel



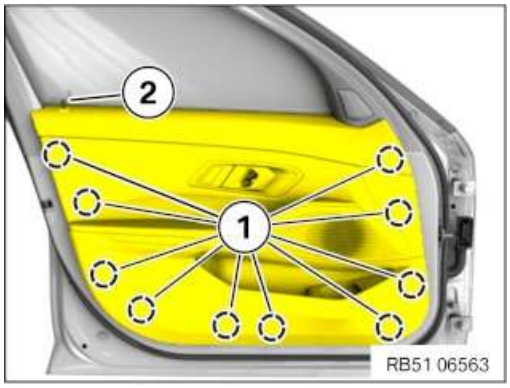
- Have the set of special tools 0 493 752 (00 9 329) ready.



- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

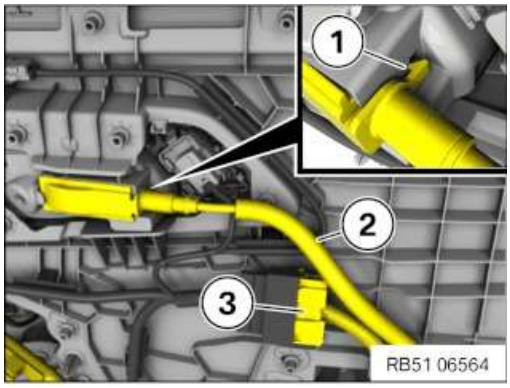


- Loosen screws (1).



- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).

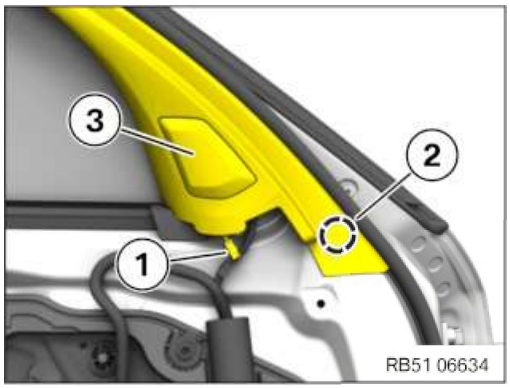
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- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

2 – Partially removing the cover on the inner window frame

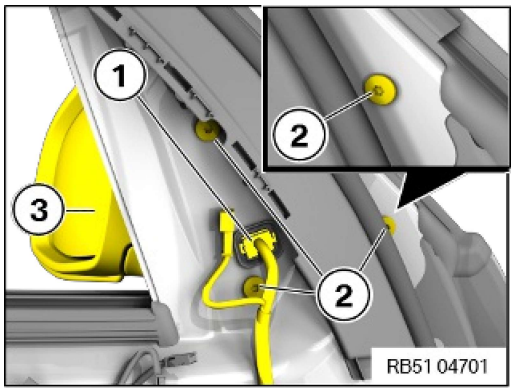


- If necessary, unlock and disconnect the plug connection (1).
- Unclip clip (2).
- Release the cover on inner window frame (3) in the area of the exterior rearview mirror.

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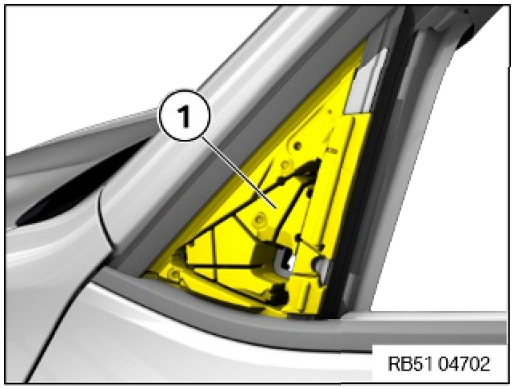
MAIN WORK

3 – Removing the exterior mirror



- Unlock plug connection (1) and disconnect.
- Release the screws (2) and remove the exterior rearview mirror (3).

4 – Installing the exterior mirror



Check

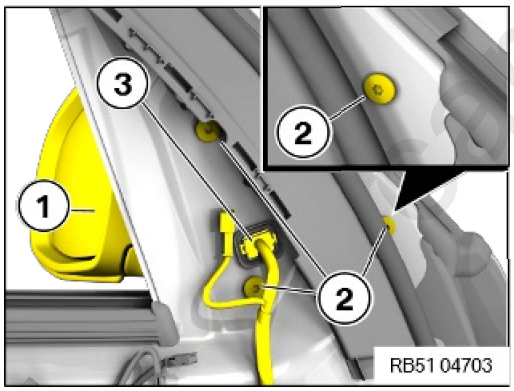
- Check mirror triangle seal (1) for damage.

Result

» The mirror triangle seal is damaged.

Measure

- Replace mirror triangle seal .



- Position exterior rearview mirror (1) and tighten screws (2).

Exterior mirror to door

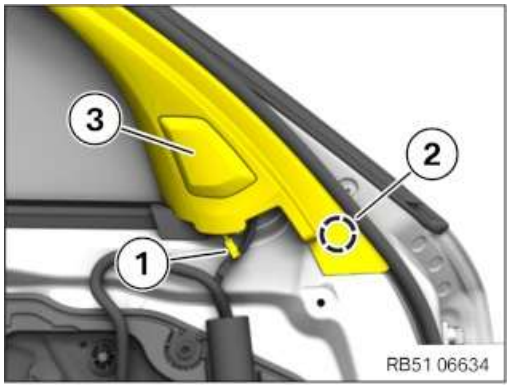
Thread-tapping hexagon screw		Tightening torque	10 Nm

- Connect connectors (3) and lock.

POSTPROCESSES

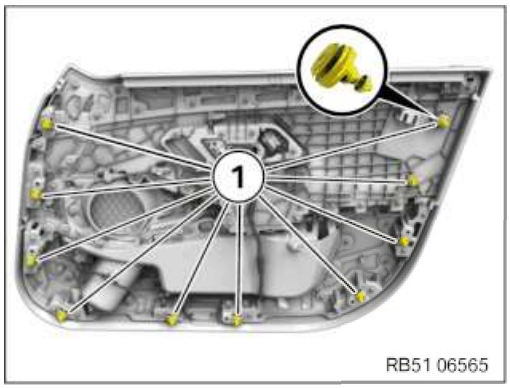
5 – Installing the cover on the inside of the window frame partially

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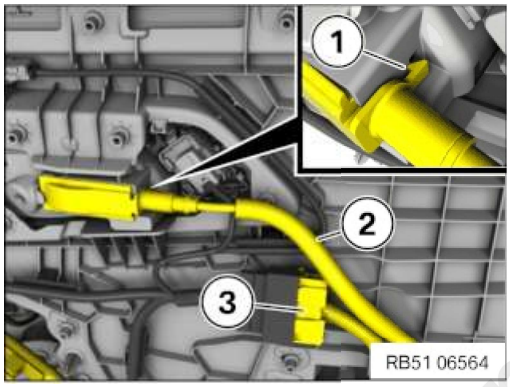
- Mount cover on the inner window frame (3) in the area of the exterior rearview mirror.
- Clip in the clip (2).
- If necessary, connect the connector (1) and lock it.

6 – Install door trim panel

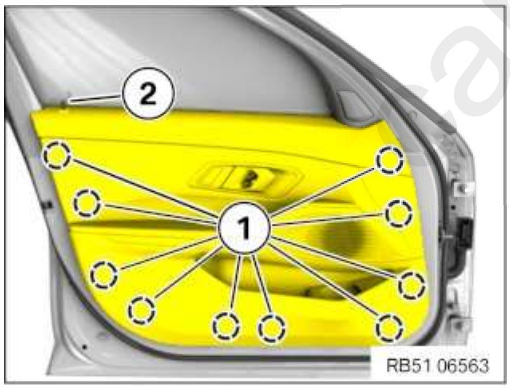


- Renew the clips (1).

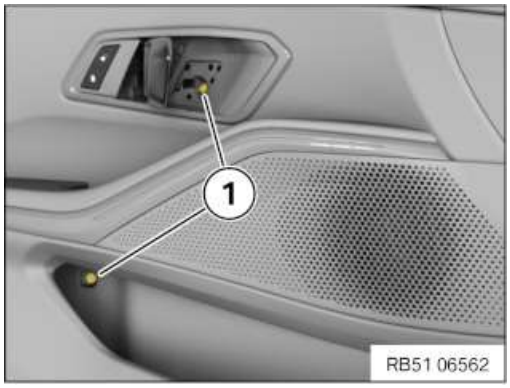
  Parts: Clips



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).

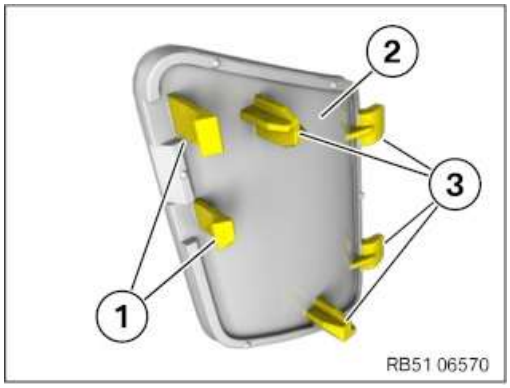


- Tighten the screws (1).

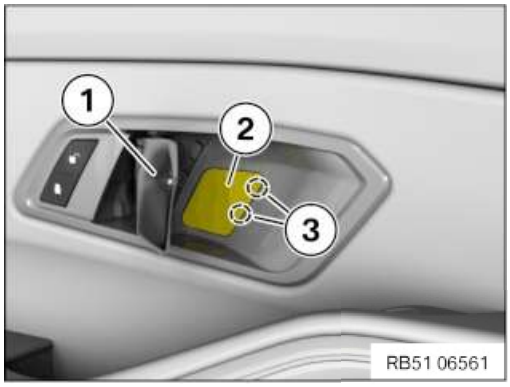
Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm

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- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

Exterior mirror to door — Used in step 4

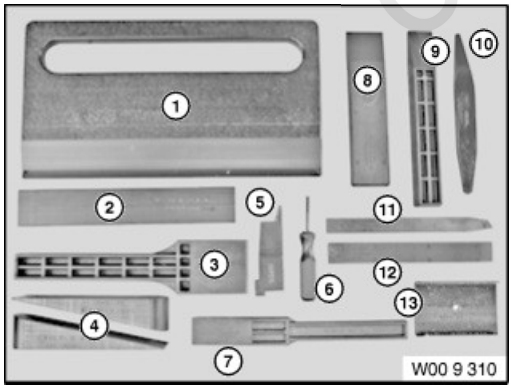
Thread-tapping hexagon screw		Tightening torque	10 Nm

Door trim panel to door — Used in step 6

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

0 493 752 (00 9 329) Case



Common — Used in step 1

Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

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51 21 004 Adjusting front left or right lock striker

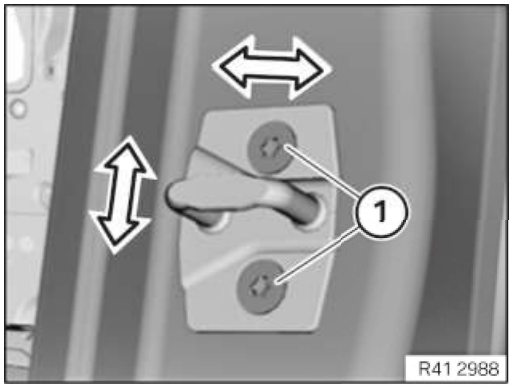
NOTICE

Description is for left component only. Procedure on the right side is identical.

1 Adjust lock striker

Prerequisite

The screws on lock striker are loosened so far that the lock striker can still be moved.



TECHNICAL INFORMATION

The gap dimensions form the basis for these repair instructions and must be observed without fail.

For more information see: 41 00 ... Gap dimensions for body

- Adjust the lock striker's height such that the door lock does not bump or rub against anything.
- Move lock striker sideways in order to adjust the gap dimensions between door and rear side panel.
- Tighten the screws (1).

Lock striker

Screw		Tightening torque	21 Nm

Additional Information

Overview of Tightening Torques

Lock striker Used in step 1

Screw		Tightening torque	21 Nm

Links

Repair instructions (PRE)	Used in step
Gap dimensions, body	1
Gap dimensions, body	1
Gap dimensions, body	1
Gap dimensions, body	1
Gap dimensions, body	1
Gap dimensions, body	1
Gap dimensions, body	1
Gap dimensions, body	1
Gap dimensions, body	1

Repair instructions	Used in step

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51 21 280 Remove and install/replace door stop of the front left or front right door

WARNING

Working on 12 V vehicle electrical system.

Risk of short circuits! Risk of fire!

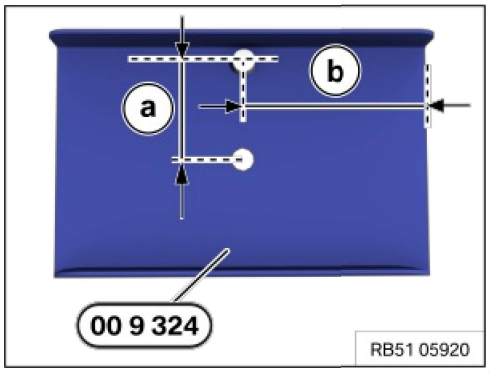
- Detach battery earth lead from battery.
- For additional batteries: Detach all battery earth leads from additional batteries.

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

1 – Preparing the special tool



- **Do this only if the upper bore hole is missing.**
- Mark and make the bore hole on the special tool 0 495 484 (00 9 324) according to the specified dimensions.

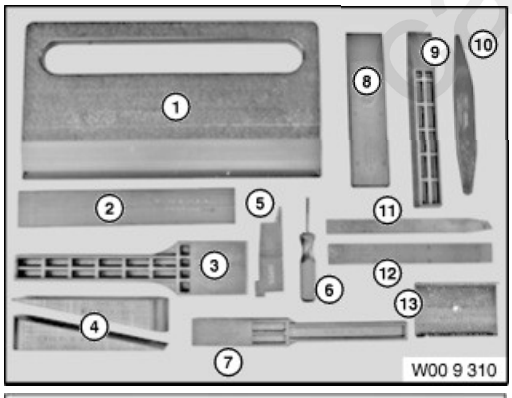
  Make a bore hole on the side with the long shank.

  The diameter of the bore hole is 6 mm.

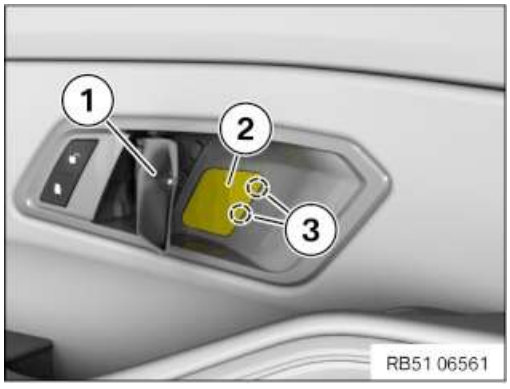
  Dimension (a) = 25 mm from the centre of the existing bore hole

  Dimension (b) = 50 mm from the outer edge of the special tool

2 – Remove door trim panel

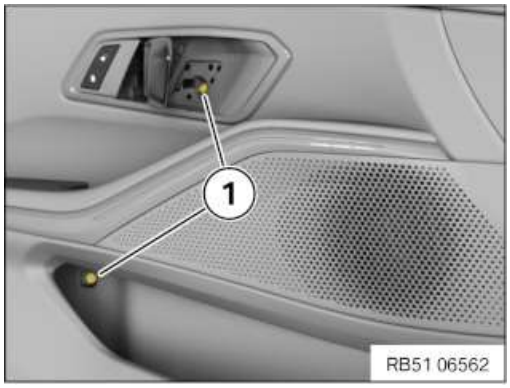


- Have the set of special tools 0 493 752 (00 9 329) ready.

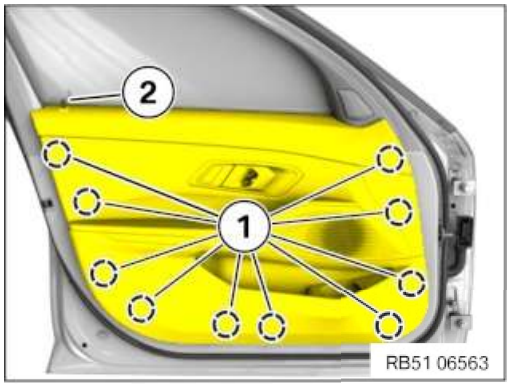


- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

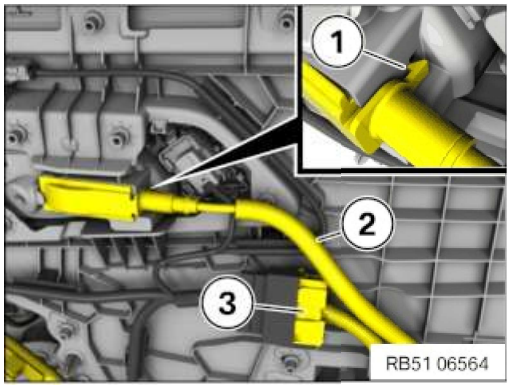
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- Loosen screws (1).



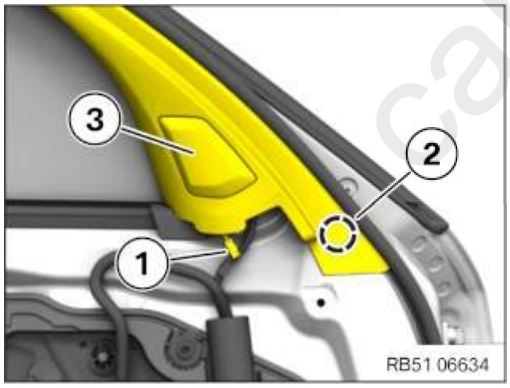
- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).



- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

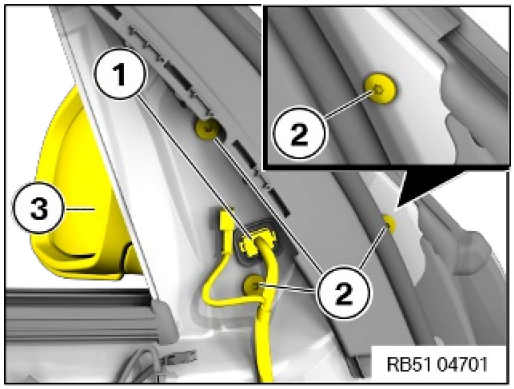
  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

3 – Partially removing the cover on the inner window frame



- If necessary, unlock and disconnect the plug connection (1).
- Unclip clip (2).
- Release the cover on inner window frame (3) in the area of the exterior rearview mirror.

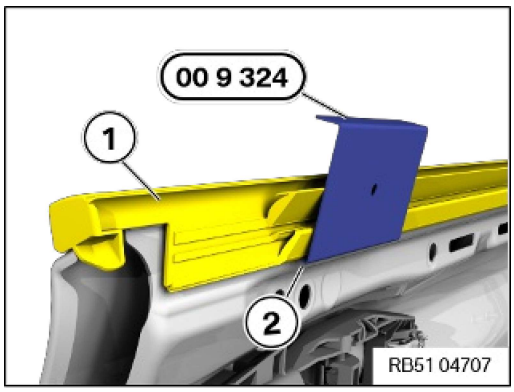
4 – Removing the exterior mirror



- Unlock plug connection (1) and disconnect.
- Release the screws (2) and remove the exterior rearview mirror (3).

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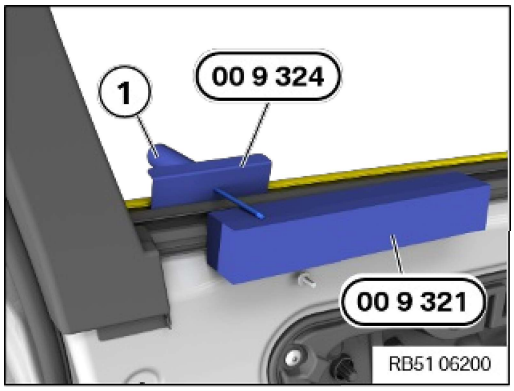
5 – Removing the outer weather strip



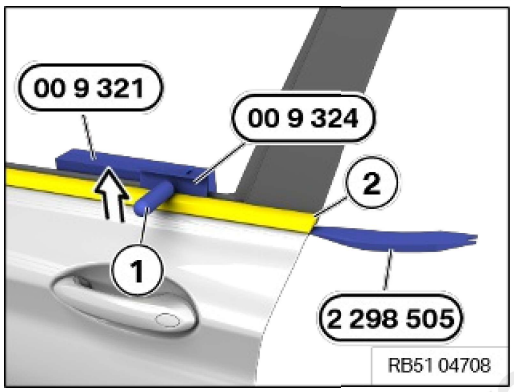
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Insert the special tool 0 495 484 (00 9 324) at the front (on A-pillar) into the window cavity and slide it toward the back.
- Position the special tool 0 495 484 (00 9 324) as shown at the lower edge of the outer weather strip (1) with the short shank (2).



- Place the special tool 0 490 538 (00 9 321) on the inner door panel.
- Thread a suitable tool (1) through the opening in the special tool 0 495 484 (00 9 324).



RISK OF DAMAGE

Scratches.

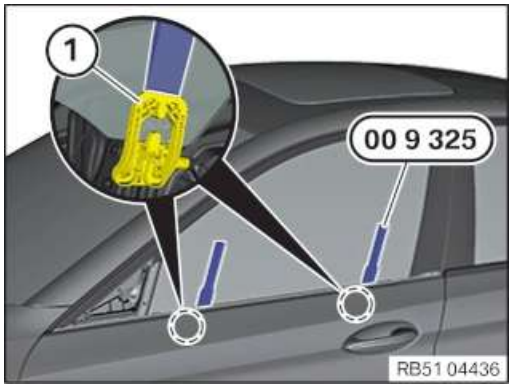
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Lift up the outer rear weather strip (2) with the special tool 2 298 505 as shown; maximum 5 mm.
- With a suitable tool (1), move the lever in the direction of arrow using the special tool 0 490 538 (00 9 321) for support.

  When this happens, the special tool 0 495 484 (00 9 324) lifts the outer weather strip (2) upwards.
- Repeat this process step by step until the outer weather strip(2) is completely disassembled.

6 – Removing front module carrier



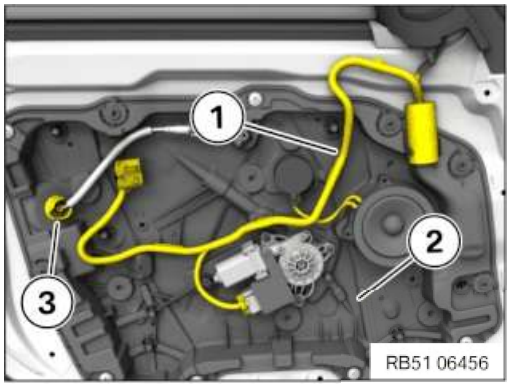
- Secure the door window glass to the door frame when it is closed using adhesive tape.
- Spread both holders (1) on the door window glass simultaneously using special tool 0 496 569 (00 9 325) until it is possible to detach the door window glass.
- Move the power window down.

▸ **Disconnecting all battery earth leads**

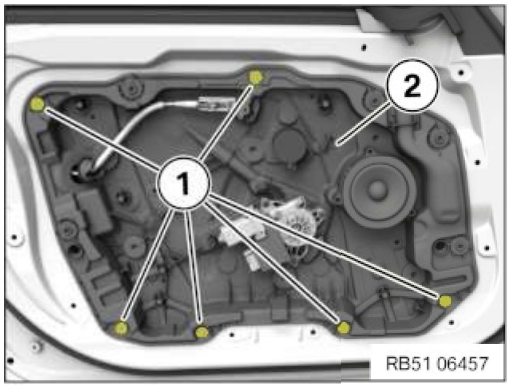
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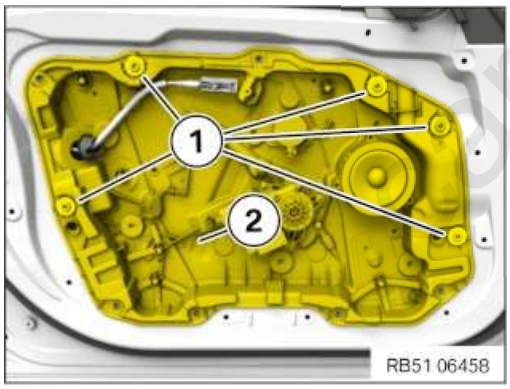
- See additional information.



- Unlock and disconnect all the electrical plug connections.
- Unclip wiring harness (1) on front module carrier (2).
- Release the rubber grommet of the Bowden cable for the inner door opener (3).



- Release screws (1) on front module carrier (2).

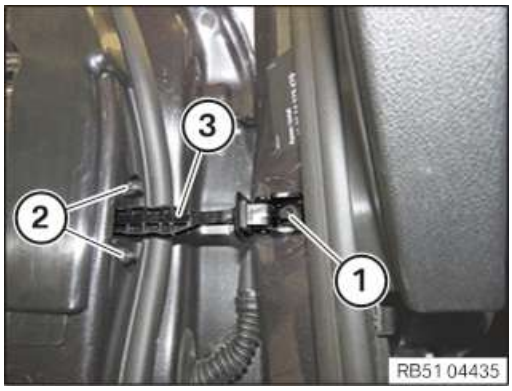


- Open bayonet fitting (1) by twisting and remove front module carrier (2).

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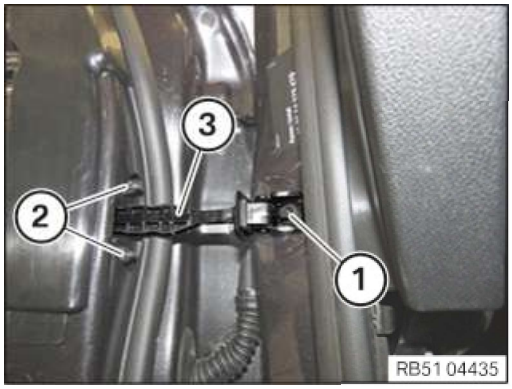
MAIN WORK

7 – Remove door stop



- Loosen screw (1).
- Loosen nuts (2).
- Slide out door brake (3).

8 – Installing the door stop



- Slide in door brake (3).
- Tighten nuts (2).
- Tighten down screw (1).

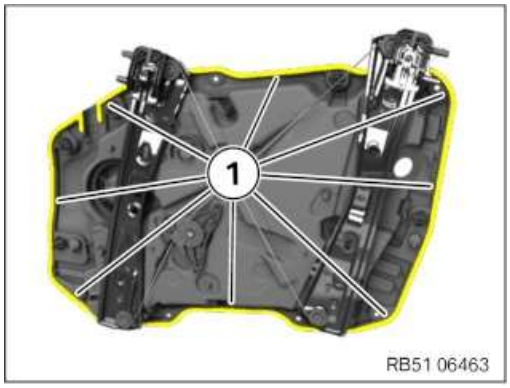
Door stop to pillar

Screw		Tightening torque	28 Nm

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POSTPROCESSES

9 – Installing front module carrier



Check

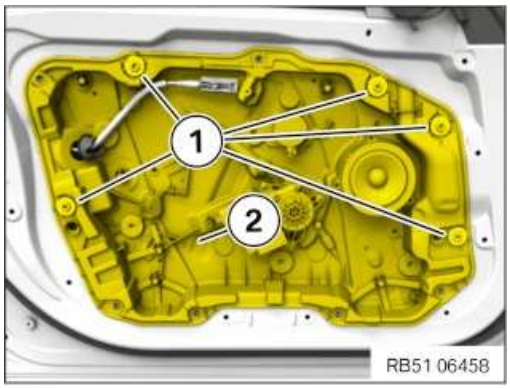
- Check seal (1) of the front module carrier for damage.

Result

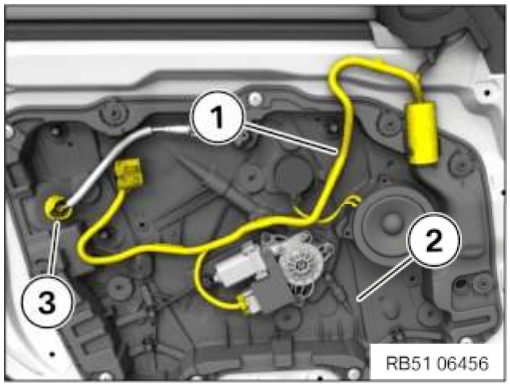
» Seal of the front module carrier is damaged.

Measure

- Renew the front module carrier.



- Position front module carrier (2) on the door.
- Lock bayonet fittings (1) by twisting them.

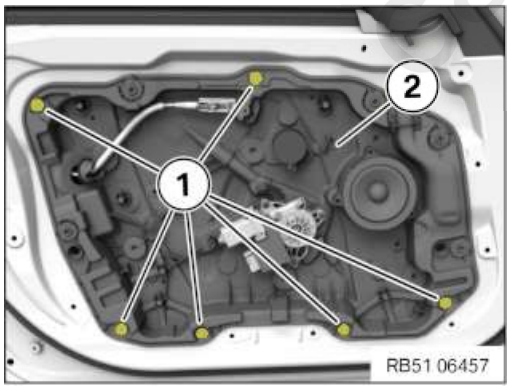


- Connect all electrical connectors and lock.
- Clip in wiring harness (1) on front module carrier (2).
- Install rubber grommet of the Bowden cable for the inner door opener (3).
- Check rubber grommet of the Bowden cable for the inner door handle (3) for correct seating.

► **Disconnecting all battery earth leads**



- See additional information.



- Tighten screws (1) of the front module carrier (2).

Module carrier to front door

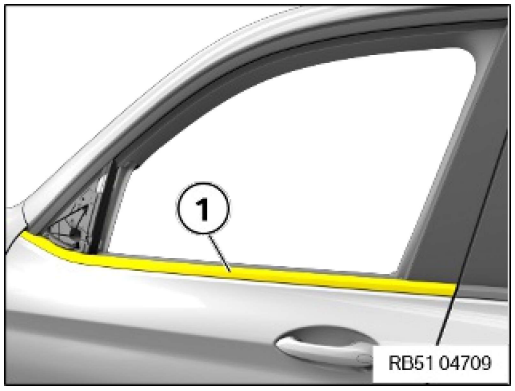
Torx socket M5x12		Tightening torque	8 Nm

- Move the power window upwards until the fixed side window glass correctly engages in both holders.

  Remove adhesive tape.

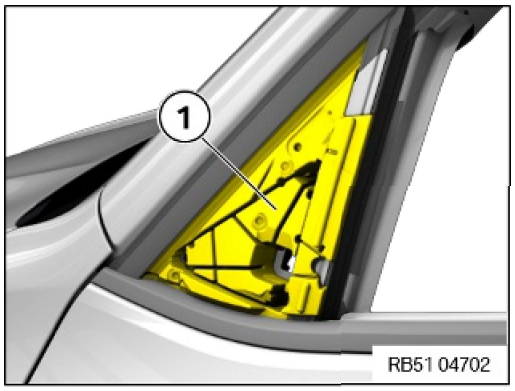
10 – Install outer weather strip

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- Check outer weather strip (1) for damage, renew the outer weather strip (1) if required.
- Coat the outer weather strip (1) with a suitable lubricant prior to installation.
- Fit outer weather strip (1) on the front door.
- Press down the outer weather strip (1) across its entire length.

11 – Installing the exterior mirror



Check

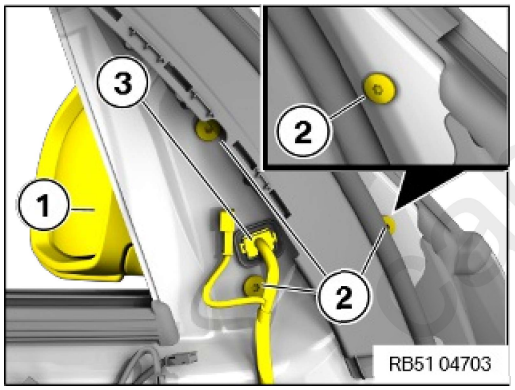
- Check mirror triangle seal (1) for damage.

Result

» The mirror triangle seal is damaged.

Measure

- Replace mirror triangle seal .



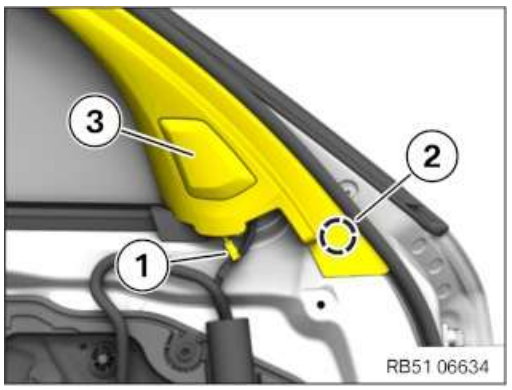
- Position exterior rearview mirror (1) and tighten screws (2).

Exterior mirror to door

Thread-tapping hexagon screw		Tightening torque	10 Nm

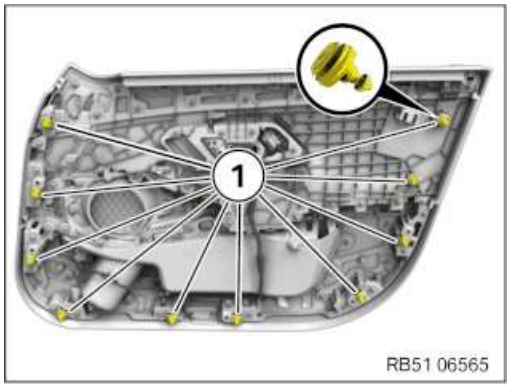
- Connect connectors (3) and lock.

12 – Installing the cover on the inside of the window frame partially



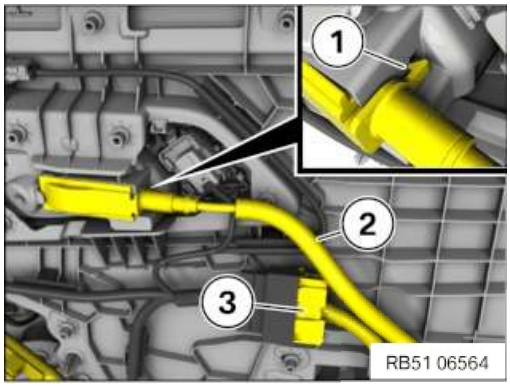
- Mount cover on the inner window frame (3) in the area of the exterior rearview mirror.
- Clip in the clip (2).
- If necessary, connect the connector (1) and lock it.

13 – Install door trim panel

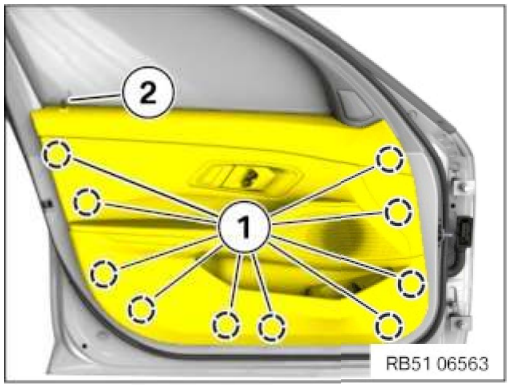


- Renew the clips (1).

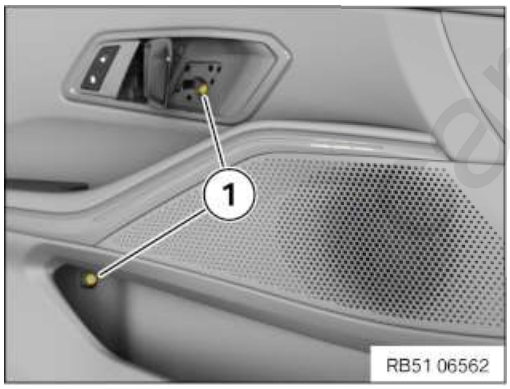
  Parts: Clips



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



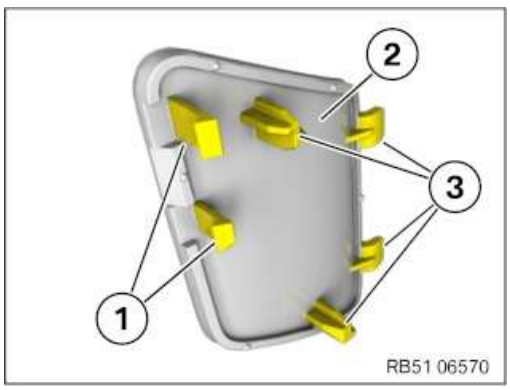
- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).



- Tighten the screws (1).

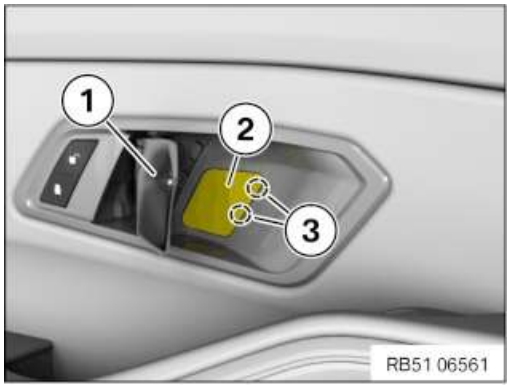
Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).

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- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

Door stop to pillar — Used in step 8

Screw		Tightening torque	28 Nm

Module carrier to front door — Used in step 9

Torx socket M5x12		Tightening torque	8 Nm

Exterior mirror to door — Used in step 11

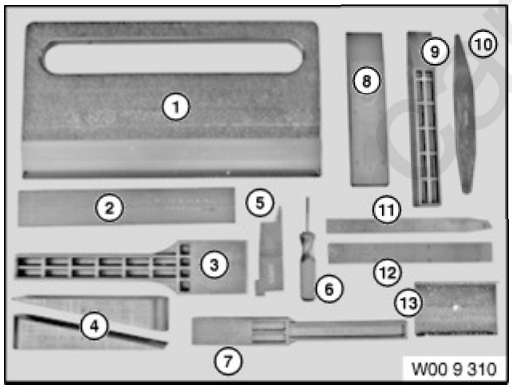
Thread-tapping hexagon screw		Tightening torque	10 Nm

Door trim panel to door — Used in step 13

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

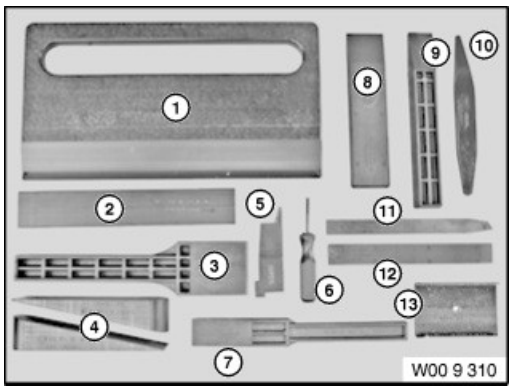
0 495 484 (00 9 324) Panel wedge



Common — Used in step 15

Usage	(Panel wedge (panel)) For removing cavity strips on the doors from E60
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 25 05 (230)

0 493 752 (00 9 329) Case

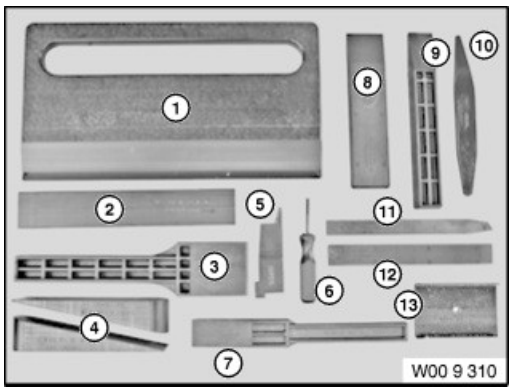


Common — Used in step 2

Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

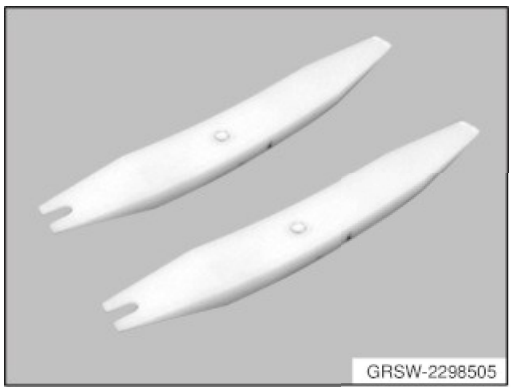
carsdiagn.com

0 490 538 (00 9 321) Folding stick



Common	Used in step 5
Usage	
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

2 298 505 Wedge



Common	Used in step 5
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

0 496 569 (00 9 325) Wedge



Common	Used in step 6
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	69
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	69
61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	69
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	69
61 20 900 Disconnecting and connecting battery earth lead	69

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61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting battery earth lead	69
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61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	69
61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting battery earth lead	69
61 20 900 Disconnecting and connecting battery earth lead	69

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51 21 235 Removing and installing/replacing the Bowden cable for the inside door opener on the left or right front door

WARNING

Working on 12 V vehicle electrical system.

Risk of short circuits! Risk of fire!

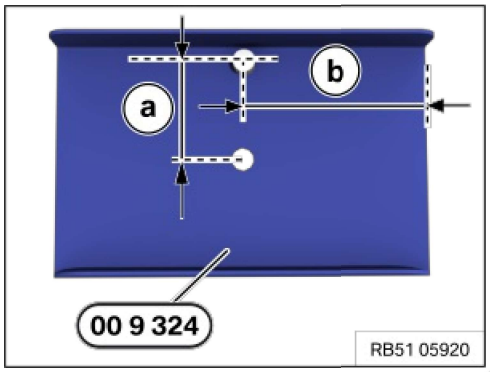
- Detach battery earth lead from battery.
- For additional batteries: Detach all battery earth leads from additional batteries.

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

1 – Preparing the special tool



- **Do this only if the upper bore hole is missing.**
- Mark and make the bore hole on the special tool 0 495 484 (00 9 324) according to the specified dimensions.

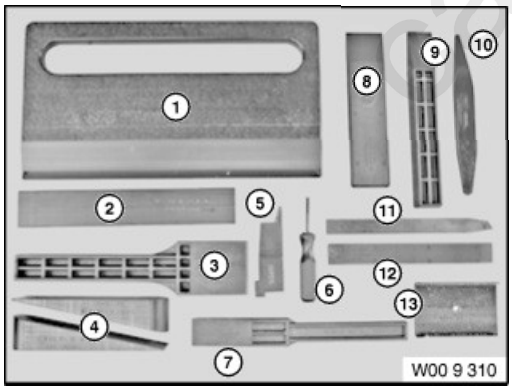
  Make a bore hole on the side with the long shank.

  The diameter of the bore hole is 6 mm.

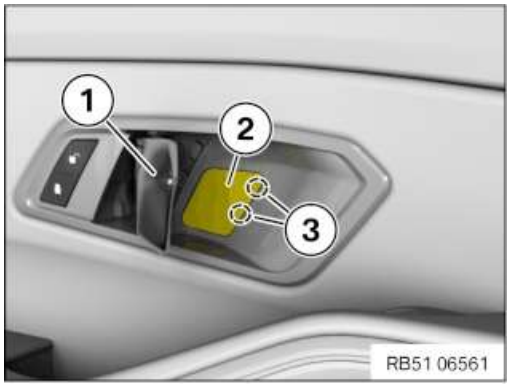
  Dimension (a) = 25 mm from the centre of the existing bore hole

  Dimension (b) = 50 mm from the outer edge of the special tool

2 – Remove door trim panel

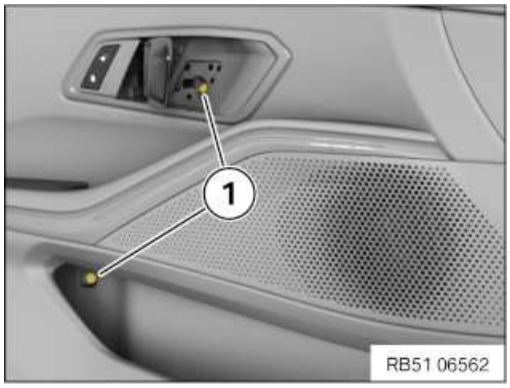


- Have the set of special tools 0 493 752 (00 9 329) ready.

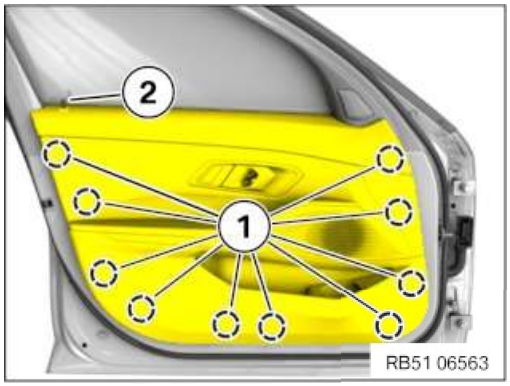


- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

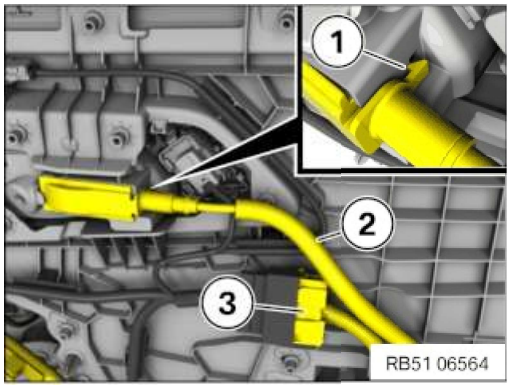
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- Loosen screws (1).



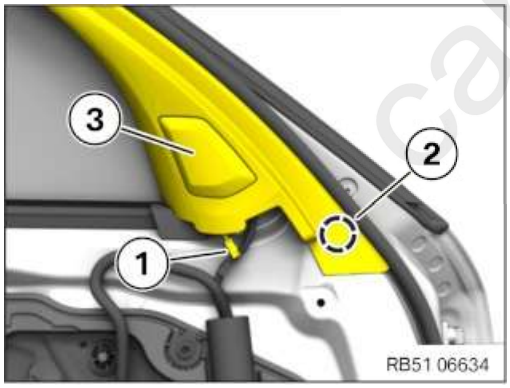
- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).



- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

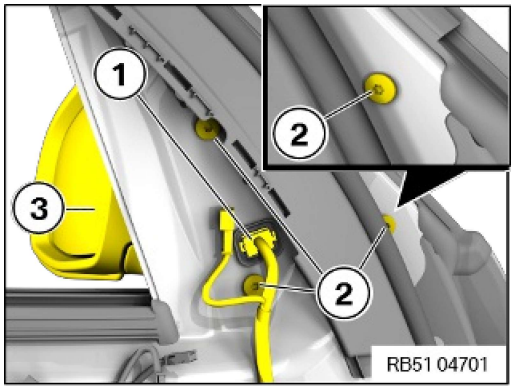
  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

3 – Partially removing the cover on the inner window frame



- If necessary, unlock and disconnect the plug connection (1).
- Unclip clip (2).
- Release the cover on inner window frame (3) in the area of the exterior rearview mirror.

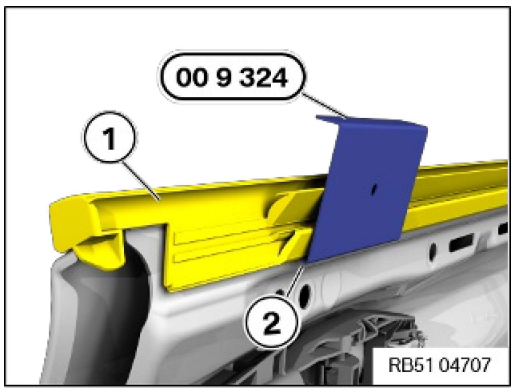
4 – Removing the exterior mirror



- Unlock plug connection (1) and disconnect.
- Release the screws (2) and remove the exterior rearview mirror (3).

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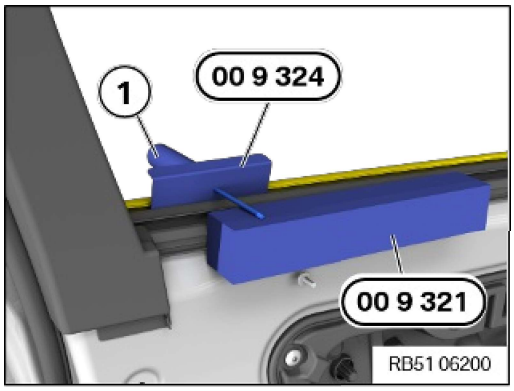
5 – Removing the outer weather strip



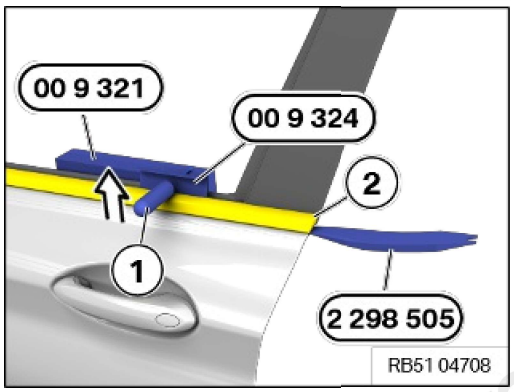
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Insert the special tool 0 495 484 (00 9 324) at the front (on A-pillar) into the window cavity and slide it toward the back.
- Position the special tool 0 495 484 (00 9 324) as shown at the lower edge of the outer weather strip (1) with the short shank (2).



- Place the special tool 0 490 538 (00 9 321) on the inner door panel.
- Thread a suitable tool (1) through the opening in the special tool 0 495 484 (00 9 324).



RISK OF DAMAGE

Scratches.

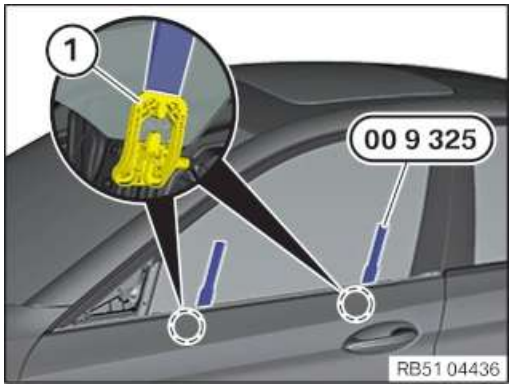
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Lift up the outer rear weather strip (2) with the special tool 2 298 505 as shown; maximum 5 mm.
- With a suitable tool (1), move the lever in the direction of arrow using the special tool 0 490 538 (00 9 321) for support.

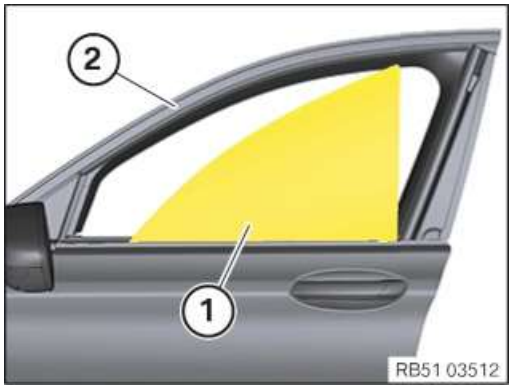
  When this happens, the special tool 0 495 484 (00 9 324) lifts the outer weather strip (2) upwards.
- Repeat this process step by step until the outer weather strip(2) is completely disassembled.

6 – Remove front door window glass



- Attach the front door window glass when closed using adhesive tape.
- Spread both holders (1) on the front door window glass simultaneously using special tool 0 496 569 (00 9 325) until it is possible to detach the front door window glass.
- Move the power window down.

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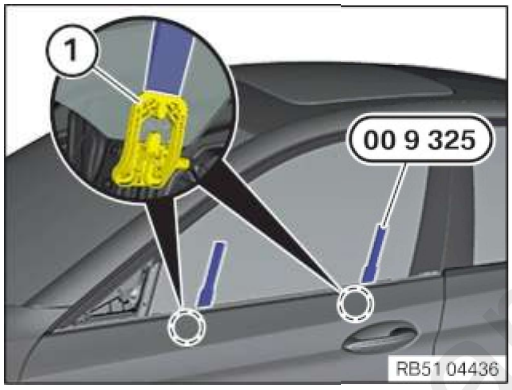
- Remove adhesive tape from the front door window glass (1).
- Slide the front door window glass (1) down.
- Twist the front door window glass (1) in the door frame (2).
- Guide the front door window glass (1) out to the top.

7 – Disconnecting all battery earth leads



- See additional information.

8 – Removing front module carrier



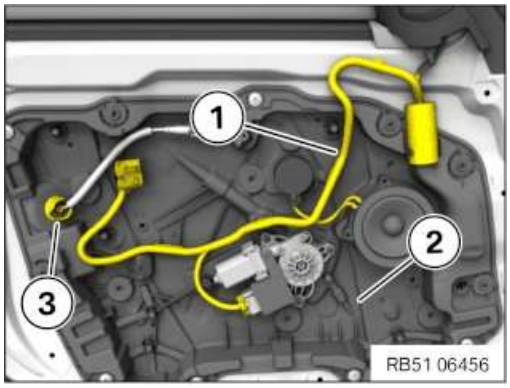
- Secure the door window glass to the door frame when it is closed using adhesive tape.
- Spread both holders (1) on the door window glass simultaneously using special tool 0 496 569 (00 9 325) until it is possible to detach the door window glass.
- Move the power window down.

▶ **Disconnecting all battery earth leads**

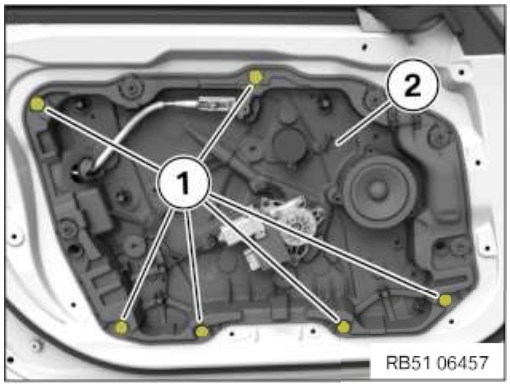


- See additional information.

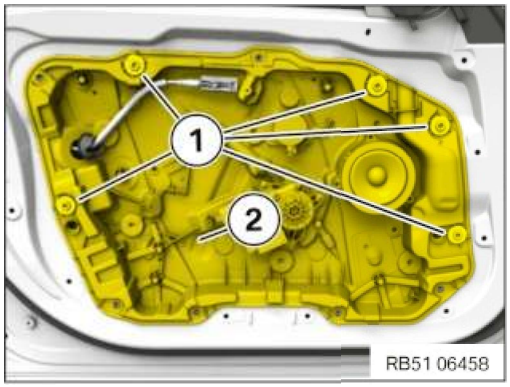
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- Unlock and disconnect all the electrical plug connections.
- Unclip wiring harness (1) on front module carrier (2).
- Release the rubber grommet of the Bowden cable for the inner door opener (3).



- Release screws (1) on front module carrier (2).



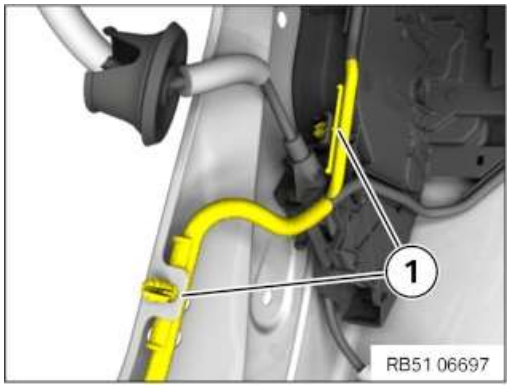
- Open bayonet fitting (1) by twisting and remove front module carrier (2).

MAIN WORK

9 – Replacing the Bowden cable for the inner door opener

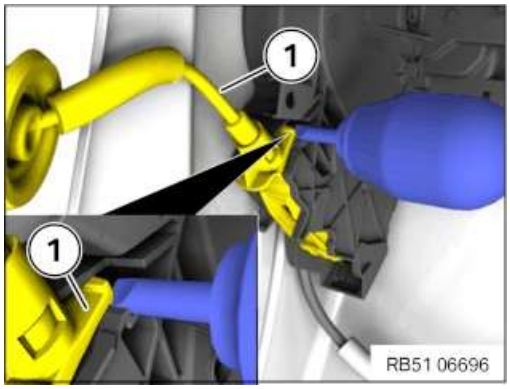
NOTICE

To provide a better overview: Illustration of surrounding parts in removed state.

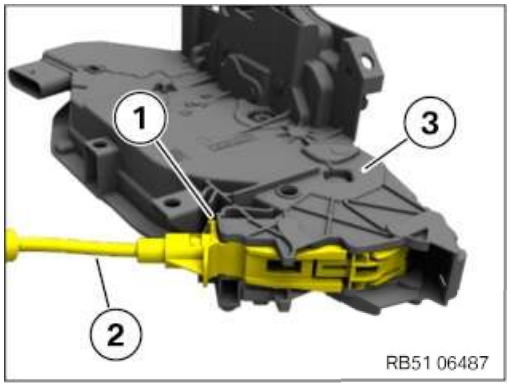


- Unclip clips (1) and set aside the wiring harness.

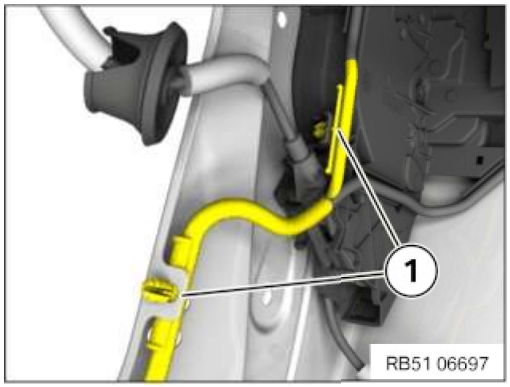
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- Unclip clip (1) with a suitable tool.
- Remove the Bowden cable for the inner door opener from the door lock.



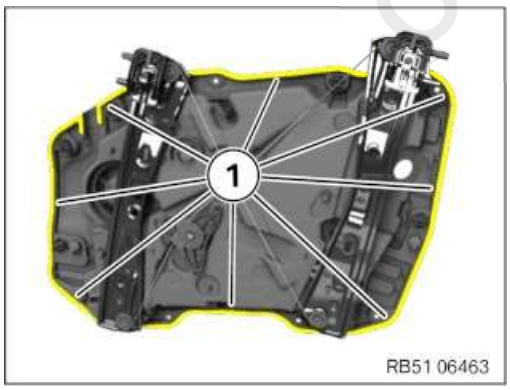
- Install the new Bowden cable for inner door opener (2) in door lock (3).
- Clip in the clip (1).



- Clip in wiring harness with clips (1).

POSTPROCESSES

10 – Installing front module carrier



Check

- Check seal (1) of the front module carrier for damage.

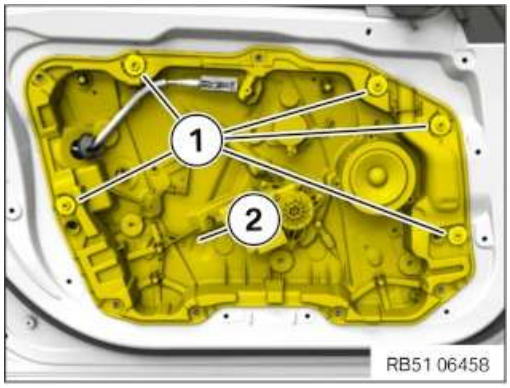
Result

» Seal of the front module carrier is damaged.

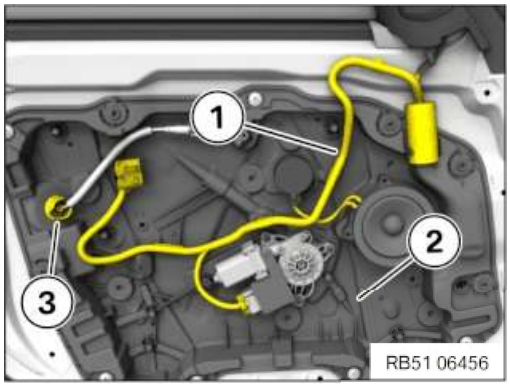
Measure

- Renew the front module carrier.

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- Position front module carrier (2) on the door.
- Lock bayonet fittings (1) by twisting them.

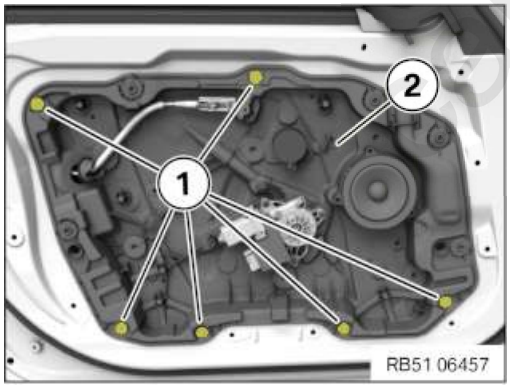


- Connect all electrical connectors and lock.
- Clip in wiring harness (1) on front module carrier (2).
- Install rubber grommet of the Bowden cable for the inner door opener (3).
- Check rubber grommet of the Bowden cable for the inner door handle (3) for correct seating.

▶ **Disconnecting all battery earth leads**



- See additional information.



- Tighten screws (1) of the front module carrier (2).

Module carrier to front door

Torx socket M5x12		Tightening torque	8 Nm

- Move the power window upwards until the fixed side window glass correctly engages in both holders.

  Remove adhesive tape.

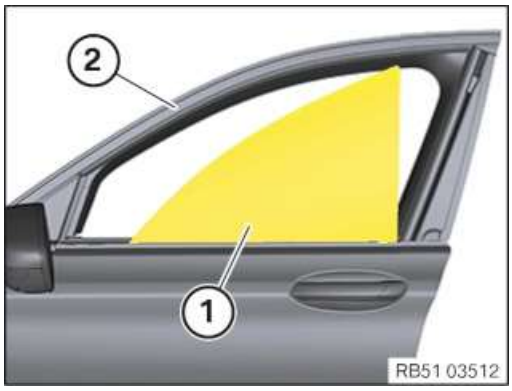
11 – Disconnecting all battery earth leads



- See additional information.

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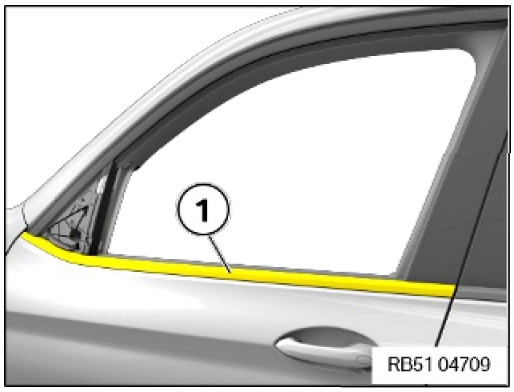
12 – Installing front door window glass



- Insert the twisted front door window glass (1) into the door frame (2).
- Insert the front door window glass (1) into the rubber window seals by twisting it.

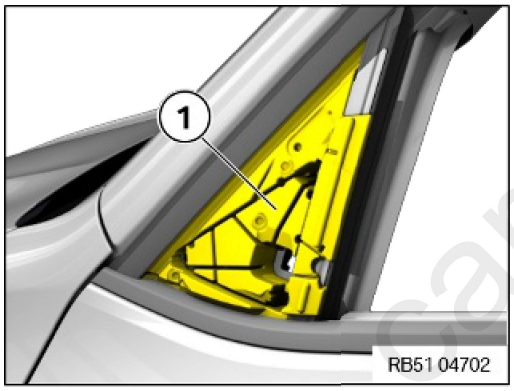
  The front door window glass (1) must be positioned correctly in the rubber window seal.
- Push the front door window glass (1) fully upwards and secure it to the door frame (2) using adhesive tape.
- Shift the power windows upwards until the front door window glass (1) correctly engages in both holders.
- Remove adhesive tape.

13 – Install outer weather strip



- Check outer weather strip (1) for damage, renew the outer weather strip (1) if required.
- Coat the outer weather strip (1) with a suitable lubricant prior to installation.
- Fit outer weather strip (1) on the front door.
- Press down the outer weather strip (1) across its entire length.

14 – Installing the exterior mirror



Check

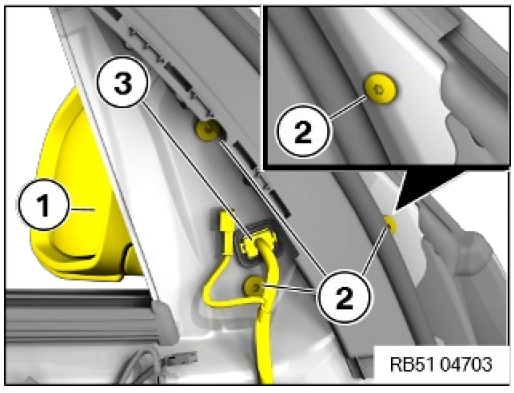
- Check mirror triangle seal (1) for damage.

Result

» The mirror triangle seal is damaged.

Measure

- Replace mirror triangle seal .



- Position exterior rearview mirror (1) and tighten screws (2).

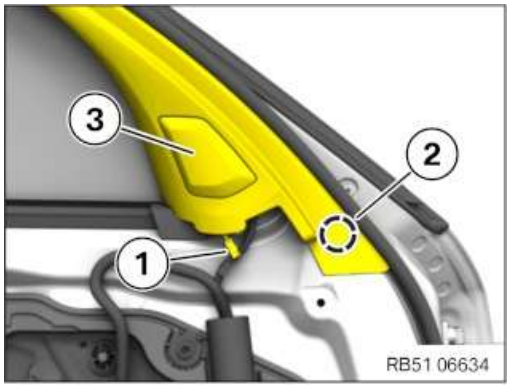
Exterior mirror to door

Thread-tapping hexagon screw		Tightening torque	10 Nm

- Connect connectors (3) and lock.

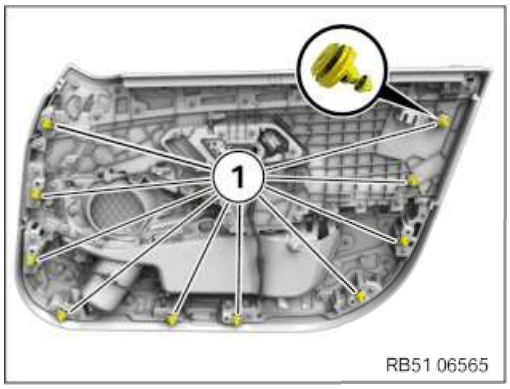
15 – Installing the cover on the inside of the window frame partially

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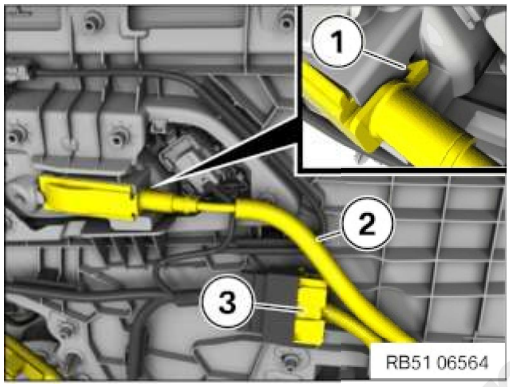
- Mount cover on the inner window frame (3) in the area of the exterior rearview mirror.
- Clip in the clip (2).
- If necessary, connect the connector (1) and lock it.

16 – Install door trim panel

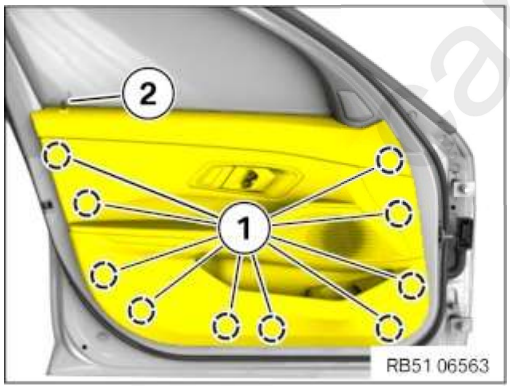


- Renew the clips (1).

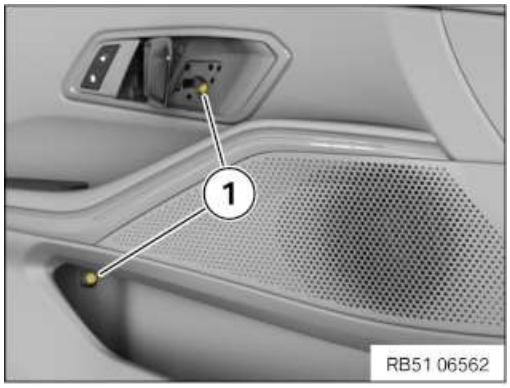
  Parts: Clips



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).

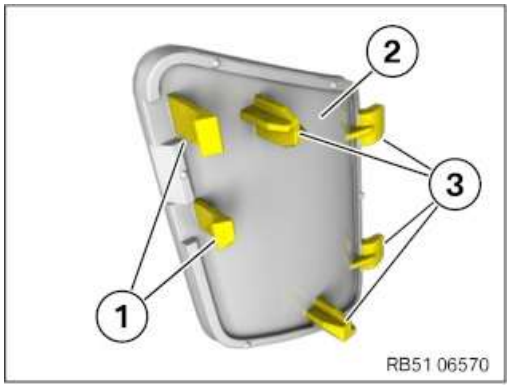


- Tighten the screws (1).

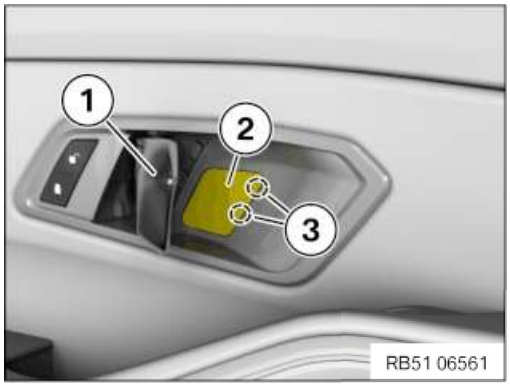
Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm

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- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

Module carrier to front door — Used in step 10

Torx socket M5x12		Tightening torque	8 Nm

Exterior mirror to door — Used in step 14

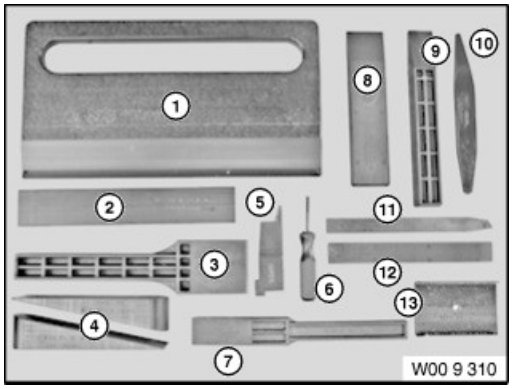
Thread-tapping hexagon screw		Tightening torque	10 Nm

Door trim panel to door — Used in step 16

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

0 495 484 (00 9 324) Panel wedge

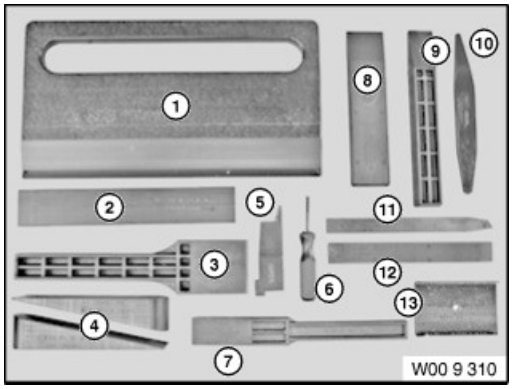


Common — Used in step 15

Usage	(Panel wedge (panel)) For removing cavity strips on the doors from E60
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 25 05 (230)

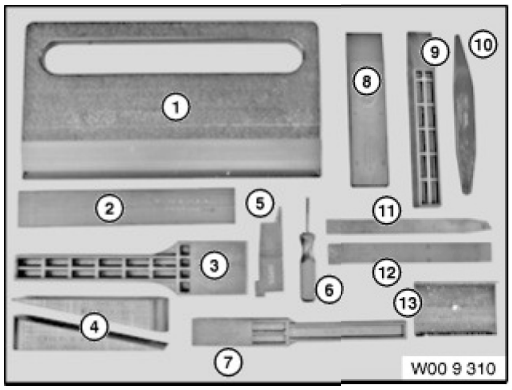
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0 493 752 (00 9 329) Case



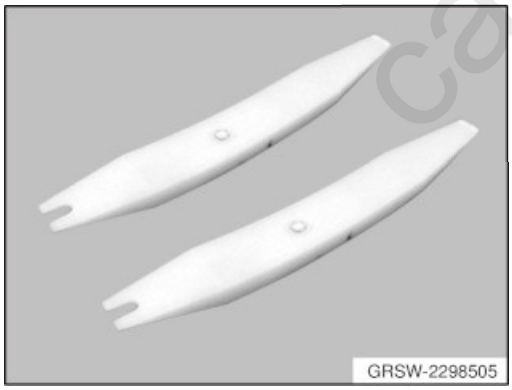
Common	Used in step 2
Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

0 490 538 (00 9 321) Folding stick



Common	Used in step 5
Usage	
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

2 298 505 Wedge



Common	Used in step 5
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

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0 496 569 (00 9 325) Wedge



Common	Used in step 68
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	781011
61 20 900 Disconnecting and connecting battery earth lead	781011
61 20 900 Disconnecting and connecting battery earth lead	781011
61 20 900 Disconnecting and connecting battery earth lead	781011
61 20 900 Disconnecting and connecting battery earth lead	781011
61 20 900 Disconnecting and connecting battery earth lead	781011
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	781011
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	781011
61 20 900 Disconnecting and connecting battery earth lead	781011
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	781011
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	781011
61 20 900 Disconnecting and connecting battery earth lead	781011
61 20 900 Disconnecting and connecting battery earth lead	781011
61 20 900 Disconnecting and connecting battery earth lead	781011
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61 20 900 Disconnecting and connecting battery earth lead	781011
61 20 900 Disconnecting and connecting battery earth lead	781011
61 20 900 Disconnecting and connecting battery earth lead	781011
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	781011
61 20 900 Disconnecting and connecting battery earth lead	781011
61 20 900 Disconnecting and connecting battery earth lead	781011
61 20 900 Disconnecting and connecting battery earth lead	781011
61 20 900 Disconnecting and connecting battery earth lead	781011
61 20 900 Disconnecting and connecting battery earth lead	781011
61 20 900 Disconnecting and connecting battery earth lead	781011
61 20 900 Disconnecting and connecting battery earth lead	781011

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51 21 233 Removing and installing/replacing the Bowden cable of the outside door handle at the front left or right

WARNING

Working on 12 V vehicle electrical system.

Risk of short circuits! Risk of fire!

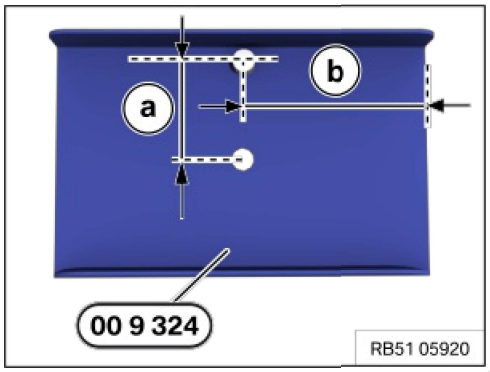
- Detach battery earth lead from battery.
- For additional batteries: Detach all battery earth leads from additional batteries.

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

1 – Preparing the special tool



- **Do this only if the upper bore hole is missing.**
- Mark and make the bore hole on the special tool 0 495 484 (00 9 324) according to the specified dimensions.

  Make a bore hole on the side with the long shank.

  The diameter of the bore hole is 6 mm.

  Dimension (a) = 25 mm from the centre of the existing bore hole

  Dimension (b) = 50 mm from the outer edge of the special tool

2 – Remove the outside door handle

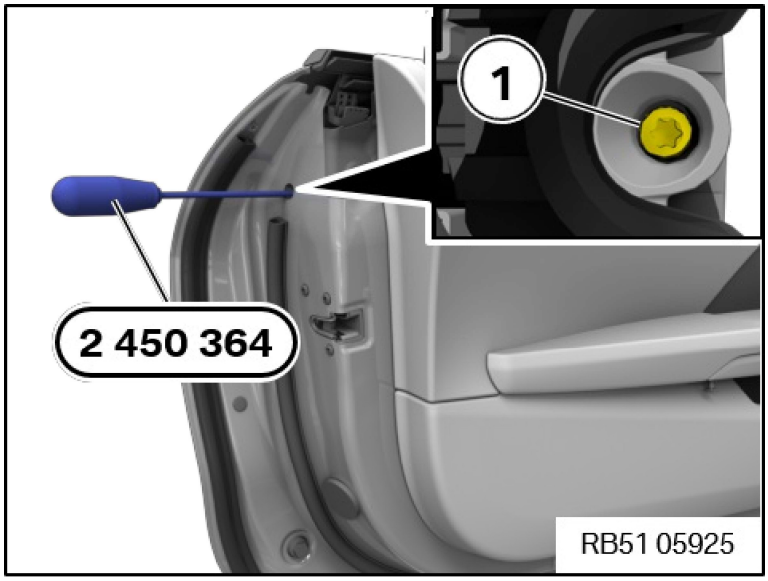
NOTICE

Description is for left component only. Procedure on the right side is identical.

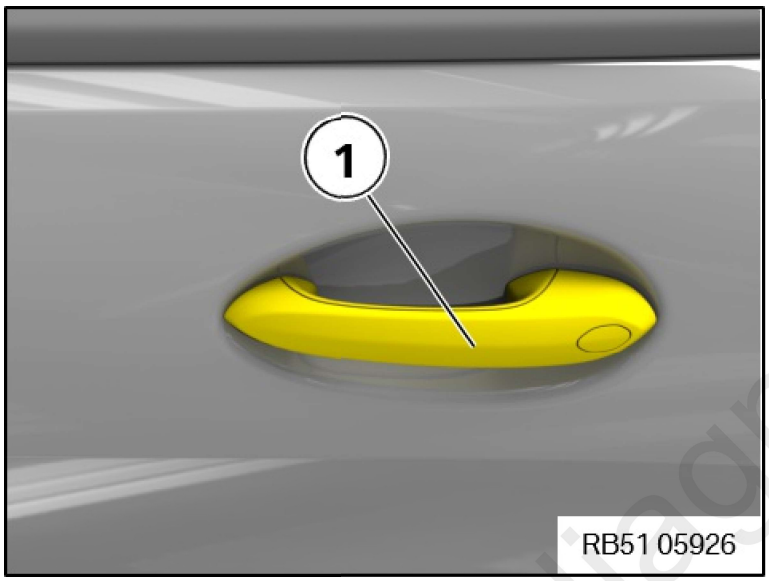


- Remove the seal plug (1).

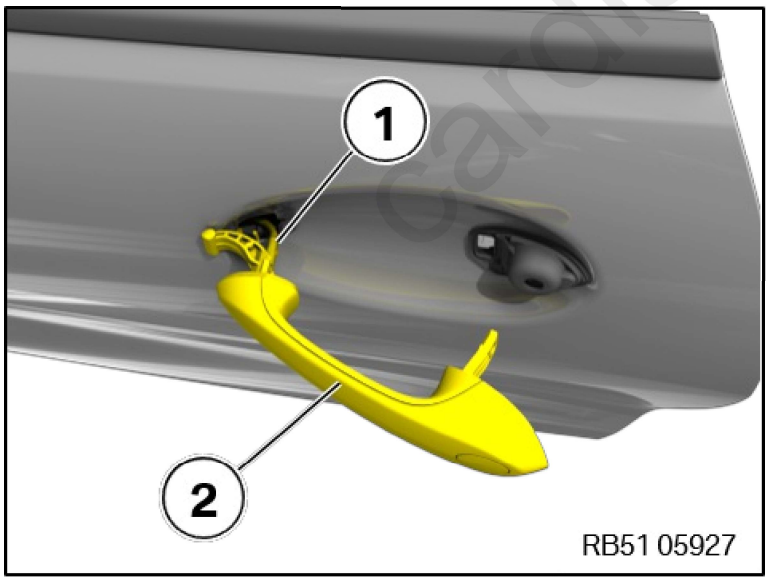
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- Release the clamping bolt (1) from the outside door handle support with the special tool 2 450 364.

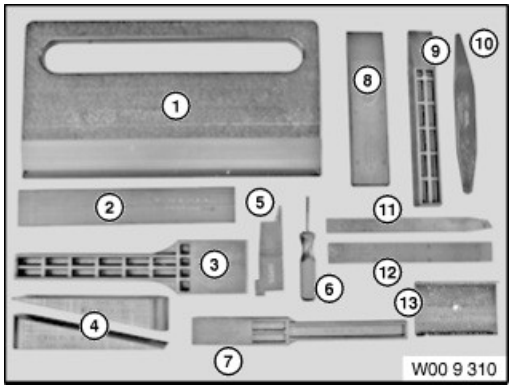


- Pull the rear outside door handle (1) to the outside and remove it in the process.
- Pivot the outside door handle (1) further towards the outside and in this process, remove it at the front.

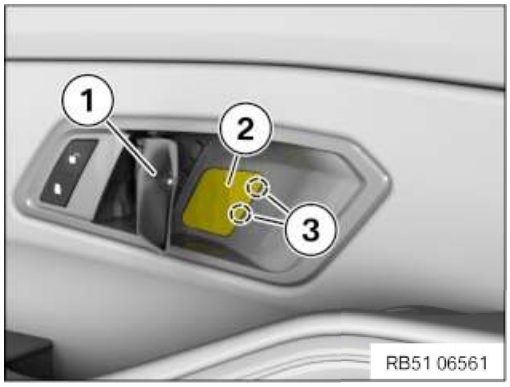


- Unlock and disconnect plug connections (1).
- Remove the outside door handle (2).

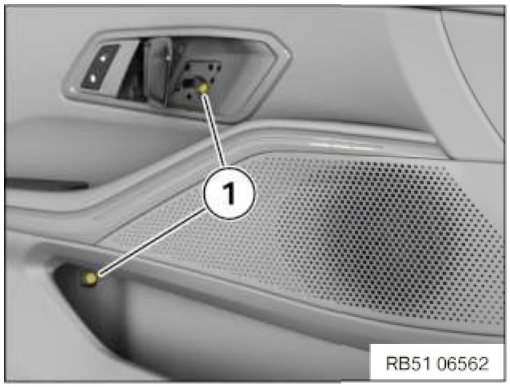
3 – Remove door trim panel



- Have the set of special tools 0 493 752 (00 9 329) ready.



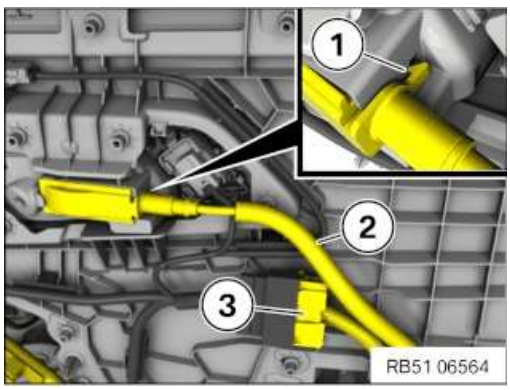
- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).



- Loosen screws (1).



- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).

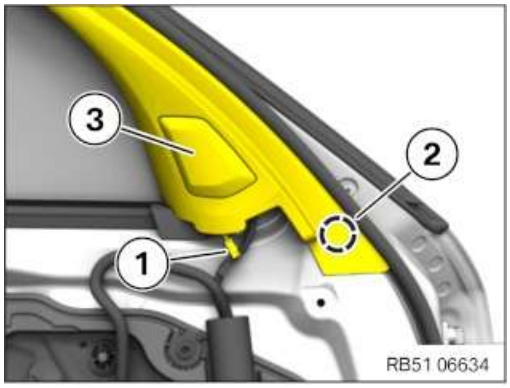


- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

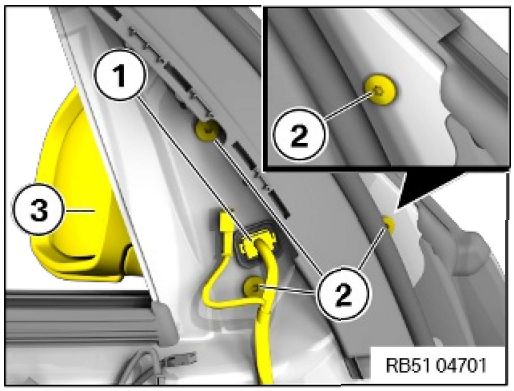
4 – Partially removing the cover on the inner window frame

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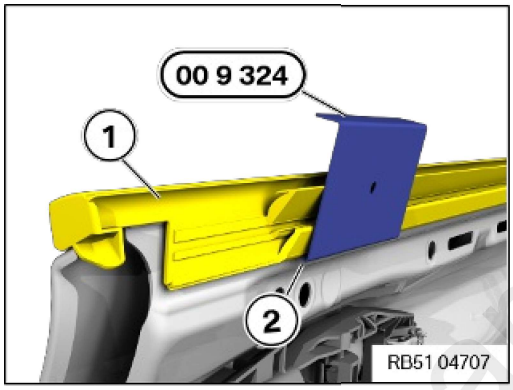
- If necessary, unlock and disconnect the plug connection (1).
- Unclip clip (2).
- Release the cover on inner window frame (3) in the area of the exterior rearview mirror.

5 – Removing the exterior mirror



- Unlock plug connection (1) and disconnect.
- Release the screws (2) and remove the exterior rearview mirror (3).

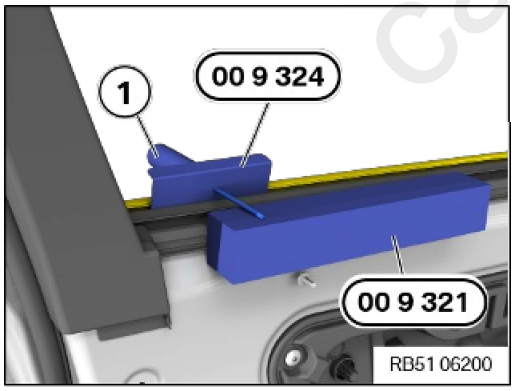
6 – Removing the outer weather strip



NOTICE

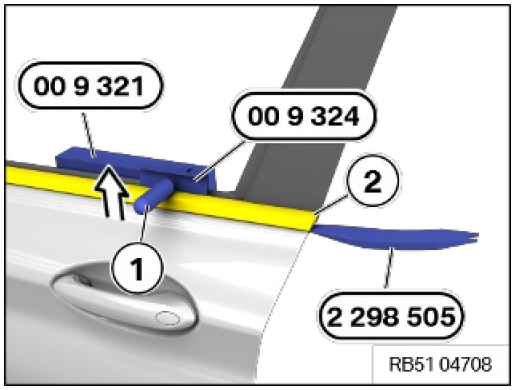
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Insert the special tool 0 495 484 (00 9 324) at the front (on A-pillar) into the window cavity and slide it toward the back.
- Position the special tool 0 495 484 (00 9 324) as shown at the lower edge of the outer weather strip (1) with the short shank (2).



- Place the special tool 0 490 538 (00 9 321) on the inner door panel.
- Thread a suitable tool (1) through the opening in the special tool 0 495 484 (00 9 324).

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RISK OF DAMAGE

Scratches.

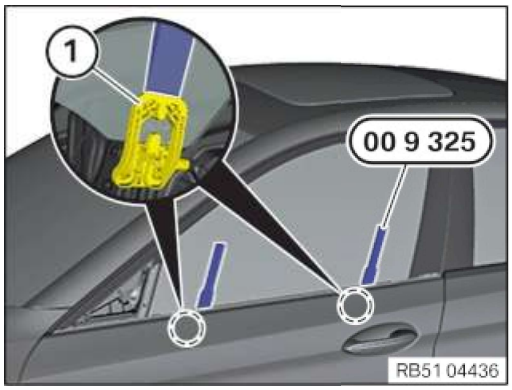
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

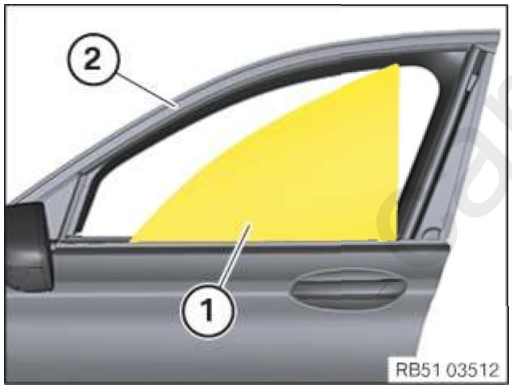
- Lift up the outer rear weather strip (2) with the special tool 2 298 505 as shown; maximum 5 mm.
- With a suitable tool (1), move the lever in the direction of arrow using the special tool 0 490 538 (00 9 321) for support.

  When this happens, the special tool 0 495 484 (00 9 324) lifts the outer weather strip (2) upwards.
- Repeat this process step by step until the outer weather strip(2) is completely disassembled.

7 – Remove front door window glass



- Attach the front door window glass when closed using adhesive tape.
- Spread both holders (1) on the front door window glass simultaneously using special tool 0 496 569 (00 9 325) until it is possible to detach the front door window glass.
- Move the power window down.



- Remove adhesive tape from the front door window glass (1).
- Slide the front door window glass (1) down.
- Twist the front door window glass (1) in the door frame (2).
- Guide the front door window glass (1) out to the top.

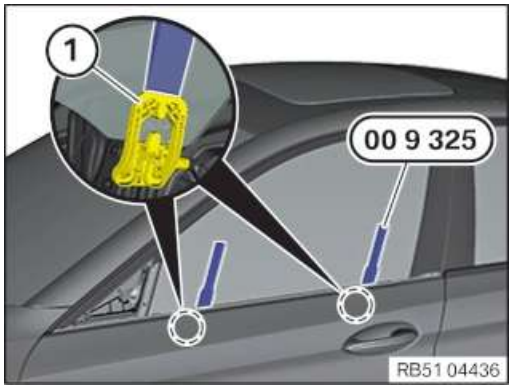
8 – Disconnecting all battery earth leads



- See additional information.

9 – Removing front module carrier

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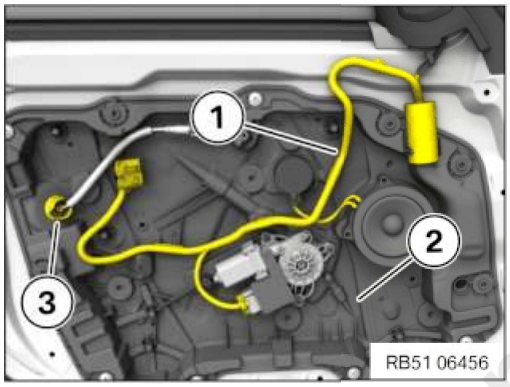


- Secure the door window glass to the door frame when it is closed using adhesive tape.
- Spread both holders (1) on the door window glass simultaneously using special tool 0 496 569 (00 9 325) until it is possible to detach the door window glass.
- Move the power window down.

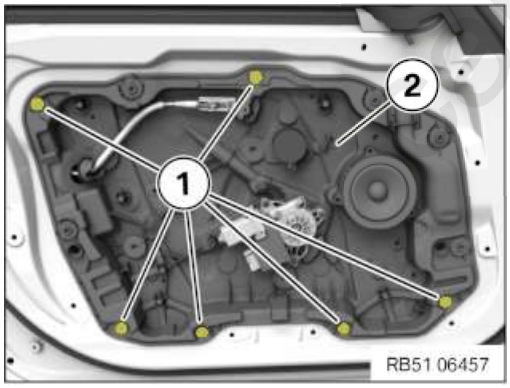
▶ **Disconnecting all battery earth leads**



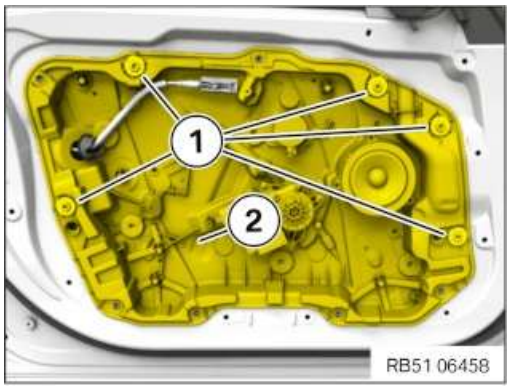
- See additional information.



- Unlock and disconnect all the electrical plug connections.
- Unclip wiring harness (1) on front module carrier (2).
- Release the rubber grommet of the Bowden cable for the inner door opener (3).

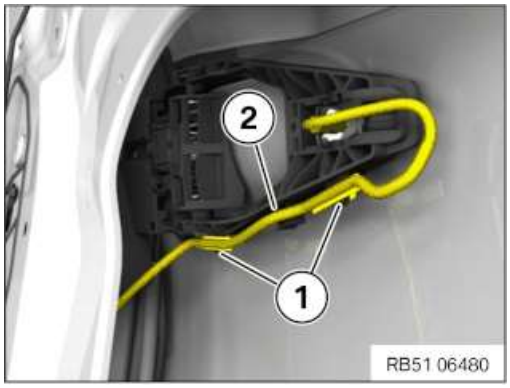


- Release screws (1) on front module carrier (2).

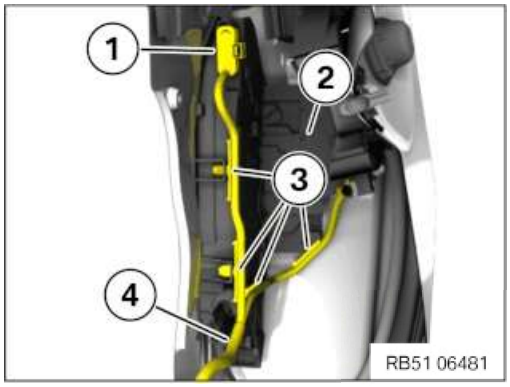


- Open bayonet fitting (1) by twisting and remove front module carrier (2).

10 – Removing the outer door handle support



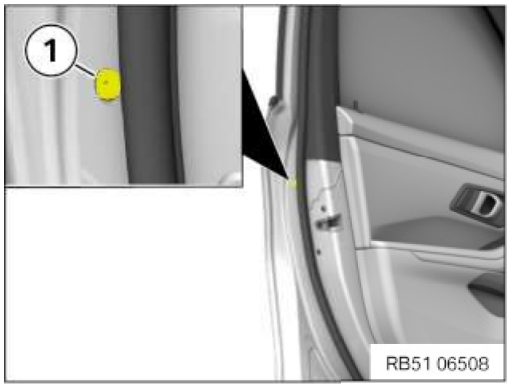
- Unclip clips (1) and place wiring harness (2) aside.



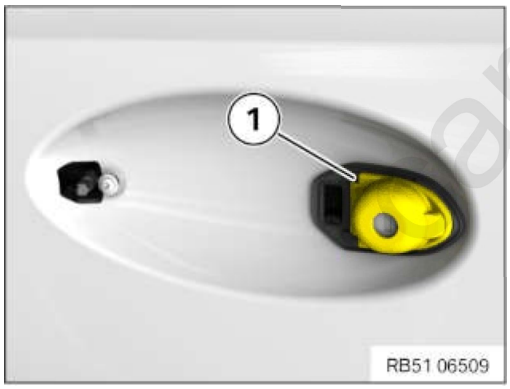
NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

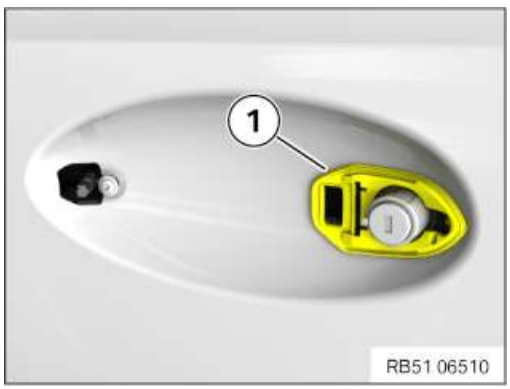
- Unlock and disconnect the plug connection (1)on the door lock (2).
- Unclip clips (3).
- Remove the wiring harness (4) and put to one side.



- Loosen screw (1).

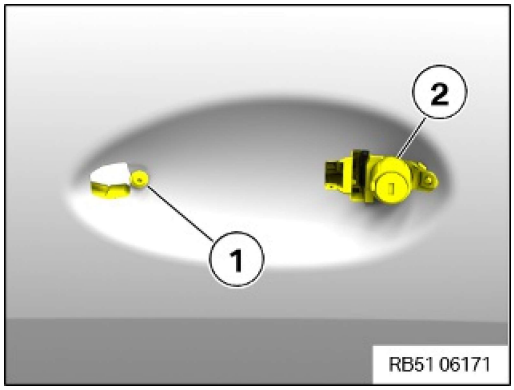


- Remove the cover (1).

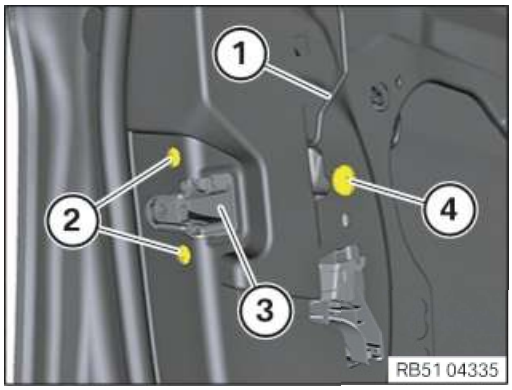


- Remove seal (1) for the outside door handle.

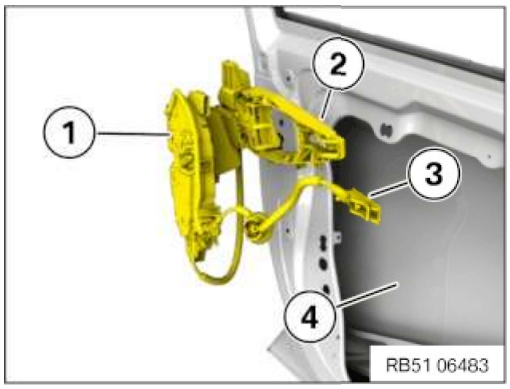
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- Loosen screw (1).
- Slide the outside door handle support (2) forward and thread out to the inside.



- Unclip locking rod (1).
- Release screws (2) and (4) of the door lock (3).

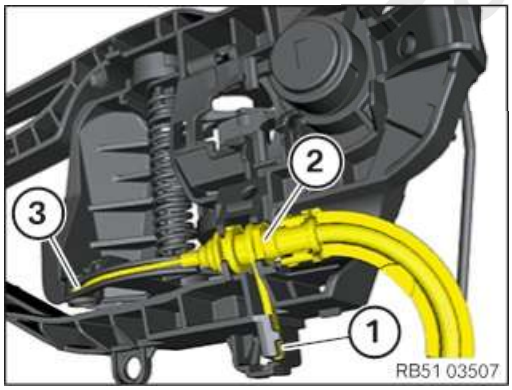


- Thread out door lock (1) together with the outside door handle support (2) and the Bowden cable for inner door opener (3) from the door (4).

  Make sure that the seal of door lock (1) is not damaged.

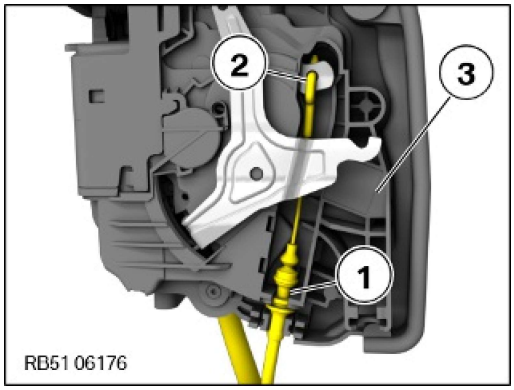
MAIN WORK

11 – Replacing Bowden cable for outside door handle

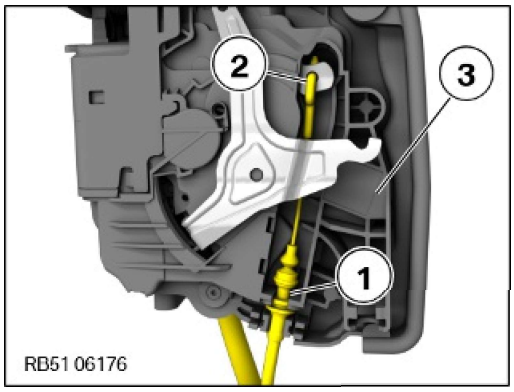


- Lift tab (1) over the latch mechanisms and turn upwards.
- Detach the Bowden cable for outside door handle (2).
- Detach the Bowden cable nipple (3).

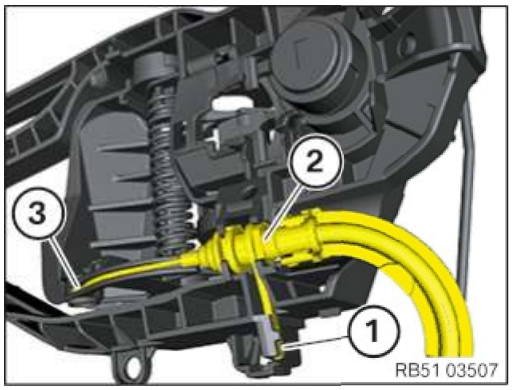
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- Unclip the Bowden cable for outside door handle (1) from door lock (3).
- Detach Bowden cable nipple (2) from door lock (3).



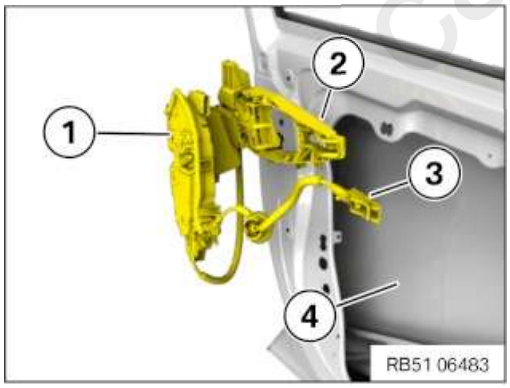
- Attach Bowden cable nipple (2) of the new Bowden cable for outside door handle (1) to door lock (3).
- Attach the new Bowden cable for outside door handle (1) to door lock (3).



- Attach Bowden cable nipple (3) of the new Bowden cable for outside door handle (2).
- Attach the new Bowden cable for outside door handle (2).
- Twist and engage the tab (1).

POSTPROCESSES

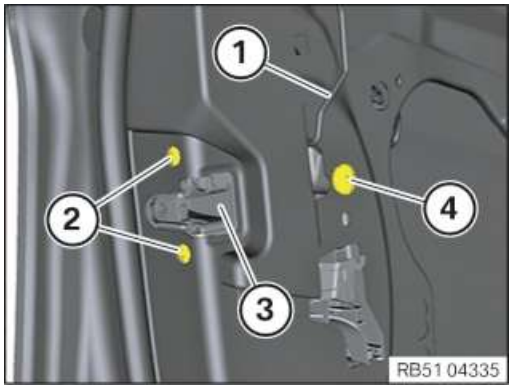
12 – Installing the outer door handle support



- Guide door lock (1) together with outside door handle support (2) and the Bowden cable for inner door opener (3) into door (4).

  Make sure that the seal of door lock (1) is not damaged.

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- Screw in screws (2) and (4) a few turns.
- Tighten down screws (2).

Door lock to door

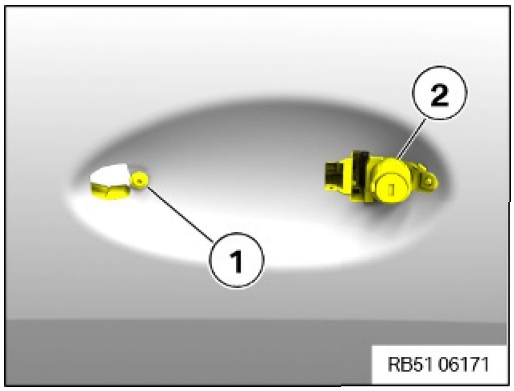
Screw		Tightening torque	8,8 Nm

- Tighten down screw (4).

Door lock to door

Screw		Tightening torque	8,8 Nm

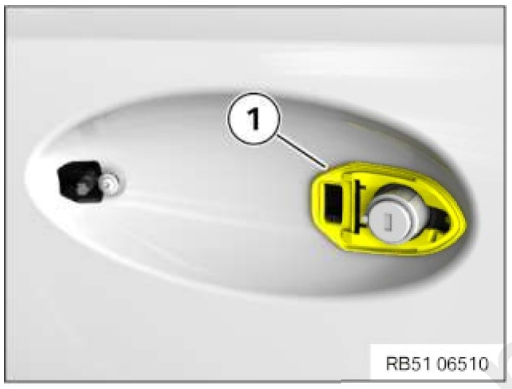
- Clip in locking rod (1).



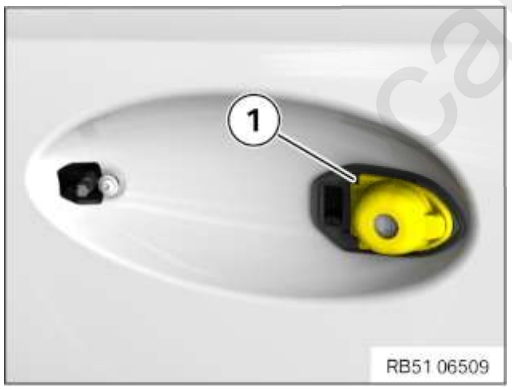
- Feed in outside door handle support (2) and position correctly.
- Tighten down screw (1).

Outside door handle support to door

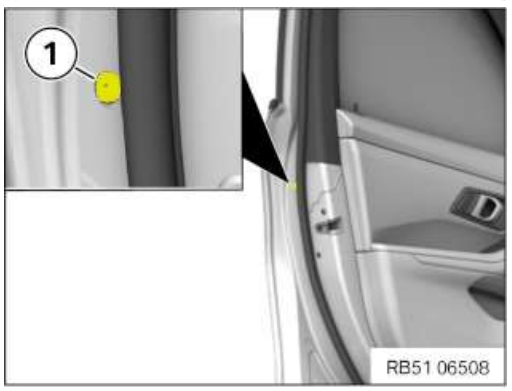
Screw		Tightening torque	2,6 Nm



- Install seal (1) for the outside door handle.



- Install the cover (1).

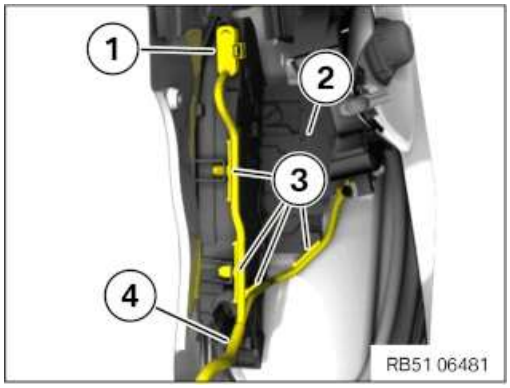


- Tighten down screw (1).

Attachment bell to outside door handle support

Screw		Tightening torque	3 Nm

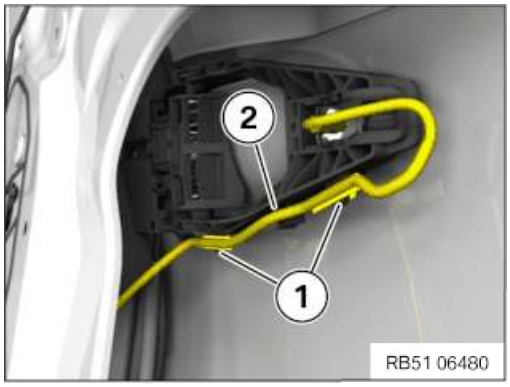
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NOTICE

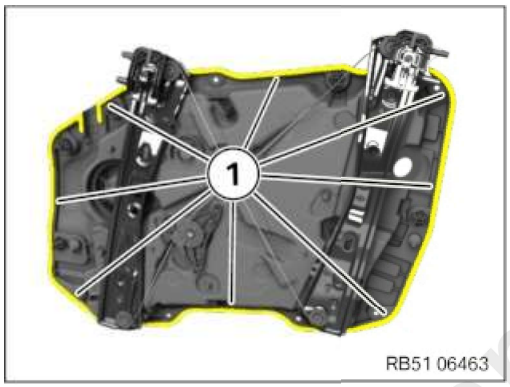
To provide a better overview: Schematic diagram with partially hidden components.

- Insert the wiring harness (4).
- Connect connector (1) at the door lock (2) and lock.
- Clip in clips (3).



- Route the wiring harness (2) correctly.
- Clip in clips (1).

13 – Installing front module carrier



Check

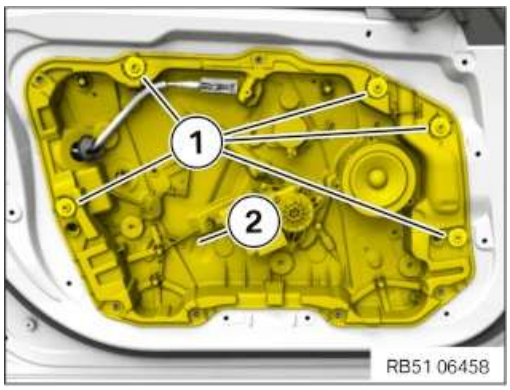
- Check seal (1) of the front module carrier for damage.

Result

» Seal of the front module carrier is damaged.

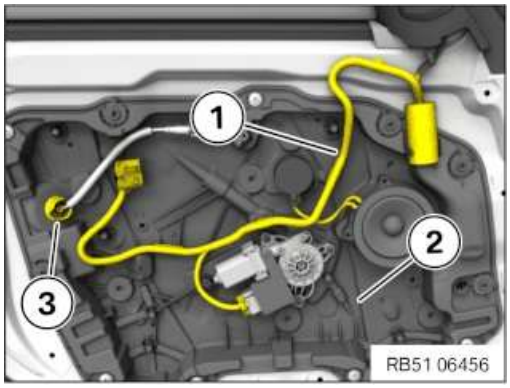
Measure

- Renew the front module carrier.



- Position front module carrier (2) on the door.
- Lock bayonet fittings (1) by twisting them.

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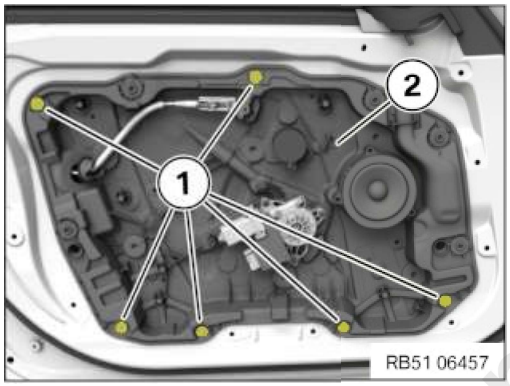


- Connect all electrical connectors and lock.
- Clip in wiring harness (1) on front module carrier (2).
- Install rubber grommet of the Bowden cable for the inner door opener (3).
- Check rubber grommet of the Bowden cable for the inner door handle (3) for correct seating.

▶ **Disconnecting all battery earth leads**



- See additional information.



- Tighten screws (1) of the front module carrier (2).

Module carrier to front door

Torx socket M5x12		Tightening torque	8 Nm

- Move the power window upwards until the fixed side window glass correctly engages in both holders.

  Remove adhesive tape.

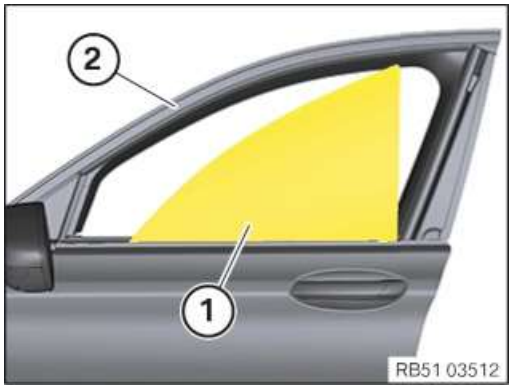
14 – Disconnecting all battery earth leads



- See additional information.

15 – Installing front door window glass

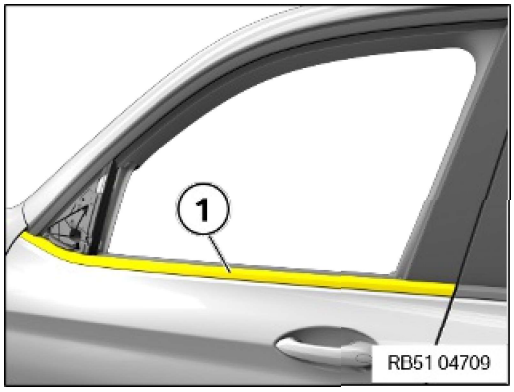
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- Insert the twisted front door window glass (1) into the door frame (2).
- Insert the front door window glass (1) into the rubber window seals by twisting it.

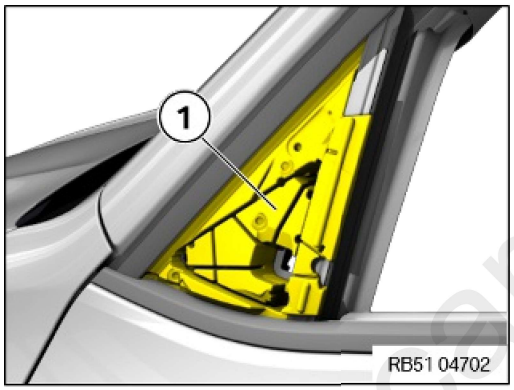
  The front door window glass (1) must be positioned correctly in the rubber window seal.
- Push the front door window glass (1) fully upwards and secure it to the door frame (2) using adhesive tape.
- Shift the power windows upwards until the front door window glass (1) correctly engages in both holders.
- Remove adhesive tape.

16 – Install outer weather strip



- Check outer weather strip (1) for damage, renew the outer weather strip (1) if required.
- Coat the outer weather strip (1) with a suitable lubricant prior to installation.
- Fit outer weather strip (1) on the front door.
- Press down the outer weather strip (1) across its entire length.

17 – Installing the exterior mirror



Check

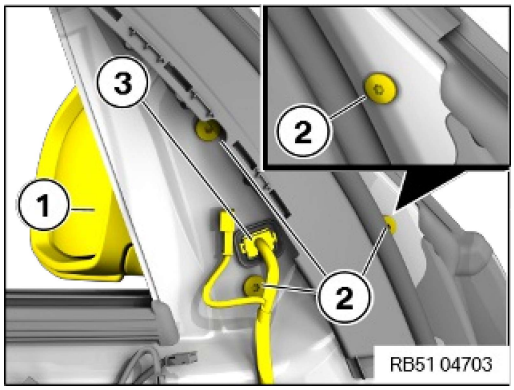
- Check mirror triangle seal (1) for damage.

Result

» The mirror triangle seal is damaged.

Measure

- Replace mirror triangle seal .



- Position exterior rearview mirror (1) and tighten screws (2).

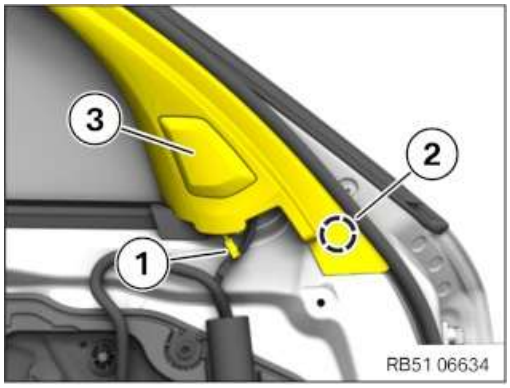
Exterior mirror to door

Thread-tapping hexagon screw		Tightening torque	10 Nm

- Connect connectors (3) and lock.

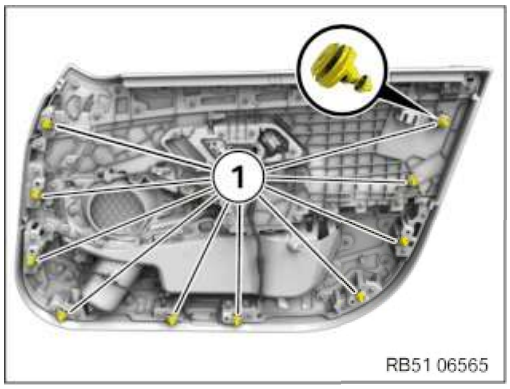
18 – Installing the cover on the inside of the window frame partially

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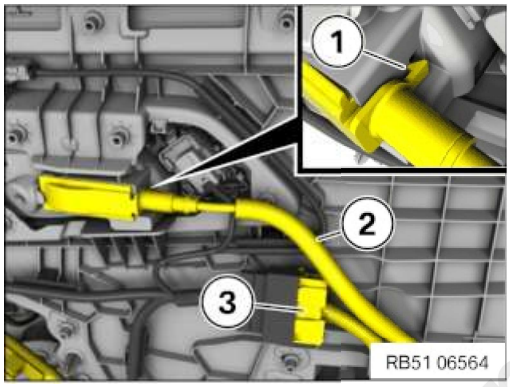
- Mount cover on the inner window frame (3) in the area of the exterior rearview mirror.
- Clip in the clip (2).
- If necessary, connect the connector (1) and lock it.

19 – Install door trim panel

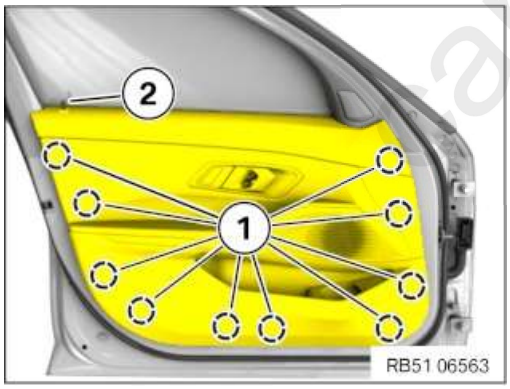


- Renew the clips (1).

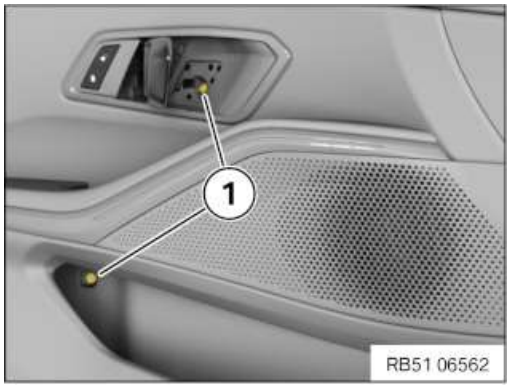
  Parts: Clips



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).

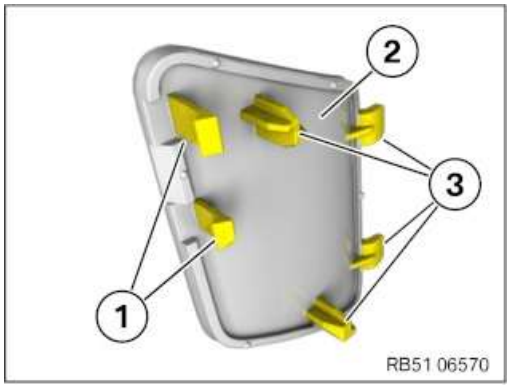


- Tighten the screws (1).

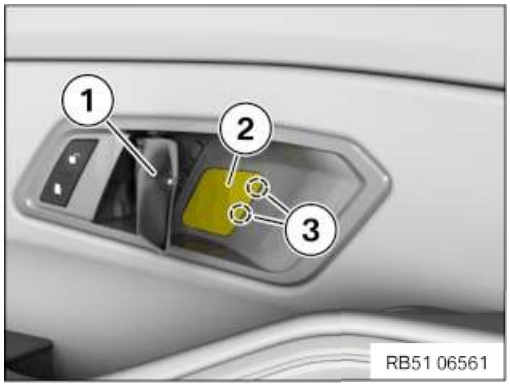
Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm

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- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).

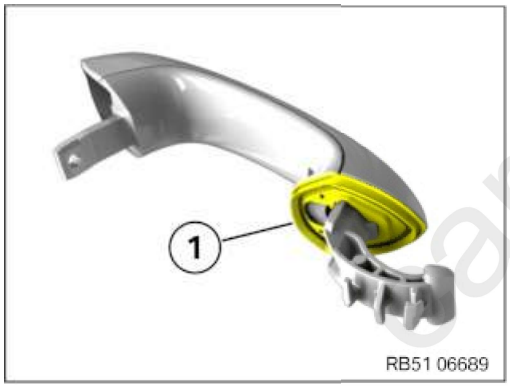


- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

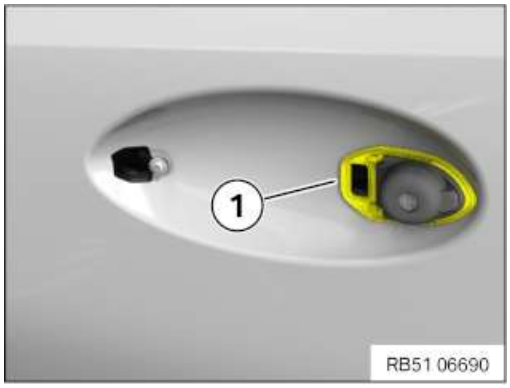
20 – Installing the outside door handle

NOTICE

Description is for left component only. Procedure on the right side is identical.

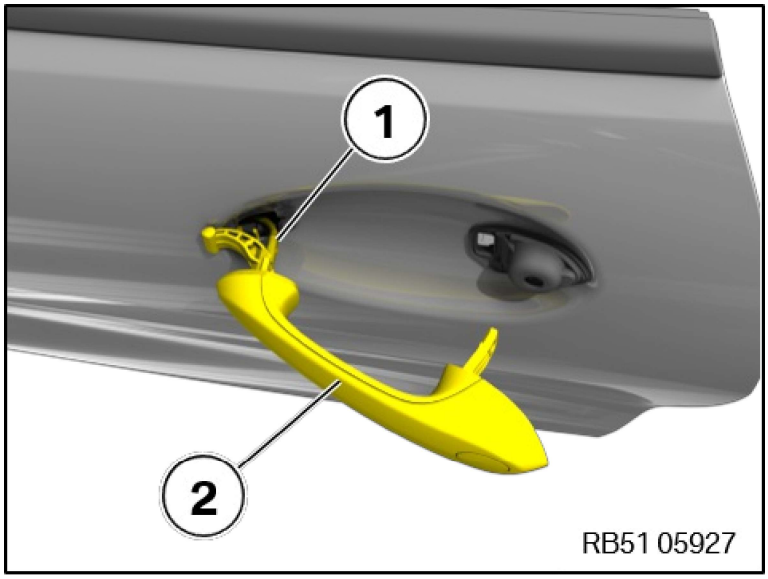


- Check the seal (1) for damage and renew if necessary.

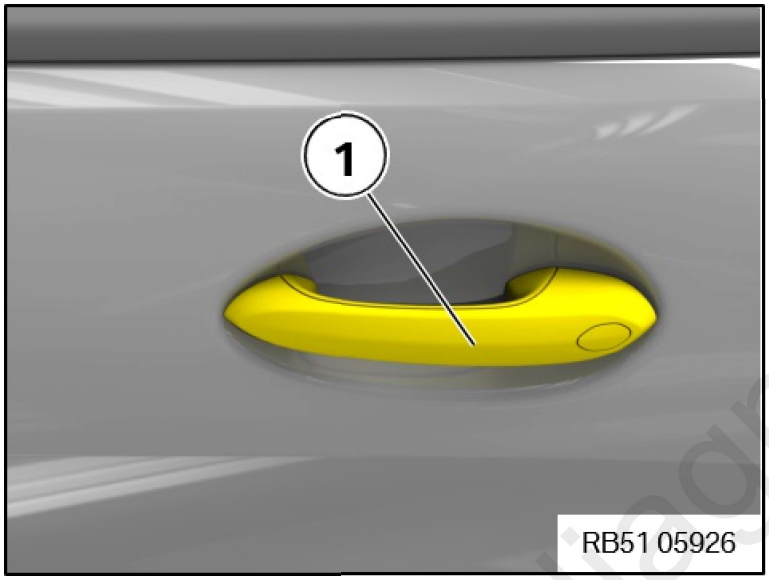


- Check the seal (1) for damage and renew if necessary.

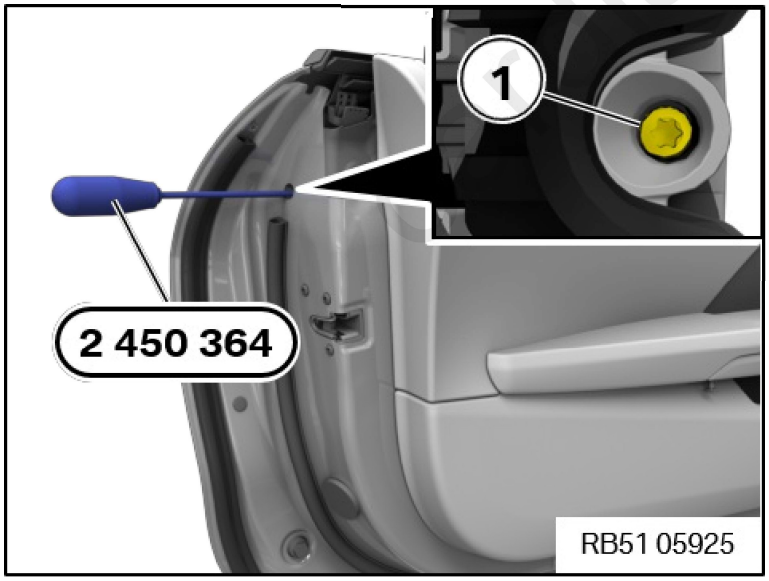
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- Insert the front outside door handle (2).
- Connect connectors (1) and lock.



- Insert the rear outside door handle (1).



NOTICE

Schematic diagram is for example purposes.
Some parts may differ in certain details.

- Tighten the clamping bolt (1) on the outside door handle support with the special tool 2 450 364.

Clamping bolt for door handle

Screw		Tightening torque	2 Nm



- Install seal plug (1).

Additional Information

Overview of Tightening Torques

Door lock to door			Used in step 12
Screw		Tightening torque	8,8 Nm

Outside door handle support to door			Used in step 12
Screw		Tightening torque	2,6 Nm

Attachment bell to outside door handle support			Used in step 12
Screw		Tightening torque	3 Nm

Module carrier to front door			Used in step 13
Torx socket M5x12		Tightening torque	8 Nm

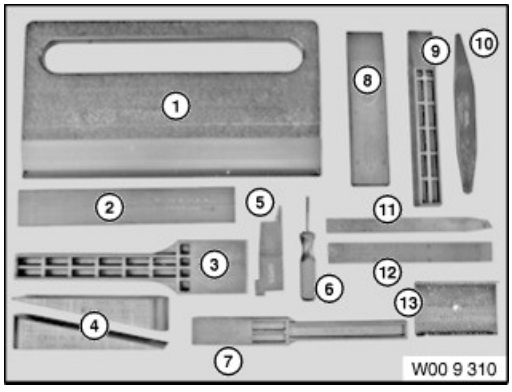
Exterior mirror to door			Used in step 17
Thread-tapping hexagon screw		Tightening torque	10 Nm

Door trim panel to door			Used in step 19
Screw TS5x20		Tightening torque	2,6 Nm

Clamping bolt for door handle			Used in step 20
Screw		Tightening torque	2 Nm

Overview of Special Tools

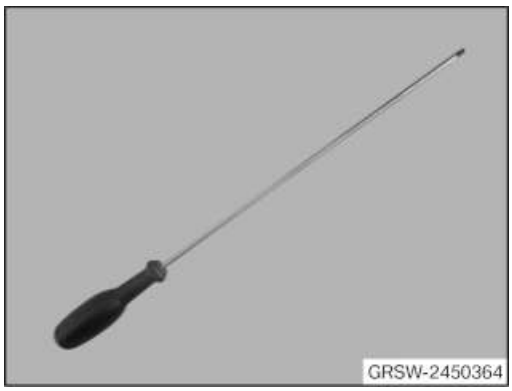
0 495 484 (00 9 324) Panel wedge



Common	Used in step 16
Usage	(Panel wedge (panel)) For removing cavity strips on the doors from E60
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 25 05 (230)

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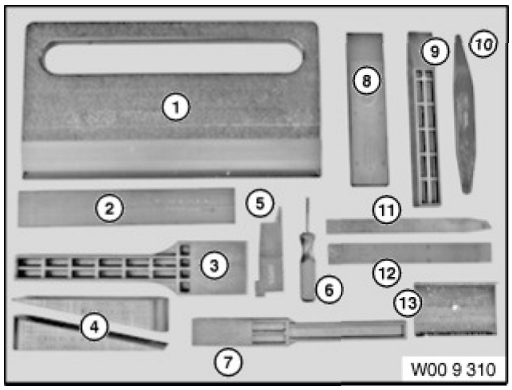
2 450 364 Torx



Common Used in step 220

Usage	for releasing the outside door handles
Included in the tool or work	
Storage location	A5
Replaced by	
In connection with	
SI-Number	01 22 16 (440)

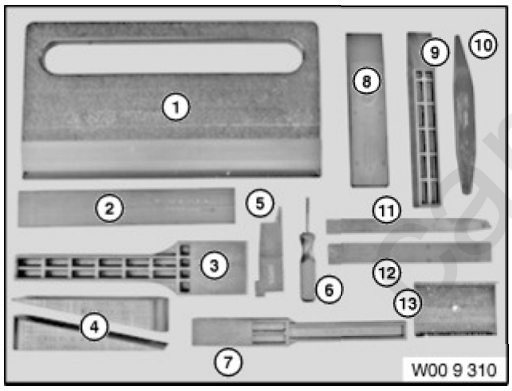
0 493 752 (00 9 329) Case



Common Used in step 3

Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

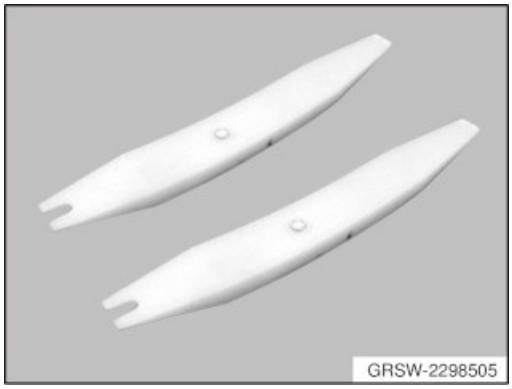
0 490 538 (00 9 321) Folding stick



Common Used in step 6

Usage	
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

2 298 505 Wedge



Common Used in step 6

Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

0 496 569 (00 9 325) Wedge



Common	Used in step 79
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	891314
61 20 900 Disconnecting and connecting battery earth lead	891314
61 20 900 Disconnecting and connecting battery earth lead	891314
61 20 900 Disconnecting and connecting battery earth lead	891314
61 20 900 Disconnecting and connecting battery earth lead	891314
61 20 900 Disconnecting and connecting battery earth lead	891314
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	891314
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	891314
61 20 900 Disconnecting and connecting battery earth lead	891314
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	891314
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	891314
61 20 900 Disconnecting and connecting battery earth lead	891314
61 20 900 Disconnecting and connecting battery earth lead	891314
61 20 900 Disconnecting and connecting battery earth lead	891314
61 20 900 Disconnecting and connecting battery earth lead	891314
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61 20 900 Disconnecting and connecting battery earth lead	891314
61 20 900 Disconnecting and connecting battery earth lead	891314
61 20 900 Disconnecting and connecting battery earth lead	891314
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	891314
61 20 900 Disconnecting and connecting battery earth lead	891314
61 20 900 Disconnecting and connecting battery earth lead	891314
61 20 900 Disconnecting and connecting battery earth lead	891314
61 20 900 Disconnecting and connecting battery earth lead	891314
61 20 900 Disconnecting and connecting battery earth lead	891314
61 20 900 Disconnecting and connecting battery earth lead	891314

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51 21 140 Removing and installing/replacing the complete lock barrel on the left or right front door

WARNING

Working on 12 V vehicle electrical system.

Risk of short circuits! Risk of fire!

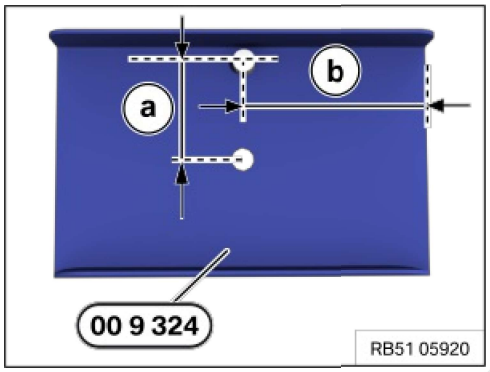
- Detach battery earth lead from battery.
- For additional batteries: Detach all battery earth leads from additional batteries.

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

1 – Preparing the special tool



- **Do this only if the upper bore hole is missing.**
- Mark and make the bore hole on the special tool 0 495 484 (00 9 324) according to the specified dimensions.

  Make a bore hole on the side with the long shank.

  The diameter of the bore hole is 6 mm.

  Dimension (a) = 25 mm from the centre of the existing bore hole

  Dimension (b) = 50 mm from the outer edge of the special tool

2 – Remove the outside door handle

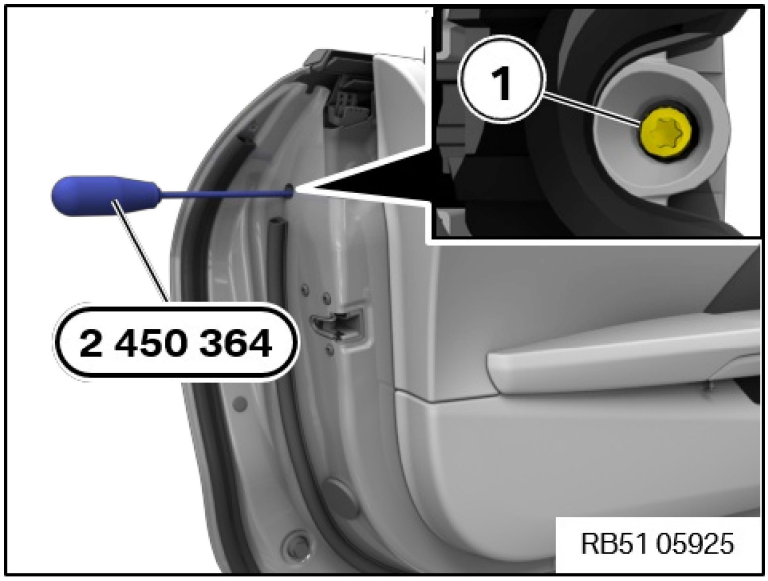
NOTICE

Description is for left component only. Procedure on the right side is identical.

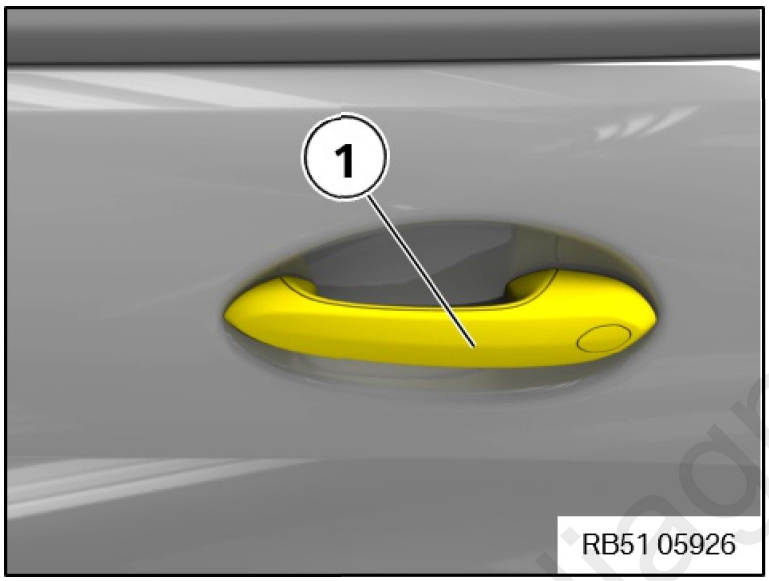


- Remove the seal plug (1).

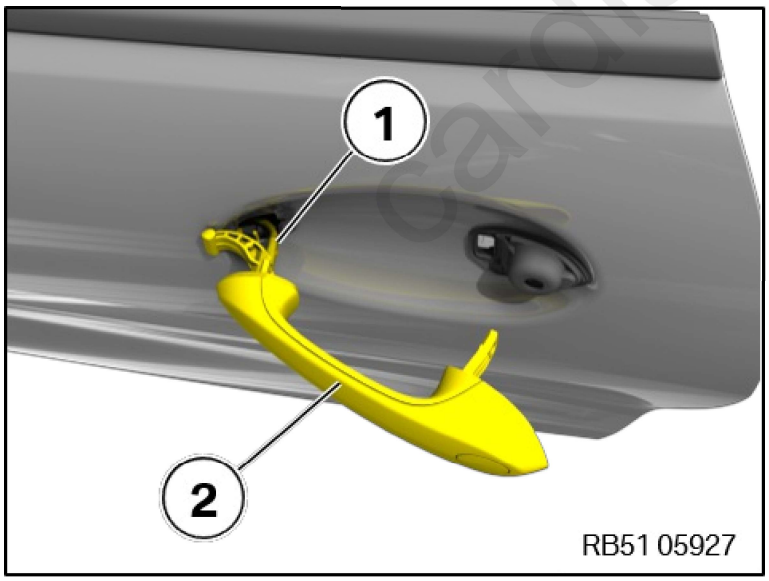
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- Release the clamping bolt (1) from the outside door handle support with the special tool 2 450 364.

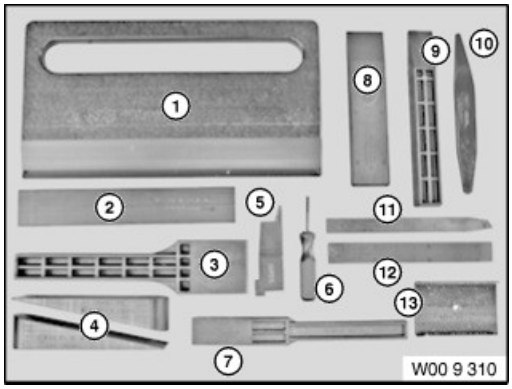


- Pull the rear outside door handle (1) to the outside and remove it in the process.
- Pivot the outside door handle (1) further towards the outside and in this process, remove it at the front.

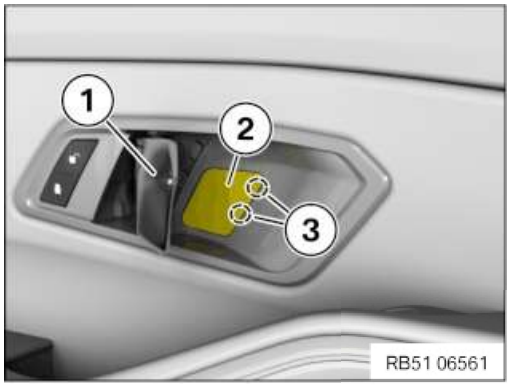


- Unlock and disconnect plug connections (1).
- Remove the outside door handle (2).

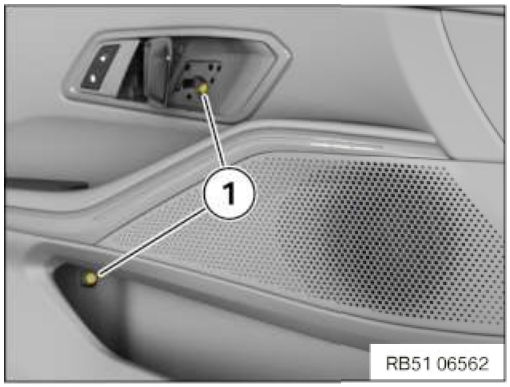
3 – Remove door trim panel



- Have the set of special tools 0 493 752 (00 9 329) ready.



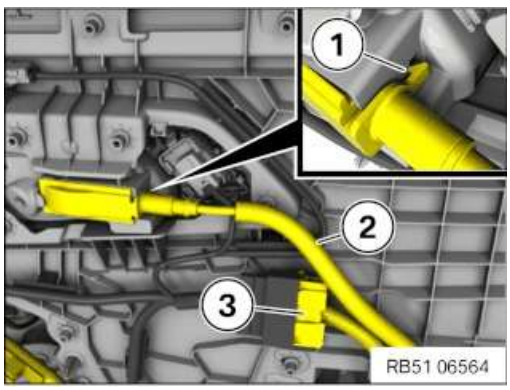
- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).



- Loosen screws (1).



- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).

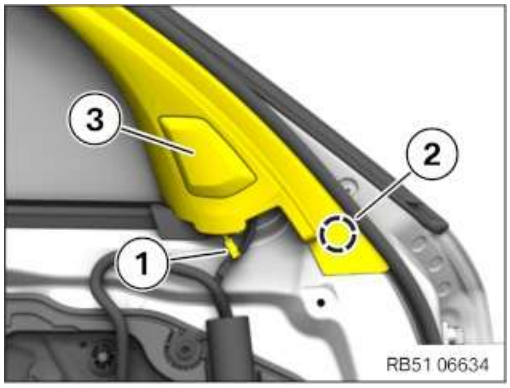


- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

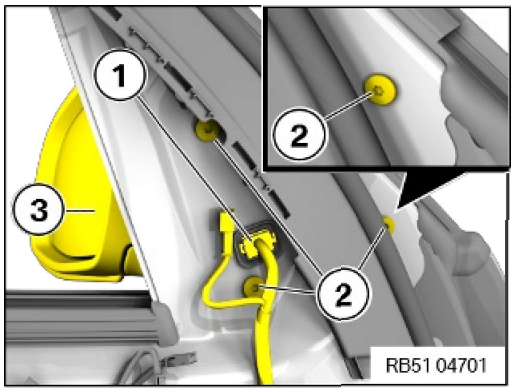
4 – Partially removing the cover on the inner window frame

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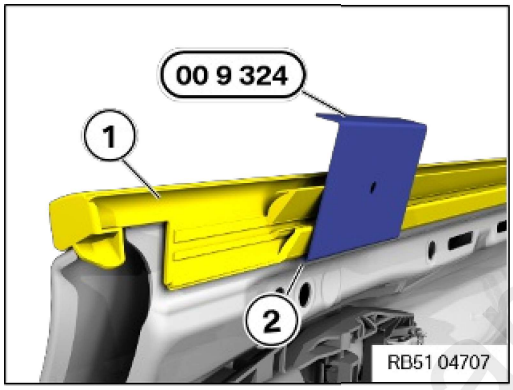
- If necessary, unlock and disconnect the plug connection (1).
- Unclip clip (2).
- Release the cover on inner window frame (3) in the area of the exterior rearview mirror.

5 – Removing the exterior mirror



- Unlock plug connection (1) and disconnect.
- Release the screws (2) and remove the exterior rearview mirror (3).

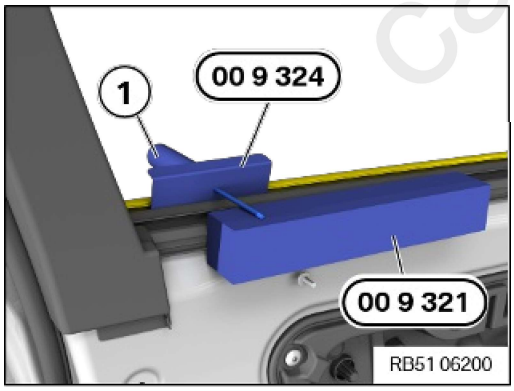
6 – Removing the outer weather strip



NOTICE

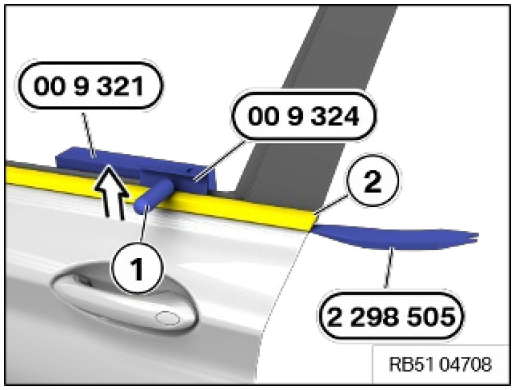
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Insert the special tool 0 495 484 (00 9 324) at the front (on A-pillar) into the window cavity and slide it toward the back.
- Position the special tool 0 495 484 (00 9 324) as shown at the lower edge of the outer weather strip (1) with the short shank (2).



- Place the special tool 0 490 538 (00 9 321) on the inner door panel.
- Thread a suitable tool (1) through the opening in the special tool 0 495 484 (00 9 324).

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RISK OF DAMAGE

Scratches.

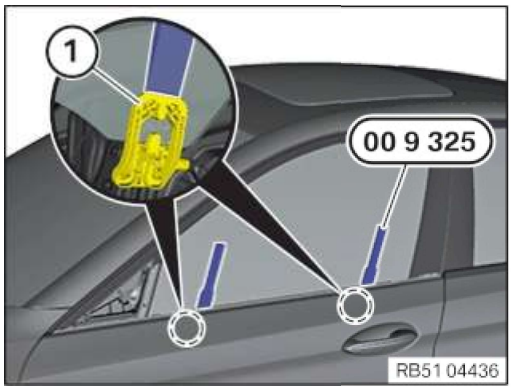
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Lift up the outer rear weather strip (2) with the special tool 2 298 505 as shown; maximum 5 mm.
- With a suitable tool (1), move the lever in the direction of arrow using the special tool 0 490 538 (00 9 321) for support.

  When this happens, the special tool 0 495 484 (00 9 324) lifts the outer weather strip (2) upwards.
- Repeat this process step by step until the outer weather strip(2) is completely disassembled.

7 – Removing front module carrier

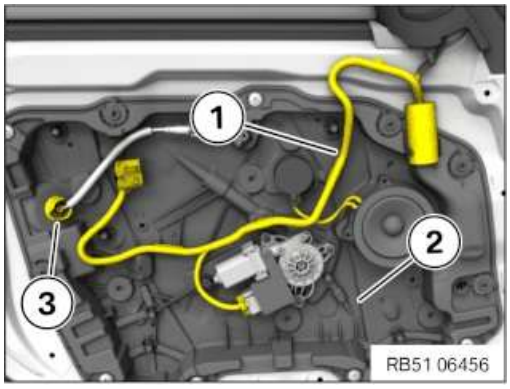


- Secure the door window glass to the door frame when it is closed using adhesive tape.
- Spread both holders (1) on the door window glass simultaneously using special tool 0 496 569 (00 9 325) until it is possible to detach the door window glass.
- Move the power window down.

► **Disconnecting all battery earth leads**

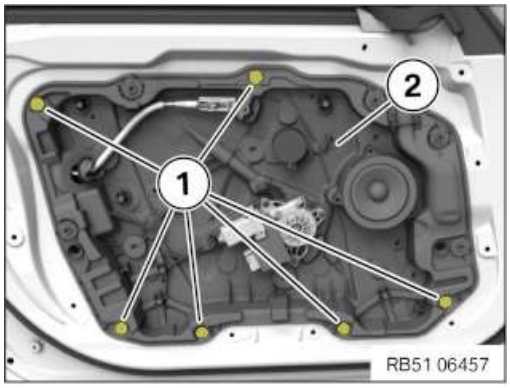


- See additional information.

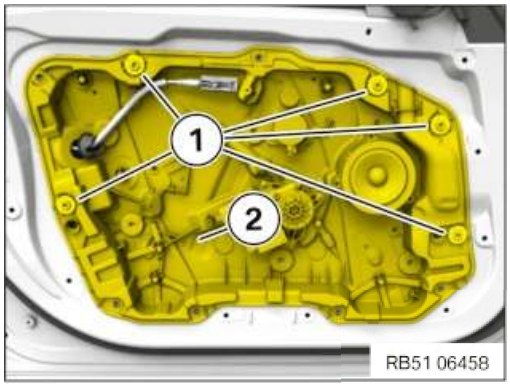


- Unlock and disconnect all the electrical plug connections.
- Unclip wiring harness (1) on front module carrier (2).
- Release the rubber grommet of the Bowden cable for the inner door opener (3).

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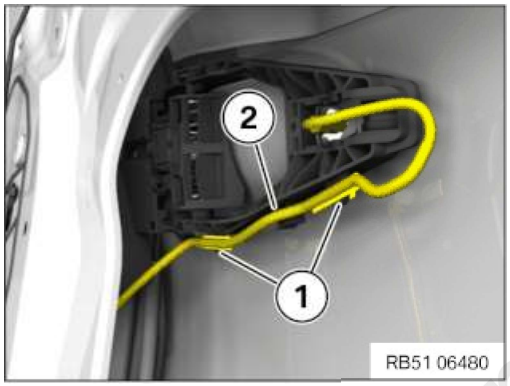


- Release screws (1) on front module carrier (2).

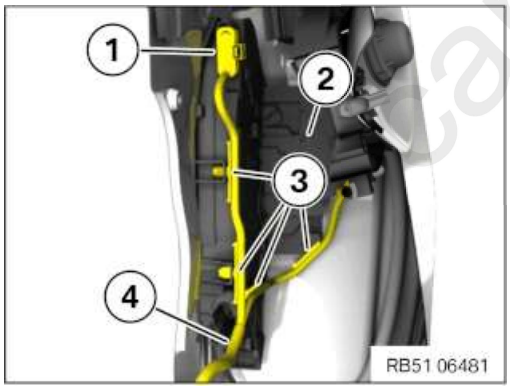


- Open bayonet fitting (1) by twisting and remove front module carrier (2).

8 – Removing the outer door handle support



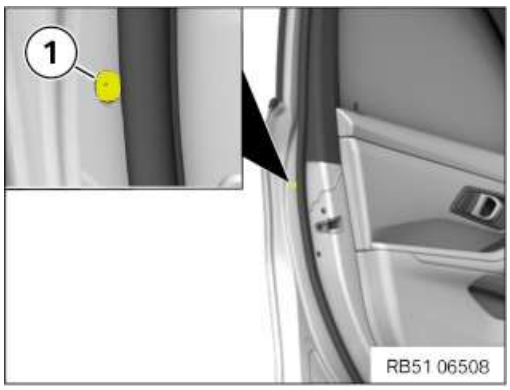
- Unclip clips (1) and place wiring harness (2) aside.



NOTICE

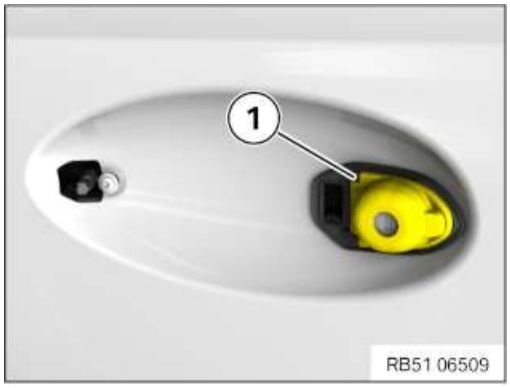
To provide a better overview: Schematic diagram with partially hidden components.

- Unlock and disconnect the plug connection (1)on the door lock (2).
- Unclip clips (3).
- Remove the wiring harness (4) and put to one side.

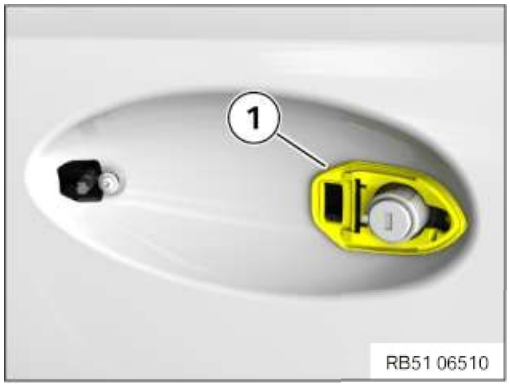


- Loosen screw (1).

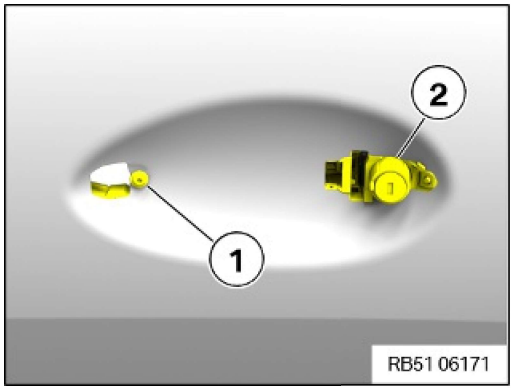
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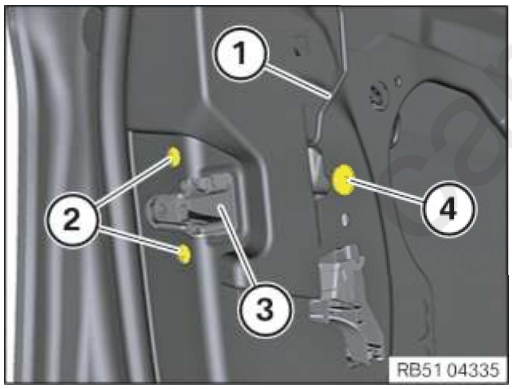
- Remove the cover (1).



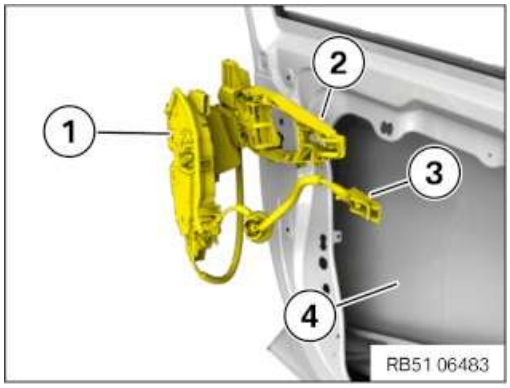
- Remove seal (1) for the outside door handle.



- Loosen screw (1).
- Slide the outside door handle support (2) forward and thread out to the inside.



- Unclip locking rod (1).
- Release screws (2) and (4) of the door lock (3).

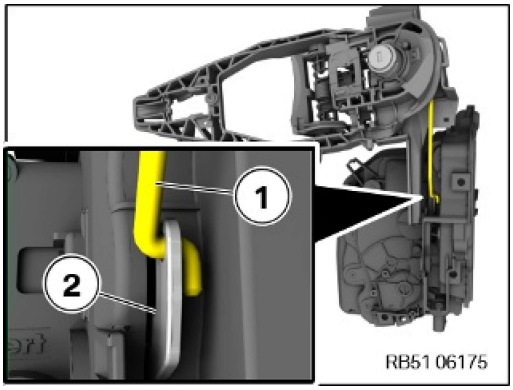


- Thread out door lock (1) together with the outside door handle support (2) and the Bowden cable for inner door opener (3) from the door (4).

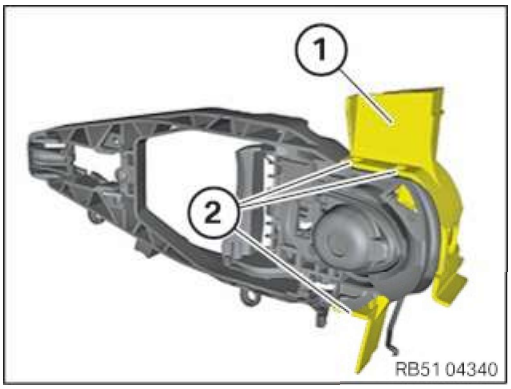
  Make sure that the seal of door lock (1) is not damaged.

MAIN WORK

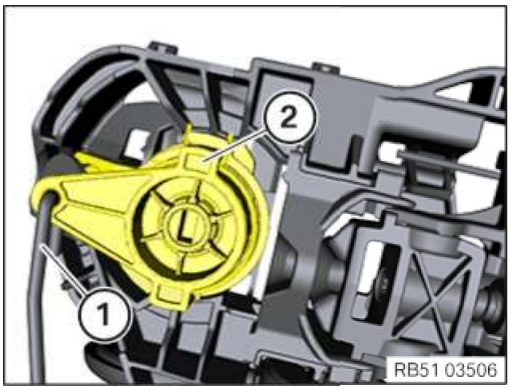
9 – Replacing lock barrel



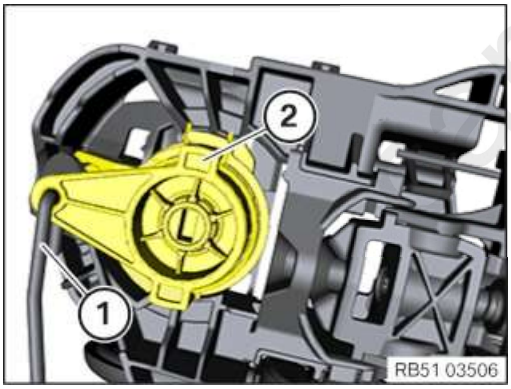
- Detach the linkage (1) from the door lock (2).



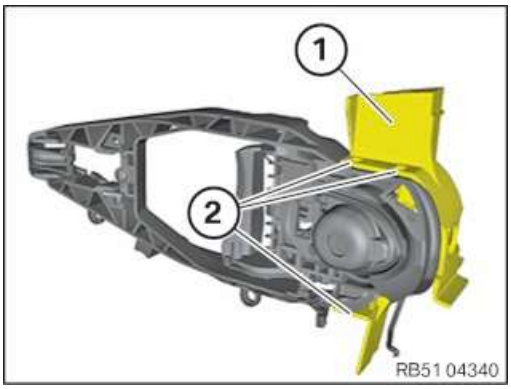
- Unclip the cover (1) at the points (2).
- Remove cover (1).



- Detach the locking rod (1).
- Twist the lock barrel (2) in clockwise direction and remove it.

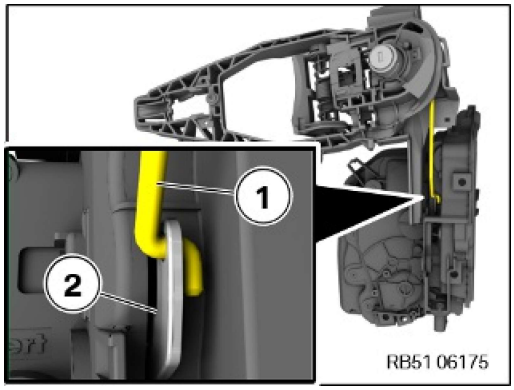


- Screw in the new lock barrel (2) counterclockwise.
- Attach the locking rod (1) in the new lock barrel (2).



- Clip in the cover (1) at the points (2).

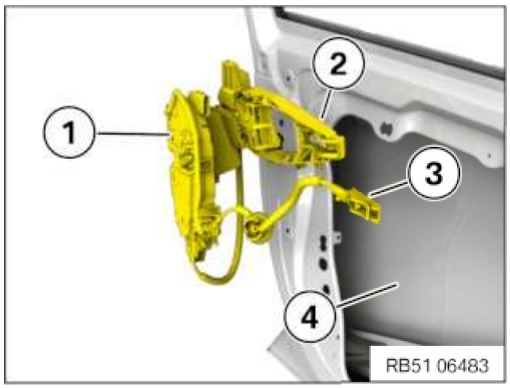
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- Attach the linkage (1) in the door lock (2).

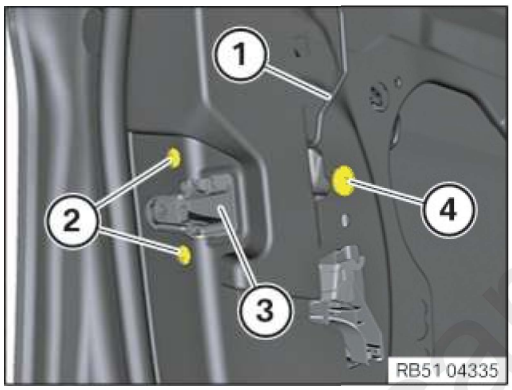
POSTPROCESSES

10 – Installing the outer door handle support



- Guide door lock (1) together with outside door handle support (2) and the Bowden cable for inner door opener (3) into door (4).

  Make sure that the seal of door lock (1) is not damaged.



- Screw in screws (2) and (4) a few turns.
- Tighten down screws (2).

Door lock to door

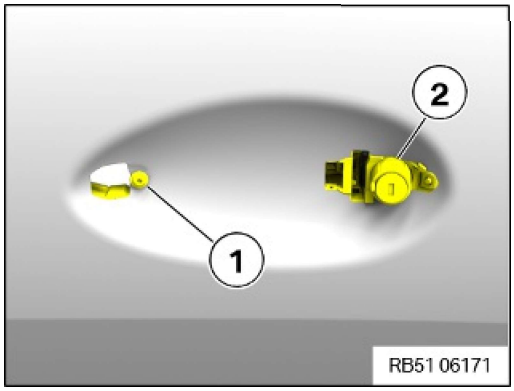
Screw		Tightening torque	8,8 Nm

- Tighten down screw (4).

Door lock to door

Screw		Tightening torque	8,8 Nm

- Clip in locking rod (1).

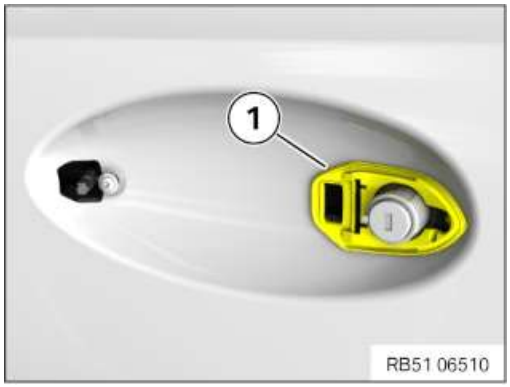


- Feed in outside door handle support (2) and position correctly.
- Tighten down screw (1).

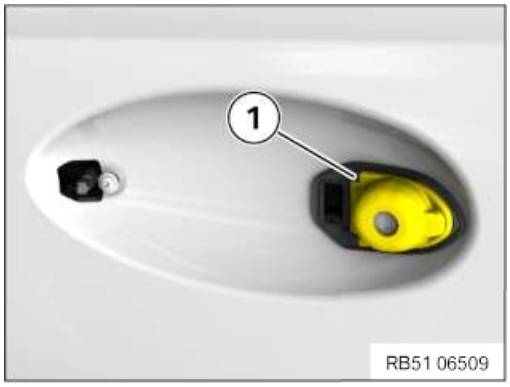
Outside door handle support to door

Screw		Tightening torque	2,6 Nm

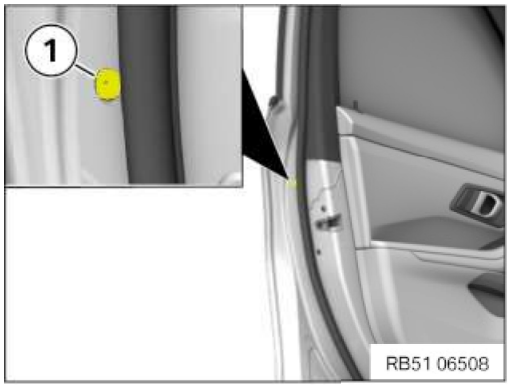
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- Install seal (1) for the outside door handle.



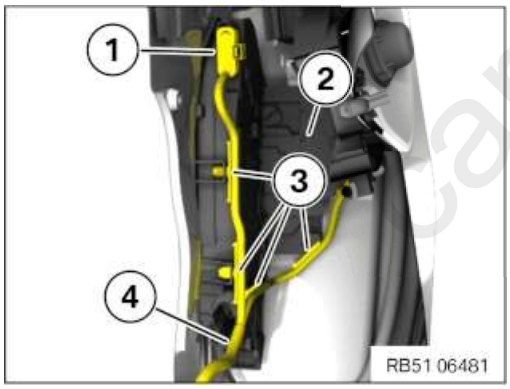
- Install the cover (1).



- Tighten down screw (1).

Attachment bell to outside door handle support

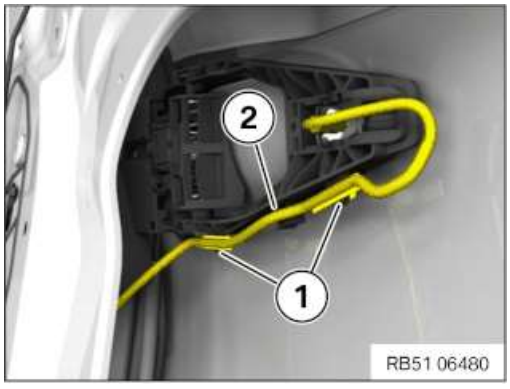
Screw		Tightening torque	3 Nm



NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

- Insert the wiring harness (4).
- Connect connector (1) at the door lock (2) and lock.
- Clip in clips (3).

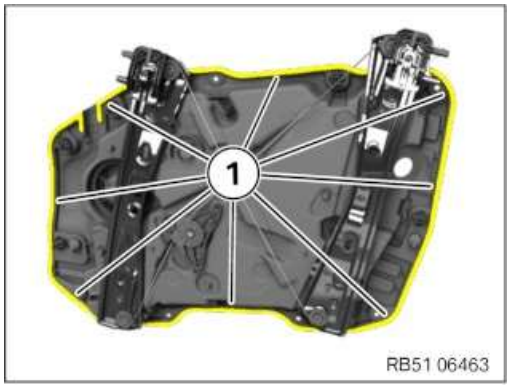


- Route the wiring harness (2) correctly.
- Clip in clips (1).

11 – Installing front module carrier

Check

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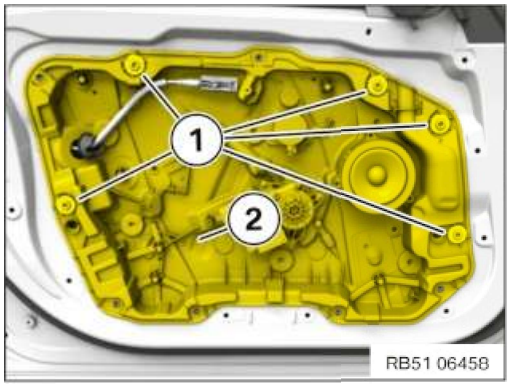
- Check seal (1) of the front module carrier for damage.

Result

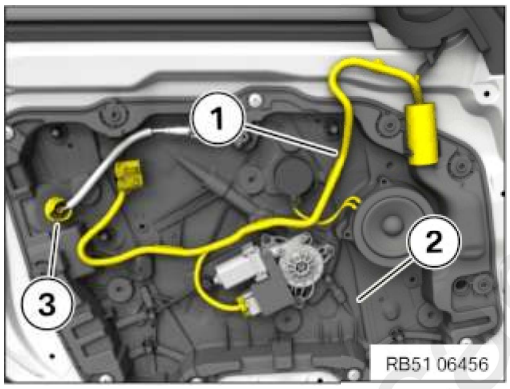
» Seal of the front module carrier is damaged.

Measure

- Renew the front module carrier.



- Position front module carrier (2) on the door.
- Lock bayonet fittings (1) by twisting them.



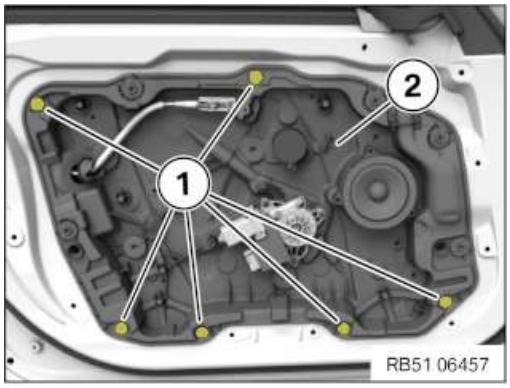
- Connect all electrical connectors and lock.
- Clip in wiring harness (1) on front module carrier (2).
- Install rubber grommet of the Bowden cable for the inner door opener (3).
- Check rubber grommet of the Bowden cable for the inner door handle (3) for correct seating.

▸ **Disconnecting all battery earth leads**



- See additional information.

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- Tighten screws (1) of the front module carrier (2).

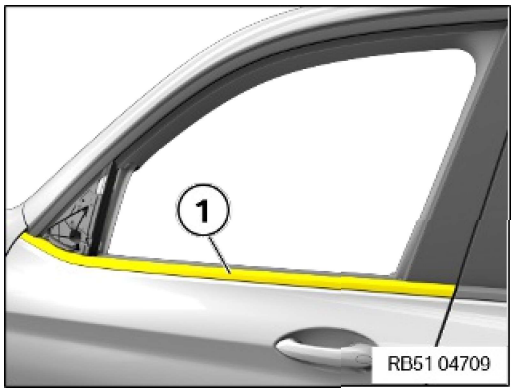
Module carrier to front door

Torx socket M5x12		Tightening torque	8 Nm

- Move the power window upwards until the fixed side window glass correctly engages in both holders.

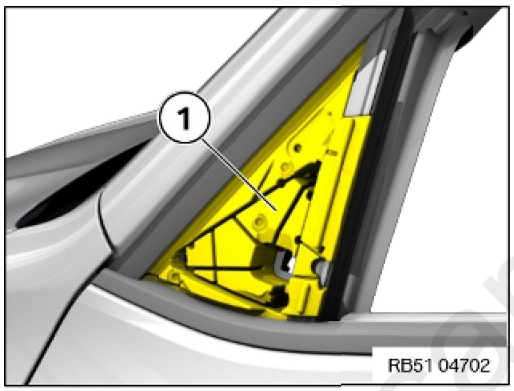
  Remove adhesive tape.

12 – Install outer weather strip



- Check outer weather strip (1) for damage, renew the outer weather strip (1) if required.
- Coat the outer weather strip (1) with a suitable lubricant prior to installation.
- Fit outer weather strip (1) on the front door.
- Press down the outer weather strip (1) across its entire length.

13 – Installing the exterior mirror



Check

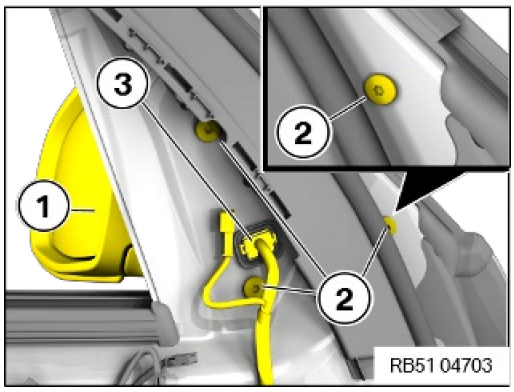
- Check mirror triangle seal (1) for damage.

Result

» The mirror triangle seal is damaged.

Measure

- Replace mirror triangle seal .



- Position exterior rearview mirror (1) and tighten screws (2).

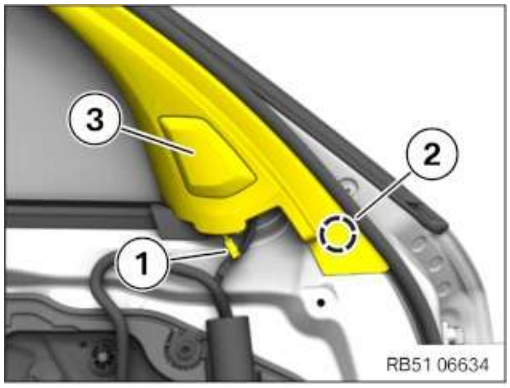
Exterior mirror to door

Thread-tapping hexagon screw		Tightening torque	10 Nm

- Connect connectors (3) and lock.

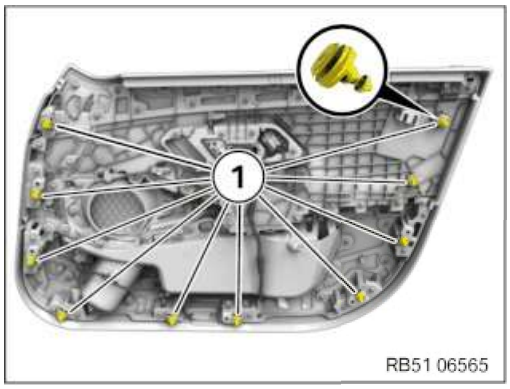
14 – Installing the cover on the inside of the window frame partially

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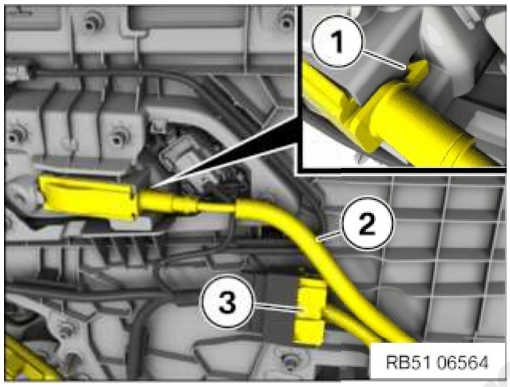
- Mount cover on the inner window frame (3) in the area of the exterior rearview mirror.
- Clip in the clip (2).
- If necessary, connect the connector (1) and lock it.

15 – Install door trim panel

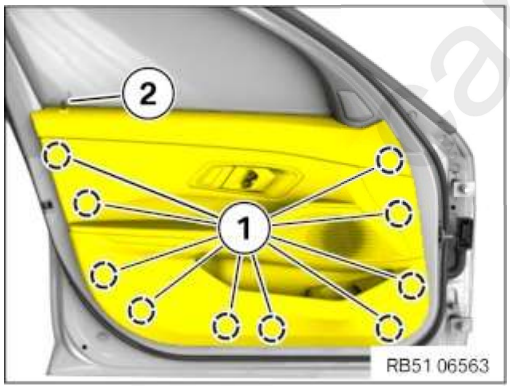


- Renew the clips (1).

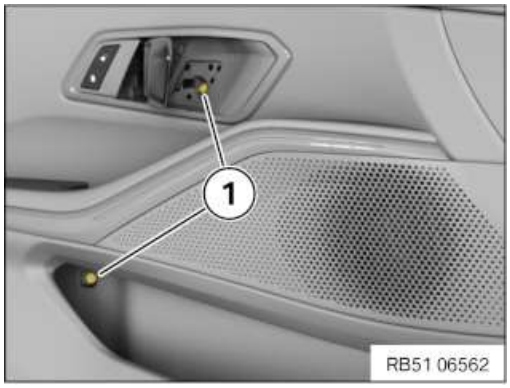
  Parts: Clips



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).

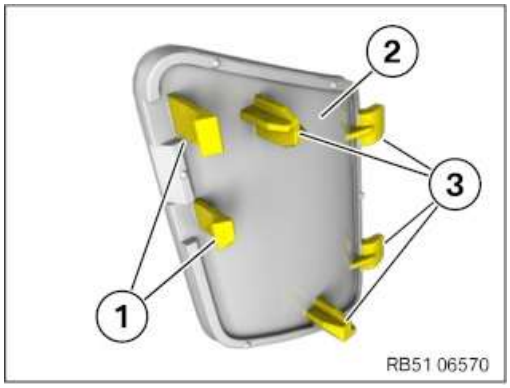


- Tighten the screws (1).

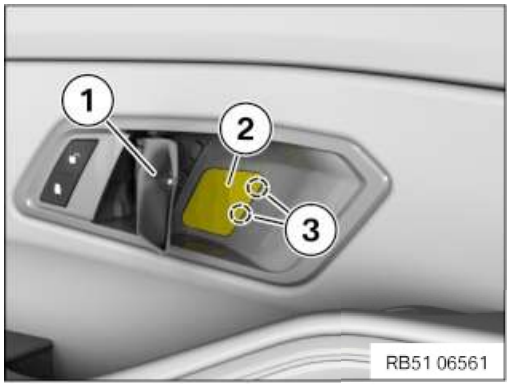
Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm

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- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).

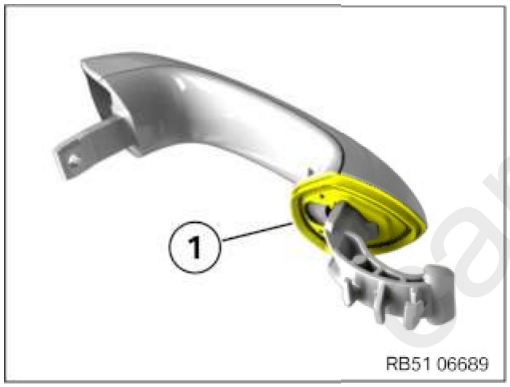


- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

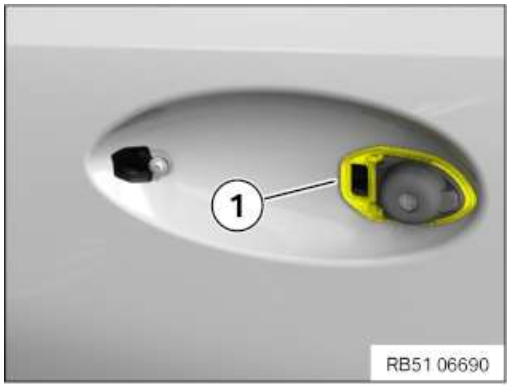
16 – Installing the outside door handle

NOTICE

Description is for left component only. Procedure on the right side is identical.

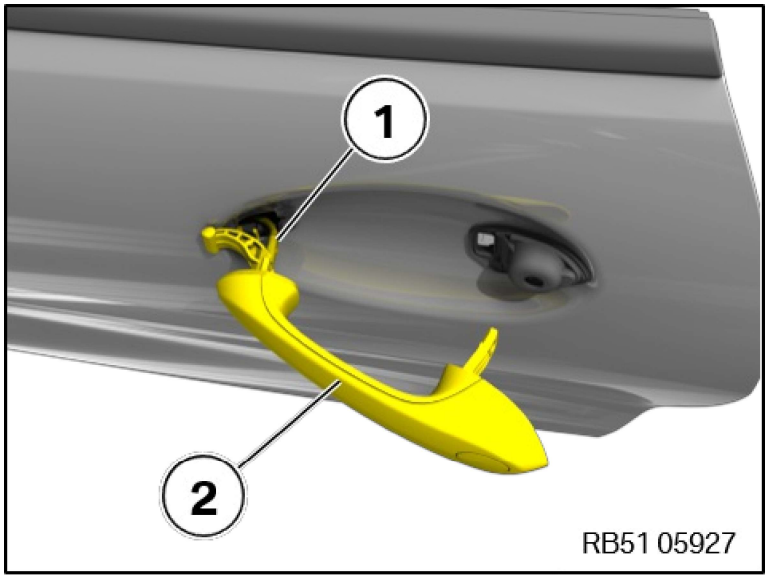


- Check the seal (1) for damage and renew if necessary.

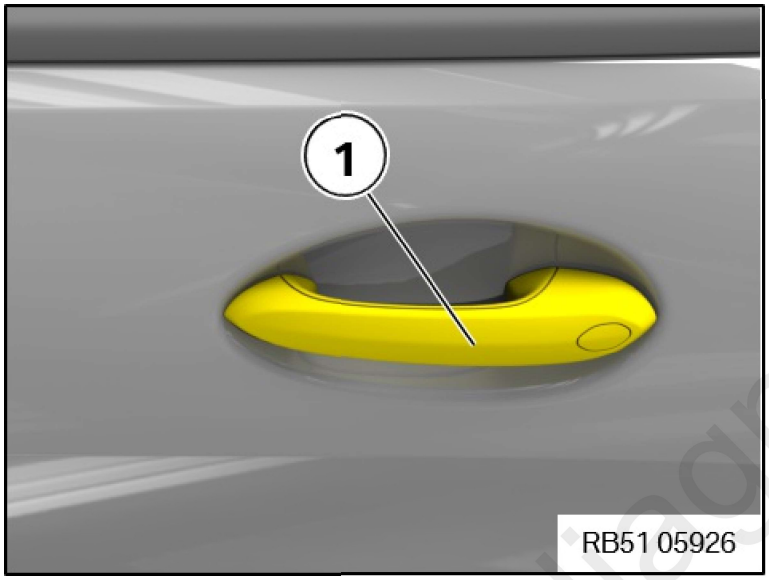


- Check the seal (1) for damage and renew if necessary.

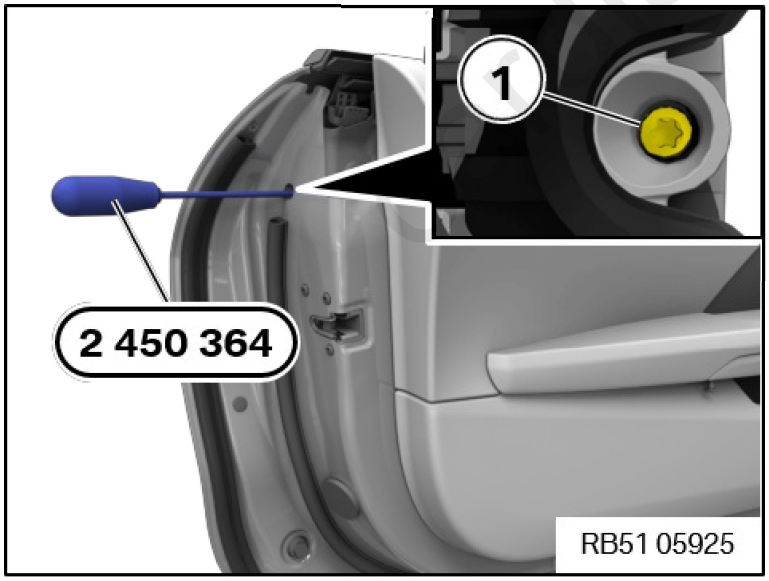
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- Insert the front outside door handle (2).
- Connect connectors (1) and lock.



- Insert the rear outside door handle (1).



NOTICE

Schematic diagram is for example purposes.
Some parts may differ in certain details.

- Tighten the clamping bolt (1) on the outside door handle support with the special tool 2 450 364.

Clamping bolt for door handle

Screw		Tightening torque	2 Nm



- Install seal plug (1).

Additional Information

Overview of Tightening Torques

Door lock to door			Used in step 10
Screw		Tightening torque	8,8 Nm

Outside door handle support to door			Used in step 10
Screw		Tightening torque	2,6 Nm

Attachment bell to outside door handle support			Used in step 10
Screw		Tightening torque	3 Nm

Module carrier to front door			Used in step 11
Torx socket M5x12		Tightening torque	8 Nm

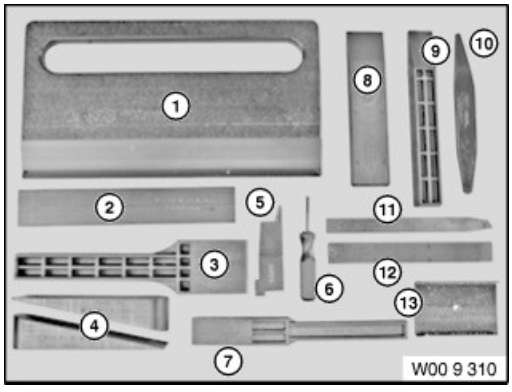
Exterior mirror to door			Used in step 13
Thread-tapping hexagon screw		Tightening torque	10 Nm

Door trim panel to door			Used in step 15
Screw TS5x20		Tightening torque	2,6 Nm

Clamping bolt for door handle			Used in step 16
Screw		Tightening torque	2 Nm

Overview of Special Tools

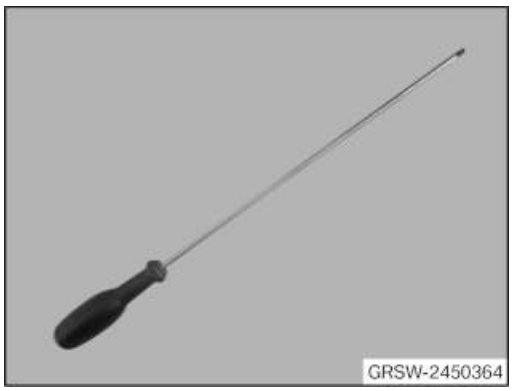
0 495 484 (00 9 324) Panel wedge



Common		Used in step 16
Usage	(Panel wedge (panel)) For removing cavity strips on the doors from E60	
Included in the tool or work	0 490 527	
Storage location	Individual	
Replaced by		
In connection with		
SI-Number	01 25 05 (230)	

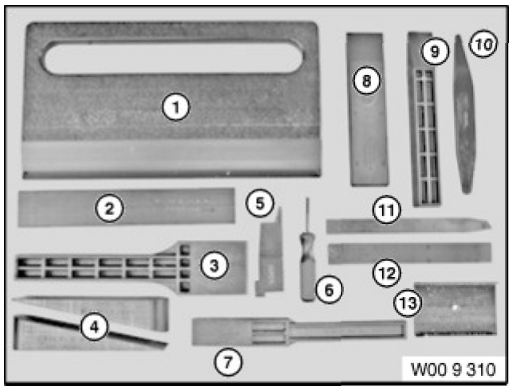
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2 450 364 Torx



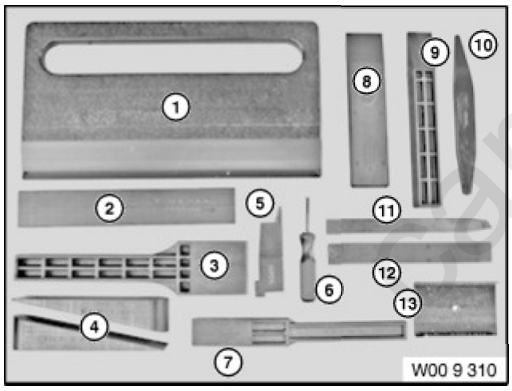
Common	Used in step 216
Usage	for releasing the outside door handles
Included in the tool or work	
Storage location	A5
Replaced by	
In connection with	
SI-Number	01 22 16 (440)

0 493 752 (00 9 329) Case



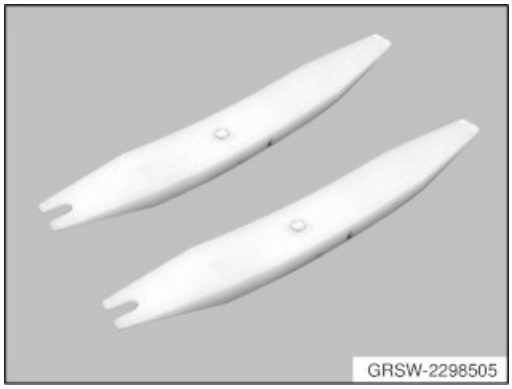
Common	Used in step 3
Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

0 490 538 (00 9 321) Folding stick



Common	Used in step 6
Usage	
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

2 298 505 Wedge



Common	Used in step 6
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

0 496 569 (00 9 325) Wedge



Common	Used in step 7
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	711
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	711
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	711
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	711
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting battery earth lead	711
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61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	711
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting battery earth lead	711

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51 21 092 Removing and installing/replacing the door lock of the driver's door

WARNING

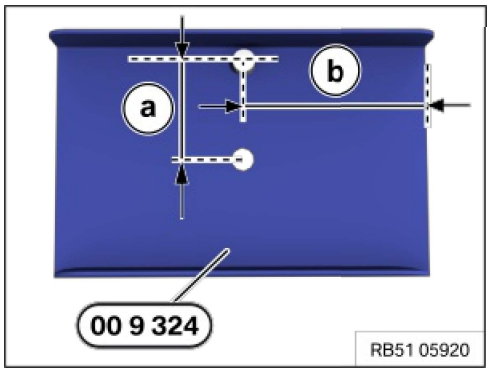
Working on 12 V vehicle electrical system.

Risk of short circuits! Risk of fire!

- Detach battery earth lead from battery.
- For additional batteries: Detach all battery earth leads from additional batteries.

PRELIMINARY WORK

1 – Preparing the special tool



- **Do this only if the upper bore hole is missing.**
- Mark and make the bore hole on the special tool 0 495 484 (00 9 324) according to the specified dimensions.

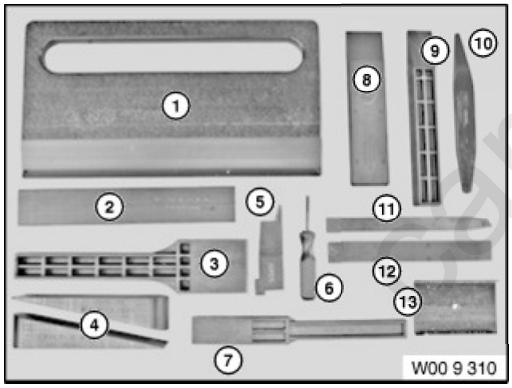
  Make a bore hole on the side with the long shank.

  The diameter of the bore hole is 6 mm.

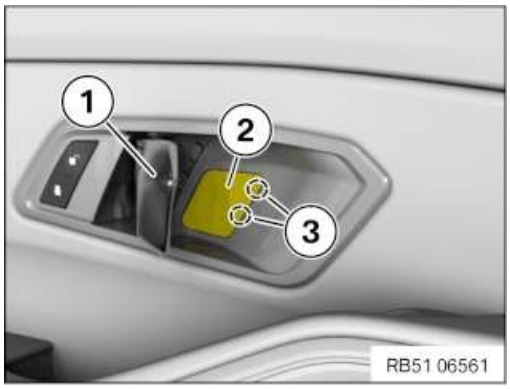
  Dimension (a) = 25 mm from the centre of the existing bore hole

  Dimension (b) = 50 mm from the outer edge of the special tool

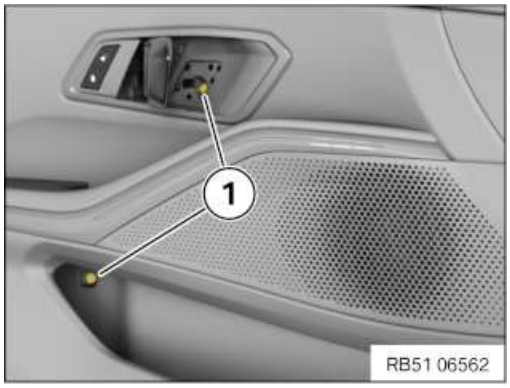
2 – Remove door trim panel



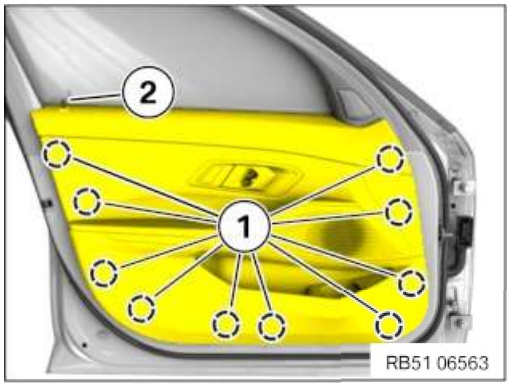
- Have the set of special tools 0 493 752 (00 9 329) ready.



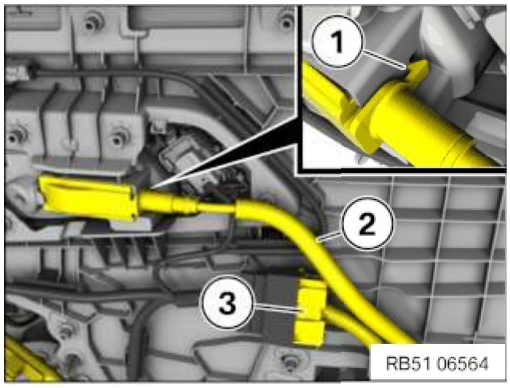
- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).



- Loosen screws (1).



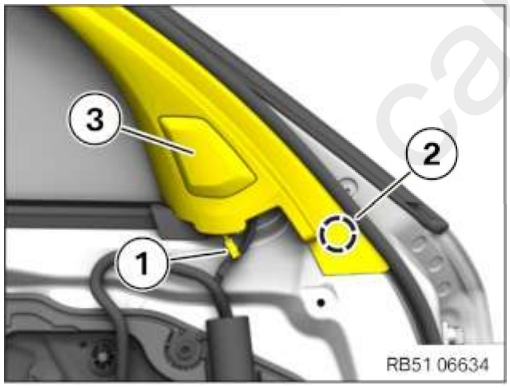
- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).



- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

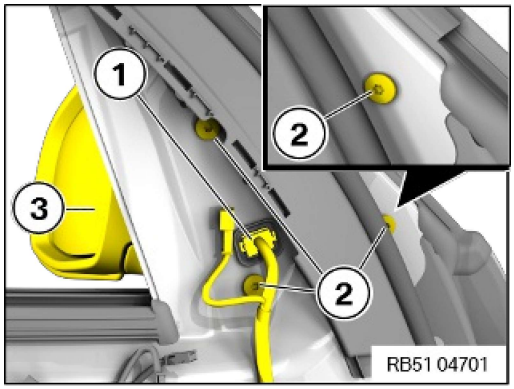
  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

3 – Partially removing the cover on the inner window frame



- If necessary, unlock and disconnect the plug connection (1).
- Unclip clip (2).
- Release the cover on inner window frame (3) in the area of the exterior rearview mirror.

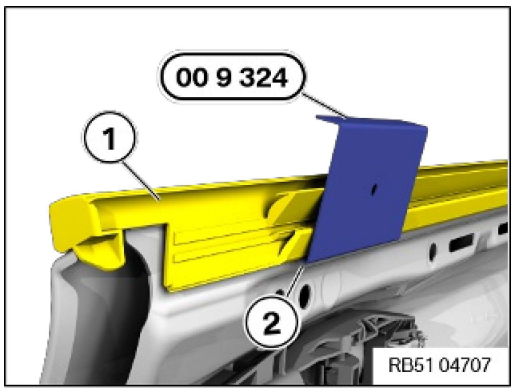
4 – Removing the exterior mirror



- Unlock plug connection (1) and disconnect.
- Release the screws (2) and remove the exterior rearview mirror (3).

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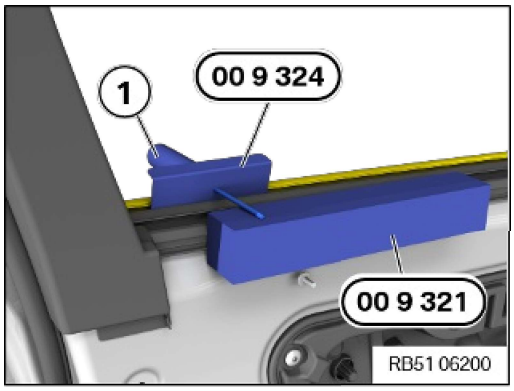
5 – Removing the outer weather strip



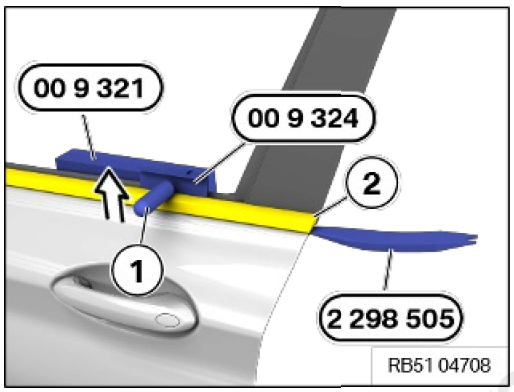
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Insert the special tool 0 495 484 (00 9 324) at the front (on A-pillar) into the window cavity and slide it toward the back.
- Position the special tool 0 495 484 (00 9 324) as shown at the lower edge of the outer weather strip (1) with the short shank (2).



- Place the special tool 0 490 538 (00 9 321) on the inner door panel.
- Thread a suitable tool (1) through the opening in the special tool 0 495 484 (00 9 324).



RISK OF DAMAGE

Scratches.

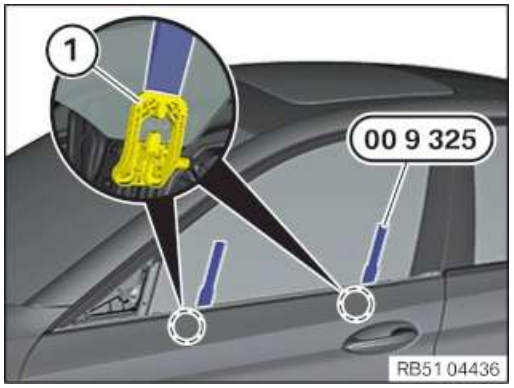
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Lift up the outer rear weather strip (2) with the special tool 2 298 505 as shown; maximum 5 mm.
- With a suitable tool (1), move the lever in the direction of arrow using the special tool 0 490 538 (00 9 321) for support.

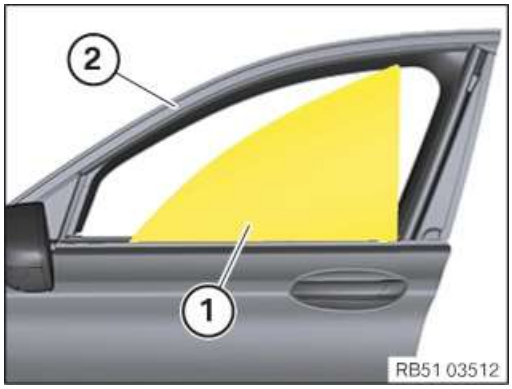
  When this happens, the special tool 0 495 484 (00 9 324) lifts the outer weather strip (2) upwards.
- Repeat this process step by step until the outer weather strip(2) is completely disassembled.

6 – Remove front door window glass



- Attach the front door window glass when closed using adhesive tape.
- Spread both holders (1) on the front door window glass simultaneously using special tool 0 496 569 (00 9 325) until it is possible to detach the front door window glass.
- Move the power window down.

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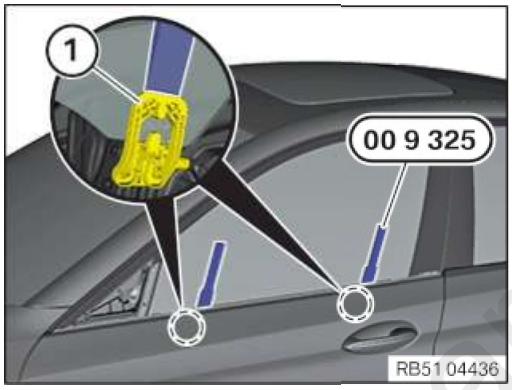
- Remove adhesive tape from the front door window glass (1).
- Slide the front door window glass (1) down.
- Twist the front door window glass (1) in the door frame (2).
- Guide the front door window glass (1) out to the top.

7 – Disconnecting all battery earth leads



- See additional information.

8 – Removing front module carrier



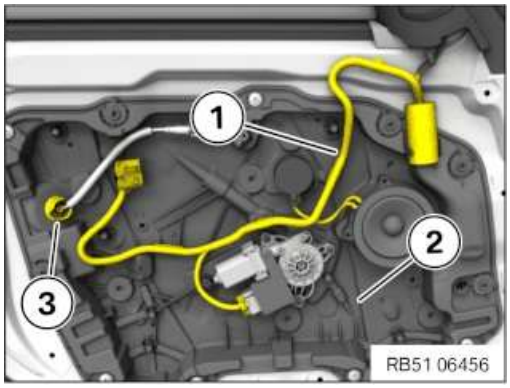
- Secure the door window glass to the door frame when it is closed using adhesive tape.
- Spread both holders (1) on the door window glass simultaneously using special tool 0 496 569 (00 9 325) until it is possible to detach the door window glass.
- Move the power window down.

▶ **Disconnecting all battery earth leads**

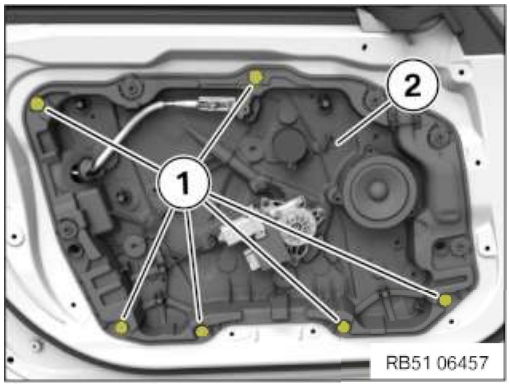


- See additional information.

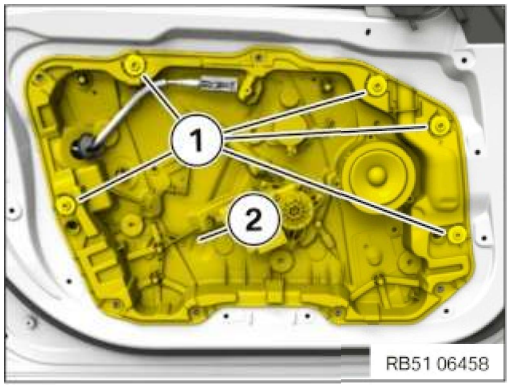
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- Unlock and disconnect all the electrical plug connections.
- Unclip wiring harness (1) on front module carrier (2).
- Release the rubber grommet of the Bowden cable for the inner door opener (3).



- Release screws (1) on front module carrier (2).



- Open bayonet fitting (1) by twisting and remove front module carrier (2).

9 – Remove the outside door handle

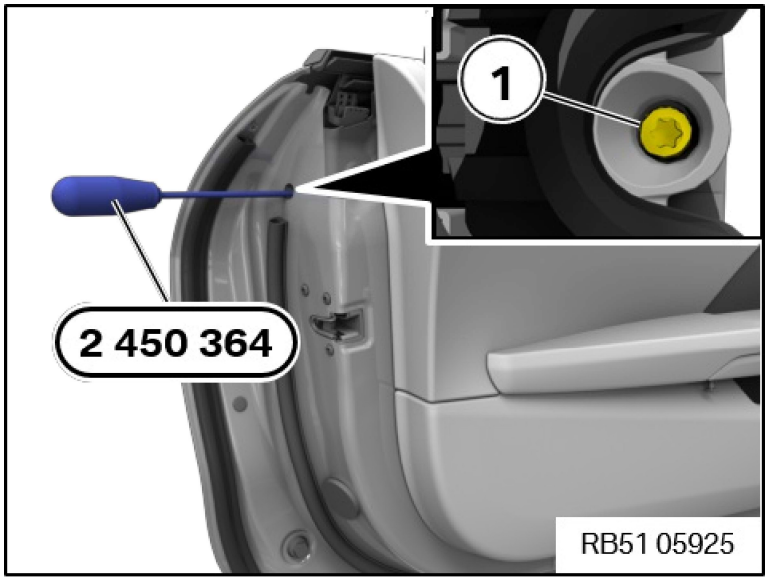
NOTICE

Description is for left component only. Procedure on the right side is identical.

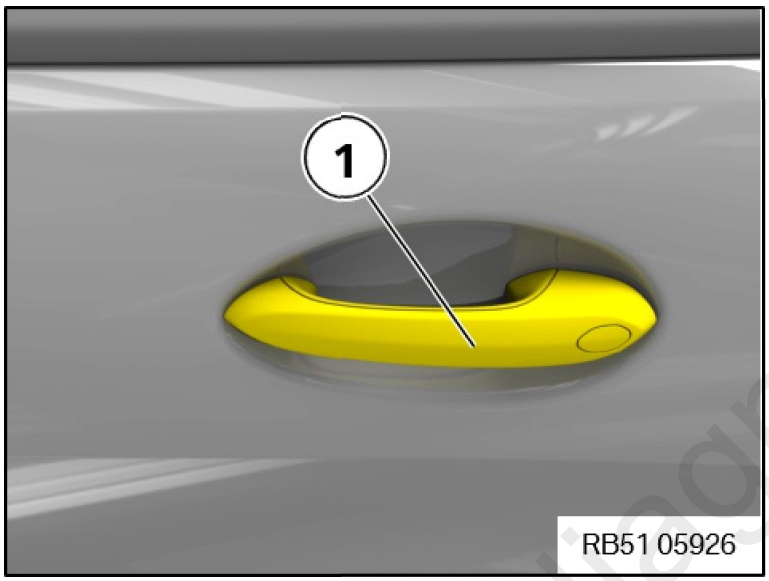


- Remove the seal plug (1).

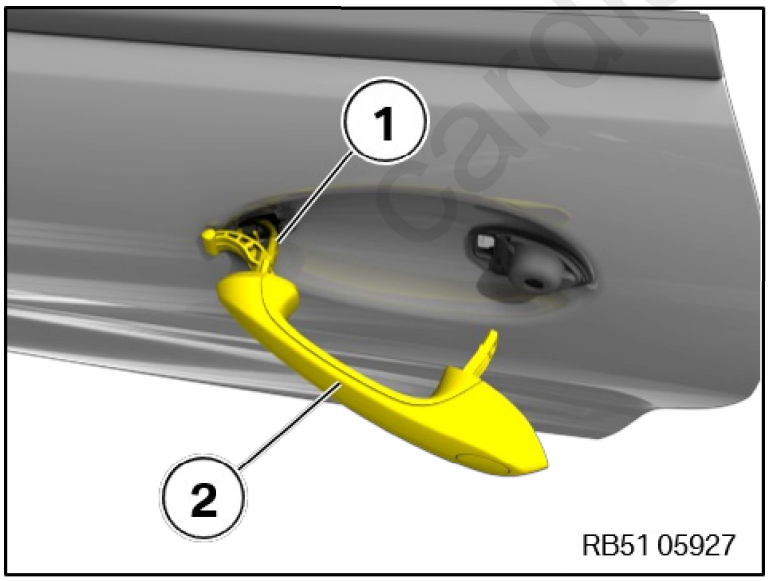
cardiagn.com



- Release the clamping bolt (1) from the outside door handle support with the special tool 2 450 364.



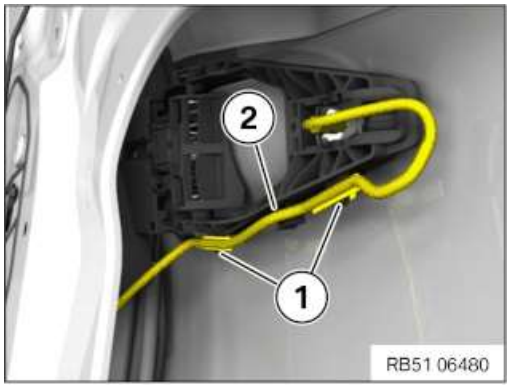
- Pull the rear outside door handle (1) to the outside and remove it in the process.
- Pivot the outside door handle (1) further towards the outside and in this process, remove it at the front.



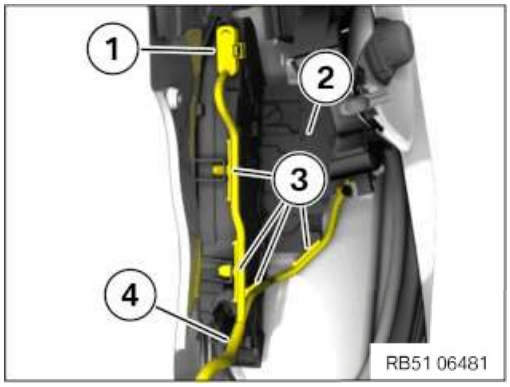
- Unlock and disconnect plug connections (1).
- Remove the outside door handle (2).

10 – Removing the outer door handle support

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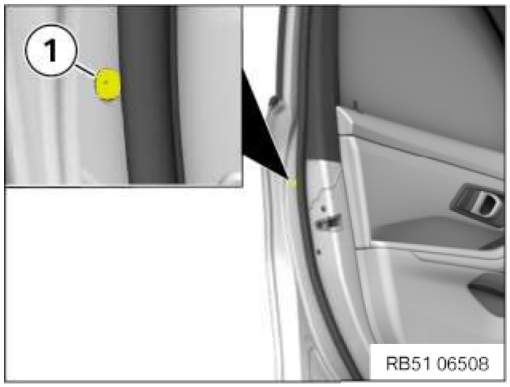
- Unclip clips (1) and place wiring harness (2) aside.



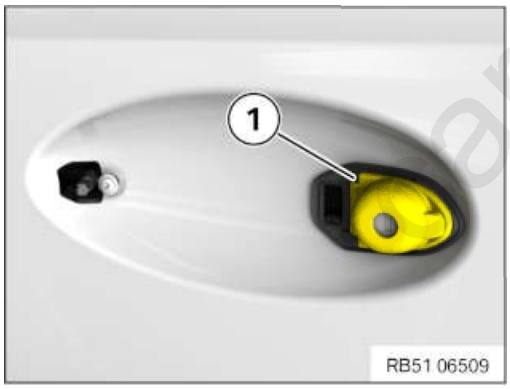
NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

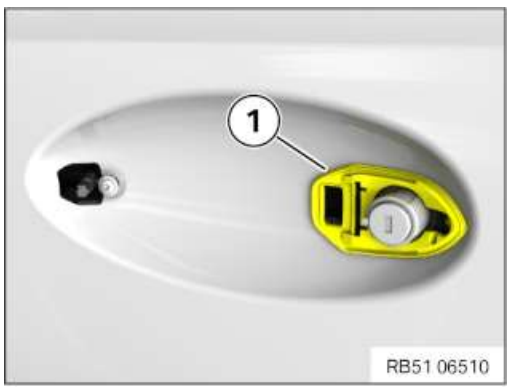
- Unlock and disconnect the plug connection (1)on the door lock (2).
- Unclip clips (3).
- Remove the wiring harness (4) and put to one side.



- Loosen screw (1).

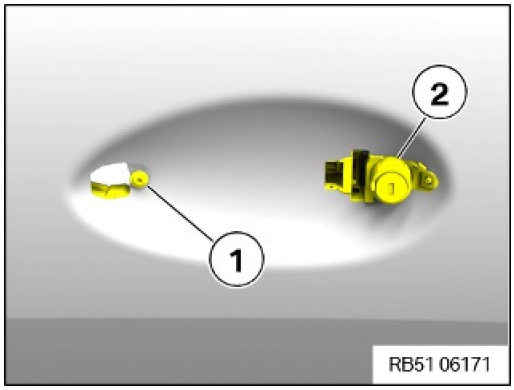


- Remove the cover (1).

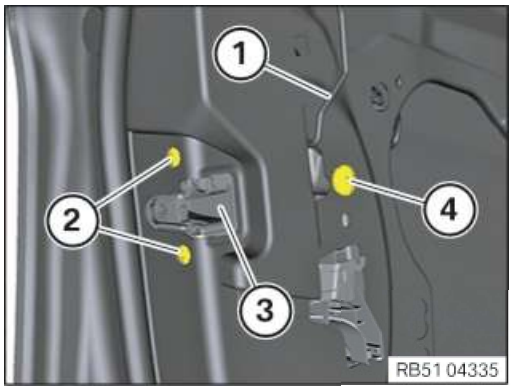


- Remove seal (1) for the outside door handle.

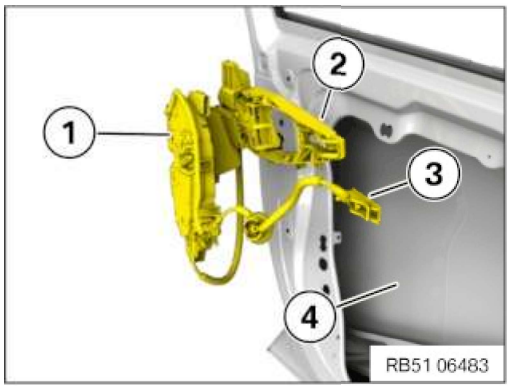
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- Loosen screw (1).
- Slide the outside door handle support (2) forward and thread out to the inside.



- Unclip locking rod (1).
- Release screws (2) and (4) of the door lock (3).

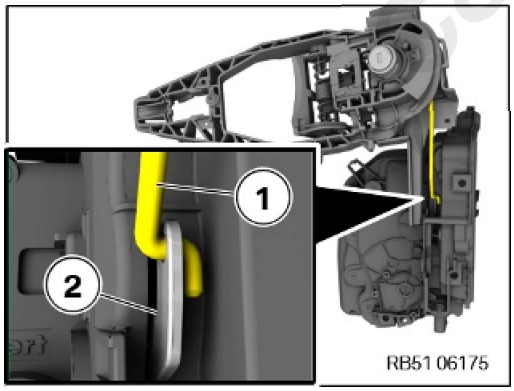


- Thread out door lock (1) together with the outside door handle support (2) and the Bowden cable for inner door opener (3) from the door (4).

  Make sure that the seal of door lock (1) is not damaged.

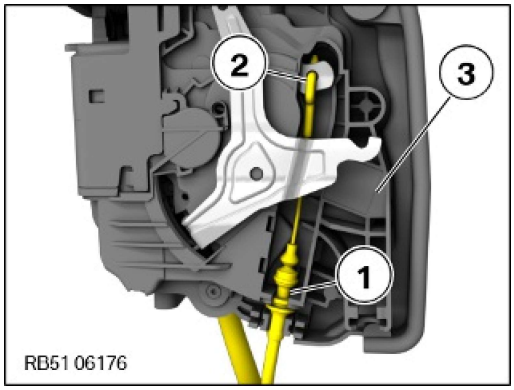
MAIN WORK

11 – Replacing door lock

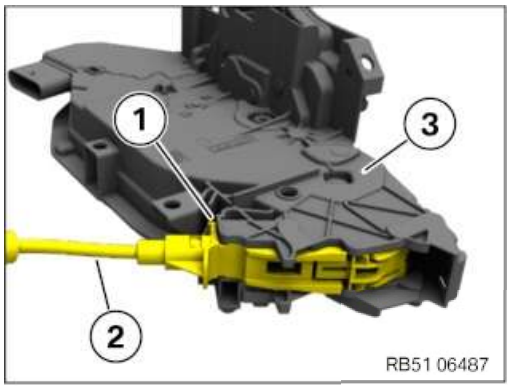


- Detach the linkage (1) from the door lock (2).

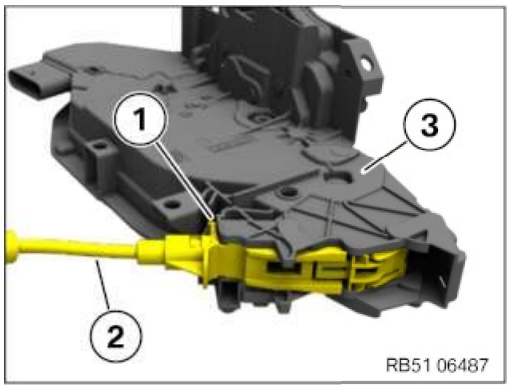
cardiagn.com



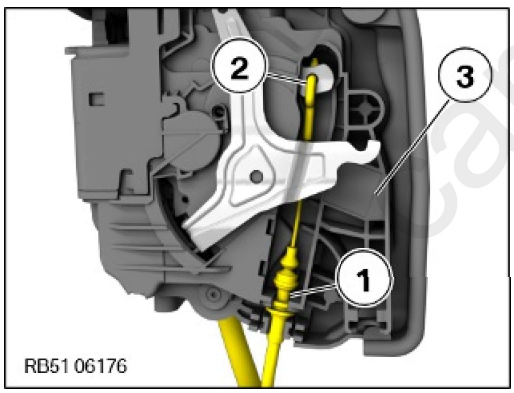
- Unclip Bowden cable (1) from door lock (3).
- Detach Bowden cable nipple (2) from door lock (3).



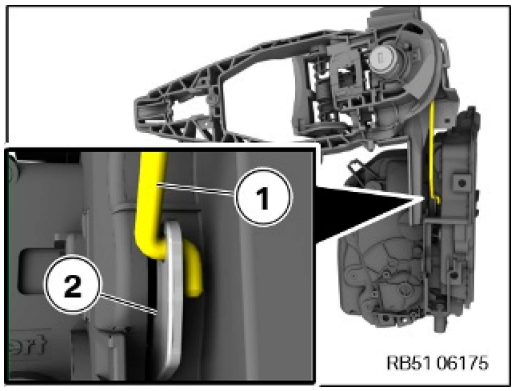
- Unclip clip (1) on the Bowden cable for the inner door opener (2).
- Remove Bowden cable for the inner door opener (2) from the door lock (3).



- Install Bowden cable for the inner door opener (2) in the new door lock (3).
- Clip in the clip (1).



- Attach Bowden cable nipple (2) to the new door lock (3).
- Clip in Bowden cable (1) on the new door lock (3).



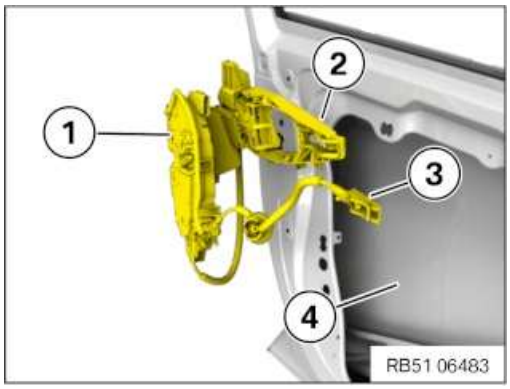
- Attach the linkage (1) in the new door lock (2).

POSTPROCESSES

12 – Installing the outer door handle support

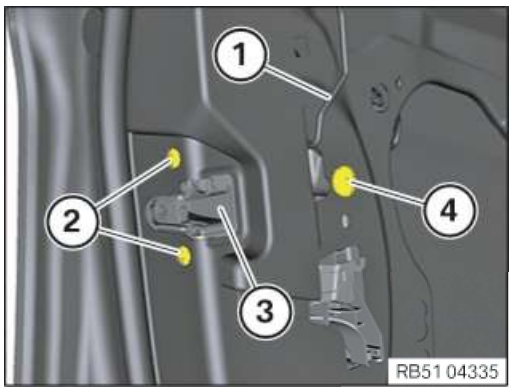
carjagn.com

12 – Installing the outer door handle support



- Guide door lock (1) together with outside door handle support (2) and the Bowden cable for inner door opener (3) into door (4).

  Make sure that the seal of door lock (1) is not damaged.



- Screw in screws (2) and (4) a few turns.
- Tighten down screws (2).

Door lock to door

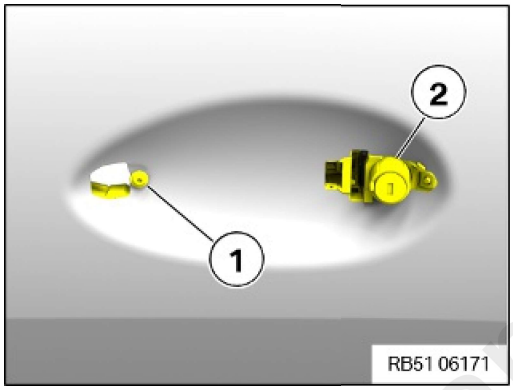
Screw		Tightening torque	8,8 Nm

- Tighten down screw (4).

Door lock to door

Screw		Tightening torque	8,8 Nm

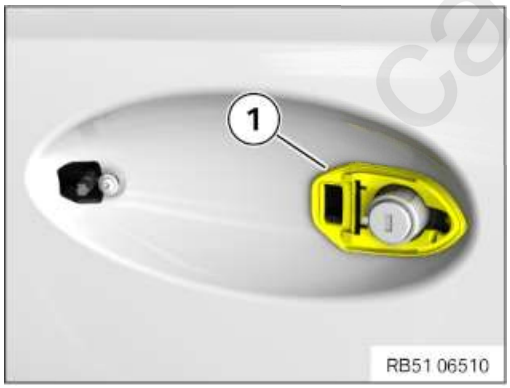
- Clip in locking rod (1).



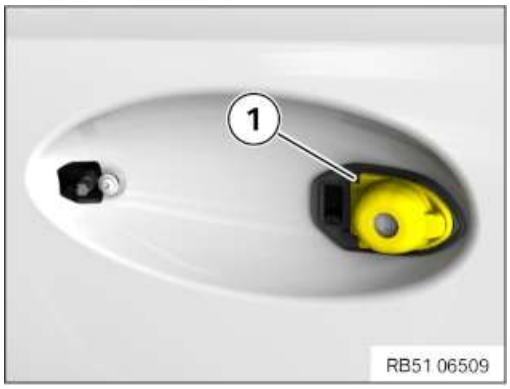
- Feed in outside door handle support (2) and position correctly.
- Tighten down screw (1).

Outside door handle support to door

Screw		Tightening torque	2,6 Nm

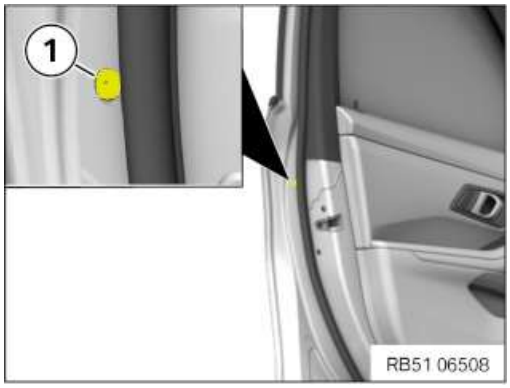


- Install seal (1) for the outside door handle.



- Install the cover (1).

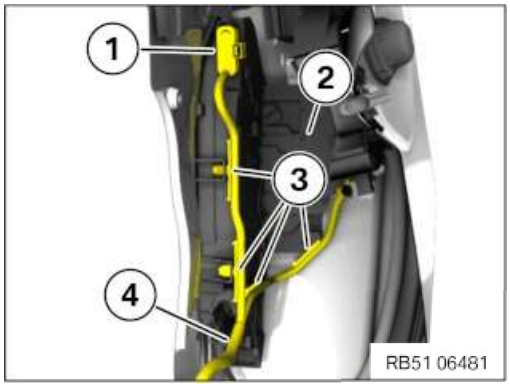
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- Tighten down screw (1).

Attachment bell to outside door handle support

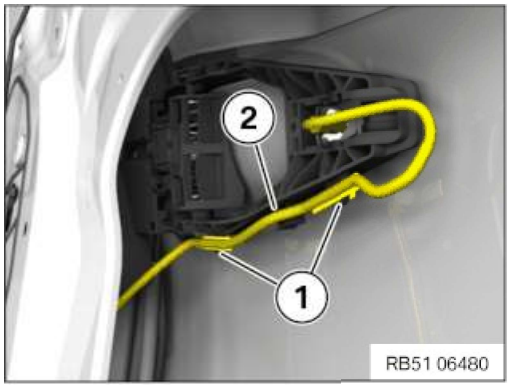
Screw		Tightening torque	3 Nm



NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

- Insert the wiring harness (4).
- Connect connector (1) at the door lock (2) and lock.
- Clip in clips (3).

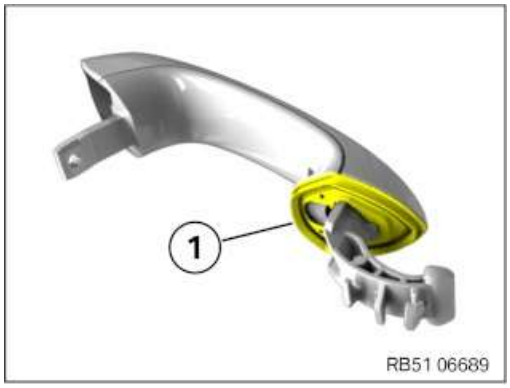


- Route the wiring harness (2) correctly.
- Clip in clips (1).

13 – Installing the outside door handle

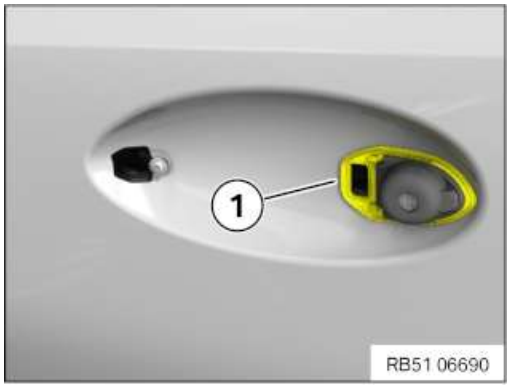
NOTICE

Description is for left component only. Procedure on the right side is identical.

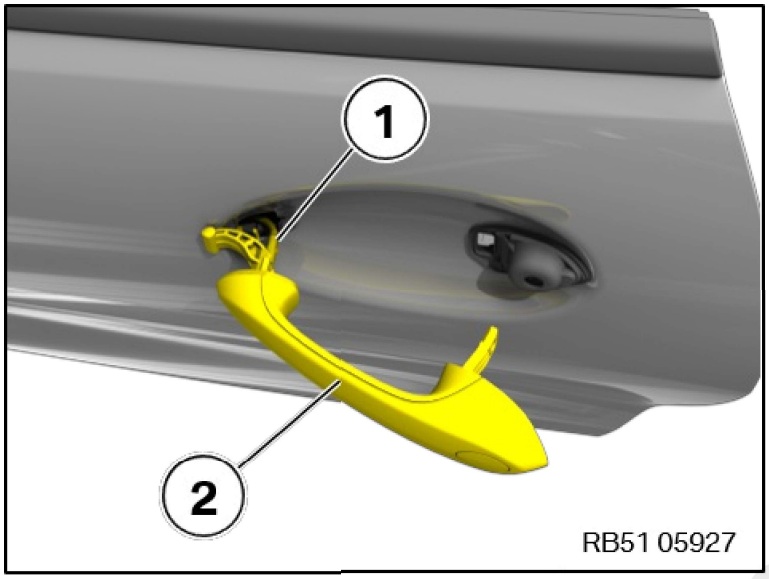


- Check the seal (1) for damage and renew if necessary.

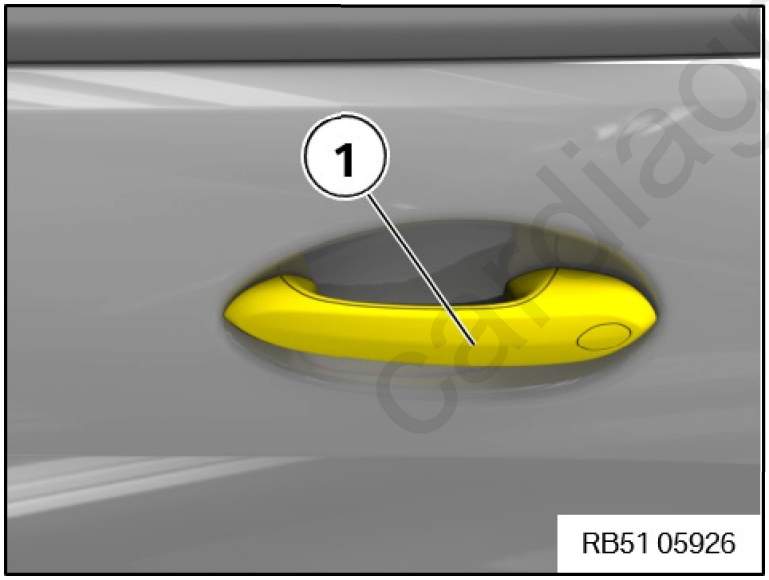
cardiagn.com



- Check the seal (1) for damage and renew if necessary.

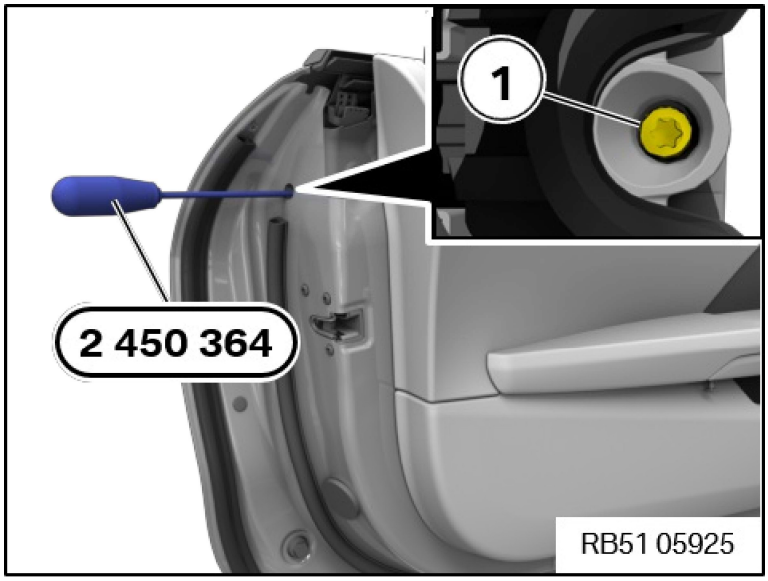


- Insert the front outside door handle (2).
- Connect connectors (1) and lock.



- Insert the rear outside door handle (1).

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NOTICE

Schematic diagram is for example purposes.
Some parts may differ in certain details.

- Tighten the clamping bolt (1) on the outside door handle support with the special tool 2 450 364.

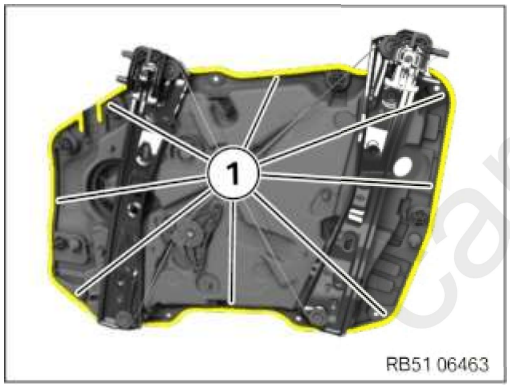
Clamping bolt for door handle

Screw		Tightening torque	2 Nm



- Install seal plug (1).

14 – Installing front module carrier



Check

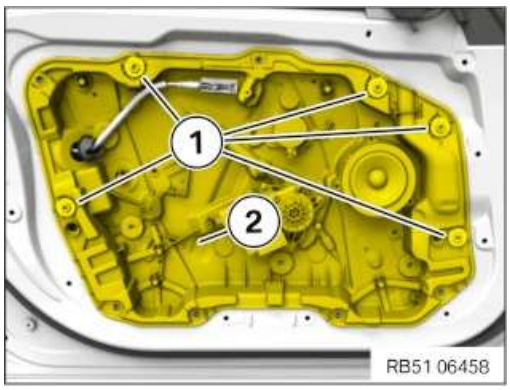
- Check seal (1) of the front module carrier for damage.

Result

» Seal of the front module carrier is damaged.

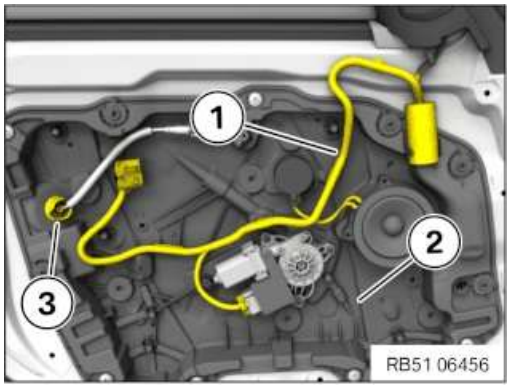
Measure

- Renew the front module carrier.



- Position front module carrier (2) on the door.
- Lock bayonet fittings (1) by twisting them.

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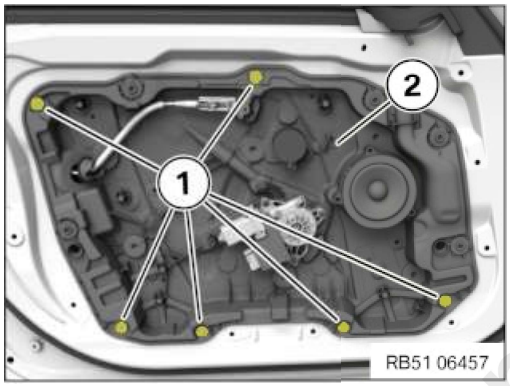


- Connect all electrical connectors and lock.
- Clip in wiring harness (1) on front module carrier (2).
- Install rubber grommet of the Bowden cable for the inner door opener (3).
- Check rubber grommet of the Bowden cable for the inner door handle (3) for correct seating.

▶ **Disconnecting all battery earth leads**



- See additional information.



- Tighten screws (1) of the front module carrier (2).

Module carrier to front door

Torx socket M5x12		Tightening torque	8 Nm

- Move the power window upwards until the fixed side window glass correctly engages in both holders.

  Remove adhesive tape.

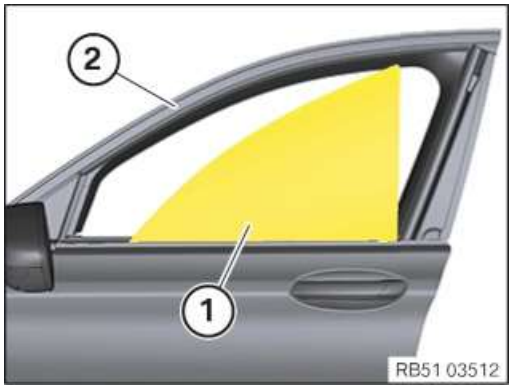
15 – Disconnecting all battery earth leads



- See additional information.

16 – Installing front door window glass

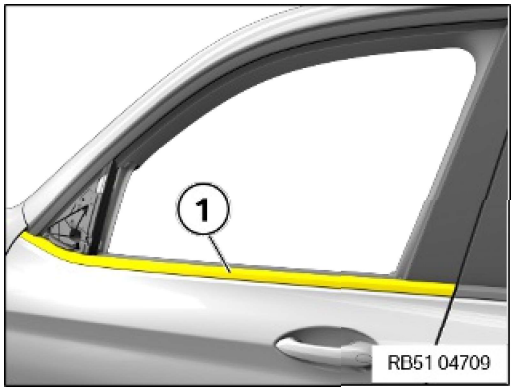
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- Insert the twisted front door window glass (1) into the door frame (2).
- Insert the front door window glass (1) into the rubber window seals by twisting it.

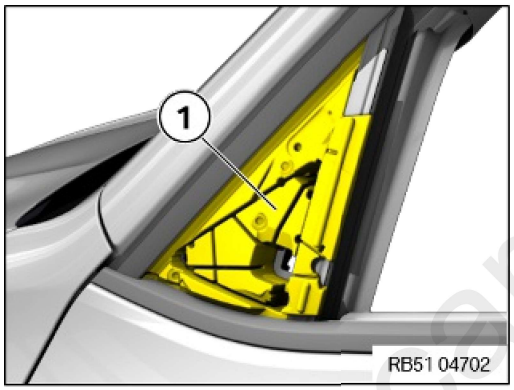
  The front door window glass (1) must be positioned correctly in the rubber window seal.
- Push the front door window glass (1) fully upwards and secure it to the door frame (2) using adhesive tape.
- Shift the power windows upwards until the front door window glass (1) correctly engages in both holders.
- Remove adhesive tape.

17 – Install outer weather strip



- Check outer weather strip (1) for damage, renew the outer weather strip (1) if required.
- Coat the outer weather strip (1) with a suitable lubricant prior to installation.
- Fit outer weather strip (1) on the front door.
- Press down the outer weather strip (1) across its entire length.

18 – Installing the exterior mirror



Check

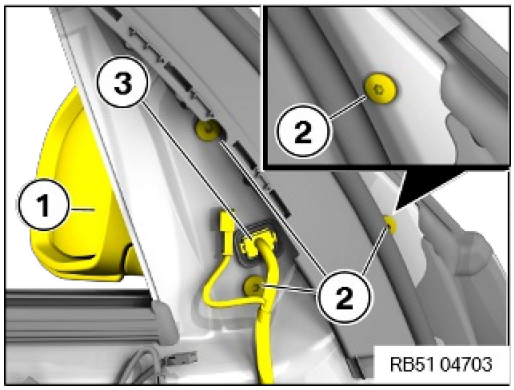
- Check mirror triangle seal (1) for damage.

Result

» The mirror triangle seal is damaged.

Measure

- Replace mirror triangle seal .



- Position exterior rearview mirror (1) and tighten screws (2).

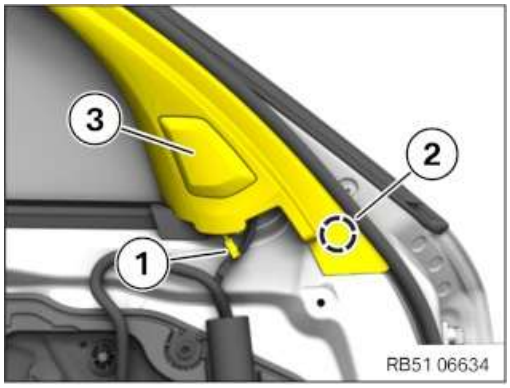
Exterior mirror to door

Thread-tapping hexagon screw		Tightening torque	10 Nm

- Connect connectors (3) and lock.

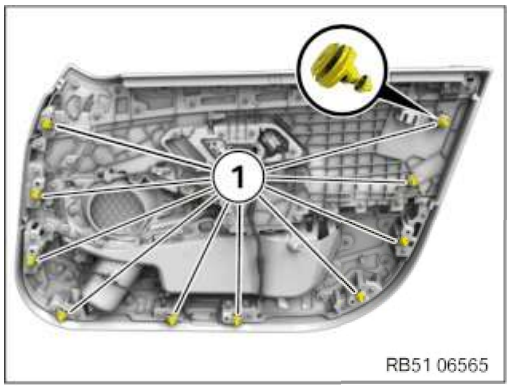
19 – Installing the cover on the inside of the window frame partially

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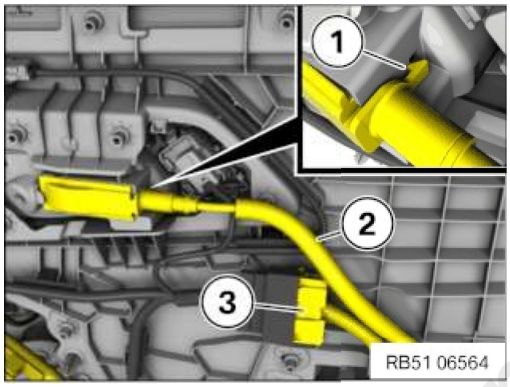
- Mount cover on the inner window frame (3) in the area of the exterior rearview mirror.
- Clip in the clip (2).
- If necessary, connect the connector (1) and lock it.

20 – Install door trim panel

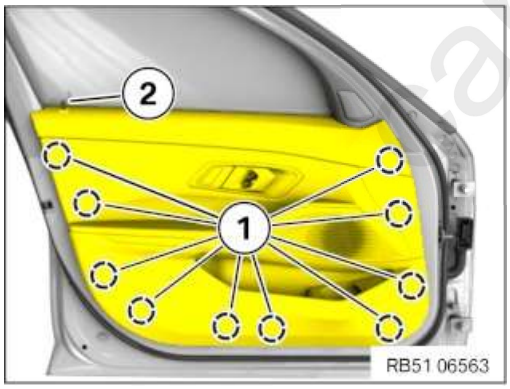


- Renew the clips (1).

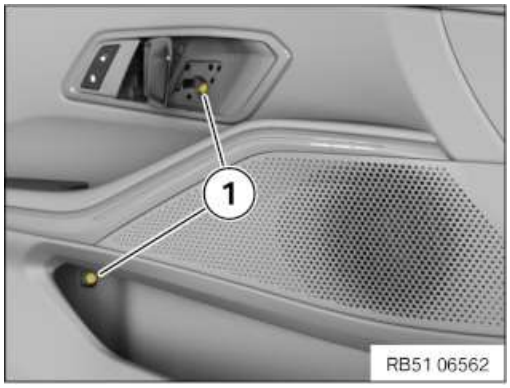
  Parts: Clips



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).

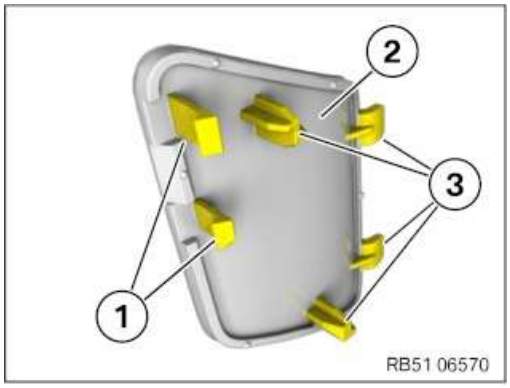


- Tighten the screws (1).

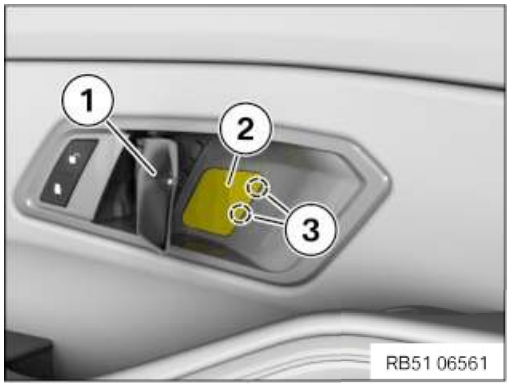
Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm

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- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

Door lock to door			Used in step 12
Screw		Tightening torque	8,8 Nm

Outside door handle support to door			Used in step 12
Screw		Tightening torque	2,6 Nm

Attachment bell to outside door handle support			Used in step 12
Screw		Tightening torque	3 Nm

Clamping bolt for door handle			Used in step 13
Screw		Tightening torque	2 Nm

Module carrier to front door			Used in step 14
Torx socket M5x12		Tightening torque	8 Nm

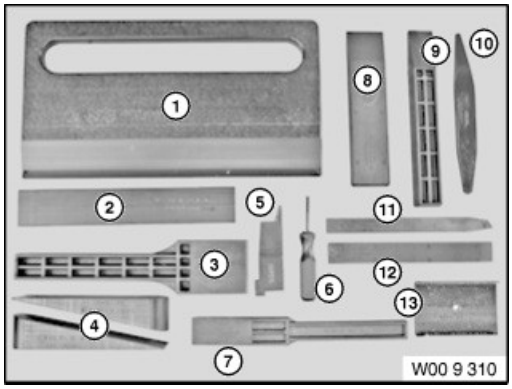
Exterior mirror to door			Used in step 18
Thread-tapping hexagon screw		Tightening torque	10 Nm

Door trim panel to door			Used in step 20
Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

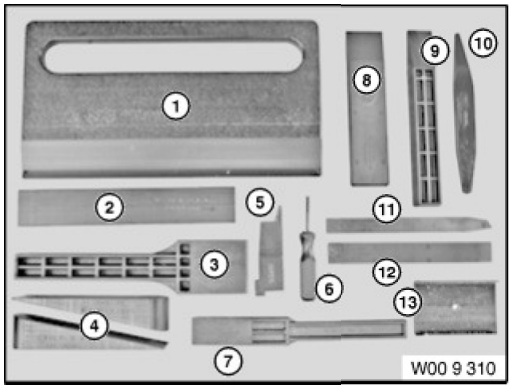
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0 495 484 (00 9 324) Panel wedge



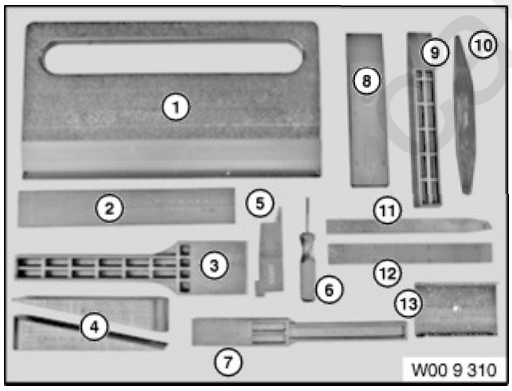
Common	Used in step 15
Usage	(Panel wedge (panel)) For removing cavity strips on the doors from E60
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 25 05 (230)

0 493 752 (00 9 329) Case



Common	Used in step 2
Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

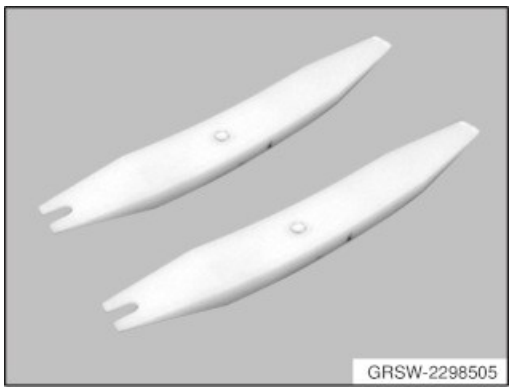
0 490 538 (00 9 321) Folding stick



Common	Used in step 5
Usage	
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

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2 298 505 Wedge



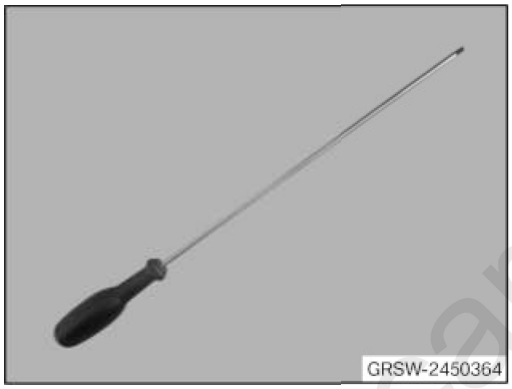
Common	Used in step 5
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

0 496 569 (00 9 325) Wedge



Common	Used in step 68
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

2 450 364 Torx



Common	Used in step 913
Usage	for releasing the outside door handles
Included in the tool or work	
Storage location	A5
Replaced by	
In connection with	
SI-Number	01 22 16 (440)

Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	781415
61 20 900 Disconnecting and connecting battery earth lead	781415
61 20 900 Disconnecting and connecting battery earth lead	781415
61 20 900 Disconnecting and connecting battery earth lead	781415
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61 20 900 Disconnecting and connecting battery earth lead	781415
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	781415
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	781415
61 20 900 Disconnecting and connecting battery earth lead	781415
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	781415
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	781415
61 20 900 Disconnecting and connecting battery earth lead	781415

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61 20 900 Disconnecting and connecting battery earth lead	781415
61 20 900 Disconnecting and connecting battery earth lead	781415
61 20 900 Disconnecting and connecting battery earth lead	781415

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51 21 111 Removing and installing/replacing the door lock of the front passenger door

WARNING

Working on 12 V vehicle electrical system.

Risk of short circuits! Risk of fire!

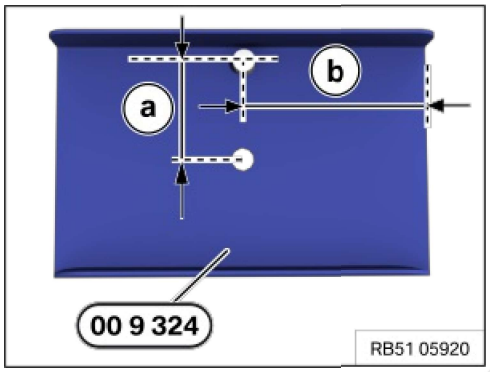
- Detach battery earth lead from battery.
- For additional batteries: Detach all battery earth leads from additional batteries.

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

1 – Preparing the special tool



- **Do this only if the upper bore hole is missing.**
- Mark and make the bore hole on the special tool 0 495 484 (00 9 324) according to the specified dimensions.

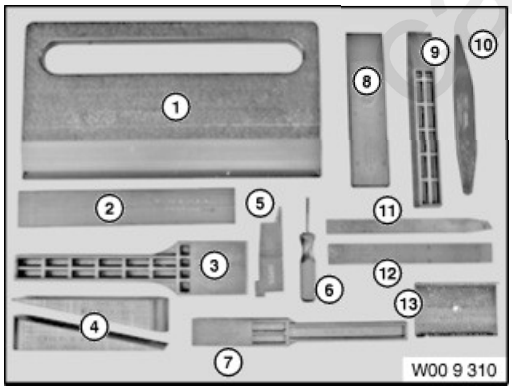
  Make a bore hole on the side with the long shank.

  The diameter of the bore hole is 6 mm.

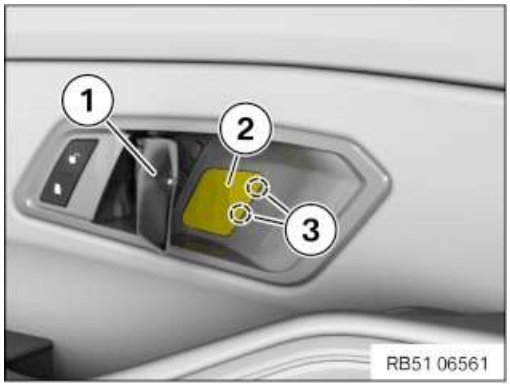
  Dimension (a) = 25 mm from the centre of the existing bore hole

  Dimension (b) = 50 mm from the outer edge of the special tool

2 – Remove door trim panel

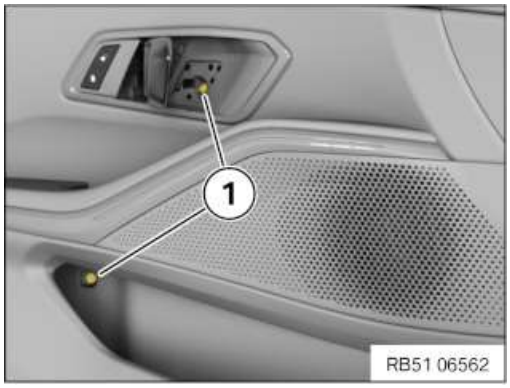


- Have the set of special tools 0 493 752 (00 9 329) ready.

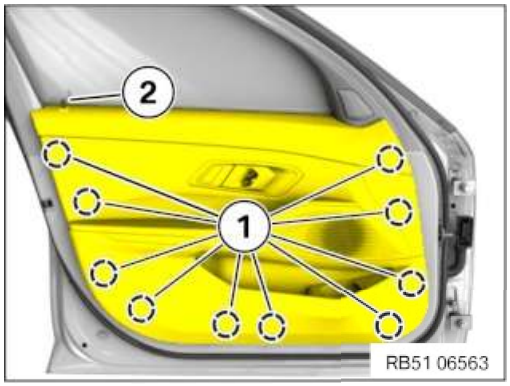


- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

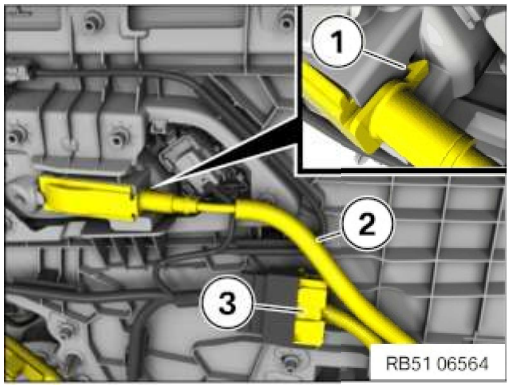
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- Loosen screws (1).



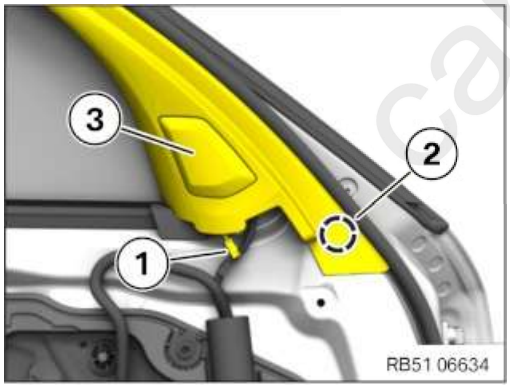
- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).



- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

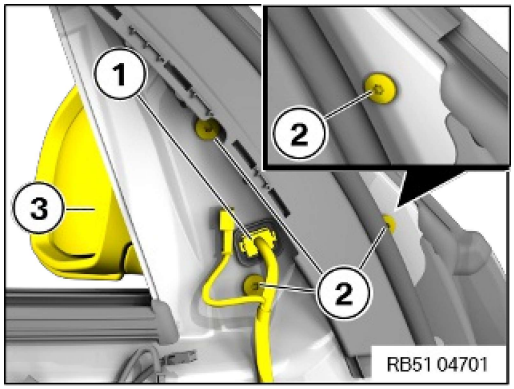
  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

3 – Partially removing the cover on the inner window frame



- If necessary, unlock and disconnect the plug connection (1).
- Unclip clip (2).
- Release the cover on inner window frame (3) in the area of the exterior rearview mirror.

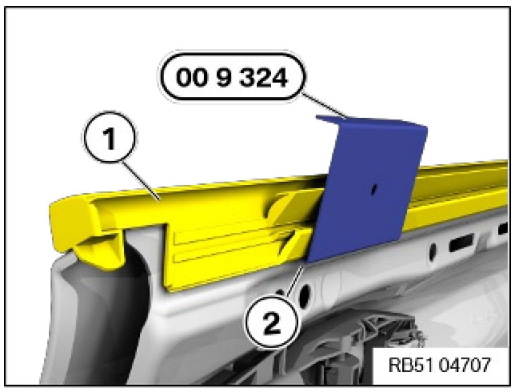
4 – Removing the exterior mirror



- Unlock plug connection (1) and disconnect.
- Release the screws (2) and remove the exterior rearview mirror (3).

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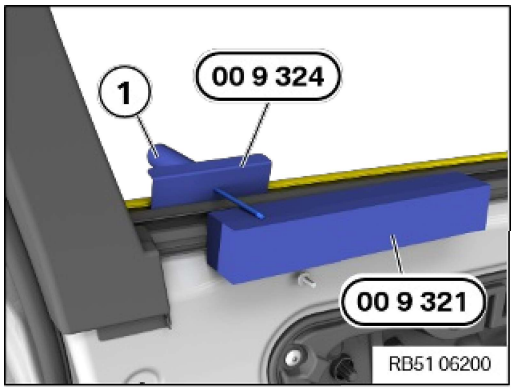
5 – Removing the outer weather strip



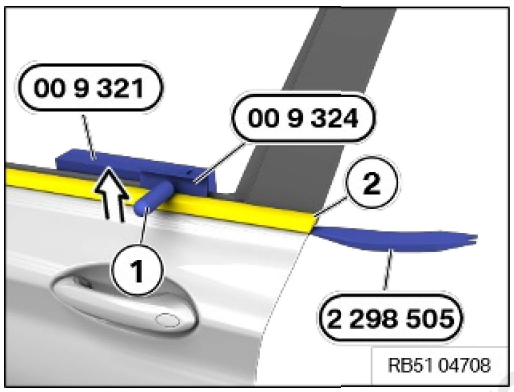
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Insert the special tool 0 495 484 (00 9 324) at the front (on A-pillar) into the window cavity and slide it toward the back.
- Position the special tool 0 495 484 (00 9 324) as shown at the lower edge of the outer weather strip (1) with the short shank (2).



- Place the special tool 0 490 538 (00 9 321) on the inner door panel.
- Thread a suitable tool (1) through the opening in the special tool 0 495 484 (00 9 324).



RISK OF DAMAGE

Scratches.

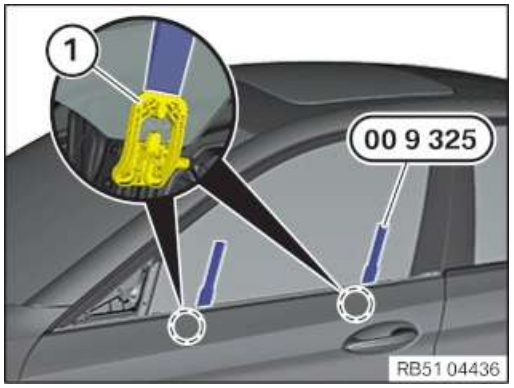
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Lift up the outer rear weather strip (2) with the special tool 2 298 505 as shown; maximum 5 mm.
- With a suitable tool (1), move the lever in the direction of arrow using the special tool 0 490 538 (00 9 321) for support.

  When this happens, the special tool 0 495 484 (00 9 324) lifts the outer weather strip (2) upwards.
- Repeat this process step by step until the outer weather strip(2) is completely disassembled.

6 – Removing front module carrier



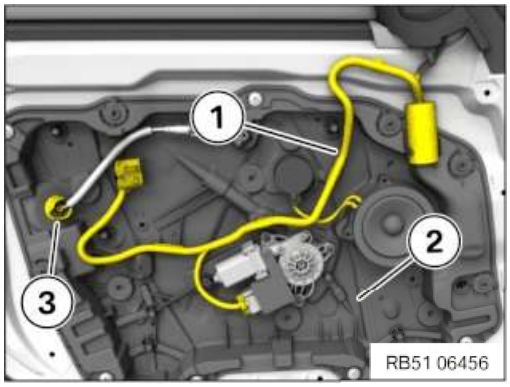
- Secure the door window glass to the door frame when it is closed using adhesive tape.
- Spread both holders (1) on the door window glass simultaneously using special tool 0 496 569 (00 9 325) until it is possible to detach the door window glass.
- Move the power window down.

▸ **Disconnecting all battery earth leads**

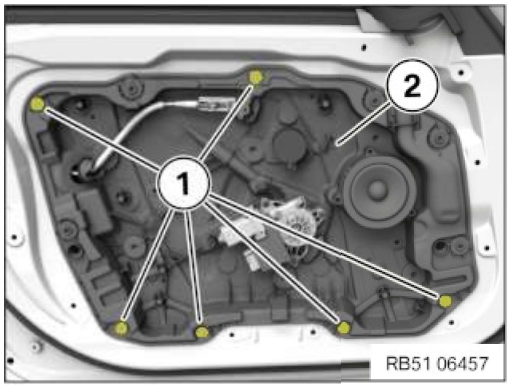
cardiagn.com



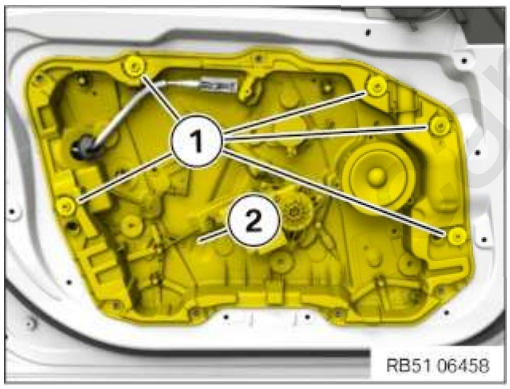
- See additional information.



- Unlock and disconnect all the electrical plug connections.
- Unclip wiring harness (1) on front module carrier (2).
- Release the rubber grommet of the Bowden cable for the inner door opener (3).



- Release screws (1) on front module carrier (2).

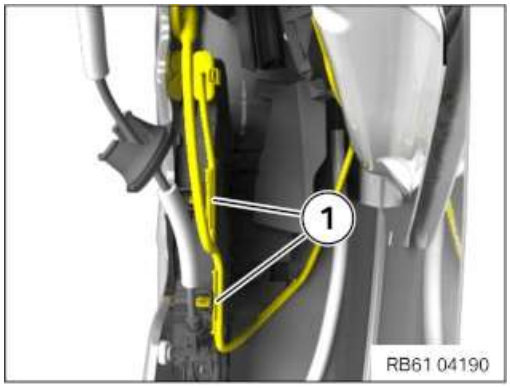


- Open bayonet fitting (1) by twisting and remove front module carrier (2).

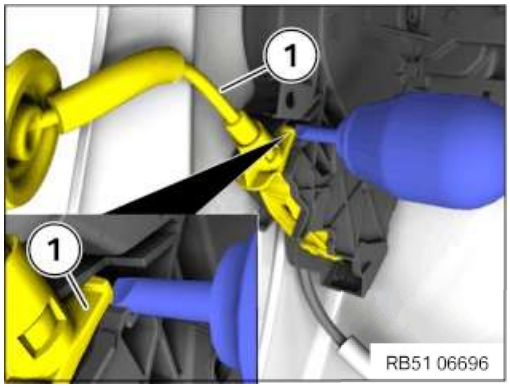
7 – Remove Bowden cable for the inside door opener

NOTICE

To provide a better overview: Illustration of surrounding parts in removed state.



- Unclip clips (1) and place wiring harness aside.



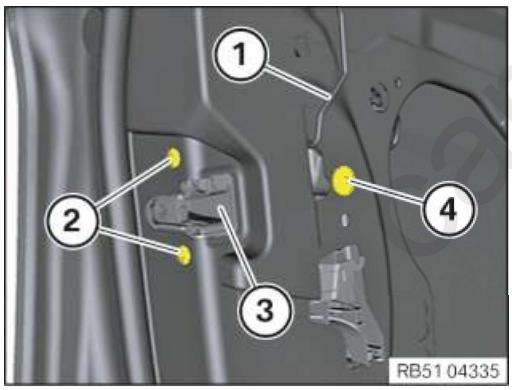
- Unclip clip (1) with a suitable tool.
- Remove the Bowden cable for the inner door opener from the door lock.

MAIN WORK

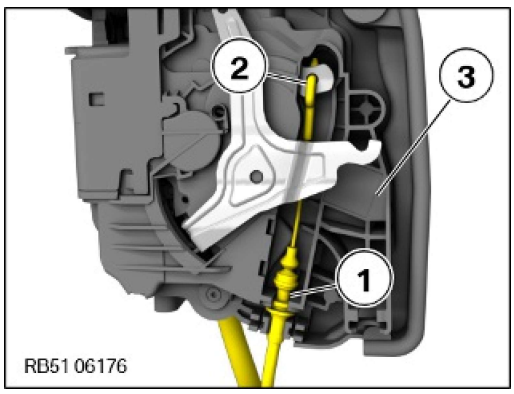
8 – Remove right door lock

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Unclip locking rod (1).
- Unlock and disconnect the plug connection on the inner door lock (3).
- Unclip the wiring harness from the door lock (3) on the inside.
- Loosen screws (2) and (4).
- Guide out door lock (3).



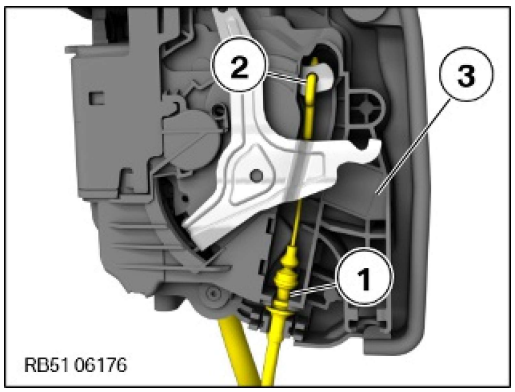
- Unclip Bowden cable (1) from door lock (3).
- Detach Bowden cable nipple (2) from door lock (3).

9 – Installing the right door lock

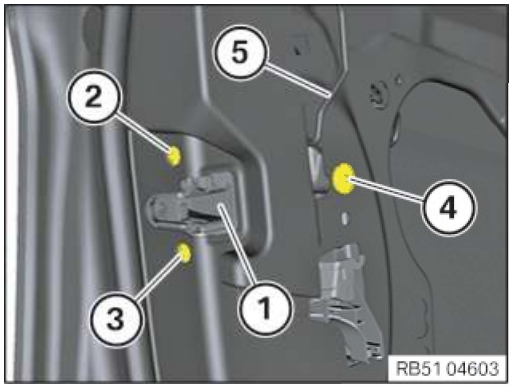
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NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Attach Bowden cable nipple (2) to the new door lock (3).
- Clip in Bowden cable (1) on the new door lock (3).



- Insert door lock (1).
- Attach wiring harness.
- Connect and lock the connector on the door lock (1).
- Position bolts (2) to (4).
- Tighten the screws in the following sequence: (2) - (3) - (4).

Door lock to door

Screw		Tightening torque	8,8 Nm

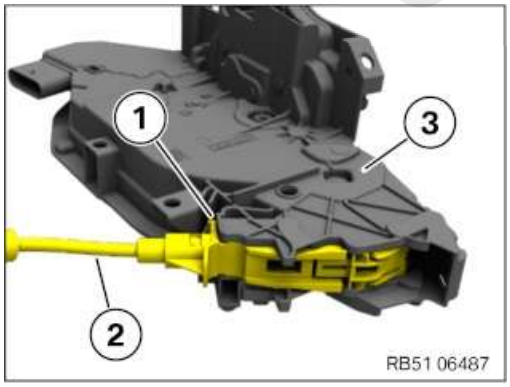
- Clip in locking rod (5).

POSTPROCESSES

10 – Install the Bowden cable for the inside door opener

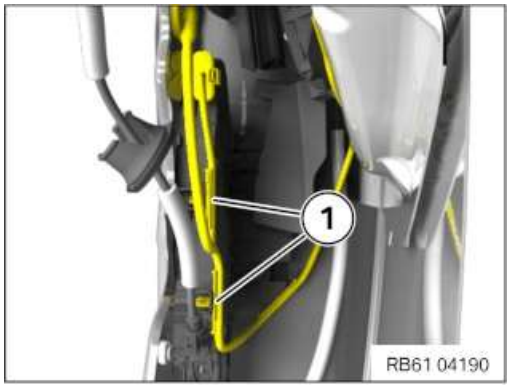
NOTICE

To provide a better overview: Illustration of surrounding parts in removed state.



- Install the new Bowden cable for inner door opener (2) in door lock (3).
- Clip in clip (1).

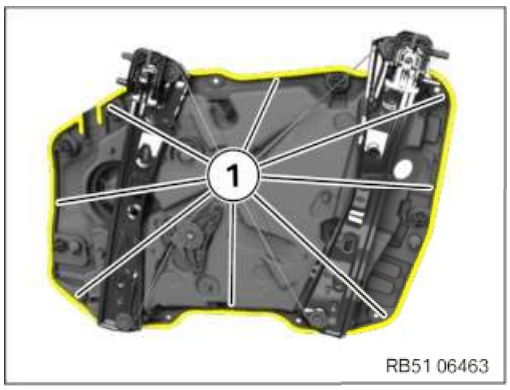
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- Clip in the wiring harness using clips (1).

11 – Installing front module carrier

Check



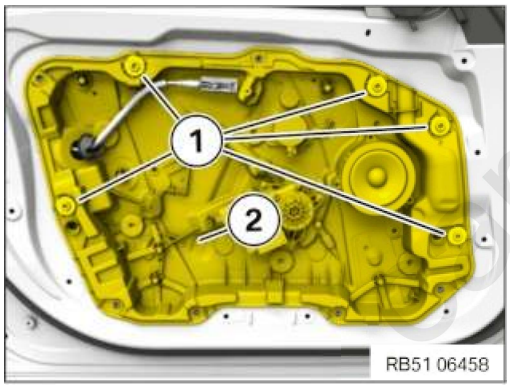
- Check seal (1) of the front module carrier for damage.

Result

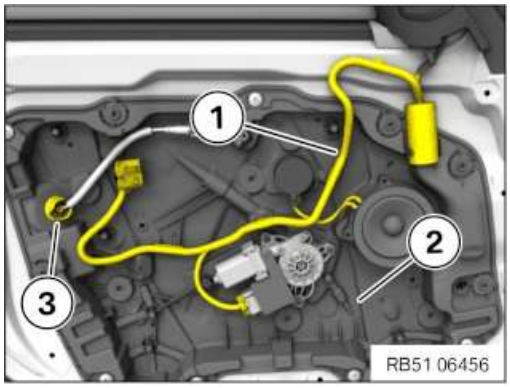
» Seal of the front module carrier is damaged.

Measure

- Renew the front module carrier.



- Position front module carrier (2) on the door.
- Lock bayonet fittings (1) by twisting them.



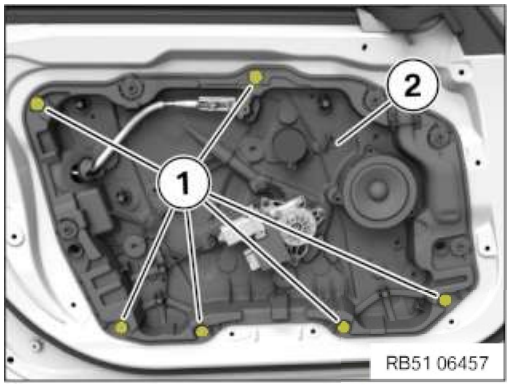
- Connect all electrical connectors and lock.
- Clip in wiring harness (1) on front module carrier (2).
- Install rubber grommet of the Bowden cable for the inner door opener (3).
- Check rubber grommet of the Bowden cable for the inner door handle (3) for correct seating.

► **Disconnecting all battery earth leads**

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- See additional information.



- Tighten screws (1) of the front module carrier (2).

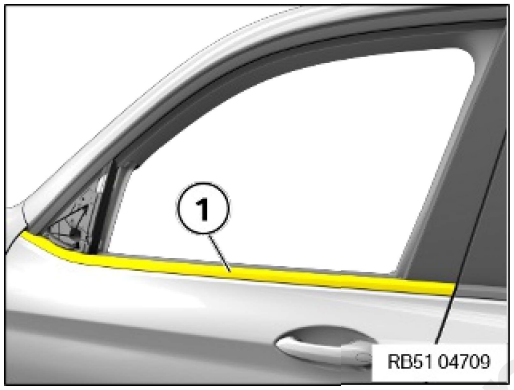
Module carrier to front door

Torx socket M5x12		Tightening torque	8 Nm

- Move the power window upwards until the fixed side window glass correctly engages in both holders.

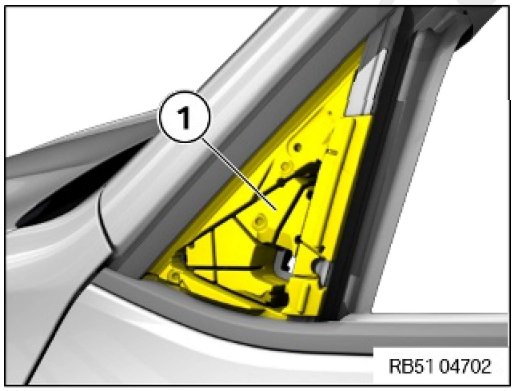
  Remove adhesive tape.

12 – Install outer weather strip



- Check outer weather strip (1) for damage, renew the outer weather strip (1) if required.
- Coat the outer weather strip (1) with a suitable lubricant prior to installation.
- Fit outer weather strip (1) on the front door.
- Press down the outer weather strip (1) across its entire length.

13 – Installing the exterior mirror



Check

- Check mirror triangle seal (1) for damage.

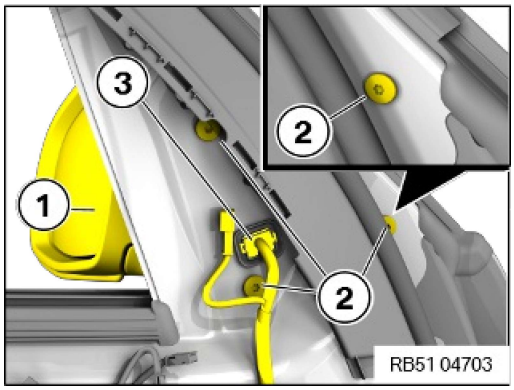
Result

» The mirror triangle seal is damaged.

Measure

- Replace mirror triangle seal .

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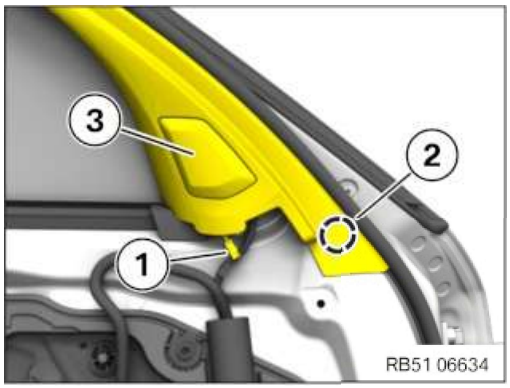
- Position exterior rearview mirror (1) and tighten screws (2).

Exterior mirror to door

Thread-tapping hexagon screw		Tightening torque	10 Nm

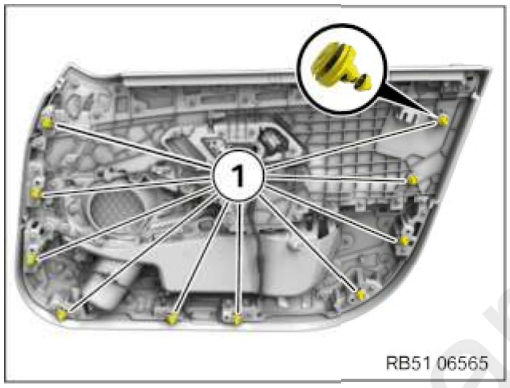
- Connect connectors (3) and lock.

14 – Installing the cover on the inside of the window frame partially



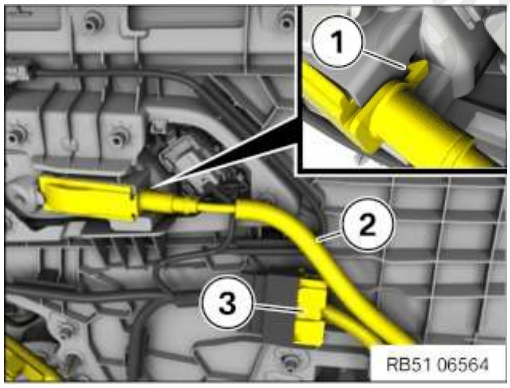
- Mount cover on the inner window frame (3) in the area of the exterior rearview mirror.
- Clip in the clip (2).
- If necessary, connect the connector (1) and lock it.

15 – Install door trim panel

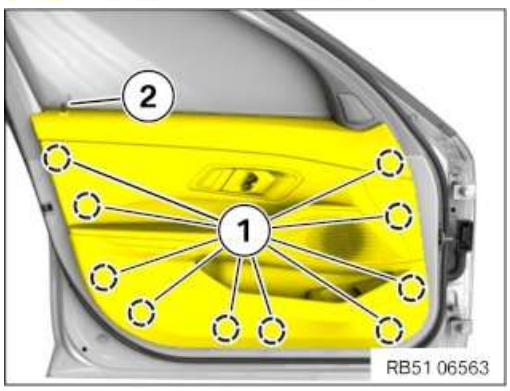


- Renew the clips (1).

  Parts: Clips

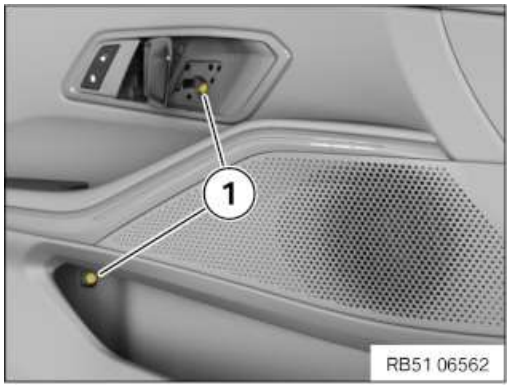


- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).

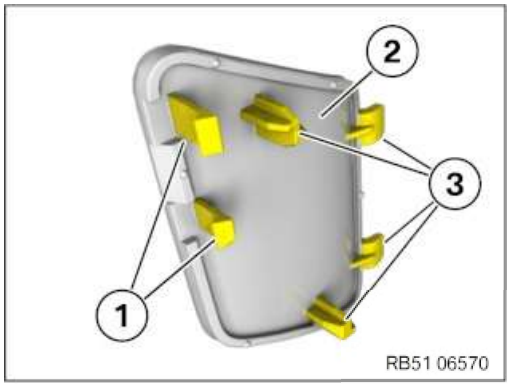
erdiagn.com



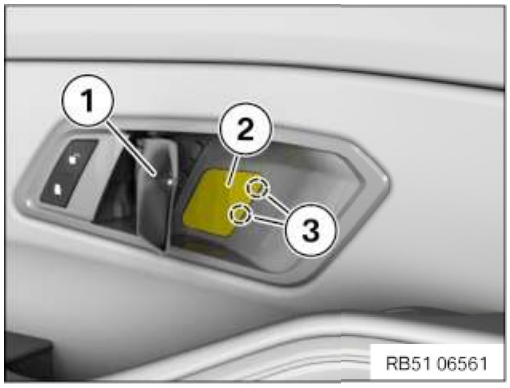
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

Door lock to door Used in step 9

Screw		Tightening torque	8,8 Nm

Module carrier to front door Used in step 11

Torx socket M5x12		Tightening torque	8 Nm

Exterior mirror to door Used in step 13

Thread-tapping hexagon screw		Tightening torque	10 Nm

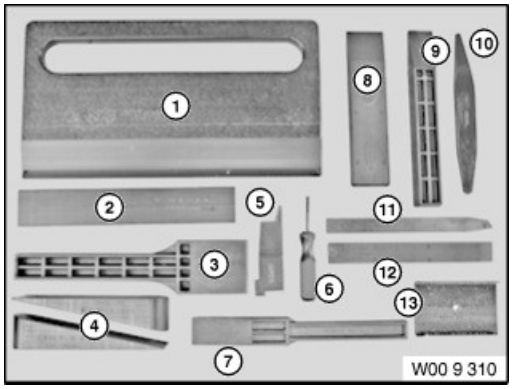
Door trim panel to door Used in step 15

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

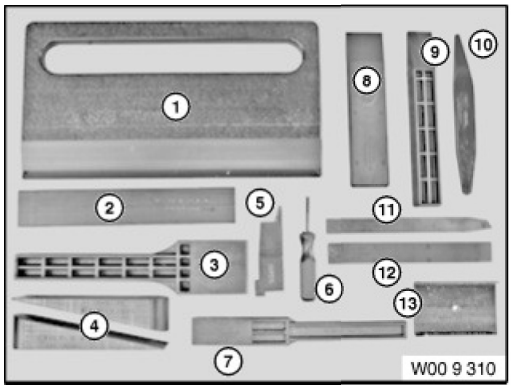
cardiagn.com

0 495 484 (00 9 324) Panel wedge



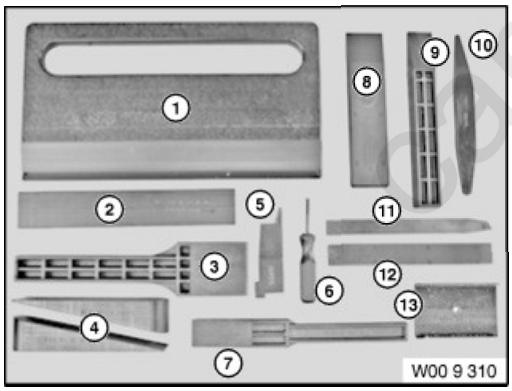
Common	Used in step 15
Usage	(Panel wedge (panel)) For removing cavity strips on the doors from E60
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 25 05 (230)

0 493 752 (00 9 329) Case



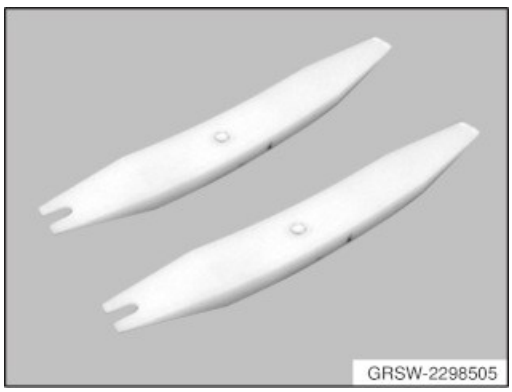
Common	Used in step 2
Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

0 490 538 (00 9 321) Folding stick



Common	Used in step 5
Usage	
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

2 298 505 Wedge



Common	Used in step 5
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

bmdiagn.com

0 496 569 (00 9 325) Wedge



Common	Used in step 6
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	611
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	611
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	611
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	611
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting battery earth lead	611
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61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	611
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61 20 900 Disconnecting and connecting battery earth lead	611
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61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting battery earth lead	611

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51 21 225 Removing and installing/replacing the inner door opener on the left or right front door

RISK OF DAMAGE

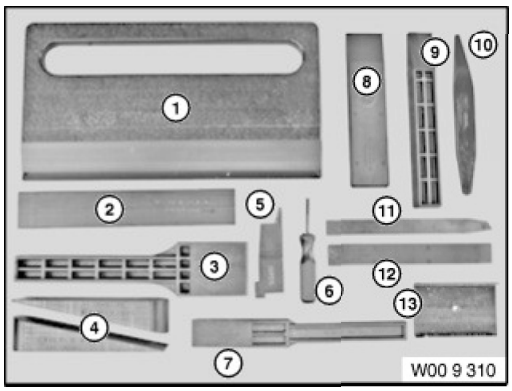
Scratches.

Tools and sharp-edged components can cause scratches.

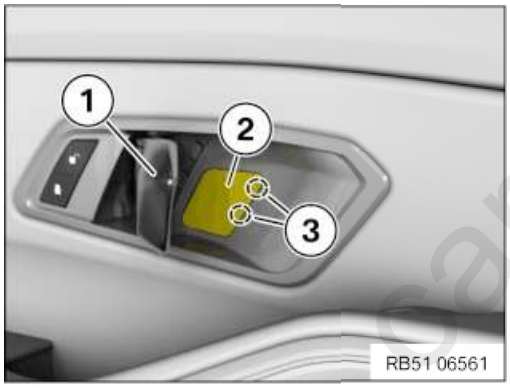
- Protect working area.
- Handle tools and components carefully.

PRELIMINARY WORK

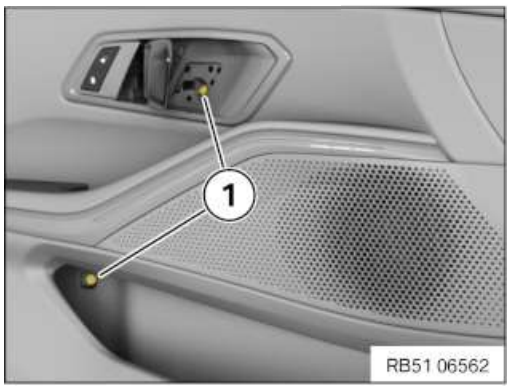
1 – Remove door trim panel



- Have the set of special tools 0 493 752 (00 9 329) ready.

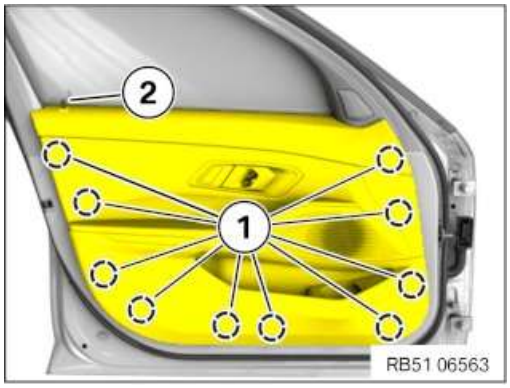


- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

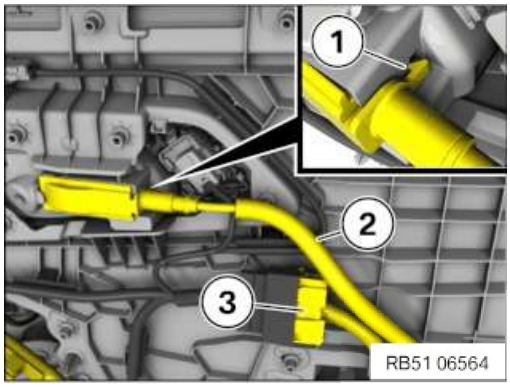


- Loosen screws (1).

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- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).



- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

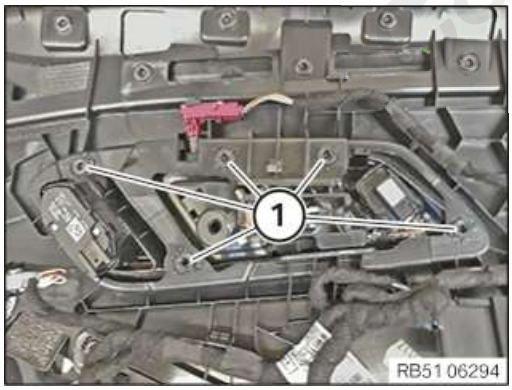
  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

MAIN WORK

2 – Removing inside door opener

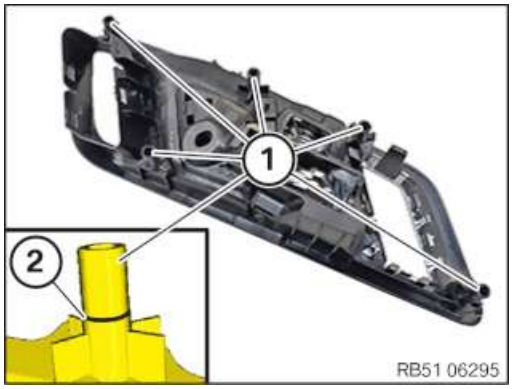


- Disconnect plug connection (1).

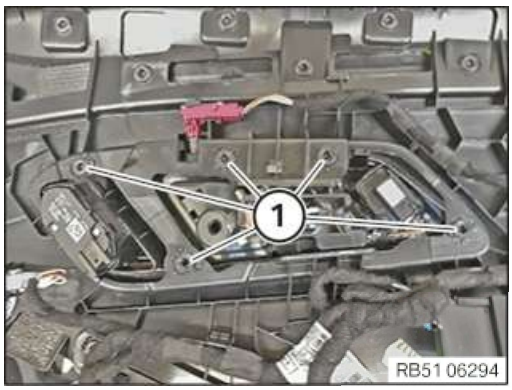


- Remove the existing LED module if necessary.
- Drill out and/or grind down the spot-welds (1).
- Guide out and remove the inner door opener from the door trim panel.

3 – Installing the inner door opener



- Saw off all welding pins (1) along the moulding (2).



- Remove welding remnants on door trim panel with a scalpel.
- Guide the door opener into the door trim panel.
- Insert the repair screws in welding pins (1) and tighten them.

Repair screw to door trim panel

Oval-head screw M4x10		Tightening torque	2,0 Nm

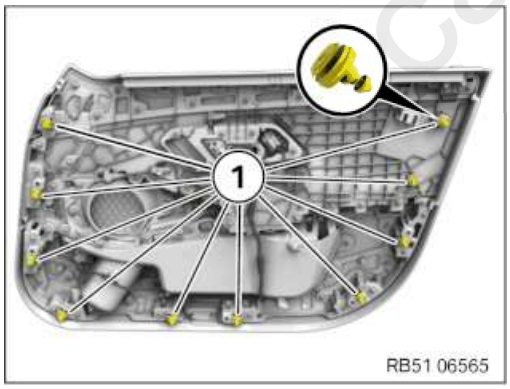
- Install the existing LED module if necessary.



- Connect connectors (1) and lock.

POSTPROCESSES

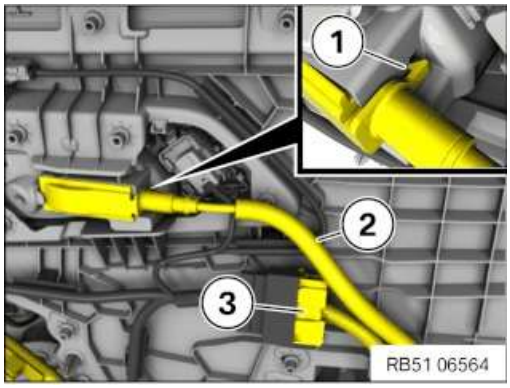
4 – Install door trim panel



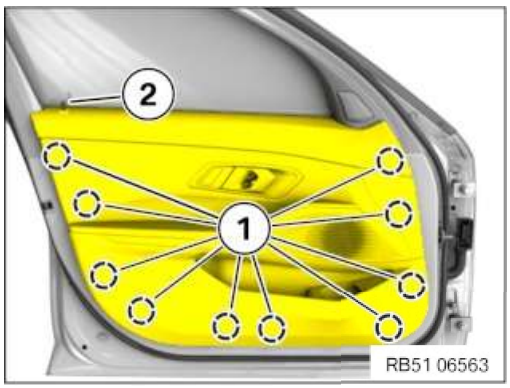
- Renew the clips (1).

  Parts: Clips

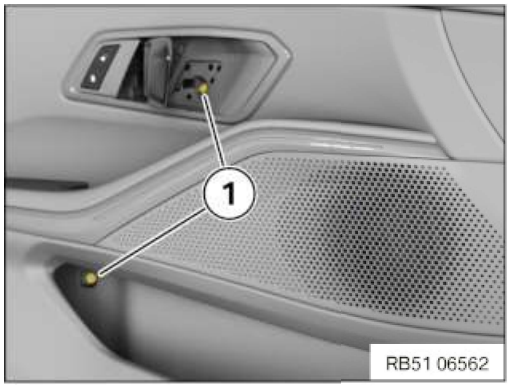
cardiagn.com



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



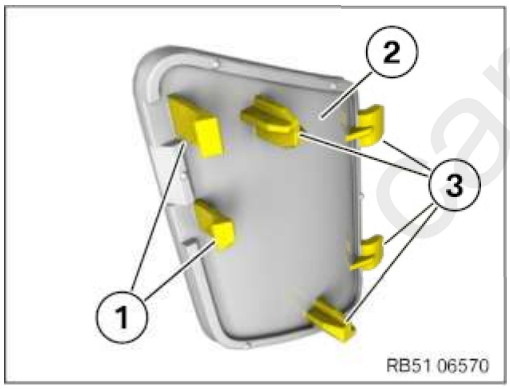
- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).



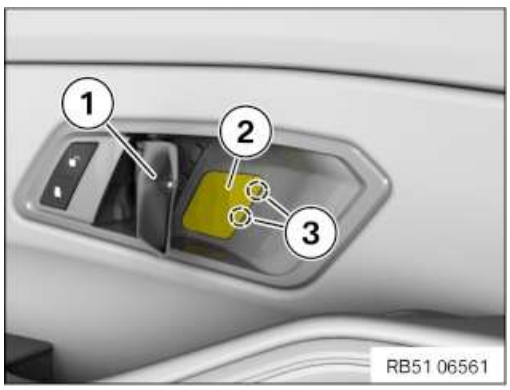
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

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Overview of Tightening Torques

Repair screw to door trim panel — Used in step 3

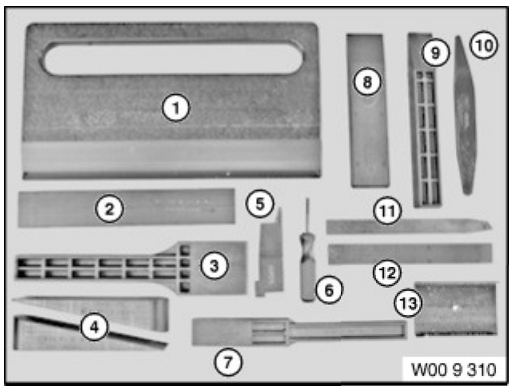
Oval-head screw M4x10		Tightening torque	2,0 Nm

Door trim panel to door — Used in step 4

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

0 493 752 (00 9 329) Case



Common — Used in step 1

Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

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51 21 170 Removing and installing/replacing the outside door handle at the front left or right

NOTICE

Description is for left component only. Procedure on the right side is identical.

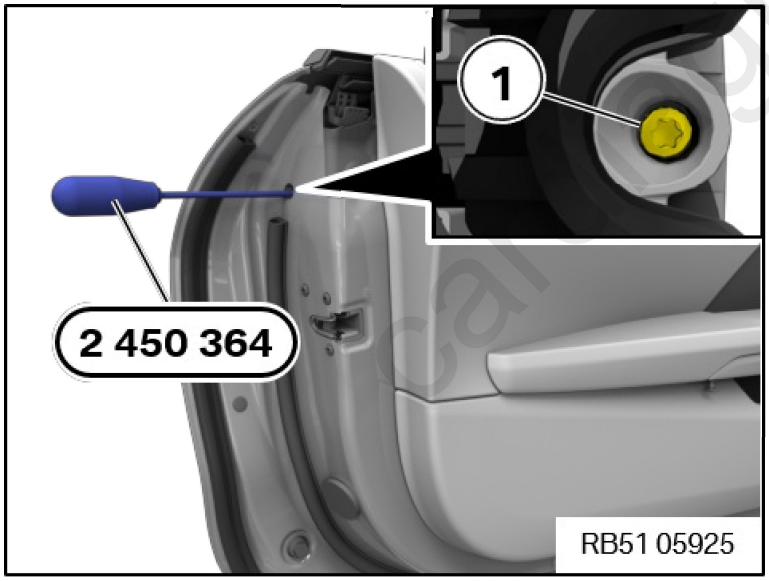
1 – Remove the outside door handle

NOTICE

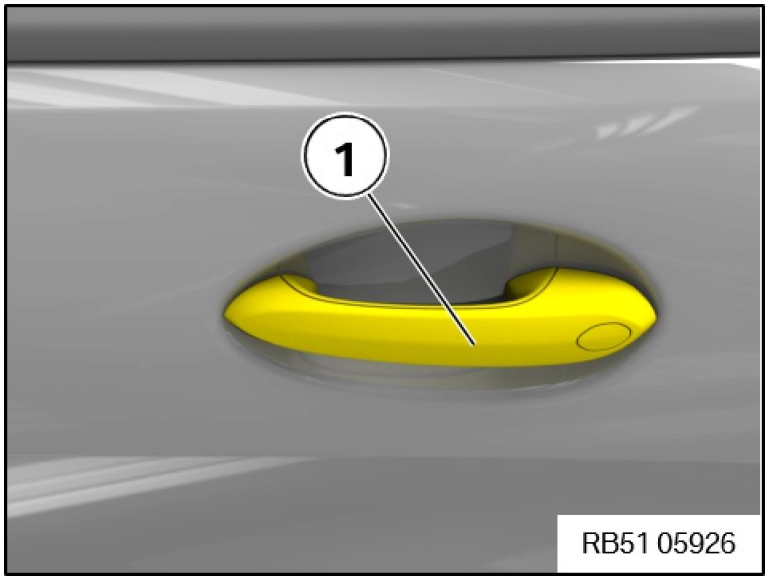
Description is for left component only. Procedure on the right side is identical.



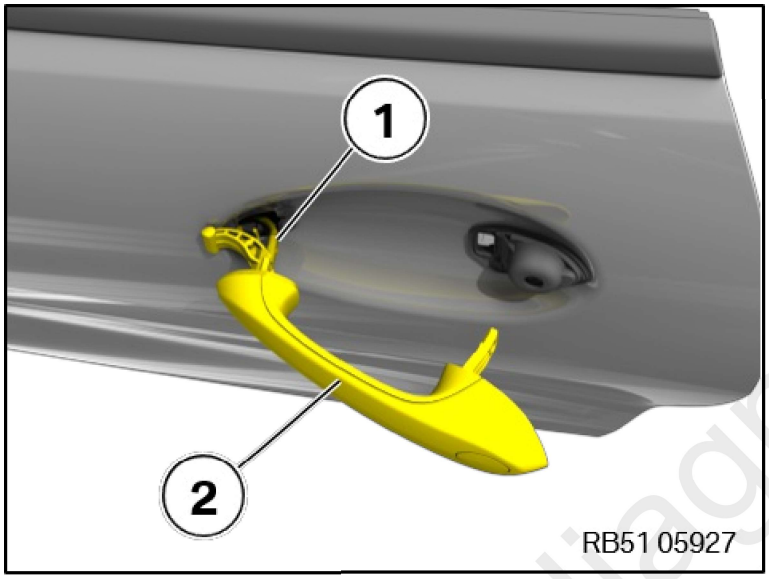
- Remove the seal plug (1).



- Release the clamping bolt (1) from the outside door handle support with the special tool 2 450 364.



- Pull the rear outside door handle (1) to the outside and remove it in the process.
- Pivot the outside door handle (1) further towards the outside and in this process, remove it at the front.

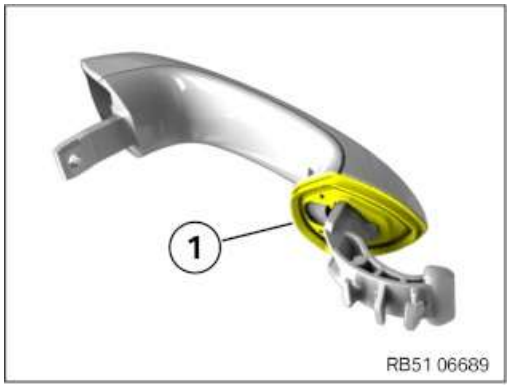


- Unlock and disconnect plug connections (1).
- Remove the outside door handle (2).

2 – Installing the outside door handle

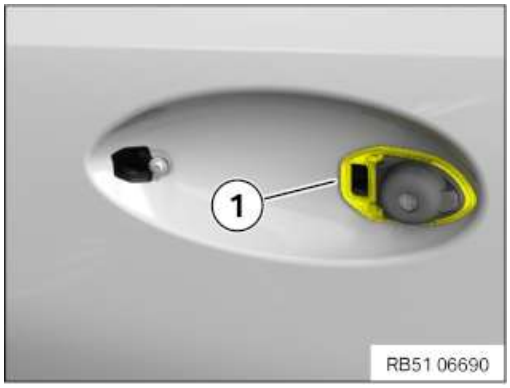
NOTICE

Description is for left component only. Procedure on the right side is identical.

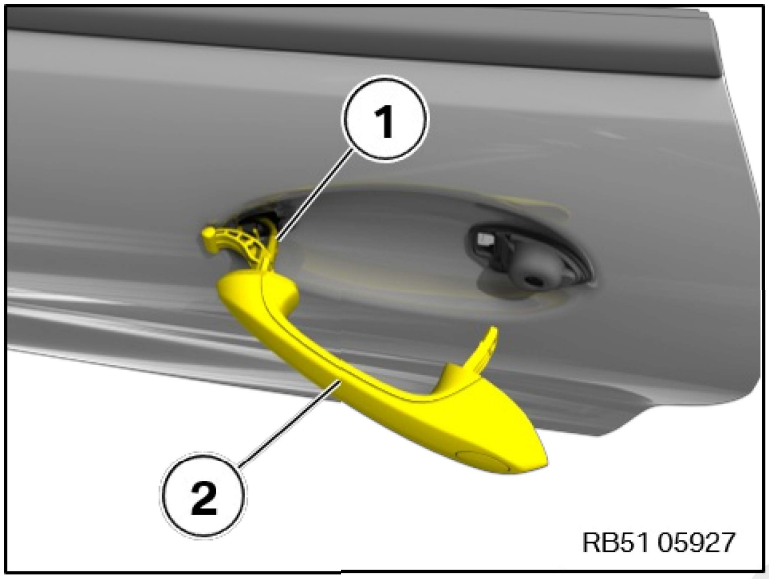


- Check the seal (1) for damage and renew if necessary.

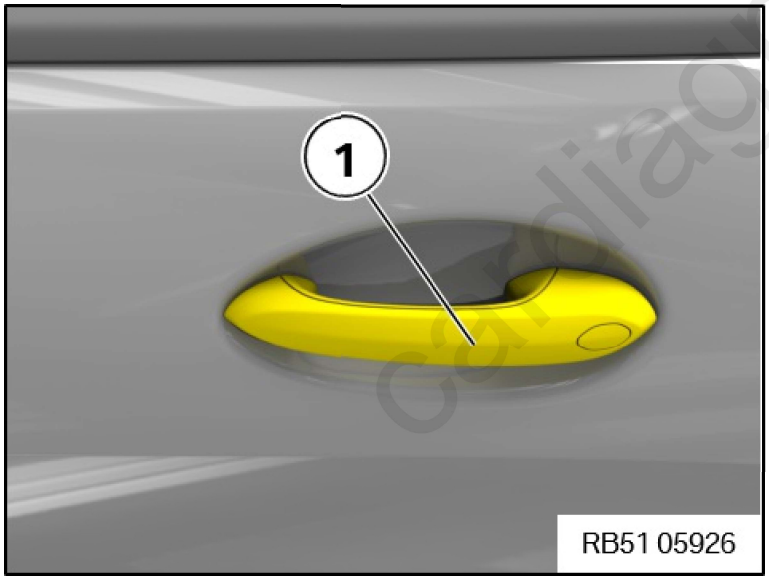
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- Check the seal (1) for damage and renew if necessary.

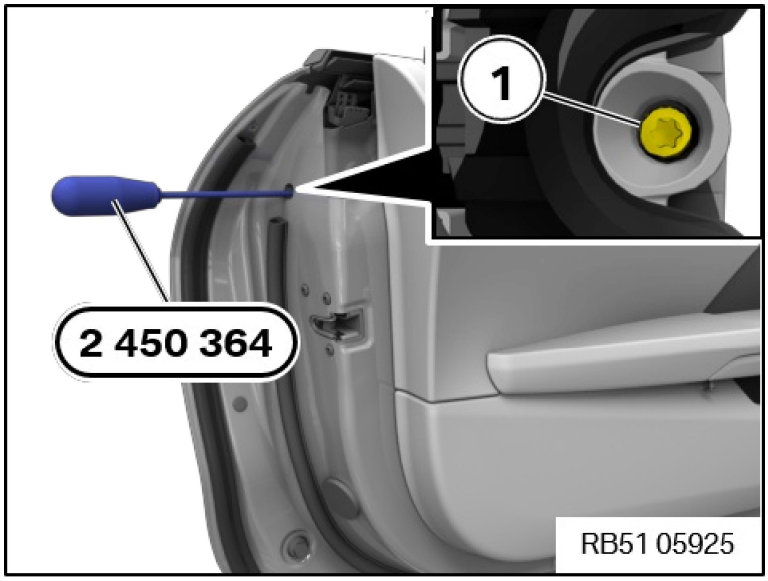


- Insert the front outside door handle (2).
- Connect connectors (1) and lock.



- Insert the rear outside door handle (1).

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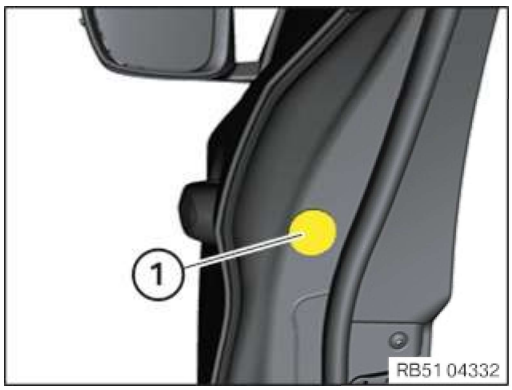
NOTICE

Schematic diagram is for example purposes.
Some parts may differ in certain details.

- Tighten the clamping bolt (1) on the outside door handle support with the special tool 2 450 364.

Clamping bolt for door handle

Screw		Tightening torque	2 Nm



- Install seal plug (1).

Additional Information

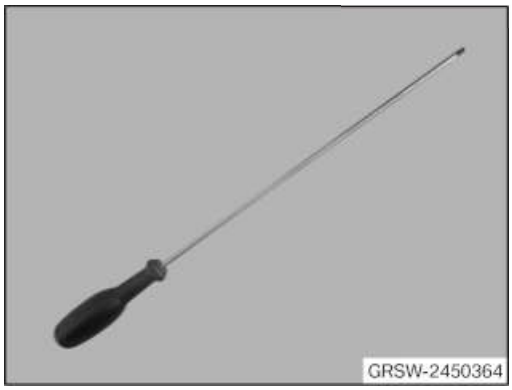
Overview of Tightening Torques

Clamping bolt for door handle Used in step 2

Screw		Tightening torque	2 Nm

Overview of Special Tools

2 450 364 Torx



Common Used in step 12

Usage	for releasing the outside door handles
Included in the tool or work	
Storage location	A5
Replaced by	
In connection with	
SI-Number	01 22 16 (440)

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51 21 125 Removing and installing/replacing the outside door handle support including lock barrel, left or right

WARNING

Working on 12 V vehicle electrical system.

Risk of short circuits! Risk of fire!

- Detach battery earth lead from battery.
- For additional batteries: Detach all battery earth leads from additional batteries.

NOTICE

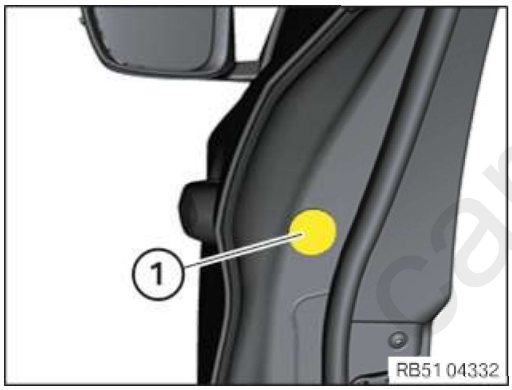
Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

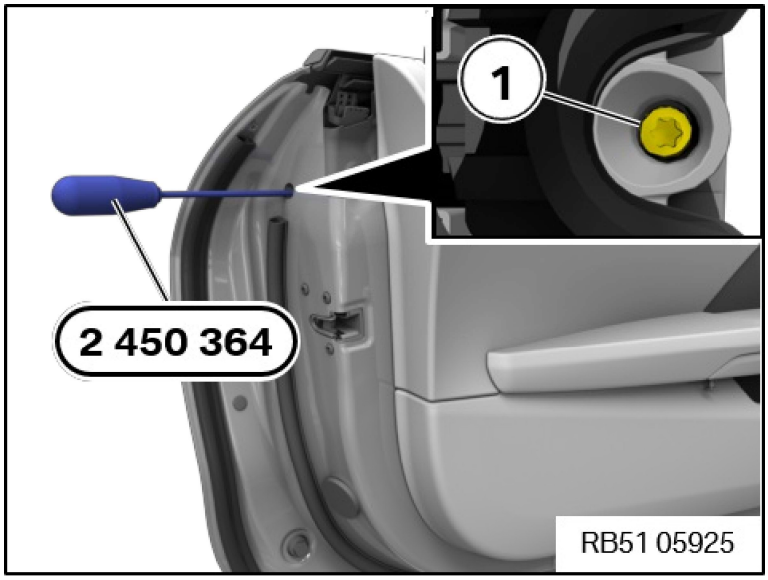
1 – Remove the outside door handle

NOTICE

Description is for left component only. Procedure on the right side is identical.

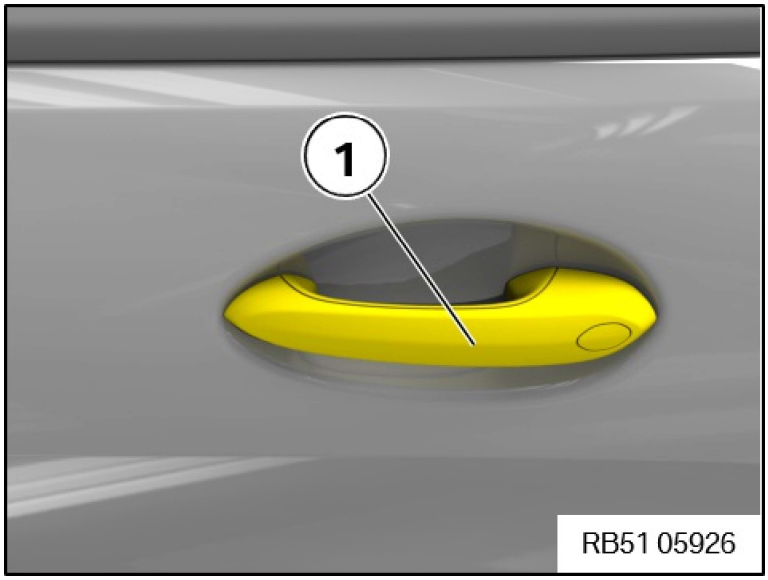


- Remove the seal plug (1).

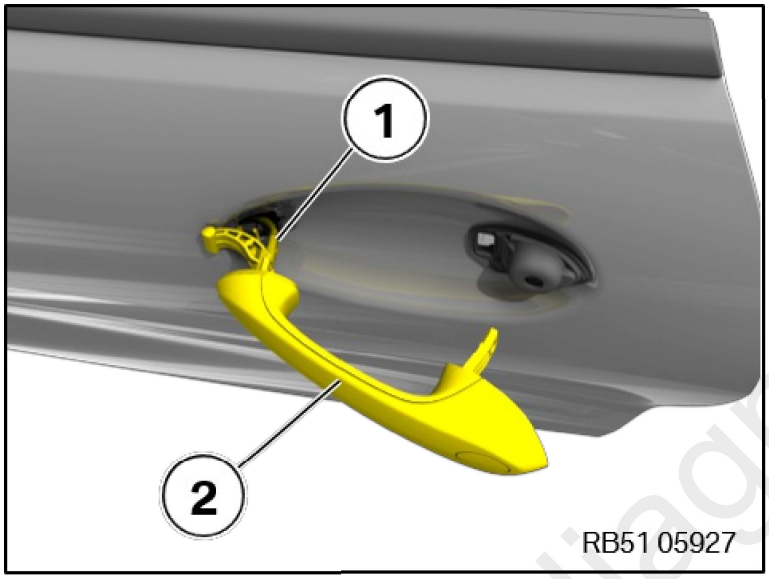


- Release the clamping bolt (1) from the outside door handle support with the special tool 2 450 364.

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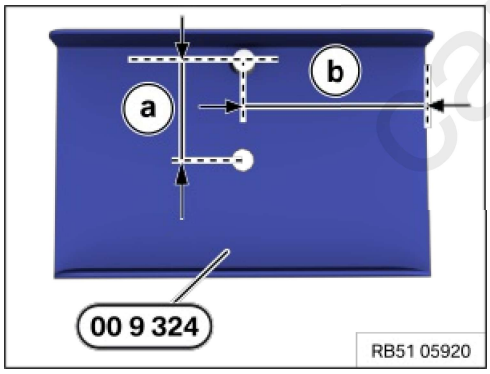
- Pull the rear outside door handle (1) to the outside and remove it in the process.
- Pivot the outside door handle (1) further towards the outside and in this process, remove it at the front.



- Unlock and disconnect plug connections (1).
- Remove the outside door handle (2).

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2 – Preparing the special tool



- **Do this only if the upper bore hole is missing.**
- Mark and make the bore hole on the special tool 0 495 484 (00 9 324) according to the specified dimensions.

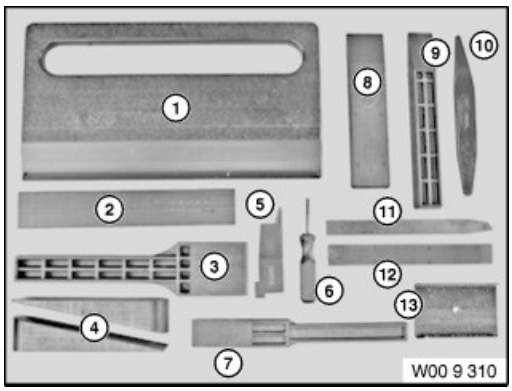
  Make a bore hole on the side with the long shank.

  The diameter of the bore hole is 6 mm.

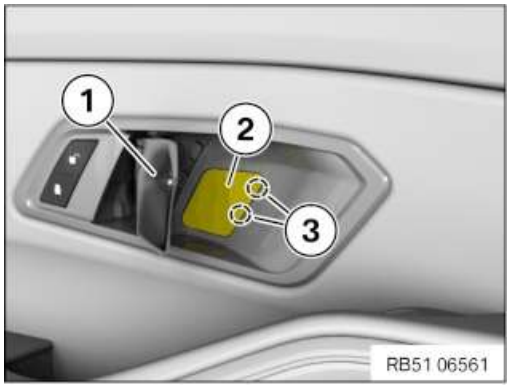
  Dimension (a) = 25 mm from the centre of the existing bore hole

  Dimension (b) = 50 mm from the outer edge of the special tool

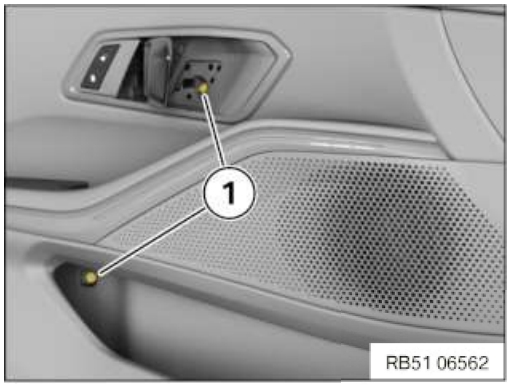
3 – Remove door trim panel



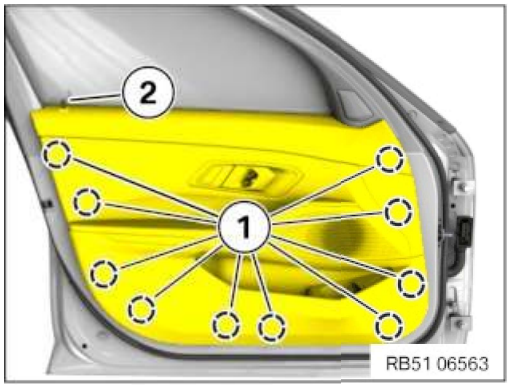
- Have the set of special tools 0 493 752 (00 9 329) ready.



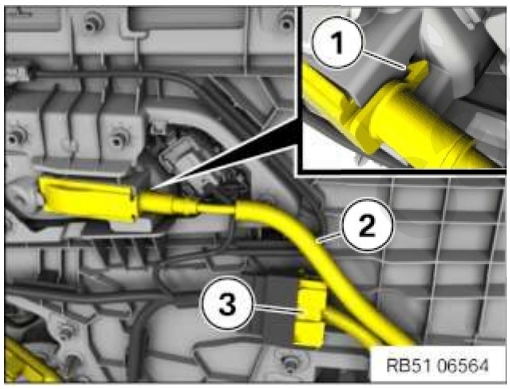
- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).



- Loosen screws (1).



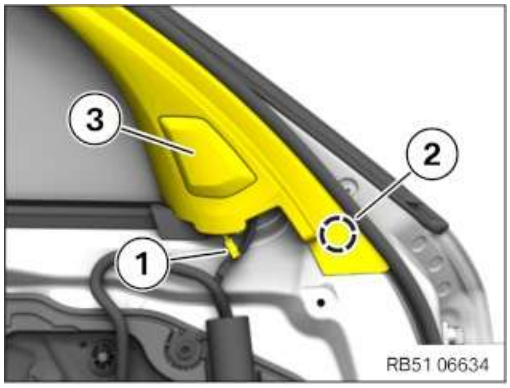
- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).



- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

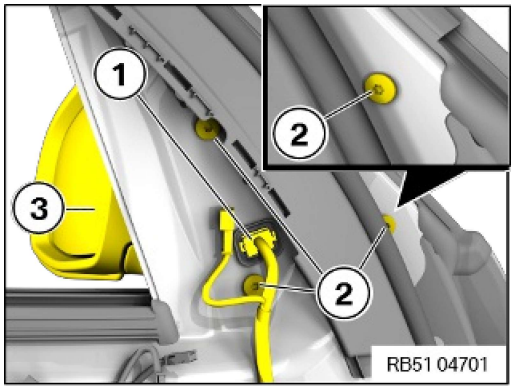
  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

4 – Partially removing the cover on the inner window frame



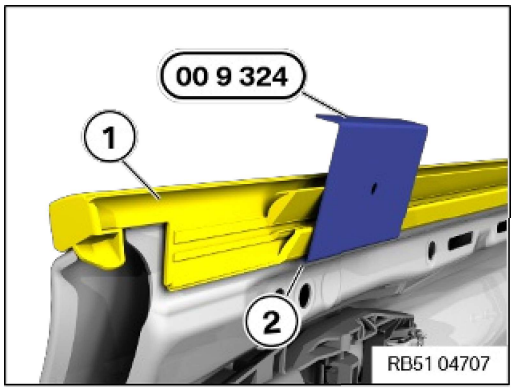
- If necessary, unlock and disconnect the plug connection (1).
- Unclip clip (2).
- Release the cover on inner window frame (3) in the area of the exterior rearview mirror.

5 – Removing the exterior mirror



- Unlock plug connection (1) and disconnect.
- Release the screws (2) and remove the exterior rearview mirror (3).

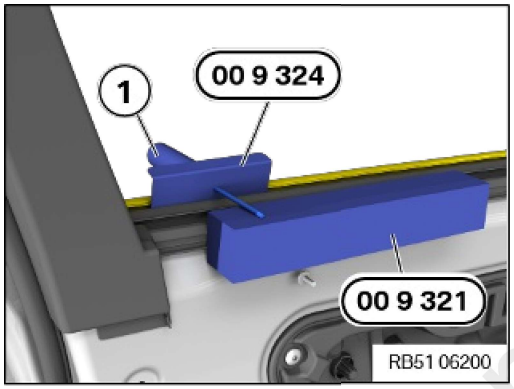
6 – Removing the outer weather strip



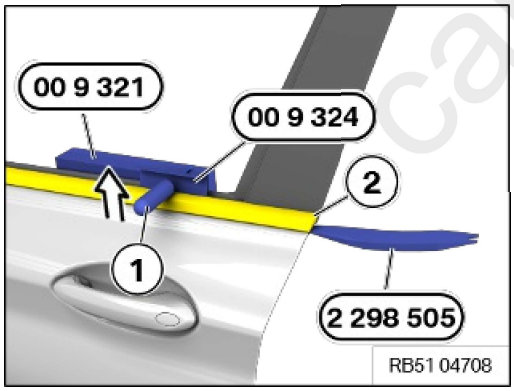
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Insert the special tool 0 495 484 (00 9 324) at the front (on A-pillar) into the window cavity and slide it toward the back.
- Position the special tool 0 495 484 (00 9 324) as shown at the lower edge of the outer weather strip (1) with the short shank (2).



- Place the special tool 0 490 538 (00 9 321) on the inner door panel.
- Thread a suitable tool (1) through the opening in the special tool 0 495 484 (00 9 324).



RISK OF DAMAGE

Scratches.

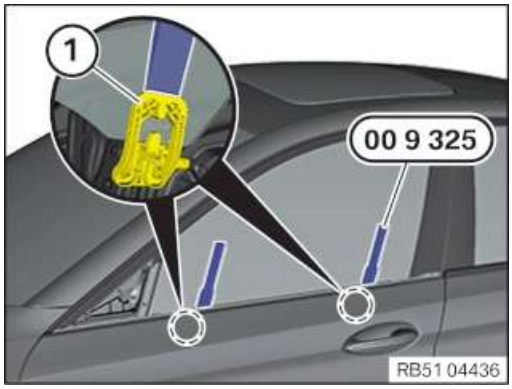
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Lift up the outer rear weather strip (2) with the special tool 2 298 505 as shown; maximum 5 mm.
- With a suitable tool (1), move the lever in the direction of arrow using the special tool 0 490 538 (00 9 321) for support.

  When this happens, the special tool 0 495 484 (00 9 324) lifts the outer weather strip (2) upwards.
- Repeat this process step by step until the outer weather strip(2) is completely disassembled.

7 – Removing front module carrier

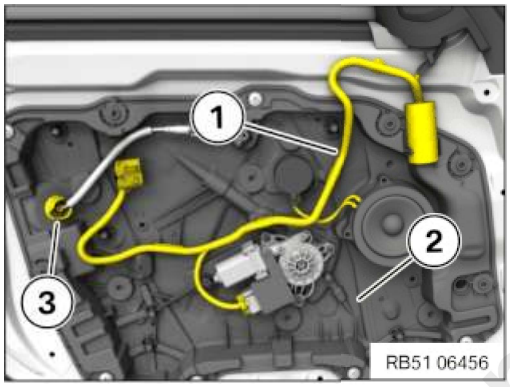


- Secure the door window glass to the door frame when it is closed using adhesive tape.
- Spread both holders (1) on the door window glass simultaneously using special tool 0 496 569 (00 9 325) until it is possible to detach the door window glass.
- Move the power window down.

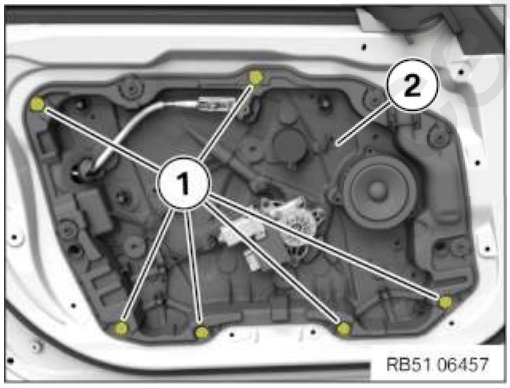
▶ **Disconnecting all battery earth leads**



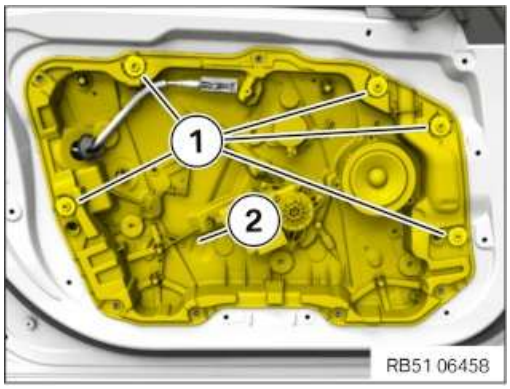
- See additional information.



- Unlock and disconnect all the electrical plug connections.
- Unclip wiring harness (1) on front module carrier (2).
- Release the rubber grommet of the Bowden cable for the inner door opener (3).



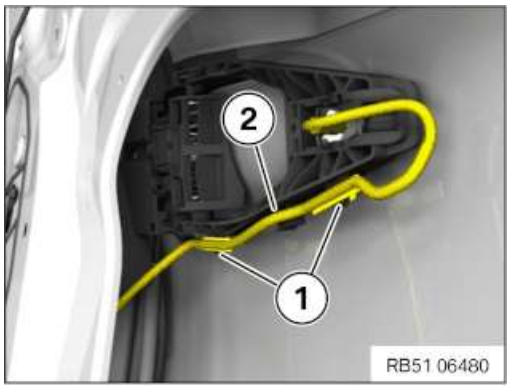
- Release screws (1) on front module carrier (2).



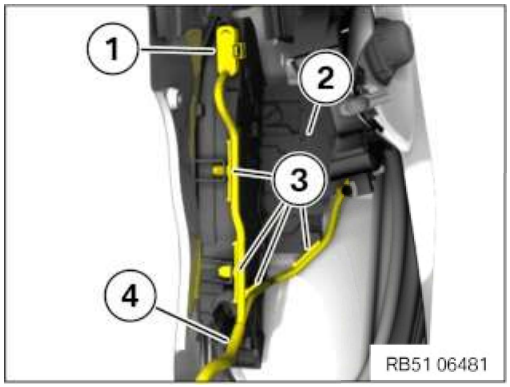
- Open bayonet fitting (1) by twisting and remove front module carrier (2).

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8 – Removing the outer door handle support



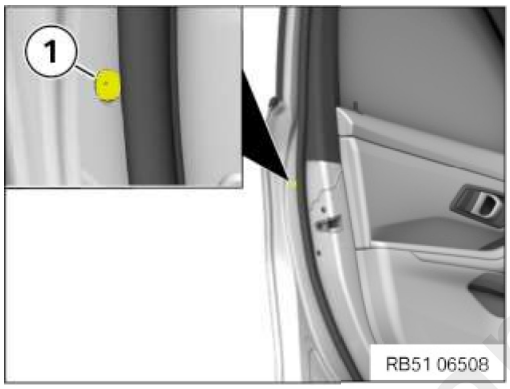
- Unclip clips (1) and place wiring harness (2) aside.



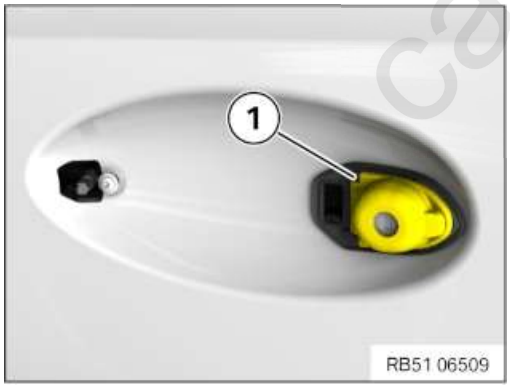
NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

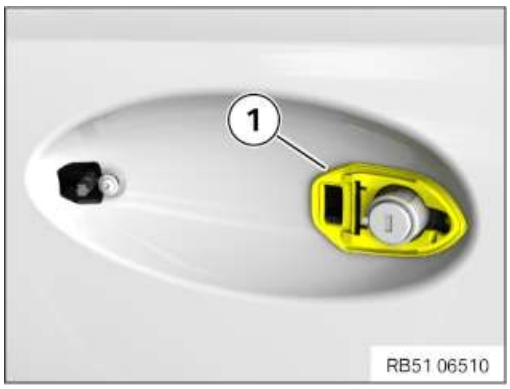
- Unlock and disconnect the plug connection (1)on the door lock (2).
- Unclip clips (3).
- Remove the wiring harness (4) and put to one side.



- Loosen screw (1).

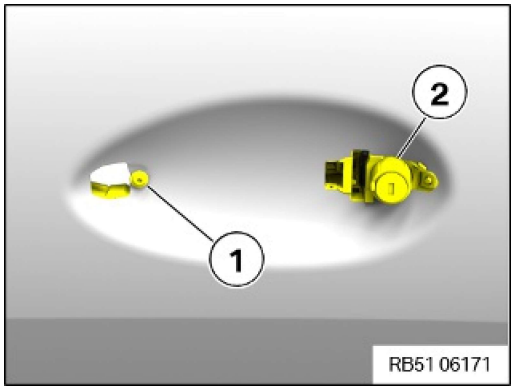


- Remove the cover (1).

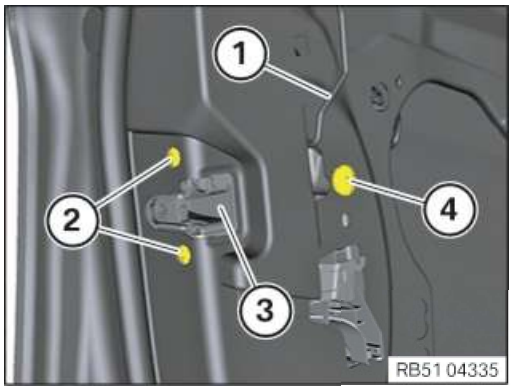


- Remove seal (1) for the outside door handle.

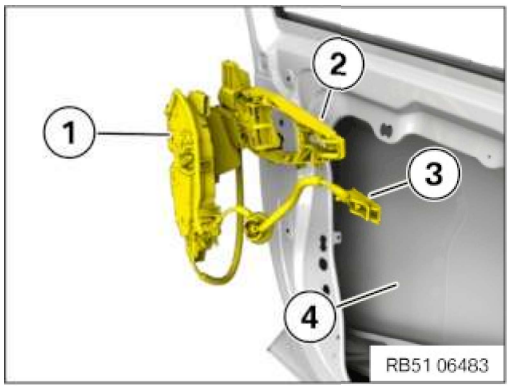
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- Loosen screw (1).
- Slide the outside door handle support (2) forward and thread out to the inside.



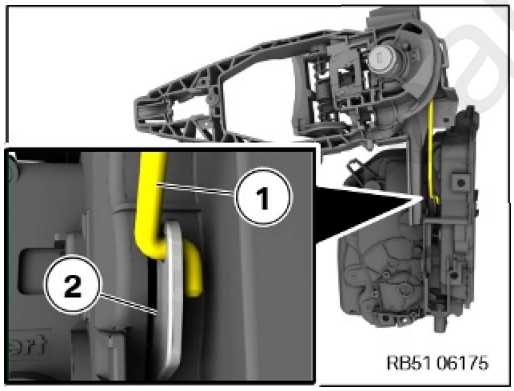
- Unclip locking rod (1).
- Release screws (2) and (4) of the door lock (3).



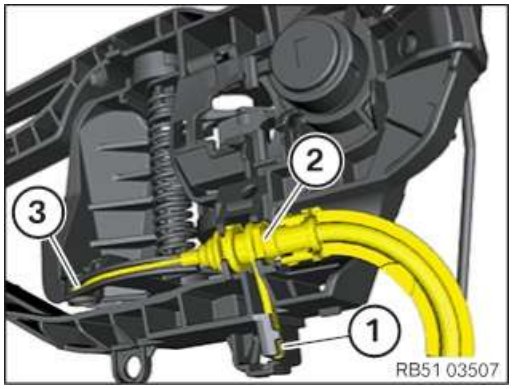
- Thread out door lock (1) together with the outside door handle support (2) and the Bowden cable for inner door opener (3) from the door (4).

  Make sure that the seal of door lock (1) is not damaged.

9 – Replacing outside door handle support

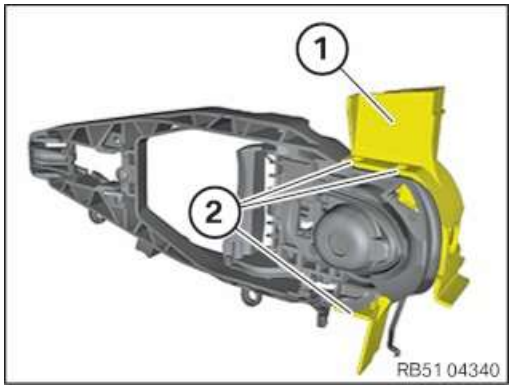


- Detach the linkage (1) from the door lock (2).

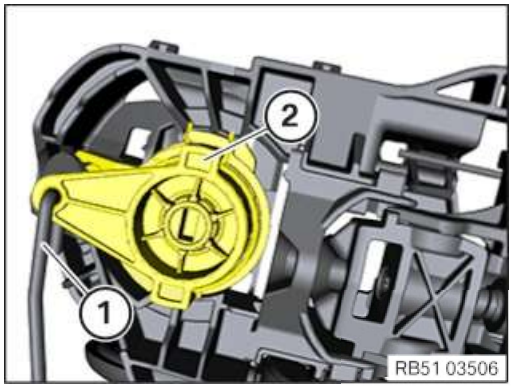


- Lift tab (1) over the latch mechanisms and turn upwards.
- Detach the Bowden cable for outside door handle (2).
- Detach the Bowden cable nipple (3).

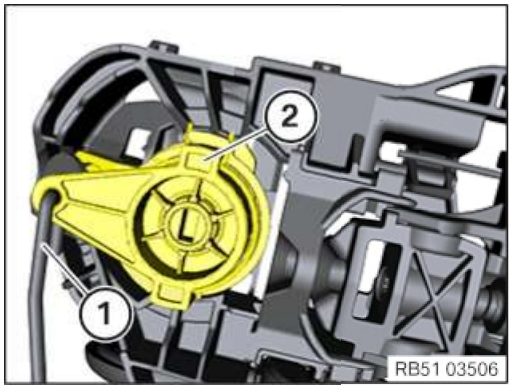
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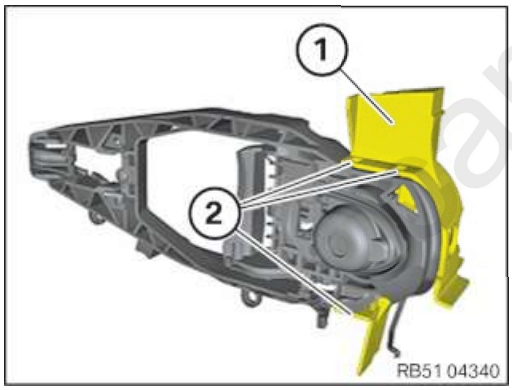
- Unclip the cover (1) at the points (2).
- Remove cover (1).



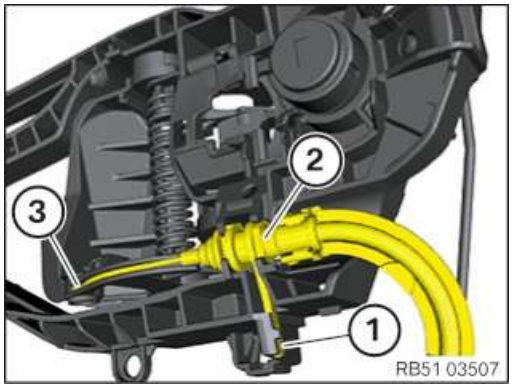
- Detach the locking rod (1).
- Turn lock barrel (2) in the clockwise direction and remove it from the outside door handle support.



- Screw lock barrel (2) in the anticlockwise direction into the new outside door handle support.
- Attach locking rod (1) in lock barrel (2).

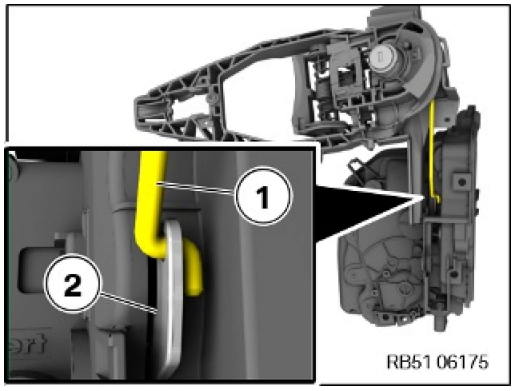


- Clip in the cover (1) at the points (2).



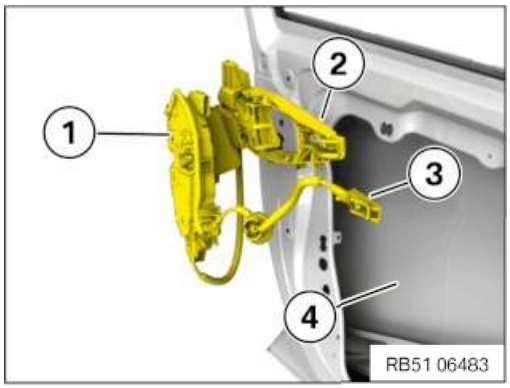
- Attach Bowden cable nipple (3) of the Bowden cable for outside door handle (2).
- Attach the Bowden cable for outside door handle (2).
- Twist and engage the tab (1).

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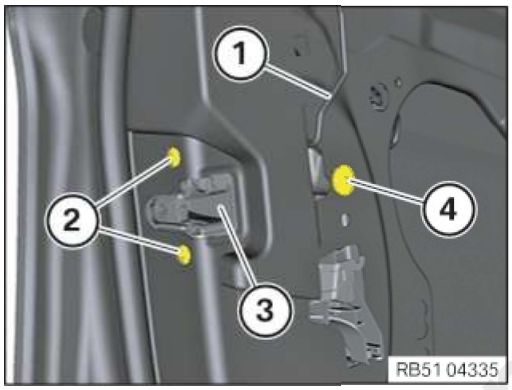
- Attach the linkage (1) in the door lock (2).

10 – Installing the outer door handle support



- Guide door lock (1) together with outside door handle support (2) and the Bowden cable for inner door opener (3) into door (4).

  Make sure that the seal of door lock (1) is not damaged.



- Screw in screws (2) and (4) a few turns.
- Tighten down screws (2).

Door lock to door

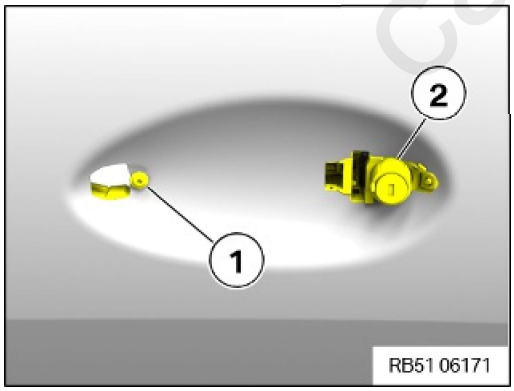
Screw		Tightening torque	8,8 Nm

- Tighten down screw (4).

Door lock to door

Screw		Tightening torque	8,8 Nm

- Clip in locking rod (1).

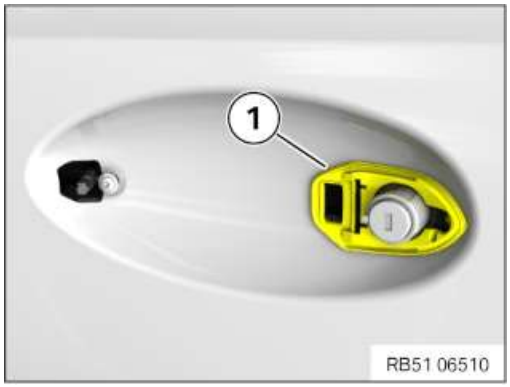


- Feed in outside door handle support (2) and position correctly.
- Tighten down screw (1).

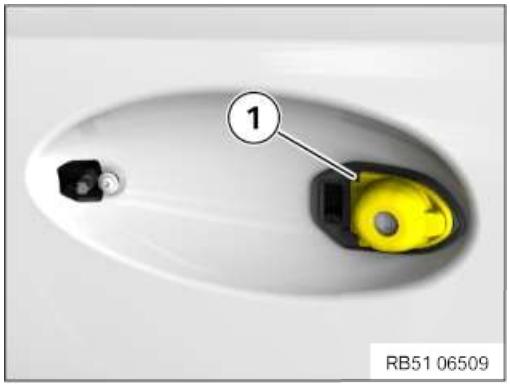
Outside door handle support *to door*

Screw		Tightening torque	2,6 Nm

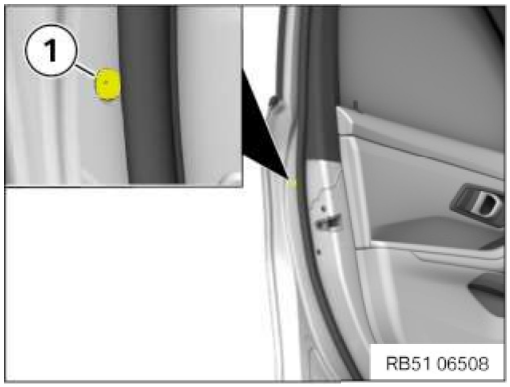
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- Install seal (1) for the outside door handle.



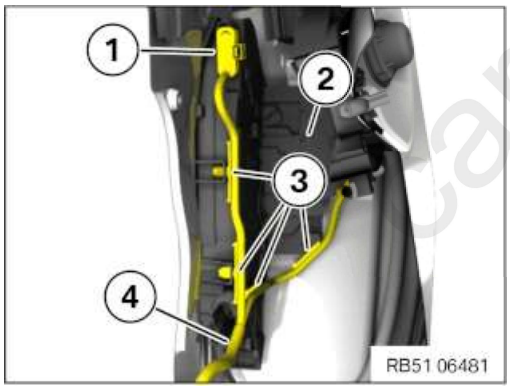
- Install the cover (1).



- Tighten down screw (1).

Attachment bell to outside door handle support

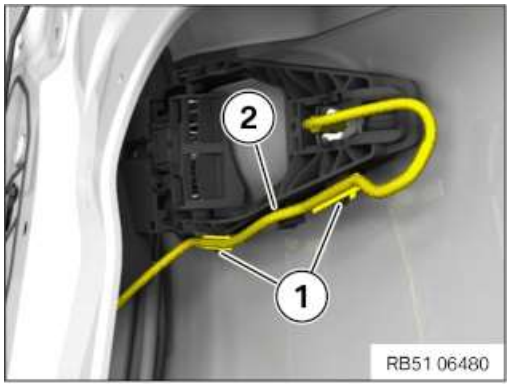
Screw		Tightening torque	3 Nm



NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

- Insert the wiring harness (4).
- Connect connector (1) at the door lock (2) and lock.
- Clip in clips (3).

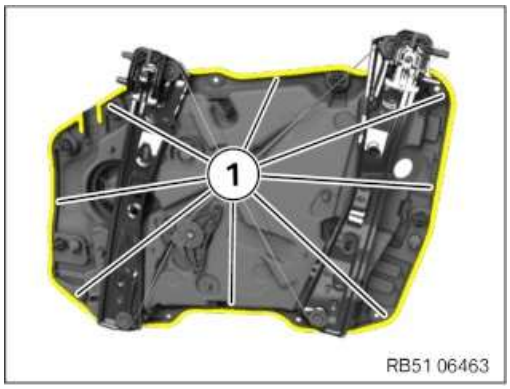


- Route the wiring harness (2) correctly.
- Clip in clips (1).

POSTPROCESSES

11 – Installing front module carrier

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Check

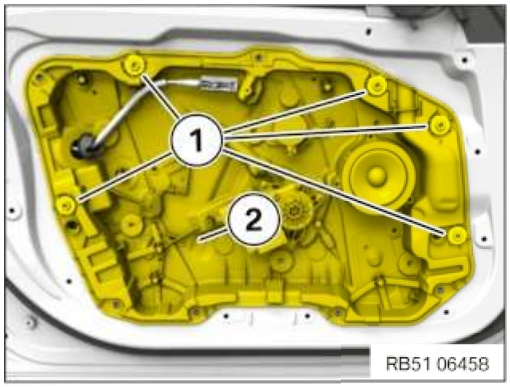
- Check seal (1) of the front module carrier for damage.

Result

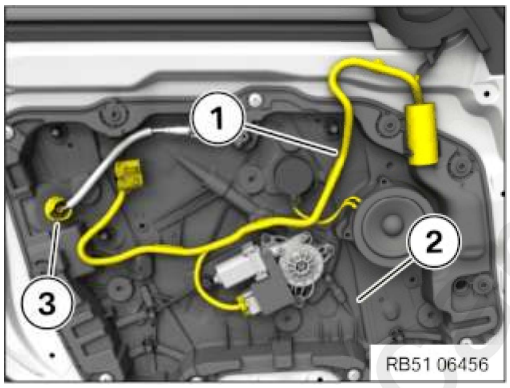
» Seal of the front module carrier is damaged.

Measure

- Renew the front module carrier.



- Position front module carrier (2) on the door.
- Lock bayonet fittings (1) by twisting them.

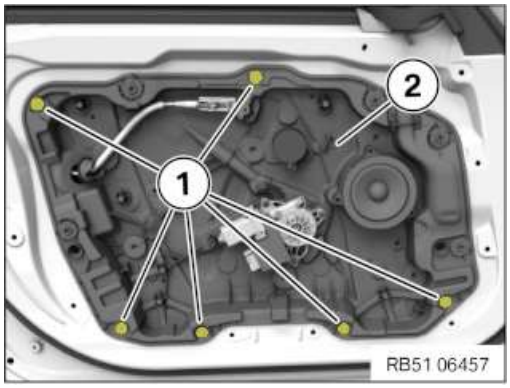


- Connect all electrical connectors and lock.
- Clip in wiring harness (1) on front module carrier (2).
- Install rubber grommet of the Bowden cable for the inner door opener (3).
- Check rubber grommet of the Bowden cable for the inner door handle (3) for correct seating.

▸ **Disconnecting all battery earth leads**



- See additional information.



- Tighten screws (1) of the front module carrier (2).

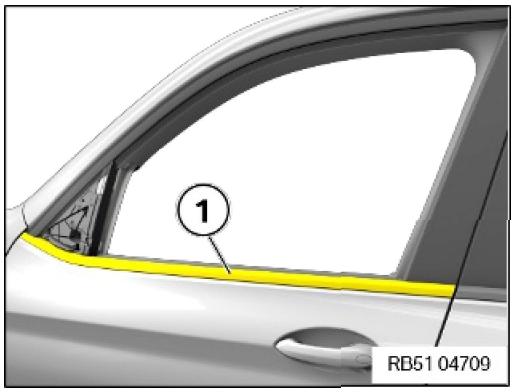
Module carrier to front door

Torx socket M5x12		Tightening torque	8 Nm

- Move the power window upwards until the fixed side window glass correctly engages in both holders.

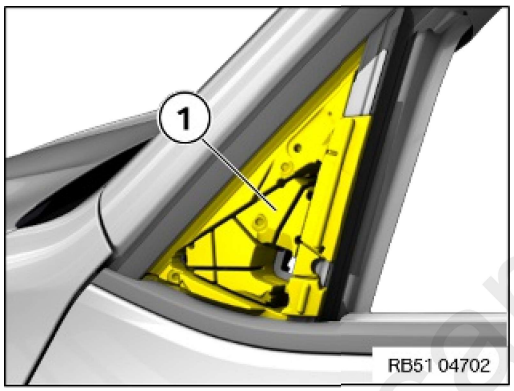
  Remove adhesive tape.

12 – Install outer weather strip



- Check outer weather strip (1) for damage, renew the outer weather strip (1) if required.
- Coat the outer weather strip (1) with a suitable lubricant prior to installation.
- Fit outer weather strip (1) on the front door.
- Press down the outer weather strip (1) across its entire length.

13 – Installing the exterior mirror



Check

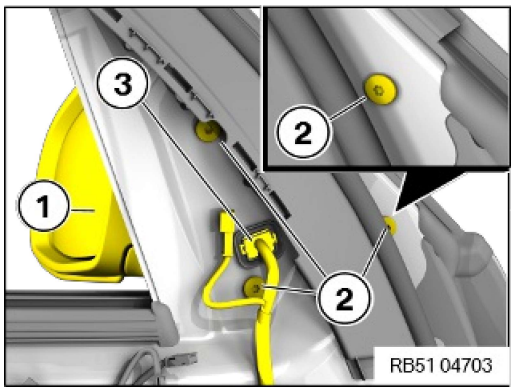
- Check mirror triangle seal (1) for damage.

Result

» The mirror triangle seal is damaged.

Measure

- Replace mirror triangle seal .



- Position exterior rearview mirror (1) and tighten screws (2).

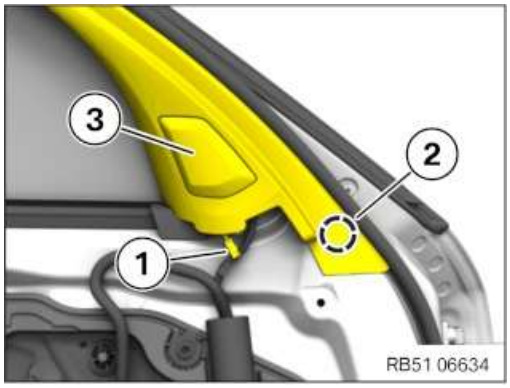
Exterior mirror to door

Thread-tapping hexagon screw		Tightening torque	10 Nm

- Connect connectors (3) and lock.

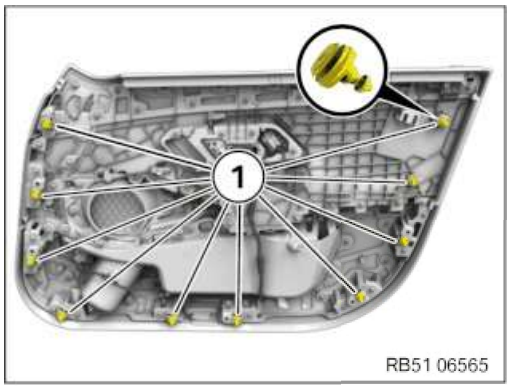
14 – Installing the cover on the inside of the window frame partially

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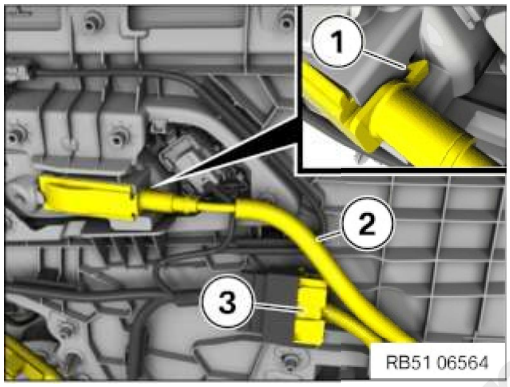
- Mount cover on the inner window frame (3) in the area of the exterior rearview mirror.
- Clip in the clip (2).
- If necessary, connect the connector (1) and lock it.

15 – Install door trim panel

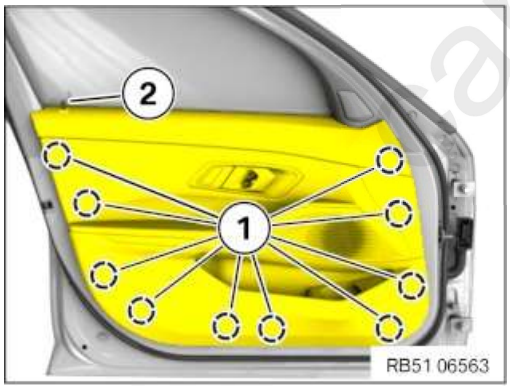


- Renew the clips (1).

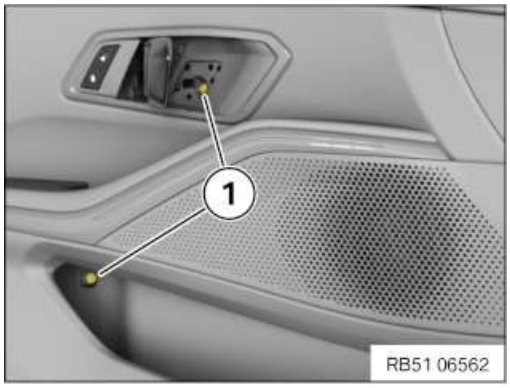
  Parts: Clips



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).

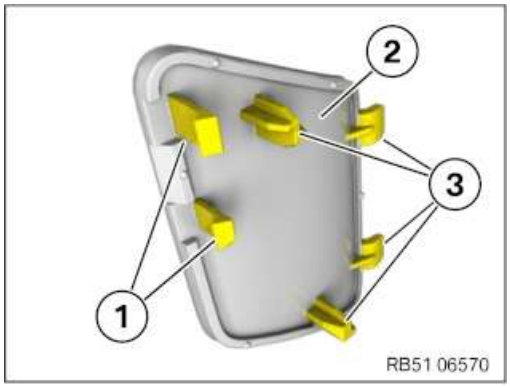


- Tighten the screws (1).

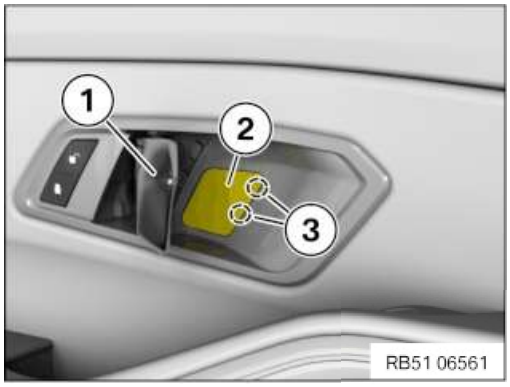
Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm

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- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).

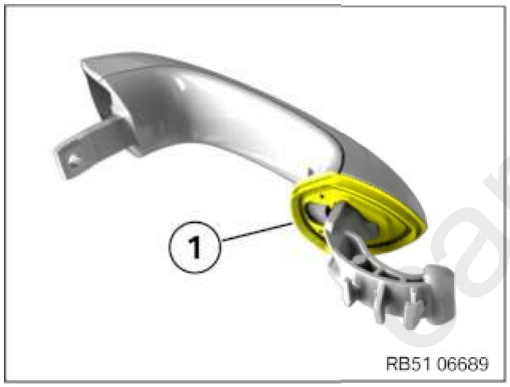


- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

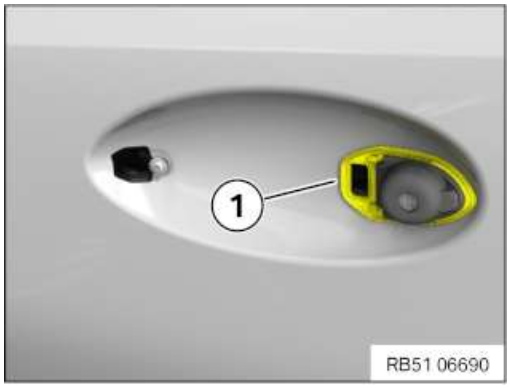
16 – Installing the outside door handle

NOTICE

Description is for left component only. Procedure on the right side is identical.

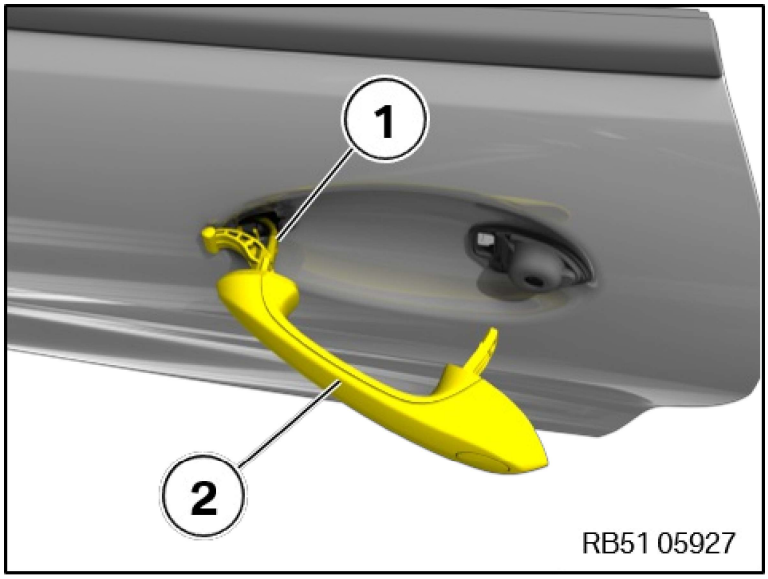


- Check the seal (1) for damage and renew if necessary.

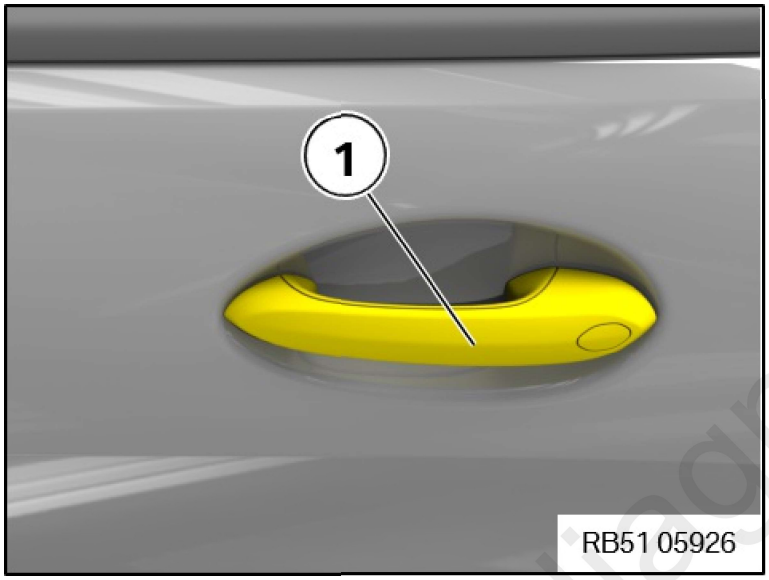


- Check the seal (1) for damage and renew if necessary.

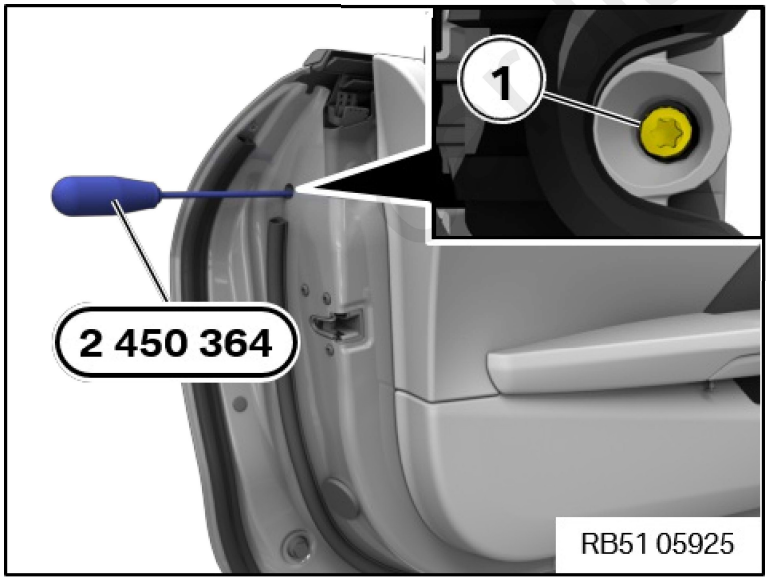
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- Insert the front outside door handle (2).
- Connect connectors (1) and lock.



- Insert the rear outside door handle (1).



NOTICE

Schematic diagram is for example purposes.
Some parts may differ in certain details.

- Tighten the clamping bolt (1) on the outside door handle support with the special tool 2 450 364.

Clamping bolt for door handle

Screw		Tightening torque	2 Nm



- Install seal plug (1).

Additional Information

Overview of Tightening Torques

Door lock to door			Used in step 10
Screw		Tightening torque	8,8 Nm

Outside door handle support to door			Used in step 10
Screw		Tightening torque	2,6 Nm

Attachment bell to outside door handle support			Used in step 10
Screw		Tightening torque	3 Nm

Module carrier to front door			Used in step 11
Torx socket M5x12		Tightening torque	8 Nm

Exterior mirror to door			Used in step 13
Thread-tapping hexagon screw		Tightening torque	10 Nm

Door trim panel to door			Used in step 15
Screw TS5x20		Tightening torque	2,6 Nm

Clamping bolt for door handle			Used in step 16
Screw		Tightening torque	2 Nm

Overview of Special Tools

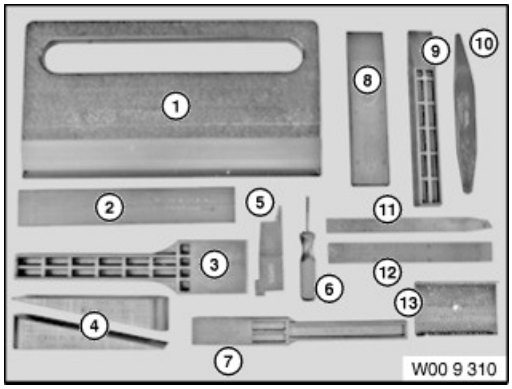
2 450 364 Torx



Common	Used in step 116
Usage	for releasing the outside door handles
Included in the tool or work	
Storage location	A5
Replaced by	
In connection with	
SI-Number	01 22 16 (440)

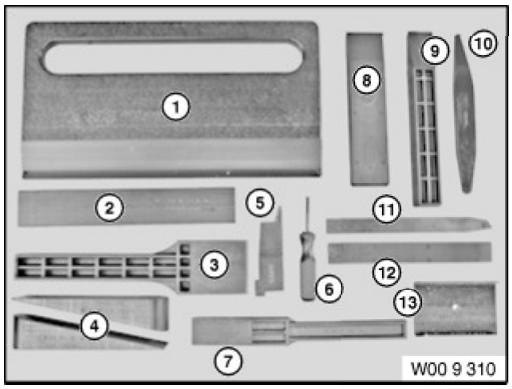
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0 495 484 (00 9 324) Panel wedge



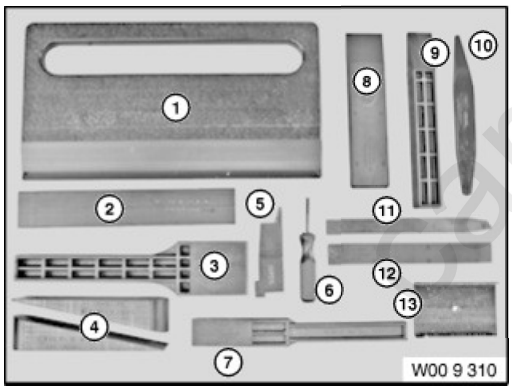
Common	Used in step 26
Usage	(Panel wedge (panel)) For removing cavity strips on the doors from E60
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 25 05 (230)

0 493 752 (00 9 329) Case



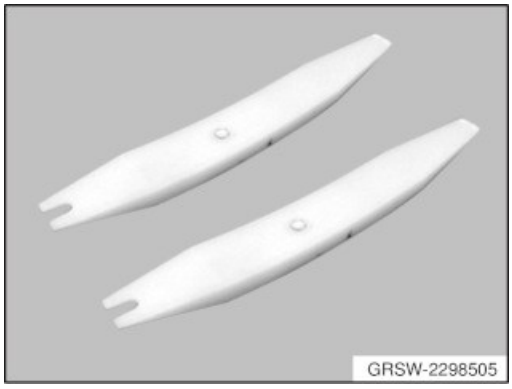
Common	Used in step 3
Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

0 490 538 (00 9 321) Folding stick



Common	Used in step 6
Usage	
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

2 298 505 Wedge



Common	Used in step 6
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

0 496 569 (00 9 325) Wedge



Common	Used in step 7
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	711
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	711
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	711
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	711
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting battery earth lead	711
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61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	711
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting battery earth lead	711
61 20 900 Disconnecting and connecting battery earth lead	711

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51 21 126 Removing and installing/replacing the outside door handle support without lock barrel, left or right

WARNING

Working on 12 V vehicle electrical system.

Risk of short circuits! Risk of fire!

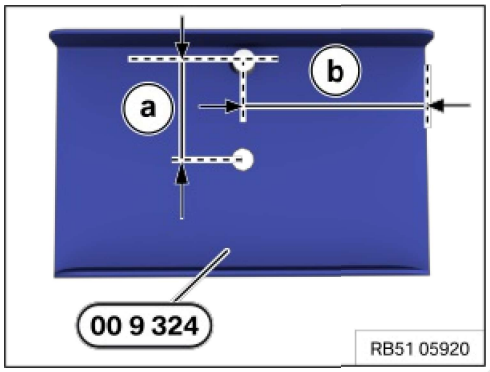
- Detach battery earth lead from battery.
- For additional batteries: Detach all battery earth leads from additional batteries.

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

1 – Preparing the special tool



- **Do this only if the upper bore hole is missing.**
- Mark and make the bore hole on the special tool 0 495 484 (00 9 324) according to the specified dimensions.

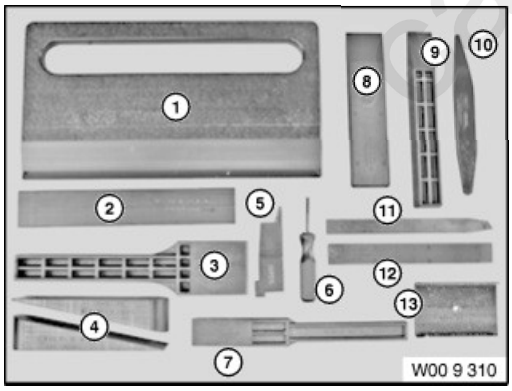
  Make a bore hole on the side with the long shank.

  The diameter of the bore hole is 6 mm.

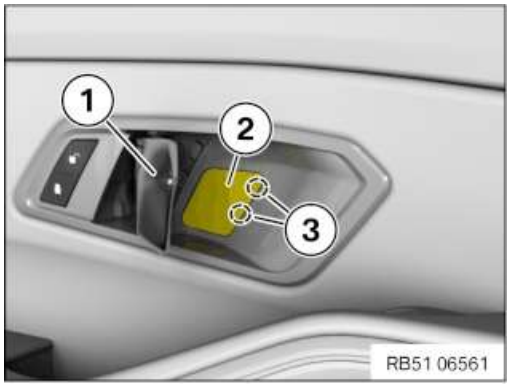
  Dimension (a) = 25 mm from the centre of the existing bore hole

  Dimension (b) = 50 mm from the outer edge of the special tool

2 – Remove door trim panel

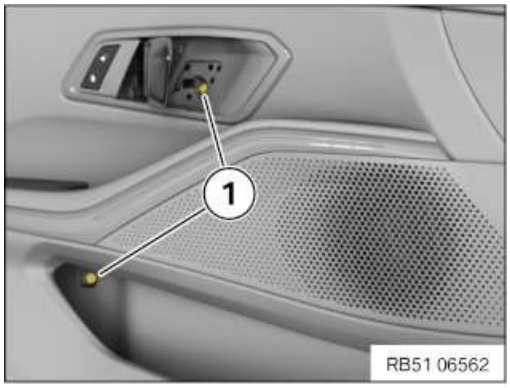


- Have the set of special tools 0 493 752 (00 9 329) ready.

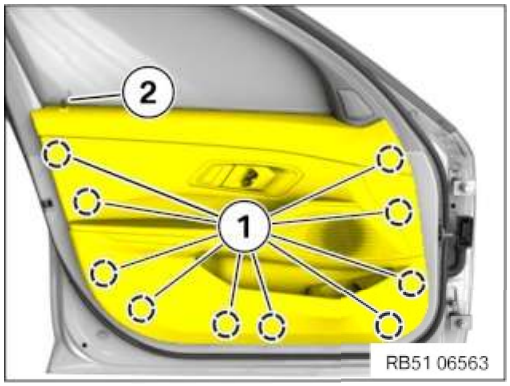


- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

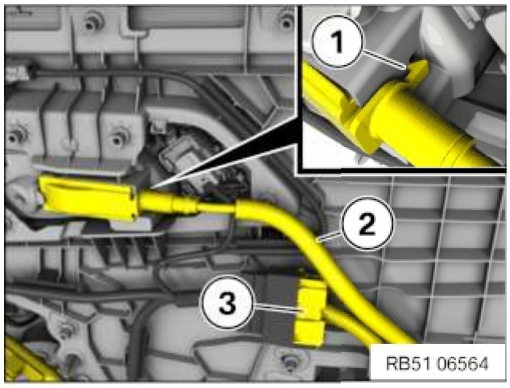
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- Loosen screws (1).



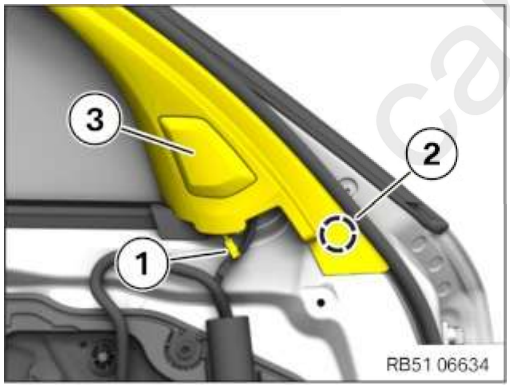
- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).



- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

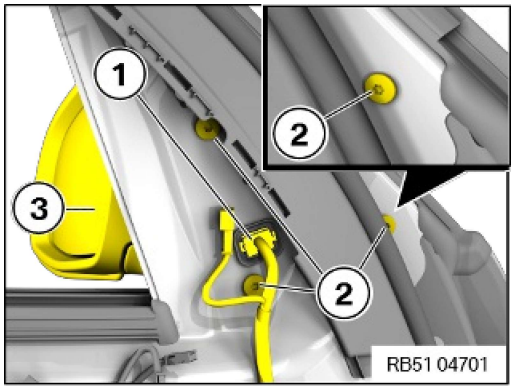
  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

3 – Partially removing the cover on the inner window frame



- If necessary, unlock and disconnect the plug connection (1).
- Unclip clip (2).
- Release the cover on inner window frame (3) in the area of the exterior rearview mirror.

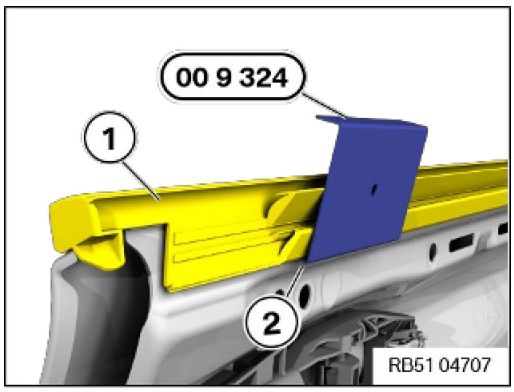
4 – Removing the exterior mirror



- Unlock plug connection (1) and disconnect.
- Release the screws (2) and remove the exterior rearview mirror (3).

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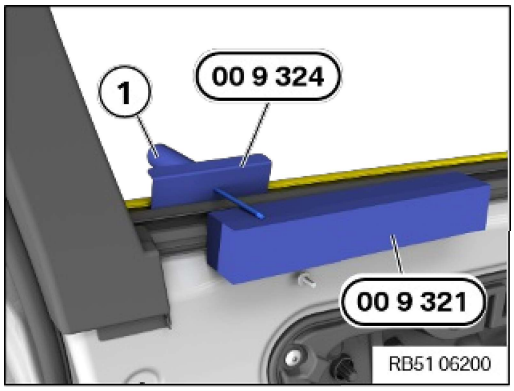
5 – Removing the outer weather strip



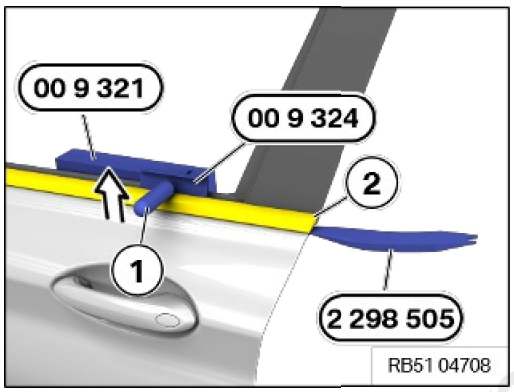
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Insert the special tool 0 495 484 (00 9 324) at the front (on A-pillar) into the window cavity and slide it toward the back.
- Position the special tool 0 495 484 (00 9 324) as shown at the lower edge of the outer weather strip (1) with the short shank (2).



- Place the special tool 0 490 538 (00 9 321) on the inner door panel.
- Thread a suitable tool (1) through the opening in the special tool 0 495 484 (00 9 324).



RISK OF DAMAGE

Scratches.

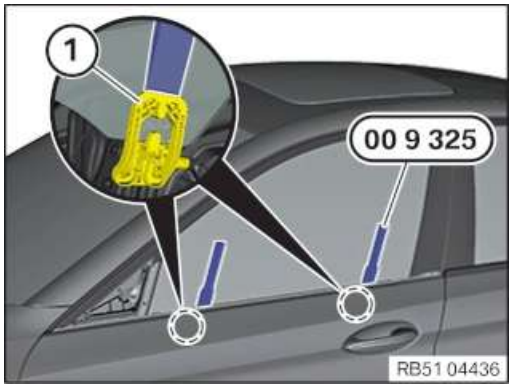
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Lift up the outer rear weather strip (2) with the special tool 2 298 505 as shown; maximum 5 mm.
- With a suitable tool (1), move the lever in the direction of arrow using the special tool 0 490 538 (00 9 321) for support.

  When this happens, the special tool 0 495 484 (00 9 324) lifts the outer weather strip (2) upwards.
- Repeat this process step by step until the outer weather strip(2) is completely disassembled.

6 – Removing front module carrier



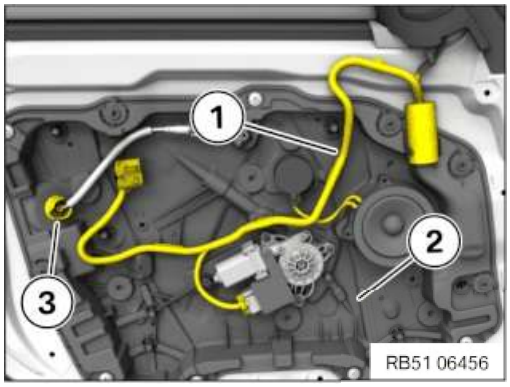
- Secure the door window glass to the door frame when it is closed using adhesive tape.
- Spread both holders (1) on the door window glass simultaneously using special tool 0 496 569 (00 9 325) until it is possible to detach the door window glass.
- Move the power window down.

▸ **Disconnecting all battery earth leads**

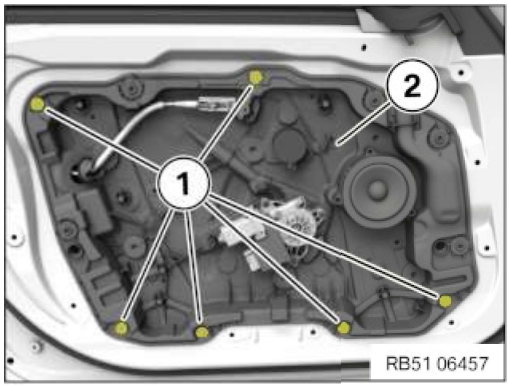
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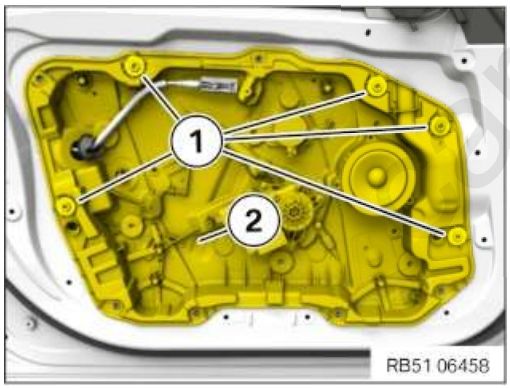
- See additional information.



- Unlock and disconnect all the electrical plug connections.
- Unclip wiring harness (1) on front module carrier (2).
- Release the rubber grommet of the Bowden cable for the inner door opener (3).



- Release screws (1) on front module carrier (2).



- Open bayonet fitting (1) by twisting and remove front module carrier (2).

7 – Remove the outside door handle

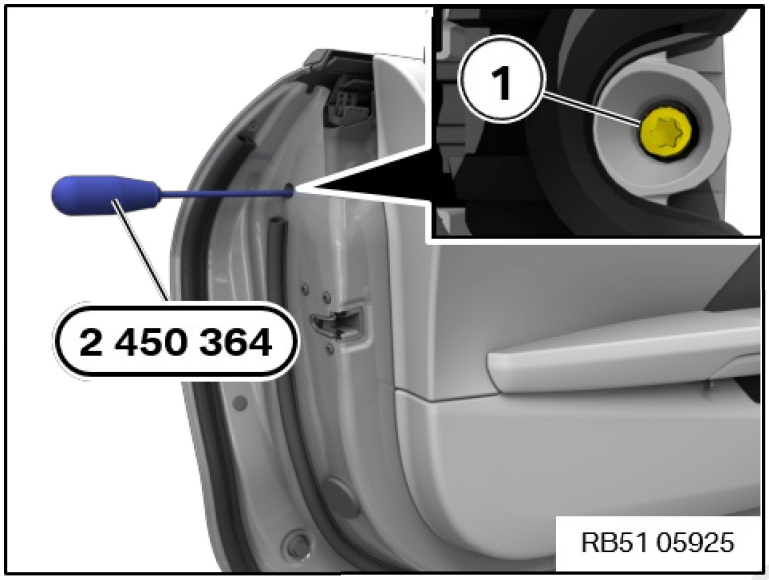
NOTICE

Description is for left component only. Procedure on the right side is identical.

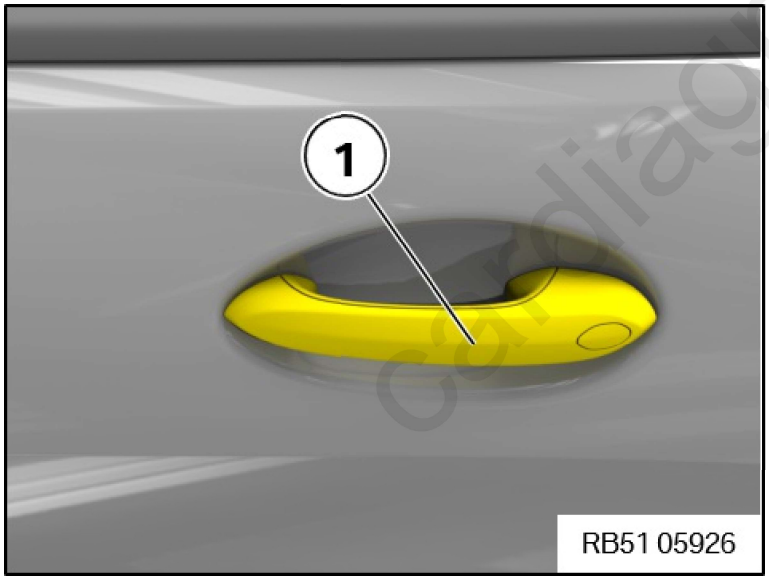
cardiagn.com



- Remove the seal plug (1).

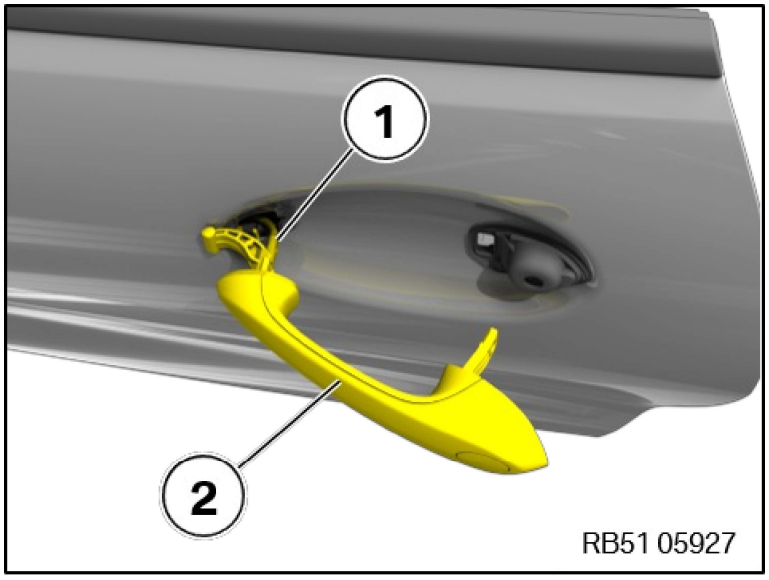


- Release the clamping bolt (1) from the outside door handle support with the special tool 2 450 364.



- Pull the rear outside door handle (1) to the outside and remove it in the process.
- Pivot the outside door handle (1) further towards the outside and in this process, remove it at the front.

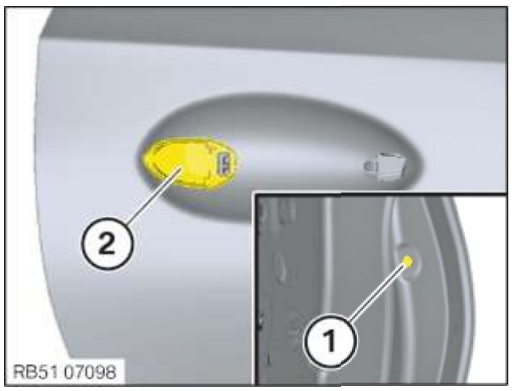
cardiagn.com



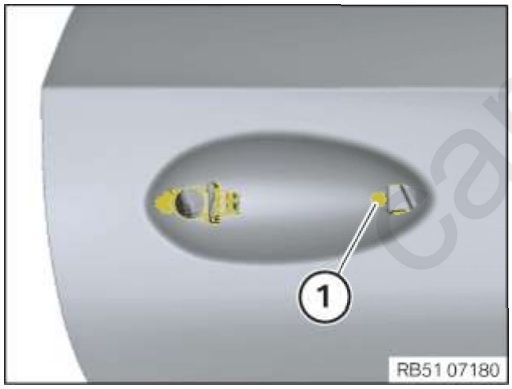
- Unlock and disconnect plug connections (1).
- Remove the outside door handle (2).

MAIN WORK

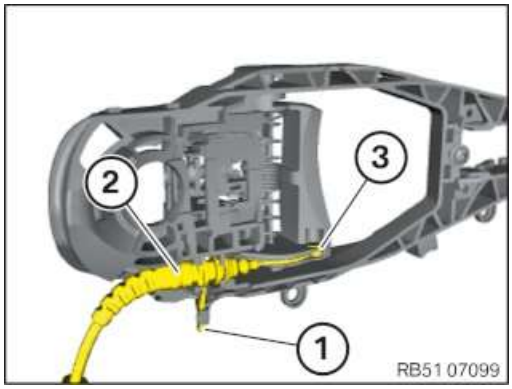
8 – Remove the outside door handle support without the lock barrel



- Loosen screw (1).
- Remove the cover (2).



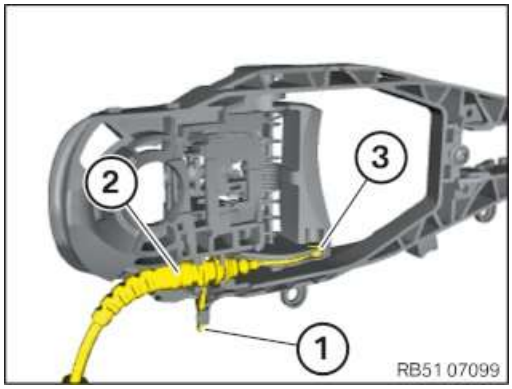
- Release the screw (1) feed out the outside door handle support from the door.



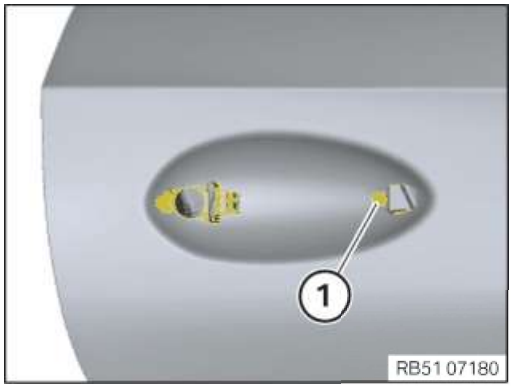
- Lift the tab (1) over the latch mechanism and twist it upwards.
- Detach the Bowden cable (2).
- Detach the Bowden cable nipple (3).

9 – Install the outside door handle support without the lock barrel

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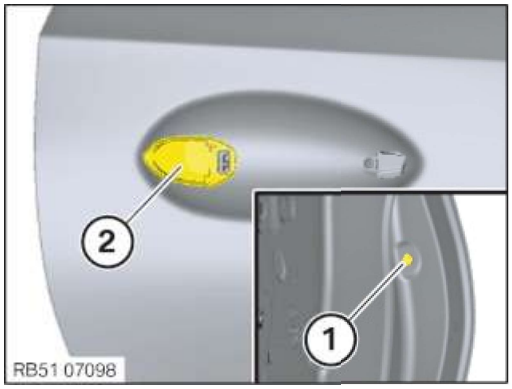
- Attach the Bowden cable nipple (3).
- Attach the Bowden cable (2).
- Turn and engage tab (1).



- Feed in outside door handle support in the door and position correctly.
- Tighten down screw (1).

Outside door handle support to door

Screw		Tightening torque	2,6 Nm



- Install cover (2) and tighten screw (1).

Attachment bell to outside door handle support

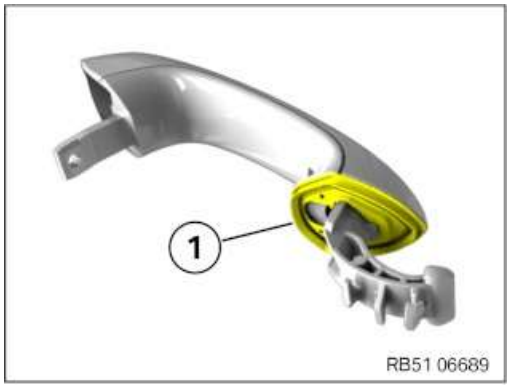
Screw		Tightening torque	3 Nm

POSTPROCESSES

10 – Installing the outside door handle

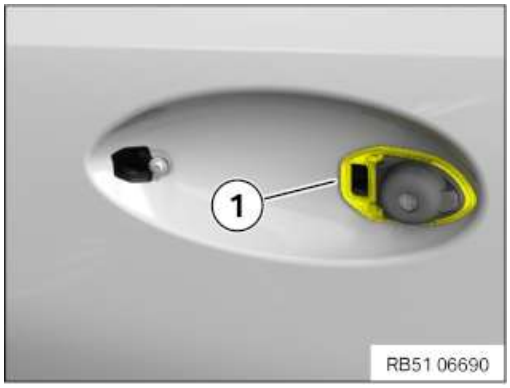
NOTICE

Description is for left component only. Procedure on the right side is identical.

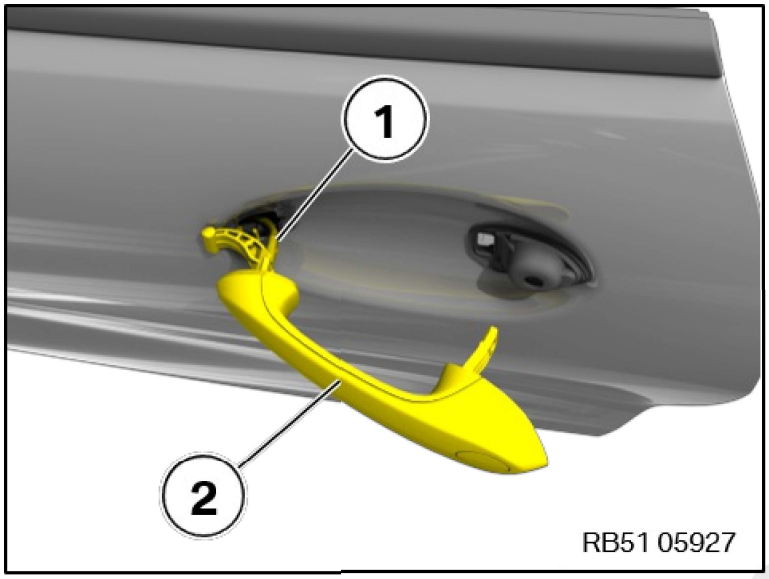


- Check the seal (1) for damage and renew if necessary.

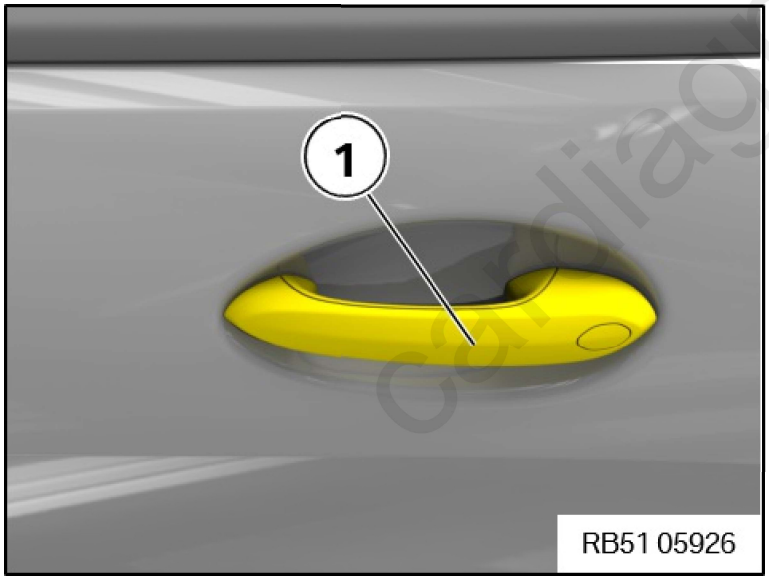
cardiagn.com



- Check the seal (1) for damage and renew if necessary.

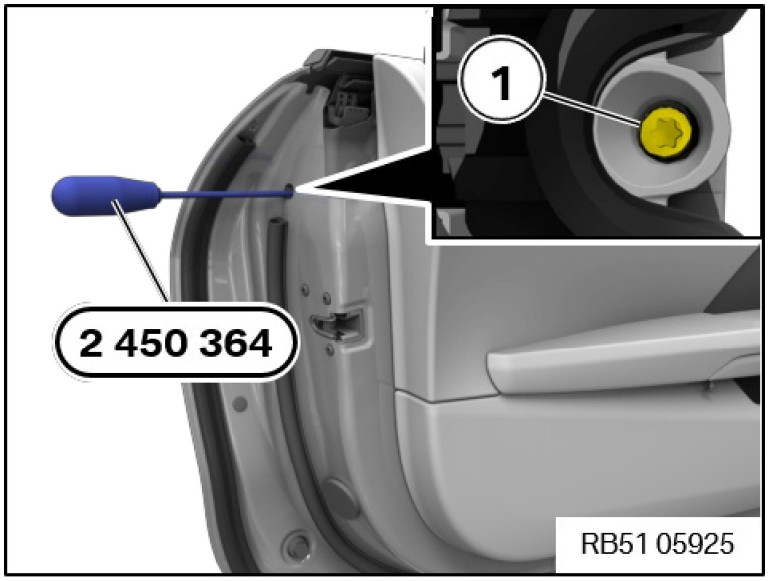


- Insert the front outside door handle (2).
- Connect connectors (1) and lock.



- Insert the rear outside door handle (1).

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NOTICE

Schematic diagram is for example purposes.
Some parts may differ in certain details.

- Tighten the clamping bolt (1) on the outside door handle support with the special tool 2 450 364.

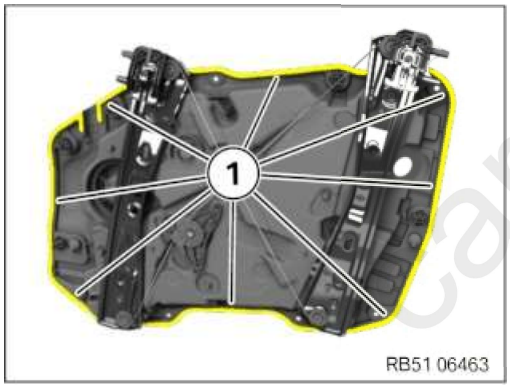
Clamping bolt for door handle

Screw		Tightening torque	2 Nm



- Install seal plug (1).

11 – Installing front module carrier



Check

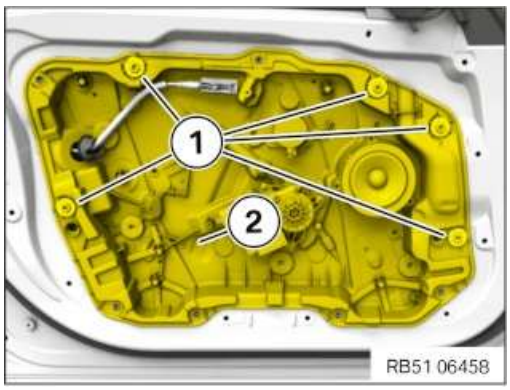
- Check seal (1) of the front module carrier for damage.

Result

» Seal of the front module carrier is damaged.

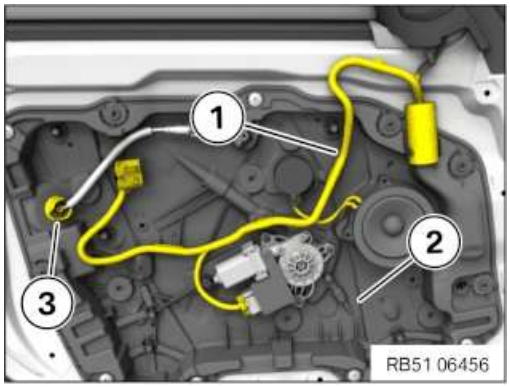
Measure

- Renew the front module carrier.



- Position front module carrier (2) on the door.
- Lock bayonet fittings (1) by twisting them.

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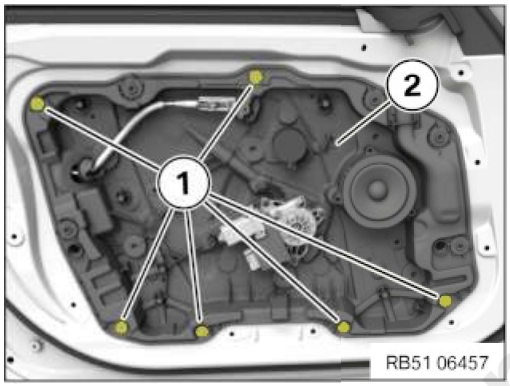


- Connect all electrical connectors and lock.
- Clip in wiring harness (1) on front module carrier (2).
- Install rubber grommet of the Bowden cable for the inner door opener (3).
- Check rubber grommet of the Bowden cable for the inner door handle (3) for correct seating.

▶ **Disconnecting all battery earth leads**



- See additional information.



- Tighten screws (1) of the front module carrier (2).

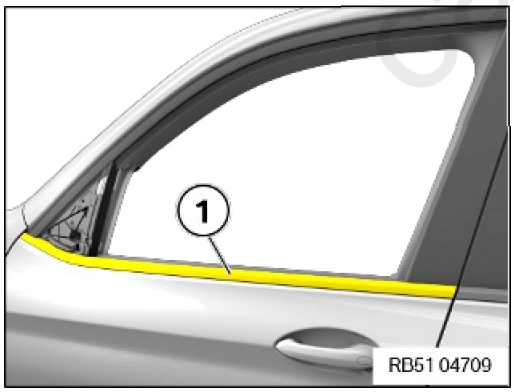
Module carrier to front door

Torx socket M5x12		Tightening torque	8 Nm

- Move the power window upwards until the fixed side window glass correctly engages in both holders.

  Remove adhesive tape.

12 – Install outer weather strip

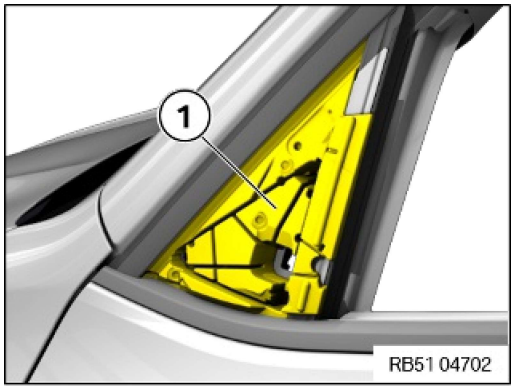


- Check outer weather strip (1) for damage, renew the outer weather strip (1) if required.
- Coat the outer weather strip (1) with a suitable lubricant prior to installation.
- Fit outer weather strip (1) on the front door.
- Press down the outer weather strip (1) across its entire length.

13 – Installing the exterior mirror

Check

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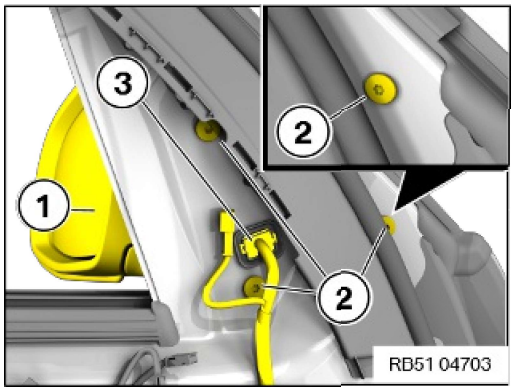
- Check mirror triangle seal (1) for damage.

Result

» The mirror triangle seal is damaged.

Measure

- Replace mirror triangle seal .



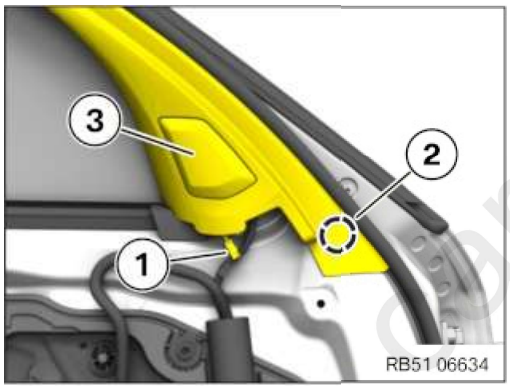
- Position exterior rearview mirror (1) and tighten screws (2).

Exterior mirror to door

Thread-tapping hexagon screw		Tightening torque	10 Nm

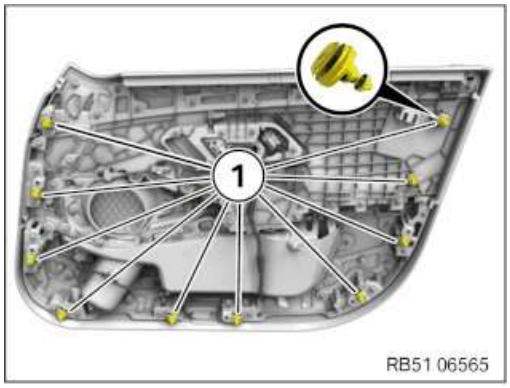
- Connect connectors (3) and lock.

14 – Installing the cover on the inside of the window frame partially



- Mount cover on the inner window frame (3) in the area of the exterior rearview mirror.
- Clip in the clip (2).
- If necessary, connect the connector (1) and lock it.

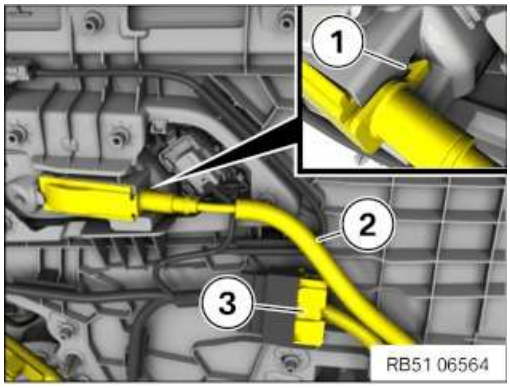
15 – Install door trim panel



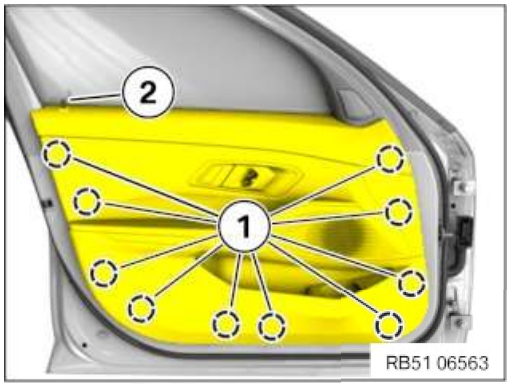
- Renew the clips (1).

  Parts: Clips

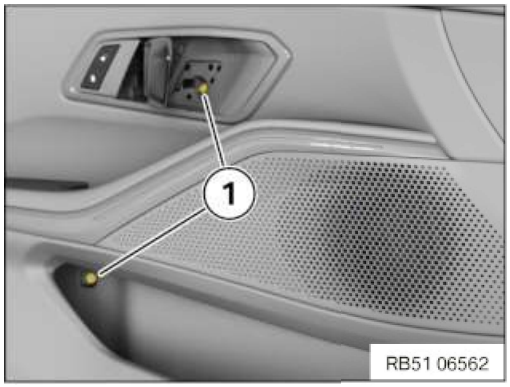
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- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



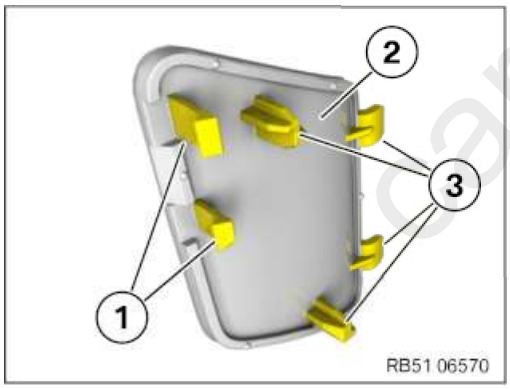
- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).



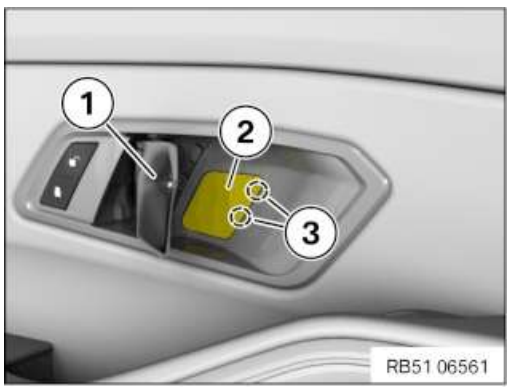
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

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Overview of Tightening Torques

Outside door handle support to door — Used in step 9

Screw		Tightening torque	2,6 Nm

Attachment bell to outside door handle support — Used in step 9

Screw		Tightening torque	3 Nm

Clamping bolt for door handle — Used in step 10

Screw		Tightening torque	2 Nm

Module carrier to front door — Used in step 11

Torx socket M5x12		Tightening torque	8 Nm

Exterior mirror to door — Used in step 13

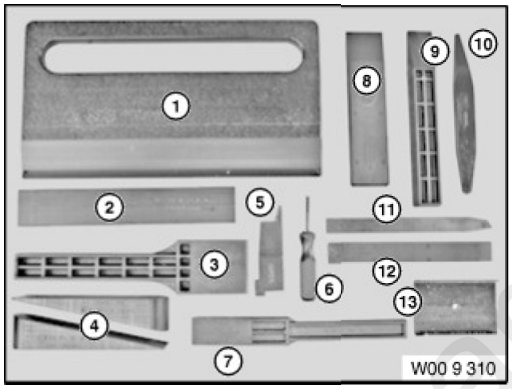
Thread-tapping hexagon screw		Tightening torque	10 Nm

Door trim panel to door — Used in step 15

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

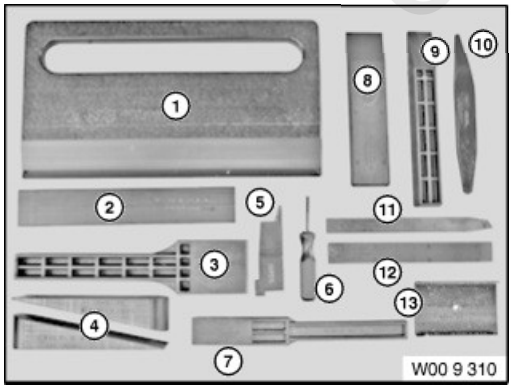
0 495 484 (00 9 324) Panel wedge



Common — Used in step 15

Usage	(Panel wedge (panel)) For removing cavity strips on the doors from E60
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 25 05 (230)

0 493 752 (00 9 329) Case

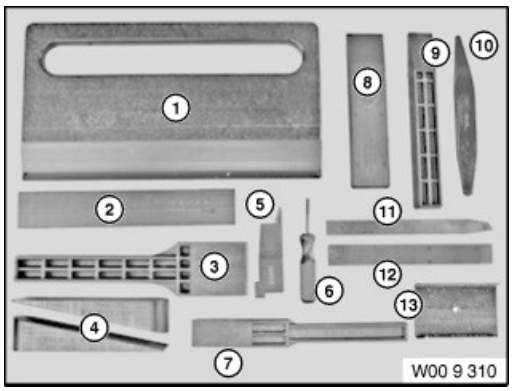


Common — Used in step 2

Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

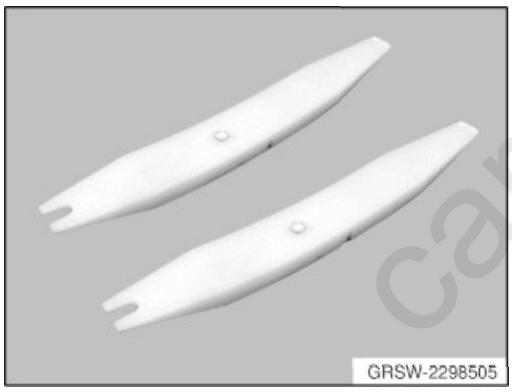
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0 490 538 (00 9 321) Folding stick



Common	Used in step 5
Usage	
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

2 298 505 Wedge



Common	Used in step 5
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

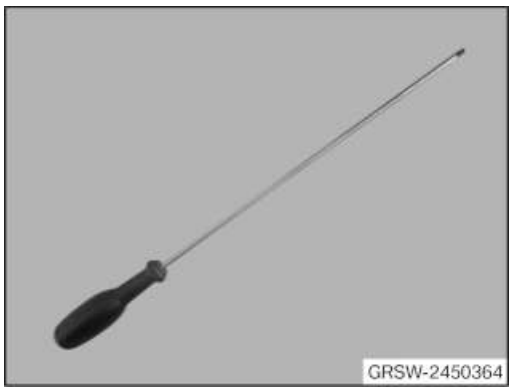
0 496 569 (00 9 325) Wedge



Common	Used in step 6
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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2 450 364 Torx



Common	Used in step 710
Usage	for releasing the outside door handles
Included in the tool or work	
Storage location	A5
Replaced by	
In connection with	
SI-Number	01 22 16 (440)

Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	611
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	611
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	611
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	611
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting battery earth lead	611
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61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	611
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting battery earth lead	611
61 20 900 Disconnecting and connecting battery earth lead	611

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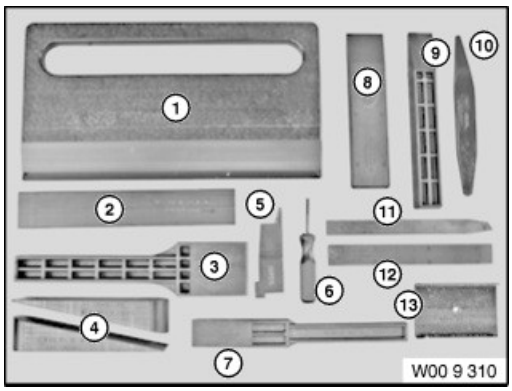
61 20 900 Disconnecting and connecting battery earth lead 611
61 20 900 Disconnecting and connecting battery earth lead 611

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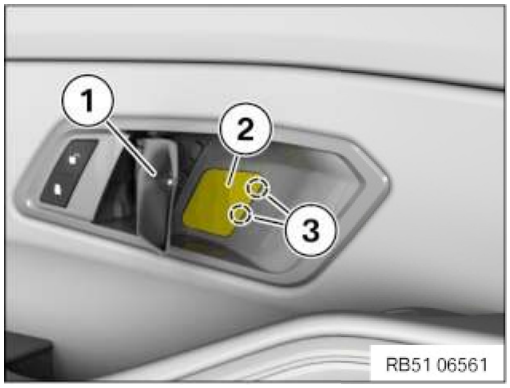
51 21 330 Removing and installing/replacing the weather strip on the inside of the front door

PRELIMINARY WORK

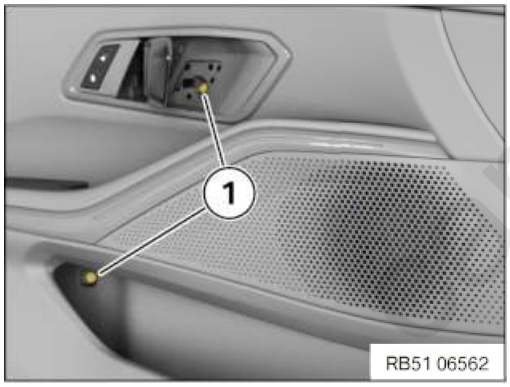
1 – Remove door trim panel



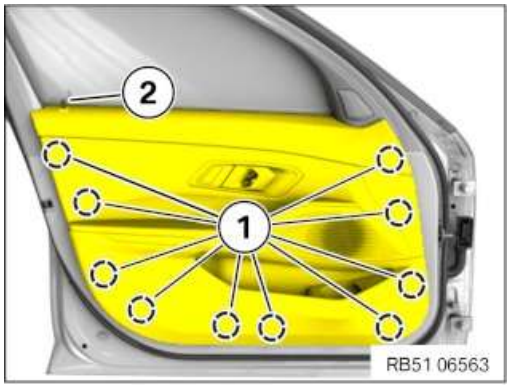
- Have the set of special tools 0 493 752 (00 9 329) ready.



- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

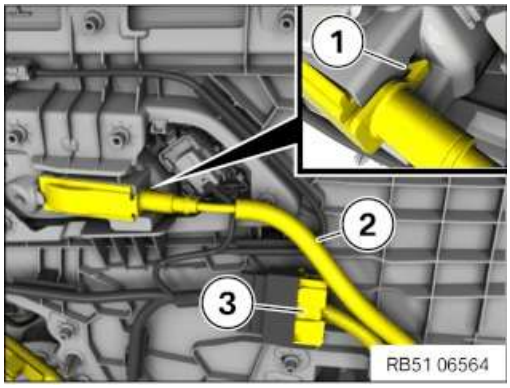


- Loosen screws (1).



- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).

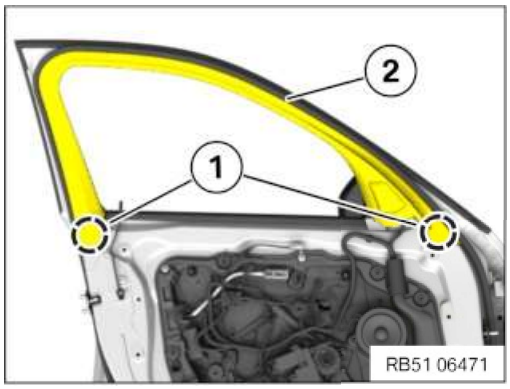
partdiagn.com



- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

2 – Removing the cover on the window frame



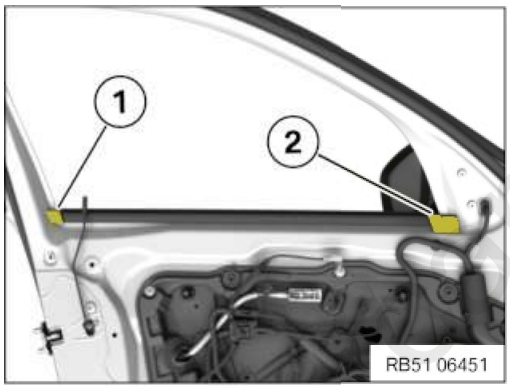
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Unclip clips (1).
- Release and remove the cover all around inner window frame (2), starting from the rear.
- If necessary, unlock and disconnect the plug connection on the speaker.

MAIN WORK

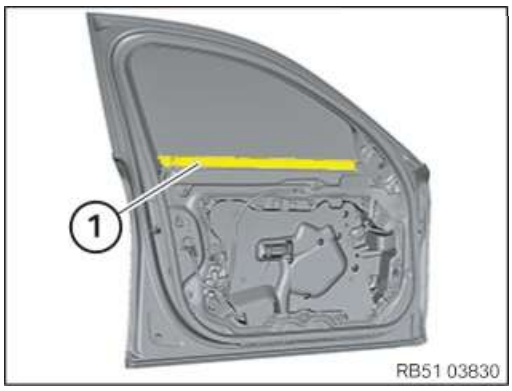
3 – Remove inner weather strip



NOTICE

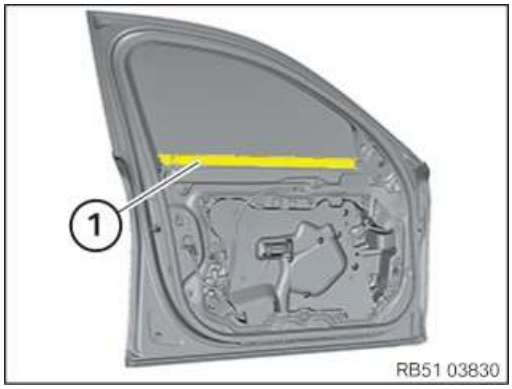
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Release sealings (1) and (2).



- Pull off inner weather strip (1) towards the top.

4 – Installing inner weather strip



NOTICE

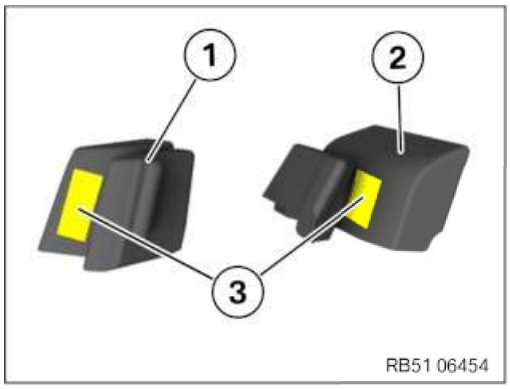
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Coat the area of the inner weather strip (1) with approved lubricant.

Expendable materials

Fitting aid (Circo Light; lubricant)	250 ml, Bottle	83192405829

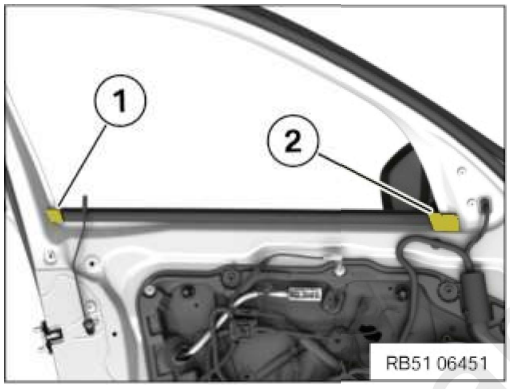
- Position the inner weather strip (1) correctly and connect.



- Renew sealings (1) and (2).

  Parts: Seal

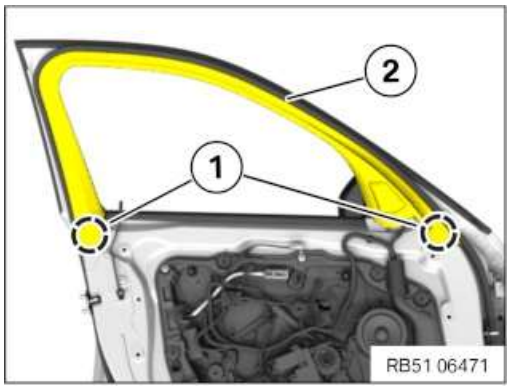
- Pull liner (3) off at the new sealings (1) and (2).



- Position the new sealings (1) and (2) correctly and bond.

POSTPROCESSES

5 – Installing the cover on the inside of the window frame

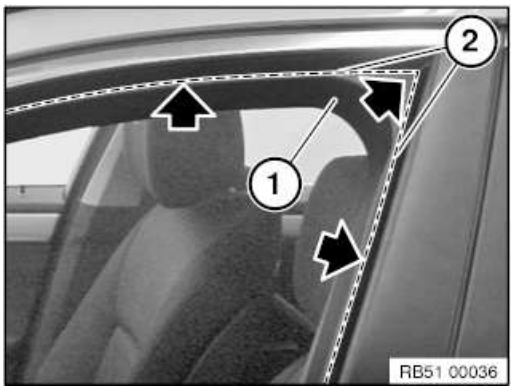


NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- If necessary, connect and lock the connector of the speaker.
- Guide in the cover all around the inner window frame (2) starting from the rear and position it correctly.
- Clip in clips (1).

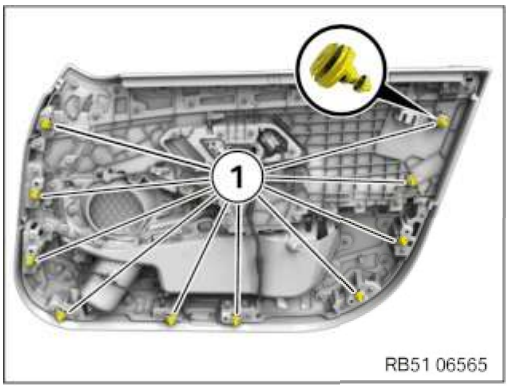
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- Insert the cover on the inner window frame (1) into the gap of the rubber window seal(2) .

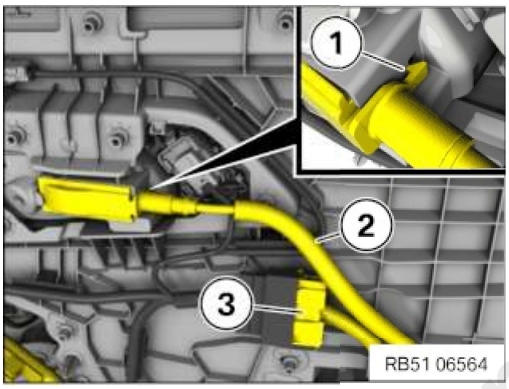
  While doing so, pay attention to the correct position of the cover on the inner window frame (1) on the door seal.

6 – Install door trim panel

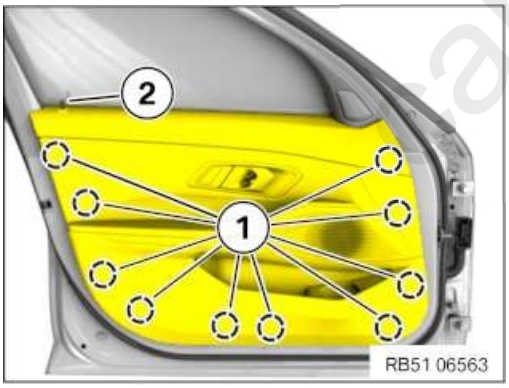


- Renew the clips (1).

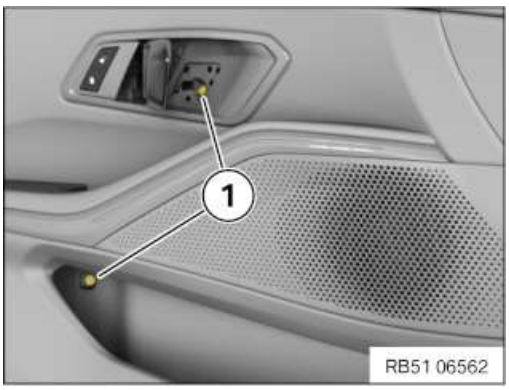
  Parts: Clips



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).

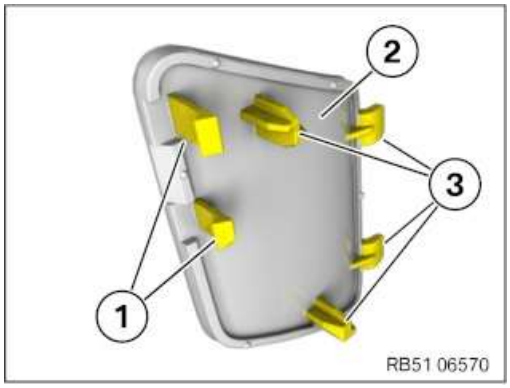


- Tighten the screws (1).

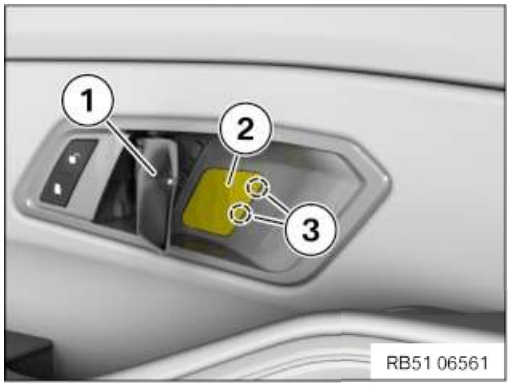
Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm

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- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

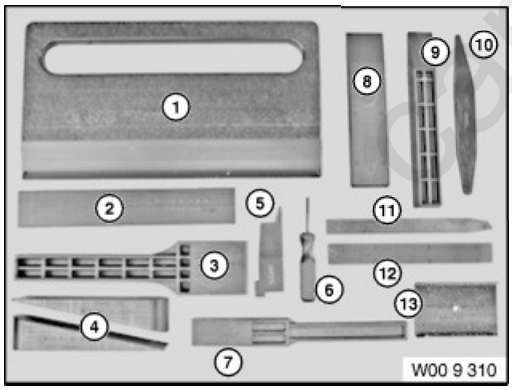
Overview of Tightening Torques

Door trim panel to door — Used in step 6

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

0 493 752 (00 9 329) Case



Common — Used in step 1

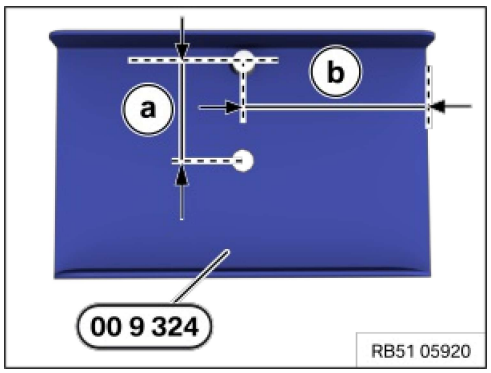
Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

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51 21 300 Removing and installing/replacing weather strip on outside of front door

PRELIMINARY WORK

1 – Preparing the special tool



- **Do this only if the upper bore hole is missing.**
- Mark and make the bore hole on the special tool 0 495 484 (00 9 324) according to the specified dimensions.

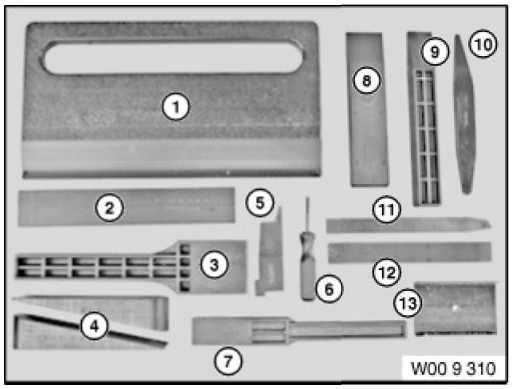
  Make a bore hole on the side with the long shank.

  The diameter of the bore hole is 6 mm.

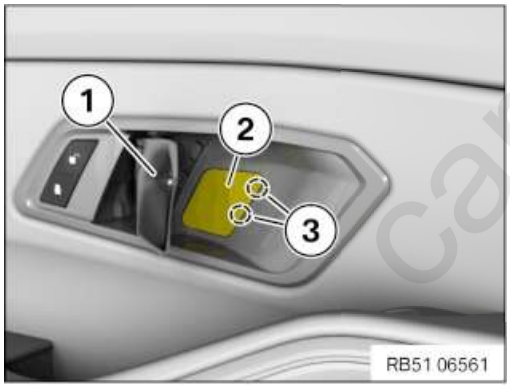
  Dimension (a) = 25 mm from the centre of the existing bore hole

  Dimension (b) = 50 mm from the outer edge of the special tool

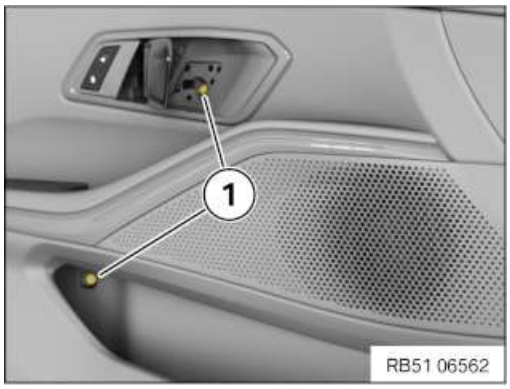
2 – Remove door trim panel



- Have the set of special tools 0 493 752 (00 9 329) ready.

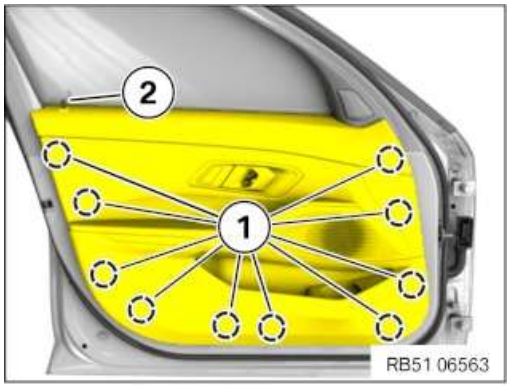


- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

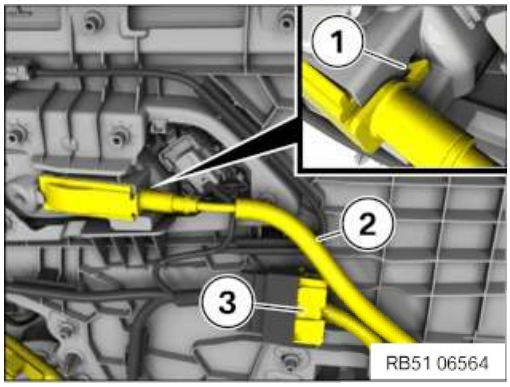


- Loosen screws (1).

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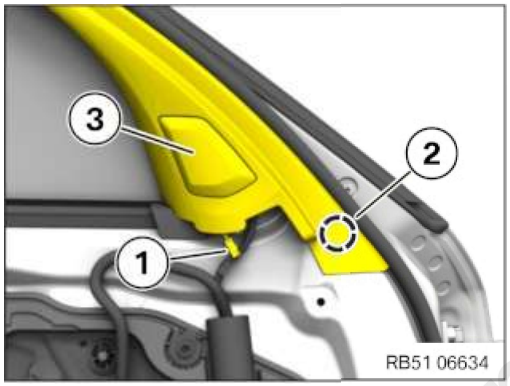
- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).



- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

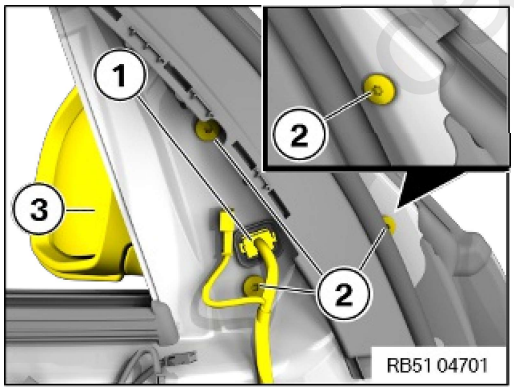
  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

3 – Partially removing the cover on the inner window frame



- If necessary, unlock and disconnect the plug connection (1).
- Unclip clip (2).
- Release the cover on inner window frame (3) in the area of the exterior rearview mirror.

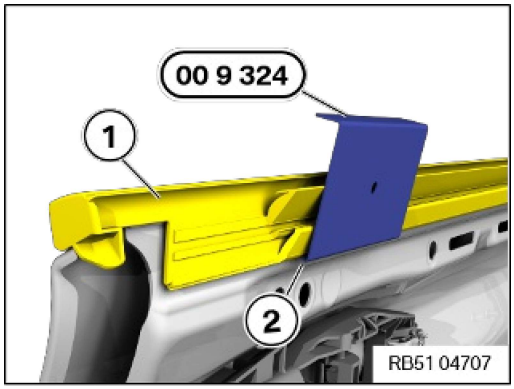
4 – Removing the exterior mirror



- Unlock plug connection (1) and disconnect.
- Release the screws (2) and remove the exterior rearview mirror (3).

MAIN WORK

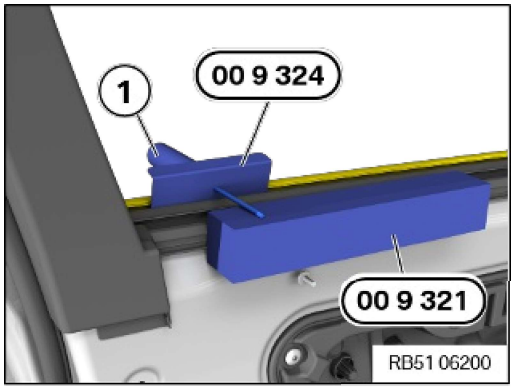
5 – Removing the outer weather strip



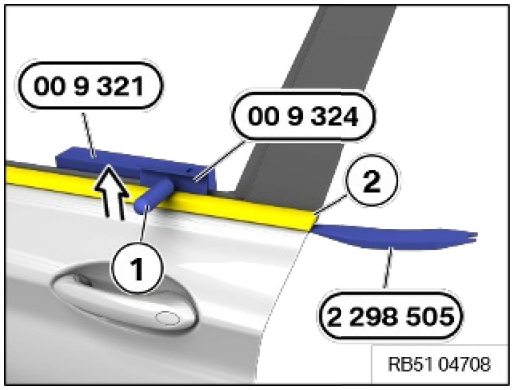
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Insert the special tool 0 495 484 (00 9 324) at the front (on A-pillar) into the window cavity and slide it toward the back.
- Position the special tool 0 495 484 (00 9 324) as shown at the lower edge of the outer weather strip (1) with the short shank (2).



- Place the special tool 0 490 538 (00 9 321) on the inner door panel.
- Thread a suitable tool (1) through the opening in the special tool 0 495 484 (00 9 324).



RISK OF DAMAGE

Scratches.

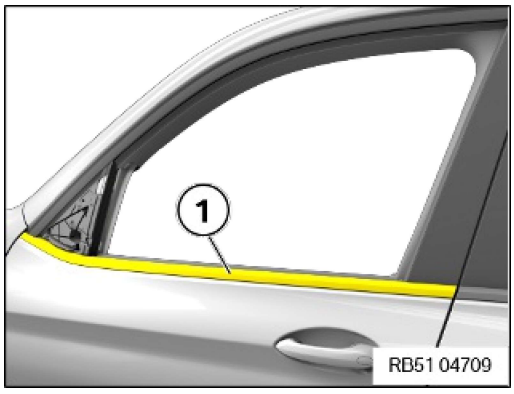
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Lift up the outer rear weather strip (2) with the special tool 2 298 505 as shown; maximum 5 mm.
- With a suitable tool (1), move the lever in the direction of arrow using the special tool 0 490 538 (00 9 321) for support.

  When this happens, the special tool 0 495 484 (00 9 324) lifts the outer weather strip (2) upwards.
- Repeat this process step by step until the outer weather strip(2) is completely disassembled.

6 – Install outer weather strip

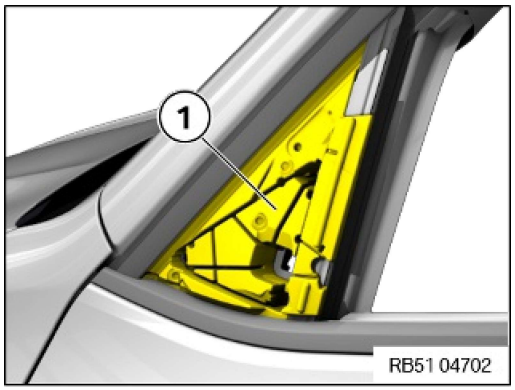


- Check outer weather strip (1) for damage, renew the outer weather strip (1) if required.
- Coat the outer weather strip (1) with a suitable lubricant prior to installation.
- Fit outer weather strip (1) on the front door.
- Press down the outer weather strip (1) across its entire length.

POSTPROCESSES

7 – Installing the exterior mirror

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Check

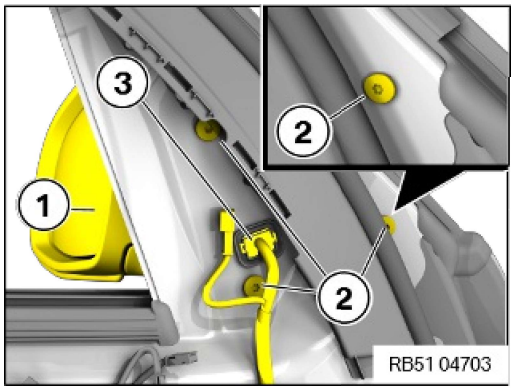
- Check mirror triangle seal (1) for damage.

Result

» The mirror triangle seal is damaged.

Measure

- Replace mirror triangle seal .



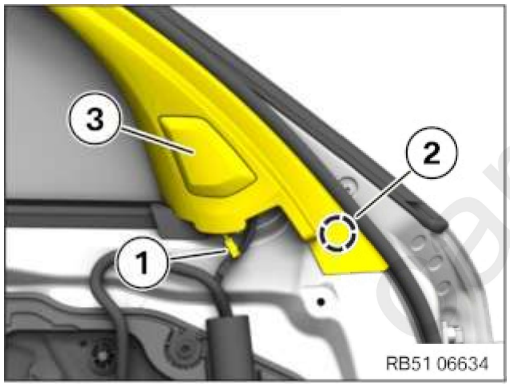
- Position exterior rearview mirror (1) and tighten screws (2).

Exterior mirror to door

Thread-tapping hexagon screw		Tightening torque	10 Nm

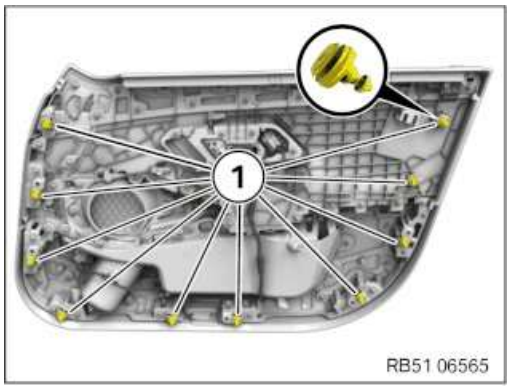
- Connect connectors (3) and lock.

8 – Installing the cover on the inside of the window frame partially



- Mount cover on the inner window frame (3) in the area of the exterior rearview mirror.
- Clip in the clip (2).
- If necessary, connect the connector (1) and lock it.

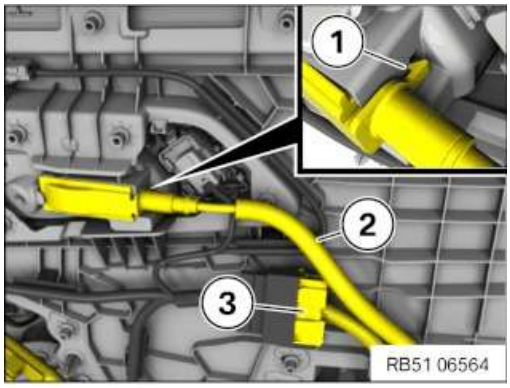
9 – Install door trim panel



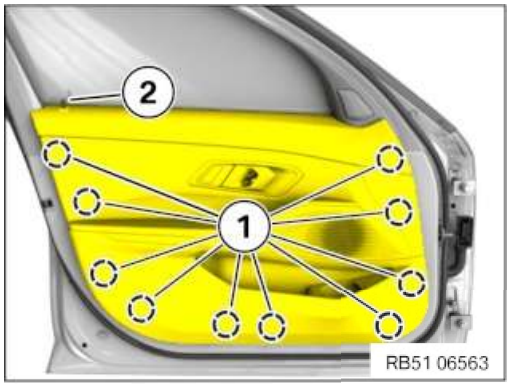
- Renew the clips (1).

  Parts: Clips

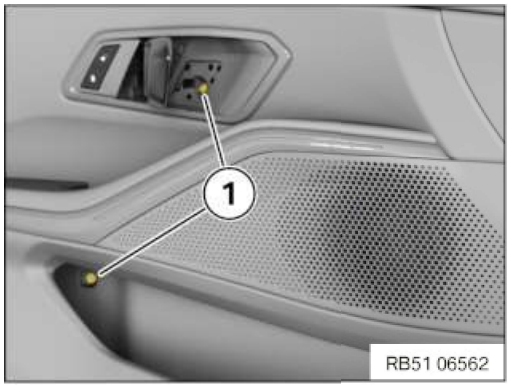
carofan.com



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



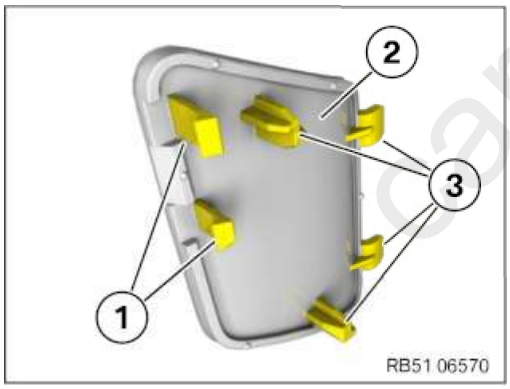
- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).



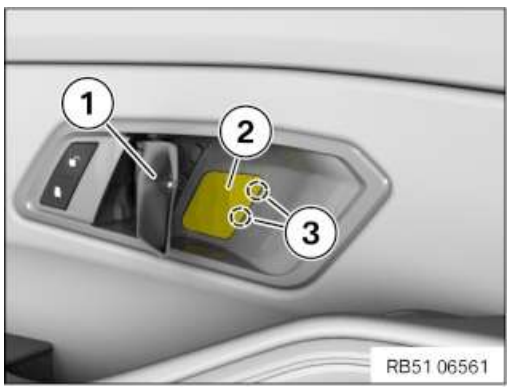
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

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Overview of Tightening Torques

Exterior mirror to door — Used in step 7

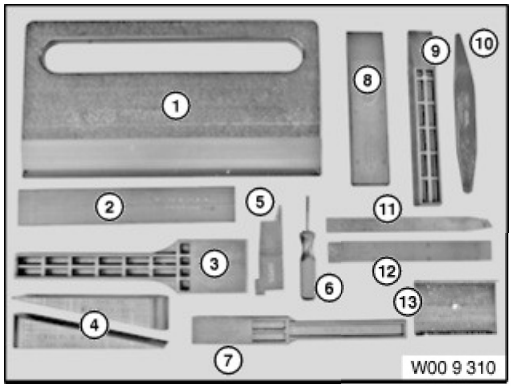
Thread-tapping hexagon screw		Tightening torque	10 Nm

Door trim panel to door — Used in step 9

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

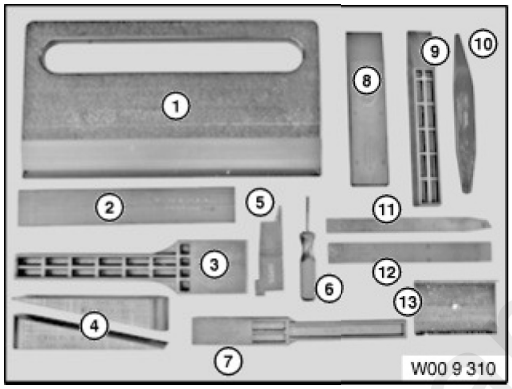
0 495 484 (00 9 324) Panel wedge



Common — Used in step 15

Usage	(Panel wedge (panel)) For removing cavity strips on the doors from E60
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 25 05 (230)

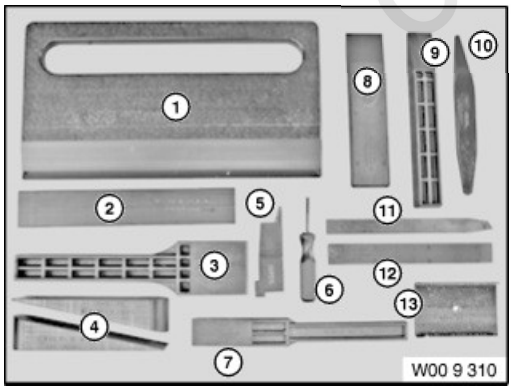
0 493 752 (00 9 329) Case



Common — Used in step 2

Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

0 490 538 (00 9 321) Folding stick

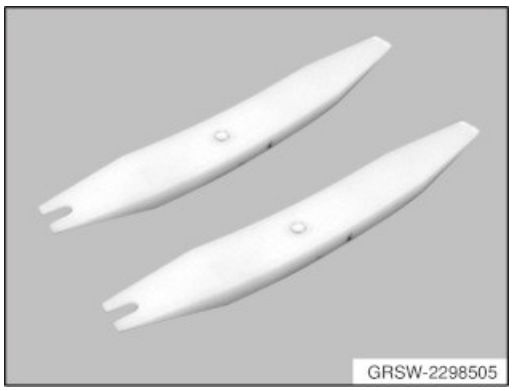


Common — Used in step 5

Usage	
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

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2 298 505 Wedge

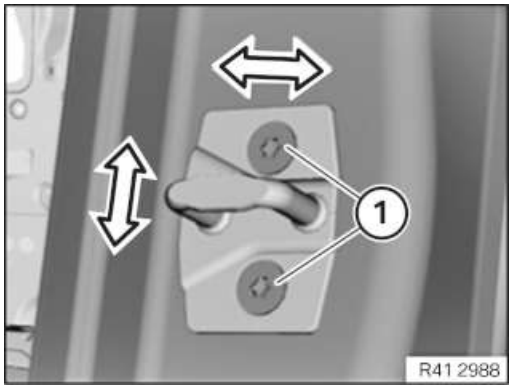


Common	Used in step 5
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

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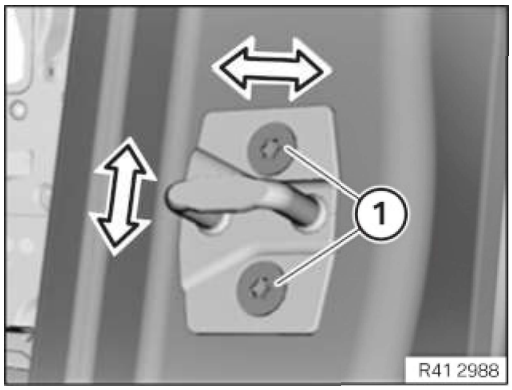
51 21 003 Replacing front left or right lock striker

1 – Removing lock striker



- Loosen screws (1).
- Remove lock striker.

2 – Installing lock striker

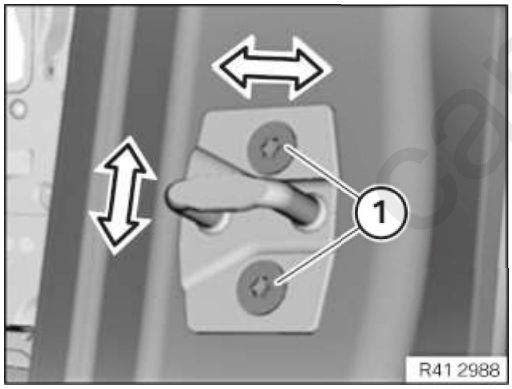


- Position lock striker.
- Tighten down screws (1) until lock striker can still just be moved.

3 – Adjust lock striker

Prerequisite

The screws on lock striker are loosened so far that the lock striker can still be moved.



TECHNICAL INFORMATION

The gap dimensions form the basis for these repair instructions and must be observed without fail.

For more information see: 41 00 ... Gap dimensions for body

- Adjust the lock striker's height such that the door lock does not bump or rub against anything.
- Move lock striker sideways in order to adjust the gap dimensions between door and rear side panel.
- Tighten the screws (1).

Lock striker

Screw		Tightening torque	21 Nm

Additional Information

Overview of Tightening Torques

Lock striker Used in step 3

Screw		Tightening torque	21 Nm

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Links

Repair instructions (PRE)	Used in step
Gap dimensions, body	3
Gap dimensions, body	3
Gap dimensions, body	3
Gap dimensions, body	3
Gap dimensions, body	3
Gap dimensions, body	3
Gap dimensions, body	3
Gap dimensions, body	3
Gap dimensions, body	3
Gap dimensions, body	

Repair instructions	Used in step
41 00 ... Gap dimensions, body	3

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66 12 ... Teach in radio remote control/radio remote control with display (BMW display key)

Functional description for teach-in of radio remote control/radio remote control with display (BMW display key).

The service function mentioned in the functional description can be found via the following path:

- Body
- Locking and security functions
- Remote key, key
- Lock and enable remote control key

cardiagn.com

51 22 004 Adjusting rear left or right lock striker

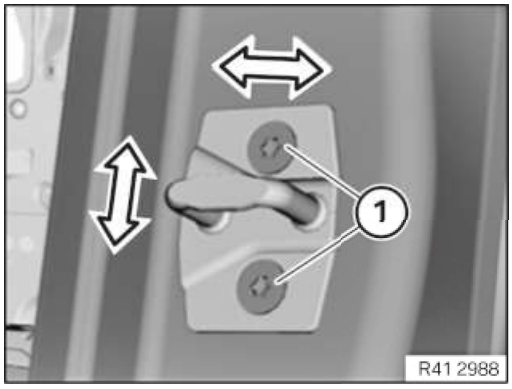
NOTICE

Description is for left component only. Procedure on the right side is identical.

1 Adjust lock striker

Prerequisite

The screws on lock striker are loosened so far that the lock striker can still be moved.



TECHNICAL INFORMATION

The gap dimensions form the basis for these repair instructions and must be observed without fail.

For more information see: 41 00 ... Gap dimensions for body

- Adjust the lock striker's height such that the door lock does not bump or rub against anything.
- Move lock striker sideways in order to adjust the gap dimensions between door and rear side panel.
- Tighten the screws (1).

Lock striker

Screw		Tightening torque	21 Nm

Additional Information

Overview of Tightening Torques

Lock striker — Used in step 1

Screw		Tightening torque	21 Nm

Links

Repair instructions (PRE)	Used in step
Gap dimensions, body	1
Gap dimensions, body	1
Gap dimensions, body	1
Gap dimensions, body	1
Gap dimensions, body	1
Gap dimensions, body	1
Gap dimensions, body	1
Gap dimensions, body	1
Gap dimensions, body	1

Repair instructions	Used in step

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51 22 090 Remove and install/replace the door lock on the left or right rear doors

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

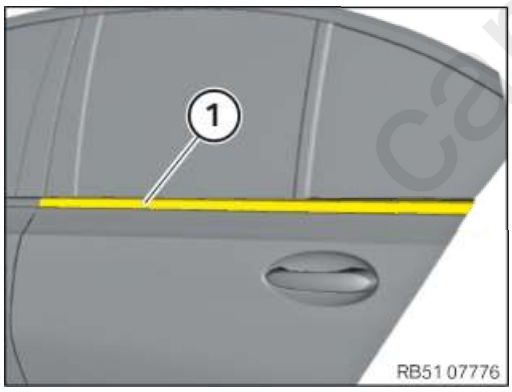
1 – Remove weather strip from the rear door

RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

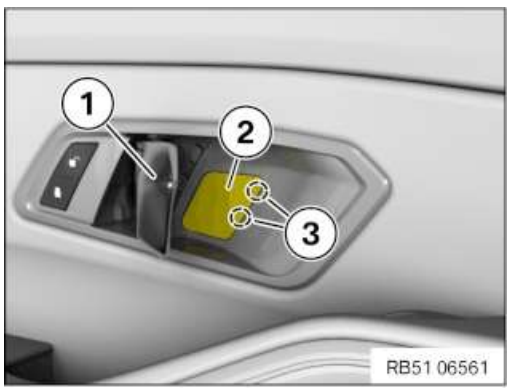
- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.



- Lever out window recess finisher strip (1) from the door carefully using the special tool 2 298 505 starting from the rear to the top.

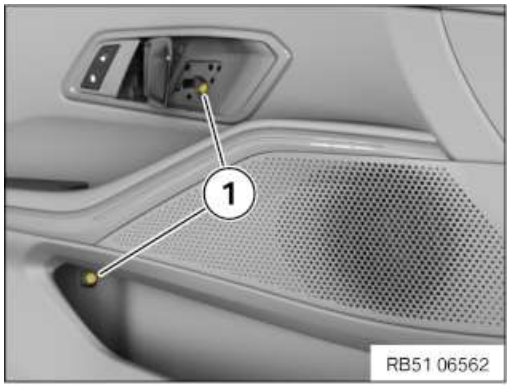
  The window recess finisher strip might get deformed and must be renewed.

2 – Remove rear door trim

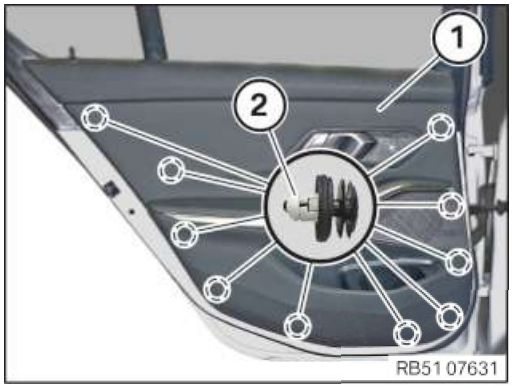


- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable tool.
- Remove trim (2).

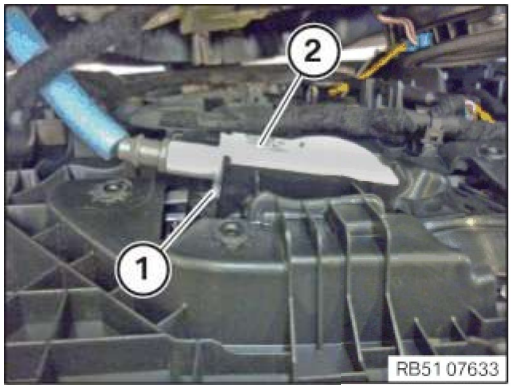
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- Loosen screws (1).



- Unclip the door trim panel (1) with the special tool 0 496 569 (00 9 325) at the clips (2).
- Guide the door trim panel (1) upwards out of the weather strip.



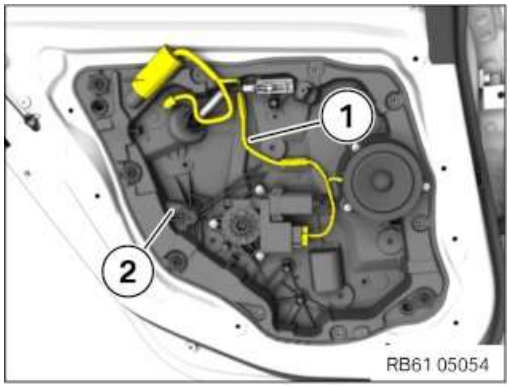
- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock available plug connections and disconnect.
- Remove door trim panel.

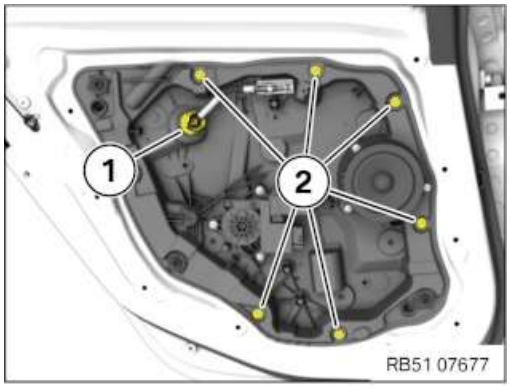
3 – Removing the rear module carrier



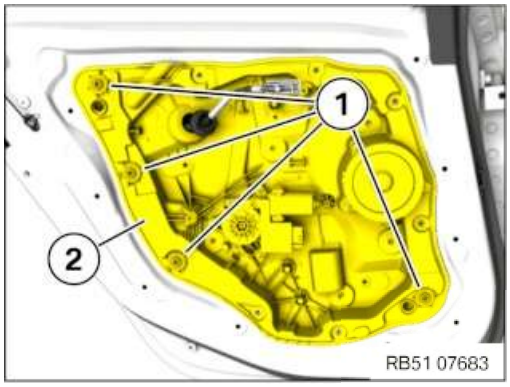
- Secure the fixed side window glass to the door frame when it is closed using adhesive tape.
- Spread apart the bracket from the outside on the fixed side window glass as far as possible using special tool 0 496 569 (00 9 325) until the fixed side window glass can be detached.
- Move the power window down approximately 10 cm.



- Release the latch mechanisms of the door wiring harness (1) from the rear module carrier (2).
- Unlock and disconnect plug connections of door wiring harness (1) on rear module carrier (2).



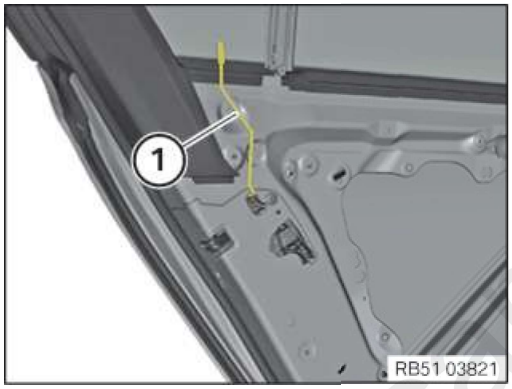
- Release the rubber grommet of the Bowden cable for the inner door opener (1).
- Loosen screws (2).



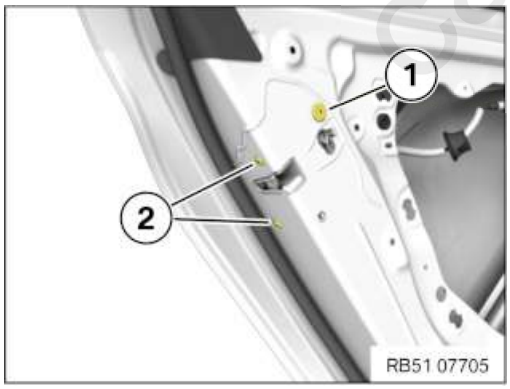
- Open locks (1) and remove rear module carrier (2).

MAIN WORK

4 – Remove rear door lock.

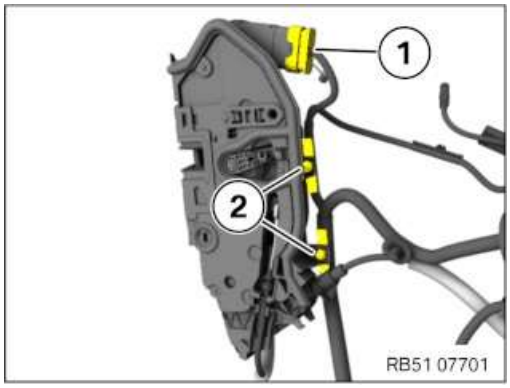


- Unclip the operating rod (1).



- Loosen screws (1) and (2).
- Guide the door lock a little way out.

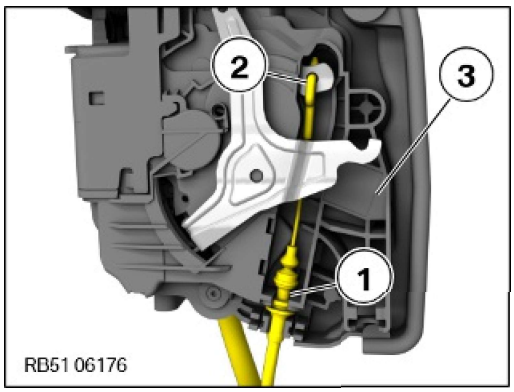
carmanualsdiagram.com



NOTICE

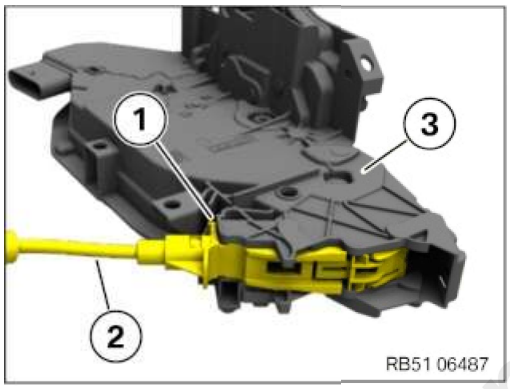
To provide a better overview: Schematic diagram with partially hidden components.

- Unlock and disconnect the plug connection (1) on the door lock.
- Remove clips (2) and remove the wiring harness from the door lock.
- Feed the door lock out of the door.

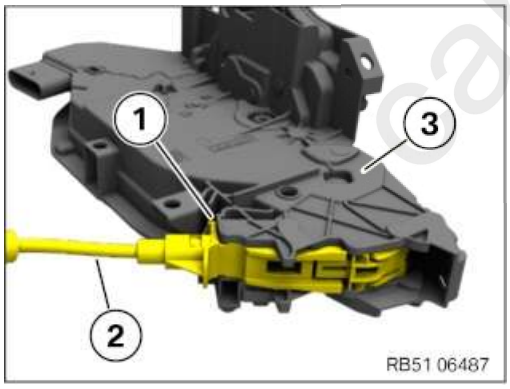


- Unclip Bowden cable (1) from door lock (3).
- Detach Bowden cable nipple (2) from door lock (3).

5 – Replacement: Door lock

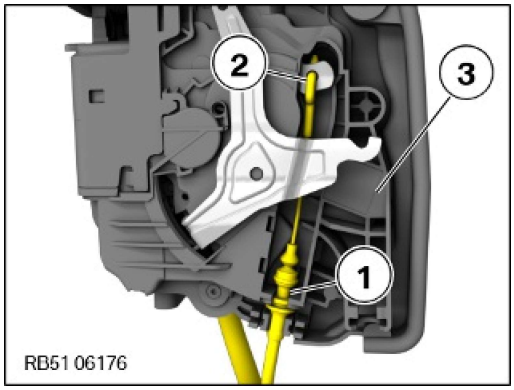


- Unclip clip (1) on the Bowden cable for the inner door opener (2).
- Remove Bowden cable for the inner door opener (2) from the door lock (3).



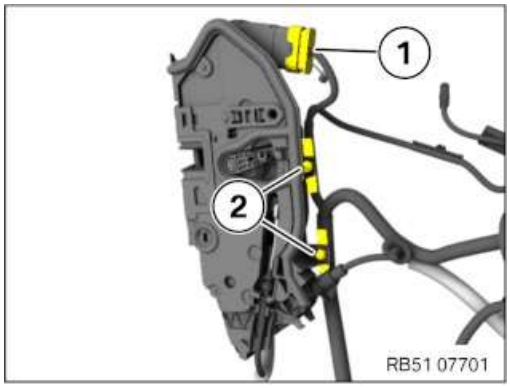
- Install Bowden cable for the inner door opener (2) in the new door lock (3).
- Clip in the clip (1).

6 – Installing rear door lock

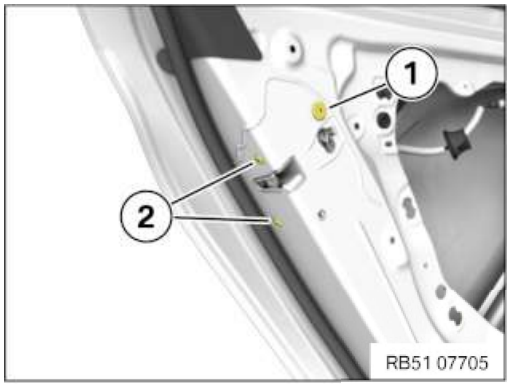


- Attach Bowden cable nipple (2) to door lock (3).
- Clip Bowden cable (1) into door lock (3).
- Guide the door lock (3) into the door.

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- Connect connectors (1) and lock.
- Position wiring harness and clip in the clips (2).



- Correctly position the door lock.
- Screw in screws (1) and (2) a few turns.
- Initially tighten the screws (2).

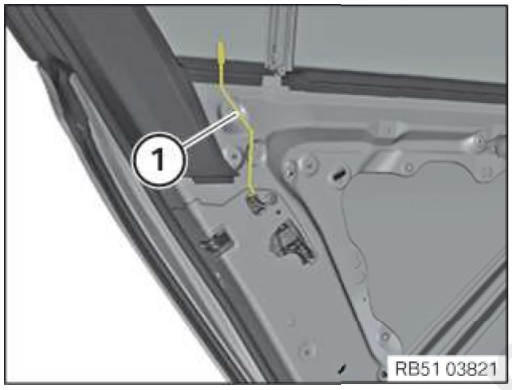
Door lock to door

Screw		Tightening torque	8,8 Nm

- Then tighten the screw (1).

Door lock to door

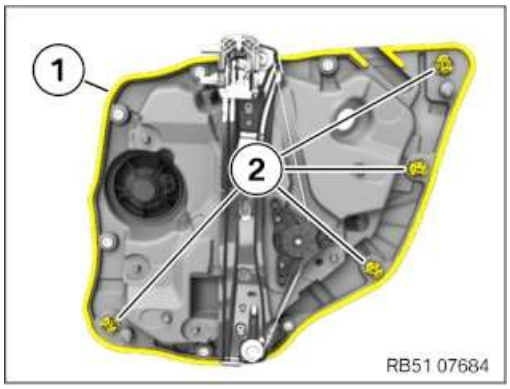
Screw		Tightening torque	8,8 Nm



- Clip in the operating rod (1).

POSTPROCESSES

7 – Installing the rear module carrier



Check

- Check seal (1)on rear module carrier for damage.
- Check the locks (2) for damage.

Result

» The seal (1) on the rear module carrier is damaged.

Measure

- Renew rear module carrier.

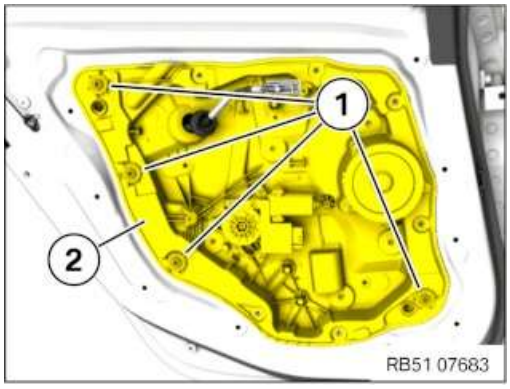
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Result

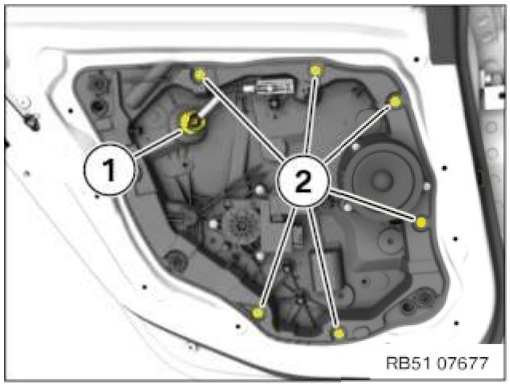
» The locks (2) are damaged.

Measure

- Renew locks (2).



- Position rear module carrier (2) and close locks (1).

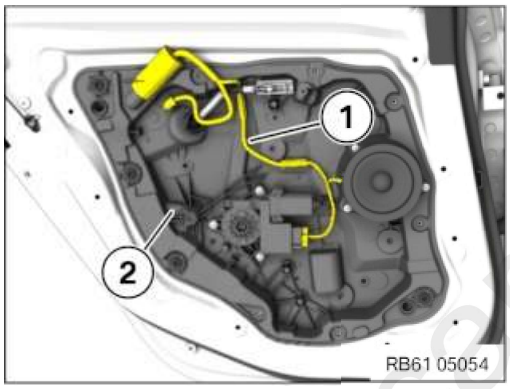


- Tighten the screws (2).

Module carrier to rear door

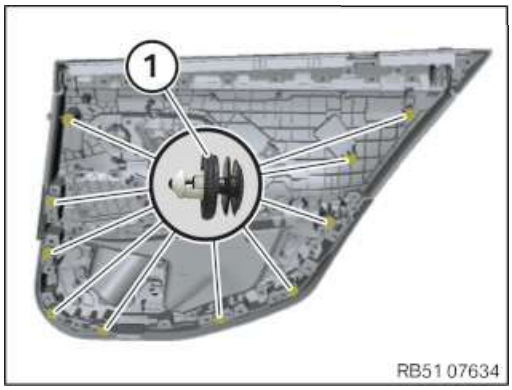
Torx socket M5x12		Tightening torque	8 Nm

- Install rubber grommet of the Bowden cable for the inner door opener (1).



- Clip the latch mechanisms of the door wiring harness (1) into the module carrier (2).
- Connect and lock plug connections of door wiring harness (1) on rear module carrier (2).
- Move the power window upwards until the fixed side window glass correctly engages in the holder.
- Remove adhesive tape.

8 – Installing rear door trim panel

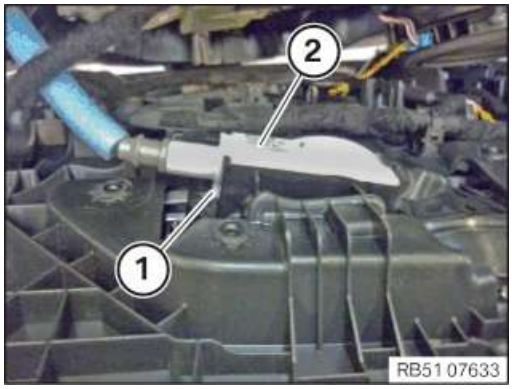


- Renew the clips (1).

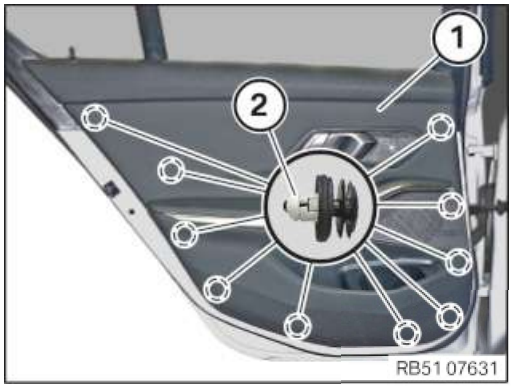
  Parts: Clips

  The clips (1) **must not be engaged**. **The disengaged state is shown.**

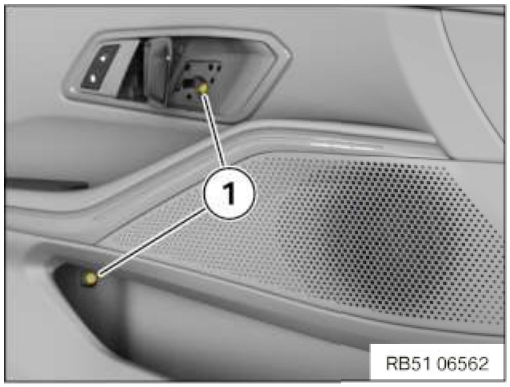
carofan.com



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door handle (2) and clip in to the latch mechanism (1).
- Connect existing connectors and lock.



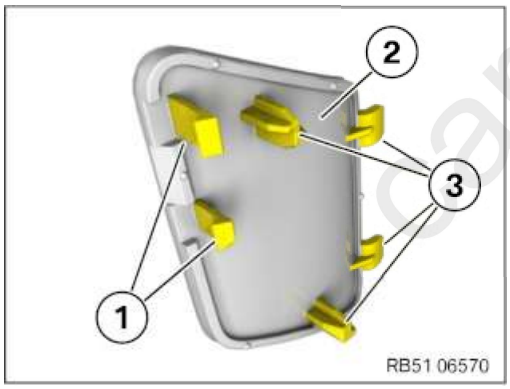
- Feed door trim panel from the top into the inner window recess finisher strip.
- Carefully clip in the door trim panel onto the clips (1).



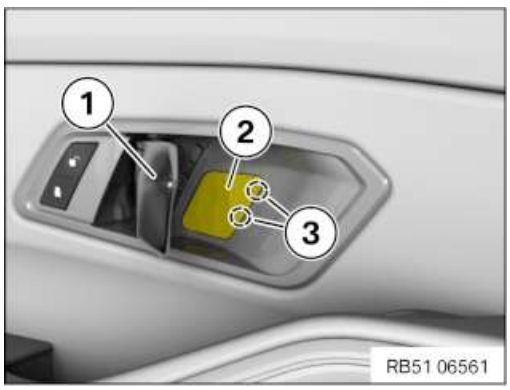
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

9 – Install weather strip on the rear door

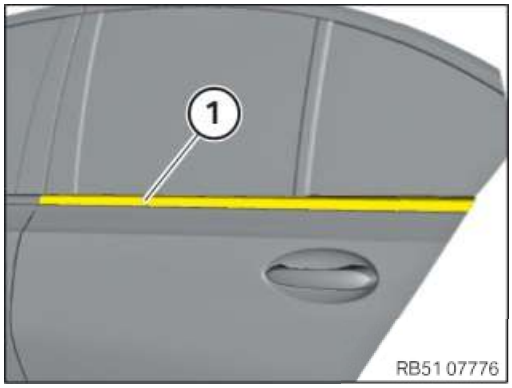
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RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.



- Coat the weather strip (1) with a suitable lubricant prior to installation.
- Install the weather strip (1) and align it to the door edges .
- Press down the window recess finisher strip (1) across its entire length.

Additional Information

Overview of Tightening Torques

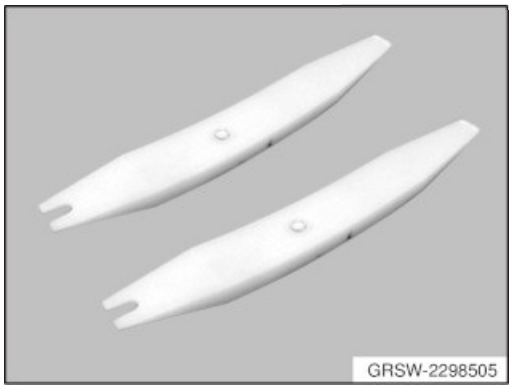
Door lock to door			Used in step 6
Screw		Tightening torque	8,8 Nm

Module carrier to rear door			Used in step 7
Torx socket M5x12		Tightening torque	8 Nm

Door trim panel to door			Used in step 8
Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

2 298 505 Wedge



Common	Used in step 1
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

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0 496 569 (00 9 325) Wedge



Common Used in step 23

Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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51 22 235 Removing and installing/replacing the Bowden cable for the inside door opener on the left or right rear door

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

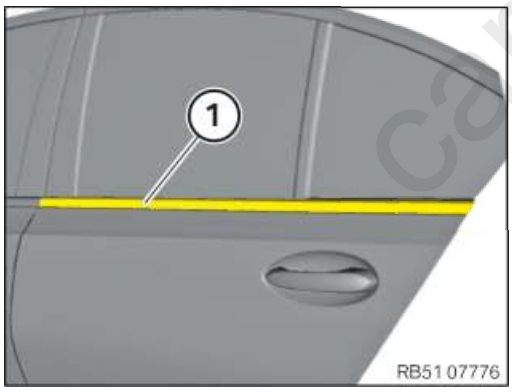
1 – Remove weather strip from the rear door

RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

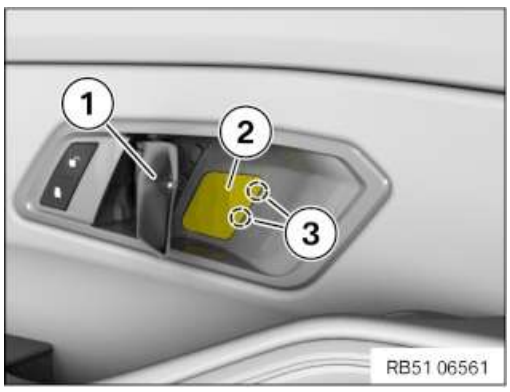
- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.



- Lever out window recess finisher strip (1) from the door carefully using the special tool 2 298 505 starting from the rear to the top.

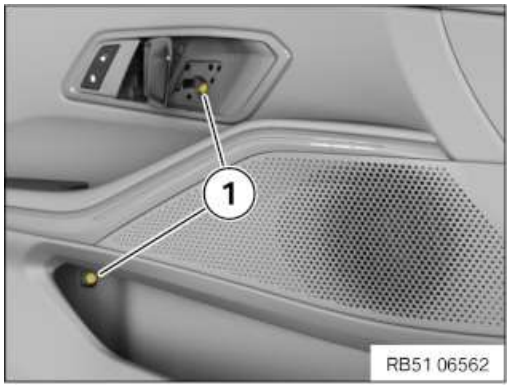
  The window recess finisher strip might get deformed and must be renewed.

2 – Remove rear door trim

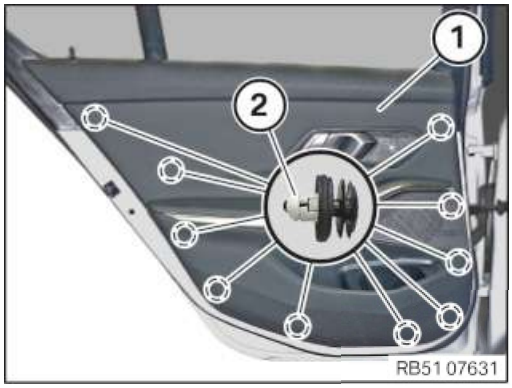


- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable tool.
- Remove trim (2).

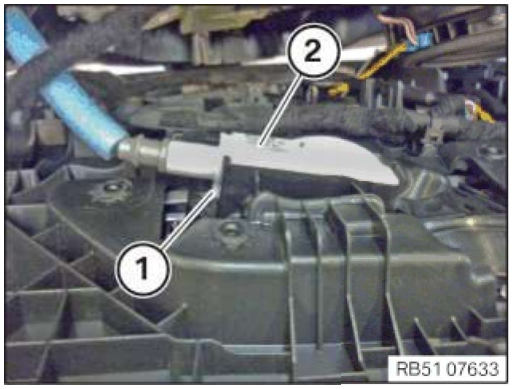
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- Loosen screws (1).



- Unclip the door trim panel (1) with the special tool 0 496 569 (00 9 325) at the clips (2).
- Guide the door trim panel (1) upwards out of the weather strip.



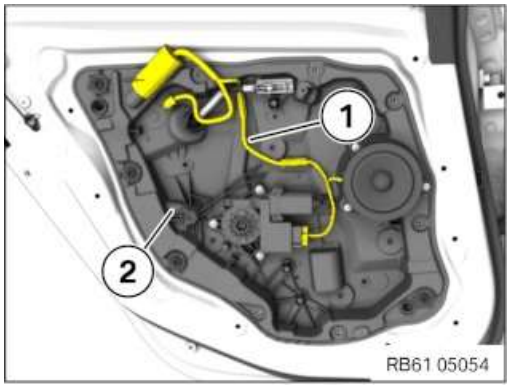
- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock available plug connections and disconnect.
- Remove door trim panel.

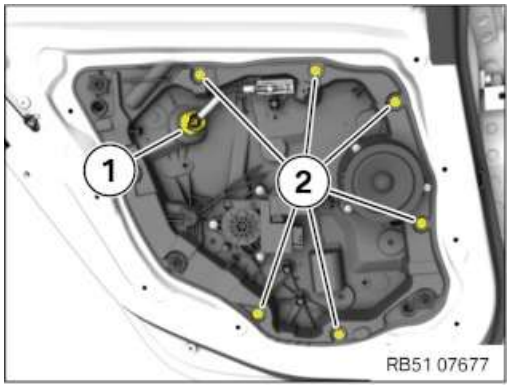
3 – Removing the rear module carrier



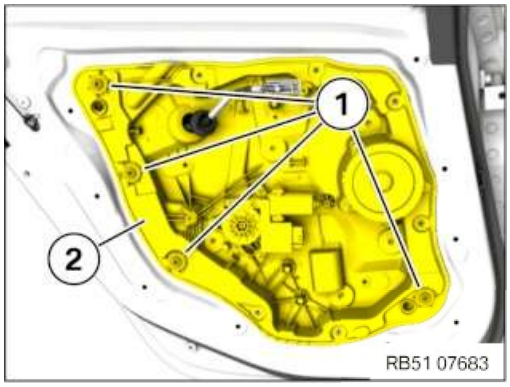
- Secure the fixed side window glass to the door frame when it is closed using adhesive tape.
- Spread apart the bracket from the outside on the fixed side window glass as far as possible using special tool 0 496 569 (00 9 325) until the fixed side window glass can be detached.
- Move the power window down approximately 10 cm.



- Release the latch mechanisms of the door wiring harness (1) from the rear module carrier (2).
- Unlock and disconnect plug connections of door wiring harness (1) on rear module carrier (2).



- Release the rubber grommet of the Bowden cable for the inner door opener (1).
- Loosen screws (2).



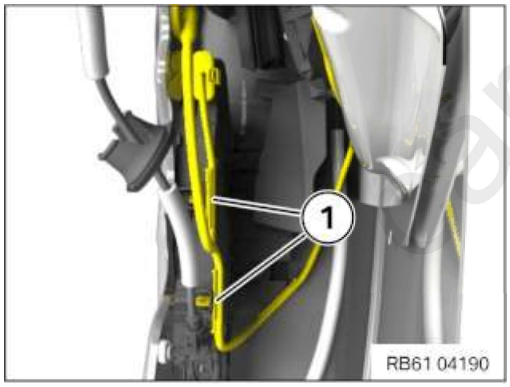
- Open locks (1) and remove rear module carrier (2).

MAIN WORK

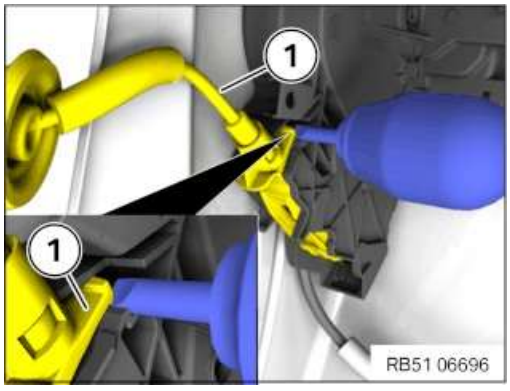
4 – Remove Bowden cable for the inside door opener

NOTICE

To provide a better overview: Illustration of surrounding parts in removed state.



- Unclip clips (1) and place wiring harness aside.



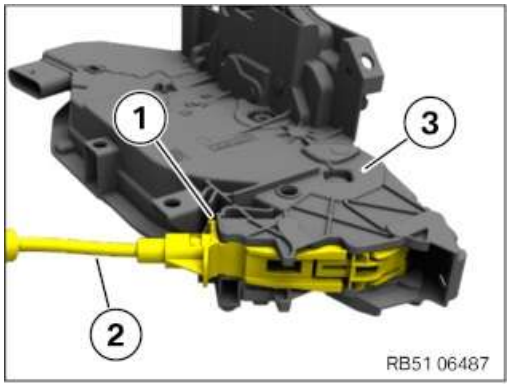
- Unclip clip (1) with a suitable tool.
- Remove the Bowden cable for the inner door opener from the door lock.

5 – Install the Bowden cable for the inside door opener

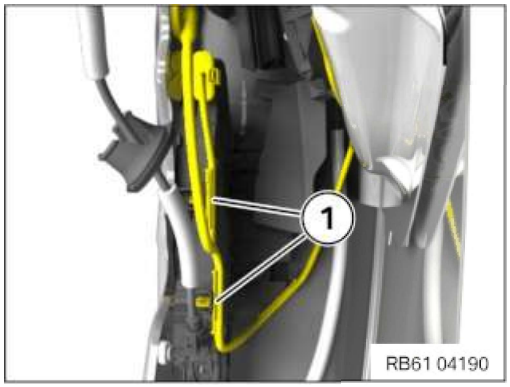
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NOTICE

To provide a better overview: Illustration of surrounding parts in removed state.



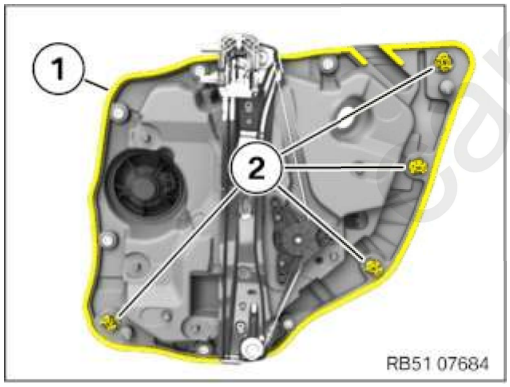
- Install the new Bowden cable for inner door opener (2) in door lock (3).
- Clip in clip (1).



- Clip in the wiring harness using clips (1).

POSTPROCESSES

6 – Installing the rear module carrier



Check

- Check seal (1)on rear module carrier for damage.
- Check the locks (2) for damage.

Result

» The seal (1) on the rear module carrier is damaged.

Measure

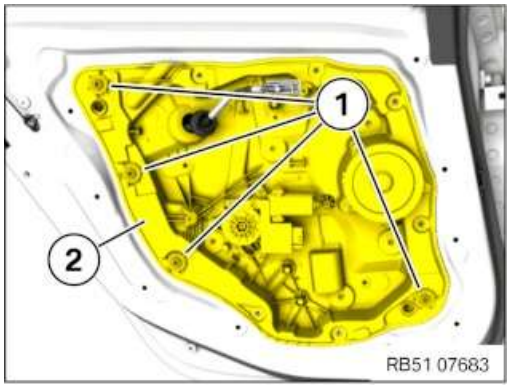
- Renew rear module carrier.

Result

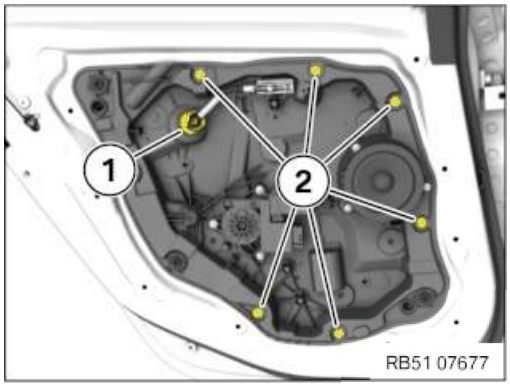
» The locks (2) are damaged.

Measure

- Renew locks (2).



- Position rear module carrier (2) and close locks (1).

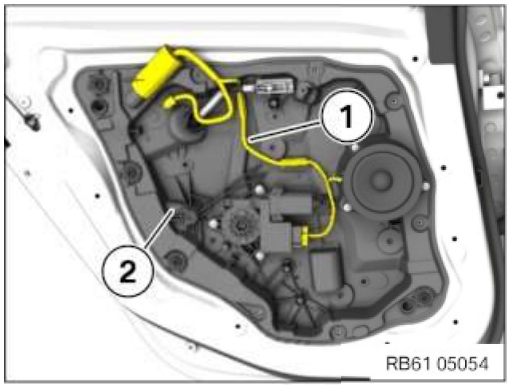


- Tighten the screws (2).

Module carrier to rear door

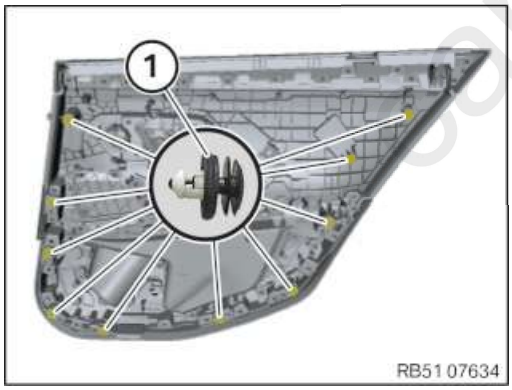
Torx socket M5x12		Tightening torque	8 Nm

- Install rubber grommet of the Bowden cable for the inner door opener (1).



- Clip the latch mechanisms of the door wiring harness (1) into the module carrier (2).
- Connect and lock plug connections of door wiring harness (1) on rear module carrier (2).
- Move the power window upwards until the fixed side window glass correctly engages in the holder.
- Remove adhesive tape.

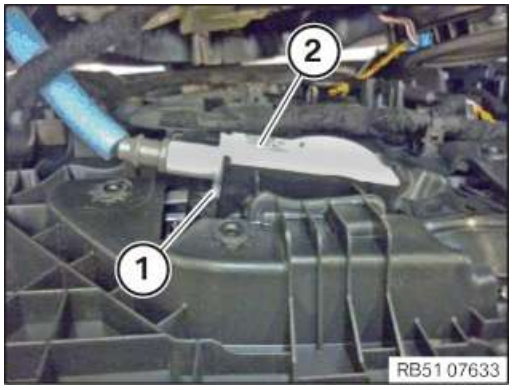
7 – Installing rear door trim panel



- Renew the clips (1).

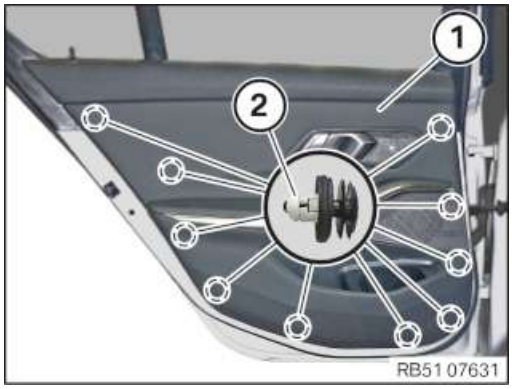
  Parts: Clips

  The clips (1) **must not be engaged. The disengaged state is shown.**

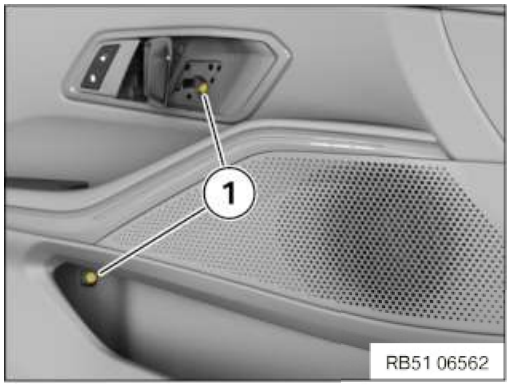


- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door handle (2) and clip in to the latch mechanism (1).
- Connect existing connectors and lock.

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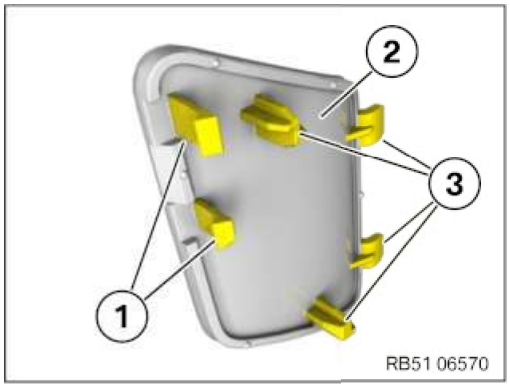
- Feed door trim panel from the top into the inner window recess finisher strip.
- Carefully clip in the door trim panel onto the clips (1).



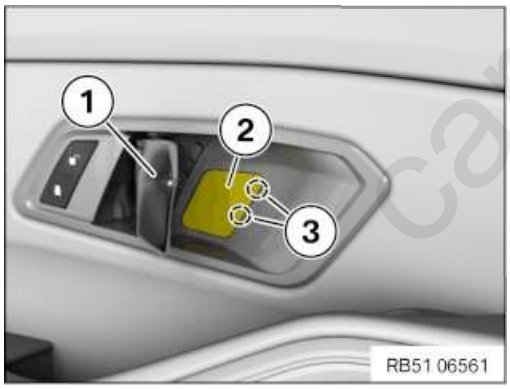
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

8 – Install weather strip on the rear door

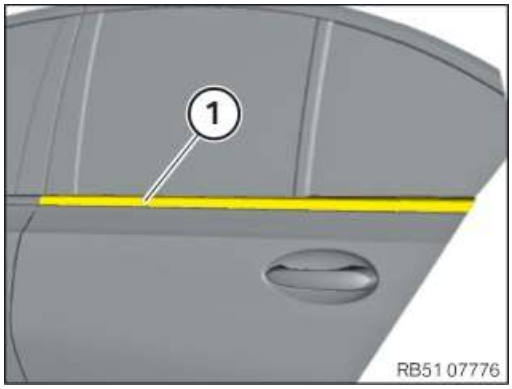
RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.

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- Coat the weather strip (1) with a suitable lubricant prior to installation.
- Install the weather strip (1) and align it to the door edges .
- Press down the window recess finisher strip (1) across its entire length.

Additional Information

Overview of Tightening Torques

Module carrier to rear door — Used in step 6

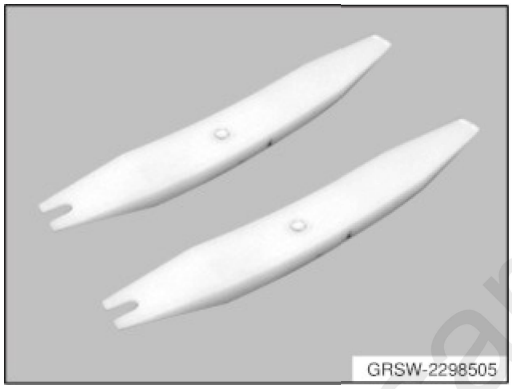
Torx socket M5x12		Tightening torque	8 Nm

Door trim panel to door — Used in step 7

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

2 298 505 Wedge



Common — Used in step 1

Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

0 496 569 (00 9 325) Wedge



Common — Used in step 23

Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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51 22 233 Removing and installing/replacing the Bowden cable for the outside door handle at the rear left or right

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

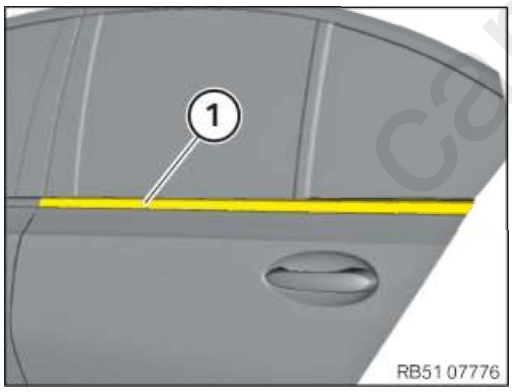
1 – Remove weather strip from the rear door

RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

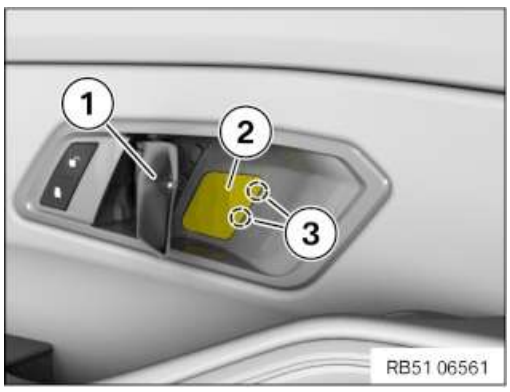
- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.



- Lever out window recess finisher strip (1) from the door carefully using the special tool 2 298 505 starting from the rear to the top.

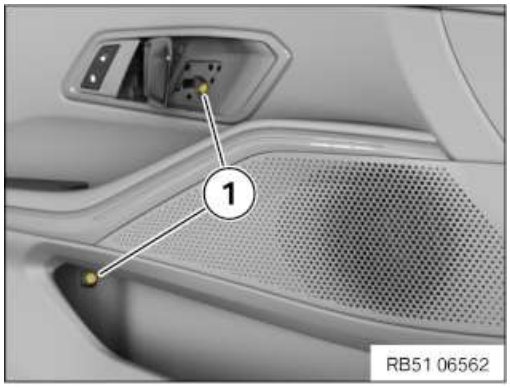
  The window recess finisher strip might get deformed and must be renewed.

2 – Remove rear door trim

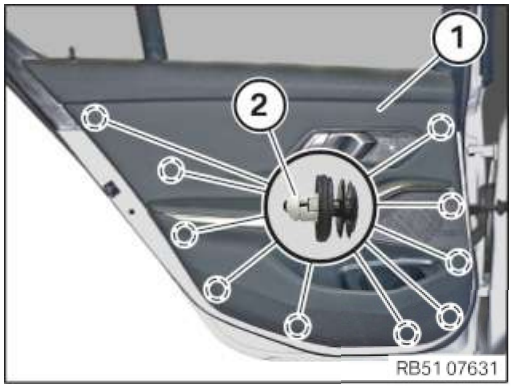


- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable tool.
- Remove trim (2).

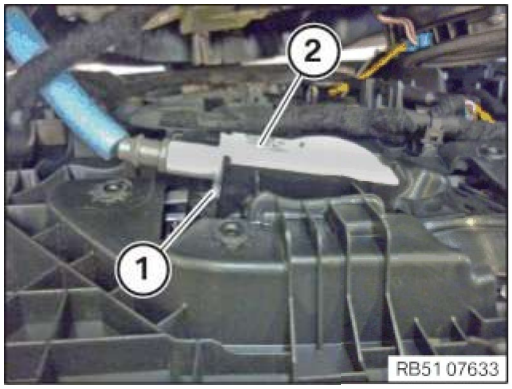
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- Loosen screws (1).



- Unclip the door trim panel (1) with the special tool 0 496 569 (00 9 325) at the clips (2).
- Guide the door trim panel (1) upwards out of the weather strip.



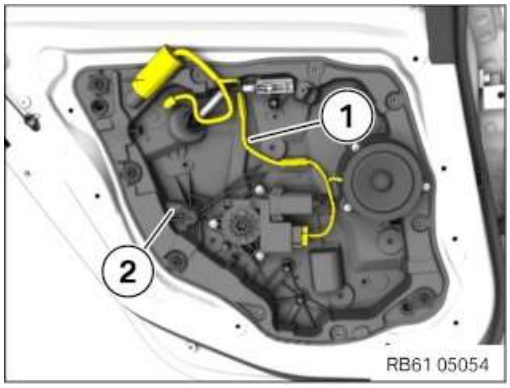
- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock available plug connections and disconnect.
- Remove door trim panel.

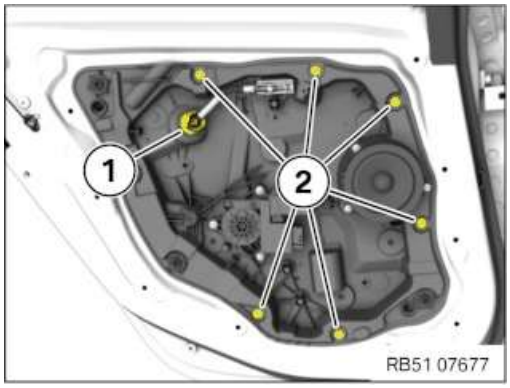
3 – Removing the rear module carrier



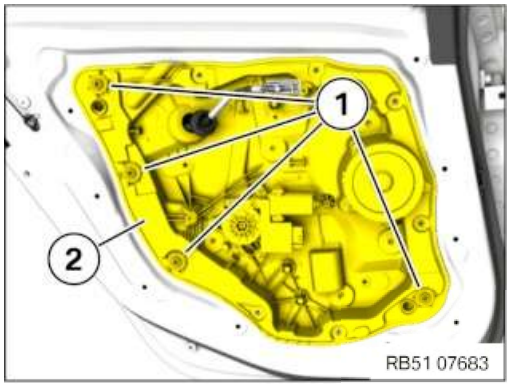
- Secure the fixed side window glass to the door frame when it is closed using adhesive tape.
- Spread apart the bracket from the outside on the fixed side window glass as far as possible using special tool 0 496 569 (00 9 325) until the fixed side window glass can be detached.
- Move the power window down approximately 10 cm.



- Release the latch mechanisms of the door wiring harness (1) from the rear module carrier (2).
- Unlock and disconnect plug connections of door wiring harness (1) on rear module carrier (2).



- Release the rubber grommet of the Bowden cable for the inner door opener (1).
- Loosen screws (2).



- Open locks (1) and remove rear module carrier (2).

4 – Remove the rear outside door handle

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

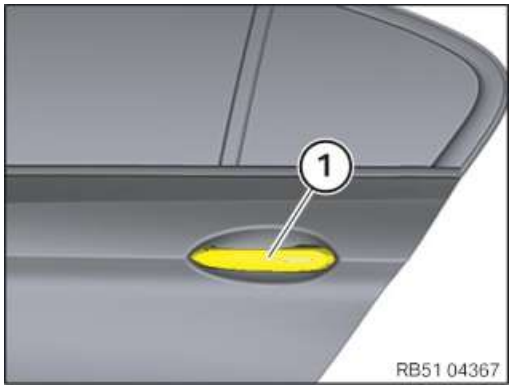


- Remove the seal plug (1).



- Release the clamping bolt (1) from the outside door handle support with the special tool 2 450 364.

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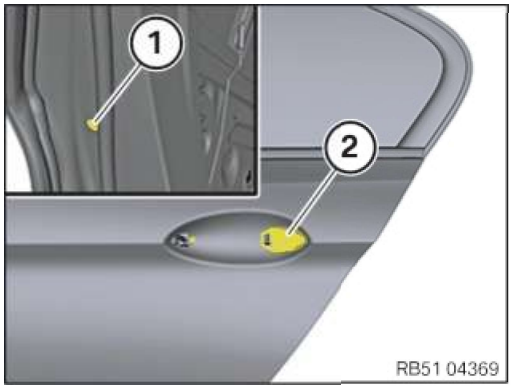


- Pull the rear outside door handle (1) out and feed it out in the rear.
- Pivot the outside door handle (1) further towards the outside and in this process, remove it at the front.
- Unlock plug connection and disconnect.
- Remove the outside door handle (1).

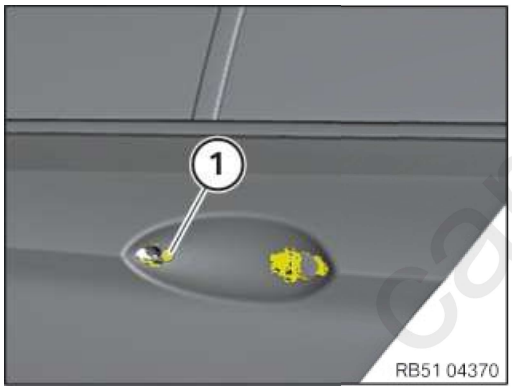
5 – Remove the rear outer door handle support

NOTICE

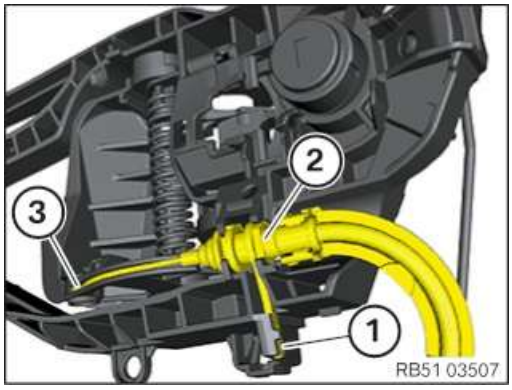
Description is for left component only. Procedure on the right side is identical.



- Loosen screw (1).
- Remove the cover (2).



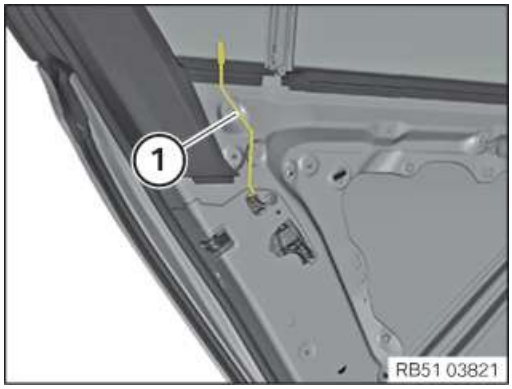
- Loosen screw (1).



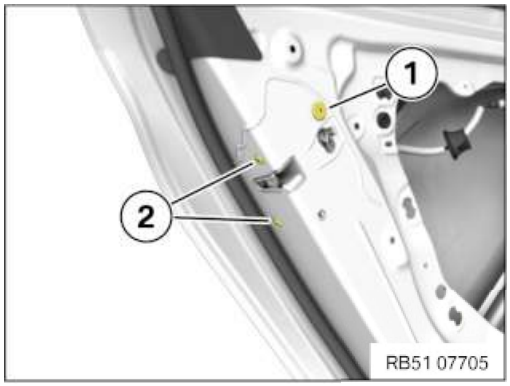
- Unclip wiring harness .
- Feed the outside door handle support out of the door.
- Lift the tab (1) over the latch mechanism and twist it upwards.
- Detach the Bowden cable (2).
- Detach the Bowden cable nipple (3).

6 – Remove rear door lock.

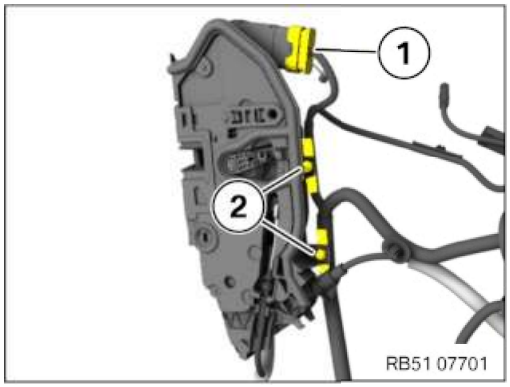
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- Unclip the operating rod (1).



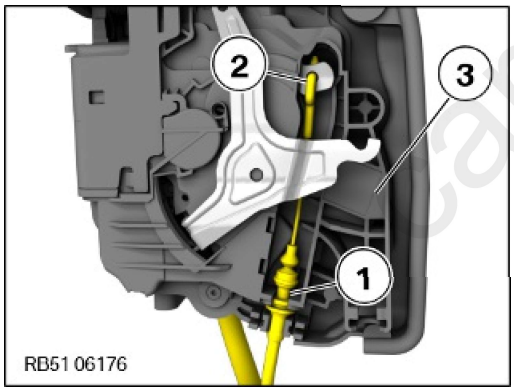
- Loosen screws (1) and (2).
- Guide the door lock a little way out.



NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

- Unlock and disconnect the plug connection (1) on the door lock.
- Remove clips (2) and remove the wiring harness from the door lock.
- Feed the door lock out of the door.



- Unclip Bowden cable (1) from door lock (3).
- Detach Bowden cable nipple (2) from door lock (3).

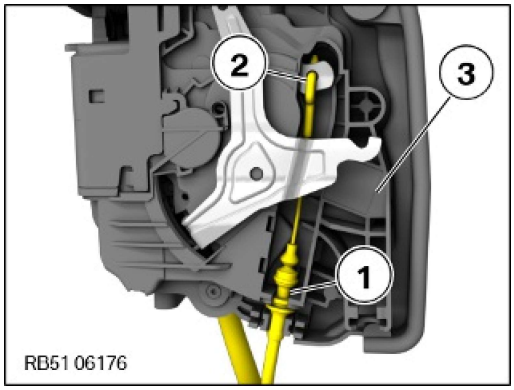
MAIN WORK

7 – Replacing Bowden cable for outside door handle

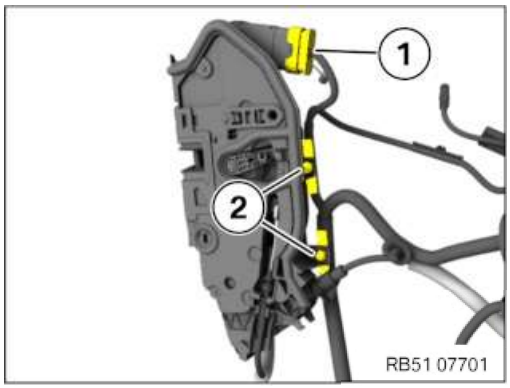
- Replace Bowden cable for outside door handle.

POSTPROCESSES

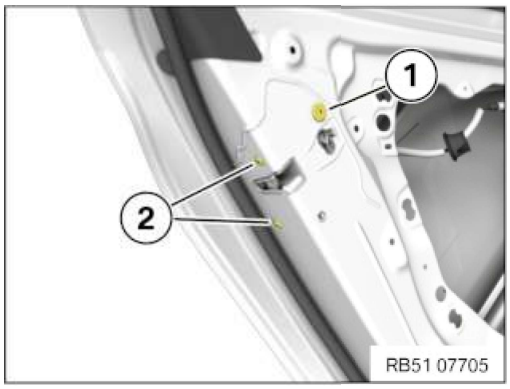
8 – Installing rear door lock



- Attach Bowden cable nipple (2) to door lock (3).
- Clip Bowden cable (1) into door lock (3).
- Guide the door lock (3) into the door.



- Connect connectors (1) and lock.
- Position wiring harness and clip in the clips (2).



- Correctly position the door lock.
- Screw in screws (1) and (2) a few turns.
- Initially tighten the screws (2).

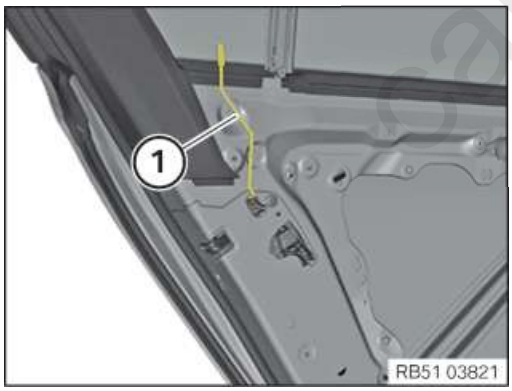
Door lock to door

Screw		Tightening torque	8,8 Nm

- Then tighten the screw (1).

Door lock to door

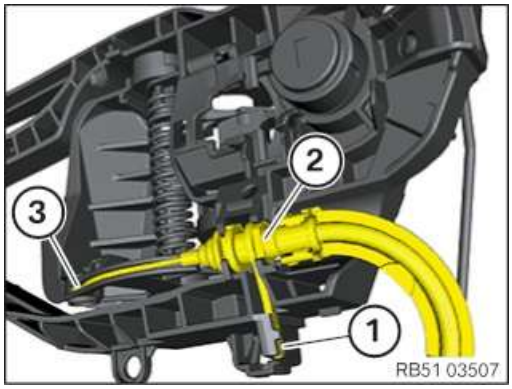
Screw		Tightening torque	8,8 Nm



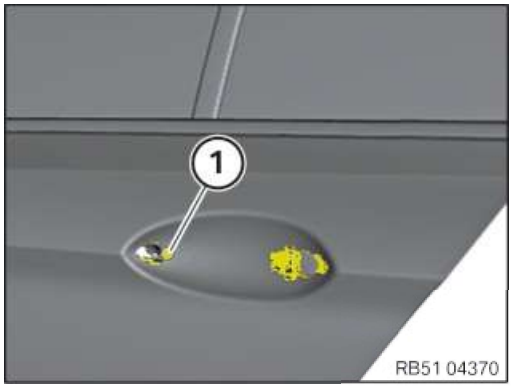
- Clip in the operating rod (1).

9 – Installing the rear outside door handle support

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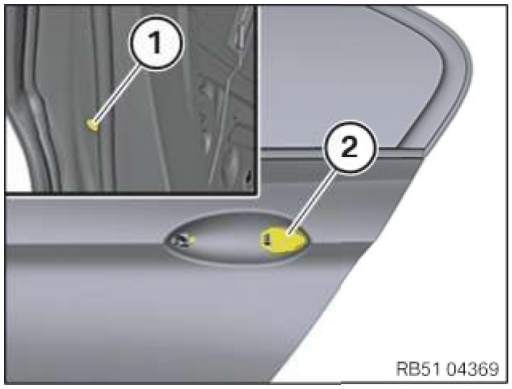
- Attach the Bowden cable nipple (3).
- Attach the Bowden cable (2).
- Twist and engage the tab (1).
- Clip in wiring harness .



- Insert the outside door handle support.
- Observe the correct installation position of the Bowden cable.
- Tighten down screw (1).

Outside door handle support to door

Screw		Tightening torque	2,6 Nm



- Install the cover (2).
- Tighten down screw (1).

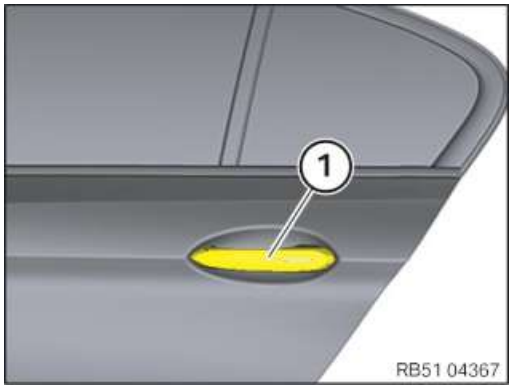
Attachment bell to outside door handle support

Screw		Tightening torque	3 Nm

10 – Install the rear outer door handle

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Install the outside door handle (1).
- Connect connectors and lock.
- Insert the front outside door handle (1).
- Insert the rear outside door handle (1).

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- Tighten the clamping bolt (1) on the outside door handle support with the special tool 2 450 364.

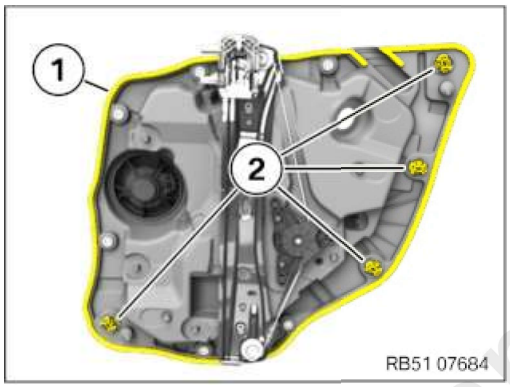
Clamping bolt for door handle

Screw		Tightening torque	2 Nm



- Install seal plug (1).

11 – Installing the rear module carrier



Check

- Check seal (1)on rear module carrier for damage.
- Check the locks (2) for damage.

Result

» The seal (1) on the rear module carrier is damaged.

Measure

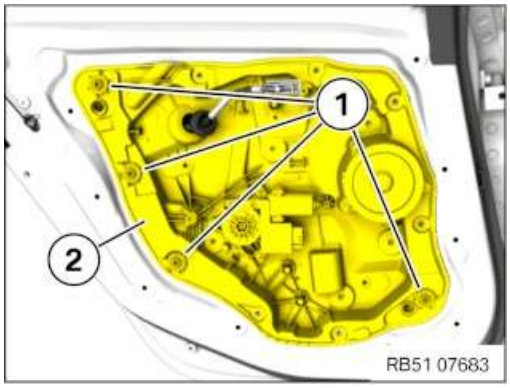
- Renew rear module carrier.

Result

» The locks (2) are damaged.

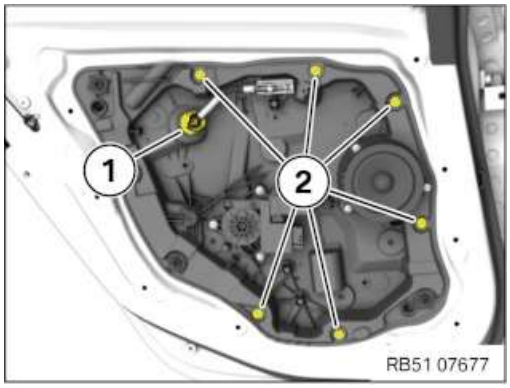
Measure

- Renew locks (2).



- Position rear module carrier (2) and close locks (1).

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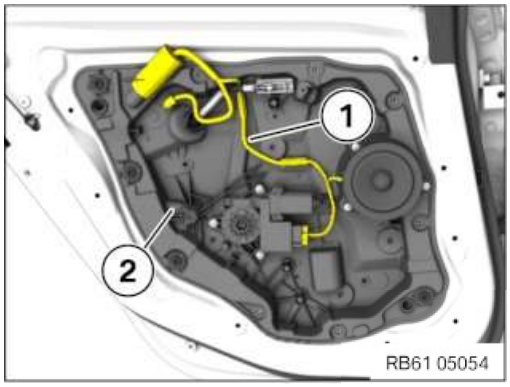


- Tighten the screws (2).

Module carrier to rear door

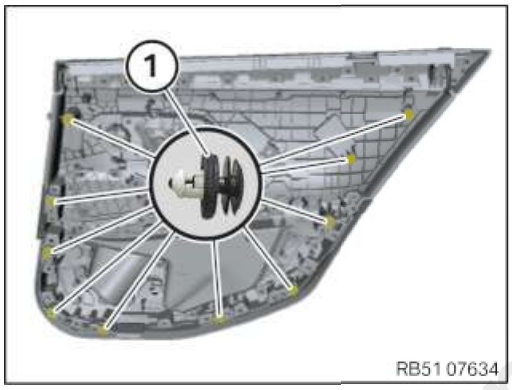
Torx socket M5x12		Tightening torque	8 Nm

- Install rubber grommet of the Bowden cable for the inner door opener (1).



- Clip the latch mechanisms of the door wiring harness (1) into the module carrier (2).
- Connect and lock plug connections of door wiring harness (1) on rear module carrier (2).
- Move the power window upwards until the fixed side window glass correctly engages in the holder.
- Remove adhesive tape.

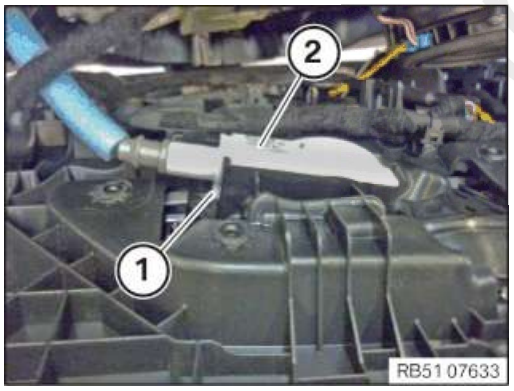
12 – Installing rear door trim panel



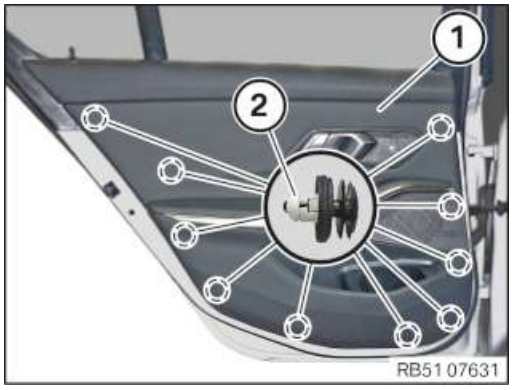
- Renew the clips (1).

  Parts: Clips

  The clips (1) **must not be engaged. The disengaged state is shown.**

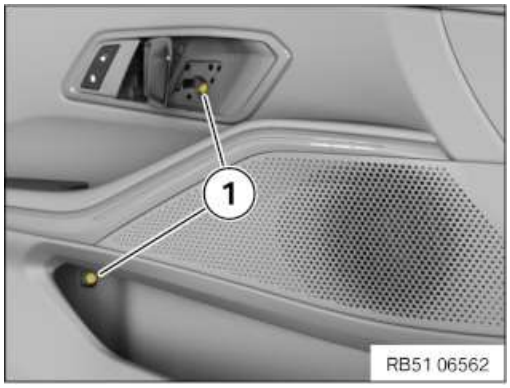


- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door handle (2) and clip in to the latch mechanism (1).
- Connect existing connectors and lock.



- Feed door trim panel from the top into the inner window recess finisher strip.
- Carefully clip in the door trim panel onto the clips (1).

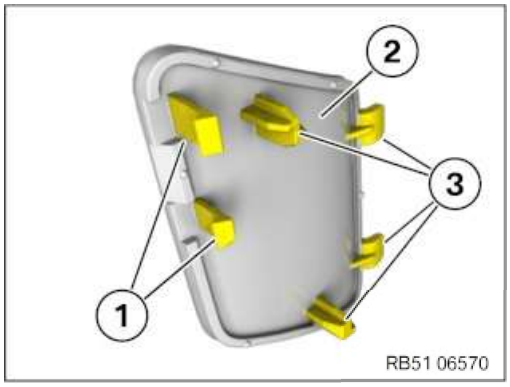
.diagn.com



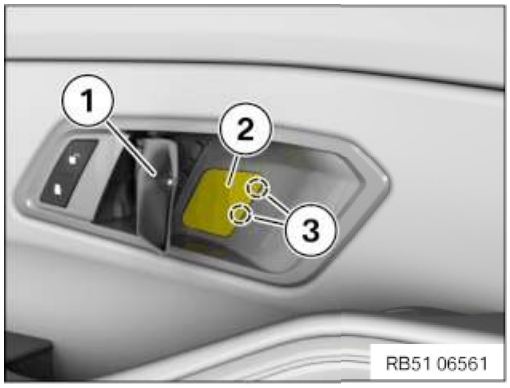
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

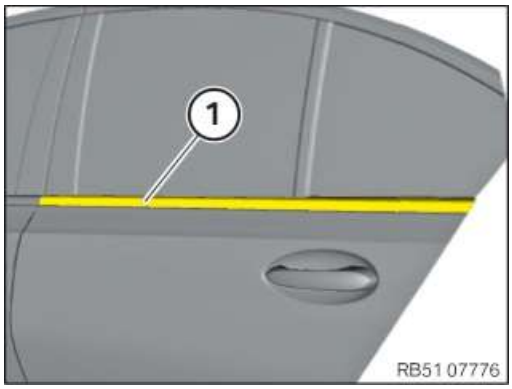
13 – Install weather strip on the rear door

RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.



- Coat the weather strip (1) with a suitable lubricant prior to installation.
- Install the weather strip (1) and align it to the door edges .
- Press down the window recess finisher strip (1) across its entire length.

Additional Information

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Overview of Tightening Torques

Door lock to door — Used in step 8

Screw		Tightening torque	8,8 Nm

Outside door handle support to door — Used in step 9

Screw		Tightening torque	2,6 Nm

Attachment bell to outside door handle support — Used in step 9

Screw		Tightening torque	3 Nm

Clamping bolt for door handle — Used in step 10

Screw		Tightening torque	2 Nm

Module carrier to rear door — Used in step 11

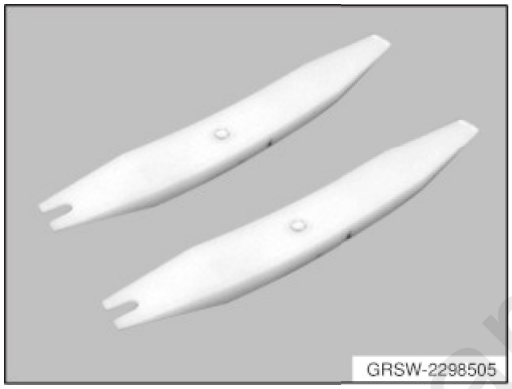
Torx socket M5x12		Tightening torque	8 Nm

Door trim panel to door — Used in step 12

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

2 298 505 Wedge



Common — Used in step 1

Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

0 496 569 (00 9 325) Wedge

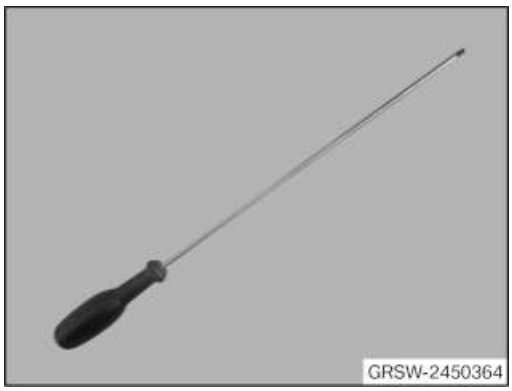


Common — Used in step 23

Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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2 450 364 Torx



Common Used in step 410

Usage	for releasing the outside door handles
Included in the tool or work	
Storage location	A5
Replaced by	
In connection with	
SI-Number	01 22 16 (440)

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51 22 280 Removing and installing/replacing the door brake on the left or right rear door

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

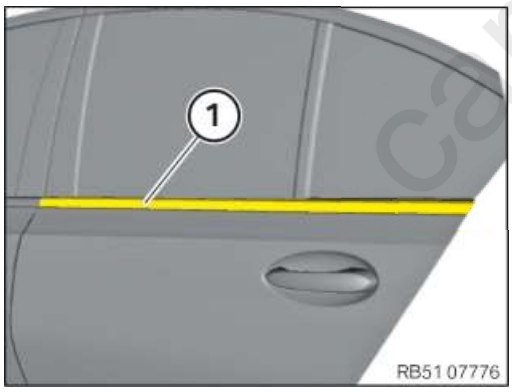
1 – Remove weather strip from the rear door

RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

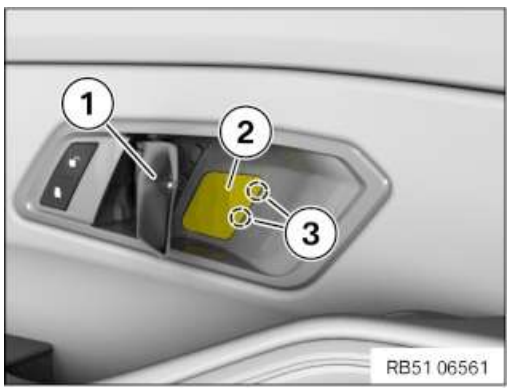
- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.



- Lever out window recess finisher strip (1) from the door carefully using the special tool 2 298 505 starting from the rear to the top.

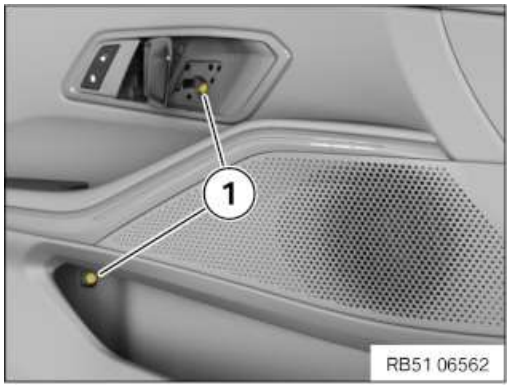
  The window recess finisher strip might get deformed and must be renewed.

2 – Remove rear door trim

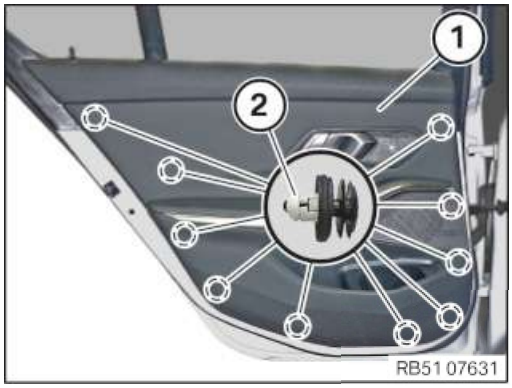


- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable tool.
- Remove trim (2).

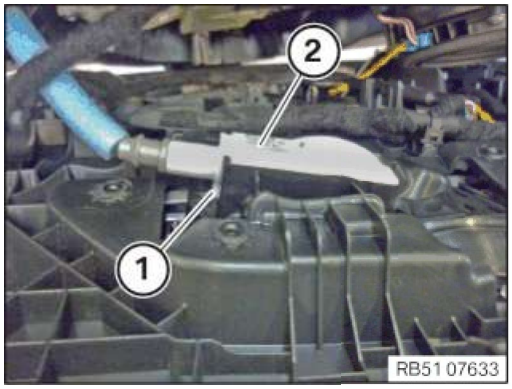
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- Loosen screws (1).



- Unclip the door trim panel (1) with the special tool 0 496 569 (00 9 325) at the clips (2).
- Guide the door trim panel (1) upwards out of the weather strip.



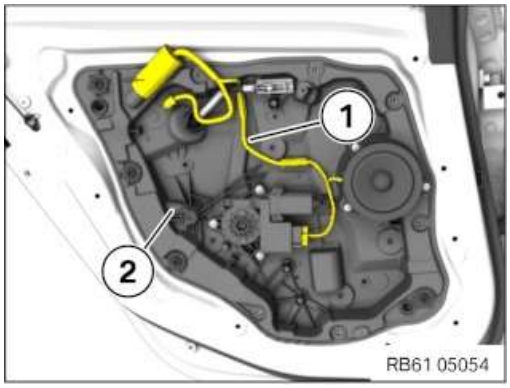
- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock available plug connections and disconnect.
- Remove door trim panel.

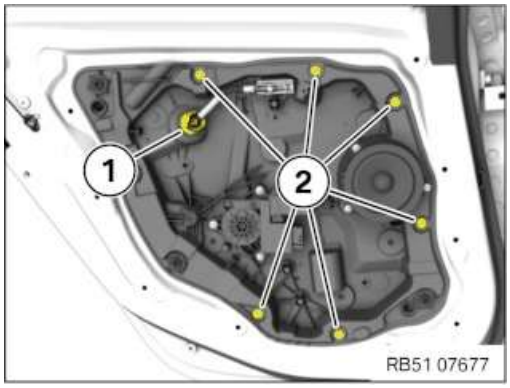
3 – Removing the rear module carrier



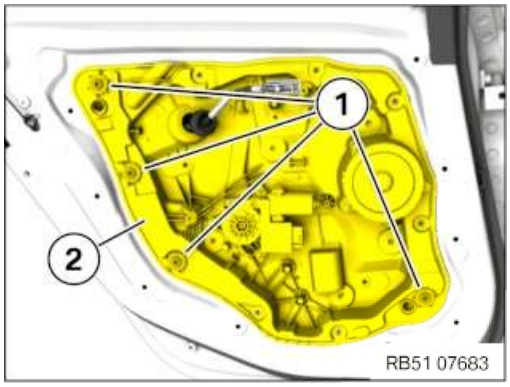
- Secure the fixed side window glass to the door frame when it is closed using adhesive tape.
- Spread apart the bracket from the outside on the fixed side window glass as far as possible using special tool 0 496 569 (00 9 325) until the fixed side window glass can be detached.
- Move the power window down approximately 10 cm.



- Release the latch mechanisms of the door wiring harness (1) from the rear module carrier (2).
- Unlock and disconnect plug connections of door wiring harness (1) on rear module carrier (2).



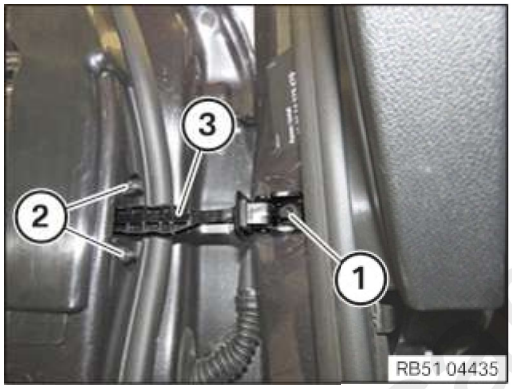
- Release the rubber grommet of the Bowden cable for the inner door opener (1).
- Loosen screws (2).



- Open locks (1) and remove rear module carrier (2).

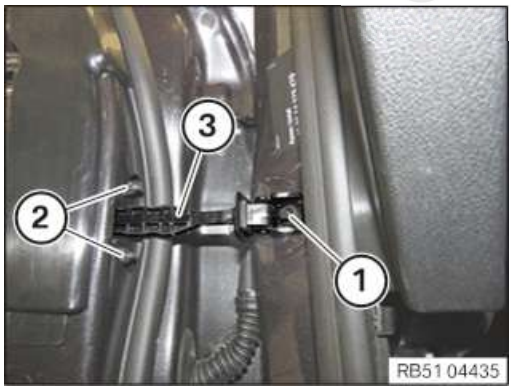
MAIN WORK

4 – Remove door stop



- Loosen screw (1).
- Loosen nuts (2).
- Slide out door brake (3).

5 – Installing the door stop



- Slide in door brake (3).
- Tighten nuts (2).
- Tighten down screw (1).

Door stop to pillar

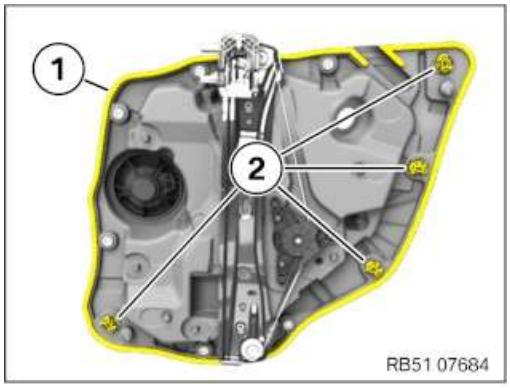
Screw		Tightening torque	28 Nm

POSTPROCESSES

6 – Installing the rear module carrier

Check

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- Check seal (1)on rear module carrier for damage.
- Check the locks (2) for damage.

Result

» The seal (1) on the rear module carrier is damaged.

Measure

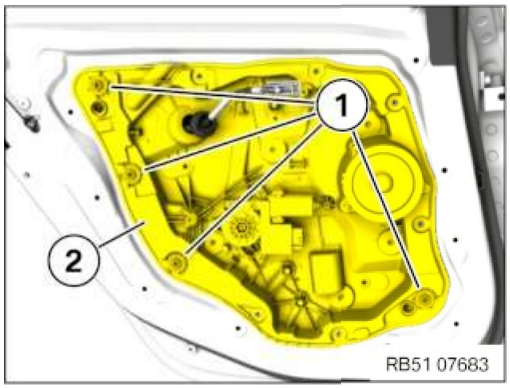
- Renew rear module carrier.

Result

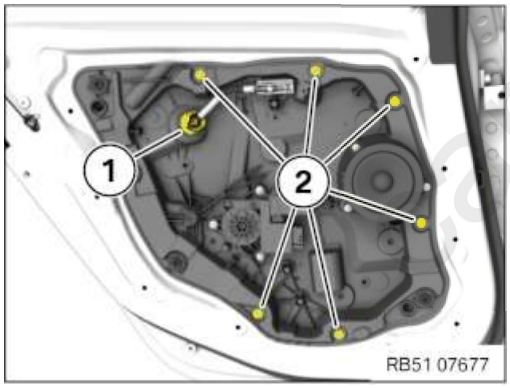
» The locks (2) are damaged.

Measure

- Renew locks (2).



- Position rear module carrier (2) and close locks (1).

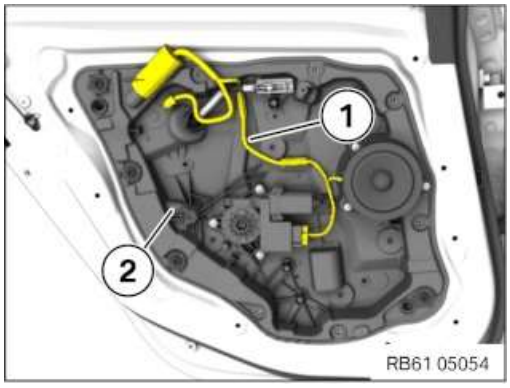


- Tighten the screws (2).

Module carrier to rear door

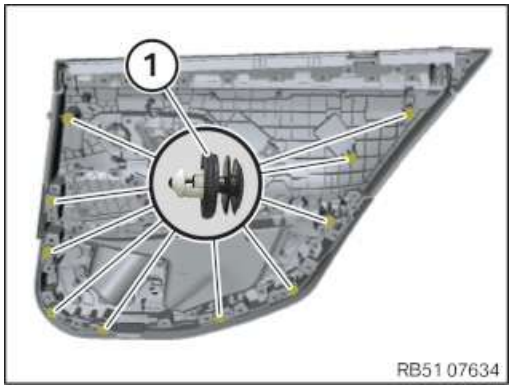
Torx socket M5x12		Tightening torque	8 Nm

- Install rubber grommet of the Bowden cable for the inner door opener (1).



- Clip the latch mechanisms of the door wiring harness (1) into the module carrier (2).
- Connect and lock plug connections of door wiring harness (1) on rear module carrier (2).
- Move the power window upwards until the fixed side window glass correctly engages in the holder.
- Remove adhesive tape.

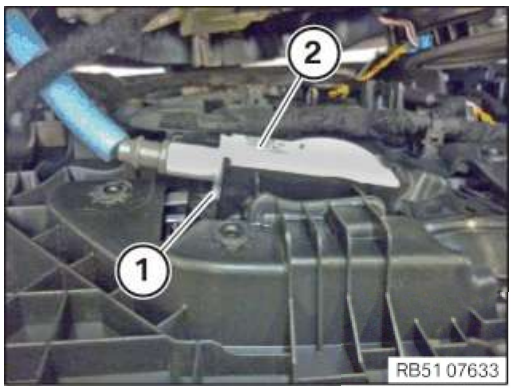
7 – Installing rear door trim panel



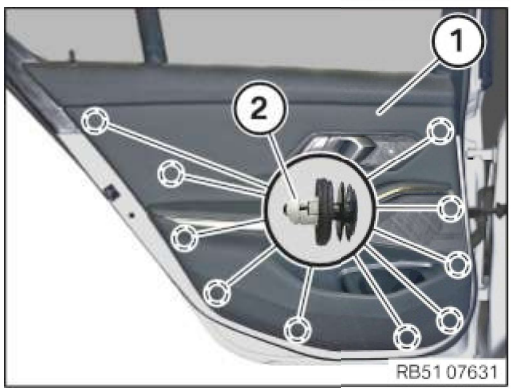
- Renew the clips (1).

  Parts: Clips

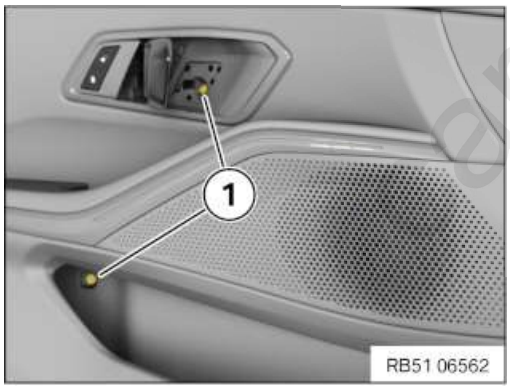
  The clips (1) **must not be engaged**. **The disengaged state is shown.**



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door handle (2) and clip in to the latch mechanism (1).
- Connect existing connectors and lock.



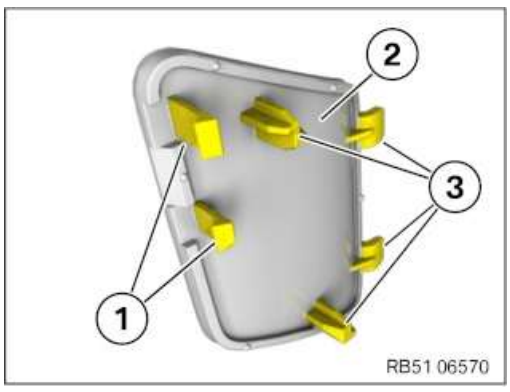
- Feed door trim panel from the top into the inner window recess finisher strip.
- Carefully clip in the door trim panel onto the clips (1).



- Tighten the screws (1).

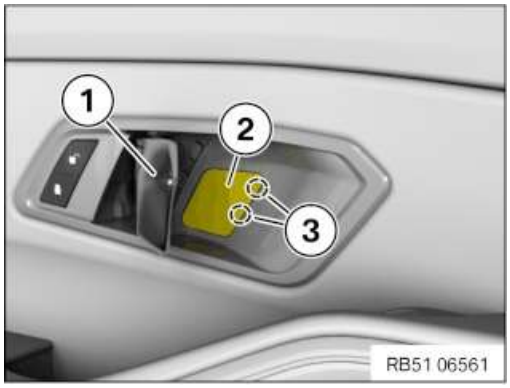
Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).

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- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

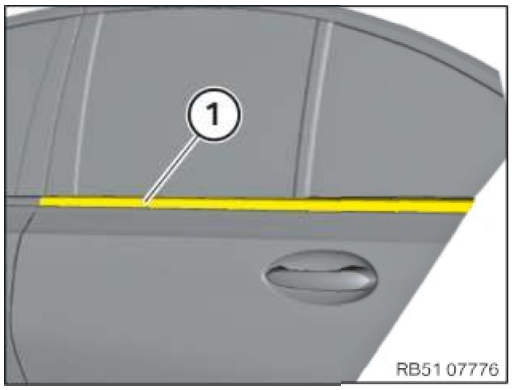
8 – Install weather strip on the rear door

RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.



- Coat the weather strip (1) with a suitable lubricant prior to installation.
- Install the weather strip (1) and align it to the door edges .
- Press down the window recess finisher strip (1) across its entire length.

Additional Information

Overview of Tightening Torques

Door stop to pillar — Used in step 5

Screw		Tightening torque	28 Nm

Module carrier to rear door — Used in step 6

Torx socket M5x12		Tightening torque	8 Nm

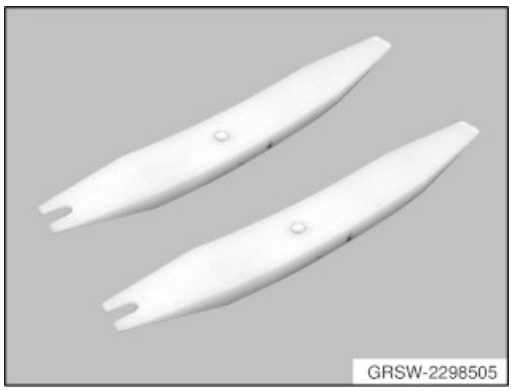
Door trim panel to door — Used in step 7

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

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2 298 505 Wedge



Common	Used in step 1
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

0 496 569 (00 9 325) Wedge



Common	Used in step 23
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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51 22 225 Removing and installing/replacing the inner door opener on the left or right rear door

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

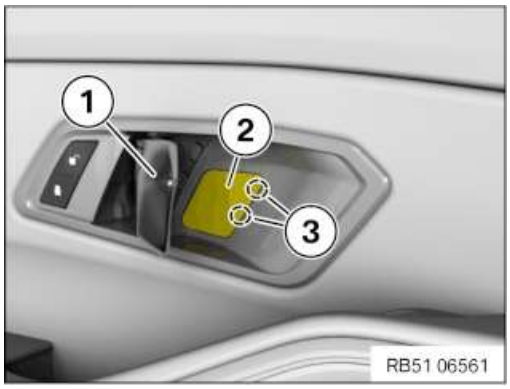
- Protect working area.
- Handle tools and components carefully.

NOTICE

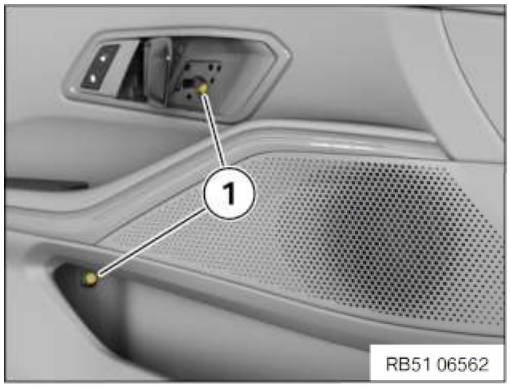
Description is for left component only. Procedure on the right side is identical.

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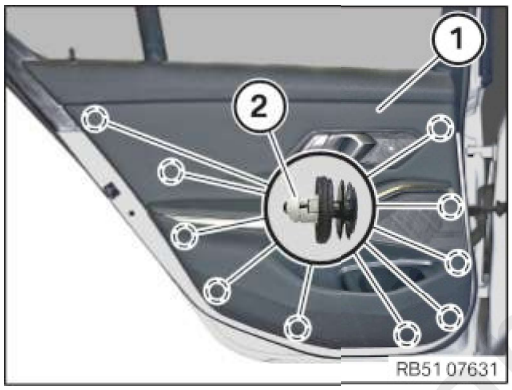
1 – Remove rear door trim



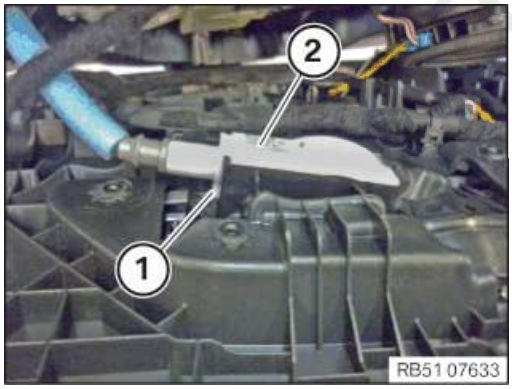
- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable tool.
- Remove trim (2).



- Loosen screws (1).



- Unclip the door trim panel (1) with the special tool 0 496 569 (00 9 325) at the clips (2).
- Guide the door trim panel (1) upwards out of the weather strip.

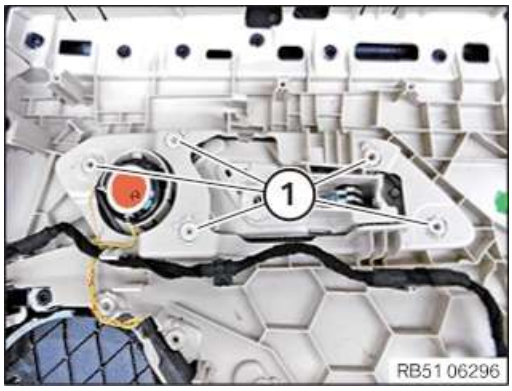


- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock available plug connections and disconnect.
- Remove door trim panel.

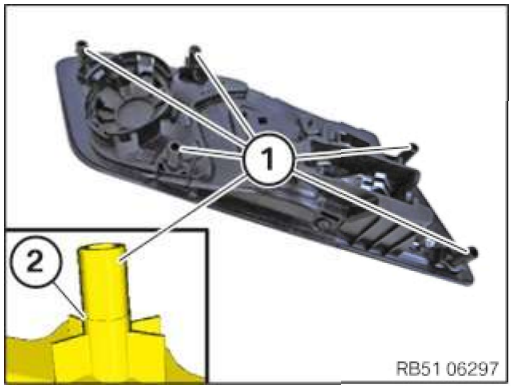
MAIN WORK

2 – Removing inside door opener

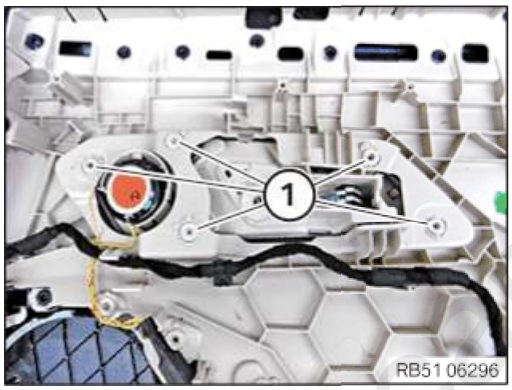


- Remove the existing LED module if necessary.
- Drill out and/or grind down the spot-welds (1).
- Guide out and remove the inner door opener from the door trim panel.

3 – Installing the inner door opener



- Saw off all welding pins (1) along the moulding (2).



- Remove welding remnants on door trim panel with a scalpel.
- Guide the door opener into the door trim panel.
- Insert the repair screws in welding pins (1) and tighten them.

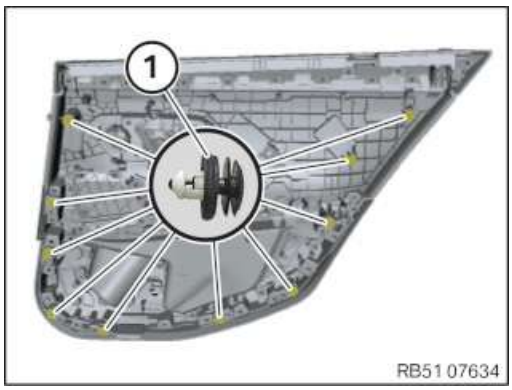
Repair screw to door trim panel

Oval-head screw M4x10		Tightening torque	2,0 Nm

- Install the existing LED module if necessary.

POSTPROCESSES

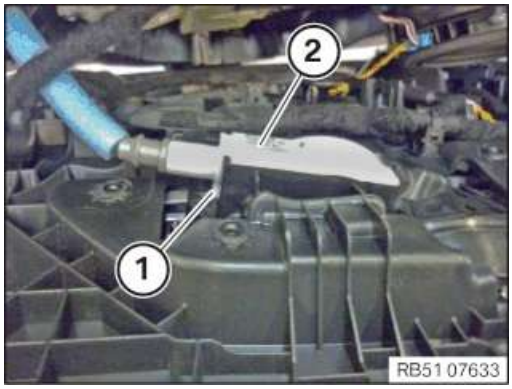
4 – Installing rear door trim panel



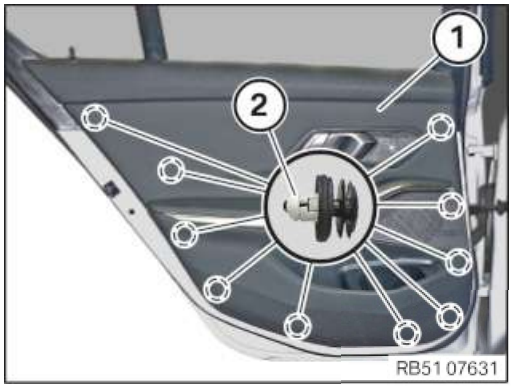
- Renew the clips (1).

  Parts: Clips

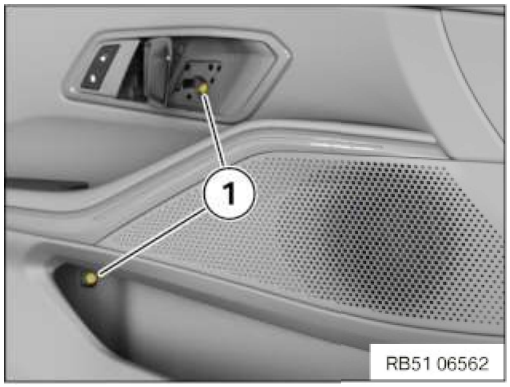
  The clips (1) **must not be engaged**. **The disengaged state is shown.**



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door handle (2) and clip in to the latch mechanism (1).
- Connect existing connectors and lock.



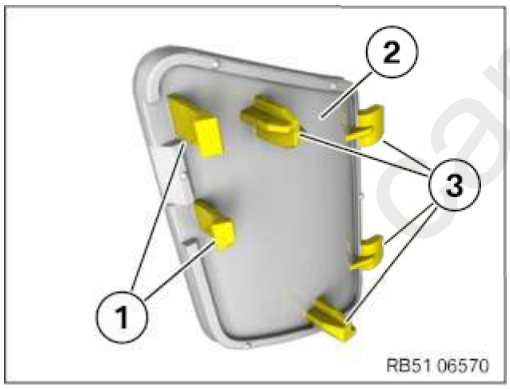
- Feed door trim panel from the top into the inner window recess finisher strip.
- Carefully clip in the door trim panel onto the clips (1).



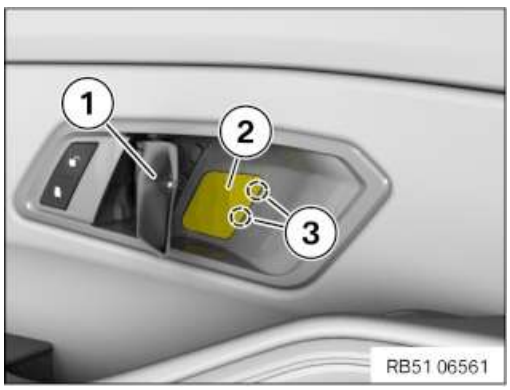
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

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Overview of Tightening Torques

Repair screw to door trim panel — Used in step 3

Oval-head screw M4x10		Tightening torque	2,0 Nm

Door trim panel to door — Used in step 4

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

0 496 569 (00 9 325) Wedge



Common — Used in step 1

Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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51 22 170 Removing and installing/replacing the outside door handle at the rear left or right

NOTICE

Description is for left component only. Procedure on the right side is identical.

1 – Remove the rear outside door handle

NOTICE

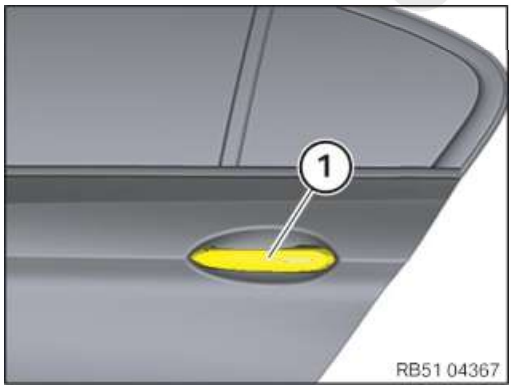
Schematic diagram is for example purposes. Some parts may differ in certain details.



- Remove the seal plug (1).



- Release the clamping bolt (1) from the outside door handle support with the special tool 2 450 364.



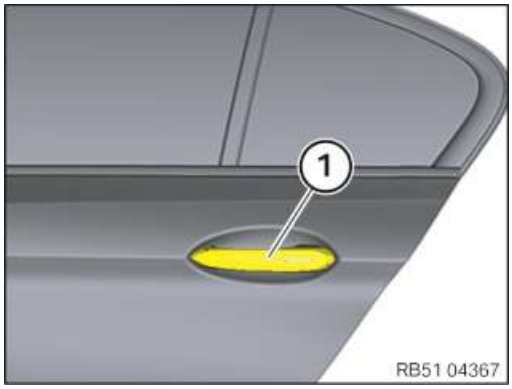
- Pull the rear outside door handle (1) out and feed it out in the rear.
- Pivot the outside door handle (1) further towards the outside and in this process, remove it at the front.
- Unlock plug connection and disconnect.
- Remove the outside door handle (1).

2 – Install the rear outer door handle

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

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- Install the outside door handle (1).
- Connect connectors and lock.
- Insert the front outside door handle (1).
- Insert the rear outside door handle (1).



- Tighten the clamping bolt (1) on the outside door handle support with the special tool 2 450 364.

Clamping bolt for door handle

Screw		Tightening torque	2 Nm



- Install seal plug (1).

Additional Information

Overview of Tightening Torques

Clamping bolt for door handle Used in step 2

Screw		Tightening torque	2 Nm

Overview of Special Tools

2 450 364 Torx



Common Used in step 12

Usage	for releasing the outside door handles
Included in the tool or work	
Storage location	A5
Replaced by	
In connection with	
SI-Number	01 22 16 (440)

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51 22 126 Removing and installing/replacing the outside door handle support in the left or right rear door

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

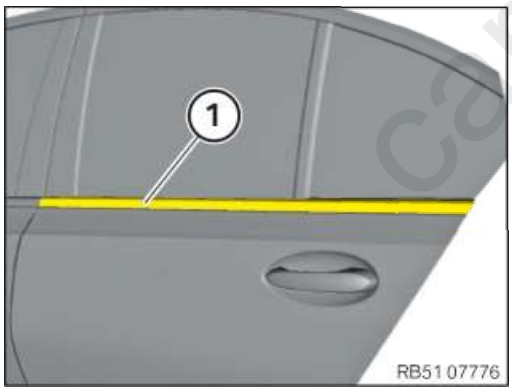
1 – Remove weather strip from the rear door

RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

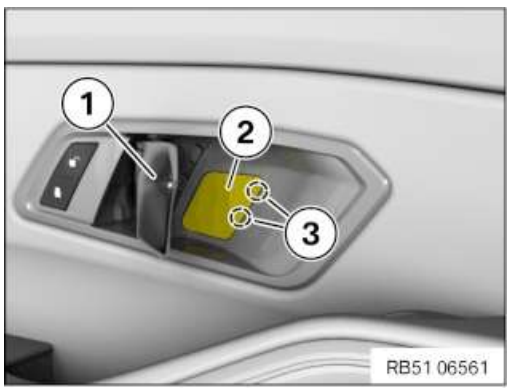
- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.



- Lever out window recess finisher strip (1) from the door carefully using the special tool 2 298 505 starting from the rear to the top.

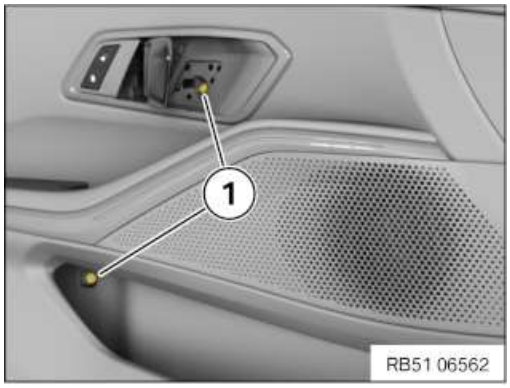
  The window recess finisher strip might get deformed and must be renewed.

2 – Remove rear door trim

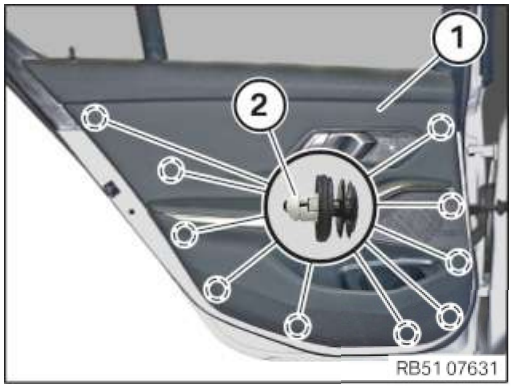


- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable tool.
- Remove trim (2).

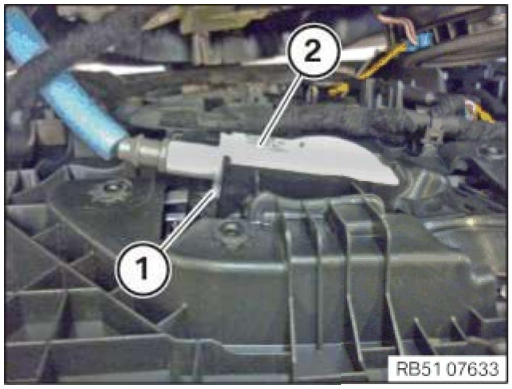
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- Loosen screws (1).



- Unclip the door trim panel (1) with the special tool 0 496 569 (00 9 325) at the clips (2).
- Guide the door trim panel (1) upwards out of the weather strip.



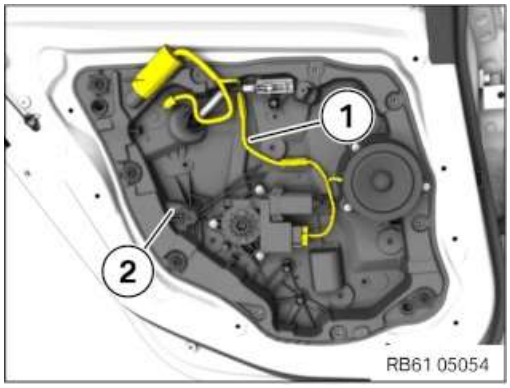
- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock available plug connections and disconnect.
- Remove door trim panel.

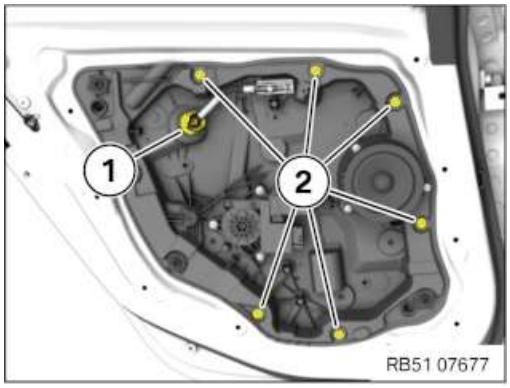
3 – Removing the rear module carrier



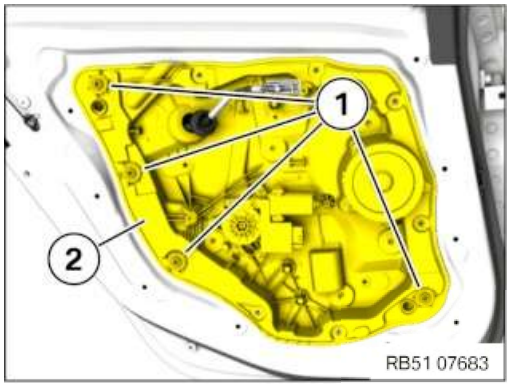
- Secure the fixed side window glass to the door frame when it is closed using adhesive tape.
- Spread apart the bracket from the outside on the fixed side window glass as far as possible using special tool 0 496 569 (00 9 325) until the fixed side window glass can be detached.
- Move the power window down approximately 10 cm.



- Release the latch mechanisms of the door wiring harness (1) from the rear module carrier (2).
- Unlock and disconnect plug connections of door wiring harness (1) on rear module carrier (2).



- Release the rubber grommet of the Bowden cable for the inner door opener (1).
- Loosen screws (2).



- Open locks (1) and remove rear module carrier (2).

4 – Remove the rear outside door handle

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

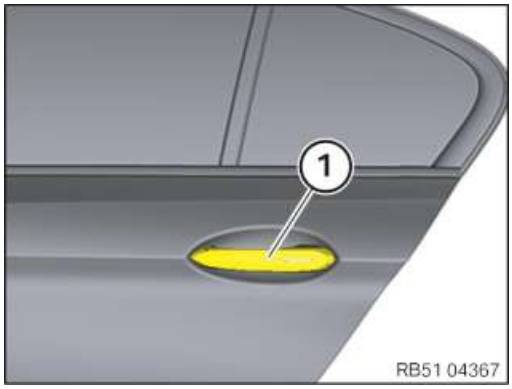


- Remove the seal plug (1).



- Release the clamping bolt (1) from the outside door handle support with the special tool 2 450 364.

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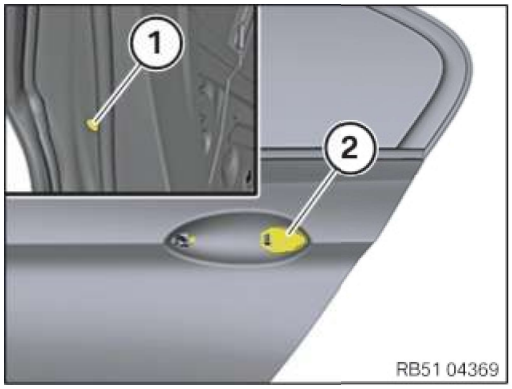
- Pull the rear outside door handle (1) out and feed it out in the rear.
- Pivot the outside door handle (1) further towards the outside and in this process, remove it at the front.
- Unlock plug connection and disconnect.
- Remove the outside door handle (1).

MAIN WORK

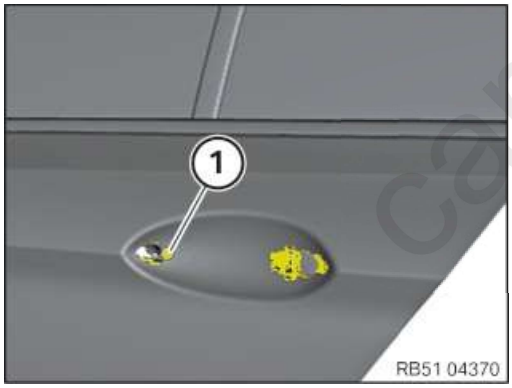
5 – Remove the rear outer door handle support

NOTICE

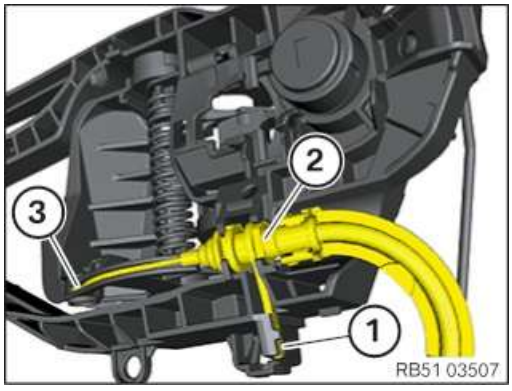
Description is for left component only. Procedure on the right side is identical.



- Loosen screw (1).
- Remove the cover (2).



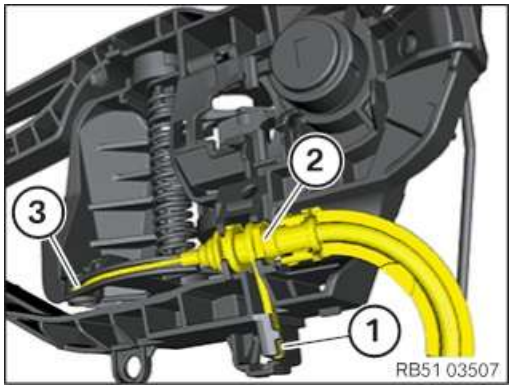
- Loosen screw (1).



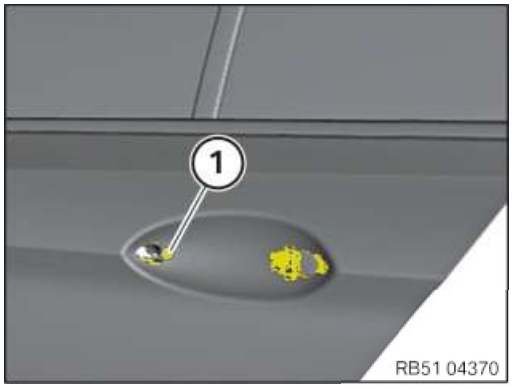
- Unclip wiring harness .
- Feed the outside door handle support out of the door.
- Lift the tab (1) over the latch mechanism and twist it upwards.
- Detach the Bowden cable (2).
- Detach the Bowden cable nipple (3).

6 – Installing the rear outside door handle support

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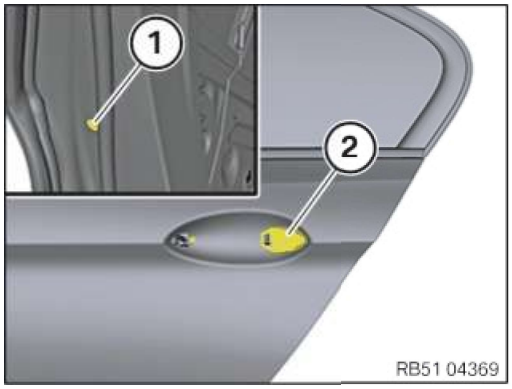
- Attach the Bowden cable nipple (3).
- Attach the Bowden cable (2).
- Twist and engage the tab (1).
- Clip in wiring harness .



- Insert the outside door handle support.
- Observe the correct installation position of the Bowden cable.
- Tighten down screw (1).

Outside door handle support to door

Screw		Tightening torque	2,6 Nm



- Install the cover (2).
- Tighten down screw (1).

Attachment bell to outside door handle support

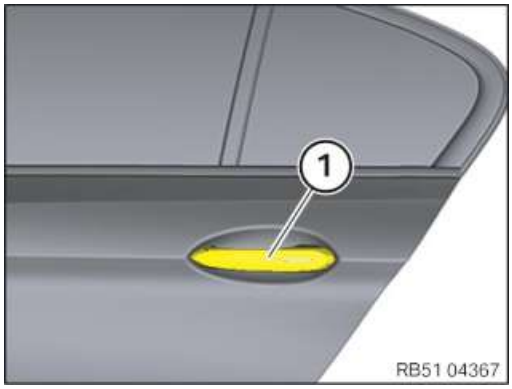
Screw		Tightening torque	3 Nm

POSTPROCESSES

7 – Install the rear outer door handle

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Install the outside door handle (1).
- Connect connectors and lock.
- Insert the front outside door handle (1).
- Insert the rear outside door handle (1).

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- Tighten the clamping bolt (1) on the outside door handle support with the special tool 2 450 364.

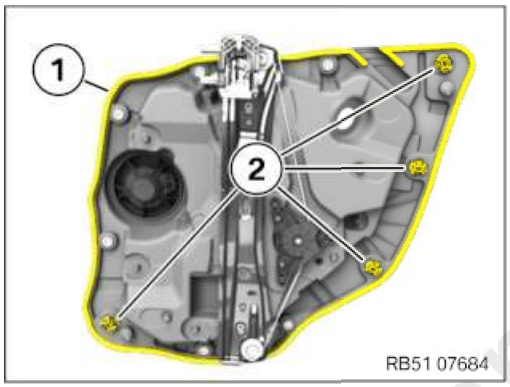
Clamping bolt for door handle

Screw		Tightening torque	2 Nm



- Install seal plug (1).

8 – Installing the rear module carrier



Check

- Check seal (1)on rear module carrier for damage.
- Check the locks (2) for damage.

Result

» The seal (1) on the rear module carrier is damaged.

Measure

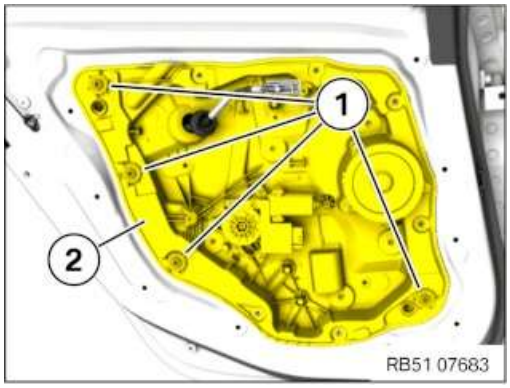
- Renew rear module carrier.

Result

» The locks (2) are damaged.

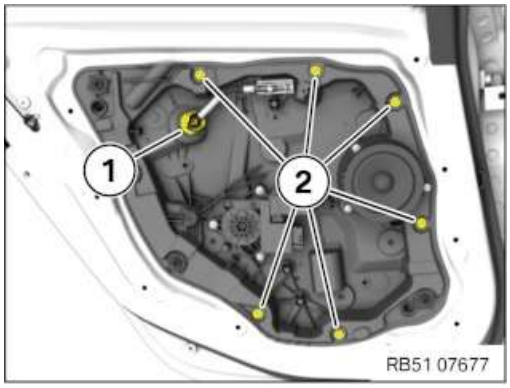
Measure

- Renew locks (2).



- Position rear module carrier (2) and close locks (1).

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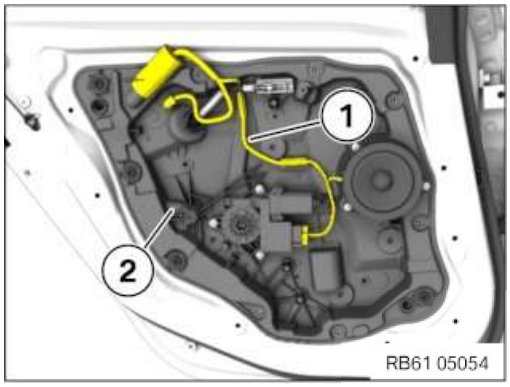


- Tighten the screws (2).

Module carrier to rear door

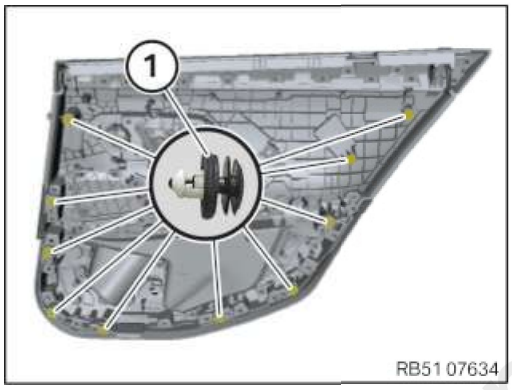
Torx socket M5x12		Tightening torque	8 Nm

- Install rubber grommet of the Bowden cable for the inner door opener (1).



- Clip the latch mechanisms of the door wiring harness (1) into the module carrier (2).
- Connect and lock plug connections of door wiring harness (1) on rear module carrier (2).
- Move the power window upwards until the fixed side window glass correctly engages in the holder.
- Remove adhesive tape.

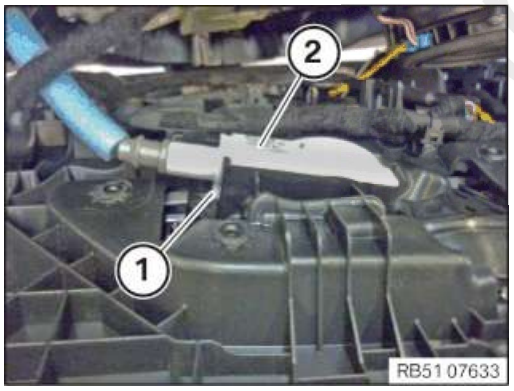
9 – Installing rear door trim panel



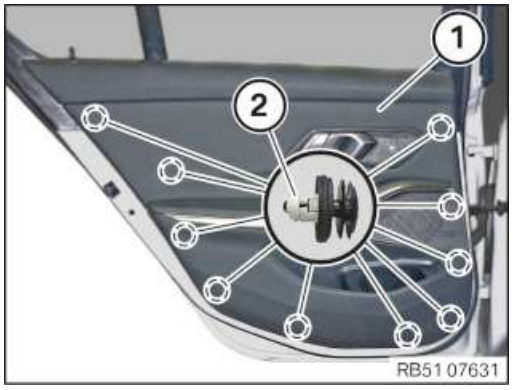
- Renew the clips (1).

  Parts: Clips

  The clips (1) **must not be engaged. The disengaged state is shown.**

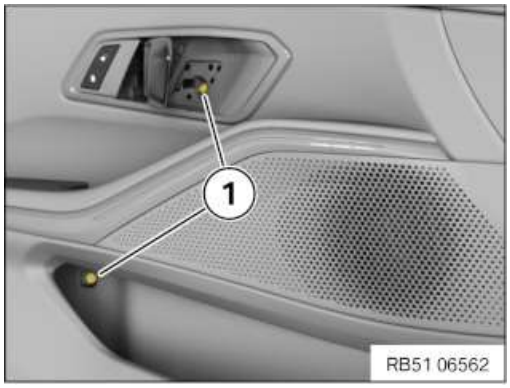


- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door handle (2) and clip in to the latch mechanism (1).
- Connect existing connectors and lock.



- Feed door trim panel from the top into the inner window recess finisher strip.
- Carefully clip in the door trim panel onto the clips (1).

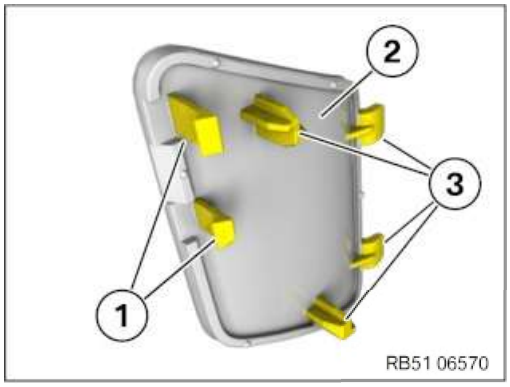
.diagn.com



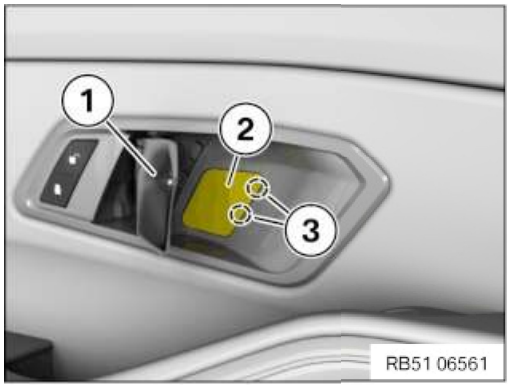
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

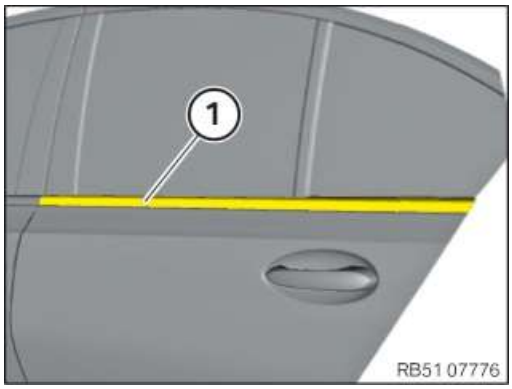
10 – Install weather strip on the rear door

RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.



- Coat the weather strip (1) with a suitable lubricant prior to installation.
- Install the weather strip (1) and align it to the door edges .
- Press down the window recess finisher strip (1) across its entire length.

Additional Information

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Overview of Tightening Torques

Outside door handle support to door — Used in step 6

Screw		Tightening torque	2,6 Nm

Attachment bell to outside door handle support — Used in step 6

Screw		Tightening torque	3 Nm

Clamping bolt for door handle — Used in step 7

Screw		Tightening torque	2 Nm

Module carrier to rear door — Used in step 8

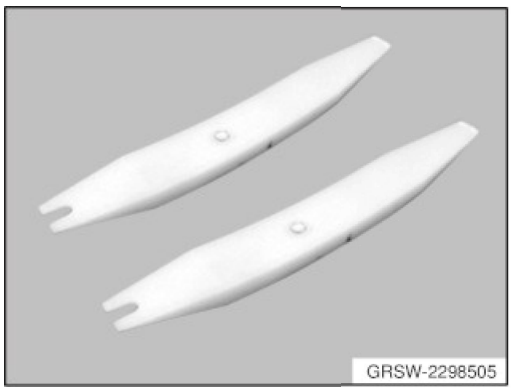
Torx socket M5x12		Tightening torque	8 Nm

Door trim panel to door — Used in step 9

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

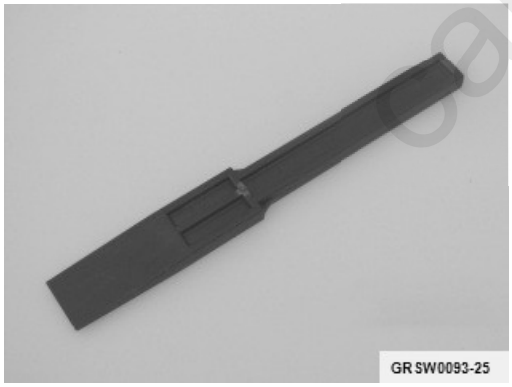
2 298 505 Wedge



Common — Used in step 1

Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

0 496 569 (00 9 325) Wedge

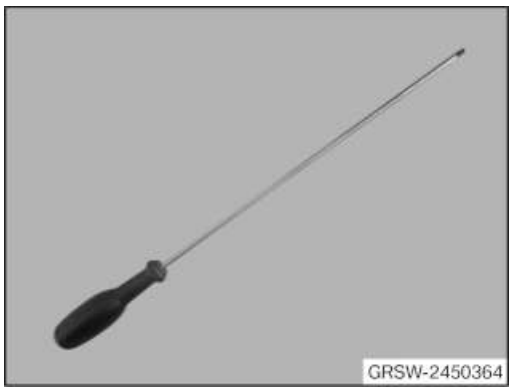


Common — Used in step 23

Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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2 450 364 Torx



Common Used in step 47

Usage	for releasing the outside door handles
Included in the tool or work	
Storage location	A5
Replaced by	
In connection with	
SI-Number	01 22 16 (440)

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51 22 330 Removing and installing/replacing the weather strip on the inside of the rear door

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

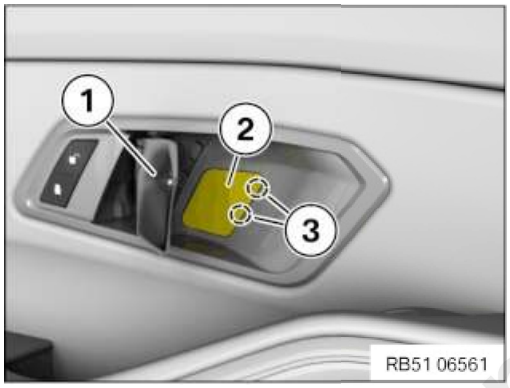
- Protect working area.
- Handle tools and components carefully.

NOTICE

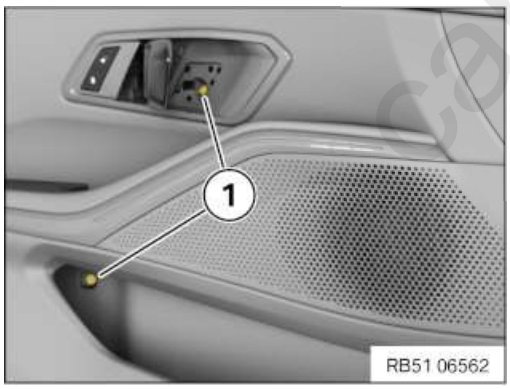
Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

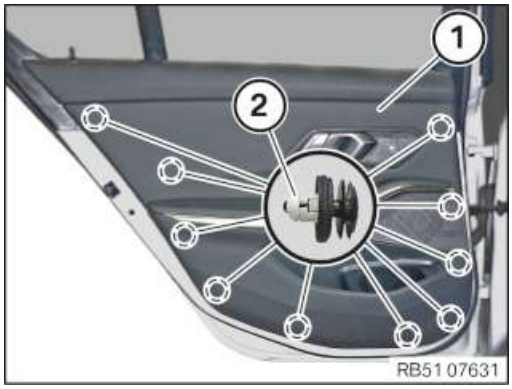
1 – Remove rear door trim



- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable tool.
- Remove trim (2).

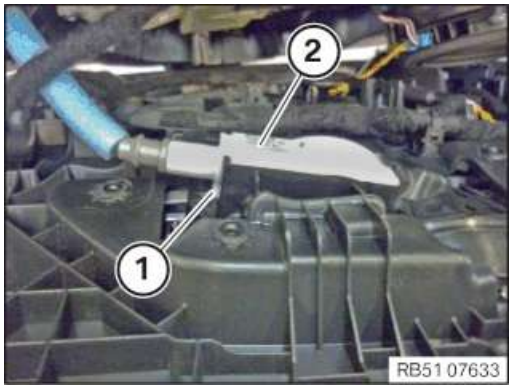


- Loosen screws (1).



- Unclip the door trim panel (1) with the special tool 0 496 569 (00 9 325) at the clips (2).
- Guide the door trim panel (1) upwards out of the weather strip.

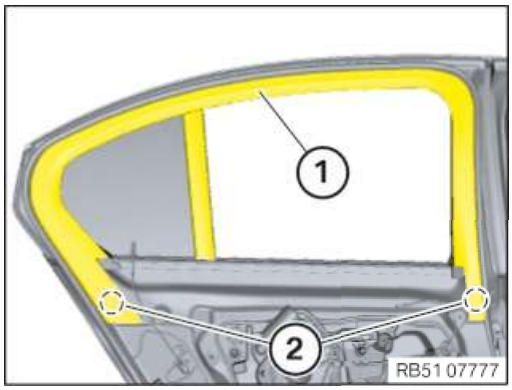
cardiagn.com



- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock available plug connections and disconnect.
- Remove door trim panel.

2 – Removing the cover on the inside of the window frame at the rear

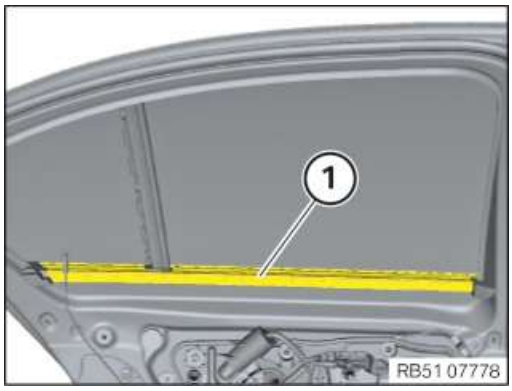


- Open side window.
- Lever out cover (1) from clips (2).
- Start at the front and remove the cover (1) from the door frame towards the bottom inside.

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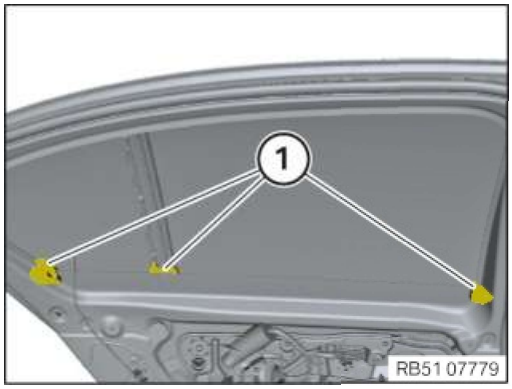
MAIN WORK

3 – Remove the weather strip from inner rear door



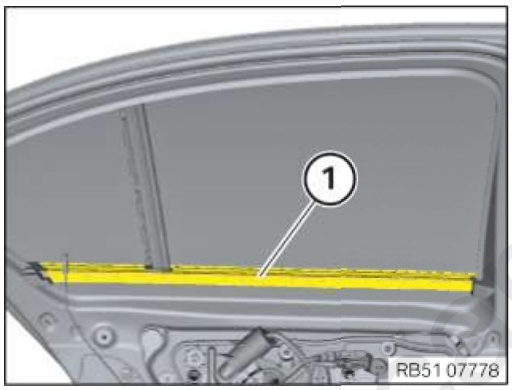
- Carefully lever out and remove the weather strip (1) with a suitable plastic wedge in an upward direction starting from the rear.

4 – Install the weather strip of the inner rear door



- Foam seals (1) must not be damaged or missing, replace if necessary.

  Make sure the foam seal (1) is fitted correctly.

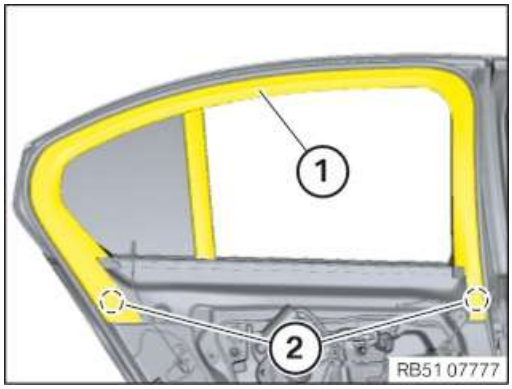


- Align the weather strip (1) and connect to door.

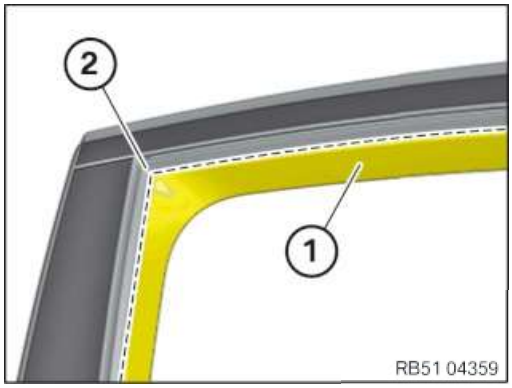
oldiagn.com

POSTPROCESSES

5 – Installing the cover on the inside of the window frame at the rear

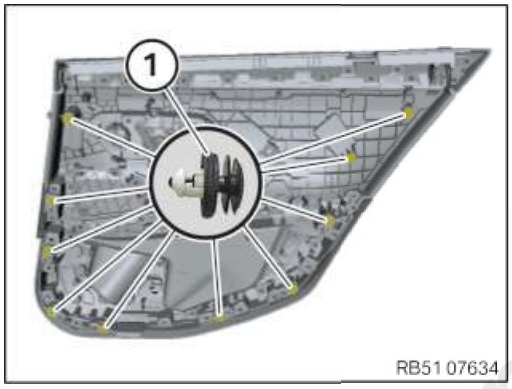


- Start from the rear and connect the cover (1) to the door frame.
- Clip in cover (1) into clips (2).



- Correctly feed in cover on window frame (1) into the gap of the rubber window seal (2).
- Make sure that the cover (1) is correctly fitted on the door seal.

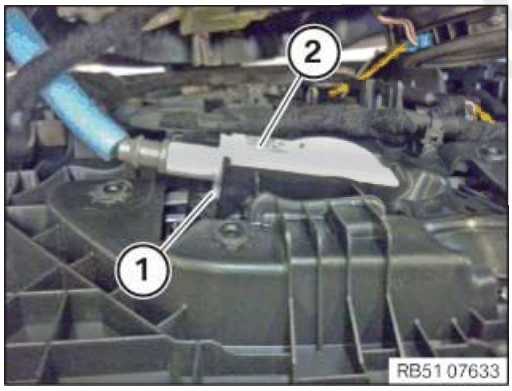
6 – Installing rear door trim panel



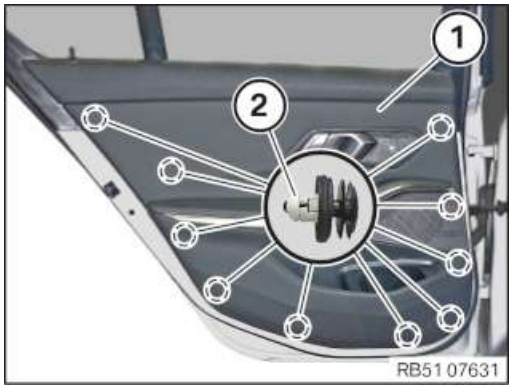
- Renew the clips (1).

  Parts: Clips

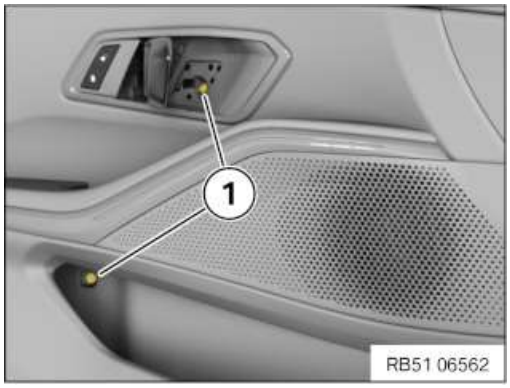
  The clips (1) **must not be engaged. The disengaged state is shown.**



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door handle (2) and clip in to the latch mechanism (1).
- Connect existing connectors and lock.



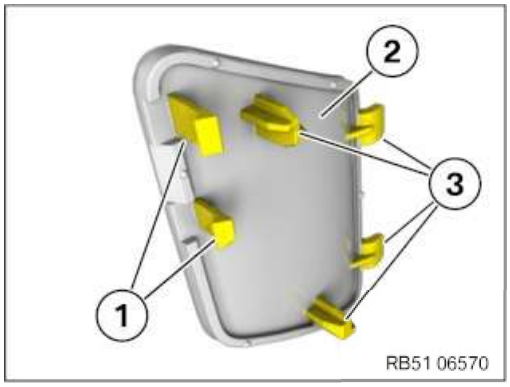
- Feed door trim panel from the top into the inner window recess finisher strip.
- Carefully clip in the door trim panel onto the clips (1).



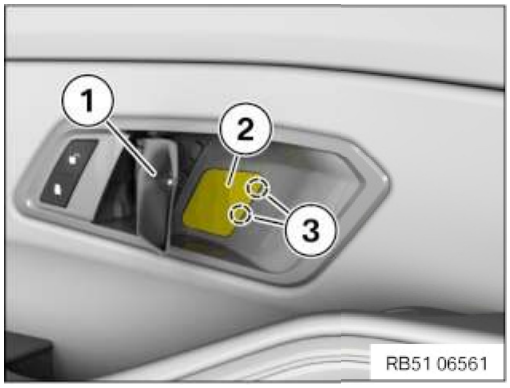
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

Door trim panel to door Used in step 6

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

0 496 569 (00 9 325) Wedge



Common Used in step 1

Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

cardiagn.com

51 22 300 Removing and installing/replacing the weather strip on the outside left or right rear door

NOTICE

Description is for left component only. Procedure on the right side is identical.

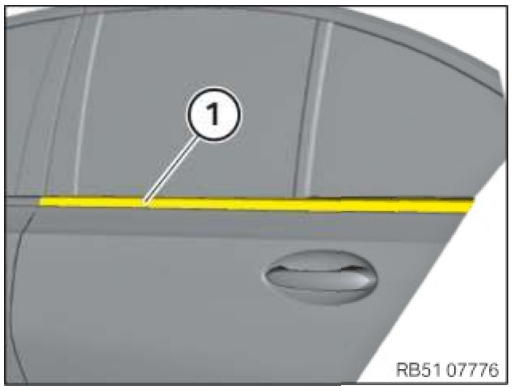
1 – Remove weather strip from the rear door

RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.



- Lever out window recess finisher strip (1) from the door carefully using the special tool 2 298 505 starting from the rear to the top.

  The window recess finisher strip might get deformed and must be renewed.

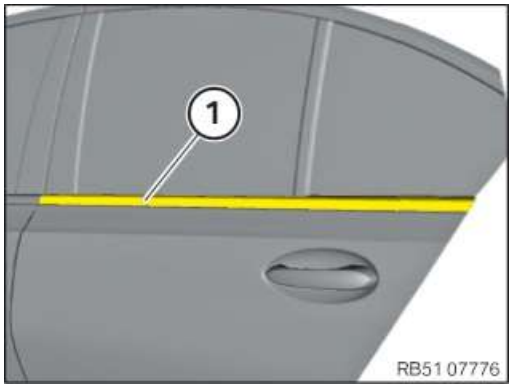
2 – Install weather strip on the rear door

RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.



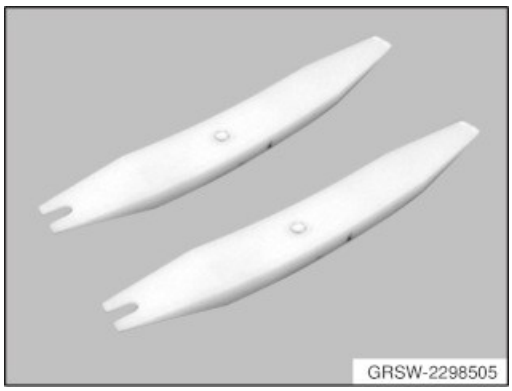
- Coat the weather strip (1) with a suitable lubricant prior to installation.
- Install the weather strip (1) and align it to the door edges .
- Press down the window recess finisher strip (1) across its entire length.

Additional Information

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Overview of Special Tools

2 298 505 Wedge

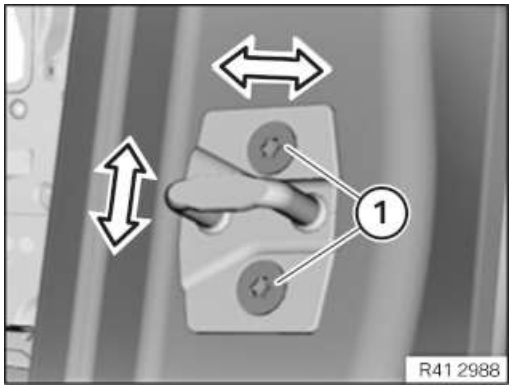


Common	Used in step 1
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

cardiagn.com

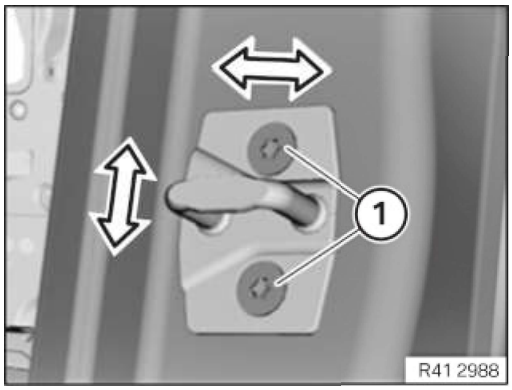
51 22 001 Replacing the rear left or right lock striker

1 – Removing lock striker



- Loosen screws (1).
- Remove lock striker.

2 – Installing lock striker

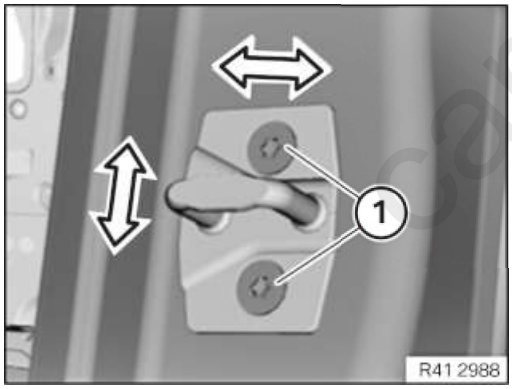


- Position lock striker.
- Tighten down screws (1) until lock striker can still just be moved.

3 – Adjust lock striker

Prerequisite

The screws on lock striker are loosened so far that the lock striker can still be moved.



TECHNICAL INFORMATION

The gap dimensions form the basis for these repair instructions and must be observed without fail.

For more information see: 41 00 ... Gap dimensions for body

- Adjust the lock striker's height such that the door lock does not bump or rub against anything.
- Move lock striker sideways in order to adjust the gap dimensions between door and rear side panel.
- Tighten the screws (1).

Lock striker

Screw		Tightening torque	21 Nm

Additional Information

Overview of Tightening Torques

Lock striker Used in step 3

Screw		Tightening torque	21 Nm

carmanuals.com

Links

Repair instructions (PRE)	Used in step
Gap dimensions, body	3
Gap dimensions, body	3
Gap dimensions, body	3
Gap dimensions, body	3
Gap dimensions, body	3
Gap dimensions, body	3
Gap dimensions, body	3
Gap dimensions, body	3
Gap dimensions, body	3

Repair instructions	Used in step
41 00 ... Gap dimensions, body	3

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51 23 131 Adjusting left or right striker on engine compartment lid

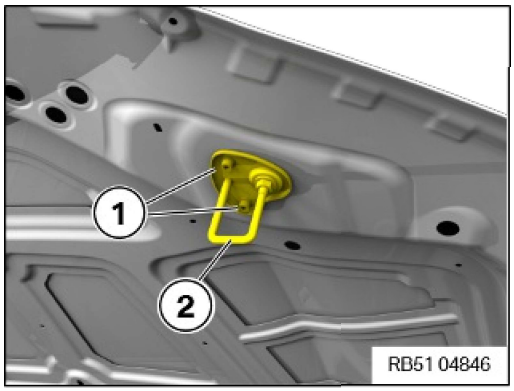
TECHNICAL INFORMATION

The gap dimensions form the basis for these repair instructions and must be observed without fail.
For more information see: 41 00 ... Gap dimensions for body

NOTICE

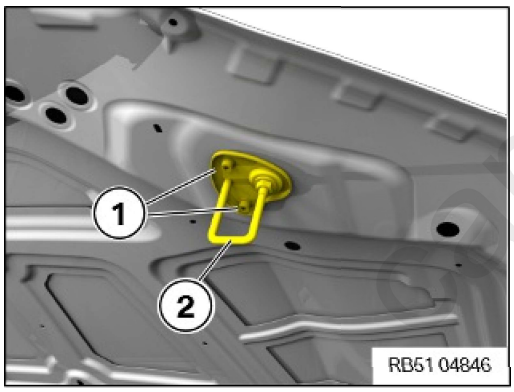
Description is for left component only. Procedure on the right side is identical.

1 – Removing the bonnet striker



- Loosen the screws (1) and remove the striker (2).

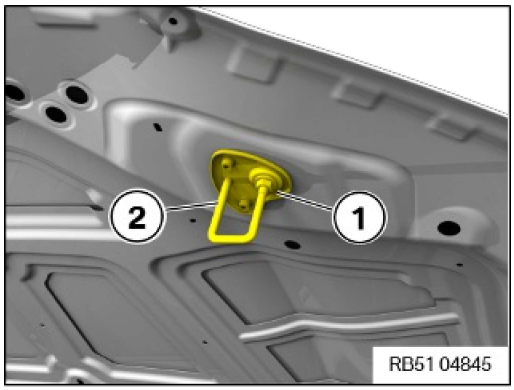
2 – Installing the bonnet striker



- Position striker (2) on bonnet and tighten with screws (1).

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3 – Adjusting the striker on the bonnet



- Adjust striker (2) by turning nut (1).

4 – Checking the gap dimension of the bonnet

TECHNICAL INFORMATION

The gap dimensions form the basis for these repair instructions and must be observed without fail.
For more information see: 41 00 ... Gap dimensions for body



Check

- Check gap dimensions between the bonnet and the side panels.

desired state

- Gap dimension does not correspond to the secondary document 41 00 ... gap dimension body.

Result

» Gap dimension does not correspond to the secondary document 41 00 ... gap dimension body.

Measure

- Adjust bonnet.

Additional Information

Overview of Tightening Torques

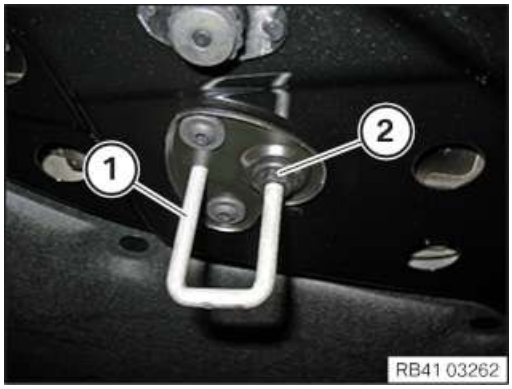
Links

Repair instructions (PRE)	Used in step
Gap dimensions, body	4

cardiagn.com

51 23 004 Adjusting the bonnet catch (adjusting hose clips)

1 – Adjusting engine compartment lid catch



NOTICE

Perform the operations on the left and right side.

- Adjust striker (1) by turning nut (2).

2 – Checking the gap dimension of the bonnet

TECHNICAL INFORMATION

The gap dimensions form the basis for these repair instructions and must be observed without fail.
For more information see: 41 00 ... Gap dimensions for body



Check

- Check gap dimensions between the bonnet and the side panels.

desired state

- Gap dimension does not correspond to the secondary document 41 00 ... gap dimension body.

Result

» Gap dimension does not correspond to the secondary document 41 00 ... gap dimension body.

Measure

- Adjust bonnet.

Additional Information

Links

Repair instructions (PRE)	Used in step
Gap dimensions, body	2
Gap dimensions, body	2
Gap dimensions, body	2
Gap dimensions, body	2

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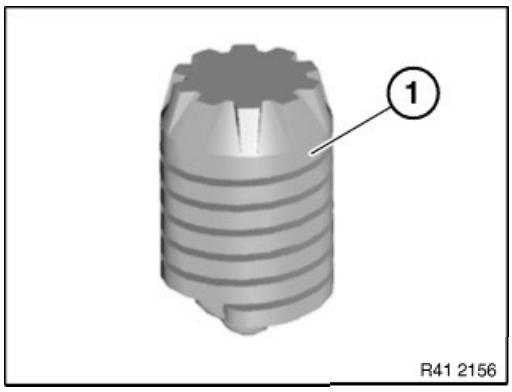
Gap dimensions, body	2
Gap dimensions, body	2
Gap dimensions, body	

Repair instructions	Used in step
41 00 ... Gap dimensions, body	2

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51 23 ... Adjusting/replacing bump stops

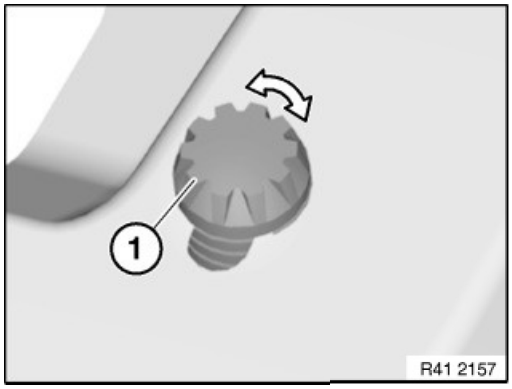
The illustrations are schematic representations and are to be applied to the relevant vehicle type.



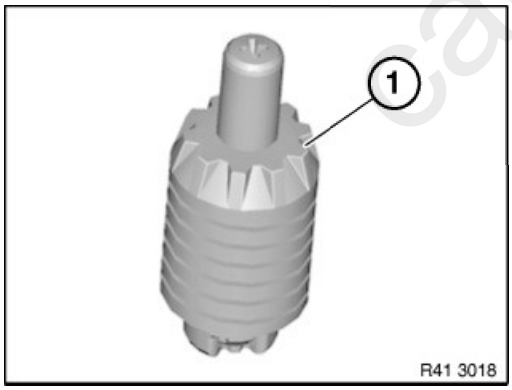
Version 1:

Following parts must not be damaged:

- (1) Bump stop



Adjust bump stop (1) to correct height by turning left or right.

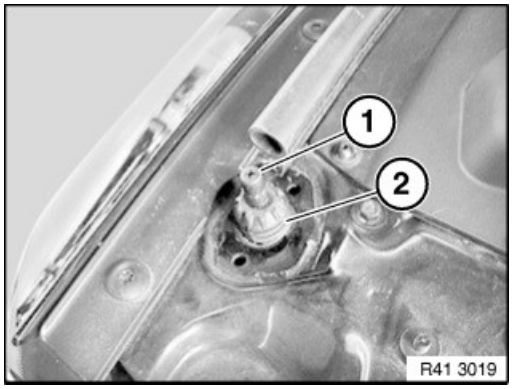


Version 2:

Replace damaged bump stops (refer to EPC):

- (1) Bump stop with ejector

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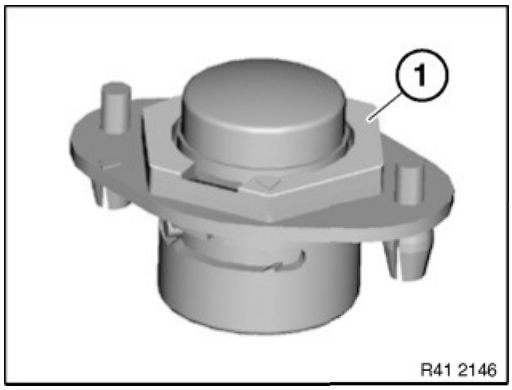


Press ejector (1) into bump stop and, in this position, twist approx. 90° counterclockwise with a Phillips screwdriver.

This locks the ejectors (1) in the bump stops.

Adjust bump stop (2) to correct height by turning left or right.

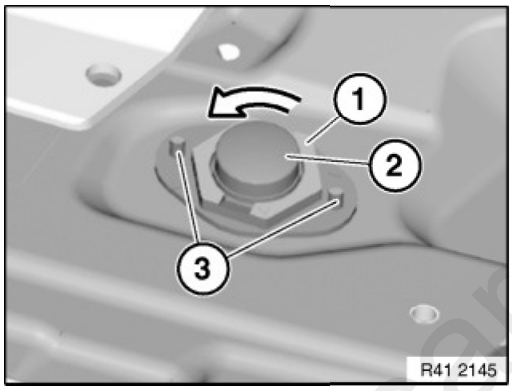
Unlock the ejector (1) again after completing adjustment.



<u>Version 3:</u>

Replace damaged bump stops (refer to EPC):

- (1) Bump stop



Turn lock (1) 45° counterclockwise.

Pull bump stop (2) upwards.

Close lid slowly until it is at the same height as the side panel.

Open lid and turn lock (1) clockwise.

Installation:

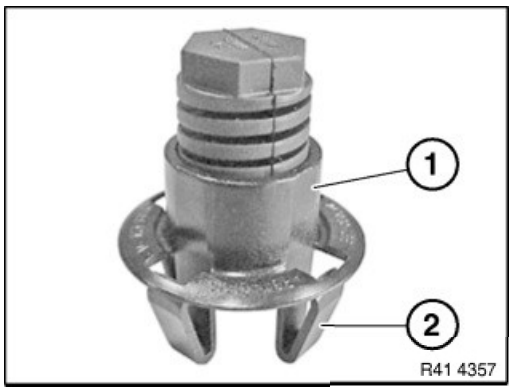
Press bump stop into panel and drive in expanding pins (3).

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51 23 ... Adjusting/replacing bump stops

The graphics are schematic representations and are to be applied to the relevant vehicle type.

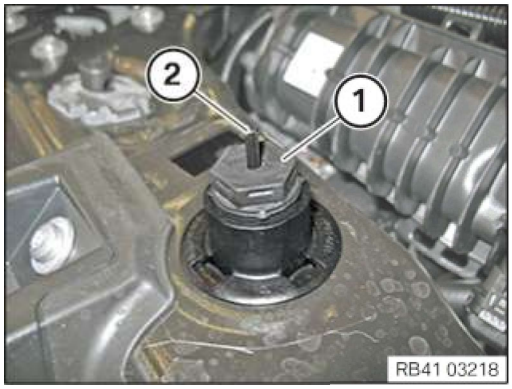
Prerequisite: Lid must be correctly adjusted.



Following parts must not be damaged:

- (1) Bump stop
- (2) Catches

Remove adjusting buffer by pressing latch mechanisms back.



Screw adjusting buffer (1) until the pin (2) can be pulled out.

Slowly pull the pin (2) out approx. 15 mm.

Slowly close engine compartment lid.

The pin (2) is thus pushed into the adjusting buffer (1).



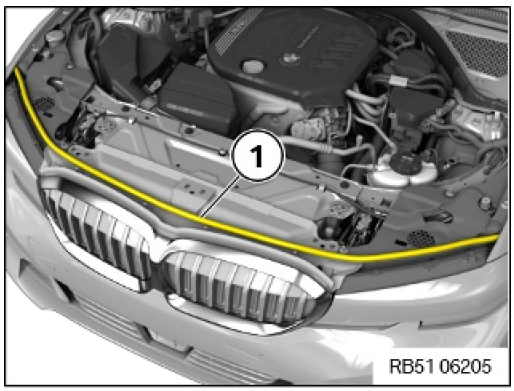
Raise engine compartment lid.

Unscrew the adjusting buffer (1) until it is flush with the upper edge of the pin (2).

51 23 211 Removing and installing/replacing Bowden cable for front bonnet locks

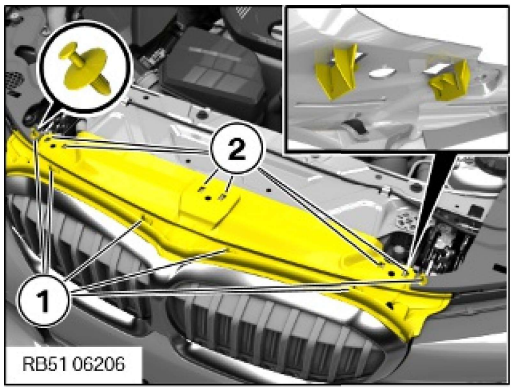
PRELIMINARY WORK

1 – Remove the seal for the bonnet in front



- Pull off front bonnet seal (1) upwards.

2 – Removing the centre engine compartment cover



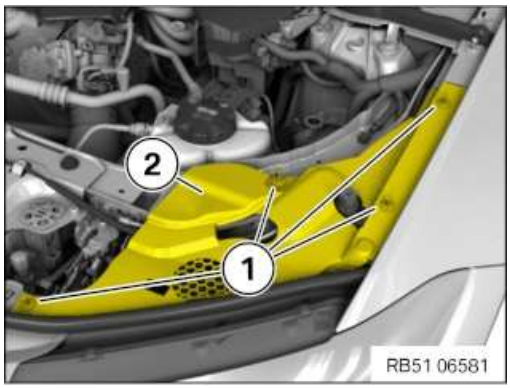
- Detach all expanding rivets (1).
- Release the cover of the centre engine compartment with the latch mechanisms (2) .
- Feed the cover for the centre engine compartment out to the rear.

3 – Removing both covers in the engine compartment on top

NOTICE

Description is for left component only. Procedure on the right side is identical.

▶ **Remove the cover in the engine compartment on top**



- Loosen the expanding rivet (1).
- Remove the cover in the engine compartment on top (2) partially.

4 – Remove the engine compartment lid catch on the left and right

▶ **Remove bonnet catch**

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▷ **Only in vehicles with active pedestrian protection**

WARNING

Pyrotechnic components.

Danger! Life-threatening injuries!

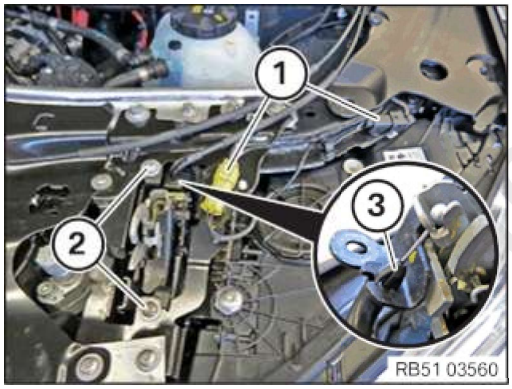
- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.

▶ **Disconnecting all battery earth leads**



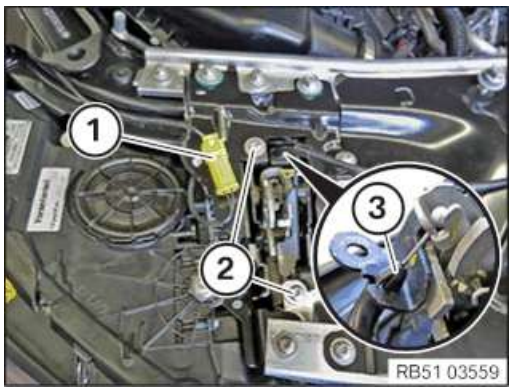
- See additional information.

◁



- Unlock plug connection (1) and disconnect.
- Loosen screws (2).
- Feed out the bonnet lock in an upwards direction.
- Detach the cable (3) and remove the bonnet lock.

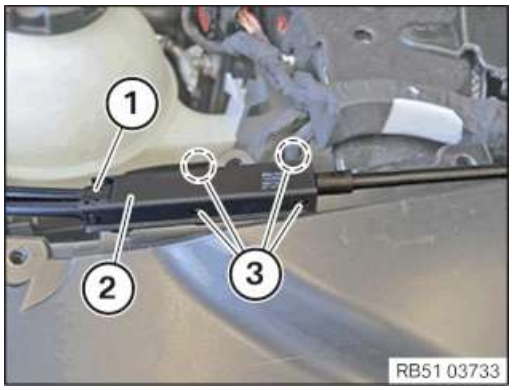
▶ **Removing the right bonnet lock**



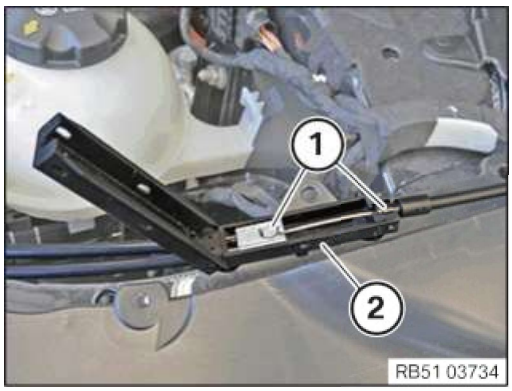
- Unlock plug connection (1) and disconnect.
- Loosen screws (2).
- Feed out the bonnet lock in an upwards direction.
- Detach the cable (3) and remove the bonnet lock.

MAIN WORK

5 – Removing Bowden cable of the front bonnet locks

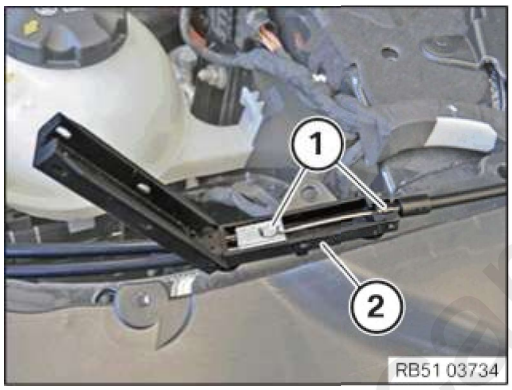


- Unclip Bowden cable bracket (1) from the body.
- Loosen lid (2) on retaining lugs (3) and fold up and to the front.

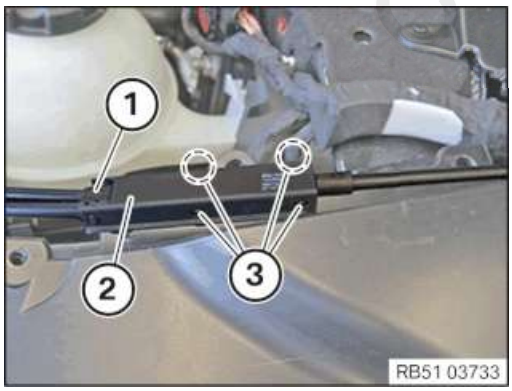


- Detach the Bowden cable (1).
- Remove Bowden cable bracket (2) together with Bowden cables.

6 – Install the Bowden cable for the front bonnet locks



- Install the Bowden cable bracket (2) together with the Bowden cables.
- Attach the Bowden cable (1).

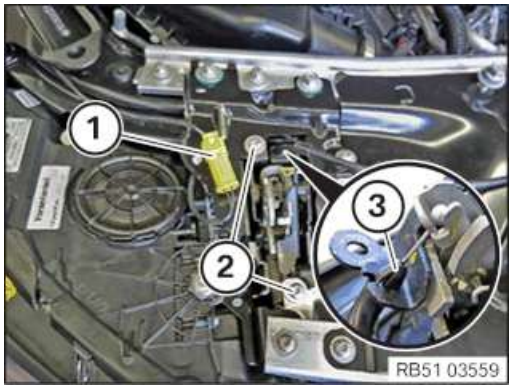


- Clip in the Bowden cable bracket (1) into the body.
- Close the lid (2) and engage with the retaining lugs (3).

POSTPROCESSES

7 – Installing left and right hood lock

▸ **Installing the right bonnet lock**



- Attach the cable (3).
- Feed in the bonnet lock.
- Renew screws (2).

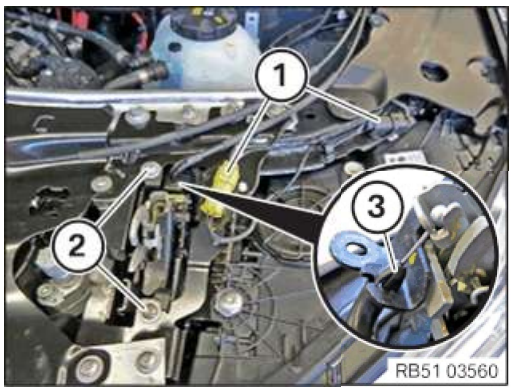
  Parts: Bolts
- Tighten the screws (2).

Engine compartment lid catch

Screw	Replace screws	Tightening torque	8 Nm

- Connect plug connection (1) and lock.

▶ **Installing bonnet lock**



- Attach the cable (3).
- Feed in the bonnet lock.
- Renew screws (2).

  Parts: Bolts
- Tighten the screws (2).

Engine compartment lid catch

Screw	Replace screws	Tightening torque	8 Nm

- Connect plug connection (1) and lock.

▷ **Only in vehicles with active pedestrian protection**

▶ **Disconnecting all battery earth leads**



- See additional information.

◁

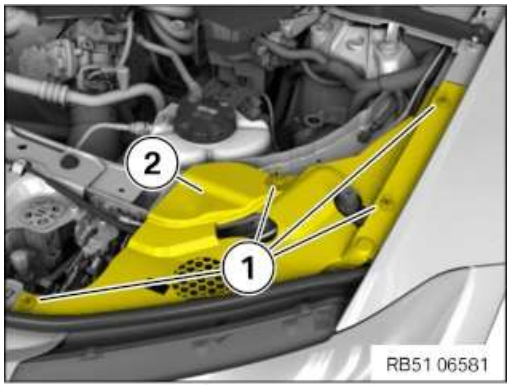
8 – Install both covers in the engine compartment on the top

NOTICE

Description is for left component only. Procedure on the right side is identical.

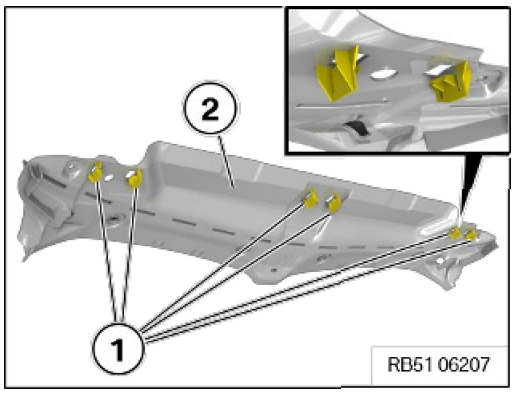
▶ **Install the cover in the engine compartment on top**

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- Install the cover in the engine compartment on top (2).
- Secure expanding rivet (1).

9 – Installing cover for engine compartment centre



Check

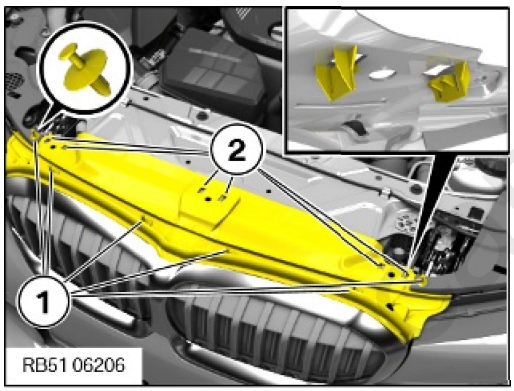
- Check latch mechanisms (1) of cover for engine compartment centre (2) for damage.

Result

» The latch mechanism (1) is damaged.

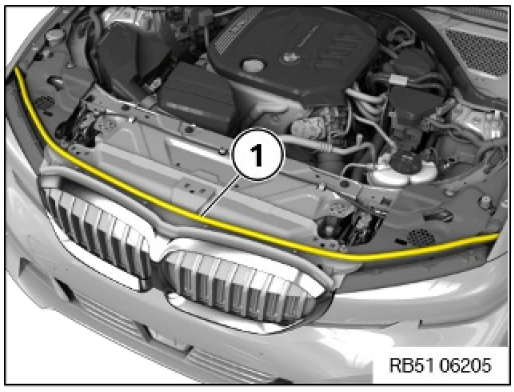
Measure

- Renew cover for engine compartment centre (2).



- Guide in the cover for the engine compartment centre from the rear and position it.
- Clip in the cover for the engine compartment centre with latch mechanisms (2).
- Mount all expanding rivets (1).

10 – Install the seal for the front bonnet



- Position the bonnet seal(1) and connect it on the mounting on the bumper and on the headlights.

Additional Information

Overview of Tightening Torques

Engine compartment lid catch			Used in step 7
Screw	Replace screws	Tightening torque	8 Nm

Links

General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	4

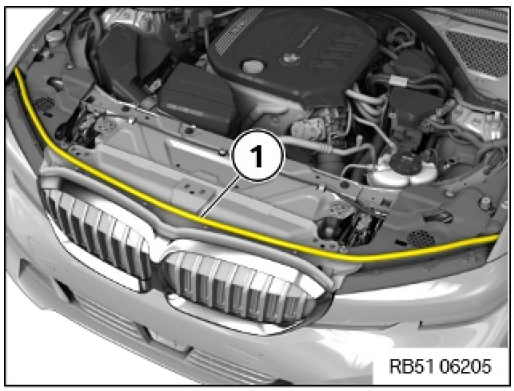
Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	47
61 20 900 Disconnecting and connecting battery earth lead	47
61 20 900 Disconnecting and connecting battery earth lead	47
61 20 900 Disconnecting and connecting battery earth lead	47
61 20 900 Disconnecting and connecting battery earth lead	47
61 20 900 Disconnecting and connecting battery earth lead	47
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	47
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61 20 900 Disconnecting and connecting battery earth lead	47
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	47
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	47
61 20 900 Disconnecting and connecting battery earth lead	47
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61 20 900 Disconnecting and connecting battery earth lead	47
61 20 900 Disconnecting and connecting battery earth lead	47
61 20 900 Disconnecting and connecting battery earth lead	47

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51 23 110 Removing and installing/replacing left engine compartment lid lock

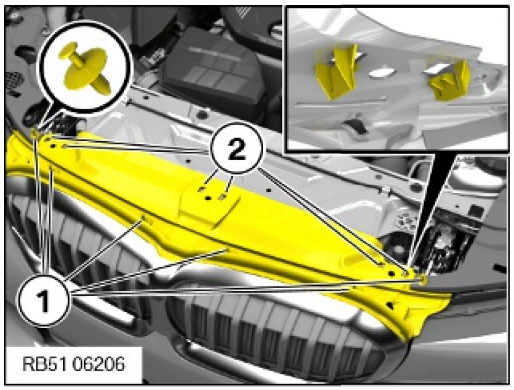
PRELIMINARY WORK

1 – Remove the seal for the bonnet in front



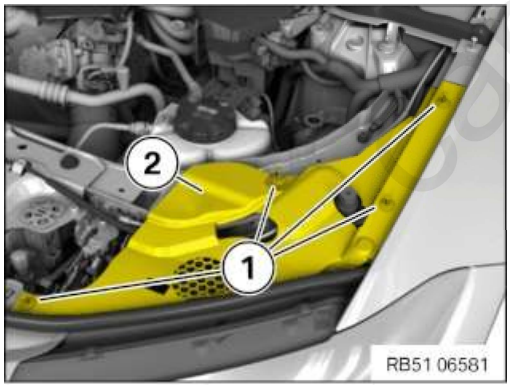
- Pull off front bonnet seal (1) upwards.

2 – Removing the centre engine compartment cover



- Detach all expanding rivets (1).
- Release the cover of the centre engine compartment with the latch mechanisms (2) .
- Feed the cover for the centre engine compartment out to the rear.

3 – Remove the cover in the engine compartment on top



- Loosen the expanding rivet (1).
- Remove the cover in the engine compartment on top (2) partially.

MAIN WORK

4 – Remove bonnet catch

▸ **Only in vehicles with active pedestrian protection**

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WARNING

Pyrotechnic components.

Danger! Life-threatening injuries!

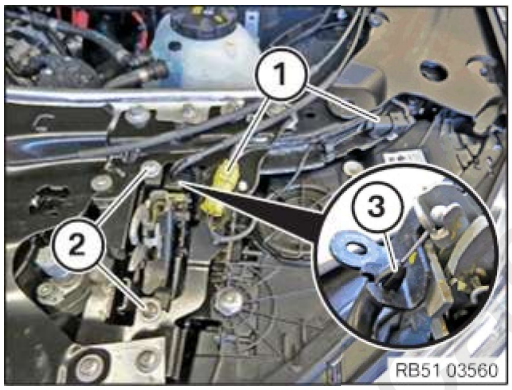
- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.

▷ **Disconnecting all battery earth leads**



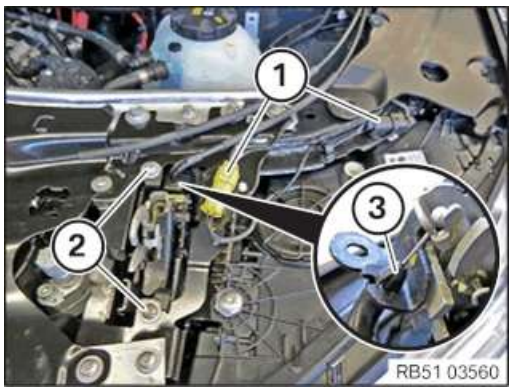
- See additional information.

◁



- Unlock plug connection (1) and disconnect.
- Loosen screws (2).
- Feed out the bonnet lock in an upwards direction.
- Detach the cable (3) and remove the bonnet lock.

5 – Installing bonnet lock



- Attach the cable (3).
- Feed in the bonnet lock.
- Renew screws (2).

  Parts: Bolts
- Tighten the screws (2).

Engine compartment lid catch

Screw	Replace screws	Tightening torque	8 Nm

- Connect plug connection (1) and lock.

► **Only in vehicles with active pedestrian protection**

▷ **Disconnecting all battery earth leads**

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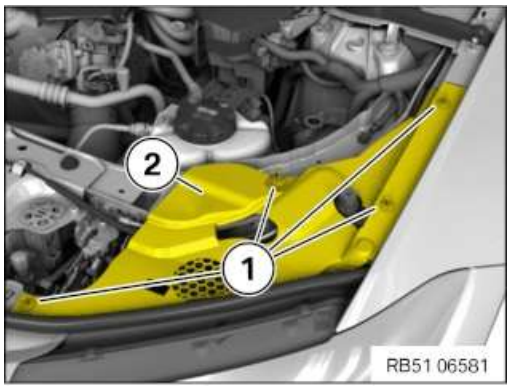


- See additional information.

◁

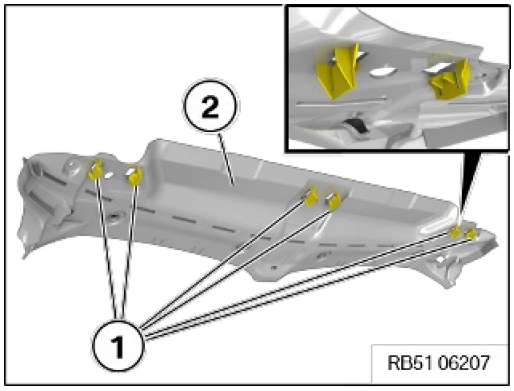
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6 – Install the cover in the engine compartment on top



- Install the cover in the engine compartment on top (2).
- Secure expanding rivet (1).

7 – Installing cover for engine compartment centre



Check

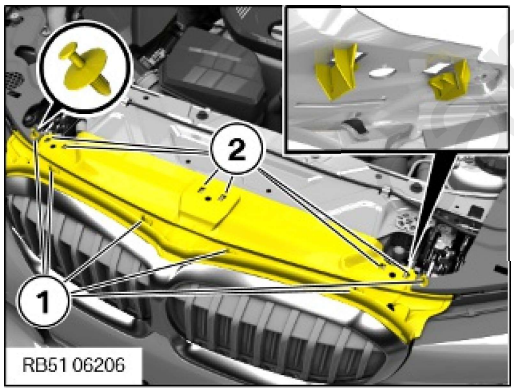
- Check latch mechanisms (1) of cover for engine compartment centre (2) for damage.

Result

» The latch mechanism (1) is damaged.

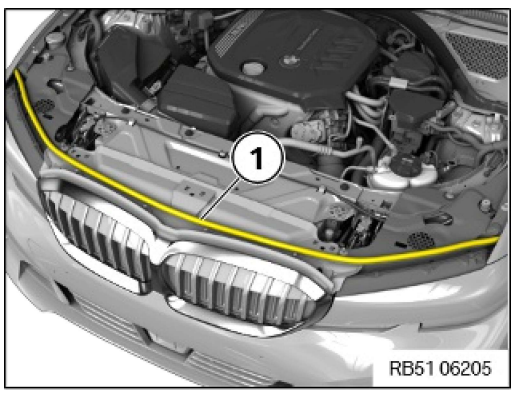
Measure

- Renew cover for engine compartment centre (2).



- Guide in the cover for the engine compartment centre from the rear and position it.
- Clip in the cover for the engine compartment centre with latch mechanisms (2).
- Mount all expanding rivets (1).

8 – Install the seal for the front bonnet



- Position the bonnet seal(1) and connect it on the mounting on the bumper and on the headlights.

Additional Information

Overview of Tightening Torques

Engine compartment lid catch — Used in step 5

Screw	Replace screws	Tightening torque	8 Nm

Links

General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	4

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	45
61 20 900 Disconnecting and connecting battery earth lead	45
61 20 900 Disconnecting and connecting battery earth lead	45
61 20 900 Disconnecting and connecting battery earth lead	45
61 20 900 Disconnecting and connecting battery earth lead	45
61 20 900 Disconnecting and connecting battery earth lead	45
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	45
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	45
61 20 900 Disconnecting and connecting battery earth lead	45
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	45
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	45
61 20 900 Disconnecting and connecting battery earth lead	45
61 20 900 Disconnecting and connecting battery earth lead	45
61 20 900 Disconnecting and connecting battery earth lead	45
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61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	45
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61 20 900 Disconnecting and connecting battery earth lead	45
61 20 900 Disconnecting and connecting battery earth lead	45

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51 23 265 Removing and installing/replacing left or right gas pressure spring for engine compartment lid

CAUTION

Shutting bonnet or tailgate.

Danger of injury!

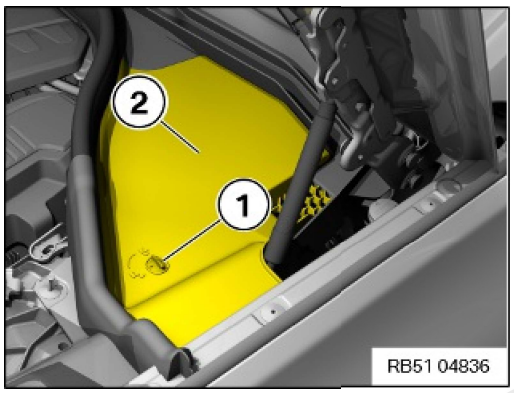
- Support bonnet/tailgate in fully open position with the aid of a suitable device.

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

1 – Remove the cover of the engine compartment at the rear left

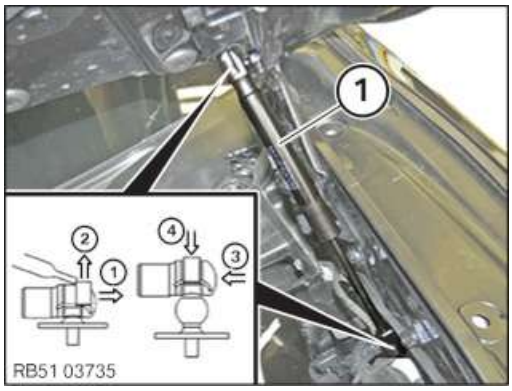


- Loosen the lock (1).
- Remove rear left cover of engine compartment (2).

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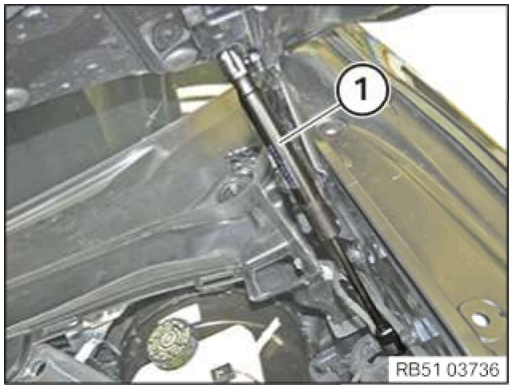
MAIN WORK

2 – Removing the gas pressure spring for engine compartment lid



- Observe the disassembly sequence:
  1. Push the clamp towards the groove using a screwdriver.
  2. Lift off the ball socket from the ball pin.
  3. Push back the clamp.
  4. Pull off the ball socket from the ball stud.
- Remove gas pressure spring for bonnet (1).

3 – Installing the gas pressure spring for engine compartment lid

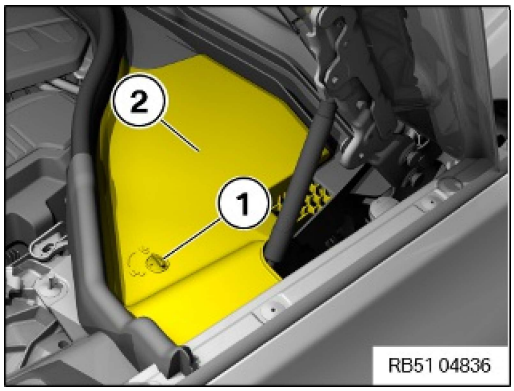


- Fix the gas pressure spring for bonnet (1) with the ball sockets on the ball studs and engage it with force.

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POSTPROCESSES

4 – Install the cover of the engine compartment on the rear left

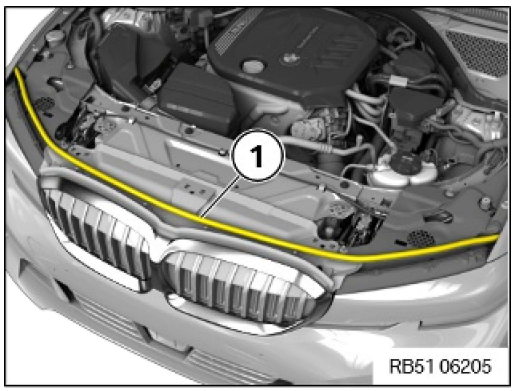


- Position the engine compartment cover at the rear left (2) .
- Close lock (1).

51 23 100 Removing and installing/replacing right engine compartment lid lock

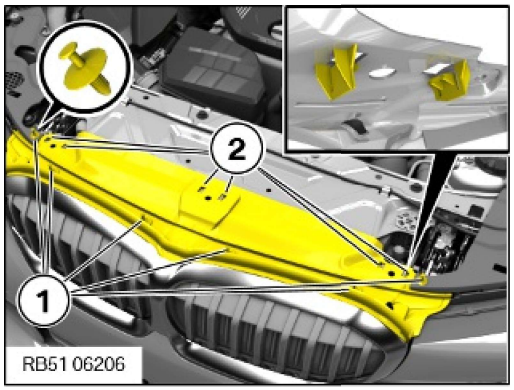
PRELIMINARY WORK

1 – Remove the seal for the bonnet in front



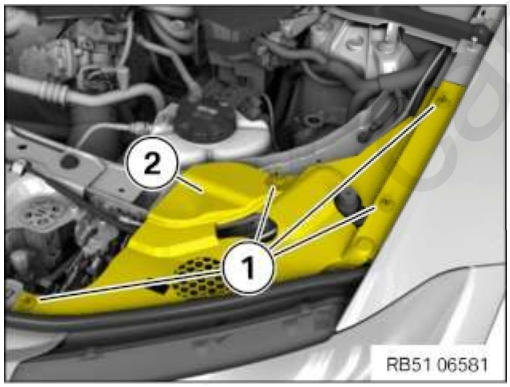
- Pull off front bonnet seal (1) upwards.

2 – Removing the centre engine compartment cover



- Detach all expanding rivets (1).
- Release the cover of the centre engine compartment with the latch mechanisms (2) .
- Feed the cover for the centre engine compartment out to the rear.

3 – Remove the cover in the engine compartment on top



- Loosen the expanding rivet (1).
- Remove the cover in the engine compartment on top (2) partially.

MAIN WORK

4 – Only in vehicles with active pedestrian protection

WARNING

Pyrotechnic components.

Danger! Life-threatening injuries!

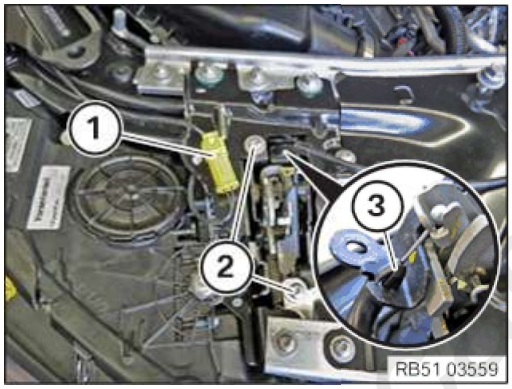
- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.

▶ **Disconnecting all battery earth leads**



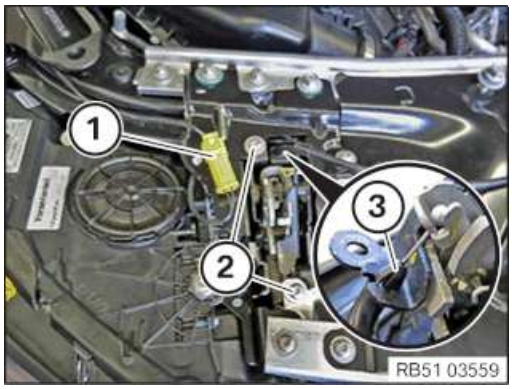
- See additional information.

5 – Removing the right bonnet lock



- Unlock plug connection (1) and disconnect.
- Loosen screws (2).
- Feed out the bonnet lock in an upwards direction.
- Detach the cable (3) and remove the bonnet lock.

6 – Installing the right bonnet lock



- Attach the cable (3).
- Feed in the bonnet lock.
- Renew screws (2).

  Parts: Bolts
- Tighten the screws (2).

Engine compartment lid catch

Screw	Replace screws	Tightening torque	8 Nm

- Connect plug connection (1) and lock.

7 – Only in vehicles with active pedestrian protection

▶ **Disconnecting all battery earth leads**

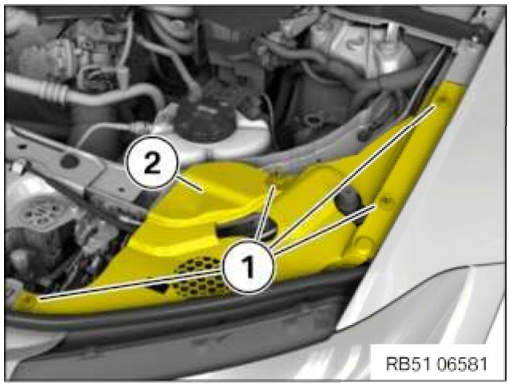
carfdiag.com



- See additional information.

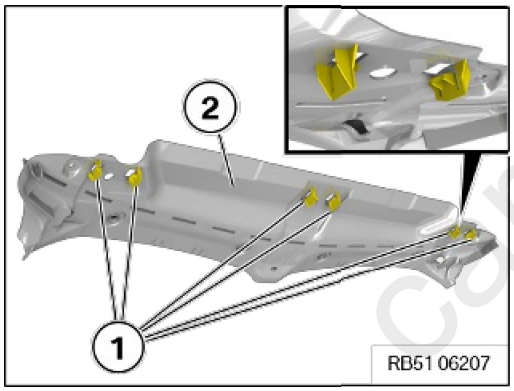
POSTPROCESSES

8 – Install the cover in the engine compartment on top



- Install the cover in the engine compartment on top (2).
- Secure expanding rivet (1).

9 – Installing cover for engine compartment centre



Check

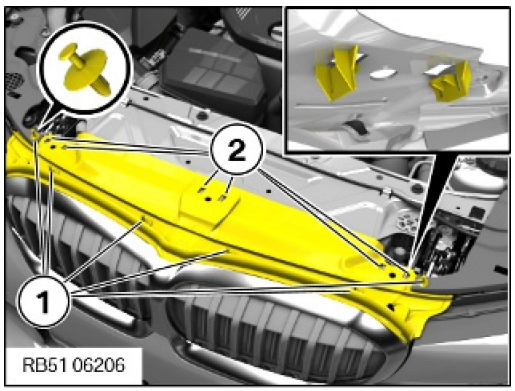
- Check latch mechanisms (1) of cover for engine compartment centre (2) for damage.

Result

» The latch mechanism (1) is damaged.

Measure

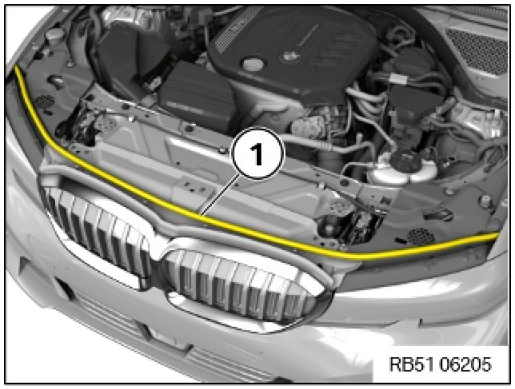
- Renew cover for engine compartment centre (2).



- Guide in the cover for the engine compartment centre from the rear and position it.
- Clip in the cover for the engine compartment centre with latch mechanisms (2).
- Mount all expanding rivets (1).

10 – Install the seal for the front bonnet

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- Position the bonnet seal(1) and connect it on the mounting on the bumper and on the headlights.

Additional Information

Overview of Tightening Torques

Engine compartment lid catch			Used in step 6
Screw	Replace screws	Tightening torque	8 Nm

Links

General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	4

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	47
61 20 900 Disconnecting and connecting battery earth lead	47
61 20 900 Disconnecting and connecting battery earth lead	47
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61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	47
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	47
61 20 900 Disconnecting and connecting battery earth lead	47
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	47
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	47
61 20 900 Disconnecting and connecting battery earth lead	47
61 20 900 Disconnecting and connecting battery earth lead	47
61 20 900 Disconnecting and connecting battery earth lead	47
61 20 900 Disconnecting and connecting battery earth lead	47
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61 20 900 Disconnecting and connecting battery earth lead	47
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	47
61 20 900 Disconnecting and connecting battery earth lead	47
61 20 900 Disconnecting and connecting battery earth lead	47

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61 20 900 Disconnecting and connecting battery earth lead 47
61 20 900 Disconnecting and connecting battery earth lead 47
61 20 900 Disconnecting and connecting battery earth lead 47
61 20 900 Disconnecting and connecting battery earth lead 47
61 20 900 Disconnecting and connecting battery earth lead 47

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51 23 400 Removing and installing/replacing the left or right actuator

NOTICE

Description is for left component only. Procedure on the right side is identical.

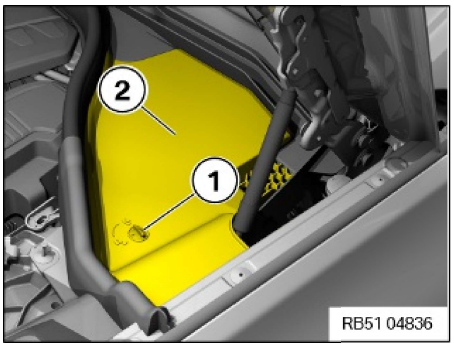
PRELIMINARY WORK

1 – Disconnecting all battery earth leads



- See additional information.

2 – Remove the cover of the engine compartment at the rear left



- Loosen the lock (1).
- Remove rear left cover of engine compartment (2).

3 – Removing both wiper arms

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the wiper arm**

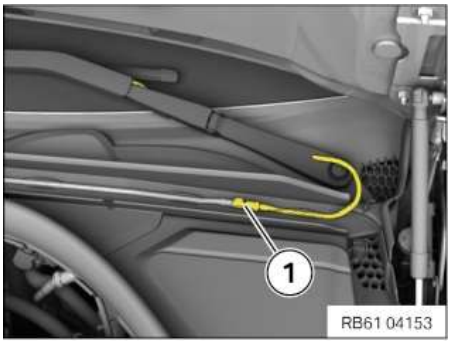
RISK OF DAMAGE

Damage to wiper console

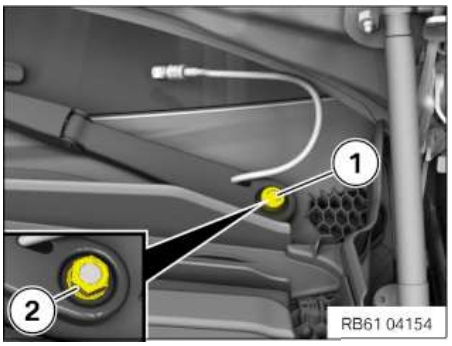
While removing the wiper arms without using special tool, the wiper console can break.

- Removing the wiper arms must be carried out only using the prescribed special tool.
- Do not lift off wiper arm, else the wiper console may break on the predetermined breaking point for the pedestrian protection.

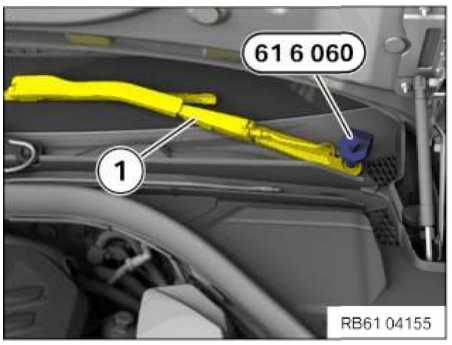
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- Disconnect the windscreen wash hose(1) at the separation point and remove from the cowl guide.

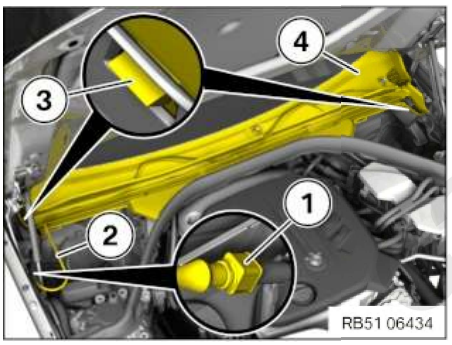


- Remove the protective cap (1).
- Loosen nut (2).

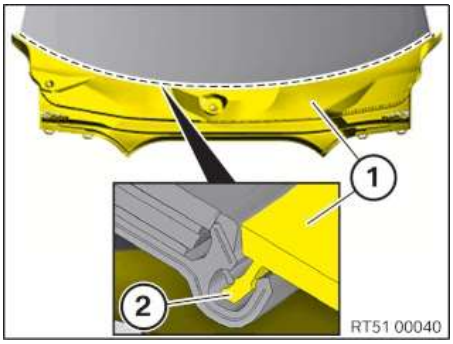


- Pull off the wiper arm (1) using special tool .

4 – Remove cowl panel cover



- Release snap fastener of the washer fluid hose (1) and put the washer fluid hose(2) to one side.
- Unclip clips (3) on the cowl panel cover (4).



- Pull the cowl panel cover (1) upward out of the latch mechanism (2) beginning on the side.

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MAIN WORK

5 – Remove the actuator on the left bonnet hinge

WARNING

Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



- Loosen screw (1).
- Unlock plug connection (2) and disconnect.
- Slightly pull the actuator (3) forwards in direction of arrow and remove it.

6 – Install the actuator on the left bonnet hinge



- Insert the actuator (1) into the guide pin (2) and push towards the rear up to the limit position in direction of arrow.
- Renew the screw (3).

  Parts: Screw
- Tighten down screw (3).
- Connect connectors (4) and lock.

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POSTPROCESSES

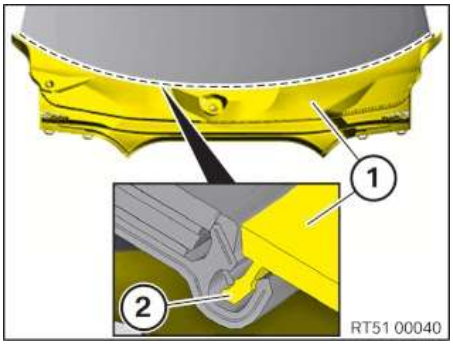
7 – Installing cowl panel cover

RISK OF DAMAGE

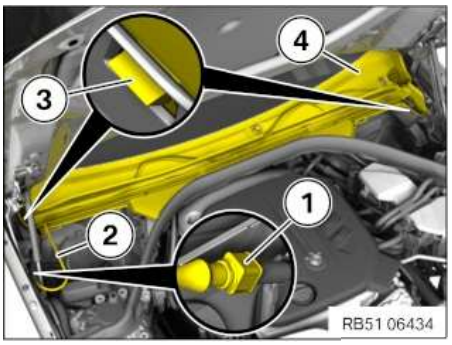
Damage caused by water ingress into the vehicle.

Water ingress into the vehicle may result in damage to components, malfunctions and corrosion.

- Ensure correct installation of the components.
- Only use undamaged components.



- Push the cowl panel cover (1) into the latch mechanism (2) beginning on the side.



- Clip cowl panel cover (4)in by means of the latch mechanisms (3).
- Position windscreen wash hose (2) and connect windscreen wash hose (1)quick lock.

8 – Installing both wiper arms

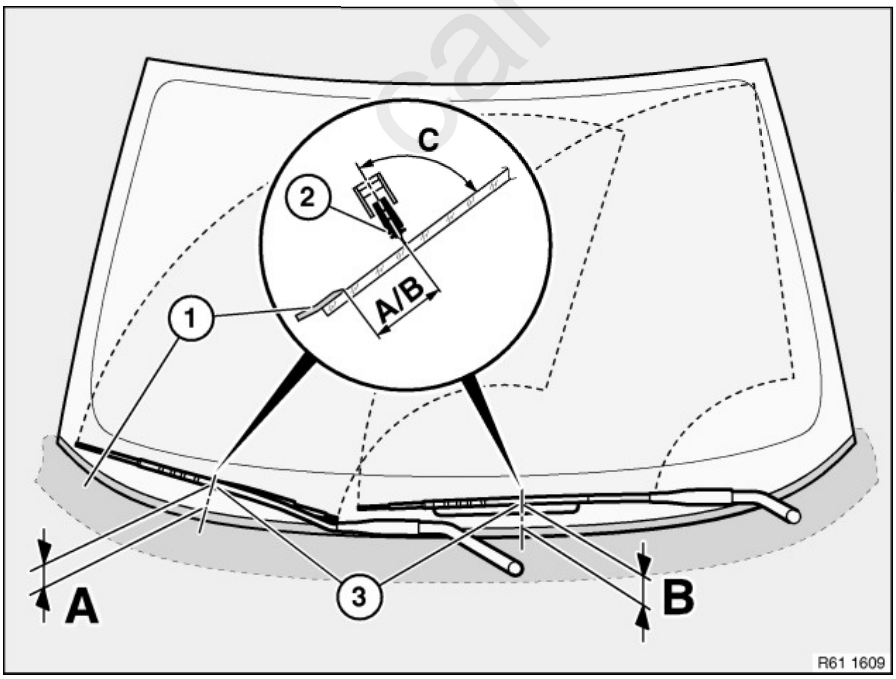
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the wiper arm**

TECHNICAL INFORMATION

The wiper system must be in zero position.
After installing the cowl panel cover and before fitting the wiper arm:
Activate the wiper system once to ensure that it has the correct installation position.

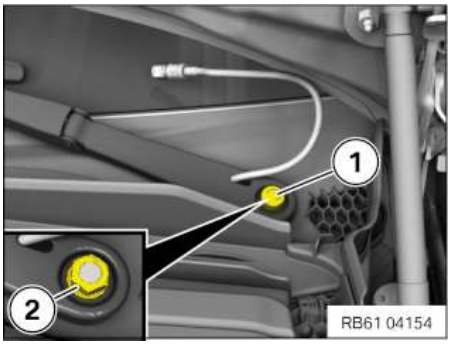


- Connect the wiper arm (3).
- Correctly position the wiper arm (2) in relation to the window edge (1).

Distance from window pane edge to wiper blade

Wiper arm right (A)	57,5 ± 5 mm
Wiper arm left (B)	63,3 ± 4 mm

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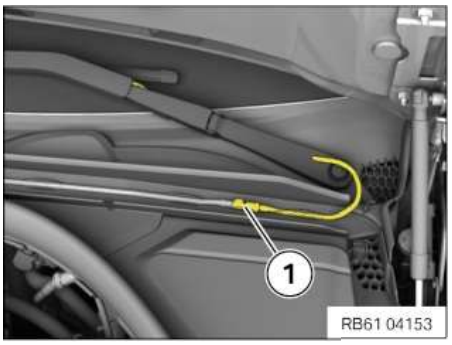


- Tighten nut (2).

Windscreen wiper arm

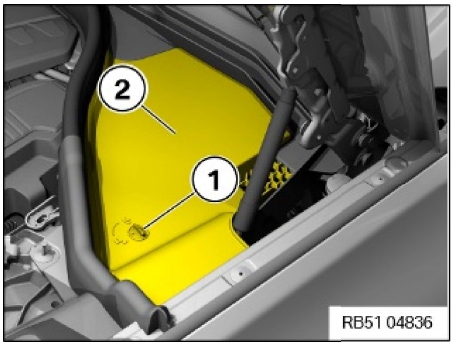
Combination hexagon nut		Tightening torque	35 Nm

- Connect the protective cap (1).



- Insert windscreen wash hose (1) into the cowl and connect at the separating point.

9 – Install the cover of the engine compartment on the rear left



- Position the engine compartment cover at the rear left (2) .
- Close lock (1).

10 – Disconnecting all battery earth leads



- See additional information.

Additional Information

Overview of Tightening Torques

Windscreen wiper arm Used in step 8

Combination hexagon nut		Tightening torque	35 Nm

Overview of Special Tools

Overview Technical Data

Distance from window pane edge to wiper blade Used in step 8

Wiper arm right (A)	57,5 ± 5 mm
Wiper arm left (B)	63,3 ± 4 mm

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Links

General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	5

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	110
61 20 900 Disconnecting and connecting battery earth lead	110
61 20 900 Disconnecting and connecting battery earth lead	110
61 20 900 Disconnecting and connecting battery earth lead	110
61 20 900 Disconnecting and connecting battery earth lead	110
61 20 900 Disconnecting and connecting battery earth lead	110
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	110
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61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	110
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	110
61 20 900 Disconnecting and connecting battery earth lead	110
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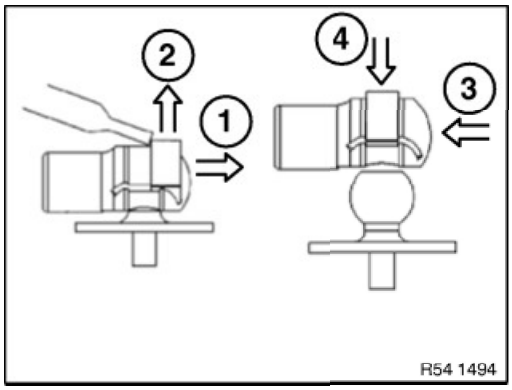
51 23 ... Removing/installing ball sockets with clip

Warning!

Danger of injury! When installed, the gas pressurised shock absorber is under preload. Minimise preload as far as possible before removing.

Important!

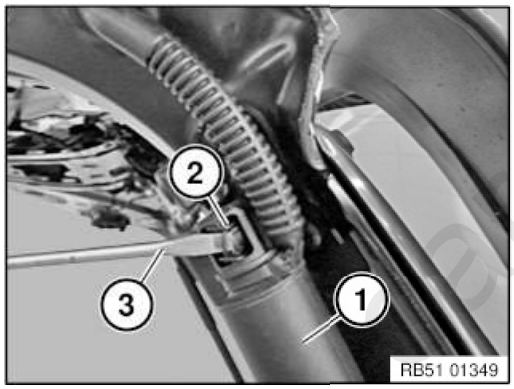
Never lift off ball socket with engaged clamp.



Version A:

1. Push on clamp in direction of groove with screwdriver
2. Lift off ball socket from ball pin
3. Slide clamp back
4. Fit ball socket on ball stud and snap into place with force

Installation note:
Pack grease into two opposite positions in socket. The grease spreads after installation on the ball pin all round in the ball socket.



Version B:

Important!

Risk of damage!

If you are not careful, retaining spring (2) may be bent to such an extent that the entire drive spindle will have to be replaced.

Press drive spindle (1) against ball pin in order to relieve strain on retaining spring (2) at ball pin.

Pull out retaining spring (2) approx. 2-3 mm with screwdriver (3).

Pull off spindle foot.

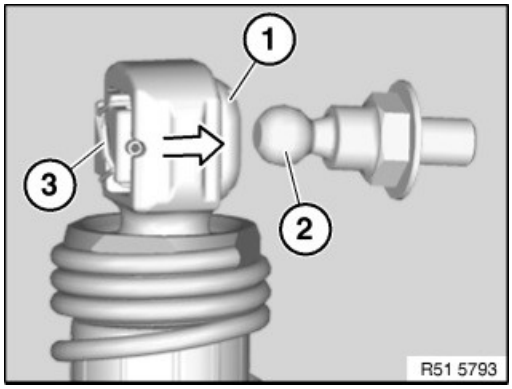
Warning!

Observe warning notices on the damper.

Electrical spindle drive for tailgate is under mechanical spring load!

The component must be secured against falling down.

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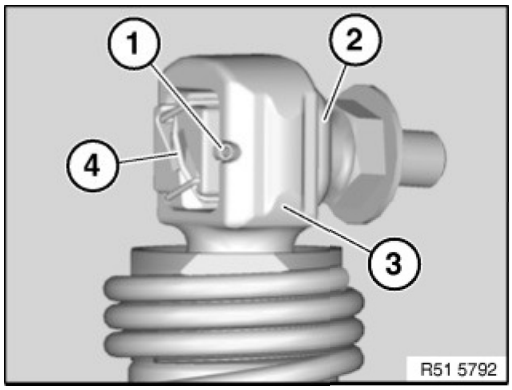


Attention!

Risk of damage!

Do not press on spindle drive at an angle or twisted.

Installation note:
Press ball socket (1) onto ball pin (2) until retaining spring (3) engages correctly (clicking sound).



Important!

If retaining spring (4) is damaged!

Release pin (1).

Remove spindle drive (3).

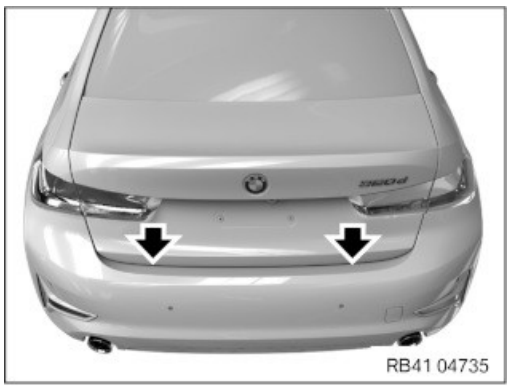
Remove ball socket (2).

Remove retaining spring (4) and replace if necessary.

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51 24 004 Adjusting tailgate catch (lower section of tailgate lock)

1 Installing the lower section of the tailgate lock

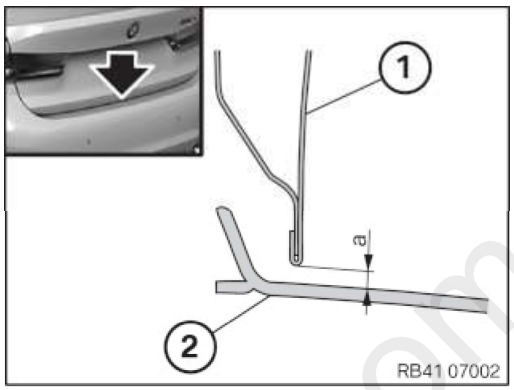


Check

- Check the gap dimensions between the tailgate and bumper panel (arrows).

Gap dimension tailgate to rear bumper panel

1 tailgate; 2 rear bumper panel	
a	5,1 (3,3 - 6,9) mm

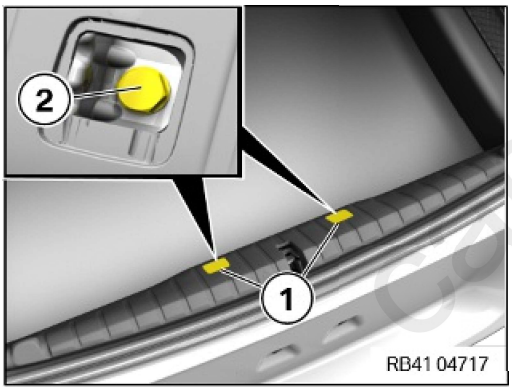


Result

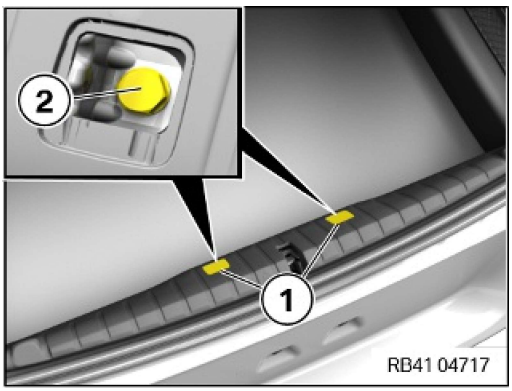
» Gap dimension does not correspond to specifications.

Measure

- Adjusting tailgate lock.



- Lever out the covers (1) with a suitable screwdriver and remove.
- Loosen screws (2) until the tailgate lock can be moved.
- Adjust tailgate lock so that the tailgate has the specified gap dimension to the bumper panel.

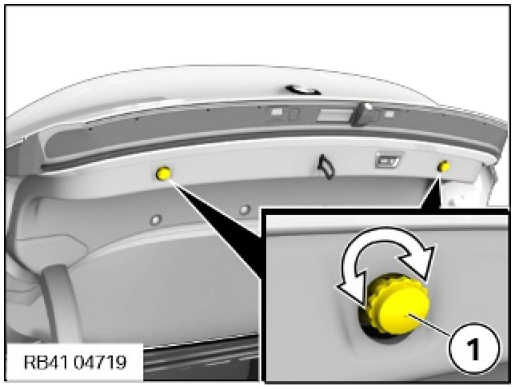


- Tighten the screws (2).

Tailgate lock to body

Hexagon screw M8x20		Tightening torque	19 Nm

- Install and clip in the covers (1).



- Adjust the stop pad (1) by twisting in arrow direction.

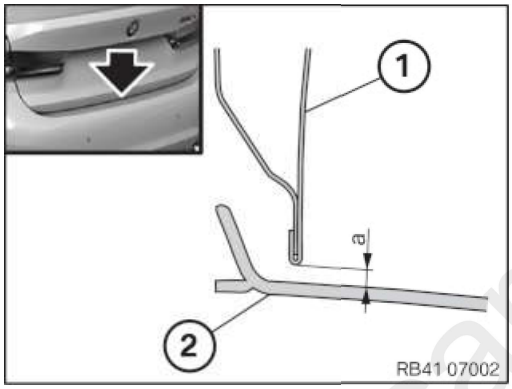
Additional Information

Overview of Tightening Torques

Tailgate lock to body			Used in step 1
Hexagon screw M8x20		Tightening torque	19 Nm

Overview Technical Data

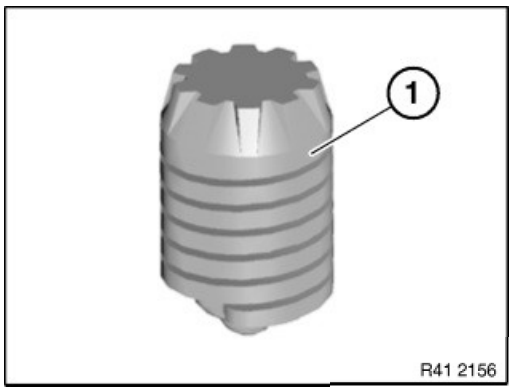
Gap dimension tailgate to rear bumper panel	Used in step 1
1 tailgate; 2 rear bumper panel	
a	5,1 (3,3 - 6,9) mm



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51 23 ... Adjusting/replacing bump stops

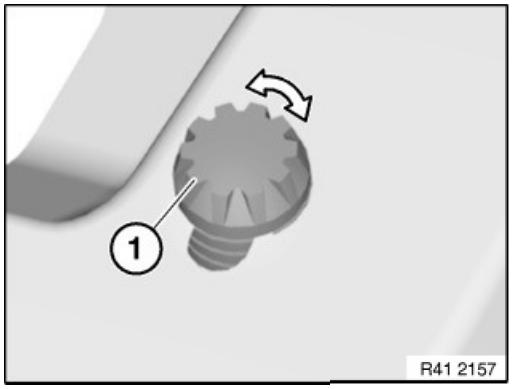
The illustrations are schematic representations and are to be applied to the relevant vehicle type.



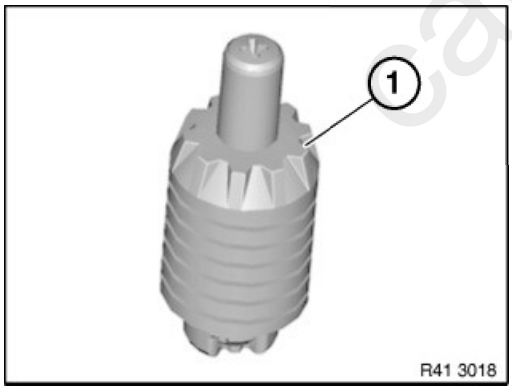
Version 1:

Following parts must not be damaged:

- (1) Bump stop



Adjust bump stop (1) to correct height by turning left or right.

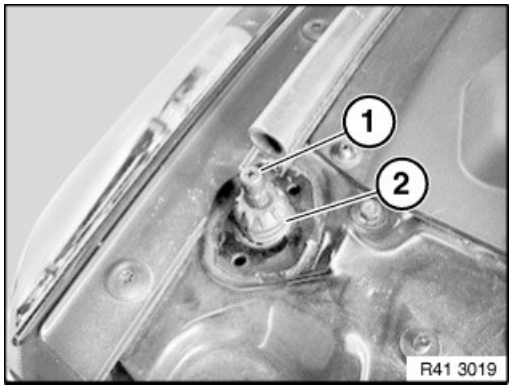


Version 2:

Replace damaged bump stops (refer to EPC):

- (1) Bump stop with ejector

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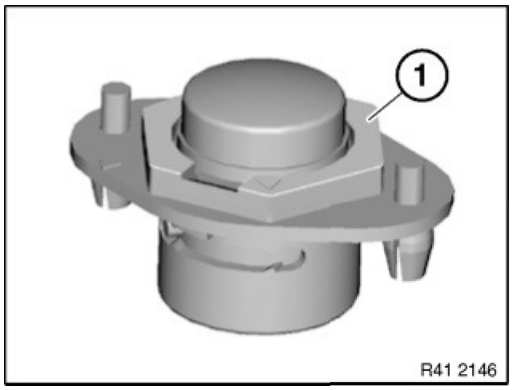


Press ejector (1) into bump stop and, in this position, twist approx. 90° counterclockwise with a Phillips screwdriver.

This locks the ejectors (1) in the bump stops.

Adjust bump stop (2) to correct height by turning left or right.

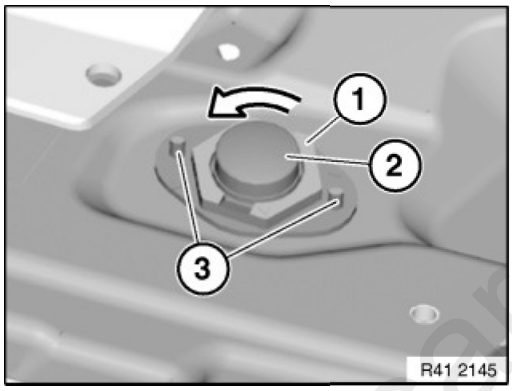
Unlock the ejector (1) again after completing adjustment.



<u>Version 3:</u>

Replace damaged bump stops (refer to EPC):

- (1) Bump stop



Turn lock (1) 45° counterclockwise.

Pull bump stop (2) upwards.

Close lid slowly until it is at the same height as the side panel.

Open lid and turn lock (1) clockwise.

Installation:

Press bump stop into panel and drive in expanding pins (3).

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51 24 133 Removing and installing/replacing drive for Automatic Soft Close drive on tailgate

PRELIMINARY WORK

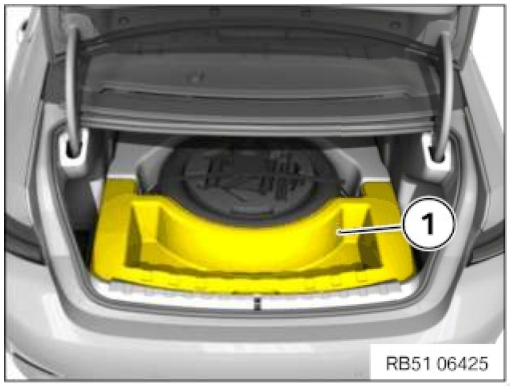
1 – Removing the luggage compartment floor trim panel



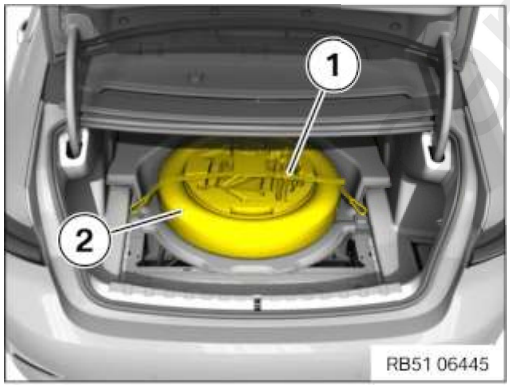
- Remove luggage compartment floor trim panel (1).

2 – If installed: Removing the compact spare wheel

▸ **Removing rear luggage compartment well**

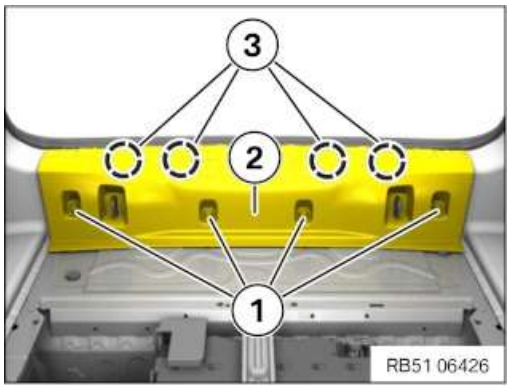


- Remove rear luggage compartment well (1).



- Open buckle on seat belt strap (1) and set it aside.
- Remove emergency wheel (2) with the insert.

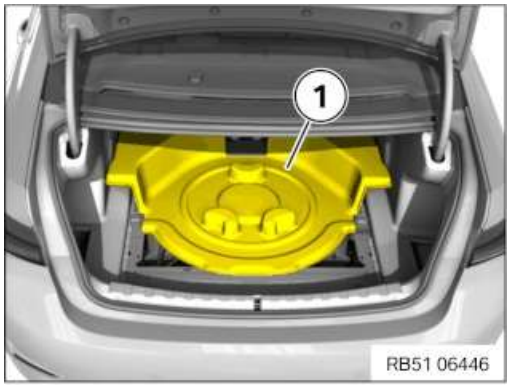
3 – Removing the loading edge trim



- Loosen the expanding rivet (1).
- Unclip loading edge trim(2) upwards from latch mechanisms (3).
- Guide out and remove loading edge trim (2) under the sealing lip of the tailgate seal.

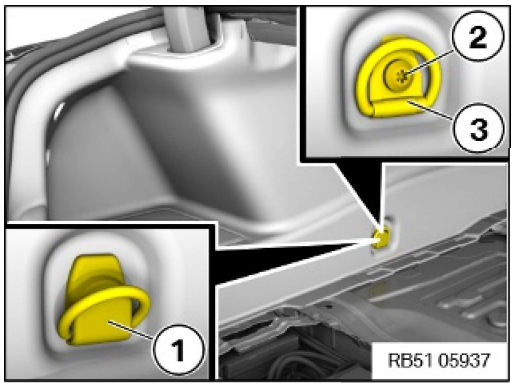
rdiagn.com

4 – Removing front luggage compartment well

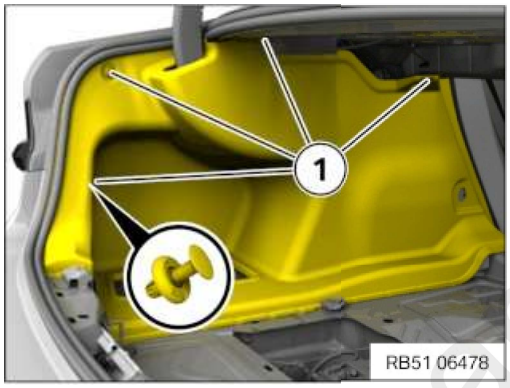


- Guide out and remove front luggage compartment well (1) on the seat belt strap.

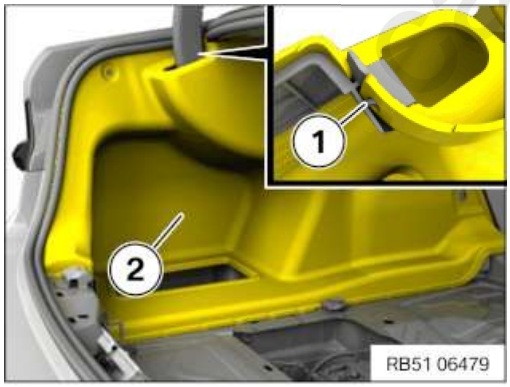
5 – Remove luggage compartment wheel arch trim panel on left.



- Remove the cover (1).
- Loosen screw (2).
- Remove lashing eye (3).



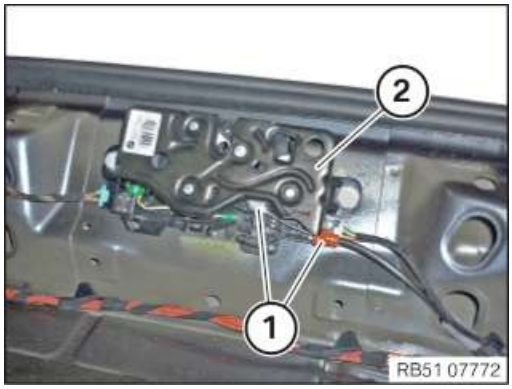
- Reposition left rear seat backrest.
- Loosen the expanding rivet (1).



- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip for the tailgate and the side trim panel in the rear passenger compartment.
- Remove luggage compartment wheel arch trim panel (2).

MAIN WORK

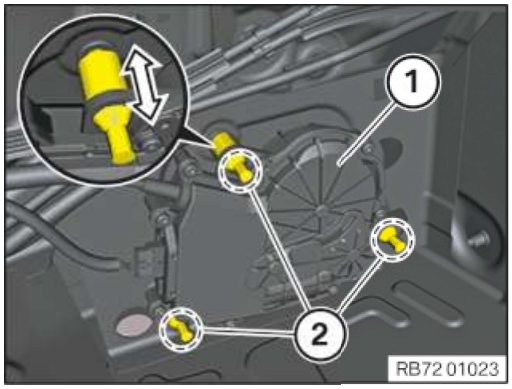
6 – Remove Automatic Soft Close drive



- Unclip the Bowden cable (1) from the tailgate lock (2) and guide it out.

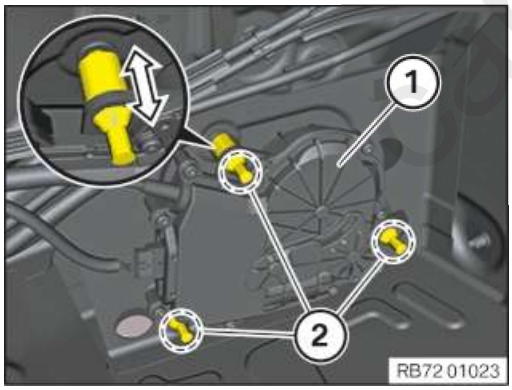


- Disconnect plug connection (1).
- Unclip the Bowden cable (2) from the holders at the tail panel.

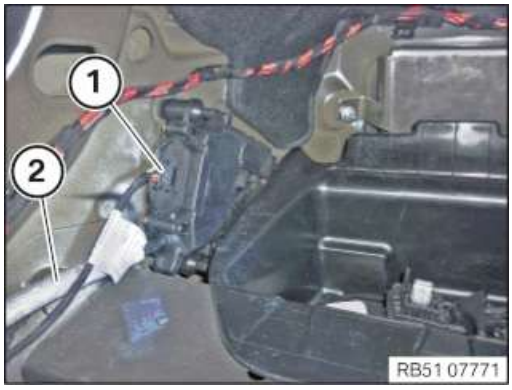


- Lever out the Automatic Soft Close drive (1) from the holders (2) in the direction of arrow and remove.

7 – Installing the Automatic Soft Close drive

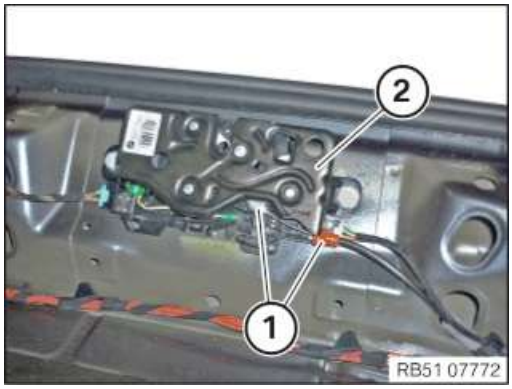


- Engage the Automatic Soft Close drive (1) on the holders (2) in direction of arrow.



- Connect and engage connectors (1).
- Clip in the Bowden cable (2) onto the holders on the tail panel.

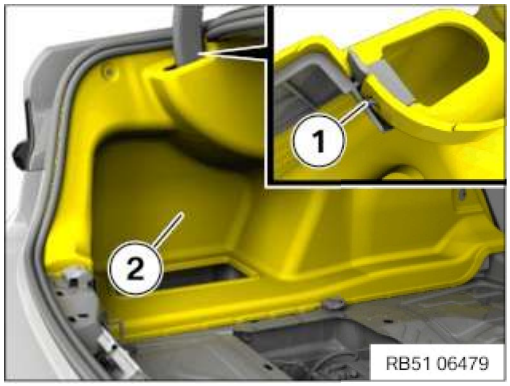
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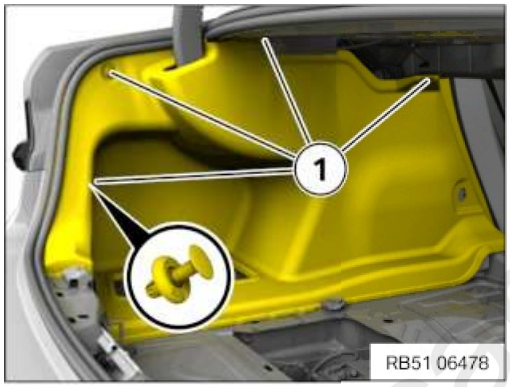
- Mount Bowden cable (1) to tailgate lock. (2)

POSTPROCESSES

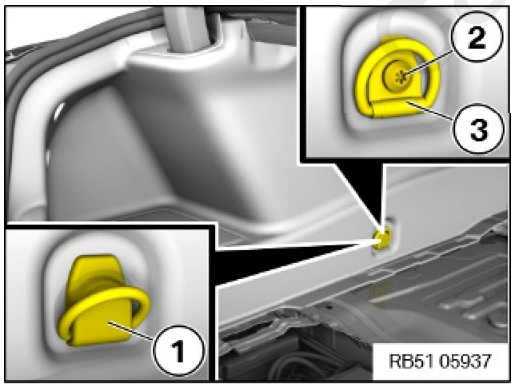
8 – Install luggage compartment wheel arch trim panel at left



- Feed luggage compartment wheel arch trim panel (2) under the side trim panel in the rear passenger compartment and the sealing lip for the tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).



- Secure expanding rivet (1).
- Raise the link rear seat backrest.



- Position the lashing eye (3).
- Tighten down screw (2).

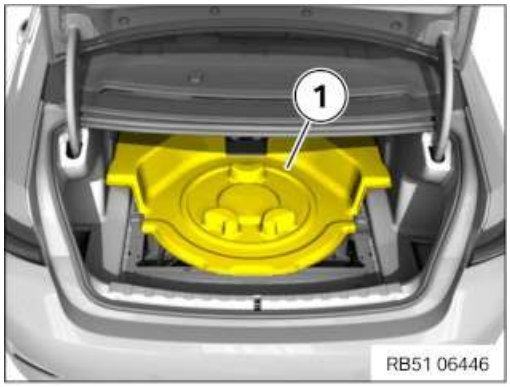
Lashing eye to body

	Tightening torque	19 Nm

- Install the cover (1).

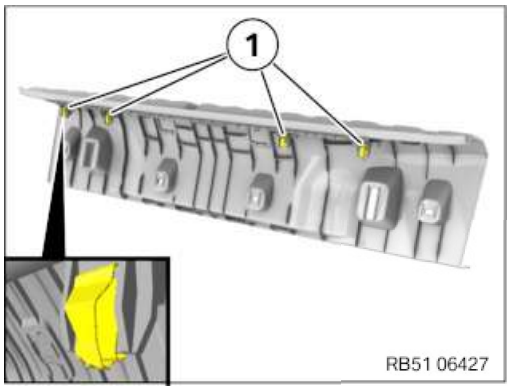
9 – Install the luggage compartment well in front

partdiagram.com

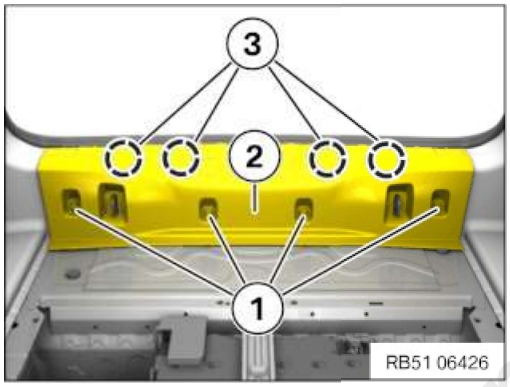


- Feed in and insert front luggage compartment well (1) on the seat belt strap.

10 – Installing loading edge trim

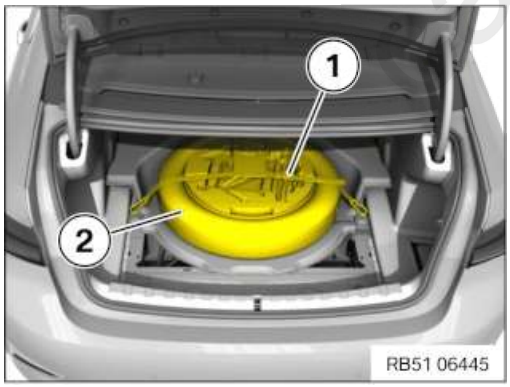


- Check the clamps (1) for damage and renew if necessary.



- Insert the loading edge trim (2) under the sealing lip of the tailgate seal.
- Fit the trim of the loading edge (2) at the latch mechanisms (3) and clip it in to the bottom.
- Secure expanding rivet (1).

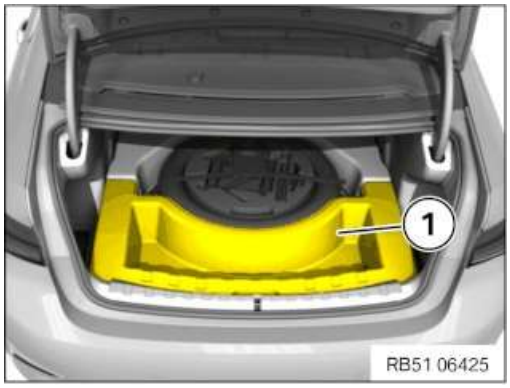
11 – If installed: Install the emergency wheel



- Install the emergency wheel (2) with the insert.
- Position the seat belt strap above the emergency wheel and close the buckle on the seat belt strap (1).

► **Installing rear luggage compartment well**

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- Install rear luggage compartment well (1).

12 – Installing the luggage compartment floor trim panel



- Insert the luggage compartment floor trim panel (1).

Additional Information

Overview of Tightening Torques

Lashing eye to body		Used in step 8
	Tightening torque	19 Nm

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51 24 301 Removing and installing/replacing gas pressure spring for tailgate

CAUTION

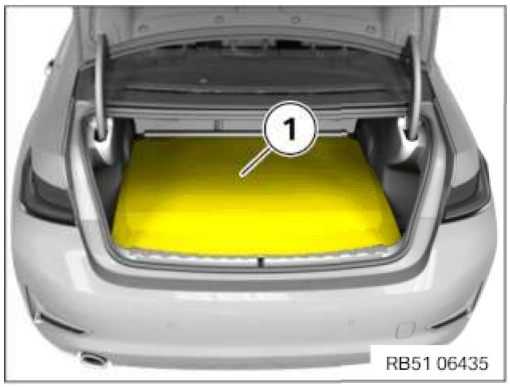
Shutting bonnet or tailgate.

Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.

PRELIMINARY WORK

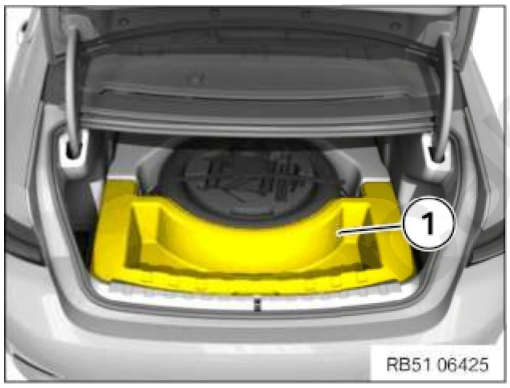
1 – Removing the luggage compartment floor trim panel



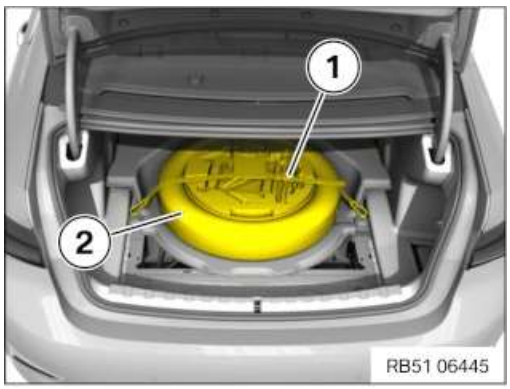
- Remove luggage compartment floor trim panel (1).

2 – If installed: Removing the compact spare wheel

▸ **Removing rear luggage compartment well**

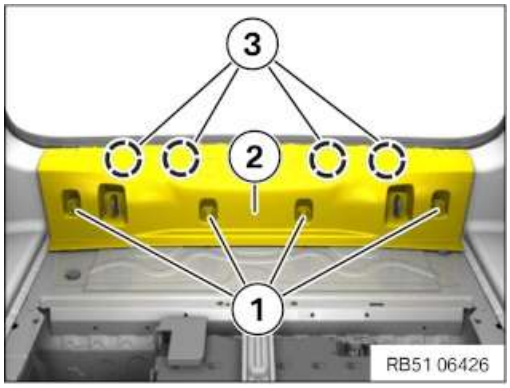


- Remove rear luggage compartment well (1).



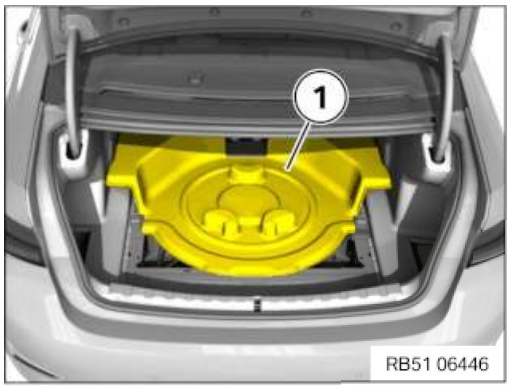
- Open buckle on seat belt strap (1) and set it aside.
- Remove emergency wheel (2) with the insert.

3 – Removing the loading edge trim



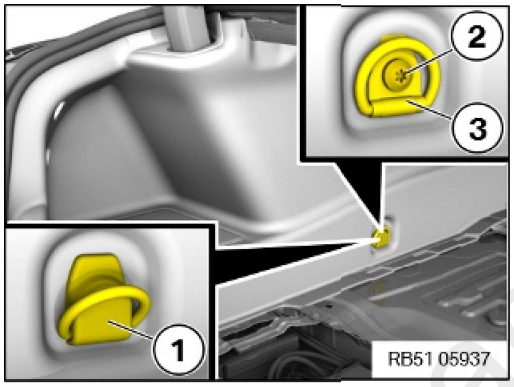
- Loosen the expanding rivet (1).
- Unclip loading edge trim(2) upwards from latch mechanisms (3).
- Guide out and remove loading edge trim (2) under the sealing lip of the tailgate seal.

4 – Removing front luggage compartment well

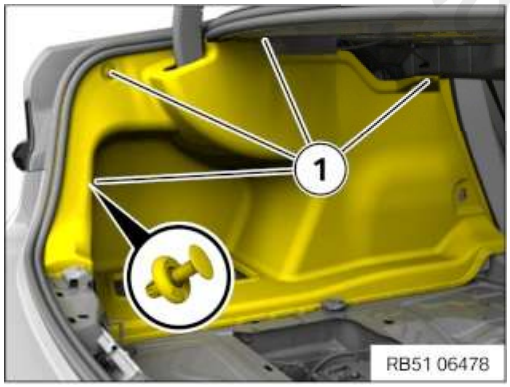


- Guide out and remove front luggage compartment well (1) on the seat belt strap.

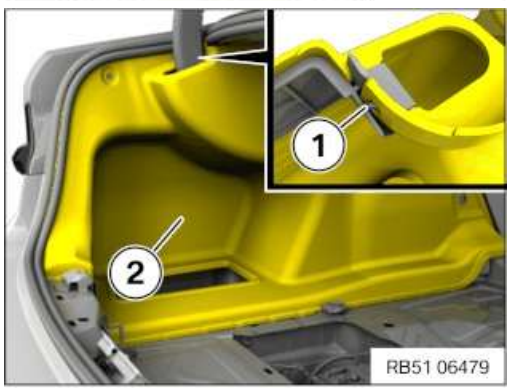
5 – Remove luggage compartment wheel arch trim panel on left.



- Remove the cover (1).
- Loosen screw (2).
- Remove lashing eye (3).



- Reposition left rear seat backrest.
- Loosen the expanding rivet (1).



- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip for the tailgate and the side trim panel in the rear passenger compartment.
- Remove luggage compartment wheel arch trim panel (2).

.com

MAIN WORK

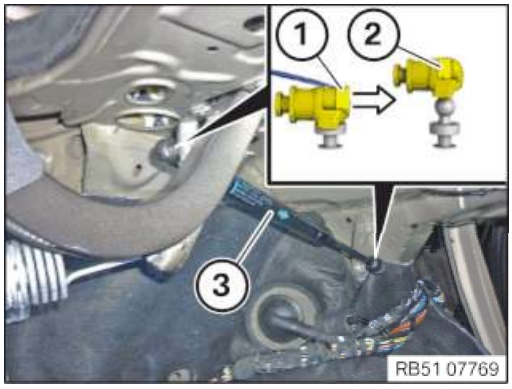
6 – Remove gas pressure spring for tailgate

CAUTION

Shutting bonnet or tailgate.

Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.



- Disassemble the ball sockets.

  Observe the disassembly sequence:

  1. Push clamp (1) on in the direction of arrow using a screwdriver.
  2. Lift off the ball socket (2) from the ball pin.
  3. Push back the clamp (1).

- Remove spindle drive (3).

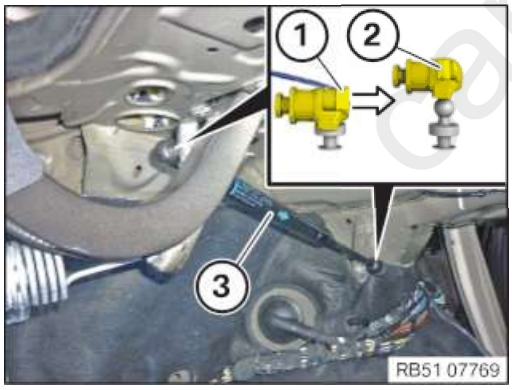
7 – Installing the gas pressure spring for the tailgate

CAUTION

Shutting bonnet or tailgate.

Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.



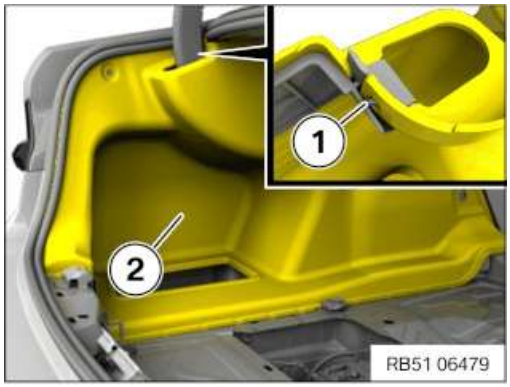
- Attach the spindle drive (3) and, together with the ball socket (2), place on the ball pin and engage with force.

  Check the clamp (1) is fitted correctly.

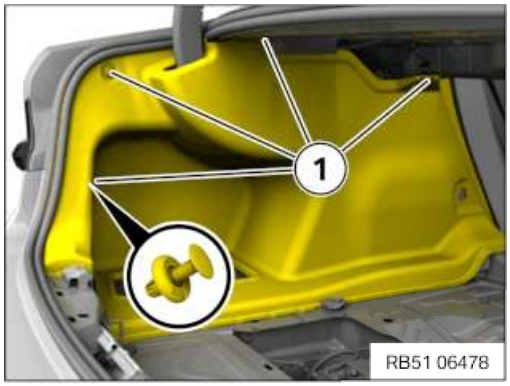
POSTPROCESSES

8 – Install luggage compartment wheel arch trim panel at left

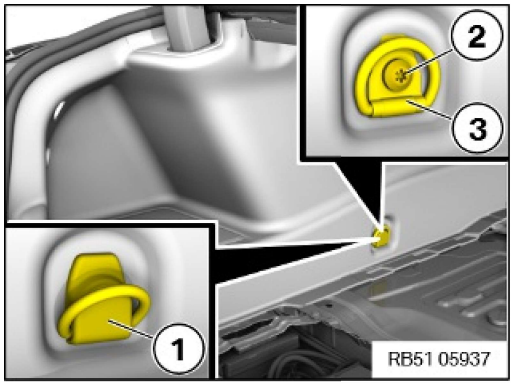
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- Feed luggage compartment wheel arch trim panel (2) under the side trim panel in the rear passenger compartment and the sealing lip for the tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).



- Secure expanding rivet (1).
- Raise the link rear seat backrest.



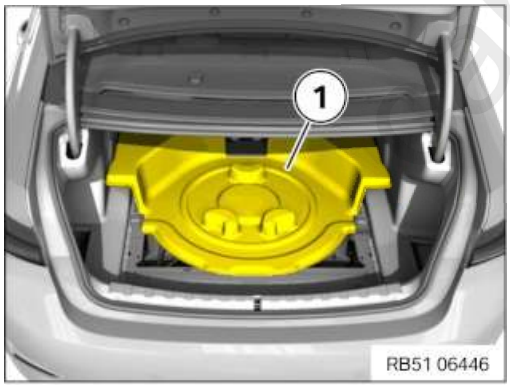
- Position the lashing eye (3).
- Tighten down screw (2).

Lashing eye to body

	Tightening torque	19 Nm

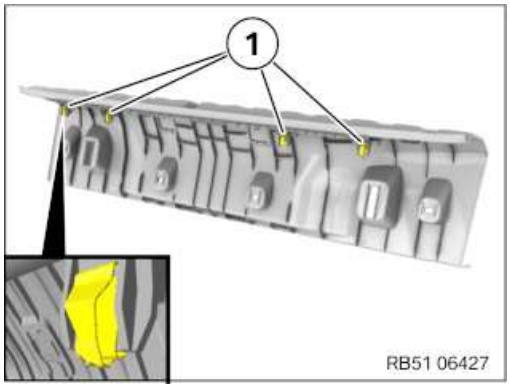
- Install the cover (1).

9 – Install the luggage compartment well in front



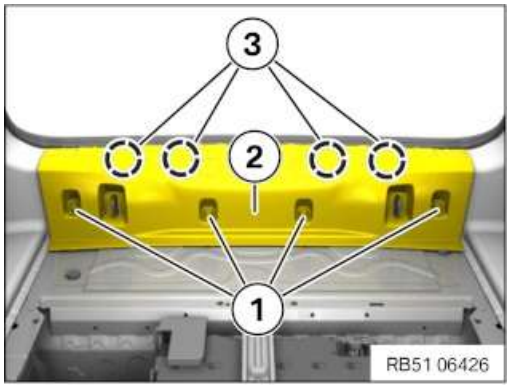
- Feed in and insert front luggage compartment well (1) on the seat belt strap.

10 – Installing loading edge trim



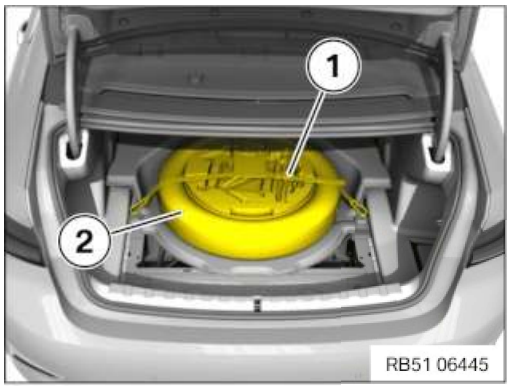
- Check the clamps (1) for damage and renew if necessary.

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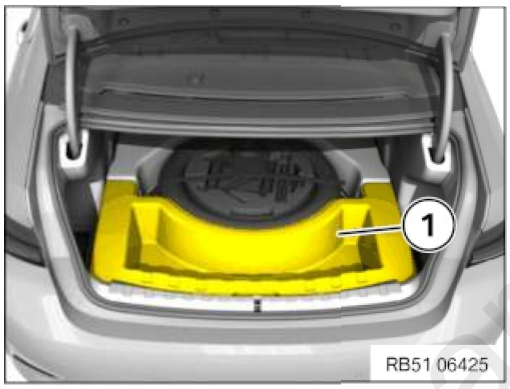
- Insert the loading edge trim (2) under the sealing lip of the tailgate seal.
- Fit the trim of the loading edge (2) at the latch mechanisms (3) and clip it in to the bottom.
- Secure expanding rivet (1).

11 – If installed: Install the emergency wheel



- Install the emergency wheel (2) with the insert.
- Position the seat belt strap above the emergency wheel and close the buckle on the seat belt strap (1).

▶ **Installing rear luggage compartment well**



- Install rear luggage compartment well (1).

12 – Installing the luggage compartment floor trim panel



- Insert the luggage compartment floor trim panel (1).

Additional Information

Overview of Tightening Torques

Lashing eye to body Used in step 8

	Tightening torque	19 Nm

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51 24 325 Removing and installing/replacing left tension spring for tailgate

CAUTION

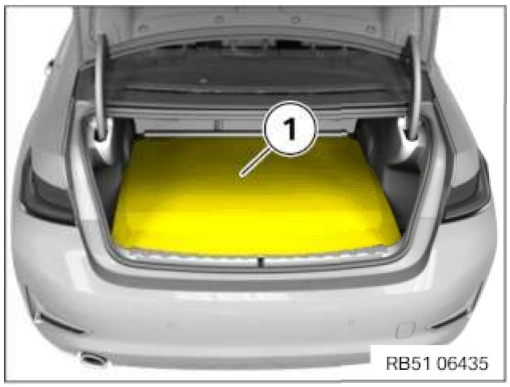
Shutting bonnet or tailgate.

Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.

PRELIMINARY WORK

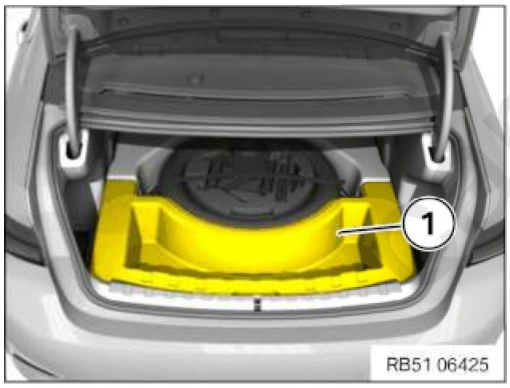
1 – Removing the luggage compartment floor trim panel



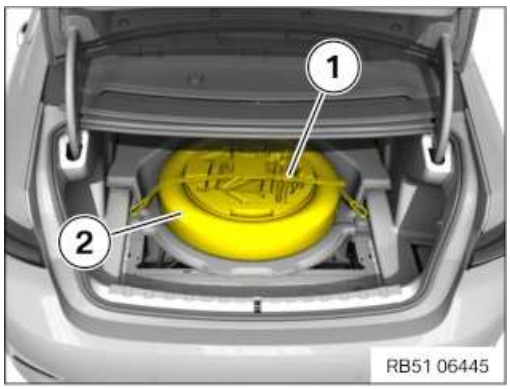
- Remove luggage compartment floor trim panel (1).

2 – If installed: Removing the compact spare wheel

▸ **Removing rear luggage compartment well**

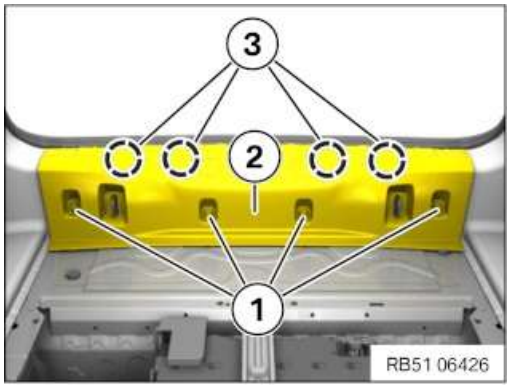


- Remove rear luggage compartment well (1).



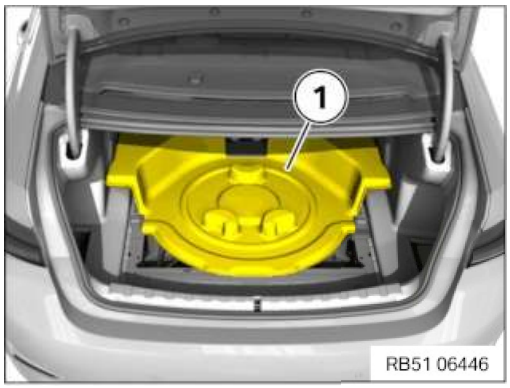
- Open buckle on seat belt strap (1) and set it aside.
- Remove emergency wheel (2) with the insert.

3 – Removing the loading edge trim



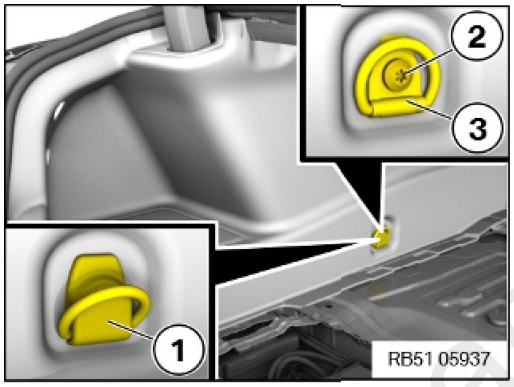
- Loosen the expanding rivet (1).
- Unclip loading edge trim(2) upwards from latch mechanisms (3).
- Guide out and remove loading edge trim (2) under the sealing lip of the tailgate seal.

4 – Removing front luggage compartment well

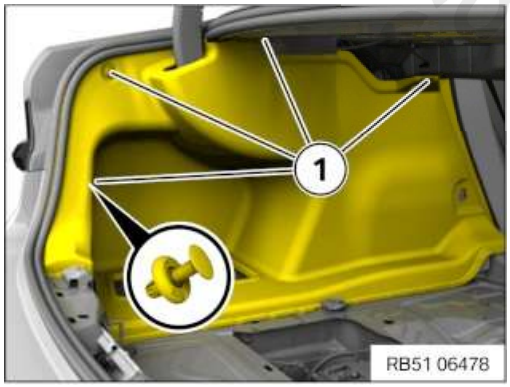


- Guide out and remove front luggage compartment well (1) on the seat belt strap.

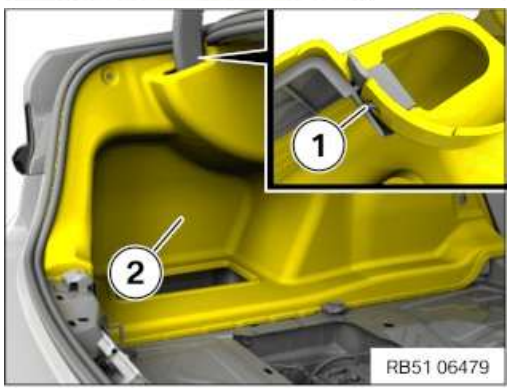
5 – Remove luggage compartment wheel arch trim panel on left.



- Remove the cover (1).
- Loosen screw (2).
- Remove lashing eye (3).



- Reposition left rear seat backrest.
- Loosen the expanding rivet (1).



- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip for the tailgate and the side trim panel in the rear passenger compartment.
- Remove luggage compartment wheel arch trim panel (2).

.com

6 – Removing tension spring for tailgate

CAUTION

Shutting bonnet or tailgate.

Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.

CAUTION

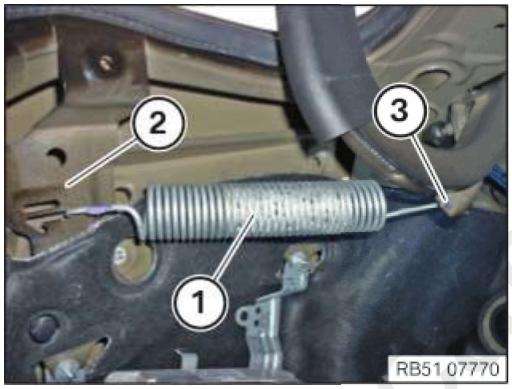
Tension spring.

Danger of injury!

- Wear protective gloves while removing and installing the tension spring.

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Note down position of tension spring (1) at rear holder (2).
- Detach the tension spring (1) from the rear holder (2).
- Feed out tension spring (1) from hinge (3).

7 – Installing the tension spring for tailgate

CAUTION

Shutting bonnet or tailgate.

Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.

CAUTION

Tension spring.

Danger of injury!

- Wear protective gloves while removing and installing the tension spring.

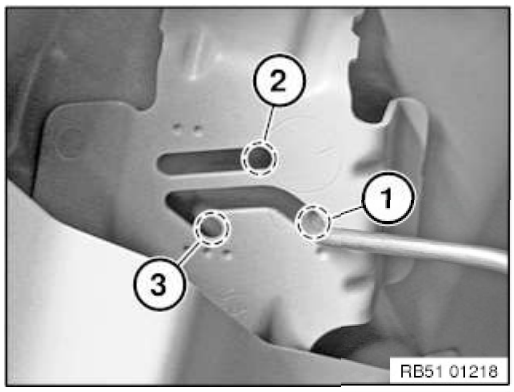
TECHNICAL INFORMATION

Notes for setting up the closing force are a fundamental requirement for these repair instructions and must be complied with at all times.

For additional information see: 51 24 ... Notes for setting up closing force on tailgate

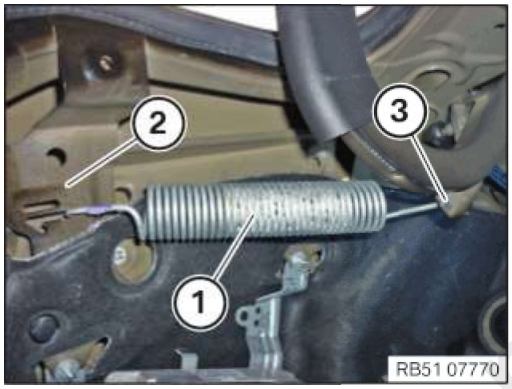
NOTICE

Description is for left component only. Procedure on the right side is identical.



- Positions (1) to (3) influence the closing force of the tension spring.

  If the closing force needs to be changed: see additional information.

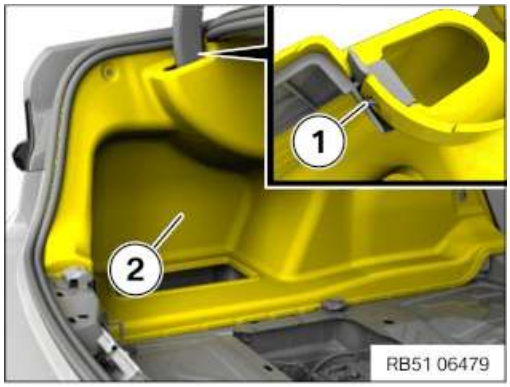


- Feed in the tension spring (1) to the hinge (3).

  Mount tension spring (1) to rear holder (2) again in the same position.

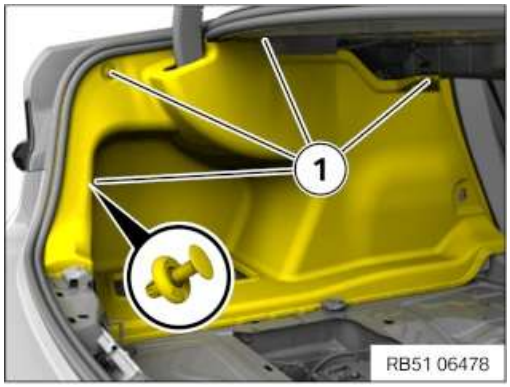
POSTPROCESSES

8 – Install luggage compartment wheel arch trim panel at left

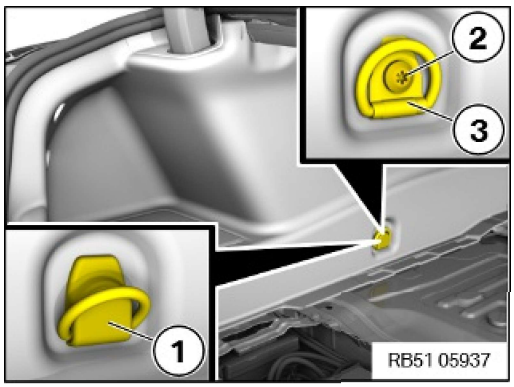


- Feed luggage compartment wheel arch trim panel (2) under the side trim panel in the rear passenger compartment and the sealing lip for the tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).

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- Secure expanding rivet (1).
- Raise the link rear seat backrest.



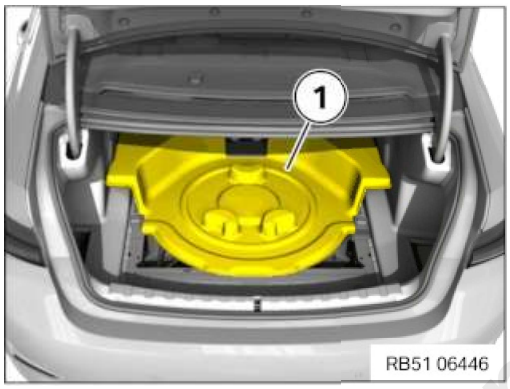
- Position the lashing eye (3).
- Tighten down screw (2).

Lashing eye to body

	Tightening torque	19 Nm

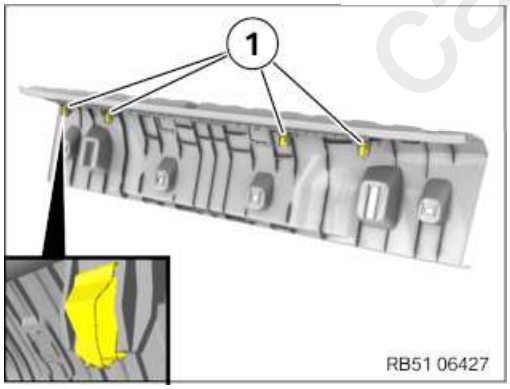
- Install the cover (1).

9 – Install the luggage compartment well in front

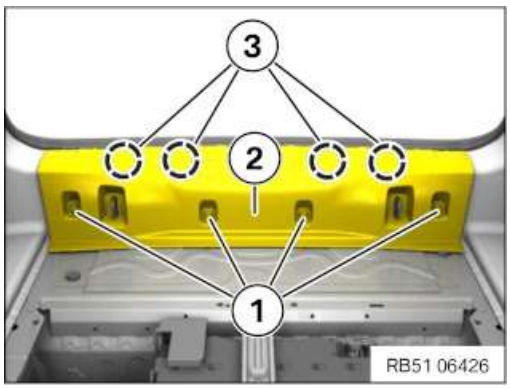


- Feed in and insert front luggage compartment well (1) on the seat belt strap.

10 – Installing loading edge trim



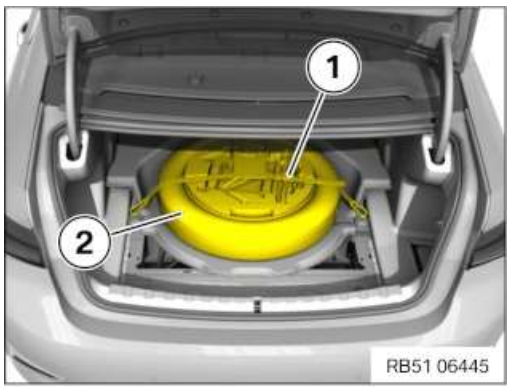
- Check the clamps (1) for damage and renew if necessary.



- Insert the loading edge trim (2) under the sealing lip of the tailgate seal.
- Fit the trim of the loading edge (2) at the latch mechanisms (3) and clip it in to the bottom.
- Secure expanding rivet (1).

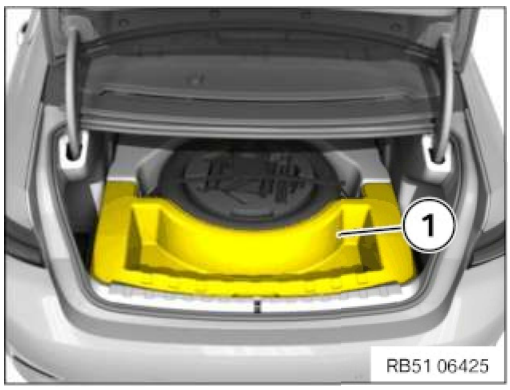
cardiagn.com

11 – If installed: Install the emergency wheel



- Install the emergency wheel (2) with the insert.
- Position the seat belt strap above the emergency wheel and close the buckle on the seat belt strap (1).

▶ **Installing rear luggage compartment well**



- Install rear luggage compartment well (1).

12 – Installing the luggage compartment floor trim panel



- Insert the luggage compartment floor trim panel (1).

Additional Information

Overview of Tightening Torques

Lashing eye to body		Used in step 8
	Tightening torque	19 Nm

Links

General repair instructions	Used in step
51 24 ... Notes on setting tailgate closing force	7

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51 24 351 Removing and installing/replacing right electrical spindle drive for tailgate

PRELIMINARY WORK

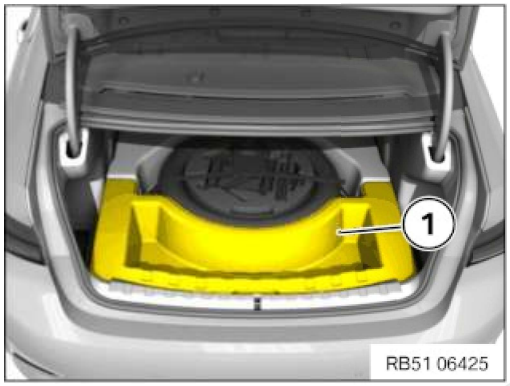
1 – Removing the luggage compartment floor trim panel



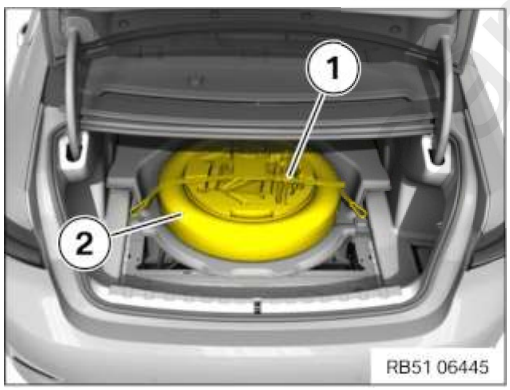
- Remove luggage compartment floor trim panel (1).

2 – If installed: Removing the compact spare wheel

▸ **Removing rear luggage compartment well**

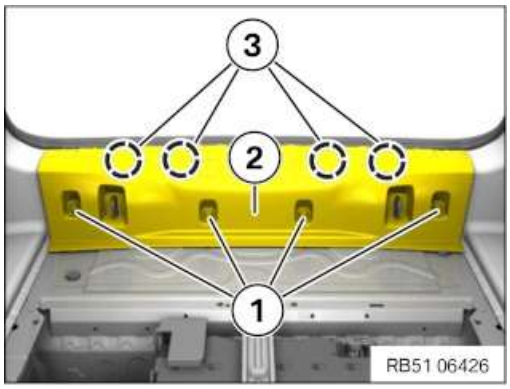


- Remove rear luggage compartment well (1).



- Open buckle on seat belt strap (1) and set it aside.
- Remove emergency wheel (2) with the insert.

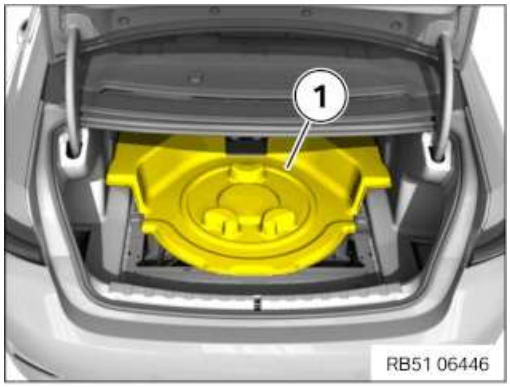
3 – Removing the loading edge trim



- Loosen the expanding rivet (1).
- Unclip loading edge trim(2) upwards from latch mechanisms (3).
- Guide out and remove loading edge trim (2) under the sealing lip of the tailgate seal.

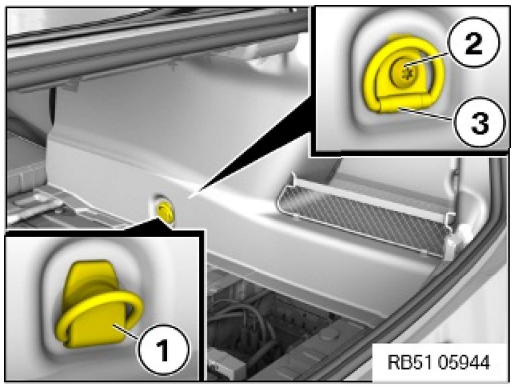
rdiagn.com

4 – Removing front luggage compartment well



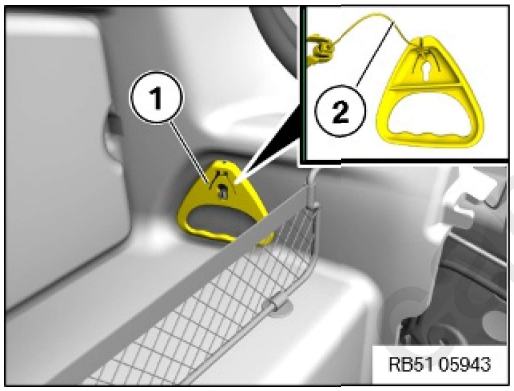
- Guide out and remove front luggage compartment well (1) on the seat belt strap.

5 – Removing right luggage compartment wheel arch trim panel

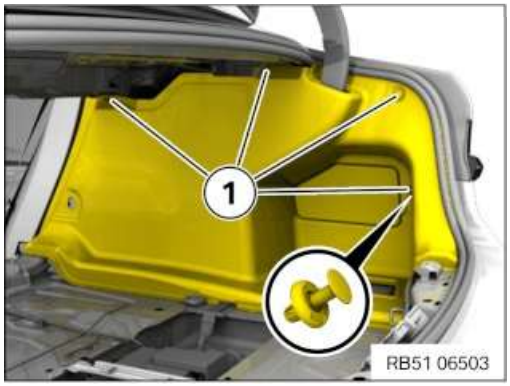


- Remove the cover (1).
- Loosen screw (2).
- Remove the lashing eye (3).

▸ If installed: Remove the emergency release handle for the tailgate (additional work in the US version)

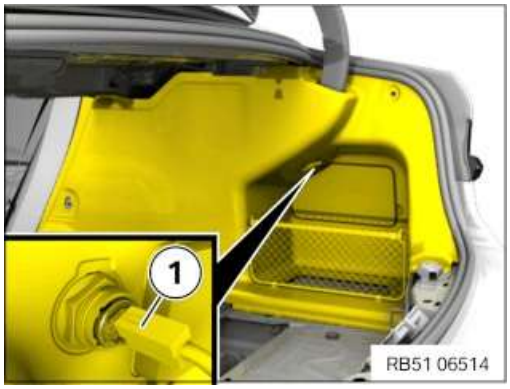


- Release the emergency release handle for tailgate (1) from the holder.
- Detach Bowden cable (2) and remove the emergency release handle for tailgate (1).

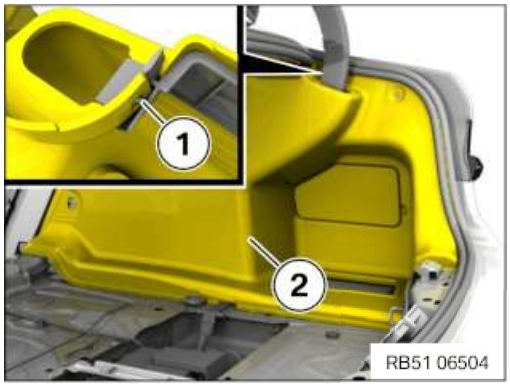


- Reposition the right rear seat backrest.
- Loosen the expanding rivet (1).

▸ If installed: Disconnect plug connection of the 12 V connection (additional work with storage package equipment specification)



- Unlock and disconnect the plug connection (1) of the 12 V power socket.



- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip for the tailgate and the side trim panel in the rear passenger compartment.
- Remove luggage compartment wheel arch trim panel (2).

MAIN WORK

6 – Removing the electrical spindle drive for the right tailgate

RISK OF DAMAGE

Damage to the spindle drive.

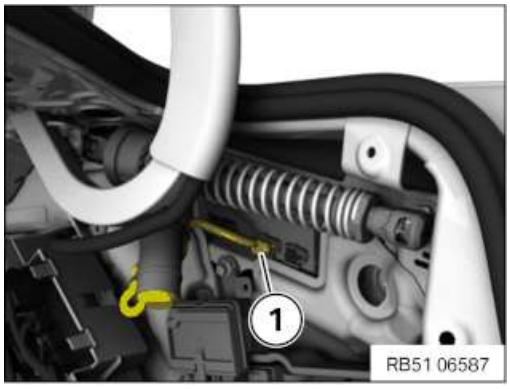
If the tailgate is not opened completely, the spindle drive may be damaged.

- Remove and install the spindle drive only when the Tailgate is open to the maximum extent.

TECHNICAL INFORMATION

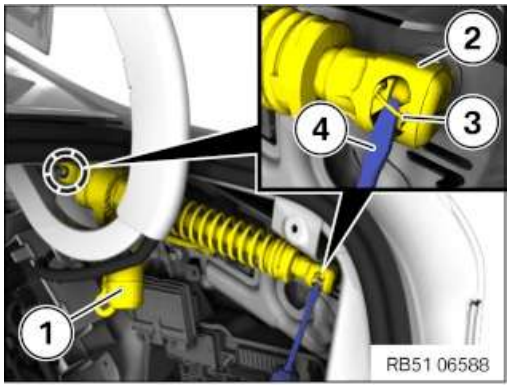
The notes on the disassembly and installation of ball sockets with clamps are the basis for these repair instructions and must be observed without fail.

For additional information see: 51 23 ... Note information on disassembly/installation of ball sockets with clamp



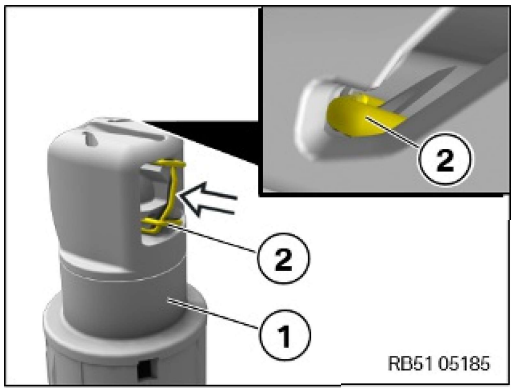
- Unlock plug connection (1) and disconnect.

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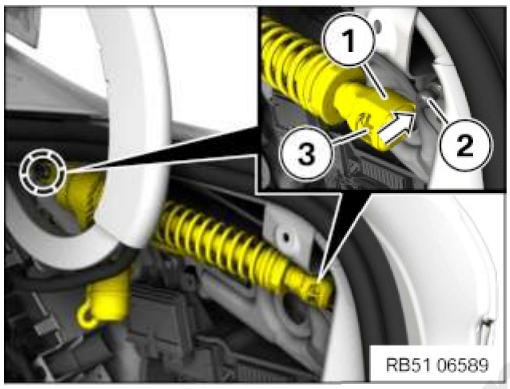


- Before removing the electrical spindle drive for right tailgate (1), ensure ball socket (2) is relieved of the load.
- First, release front ball socket (2) on the tailgate hinge.
- Then release rear ball socket (2) on the body.
- Lift retaining spring (3) slightly with a small screwdriver (4).
- Pull off and remove the electrical spindle drive for right tailgate (1) from the ball pin.

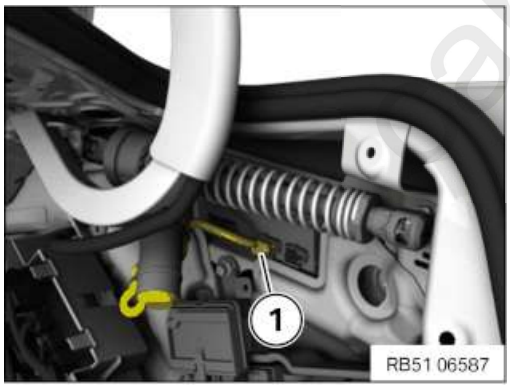
7 – Installing electrical spindle drive for the right tailgate



- Before installing the electrical spindle drive for right tailgate (1), ensure that retaining spring (2) is in its initial position.



- First, press the rear ball socket (1) on the body in the direction of the arrow on ball pin (2) until retaining spring (3) engages correctly and audibly.
- Then press the front ball socket (1) on the tailgate hinge on ball pin (2) until retaining spring (3) engages correctly and audibly.

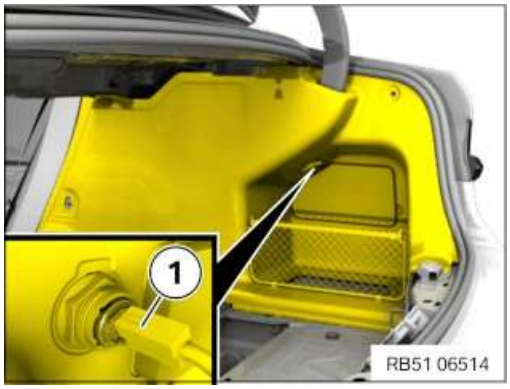


- Connect connectors (1) and lock.

POSTPROCESSES

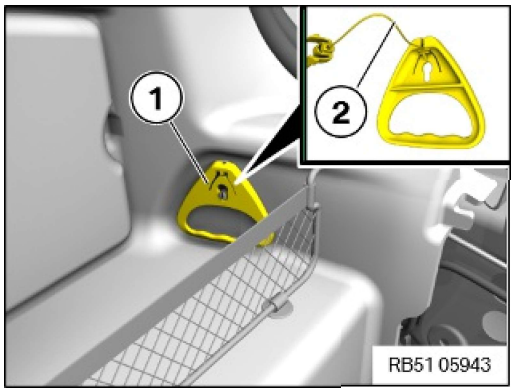
8 – Installing the luggage compartment wheel arch trim panel on the right

▸ If installed: Connecting plug of the 12 V power socket (additional work for equipment specification with storage package)

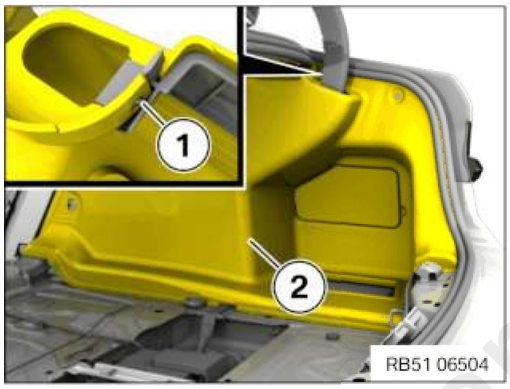


- Connect and lock connector (1) of the 12 V power socket.

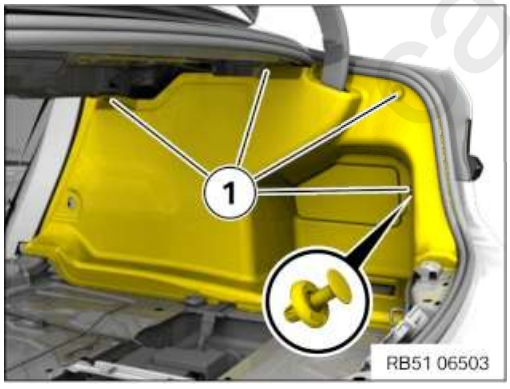
▶ If installed: Installing the emergency tailgate release handle (additional work for US version)



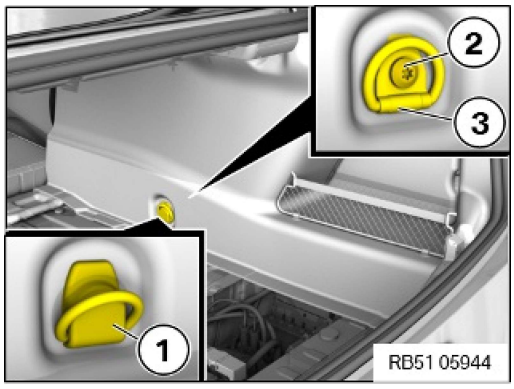
- Attach the Bowden cable (2).
- Fasten emergency tailgate release handle (1) to the bracket.



- Feed luggage compartment wheel arch trim panel (2) under the side trim panel in the rear passenger compartment and the sealing lip for the tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).



- Secure expanding rivet (1).
- Raise the right rear seat backrest.



- Position the lashing eye (3).
- Tighten down screw (2).

Lashing eye to body

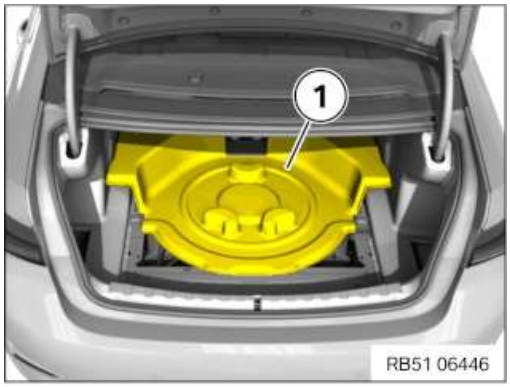
	Tightening torque	19 Nm

- Install the cover (1).

9 – Install the luggage compartment well in front

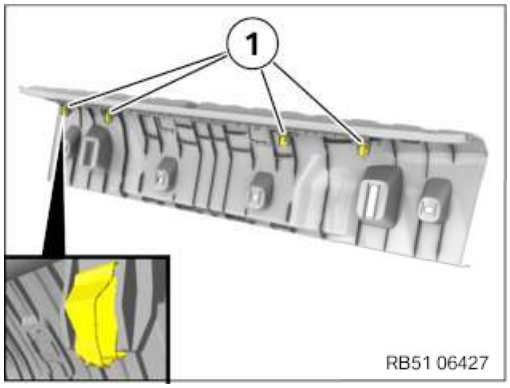
carsardiagram.com

9 – Install the luggage compartment well in front

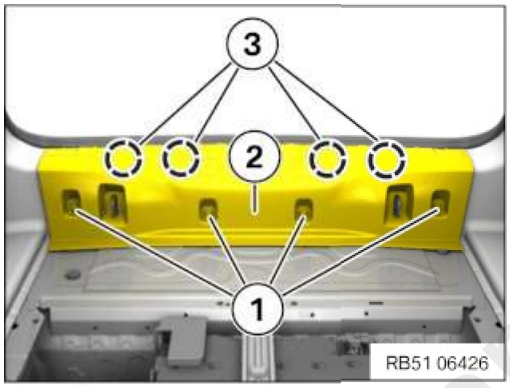


- Feed in and insert front luggage compartment well (1) on the seat belt strap.

10 – Installing loading edge trim

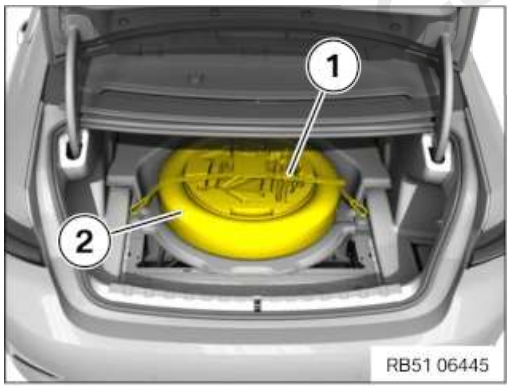


- Check the clamps (1) for damage and renew if necessary.



- Insert the loading edge trim (2) under the sealing lip of the tailgate seal.
- Fit the trim of the loading edge (2) at the latch mechanisms (3) and clip it in to the bottom.
- Secure expanding rivet (1).

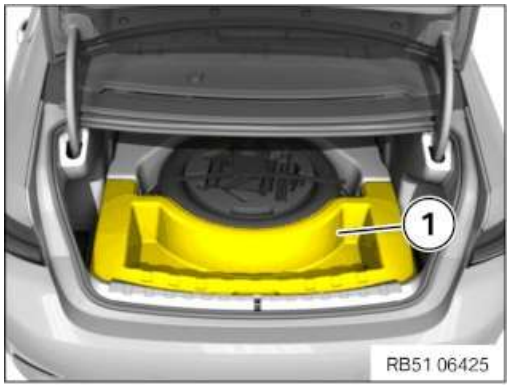
11 – If installed: Install the emergency wheel



- Install the emergency wheel (2) with the insert.
- Position the seat belt strap above the emergency wheel and close the buckle on the seat belt strap (1).

▸ Installing rear luggage compartment well

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- Install rear luggage compartment well (1).

12 – Installing the luggage compartment floor trim panel



- Insert the luggage compartment floor trim panel (1).

Additional Information

Overview of Tightening Torques

Lashing eye to body		Used in step 8
	Tightening torque	19 Nm

Links

Repair instructions	Used in step
51 23 ... Removing/installing ball sockets with clip	6

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51 24 324 Removing and installing/replacing right tension spring for tailgate

CAUTION

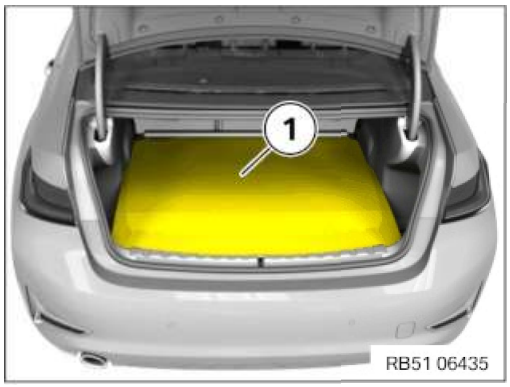
Shutting bonnet or tailgate.

Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.

PRELIMINARY WORK

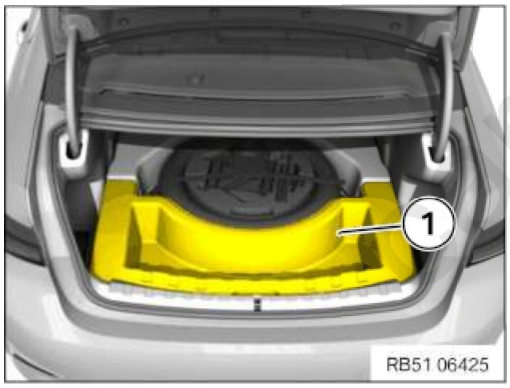
1 – Removing the luggage compartment floor trim panel



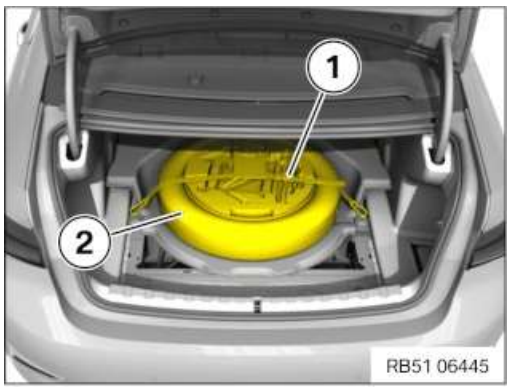
- Remove luggage compartment floor trim panel (1).

2 – If installed: Removing the compact spare wheel

▸ **Removing rear luggage compartment well**

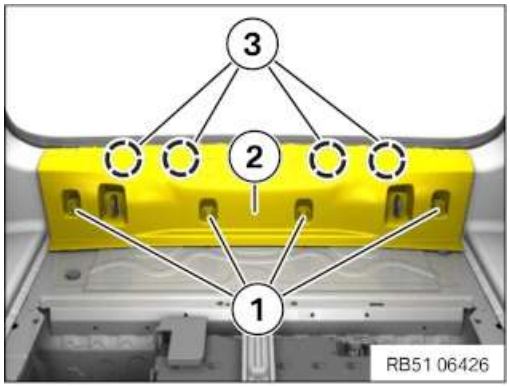


- Remove rear luggage compartment well (1).



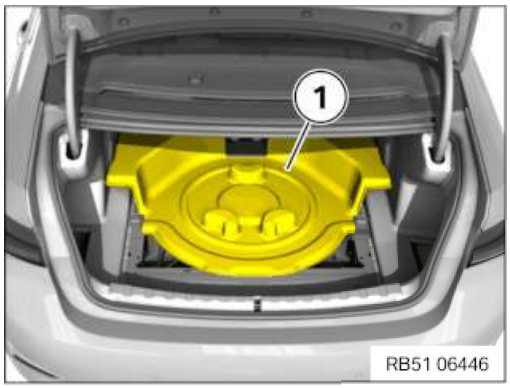
- Open buckle on seat belt strap (1) and set it aside.
- Remove emergency wheel (2) with the insert.

3 – Removing the loading edge trim



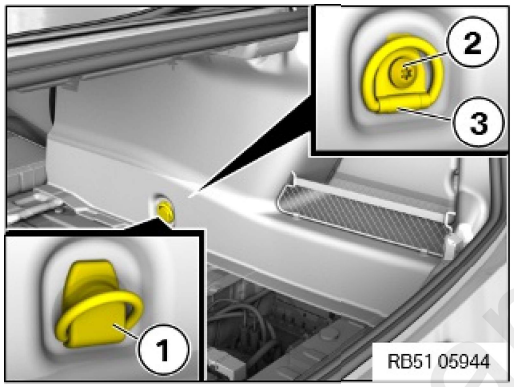
- Loosen the expanding rivet (1).
- Unclip loading edge trim(2) upwards from latch mechanisms (3).
- Guide out and remove loading edge trim (2) under the sealing lip of the tailgate seal.

4 – Removing front luggage compartment well



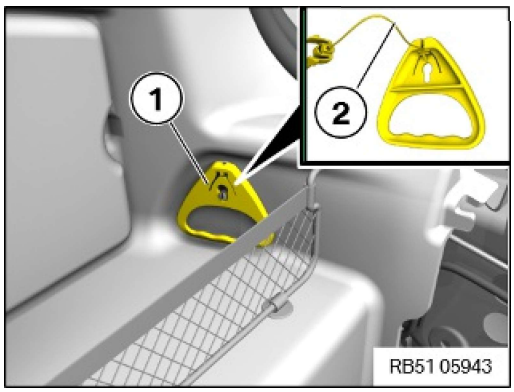
- Guide out and remove front luggage compartment well (1) on the seat belt strap.

5 – Removing right luggage compartment wheel arch trim panel



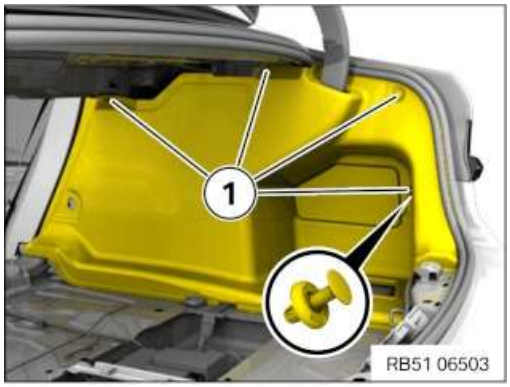
- Remove the cover (1).
- Loosen screw (2).
- Remove the lashing eye (3).

▸ If installed: Remove the emergency release handle for the tailgate (additional work in the US version)



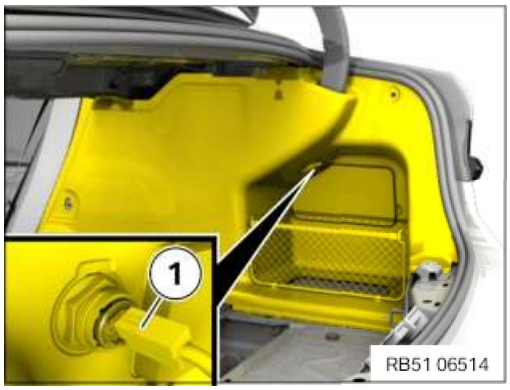
- Release the emergency release handle for tailgate (1) from the holder.
- Detach Bowden cable (2) and remove the emergency release handle for tailgate (1).

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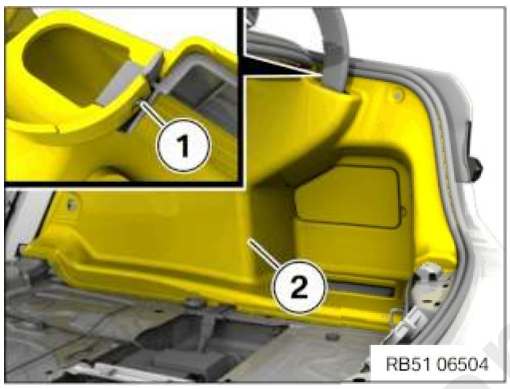


- Reposition the right rear seat backrest.
- Loosen the expanding rivet (1).

▸ If installed: Disconnect plug connection of the 12 V connection (additional work with storage package equipment specification)



- Unlock and disconnect the plug connection (1) of the 12 V power socket.



- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip for the tailgate and the side trim panel in the rear passenger compartment.
- Remove luggage compartment wheel arch trim panel (2).

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MAIN WORK

6 – Removing tension spring for tailgate

CAUTION

Shutting bonnet or tailgate.

Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.

CAUTION

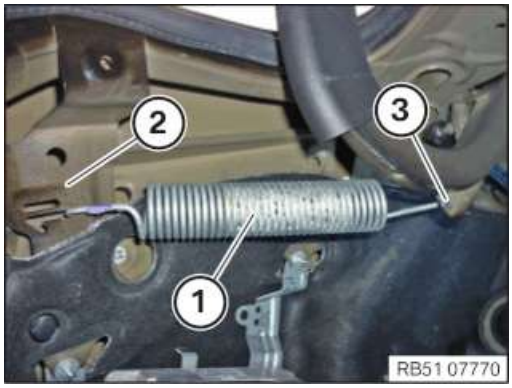
Tension spring.

Danger of injury!

- Wear protective gloves while removing and installing the tension spring.

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Note down position of tension spring (1) at rear holder (2).
- Detach the tension spring (1) from the rear holder (2).
- Feed out tension spring (1) from hinge (3).

7 – Installing the tension spring for tailgate

CAUTION

Shutting bonnet or tailgate.

Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.

CAUTION

Tension spring.

Danger of injury!

- Wear protective gloves while removing and installing the tension spring.

TECHNICAL INFORMATION

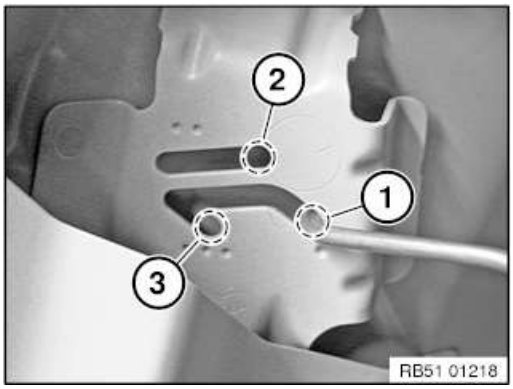
Notes for setting up the closing force are a fundamental requirement for these repair instructions and must be complied with at all times.

For additional information see: 51 24 ... Notes for setting up closing force on tailgate

NOTICE

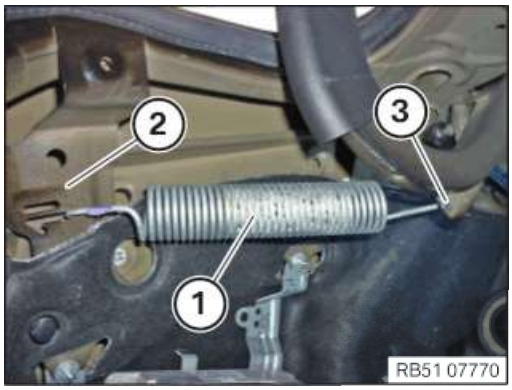
Description is for left component only. Procedure on the right side is identical.

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- Positions (1) to (3) influence the closing force of the tension spring.

  If the closing force needs to be changed:see additional information.



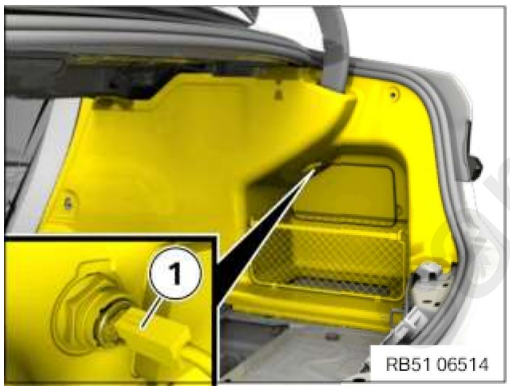
- Feed in the tension spring (1) to the hinge (3).

  Mount tension spring (1) to rear holder (2) again in the same position.

POSTPROCESSES

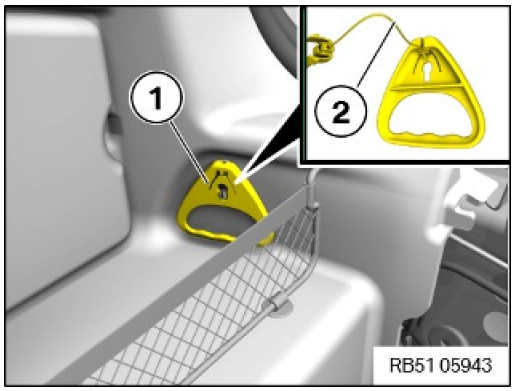
8 – Installing the luggage compartment wheel arch trim panel on the right

▸ If installed: Connecting plug of the 12 V power socket (additional work for equipment specification with storage package)



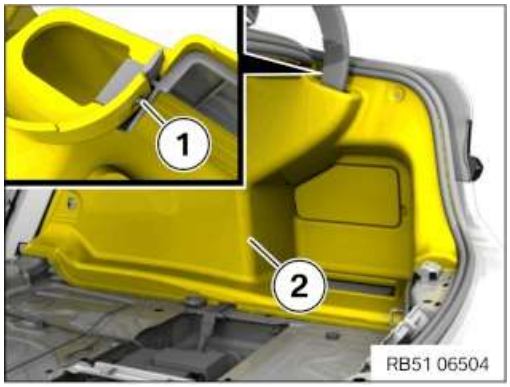
- Connect and lock connector (1) of the 12 V power socket.

▸ If installed: Installing the emergency tailgate release handle (additional work for US version)

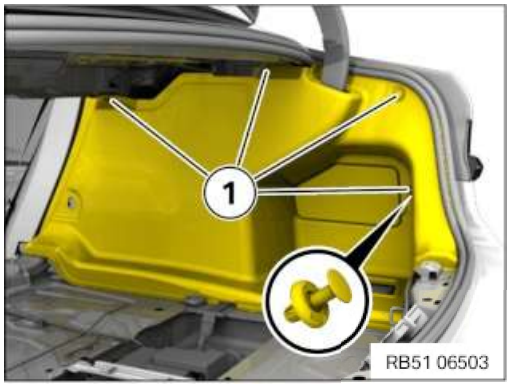


- Attach the Bowden cable (2).
- Fasten emergency tailgate release handle (1) to the bracket.

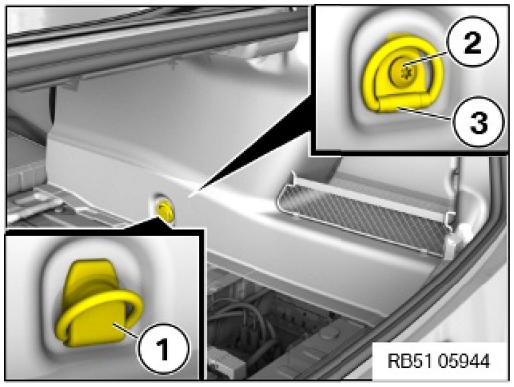
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- Feed luggage compartment wheel arch trim panel (2) under the side trim panel in the rear passenger compartment and the sealing lip for the tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).



- Secure expanding rivet (1).
- Raise the right rear seat backrest.



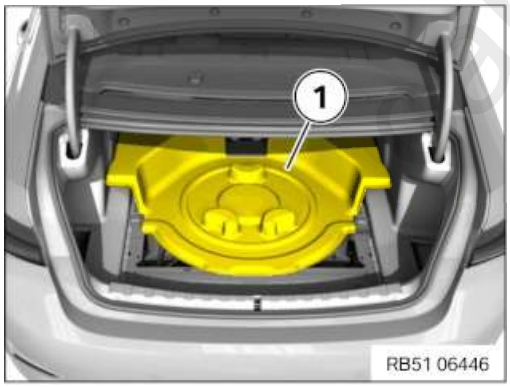
- Position the lashing eye (3).
- Tighten down screw (2).

Lashing eye to body

	Tightening torque	19 Nm

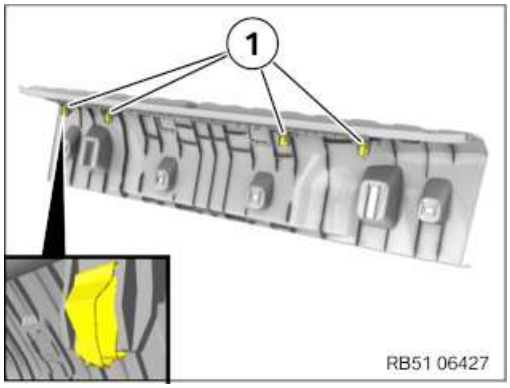
- Install the cover (1).

9 – Install the luggage compartment well in front



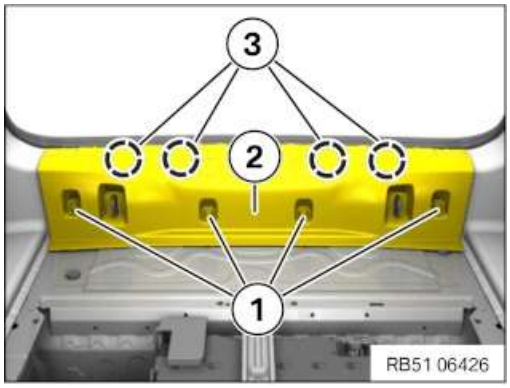
- Feed in and insert front luggage compartment well (1) on the seat belt strap.

10 – Installing loading edge trim



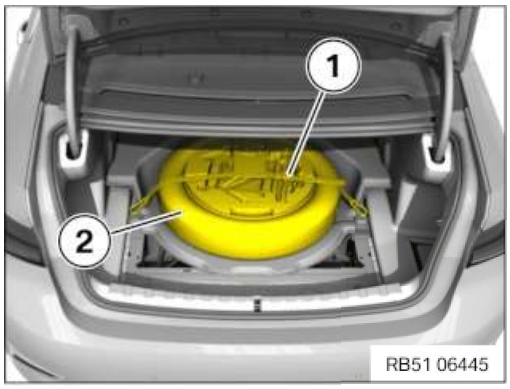
- Check the clamps (1) for damage and renew if necessary.

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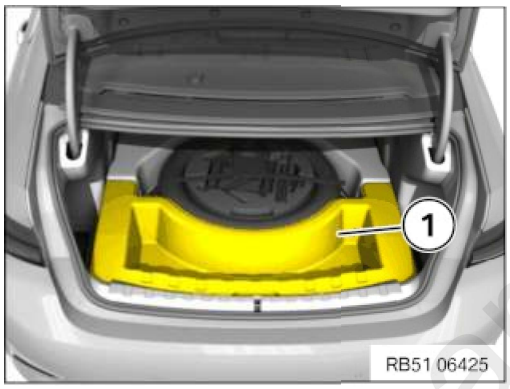
- Insert the loading edge trim (2) under the sealing lip of the tailgate seal.
- Fit the trim of the loading edge (2) at the latch mechanisms (3) and clip it in to the bottom.
- Secure expanding rivet (1).

11 – If installed: Install the emergency wheel



- Install the emergency wheel (2) with the insert.
- Position the seat belt strap above the emergency wheel and close the buckle on the seat belt strap (1).

▶ **Installing rear luggage compartment well**



- Install rear luggage compartment well (1).

12 – Installing the luggage compartment floor trim panel



- Insert the luggage compartment floor trim panel (1).

Additional Information

Overview of Tightening Torques

Lashing eye to body Used in step 8

	Tightening torque	19 Nm

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Links

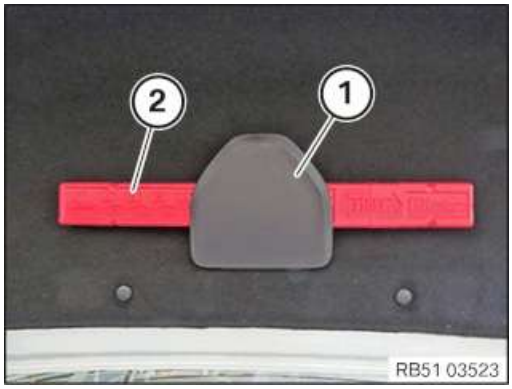
General repair instructions	Used in step
51 24 ... Notes on setting tailgate closing force	7

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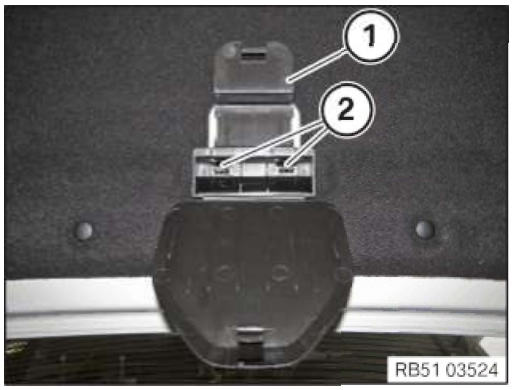
51 24 130 Removing and installing/replacing striker for tailgate lock

PRELIMINARY WORK

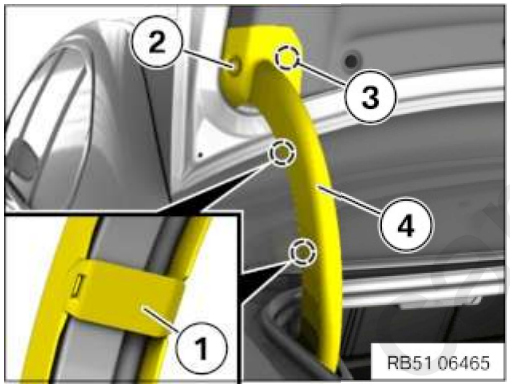
1 – Remove tailgate trim panel



- Fold the cover (1) towards the bottom.
- Remove the warning triangle (2).



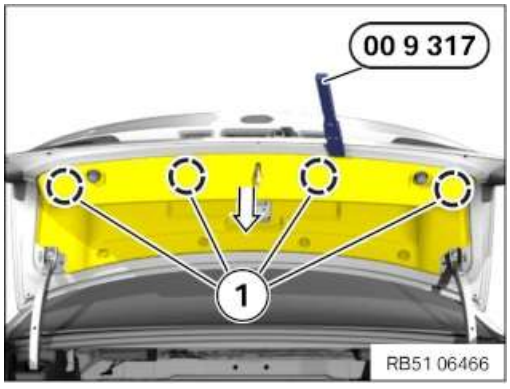
- Detach the warning triangle holder (1) from the latch mechanisms (2) and slide downwards.



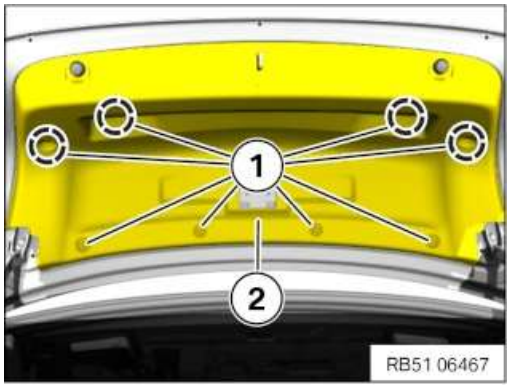
NOTICE

Description is for left component only. Procedure on the right side is identical.

- Unclip the tabs (1).
- Loosen expanding rivet (2).
- To avoid damage, release the trim panel for the hinge of the tailgate (4) without using a tool by jerking it along the hinge bracket and out of the clip fastening (3).



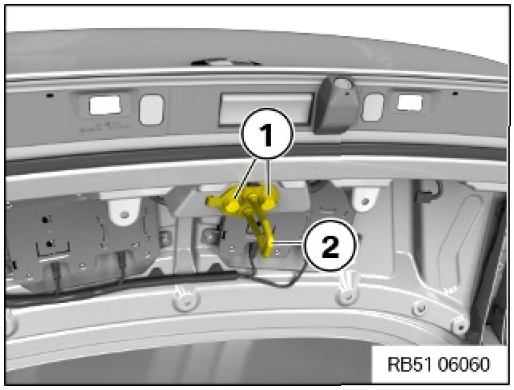
- Unclip clips (1) with special tool 0 490 534 (00 9 317) in the direction of arrow.



- Release expanding rivet (1) on the tailgate trim panel (2).
- Remove tailgate trim panel (2).
- **If installed**: Unlock plug connection of the switch for the tailgate lift and disconnect.

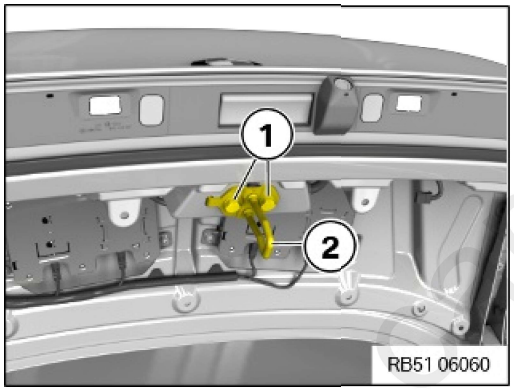
MAIN WORK

2 – Remove the striker for the tailgate catch



- Loosen screws (1).
- Remove the striker for the tailgate catch (2).

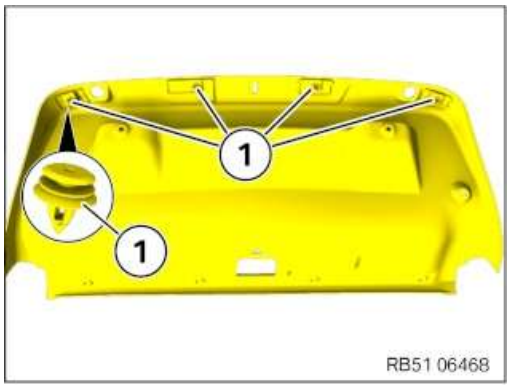
3 – Install striker for the tailgate catch



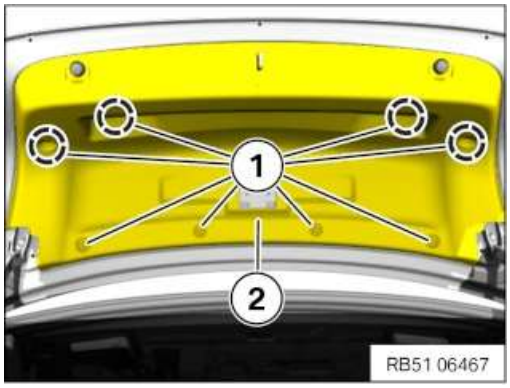
- Position the striker for the tailgate catch (2) and tighten the screws (1).

POSTPROCESSES

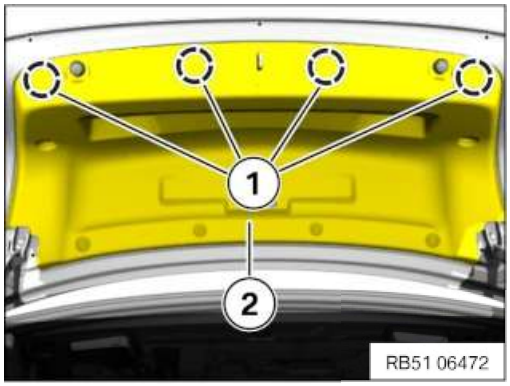
4 – Installing the tailgate trim panel



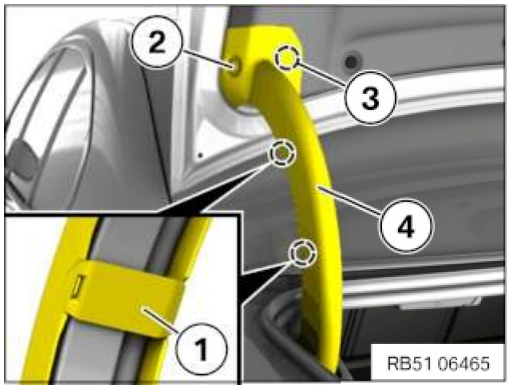
- Check the clips (1) for damage and renew if necessary.



- Fit the tailgate trim panel (2) and fasten in place with the expanding rivets (1).
- **If installed**: Connect and lock plug connection on the switch for the tailgate lift.



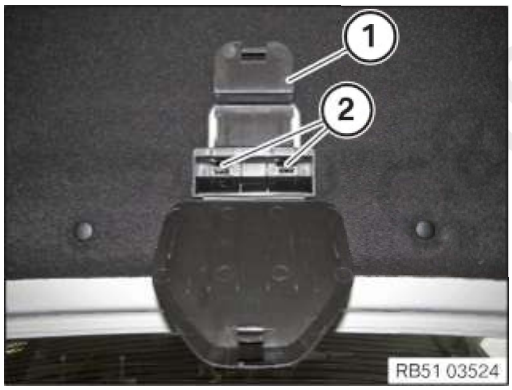
- Clip in the tailgate trim panel (2) with the clips (1).



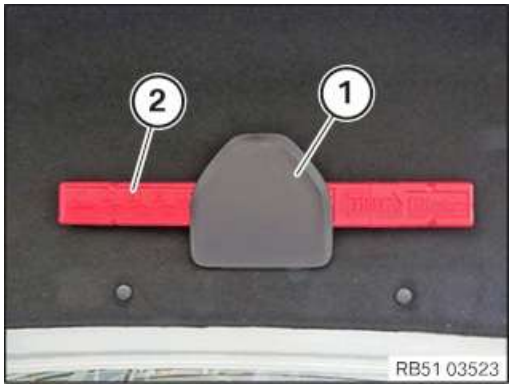
NOTICE

Description is for left component only. Procedure on the right side is identical.

- Clip in the trim panel for the hinge of the tailgate (4) to the clip fastening (3).
- Fasten expanding rivet (2).
- Clip in tabs (1).



- Position the warning triangle holder (1) and snap into the latch mechanisms (2).



- Install the warning triangle (2).
- Clip in the cover (1).

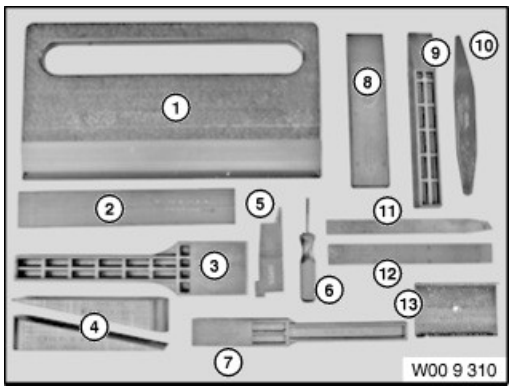
Additional Information

Overview of Tightening Torques

Overview of Tightening Torques

Overview of Special Tools

0 490 534 (00 9 317) Wedge



Common	Used in step 1
Usage	(Trim wedge) Replaced by special tool 00 9 325 from 11/2008 (quality improvement due to new material) Replaced by 00 9 325 (0 496 569)
Included in the tool or work	0 490 527
Storage location	
Replaced by	
In connection with	
SI-Number	

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51 24 100 Removing and installing/replacing tailgate lock

PRELIMINARY WORK

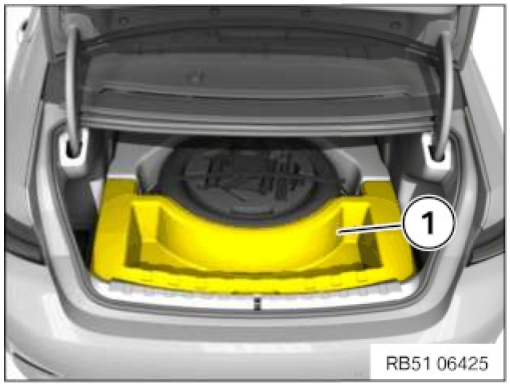
1 – Removing the luggage compartment floor trim panel



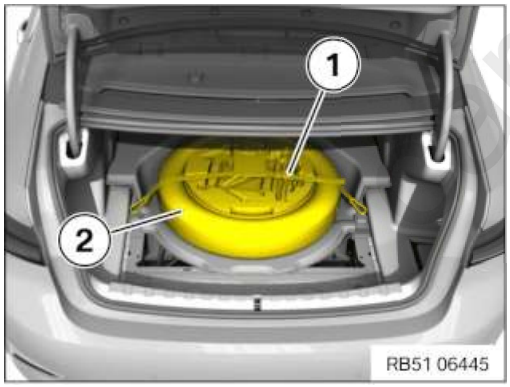
- Remove luggage compartment floor trim panel (1).

2 – If installed: Removing the compact spare wheel

▸ **Removing rear luggage compartment well**

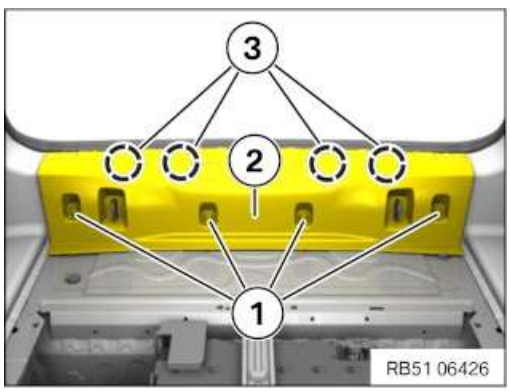


- Remove rear luggage compartment well (1).



- Open buckle on seat belt strap (1) and set it aside.
- Remove emergency wheel (2) with the insert.

3 – Removing the loading edge trim

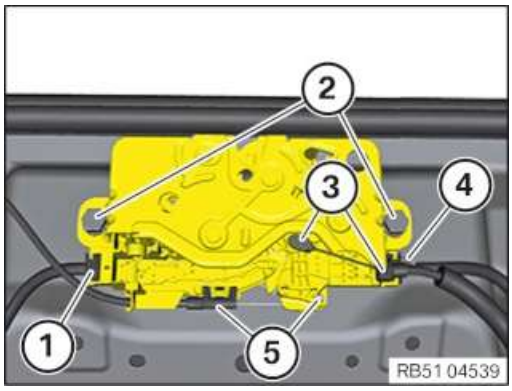


- Loosen the expanding rivet (1).
- Unclip loading edge trim(2) upwards from latch mechanisms (3).
- Guide out and remove loading edge trim (2) under the sealing lip of the tailgate seal.

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MAIN WORK

4 – Removing the tailgate lock



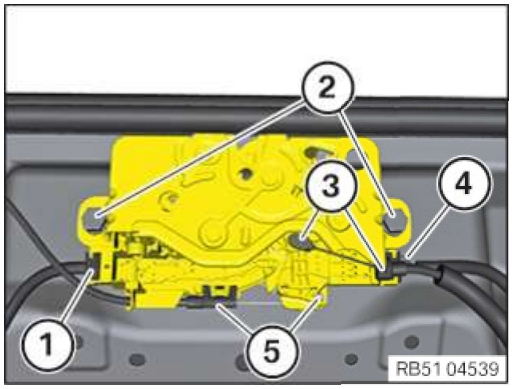
- Unlock plug connection (1) and disconnect.
- Loosen screws (2).
- **Version with Soft Close Automatic:**

  Detach the Bowden cable (3).

  Unlock plug connection (4) and disconnect.
- **Version with emergency release:**

  Detach the Bowden cable (5).

5 – Installing the tailgate lock



- Tighten the screws (2).

Tailgate lock to body

Hexagon screw M8x20		Tightening torque	19 Nm

- Connect connector (1).
- **Version with Soft Close Automatic:**

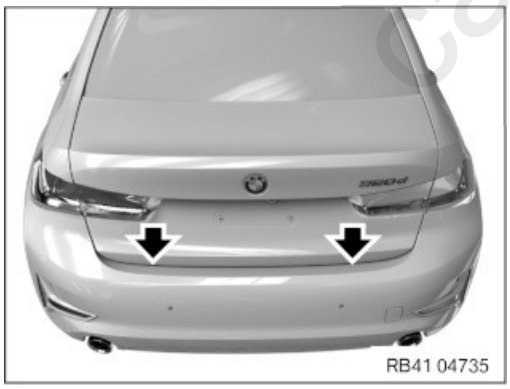
  Attach the Bowden cable (3).

  Connect connector (4).
- **Version with emergency release:**

  Attach the Bowden cable (5).

POSTPROCESSES

6 – Installing the lower section of the tailgate lock



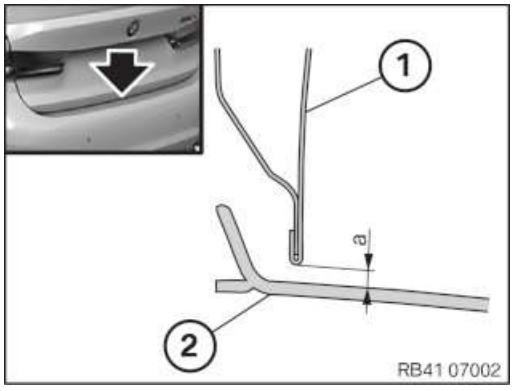
Check

- Check the gap dimensions between the tailgate and bumper panel (arrows).

Gap dimension tailgate to rear bumper panel

1 tailgate; 2 rear bumper panel

a	5,1 (3,3 - 6,9) mm



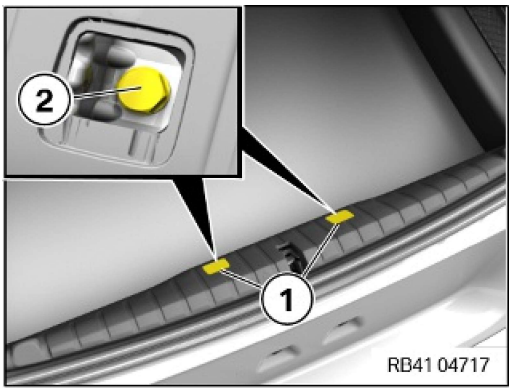
Result

» Gap dimension does not correspond to specifications.

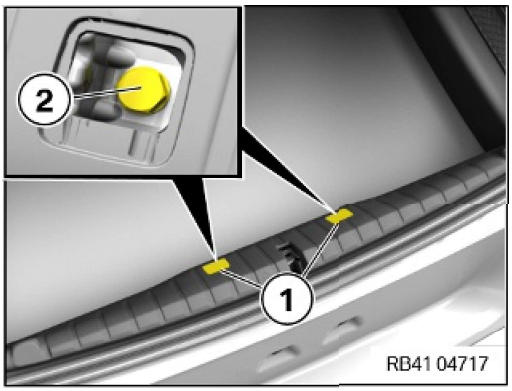
cardiagn.com

Measure

- Adjusting tailgate lock.



- Lever out the covers (1) with a suitable screwdriver and remove.
- Loosen screws (2) until the tailgate lock can be moved.
- Adjust tailgate lock so that the tailgate has the specified gap dimension to the bumper panel.

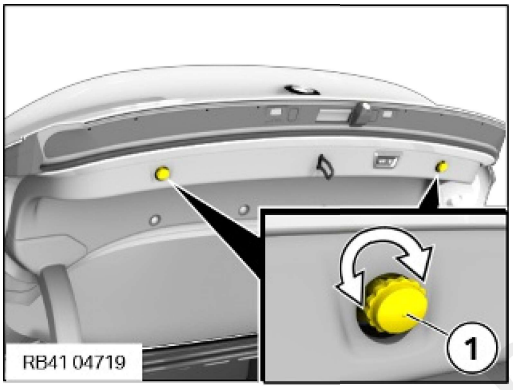


- Tighten the screws (2).

Tailgate lock to body

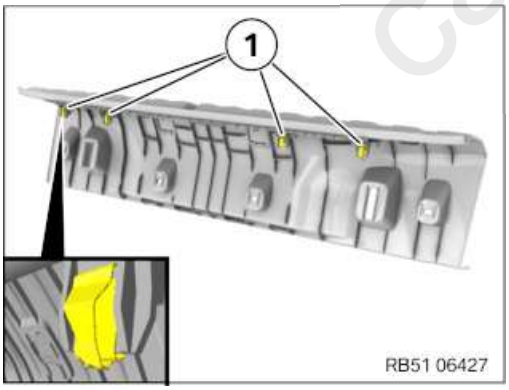
Hexagon screw M8x20		Tightening torque	19 Nm

- Install and clip in the covers (1).



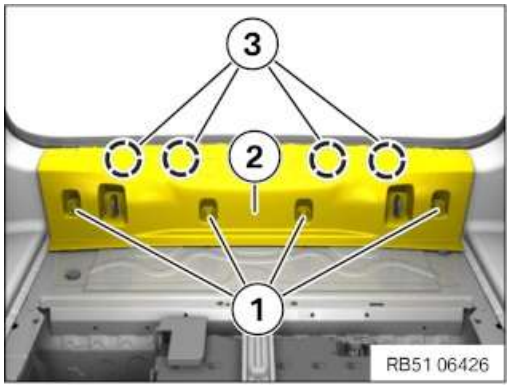
- Adjust the stop pad (1) by twisting in arrow direction.

7 – Installing loading edge trim



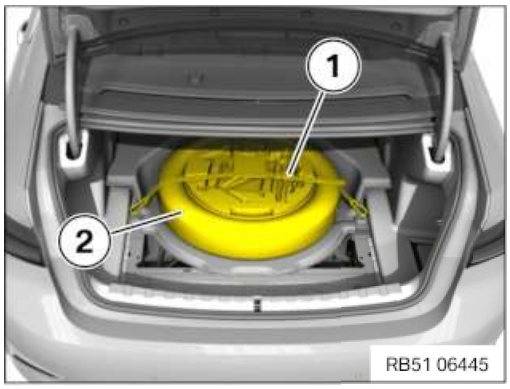
- Check the clamps (1) for damage and renew if necessary.

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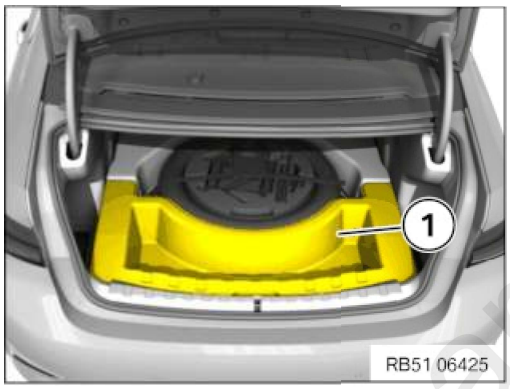
- Insert the loading edge trim (2) under the sealing lip of the tailgate seal.
- Fit the trim of the loading edge (2) at the latch mechanisms (3) and clip it in to the bottom.
- Secure expanding rivet (1).

8 – If installed: Install the emergency wheel



- Install the emergency wheel (2) with the insert.
- Position the seat belt strap above the emergency wheel and close the buckle on the seat belt strap (1).

▶ **Installing rear luggage compartment well**



- Install rear luggage compartment well (1).

9 – Installing the luggage compartment floor trim panel



- Insert the luggage compartment floor trim panel (1).

Additional Information

Overview of Tightening Torques

Tailgate lock to body Used in step 56

Hexagon screw M8x20		Tightening torque	19 Nm

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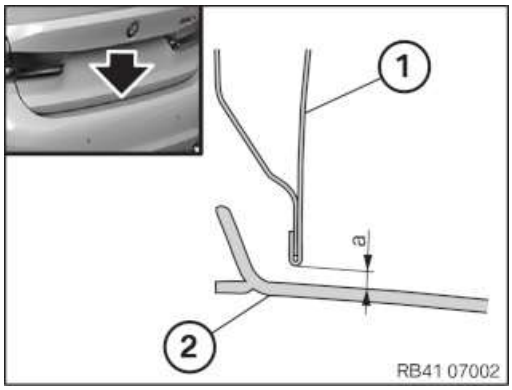
Overview Technical Data

Gap dimension tailgate to rear bumper panel

Used in step 6

1 tailgate; 2 rear bumper panel

a	5,1 (3,3 - 6,9) mm



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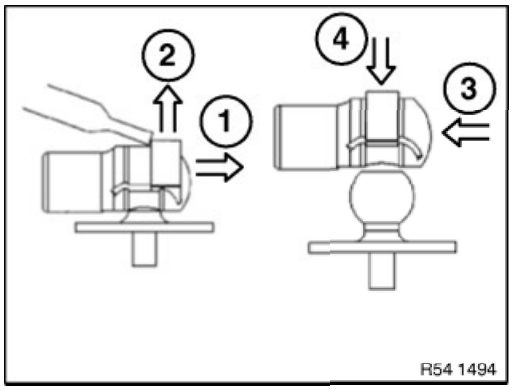
51 23 ... Removing/installing ball sockets with clip

Warning!

Danger of injury! When installed, the gas pressurised shock absorber is under preload. Minimise preload as far as possible before removing.

Important!

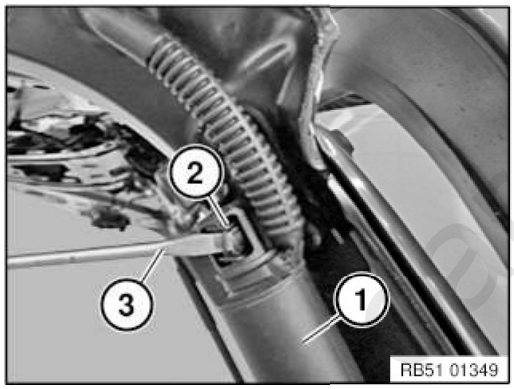
Never lift off ball socket with engaged clamp.



Version A:

1. Push on clamp in direction of groove with screwdriver
2. Lift off ball socket from ball pin
3. Slide clamp back
4. Fit ball socket on ball stud and snap into place with force

Installation note:
Pack grease into two opposite positions in socket. The grease spreads after installation on the ball pin all round in the ball socket.



Version B:

Important!

Risk of damage!

If you are not careful, retaining spring (2) may be bent to such an extent that the entire drive spindle will have to be replaced.

Press drive spindle (1) against ball pin in order to relieve strain on retaining spring (2) at ball pin.

Pull out retaining spring (2) approx. 2-3 mm with screwdriver (3).

Pull off spindle foot.

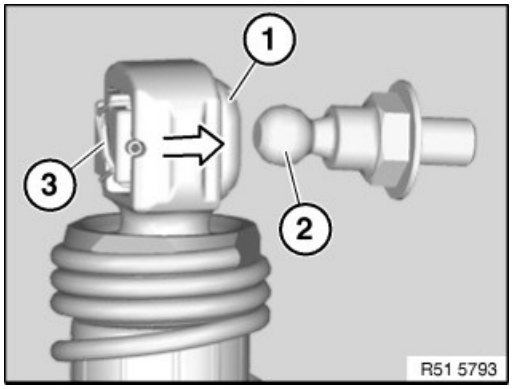
Warning!

Observe warning notices on the damper.

Electrical spindle drive for tailgate is under mechanical spring load!

The component must be secured against falling down.

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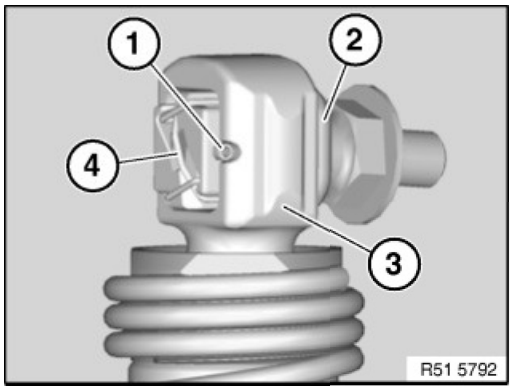


Attention!

Risk of damage!

Do not press on spindle drive at an angle or twisted.

Installation note:
Press ball socket (1) onto ball pin (2) until retaining spring (3) engages correctly (clicking sound).



Important!

If retaining spring (4) is damaged!

Release pin (1).

Remove spindle drive (3).

Remove ball socket (2).

Remove retaining spring (4) and replace if necessary.

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51 24 147 Replace button for tailgate activation

RISK OF DAMAGE

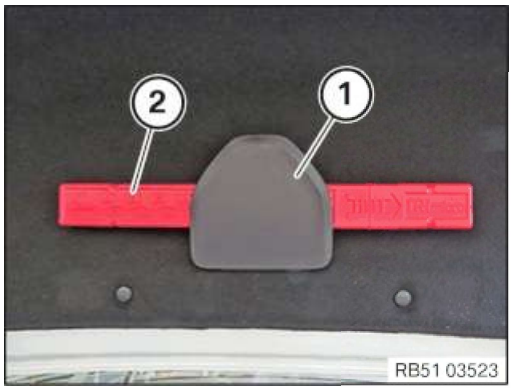
Scratches.

Tools and sharp-edged components can cause scratches.

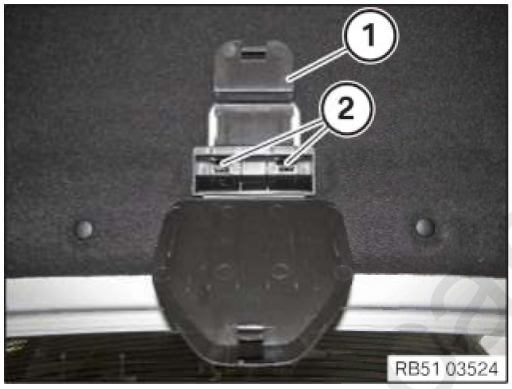
- Protect working area.
- Handle tools and components carefully.

PRELIMINARY WORK

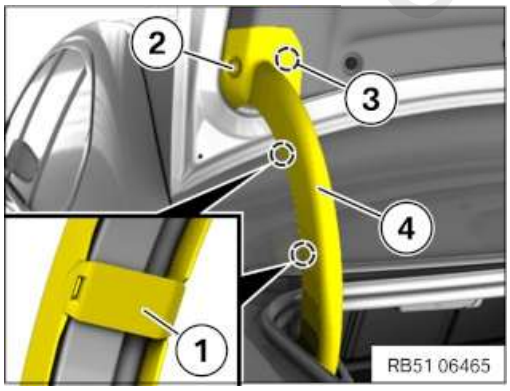
1 – Remove tailgate trim panel



- Fold the cover (1) towards the bottom.
- Remove the warning triangle (2).



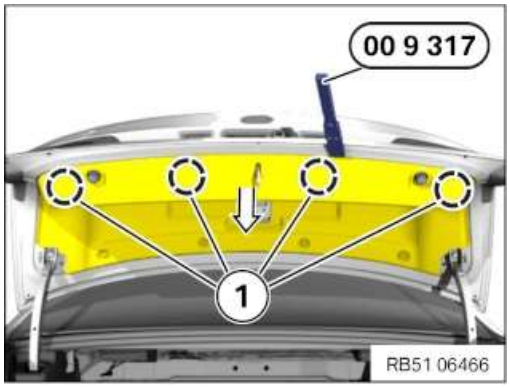
- Detach the warning triangle holder (1) from the latch mechanisms (2) and slide downwards.



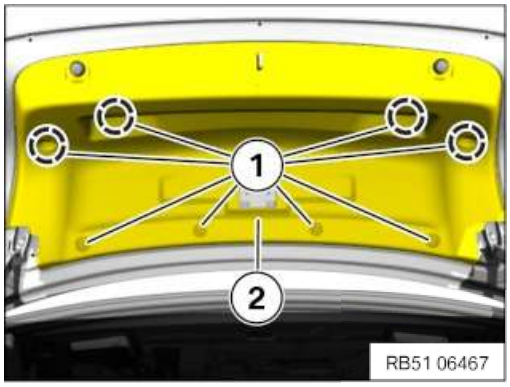
NOTICE

Description is for left component only. Procedure on the right side is identical.

- Unclip the tabs (1).
- Loosen expanding rivet (2).
- To avoid damage, release the trim panel for the hinge of the tailgate (4) without using a tool by jerking it along the hinge bracket and out of the clip fastening (3).



- Unclip clips (1) with special tool 0 490 534 (00 9 317) in the direction of arrow.



- Release expanding rivet (1) on the tailgate trim panel (2).
- Remove tailgate trim panel (2).
- **If installed**: Unlock plug connection of the switch for the tailgate lift and disconnect.

MAIN WORK

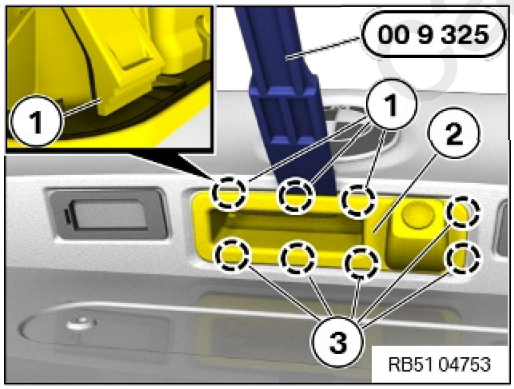
2 – Remove tailgate pushbutton

RISK OF DAMAGE

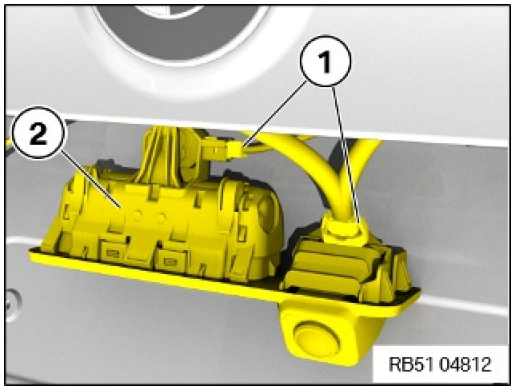
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



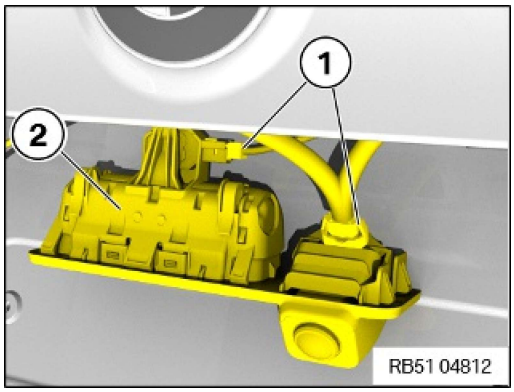
- Mount special tool 0 496 569 (00 9 325) as illustrated.
- Open the latch mechanisms (1) of the tailgate button (2) by carefully knocking onto the special tool 0 496 569 (00 9 325).
- Disengage the latch mechanisms (3) from the inside unclip the tailgate button (2) toward the bottom.



- Disconnect the connector (1) and remove the tailgate button (2).
- If necessary, remove broken off parts of the tailgate button (2) from the tailgate.

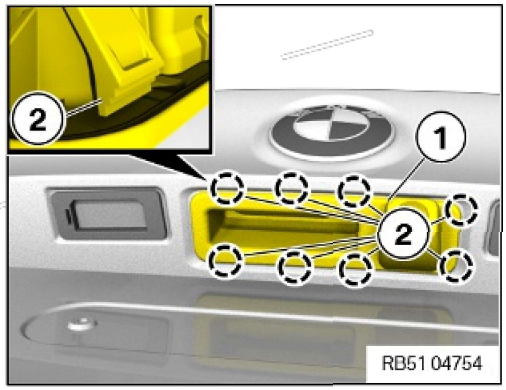
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3 – Install the tailgate button



- Renew the tailgate button (2).

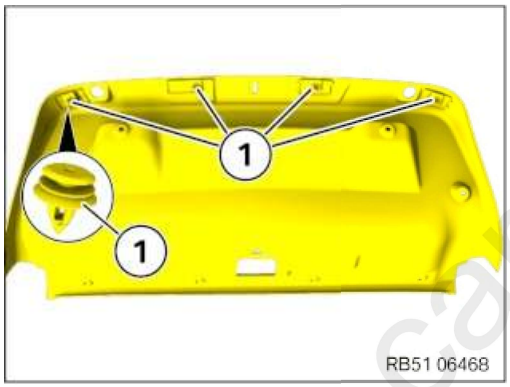
  Parts: Tailgate button
- Check the tailgate in the area of the tailgate button (2) for damage and repair where required.
- Connect the connector (1) with the tailgate button (2).



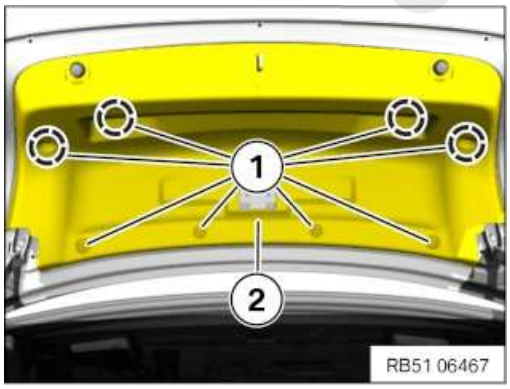
- Insert the tailgate button (1) in the tailgate and clip it into the latch mechanisms (2).

POSTPROCESSES

4 – Installing the tailgate trim panel

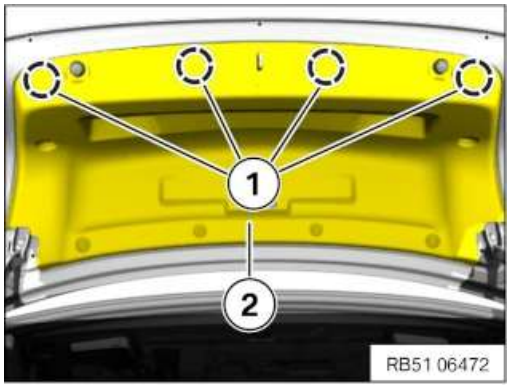


- Check the clips (1) for damage and renew if necessary.

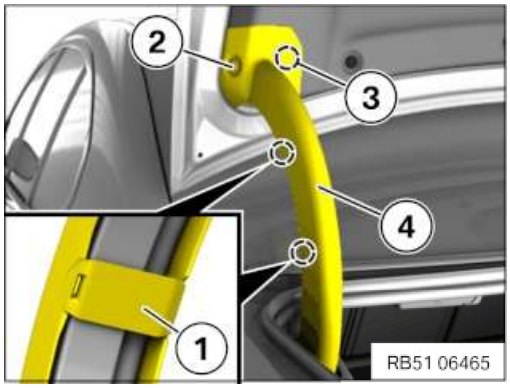


- Fit the tailgate trim panel (2) and fasten in place with the expanding rivets (1).
- **If installed**: Connect and lock plug connection on the switch for the tailgate lift.

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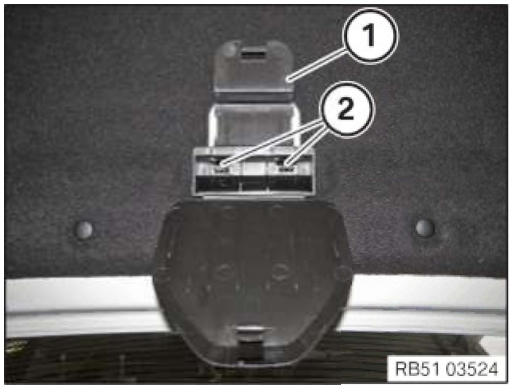
- Clip in the tailgate trim panel (2) with the clips (1).



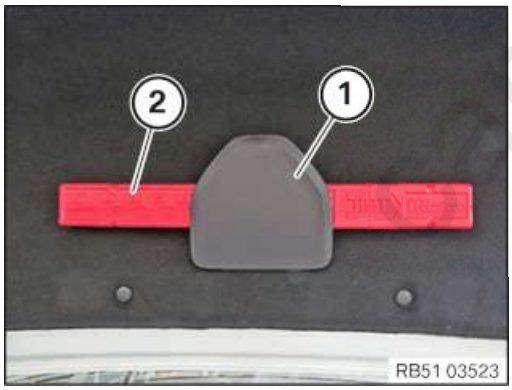
NOTICE

Description is for left component only. Procedure on the right side is identical.

- Clip in the trim panel for the hinge of the tailgate (4) to the clip fastening (3).
- Fasten expanding rivet (2).
- Clip in tabs (1).



- Position the warning triangle holder (1) and snap into the latch mechanisms (2).



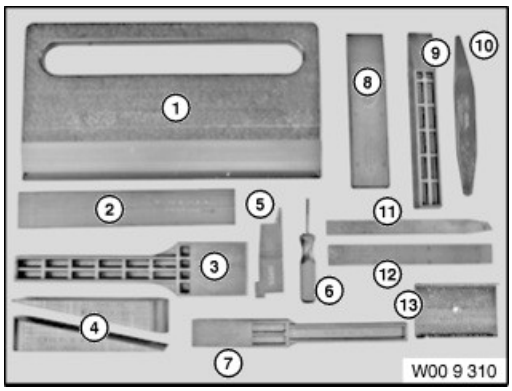
- Install the warning triangle (2).
- Clip in the cover (1).

Additional Information

Overview of Special Tools

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0 490 534 (00 9 317) Wedge



Common	Used in step 1
Usage	(Trim wedge) Replaced by special tool 00 9 325 from 11/2008 (quality improvement due to new material) Replaced by 00 9 325 (0 496 569)
Included in the tool or work	0 490 527
Storage location	
Replaced by	
In connection with	
SI-Number	

0 496 569 (00 9 325) Wedge



Common	Used in step 2
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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51 31 ... General procedure for the disassembly and installation of bonded window glass

1 General information

Follow general instructions on window bonding.

Materials needed for window bonding.

The vehicle can be towed away or driven without a windscreen, rear window and side window.

When carrying out disassembly/installation work and during the hardening time, the vehicle must be standing on its wheels on a level surface.

The windscreen, rear window and side windows are glued to the body. This bonding will increase the torsional rigidity of the vehicle. To obtain perfect bonding, comply with the installation procedure described in the following.

2 Disassembly

2.1 Disassembly in general

The following dismantling methods are applied, according to the version:

- Oscillating knife (not permissible for vehicles with window bonding on carbon body components)
- Cutting wire with wire pull handles
- "Spider" window glass removal system (unsuitable for severely damaged window glass)

Note:

When cutting out the window glass with wire pull handles, there is a risk of damage to the window glass if the wire is pulled over the window edge.

Unless otherwise described, only use this method when replacing the window glass.

Follow the vehicle-specific repair instructions!

2.2 Disassembly of damaged window glass

The disassembly method described in the REP may be unsuitable depending on the degree of damage.

- e.g. suction cups cannot be attached to window glass around cracks
- Damaged window glass may damage and tear the nylon string

Attention! Risk of damage!

Use one of the other disassembly methods at your own discretion in the event of severely damaged window glass.

Make sure adjacent components are adequately protected.

3 Installation

3.1 Preparation

Position the windscreen or rear window on a universal work top or secure the components on a tool trolley using suction lifters.

Attach two suction lifters to the outsides of the window glass in the event of storage on a universal work top.

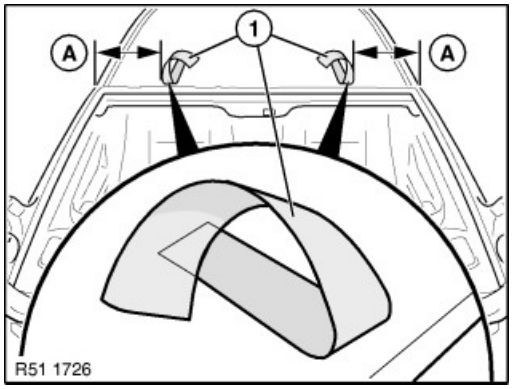
According to its size, fix side and door window glass onto the tool trolley using suction lifters or special tool 51 3 220 and set down on a suitable support.

Always keep the suction faces of the window glass suction lifters dry and clean.

Note:

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If accessibility is restricted, insert the window glass on a trial basis.



Bond two yellow plastic adhesive tapes (1) approx. 400 mm in length to the roof.

(A) = 250 mm

Only the yellow plastic adhesive tape may be used to fix the window glass.

The glass will slip down if other adhesive tapes are used.

Window glass slippage will result in leaks and wind noises.

After completing the paint work, the paint must be fully hardened before the plastic adhesive tapes are applied.

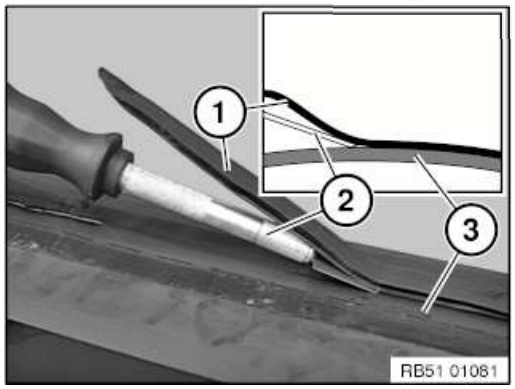
3.2 Pre-treatment of bonding surfaces

- Protect the vehicle interior against contamination, cover the Head-Up Display.
- Clean window glass and body aperture (with residual adhesive bead) with cleaning agent R2
  Attention! Do **not** use Sika remover 208 for cleaning in the adhesive area.
- Observe an air drying time of at least 5 minutes (at least 15 minutes when applied to residual adhesive bead)
- Remove residual adhesive bead from body and window glass (see point 3.3)
- Touch up paintwork damage to body aperture with BMW multibase filler (except for carbon body components)

Pretreatment on new body component (no residual adhesive beads present):

Surface	Pretreatment
Panel painted	Wipe cleaning agent R1 dry with a paper towel or observe the air drying time of at least 1 minute
Carbon	Only cleaning agent R2
Carbon painted (e.g. roof outer skin M3)	Wipe cleaning agent R1 dry with a paper towel or observe the air drying time of at least 1 minute
Plastic (e.g. I01 A-pillar)	Cleaning agent R2 and ScotchBrite Multiflex abrasive pad

3.3 Remove adhesive residue from the body and window glass



Do not remove residual adhesive bead (1) until shortly before bonding.

Use the pitchweld scraper to remove the residual adhesive bead (1) from the body aperture and window glass (3).

Position the pinchweld scraper (2) as shown and remove the residual adhesive bead (1) up to a thickness of approx. 0.5 mm.

Attention!

Carbon body components are not to have scratches with a depth greater than 0.2 mm.

Note, comply with life module check!

3.4 Installation of spacer (spacer buffer / dual-lock tapes)

Completely remove all residue of existing spacers before bonding new adhesive spacers.

The exact position of the spacers must be retained (see vehicle-specific repair instructions).

Incorrectly fitted spacers will result in:

- Window glass breakage due to tension
- leakage (if the spacer is in the adhesive area)
- Wind noises

3.5 Add-on part

Depending on the version, attach sealing, expanding foam tape, rain sensor, etc.

Observe Overview of additional work with rain sensor when working with versions including the rain sensor!

Follow the vehicle-specific repair instructions!

3.6 Pre-treatment of new window glass

- Apply a thin coat of glass activator (yellow stick); a final wipe is not necessary.
- Observe an air drying time of at least 2 minutes

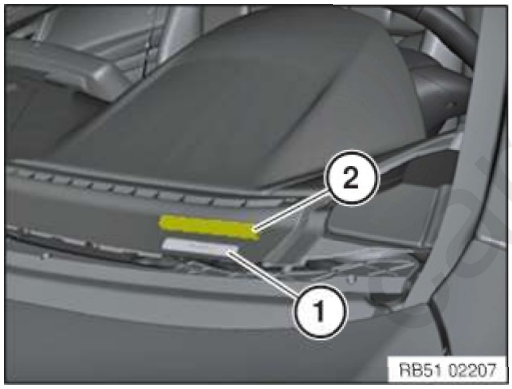
The glass activator is used for adhesion between glass or ceramic glass and the adhesive. Therefore, a thin, homogeneous and continuous line of glass activator must be applied. If the window glass is to be reused with a cut-back adhesive bead, glass activator is not needed.

It must be guaranteed that a 1 to 2 mm wide line of glass activator is located on the ceramic glass next to the squeezed adhesive bead.

The adhesive bead may become up to 15 mm wide in compressed condition. The width of the glass activator is therefore normally a minimum of 17 mm for windscreens and rear windows and a minimum of 9 mm for side windows.

The glass activator may not be applied in the field of view or the point grid. Fresh glass activator in the field of view must immediately be wiped off with cleaning agent R2 because hardened glass activator will leave a haze behind.

3.7 Version with inspection glass for vehicle identification number in windscreen



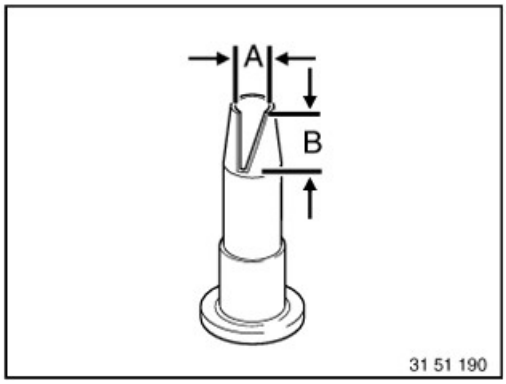
Foam tape (2) must be installed to protect the vehicle identification number (1) against tampering. If necessary, install foam tape 07 14 7 222 909.

Close off the inspection glass on the windscreen (bottom left) with Sika bonding base VP 206.

Except for:

- All US/GB models
- All models with a black dashboard cover, which means that the vehicle colour cannot be seen through the inspection glass

3.8 Nozzle preparation



Use the standard nozzle C for windscreens, rear windows, and body-specific fixed side window glass.

A	8 ±1 mm
B	12 ±1 mm

Prepare plastic nozzle for fixed door window glass.

A	8 ±1 mm
B	15 ±1 mm

Deviations are described in the vehicle-specific repair instructions.

Black ceramic glass impermeable to UV light is located on the peripheral zone of the inside of the window to protect the adhesive bead.

Ceramic glass must not be damaged.

3.9 Apply adhesive

Adhesive is applied to the window glass using a cartridge gun.

Glue cartridge must be vertical to window glass.

The almost vertical part of the adhesive bead must be facing the outer window glass edge.

On window glass with guidelines, the adhesive bead must be applied centrally between the guidelines.

On window glass without guidelines, the position of the adhesive bead is specified in the vehicle-specific repair instructions.

Coat bead joint.

Effect of differing adhesive quantities:

Too little adhesive:	Too much adhesive:
• Window glass rests too low in body aperture • Insufficient squeezing of adhesive bead (leaking)	• Window glass rests too high in body aperture • Wind noise may occur • Strains/tensions may occur (window glass breakage) • Dirt contamination of add-on parts by emerging adhesive • Adhesive on uninsulated strainer pressure lines of aerial(s) (interference of reception)

Note on bonding of windscreen:

The adhesive amount specified in the vehicle-specific repair instructions is sufficient if the specified adhesive bead size is maintained.

If too much adhesive is applied due to application-related variations (manual application), the specified adhesive amount may not be sufficient. To avoid interrupting adhesive application for longer than the permitted period, have another glue cartridge ready.

Attention!

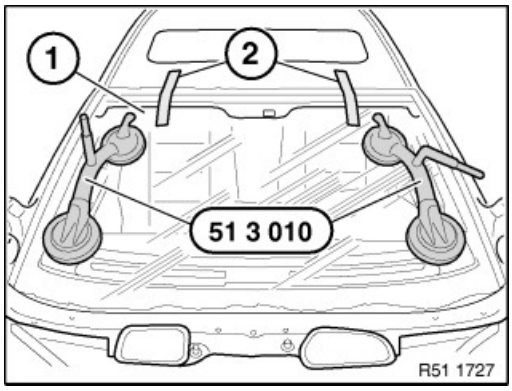
> Once the adhesive bead has been applied, the window glass must be installed within 7 minutes (depending on air humidity, temperature).
>
> After 7 minutes the adhesive bead forms a skin which can no longer guarantee a perfect bond.

3.10 Mounting the window glass

To prevent a pressure build-up in the passenger compartment when the doors are closed:

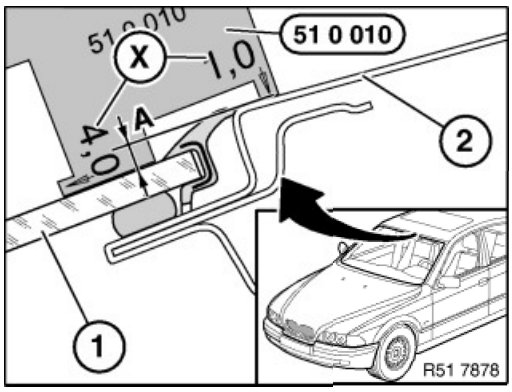
- Open a side window

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Mount window glass (1) with suction lifter (51 3 010).

3.11 Adjusting the window glass



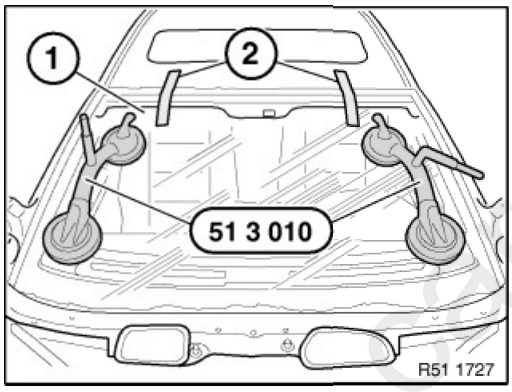
To avoid wind noise, the front and rear windows (1) must be lower than the roof outer skin (2).

Check ride height of the windscreen or rear window using special tool 51 0 010.

Dimension (A) of window glass offset, refer to vehicle-specific repair instructions.

X = measurement stages 1 ... 4 mm

3.12 Fixing the window glass



Fix the window glass with yellow plastic adhesive tapes (2).

Immediately remove dirt contamination with adhesive residue using Sika remover 208. Do not press out the window glass again.

Hardened adhesive can only be removed mechanically.

3.13 Label

Depending on version, apply label.

51 31 ... Materials for bonding window



Special tools required:

- 51 3 220

1 Tools

Type	Type	Order/part number
Electric special cutter	SuperCut FSC 1.6Q	81 43 2 296 987
Knife set Contains: Knife (U-shape) Knife (L shape) Knife (straight with stop roller)	 24 / 36 / 45 mm 25,4 mm 16 to 43 mm (adjustable) 14 mm (fixed)	81 43 9 428 596
"Roll Out 2000"	Wire cutting system	81 62 0 301 768
"Spider"	Cutting system with nylon string	81 43 2 357 248
Wire pull handles		81 43 2 326 501
Cartridge gun		81 49 2 213 059
Pinchweld scraper set		81 62 0 410 436
Siphon		81 64 2 184 377
Single suction cup	Special tool	51 3 220
Universal work table		81 49 0 151 675

2 Consumables:

Naming of Electronic Parts Catalogue	Designation, repair instructions /addition	BMW part number
Window glass repair kit, cold, 1 hour	Small repair kit	83 19 2 289 285 83 19 2 289 180 (US) 83 19 2 180 001 (China)
Window glass repair kit, cold, 1 hour	Large repair kit Like small repair kit, plus 1x window glass adhesive 300 ml	83 19 2 360 680 (not available for the US/China)
Cutting wire for glass repair	Cutting wire, square	83 19 2 150 267
Nylon string	Nylon string	81 43 2 344 272
Multi-base filler	BMW multibase filler	
Cleaning agent R1	Cleaning agent R1	83 19 2 211 217
Cleaning agent R2	Cleaning agent R2	83 19 0 417 324
Adhesive tape	Plastic adhesive tape, yellow	83 19 9 410 979
Adhesive cleaner 208	Sika remover 208	83 19 9 407 780
Aktivator 205	Sika Activator 205 (e.g. for rubber frame on windscreen)	83 19 0 030 155

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Bonding base VP 206	Sika bonding base VP 206 (e.g. for inspection glass for vehicle identification number)	83 19 9 407 777

Storage of all consumables

Dry at 15 ° - 25 °C.

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62 30 ... Notes on head-up display

Note:
A special windscreen must be fitted to ensure that the Head-Up Display image can be projected correctly.

This windscreen comprises three sections. An outer and an inner glass pane are connected by a wedge-shaped plastic film.

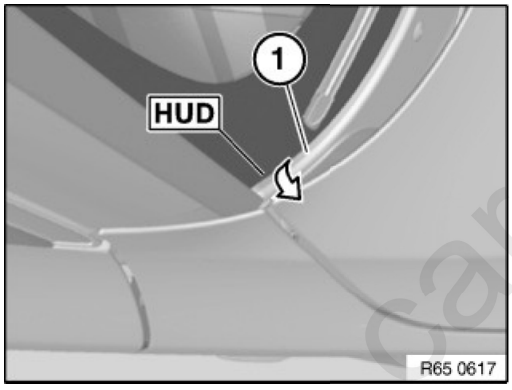
The wedge shape prevents double projection of the Head-Up Display.

When the windscreen is replaced, the vehicle identification number and Electronic Parts Catalogue must be checked to ascertain whether the windscreen in question is suitable for HUD.



Example of the display with a conventional windscreen:

With a conventional windscreen, the projected image is reflected on the inner and outer glass pane, producing a double image.



Note:
Windscreens for Head-Up Display, for vehicles with model year up to 2012, are marked with the letters "HUD" on the outside at the bottom right below the seal (1).

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51 31 ... Notes on window bonding repair kit

	Part number	Part number (US)	Part number (China)
Small repair kit	83 19 2 289 285	83 19 2 289 180	83 19 2 180 001
- Window glass adhesive 300 ml	83 19 2 289 286	83 19 2 289 181	83 19 2 180 002
- Glass activator	83 19 0 444 142		
- C nozzle	83 19 2 155 589		
- Plastic nozzle and paper tissue			
Large repair kit (Contains an additional window glass adhesive 300 ml)	83 19 2 360 680	Not available	Not available

Important!

Before working with the consumables, note the following information.

- Country-specific safety and industrial safety regulations
- Material safety data sheet of manufacturer
- Processing instructions on the packaging

1 Storage and processing of all consumables

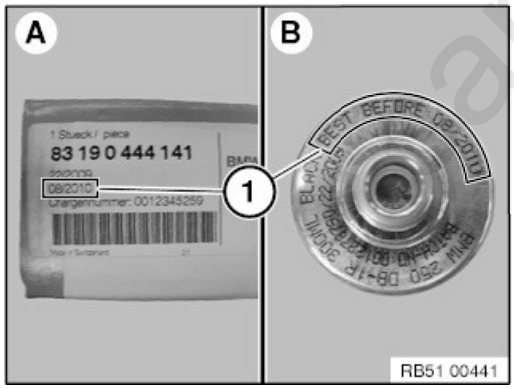
Dry at 15 ° - 25 °C.

2 Expiry date of adhesive:

Repair kit and glue cartridges are marked with a date (expiry).

Date (1) refers to the calendar week and year (KW/JJJJ).

The adhesive cannot be used after this date (1).



3 Hardening of adhesive:

The adhesive hardens by reacting with air humidity at room temperature.

Important!

Once the adhesive bead has been applied, the window glass must be installed within 7 minutes (depending on air humidity, temperature).

After 7 minutes the adhesive bead forms a skin which can no longer guarantee a perfect bond.

At ambient temperatures above 23 °C and 50 % relative air humidity (hot countries), the adhesive open time is

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shortened to approx. 5 minutes (skin formation time).

A relative air humidity of < 30% significantly slows hardening.

The adhesive hardening process is interrupted completely at ambient temperatures below 5 °C. In this event, there will be no increase in the strength of the bonded connection.

3.1 Minimum hardening time:

Minimum hardening time is reached beginning at 22 °C and 38 % relative air humidity.

- 1 hour, vehicles without front passenger airbag (after which vehicle can be moved)
- 2 hours, vehicles with front passenger airbag in countries without mandatory seat belt usage

Note:

> **In vehicles with front passenger airbag in countries without mandatory seat belt usage:**
>
> The vehicle can be transferred to the customer after a 1-hour hardening time with the following warning:
>
> **Once the windscreen glass has been bonded, all occupants must travel with their seat belts attached for 1 hour.**

Important!

> If the minimum hardening time is not adhered to, an accident can cause the passenger together with the windscreen to fall out of the vehicle after the front passenger airbag deploys.

During the minimum hardening time of 1 hour, the vehicle must not be subjected to load on one side such as e.g.:

- one wheel on kerb
- vehicle hoist
- etc.

Manoeuvring inside garage/workshop:

- only permitted on level ground
- do not under any circumstances drive over approach ramps, e.g. into multi-storey car parks

Do not remove adhesive tapes until after hardening time.

If the minimum hardening time of 1 hour is undercut, leaks and wind noises may occur at the window glass.

4 Disposal of adhesive:

Hardened adhesive is disposed of as normal waste.

Non-hardened adhesive, glue cartridge and mixtures of adhesive and solvents and the like must be disposed of as hazardous waste.

The adhesive is disposed of in paper sacks so that it can react with moisture.

5 Glass activator:

Warning!

> Wear cut resistant gloves when breaking the glass ampule.

Prepare glass activator for processing by shaking and snapping (breaking glass ampoule).

Apply glass activator by pressing gently. There is no need for final wiping. Air drying time approx. 2 minutes.

6 Expiry date of glass activator:

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Repair kit and glass activator are marked with a date (best before date).

- The glass activator may only be used up to this date (if not already opened previously).
- After opening, keep only for one week even if the expiry date has not yet been reached.

7 Disposal of glass activator:

Glass activator must not be disposed of as part of household waste.

Glass activator must be disposed of as hazardous waste.

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61 35 ... Overview of additional work for the removal and installation or replacement of electronic components in the body area/windscreen

Component	**Removal and installation** Calibration/Initialisation required **(diagnosis system must be connected)**	**Removal and installation** Use of the Special tool necessary	**Replacement** Programming/encoding Calibration/Initialisation required **(diagnosis system must be connected)**	**Replacement** Use of the Special tool necessary	Remarks
Front section: (including bumper panel)					
ACC sensor	Yes	Yes	Yes	Yes	
Night vision camera	No	No	Yes	Yes*	*conventional workshop headlight adjusting device
PDC ultrasonic sensor	No	No	No	No	
PMA ultrasonic sensor	No	No	No	No	
Sensor, lane change warning	no*	No	Yes	No	*Required after a body repair in the surrounding area of the sensor. **Comply with the regulations for repainting!**
Sensor for active pedestrian protection	No	No	No	No	Must be replaced after the active pedestrian protection has been activated! **Impact absorber** must also be replaced!
Actuator for active pedestrian protection	No	No	No	No	Must be replaced after the active pedestrian protection has been activated!
Front camera	No	No	Yes	No	
Side section:					

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Top view camera (in the exterior mirror)	No	No	Yes	No	
Rear area: (including bumper panel):					
reversing camera (with Surround View)	No	No	Yes	No	
reversing camera (without Surround View)	No	No	Yes	No	
PDC ultrasonic sensor	No	No	No	No	
PMA ultrasonic sensor	No	No	No	No	
Sensor, lane change warning	no*	No	Yes	No	*Required after a body repair in the surrounding area of the sensor. **Comply with the regulations for repainting!**
Windscreen:					
Camera-based driver support systems camera	no*	No	Yes	No	*Necessary after **replacement of the windscreen**
Rain sensor (separate document)					

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61 35 ... Overview, rain sensor (additional work when replacing the windscreen / sensor replacement)

BMW G series:

Sensor type/ Sensor shape	With windscreen replacement replacement sensor required	When replacing the sensor Programming/encoding necessary	When replacing the sensor Initialisation required	Connecting the diagnosis system required
all types approximately ø 35 mm	No	No	No	No

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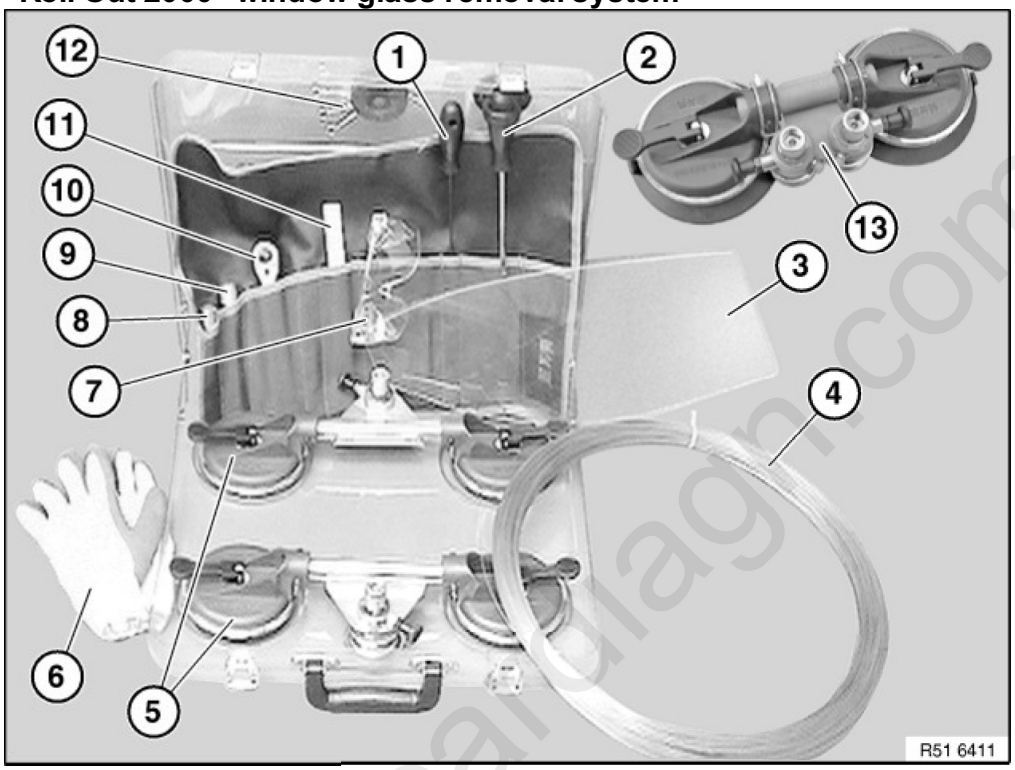
51 31 ... Remove windscreen with "Roll Out 2000"

Special tools required:

- 2 150 267

"Roll Out 2000" has been replaced by the "Spider" removal system."Roll Out 2000" may still be used. The "Spider" removal system is recommended for removing window glass.

"Roll Out 2000" window glass removal system



1	Wire starter	8	Extension (short)
2	Parabolic tool	9	Extension (long)
3	Plastic washer	10	Reversible ratchet
4	Wire cutting roller	11	Plastic wedge
5	Suction cup lifters	12	Guide needles
6	Protective gloves	13	Suction cup lifter with double spool
7	Safety goggles		

Note:
Both paint and ergonomic and health-endangering damage is minimised with the "Roll Out 2000" system.

Sourcing reference:

See Aftersales Assistance Portal (ASAP) - Service/Technical - Workshop Equipment (Start BMW) - Shop Workshop Equipment or at www.bmwgroup.com

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Warning!

Follow safety instructions for working on vehicles with airbag systems (risk of injury).

Important!

Take care when handling sharp-edged tools and cutting wire (risk of damage to head airbag and window glass).

Important!

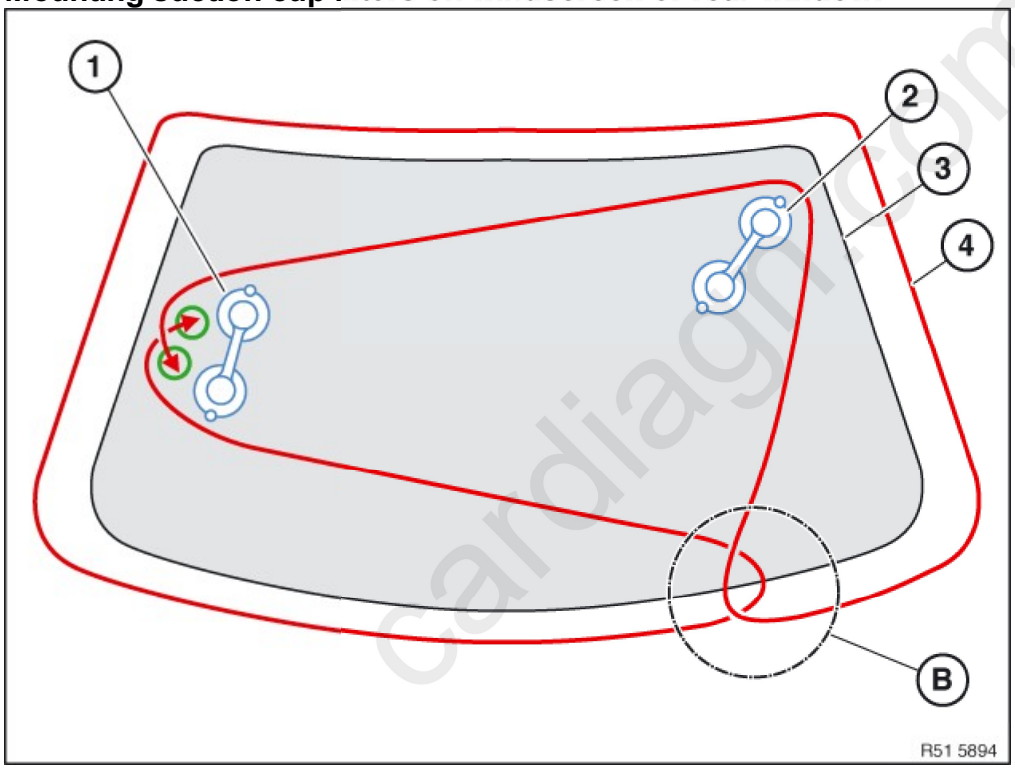
Always keep both suction cups dry and clean to ensure their optimum adhesion on the windscreen.

Suction cup may not be applied at the damaged point (crack in window glass).

Lubricate spool if lock rattling becomes too loud.

Always wear safety goggles and protective gloves for your own safety.

Mounting suction cup lifters on windscreen or rear window:



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- Secure position of lifting jacks as shown (view from outside):
  1. Suction cup lifter with double spool
  2. Suction cup lifter with single spool (as deflecting point)
  3. Window
  4. Cutting wire

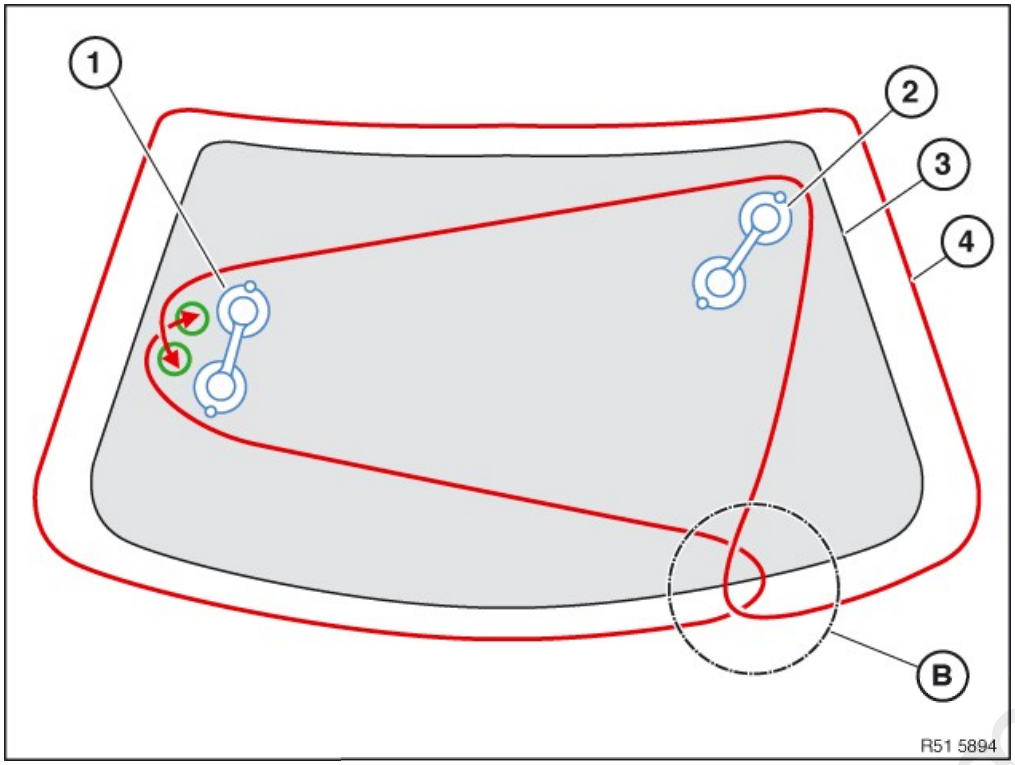
Note:

Optimum cutting is guaranteed when the cutting wire is at an acute angle to the adhesive bead. There is a risk of the cutting wire breaking if the angle is too obtuse.

The suction cup lifter (2) is used as the deflection point to achieve the corresponding angle.

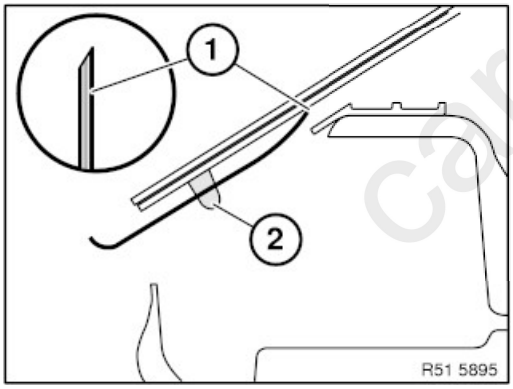
Depending on the window glass version and the effort applied during cutting, it may be necessary to change the deflection point during cutting.

The suction cups without a spool can even be used as the deflection point.



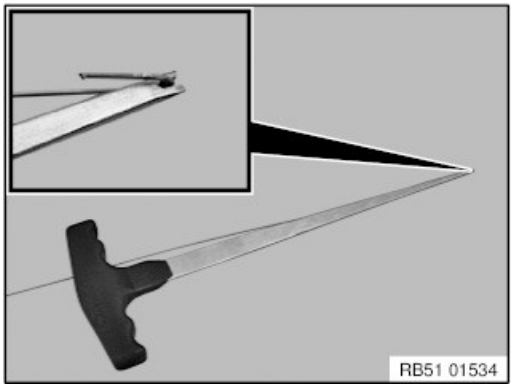
Preparatory work:

- Cut off required cutting wire length:
  Length approximately = 6 x window glass diagonal
- The cutting wire loops must lie on top of each other in area (B).
  They must not get caught up in each other. (Otherwise no possibility of cutting the adhesive bead/wire will break.)
  Overlapping of cutting wire loops approx. 10 cm.
  Distance from right window edge approx. 30 cm.



Pulling cutting wire into vehicle:

- Grip wire with pliers
  (If accessibility is bad, stick wire with wire starter 2 150 267 through adhesive bead.)
- Wire end (1) must be bent towards window glass.
- Heat wire end (1) and use it to pierce adhesive bead (2).
- Pull the wire approximately 1.5 m into the passenger compartment

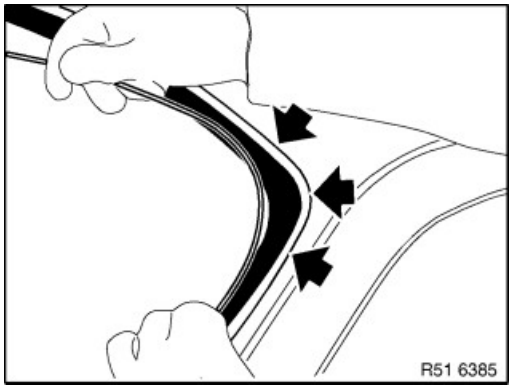


Using wire starter:

Bend wire end approx. 10 mm and insert in notched tip.

Pierce wire starter with uniform pressure through adhesive bead, wire end (bent part) must be positioned on window glass.

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Laying cutting wire around window glass:

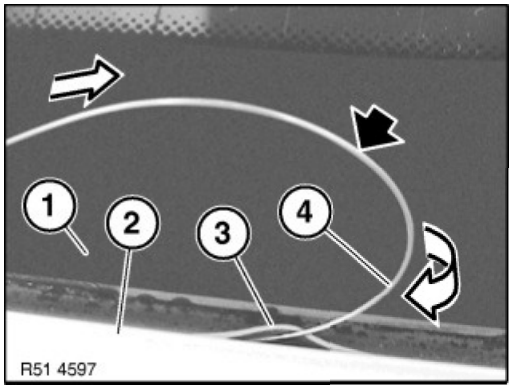
- Starting from pull-in point, lay wire eyelet created on the outside around the window glass
- Pull excess wire into passenger compartment

Important!

Make sure the cutting wire is located at all four corner points below the window glass.

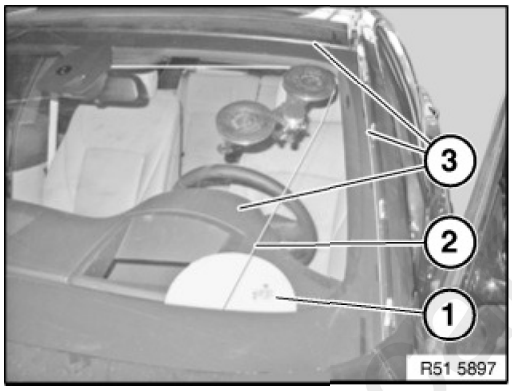
Check that the cutting wire is not caught on clamps or body.

Secure window glass on outside with adhesive tape against sliding.



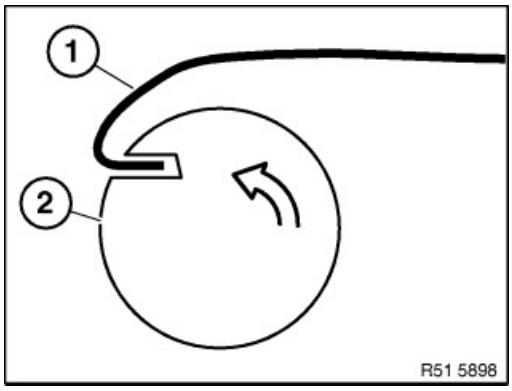
Note:
Window glass (1) with installed seals (3) or moulded-on surrounds:

- Moisten cutting wire (4) and seals (3) on window glass (1) with water
- Insert cutting wire (4) in bend (without kinking) between window glass(1) and body aperture (2)



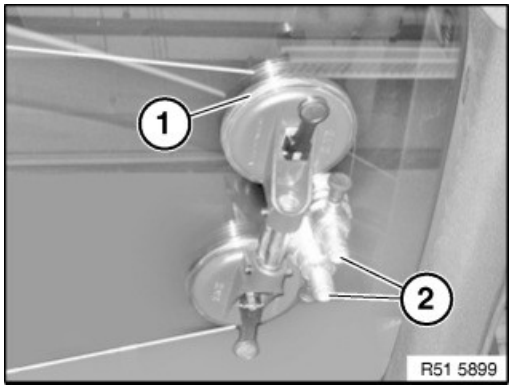
Protect the passenger compartment:

- To avoid damage and possible dirt contamination, protect A-pillars, roof and dashboard trim panel (3) by means of plastic washer (1)
- Always carry plastic washer (1) between respective wire (2) being tightened and trim panels



Attaching wire in hoisting winch with double coil:

- Bend over cutting wire end (1) approximately 10 mm and insert into slot of spool (2)
- Repeat process with other end of wire (1) and second spool (2)
- Wind cutting wire (1) onto spools by hand until cutting wire (1) is under slight tension



Starting the dismantling: *Note:*
Spools can only be rotated in one direction.

- Make sure the wire is always situated in the guide channel of the suction cup lifter (1)
- Fit reversible ratchet onto top spool shaft (2) and tighten wire
- Start by cutting lower adhesive bead
- At the end of the cutting process, the two wire loops join up at the lifting winch (1)
- Remove "Roll Out 2000"
- Remove window glass

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51 31 030 Removing and installing or replacing left or right gutter strip along windscreen

NOTICE

Description is for left component only. Procedure on the right side is identical.

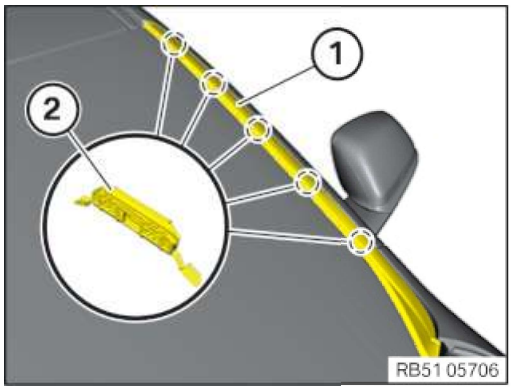
1 – Remove the gutter strip on the windscreen

RISK OF DAMAGE

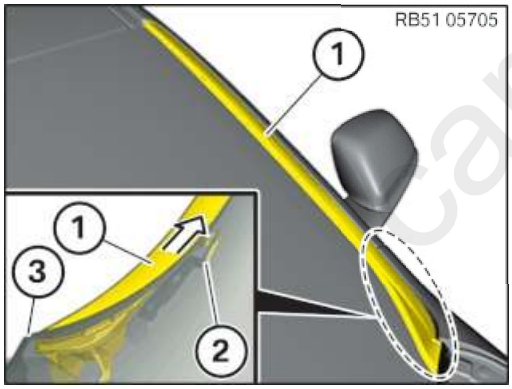
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Unclip gutter strip on the windscreen(1) from the clamps(2) starting at the roof and working upwards.



- Pull out gutter strip on the windscreen (1) out of guide (2) in direction of arrow and carefully guide out at the side panel (3).

2 – Install the gutter strip on the windscreen

RISK OF DAMAGE

Scratches.

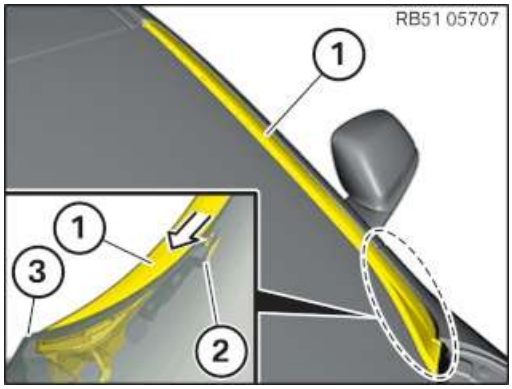
Tools and sharp-edged components can cause scratches.

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TECHNICAL INFORMATION

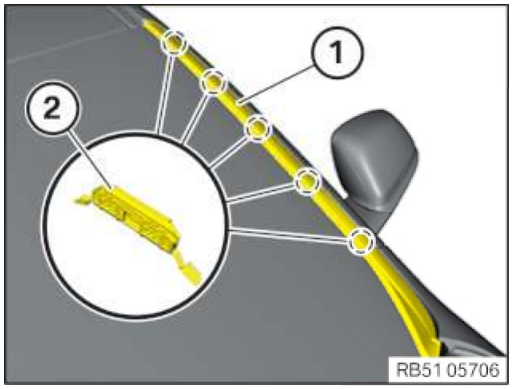
Latch mechanisms, guides and mounting elements must not be damaged or missing.



- Renew gutter strip on the windscreen (1) and paint if necessary.

  Parts: Gutter strip

- Carefully feed in the windscreen gutter strip (1) at the side panel (3) and simultaneously feed into the guide (2) in direction of arrow.



- Clip in the windscreen gutter strip (1) starting at bottom at the clamps (2).

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51 31 200 Removing and installing rear window

TECHNICAL INFORMATION

Perform window removal using the "spider".
For additional information see: 51 31 ... Window glass removal using "spider"

TECHNICAL INFORMATION

The following procedure forms the basis for these repair instructions and must be observed without fail.
For more information see: 51 31 ... General procedure for disassembly/installation of bonded window glass

PRELIMINARY WORK

1 – Removing the trim panel for the rear left and right water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Unclip the trim panel for the water channel (1) with the special tool 0 496 569 (00 9 325).

2 – Remove both C-pillar trim panels

NOTICE

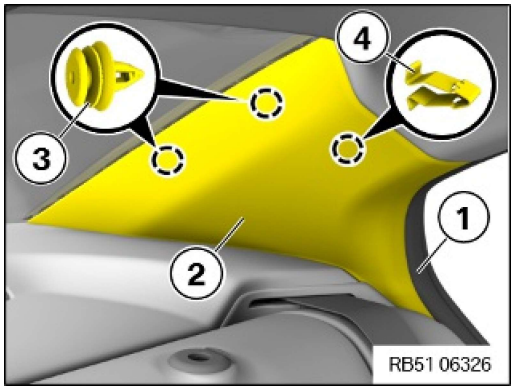
Description is for left component only. Procedure on the right side is identical.

▸ **Remove C-pillar trim panel**

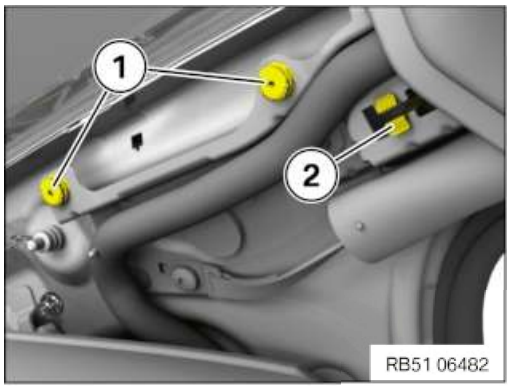
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

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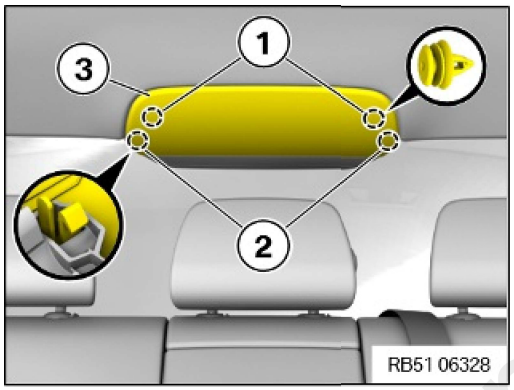


- Unclip clamp (4).
- Unclip clips (3).
- Feed out C-pillar trim panel (2) from the guides to the front.
- Thread out C-pillar trim panel (2) from the lip of edge protection (1).



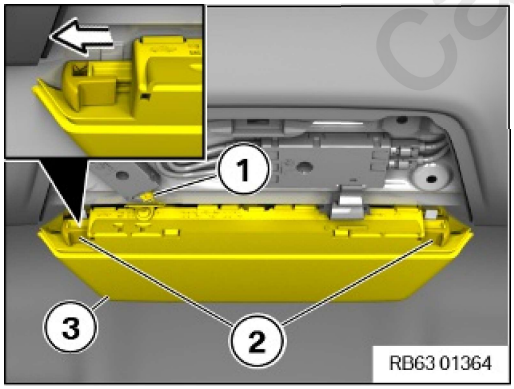
- If required, remove the clips (1) and the clamp (2) and connect it to the trim panel.

3 – Removing the trim of the additional brake light



- Loosen the clips (1).
- Release the latch mechanisms (2) and remove the trim of the additional brake light (3).

4 – Remove additional brake light

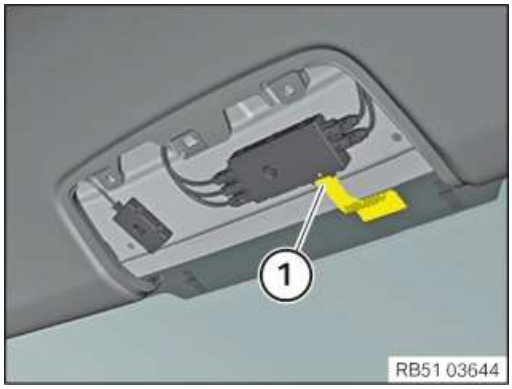


- Disconnect plug connection (1).
- Unlock both slides (2) outwards in the direction of the arrow and remove additional brake light (3).

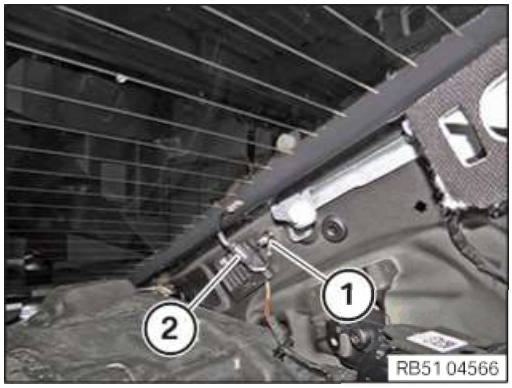
MAIN WORK

5 – Remove rear window

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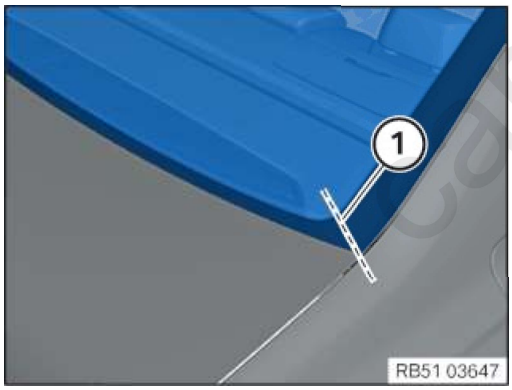
- Unlock plug connection (1) and disconnect.
- Secure cable to rear window with adhesive tape.



- Loosen nut (1).
- Secure cable (2) to the rear window.

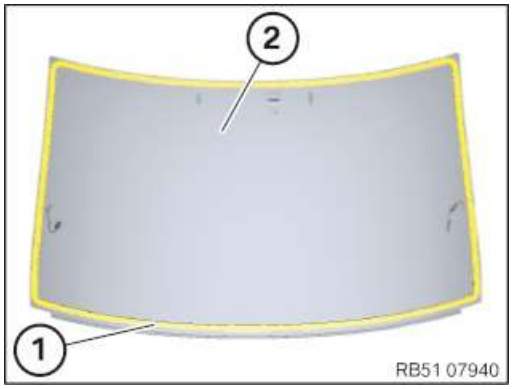


- Unlock plug connection (1) and disconnect.
- Secure cable (2) to rear window with adhesive tape.



- Tape off body in area of piercing point with fabric adhesive tape.
- Push the thread (1) through the adhesive bead along the line from the inside.
- Cut out the rear window with spider 2 357 248.
- Remove the rear window with the help of the special tool 2 184 377.
- Remove adhesive bead from the body using special tool 0 410 807 and clean the adhesive area.

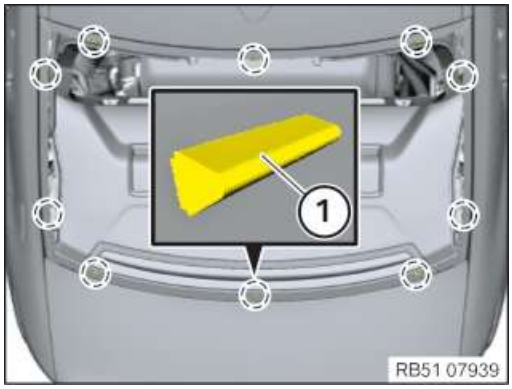
6 – In case of reusing the rear window



- Remove the adhesive bead (1) on the rear window (2) with the special tool 0 410 807.

7 – Replace the spacer

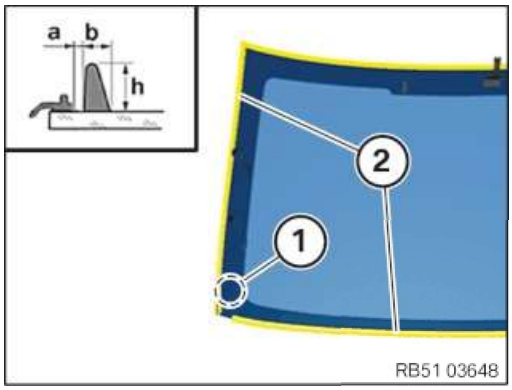
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- Completely remove the available spacer buffers (1).
- Remove the adhesive residue on the body and clean the adhesive area.
- Stick the new spacer buffers (1) in the centre on the engraved markings on the body side.

  Parts: Spacer buffer

8 – Install the rear window

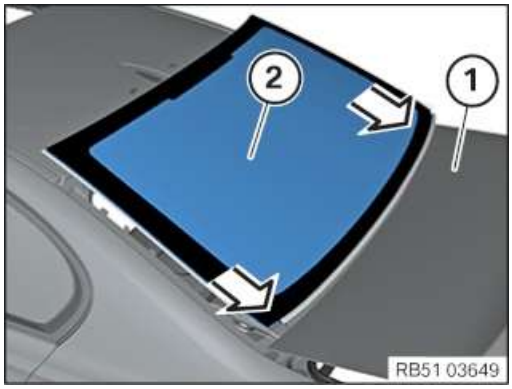


- Clean the bonding surfaces on the body and on the rear window.
- Provide two glue cartridges.
- Prepare a glue cartridge with the standard jet nozzle C.
- Apply bead joint in area (1).
- Apply adhesive bead within the mark on the rear window

Adhesive bead

b = Width	7 mm ... 9 mm
h = Height	11 mm ... 13 mm

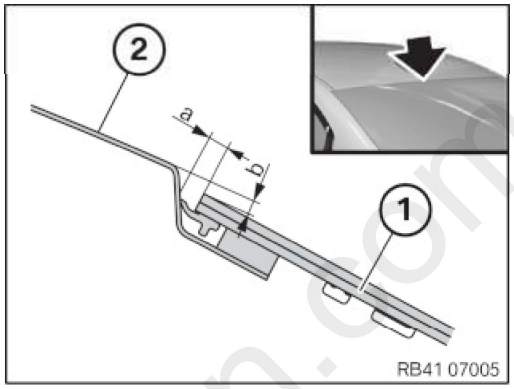
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- Open tailgate (1) approx. 1/3 and secure in this position.
- Carefully perform the following actions on rear window (2) with suction lifters
  - Bring it parallel to C-pillar
  - Feed it in under tailgate
  - Position at top
  - Align sides evenly
  - Press upwards until sealing rests evenly on roof
  - Press it evenly and adjust the gap dimension

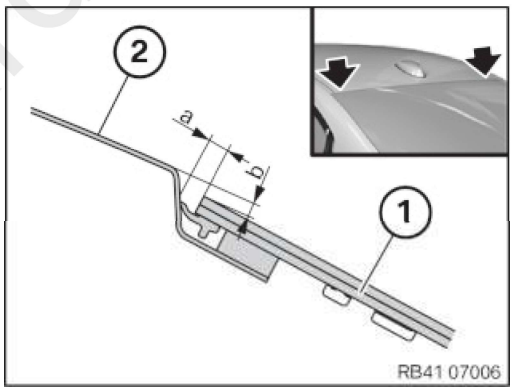
Gap dimension rear window to roof outer skin

1 rear window, 2 roof outer skin	
a	3,2 (1,9 - 4,5) mm
b	2,8 (1,5 - 4,1) mm



Gap dimension rear window to roof outer skin

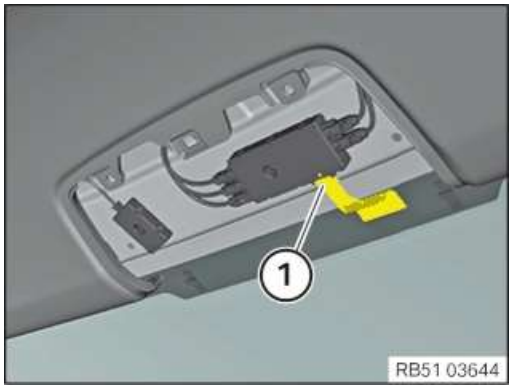
1 rear window, 2 roof outer skin	
a	3,2 (1,9 - 4,5) mm
b	2,6 (1,3 - 3,9) mm



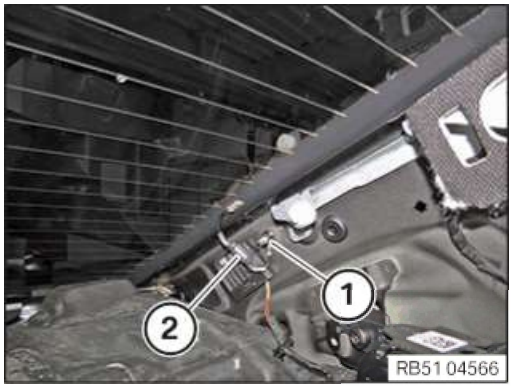
- Measure short length (A) of the rear window (1) to the roof outer skin (2) with the special tool 0 495 259 (51 0 010).

  Measure gap dimension (B) with special tool 0 496 076 (00 9 470).
- Secure rear window (1) with adhesive tap on the roof.

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- Connect connector (1).



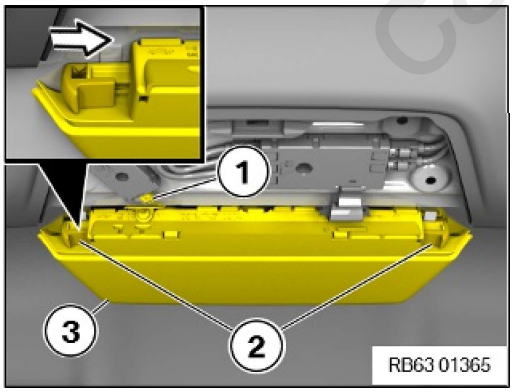
- Secure cable (2) with nuts (1) at the attachment point.



- Loosen cable (2) from the rear window.
- Connect connector (1).

POSTPROCESSES

9 – Install the auxiliary stop lamp

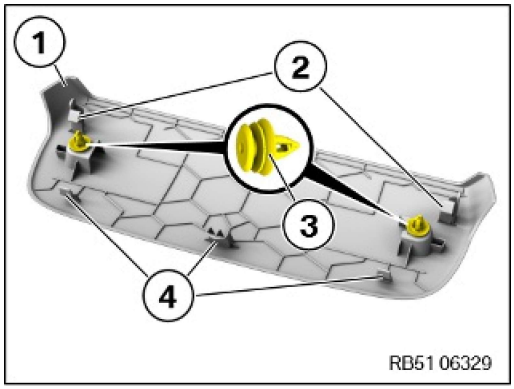


- Position the additional brake light (3).
- Lock both slides (2) inwards in the direction of the arrow.
- Connect connector (1).

10 – Installing trim for additional brake light

Check

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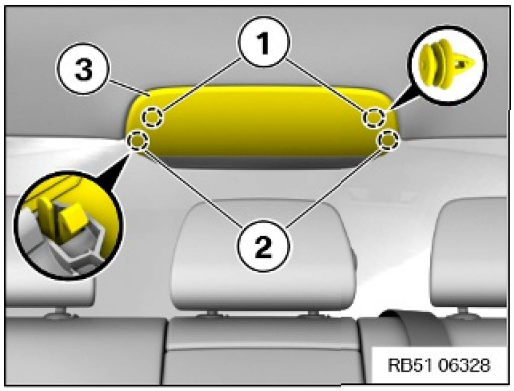
- Check the clips (3) for damage and renew if necessary.
- Check latch mechanisms (2) and guides (4) for damage.

Result

» The latch mechanism or the guide is damaged.

Measure

- Renew the trim for the additional brake light.



- Position trim for additional brake light (1) from the bottom and clip it in with latch mechanisms (2).
- Clip in clips (1).

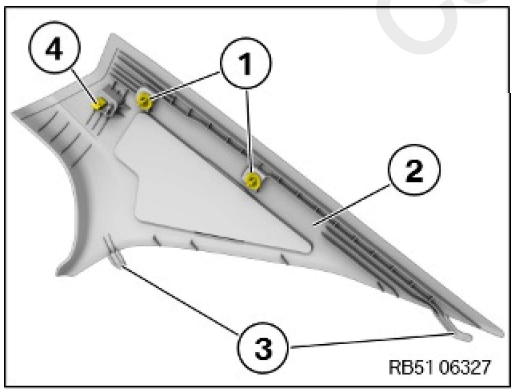
11 – Install both C-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Installing C-pillar trim panel**

Check



- Check clips (1) and clamp (4) for damage, renew if necessary.
- Check the guides (3) for damage.

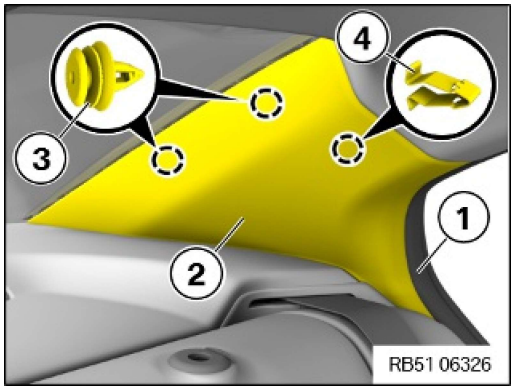
Result

» Guide is damaged.

Measure

- Renew the C-pillar trim panel .

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NOTICE

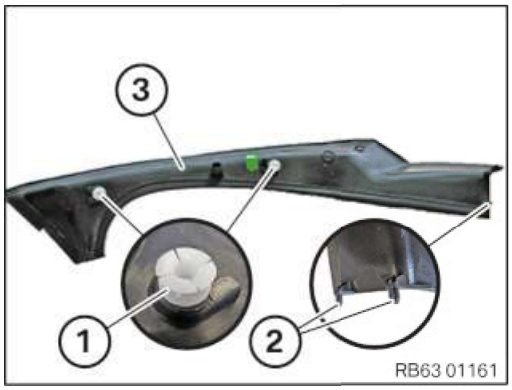
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Feed C-pillar trim panel (2) into guides towards the rear.
- Clip in clips (3).
- Clip in clamp (4).
- Guide in C-pillar trim panel (2) under the lip of edge protection (1).

12 – Installing the trim panel for the rear left and right water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Check the clips (1) and guides (2) on the trim panel for the water channel (3) for damage.



- Clip in the trim panel for the water channel (1).

Additional Information

Overview of Special Tools

0 496 569 (00 9 325) Wedge



Common	Used in step 1
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

2 357 248 Removal and installation kit



Common	Used in step 5
Usage	Removal system for removing glued windshields, side and rear windows without causing damage. The windows are cut out using an ultra-strong cord made from braided polyethylene fibres.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	05 06 13 (934)

2 184 377 Siphon



Common	Used in step 5
Usage	Siphon for the removal, installation and positioning of vehicle windows.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	08 01 10 (635)

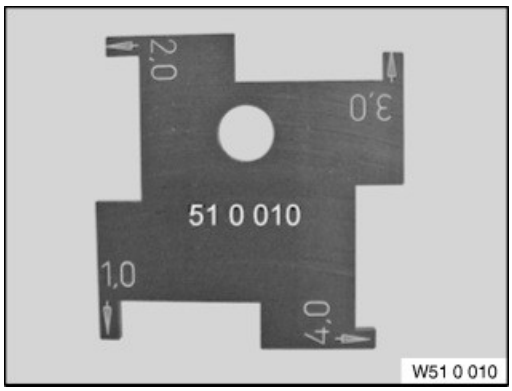
0 410 807 Accessories



Common	Used in step 56
Usage	Pinchweld scraper set for removing seal residues such as window glass adhesive or seals in the engine compartment.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	08 02 05 (206)

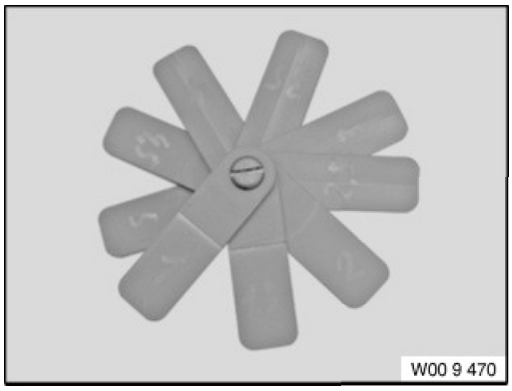
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0 495 259 (51 0 010) Gauge



Common	Used in step 8
Usage	(test gauge for installing windscreen and rear window) (replaces special tool 51 3 210 from 06/2005)
Included in the tool or work	
Storage location	B2
Replaced by	
In connection with	
SI-Number	01 10 05 (189)

0 496 076 (00 9 470) Gauge

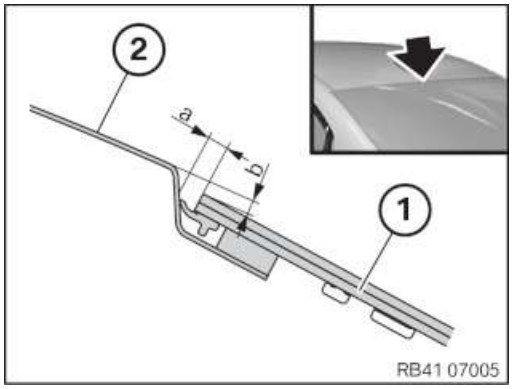


Common	Used in step 8
Usage	(Gap gauge) From 1 to 5 mm (1; 1.5; 2; 2.5 ...). For checking body gap dimensions.
Included in the tool or work	0 496 091
Storage location	A24
Replaced by	
In connection with	
SI-Number	01 03 07 (337)

Overview Technical Data

Adhesive bead	Used in step 8
b = Width	7 mm ... 9 mm
h = Height	11 mm ... 13 mm

Gap dimension rear window to roof outer skin	Used in step 8
1 rear window, 2 roof outer skin	
a	3,2 (1,9 - 4,5) mm
b	2,8 (1,5 - 4,1) mm

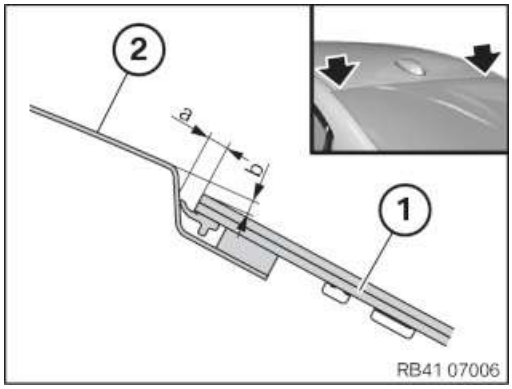


Gap dimension rear window to roof outer skin Used in step 8

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1 rear window, 2 roof outer skin

a	3,2 (1,9 - 4,5) mm
b	2,6 (1,3 - 3,9) mm



Links

General repair instructions	Used in step
51 31 ... General procedure when dismantling/installing bonded window glass	

Repair instructions	Used in step
51 31 ... Removing windows with a "Spider"	

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51 31 000 Removing and installing windscreen

RISK OF DAMAGE

Electrostatic discharge.

Damage to or destruction of electrical components.

- Leave electrical components in original packaging until just before they are installed. Use the original packaging only for any return shipments. Always package removed components straight away.
- Read and comply with user information on using the associated special tool 12 7 060.
- Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.
- Wear electrically conductive clothing and antistatic shoes (with ESD symbol).
- For additional information see: 61 35 Information on electrostatic discharge (ESD) protection.

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

TECHNICAL INFORMATION

The following procedure forms the basis for these repair instructions and must be observed without fail.
For more information see: 51 31 ... General procedure for disassembly/installation of bonded window glass

TECHNICAL INFORMATION

Perform window removal using the "spider".
For additional information see: 51 31 ... Window glass removal using "spider"

PRELIMINARY WORK

1 – Remove both A-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the A-pillar trim panel**

WARNING

Airbag unit.

Danger! Life-threatening injuries!

- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

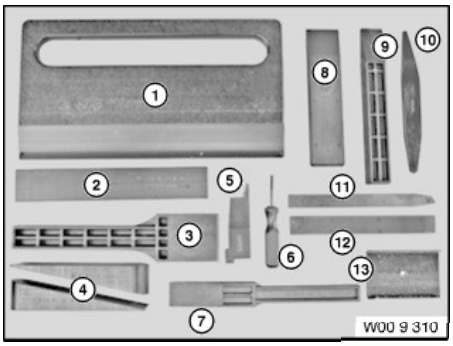
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WARNING

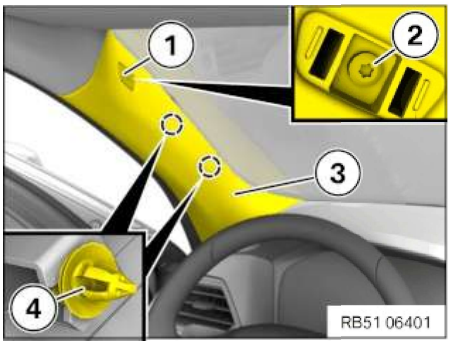
Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



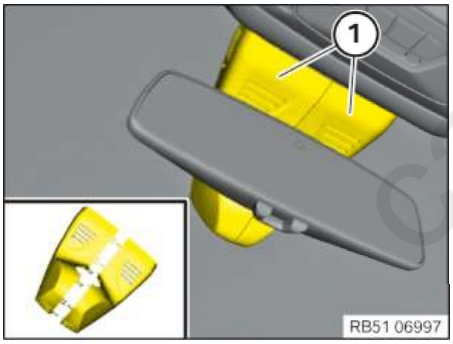
- Have the set of special tools 0 493 752 (00 9 329) ready.



- Unclip the cover (1) with suitable tools.
- Loosen screw (2).
- Unclip A-pillar trim panel (3) with clips (4) and guide it out upwards.

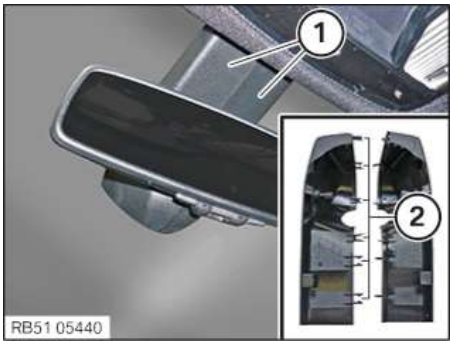
2 – Removing the covers for the interior mirror

- **Version A:**



- Release the cover (1) at the centre from the latch mechanisms (2) with a suitable plastic wedge and remove.

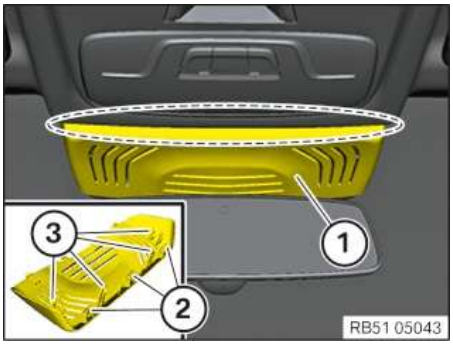
- **Version B:**



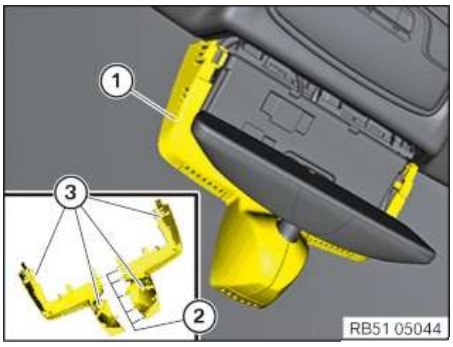
- Release the cover (1) from the latch mechanisms (2) with a suitable plastic wedge and remove sideways.

- **Version C:**

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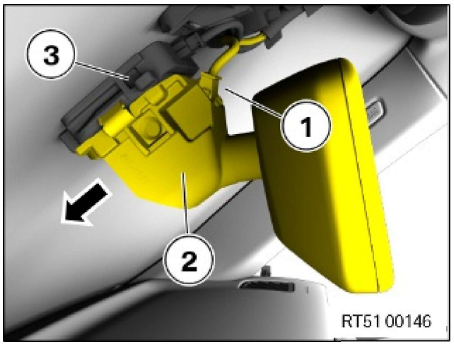


- Detach cover (1) from the clamps (2) in the marked area using a suitable plastic wedge and pull down a certain distance.
- Release cover (1) at the retaining lugs (3) and remove from the guides to the rear.



- Release cover (1) from the latch mechanisms (2) and (3) and remove sideways.
- Remove cover (1) from mirror base (2).

3 – Remove inside mirror



TECHNICAL INFORMATION

Carry out the work at temperatures between 18 °C and 23 °C only.

- Unlock plug connection (1) and disconnect.

RISK OF DAMAGE

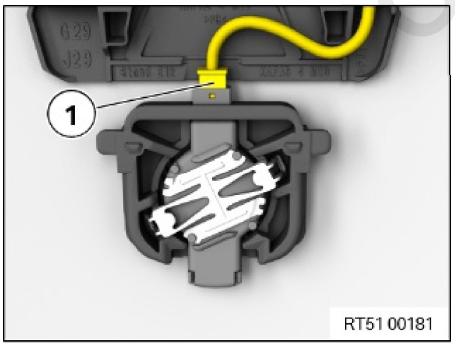
Damage to the component.

Excessive force may damage the component.

- Handle component carefully.

- Jerk and pull off the interior mirror (2) in the direction of the arrow from the mirror base (3).

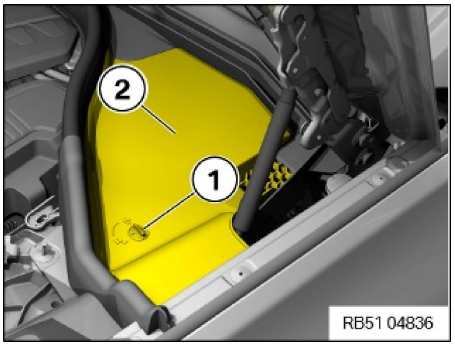
4 – Remove rain-light-solar-condensation sensor partially



- Unlock plug connection (1) and disconnect.

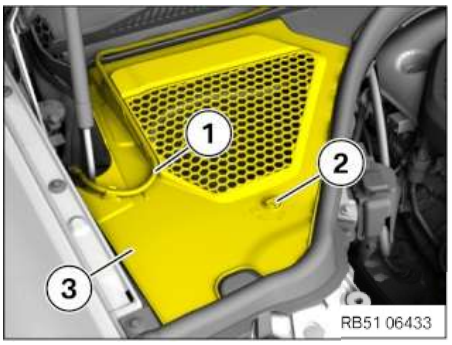
5 – Remove the cover of the engine compartment at the rear left

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- Loosen the lock (1).
- Remove rear left cover of engine compartment (2).

6 – Remove the cover of the rear right engine compartment



- Release washer fluid hose (1) from the guides.
- Loosen the lock (2).
- Remove the cover of rear right engine compartment (3).

7 – Removing both wiper arms

NOTICE

Description is for left component only. Procedure on the right side is identical.

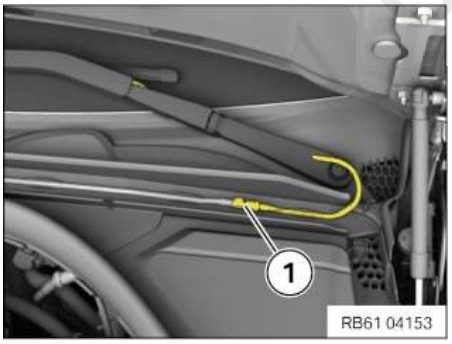
▸ **Remove the wiper arm**

RISK OF DAMAGE

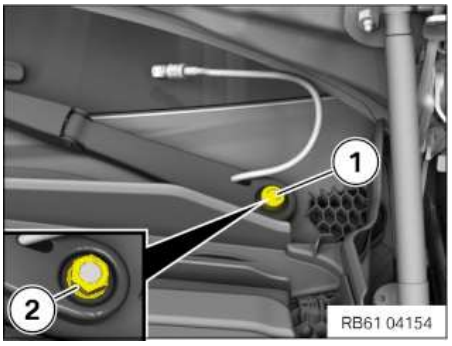
Damage to wiper console

While removing the wiper arms without using special tool, the wiper console can break.

- Removing the wiper arms must be carried out only using the prescribed special tool.
- Do not lift off wiper arm, else the wiper console may break on the predetermined breaking point for the pedestrian protection.

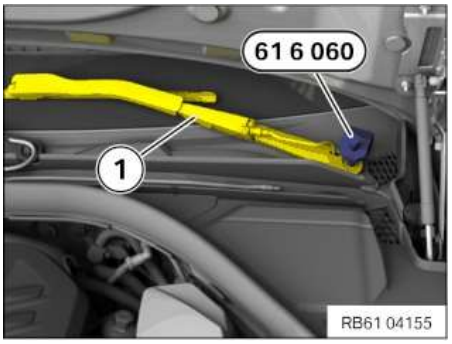


- Disconnect the windscreen wash hose(1) at the separation point and remove from the cowl guide.



- Remove the protective cap (1).
- Loosen nut (2).

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- Pull off the wiper arm (1) using special tool .

8 – Remove the gutter strip on the windscreen on the left and right

NOTICE

Description is for left component only. Procedure on the right side is identical.

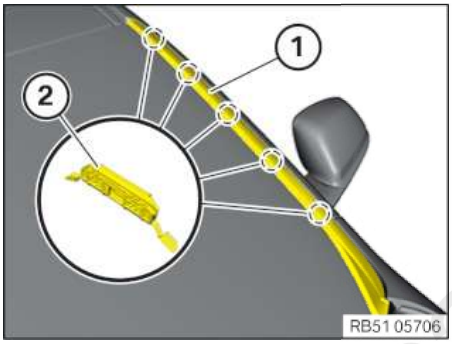
▶ **Remove the gutter strip on the windscreen**

RISK OF DAMAGE

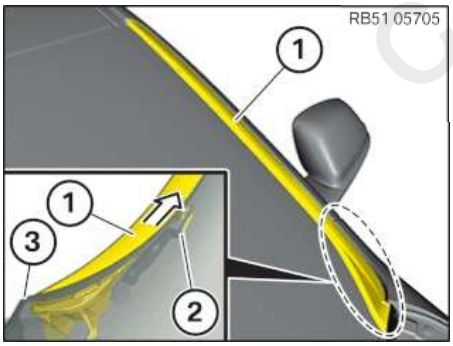
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

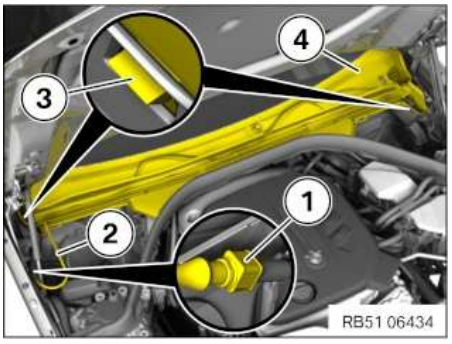


- Unclip gutter strip on the windscreen(1) from the clamps(2) starting at the roof and working upwards.



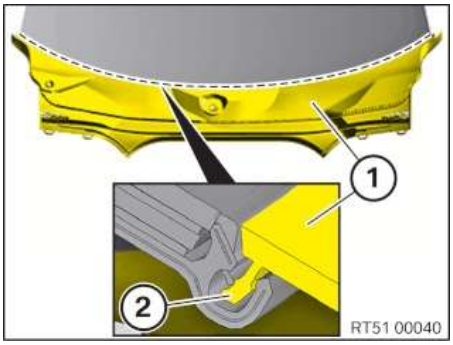
- Pull out gutter strip on the windscreen (1) out of guide (2) in direction of arrow and carefully guide out at the side panel (3).

9 – Remove cowl panel cover



- Release snap fastener of the washer fluid hose (1) and put the washer fluid hose(2) to one side.
- Unclip clips (3) on the cowl panel cover (4).

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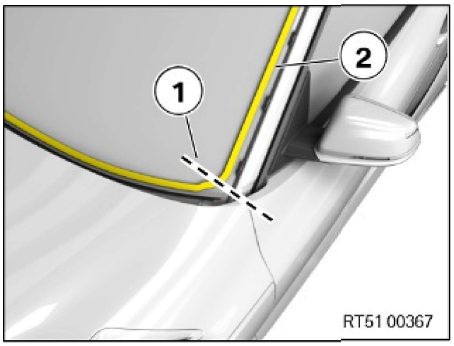
- Pull the cowl panel cover (1) upward out of the latch mechanism (2) beginning on the side.

MAIN WORK

10 – Removing the windscreen

TECHNICAL INFORMATION

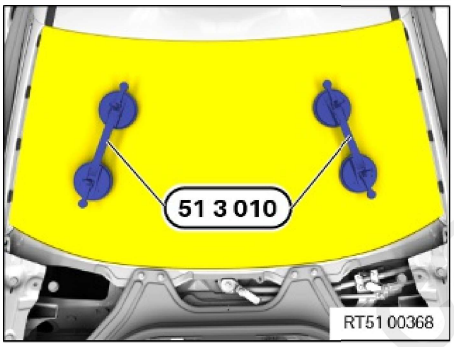
Perform window removal using the "spider".
For additional information see: 51 31 ... Window glass removal using "spider"



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Tape off body in area of piercing point with fabric adhesive tape.
- Push the thread along the line (1) through the adhesive bead (2) from the inside.
- Cut out the windscreen with the spider.

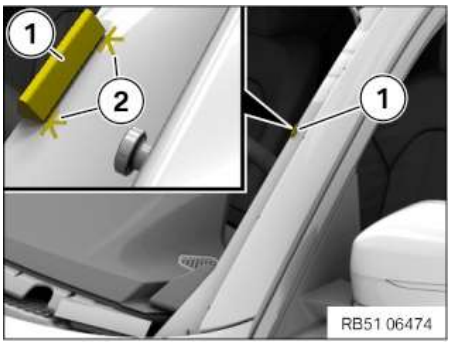


NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Remove windscreen with the special tool .

11 – Renew the spacer



NOTICE

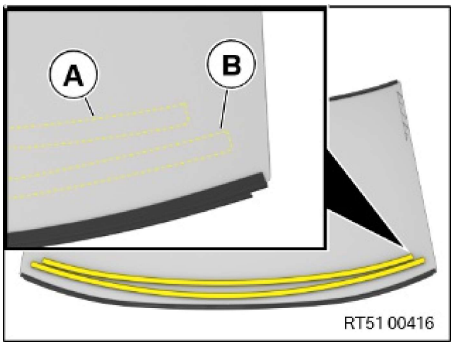
Description is for left component only. Procedure on the right side is identical.

- Before installing the windscreen, remove adhesive residue from the body and clean adhesive area.
- Completely remove the available spacer buffers (1).
- Bond the new spacer buffers (1) in the centre on the marks (2) embossed on the body.

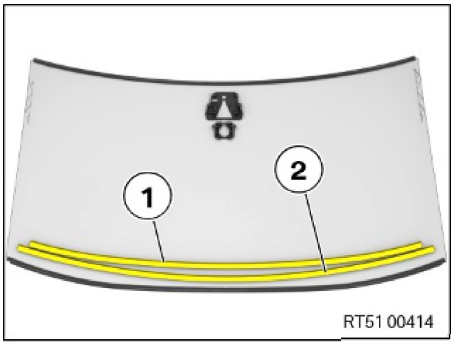
  Parts: Spacer buffer

12 – Replacement: prepare the windscreen

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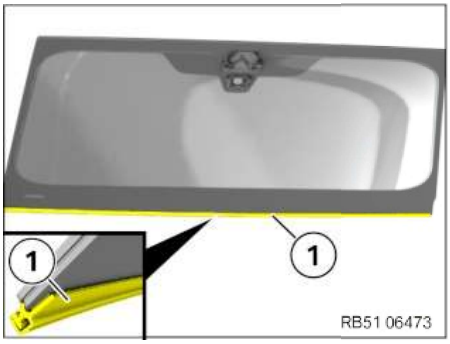


- Observe marks (A) and (B) for the expanding foam tape on the windscreen.



- Attach expanding foam tapes (1) and (2) along the marks on the edge of windscreen.

  Parts: Expanding foam tape



Check

- Check guide for cowl panel cover (1) for damage.

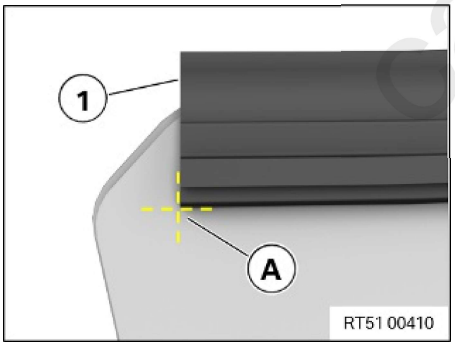
Result

» Guide for cowl panel cover is damaged.

Measure

- Renew windscreen.

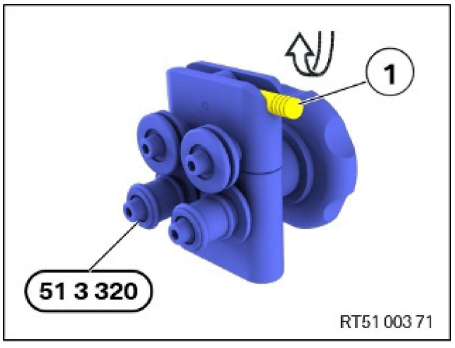
13 – Installing the windscreen rubber frame



NOTICE

Perform the operations on the left and right side.

- Observe the marking (A) for the windscreen rubber frame (1).

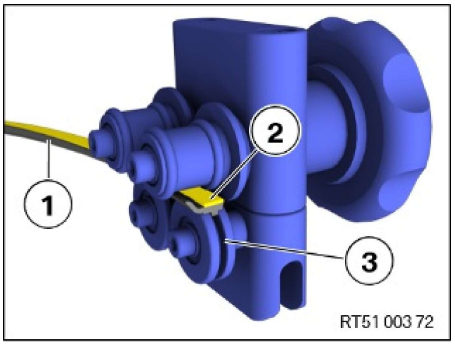


NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Reposition lever (1) in direction of arrow and open it using the special tool .

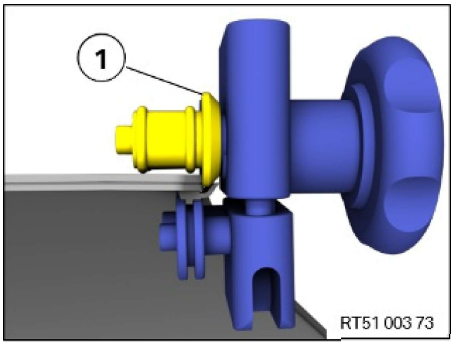
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NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

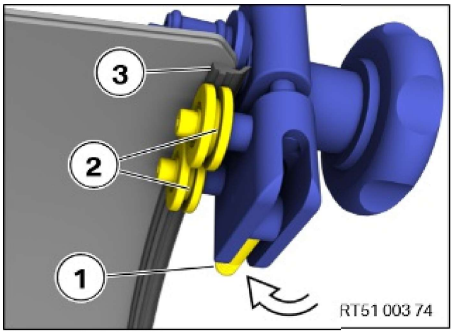
- Pull off protective film (2) in stages from adhesive tape.
- Insert the cover (1) into the guides (3).



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

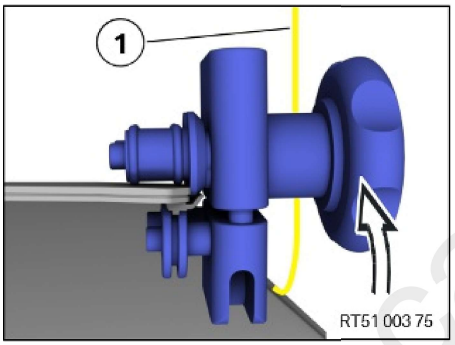
- Place the special tool with the pressure rollers (1) up against the window edge.
- Align the cover with the outer edge of the windscreen.
- Fit the cover and visually check for perfect fit.



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Reposition the lever (1) in the direction of arrow and close the special tool.
- Ensure the correct positioning of the cover (3) in the guide pulleys (2).

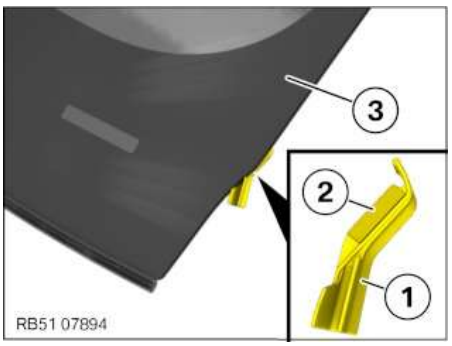


NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Continue to pull off protective film (1) in stages from adhesive tape.
- Pull the special tool in the direction of arrow with the handwheel over the entire upper edge of the window glass.

14 – Install windscreen.



▸ **Installing water guide element on the left and right**

- Check water guide element (1) on the left and right.

  Renew damaged water guide element (1).

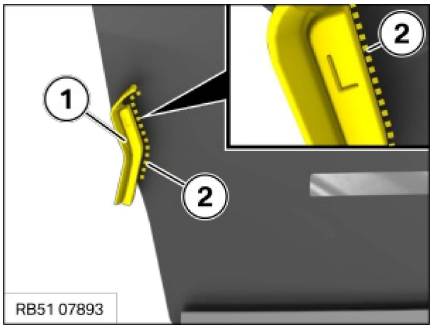
  Do not mix up the left and right water guide element.
- Clean bonding surface with cleaning agent R2.

Expendable materials

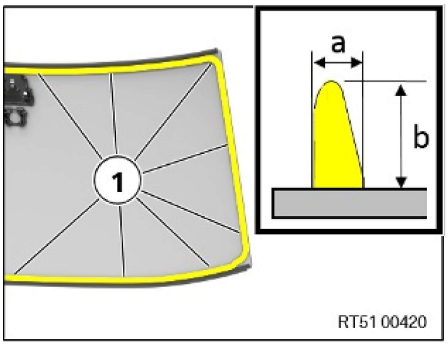
Cleaning agent R2	500 ml	83190417324

- Remove liner (2) from the water guide element (1) and position on the windscreen (3).

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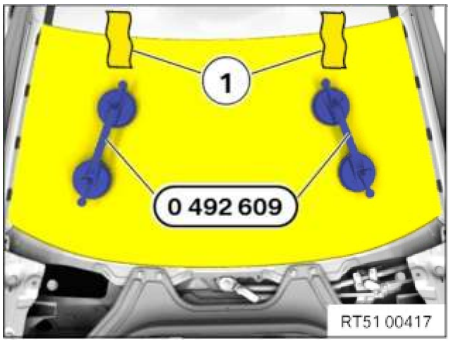
- Position water guide element (1) at the mark (2) and press it down.



NOTICE

Perform the operations on the left and right side.

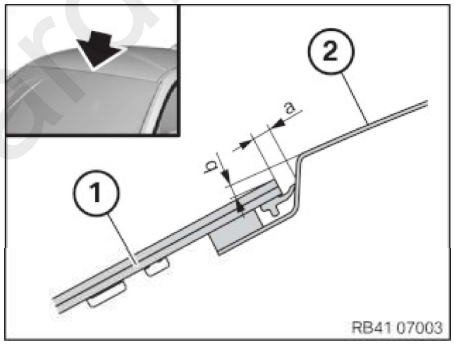
- Prepare the glue cartridge with the standard nozzle C.
- Apply adhesive bead within the marks (1) on the windscreen.



- Carefully insert the windscreen using special tool between the bonnet and the cowl panel.
- Position the windscreen at the top.
- Evenly align the windscreen on the left and right.
- Insert and press on the windscreen at the bottom.
- Press the windscreen towards the top until the rubber frame of the windscreen is evenly in contact with the roof.
- Secure the windscreen in this installation position using the two yellow plastic adhesive tapes (1).

Gap dimension windscreen to roof outer skin

1 windscreen; 2 roof outer skin	
a	4,3 (3,1 - 5,5) mm
b	3,0 (1,6 - 4,4) mm
b (with HUD)	2,5 (1,1 - 3,9) mm



POSTPROCESSES

15 – Installing cowl panel cover

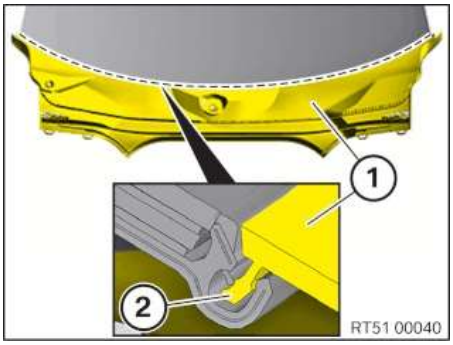
RISK OF DAMAGE

Damage caused by water ingress into the vehicle.

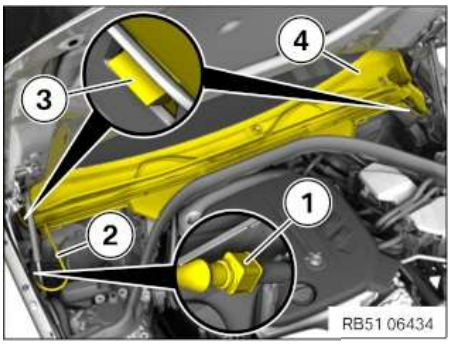
Water ingress into the vehicle may result in damage to components, malfunctions and corrosion.

- Ensure correct installation of the components.
- Only use undamaged components.

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- Push the cowl panel cover (1) into the latch mechanism (2) beginning on the side.



- Clip cowl panel cover (4)in by means of the latch mechanisms (3).
- Position windscreen wash hose (2) and connect windscreen wash hose (1)quick lock.

16 – Install the gutter strip on the windscreen on the left and right

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the gutter strip on the windscreen**

RISK OF DAMAGE

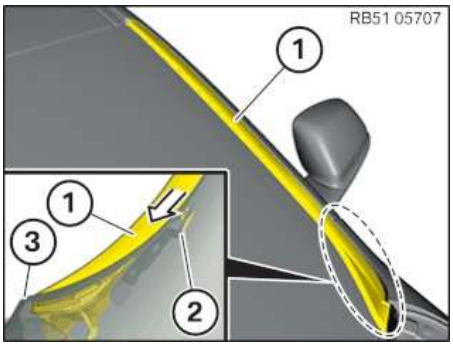
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

TECHNICAL INFORMATION

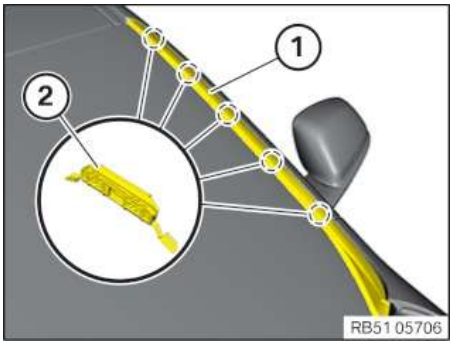
Latch mechanisms, guides and mounting elements must not be damaged or missing.



- Renew gutter strip on the windscreen (1) and paint if necessary.

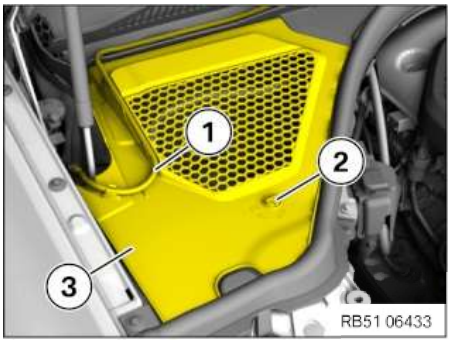
  Parts: Gutter strip
- Carefully feed in the windscreen gutter strip (1) at the side panel (3) and simultaneously feed into the guide (2) in direction of arrow.

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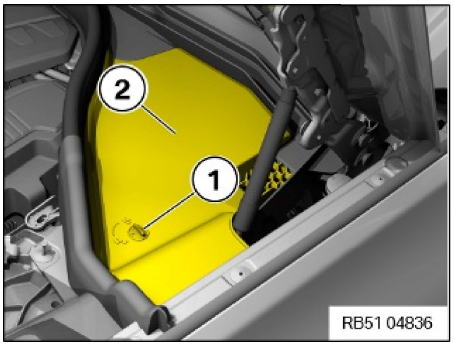
- Clip in the windscreen gutter strip (1) starting at bottom at the clamps (2).

17 – Install the rear right engine compartment cover



- Position the cover of the engine compartment on the rear right (3).
- Close lock (2).
- Insert washer fluid hose (1) into the guides.

18 – Install the cover of the engine compartment on the rear left



- Position the engine compartment cover at the rear left (2) .
- Close lock (1).

19 – Installing both wiper arms

NOTICE

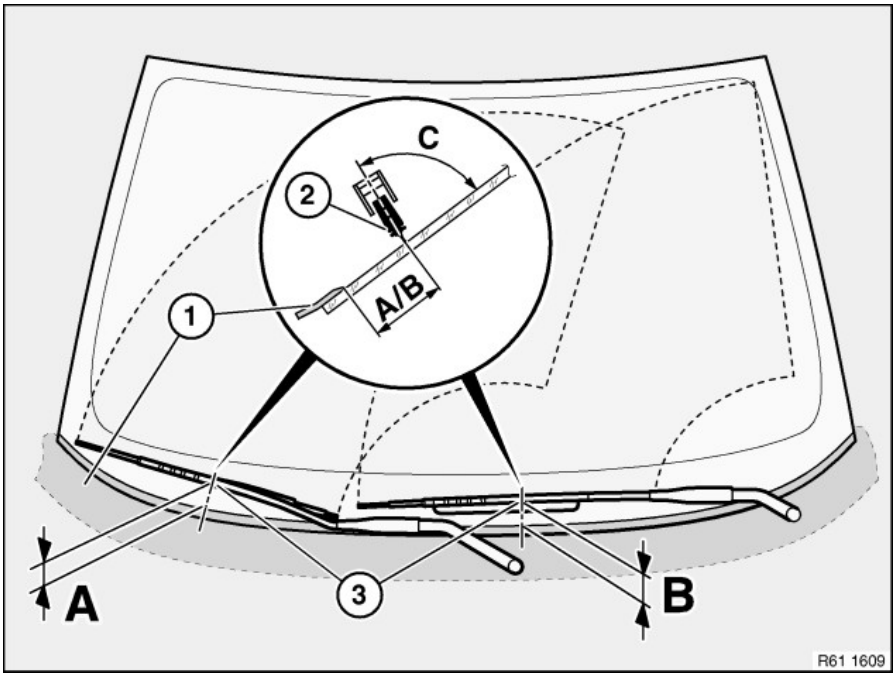
Description is for left component only. Procedure on the right side is identical.

▸ **Install the wiper arm**

TECHNICAL INFORMATION

The wiper system must be in zero position.
After installing the cowl panel cover and before fitting the wiper arm:
Activate the wiper system once to ensure that it has the correct installation position.

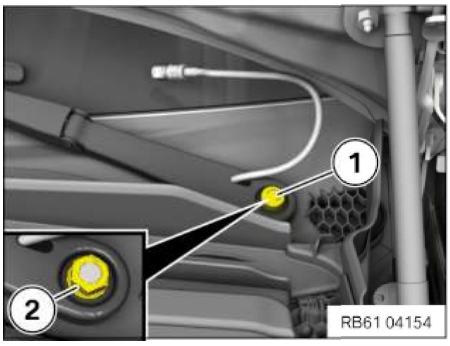
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- Connect the wiper arm (3).
- Correctly position the wiper arm (2) in relation to the window edge (1).

Distance from window pane edge to wiper blade

Wiper arm right (A)	57,5 ± 5 mm
Wiper arm left (B)	63,3 ± 4 mm

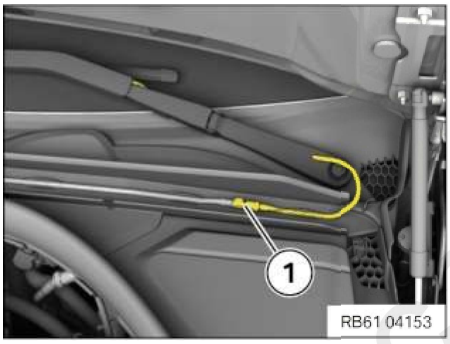


- Tighten nut (2).

Windscreen wiper arm

Combination hexagon nut		Tightening torque	35 Nm

- Connect the protective cap (1).



- Insert windscreen wash hose (1) into the cowl and connect at the separating point.

20 – Install both A-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Installing the A-pillar trim panel**

WARNING

Airbag unit.

Danger! Life-threatening injuries!

- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

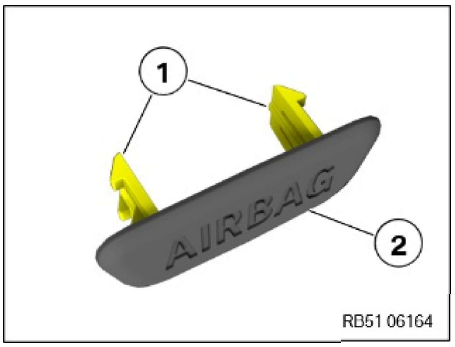
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WARNING

Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



Check

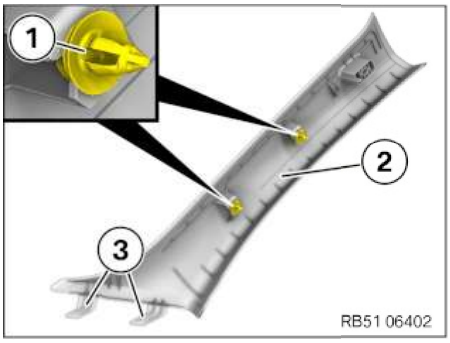
- Check retaining lugs (1) of cover (2) for damage.

Result

» Retaining lug is damaged.

Measure

- Renew the cover.



Check

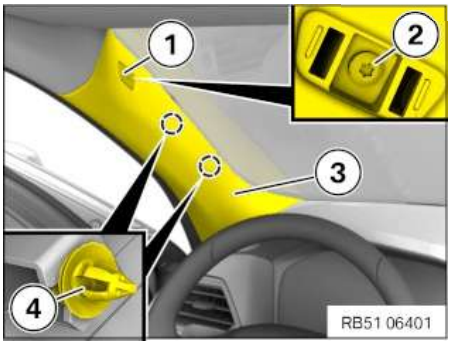
- Check the clips (1) for damage and renew if necessary.
- Check the guides (3) for damage.

Result

» Guide is damaged.

Measure

- Renew the A-pillar trim panel.



- Guide in A-pillar trim panel (3) *downwards and clip it in with clips* (4).
- Tighten down screw (2).

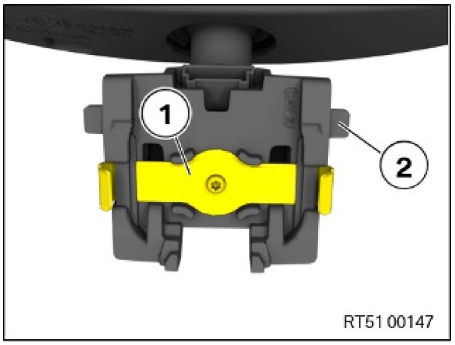
A-pillar trim panel to body

Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

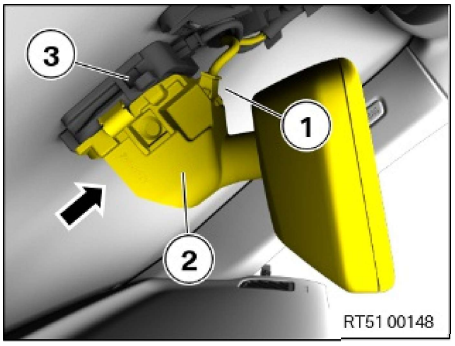
- Clip in the cover (1).

21 – Install interior mirror

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- Check the clamp (1) on both sides of the mirror base (2) for damage and renew as needed.



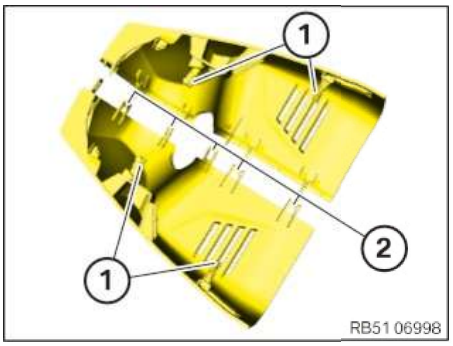
TECHNICAL INFORMATION

Carry out the work at temperatures between 18 °C and 23 °C only.

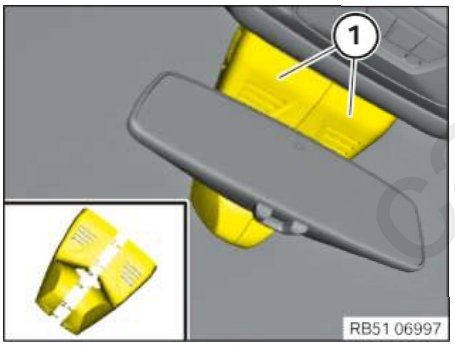
- Position the interior mirror (2) at the mirror base and slide it on in direction of the arrow.
- Check the correct installation position of the interior mirror (2) at the mirror base (3).
- Connect connectors (1) and lock.

22 – Installing the covers for the interior mirror

- **Version A:**

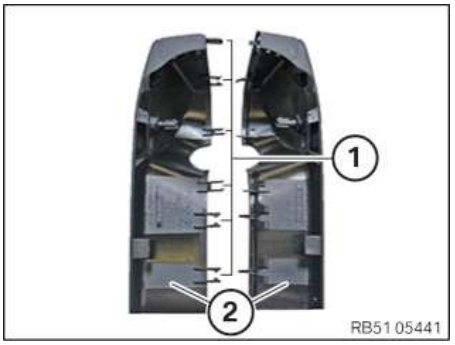


- Check latch mechanisms (1) and (2).
- If the latch mechanisms (1) or (2) are faulty, renew the covers.



- Feed cover (1) in and lock.

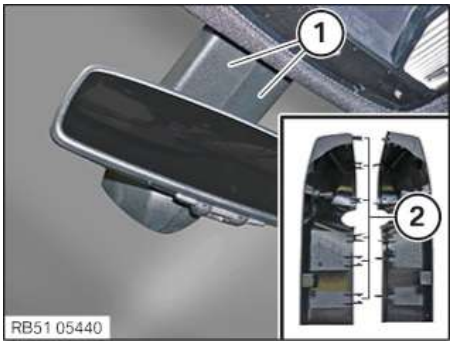
- **Version B:**



- Check the latch mechanisms (1) on the two covers (2) for damage, renew the covers (2) if necessary.

  The covers (2) must not be damaged or missing.

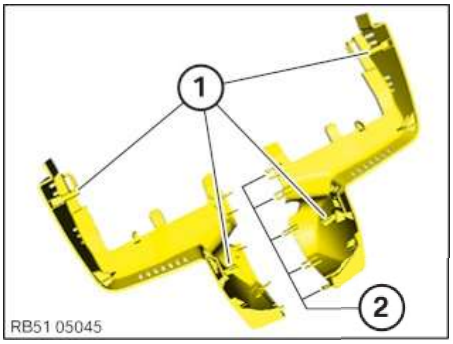
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- Position the covers (1) correctly on the mirror and engage with the latch mechanisms (2).

- **Version C:**

Check



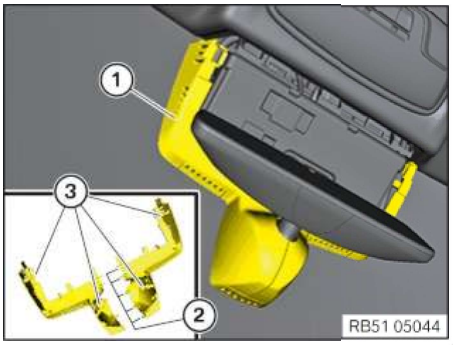
- Check the latch mechanisms (1) and (2) of the covers for damage.

Result

» The latch mechanism is damaged.

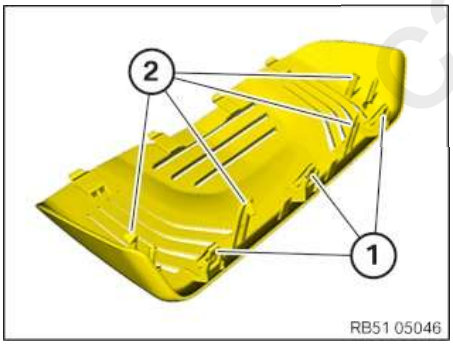
Measure

- Renew the cover.



- Guide in cover (1) on left and right and engage using latch mechanisms (2) and (3).

Check



- Check clamps (1) for damage; renew if necessary.
- Check latch mechanisms (2) for damage.

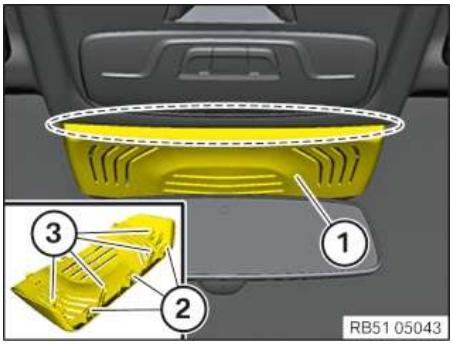
Result

» The latch mechanism is damaged.

Measure

- Renew the cover.

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- Guide cover (1) into front guides and engage using retaining lugs (3) and clamps (2).

Additional Information

Overview of Tightening Torques

Windscreen wiper arm — Used in step 19

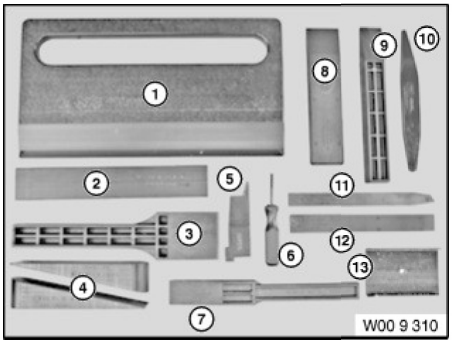
Combination hexagon nut		Tightening torque	35 Nm

A-pillar trim panel to body — Used in step 20

Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

Overview of Special Tools

0 493 752 (00 9 329) Case



Common — Used in step 1

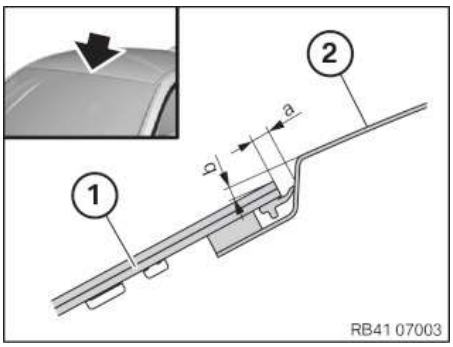
Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

Overview Technical Data

Gap dimension windscreen to roof outer skin — Used in step 14

1 windscreen; 2 roof outer skin

a	4,3 (3,1 - 5,5) mm
b	3,0 (1,6 - 4,4) mm
b (with HUD)	2,5 (1,1 - 3,9) mm



Distance from window pane edge to wiper blade — Used in step 19

Wiper arm right (A)	57,5 ± 5 mm
Wiper arm left (B)	63,3 ± 4 mm

Links

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General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	1
72 00 ... Safety regulations for handling components with gas generators	1
51 31 ... General procedure for the disassembly and installation of bonded window glass	10
51 31 ... Materials for bonding window	10

Repair instructions	Used in step
51 31 ... Removing windows with a "Spider"	10
61 35 ... Notes on ESD protection (Electro Static Discharge)	

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51 31 ... Removing windows with a "Spider"

Windscreen removal system "Spider"



1	"Spider" separation device	6	Line threader
2	Bit holder	7	Line routing tool
3	Operating instructions	8	Suction anchor
4	Dashboard protection	9	Cord for separating adhesive strips
5	Angular transmission		

Accessories required for operation (not included):

Cordless screwdriver/drill with at least a 10.8 V Li-ion battery or a 18 V Ni-Cd battery and variable speed.

Note: Always use a low gear setting.

Note:
Damage as well as ergonomic and health-endangering damage are minimised with the "Spider" disassembly system.

Sourcing reference:

See Aftersales Assistance Portal (ASAP) - Service/Technical - Workshop Equipment (Start BMW) - Shop Workshop Equipment or at www.bmwgroup.com

Warning!
Follow safety instructions for working on vehicles with airbag systems (risk of injury).

Important!
Handle sharp-edged tools with care (risk of damage to the head airbag and the window glass).

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Important!

Always keep both suction cups dry and clean to ensure their optimum adhesion on the windscreen.

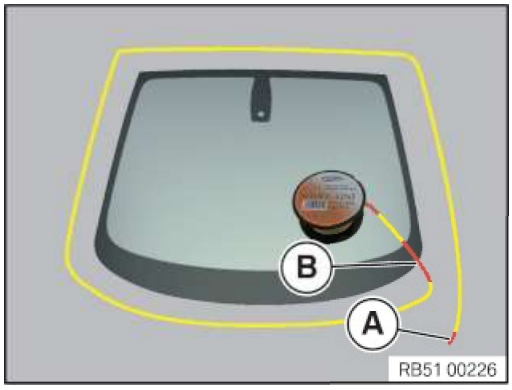
Suction cup may not be applied at the damaged point (crack in window glass).

The bearing bushes of the shaft (spindle) must always be lubricated.

Always wear safety goggles and protective gloves for your own safety.

The procedure for disassembly of the windscreen is described below as an example.

Deviations in the work procedure can be found in the vehicle-specific repair instructions.



General

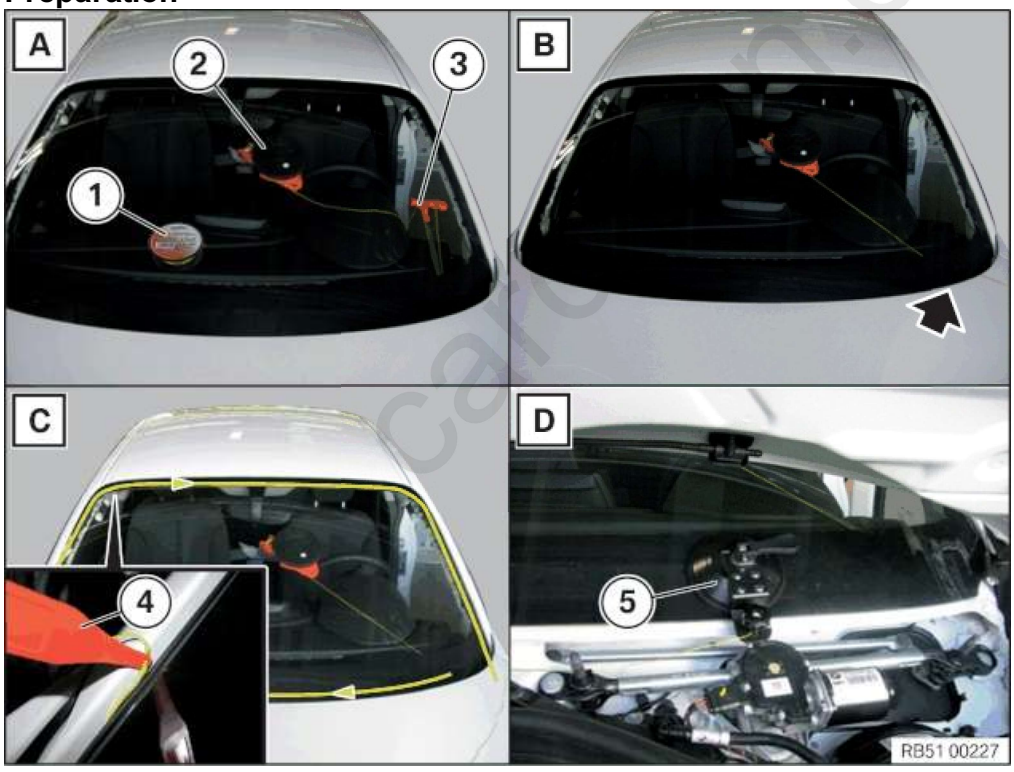
A cord approx. 6.8 m long is used to cut through the adhesive bead.

The cord length to be used is identified by a short red mark (A) approx. 5 cm.

The part of the cord laid outside around the window glass (approx. 5 m) is identified with a long red mark (B) (approx. 18 cm).

The marks are applied so that the cord has to be pulled from the inside to the outside.

Preparation



A. Pierce cord from the roller (1) or separation device (2) with cord threader (3) through the adhesive bead from the inside, protect the area from the inside as required.

B. Pull out cord up to the first red mark (approx. 18 cm long).

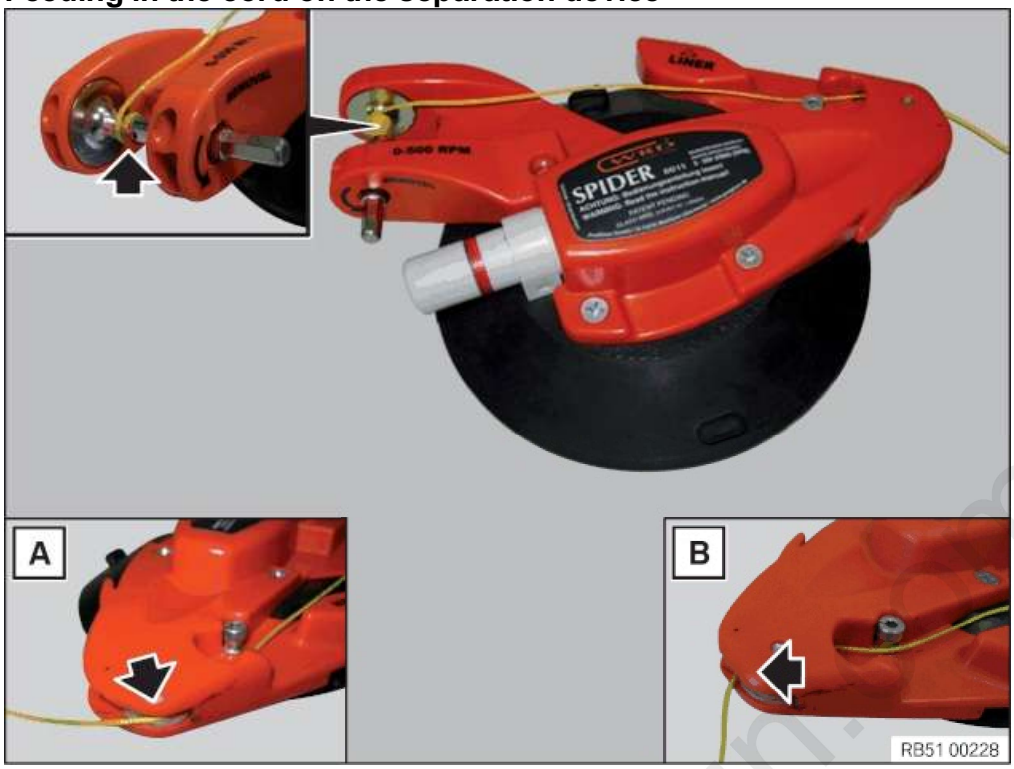
C. Lay cord around the window glass, use pulling aid (4) if required.

D. Secure suction anchor (5) outside on window glass, secure cord to suction anchor (5).

If required, unwind cord from roller (1) up to the second red mark (approx. 5 cm long) and cut off.

Make sure the cord lies below the window glass at all four corners.
Check that the cord is not caught on clamps or body.
Secure window glass on outside with adhesive tape against sliding.

Feeding in the cord on the separation device



Normally, the adhesive bead is cut through anticlockwise seen from the passenger compartment.

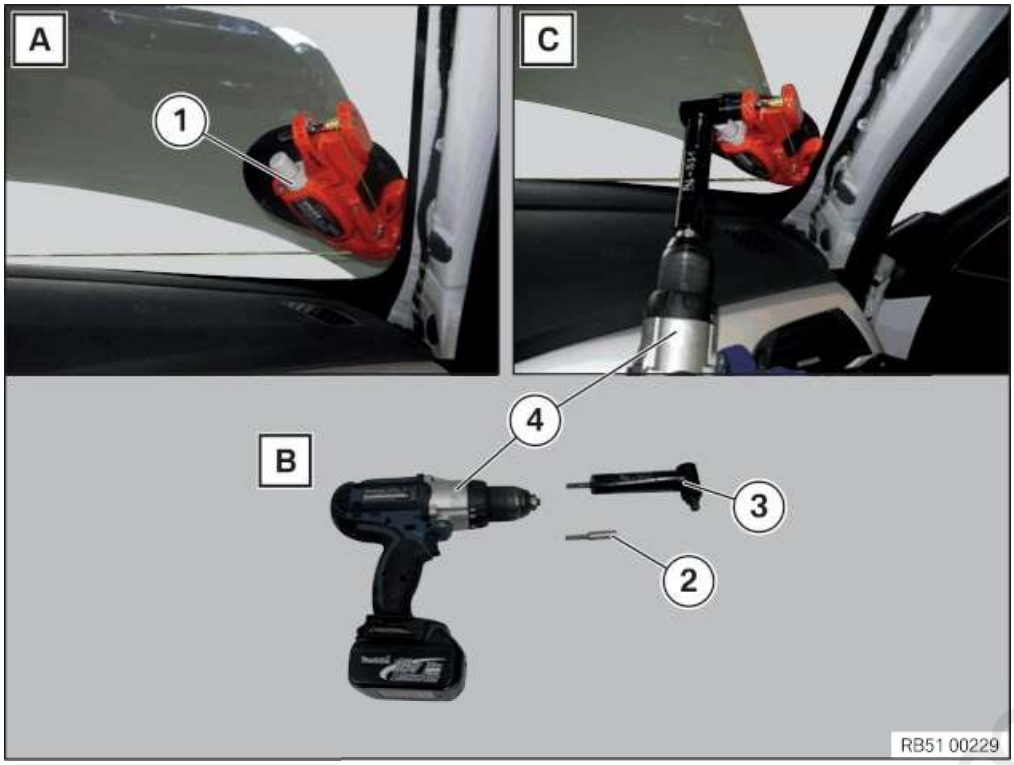
- This means the cord must be fed into the separation device as shown in graphic A.

When accessibility is not optimal, the opposite cutting direction may be required (comply with vehicle-specific repair instructions).

- This means the cord must be fed into the separation device as shown in graphic B.

Feed cord into coil and wind it on, at the same time trapping the end of the cord.
When winding the cord, the correct direction of rotation on the separation device must be observed.

Cutting out procedure



Optimum cutting is guaranteed when the cord is at an acute angle to the adhesive bead. There is a risk of the cord ripping if the angle is too obtuse.

The separation device must be positioned correspondingly to achieve the appropriate angle.

A. Fix separation device (1) on window glass at bottom right.
B. Depending on accessibility, attach bit holder (2) or angle gear (3) to cordless screwdriver (4).
C. Place cordless screwdriver (4) on separation device (1) and start winding cord, observe direction of rotation on separation device.

If required, over trim panel components with plastic protection.

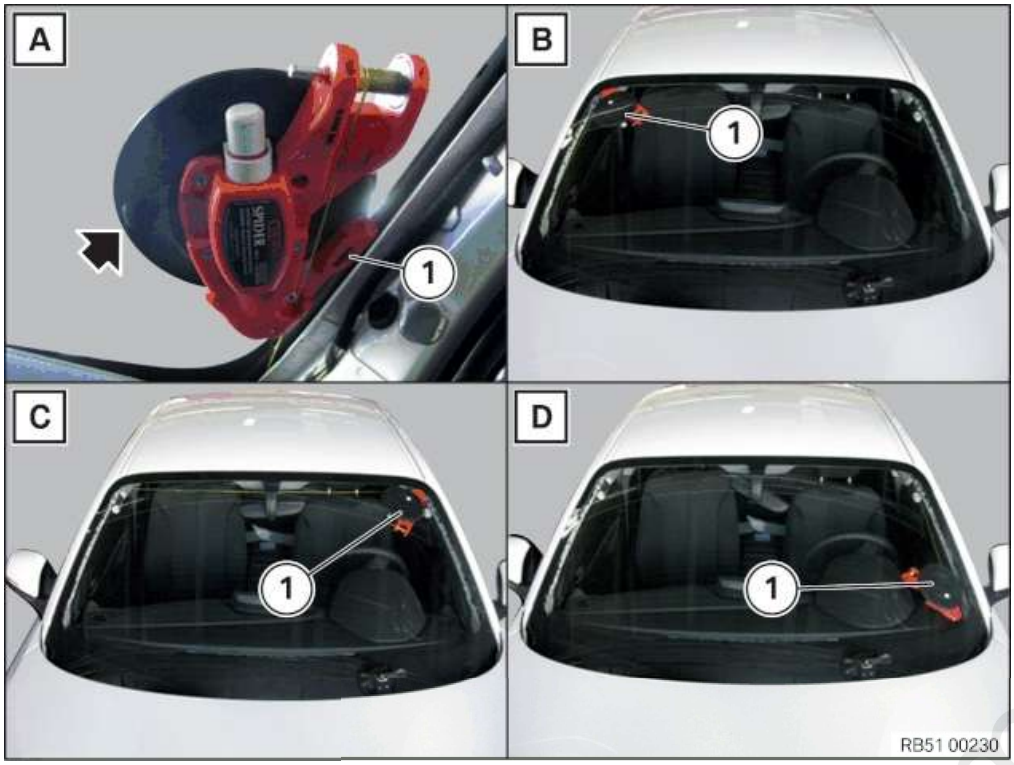
Guide cord with plastic protection around sharp-edged positions.

Cut through adhesive bead up to bottom area of A-pillar.

Turn back cordless screwdriver (4) approx. 2 rotations and remove.

Cutting out procedure

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A. Discharge vacuum on windscreen removal tool (1) by pressing the tab, remove windscreen removal tool (1) from window glass.

B. Reset removal tool (1) at illustrated and wind up cord up to the position of windscreen removal tool (1).

C./D. Repeat further resetting, work sequence as given at B.

Additional resetting may be required for very curved window glass.

It is possible to reuse the cord. When a cord is used many times the risk of ripping increases.
Dirt contamination must be avoided when a cord s reused.

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51 31 ... Removing windows with an oscillating knife



Warning!

Follow safety instructions for working on vehicles with airbag systems (risk of injury).

Important!

Handle sharp-edged tools with care (risk of damage to the head airbag and the window glass).



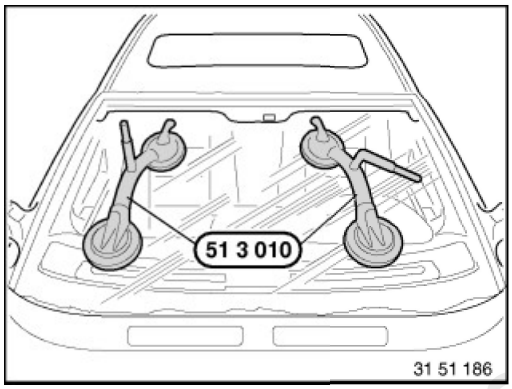
Important!

Follow the vehicle-specific repair instructions!

Always wear safety goggles and protective gloves for your own safety.

Cover the working area (side walls, roof-mounted aerial and if necessary interior equipment) with protective covers.

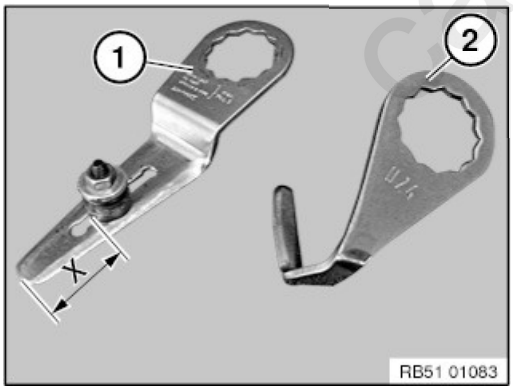
Tape off body with fabric adhesive tape (e.g. Tesa) in areas where the oscillating knife could damage the window glass or the paint.



Use suction cups (51 3 010) to lift out the window glass.

Always keep both suction cups dry and clean to ensure their optimum adhesion on the windscreen.

Secure window glass against falling out.



Depending on the area of application, knife 1 or 2 is used.

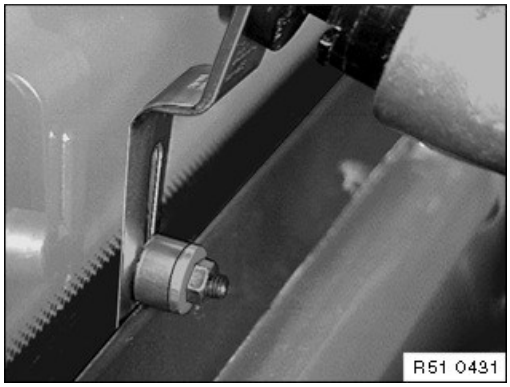
(1) Straight knife with adjustable thrust roller

(2) U-shaped knife

Dimension (X) on the knife (1) can be adjusted individually, see vehicle-specific repair instructions.

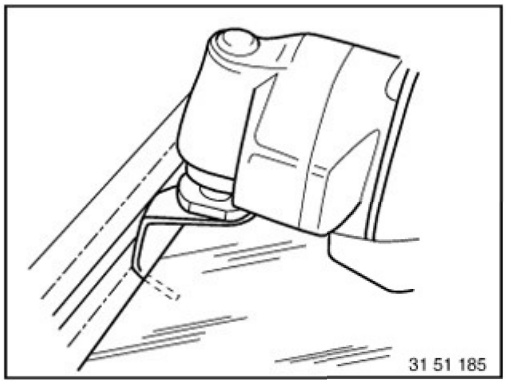
Note:
Sharpen knife blade before every use on a running machine with a grinding stone (even with new knife blade).

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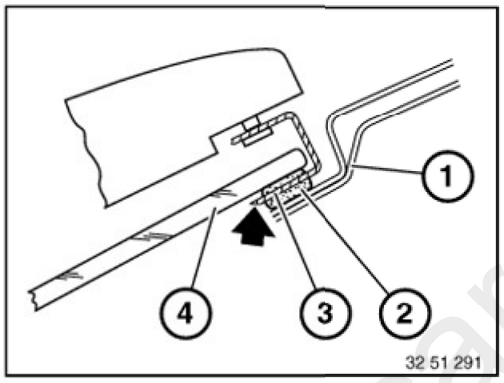
Removing from the inside:

Guide knife carefully between body and window glass.
Run blade of knife parallel to glass.
Take care not to damage paintwork.
Cut through adhesive bead all the way around.
Pull window glass outwards to remove.



Removal from outside:

Guide knife carefully between body and window glass.
Run blade of knife parallel to glass.
Take care not to damage paintwork.
Cut through adhesive bead all the way around.
Pull window glass outwards to remove.



Cut through adhesive bead as closely as possible to window glass.

(1) Body opening
(2) Adhesive bead
(3) Knife
(4) Window

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51 31 221 Replace rear window

TECHNICAL INFORMATION

Perform window removal using the "spider".
For additional information see: 51 31 ... Window glass removal using "spider"

TECHNICAL INFORMATION

The following procedure forms the basis for these repair instructions and must be observed without fail.
For more information see: 51 31 ... General procedure for disassembly/installation of bonded window glass

PRELIMINARY WORK

1 – Removing the trim panel for the rear left and right water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Unclip the trim panel for the water channel (1) with the special tool 0 496 569 (00 9 325).

2 – Remove both C-pillar trim panels

NOTICE

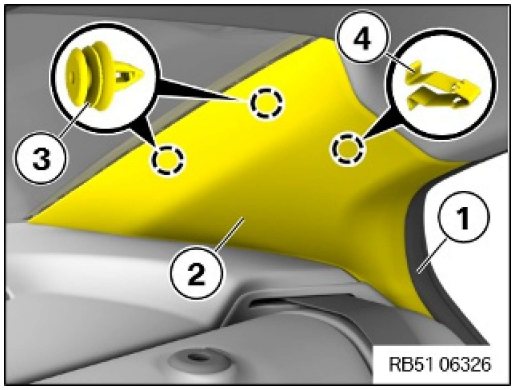
Description is for left component only. Procedure on the right side is identical.

▸ **Remove C-pillar trim panel**

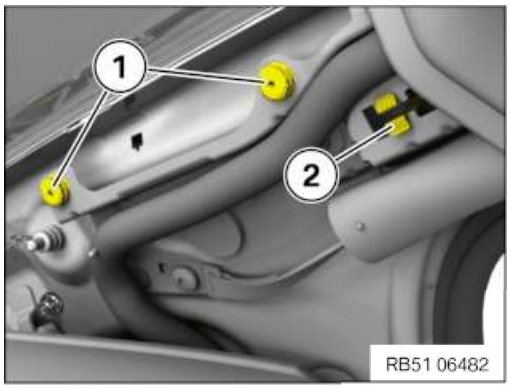
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

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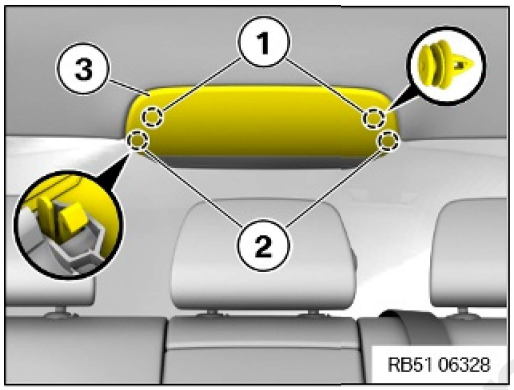


- Unclip clamp (4).
- Unclip clips (3).
- Feed out C-pillar trim panel (2) from the guides to the front.
- Thread out C-pillar trim panel (2) from the lip of edge protection (1).



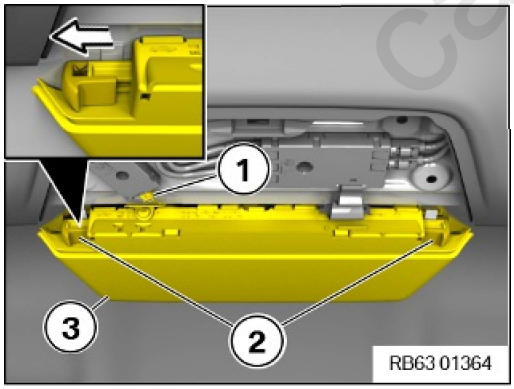
- If required, remove the clips (1) and the clamp (2) and connect it to the trim panel.

3 – Removing the trim of the additional brake light



- Loosen the clips (1).
- Release the latch mechanisms (2) and remove the trim of the additional brake light (3).

4 – Remove additional brake light

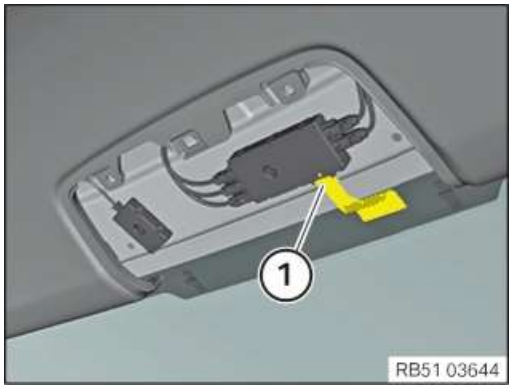


- Disconnect plug connection (1).
- Unlock both slides (2) outwards in the direction of the arrow and remove additional brake light (3).

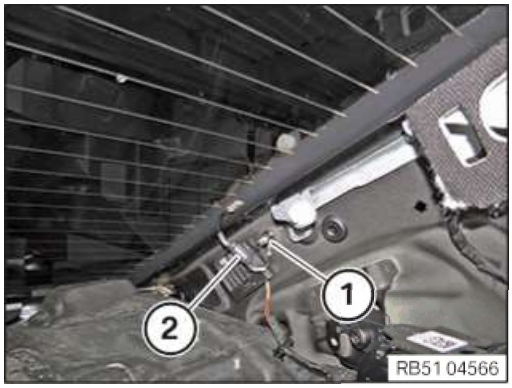
MAIN WORK

5 – Remove rear window

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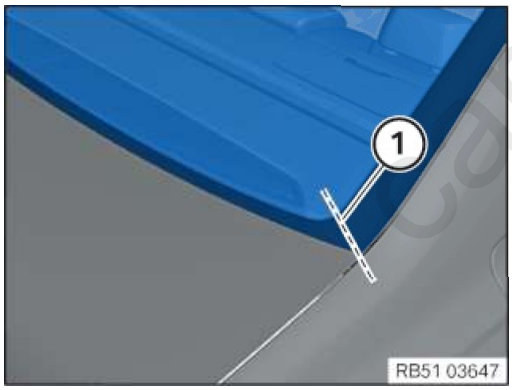
- Unlock plug connection (1) and disconnect.
- Secure cable to rear window with adhesive tape.



- Loosen nut (1).
- Secure cable (2) to the rear window.

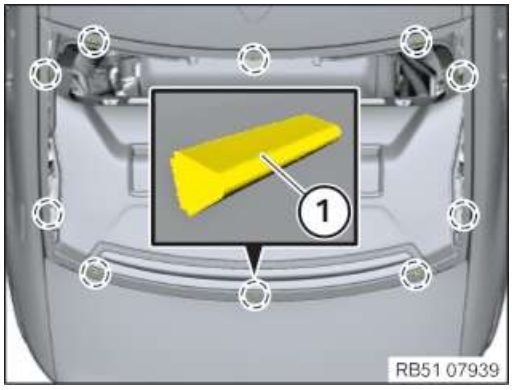


- Unlock plug connection (1) and disconnect.
- Secure cable (2) to rear window with adhesive tape.



- Tape off body in area of piercing point with fabric adhesive tape.
- Push the thread (1) through the adhesive bead along the line from the inside.
- Cut out the rear window with spider 2 357 248.
- Remove the rear window with the help of the special tool 2 184 377.
- Remove adhesive bead from the body using special tool 0 410 807 and clean the adhesive area.

6 – Replace the spacer

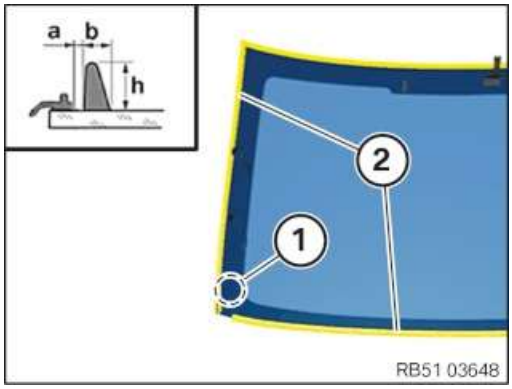


- Completely remove the available spacer buffers (1).
- Remove the adhesive residue on the body and clean the adhesive area.
- Stick the new spacer buffers (1) in the centre on the engraved markings on the body side.

  Parts: Spacer buffer

7 – Install the rear window

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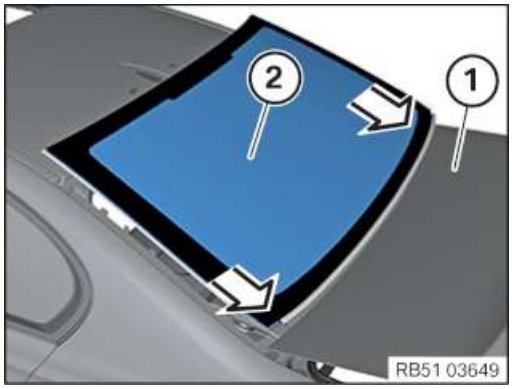


- Clean the bonding surfaces on the body and on the rear window.
- Provide two glue cartridges.
- Prepare a glue cartridge with the standard jet nozzle C.
- Apply bead joint in area (1).
- Apply adhesive bead within the mark on the rear window

Adhesive bead

b = Width	7 mm ... 9 mm
h = Height	11 mm ... 13 mm

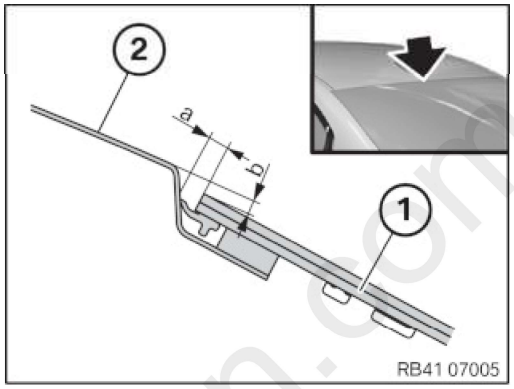
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- Open tailgate (1) approx. 1/3 and secure in this position.
- Carefully perform the following actions on rear window (2) with suction lifters
  - Bring it parallel to C-pillar
  - Feed it in under tailgate
  - Position at top
  - Align sides evenly
  - Press upwards until sealing rests evenly on roof
  - Press it evenly and adjust the gap dimension

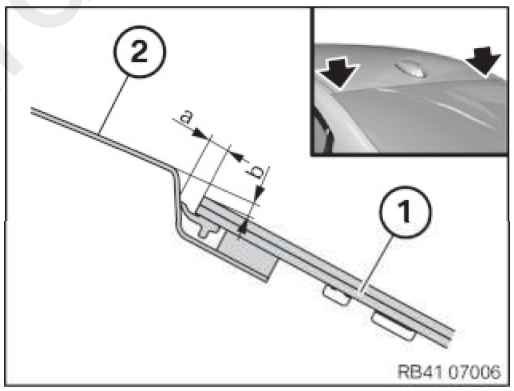
Gap dimension rear window to roof outer skin

1 rear window, 2 roof outer skin	
a	3,2 (1,9 - 4,5) mm
b	2,8 (1,5 - 4,1) mm



Gap dimension rear window to roof outer skin

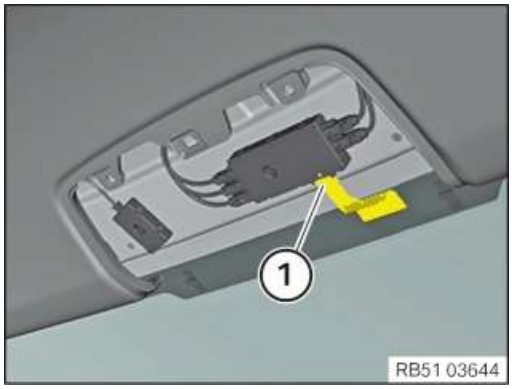
1 rear window, 2 roof outer skin	
a	3,2 (1,9 - 4,5) mm
b	2,6 (1,3 - 3,9) mm



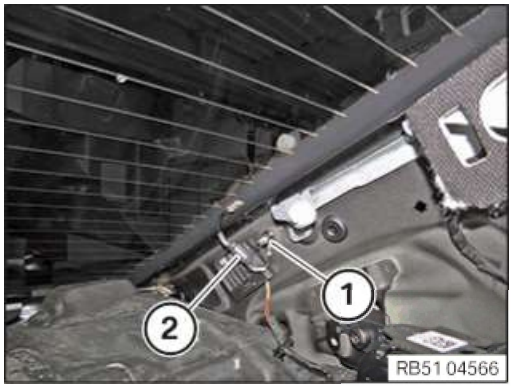
- Measure short length (A) of the rear window (1) to the roof outer skin (2) with the special tool 0 495 259 (51 0 010).

  Measure gap dimension (B) with special tool 0 496 076 (00 9 470).
- Secure rear window (1) with adhesive tap on the roof.

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- Connect connector (1).



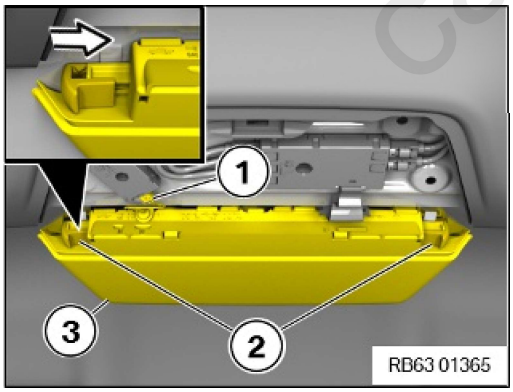
- Secure cable (2) with nuts (1) at the attachment point.



- Loosen cable (2) from the rear window.
- Connect connector (1).

POSTPROCESSES

8 – Install the auxiliary stop lamp

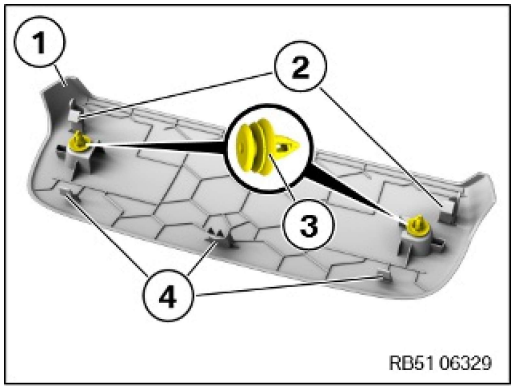


- Position the additional brake light (3).
- Lock both slides (2) inwards in the direction of the arrow.
- Connect connector (1).

9 – Installing trim for additional brake light

Check

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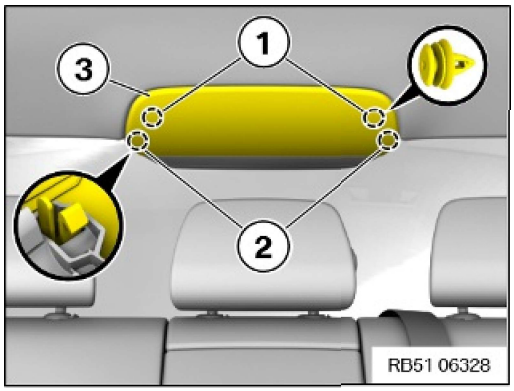
- Check the clips (3) for damage and renew if necessary.
- Check latch mechanisms (2) and guides (4) for damage.

Result

» The latch mechanism or the guide is damaged.

Measure

- Renew the trim for the additional brake light.



- Position trim for additional brake light (1) from the bottom and clip it in with latch mechanisms (2).
- Clip in clips (1).

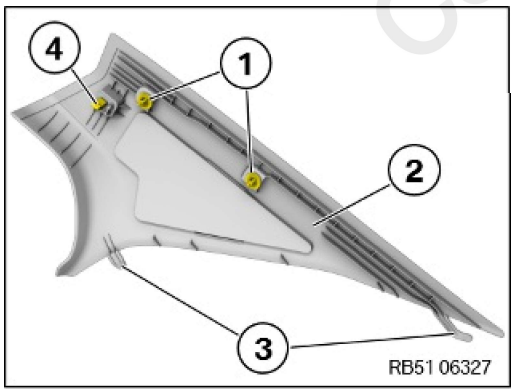
10 – Install both C-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Installing C-pillar trim panel**

Check



- Check clips (1) and clamp (4) for damage, renew if necessary.
- Check the guides (3) for damage.

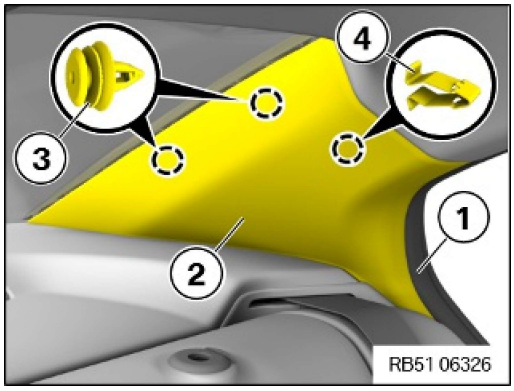
Result

» Guide is damaged.

Measure

- Renew the C-pillar trim panel .

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NOTICE

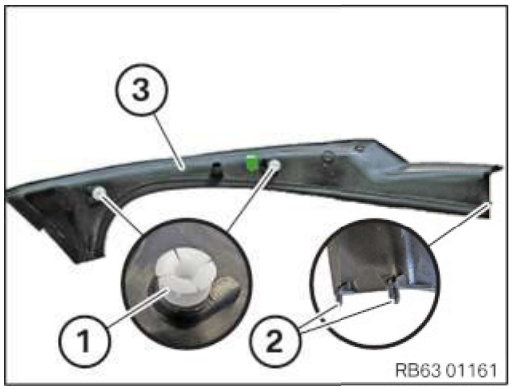
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Feed C-pillar trim panel (2) into guides towards the rear.
- Clip in clips (3).
- Clip in clamp (4).
- Guide in C-pillar trim panel (2) under the lip of edge protection (1).

11 – Installing the trim panel for the rear left and right water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Check the clips (1) and guides (2) on the trim panel for the water channel (3) for damage.



- Clip in the trim panel for the water channel (1).

Additional Information

Overview of Special Tools

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0 496 569 (00 9 325) Wedge



Common	Used in step 1
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

2 357 248 Removal and installation kit



Common	Used in step 5
Usage	Removal system for removing glued windshields, side and rear windows without causing damage. The windows are cut out using an ultra-strong cord made from braided polyethylene fibres.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	05 06 13 (934)

2 184 377 Siphon



Common	Used in step 5
Usage	Siphon for the removal, installation and positioning of vehicle windows.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	08 01 10 (635)

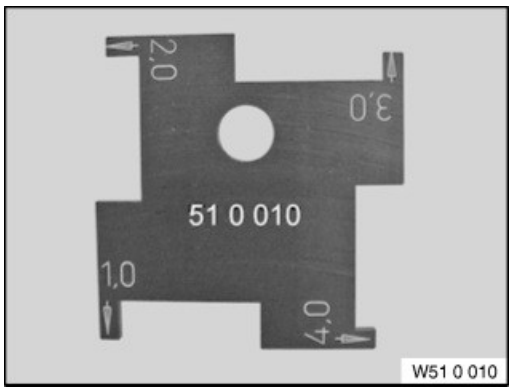
0 410 807 Accessories



Common	Used in step 5
Usage	Pinchweld scraper set for removing seal residues such as window glass adhesive or seals in the engine compartment.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	08 02 05 (206)

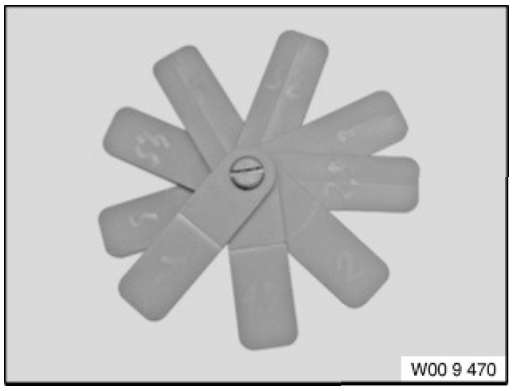
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0 495 259 (51 0 010) Gauge



Common	Used in step 7
Usage	(test gauge for installing windscreen and rear window) (replaces special tool 51 3 210 from 06/2005)
Included in the tool or work	
Storage location	B2
Replaced by	
In connection with	
SI-Number	01 10 05 (189)

0 496 076 (00 9 470) Gauge

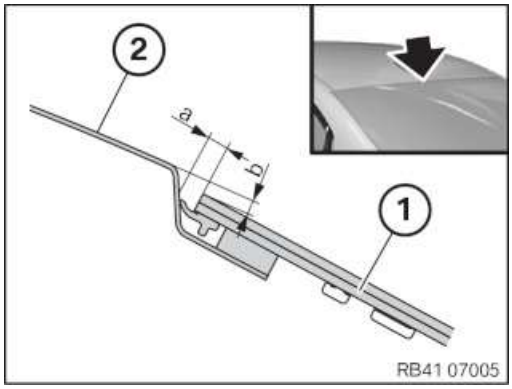


Common	Used in step 7
Usage	(Gap gauge) From 1 to 5 mm (1; 1.5; 2; 2.5 ...). For checking body gap dimensions.
Included in the tool or work	0 496 091
Storage location	A24
Replaced by	
In connection with	
SI-Number	01 03 07 (337)

Overview Technical Data

Adhesive bead	Used in step 7
b = Width	7 mm ... 9 mm
h = Height	11 mm ... 13 mm

Gap dimension rear window to roof outer skin	Used in step 7
1 rear window, 2 roof outer skin	
a	3,2 (1,9 - 4,5) mm
b	2,8 (1,5 - 4,1) mm

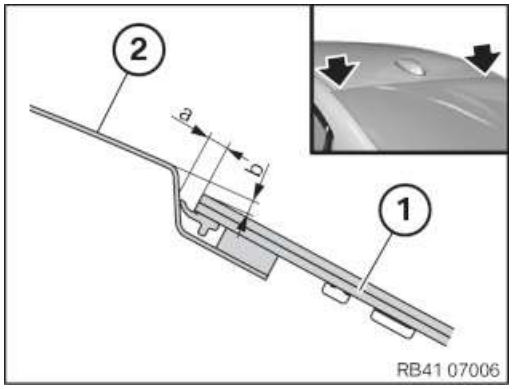


Gap dimension rear window to roof outer skin Used in step 7

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1 rear window, 2 roof outer skin

a	3,2 (1,9 - 4,5) mm
b	2,6 (1,3 - 3,9) mm



Links

General repair instructions	Used in step
51 31 ... General procedure when dismantling/installing bonded window glass	

Repair instructions	Used in step
51 31 ... Removing windows with a "Spider"	

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51 31 011 Replace windscreen

RISK OF DAMAGE

Electrostatic discharge.

Damage to or destruction of electrical components.

- Leave electrical components in original packaging until just before they are installed. Use the original packaging only for any return shipments. Always package removed components straight away.
- Read and comply with user information on using the associated special tool 12 7 060.
- Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.
- Wear electrically conductive clothing and antistatic shoes (with ESD symbol).
- For additional information see: 61 35 Information on electrostatic discharge (ESD) protection.

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

TECHNICAL INFORMATION

The following procedure forms the basis for these repair instructions and must be observed without fail.
For more information see: 51 31 ... General procedure for disassembly/installation of bonded window glass

TECHNICAL INFORMATION

Perform window removal using the "spider".
For additional information see: 51 31 ... Window glass removal using "spider"

PRELIMINARY WORK

1 – Remove both A-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the A-pillar trim panel**

WARNING

Airbag unit.

Danger! Life-threatening injuries!

- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

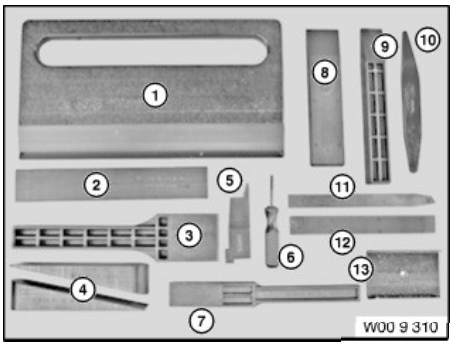
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WARNING

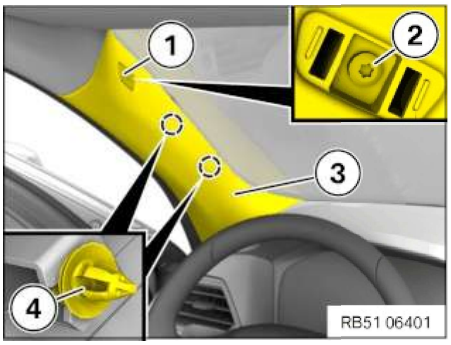
Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



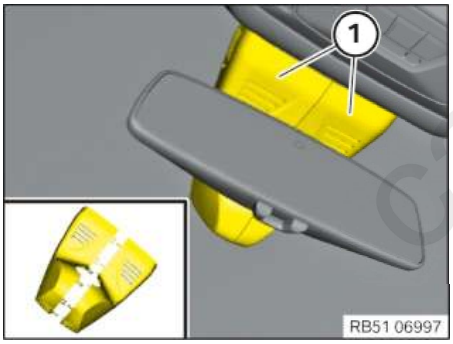
- Have the set of special tools 0 493 752 (00 9 329) ready.



- Unclip the cover (1) with suitable tools.
- Loosen screw (2).
- Unclip A-pillar trim panel (3) with clips (4) and guide it out upwards.

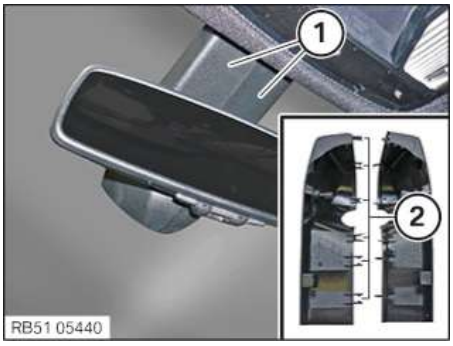
2 – Removing the covers for the interior mirror

- **Version A:**



- Release the cover (1) at the centre from the latch mechanisms (2) with a suitable plastic wedge and remove.

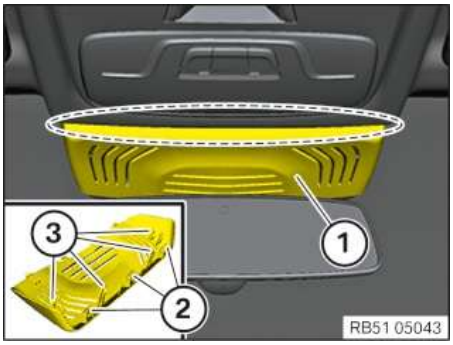
- **Version B:**



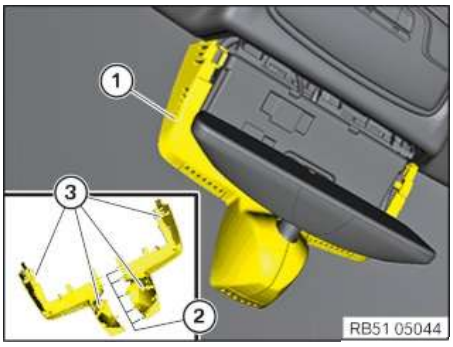
- Release the cover (1) from the latch mechanisms (2) with a suitable plastic wedge and remove sideways.

- **Version C:**

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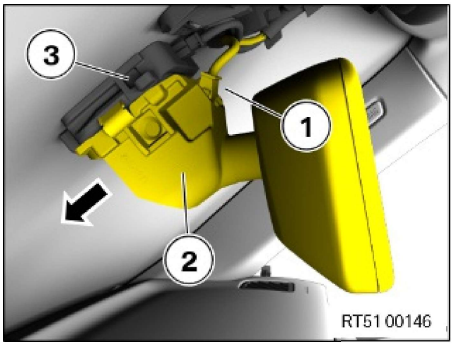


- Detach cover (1) from the clamps (2) in the marked area using a suitable plastic wedge and pull down a certain distance.
- Release cover (1) at the retaining lugs (3) and remove from the guides to the rear.



- Release cover (1) from the latch mechanisms (2) and (3) and remove sideways.
- Remove cover (1) from mirror base (2).

3 – Remove inside mirror



TECHNICAL INFORMATION

Carry out the work at temperatures between 18 °C and 23 °C only.

- Unlock plug connection (1) and disconnect.

RISK OF DAMAGE

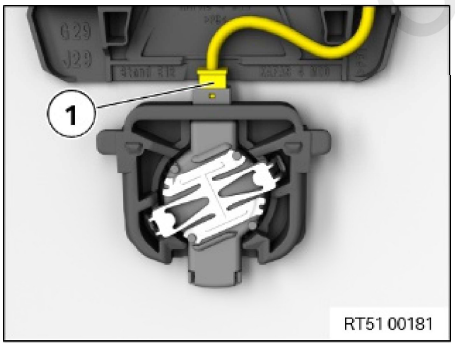
Damage to the component.

Excessive force may damage the component.

- Handle component carefully.

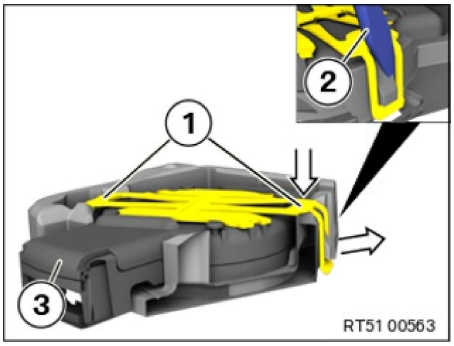
- Jerk and pull off the interior mirror (2) in the direction of the arrow from the mirror base (3).

4 – Remove rain-light-solar-condensation sensor partially



- Unlock plug connection (1) and disconnect.

5 – Remove rain-light-solar-condensation sensor



- Push in retaining springs (1) on both sides in the direction of arrow and unlock the lock by means of a screwdriver (2) in the direction of arrow.

RISK OF DAMAGE

Damage to silicone surface.

A damaged silicone surface can lead to malfunctioning of the rain-light-solar-condensation sensor.

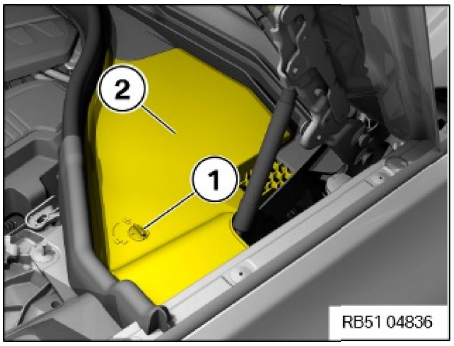
- Do not touch or damage the silicone-coated surface on the rain-light-solar-condensation sensor.
- After releasing lock, wait approx. 30 min. at 20°C for silicone surface to relax.

- Pull the rain-light-solar-condensation sensor (3)slowly off the windscreen. At the same time, monitor the release of the silicone area from outside.

  The silicone surface must evenly loosen from the windscreen, if applicable, lower the pull-off force.
- Thread the rain-light-solar-condensation sensor (3) out of the holder.

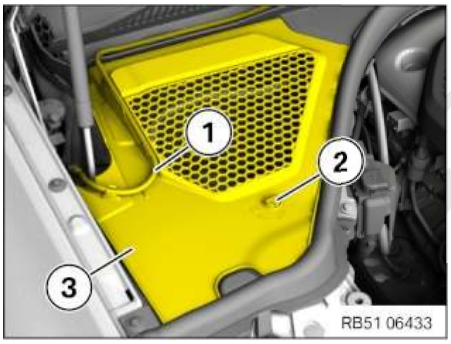
Note: When replacing windscreen: Immediately install the rain-light-solar-condensation sensor on the new windscreen.

6 – Remove the cover of the engine compartment at the rear left



- Loosen the lock (1).
- Remove rear left cover of engine compartment (2).

7 – Remove the cover of the rear right engine compartment



- Release washer fluid hose (1) from the guides.
- Loosen the lock (2).
- Remove the cover of rear right engine compartment (3).

8 – Removing both wiper arms

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the wiper arm**

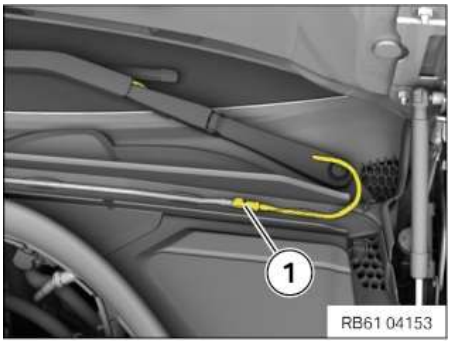
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RISK OF DAMAGE

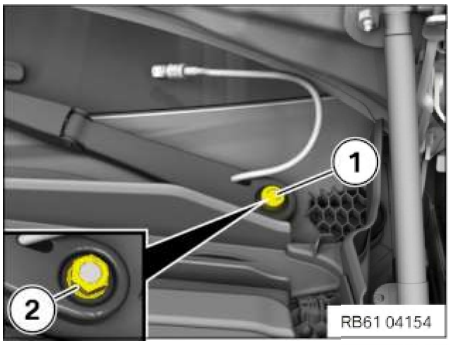
Damage to wiper console

While removing the wiper arms without using special tool, the wiper console can break.

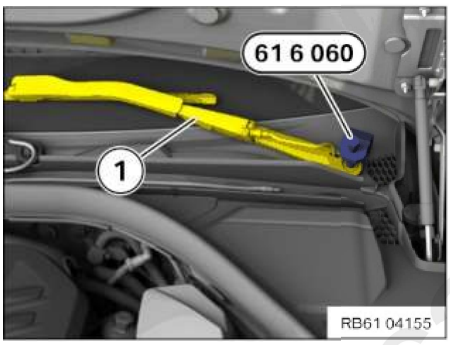
- Removing the wiper arms must be carried out only using the prescribed special tool.
- Do not lift off wiper arm, else the wiper console may break on the predetermined breaking point for the pedestrian protection.



- Disconnect the windscreen wash hose(1) at the separation point and remove from the cowl guide.



- Remove the protective cap (1).
- Loosen nut (2).



- Pull off the wiper arm (1) using special tool .

9 – Remove the gutter strip on the windscreen on the left and right

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the gutter strip on the windscreen**

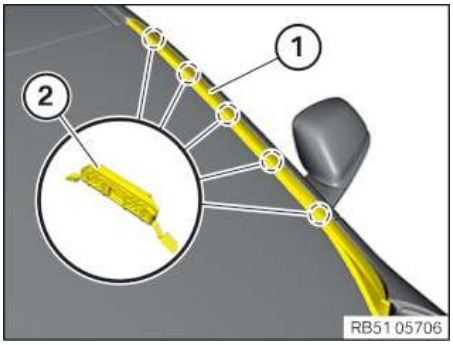
RISK OF DAMAGE

Scratches.

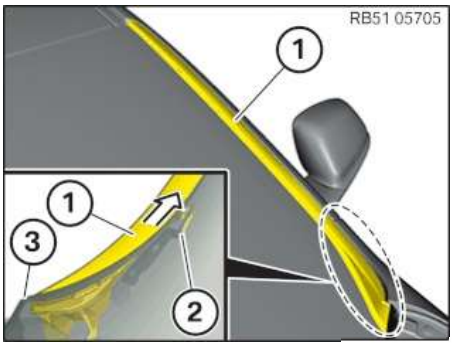
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

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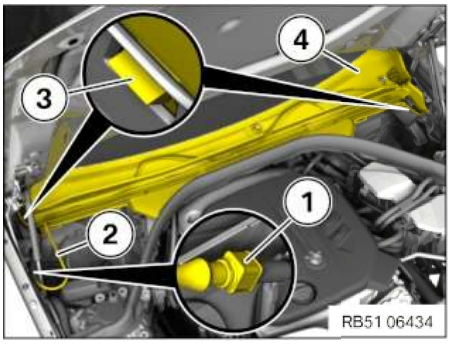


- Unclip gutter strip on the windscreen(1) from the clamps(2) starting at the roof and working upwards.

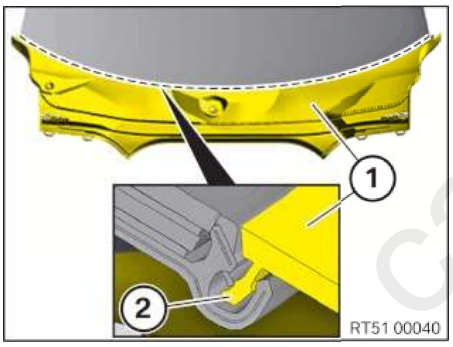


- Pull out gutter strip on the windscreen (1) out of guide (2) in direction of arrow and carefully guide out at the side panel (3).

10 – Remove cowl panel cover



- Release snap fastener of the washer fluid hose (1) and put the washer fluid hose(2) to one side.
- Unclip clips (3) on the cowl panel cover (4).



- Pull the cowl panel cover (1) upward out of the latch mechanism (2) beginning on the side.

MAIN WORK

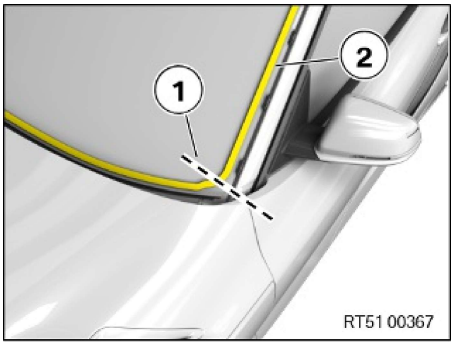
11 – Removing the windscreen

TECHNICAL INFORMATION

Perform window removal using the "spider".

For additional information see: 51 31 ... Window glass removal using "spider"

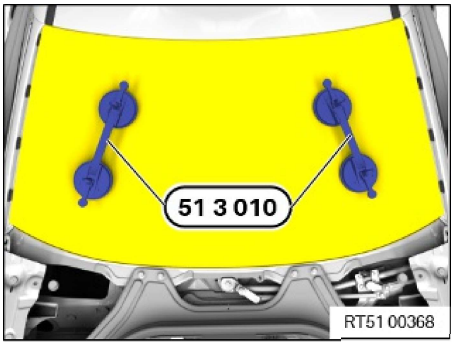
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NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Tape off body in area of piercing point with fabric adhesive tape.
- Push the thread along the line (1) through the adhesive bead (2) from the inside.
- Cut out the windscreen with the spider.

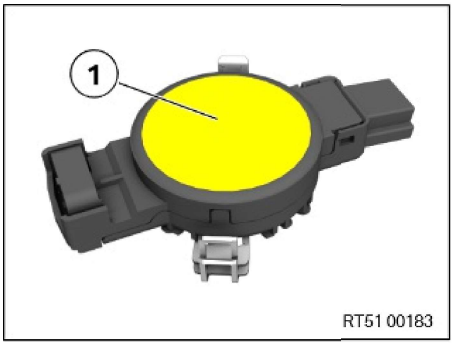


NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Remove windscreen with the special tool .

12 – Installing the rain-light-solar-condensation sensor



Check

RISK OF DAMAGE

Damage to silicone surface.

A damaged silicone surface can lead to malfunctioning of the rain-light-solar-condensation sensor.

- Do not touch or damage the silicone-coated surface on the rain-light-solar-condensation sensor.
- After releasing lock, wait approx. 30 min. at 20°C for silicone surface to relax.

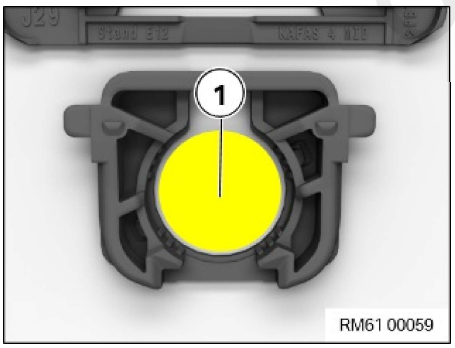
- Check silicon surface (1) for damage.

Result

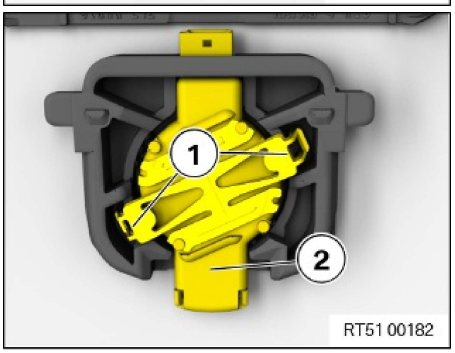
» Silicone surface (1) is damaged.

Measure

- Replace rain-light-solar-condensation sensor.



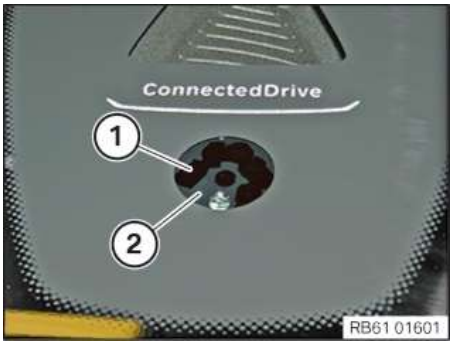
- Carefully clean windscreen in the contact area (1) of rain-light-solar-condensation sensor.



- Insert the rain-light-solar-condensation sensor (2) into the holder and press on centred on the retaining springs (1).
- Successively press down the retaining springs (1) on each side to lock it.

Check

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- Check contact surfaces for air pockets from the outside.

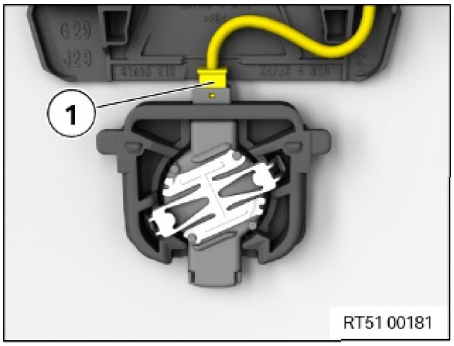
  Visible shadows (1) are not air pockets, but the optical element of the rain-light-solar-condensation sensor (2). The shades (1) do not represent any functional limitation.

Result

» Contact surface has air pockets.

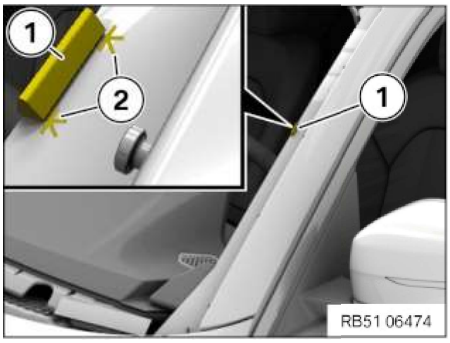
Measure

- Remove the rain-light-solar-condensation sensor and install again.



- Connect connectors (1) and lock.

13 – Renew the spacer



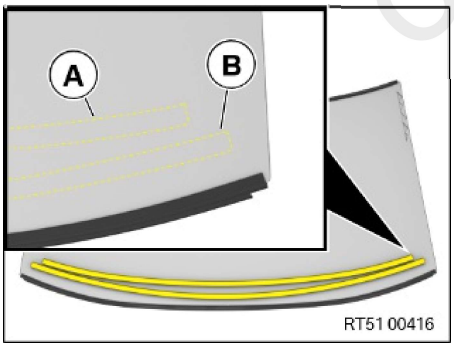
NOTICE

Description is for left component only. Procedure on the right side is identical.

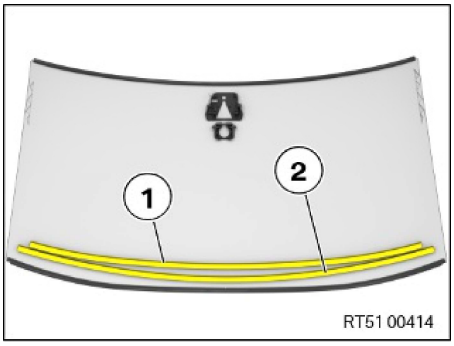
- Before installing the windscreen, remove adhesive residue from the body and clean adhesive area.
- Completely remove the available spacer buffers (1).
- Bond the new spacer buffers (1) in the centre on the marks (2) embossed on the body.

Parts: Spacer buffer

14 – Replacement: prepare the windscreen



- Observe marks (A) and (B) for the expanding foam tape on the windscreen.

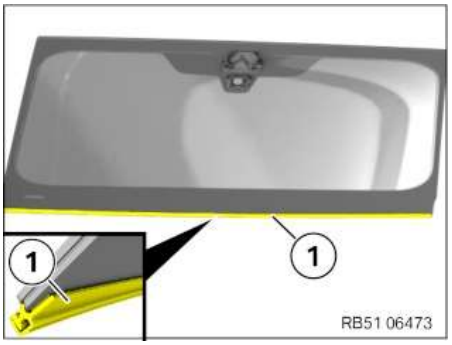


- Attach expanding foam tapes (1) and (2) along the marks on the edge of windscreen.

  Parts: Expanding foam tape

Check

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- Check guide for cowl panel cover (1) for damage.

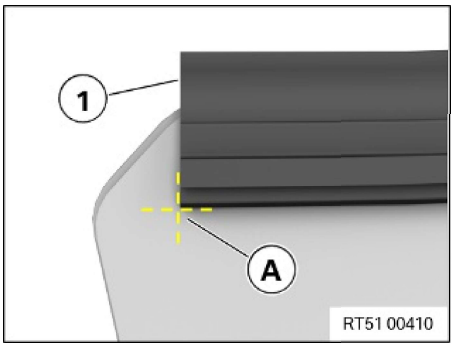
Result

» Guide for cowl panel cover is damaged.

Measure

- Renew windscreen.

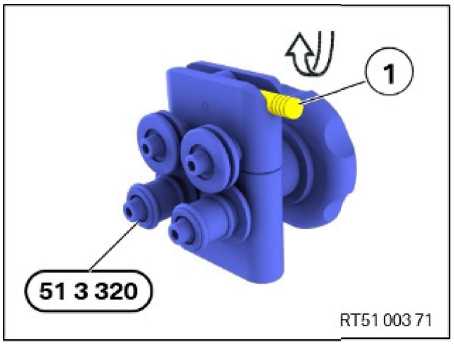
15 – Installing the windscreen rubber frame



NOTICE

Perform the operations on the left and right side.

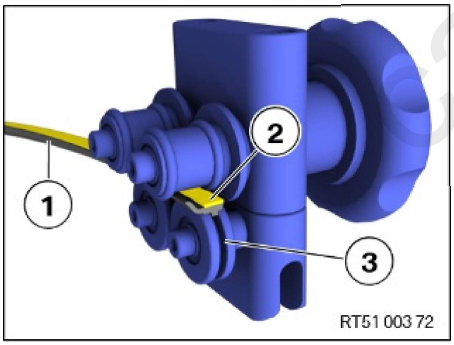
- Observe the marking (A) for the windscreen rubber frame (1).



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

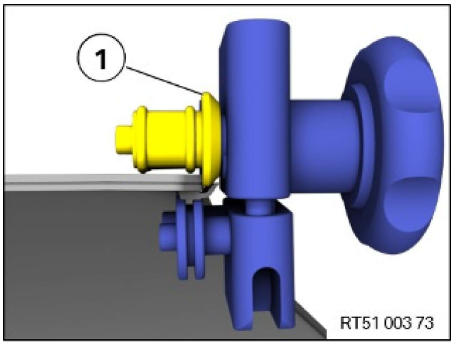
- Reposition lever (1) in direction of arrow and open it using the special tool .



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

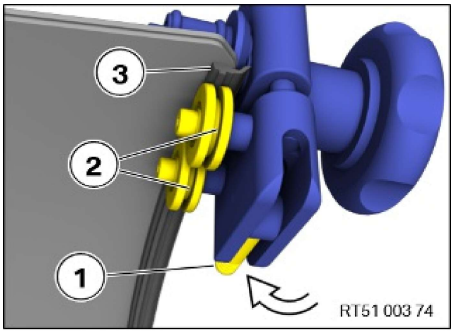
- Pull off protective film (2) in stages from adhesive tape.
- Insert the cover (1) into the guides (3).



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

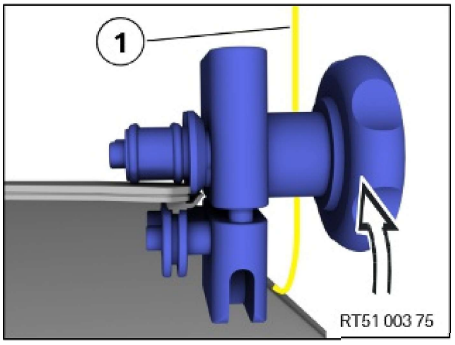
- Place the special tool with the pressure rollers (1) up against the window edge.
- Align the cover with the outer edge of the windscreen.
- Fit the cover and visually check for perfect fit.



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Reposition the lever (1) in the direction of arrow and close the special tool.
- Ensure the correct positioning of the cover (3) in the guide pulleys (2).



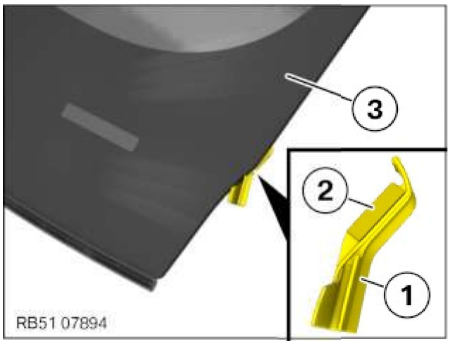
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Continue to pull off protective film (1) in stages from adhesive tape.
- Pull the special tool in the direction of arrow with the handwheel over the entire upper edge of the window glass.

16 – Install windscreen.

▸ **Installing water guide element on the left and right**



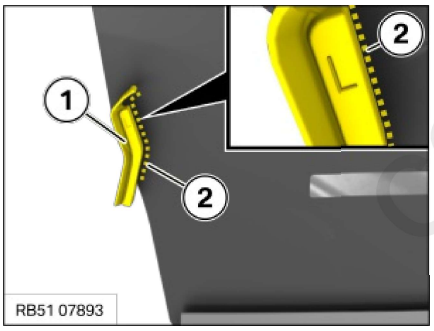
- Check water guide element (1) on the left and right.

  Renew damaged water guide element (1).

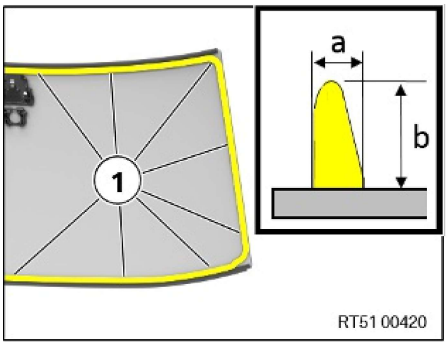
  Do not mix up the left and right water guide element.
- Clean bonding surface with cleaning agent R2.

Expendable materials

Cleaning agent R2	500 ml	83190417324



- Remove liner (2) from the water guide element (1) and position on the windscreen (3).
- Position water guide element (1) at the mark (2) and press it down.

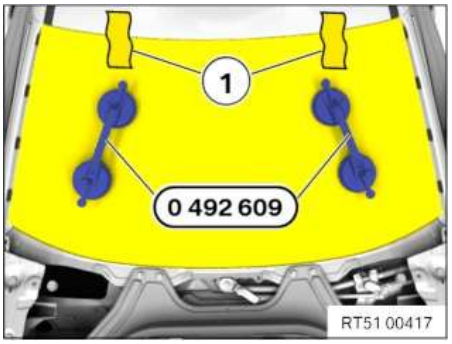


NOTICE

Perform the operations on the left and right side.

- Prepare the glue cartridge with the standard nozzle C.
- Apply adhesive bead within the marks (1) on the windscreen.

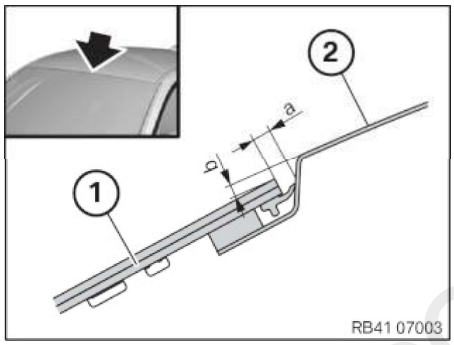
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- Carefully insert the windscreen using special tool between the bonnet and the cowl panel.
- Position the windscreen at the top.
- Evenly align the windscreen on the left and right.
- Insert and press on the windscreen at the bottom.
- Press the windscreen towards the top until the rubber frame of the windscreen is evenly in contact with the roof.
- Secure the windscreen in this installation position using the two yellow plastic adhesive tapes (1).

Gap dimension windscreen to roof outer skin

1 windscreen; 2 roof outer skin	
a	4,3 (3,1 - 5,5) mm
b	3,0 (1,6 - 4,4) mm
b (with HUD)	2,5 (1,1 - 3,9) mm



POSTPROCESSES

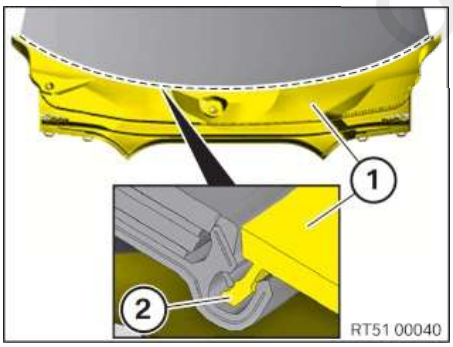
17 – Installing cowl panel cover

RISK OF DAMAGE

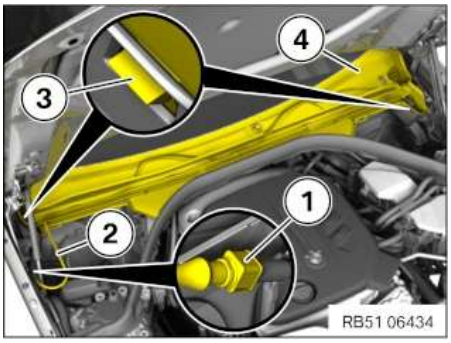
Damage caused by water ingress into the vehicle.

Water ingress into the vehicle may result in damage to components, malfunctions and corrosion.

- Ensure correct installation of the components.
- Only use undamaged components.



- Push the cowl panel cover (1) into the latch mechanism (2) beginning on the side.



- Clip cowl panel cover (4)in by means of the latch mechanisms (3).
- Position windscreen wash hose (2) and connect windscreen wash hose (1)quick lock.

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18 – Install the gutter strip on the windscreen on the left and right

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the gutter strip on the windscreen**

RISK OF DAMAGE

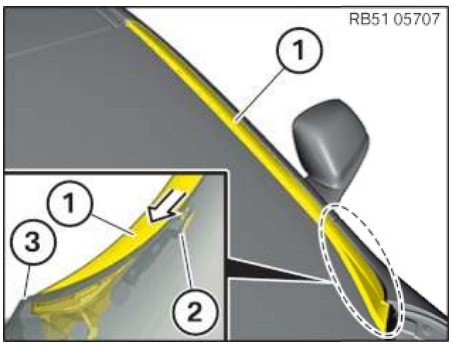
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

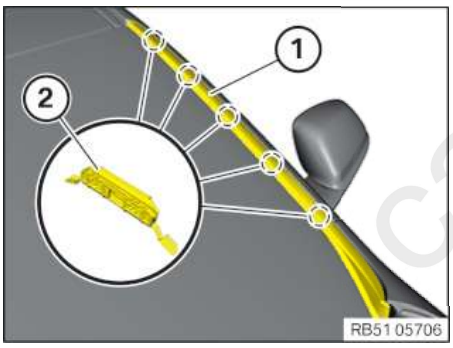
TECHNICAL INFORMATION

Latch mechanisms, guides and mounting elements must not be damaged or missing.



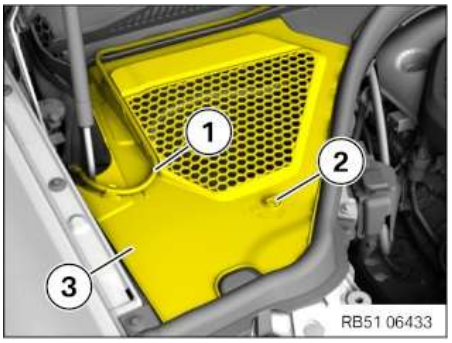
- Renew gutter strip on the windscreen (1) and paint if necessary.

  Parts: Gutter strip
- Carefully feed in the windscreen gutter strip (1) at the side panel (3) and simultaneously feed into the guide (2) in direction of arrow.



- Clip in the windscreen gutter strip (1) starting at bottom at the clamps (2).

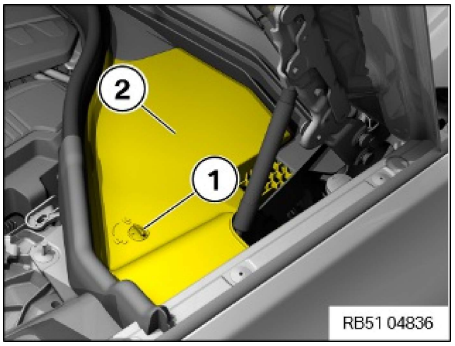
19 – Install the rear right engine compartment cover



- Position the cover of the engine compartment on the rear right (3).
- Close lock (2).
- Insert washer fluid hose (1) into the guides.

20 – Install the cover of the engine compartment on the rear left

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- Position the engine compartment cover at the rear left (2) .
- Close lock (1).

21 – Installing both wiper arms

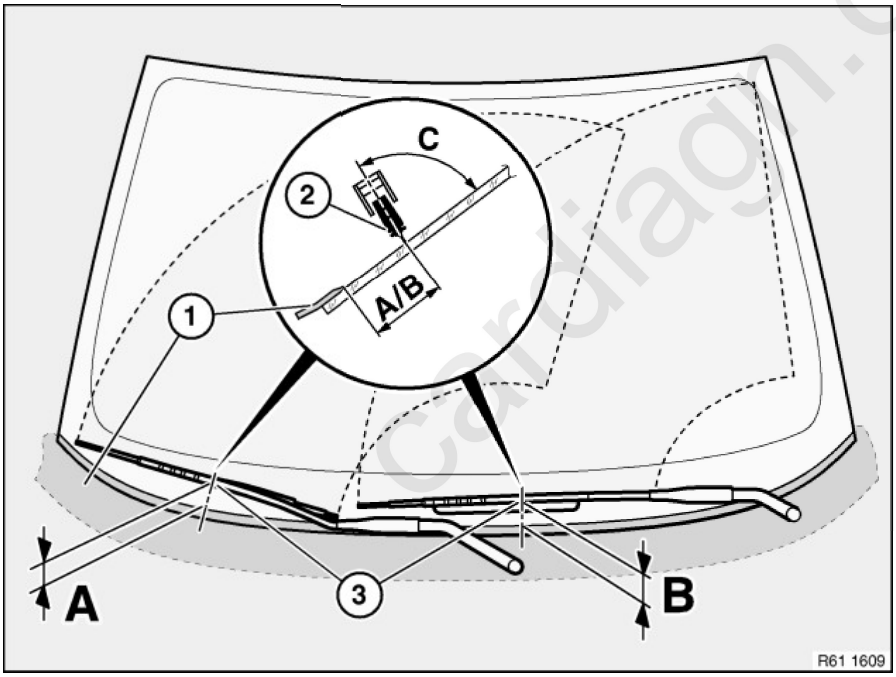
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the wiper arm**

TECHNICAL INFORMATION

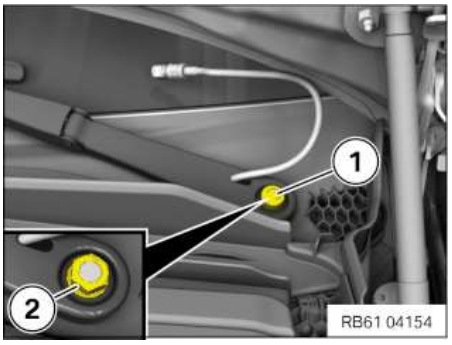
The wiper system must be in zero position.
After installing the cowl panel cover and before fitting the wiper arm:
Activate the wiper system once to ensure that it has the correct installation position.



- Connect the wiper arm (3).
- Correctly position the wiper arm (2) in relation to the window edge (1).

Distance from window pane edge to wiper blade

Wiper arm right (A)	57,5 ± 5 mm
Wiper arm left (B)	63,3 ± 4 mm



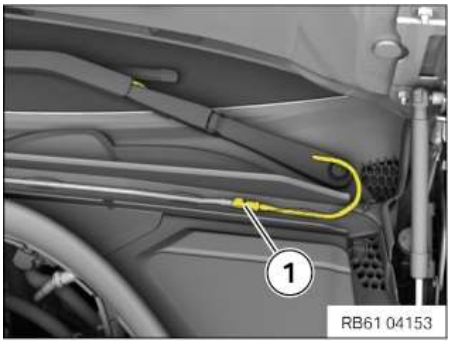
- Tighten nut (2).

Windscreen wiper arm

Combination hexagon nut		Tightening torque	35 Nm

- Connect the protective cap (1).

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- Insert windscreen wash hose (1) into the cowl and connect at the separating point.

22 – Install both A-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Installing the A-pillar trim panel**

WARNING

Airbag unit.

Danger! Life-threatening injuries!

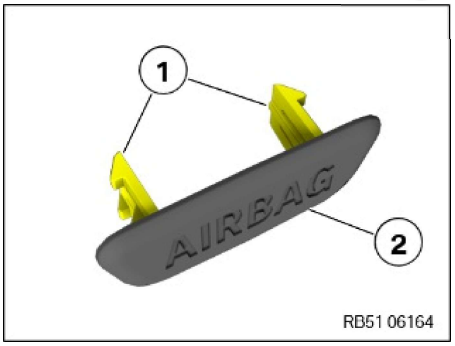
- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

WARNING

Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



Check

- Check retaining lugs (1) of cover (2) for damage.

Result

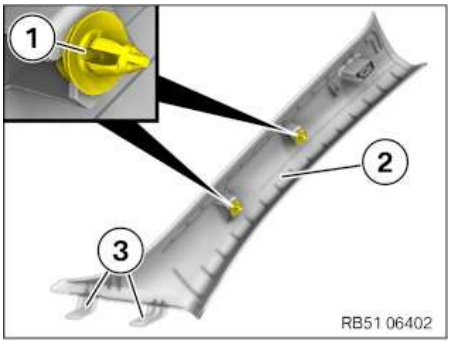
» Retaining lug is damaged.

Measure

- Renew the cover.

Check

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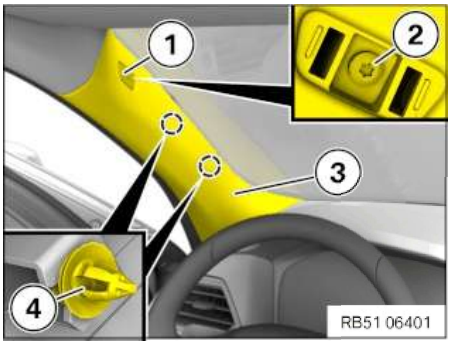
- Check the clips (1) for damage and renew if necessary.
- Check the guides (3) for damage.

Result

» Guide is damaged.

Measure

- Renew the A-pillar trim panel.



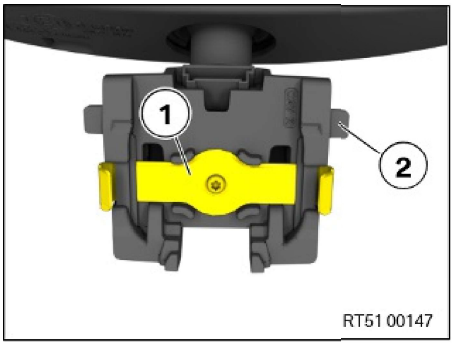
- Guide in A-pillar trim panel (3) downwards and clip it in with clips (4).
- Tighten down screw (2).

A-pillar trim panel to body

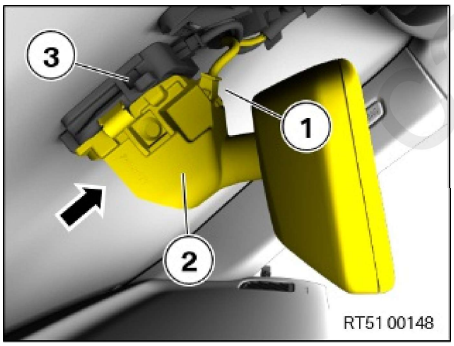
Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

- Clip in the cover (1).

23 – Install interior mirror



- Check the clamp (1) on both sides of the mirror base (2) for damage and renew as needed.



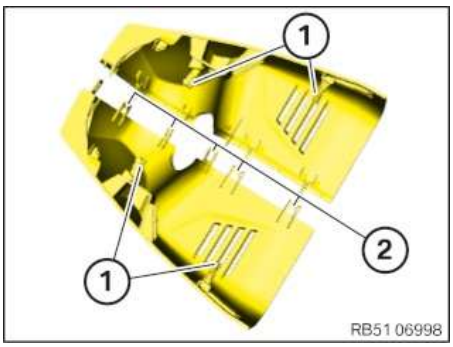
TECHNICAL INFORMATION

Carry out the work at temperatures between 18 °C and 23 °C only.

- Position the interior mirror (2) at the mirror base and slide it on in direction of the arrow.
- Check the correct installation position of the interior mirror (2) at the mirror base (3).
- Connect connectors (1) and lock.

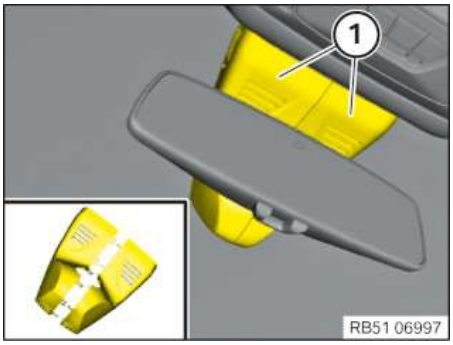
24 – Installing the covers for the interior mirror

- **Version A:**



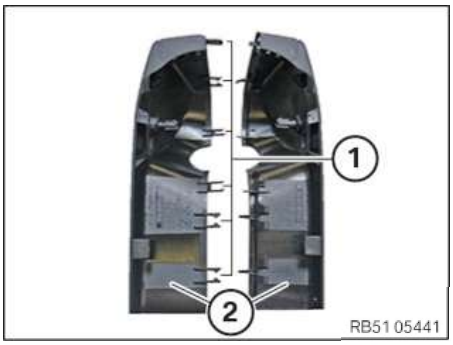
- Check latch mechanisms (1) and (2).
- If the latch mechanisms (1) or (2) are faulty, renew the covers.

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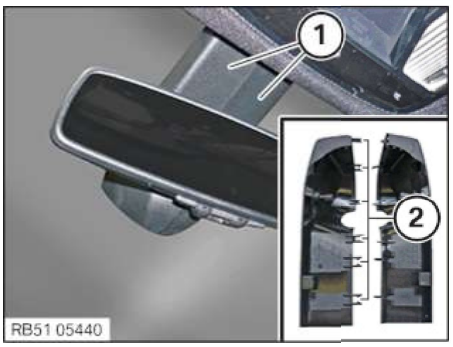
- Feed cover (1) in and lock.

- **Version B:**



- Check the latch mechanisms (1) on the two covers (2) for damage, renew the covers (2) if necessary.

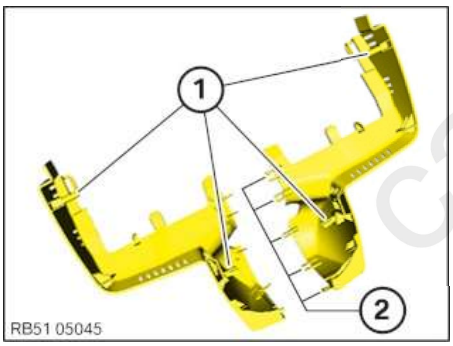
  The covers (2) must not be damaged or missing.



- Position the covers (1) correctly on the mirror and engage with the latch mechanisms (2).

- **Version C:**

Check



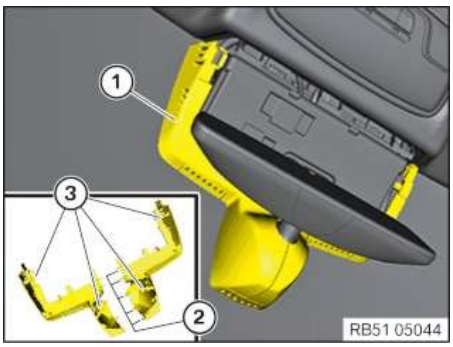
- Check the latch mechanisms (1) and (2) of the covers for damage.

Result

» The latch mechanism is damaged.

Measure

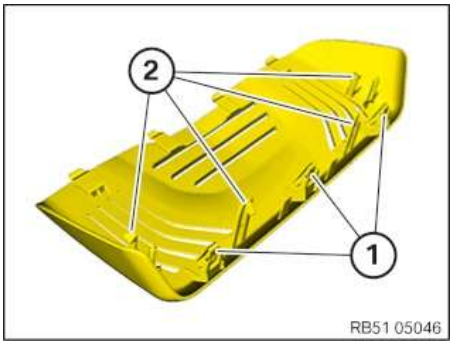
- Renew the cover.



- Guide in cover (1) on left and right and engage using latch mechanisms (2) and (3).

Check

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- Check clamps (1) for damage; renew if necessary.
- Check latch mechanisms (2) for damage.

Result

» The latch mechanism is damaged.

Measure

- Renew the cover.



- Guide cover (1) into front guides and engage using retaining lugs (3) and clamps (2).

Additional Information

Overview of Tightening Torques

Windscreen wiper arm — Used in step 21

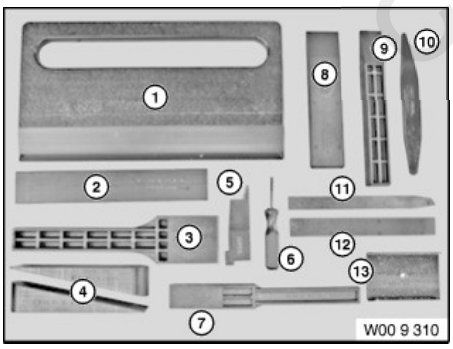
Combination hexagon nut		Tightening torque	35 Nm

A-pillar trim panel to body — Used in step 22

Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

Overview of Special Tools

0 493 752 (00 9 329) Case



Common — Used in step 1

Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

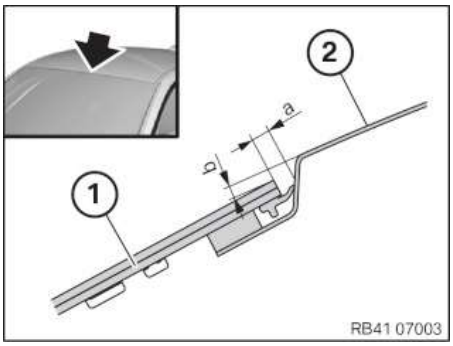
Overview Technical Data

Gap dimension windscreen to roof outer skin — Used in step 16

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1 windscreen; 2 roof outer skin

a	4,3 (3,1 - 5,5) mm
b	3,0 (1,6 - 4,4) mm
b (with HUD)	2,5 (1,1 - 3,9) mm



Distance from window pane edge to wiper blade Used in step 21

Wiper arm right (A)	57,5 ± 5 mm
Wiper arm left (B)	63,3 ± 4 mm

Links

General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	1
72 00 ... Safety regulations for handling components with gas generators	1
51 31 ... General procedure for the disassembly and installation of bonded window glass	11
51 31 ... Materials for bonding window	11

Repair instructions	Used in step
51 31 ... Removing windows with a "Spider"	11
61 35 ... Notes on ESD protection (Electro Static Discharge)	

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51 31 ... Window glass removal with wire pull handle

Special tools required:

- 2 150 267

Warning!

Follow safety instructions for working on vehicles with airbag systems (risk of injury).

Always wear safety goggles and protective gloves for your own safety.

Attention!

Handle sharp-edged tools with care (risk of damage to the head airbag and the window glass).

Attention!

Follow the vehicle-specific repair instructions!

Protect inner and outer working area (body, trim panels, cables etc.) against damage.

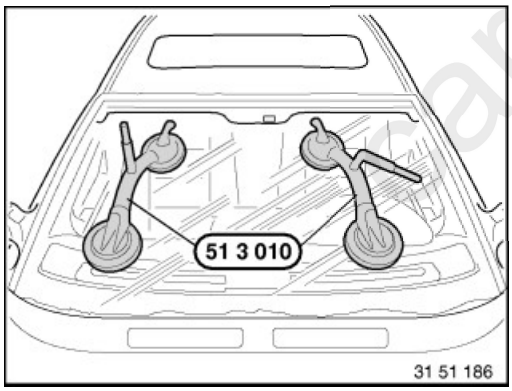
Depending on the area of application, a separating cord can also be used as an alternative to wire.

Using the separating cord prevents any damage to the body.

Do not pull the separating cord over any sharp edges (risk of tearing)!

Used tool:

- Wire pull handles
- Dashboard protection
- Wire starter (special tool 2 150 267)

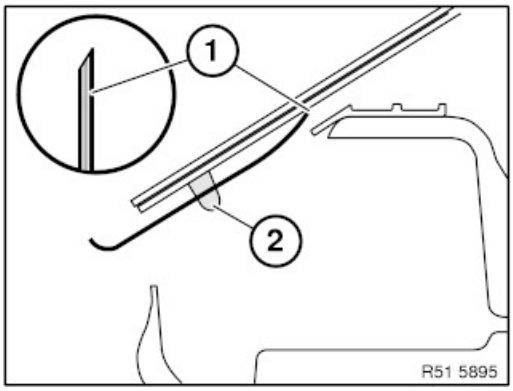


Use suction cups (51 3 010) to lift out the window glass.

Always keep both suction cups dry and clean to ensure their optimum adhesion on the windscreen.

Secure window glass (if necessary with adhesive tape) against falling out.

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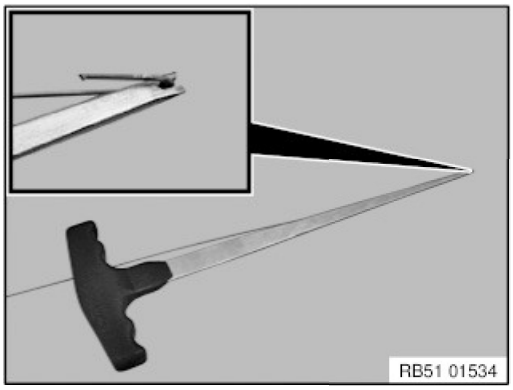


Pulling cutting wire into vehicle:

- Grip wire with pliers

  (If access is difficult: using wire starter 2 150 267 , feed wire through adhesive bead.)
- Wire end (1) must be bent towards window glass.
- Heat wire end (1) and use it to pierce adhesive bead (2).
- Pull approximately half of the wire into the passenger compartment

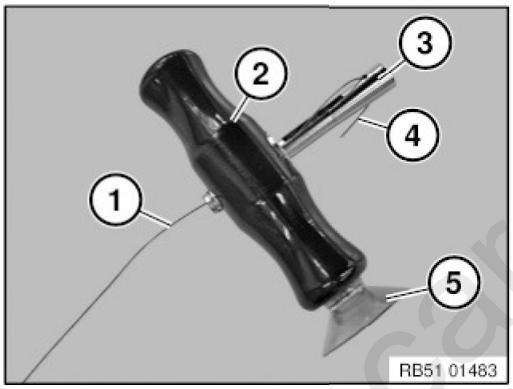
Note:
When using the separating cord, always pull it in using the wire starter 2 150 267 .



Using wire starter:

Bend wire end approx. 10 mm and insert in notched tip.

Pierce wire starter with uniform pressure through adhesive bead, wire end (bent part) must be positioned on window glass.



Attach wire pull handles:

Feed in cutting wire (1) in cutting handle (2) and clamping element (3) as illustrated.

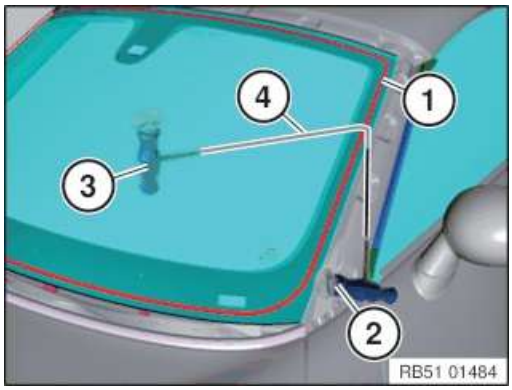
Move back cutting handle (2) over clamping element (3) and trap wire end (4).

Danger of injury!

Wire end (4) must not protrude out of cutting handle (2).

Cutting handle (2) can be secured with suction cup (5) to the vehicle window or body during each of the work operations. This prevents damage to the paint.

Fit second wire pull handle to other wire end.



Perform repair work with the aid of a second person.

Cutting wire (4) must be guided in cutting direction at an acute as possible angle (>45°) to adhesive bead (1).

Cut through adhesive bead (1) by pulling cutting handle (2) and at the same time providing counter support with cutting handle (3).

Pull back cutting wire (4) with cutting handle (3) and make sure that cutting wire (4) is always held under tension.

Cut through remaining adhesive bead in the same way.

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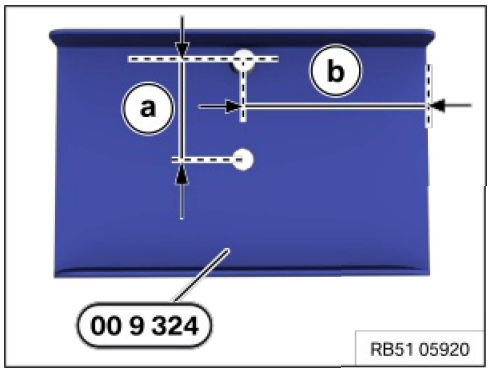
51 32 420 Remove and install/replace window frame trim of the front left or front right door

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

1 – Preparing the special tool



- **Do this only if the upper bore hole is missing.**
- Mark and make the bore hole on the special tool 0 495 484 (00 9 324) according to the specified dimensions.

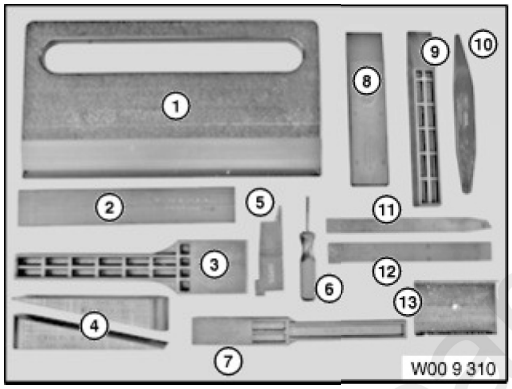
  Make a bore hole on the side with the long shank.

  The diameter of the bore hole is 6 mm.

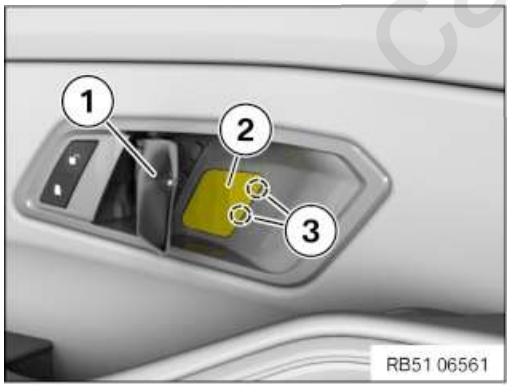
  Dimension (a) = 25 mm from the centre of the existing bore hole

  Dimension (b) = 50 mm from the outer edge of the special tool

2 – Remove door trim panel

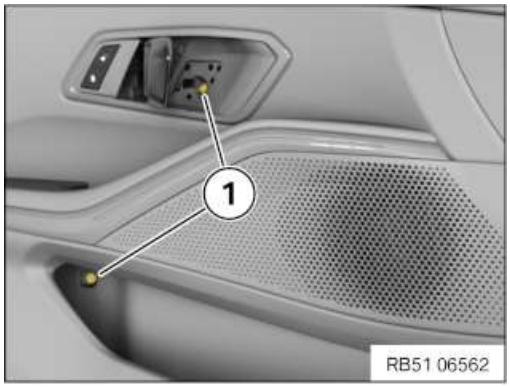


- Have the set of special tools 0 493 752 (00 9 329) ready.

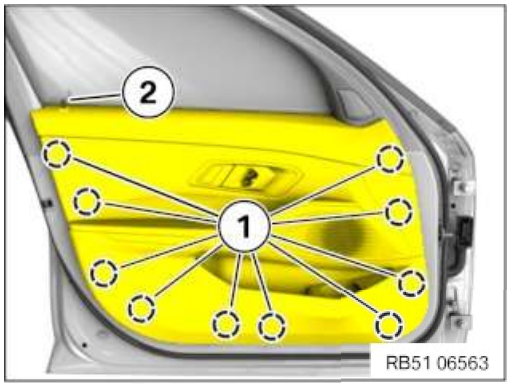


- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

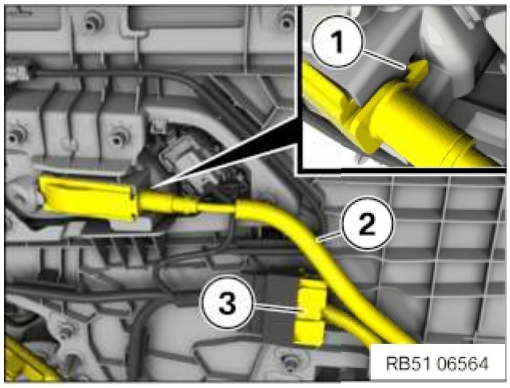
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- Loosen screws (1).



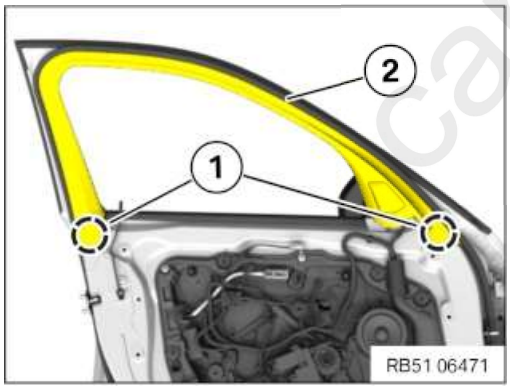
- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).



- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

3 – Removing the cover on the window frame



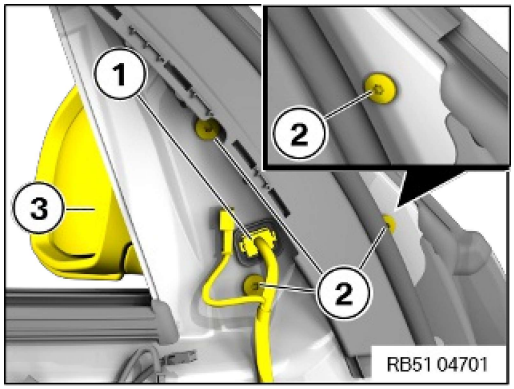
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Unclip clips (1).
- Release and remove the cover all around inner window frame (2), starting from the rear.
- If necessary, unlock and disconnect the plug connection on the speaker.

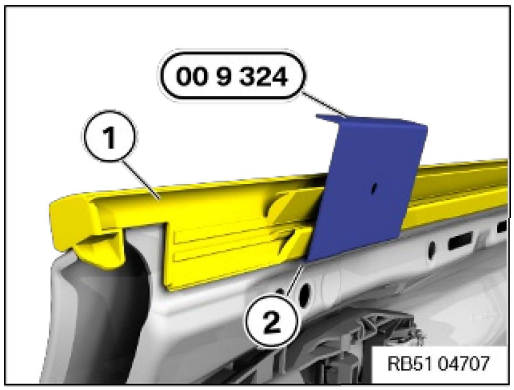
4 – Removing the exterior mirror

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- Unlock plug connection (1) and disconnect.
- Release the screws (2) and remove the exterior rearview mirror (3).

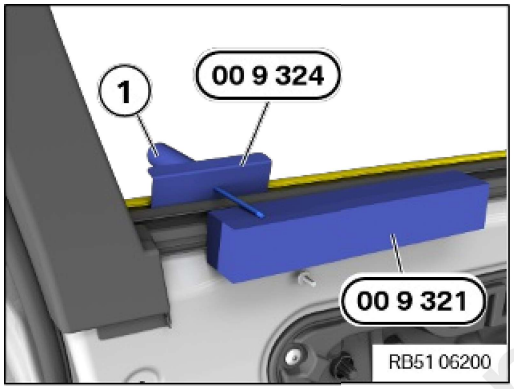
5 – Removing the outer weather strip



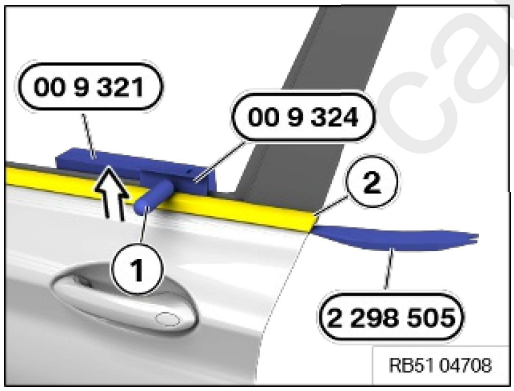
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Insert the special tool 0 495 484 (00 9 324) at the front (on A-pillar) into the window cavity and slide it toward the back.
- Position the special tool 0 495 484 (00 9 324) as shown at the lower edge of the outer weather strip (1) with the short shank (2).



- Place the special tool 0 490 538 (00 9 321) on the inner door panel.
- Thread a suitable tool (1) through the opening in the special tool 0 495 484 (00 9 324).



RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

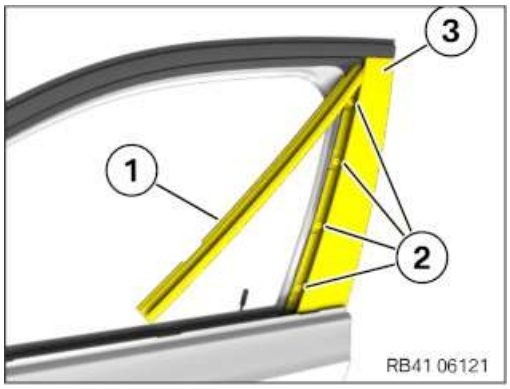
- Protect working area.
- Handle tools and components carefully.

- Lift up the outer rear weather strip (2) with the special tool 2 298 505 as shown; maximum 5 mm.
- With a suitable tool (1), move the lever in the direction of arrow using the special tool 0 490 538 (00 9 321) for support.

  When this happens, the special tool 0 495 484 (00 9 324) lifts the outer weather strip (2) upwards.
- Repeat this process step by step until the outer weather strip(2) is completely disassembled.

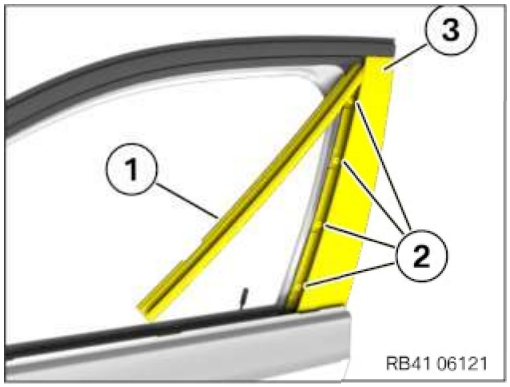
MAIN WORK

6 – Remove the window frame trim from the front door



- Carefully remove the rubber window seal (1) in the working area.
- Loosen screws (2).
- Fold the front window frame trim (3) back slightly and guide it out to the top.

7 – Install the window frame trim of the front door



- Insert the window frame trim (3) towards the bottom and attach it to the door frame.
- Tighten the screws (2).

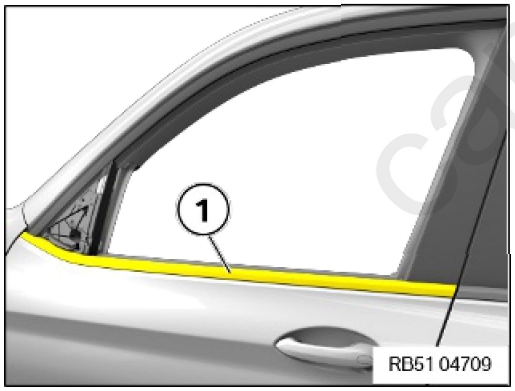
Window frame trim to door frame

Oval-head screw for thermoplastic		Tightening torque	2,3 Nm

- Coat rubber window seal (1) with water before the installation.
- Carefully insert the rubber window seal (1).

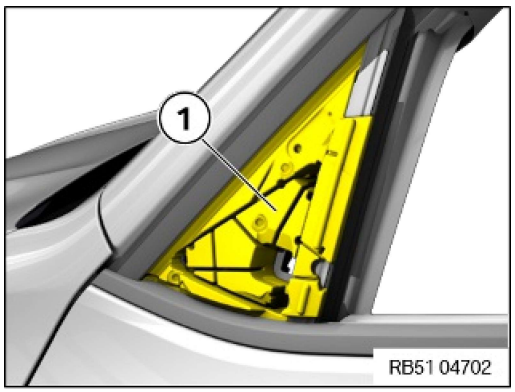
POSTPROCESSES

8 – Install outer weather strip



- Check outer weather strip (1) for damage, renew the outer weather strip (1) if required.
- Coat the outer weather strip (1) with a suitable lubricant prior to installation.
- Fit outer weather strip (1) on the front door.
- Press down the outer weather strip (1) across its entire length.

9 – Installing the exterior mirror



Check

- Check mirror triangle seal (1) for damage.

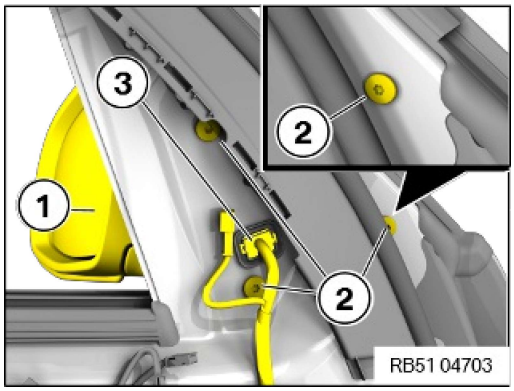
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Result

» The mirror triangle seal is damaged.

Measure

- Replace mirror triangle seal .



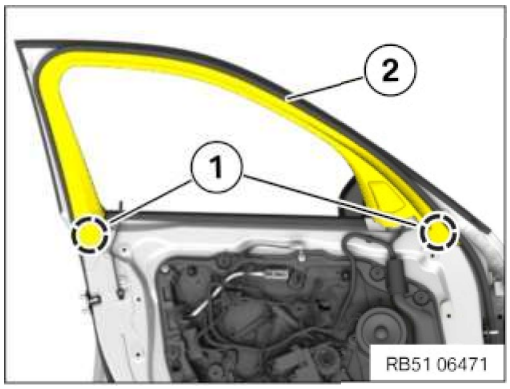
- Position exterior rearview mirror (1) and tighten screws (2).

Exterior mirror to door

Thread-tapping hexagon screw		Tightening torque	10 Nm

- Connect connectors (3) and lock.

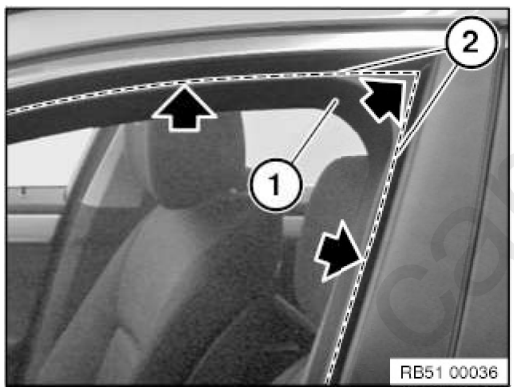
10 – Installing the cover on the inside of the window frame



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

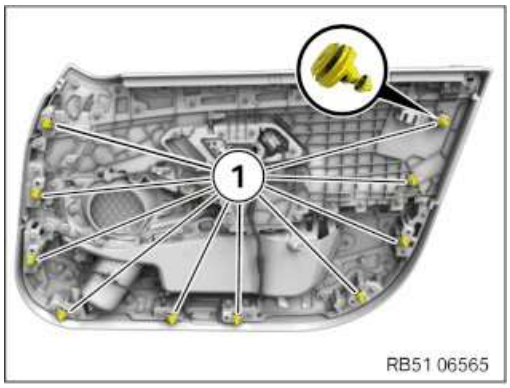
- If necessary, connect and lock the connector of the speaker.
- Guide in the cover all around the inner window frame (2) starting from the rear and position it correctly.
- Clip in clips (1).



- Insert the cover on the inner window frame (1) into the gap of the rubber window seal(2) .

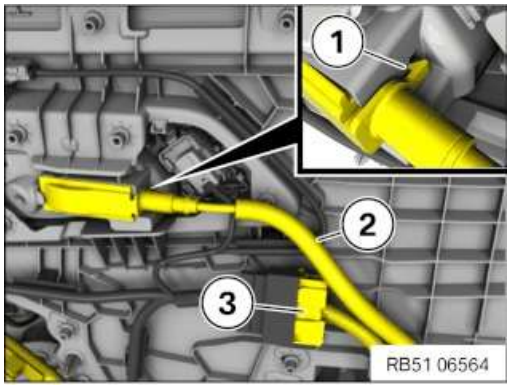
  While doing so, pay attention to the correct position of the cover on the inner window frame (1) on the door seal.

11 – Install door trim panel

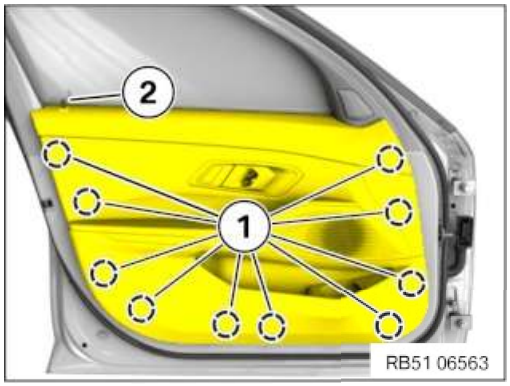


- Renew the clips (1).

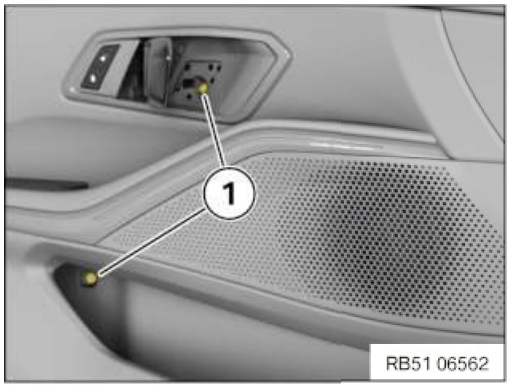
  Parts: Clips



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



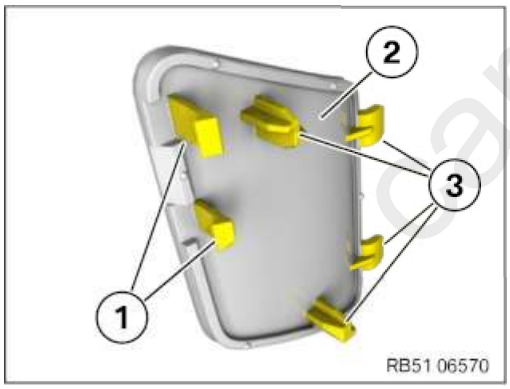
- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).



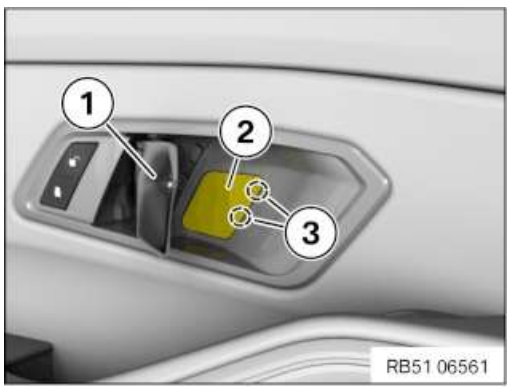
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

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Overview of Tightening Torques

Window frame trim to door frame — Used in step 7

Oval-head screw for thermoplastic		Tightening torque	2,3 Nm

Exterior mirror to door — Used in step 9

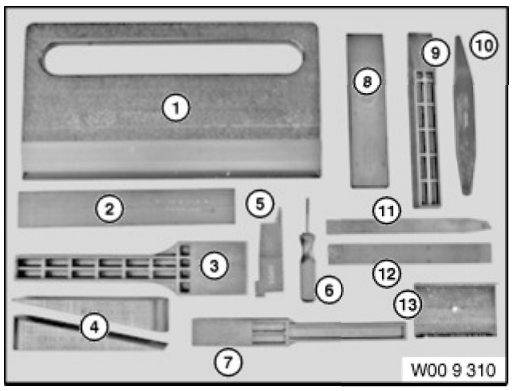
Thread-tapping hexagon screw		Tightening torque	10 Nm

Door trim panel to door — Used in step 11

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

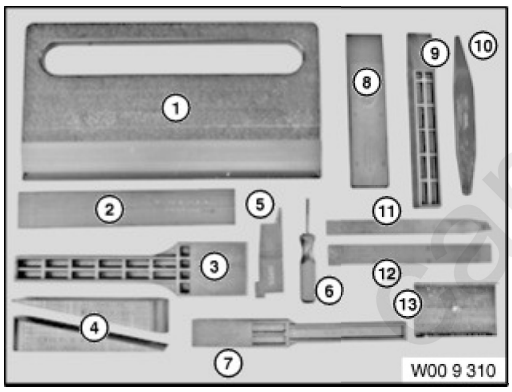
0 495 484 (00 9 324) Panel wedge



Common — Used in step 15

Usage	(Panel wedge (panel)) For removing cavity strips on the doors from E60
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 25 05 (230)

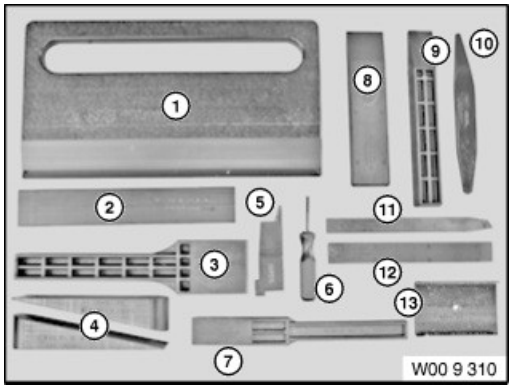
0 493 752 (00 9 329) Case



Common — Used in step 2

Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

0 490 538 (00 9 321) Folding stick

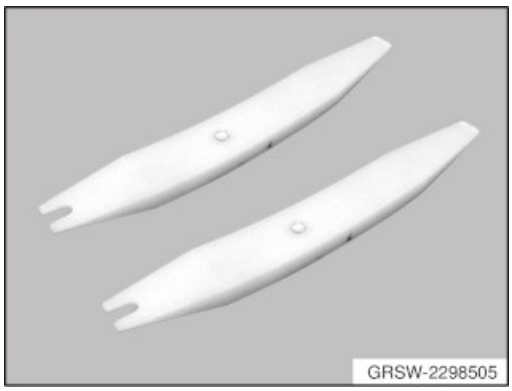


Common — Used in step 5

Usage	
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

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2 298 505 Wedge



Common	Used in step 5
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

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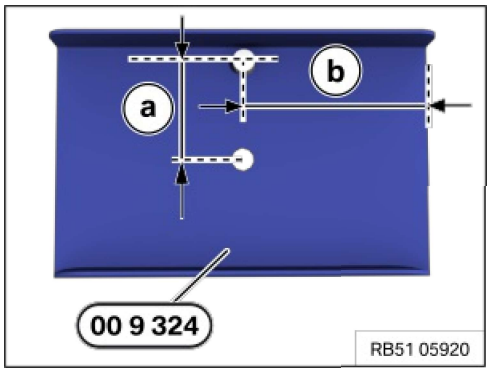
51 32 170 Removing and installing/replacing door window glass, front left or right

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

1 – Preparing the special tool



- **Do this only if the upper bore hole is missing.**
- Mark and make the bore hole on the special tool 0 495 484 (00 9 324) according to the specified dimensions.

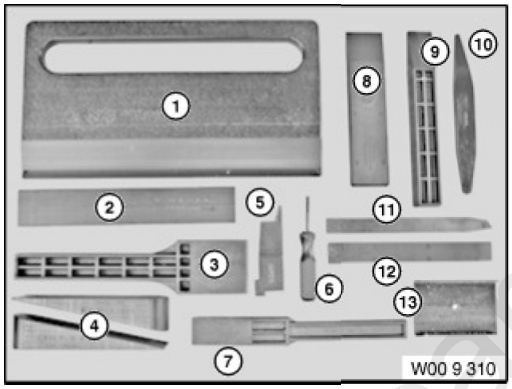
  Make a bore hole on the side with the long shank.

  The diameter of the bore hole is 6 mm.

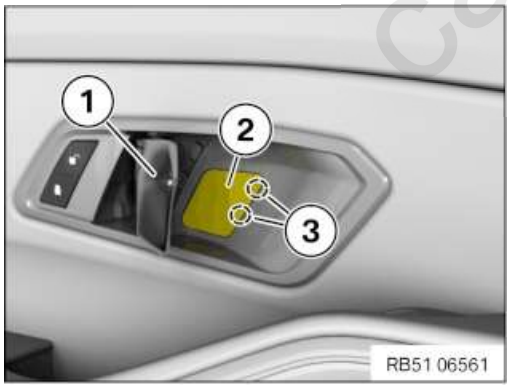
  Dimension (a) = 25 mm from the centre of the existing bore hole

  Dimension (b) = 50 mm from the outer edge of the special tool

2 – Remove door trim panel

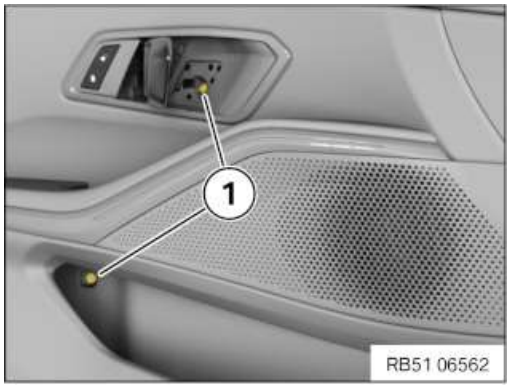


- Have the set of special tools 0 493 752 (00 9 329) ready.

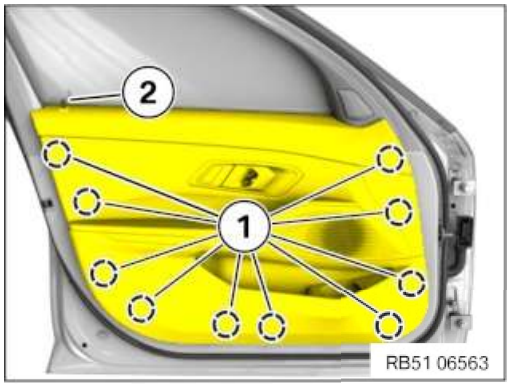


- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

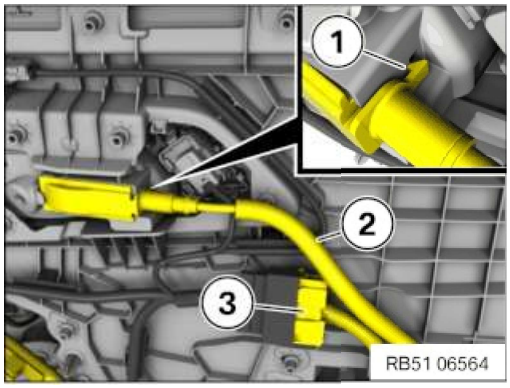
cardiagn.com



- Loosen screws (1).



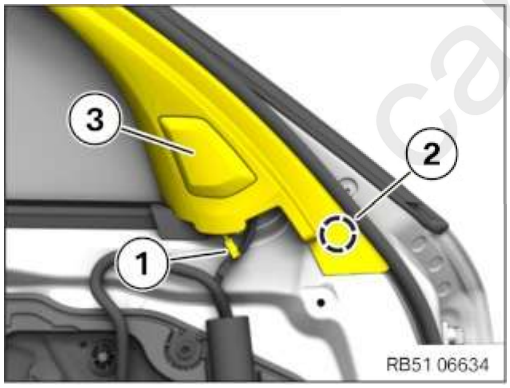
- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).



- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

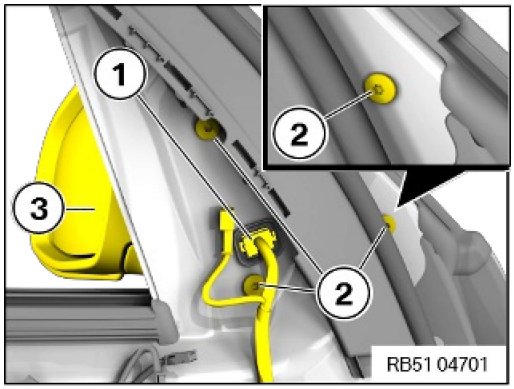
  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

3 – Partially removing the cover on the inner window frame



- If necessary, unlock and disconnect the plug connection (1).
- Unclip clip (2).
- Release the cover on inner window frame (3) in the area of the exterior rearview mirror.

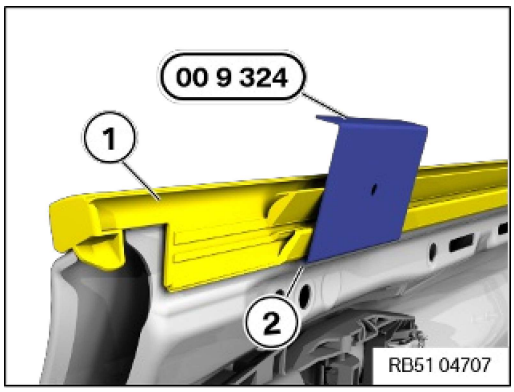
4 – Removing the exterior mirror



- Unlock plug connection (1) and disconnect.
- Release the screws (2) and remove the exterior rearview mirror (3).

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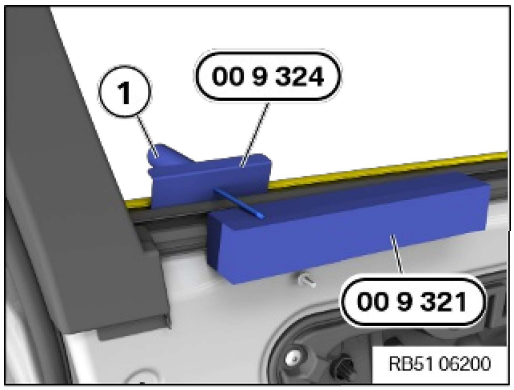
5 – Removing the outer weather strip



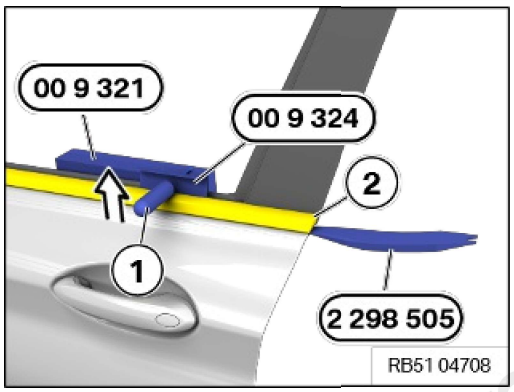
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Insert the special tool 0 495 484 (00 9 324) at the front (on A-pillar) into the window cavity and slide it toward the back.
- Position the special tool 0 495 484 (00 9 324) as shown at the lower edge of the outer weather strip (1) with the short shank (2).



- Place the special tool 0 490 538 (00 9 321) on the inner door panel.
- Thread a suitable tool (1) through the opening in the special tool 0 495 484 (00 9 324).



RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

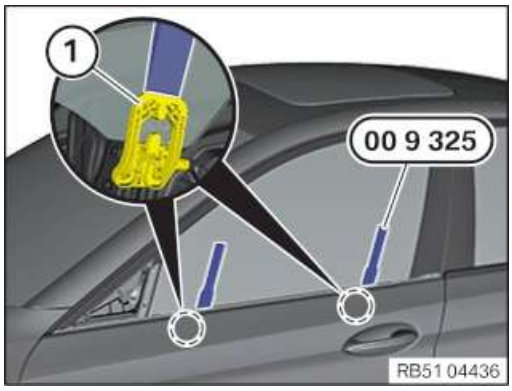
- Lift up the outer rear weather strip (2) with the special tool 2 298 505 as shown; maximum 5 mm.
- With a suitable tool (1), move the lever in the direction of arrow using the special tool 0 490 538 (00 9 321) for support.

  When this happens, the special tool 0 495 484 (00 9 324) lifts the outer weather strip (2) upwards.
- Repeat this process step by step until the outer weather strip(2) is completely disassembled.

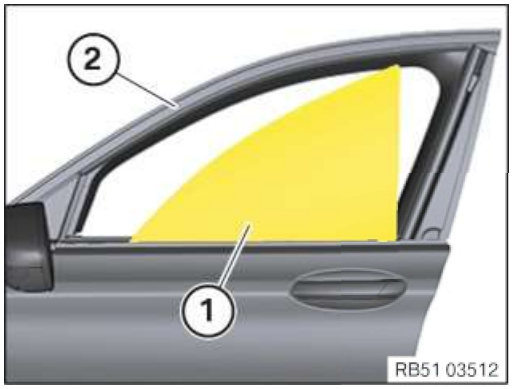
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MAIN WORK

6 – Remove front door window glass

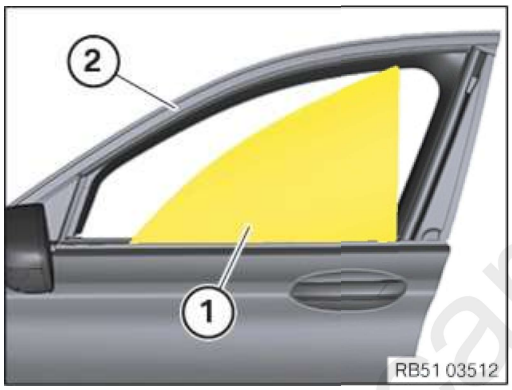


- Attach the front door window glass when closed using adhesive tape.
- Spread both holders (1) on the front door window glass simultaneously using special tool 0 496 569 (00 9 325) until it is possible to detach the front door window glass.
- Move the power window down.



- Remove adhesive tape from the front door window glass (1).
- Slide the front door window glass (1) down.
- Twist the front door window glass (1) in the door frame (2).
- Guide the front door window glass (1) out to the top.

7 – Installing front door window glass

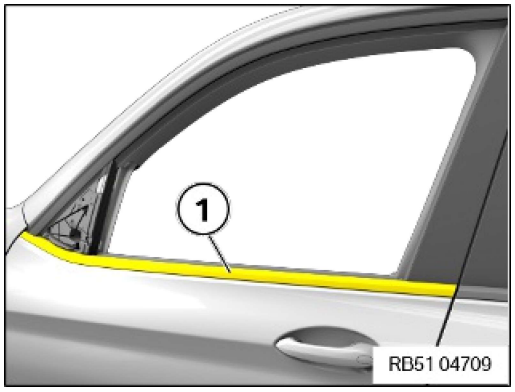


- Insert the twisted front door window glass (1) into the door frame (2).
- Insert the front door window glass (1) into the rubber window seals by twisting it.

  The front door window glass (1) must be positioned correctly in the rubber window seal.
- Push the front door window glass (1) fully upwards and secure it to the door frame (2) using adhesive tape.
- Shift the power windows upwards until the front door window glass (1) correctly engages in both holders.
- Remove adhesive tape.

POSTPROCESSES

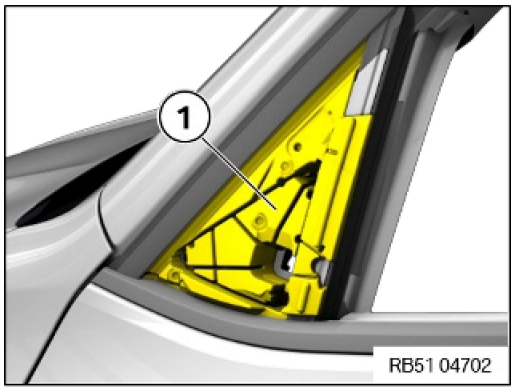
8 – Install outer weather strip



- Check outer weather strip (1) for damage, renew the outer weather strip (1) if required.
- Coat the outer weather strip (1) with a suitable lubricant prior to installation.
- Fit outer weather strip (1) on the front door.
- Press down the outer weather strip (1) across its entire length.

9 – Installing the exterior mirror

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Check

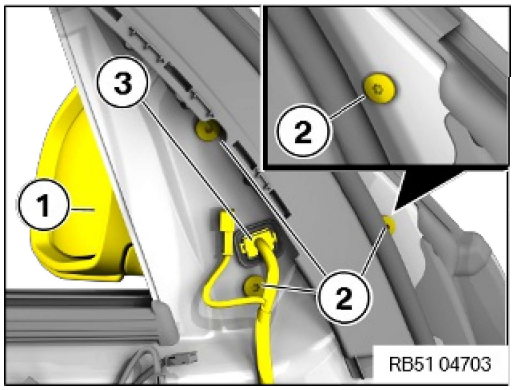
- Check mirror triangle seal (1) for damage.

Result

» The mirror triangle seal is damaged.

Measure

- Replace mirror triangle seal .



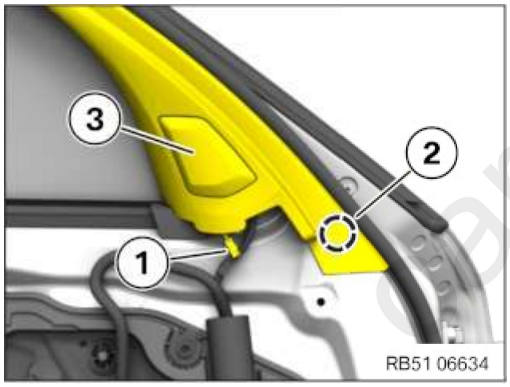
- Position exterior rearview mirror (1) and tighten screws (2).

Exterior mirror to door

Thread-tapping hexagon screw		Tightening torque	10 Nm

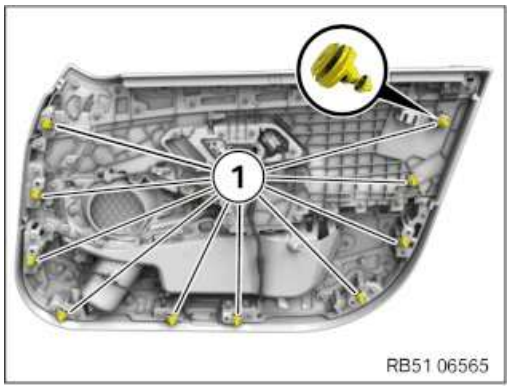
- Connect connectors (3) and lock.

10 – Installing the cover on the inside of the window frame partially



- Mount cover on the inner window frame (3) in the area of the exterior rearview mirror.
- Clip in the clip (2).
- If necessary, connect the connector (1) and lock it.

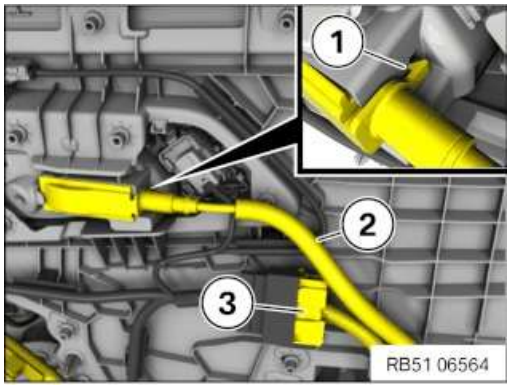
11 – Install door trim panel



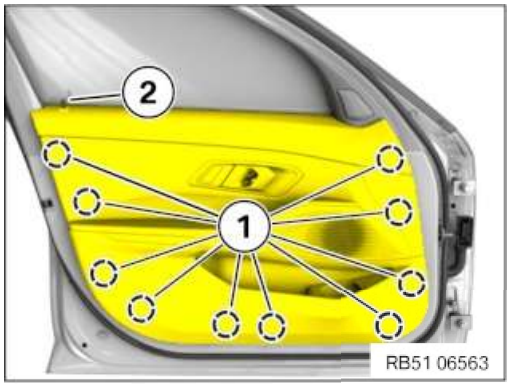
- Renew the clips (1).

  Parts: Clips

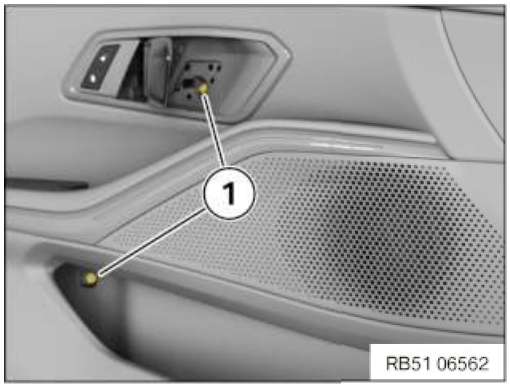
eardisn.com



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



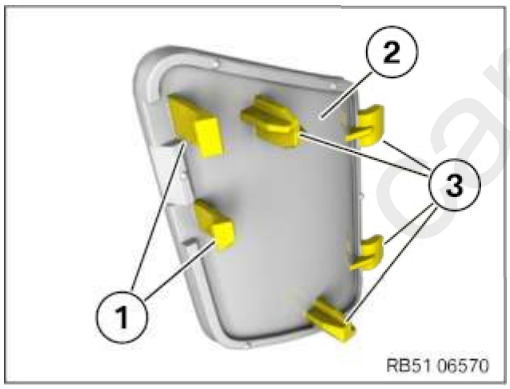
- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).



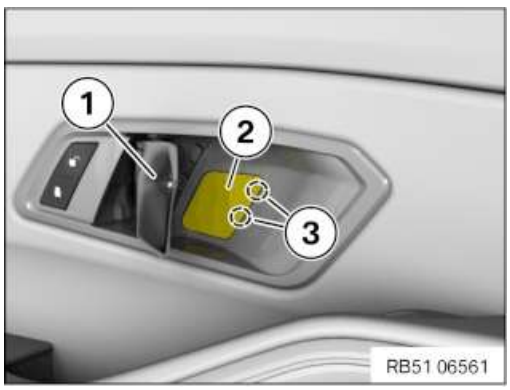
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

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Overview of Tightening Torques

Exterior mirror to door — Used in step 9

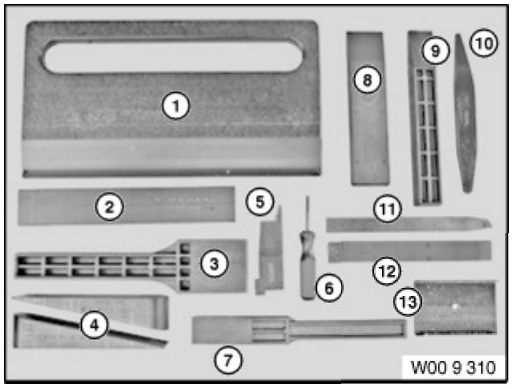
Thread-tapping hexagon screw		Tightening torque	10 Nm

Door trim panel to door — Used in step 11

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

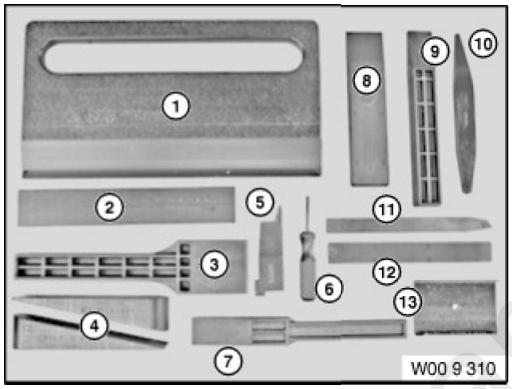
0 495 484 (00 9 324) Panel wedge



Common — Used in step 15

Usage	(Panel wedge (panel)) For removing cavity strips on the doors from E60
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 25 05 (230)

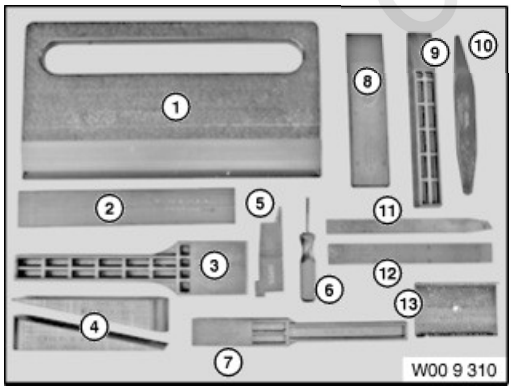
0 493 752 (00 9 329) Case



Common — Used in step 2

Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

0 490 538 (00 9 321) Folding stick

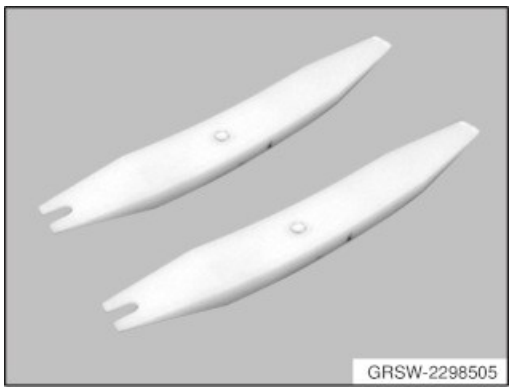


Common — Used in step 5

Usage	
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

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2 298 505 Wedge



Common	Used in step 5
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

0 496 569 (00 9 325) Wedge



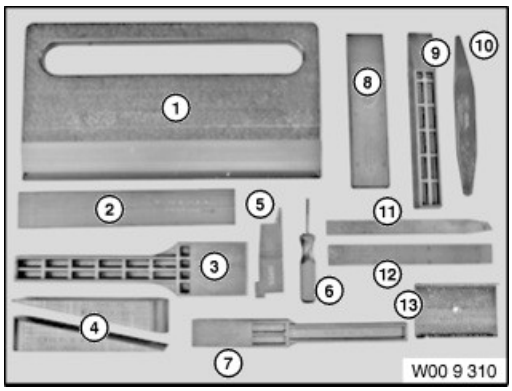
Common	Used in step 6
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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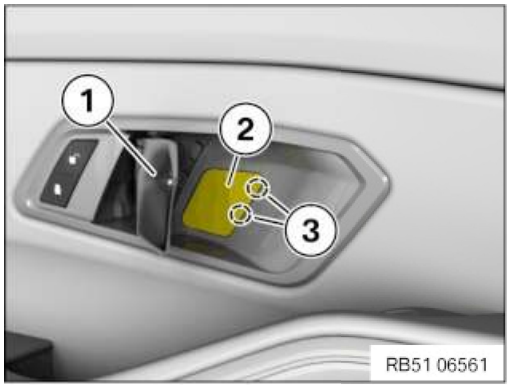
51 32 390 Removing and installing/replacing frame trim on window frame of left or right front door

PRELIMINARY WORK

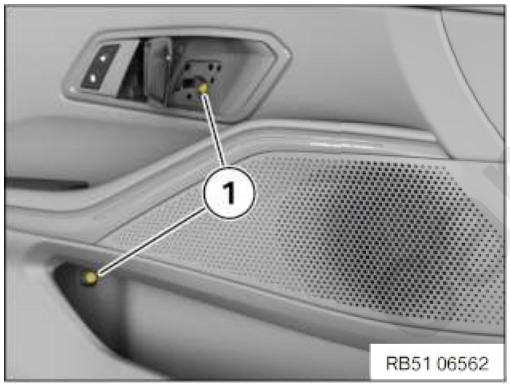
1 – Remove door trim panel



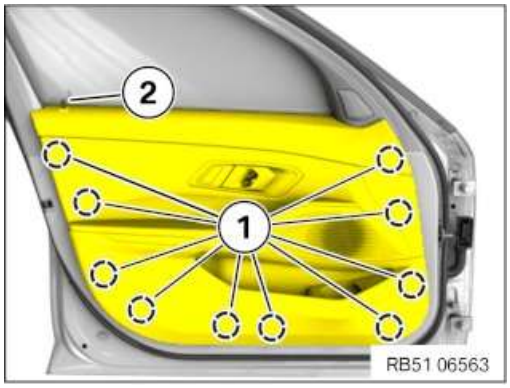
- Have the set of special tools 0 493 752 (00 9 329) ready.



- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

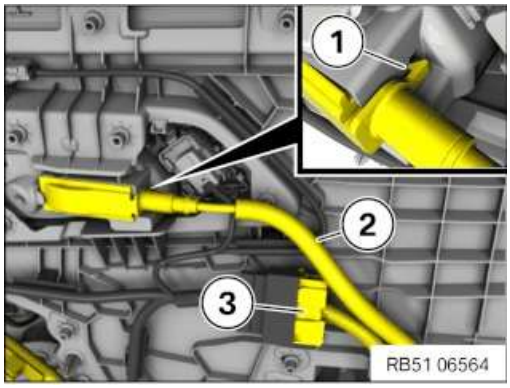


- Loosen screws (1).



- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).

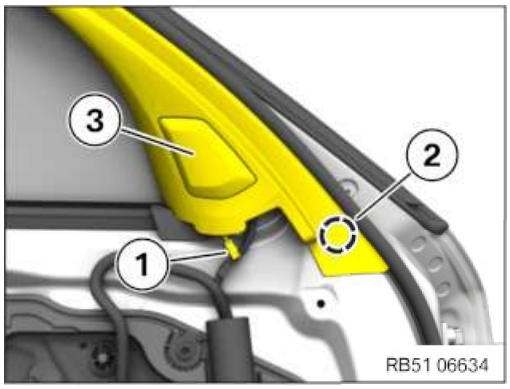
partdiagn.com



- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

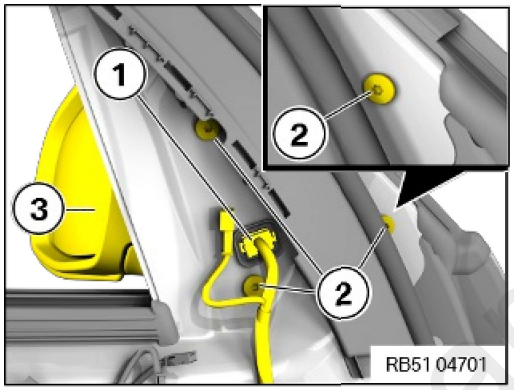
  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

2 – Partially removing the cover on the inner window frame



- If necessary, unlock and disconnect the plug connection (1).
- Unclip clip (2).
- Release the cover on inner window frame (3) in the area of the exterior rearview mirror.

3 – Removing the exterior mirror



- Unlock plug connection (1) and disconnect.
- Release the screws (2) and remove the exterior rearview mirror (3).

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MAIN WORK

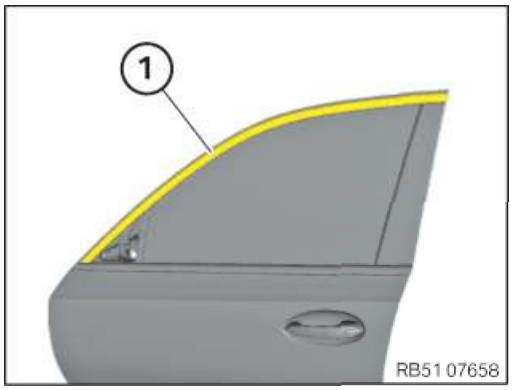
4 – Remove the frame trim on the window frame of the front door

RISK OF DAMAGE

Scratches.

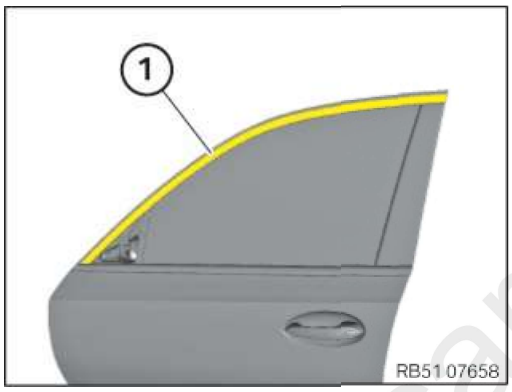
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Carefully lever out the frame trim (1) at rear starting with the special tool 2 298 505 from the rubber window seal, outwards.

5 – Install the frame trim on the window frame of the front door



- Correctly position front frame trim (1) and lock on the rubber window seal.

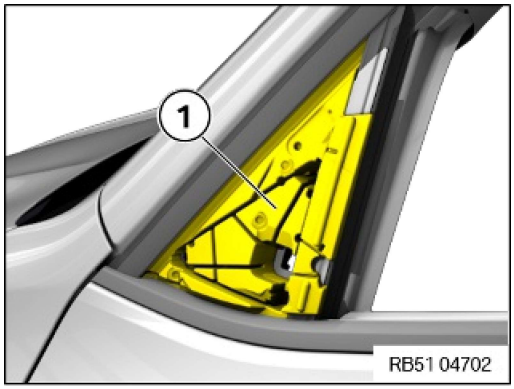
Note: For better installation, coat the rubber window seal with water.

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POSTPROCESSES

6 – Installing the exterior mirror

Check



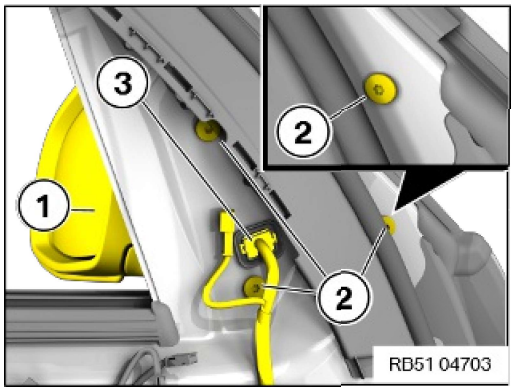
- Check mirror triangle seal (1) for damage.

Result

» The mirror triangle seal is damaged.

Measure

- Replace mirror triangle seal .



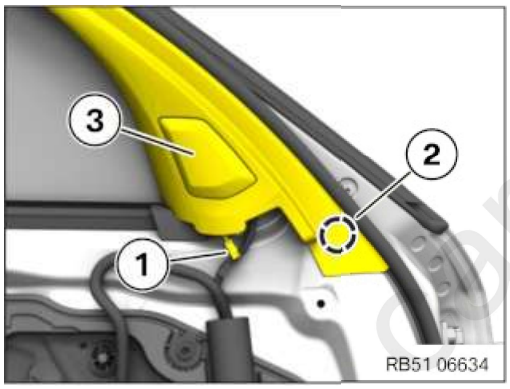
- Position exterior rearview mirror (1) and tighten screws (2).

Exterior mirror to door

Thread-tapping hexagon screw		Tightening torque	10 Nm

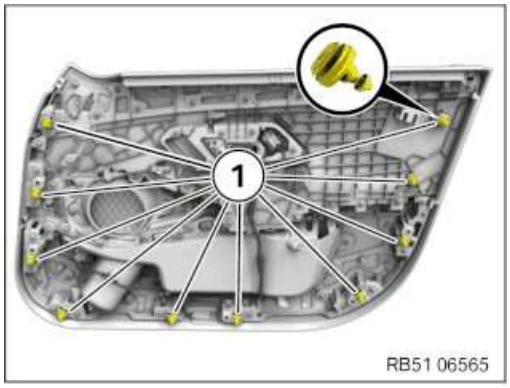
- Connect connectors (3) and lock.

7 – Installing the cover on the inside of the window frame partially



- Mount cover on the inner window frame (3) in the area of the exterior rearview mirror.
- Clip in the clip (2).
- If necessary, connect the connector (1) and lock it.

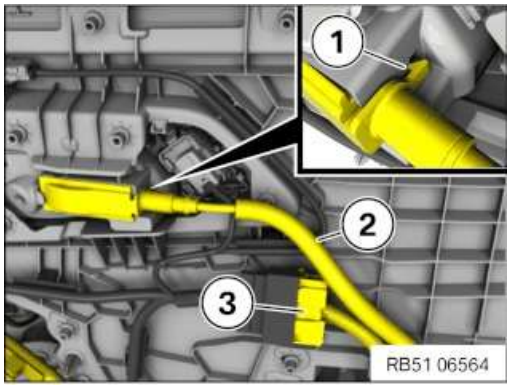
8 – Install door trim panel



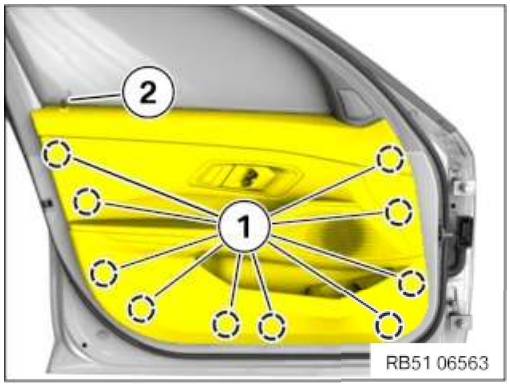
- Renew the clips (1).

  Parts: Clips

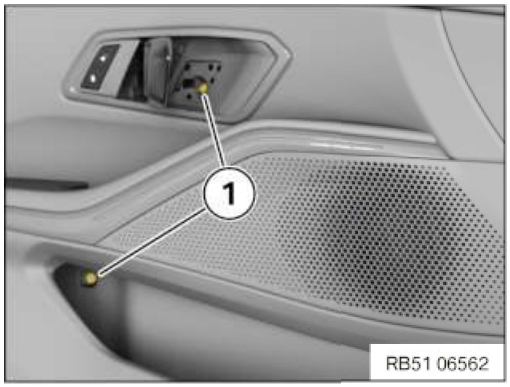
cardiagn.com



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



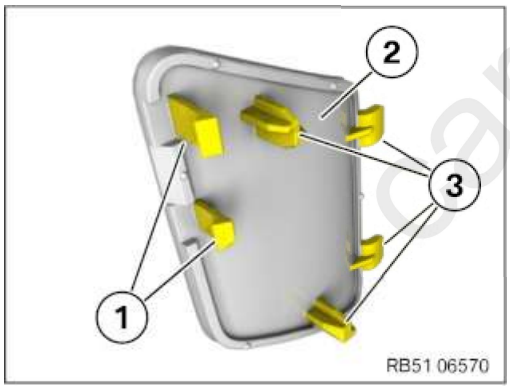
- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).



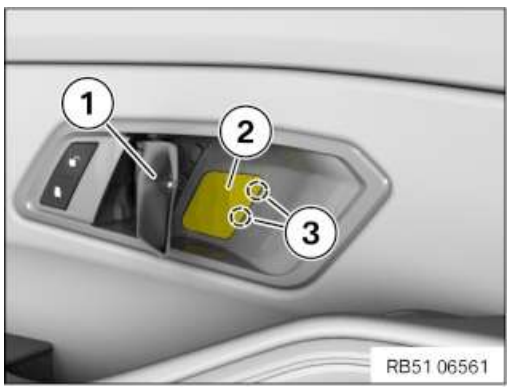
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

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Overview of Tightening Torques

Exterior mirror to door — Used in step 6

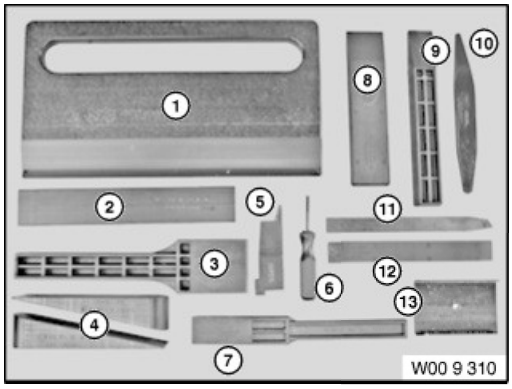
Thread-tapping hexagon screw		Tightening torque	10 Nm

Door trim panel to door — Used in step 8

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

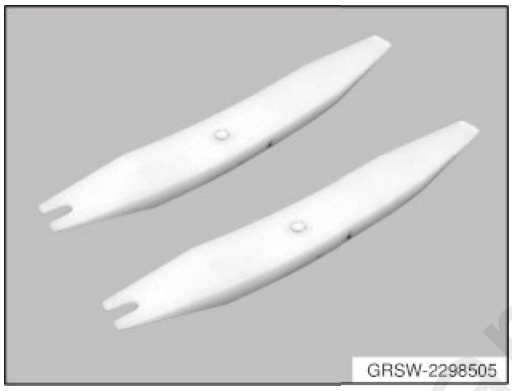
0 493 752 (00 9 329) Case



Common — Used in step 1

Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

2 298 505 Wedge



Common — Used in step 4

Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

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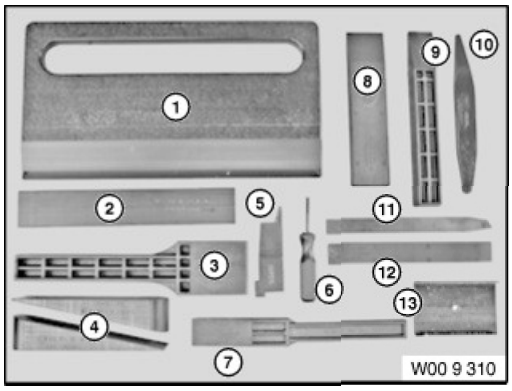
51 32 160 Removing and installing/replacing housing cover on inner left or right door window frame

NOTICE

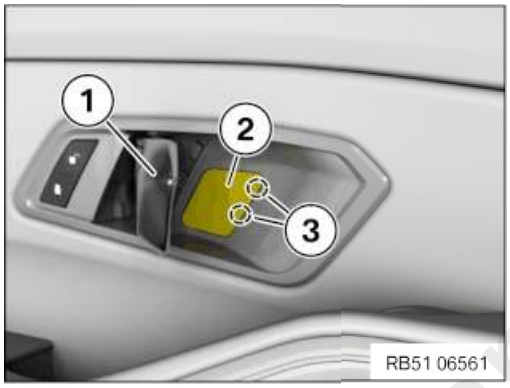
Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

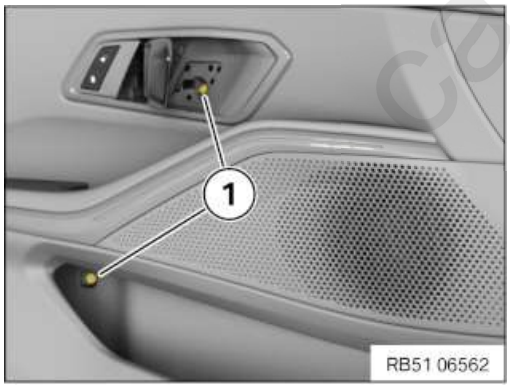
1 – Remove door trim panel



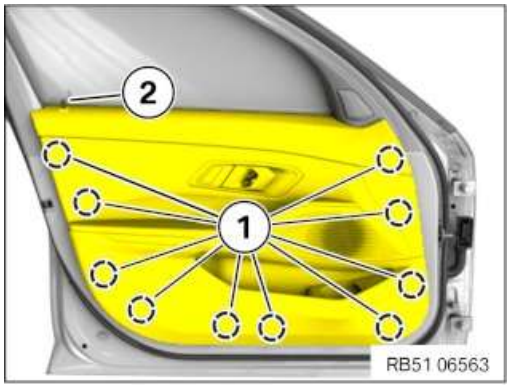
- Have the set of special tools 0 493 752 (00 9 329) ready.



- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

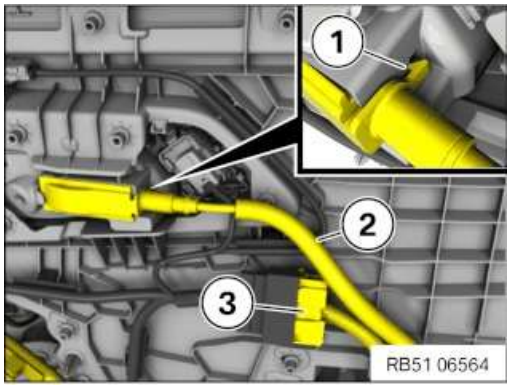


- Loosen screws (1).



- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).

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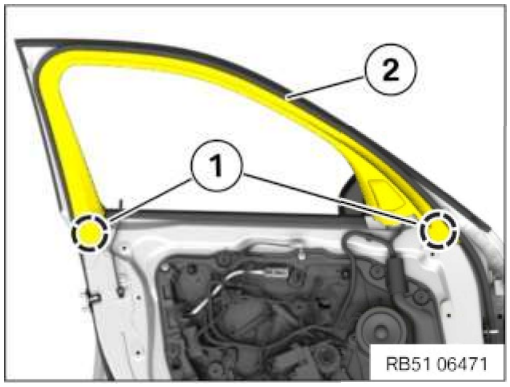


- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

MAIN WORK

2 – Removing the cover on the window frame

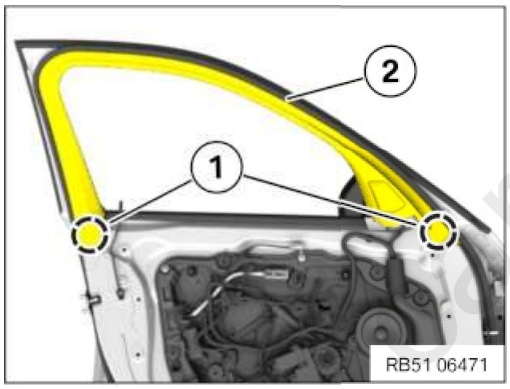


NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Unclip clips (1).
- Release and remove the cover all around inner window frame (2), starting from the rear.
- If necessary, unlock and disconnect the plug connection on the speaker.

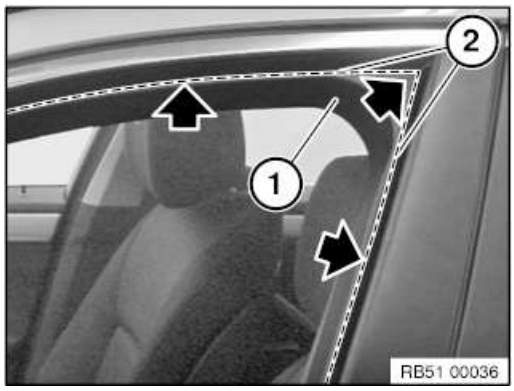
3 – Installing the cover on the inside of the window frame



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- If necessary, connect and lock the connector of the speaker.
- Guide in the cover all around the inner window frame (2) starting from the rear and position it correctly.
- Clip in clips (1).

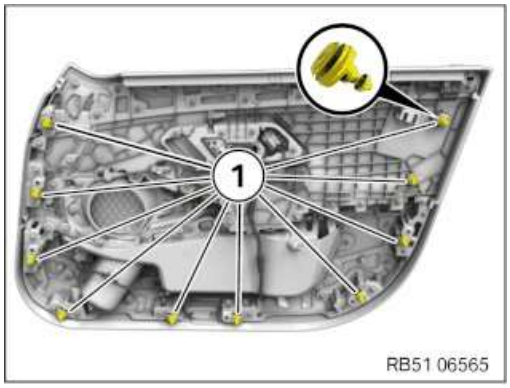


- Insert the cover on the inner window frame (1) into the gap of the rubber window seal(2) .

  While doing so, pay attention to the correct position of the cover on the inner window frame (1) on the door seal.

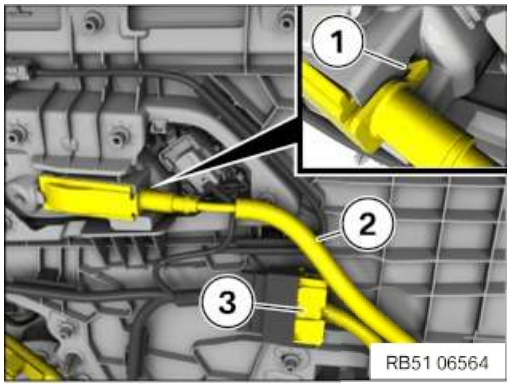
POSTPROCESSES

4 – Install door trim panel

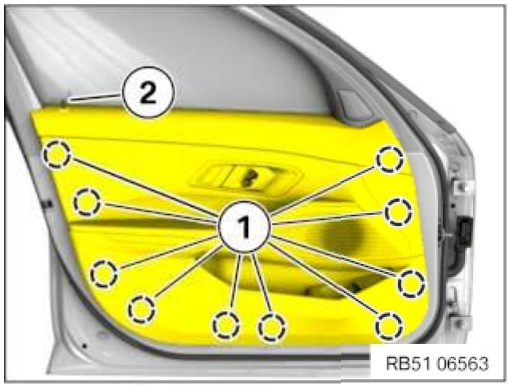


- Renew the clips (1).

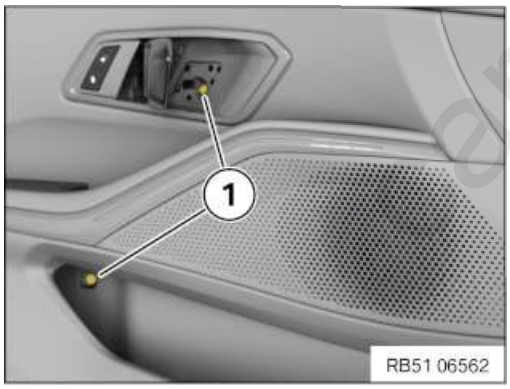
  Parts: Clips



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



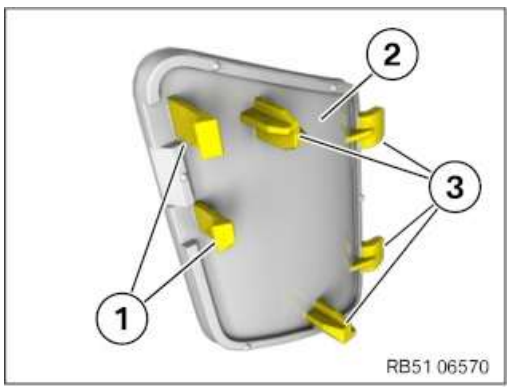
- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).



- Tighten the screws (1).

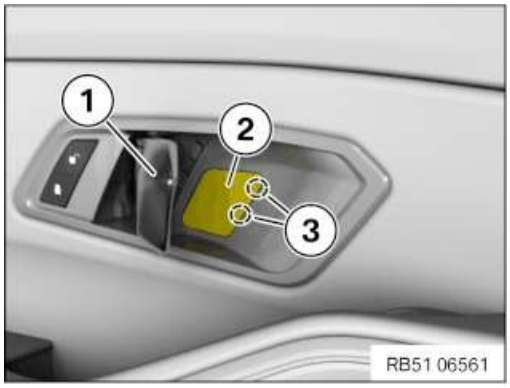
Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).

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- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

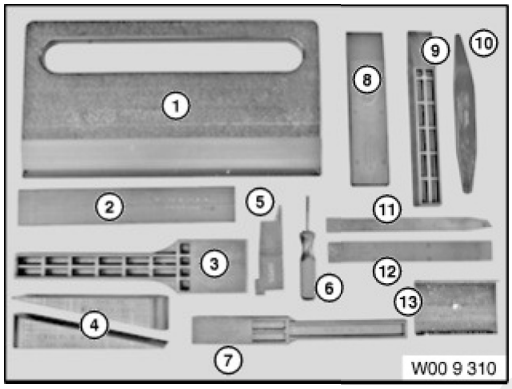
Overview of Tightening Torques

Door trim panel to door — Used in step 4

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

0 493 752 (00 9 329) Case



Common — Used in step 1

Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

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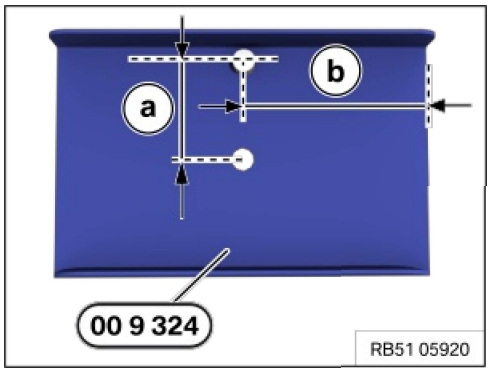
51 32 211 Replace the rubber window seal for the front left or right door window glass

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

1 – Preparing the special tool



- **Do this only if the upper bore hole is missing.**
- Mark and make the bore hole on the special tool 0 495 484 (00 9 324) according to the specified dimensions.

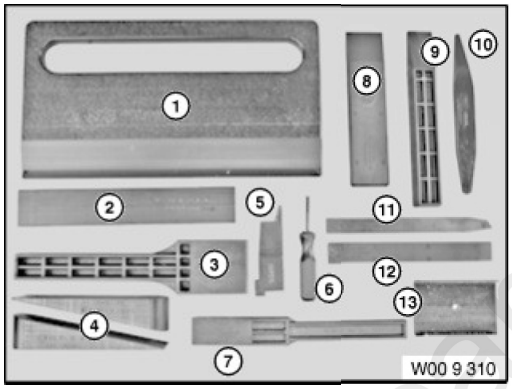
  Make a bore hole on the side with the long shank.

  The diameter of the bore hole is 6 mm.

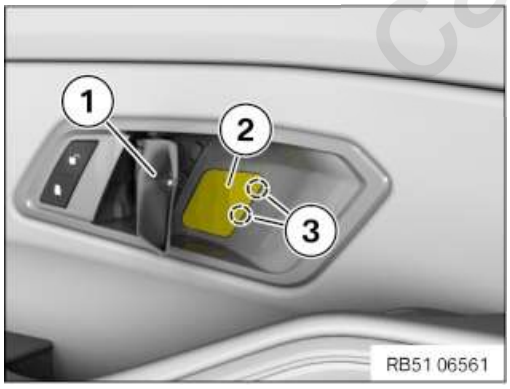
  Dimension (a) = 25 mm from the centre of the existing bore hole

  Dimension (b) = 50 mm from the outer edge of the special tool

2 – Remove door trim panel

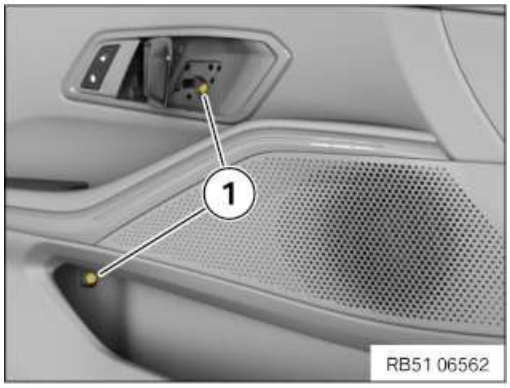


- Have the set of special tools 0 493 752 (00 9 329) ready.

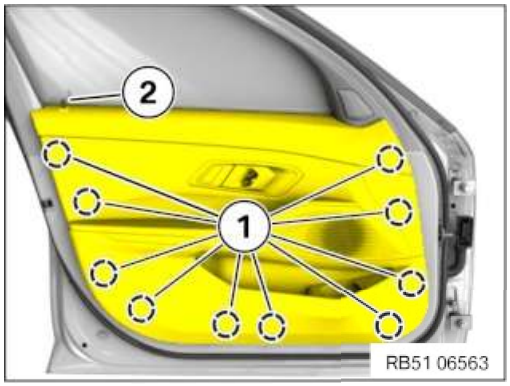


- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

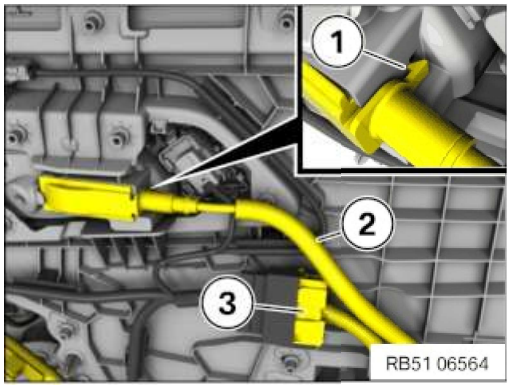
cardiagn.com



- Loosen screws (1).



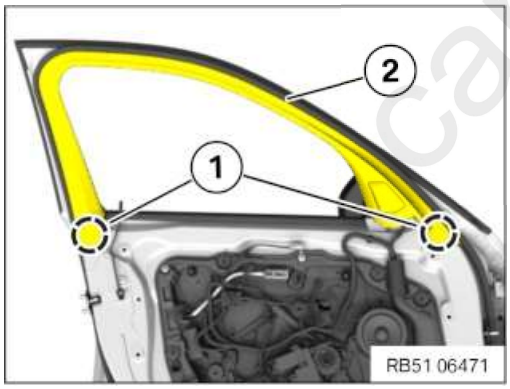
- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).



- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

3 – Removing the cover on the window frame



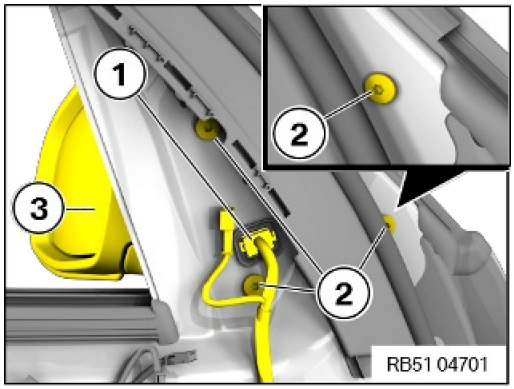
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Unclip clips (1).
- Release and remove the cover all around inner window frame (2), starting from the rear.
- If necessary, unlock and disconnect the plug connection on the speaker.

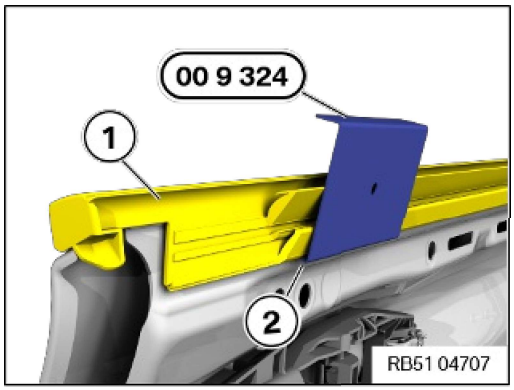
4 – Removing the exterior mirror

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- Unlock plug connection (1) and disconnect.
- Release the screws (2) and remove the exterior rearview mirror (3).

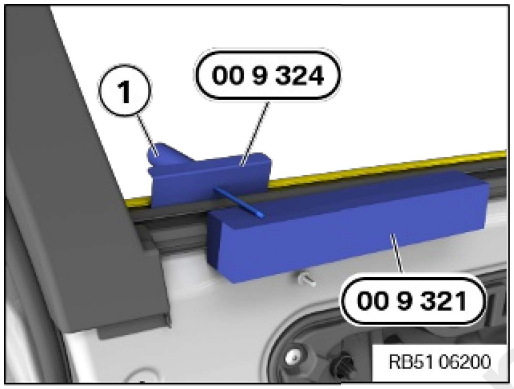
5 – Removing the outer weather strip



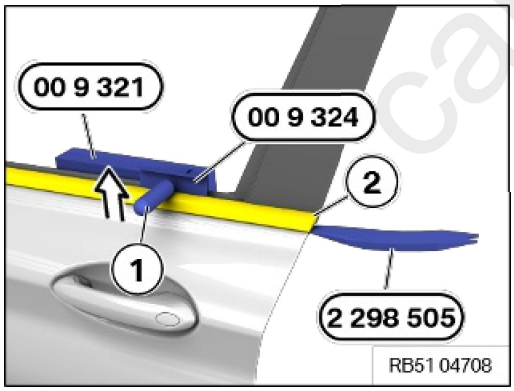
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Insert the special tool 0 495 484 (00 9 324) at the front (on A-pillar) into the window cavity and slide it toward the back.
- Position the special tool 0 495 484 (00 9 324) as shown at the lower edge of the outer weather strip (1) with the short shank (2).



- Place the special tool 0 490 538 (00 9 321) on the inner door panel.
- Thread a suitable tool (1) through the opening in the special tool 0 495 484 (00 9 324).



RISK OF DAMAGE

Scratches.

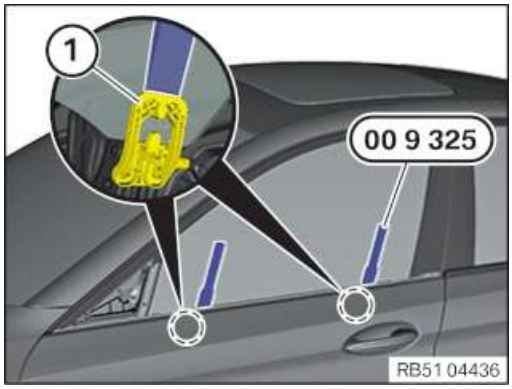
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

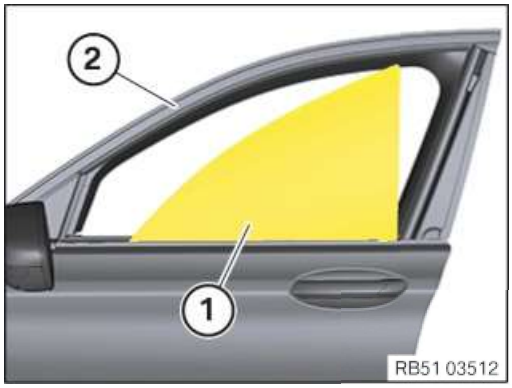
- Lift up the outer rear weather strip (2) with the special tool 2 298 505 as shown; maximum 5 mm.
- With a suitable tool (1), move the lever in the direction of arrow using the special tool 0 490 538 (00 9 321) for support.

  When this happens, the special tool 0 495 484 (00 9 324) lifts the outer weather strip (2) upwards.
- Repeat this process step by step until the outer weather strip(2) is completely disassembled.

6 – Remove front door window glass

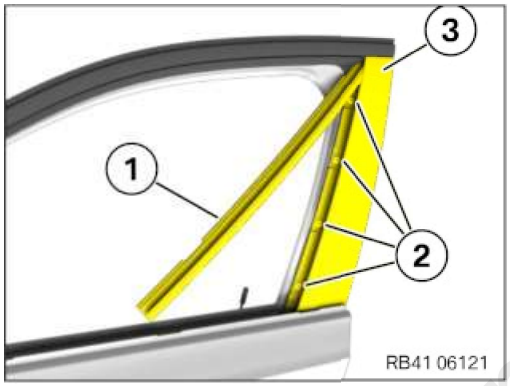


- Attach the front door window glass when closed using adhesive tape.
- Spread both holders (1) on the front door window glass simultaneously using special tool 0 496 569 (00 9 325) until it is possible to detach the front door window glass.
- Move the power window down.



- Remove adhesive tape from the front door window glass (1).
- Slide the front door window glass (1) down.
- Twist the front door window glass (1) in the door frame (2).
- Guide the front door window glass (1) out to the top.

7 – Remove the window frame trim from the front door

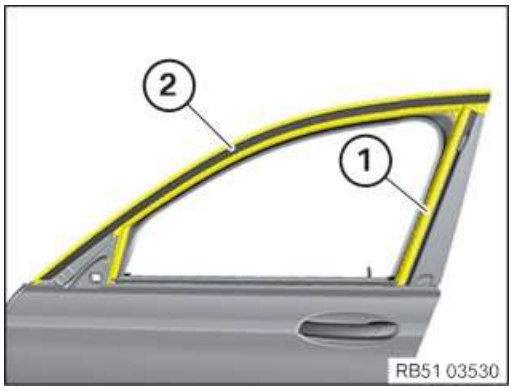


- Carefully remove the rubber window seal (1) in the working area.
- Loosen screws (2).
- Fold the front window frame trim (3) back slightly and guide it out to the top.

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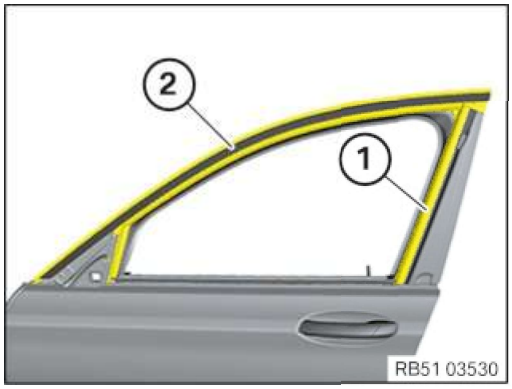
MAIN WORK

8 – Remove rubber window seal



- Remove rubber window seal (1) in the top area of the trim strip (2).
- Guide the rubber window seal (1) out together with the trim strip (2).

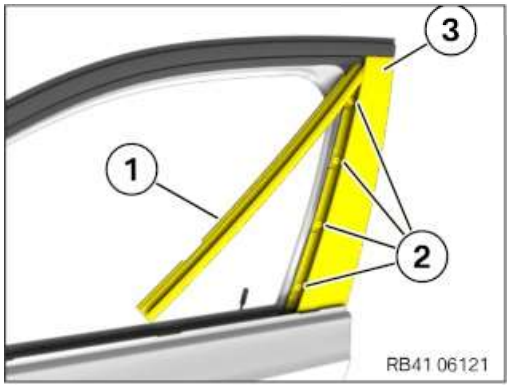
9 – Install the rubber window seal



- Feed in rubber window seal (1) together with the top trim strip (2) on the door frame.
- Mount rubber window seal (1) on the trim strip (2).
- Coat rubber window seal (1) with suitable lubricant.
- Retract rubber window seal (1), front and rear in the window guide.
- Make sure the position of the rubber window seal (1) is correct!

POSTPROCESSES

10 – Install the window frame trim of the front door



- Insert the window frame trim (3) towards the bottom and attach it to the door frame.
- Tighten the screws (2).

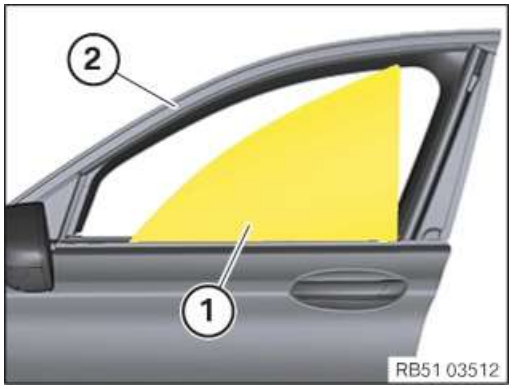
Window frame trim to door frame

Oval-head screw for thermoplastic		Tightening torque	2,3 Nm

- Coat rubber window seal (1) with water before the installation.
- Carefully insert the rubber window seal (1).

11 – Installing front door window glass

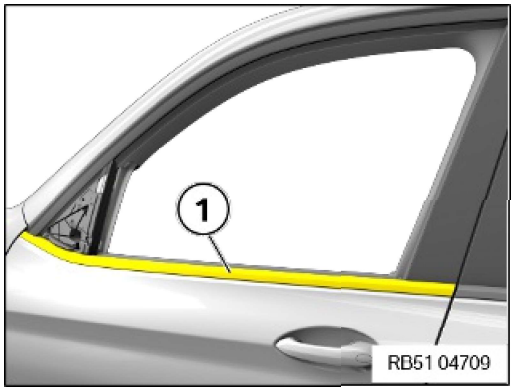
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- Insert the twisted front door window glass (1) into the door frame (2).
- Insert the front door window glass (1) into the rubber window seals by twisting it.

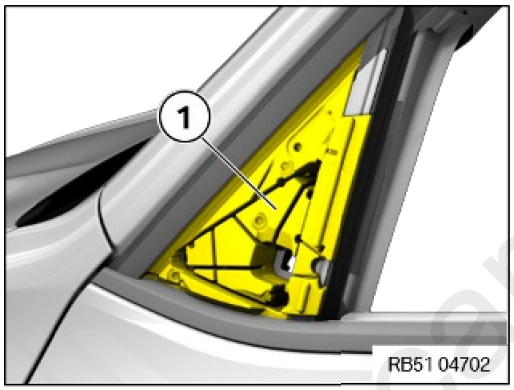
  The front door window glass (1) must be positioned correctly in the rubber window seal.
- Push the front door window glass (1) fully upwards and secure it to the door frame (2) using adhesive tape.
- Shift the power windows upwards until the front door window glass (1) correctly engages in both holders.
- Remove adhesive tape.

12 – Install outer weather strip



- Check outer weather strip (1) for damage, renew the outer weather strip (1) if required.
- Coat the outer weather strip (1) with a suitable lubricant prior to installation.
- Fit outer weather strip (1) on the front door.
- Press down the outer weather strip (1) across its entire length.

13 – Installing the exterior mirror



Check

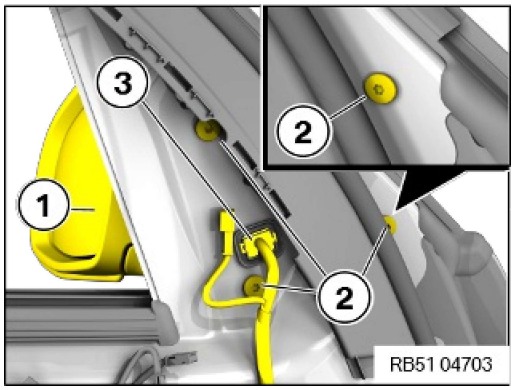
- Check mirror triangle seal (1) for damage.

Result

» The mirror triangle seal is damaged.

Measure

- Replace mirror triangle seal .



- Position exterior rearview mirror (1) and tighten screws (2).

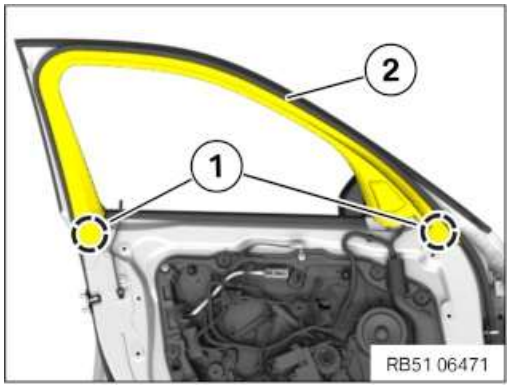
Exterior mirror to door

Thread-tapping hexagon screw		Tightening torque	10 Nm

- Connect connectors (3) and lock.

14 – Installing the cover on the inside of the window frame

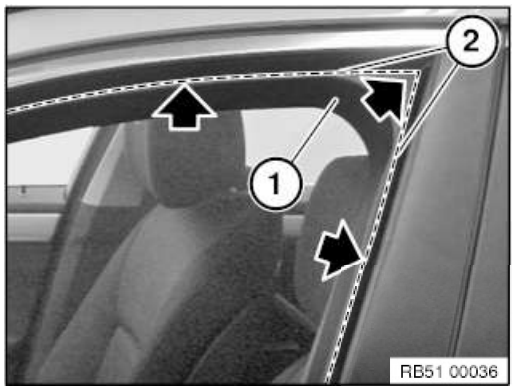
cardiagn.com



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

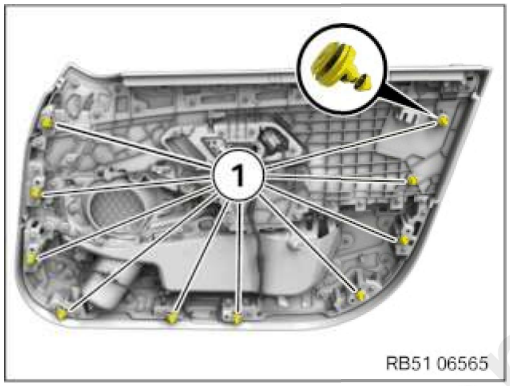
- If necessary, connect and lock the connector of the speaker.
- Guide in the cover all around the inner window frame (2) starting from the rear and position it correctly.
- Clip in clips (1).



- Insert the cover on the inner window frame (1) into the gap of the rubber window seal(2) .

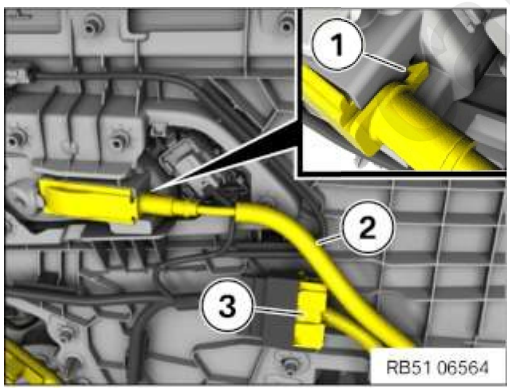
  While doing so, pay attention to the correct position of the cover on the inner window frame (1) on the door seal.

15 – Install door trim panel

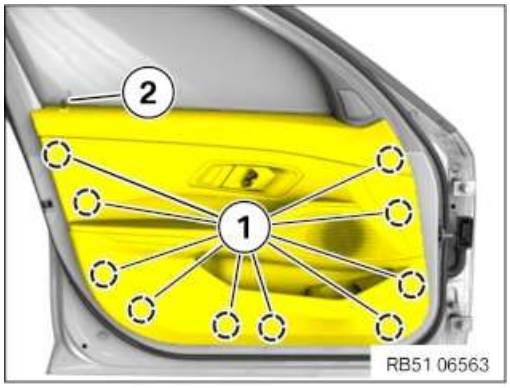


- Renew the clips (1).

  Parts: Clips

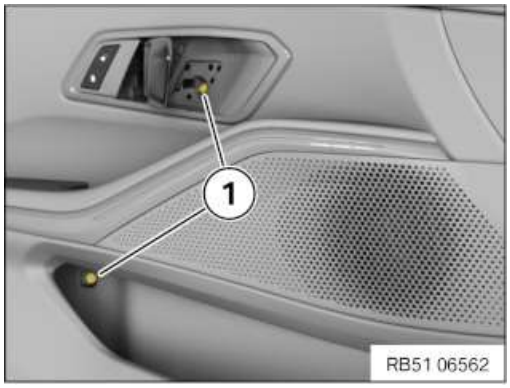


- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).

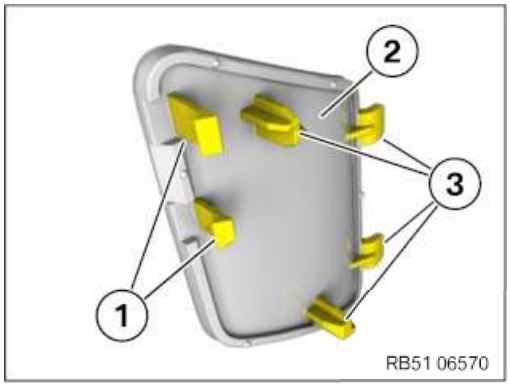
rdiagn.com



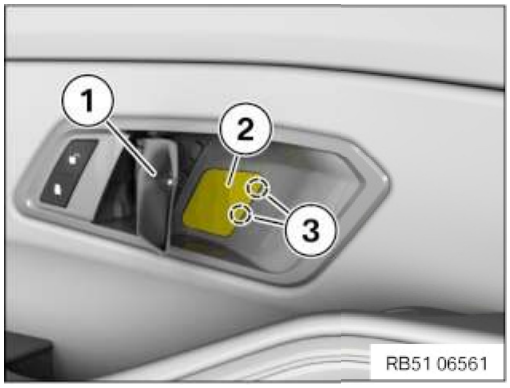
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

Window frame trim to door frame Used in step 10

Oval-head screw for thermoplastic		Tightening torque	2,3 Nm

Exterior mirror to door Used in step 13

Thread-tapping hexagon screw		Tightening torque	10 Nm

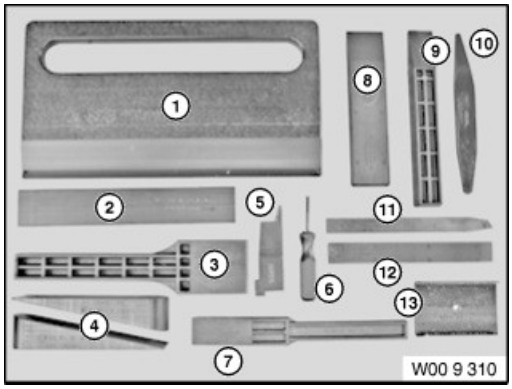
Door trim panel to door Used in step 15

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

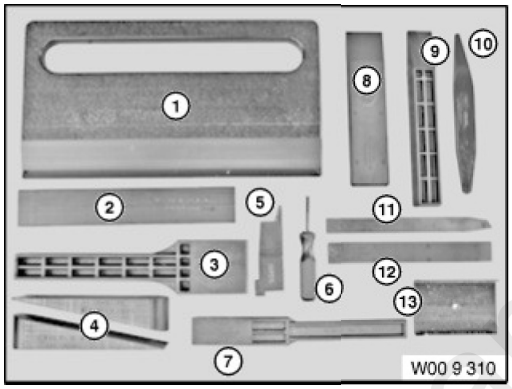
cardiagn.com

0 495 484 (00 9 324) Panel wedge



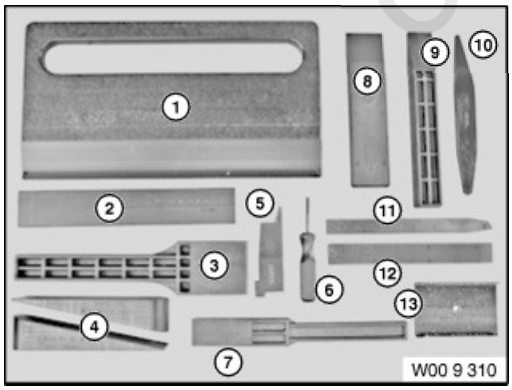
Common	Used in step 15
Usage	(Panel wedge (panel)) For removing cavity strips on the doors from E60
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 25 05 (230)

0 493 752 (00 9 329) Case



Common	Used in step 2
Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

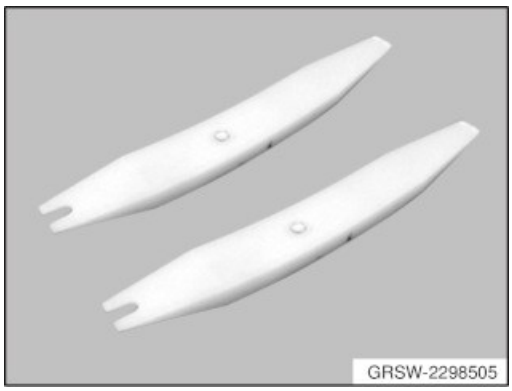
0 490 538 (00 9 321) Folding stick



Common	Used in step 5
Usage	
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

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2 298 505 Wedge



Common	Used in step 5
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

0 496 569 (00 9 325) Wedge



Common	Used in step 6
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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51 33 068 Removing and installing module carrier of right front door

WARNING

Working on 12 V vehicle electrical system.

Risk of short circuits! Risk of fire!

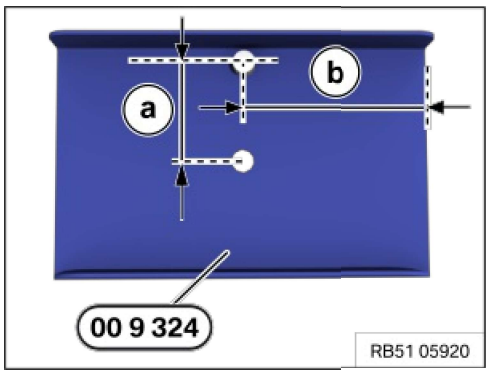
- Detach battery earth lead from battery.
- For additional batteries: Detach all battery earth leads from additional batteries.

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

1 – Preparing the special tool



- **Do this only if the upper bore hole is missing.**
- Mark and make the bore hole on the special tool 0 495 484 (00 9 324) according to the specified dimensions.

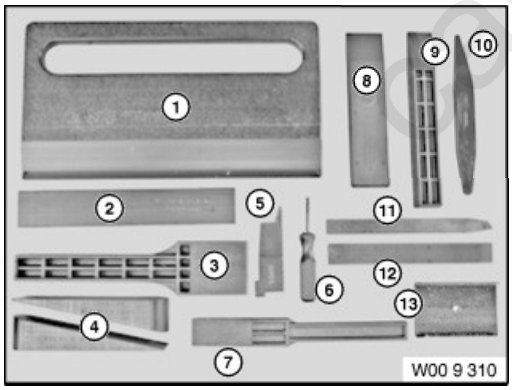
  Make a bore hole on the side with the long shank.

  The diameter of the bore hole is 6 mm.

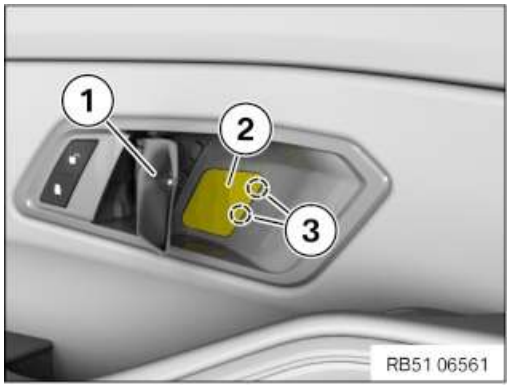
  Dimension (a) = 25 mm from the centre of the existing bore hole

  Dimension (b) = 50 mm from the outer edge of the special tool

2 – Remove door trim panel

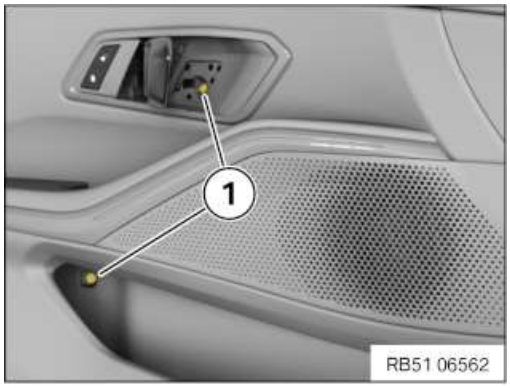


- Have the set of special tools 0 493 752 (00 9 329) ready.

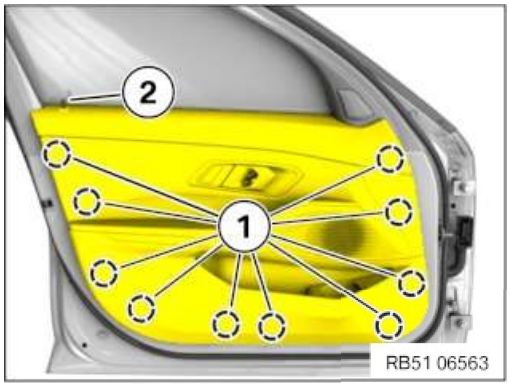


- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

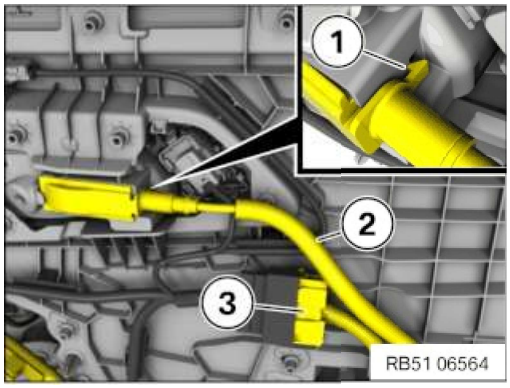
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- Loosen screws (1).



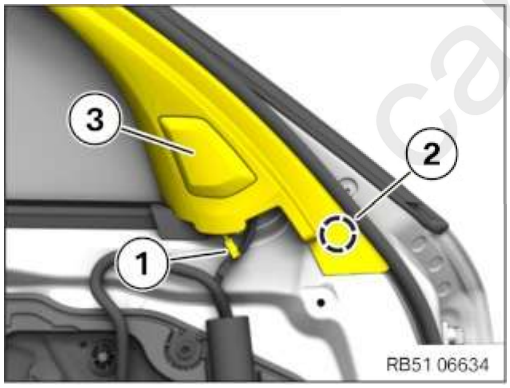
- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).



- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

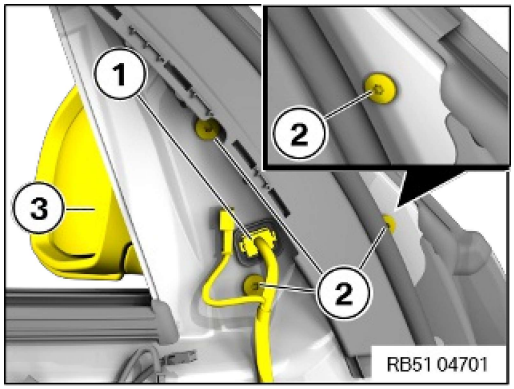
  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

3 – Partially removing the cover on the inner window frame



- If necessary, unlock and disconnect the plug connection (1).
- Unclip clip (2).
- Release the cover on inner window frame (3) in the area of the exterior rearview mirror.

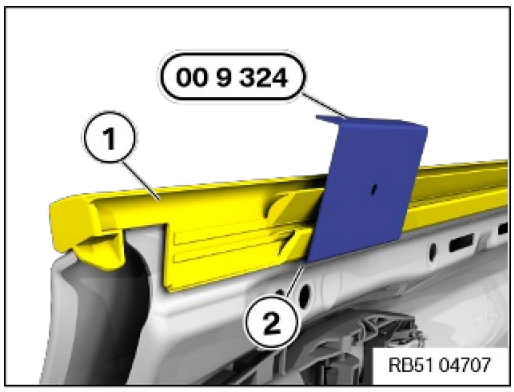
4 – Removing the exterior mirror



- Unlock plug connection (1) and disconnect.
- Release the screws (2) and remove the exterior rearview mirror (3).

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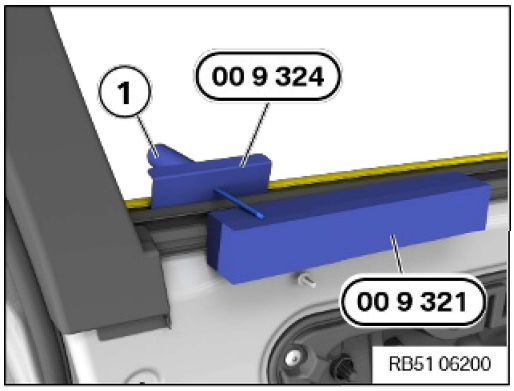
5 – Removing the outer weather strip



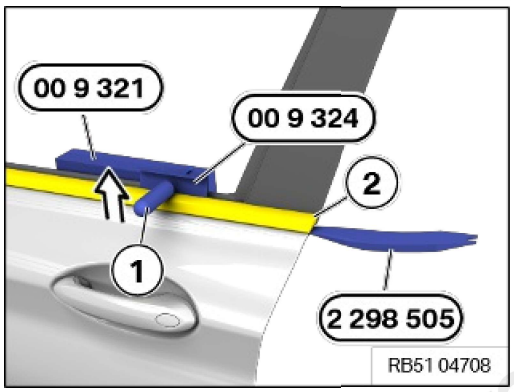
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Insert the special tool 0 495 484 (00 9 324) at the front (on A-pillar) into the window cavity and slide it toward the back.
- Position the special tool 0 495 484 (00 9 324) as shown at the lower edge of the outer weather strip (1) with the short shank (2).



- Place the special tool 0 490 538 (00 9 321) on the inner door panel.
- Thread a suitable tool (1) through the opening in the special tool 0 495 484 (00 9 324).



RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

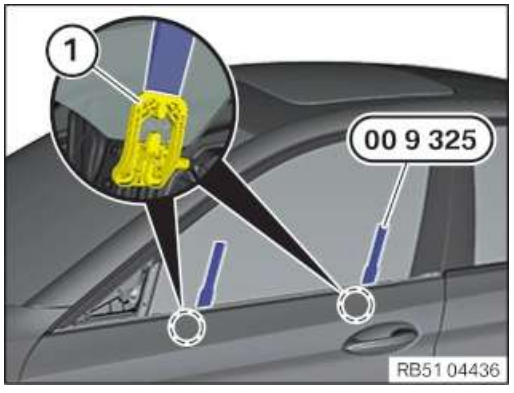
- Protect working area.
- Handle tools and components carefully.

- Lift up the outer rear weather strip (2) with the special tool 2 298 505 as shown; maximum 5 mm.
- With a suitable tool (1), move the lever in the direction of arrow using the special tool 0 490 538 (00 9 321) for support.

  When this happens, the special tool 0 495 484 (00 9 324) lifts the outer weather strip (2) upwards.
- Repeat this process step by step until the outer weather strip(2) is completely disassembled.

MAIN WORK

6 – Removing front module carrier



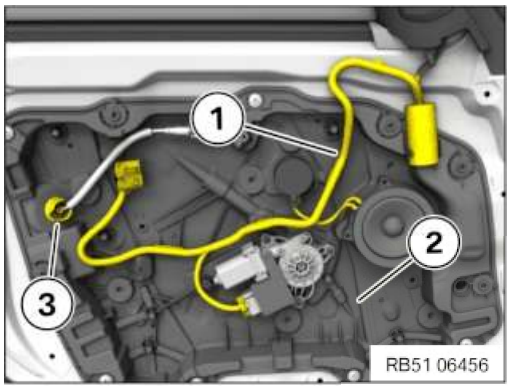
- Secure the door window glass to the door frame when it is closed using adhesive tape.
- Spread both holders (1) on the door window glass simultaneously using special tool 0 496 569 (00 9 325) until it is possible to detach the door window glass.
- Move the power window down.

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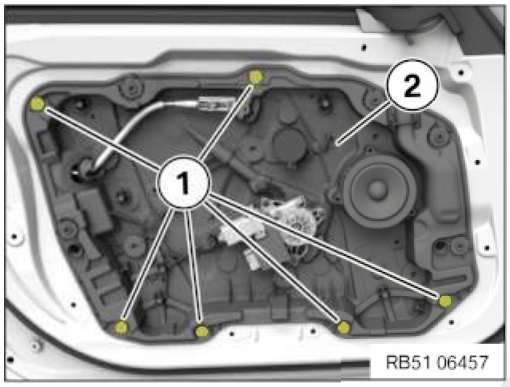
▶ **Disconnecting all battery earth leads**



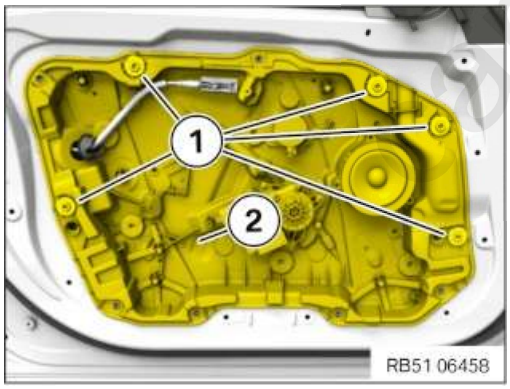
- See additional information.



- Unlock and disconnect all the electrical plug connections.
- Unclip wiring harness (1) on front module carrier (2).
- Release the rubber grommet of the Bowden cable for the inner door opener (3).



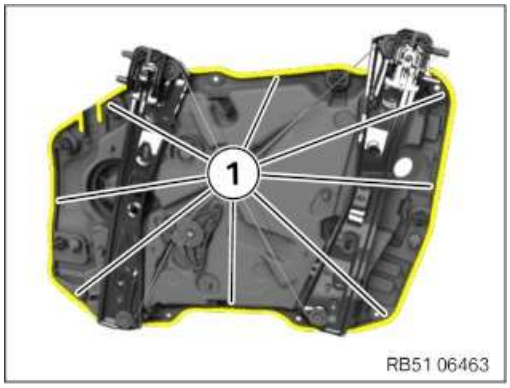
- Release screws (1) on front module carrier (2).



- Open bayonet fitting (1) by twisting and remove front module carrier (2).

7 – Installing front module carrier

Check



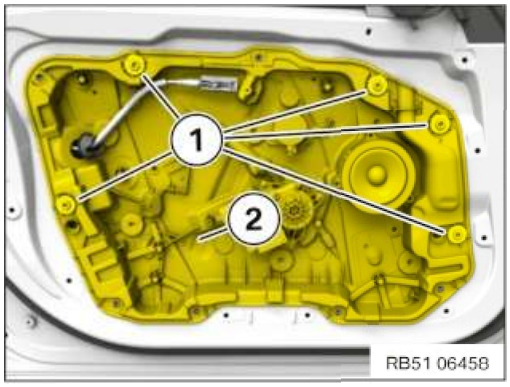
- Check seal (1) of the front module carrier for damage.

Result

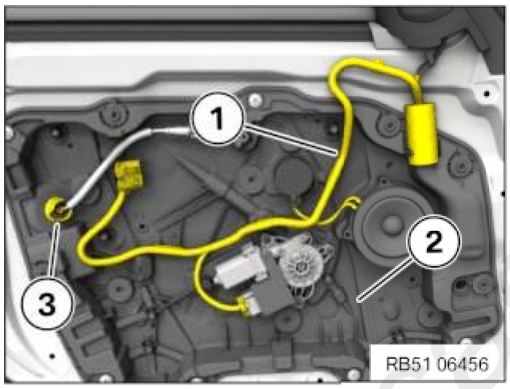
» Seal of the front module carrier is damaged.

Measure

- Renew the front module carrier.



- Position front module carrier (2) on the door.
- Lock bayonet fittings (1) by twisting them.



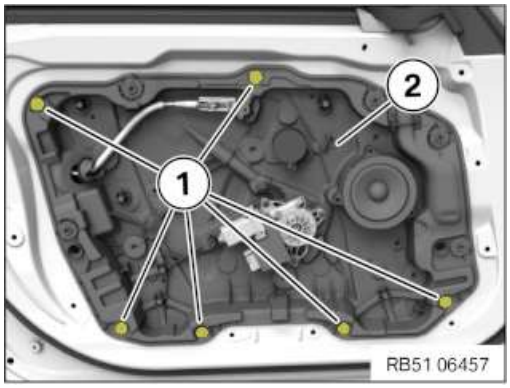
- Connect all electrical connectors and lock.
- Clip in wiring harness (1) on front module carrier (2).
- Install rubber grommet of the Bowden cable for the inner door opener (3).
- Check rubber grommet of the Bowden cable for the inner door handle (3) for correct seating.

▸ **Disconnecting all battery earth leads**



- See additional information.

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- Tighten screws (1) of the front module carrier (2).

Module carrier to front door

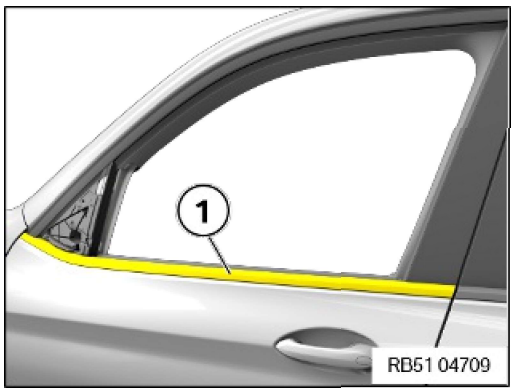
Torx socket M5x12		Tightening torque	8 Nm

- Move the power window upwards until the fixed side window glass correctly engages in both holders.

  Remove adhesive tape.

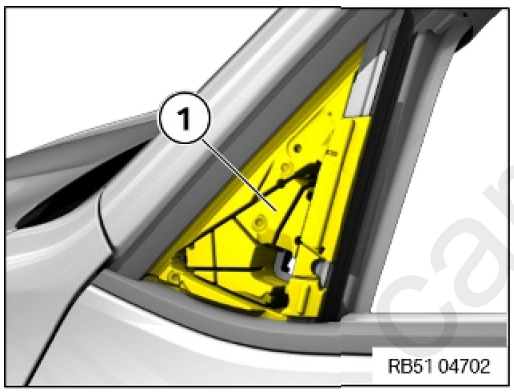
POSTPROCESSES

8 – Install outer weather strip



- Check outer weather strip (1) for damage, renew the outer weather strip (1) if required.
- Coat the outer weather strip (1) with a suitable lubricant prior to installation.
- Fit outer weather strip (1) on the front door.
- Press down the outer weather strip (1) across its entire length.

9 – Installing the exterior mirror



Check

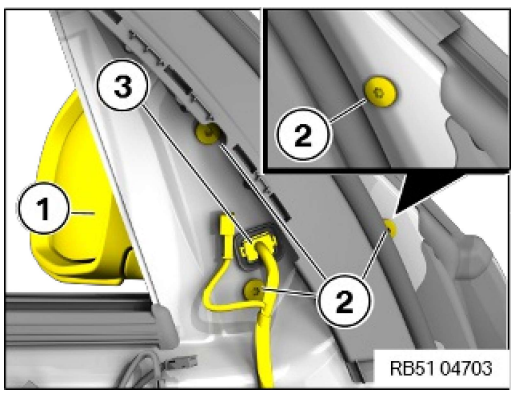
- Check mirror triangle seal (1) for damage.

Result

» The mirror triangle seal is damaged.

Measure

- Replace mirror triangle seal .



- Position exterior rearview mirror (1) and tighten screws (2).

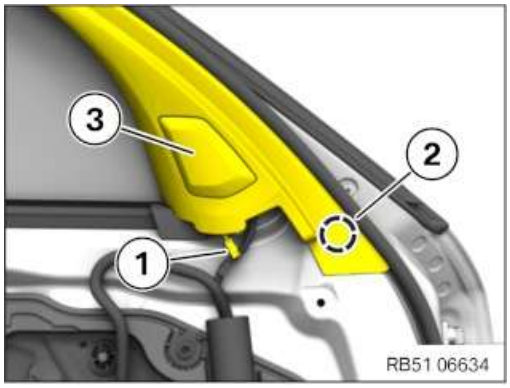
Exterior mirror to door

Thread-tapping hexagon screw		Tightening torque	10 Nm

- Connect connectors (3) and lock.

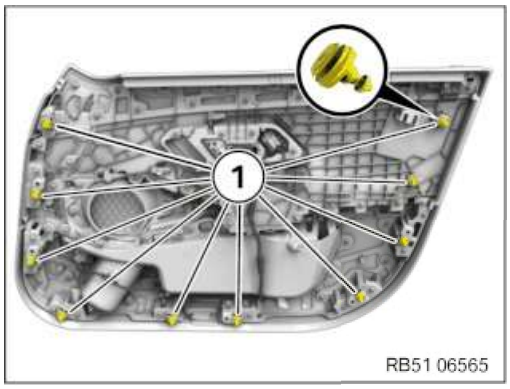
10 – Installing the cover on the inside of the window frame partially

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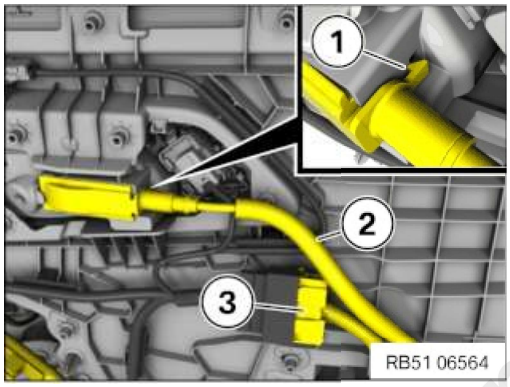
- Mount cover on the inner window frame (3) in the area of the exterior rearview mirror.
- Clip in the clip (2).
- If necessary, connect the connector (1) and lock it.

11 – Install door trim panel

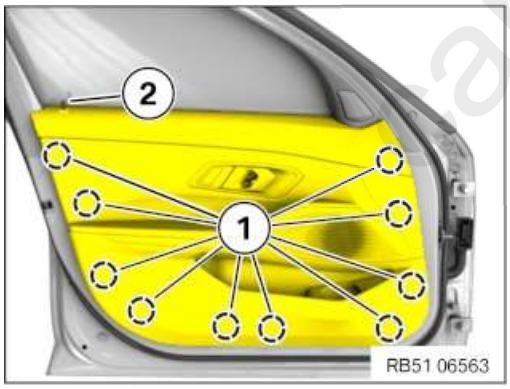


- Renew the clips (1).

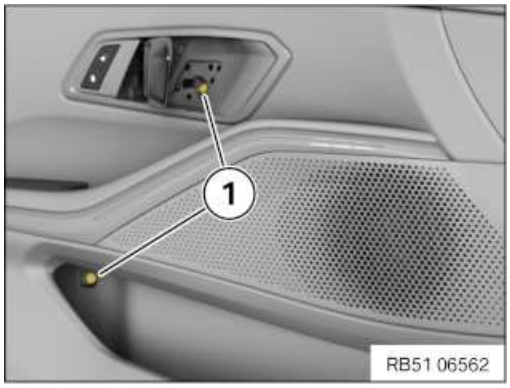
  Parts: Clips



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).

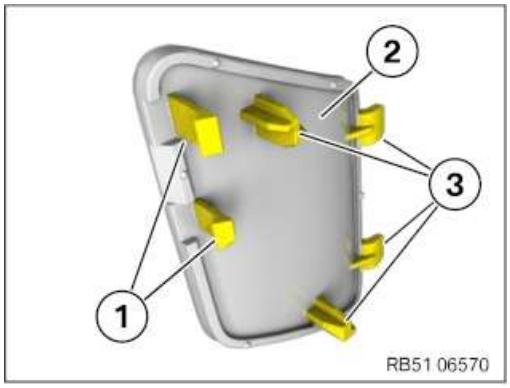


- Tighten the screws (1).

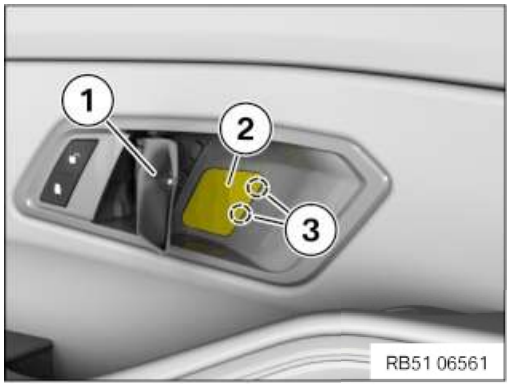
Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm

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- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

Module carrier to front door — Used in step 7

Torx socket M5x12		Tightening torque	8 Nm

Exterior mirror to door — Used in step 9

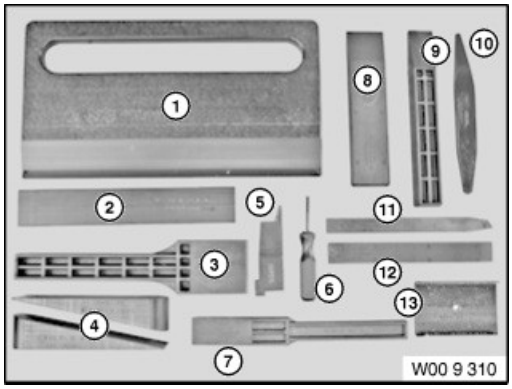
Thread-tapping hexagon screw		Tightening torque	10 Nm

Door trim panel to door — Used in step 11

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

0 495 484 (00 9 324) Panel wedge

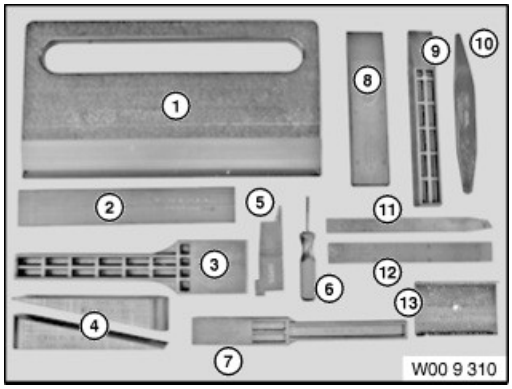


Common — Used in step 15

Usage	(Panel wedge (panel)) For removing cavity strips on the doors from E60
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 25 05 (230)

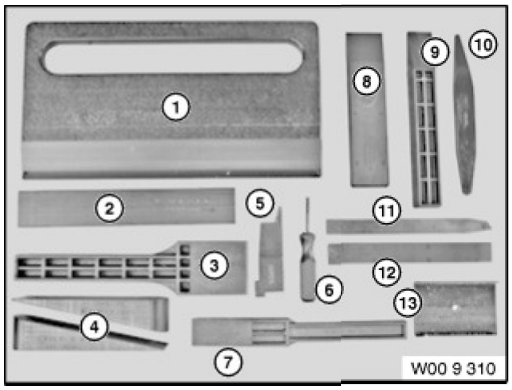
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0 493 752 (00 9 329) Case



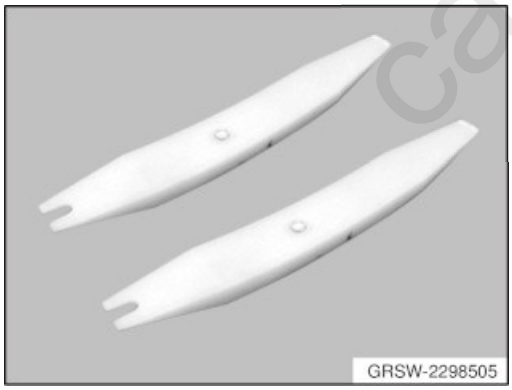
Common	Used in step 2
Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

0 490 538 (00 9 321) Folding stick



Common	Used in step 5
Usage	
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

2 298 505 Wedge



Common	Used in step 5
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

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0 496 569 (00 9 325) Wedge



Common	Used in step 6
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	67
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	67
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
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61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67

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51 33 066 Removing and installing the module carrier of the left front door

WARNING

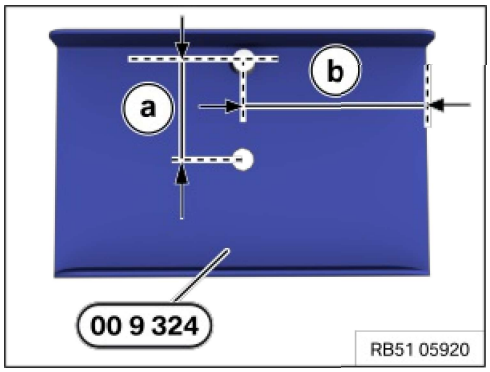
Working on 12 V vehicle electrical system.

Risk of short circuits! Risk of fire!

- Detach battery earth lead from battery.
- For additional batteries: Detach all battery earth leads from additional batteries.

PRELIMINARY WORK

1 – Preparing the special tool



- **Do this only if the upper bore hole is missing.**
- Mark and make the bore hole on the special tool 0 495 484 (00 9 324) according to the specified dimensions.

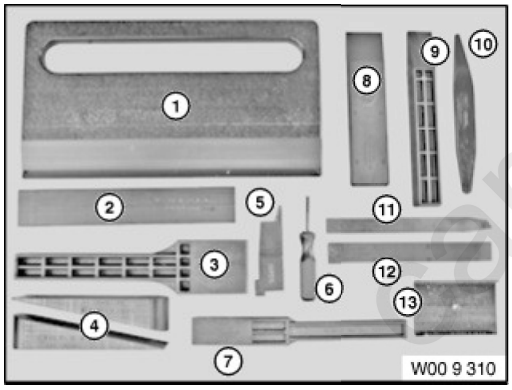
  Make a bore hole on the side with the long shank.

  The diameter of the bore hole is 6 mm.

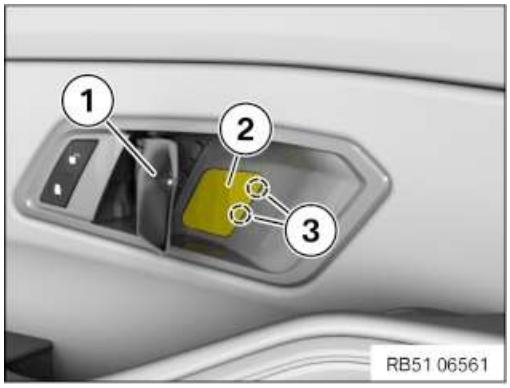
  Dimension (a) = 25 mm from the centre of the existing bore hole

  Dimension (b) = 50 mm from the outer edge of the special tool

2 – Remove door trim panel

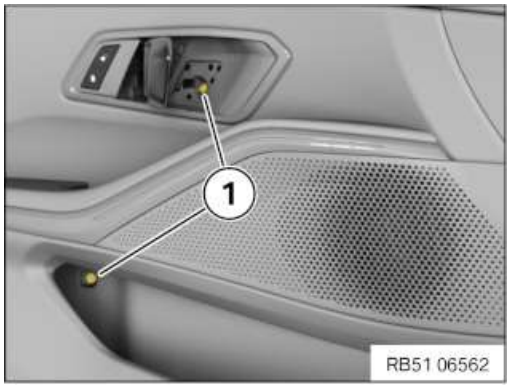


- Have the set of special tools 0 493 752 (00 9 329) ready.

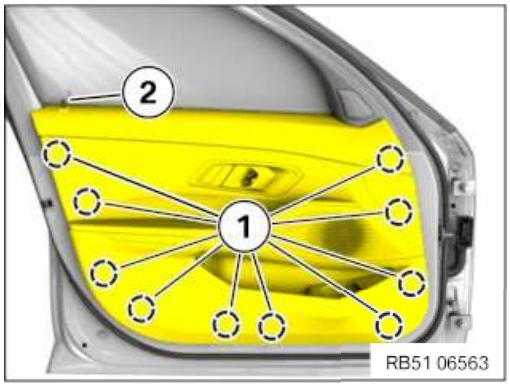


- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

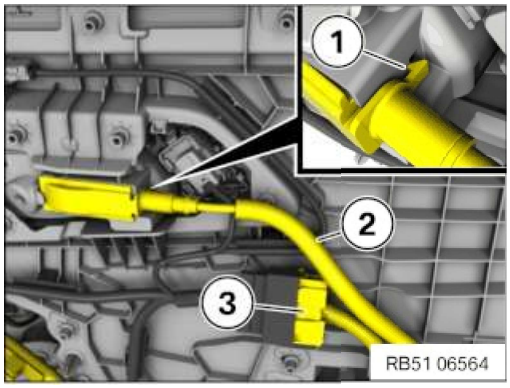
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- Loosen screws (1).



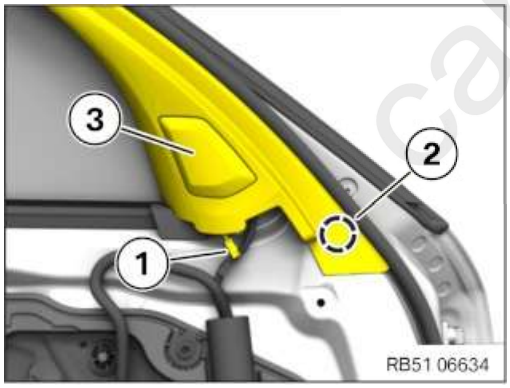
- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).



- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

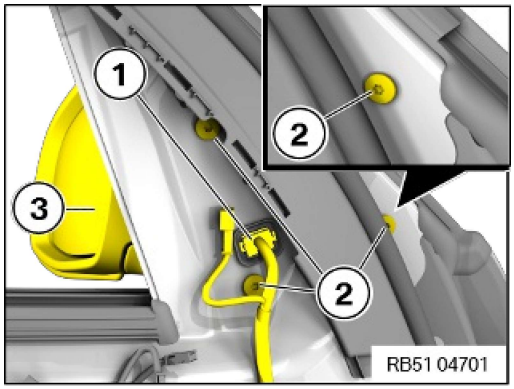
  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

3 – Partially removing the cover on the inner window frame



- If necessary, unlock and disconnect the plug connection (1).
- Unclip clip (2).
- Release the cover on inner window frame (3) in the area of the exterior rearview mirror.

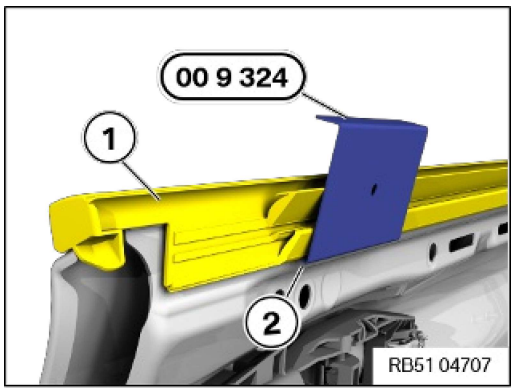
4 – Removing the exterior mirror



- Unlock plug connection (1) and disconnect.
- Release the screws (2) and remove the exterior rearview mirror (3).

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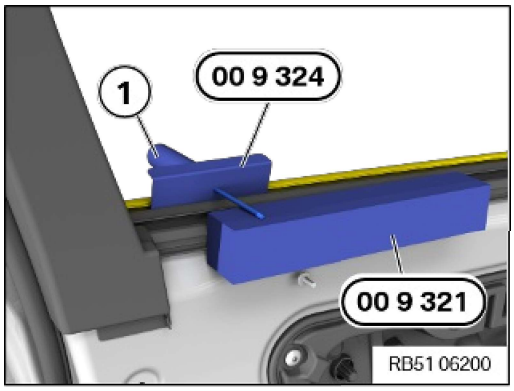
5 – Removing the outer weather strip



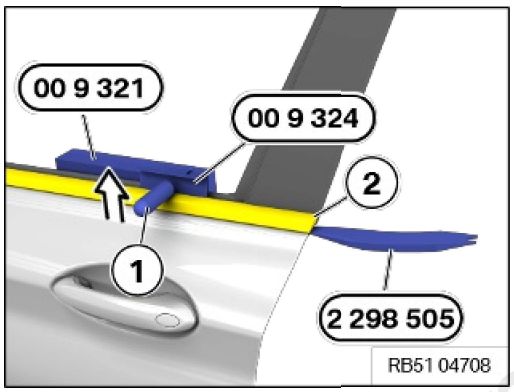
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Insert the special tool 0 495 484 (00 9 324) at the front (on A-pillar) into the window cavity and slide it toward the back.
- Position the special tool 0 495 484 (00 9 324) as shown at the lower edge of the outer weather strip (1) with the short shank (2).



- Place the special tool 0 490 538 (00 9 321) on the inner door panel.
- Thread a suitable tool (1) through the opening in the special tool 0 495 484 (00 9 324).



RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

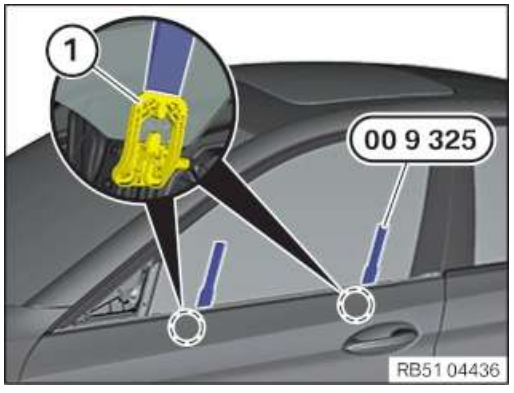
- Protect working area.
- Handle tools and components carefully.

- Lift up the outer rear weather strip (2) with the special tool 2 298 505 as shown; maximum 5 mm.
- With a suitable tool (1), move the lever in the direction of arrow using the special tool 0 490 538 (00 9 321) for support.

  When this happens, the special tool 0 495 484 (00 9 324) lifts the outer weather strip (2) upwards.
- Repeat this process step by step until the outer weather strip(2) is completely disassembled.

MAIN WORK

6 – Removing front module carrier



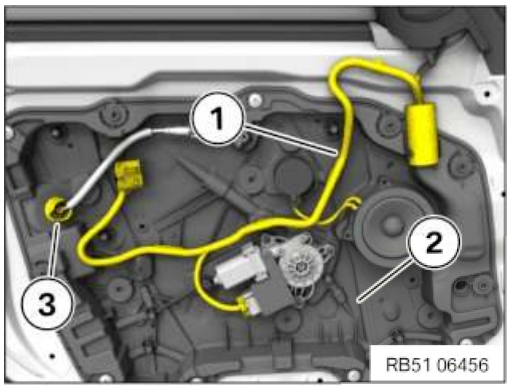
- Secure the door window glass to the door frame when it is closed using adhesive tape.
- Spread both holders (1) on the door window glass simultaneously using special tool 0 496 569 (00 9 325) until it is possible to detach the door window glass.
- Move the power window down.

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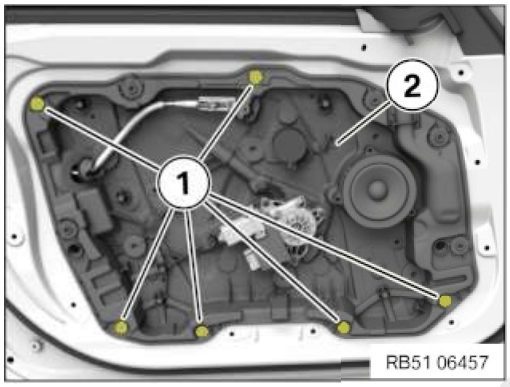
▶ **Disconnecting all battery earth leads**



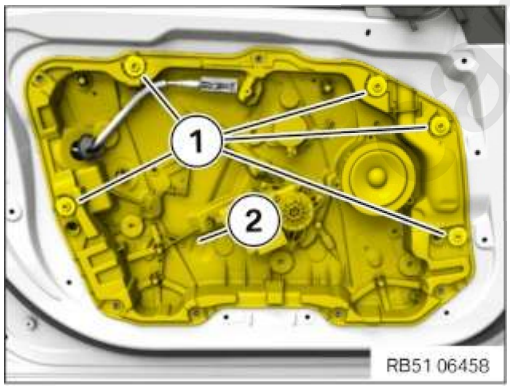
- See additional information.



- Unlock and disconnect all the electrical plug connections.
- Unclip wiring harness (1) on front module carrier (2).
- Release the rubber grommet of the Bowden cable for the inner door opener (3).



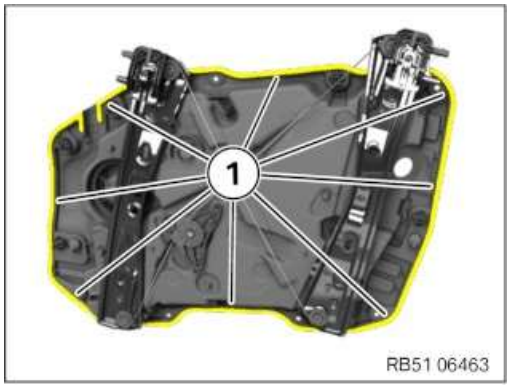
- Release screws (1) on front module carrier (2).



- Open bayonet fitting (1) by twisting and remove front module carrier (2).

7 – Installing front module carrier

Check



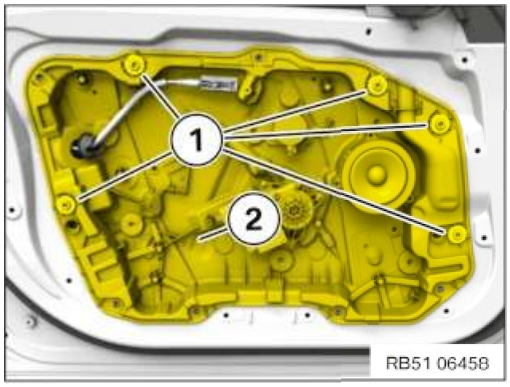
- Check seal (1) of the front module carrier for damage.

Result

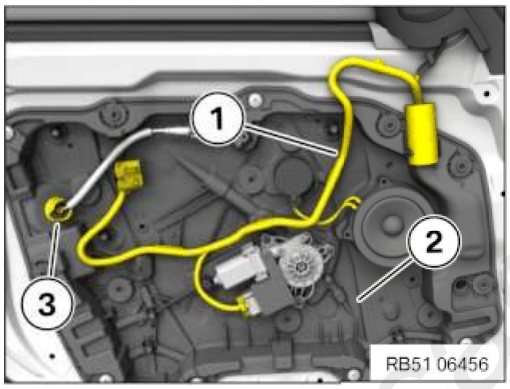
» Seal of the front module carrier is damaged.

Measure

- Renew the front module carrier.



- Position front module carrier (2) on the door.
- Lock bayonet fittings (1) by twisting them.



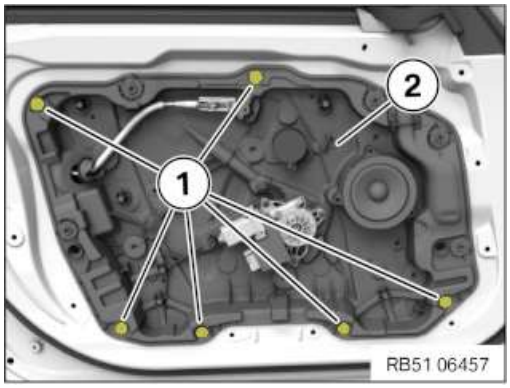
- Connect all electrical connectors and lock.
- Clip in wiring harness (1) on front module carrier (2).
- Install rubber grommet of the Bowden cable for the inner door opener (3).
- Check rubber grommet of the Bowden cable for the inner door handle (3) for correct seating.

▸ **Disconnecting all battery earth leads**



- See additional information.

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- Tighten screws (1) of the front module carrier (2).

Module carrier to front door

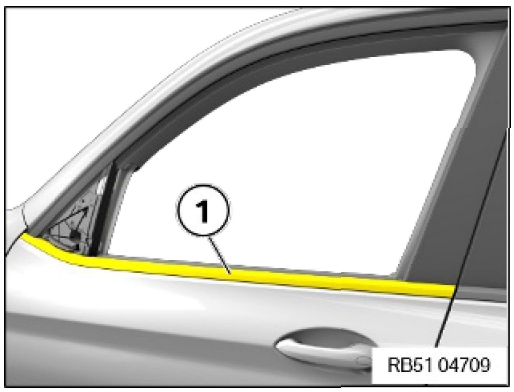
Torx socket M5x12		Tightening torque	8 Nm

- Move the power window upwards until the fixed side window glass correctly engages in both holders.

  Remove adhesive tape.

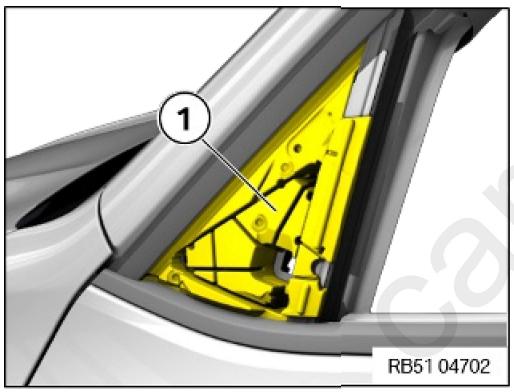
POSTPROCESSES

8 – Install outer weather strip



- Check outer weather strip (1) for damage, renew the outer weather strip (1) if required.
- Coat the outer weather strip (1) with a suitable lubricant prior to installation.
- Fit outer weather strip (1) on the front door.
- Press down the outer weather strip (1) across its entire length.

9 – Installing the exterior mirror



Check

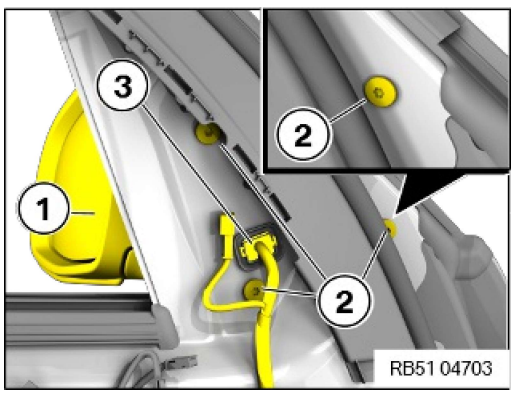
- Check mirror triangle seal (1) for damage.

Result

» The mirror triangle seal is damaged.

Measure

- Replace mirror triangle seal .



- Position exterior rearview mirror (1) and tighten screws (2).

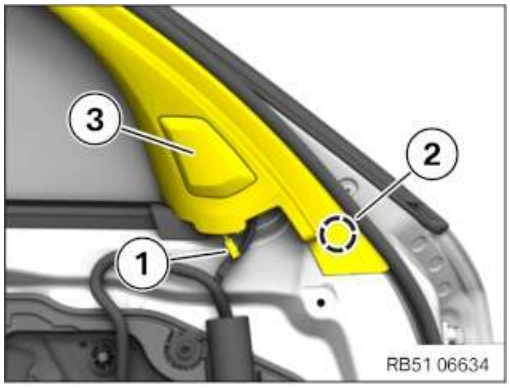
Exterior mirror to door

Thread-tapping hexagon screw		Tightening torque	10 Nm

- Connect connectors (3) and lock.

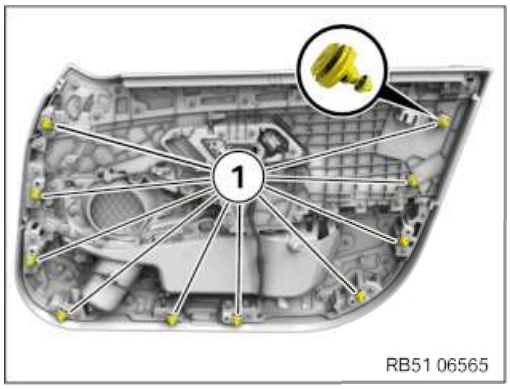
10 – Installing the cover on the inside of the window frame partially

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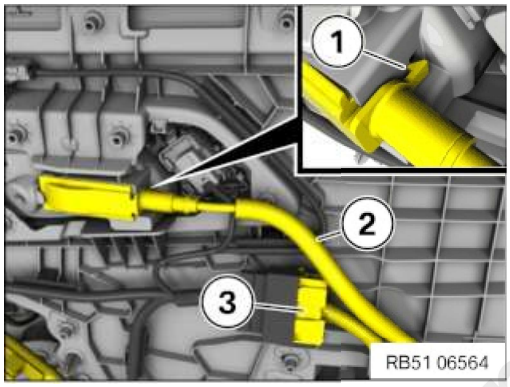
- Mount cover on the inner window frame (3) in the area of the exterior rearview mirror.
- Clip in the clip (2).
- If necessary, connect the connector (1) and lock it.

11 – Install door trim panel

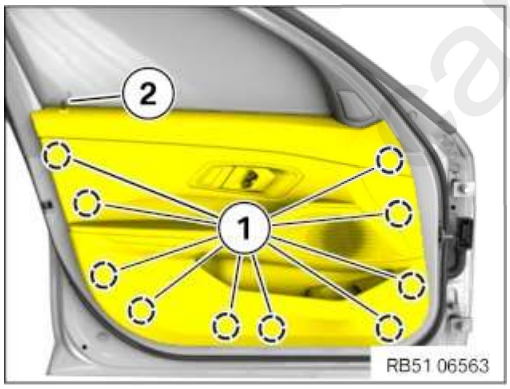


- Renew the clips (1).

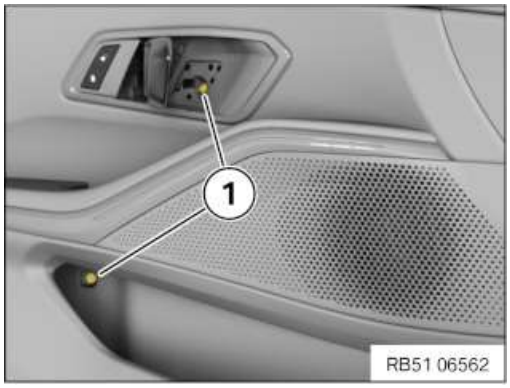
  Parts: Clips



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).

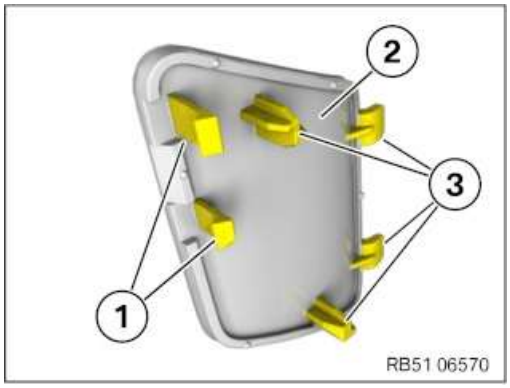


- Tighten the screws (1).

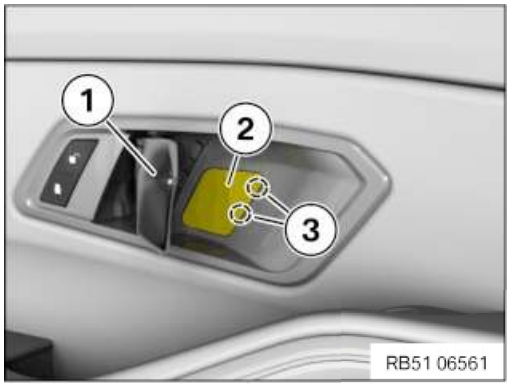
Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm

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- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

Module carrier to front door — Used in step 7

Torx socket M5x12		Tightening torque	8 Nm

Exterior mirror to door — Used in step 9

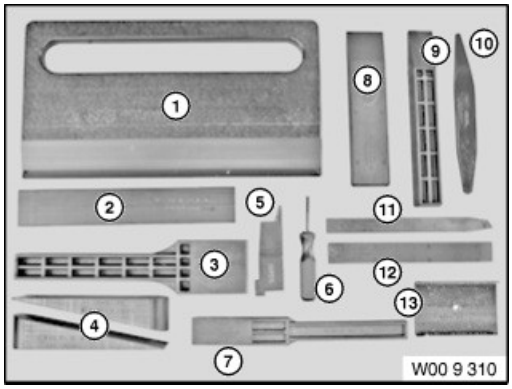
Thread-tapping hexagon screw		Tightening torque	10 Nm

Door trim panel to door — Used in step 11

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

0 495 484 (00 9 324) Panel wedge

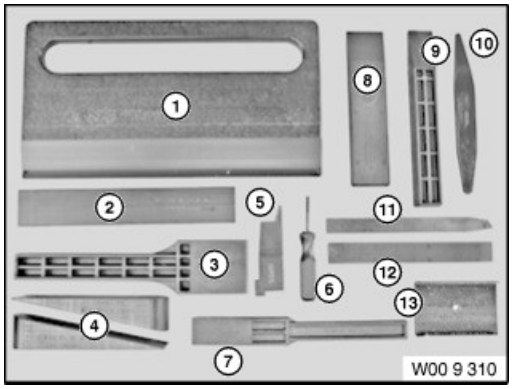


Common — Used in step 15

Usage	(Panel wedge (panel)) For removing cavity strips on the doors from E60
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 25 05 (230)

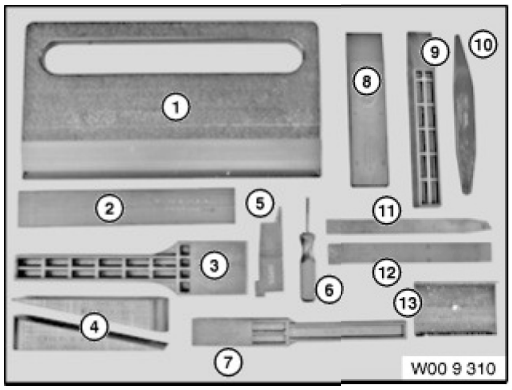
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0 493 752 (00 9 329) Case



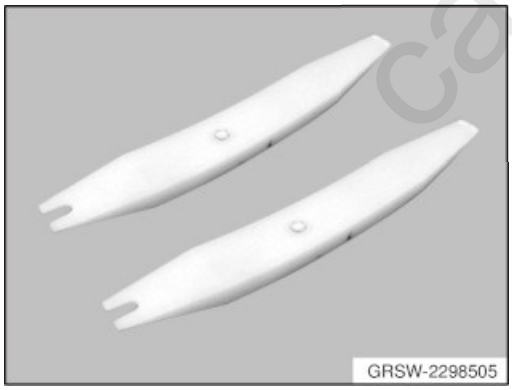
Common	Used in step 2
Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

0 490 538 (00 9 321) Folding stick



Common	Used in step 5
Usage	
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

2 298 505 Wedge



Common	Used in step 5
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

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0 496 569 (00 9 325) Wedge



Common	Used in step 6
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	67
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	67
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
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61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67
61 20 900 Disconnecting and connecting battery earth lead	67

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51 33 070 Replace left front door module carrier

WARNING

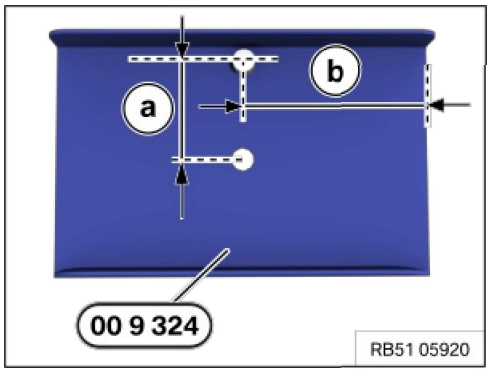
Working on 12 V vehicle electrical system.

Risk of short circuits! Risk of fire!

- Detach battery earth lead from battery.
- For additional batteries: Detach all battery earth leads from additional batteries.

PRELIMINARY WORK

1 – Preparing the special tool



- **Do this only if the upper bore hole is missing.**
- Mark and make the bore hole on the special tool 0 495 484 (00 9 324) according to the specified dimensions.

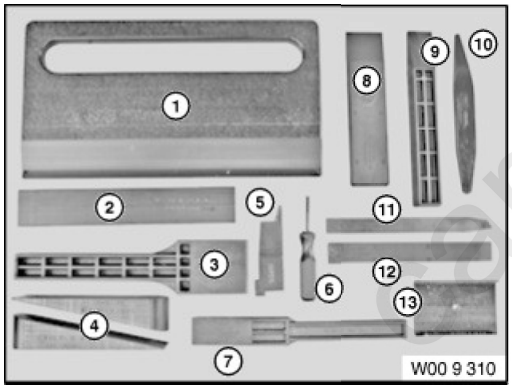
  Make a bore hole on the side with the long shank.

  The diameter of the bore hole is 6 mm.

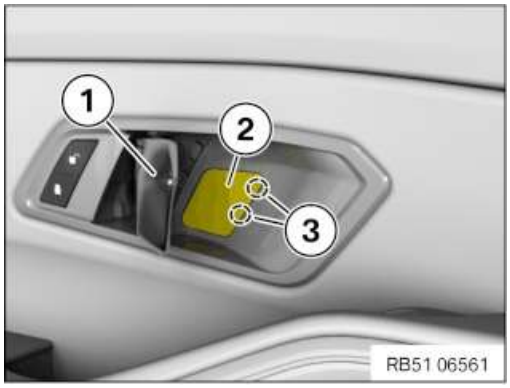
  Dimension (a) = 25 mm from the centre of the existing bore hole

  Dimension (b) = 50 mm from the outer edge of the special tool

2 – Remove door trim panel

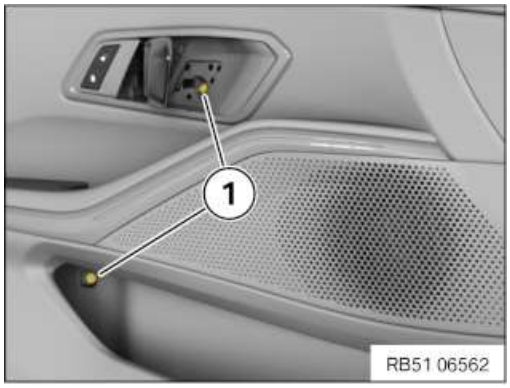


- Have the set of special tools 0 493 752 (00 9 329) ready.

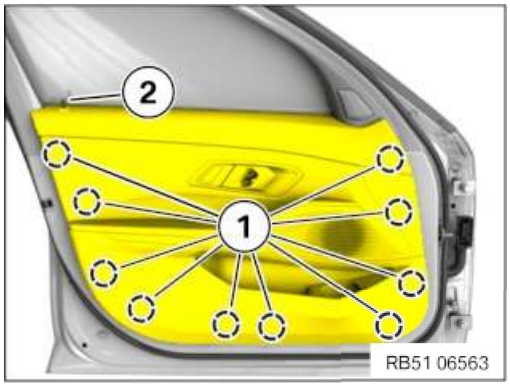


- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

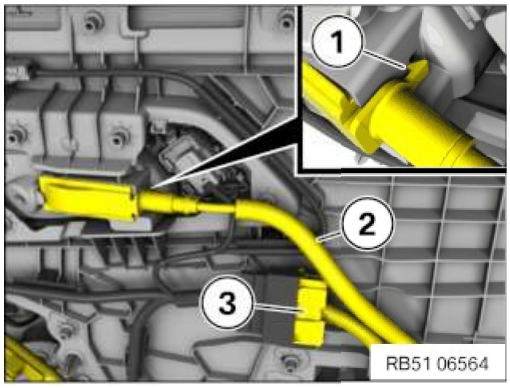
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- Loosen screws (1).



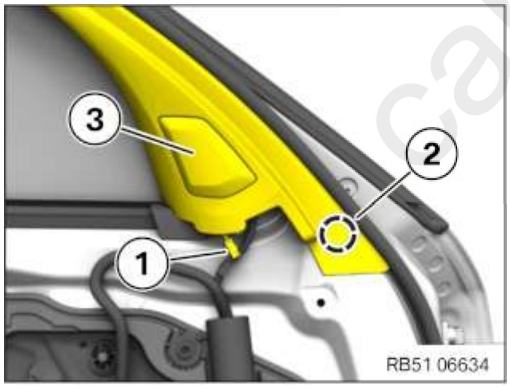
- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).



- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

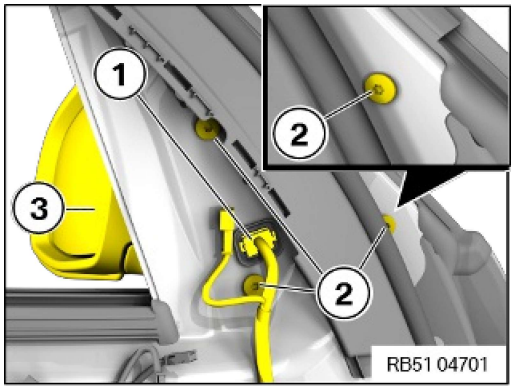
  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

3 – Partially removing the cover on the inner window frame



- If necessary, unlock and disconnect the plug connection (1).
- Unclip clip (2).
- Release the cover on inner window frame (3) in the area of the exterior rearview mirror.

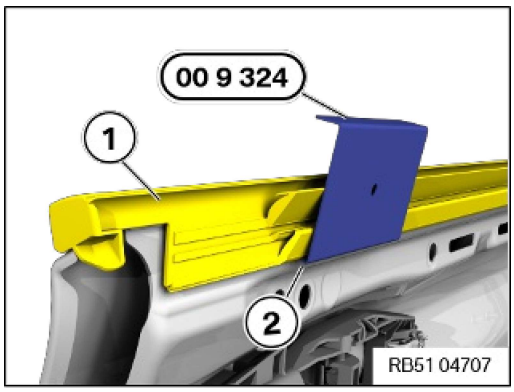
4 – Removing the exterior mirror



- Unlock plug connection (1) and disconnect.
- Release the screws (2) and remove the exterior rearview mirror (3).

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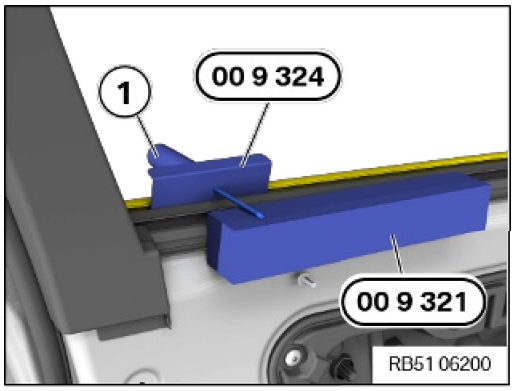
5 – Removing the outer weather strip



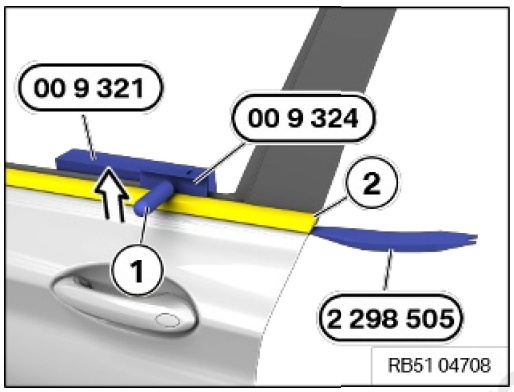
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Insert the special tool 0 495 484 (00 9 324) at the front (on A-pillar) into the window cavity and slide it toward the back.
- Position the special tool 0 495 484 (00 9 324) as shown at the lower edge of the outer weather strip (1) with the short shank (2).



- Place the special tool 0 490 538 (00 9 321) on the inner door panel.
- Thread a suitable tool (1) through the opening in the special tool 0 495 484 (00 9 324).



RISK OF DAMAGE

Scratches.

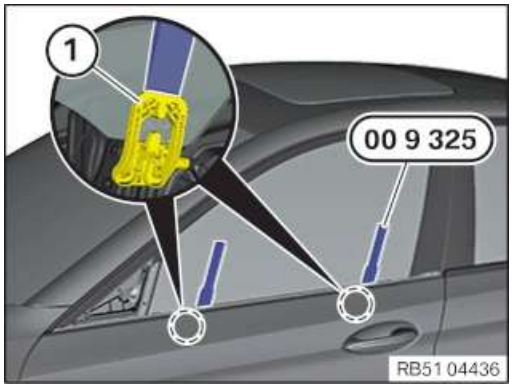
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Lift up the outer rear weather strip (2) with the special tool 2 298 505 as shown; maximum 5 mm.
- With a suitable tool (1), move the lever in the direction of arrow using the special tool 0 490 538 (00 9 321) for support.

  When this happens, the special tool 0 495 484 (00 9 324) lifts the outer weather strip (2) upwards.
- Repeat this process step by step until the outer weather strip(2) is completely disassembled.

6 – Removing front module carrier



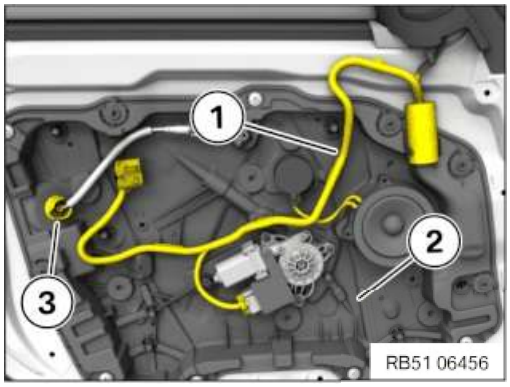
- Secure the door window glass to the door frame when it is closed using adhesive tape.
- Spread both holders (1) on the door window glass simultaneously using special tool 0 496 569 (00 9 325) until it is possible to detach the door window glass.
- Move the power window down.

▸ **Disconnecting all battery earth leads**

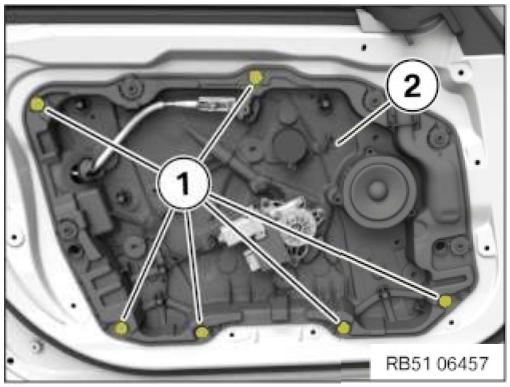
cardiagn.com



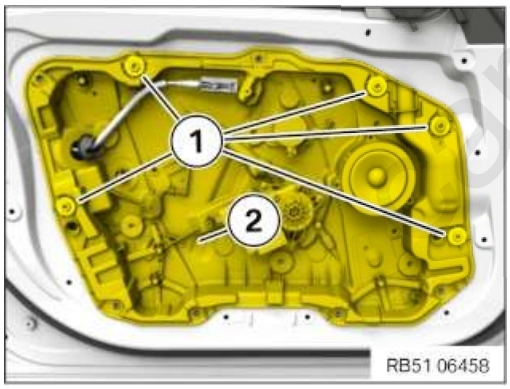
- See additional information.



- Unlock and disconnect all the electrical plug connections.
- Unclip wiring harness (1) on front module carrier (2).
- Release the rubber grommet of the Bowden cable for the inner door opener (3).



- Release screws (1) on front module carrier (2).

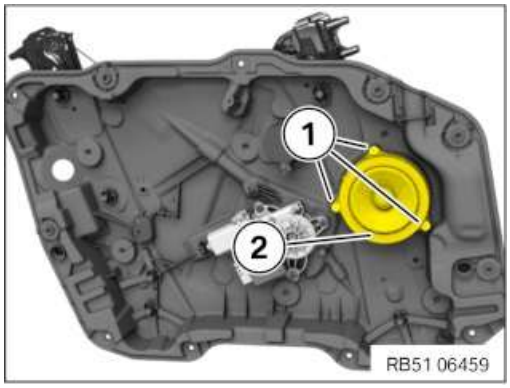


- Open bayonet fitting (1) by twisting and remove front module carrier (2).

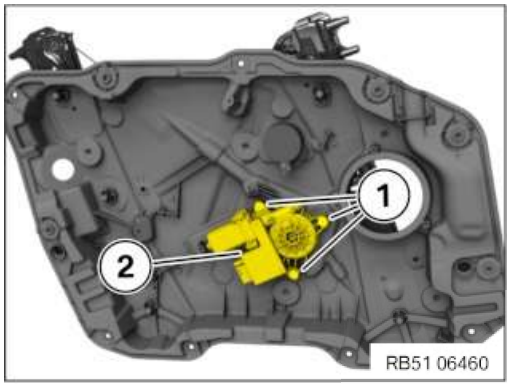
MAIN WORK

7 – Replacing the module carrier

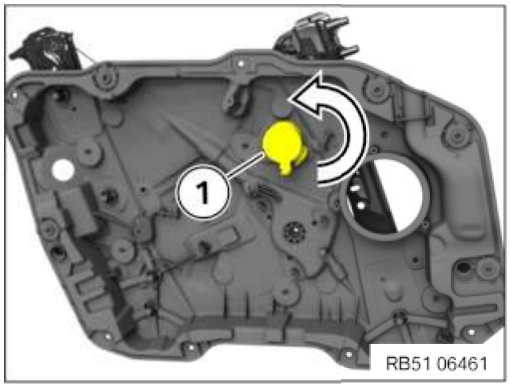
ardiagn.com



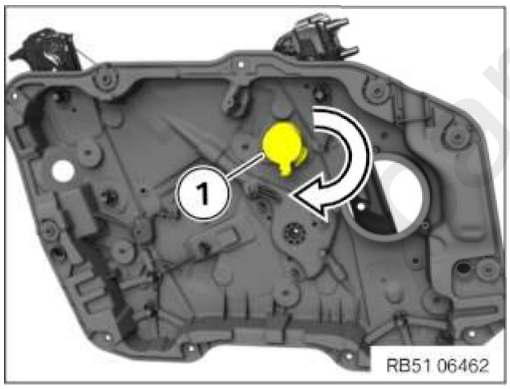
- Loosen screws (1).
- Remove speaker (2).



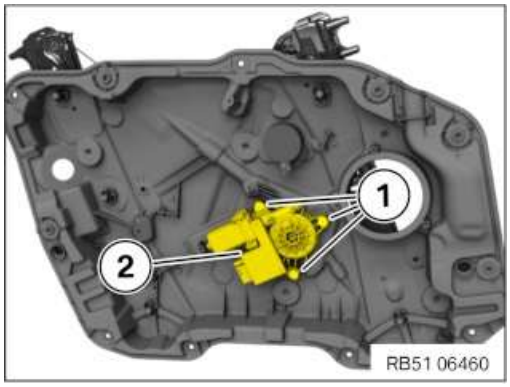
- Loosen screws (1).
- Remove flat motor (2).



- Twist and unlock airbag sensor (1) in direction of arrow.
- Remove airbag sensor (1).



- Position airbag sensor (1) on the new module carrier.
- Twist and lock airbag sensor (1) in direction of arrow.

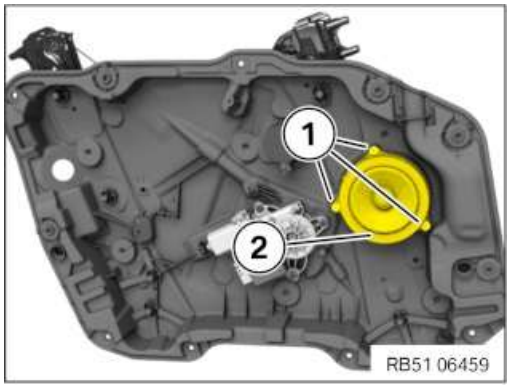


- Position flat motor (2) on the new module carrier.
- Tighten the screws (1).

Flat motor on door module carrier

Oval-head screw for thermoplastic		Tightening torque	3,5 Nm

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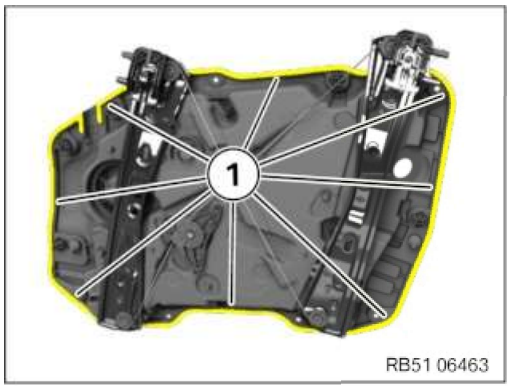
- Position speaker (2) on the new module carrier.
- Tighten the screws (1).

Door speaker on door module carrier

Oval-head screw for thermoplastic		Tightening torque	2 Nm

POSTPROCESSES

8 – Installing front module carrier



Check

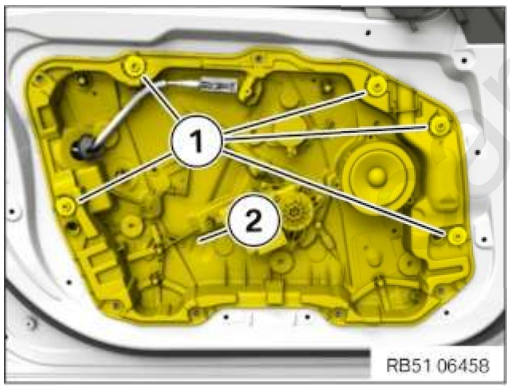
- Check seal (1) of the front module carrier for damage.

Result

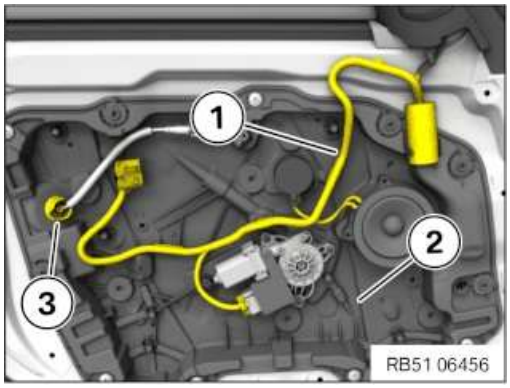
» Seal of the front module carrier is damaged.

Measure

- Renew the front module carrier.



- Position front module carrier (2) on the door.
- Lock bayonet fittings (1) by twisting them.



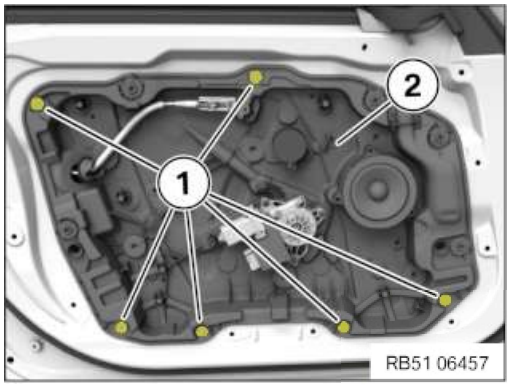
- Connect all electrical connectors and lock.
- Clip in wiring harness (1) on front module carrier (2).
- Install rubber grommet of the Bowden cable for the inner door opener (3).
- Check rubber grommet of the Bowden cable for the inner door handle (3) for correct seating.

▸ **Disconnecting all battery earth leads**

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- See additional information.



- Tighten screws (1) of the front module carrier (2).

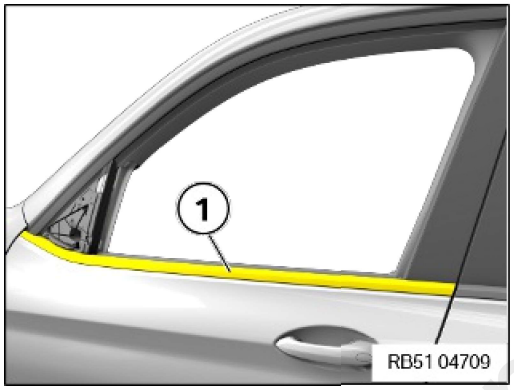
Module carrier to front door

Torx socket M5x12		Tightening torque	8 Nm

- Move the power window upwards until the fixed side window glass correctly engages in both holders.

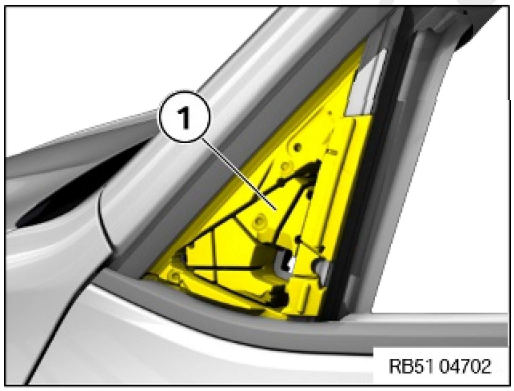
  Remove adhesive tape.

9 – Install outer weather strip



- Check outer weather strip (1) for damage, renew the outer weather strip (1) if required.
- Coat the outer weather strip (1) with a suitable lubricant prior to installation.
- Fit outer weather strip (1) on the front door.
- Press down the outer weather strip (1) across its entire length.

10 – Installing the exterior mirror



Check

- Check mirror triangle seal (1) for damage.

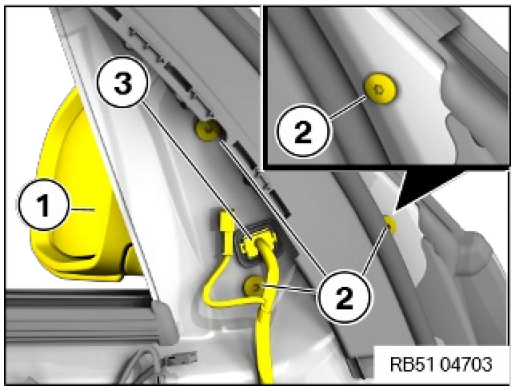
Result

» The mirror triangle seal is damaged.

Measure

- Replace mirror triangle seal .

carsdiagn.com



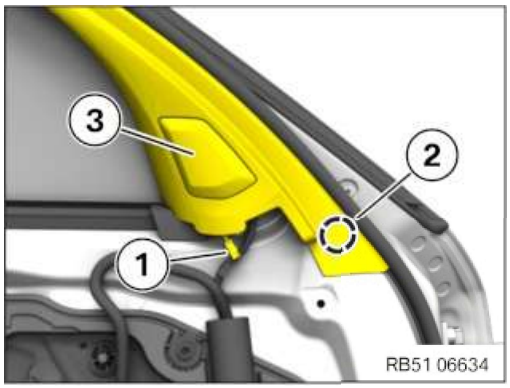
- Position exterior rearview mirror (1) and tighten screws (2).

Exterior mirror to door

Thread-tapping hexagon screw		Tightening torque	10 Nm

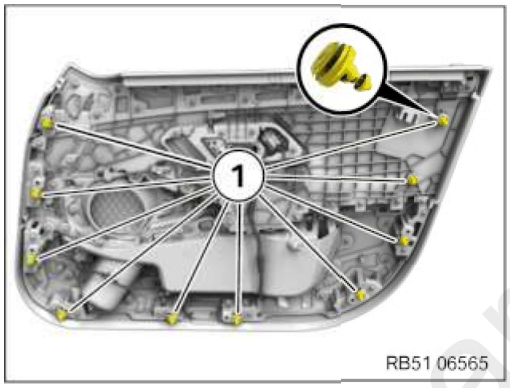
- Connect connectors (3) and lock.

11 – Installing the cover on the inside of the window frame partially



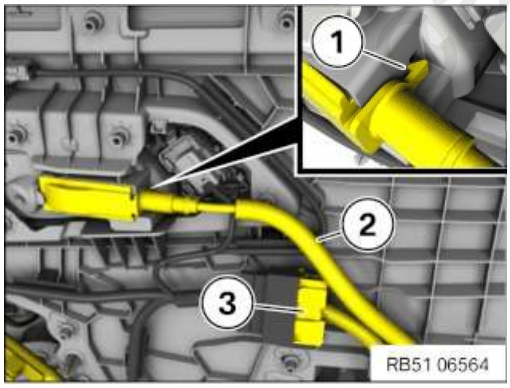
- Mount cover on the inner window frame (3) in the area of the exterior rearview mirror.
- Clip in the clip (2).
- If necessary, connect the connector (1) and lock it.

12 – Install door trim panel

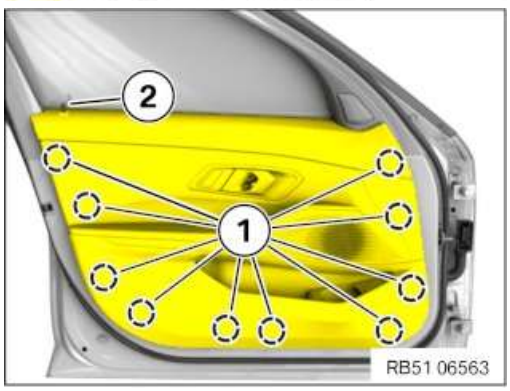


- Renew the clips (1).

  Parts: Clips

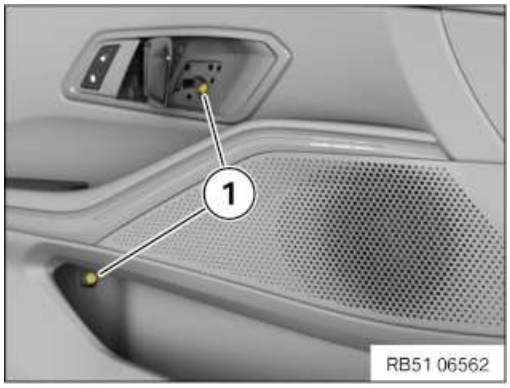


- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).

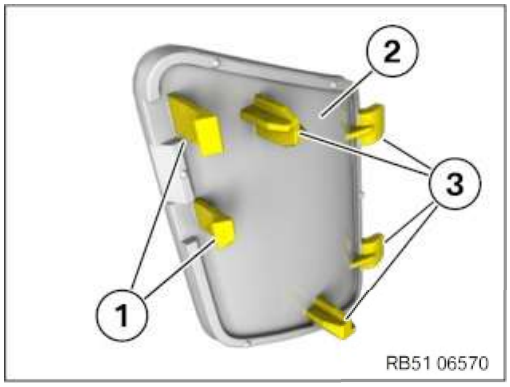
erdiagn.com



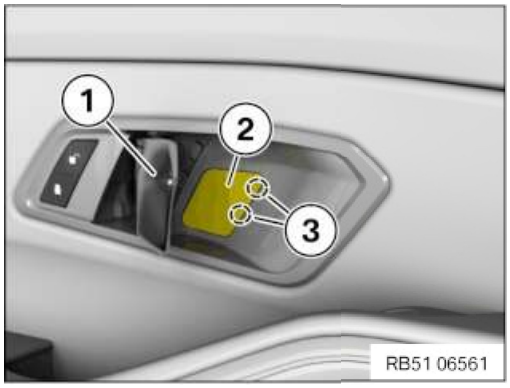
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

Flat motor on door module carrier Used in step 7

Oval-head screw for thermoplastic		Tightening torque	3,5 Nm

Door speaker on door module carrier Used in step 7

Oval-head screw for thermoplastic		Tightening torque	2 Nm

Module carrier to front door Used in step 8

Torx socket M5x12		Tightening torque	8 Nm

Exterior mirror to door Used in step 10

Thread-tapping hexagon screw		Tightening torque	10 Nm

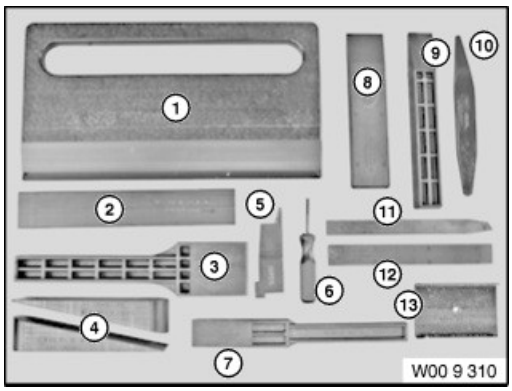
Door trim panel to door Used in step 12

Screw TS5x20		Tightening torque	2,6 Nm

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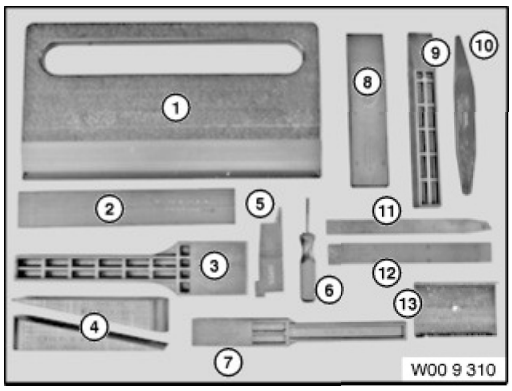
Overview of Special Tools

0 495 484 (00 9 324) Panel wedge



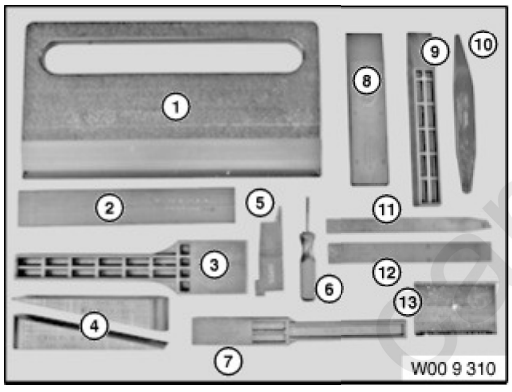
Common	Used in step 15
Usage	(Panel wedge (panel)) For removing cavity strips on the doors from E60
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 25 05 (230)

0 493 752 (00 9 329) Case



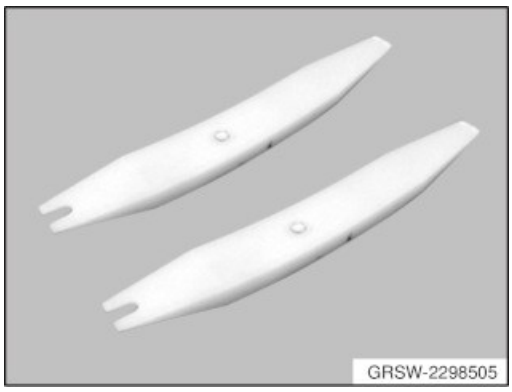
Common	Used in step 2
Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

0 490 538 (00 9 321) Folding stick



Common	Used in step 5
Usage	
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

2 298 505 Wedge



Common	Used in step 5
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

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0 496 569 (00 9 325) Wedge



Common	Used in step 6
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	68
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	68
61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	68
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	68
61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting battery earth lead	68
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61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	68
61 20 900 Disconnecting and connecting battery earth lead	68

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61 20 900 Disconnecting and connecting battery earth lead	68
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61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting battery earth lead	68

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51 33 072 Replace right front door module carrier

WARNING

Working on 12 V vehicle electrical system.

Risk of short circuits! Risk of fire!

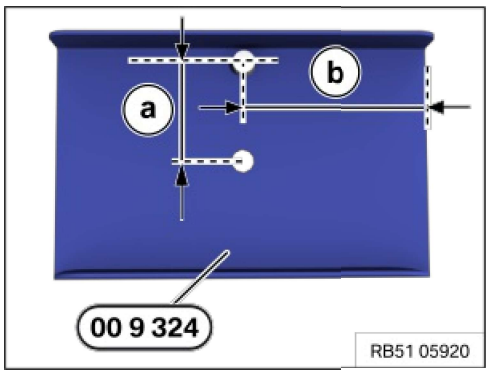
- Detach battery earth lead from battery.
- For additional batteries: Detach all battery earth leads from additional batteries.

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

1 – Preparing the special tool



- **Do this only if the upper bore hole is missing.**
- Mark and make the bore hole on the special tool 0 495 484 (00 9 324) according to the specified dimensions.

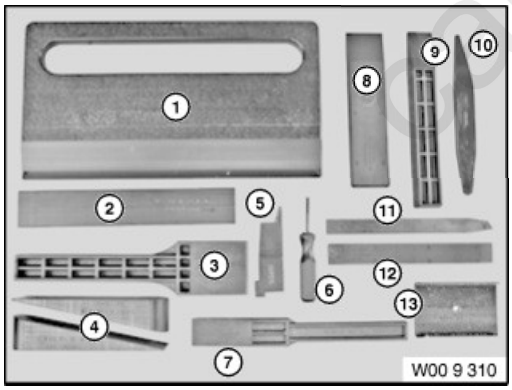
  Make a bore hole on the side with the long shank.

  The diameter of the bore hole is 6 mm.

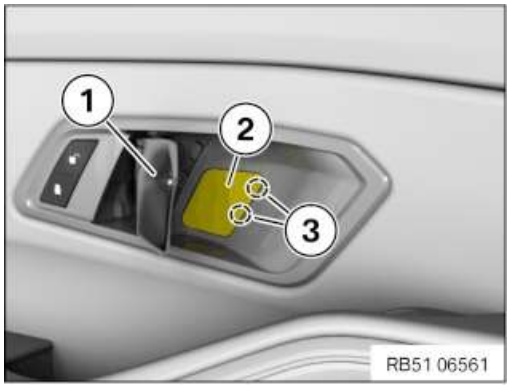
  Dimension (a) = 25 mm from the centre of the existing bore hole

  Dimension (b) = 50 mm from the outer edge of the special tool

2 – Remove door trim panel

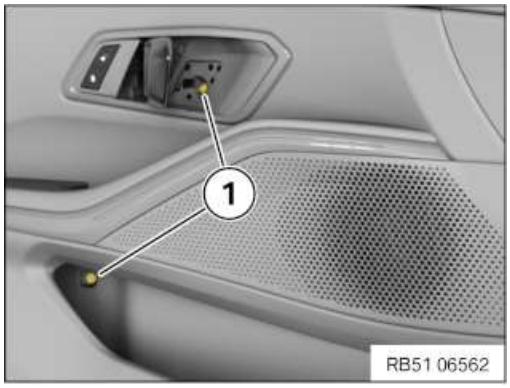


- Have the set of special tools 0 493 752 (00 9 329) ready.

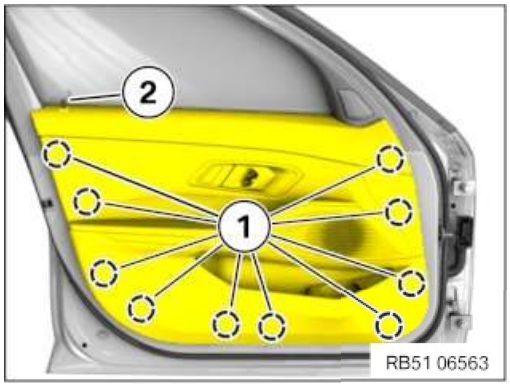


- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

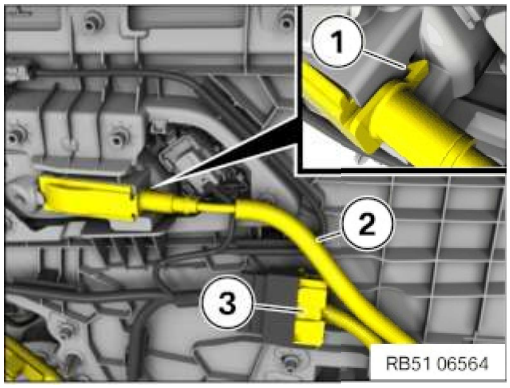
cardiagn.com



- Loosen screws (1).



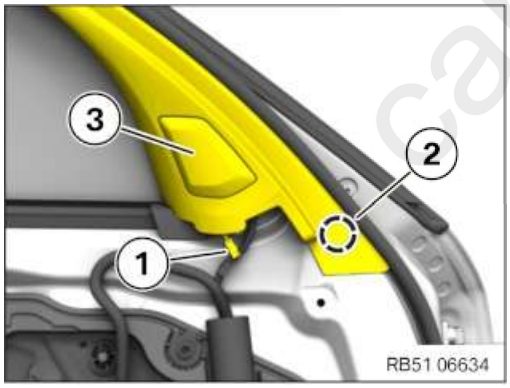
- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).



- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

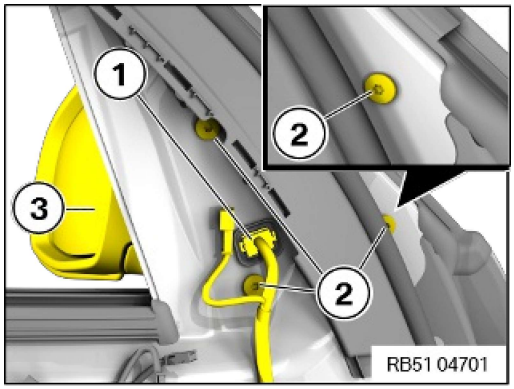
  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

3 – Partially removing the cover on the inner window frame



- If necessary, unlock and disconnect the plug connection (1).
- Unclip clip (2).
- Release the cover on inner window frame (3) in the area of the exterior rearview mirror.

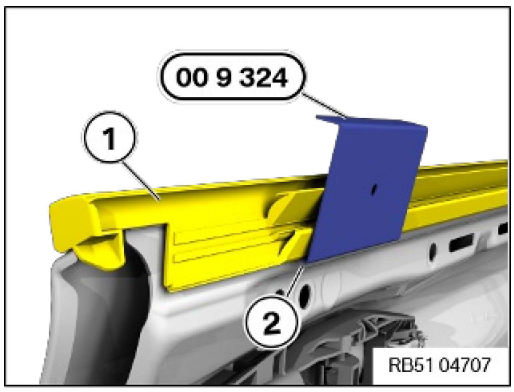
4 – Removing the exterior mirror



- Unlock plug connection (1) and disconnect.
- Release the screws (2) and remove the exterior rearview mirror (3).

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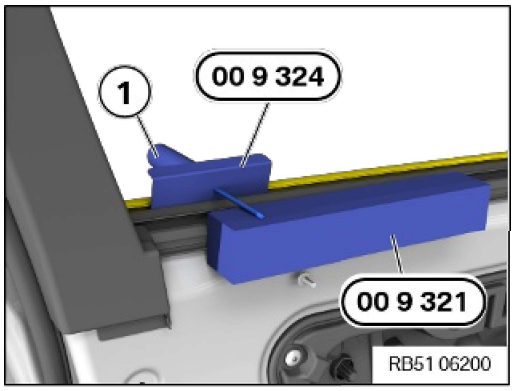
5 – Removing the outer weather strip



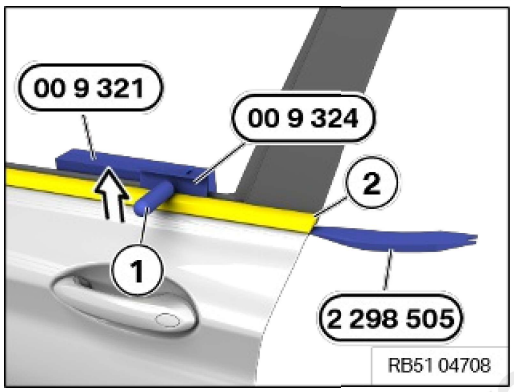
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Insert the special tool 0 495 484 (00 9 324) at the front (on A-pillar) into the window cavity and slide it toward the back.
- Position the special tool 0 495 484 (00 9 324) as shown at the lower edge of the outer weather strip (1) with the short shank (2).



- Place the special tool 0 490 538 (00 9 321) on the inner door panel.
- Thread a suitable tool (1) through the opening in the special tool 0 495 484 (00 9 324).



RISK OF DAMAGE

Scratches.

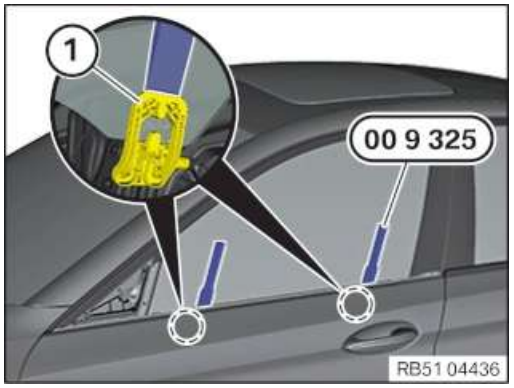
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Lift up the outer rear weather strip (2) with the special tool 2 298 505 as shown; maximum 5 mm.
- With a suitable tool (1), move the lever in the direction of arrow using the special tool 0 490 538 (00 9 321) for support.

  When this happens, the special tool 0 495 484 (00 9 324) lifts the outer weather strip (2) upwards.
- Repeat this process step by step until the outer weather strip(2) is completely disassembled.

6 – Removing front module carrier



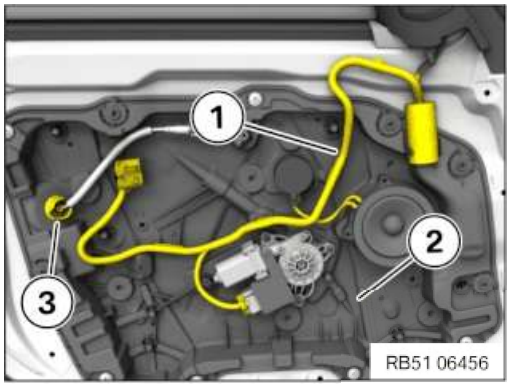
- Secure the door window glass to the door frame when it is closed using adhesive tape.
- Spread both holders (1) on the door window glass simultaneously using special tool 0 496 569 (00 9 325) until it is possible to detach the door window glass.
- Move the power window down.

▸ **Disconnecting all battery earth leads**

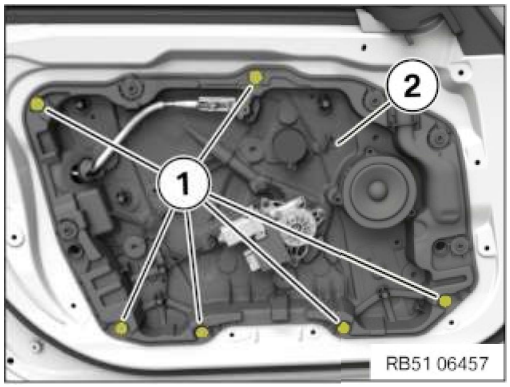
cardiagn.com



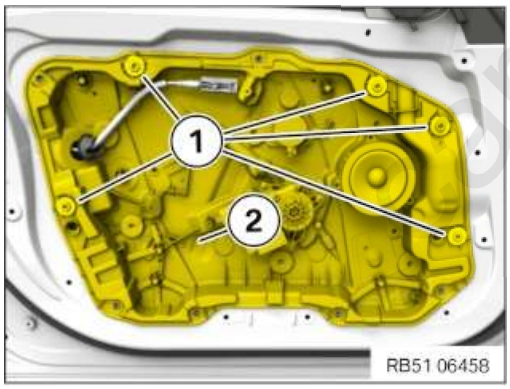
- See additional information.



- Unlock and disconnect all the electrical plug connections.
- Unclip wiring harness (1) on front module carrier (2).
- Release the rubber grommet of the Bowden cable for the inner door opener (3).



- Release screws (1) on front module carrier (2).

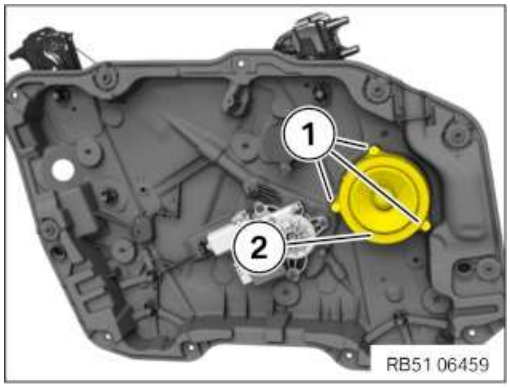


- Open bayonet fitting (1) by twisting and remove front module carrier (2).

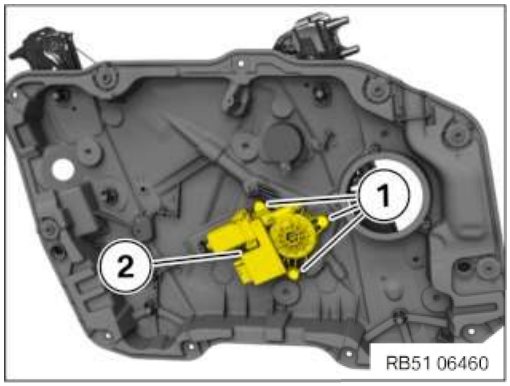
MAIN WORK

7 – Replacing the module carrier

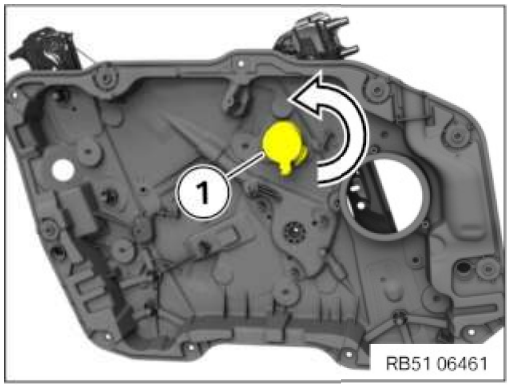
ardiagn.com



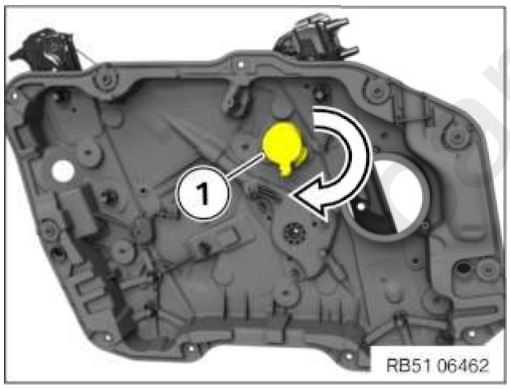
- Loosen screws (1).
- Remove speaker (2).



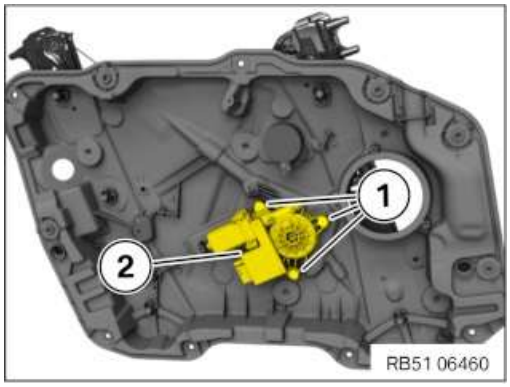
- Loosen screws (1).
- Remove flat motor (2).



- Twist and unlock airbag sensor (1) in direction of arrow.
- Remove airbag sensor (1).



- Position airbag sensor (1) on the new module carrier.
- Twist and lock airbag sensor (1) in direction of arrow.

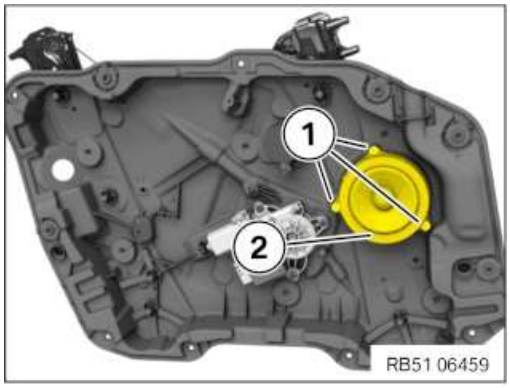


- Position flat motor (2) on the new module carrier.
- Tighten the screws (1).

Flat motor on door module carrier

Oval-head screw for thermoplastic		Tightening torque	3,5 Nm

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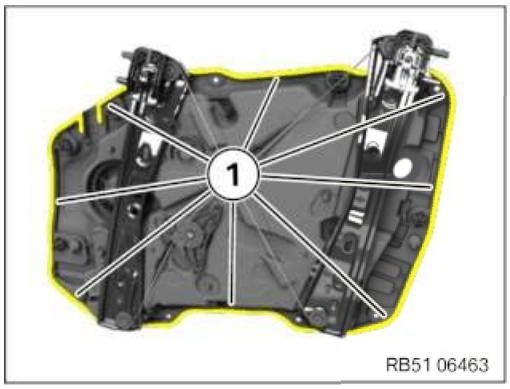
- Position speaker (2) on the new module carrier.
- Tighten the screws (1).

Door speaker on door module carrier

Oval-head screw for thermoplastic		Tightening torque	2 Nm

POSTPROCESSES

8 – Installing front module carrier



Check

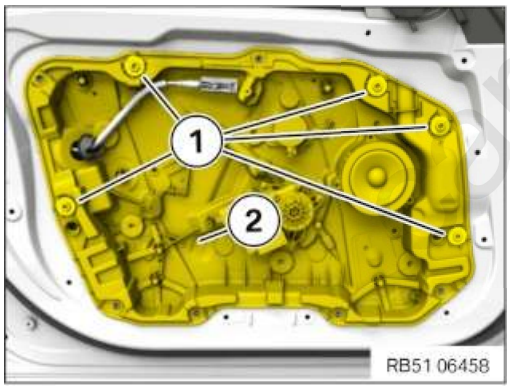
- Check seal (1) of the front module carrier for damage.

Result

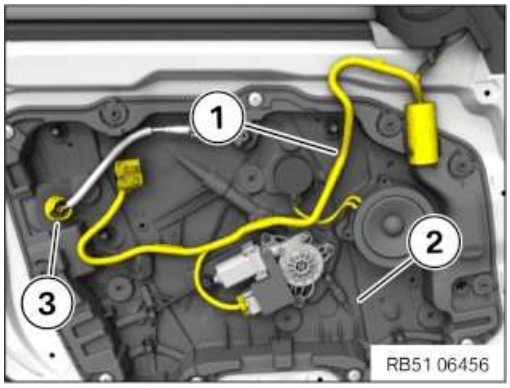
» Seal of the front module carrier is damaged.

Measure

- Renew the front module carrier.



- Position front module carrier (2) on the door.
- Lock bayonet fittings (1) by twisting them.



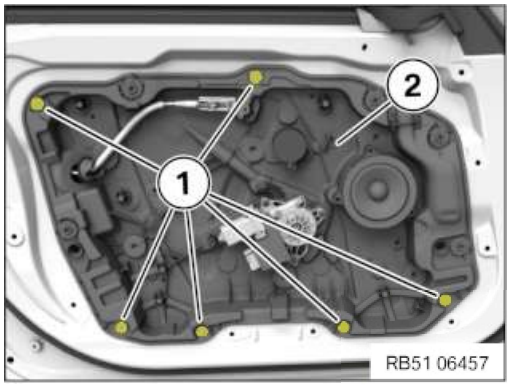
- Connect all electrical connectors and lock.
- Clip in wiring harness (1) on front module carrier (2).
- Install rubber grommet of the Bowden cable for the inner door opener (3).
- Check rubber grommet of the Bowden cable for the inner door handle (3) for correct seating.

▸ **Disconnecting all battery earth leads**

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- See additional information.



- Tighten screws (1) of the front module carrier (2).

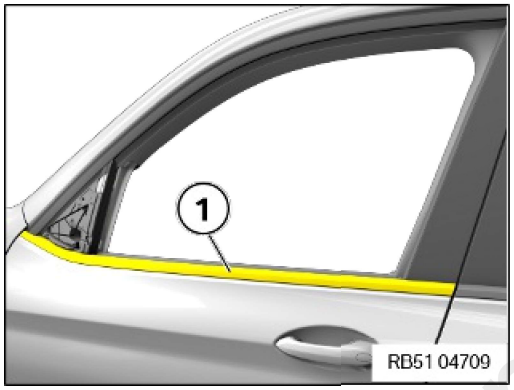
Module carrier to front door

Torx socket M5x12		Tightening torque	8 Nm

- Move the power window upwards until the fixed side window glass correctly engages in both holders.

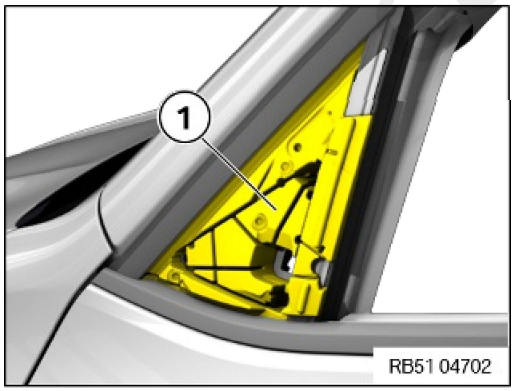
  Remove adhesive tape.

9 – Install outer weather strip



- Check outer weather strip (1) for damage, renew the outer weather strip (1) if required.
- Coat the outer weather strip (1) with a suitable lubricant prior to installation.
- Fit outer weather strip (1) on the front door.
- Press down the outer weather strip (1) across its entire length.

10 – Installing the exterior mirror



Check

- Check mirror triangle seal (1) for damage.

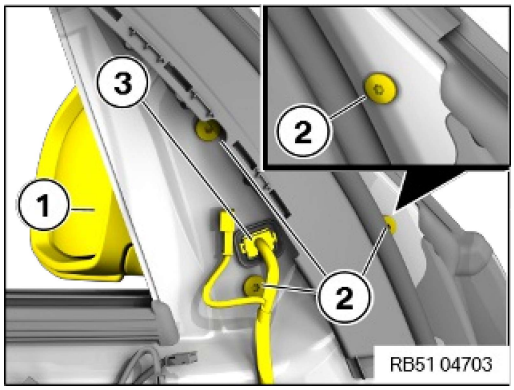
Result

» The mirror triangle seal is damaged.

Measure

- Replace mirror triangle seal .

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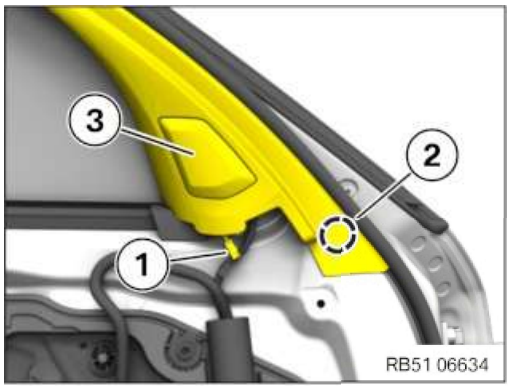
- Position exterior rearview mirror (1) and tighten screws (2).

Exterior mirror to door

Thread-tapping hexagon screw		Tightening torque	10 Nm

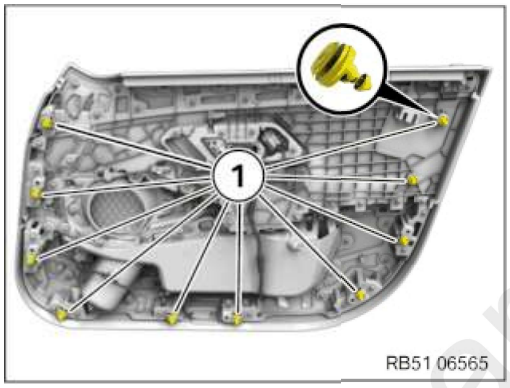
- Connect connectors (3) and lock.

11 – Installing the cover on the inside of the window frame partially



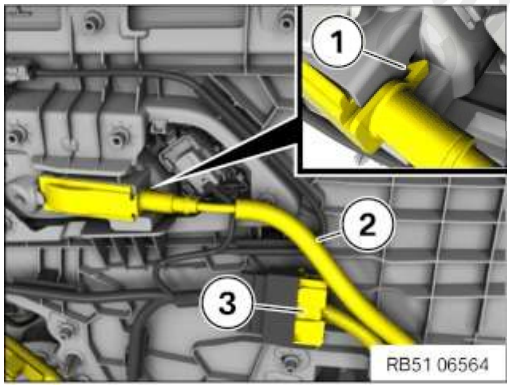
- Mount cover on the inner window frame (3) in the area of the exterior rearview mirror.
- Clip in the clip (2).
- If necessary, connect the connector (1) and lock it.

12 – Install door trim panel

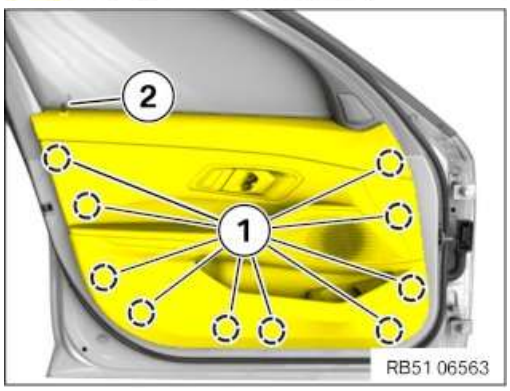


- Renew the clips (1).

  Parts: Clips

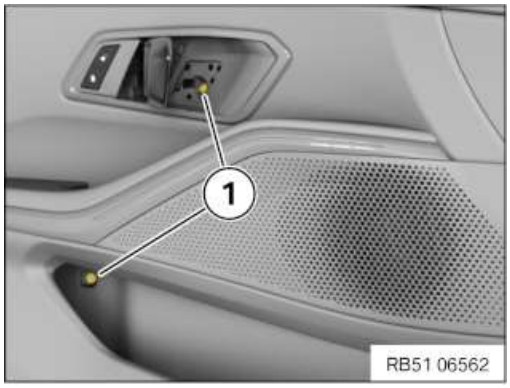


- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).

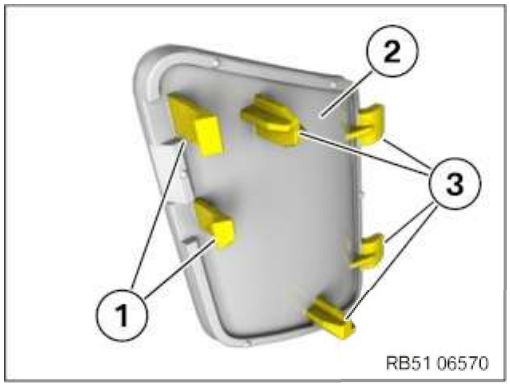
erdiagn.com



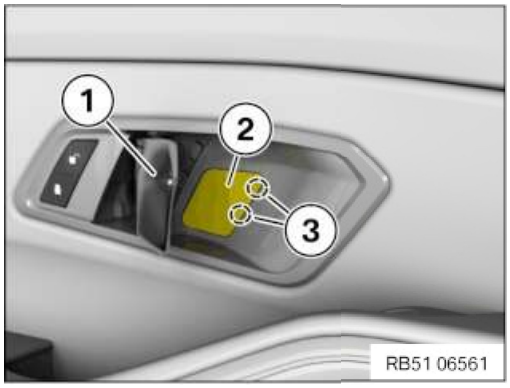
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

Flat motor on door module carrier Used in step 7

Oval-head screw for thermoplastic		Tightening torque	3,5 Nm

Door speaker on door module carrier Used in step 7

Oval-head screw for thermoplastic		Tightening torque	2 Nm

Module carrier to front door Used in step 8

Torx socket M5x12		Tightening torque	8 Nm

Exterior mirror to door Used in step 10

Thread-tapping hexagon screw		Tightening torque	10 Nm

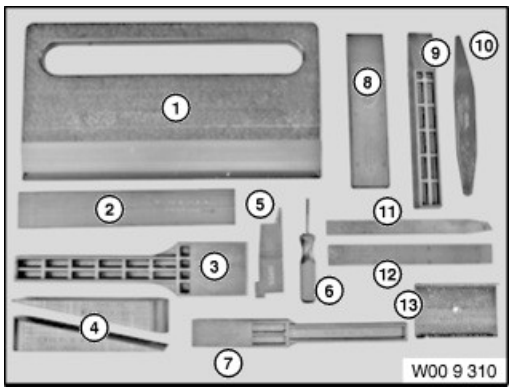
Door trim panel to door Used in step 12

Screw TS5x20		Tightening torque	2,6 Nm

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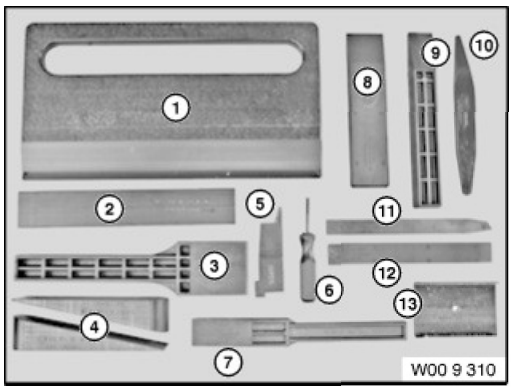
Overview of Special Tools

0 495 484 (00 9 324) Panel wedge



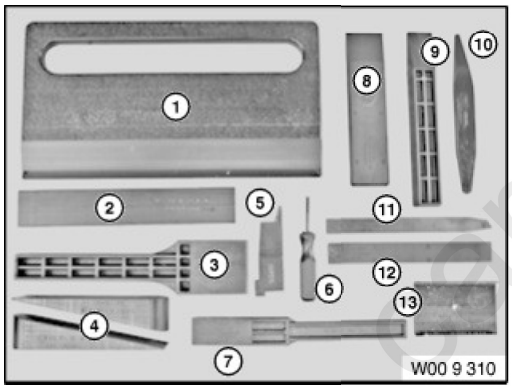
Common	Used in step 15
Usage	(Panel wedge (panel)) For removing cavity strips on the doors from E60
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 25 05 (230)

0 493 752 (00 9 329) Case



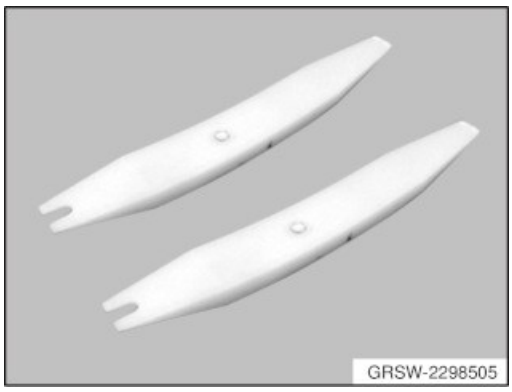
Common	Used in step 2
Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

0 490 538 (00 9 321) Folding stick



Common	Used in step 5
Usage	
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

2 298 505 Wedge



Common	Used in step 5
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

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0 496 569 (00 9 325) Wedge



Common	Used in step 6
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	68
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	68
61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	68
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	68
61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting battery earth lead	68
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61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	68
61 20 900 Disconnecting and connecting battery earth lead	68

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61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting battery earth lead	68
61 20 900 Disconnecting and connecting battery earth lead	68

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51 34 160 Removing and installing/replacing housing cover on inner left or right door window frame

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

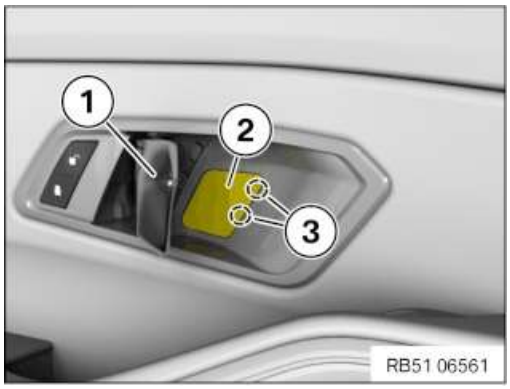
- Protect working area.
- Handle tools and components carefully.

NOTICE

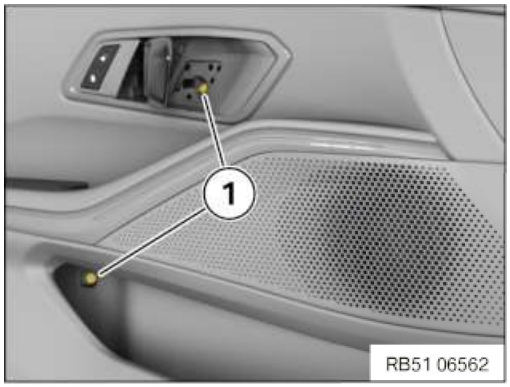
Description is for left component only. Procedure on the right side is identical.

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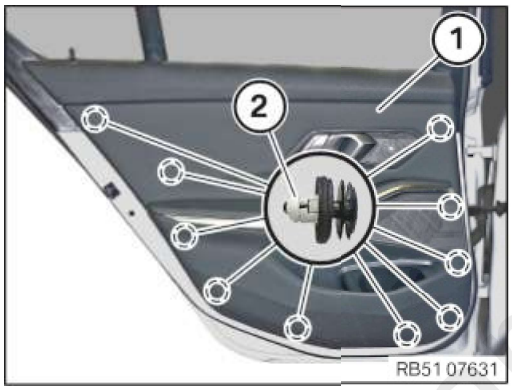
1 – Remove rear door trim



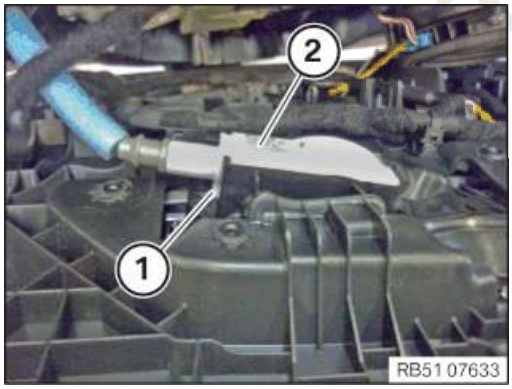
- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable tool.
- Remove trim (2).



- Loosen screws (1).



- Unclip the door trim panel (1) with the special tool 0 496 569 (00 9 325) at the clips (2).
- Guide the door trim panel (1) upwards out of the weather strip.

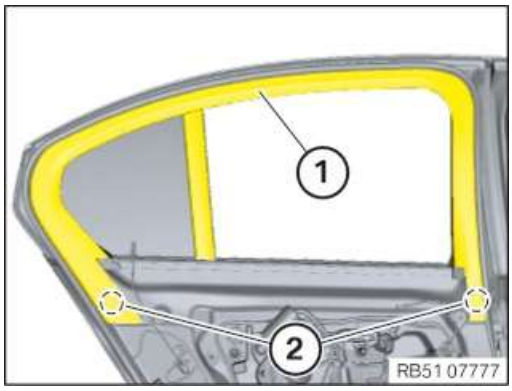


- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock available plug connections and disconnect.
- Remove door trim panel.

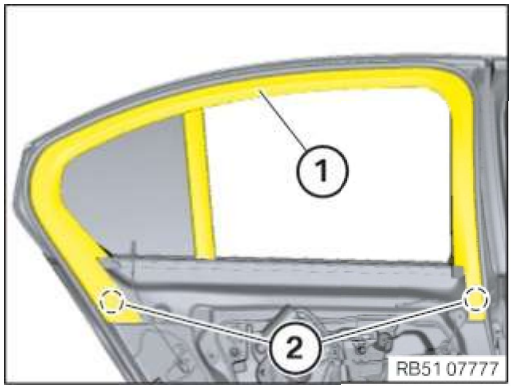
MAIN WORK

2 – Removing the cover on the inside of the window frame at the rear

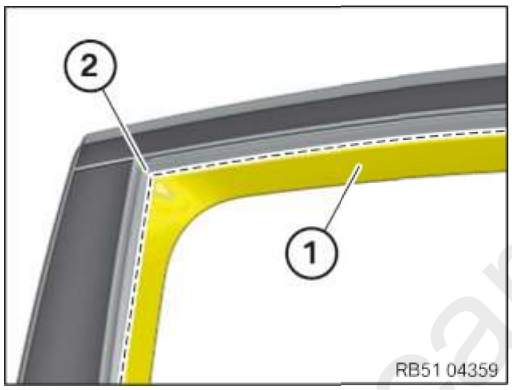


- Open side window.
- Lever out cover (1) from clips (2).
- Start at the front and remove the cover (1) from the door frame towards the bottom inside.

3 – Installing the cover on the inside of the window frame at the rear



- Start from the rear and connect the cover (1) to the door frame.
- Clip in cover (1) into clips (2).

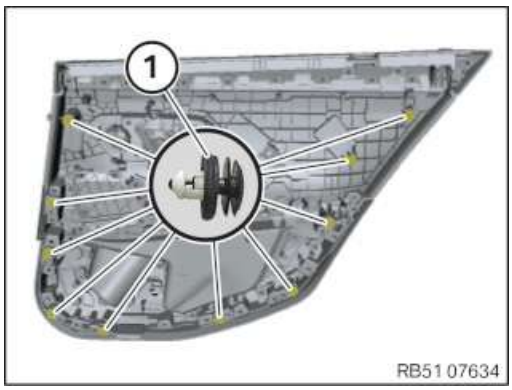


- Correctly feed in cover on window frame (1) into the gap of the rubber window seal (2).
- Make sure that the cover (1) is correctly fitted on the door seal.

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POSTPROCESSES

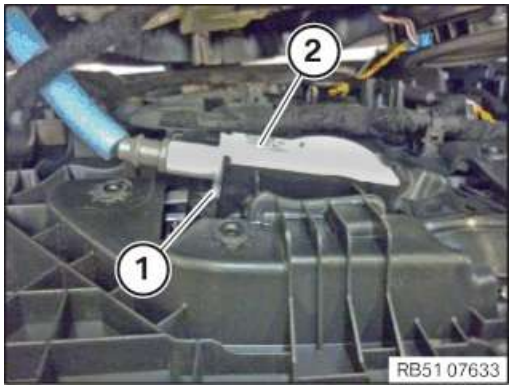
4 – Installing rear door trim panel



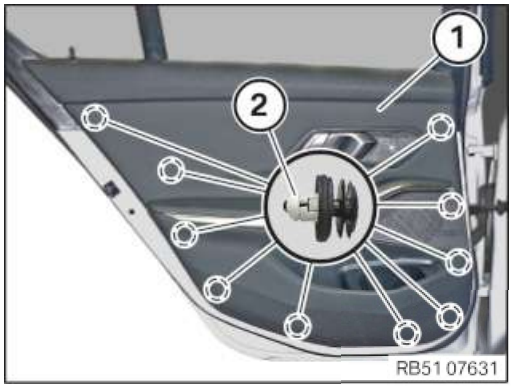
- Renew the clips (1).

  Parts: Clips

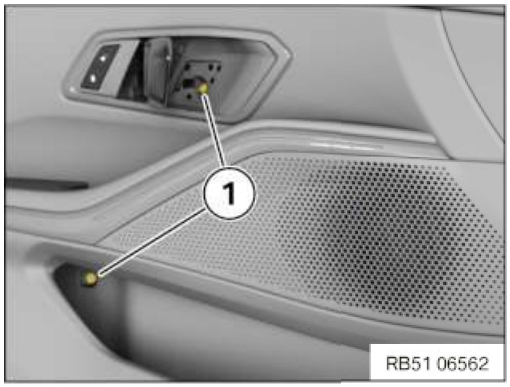
  The clips (1) **must not be engaged**. **The disengaged state is shown.**



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door handle (2) and clip in to the latch mechanism (1).
- Connect existing connectors and lock.



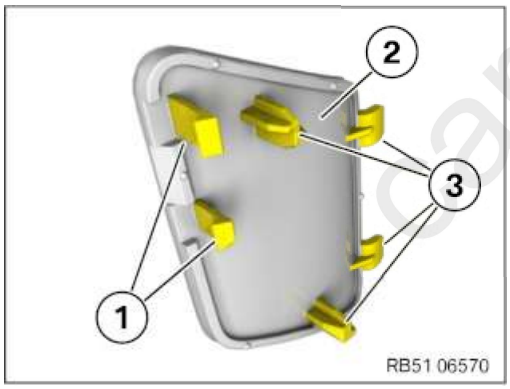
- Feed door trim panel from the top into the inner window recess finisher strip.
- Carefully clip in the door trim panel onto the clips (1).



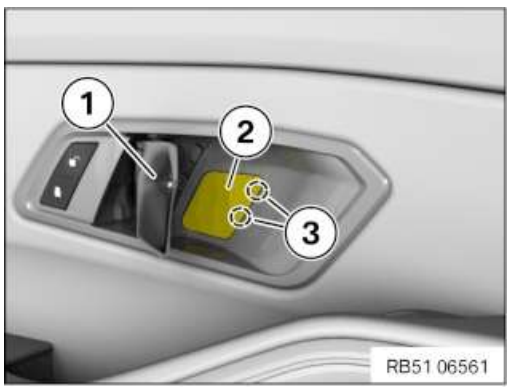
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

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Overview of Tightening Torques

Door trim panel to door — Used in step 4

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

0 496 569 (00 9 325) Wedge



Common — Used in step 1

Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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51 34 380 Removing and installing/replacing the frame trim on the window frame of the left or right rear door

NOTICE

Description is for left component only. Procedure on the right side is identical.

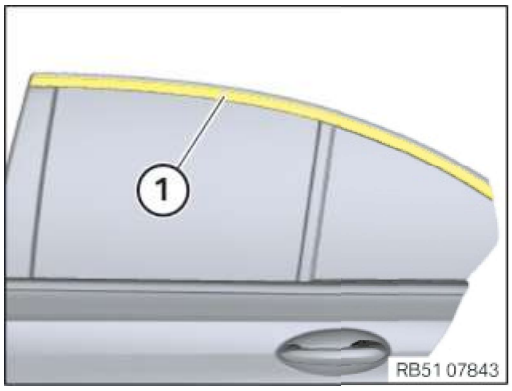
1 – Remove the frame trim on the window frame of the rear door

RISK OF DAMAGE

Scratches.

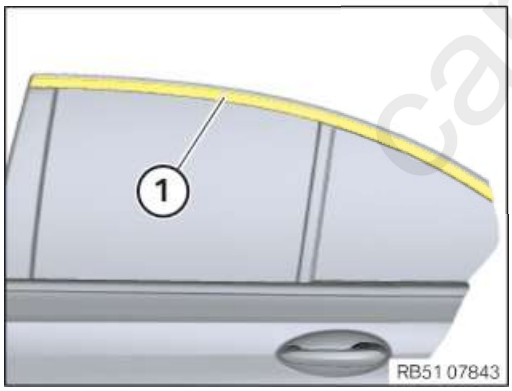
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Beginning at the front, carefully lever the ornamental frame (1) outwards from the weather-strip using the special tool 2 298 505.

2 – Installing the frame trim on the window frame of the rear door



- Correctly position frame trim (1) starting from the rear and lock on the rubber window seal.

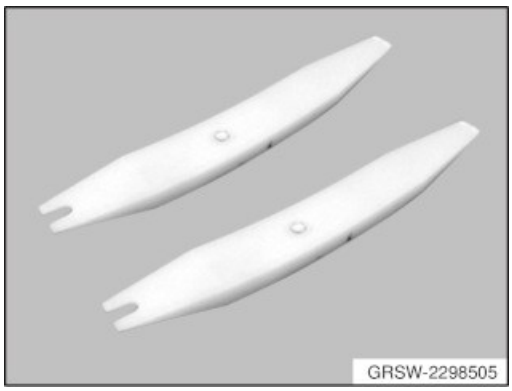
Note: For better installation, coat the rubber window seal with water.

Additional Information

Overview of Special Tools

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2 298 505 Wedge



Common	Used in step 1
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

cardiagn.com

51 34 420 Removing and installing/replacing window frame trim of the rear left or rear right door

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

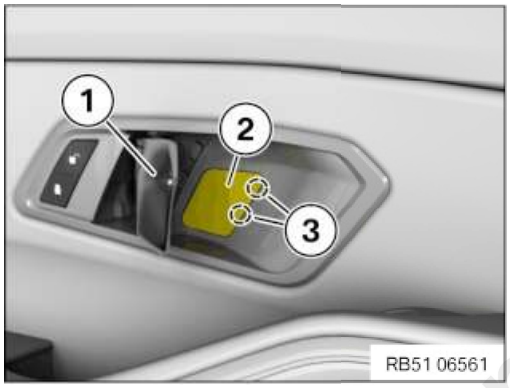
- Protect working area.
- Handle tools and components carefully.

NOTICE

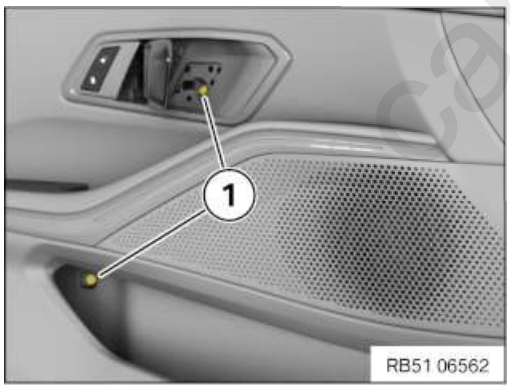
Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

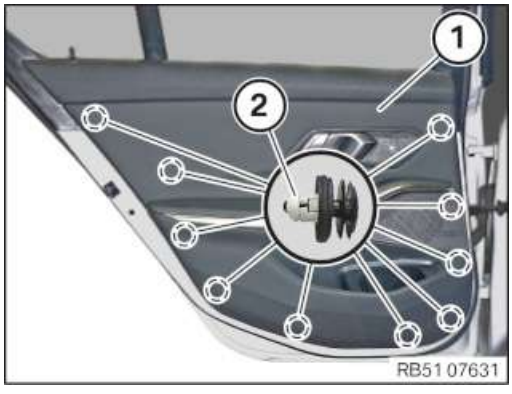
1 – Remove rear door trim



- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable tool.
- Remove trim (2).

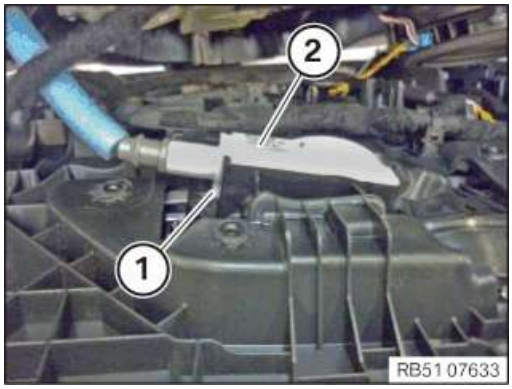


- Loosen screws (1).



- Unclip the door trim panel (1) with the special tool 0 496 569 (00 9 325) at the clips (2).
- Guide the door trim panel (1) upwards out of the weather strip.

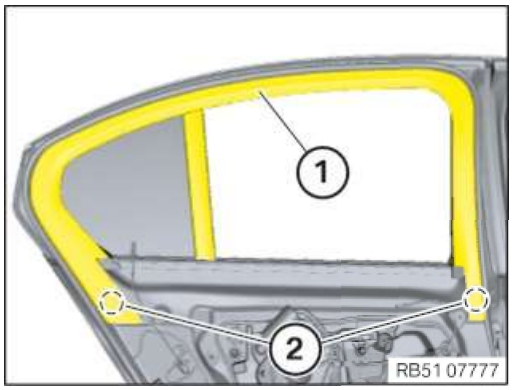
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- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock available plug connections and disconnect.
- Remove door trim panel.

2 – Removing the cover on the inside of the window frame at the rear



- Open side window.
- Lever out cover (1) from clips (2).
- Start at the front and remove the cover (1) from the door frame towards the bottom inside.

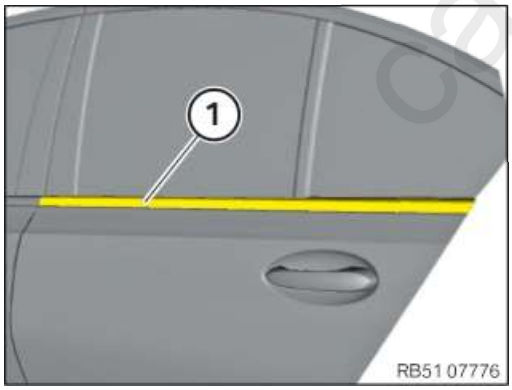
3 – Remove weather strip from the rear door

RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.



- Lever out window recess finisher strip (1) from the door carefully using the special tool 2 298 505 starting from the rear to the top.

  The window recess finisher strip might get deformed and must be renewed.

MAIN WORK

4 – Removing window frame trim of rear door

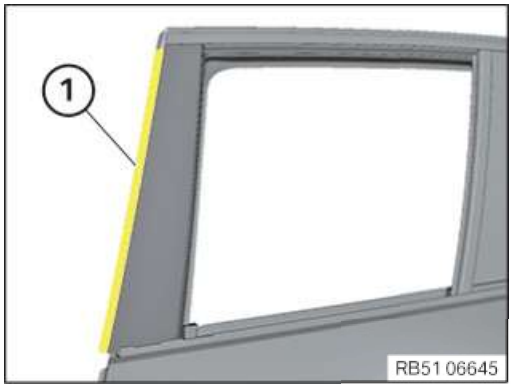
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RISK OF DAMAGE

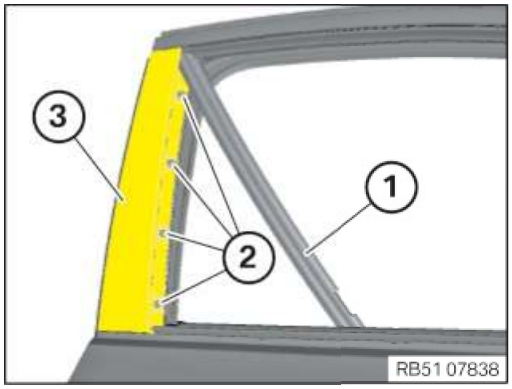
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

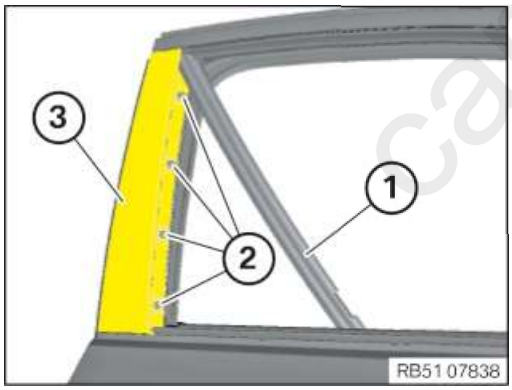


- Release rubber window seal (1) from the window frame cover.



- Remove the rubber window seal (1) from the window frame trim as shown.
- Loosen screws (2).
- Press window frame trim (3) lightly to the front and feed out upwards.

5 – Installing window frame trim of rear door

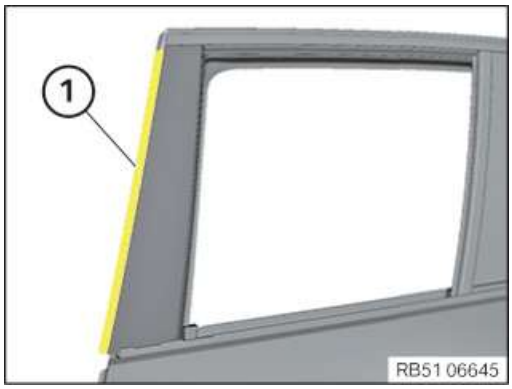


- Guide in window frame cover(3) and position it correctly.
- Tighten the screws (2).

Window frame trim to door frame

Oval-head screw for thermoplastic		Tightening torque	2,3 Nm

- Mount the rubber window seal (1).



- Mount the rubber window seal (1).

POSTPROCESSES

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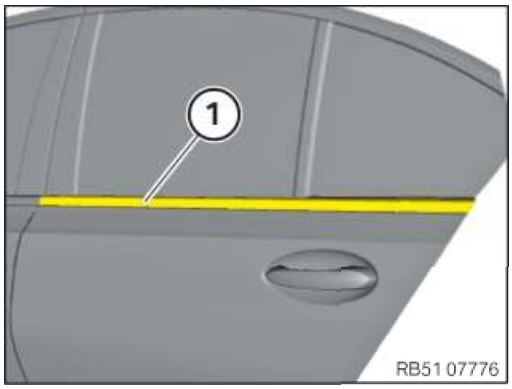
6 – Install weather strip on the rear door

RISK OF DAMAGE

Paint damage.

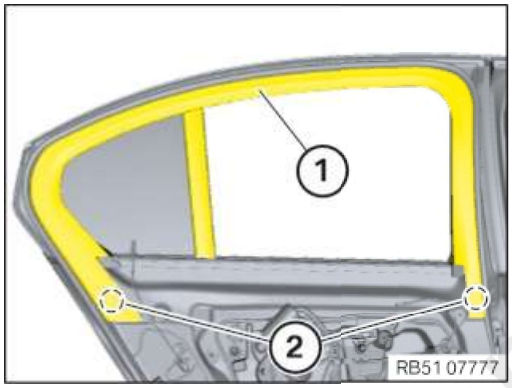
Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.

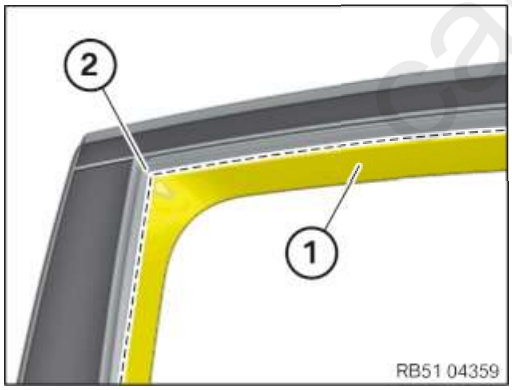


- Coat the weather strip (1) with a suitable lubricant prior to installation.
- Install the weather strip (1) and align it to the door edges .
- Press down the window recess finisher strip (1) across its entire length.

7 – Installing the cover on the inside of the window frame at the rear

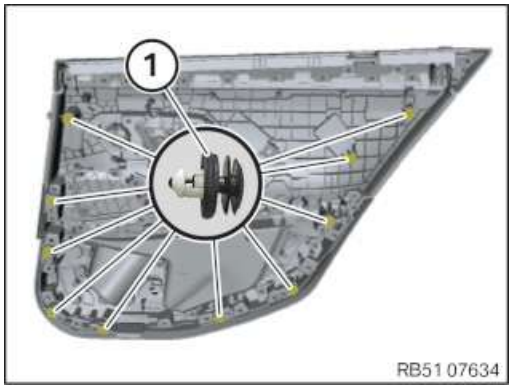


- Start from the rear and connect the cover (1) to the door frame.
- Clip in cover (1) into clips (2).



- Correctly feed in cover on window frame (1) into the gap of the rubber window seal (2).
- Make sure that the cover (1) is correctly fitted on the door seal.

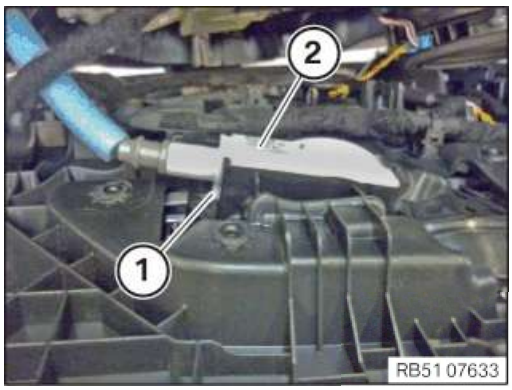
8 – Installing rear door trim panel



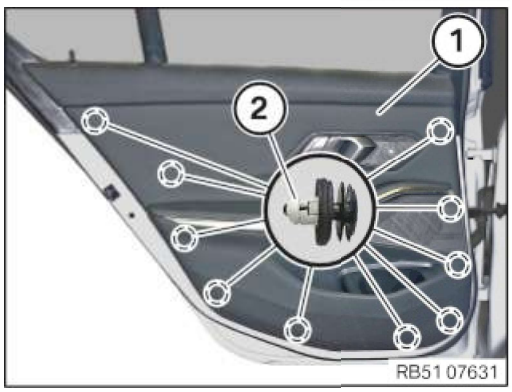
- Renew the clips (1).

  Parts: Clips

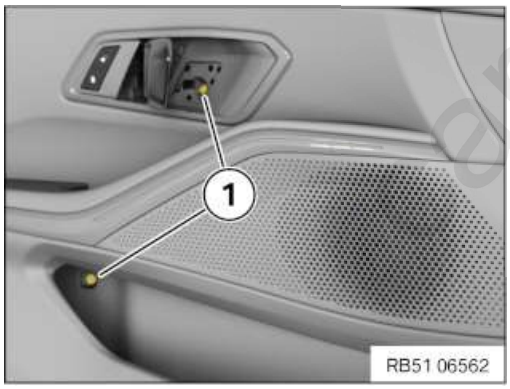
  The clips (1) **must not be engaged**. **The disengaged state is shown.**



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door handle (2) and clip in to the latch mechanism (1).
- Connect existing connectors and lock.



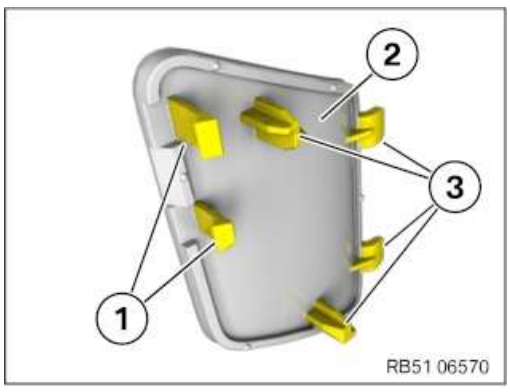
- Feed door trim panel from the top into the inner window recess finisher strip.
- Carefully clip in the door trim panel onto the clips (1).



- Tighten the screws (1).

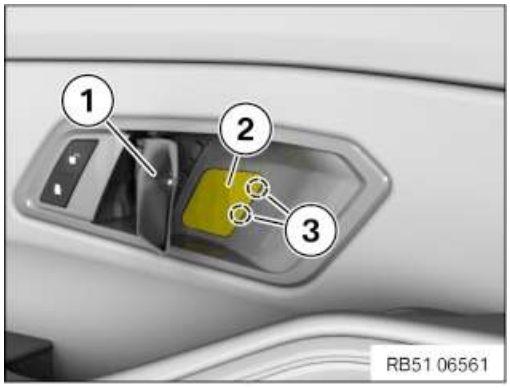
Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).

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- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

Window frame trim to door frame — Used in step 5

Oval-head screw for thermoplastic		Tightening torque	2,3 Nm

Door trim panel to door — Used in step 8

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

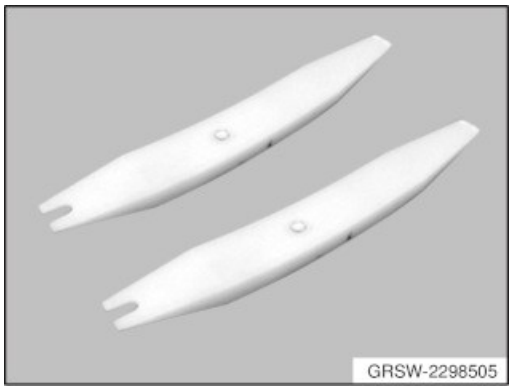
0 496 569 (00 9 325) Wedge



Common — Used in step 1

Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

2 298 505 Wedge



Common — Used in step 3

Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

cardiagn.com

51 34 191 Replacing left or right fixed door window in rear window frame

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

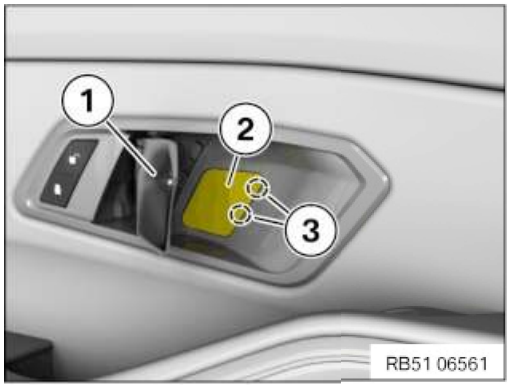
- Protect working area.
- Handle tools and components carefully.

NOTICE

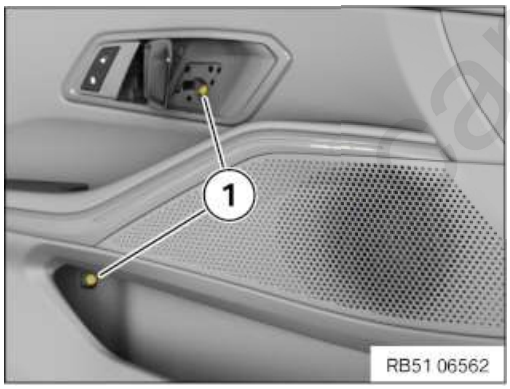
Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

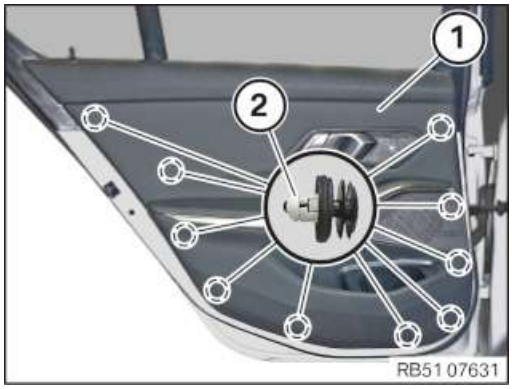
1 – Remove rear door trim



- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable tool.
- Remove trim (2).

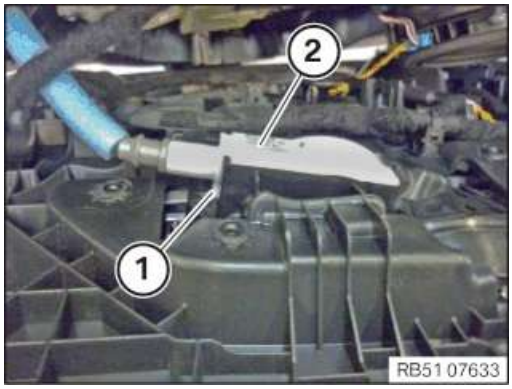


- Loosen screws (1).



- Unclip the door trim panel (1) with the special tool 0 496 569 (00 9 325) at the clips (2).
- Guide the door trim panel (1) upwards out of the weather strip.

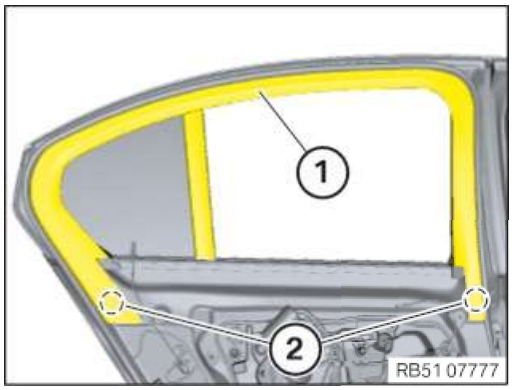
cardiagn.com



- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

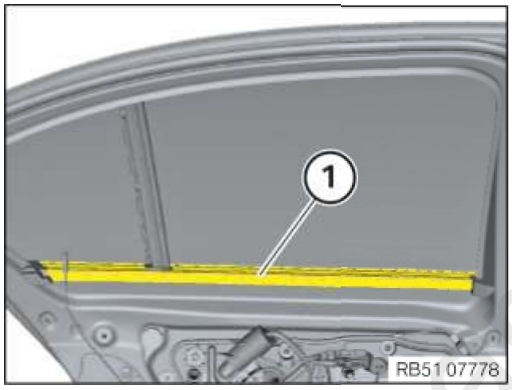
  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock available plug connections and disconnect.
- Remove door trim panel.

2 – Removing the cover on the inside of the window frame at the rear



- Open side window.
- Lever out cover (1) from clips (2).
- Start at the front and remove the cover (1) from the door frame towards the bottom inside.

3 – Remove the weather strip from inner rear door



- Carefully lever out and remove the weather strip (1) with a suitable plastic wedge in an upward direction starting from the rear.

4 – Remove weather strip from the rear door

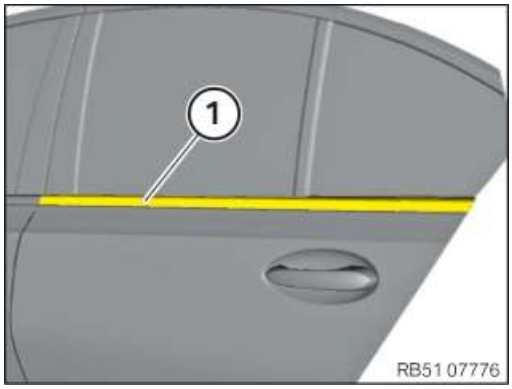
RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.

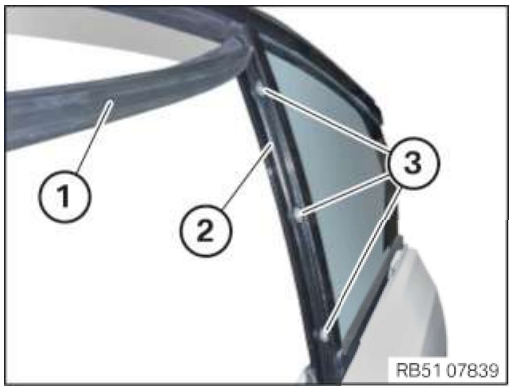
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- Lever out window recess finisher strip (1) from the door carefully using the special tool 2 298 505 starting from the rear to the top.

  The window recess finisher strip might get deformed and must be renewed.

5 – Removing the window guide bar trim



- Guide the rubber window seal (1) out of the window guide bar trim (2).
- Loosen screws (3).
- Remove the window guide bar trim (2) from the door.

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6 – Remove rear side window



- Remove the label (1).
- Remove cover (2).
- Loosen screws (3).



- Remove the window guide rubber (1) from the door frame in the area of the side window glass (3) as shown.
- Loosen screw (2).
- Unclip fixed side window glass (3) out of door at the top.
- Guide the side window glass (3) upwards out of the door.

7 – Install rear fixed side window glass



- Guide the side window glass (3) from above into door.
- Clip the side window glass (3) into door at the top.
- Tighten down screw (2).

Rear side window glass to door

Sheet metal screw 4.2x19		Tightening torque	2.5 Nm
Oval-head screw		Tightening torque	7,6 Nm

- Install the rubber window seal (1) in the area of the side window (3) on the door frame.



- Tighten the screws (3).

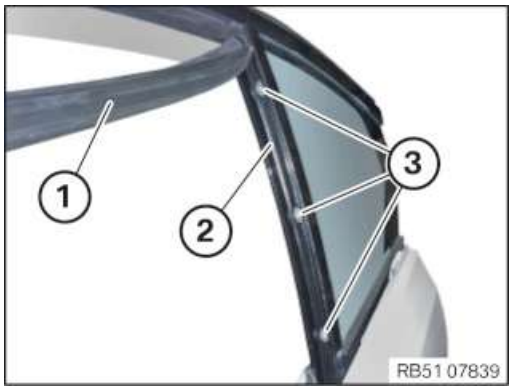
Rear side window glass to door

Sheet metal screw 4.2x19		Tightening torque	2.5 Nm
Oval-head screw		Tightening torque	7,6 Nm

- Fit cover (2).
- Attach the adhesive label (1).

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8 – Installing the window guide bar trim



- Insert the window guide bar trim (2) in the door.
- Tighten the screws (3).

Trim, window guide web to door frame

Oval-head screw M4x8		Tightening torque	2,6 Nm

- Thread the rubber window seal (1) into the window guide bar trim (2).

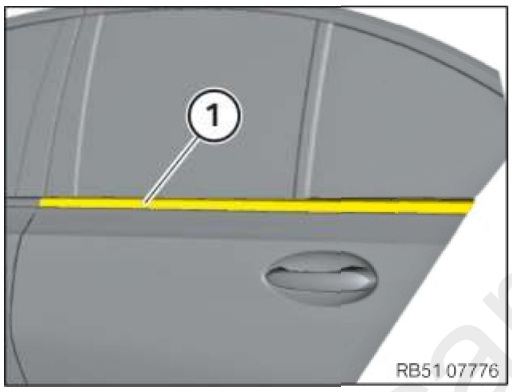
9 – Install weather strip on the rear door

RISK OF DAMAGE

Paint damage.

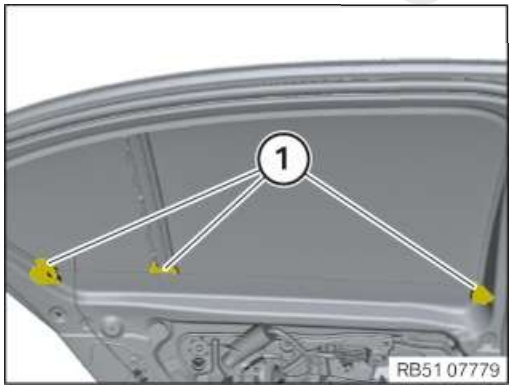
Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.



- Coat the weather strip (1) with a suitable lubricant prior to installation.
- Install the weather strip (1) and align it to the door edges .
- Press down the window recess finisher strip (1) across its entire length.

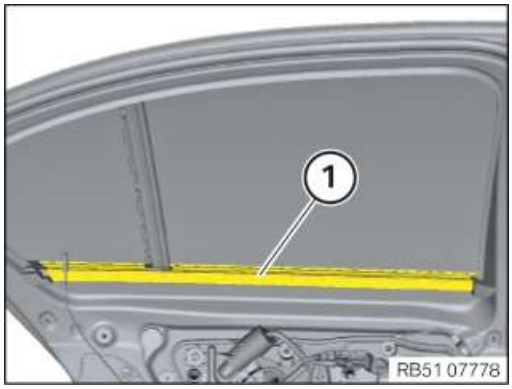
10 – Install the weather strip of the inner rear door



- Foam seals (1) must not be damaged or missing, replace if necessary.

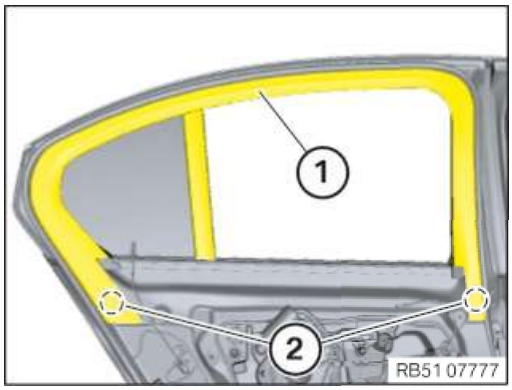
  Make sure the foam seal (1) is fitted correctly.

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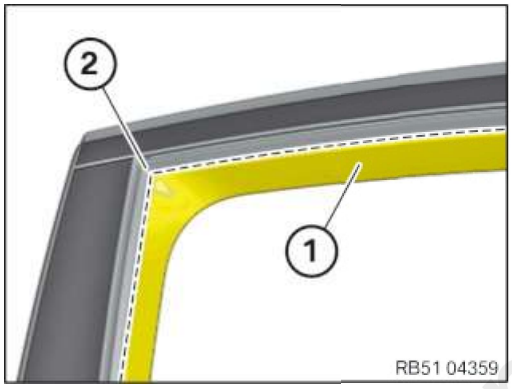


- Align the weather strip (1) and connect to door.

11 – Installing the cover on the inside of the window frame at the rear

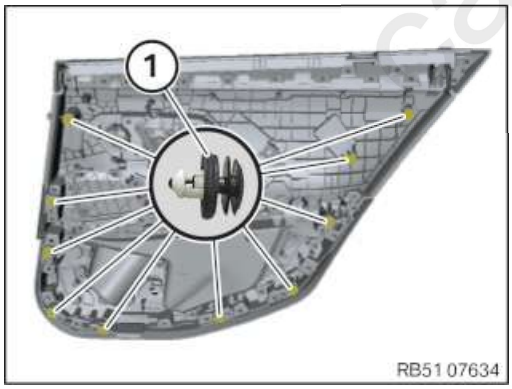


- Start from the rear and connect the cover (1) to the door frame.
- Clip in cover (1) into clips (2).



- Correctly feed in cover on window frame (1) into the gap of the rubber window seal (2).
- Make sure that the cover (1) is correctly fitted on the door seal.

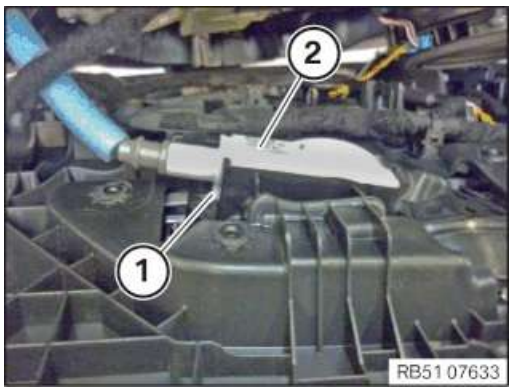
12 – Installing rear door trim panel



- Renew the clips (1).

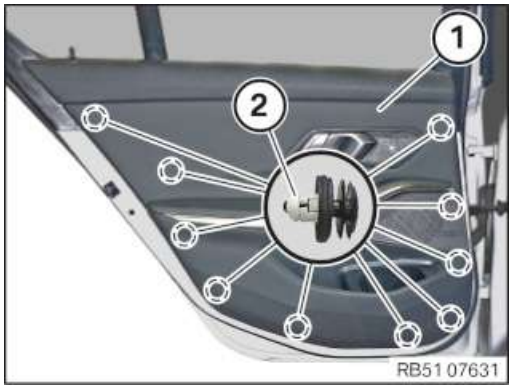
  Parts: Clips

  The clips (1) **must not be engaged. The disengaged state is shown.**

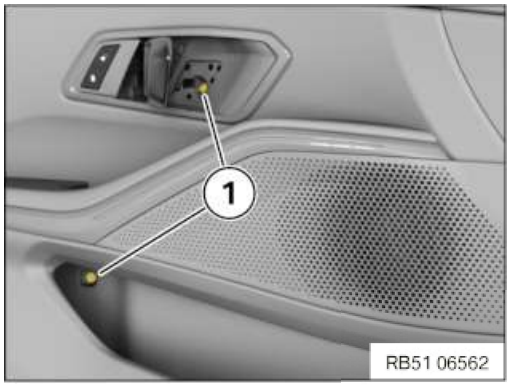


- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door handle (2) and clip in to the latch mechanism (1).
- Connect existing connectors and lock.

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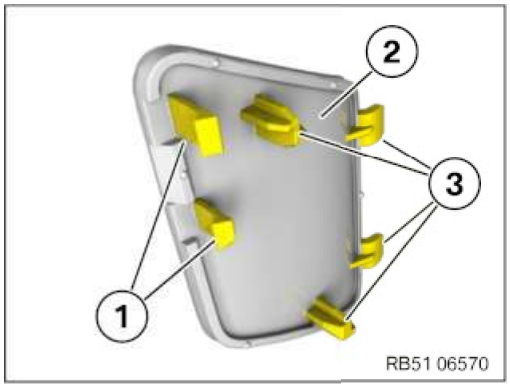
- Feed door trim panel from the top into the inner window recess finisher strip.
- Carefully clip in the door trim panel onto the clips (1).



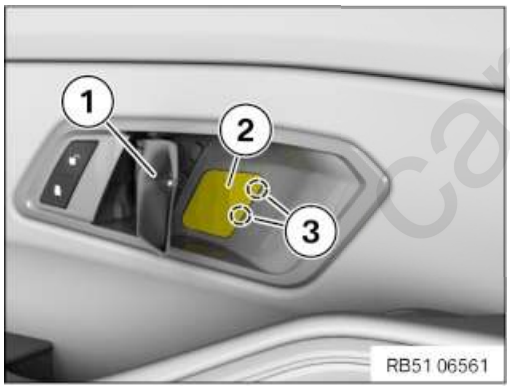
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

Rear side window glass to door — Used in step 7

Sheet metal screw 4.2x19		Tightening torque	2.5 Nm
Oval-head screw		Tightening torque	7,6 Nm

Trim, window guide web to door frame — Used in step 8

Oval-head screw M4x8		Tightening torque	2,6 Nm

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Door trim panel to door			Used in step 12
Screw TS5x20		Tightening torque	2,6 Nm

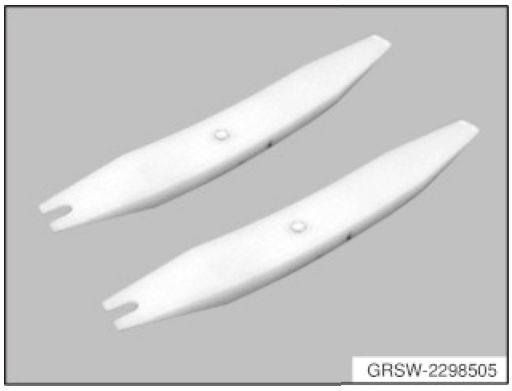
Overview of Special Tools

0 496 569 (00 9 325) Wedge



Common	Used in step 1
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

2 298 505 Wedge



Common	Used in step 4
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

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51 34 426 Replacing left or right window guide bar cover

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

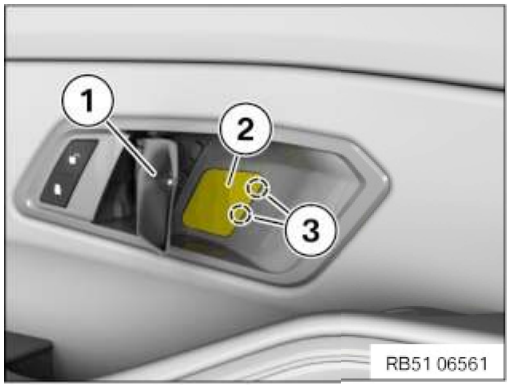
- Protect working area.
- Handle tools and components carefully.

NOTICE

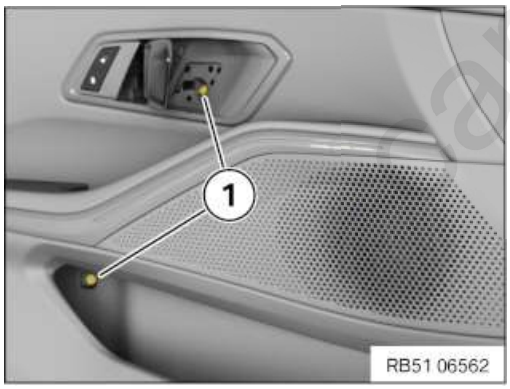
Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

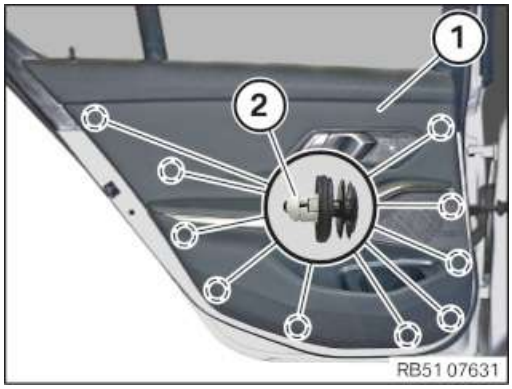
1 – Remove rear door trim



- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable tool.
- Remove trim (2).

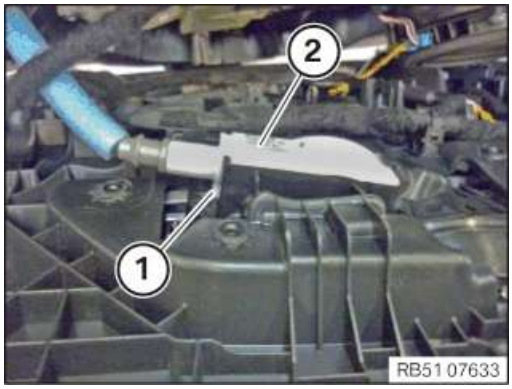


- Loosen screws (1).



- Unclip the door trim panel (1) with the special tool 0 496 569 (00 9 325) at the clips (2).
- Guide the door trim panel (1) upwards out of the weather strip.

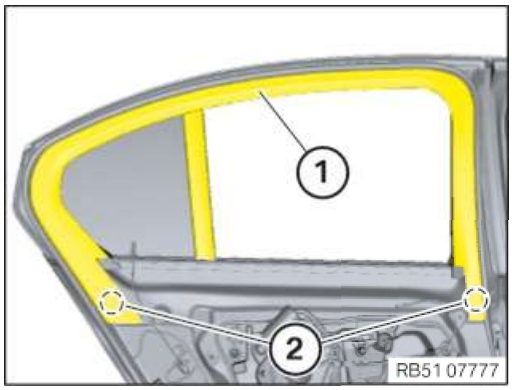
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- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

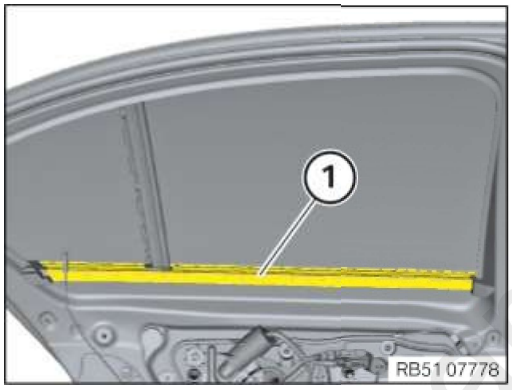
  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock available plug connections and disconnect.
- Remove door trim panel.

2 – Removing the cover on the inside of the window frame at the rear



- Open side window.
- Lever out cover (1) from clips (2).
- Start at the front and remove the cover (1) from the door frame towards the bottom inside.

3 – Remove the weather strip from inner rear door



- Carefully lever out and remove the weather strip (1) with a suitable plastic wedge in an upward direction starting from the rear.

4 – Remove weather strip from the rear door

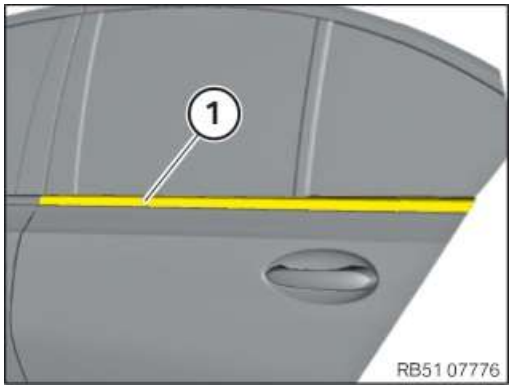
RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.

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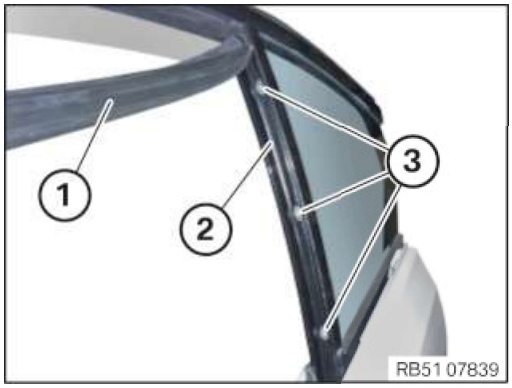


- Lever out window recess finisher strip (1) from the door carefully using the special tool 2 298 505 starting from the rear to the top.

  The window recess finisher strip might get deformed and must be renewed.

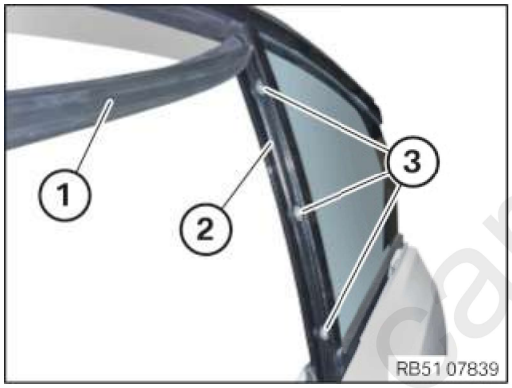
MAIN WORK

5 – Removing the window guide bar trim



- Guide the rubber window seal (1) out of the window guide bar trim (2).
- Loosen screws (3).
- Remove the window guide bar trim (2) from the door.

6 – Installing the window guide bar trim



- Insert the window guide bar trim (2) in the door.
- Tighten the screws (3).

Trim, window guide web to door frame

Oval-head screw M4x8		Tightening torque	2,6 Nm

- Thread the rubber window seal (1) into the window guide bar trim (2).

POSTPROCESSES

7 – Install weather strip on the rear door

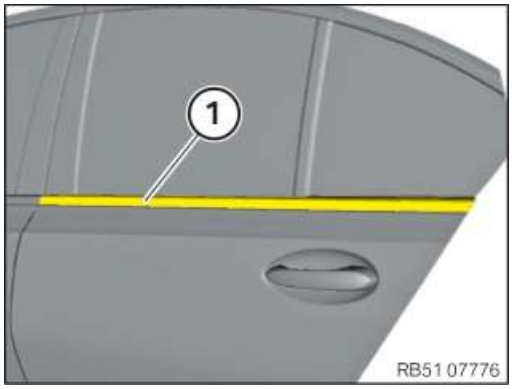
RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

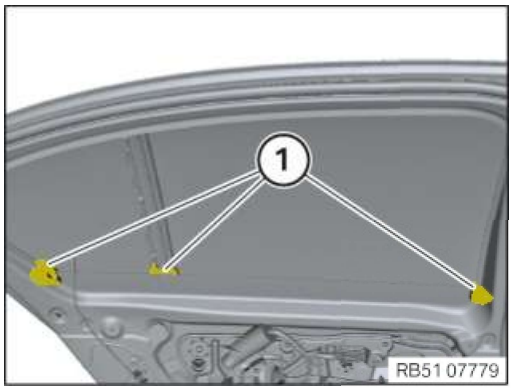
- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.

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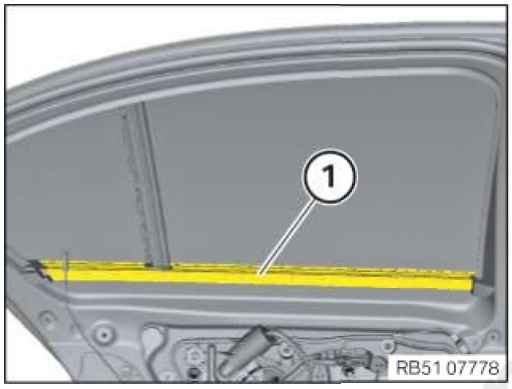
- Coat the weather strip (1) with a suitable lubricant prior to installation.
- Install the weather strip (1) and align it to the door edges .
- Press down the window recess finisher strip (1) across its entire length.

8 – Install the weather strip of the inner rear door



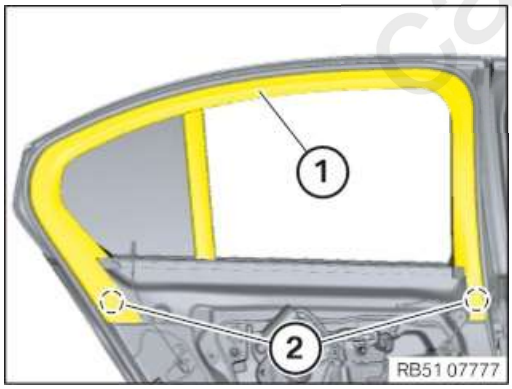
- Foam seals (1) must not be damaged or missing, replace if necessary.

  Make sure the foam seal (1) is fitted correctly.

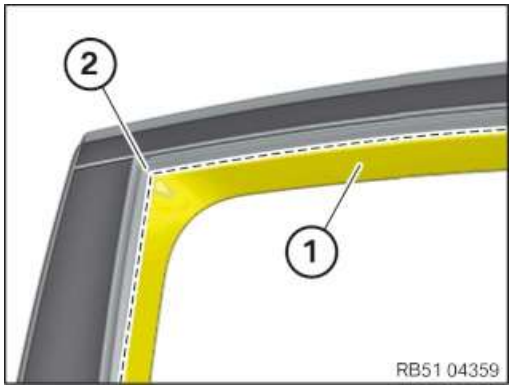


- Align the weather strip (1) and connect to door.

9 – Installing the cover on the inside of the window frame at the rear



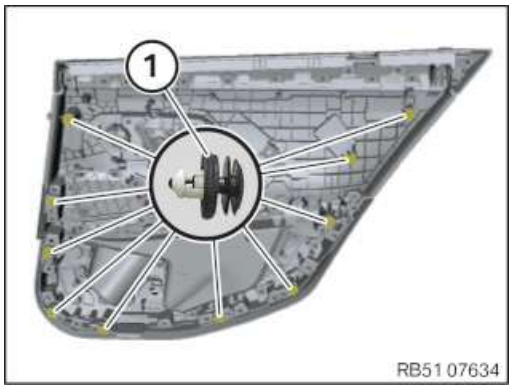
- Start from the rear and connect the cover (1) to the door frame.
- Clip in cover (1) into clips (2).



- Correctly feed in cover on window frame (1) into the gap of the rubber window seal (2).
- Make sure that the cover (1) is correctly fitted on the door seal.

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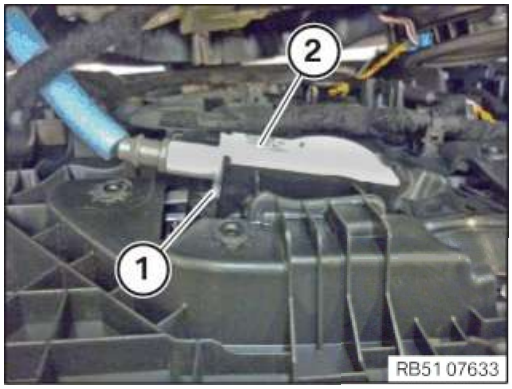
10 – Installing rear door trim panel



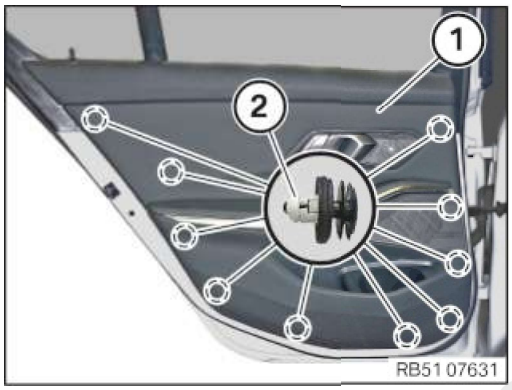
- Renew the clips (1).

  Parts: Clips

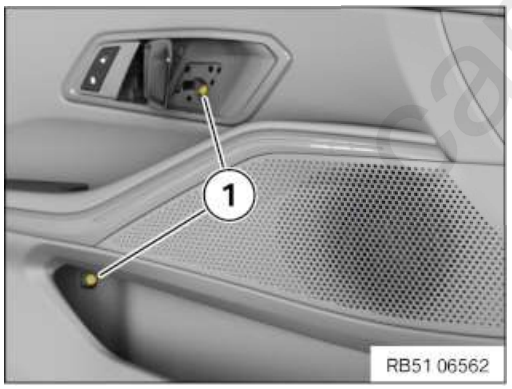
  The clips (1) **must not be engaged**. **The disengaged state is shown.**



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door handle (2) and clip in to the latch mechanism (1).
- Connect existing connectors and lock.



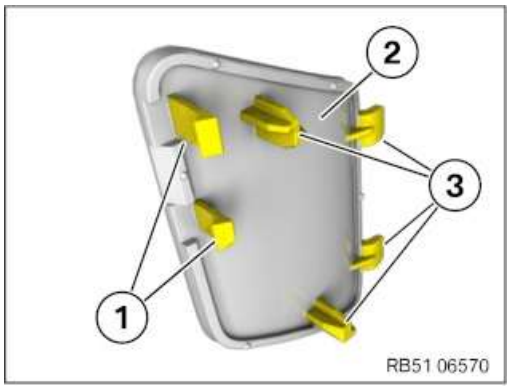
- Feed door trim panel from the top into the inner window recess finisher strip.
- Carefully clip in the door trim panel onto the clips (1).



- Tighten the screws (1).

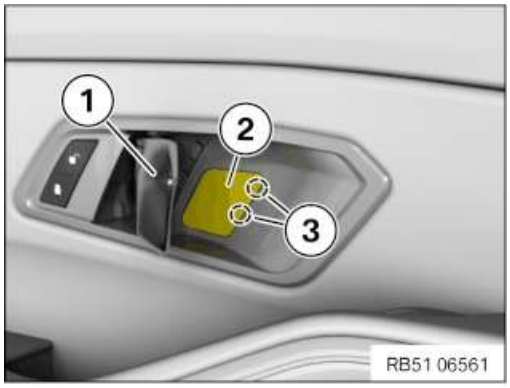
Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).

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- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

Trim, window guide web to door frame — Used in step 6

Oval-head screw M4x8		Tightening torque	2,6 Nm

Door trim panel to door — Used in step 10

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

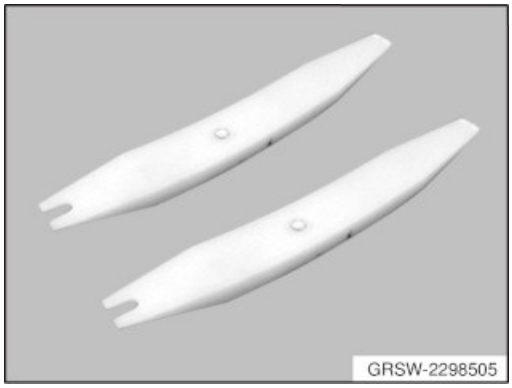
0 496 569 (00 9 325) Wedge



Common — Used in step 1

Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

2 298 505 Wedge



Common — Used in step 4

Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

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51 34 171 Replacing rear left or right door window

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

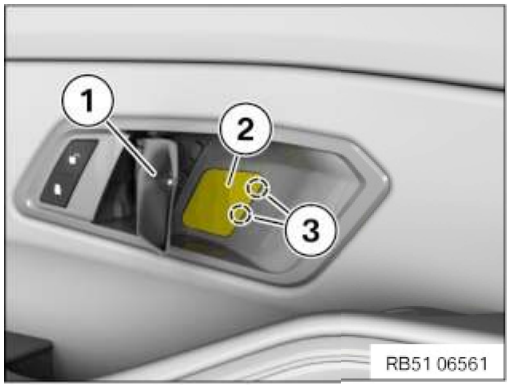
- Protect working area.
- Handle tools and components carefully.

NOTICE

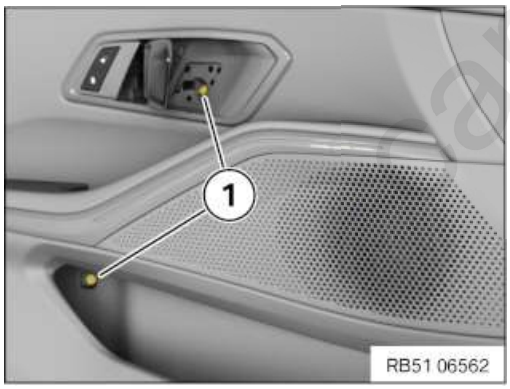
Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

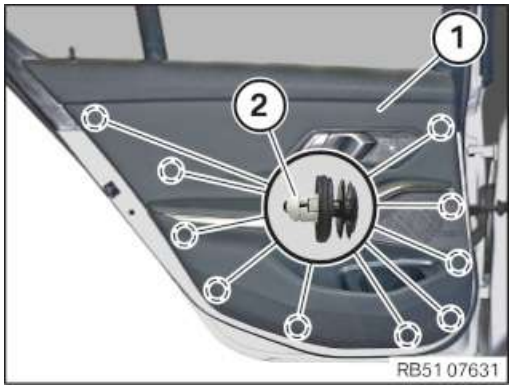
1 – Remove rear door trim



- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable tool.
- Remove trim (2).

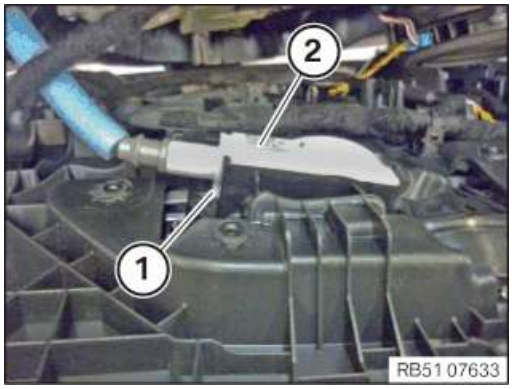


- Loosen screws (1).



- Unclip the door trim panel (1) with the special tool 0 496 569 (00 9 325) at the clips (2).
- Guide the door trim panel (1) upwards out of the weather strip.

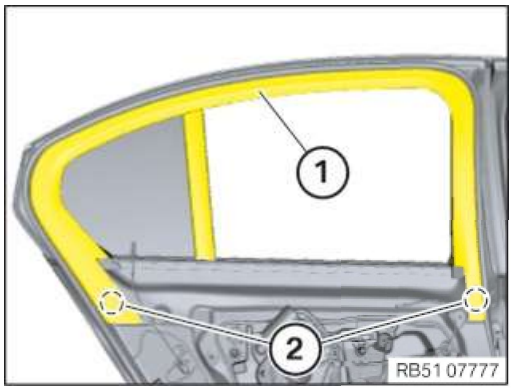
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- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock available plug connections and disconnect.
- Remove door trim panel.

2 – Removing the cover on the inside of the window frame at the rear



- Open side window.
- Lever out cover (1) from clips (2).
- Start at the front and remove the cover (1) from the door frame towards the bottom inside.

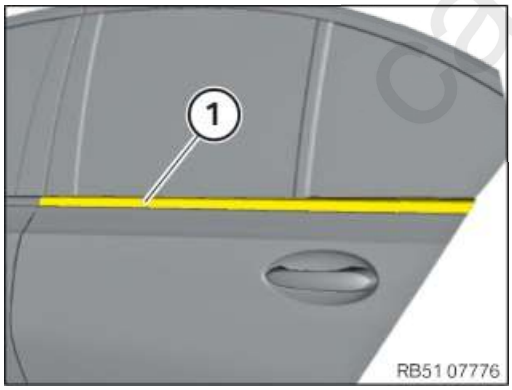
3 – Remove weather strip from the rear door

RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.



- Lever out window recess finisher strip (1) from the door carefully using the special tool 2 298 505 starting from the rear to the top.

  The window recess finisher strip might get deformed and must be renewed.

4 – Removing window frame trim of rear door

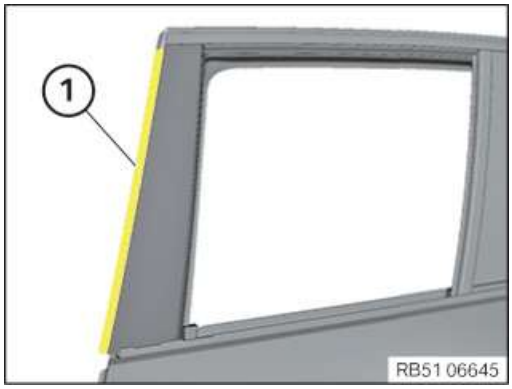
RISK OF DAMAGE

Scratches.

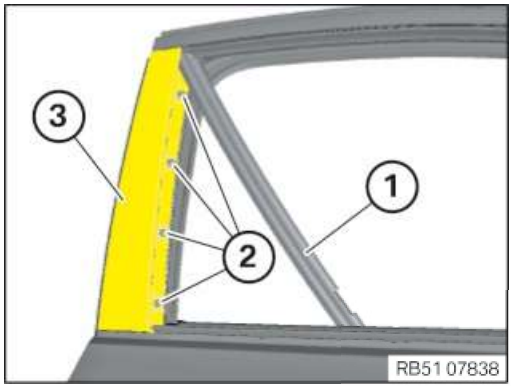
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

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- Release rubber window seal (1) from the window frame cover.



- Remove the rubber window seal (1) from the window frame trim as shown.
- Loosen screws (2).
- Press window frame trim (3) lightly to the front and feed out upwards.

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MAIN WORK

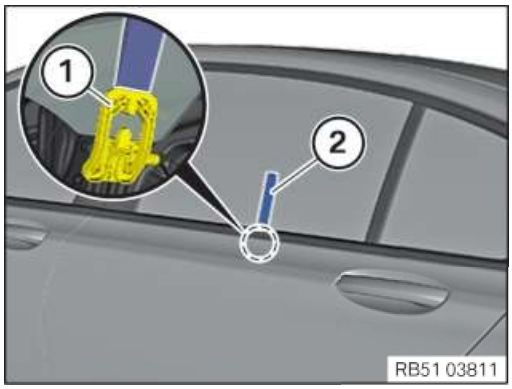
5 – Removing rear door window glass

Prerequisite

The door window glass is fully shut.

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

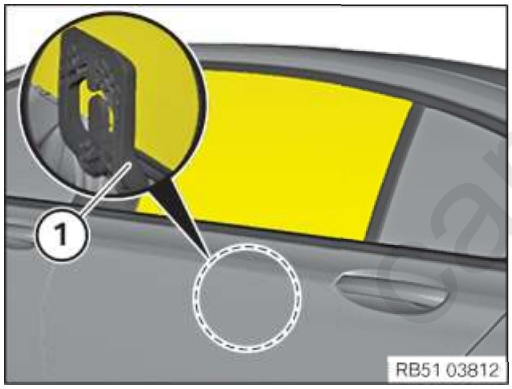


- Secure the door window glass to the door frame when it is closed using adhesive tape.
- Spread the holder (1) on the door window glass with the special tool 0 496 569 (00 9 325) (2) and unlock.
- Move the power window all the way down.
- Remove the adhesive tape and take out the door window glass to the top.

6 – Installing rear door window glass

NOTICE

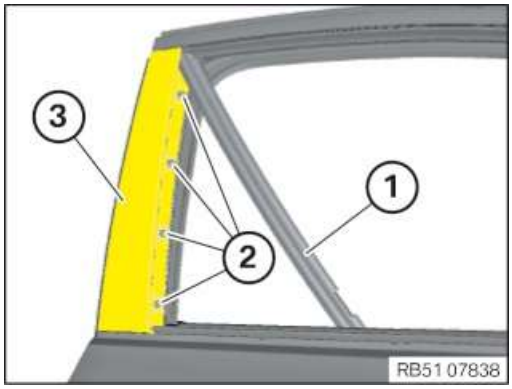
Schematic diagram is for example purposes. Some parts may differ in certain details.



- Insert door window glass and fix to door frame using adhesive tape.
- Move the power window regulator up and engage the holder (1).
- Make sure the holder (1) has engaged correctly.
- Remove adhesive tape.

POSTPROCESSES

7 – Installing window frame trim of rear door

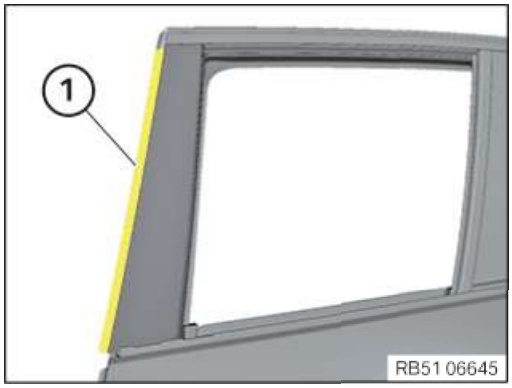


- Guide in window frame cover(3) and position it correctly.
- Tighten the screws (2).

Window frame trim to door frame

Oval-head screw for thermoplastic		Tightening torque	2,3 Nm

- Mount the rubber window seal (1).



- Mount the rubber window seal (1).

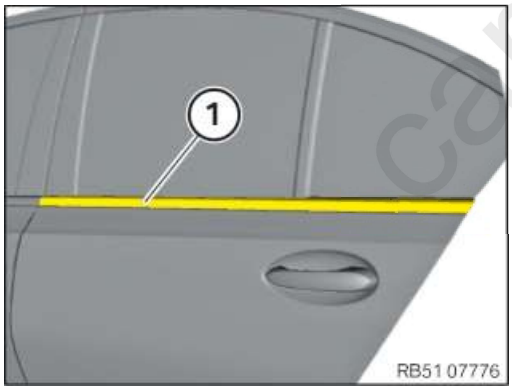
8 – Install weather strip on the rear door

RISK OF DAMAGE

Paint damage.

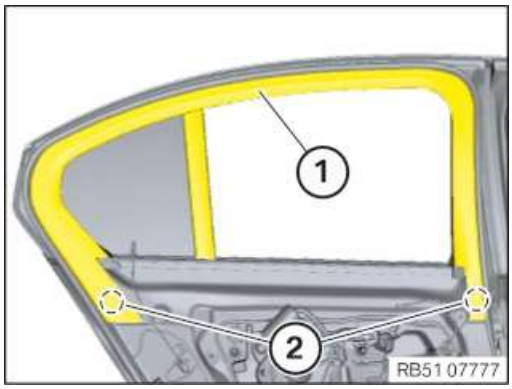
Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.



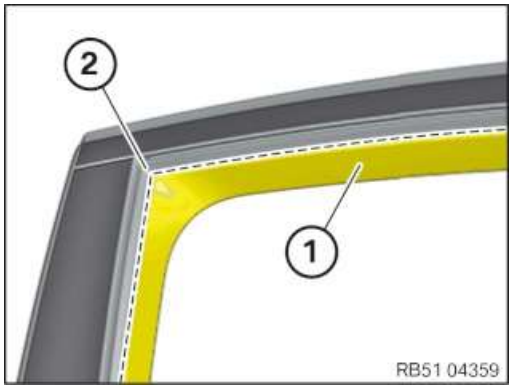
- Coat the weather strip (1) with a suitable lubricant prior to installation.
- Install the weather strip (1) and align it to the door edges .
- Press down the window recess finisher strip (1) across its entire length.

9 – Installing the cover on the inside of the window frame at the rear



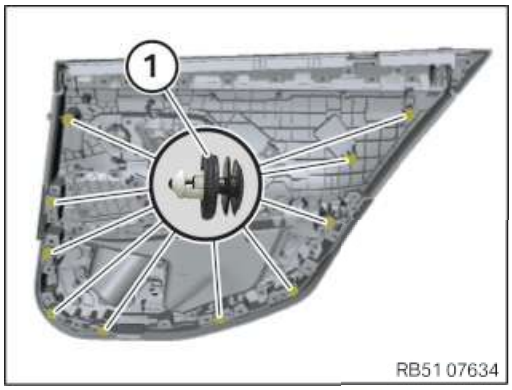
- Start from the rear and connect the cover (1) to the door frame.
- Clip in cover (1) into clips (2).

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- Correctly feed in cover on window frame (1) into the gap of the rubber window seal (2).
- Make sure that the cover (1) is correctly fitted on the door seal.

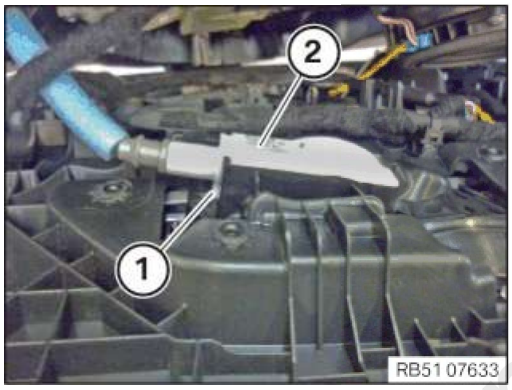
10 – Installing rear door trim panel



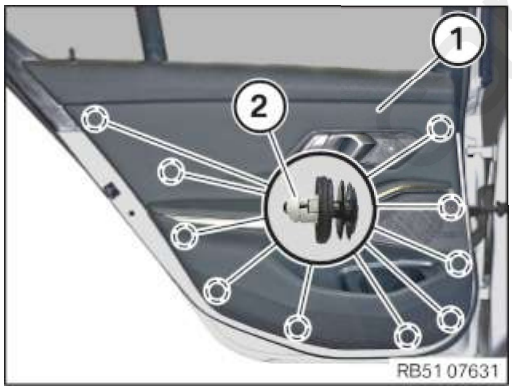
- Renew the clips (1).

  Parts: Clips

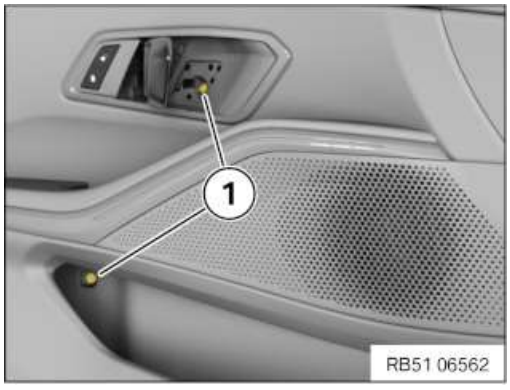
  The clips (1) **must not be engaged**. **The disengaged state is shown.**



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door handle (2) and clip in to the latch mechanism (1).
- Connect existing connectors and lock.



- Feed door trim panel from the top into the inner window recess finisher strip.
- Carefully clip in the door trim panel onto the clips (1).

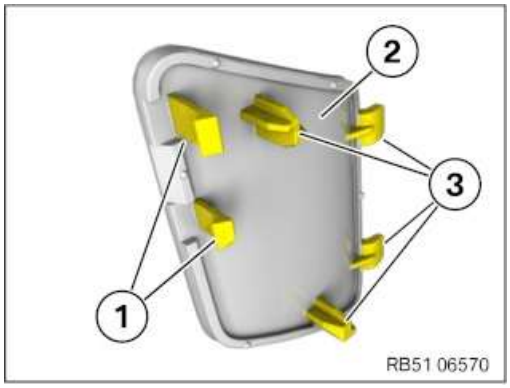


- Tighten the screws (1).

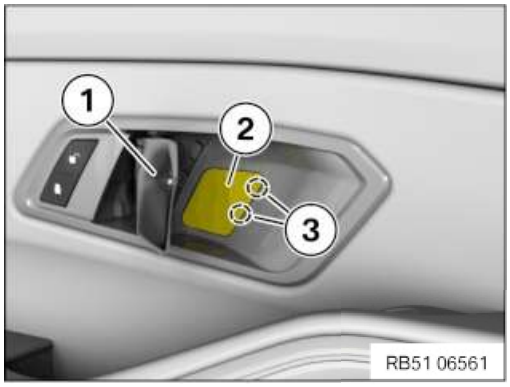
Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm

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- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

Window frame trim to door frame — Used in step 7

Oval-head screw for thermoplastic		Tightening torque	2,3 Nm

Door trim panel to door — Used in step 10

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

0 496 569 (00 9 325) Wedge

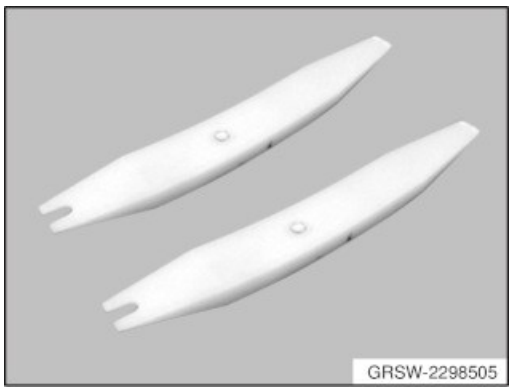


Common — Used in step 15

Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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2 298 505 Wedge



Common	Used in step 3
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

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51 34 211 Replacing rubber seal for rear left or right door window

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

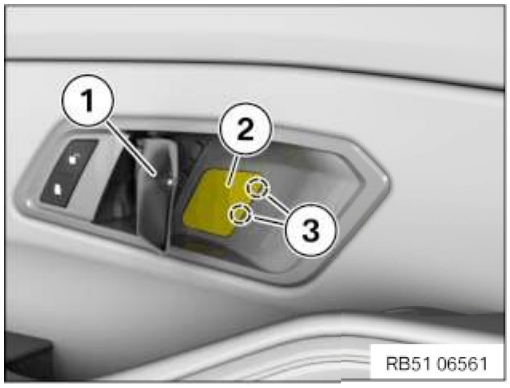
- Protect working area.
- Handle tools and components carefully.

NOTICE

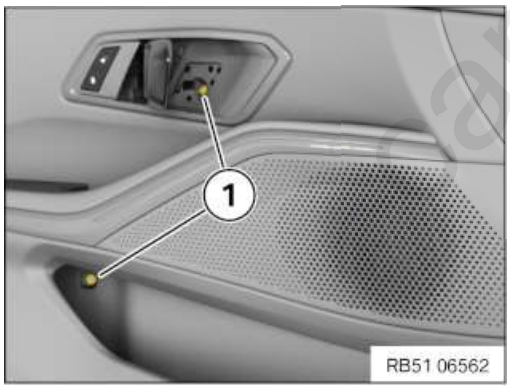
Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

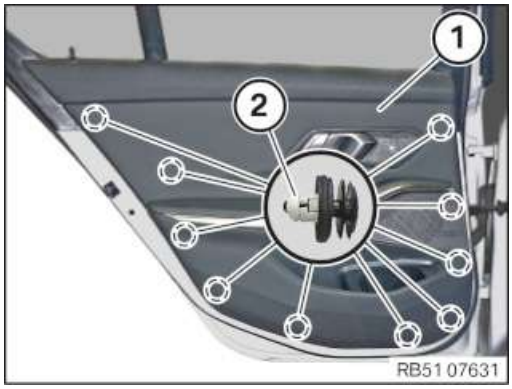
1 – Remove rear door trim



- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable tool.
- Remove trim (2).

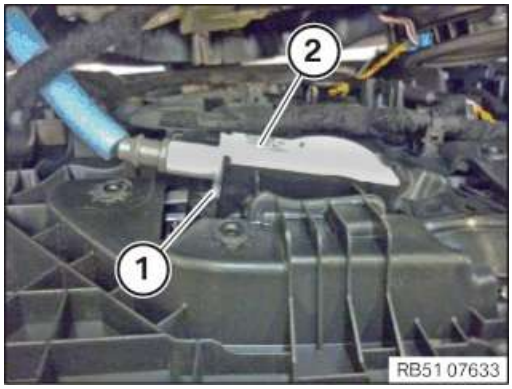


- Loosen screws (1).



- Unclip the door trim panel (1) with the special tool 0 496 569 (00 9 325) at the clips (2).
- Guide the door trim panel (1) upwards out of the weather strip.

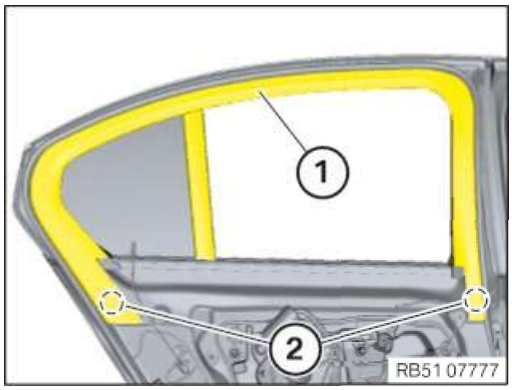
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- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock available plug connections and disconnect.
- Remove door trim panel.

2 – Removing the cover on the inside of the window frame at the rear



- Open side window.
- Lever out cover (1) from clips (2).
- Start at the front and remove the cover (1) from the door frame towards the bottom inside.

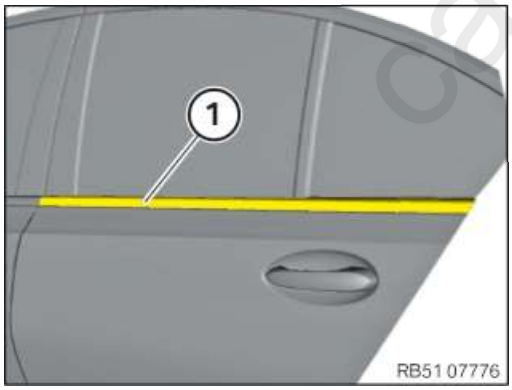
3 – Remove weather strip from the rear door

RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.



- Lever out window recess finisher strip (1) from the door carefully using the special tool 2 298 505 starting from the rear to the top.

  The window recess finisher strip might get deformed and must be renewed.

4 – Removing window frame trim of rear door

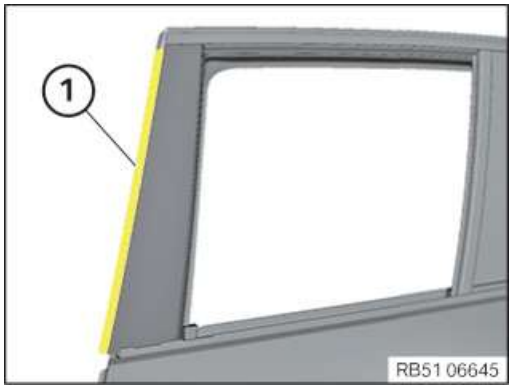
RISK OF DAMAGE

Scratches.

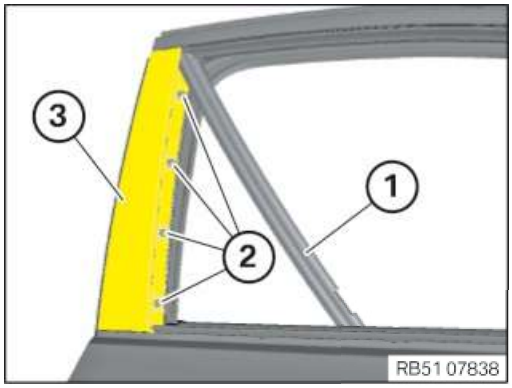
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

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- Release rubber window seal (1) from the window frame cover.



- Remove the rubber window seal (1) from the window frame trim as shown.
- Loosen screws (2).
- Press window frame trim (3) lightly to the front and feed out upwards.

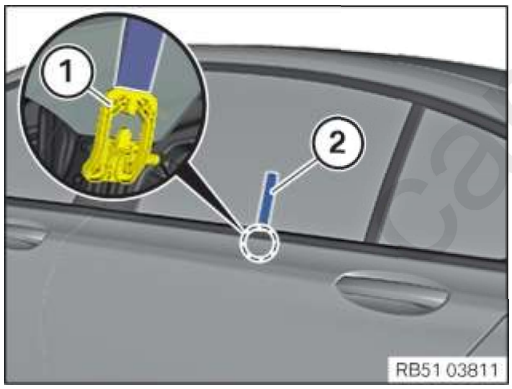
5 – Removing rear door window glass

Prerequisite

The door window glass is fully shut.

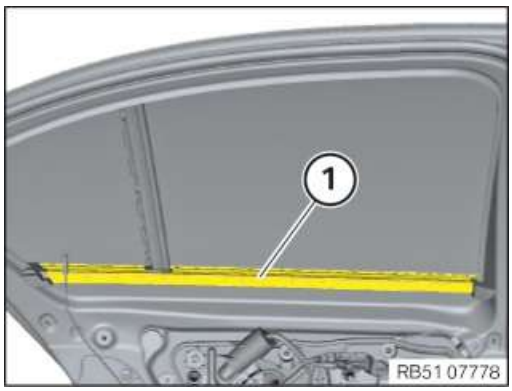
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



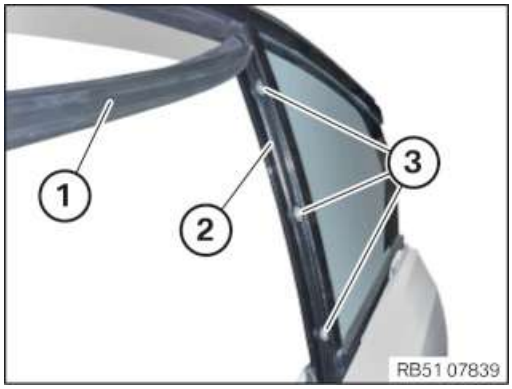
- Secure the door window glass to the door frame when it is closed using adhesive tape.
- Spread the holder (1) on the door window glass with the special tool 0 496 569 (00 9 325) (2) and unlock.
- Move the power window all the way down.
- Remove the adhesive tape and take out the door window glass to the top.

6 – Remove the weather strip from inner rear door



- Carefully lever out and remove the weather strip (1) with a suitable plastic wedge in an upward direction starting from the rear.

7 – Removing the window guide bar trim



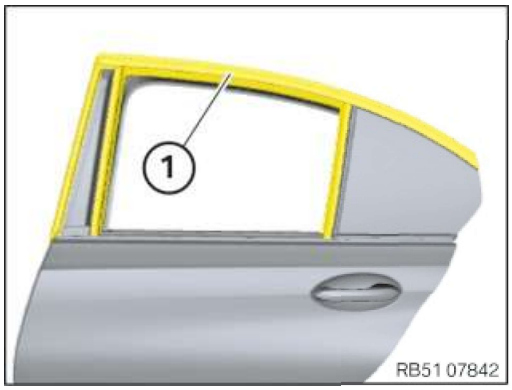
- Guide the rubber window seal (1) out of the window guide bar trim (2).
- Loosen screws (3).
- Remove the window guide bar trim (2) from the door.

MAIN WORK

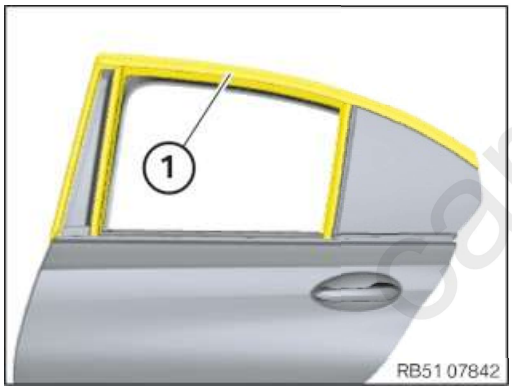
8 – Replacing the rubber window seal for door window glass

Prerequisite

Door window glass is fully open.



- Release rubber window seal (1) toward the outside off the window frame (2) and remove.
- Replace the rubber window seal.

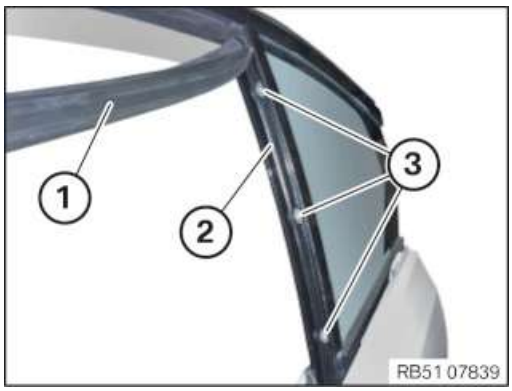


- Treat the rubber window seal (1) with a suitable lubricant.
- Position the rubber window seal (1) roughly on the door.
- Connect the rubber window seal (1) to the door.

  Make sure the window guide rubber (1) is positioned correctly at all adjacent parts.

POSTPROCESSES

9 – Installing the window guide bar trim



- Insert the window guide bar trim (2) in the door.
- Tighten the screws (3).

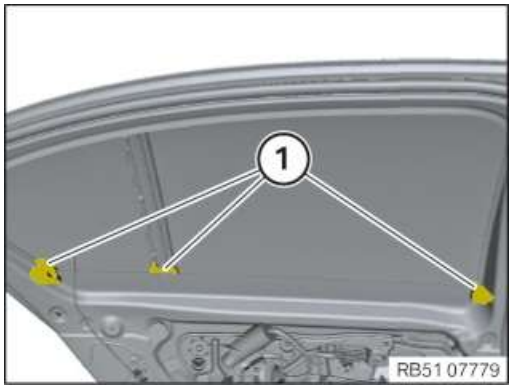
Trim, window guide web to door frame

Oval-head screw M4x8		Tightening torque	2,6 Nm

- Thread the rubber window seal (1) into the window guide bar trim (2).

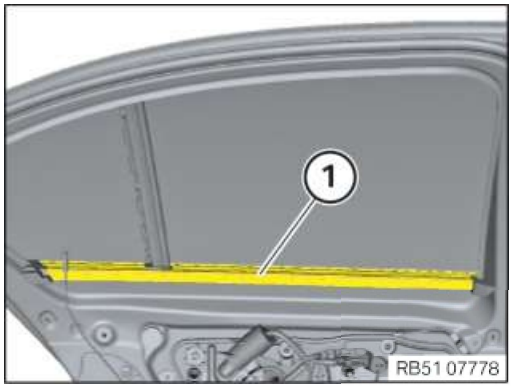
10 – Install the weather strip of the inner rear door

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- Foam seals (1) must not be damaged or missing, replace if necessary.

  Make sure the foam seal (1) is fitted correctly.

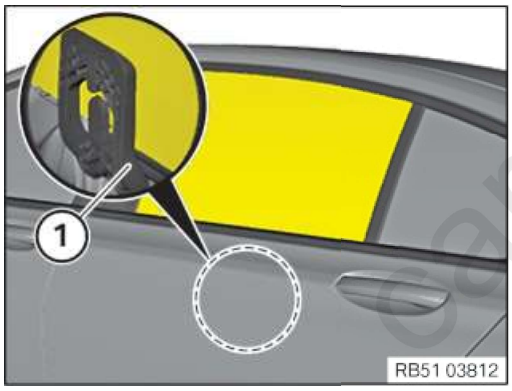


- Align the weather strip (1) and connect to door.

11 – Installing rear door window glass

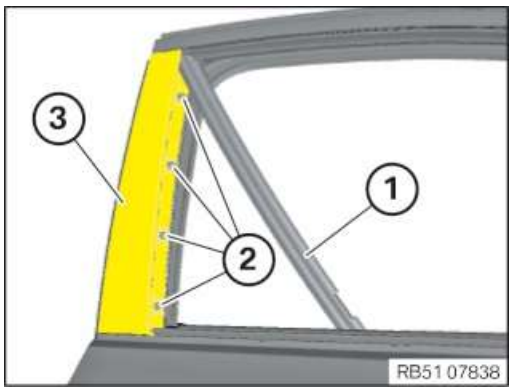
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Insert door window glass and fix to door frame using adhesive tape.
- Move the power window regulator up and engage the holder (1).
- Make sure the holder (1) has engaged correctly.
- Remove adhesive tape.

12 – Installing window frame trim of rear door



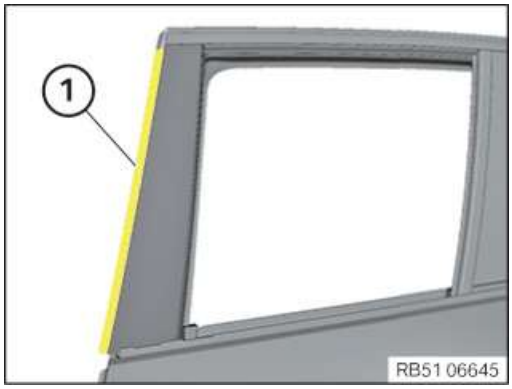
- Guide in window frame cover(3) and position it correctly.
- Tighten the screws (2).

Window frame trim to door frame

Oval-head screw for thermoplastic		Tightening torque	2,3 Nm

- Mount the rubber window seal (1).

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- Mount the rubber window seal (1).

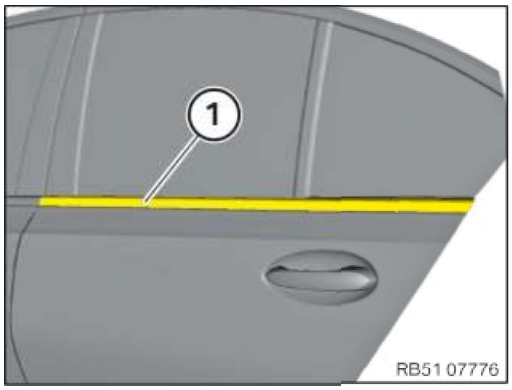
13 – Install weather strip on the rear door

RISK OF DAMAGE

Paint damage.

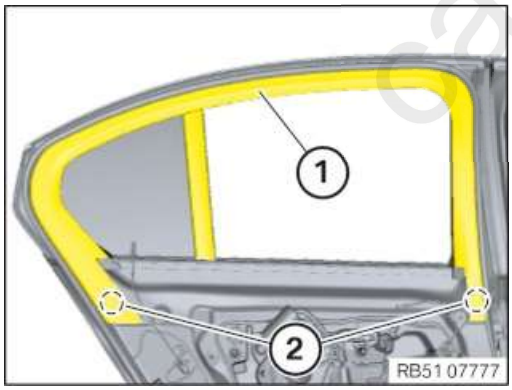
Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.

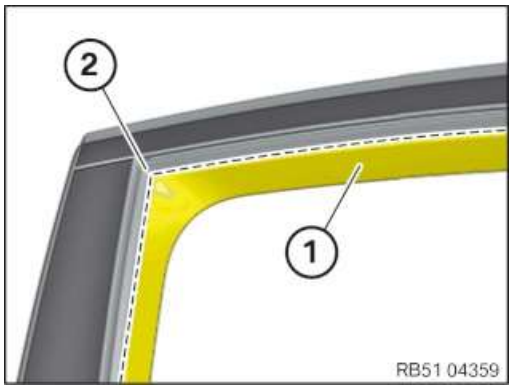


- Coat the weather strip (1) with a suitable lubricant prior to installation.
- Install the weather strip (1) and align it to the door edges .
- Press down the window recess finisher strip (1) across its entire length.

14 – Installing the cover on the inside of the window frame at the rear



- Start from the rear and connect the cover (1) to the door frame.
- Clip in cover (1) into clips (2).

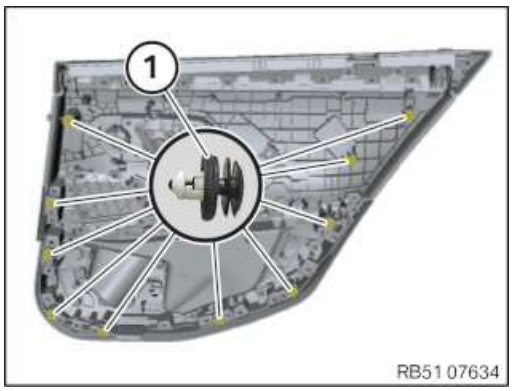


- Correctly feed in cover on window frame (1) into the gap of the rubber window seal (2).
- Make sure that the cover (1) is correctly fitted on the door seal.

15 – Installing rear door trim panel

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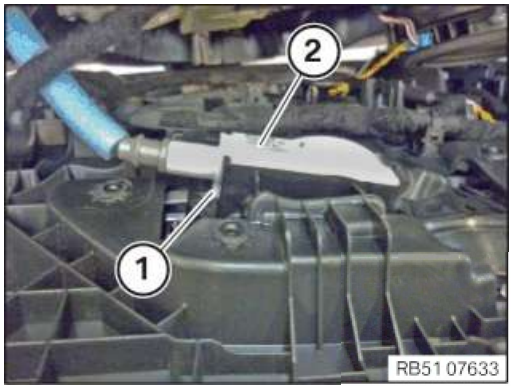
15 – Installing rear door trim panel



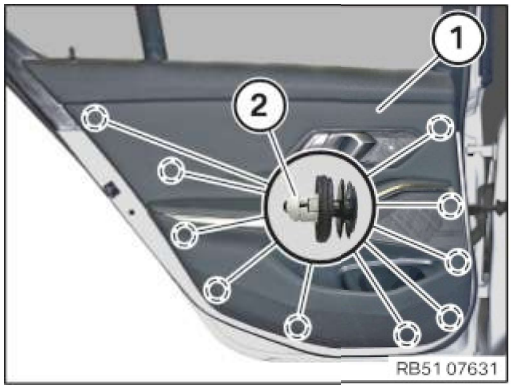
- Renew the clips (1).

  Parts: Clips

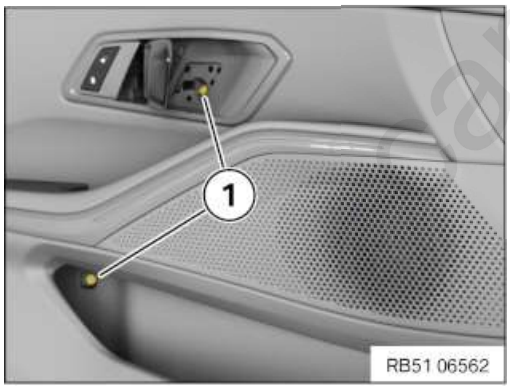
  The clips (1) **must not be engaged**. **The disengaged state is shown.**



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door handle (2) and clip in to the latch mechanism (1).
- Connect existing connectors and lock.



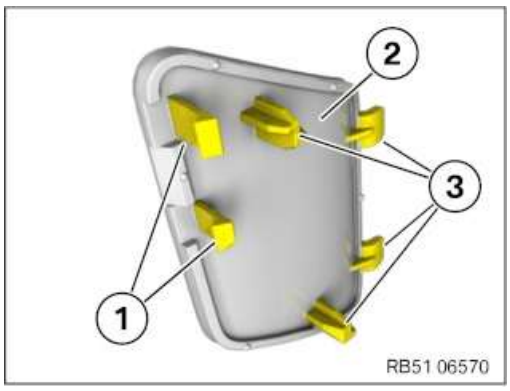
- Feed door trim panel from the top into the inner window recess finisher strip.
- Carefully clip in the door trim panel onto the clips (1).



- Tighten the screws (1).

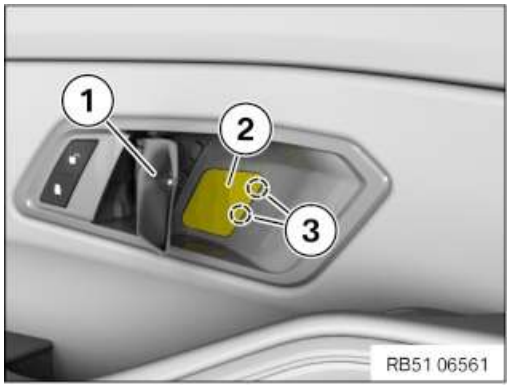
Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).

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- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

Trim, window guide web to door frame — Used in step 9

Oval-head screw M4x8		Tightening torque	2,6 Nm

Window frame trim to door frame — Used in step 12

Oval-head screw for thermoplastic		Tightening torque	2,3 Nm

Door trim panel to door — Used in step 15

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

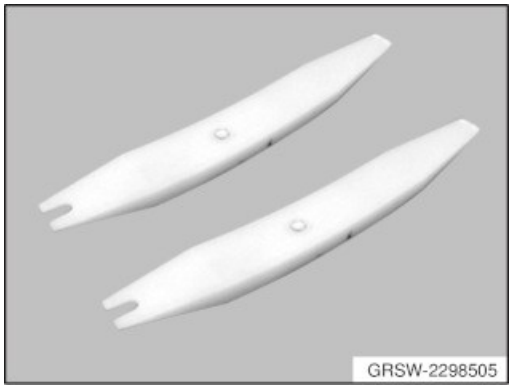
0 496 569 (00 9 325) Wedge



Common — Used in step 15

Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

2 298 505 Wedge



Common — Used in step 3

Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

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51 35 066 Removing and installing module carrier of left rear door

RISK OF DAMAGE

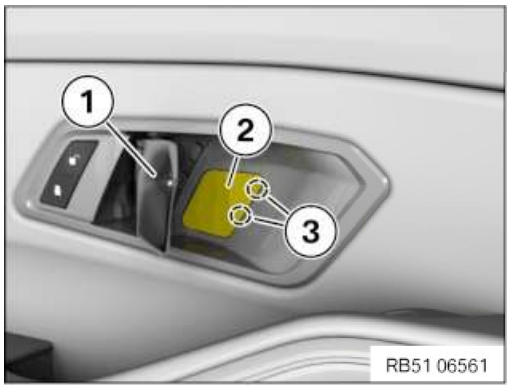
Scratches.

Tools and sharp-edged components can cause scratches.

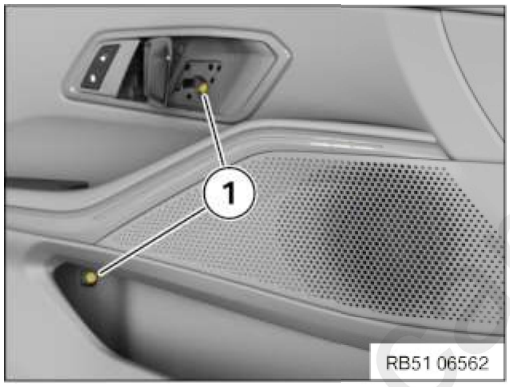
- Protect working area.
- Handle tools and components carefully.

PRELIMINARY WORK

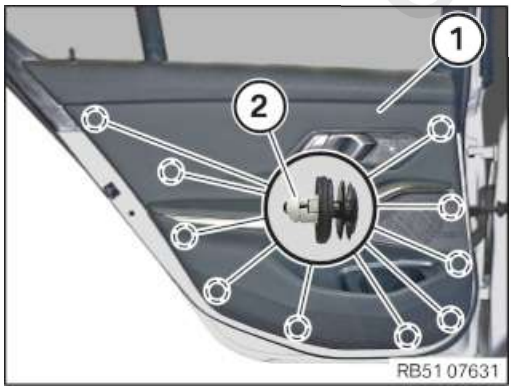
1 – Remove rear door trim



- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable tool.
- Remove trim (2).

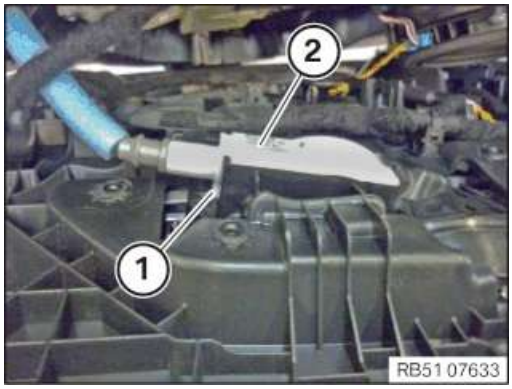


- Loosen screws (1).



- Unclip the door trim panel (1) with the special tool 0 496 569 (00 9 325) at the clips (2).
- Guide the door trim panel (1) upwards out of the weather strip.

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- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock available plug connections and disconnect.
- Remove door trim panel.

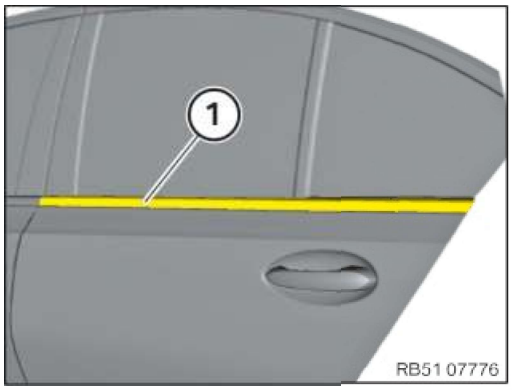
2 – Remove weather strip from the rear door

RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.



- Lever out window recess finisher strip (1) from the door carefully using the special tool 2 298 505 starting from the rear to the top.

  The window recess finisher strip might get deformed and must be renewed.

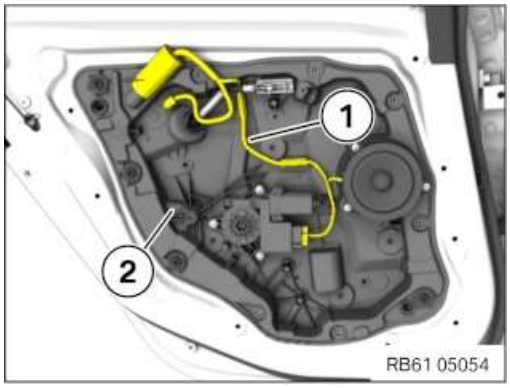
MAIN WORK

3 – Removing the rear module carrier

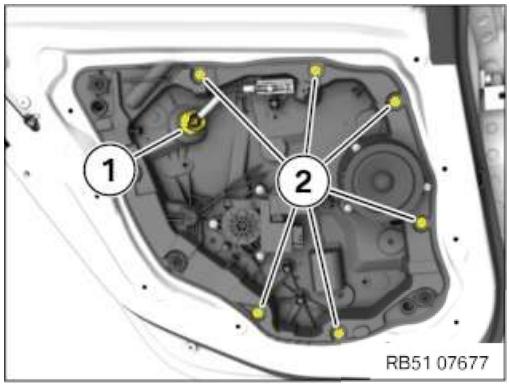


- Secure the fixed side window glass to the door frame when it is closed using adhesive tape.
- Spread apart the bracket from the outside on the fixed side window glass as far as possible using special tool 0 496 569 (00 9 325) until the fixed side window glass can be detached.
- Move the power window down approximately 10 cm.

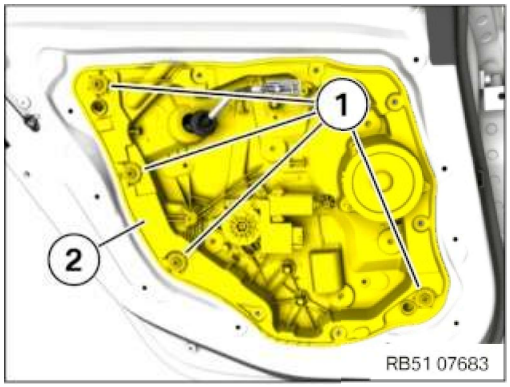
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- Release the latch mechanisms of the door wiring harness (1) from the rear module carrier (2).
- Unlock and disconnect plug connections of door wiring harness (1) on rear module carrier (2).

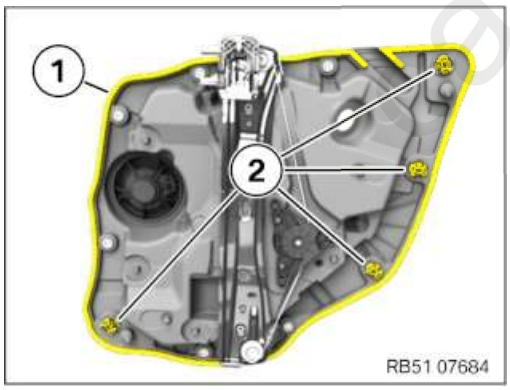


- Release the rubber grommet of the Bowden cable for the inner door opener (1).
- Loosen screws (2).



- Open locks (1) and remove rear module carrier (2).

4 – Installing the rear module carrier



Check

- Check seal (1)on rear module carrier for damage.
- Check the locks (2) for damage.

Result

» The seal (1) on the rear module carrier is damaged.

Measure

- Renew rear module carrier.

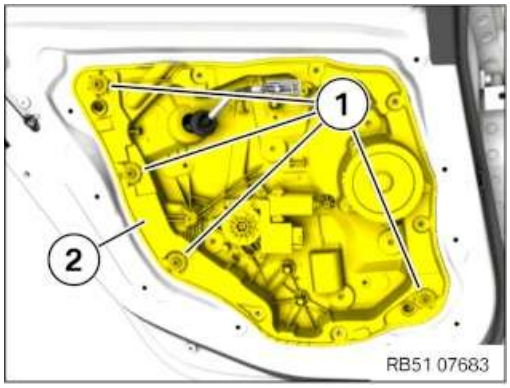
Result

» The locks (2) are damaged.

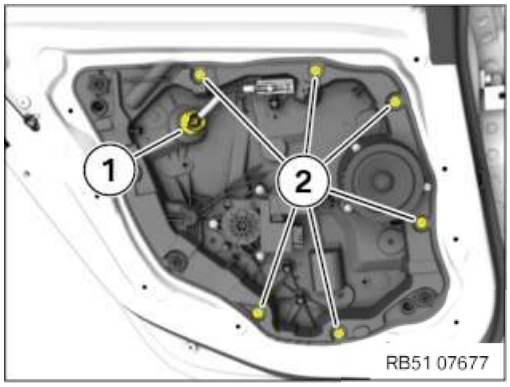
Measure

- Renew locks (2).

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- Position rear module carrier (2) and close locks (1).

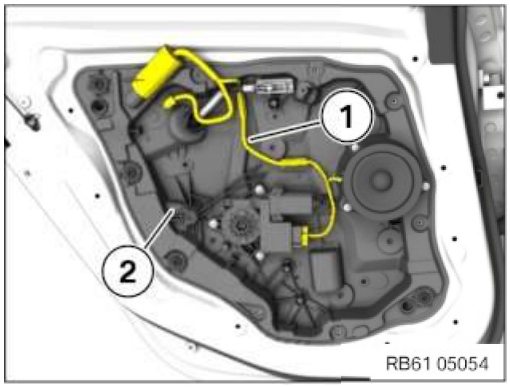


- Tighten the screws (2).

Module carrier to rear door

Torx socket M5x12		Tightening torque	8 Nm

- Install rubber grommet of the Bowden cable for the inner door opener (1).



- Clip the latch mechanisms of the door wiring harness (1) into the module carrier (2).
- Connect and lock plug connections of door wiring harness (1) on rear module carrier (2).
- Move the power window upwards until the fixed side window glass correctly engages in the holder.
- Remove adhesive tape.

POSTPROCESSES

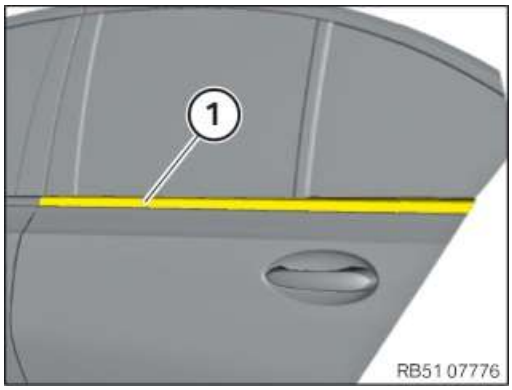
5 – Install weather strip on the rear door

RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

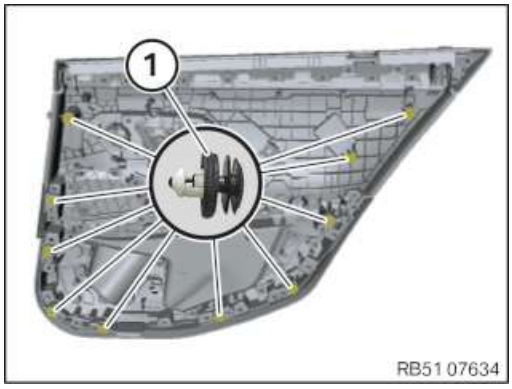
- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.



- Coat the weather strip (1) with a suitable lubricant prior to installation.
- Install the weather strip (1) and align it to the door edges .
- Press down the window recess finisher strip (1) across its entire length.

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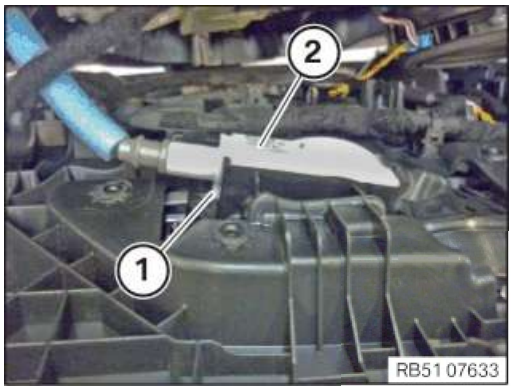
6 – Installing rear door trim panel



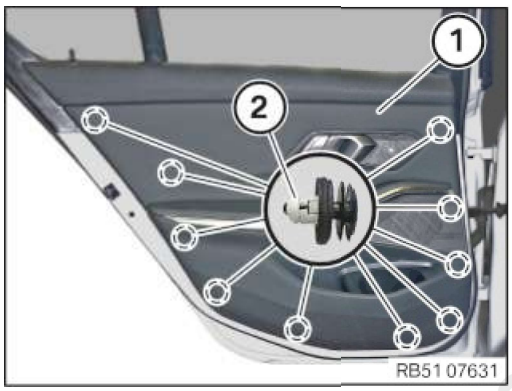
- Renew the clips (1).

  Parts: Clips

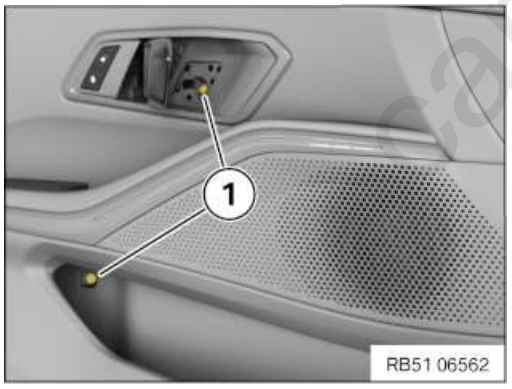
  The clips (1) **must not be engaged**. **The disengaged state is shown.**



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door handle (2) and clip in to the latch mechanism (1).
- Connect existing connectors and lock.



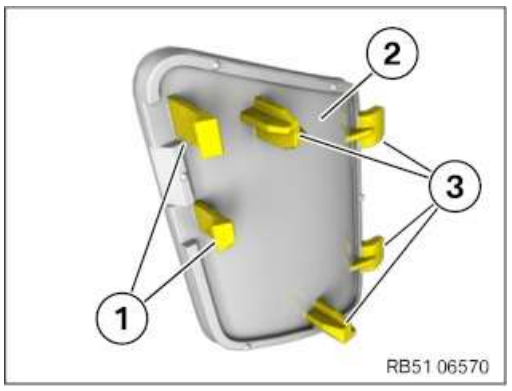
- Feed door trim panel from the top into the inner window recess finisher strip.
- Carefully clip in the door trim panel onto the clips (1).



- Tighten the screws (1).

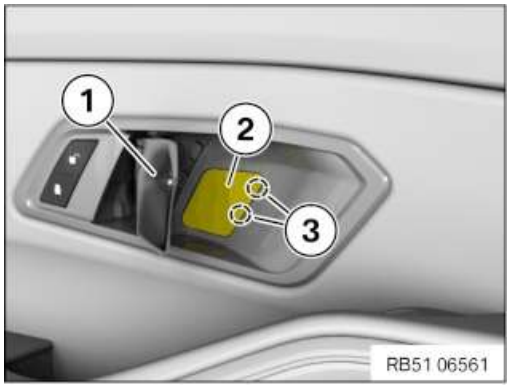
Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).

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- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

Module carrier to rear door — Used in step 4

Torx socket M5x12		Tightening torque	8 Nm

Door trim panel to door — Used in step 6

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

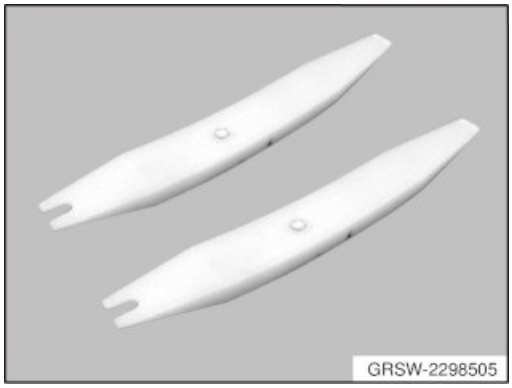
0 496 569 (00 9 325) Wedge



Common — Used in step 13

Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

2 298 505 Wedge



Common — Used in step 2

Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

carclagn.com

51 35 068 Removing and installing module carrier of right rear door

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

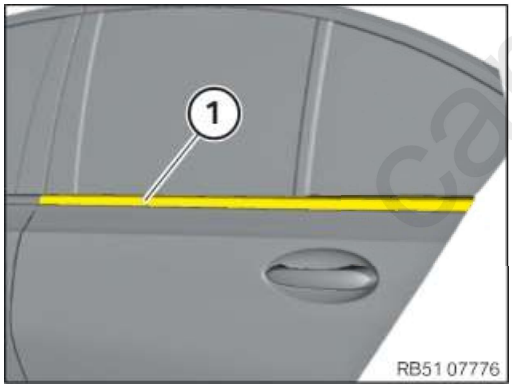
1 – Remove weather strip from the rear door

RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

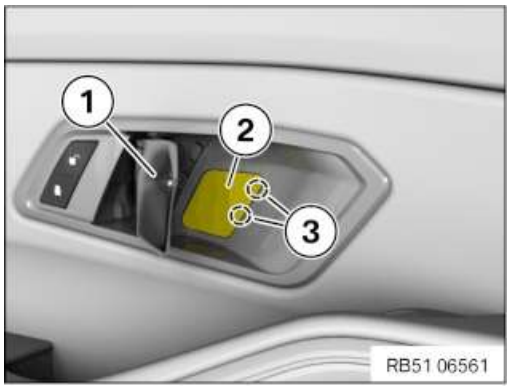
- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.



- Lever out window recess finisher strip (1) from the door carefully using the special tool 2 298 505 starting from the rear to the top.

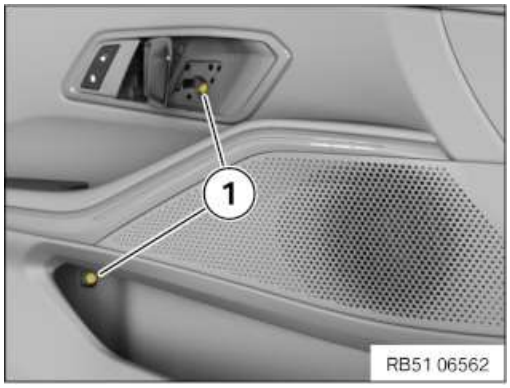
  The window recess finisher strip might get deformed and must be renewed.

2 – Remove rear door trim

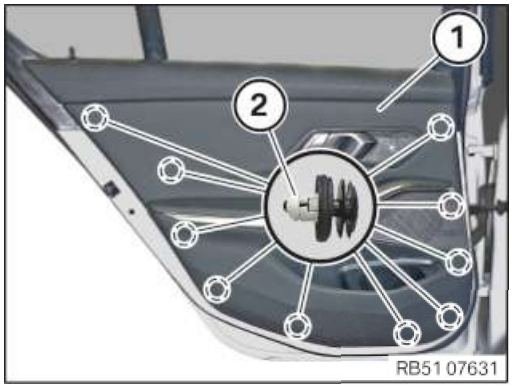


- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable tool.
- Remove trim (2).

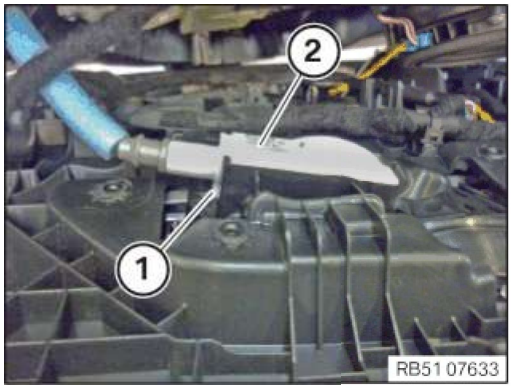
cardiagn.com



- Loosen screws (1).



- Unclip the door trim panel (1) with the special tool 0 496 569 (00 9 325) at the clips (2).
- Guide the door trim panel (1) upwards out of the weather strip.



- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

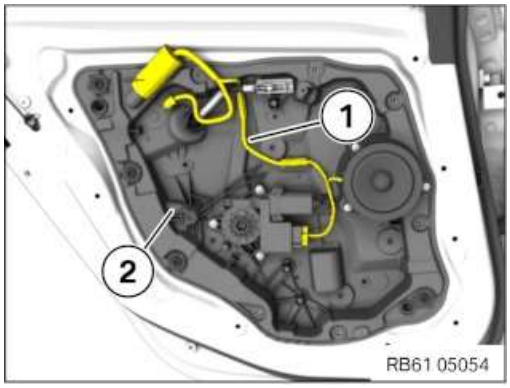
  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock available plug connections and disconnect.
- Remove door trim panel.

MAIN WORK

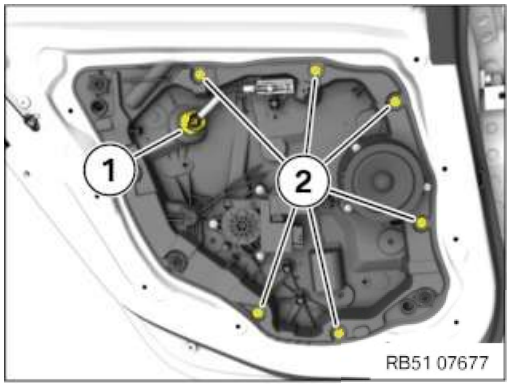
3 – Removing the rear module carrier



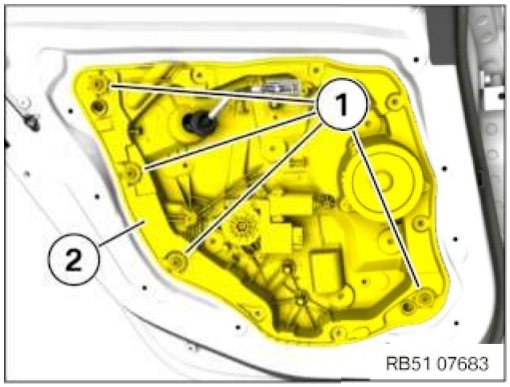
- Secure the fixed side window glass to the door frame when it is closed using adhesive tape.
- Spread apart the bracket from the outside on the fixed side window glass as far as possible using special tool 0 496 569 (00 9 325) until the fixed side window glass can be detached.
- Move the power window down approximately 10 cm.



- Release the latch mechanisms of the door wiring harness (1) from the rear module carrier (2).
- Unlock and disconnect plug connections of door wiring harness (1) on rear module carrier (2).

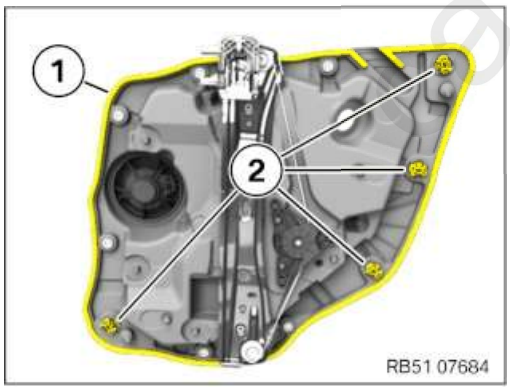


- Release the rubber grommet of the Bowden cable for the inner door opener (1).
- Loosen screws (2).



- Open locks (1) and remove rear module carrier (2).

4 – Installing the rear module carrier



Check

- Check seal (1)on rear module carrier for damage.
- Check the locks (2) for damage.

Result

» The seal (1) on the rear module carrier is damaged.

Measure

- Renew rear module carrier.

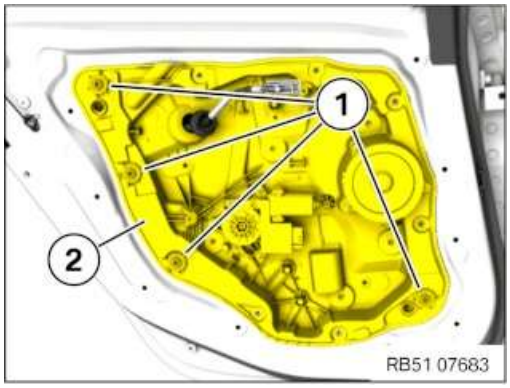
Result

» The locks (2) are damaged.

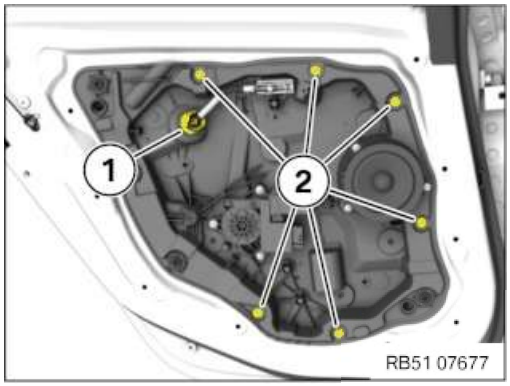
Measure

- Renew locks (2).

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- Position rear module carrier (2) and close locks (1).

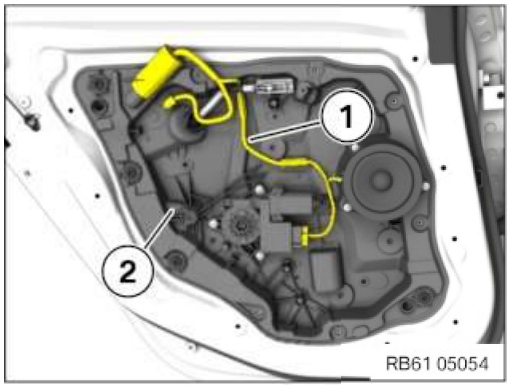


- Tighten the screws (2).

Module carrier to rear door

Torx socket M5x12		Tightening torque	8 Nm

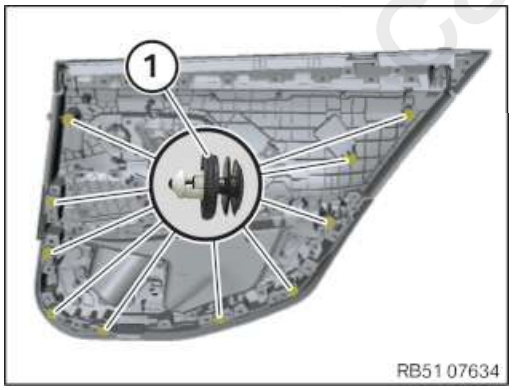
- Install rubber grommet of the Bowden cable for the inner door opener (1).



- Clip the latch mechanisms of the door wiring harness (1) into the module carrier (2).
- Connect and lock plug connections of door wiring harness (1) on rear module carrier (2).
- Move the power window upwards until the fixed side window glass correctly engages in the holder.
- Remove adhesive tape.

POSTPROCESSES

5 – Installing rear door trim panel

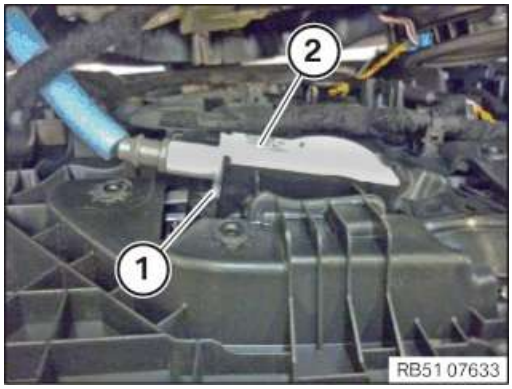


- Renew the clips (1).

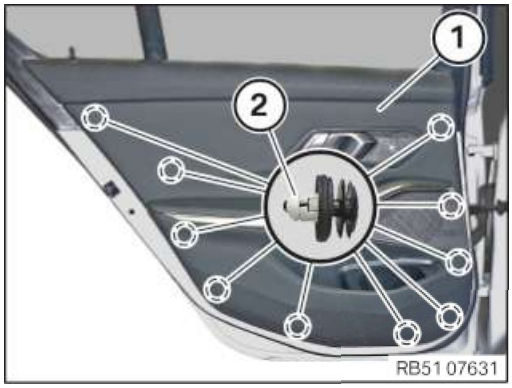
  Parts: Clips

  The clips (1) **must not be engaged**. **The disengaged state is shown.**

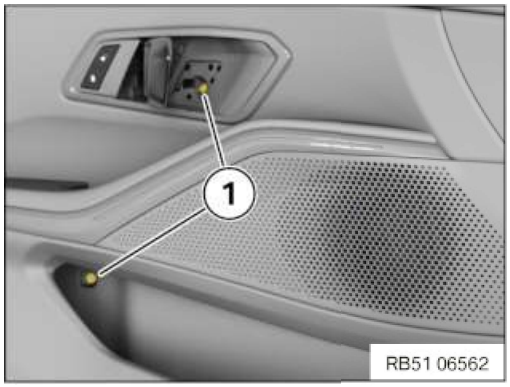
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- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door handle (2) and clip in to the latch mechanism (1).
- Connect existing connectors and lock.



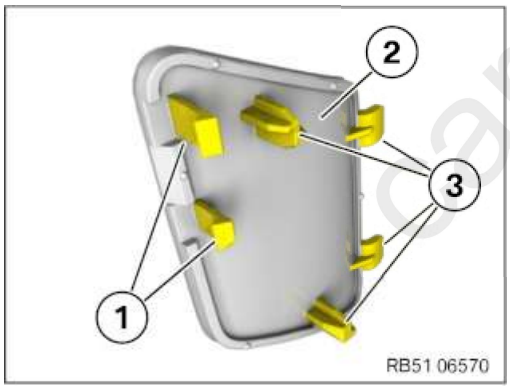
- Feed door trim panel from the top into the inner window recess finisher strip.
- Carefully clip in the door trim panel onto the clips (1).



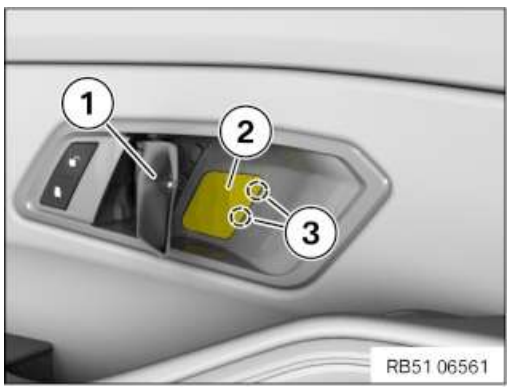
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

6 – Install weather strip on the rear door

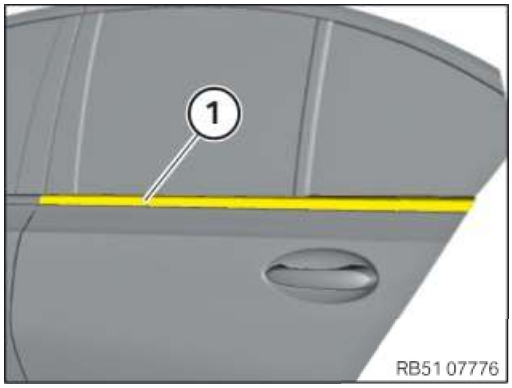
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RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.



- Coat the weather strip (1) with a suitable lubricant prior to installation.
- Install the weather strip (1) and align it to the door edges .
- Press down the window recess finisher strip (1) across its entire length.

Additional Information

Overview of Tightening Torques

Module carrier to rear door — Used in step 4

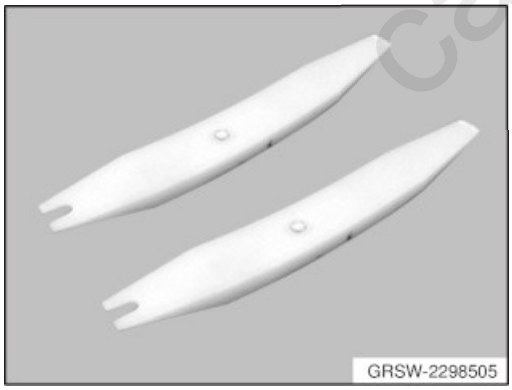
Torx socket M5x12		Tightening torque	8 Nm

Door trim panel to door — Used in step 5

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

2 298 505 Wedge



Common — Used in step 1

Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

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0 496 569 (00 9 325) Wedge



Common Used in step 23

Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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51 35 070 Replace module carrier of left rear door

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

PRELIMINARY WORK

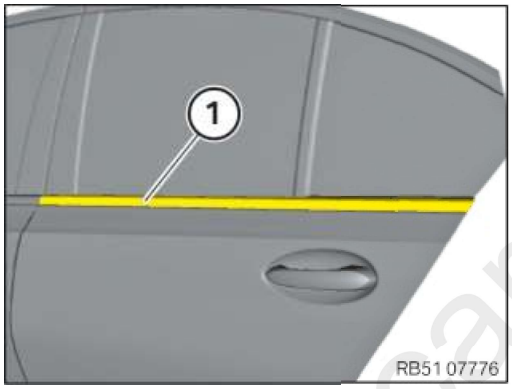
1 – Remove weather strip from the rear door

RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

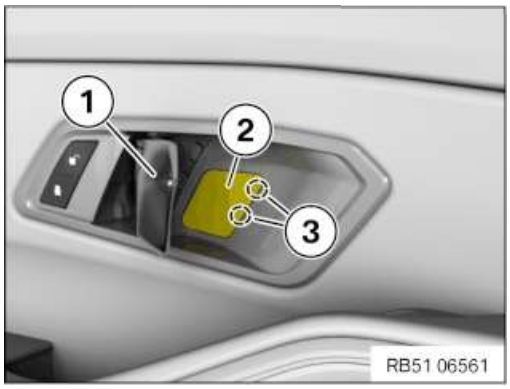
- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.



- Lever out window recess finisher strip (1) from the door carefully using the special tool 2 298 505 starting from the rear to the top.

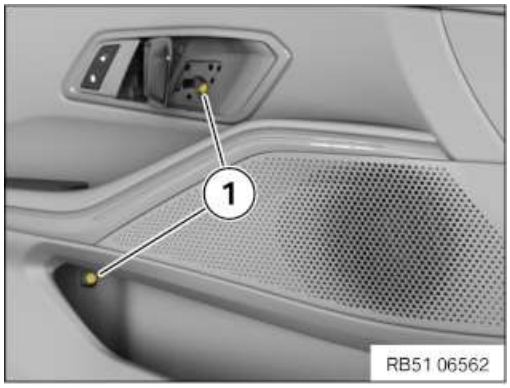
  The window recess finisher strip might get deformed and must be renewed.

2 – Remove rear door trim

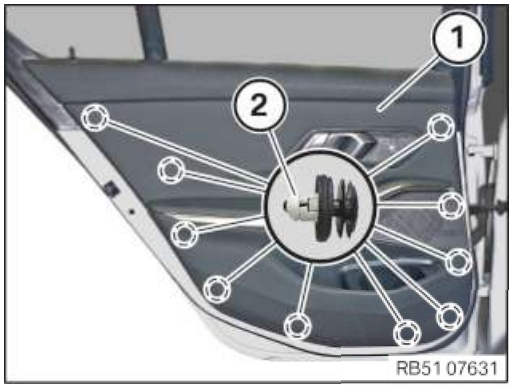


- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable tool.
- Remove trim (2).

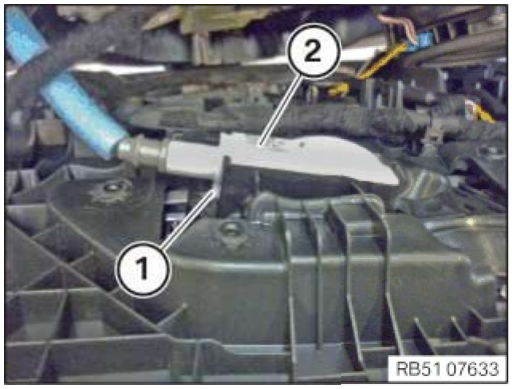
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- Loosen screws (1).



- Unclip the door trim panel (1) with the special tool 0 496 569 (00 9 325) at the clips (2).
- Guide the door trim panel (1) upwards out of the weather strip.



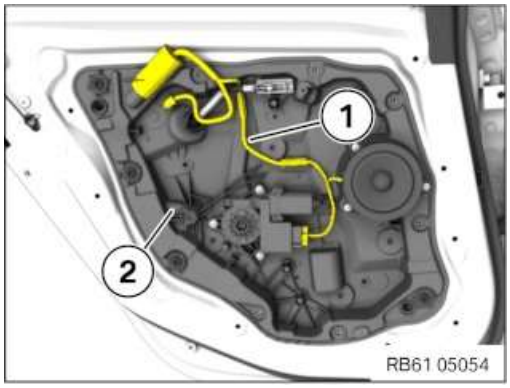
- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock available plug connections and disconnect.
- Remove door trim panel.

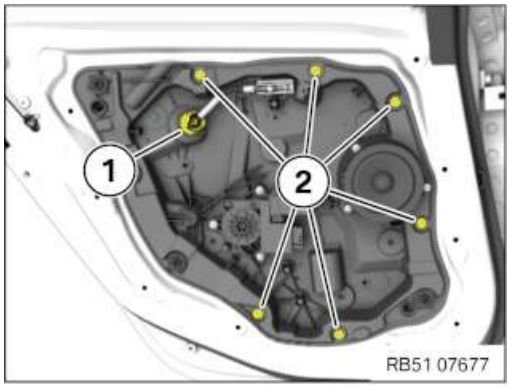
3 – Removing the rear module carrier



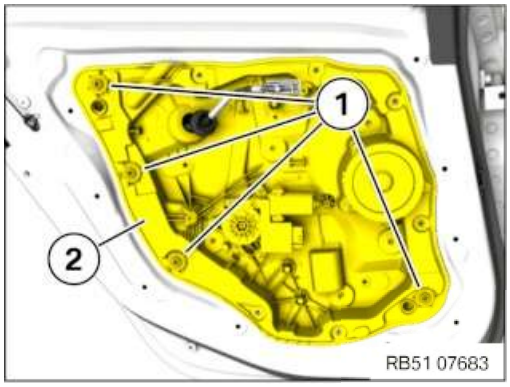
- Secure the fixed side window glass to the door frame when it is closed using adhesive tape.
- Spread apart the bracket from the outside on the fixed side window glass as far as possible using special tool 0 496 569 (00 9 325) until the fixed side window glass can be detached.
- Move the power window down approximately 10 cm.



- Release the latch mechanisms of the door wiring harness (1) from the rear module carrier (2).
- Unlock and disconnect plug connections of door wiring harness (1) on rear module carrier (2).



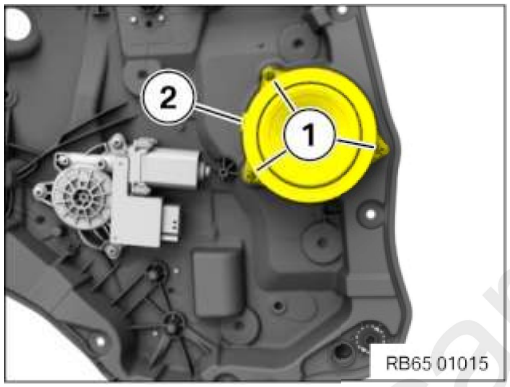
- Release the rubber grommet of the Bowden cable for the inner door opener (1).
- Loosen screws (2).



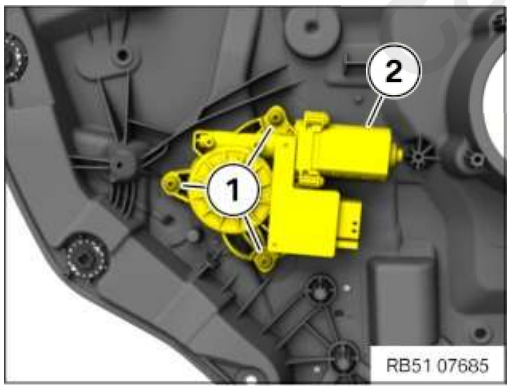
- Open locks (1) and remove rear module carrier (2).

MAIN WORK

4 – Replacement: Rear module carrier

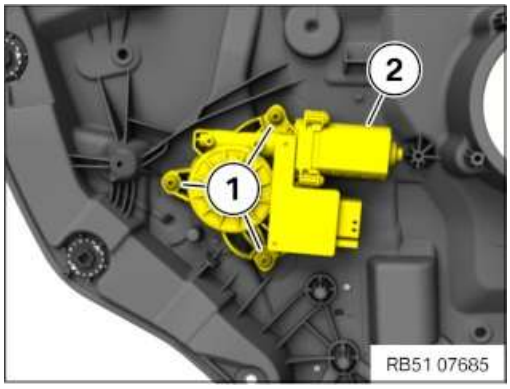


- Release screws (1) and remove loudspeakers (2).



- Release screws (1) and remove drive for rear power window (2).

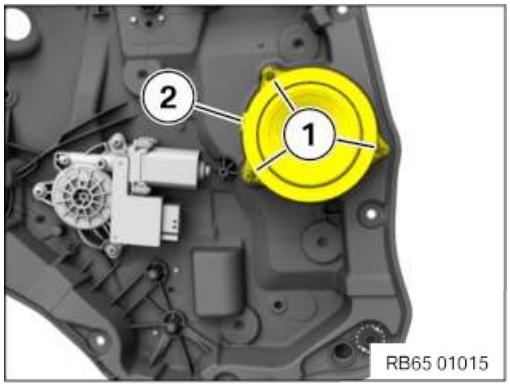
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- Position drive for rear power window (2) on the new module carrier at the rear.
- Tighten the screws (1).

Flat motor on door module carrier

Oval-head screw for thermoplastic		Tightening torque	3,5 Nm



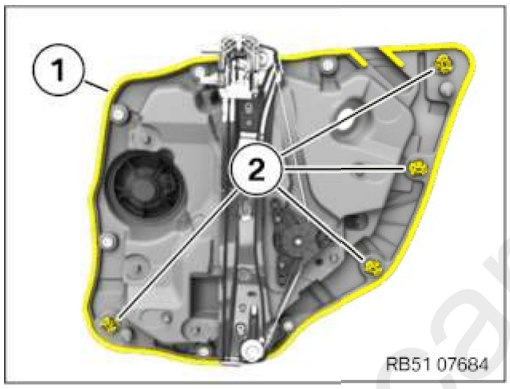
- Position loudspeakers (2) on the rear module carrier and tighten screws (1).

Door speaker on door module carrier

Oval-head screw for thermoplastic		Tightening torque	2 Nm

POSTPROCESSES

5 – Installing the rear module carrier



Check

- Check seal (1)on rear module carrier for damage.
- Check the locks (2) for damage.

Result

» The seal (1) on the rear module carrier is damaged.

Measure

- Renew rear module carrier.

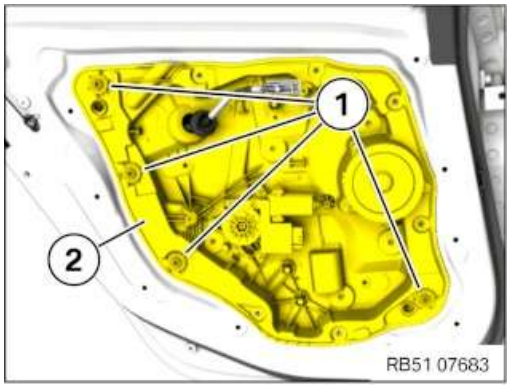
Result

» The locks (2) are damaged.

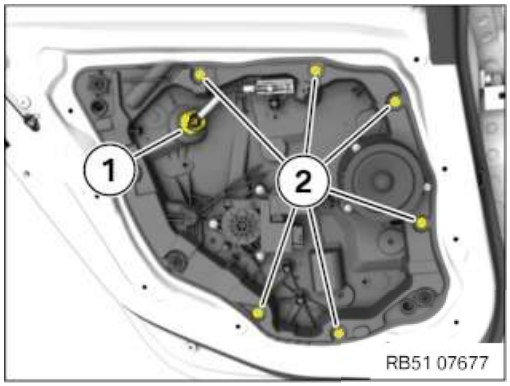
Measure

- Renew locks (2).

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- Position rear module carrier (2) and close locks (1).

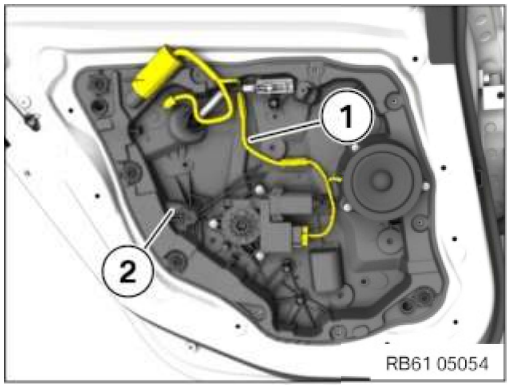


- Tighten the screws (2).

Module carrier to rear door

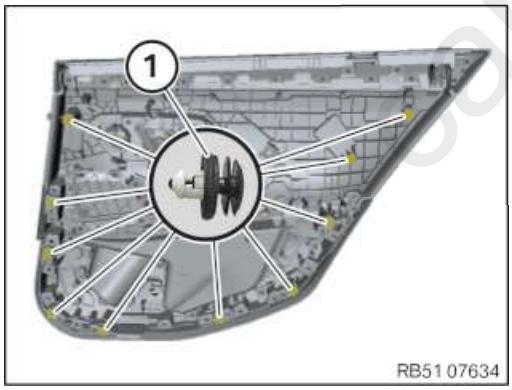
Torx socket M5x12		Tightening torque	8 Nm

- Install rubber grommet of the Bowden cable for the inner door opener (1).



- Clip the latch mechanisms of the door wiring harness (1) into the module carrier (2).
- Connect and lock plug connections of door wiring harness (1) on rear module carrier (2).
- Move the power window upwards until the fixed side window glass correctly engages in the holder.
- Remove adhesive tape.

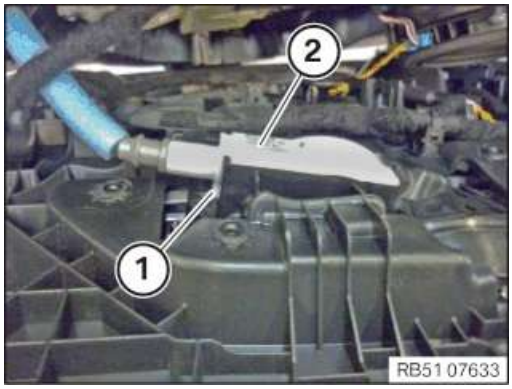
6 – Installing rear door trim panel



- Renew the clips (1).

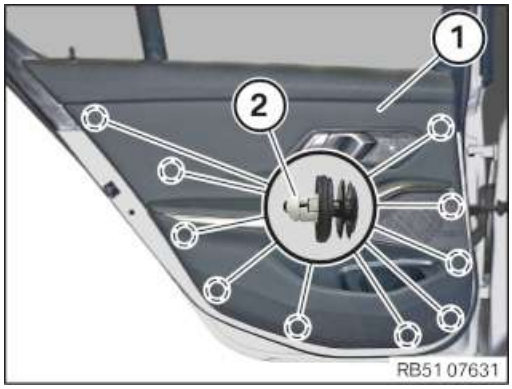
  Parts: Clips

  The clips (1) **must not be engaged. The disengaged state is shown.**

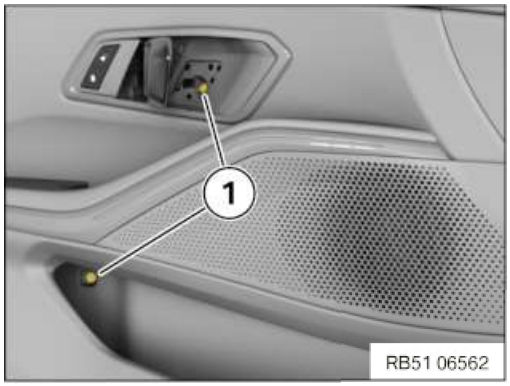


- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door handle (2) and clip in to the latch mechanism (1).
- Connect existing connectors and lock.

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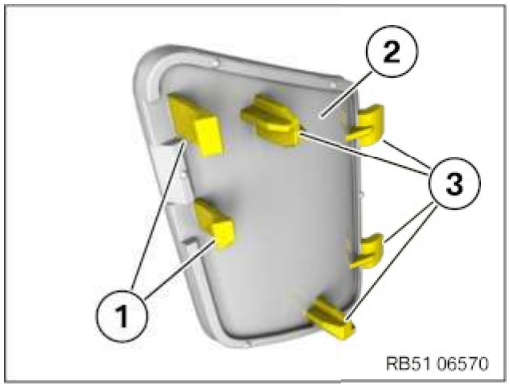
- Feed door trim panel from the top into the inner window recess finisher strip.
- Carefully clip in the door trim panel onto the clips (1).



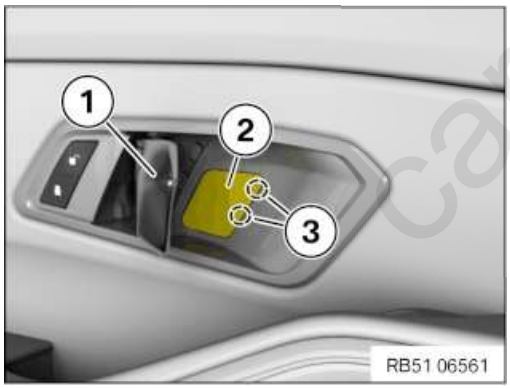
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

7 – Install weather strip on the rear door

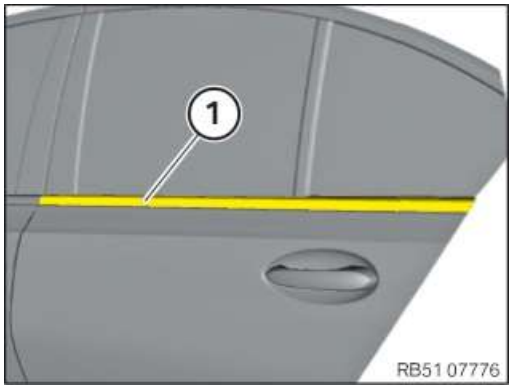
RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.

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- Coat the weather strip (1) with a suitable lubricant prior to installation.
- Install the weather strip (1) and align it to the door edges .
- Press down the window recess finisher strip (1) across its entire length.

Additional Information

Overview of Tightening Torques

Flat motor on door module carrier — Used in step 4

Oval-head screw for thermoplastic		Tightening torque	3,5 Nm

Door speaker on door module carrier — Used in step 4

Oval-head screw for thermoplastic		Tightening torque	2 Nm

Module carrier to rear door — Used in step 5

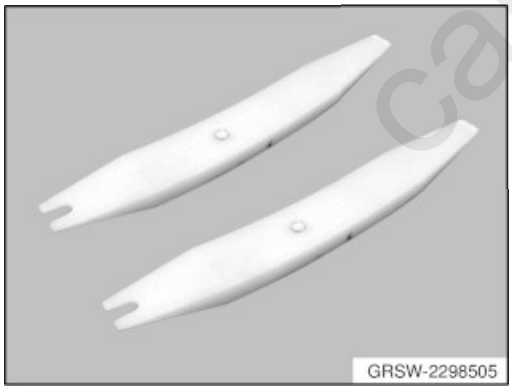
Torx socket M5x12		Tightening torque	8 Nm

Door trim panel to door — Used in step 6

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

2 298 505 Wedge



Common — Used in step 1

Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

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0 496 569 (00 9 325) Wedge



Common Used in step 23

Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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51 35 072 Replace right rear door module carrier

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

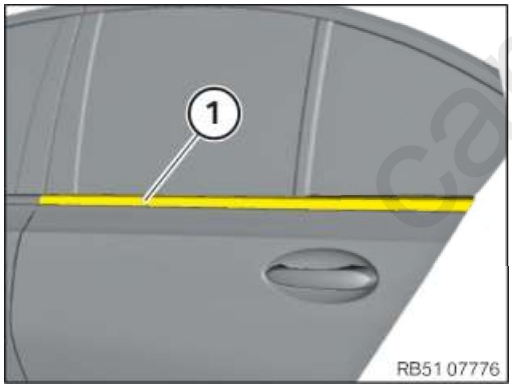
1 – Remove weather strip from the rear door

RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

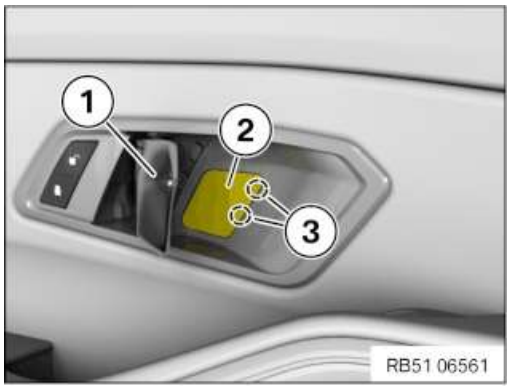
- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.



- Lever out window recess finisher strip (1) from the door carefully using the special tool 2 298 505 starting from the rear to the top.

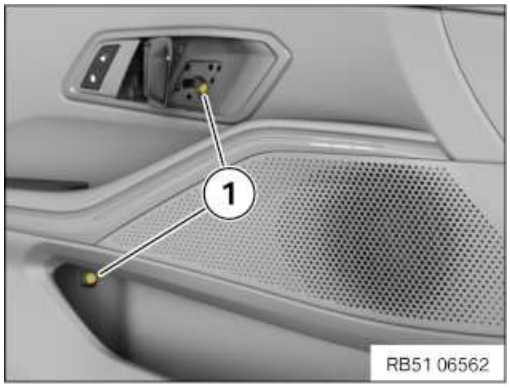
  The window recess finisher strip might get deformed and must be renewed.

2 – Remove rear door trim

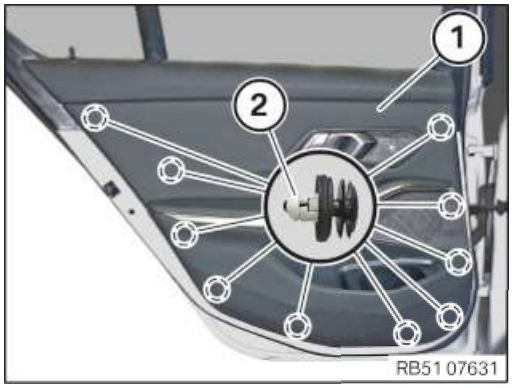


- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable tool.
- Remove trim (2).

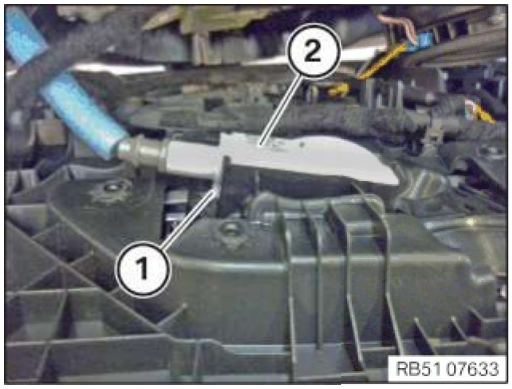
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- Loosen screws (1).



- Unclip the door trim panel (1) with the special tool 0 496 569 (00 9 325) at the clips (2).
- Guide the door trim panel (1) upwards out of the weather strip.



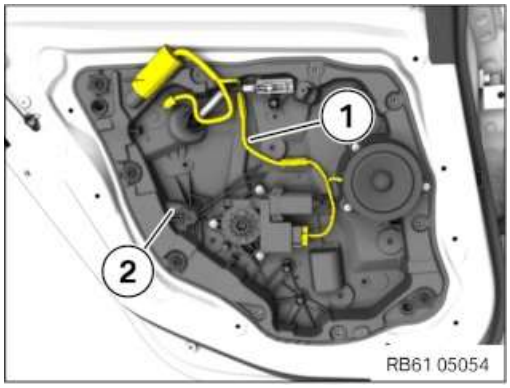
- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock available plug connections and disconnect.
- Remove door trim panel.

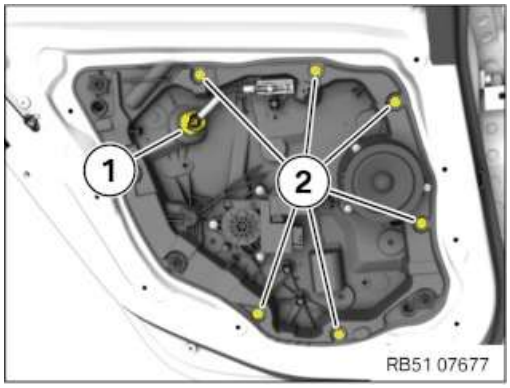
3 – Removing the rear module carrier



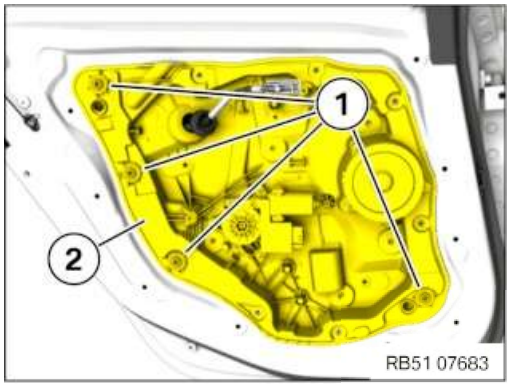
- Secure the fixed side window glass to the door frame when it is closed using adhesive tape.
- Spread apart the bracket from the outside on the fixed side window glass as far as possible using special tool 0 496 569 (00 9 325) until the fixed side window glass can be detached.
- Move the power window down approximately 10 cm.



- Release the latch mechanisms of the door wiring harness (1) from the rear module carrier (2).
- Unlock and disconnect plug connections of door wiring harness (1) on rear module carrier (2).



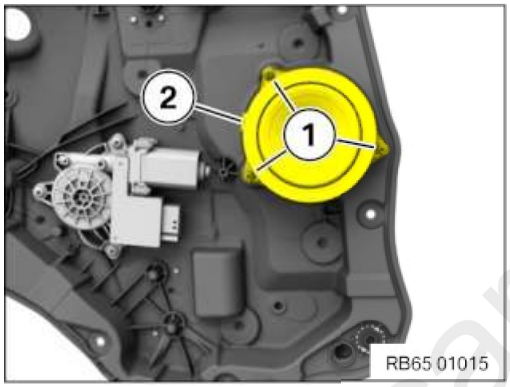
- Release the rubber grommet of the Bowden cable for the inner door opener (1).
- Loosen screws (2).



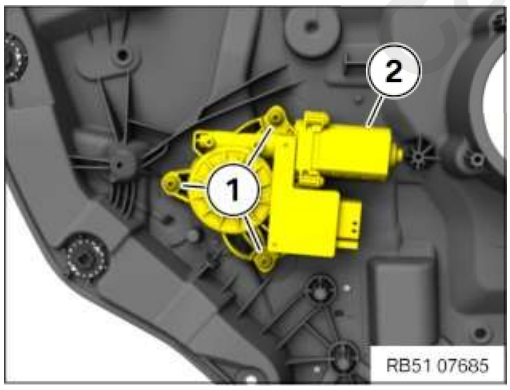
- Open locks (1) and remove rear module carrier (2).

MAIN WORK

4 – Replacement: Rear module carrier

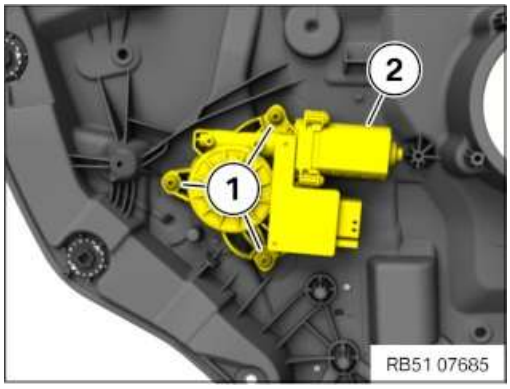


- Release screws (1) and remove loudspeakers (2).



- Release screws (1) and remove drive for rear power window (2).

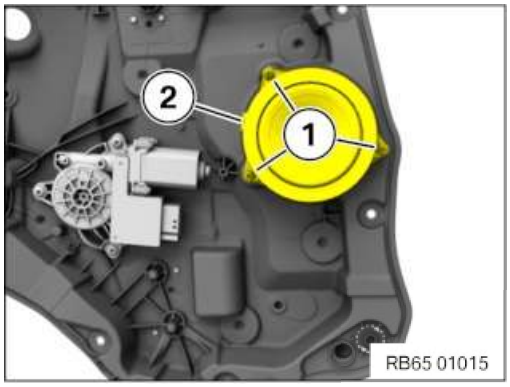
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- Position drive for rear power window (2) on the new module carrier at the rear.
- Tighten the screws (1).

Flat motor on door module carrier

Oval-head screw for thermoplastic		Tightening torque	3,5 Nm



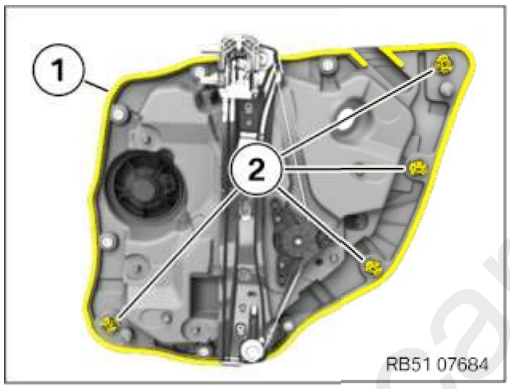
- Position loudspeakers (2) on the rear module carrier and tighten screws (1).

Door speaker on door module carrier

Oval-head screw for thermoplastic		Tightening torque	2 Nm

POSTPROCESSES

5 – Installing the rear module carrier



Check

- Check seal (1)on rear module carrier for damage.
- Check the locks (2) for damage.

Result

» The seal (1) on the rear module carrier is damaged.

Measure

- Renew rear module carrier.

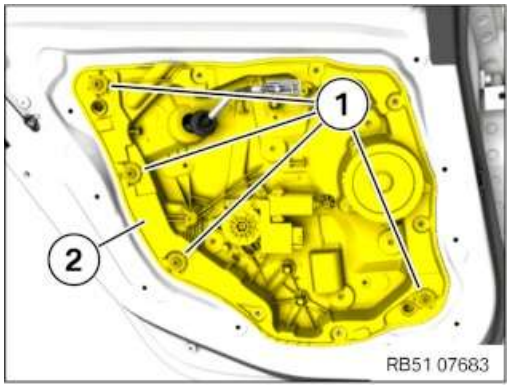
Result

» The locks (2) are damaged.

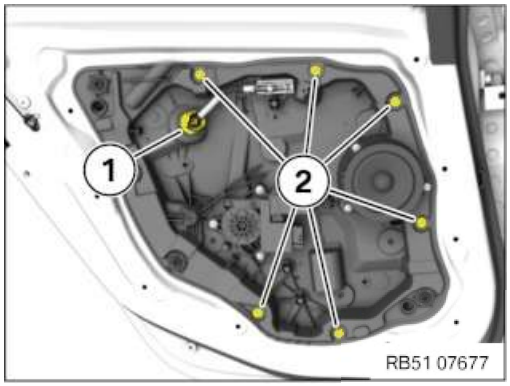
Measure

- Renew locks (2).

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- Position rear module carrier (2) and close locks (1).

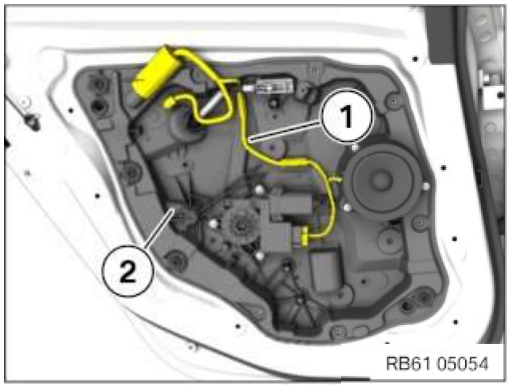


- Tighten the screws (2).

Module carrier to rear door

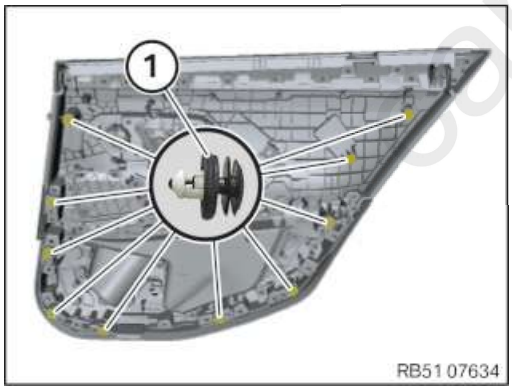
Torx socket M5x12		Tightening torque	8 Nm

- Install rubber grommet of the Bowden cable for the inner door opener (1).



- Clip the latch mechanisms of the door wiring harness (1) into the module carrier (2).
- Connect and lock plug connections of door wiring harness (1) on rear module carrier (2).
- Move the power window upwards until the fixed side window glass correctly engages in the holder.
- Remove adhesive tape.

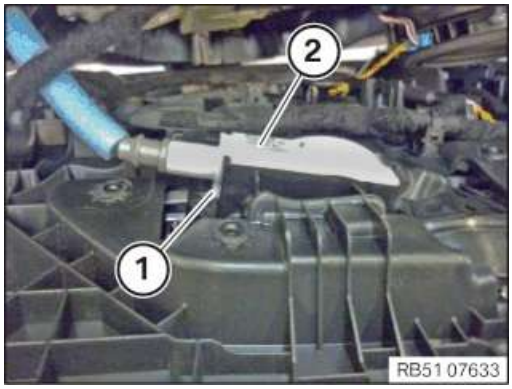
6 – Installing rear door trim panel



- Renew the clips (1).

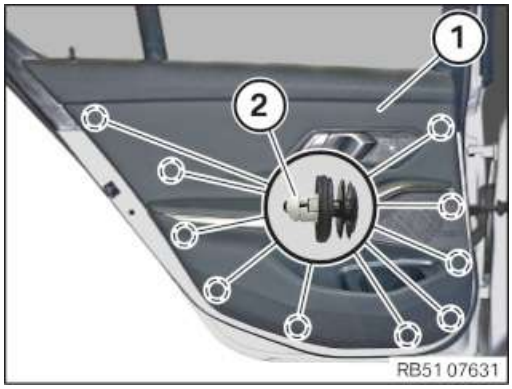
  Parts: Clips

  The clips (1) **must not be engaged. The disengaged state is shown.**

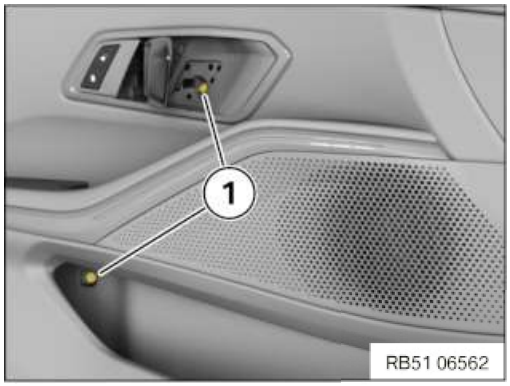


- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door handle (2) and clip in to the latch mechanism (1).
- Connect existing connectors and lock.

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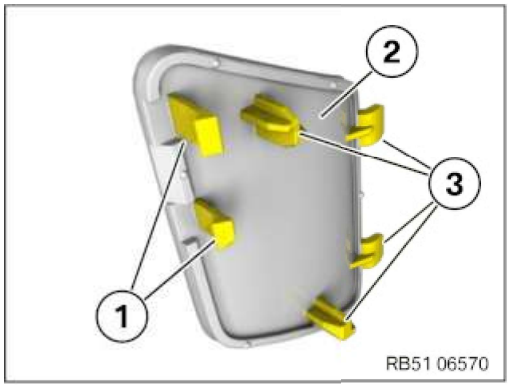
- Feed door trim panel from the top into the inner window recess finisher strip.
- Carefully clip in the door trim panel onto the clips (1).



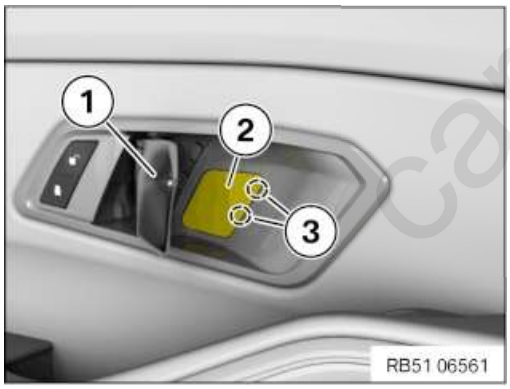
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

7 – Install weather strip on the rear door

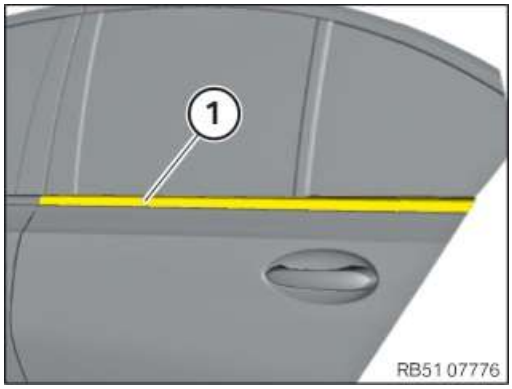
RISK OF DAMAGE

Paint damage.

Mechanical action can lead to paint damage.

- Mask those working areas at risk with yellow plastic adhesive tape.
- Remove and install heavy or bulky components with the aid of another person/other persons.

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- Coat the weather strip (1) with a suitable lubricant prior to installation.
- Install the weather strip (1) and align it to the door edges .
- Press down the window recess finisher strip (1) across its entire length.

Additional Information

Overview of Tightening Torques

Flat motor on door module carrier — Used in step 4

Oval-head screw for thermoplastic		Tightening torque	3,5 Nm

Door speaker on door module carrier — Used in step 4

Oval-head screw for thermoplastic		Tightening torque	2 Nm

Module carrier to rear door — Used in step 5

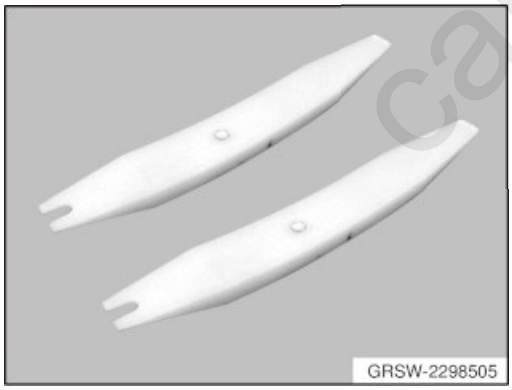
Torx socket M5x12		Tightening torque	8 Nm

Door trim panel to door — Used in step 6

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

2 298 505 Wedge



Common — Used in step 1

Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

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0 496 569 (00 9 325) Wedge



Common Used in step 23

Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

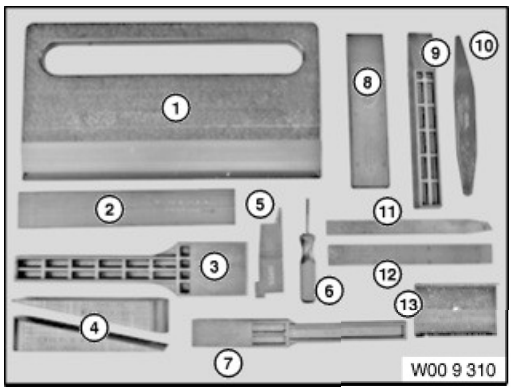
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51 41 000 Removing and installing left or right front door trim panel

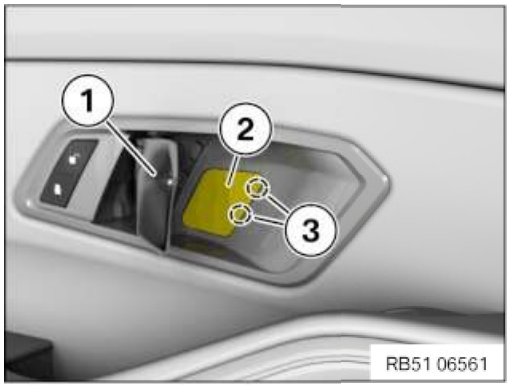
NOTICE

Description is for left component only. Procedure on the right side is identical.

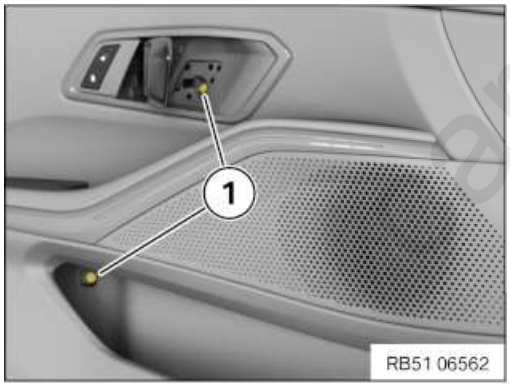
1 – Remove door trim panel



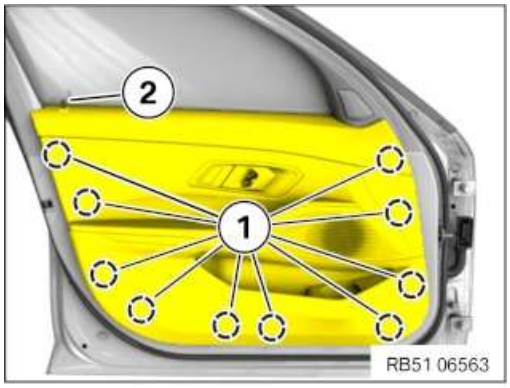
- Have the set of special tools 0 493 752 (00 9 329) ready.



- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

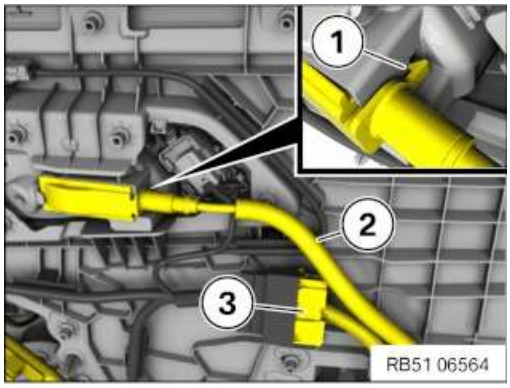


- Loosen screws (1).



- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).

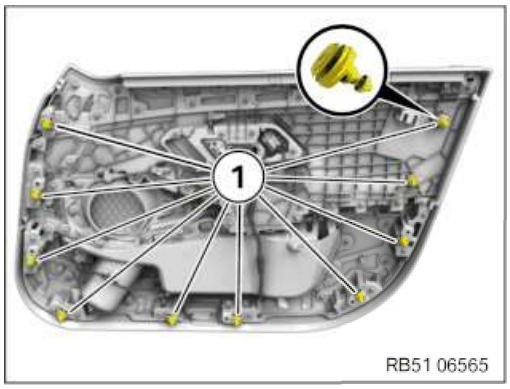
ardiagn.com



- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

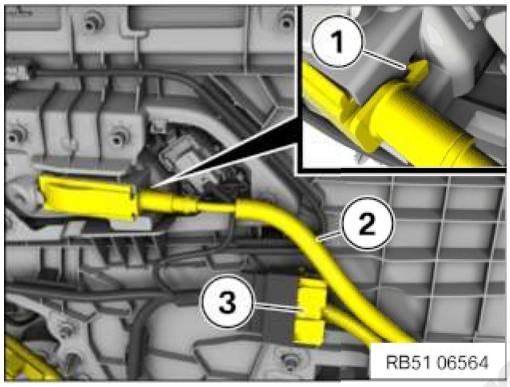
  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

2 – Install door trim panel

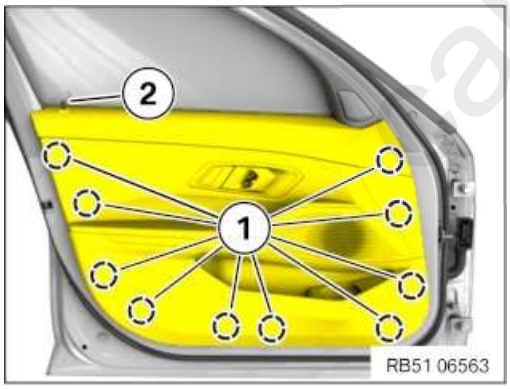


- Renew the clips (1).

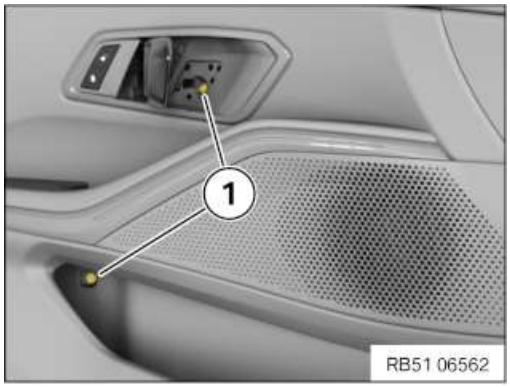
  Parts: Clips



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).

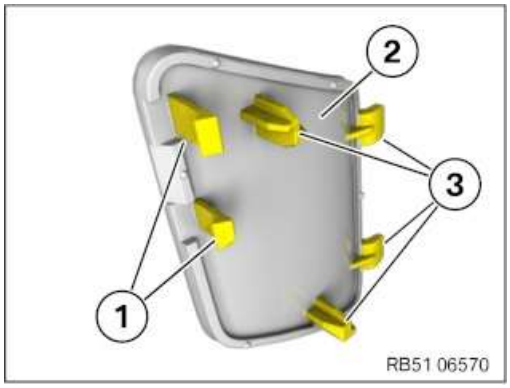


- Tighten the screws (1).

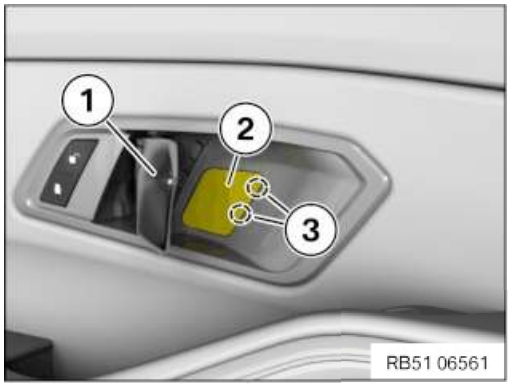
Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm

cardiagn.com



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

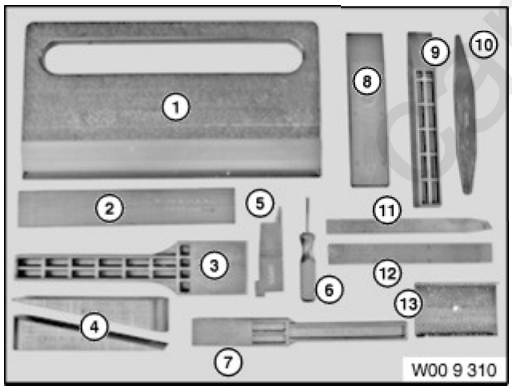
Overview of Tightening Torques

Door trim panel to door — Used in step 2

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

0 493 752 (00 9 329) Case



Common — Used in step 1

Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

cardiagn.com

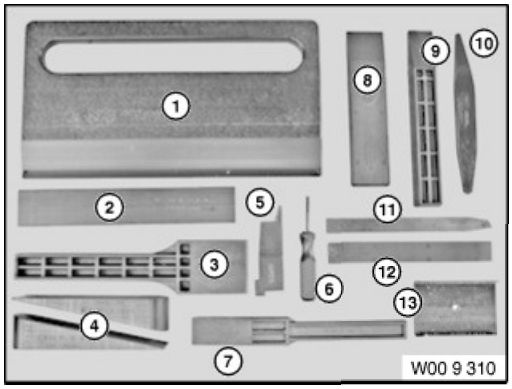
51 41 901 Replace decorative strip

NOTICE

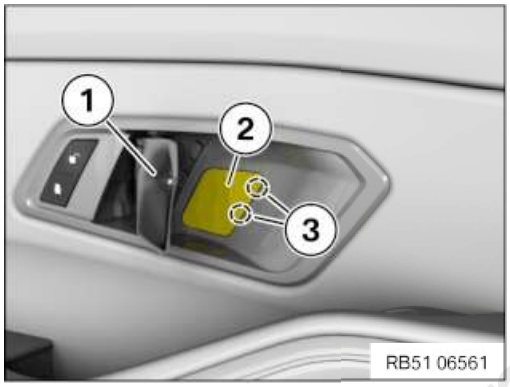
Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

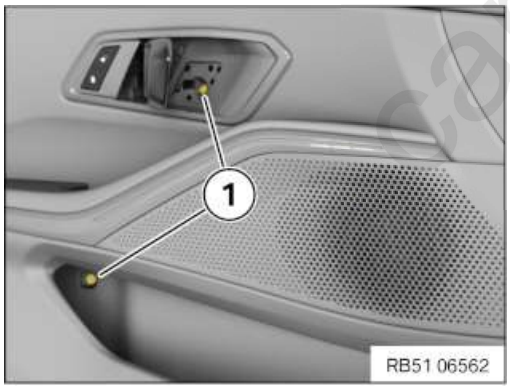
1 – Remove door trim panel



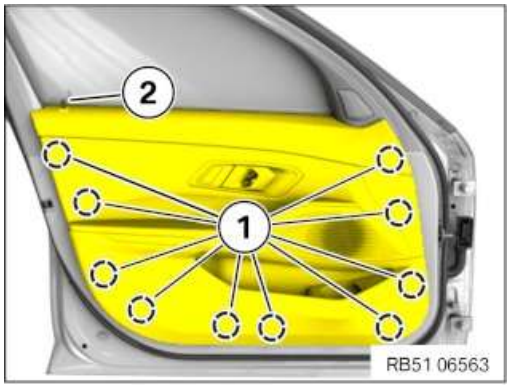
- Have the set of special tools 0 493 752 (00 9 329) ready.



- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

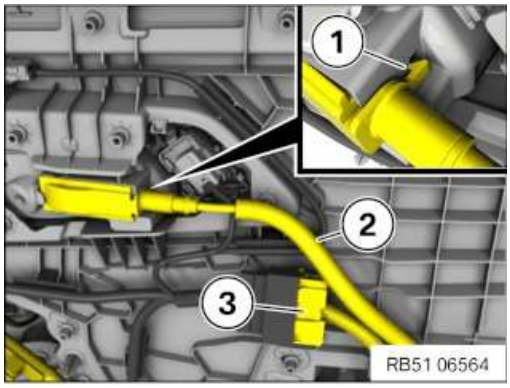


- Loosen screws (1).



- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).

cardiagn.com

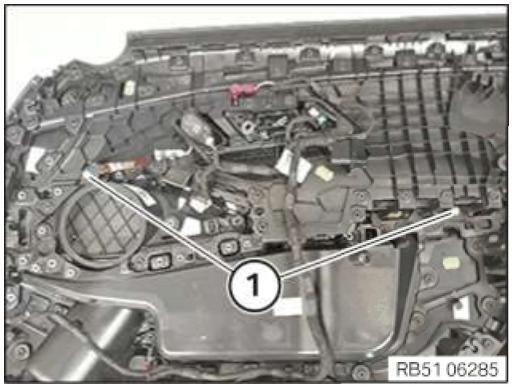


- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

MAIN WORK

2 – Removing the decorative strip on the front door trim panel



- Loosen screws (1).

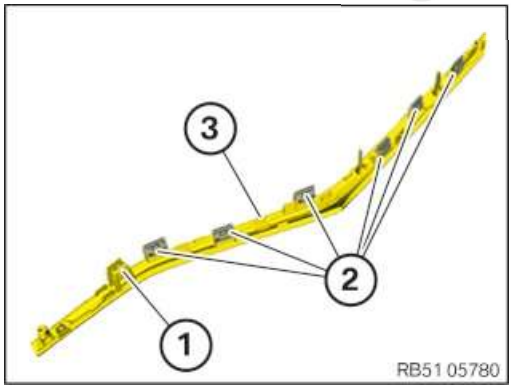


- In the version with optical fibre: remove LED module.
- Unclip decorative strip (1) starting at the rear using the special tool 0 496 569 (00 9 325).

  Check if there is any optical fibre in the area of the speaker cover.

  The optical fibre must not be damaged.

3 – Installing decorative strip on the front door trim panel



- Check latch mechanisms (1) and clamps (2) at the decorative strip (3).

  The faulty latch mechanisms (1) and clamps (2) on decorative strip (3) must be renewed.

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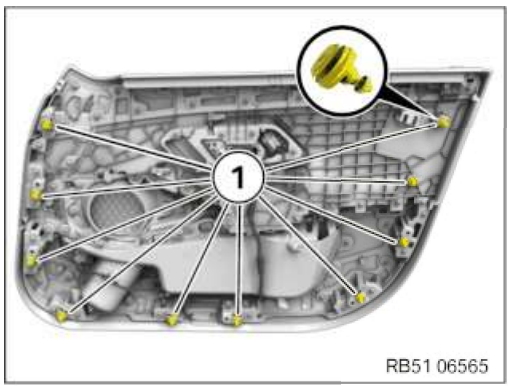
- Position the decorative strip and engage it into the clamps.
- Tighten screws (1) on the decorative strips.

Decorative strip to door trim panel

Screw		Tightening torque	2,3 Nm

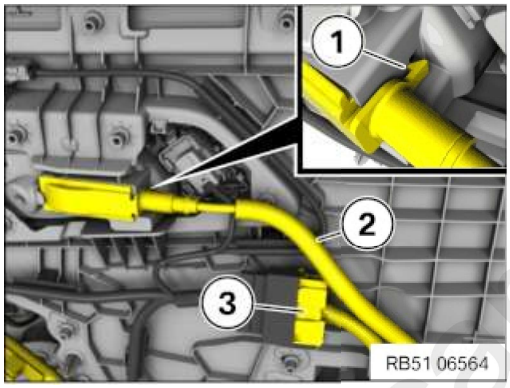
POSTPROCESSES

4 – Install door trim panel

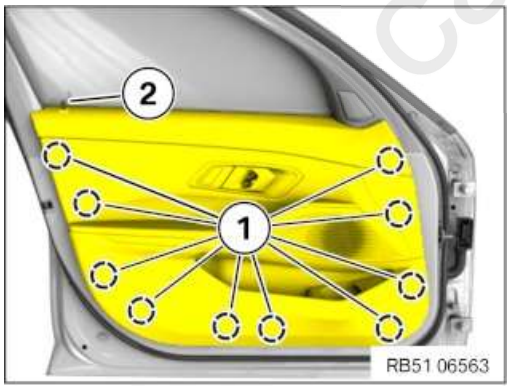


- Renew the clips (1).

  Parts: Clips

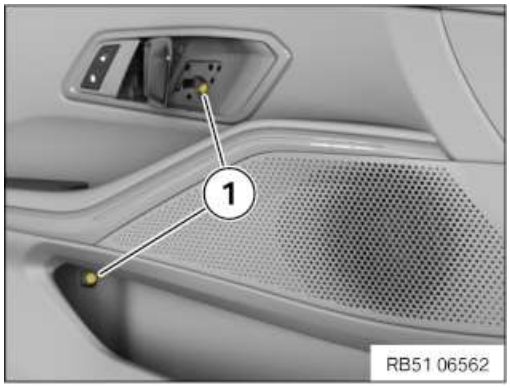


- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).

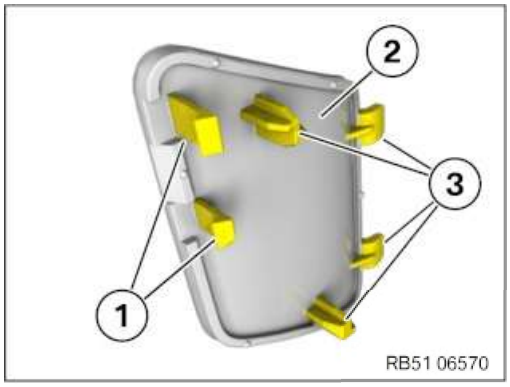
carldiagn.com



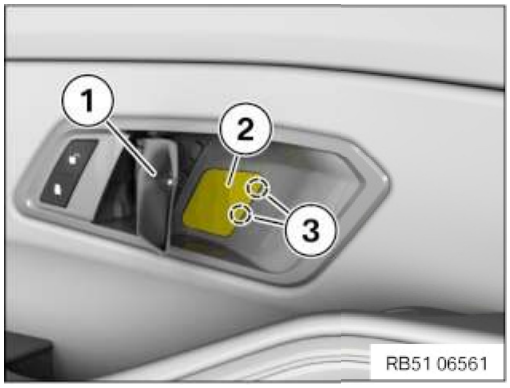
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

Decorative strip to door trim panel Used in step 3

Screw		Tightening torque	2,3 Nm

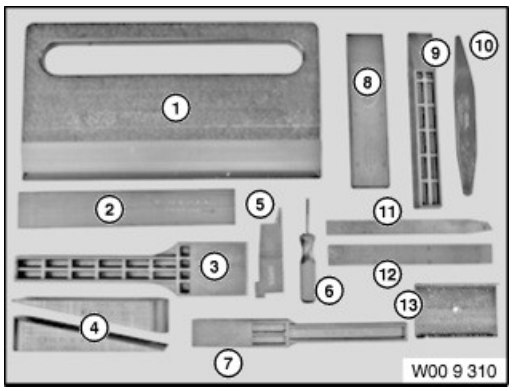
Door trim panel to door Used in step 4

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

cardiagn.com

0 493 752 (00 9 329) Case



Common	Used in step 1
Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

0 496 569 (00 9 325) Wedge



Common	Used in step 2
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

cardiagn.com

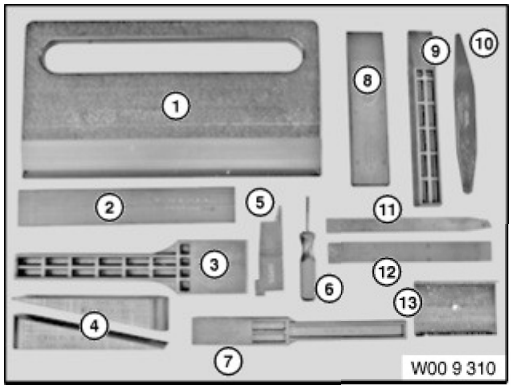
51 41 001 Replacing left or right front door trim panel

NOTICE

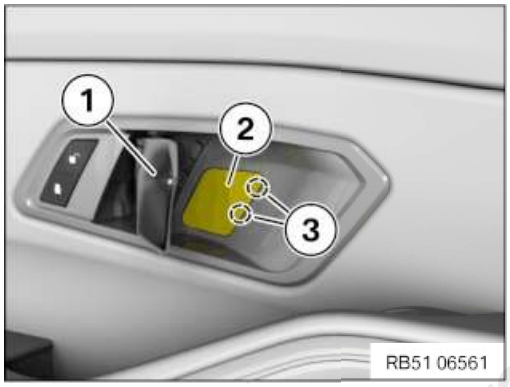
Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

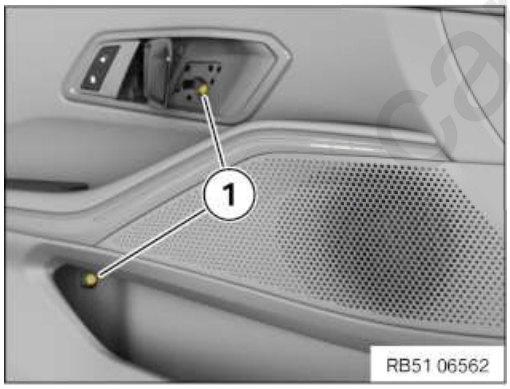
1 – Remove door trim panel



- Have the set of special tools 0 493 752 (00 9 329) ready.



- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

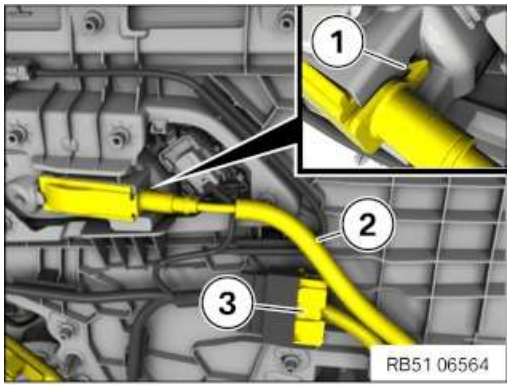


- Loosen screws (1).



- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).

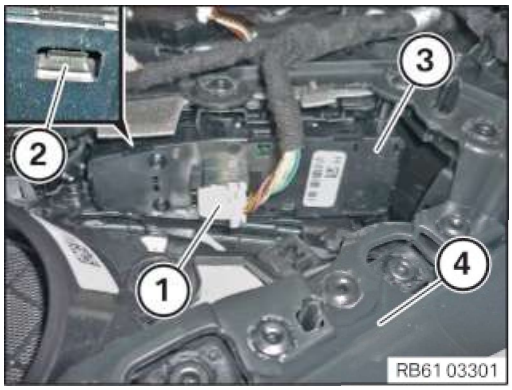
cardiagn.com



- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

2 – Removing power window switch on the driver's side



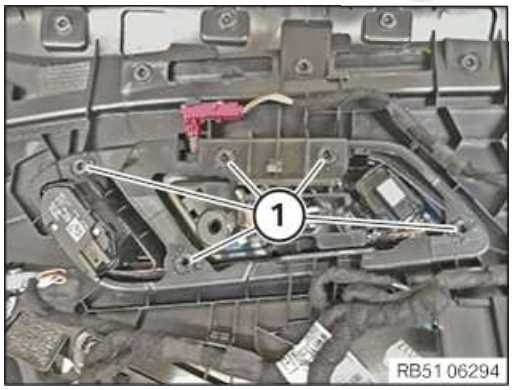
- Unlock and disconnect connector (1).
- Release latch mechanisms (2) and remove the power window switch (3) from the door trim panel (4).

MAIN WORK

3 – Removing inside door opener



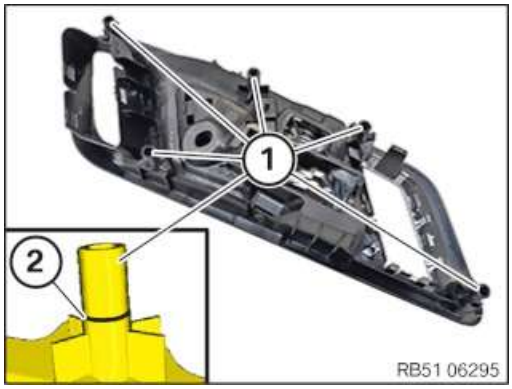
- Disconnect plug connection (1).



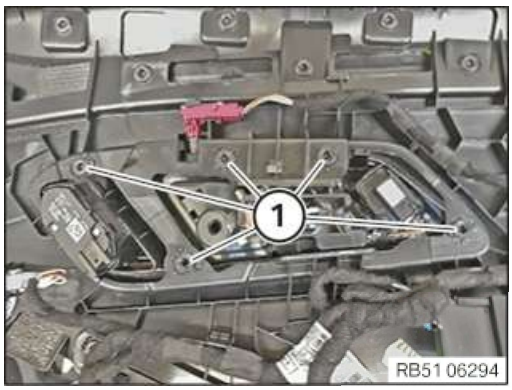
- Remove the existing LED module if necessary.
- Drill out and/or grind down the spot-welds (1).
- Guide out and remove the inner door opener from the door trim panel.

4 – Installing the inner door opener

mdiag.com



- Saw off all welding pins (1) along the moulding (2).



- Remove welding remnants on door trim panel with a scalpel.
- Guide the door opener into the door trim panel.
- Insert the repair screws in welding pins (1) and tighten them.

Repair screw to door trim panel

Oval-head screw M4x10		Tightening torque	2,0 Nm

- Install the existing LED module if necessary.



- Connect connectors (1) and lock.

5 – Removing the decorative strip on the front door trim panel



- Loosen screws (1).



- In the version with optical fibre: remove LED module.
- Unclip decorative strip (1) starting at the rear using the special tool 0 496 569 (00 9 325).

  Check if there is any optical fibre in the area of the speaker cover.

  The optical fibre must not be damaged.

6 – Removing the speaker cover on the front door trim panel

mdiagn.com

NOTICE

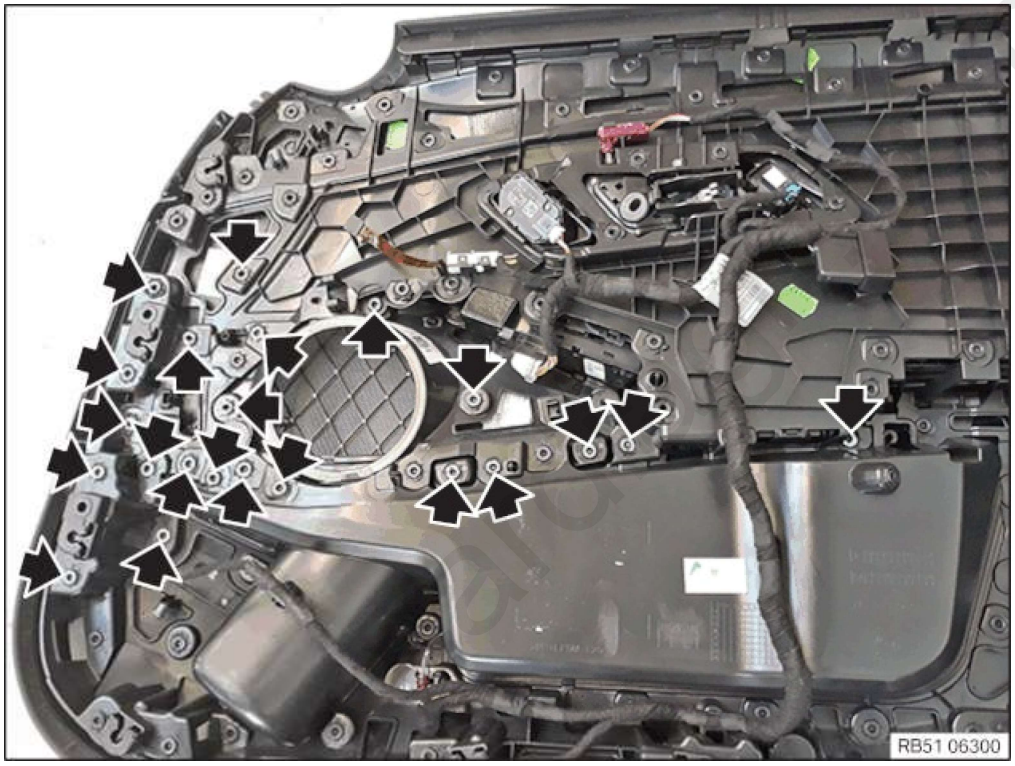
Description is for left component only. Procedure on the right side is identical.



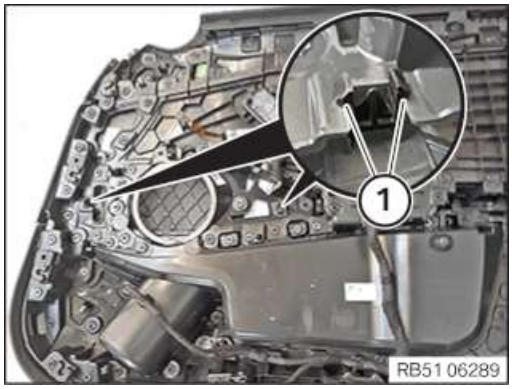
- Loosen screws (1).

▸ **Drilling out spot-welds**

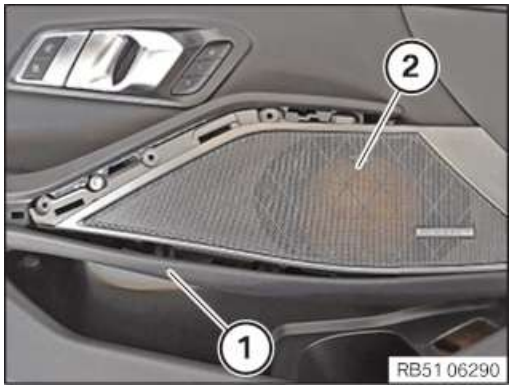
Overview: Attachment points



- Drill out or grind down the marked spot-welds (arrows).

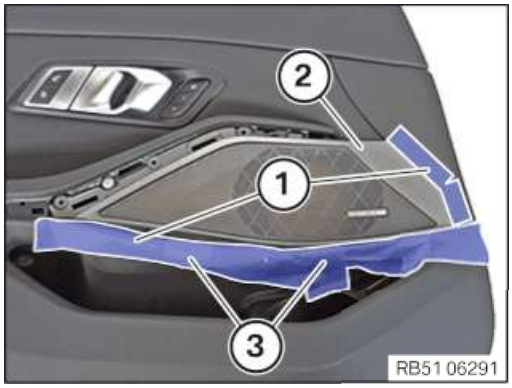


- Press latch mechanisms (1) together with long-nose pliers and disengage them in the downward direction.



- Carefully release the upper section of door pocket (1) away from the frame, as shown, until the welding pins release speaker cover (2).

  Latch mechanisms must be disengaged as described in the previous step.

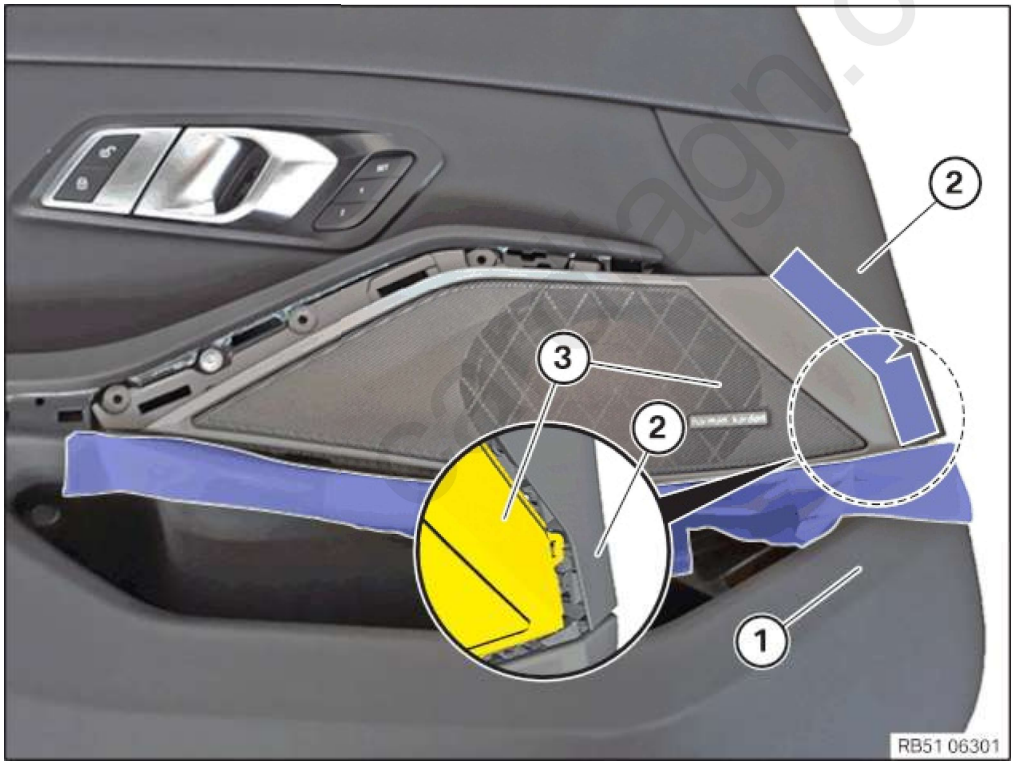


- Protect door pocket and the cover against scratches as shown with adhesive tape (1) in the entire area of the speaker cover (2).
- Wrap door pocket in the area (3) additionally with adhesive tape.

  This helps to better fix the remaining adhesive tape.

▸ **Removing speaker cover**

Overview: Speaker cover (removal)



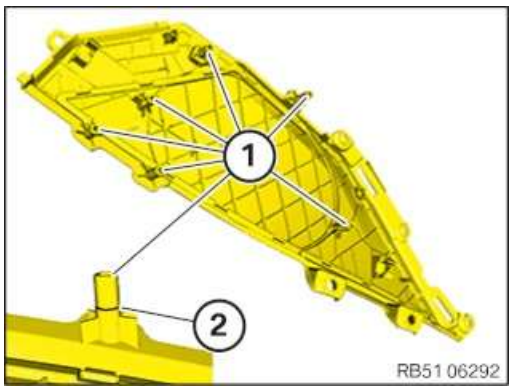
- Pull the door pocket (1) and the cover (2) with the assistance of an auxiliary person so far away from the support until cover (2) is released completely from the speaker cover (3).
- Carefully pull the speaker cover (3) off the door trim panel and remove.

  The speaker cover (3) must be removed **very carefully** to avoid damage to the door pocket.

7 – Install the speaker cover on the front door trim panel

NOTICE

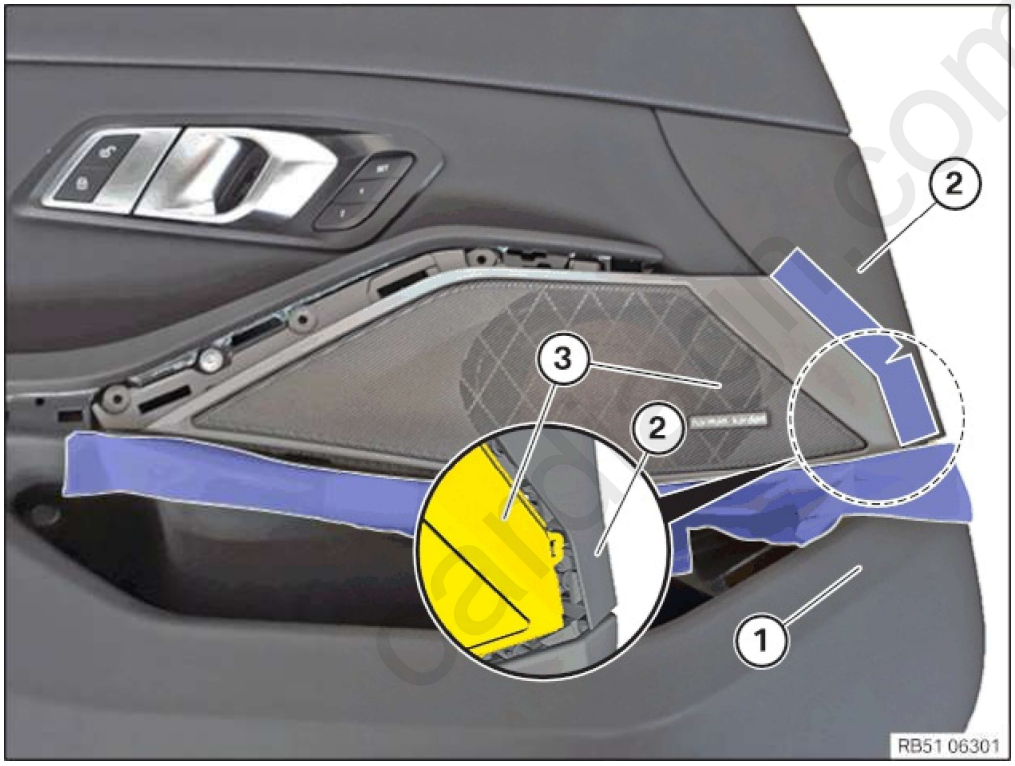
Description is for left component only. Procedure on the right side is identical.



- Saw off all welding pins (1) along the moulding (2).

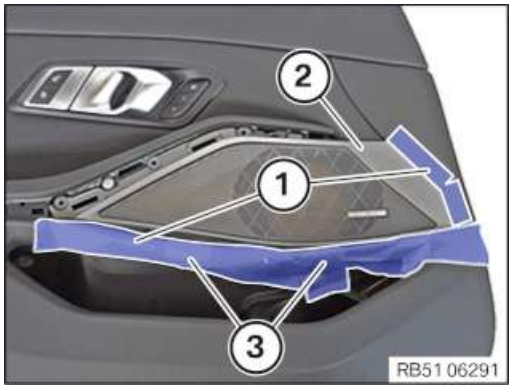
▸ Refitting speaker cover

Overview: Speaker cover (installation)

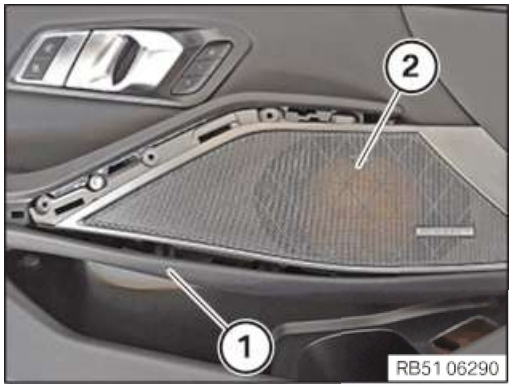


- With the help of an auxiliary person, pull door pocket (1) and cover (2) away from the support until speaker cover (3) can be guided in.
- Guide speaker cover (3) carefully into cover (2) and door pocket (1) and install it.

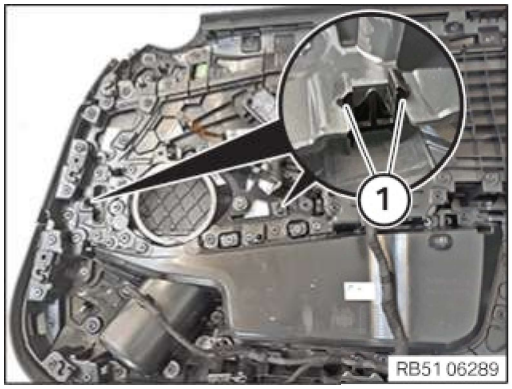
  The speaker cover must be guided in **very carefully** in order to prevent any damage to the door pocket.



- Remove the adhesive tape in area (3).
- Remove the adhesive tape (1) from the door pocket and in the entire area of the speaker cover (2).



- Again feed in the upper section of the door pocket (1) in the area of the speaker cover (2) correctly.

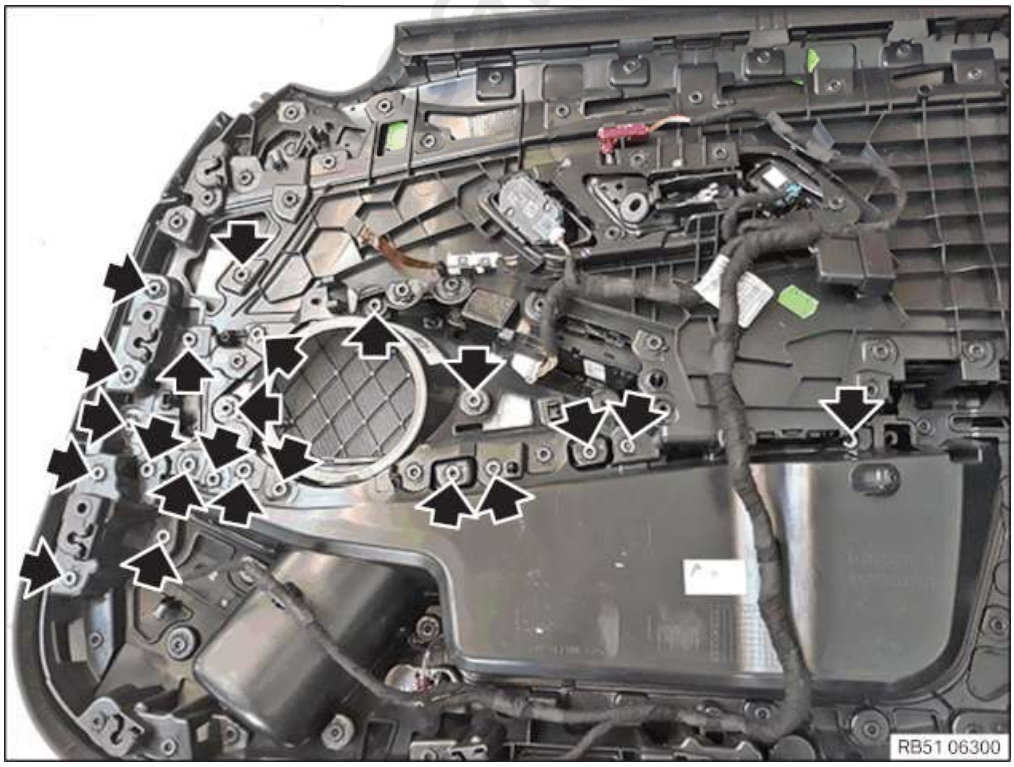


- Engage latch mechanisms (1) by applying pressure from the front onto the speaker cover.

  The latch mechanisms (1) must be correctly locked.

▸ **Repair screws**

Overview: Attachment points



- Insert and tighten repair screws (arrows).

Repair screw to door trim panel

Oval-head screw M4x10		Tightening torque	2,0 Nm

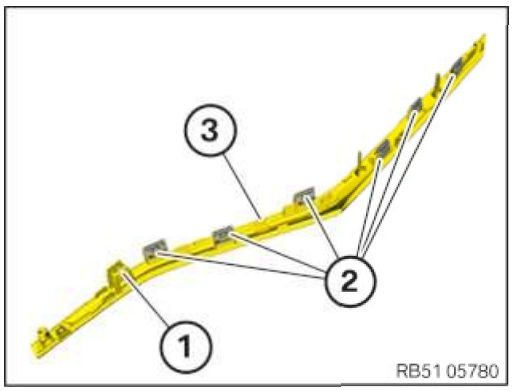


- Tighten the screws (1).

Speaker cover to door trim panel

Screw		Tightening torque	2,3 Nm

8 – Installing decorative strip on the front door trim panel



- Check latch mechanisms (1) and clamps (2) at the decorative strip (3).

  The faulty latch mechanisms (1) and clamps (2) on decorative strip (3) must be renewed.

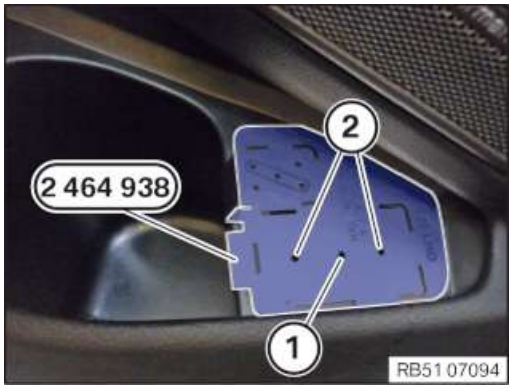


- Position the decorative strip and engage it into the clamps.
- Tighten screws (1) on the decorative strips.

Decorative strip to door trim panel

Screw		Tightening torque	2,3 Nm

9 – Punch the contour for the switch for the tailgate lift into the door trim panel



- Position special tool 2 464 938 on the door trim panel as shown.
- Transfer the contour of the switch and bore holes (1) and (2) from special tool 2 464 938 to the door trim panel.

  The contours must be transferred precisely.
- Pre-drill bore holes (1) and (2) with small drill of the special tool .

  The bore holes must be drilled precisely.
- Drill out medium bore hole (1) with the large drill of the special tool .



- Disassemble special tool .
- Guide in lower section (1) of special tool from above through the bore holes of the door trim panel.
- Put together special tool as shown.
- Align special tool with the marks and press together by turning nut (2) clockwise.
- Loosen the nut (2) after having cut through the door trim panel.
- Remove special tool .
- Press out the punching residue from the special tool using the pressing-off tool.

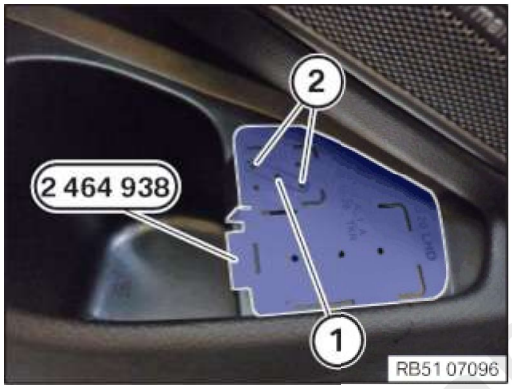
10 – Punch the contour for the button for the pressurised tank release button into the door trim panel (if installed)

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

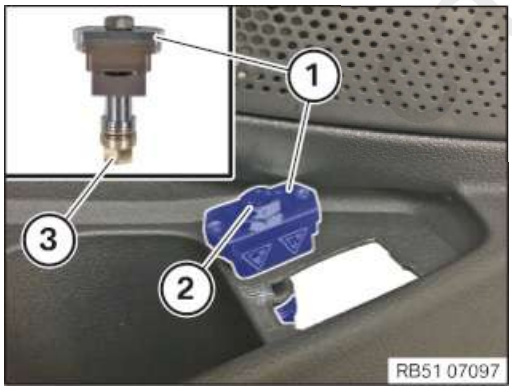


- Place special tool 2 464 938 as shown on the door trim panel of the system.

  Take into account whether it is a left or right-hand drive vehicle in doing so.
- Transfer switch contour and the bore holes (1) and (2) from the special tool 2 464 938 to the door trim panel.

  The transfer of the bore holes must be precise.
- Drill through bore holes (1) and (2) with small drill of the special tool .

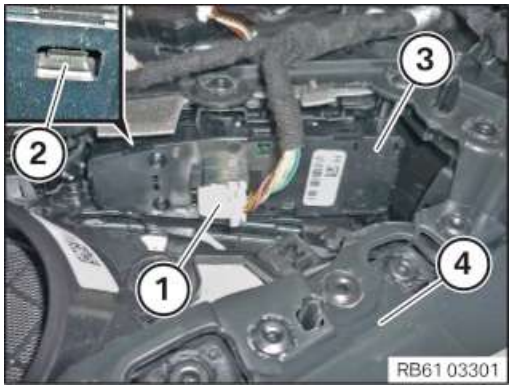
  The bore holes must be drilled precisely.
- Drill through the medium bore hole (2) with the large drill of the special tool .



- Disassemble special tool .
- Position the lower section (1) of the special tool on the top of the door trim panel as shown and insert screw (2).
- Put together special tool as shown.
- Align special tool with the marks and compress by turning the nut (3) in the clockwise direction.
- Loosen the nut (3) after having cut through the door trim panel.
- Remove special tool .
- Press out the punching residue from the special tool using the pressing-off tool.

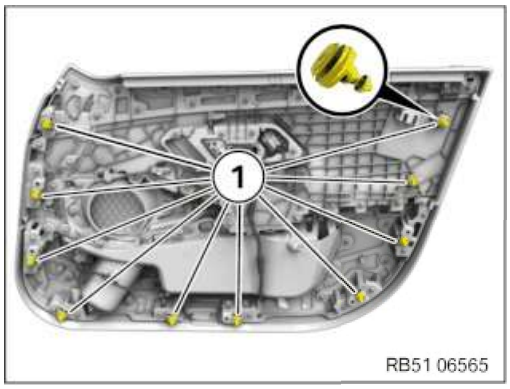
POSTPROCESSES

11 – Install the power window switch on the driver's side



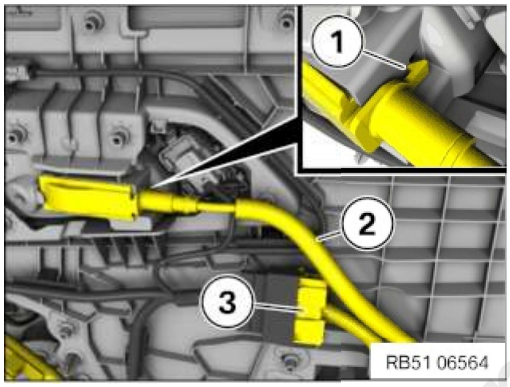
- Position power-window switch (3) on the door trim panel (4) and engage in all the latch mechanisms (2).
- Connect connectors (1) and lock.

12 – Install door trim panel

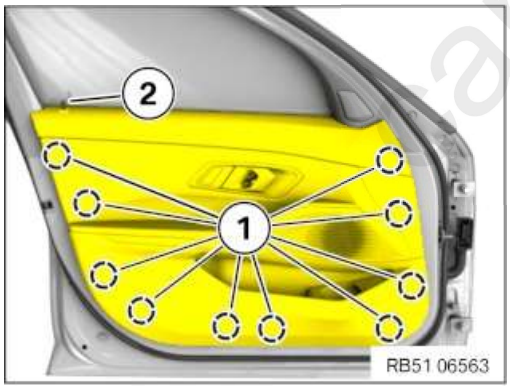


- Renew the clips (1).

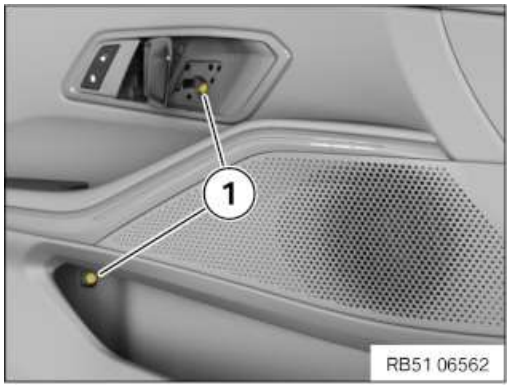
  Parts: Clips



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).

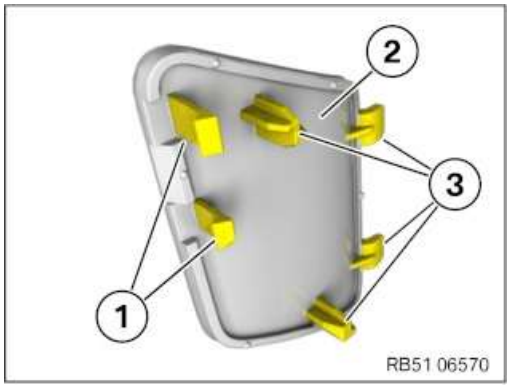


- Tighten the screws (1).

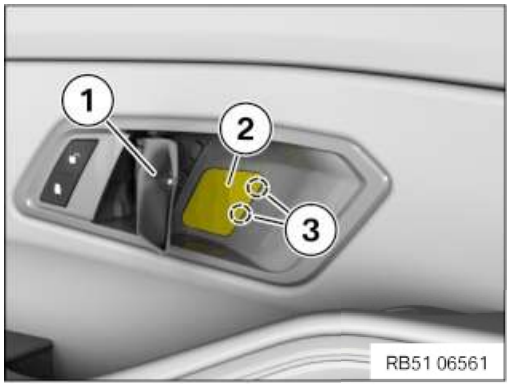
Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm

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- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

Repair screw to door trim panel			Used in step 47
Oval-head screw M4x10		Tightening torque	2,0 Nm

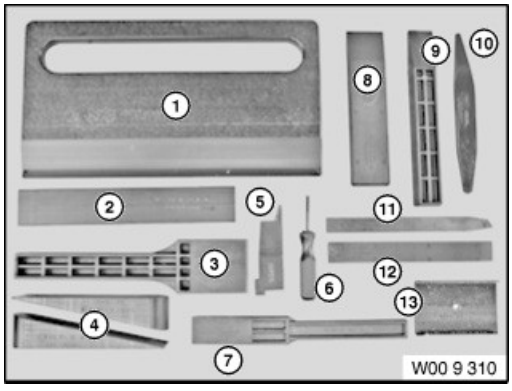
Speaker cover to door trim panel			Used in step 7
Screw		Tightening torque	2,3 Nm

Decorative strip to door trim panel			Used in step 8
Screw		Tightening torque	2,3 Nm

Door trim panel to door			Used in step 12
Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

0 493 752 (00 9 329) Case



Common	Used in step 1
Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

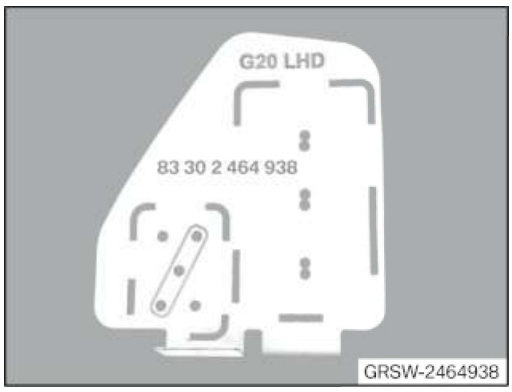
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0 496 569 (00 9 325) Wedge



Common	Used in step 5
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

2 464 938 Template



Common	Used in step 910
Usage	to position the DTE recess and HKL for G20
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	

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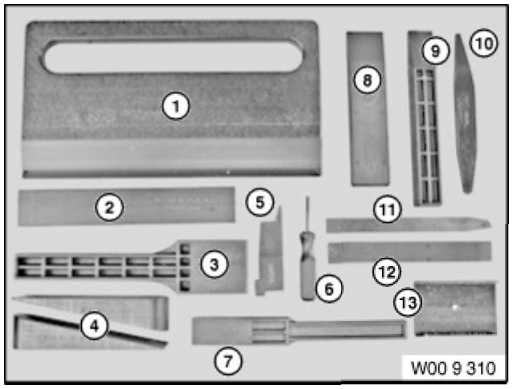
51 41 902 Replacing the speaker cover

NOTICE

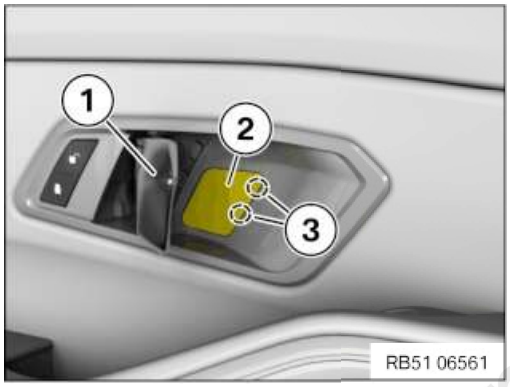
Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

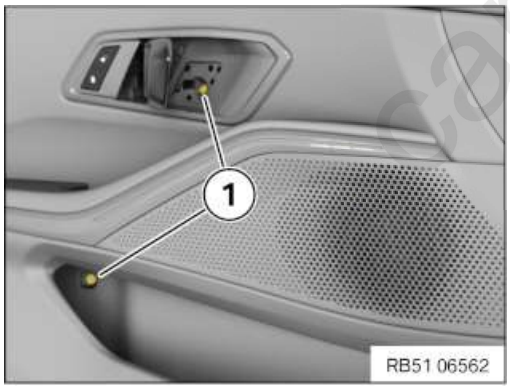
1 – Remove door trim panel



- Have the set of special tools 0 493 752 (00 9 329) ready.



- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

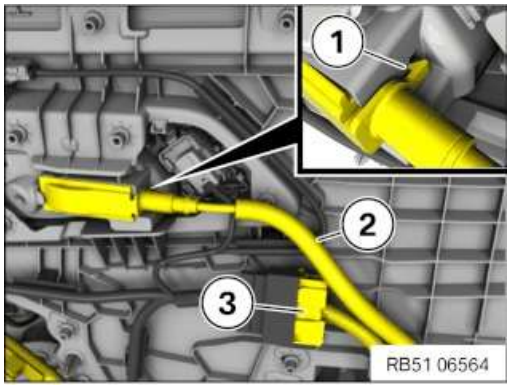


- Loosen screws (1).



- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).

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- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

2 – Removing the decorative strip on the front door trim panel



- Loosen screws (1).



- In the version with optical fibre: remove LED module.
- Unclip decorative strip (1) starting at the rear using the special tool 0 496 569 (00 9 325).

  Check if there is any optical fibre in the area of the speaker cover.

  The optical fibre must not be damaged.

MAIN WORK

3 – Removing the speaker cover on the front door trim panel

NOTICE

Description is for left component only. Procedure on the right side is identical.

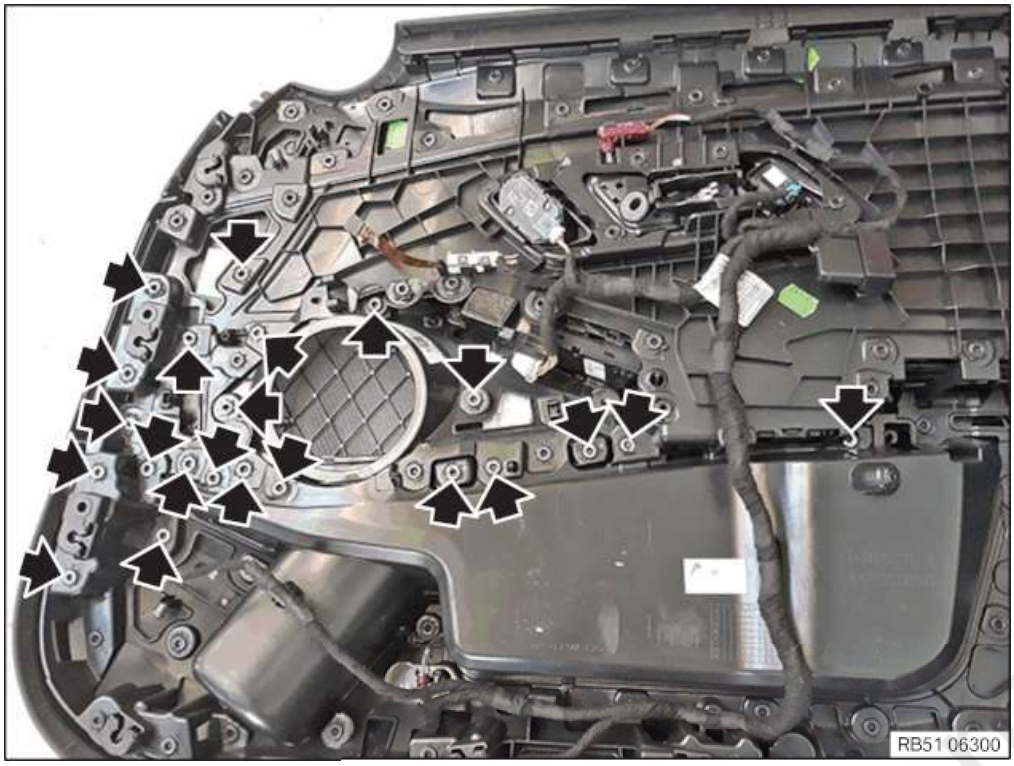


- Loosen screws (1).

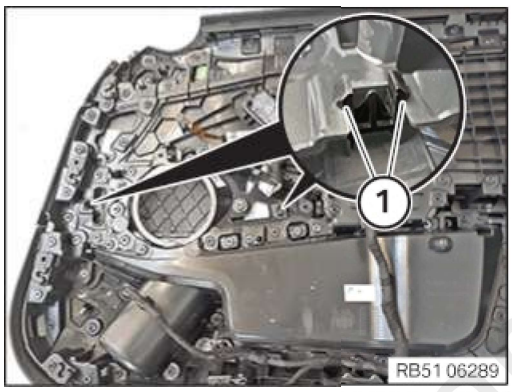
▸ **Drilling out spot-welds**

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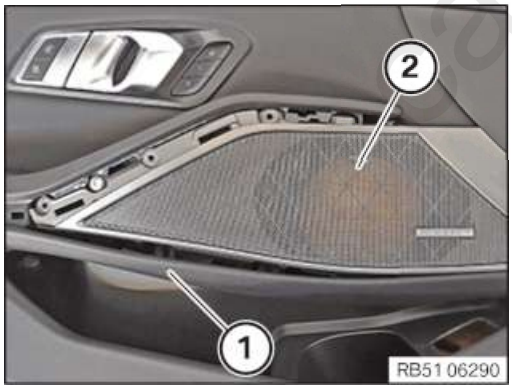
Overview: Attachment points



- Drill out or grind down the marked spot-welds (arrows).

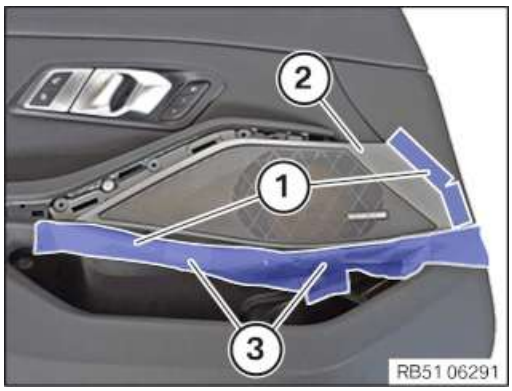


- Press latch mechanisms (1) together with long-nose pliers and disengage them in the downward direction.



- Carefully release the upper section of door pocket (1) away from the frame, as shown, until the welding pins release speaker cover (2).

  Latch mechanisms must be disengaged as described in the previous step.



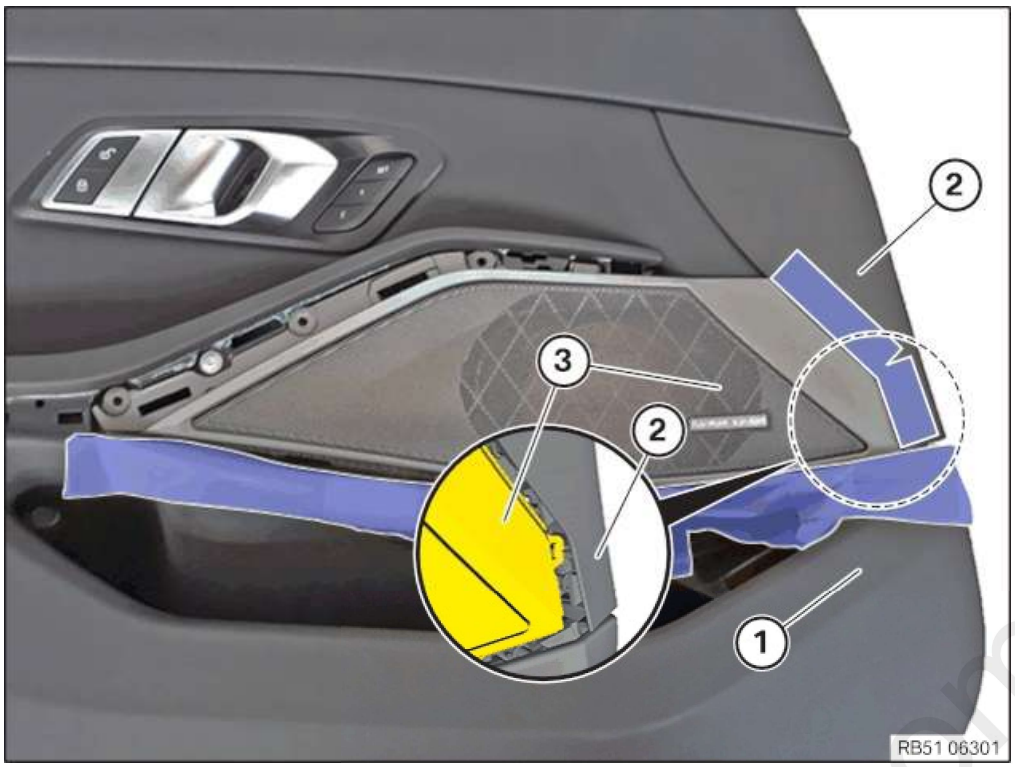
- Protect door pocket and the cover against scratches as shown with adhesive tape (1) in the entire area of the speaker cover (2).
- Wrap door pocket in the area (3) additionally with adhesive tape.

  This helps to better fix the remaining adhesive tape.

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▸ **Removing speaker cover**

Overview: Speaker cover (removal)



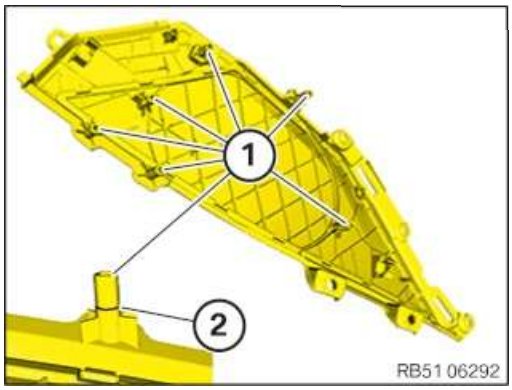
- Pull the door pocket (1) and the cover (2) with the assistance of an auxiliary person so far away from the support until cover (2) is released completely from the speaker cover (3).
- Carefully pull the speaker cover (3) off the door trim panel and remove.

  The speaker cover (3) must be removed **very carefully** to avoid damage to the door pocket.

4 – Install the speaker cover on the front door trim panel

NOTICE

Description is for left component only. Procedure on the right side is identical.

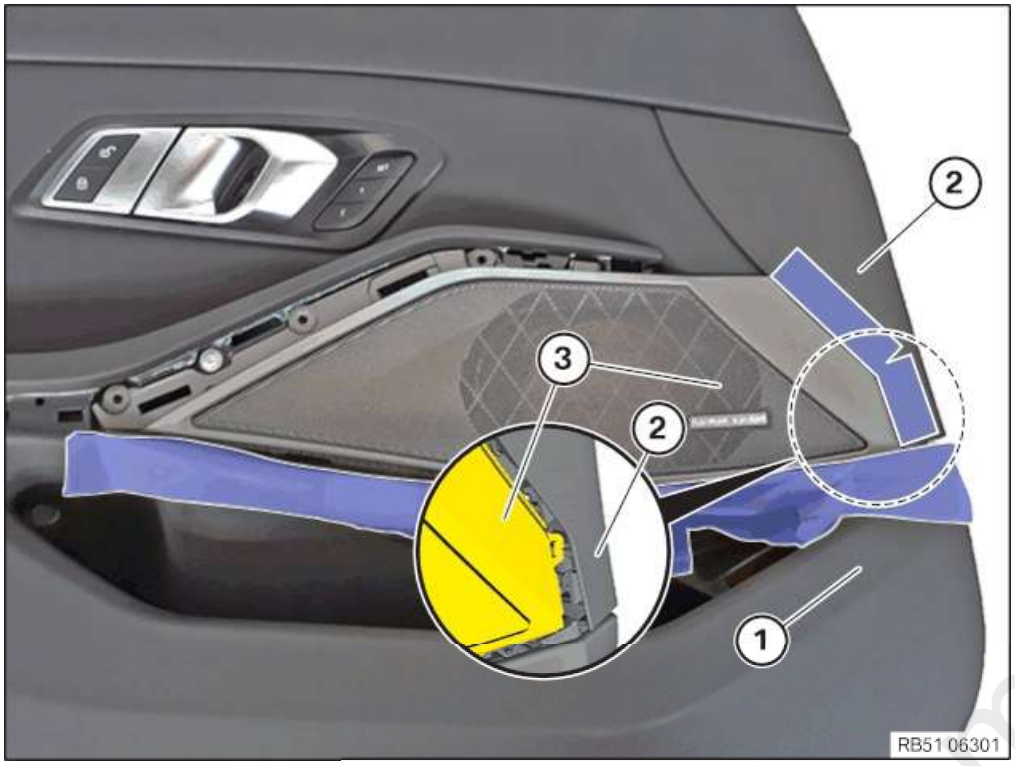


- Saw off all welding pins (1) along the moulding (2).

▸ **Refitting speaker cover**

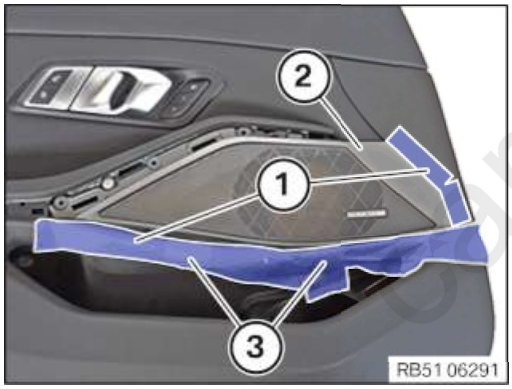
cardiagn.com

Overview: Speaker cover (installation)

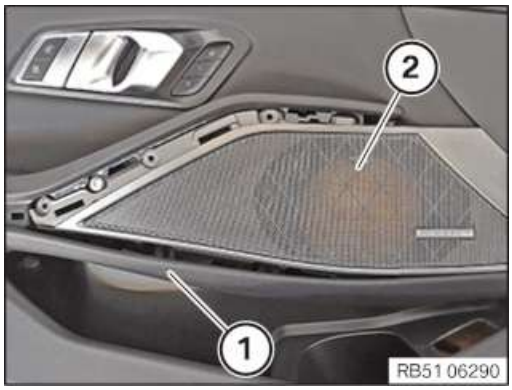


- With the help of an auxiliary person, pull door pocket (1) and cover (2) away from the support until speaker cover (3) can be guided in.
- Guide speaker cover (3) carefully into cover (2) and door pocket (1) and install it.

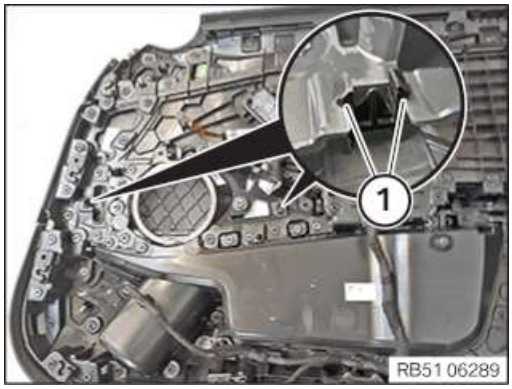
  The speaker cover must be guided in **very carefully** in order to prevent any damage to the door pocket.



- Remove the adhesive tape in area (3).
- Remove the adhesive tape (1) from the door pocket and in the entire area of the speaker cover (2).



- Again feed in the upper section of the door pocket (1) in the area of the speaker cover (2) correctly.

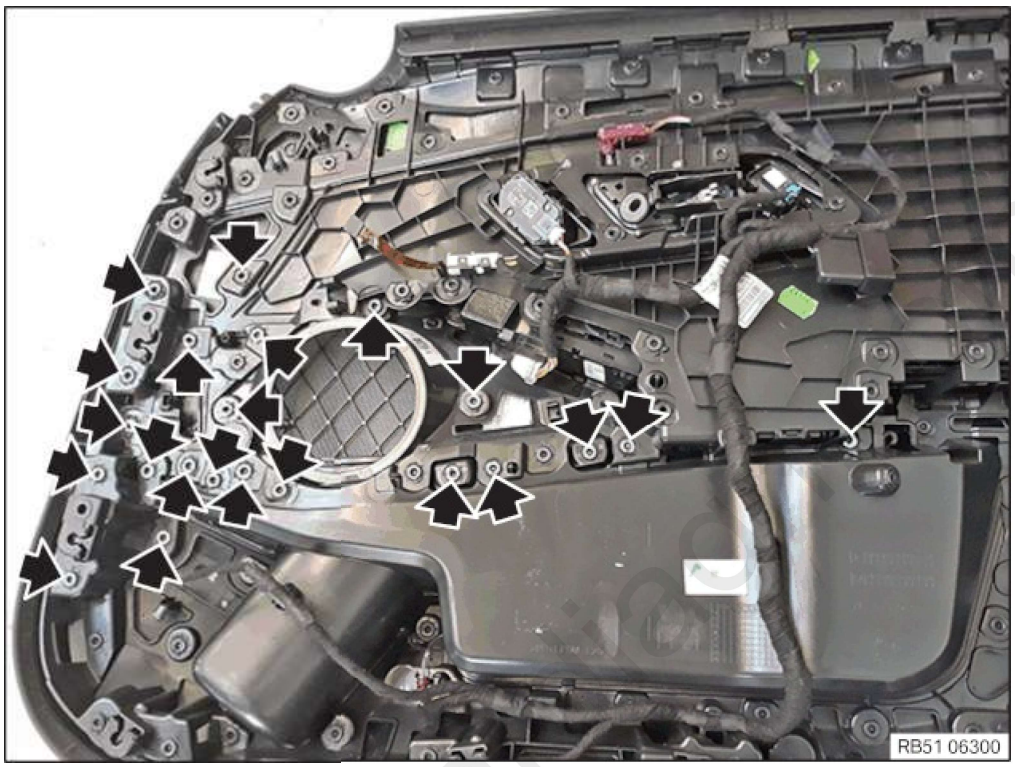


- Engage latch mechanisms (1) by applying pressure from the front onto the speaker cover.

  The latch mechanisms (1) must be correctly locked.

▸ **Repair screws**

Overview: Attachment points



- Insert and tighten repair screws (arrows).

Repair screw to door trim panel

Oval-head screw M4x10		Tightening torque	2,0 Nm



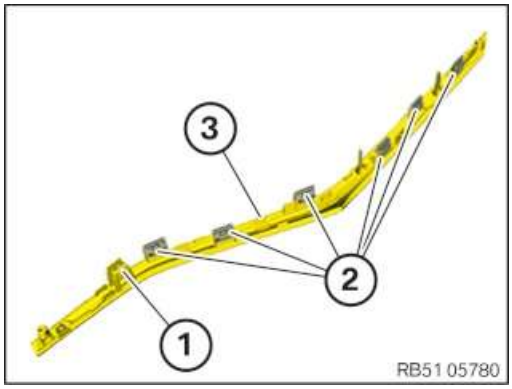
- Tighten the screws (1).

Speaker cover to door trim panel

Screw		Tightening torque	2,3 Nm

POSTPROCESSES

5 – Installing decorative strip on the front door trim panel



- Check latch mechanisms (1) and clamps (2) at the decorative strip (3).

  The faulty latch mechanisms (1) and clamps (2) on decorative strip (3) must be renewed.

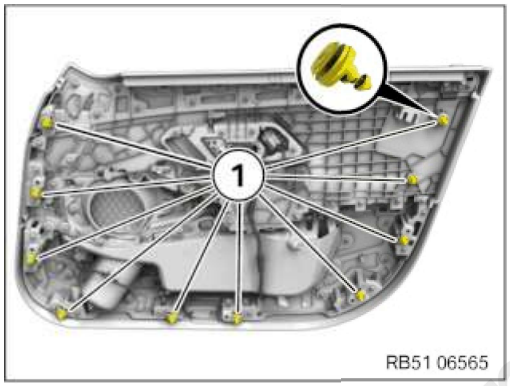


- Position the decorative strip and engage it into the clamps.
- Tighten screws (1) on the decorative strips.

Decorative strip to door trim panel

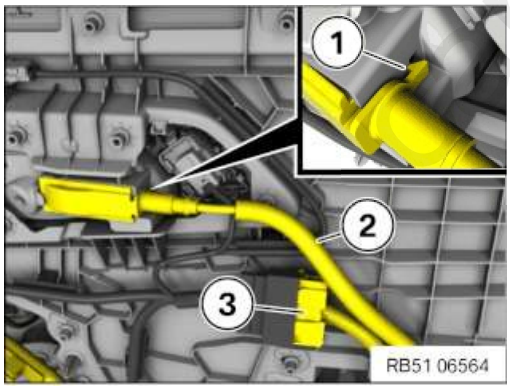
Screw		Tightening torque	2,3 Nm

6 – Install door trim panel

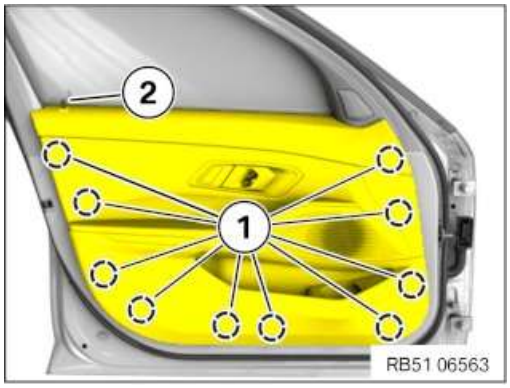


- Renew the clips (1).

  Parts: Clips

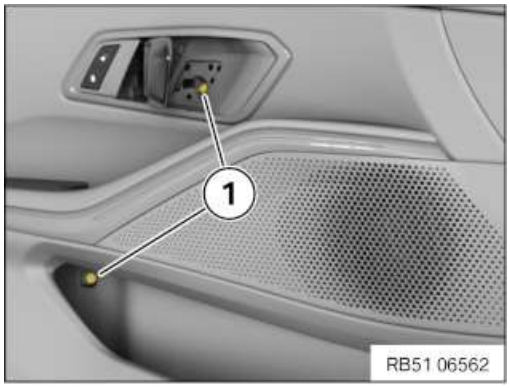


- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).

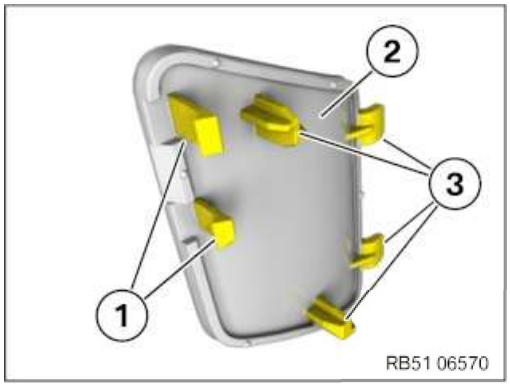
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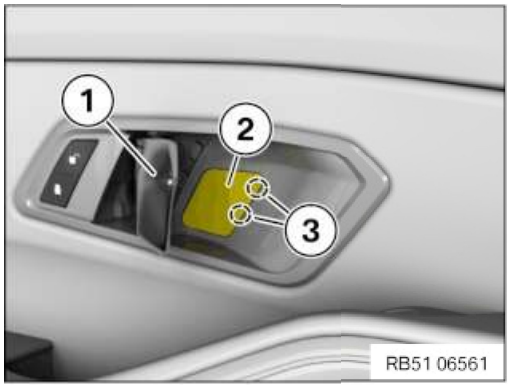
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

Repair screw to door trim panel Used in step 4

Oval-head screw M4x10		Tightening torque	2,0 Nm

Speaker cover to door trim panel Used in step 4

Screw		Tightening torque	2,3 Nm

Decorative strip to door trim panel Used in step 5

Screw		Tightening torque	2,3 Nm

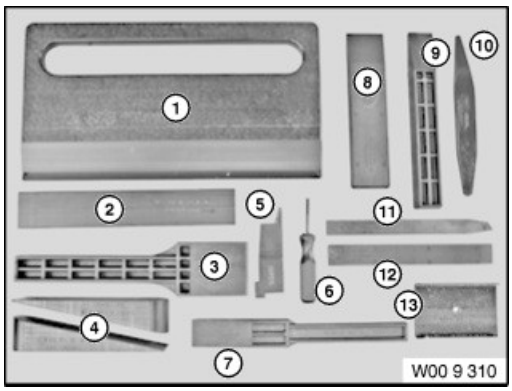
Door trim panel to door Used in step 6

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

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0 493 752 (00 9 329) Case



Common	Used in step 1
Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

0 496 569 (00 9 325) Wedge



Common	Used in step 2
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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51 42 000 Remove and install left or right rear door trim panel

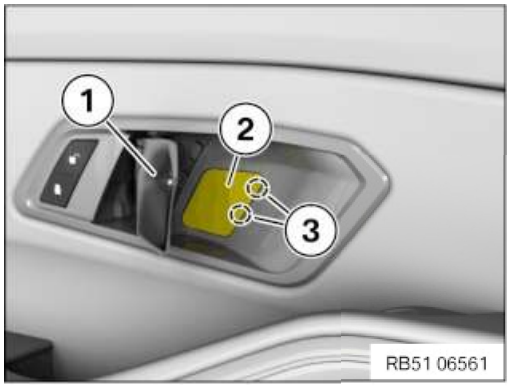
RISK OF DAMAGE

Scratches.

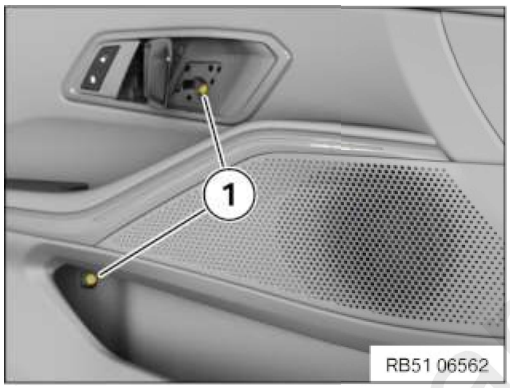
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

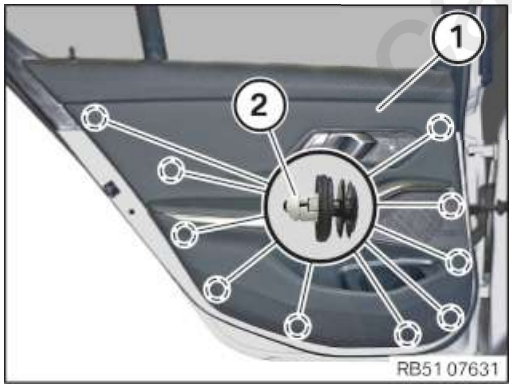
1 – Remove rear door trim



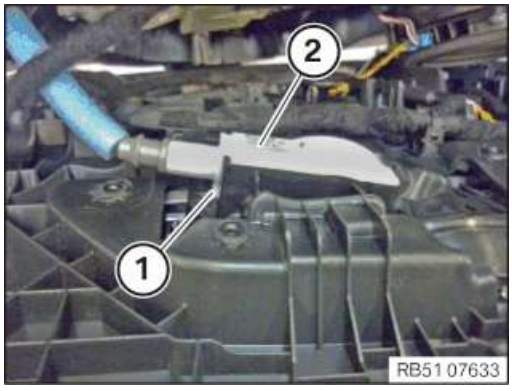
- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable tool.
- Remove trim (2).



- Loosen screws (1).



- Unclip the door trim panel (1) with the special tool 0 496 569 (00 9 325) at the clips (2).
- Guide the door trim panel (1) upwards out of the weather strip.

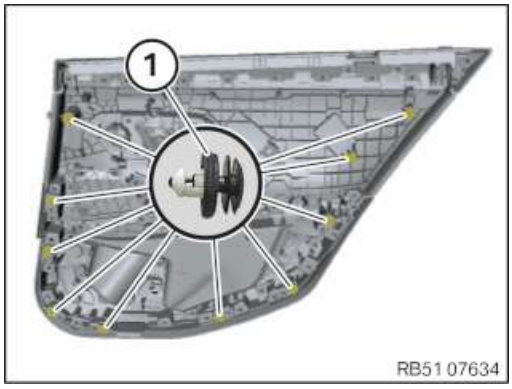


- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock available plug connections and disconnect.
- Remove door trim panel.

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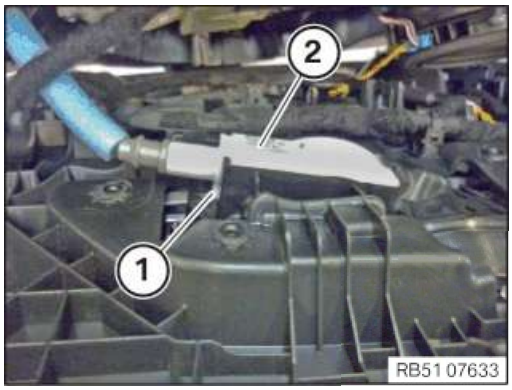
2 – Installing rear door trim panel



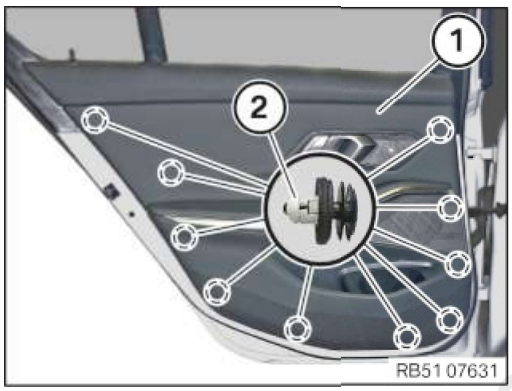
- Renew the clips (1).

  Parts: Clips

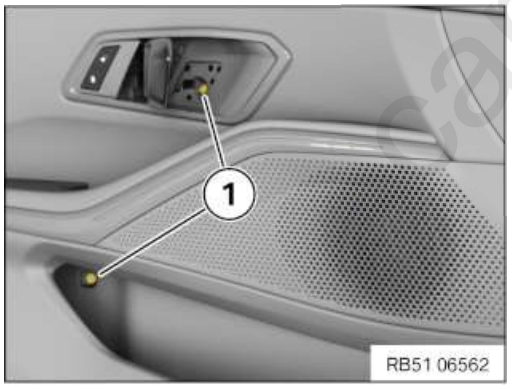
  The clips (1) **must not be engaged**. **The disengaged state is shown.**



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door handle (2) and clip in to the latch mechanism (1).
- Connect existing connectors and lock.



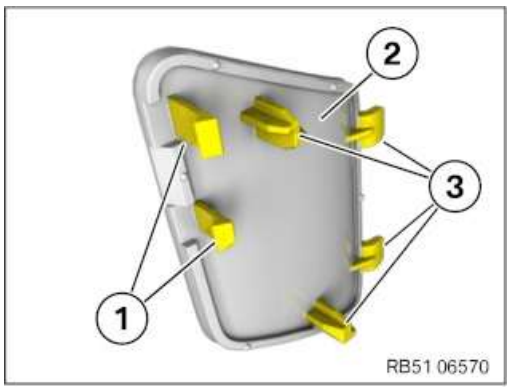
- Feed door trim panel from the top into the inner window recess finisher strip.
- Carefully clip in the door trim panel onto the clips (1).



- Tighten the screws (1).

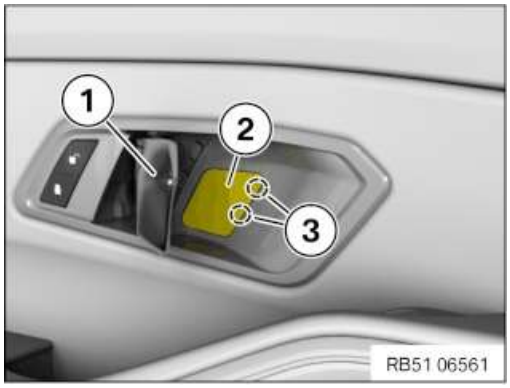
Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).

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- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

Door trim panel to door — Used in step 2

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

0 496 569 (00 9 325) Wedge



Common — Used in step 1

Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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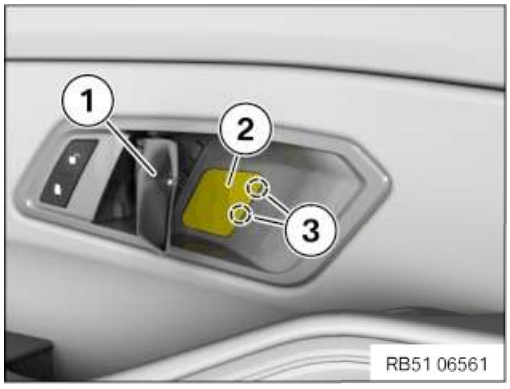
51 42 911 Replace decorative strip

NOTICE

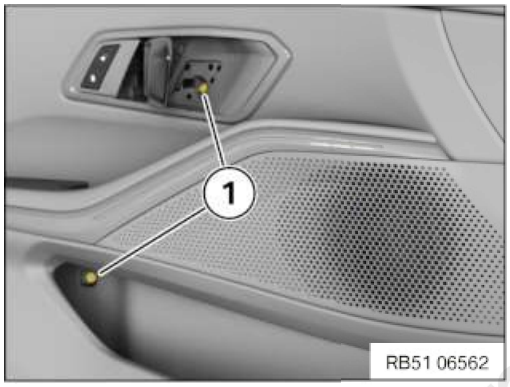
Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

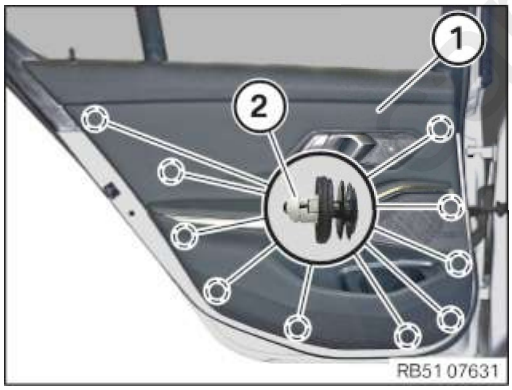
1 – Remove rear door trim



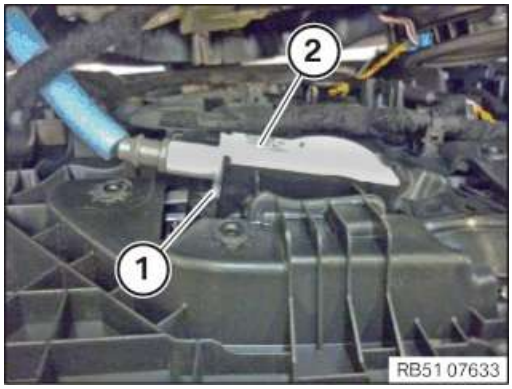
- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable tool.
- Remove trim (2).



- Loosen screws (1).



- Unclip the door trim panel (1) with the special tool 0 496 569 (00 9 325) at the clips (2).
- Guide the door trim panel (1) upwards out of the weather strip.



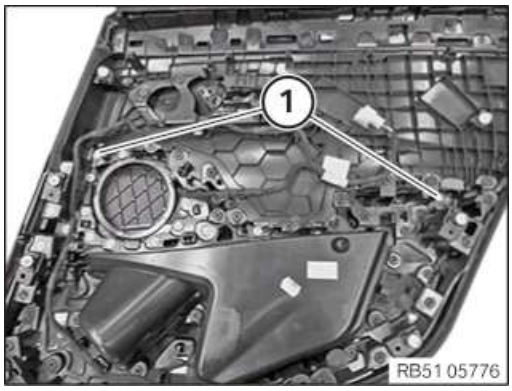
- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock available plug connections and disconnect.
- Remove door trim panel.

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MAIN WORK

2 – Remove the finisher from the rear door trim panel



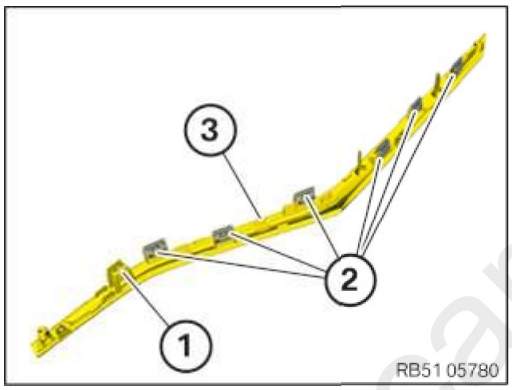
- Loosen screws (1).



- In case of equipment specification with an optical fibre, remove the LED module.
- Unclip decorative strip (1) starting at the rear using the special tool 0 496 569 (00 9 325).

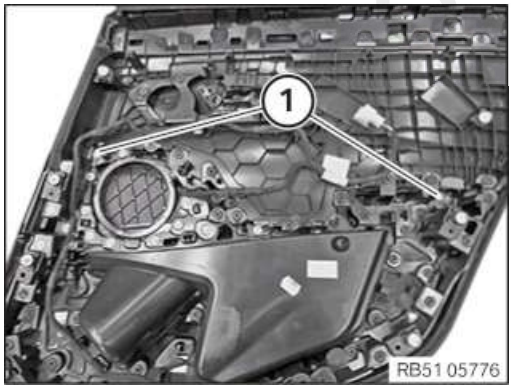
  Check if there is any optical fibre in the area of the speaker cover. It must not be damaged.

3 – Install the finisher on the rear door trim panel



- Check latch mechanisms (1) and clamps (2) at the decorative strip (3).

  In case the latch mechanisms (1)or the clamps (2) are faulty, renew the decorative strip (3).



- Remove decorative strip (1) and lock it into clamps.
- Screw the screws (1) into the decorative strip and tighten.

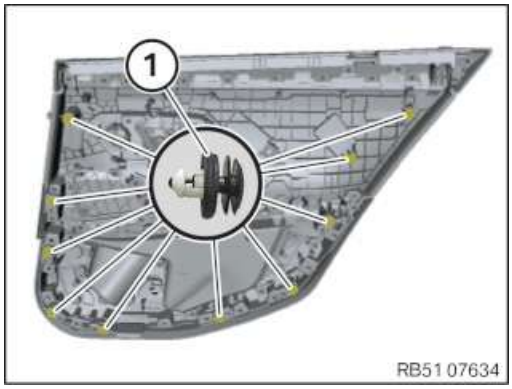
Decorative strip to door trim panel

Screw		Tightening torque	2,3 Nm

POSTPROCESSES

4 – Installing rear door trim panel

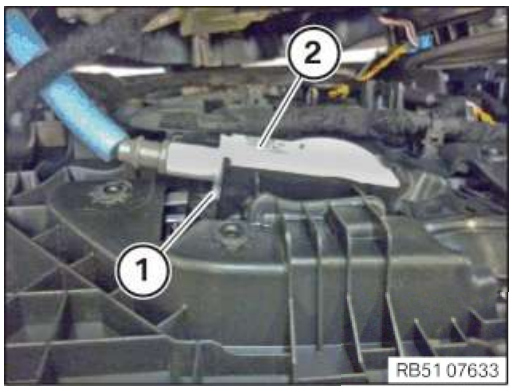
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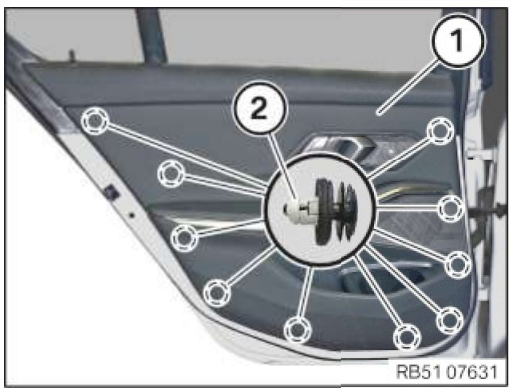
- Renew the clips (1).

  Parts: Clips

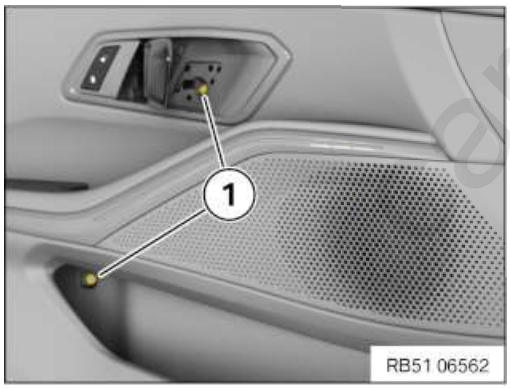
  The clips (1) **must not be engaged**. **The disengaged state is shown.**



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door handle (2) and clip in to the latch mechanism (1).
- Connect existing connectors and lock.



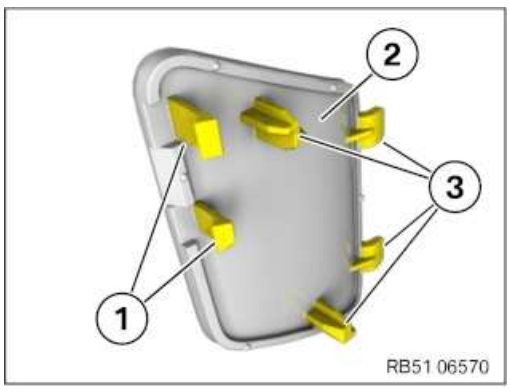
- Feed door trim panel from the top into the inner window recess finisher strip.
- Carefully clip in the door trim panel onto the clips (1).



- Tighten the screws (1).

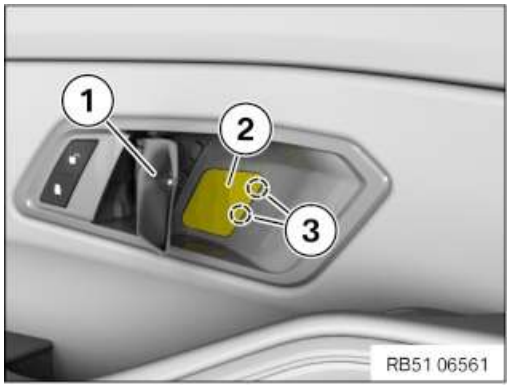
Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).

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- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

Decorative strip to door trim panel — Used in step 3

Screw		Tightening torque	2,3 Nm

Door trim panel to door — Used in step 4

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

0 496 569 (00 9 325) Wedge



Common — Used in step 12

Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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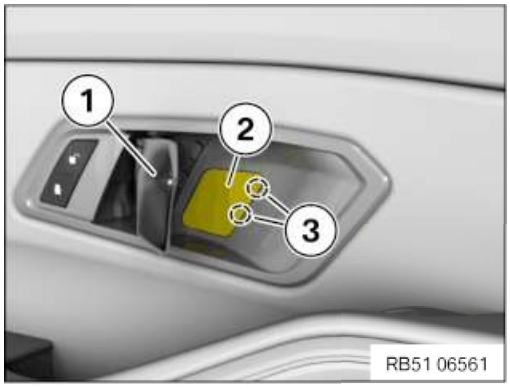
51 42 001 Replacing left or right rear door trim panel

NOTICE

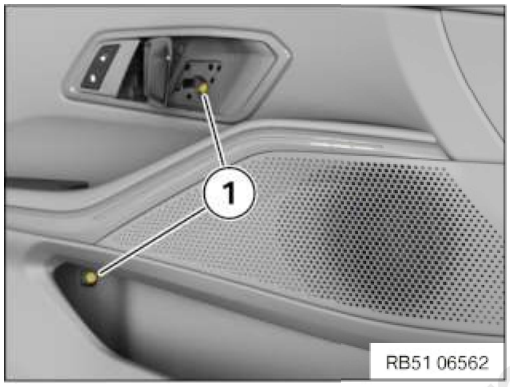
Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

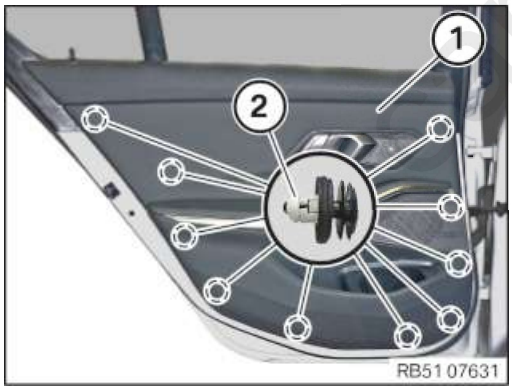
1 – Remove rear door trim



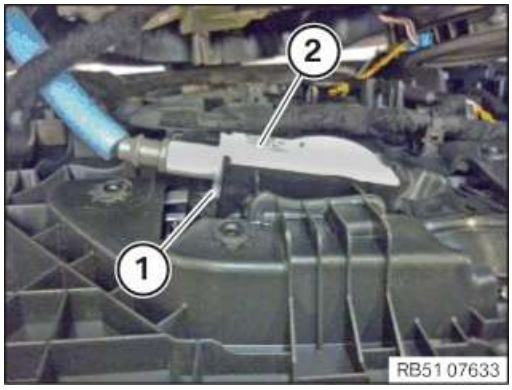
- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable tool.
- Remove trim (2).



- Loosen screws (1).



- Unclip the door trim panel (1) with the special tool 0 496 569 (00 9 325) at the clips (2).
- Guide the door trim panel (1) upwards out of the weather strip.

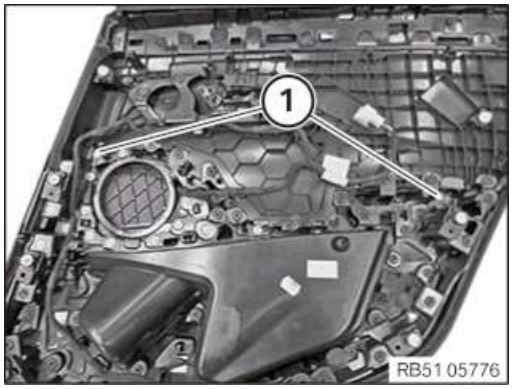


- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock available plug connections and disconnect.
- Remove door trim panel.

2 – Remove the finisher from the rear door trim panel

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- Loosen screws (1).



- In case of equipment specification with an optical fibre, remove the LED module.
- Unclip decorative strip (1) starting at the rear using the special tool 0 496 569 (00 9 325).

  Check if there is any optical fibre in the area of the speaker cover. It must not be damaged.

MAIN WORK

3 – Removing the speaker cover from the rear door trim panel

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Loosen screws (1).

▸ **Drilling out spot-welds**

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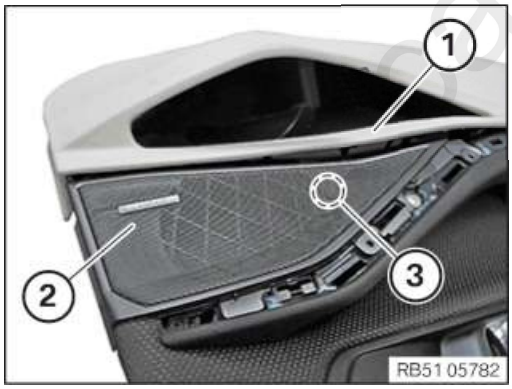
Overview: Attachment points



- Drill out or grind down the marked spot-welds (arrows).

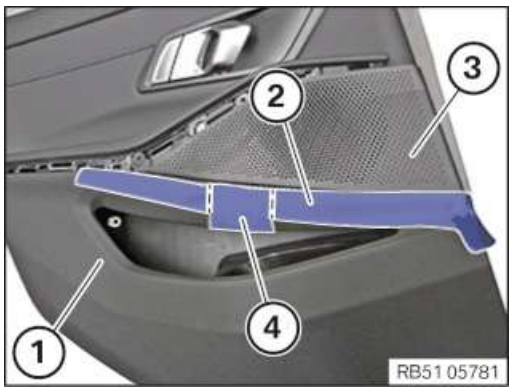


- Press latch mechanisms (1) together with long-nose pliers and disengage them in the downward direction.



- Carefully release the upper section of door pocket (1) away from the frame, as shown, until the welding pins release speaker cover (2).

  Latch mechanism (3) must be disengaged as described in the previous step.

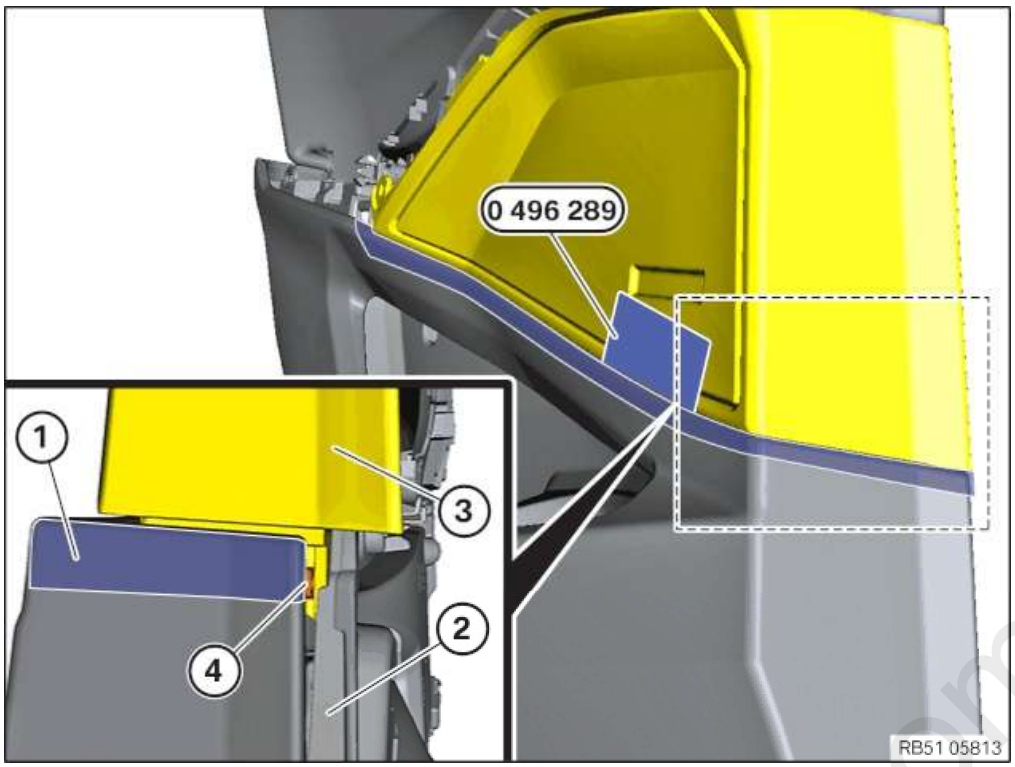


- Protect door pocket (1) from scratches with adhesive tape (2) in the entire area of speaker cover (3) as shown.
- In addition, wrap the door pocket with adhesive tape in area (4).

  This helps to better fix the remaining adhesive tape.

▸ **Removing speaker cover**

Overview: Speaker cover (removal)



- Pull the door pocket (1) with the assistance of an auxiliary person so far from the support (2), until the welding pin (4) is completely pulled out of the speaker cover (3).
- Insert the special tool 0 496 289 (00 9 341) into the gap between the door pocket and the speaker cover as shown.

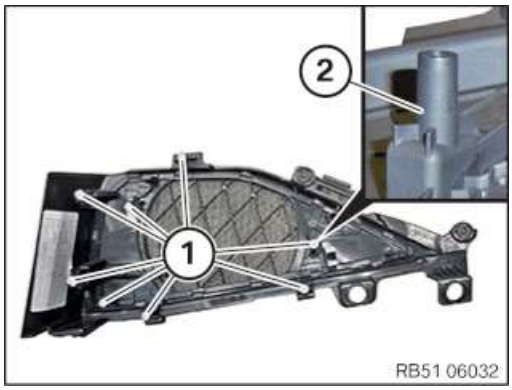
  This allows the speaker cover to be removed from the door panel without damaging it.
- Carefully pull the speaker cover (3) off the door trim panel and remove.

  The speaker cover (3) must be removed **very carefully** to avoid damage to the door pocket.

4 – Install the speaker cover on the rear door trim panel

NOTICE

Description is for left component only. Procedure on the right side is identical.

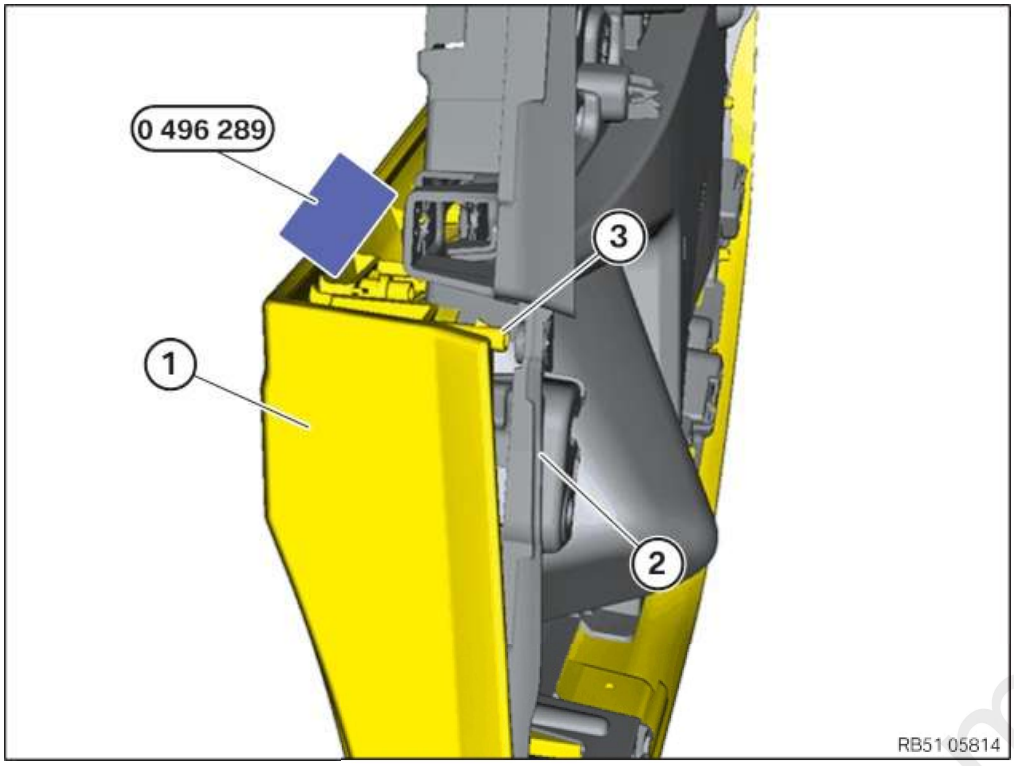


- Saw off all welding pins (1) along the moulding (2).

▸ **Refitting speaker cover**

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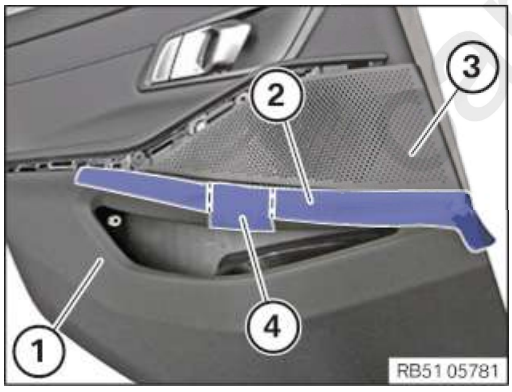
Overview: Speaker cover (installation)



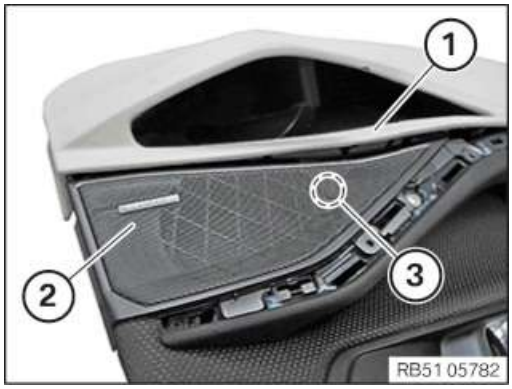
- With the help of an auxiliary person, pull door pocket (1) away from support (2) until welding pin (3) is pulled out fully from support (2).
- When installing the speaker cover, insert the special tool 0 496 289 (00 9 341) as shown.

  This makes it easier to install the speaker cover without causing any damage.
- Guide the speaker cover carefully in the door trim panel and welding pin (3) and install it.

  The speaker cover must be guided in **very carefully** in order to prevent any damage to the door pocket.



- Remove the adhesive tape in area (4).
- Remove adhesive tape (2) from door pocket (1) and in the entire area of speaker cover (3).



- Again feed in the upper section of the door pocket (1) in the area of the speaker cover (2) correctly.
- Engage the latch mechanisms on the rear side by applying pressure in area (3).

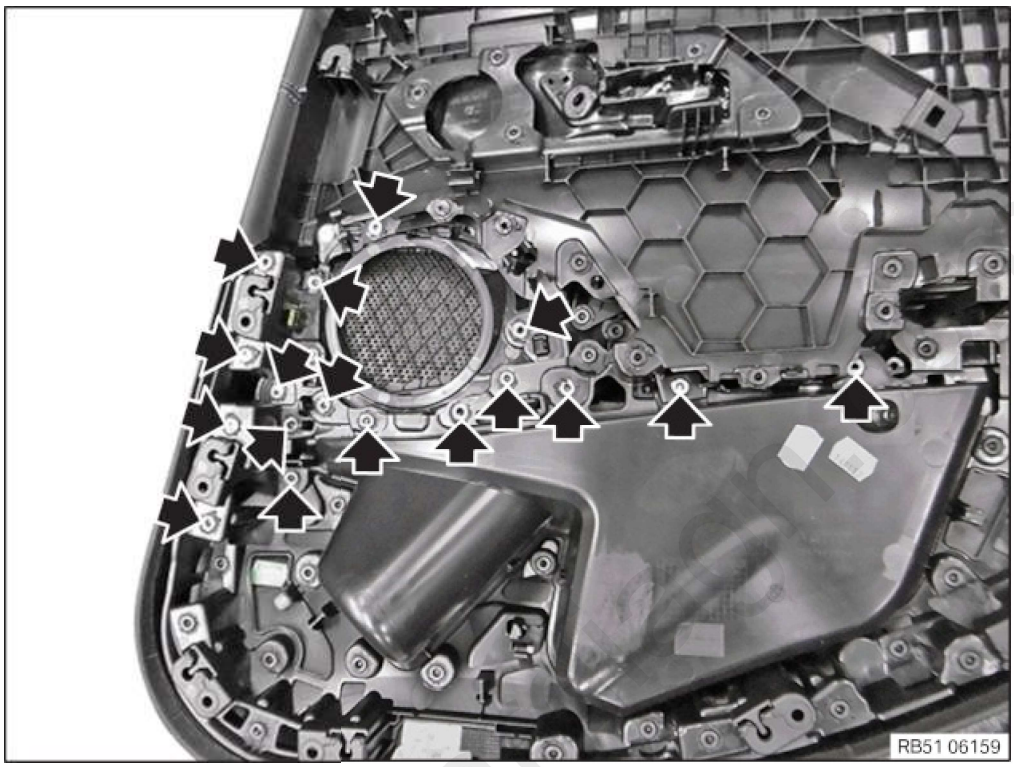


- Check the latch mechanisms (1).

  The latch mechanisms (1) must be correctly locked.

▸ **Repair screws**

Overview: Attachment points



- Insert and tighten repair screws (arrows).

Repair screw to door trim panel

Oval-head screw M4x10		Tightening torque	2,0 Nm

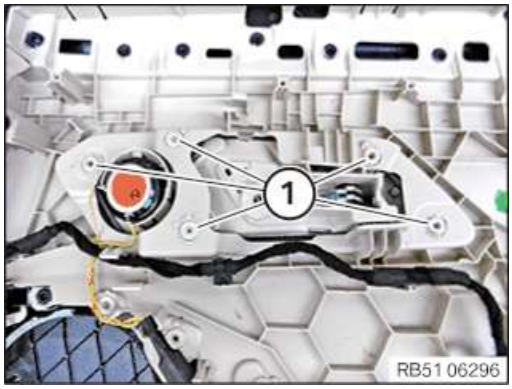


- Tighten the screws (1).

Speaker cover to door trim panel

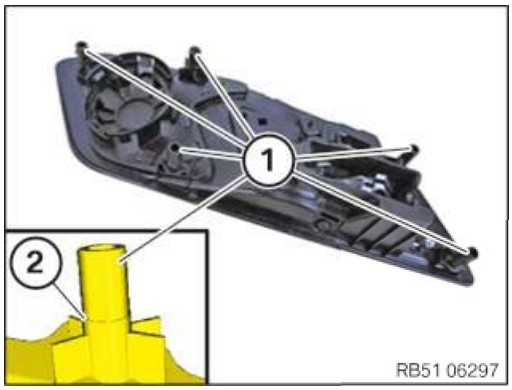
Screw		Tightening torque	2,3 Nm

5 – Removing inside door opener

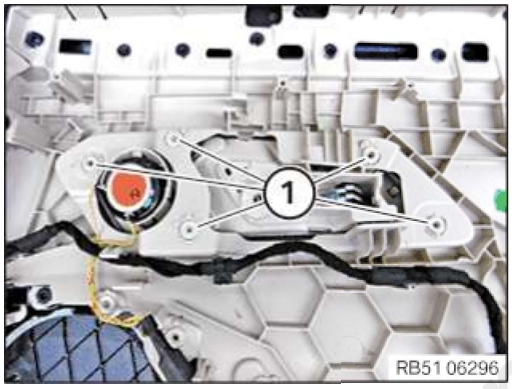


- Remove the existing LED module if necessary.
- Drill out and/or grind down the spot-welds (1).
- Guide out and remove the inner door opener from the door trim panel.

6 – Installing the inner door opener



- Saw off all welding pins (1) along the moulding (2).



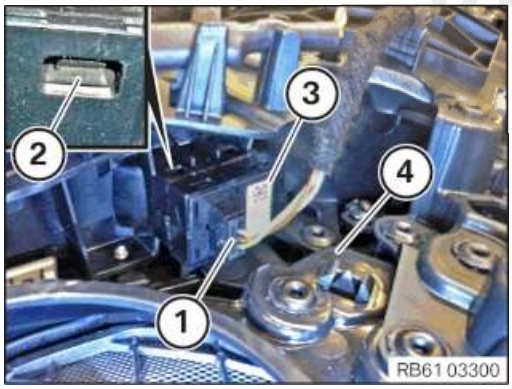
- Remove welding remnants on door trim panel with a scalpel.
- Guide the door opener into the door trim panel.
- Insert the repair screws in welding pins (1) and tighten them.

Repair screw to door trim panel

Oval-head screw M4x10	Tightening torque	2,0 Nm

- Install the existing LED module if necessary.

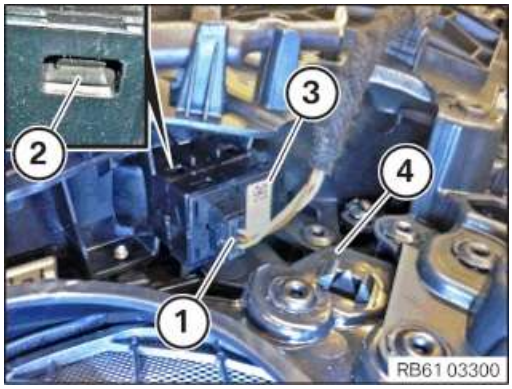
7 – Removing the rear power window switch



- Disconnect the connector (1) .
- Release latch mechanisms (2) and remove the power window switch (3) from the door trim panel (4).

8 – Installing the rear power window switch

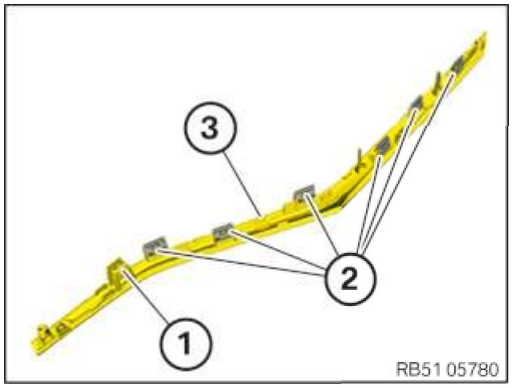
eldiagram.com



- Position power window switch (3) on the door trim panel (4) and engage in the latch mechanisms (2).
- Connect connector (1).

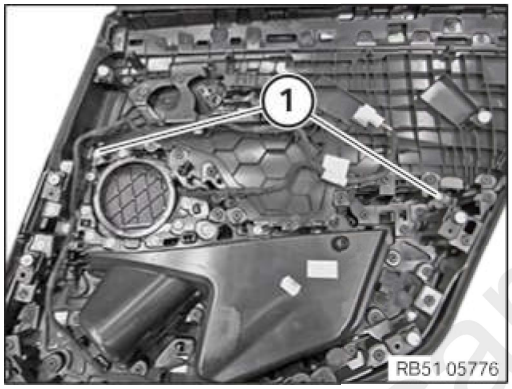
POSTPROCESSES

9 – Install the finisher on the rear door trim panel



- Check latch mechanisms (1) and clamps (2) at the decorative strip (3).

  In case the latch mechanisms (1)or the clamps (2) are faulty, renew the decorative strip (3).

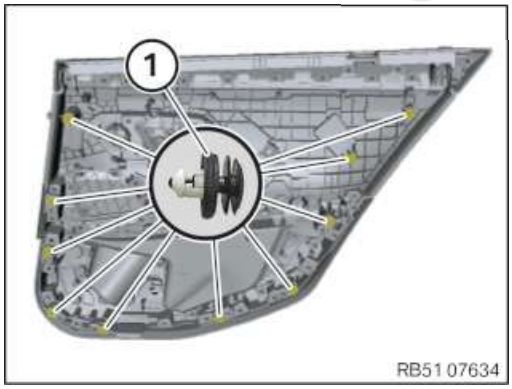


- Remove decorative strip (1) and lock it into clamps.
- Screw the screws (1) into the decorative strip and tighten.

Decorative strip to door trim panel

Screw		Tightening torque	2,3 Nm

10 – Installing rear door trim panel

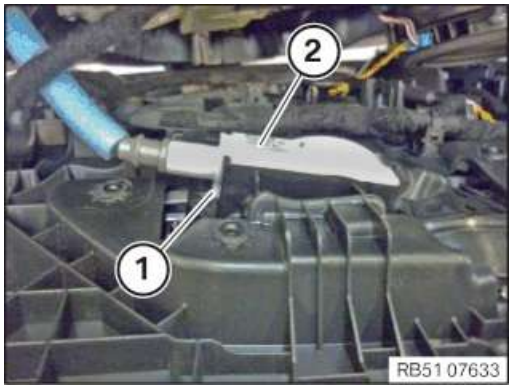


- Renew the clips (1).

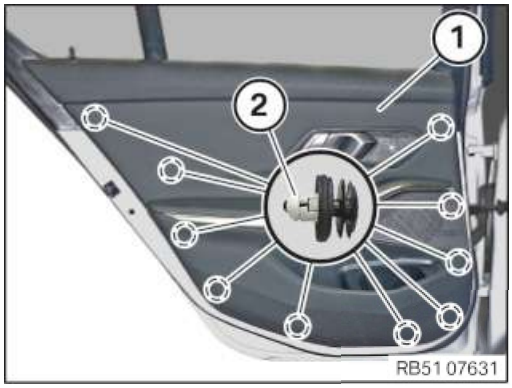
  Parts: Clips

  The clips (1) **must not be engaged. The disengaged state is shown.**

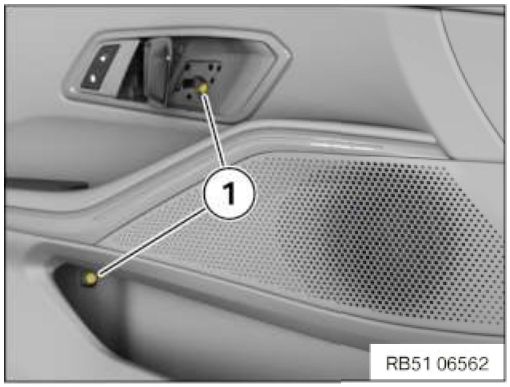
cardiagn.com



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door handle (2) and clip in to the latch mechanism (1).
- Connect existing connectors and lock.



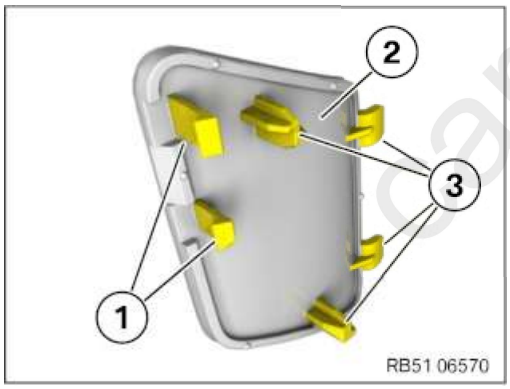
- Feed door trim panel from the top into the inner window recess finisher strip.
- Carefully clip in the door trim panel onto the clips (1).



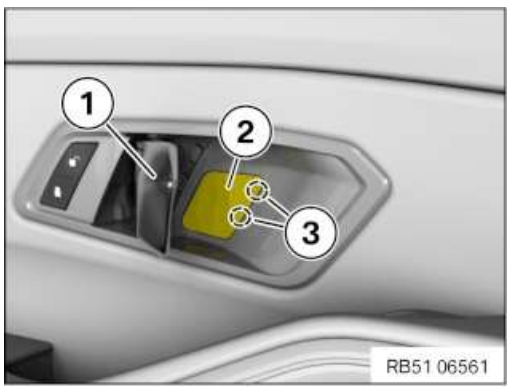
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

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Overview of Tightening Torques

Repair screw to door trim panel — Used in step 46

Oval-head screw M4x10		Tightening torque	2,0 Nm

Speaker cover to door trim panel — Used in step 4

Screw		Tightening torque	2,3 Nm

Decorative strip to door trim panel — Used in step 9

Screw		Tightening torque	2,3 Nm

Door trim panel to door — Used in step 10

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

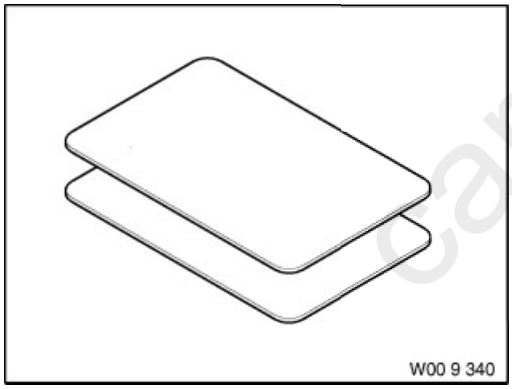
0 496 569 (00 9 325) Wedge



Common — Used in step 12

Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

0 496 289 (00 9 341) Removal aid



Common — Used in step 34

Usage	Only available as a set (2 tools) under 00 9 340 (= 83 30 0 493 687).
Included in the tool or work	0 493 687
Storage location	
Replaced by	
In connection with	
SI-Number	

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51 42 912 Replacing the speaker cover

RISK OF DAMAGE

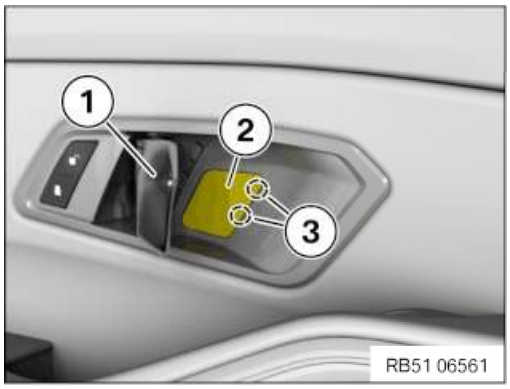
Scratches.

Tools and sharp-edged components can cause scratches.

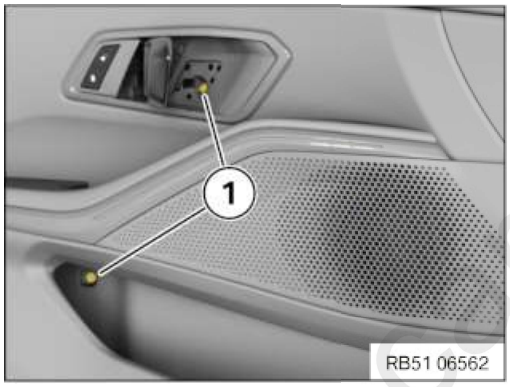
- Protect working area.
- Handle tools and components carefully.

PRELIMINARY WORK

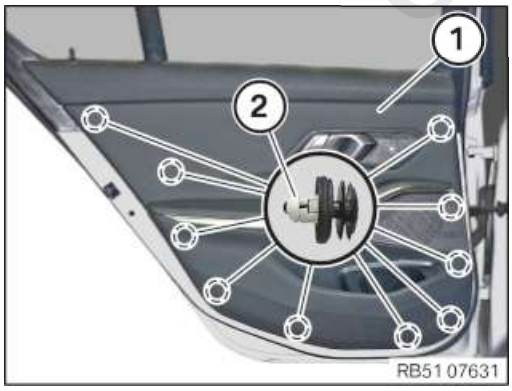
1 – Remove rear door trim



- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable tool.
- Remove trim (2).

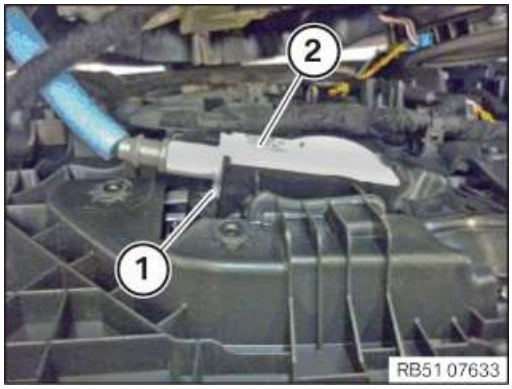


- Loosen screws (1).



- Unclip the door trim panel (1) with the special tool 0 496 569 (00 9 325) at the clips (2).
- Guide the door trim panel (1) upwards out of the weather strip.

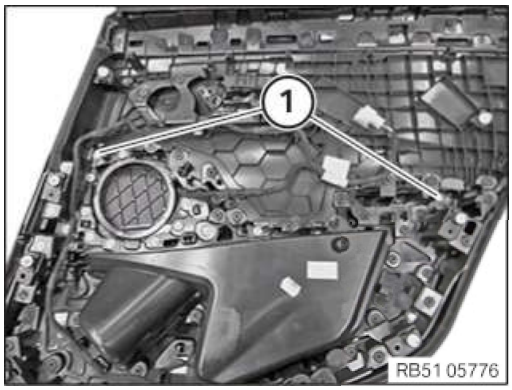
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- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock available plug connections and disconnect.
- Remove door trim panel.

2 – Remove the finisher from the rear door trim panel



- Loosen screws (1).



- In case of equipment specification with an optical fibre, remove the LED module.
- Unclip decorative strip (1) starting at the rear using the special tool 0 496 569 (00 9 325).

  Check if there is any optical fibre in the area of the speaker cover. It must not be damaged.

MAIN WORK

3 – Removing the speaker cover from the rear door trim panel

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Loosen screws (1).

▸ **Drilling out spot-welds**

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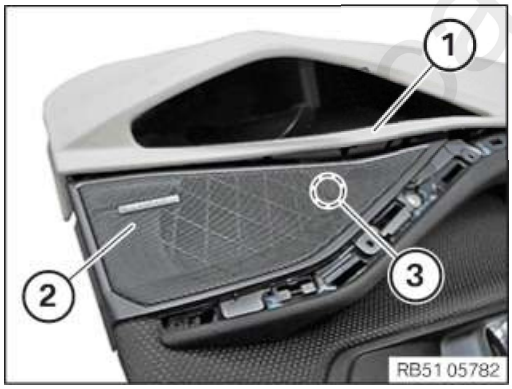
Overview: Attachment points



- Drill out or grind down the marked spot-welds (arrows).

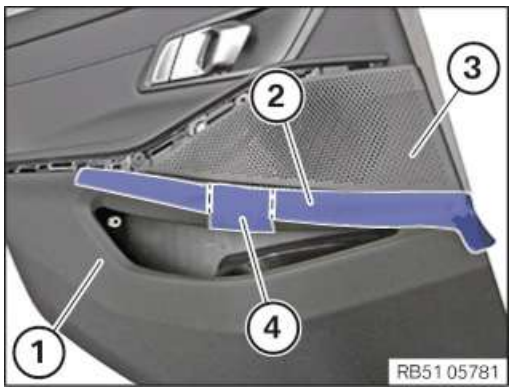


- Press latch mechanisms (1) together with long-nose pliers and disengage them in the downward direction.



- Carefully release the upper section of door pocket (1) away from the frame, as shown, until the welding pins release speaker cover (2).

  Latch mechanism (3) must be disengaged as described in the previous step.

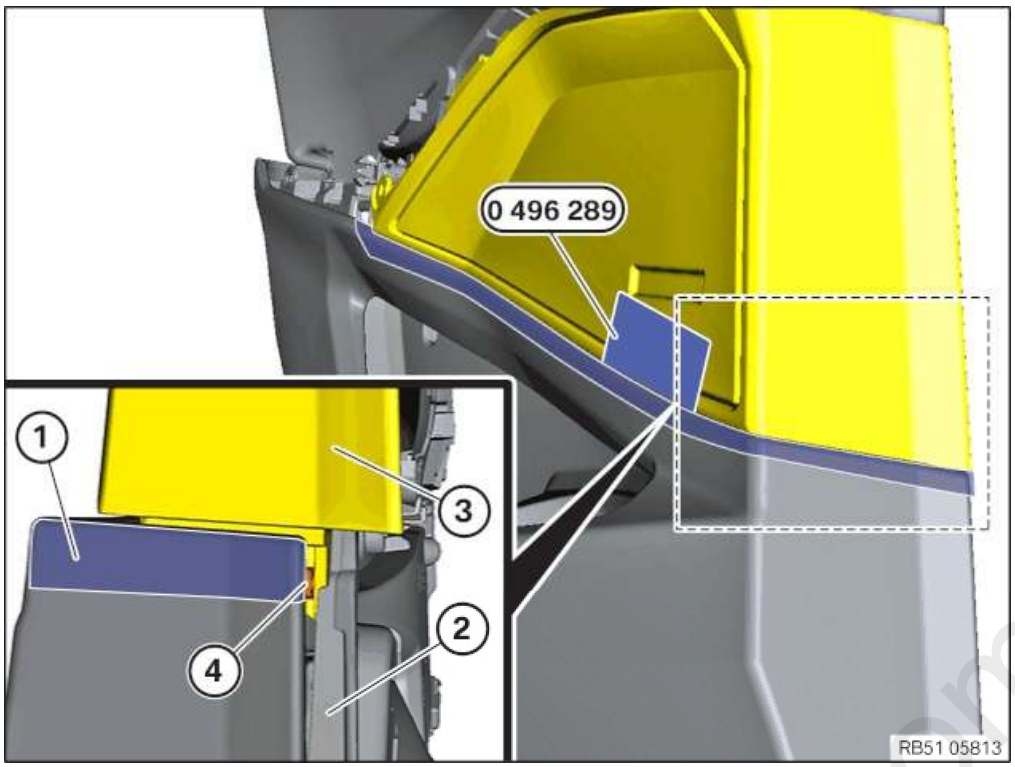


- Protect door pocket (1) from scratches with adhesive tape (2) in the entire area of speaker cover (3) as shown.
- In addition, wrap the door pocket with adhesive tape in area (4).

  This helps to better fix the remaining adhesive tape.

▸ **Removing speaker cover**

Overview: Speaker cover (removal)



- Pull the door pocket (1) with the assistance of an auxiliary person so far from the support (2), until the welding pin (4) is completely pulled out of the speaker cover (3).
- Insert the special tool 0 496 289 (00 9 341) into the gap between the door pocket and the speaker cover as shown.

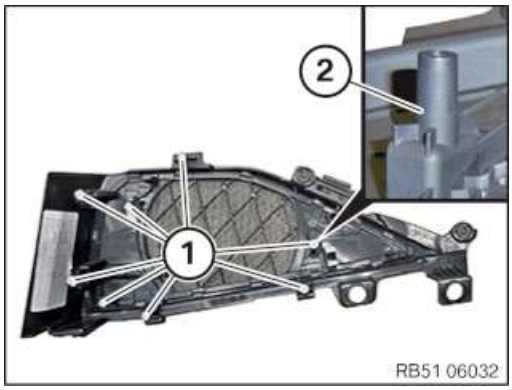
  This allows the speaker cover to be removed from the door panel without damaging it.
- Carefully pull the speaker cover (3) off the door trim panel and remove.

  The speaker cover (3) must be removed **very carefully** to avoid damage to the door pocket.

4 – Install the speaker cover on the rear door trim panel

NOTICE

Description is for left component only. Procedure on the right side is identical.

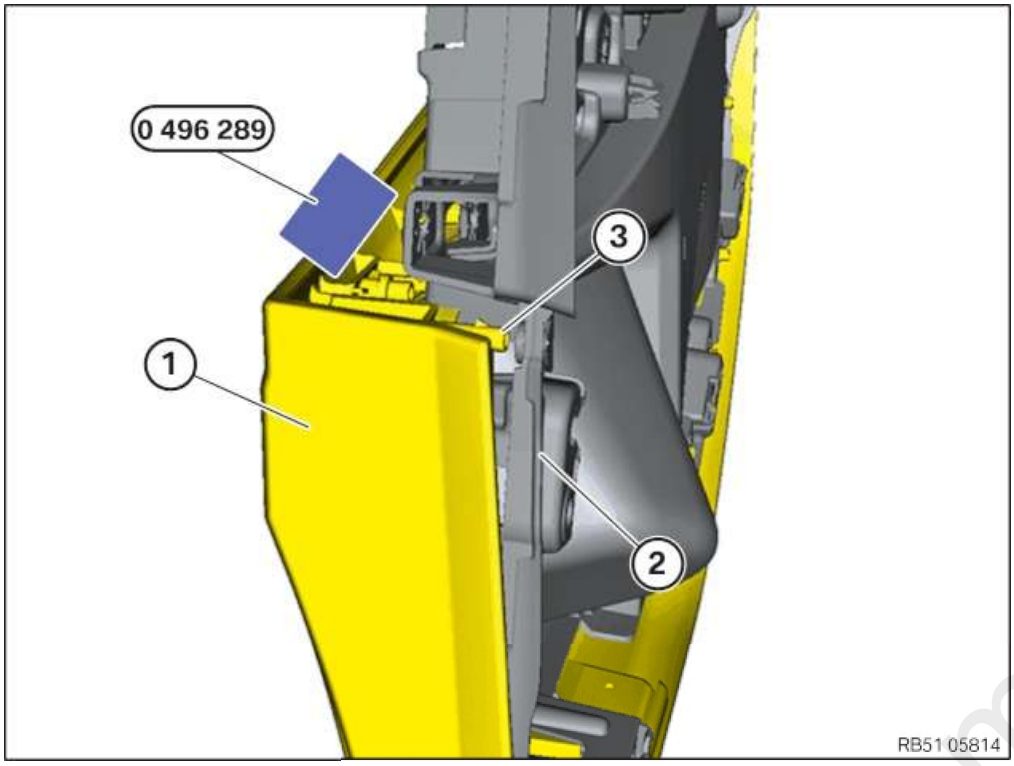


- Saw off all welding pins (1) along the moulding (2).

▸ **Refitting speaker cover**

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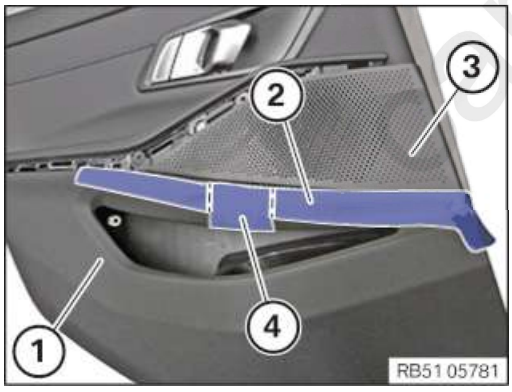
Overview: Speaker cover (installation)



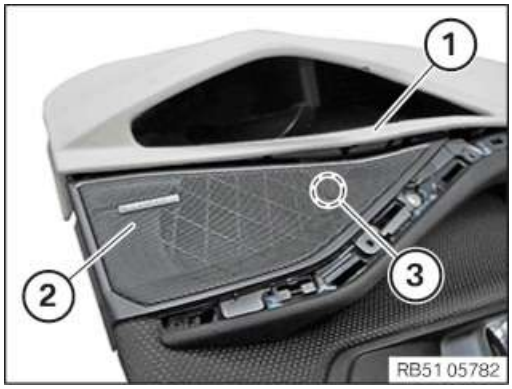
- With the help of an auxiliary person, pull door pocket (1) away from support (2) until welding pin (3) is pulled out fully from support (2).
- When installing the speaker cover, insert the special tool 0 496 289 (00 9 341) as shown.

  This makes it easier to install the speaker cover without causing any damage.
- Guide the speaker cover carefully in the door trim panel and welding pin (3) and install it.

  The speaker cover must be guided in **very carefully** in order to prevent any damage to the door pocket.



- Remove the adhesive tape in area (4).
- Remove adhesive tape (2) from door pocket (1) and in the entire area of speaker cover (3).



- Again feed in the upper section of the door pocket (1) in the area of the speaker cover (2) correctly.
- Engage the latch mechanisms on the rear side by applying pressure in area (3).

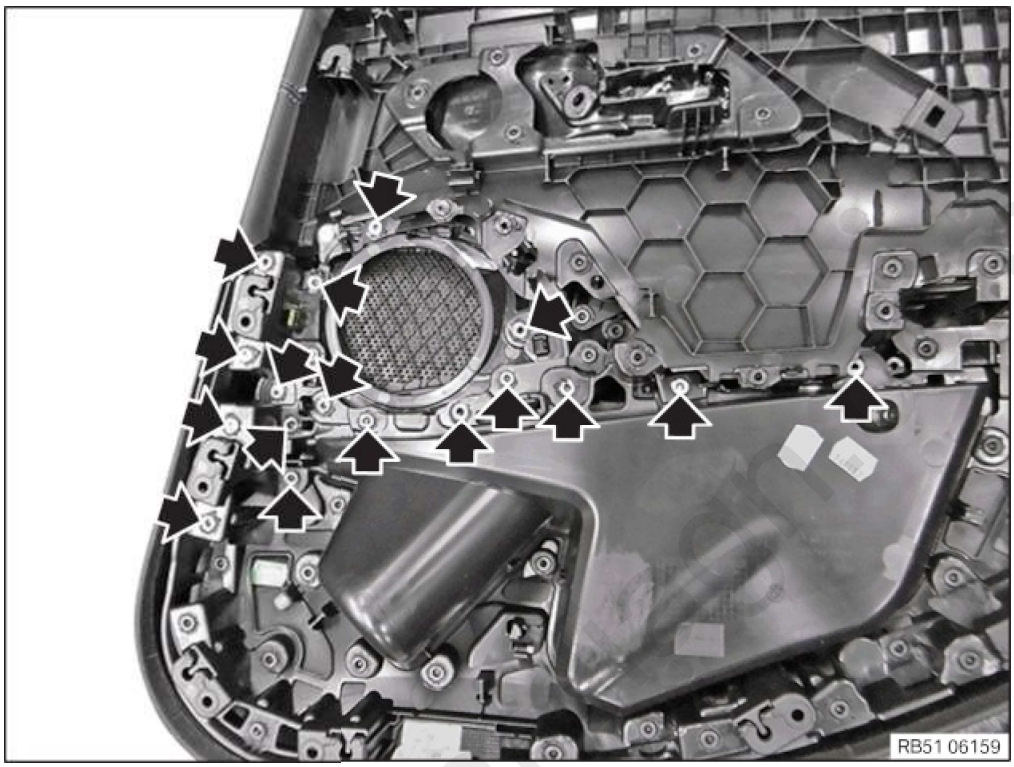


- Check the latch mechanisms (1).

  The latch mechanisms (1) must be correctly locked.

▸ **Repair screws**

Overview: Attachment points



- Insert and tighten repair screws (arrows).

Repair screw to door trim panel

Oval-head screw M4x10		Tightening torque	2,0 Nm



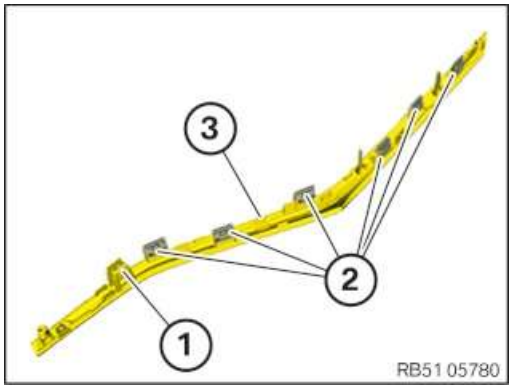
- Tighten the screws (1).

Speaker cover to door trim panel

Screw		Tightening torque	2,3 Nm

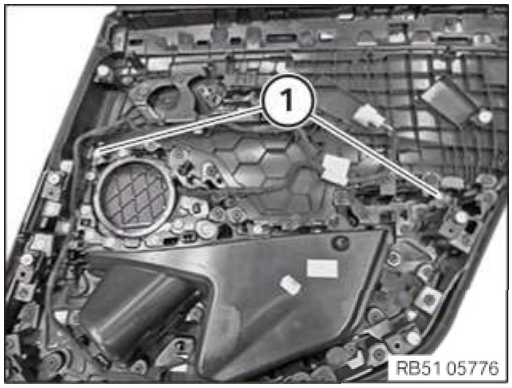
POSTPROCESSES

5 – Install the finisher on the rear door trim panel



- Check latch mechanisms (1) and clamps (2) at the decorative strip (3).

  In case the latch mechanisms (1)or the clamps (2) are faulty, renew the decorative strip (3).

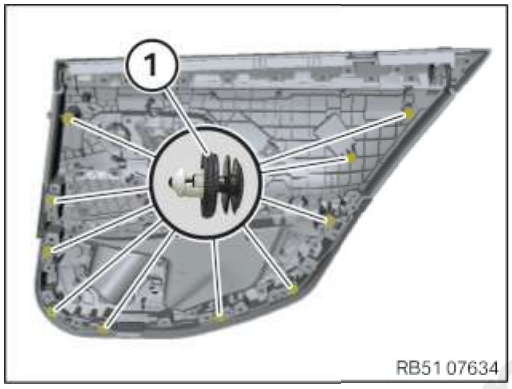


- Remove decorative strip (1) and lock it into clamps.
- Screw the screws (1) into the decorative strip and tighten.

Decorative strip to door trim panel

Screw		Tightening torque	2,3 Nm

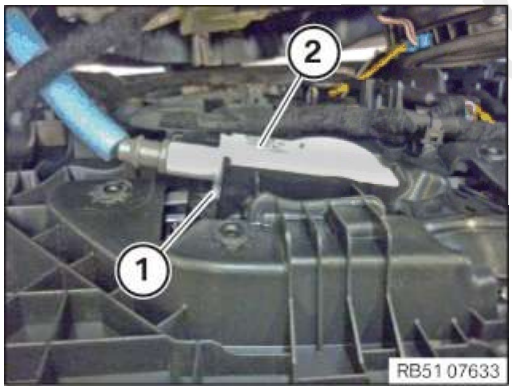
6 – Installing rear door trim panel



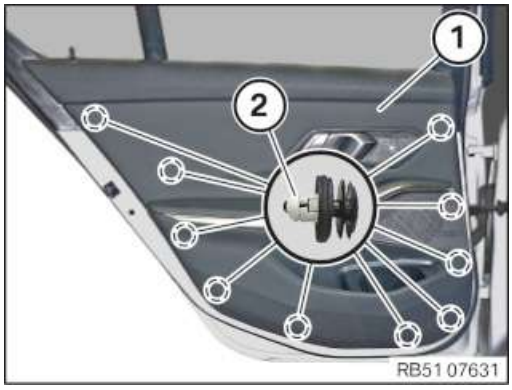
- Renew the clips (1).

  Parts: Clips

  The clips (1) **must not be engaged. The disengaged state is shown.**

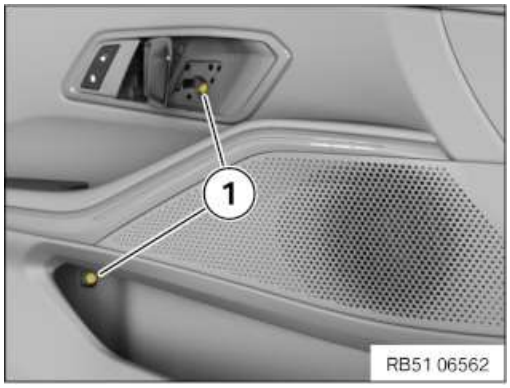


- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door handle (2) and clip in to the latch mechanism (1).
- Connect existing connectors and lock.



- Feed door trim panel from the top into the inner window recess finisher strip.
- Carefully clip in the door trim panel onto the clips (1).

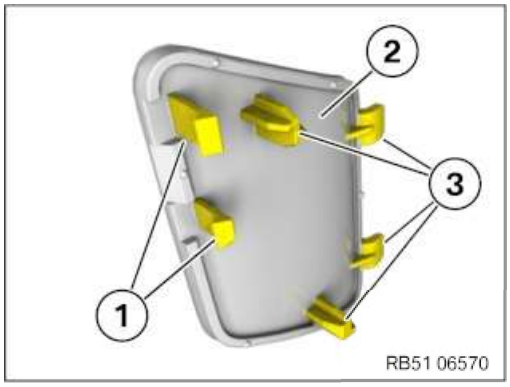
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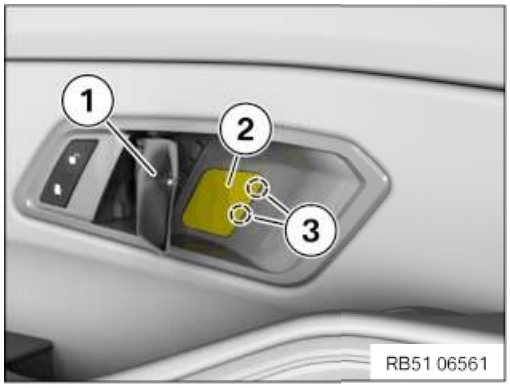
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

Repair screw to door trim panel Used in step 4

Oval-head screw M4x10		Tightening torque	2,0 Nm

Speaker cover to door trim panel Used in step 4

Screw		Tightening torque	2,3 Nm

Decorative strip to door trim panel Used in step 5

Screw		Tightening torque	2,3 Nm

Door trim panel to door Used in step 6

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

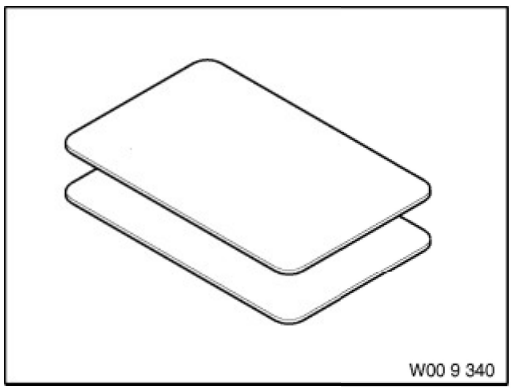
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0 496 569 (00 9 325) Wedge



Common	Used in step 12
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

0 496 289 (00 9 341) Removal aid



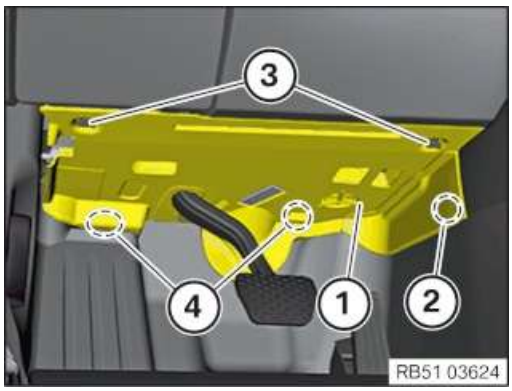
Common	Used in step 34
Usage	Only available as a set (2 tools) under 00 9 340 (= 83 30 0 493 687).
Included in the tool or work	0 493 687
Storage location	
Replaced by	
In connection with	
SI-Number	

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51 43 070 Remove and install/replace side trim panel, footwell, on A-pillar, left

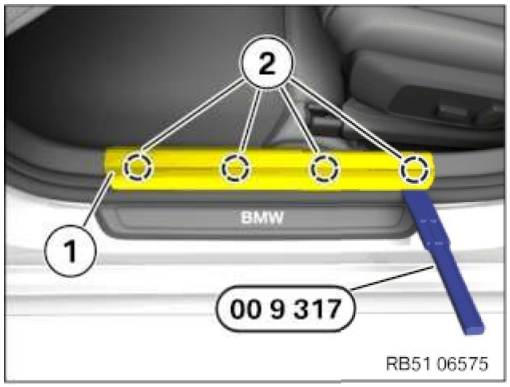
PRELIMINARY WORK

1 – Removing the trim panel for pedal mechanism

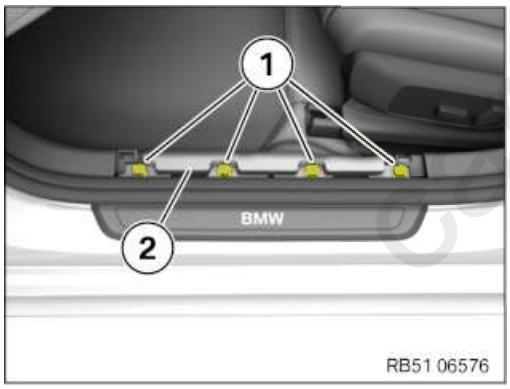


- Unclip the trim panel for the pedal mechanism (1) towards the inside in this area (2).
- Turn the locks (3) by 90°.
- Detach the trim panel for the pedal mechanism (1) inwards out of the guides (4).
- Unlock associated plug connection and disconnect.

2 – Remove door sill cover strip



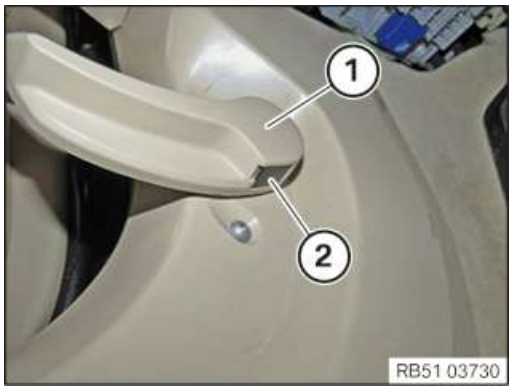
- Detach the door sill cover strip(1) using the special tool 0 490 534 (00 9 317) from the clips (2) in the floor panel.



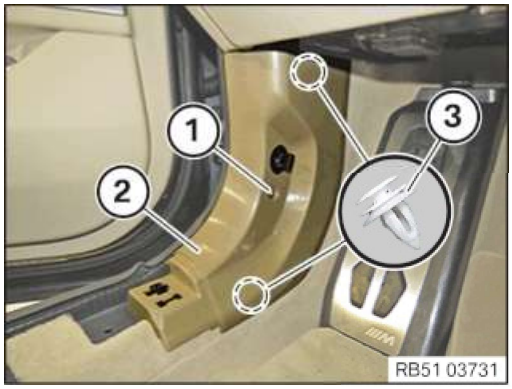
- If necessary, remove the clips (1) from the floor panel (2) and attach to the door sill cover strip.

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3 – Remove the side trim panel in the footwell at the left A-pillar

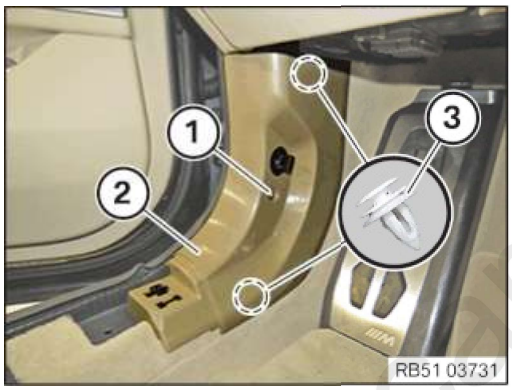


- Pull bonnet release lever (1) towards the rear.
- Lever out the locking wedge (2).
- Remove the bonnet release lever (1) inward.



- Loosen screw (1).
- Loosen the side trim panel (2) at the clips (3) and remove it toward the inside.

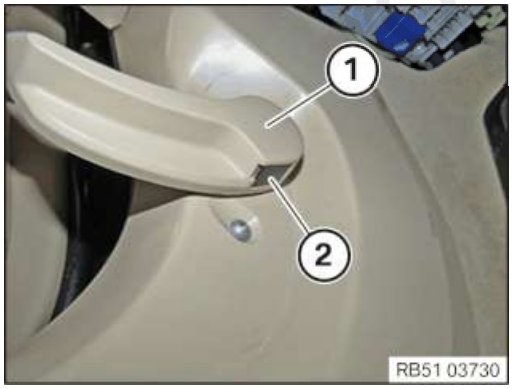
4 – Install the side trim panel in the footwell at the left A-pillar



- Check the clips (3) for damage and renew if necessary.
- Position the side trim panel (2) and engage it in the clips (3).
- Make sure that the side trim panel (2) is correctly fitted against edge protection.
- Tighten down screw (1).

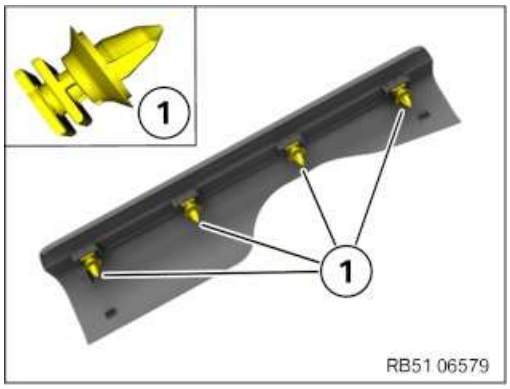
A-pillar footwell side trim panel

Screw		Tightening torque	2,5 Nm

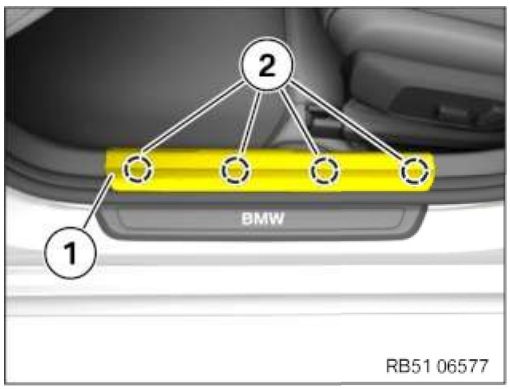


- Install bonnet release lever (1).
- Pull bonnet release lever (1) towards the rear.
- Install locking wedge (2).

5 – Install the door sill cover strip

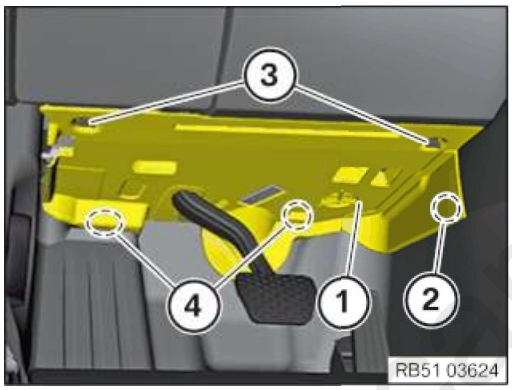


- Check the clips (1) for damage and renew if necessary.



- Clip the door sill cover strip (1) into the floor panel with the clips (2).

6 – Installing the trim panel for the pedal mechanism



- Connect associated connector.
- Attach the trim panel for the pedal mechanism (1) in the guides (4) and fold it up.
- Clip the trim panel for the pedal mechanism (1) into the centre console in this area (2).
- Insert locks (3) correctly and turn 90°.

Additional Information

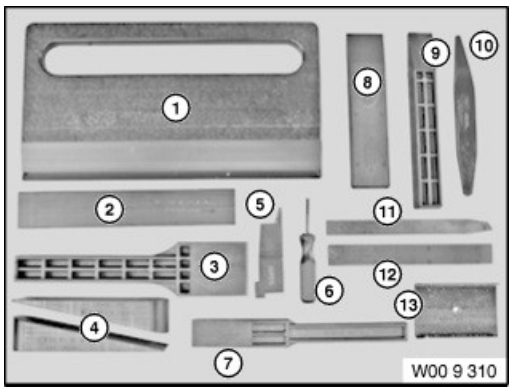
Overview of Tightening Torques

A-pillar footwell side trim panel Used in step 4

Screw		Tightening torque	2,5 Nm

Overview of Special Tools

0 490 534 (00 9 317) Wedge



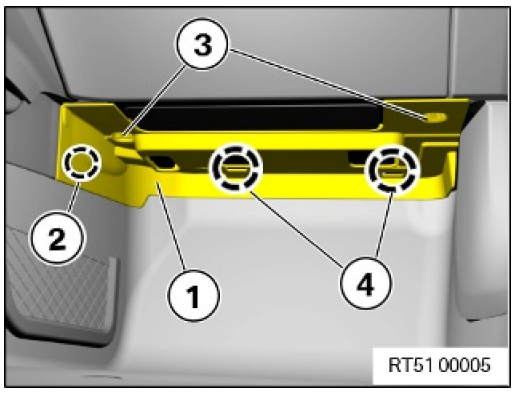
Common	Used in step 2
Usage	(Trim wedge) Replaced by special tool 00 9 325 from 11/2008 (quality improvement due to new material) Replaced by 00 9 325 (0 496 569)
Included in the tool or work	0 490 527
Storage location	
Replaced by	
In connection with	
SI-Number	

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51 43 075 Remove and install/replace side trim panel, footwell, on A-pillar, right

PRELIMINARY WORK

1 – Remove the right footwell trim



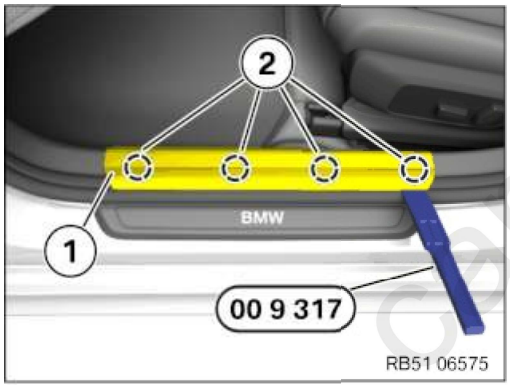
- Turn the locks (3) by 90°.
- Feed the footwell trim (1) out of the guide (2).
- Detach the footwell trim (1) inward out of the guides (4).
- Unlock associated plug connection and disconnect.

2 – Remove right door sill cover strip

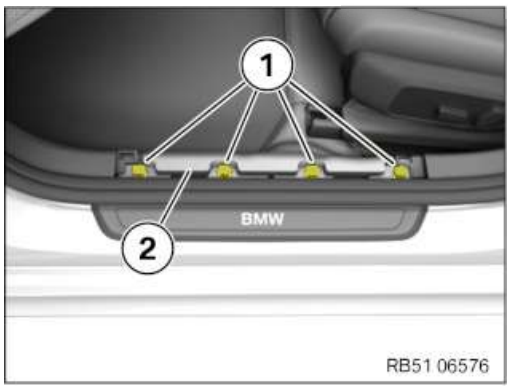
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove door sill cover strip**



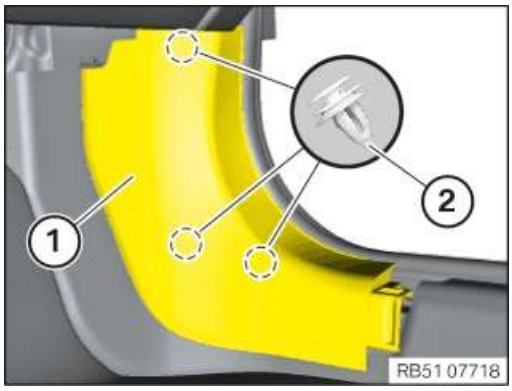
- Detach the door sill cover strip(1) using the special tool 0 490 534 (00 9 317) from the clips (2) in the floor panel.



- If necessary, remove the clips (1) from the floor panel (2) and attach to the door sill cover strip.

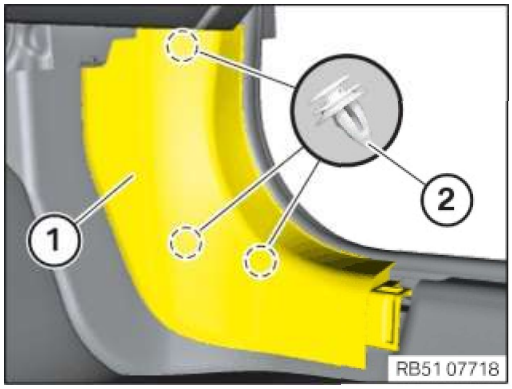
cardiagn.com

3 – Removing the side trim panel in the footwell at the right-hand A-pillar



- Loosen the side trim panel (1) at the clips (2) and remove it toward the inside.

4 – Installing side trim panel in footwell on right A-pillar



- Check the clips (2) for damage.

  Renew damaged or missing clips (2).
- Correctly position the side trim panel (1) and clip in to the clips (2).
- Make sure that the side trim panel (1) is correctly fitted against edge protection.

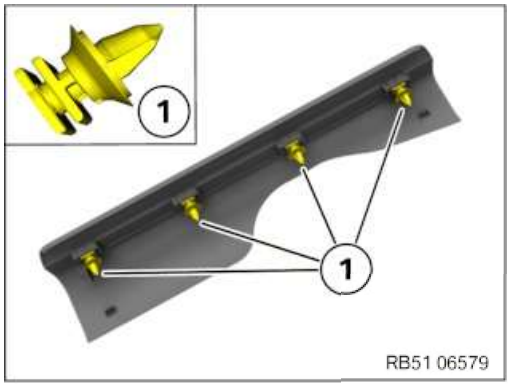
cardiagn.com

5 – Install right door sill cover strip

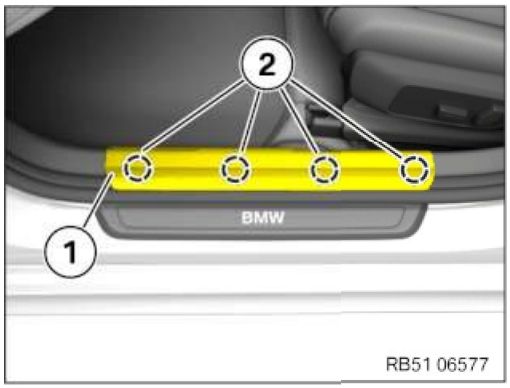
NOTICE

Description is for left component only. Procedure on the right side is identical.

▶ **Install the door sill cover strip**

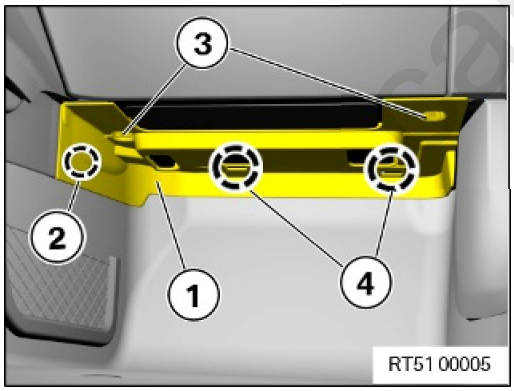


- Check the clips (1) for damage and renew if necessary.



- Clip the door sill cover strip (1) into the floor panel with the clips (2).

6 – Install the right footwell trim panel

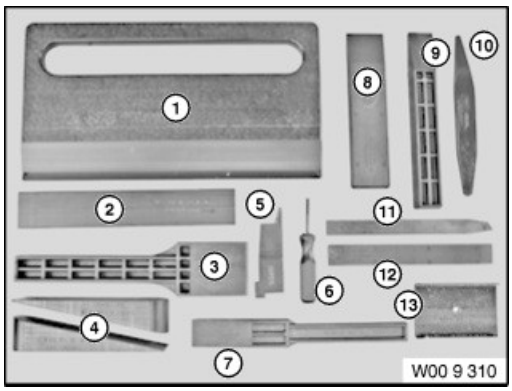


- Connect associated connector.
- Attach the footwell trim (1) to the guides (4) and fold up.
- Guide the footwell trim (1) into the guide (2) of the centre console.
- Position locks (3) correctly and turn by 90°.

Additional Information

Overview of Special Tools

0 490 534 (00 9 317) Wedge



Common	Used in step 2
Usage	(Trim wedge) Replaced by special tool 00 9 325 from 11/2008 (quality improvement due to new material) Replaced by 00 9 325 (0 496 569)
Included in the tool or work	0 490 527
Storage location	
Replaced by	
In connection with	
SI-Number	

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51 43 201 Removing and installing or replacing trim for front left or right roof pillar

NOTICE

Description is for left component only. Procedure on the right side is identical.

1 – Remove the A-pillar trim panel

WARNING

Airbag unit.

Danger! Life-threatening injuries!

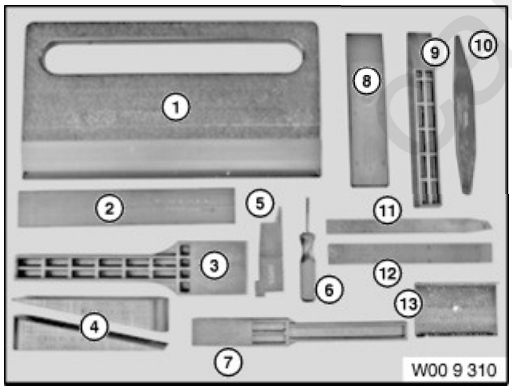
- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

WARNING

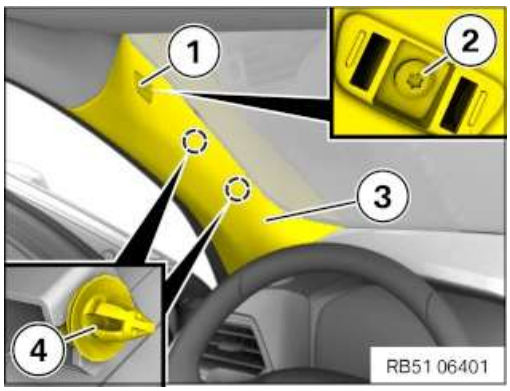
Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



- Have the set of special tools 0 493 752 (00 9 329) ready.



- Unclip the cover (1) with suitable tools.
- Loosen screw (2).
- Unclip A-pillar trim panel (3) with clips (4) and guide it out upwards.

2 – Installing the A-pillar trim panel

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WARNING

Airbag unit.

Danger! Life-threatening injuries!

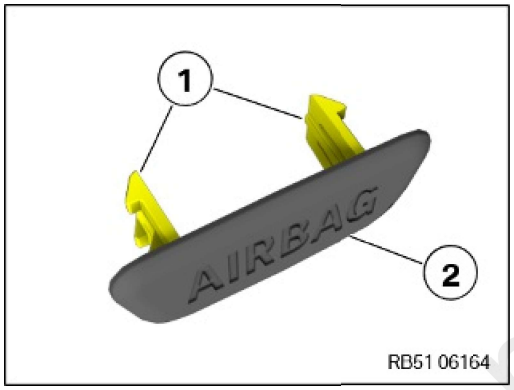
- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

WARNING

Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



Check

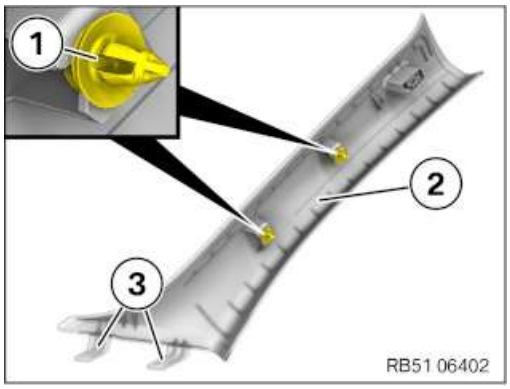
- Check retaining lugs (1) of cover (2) for damage.

Result

» Retaining lug is damaged.

Measure

- Renew the cover.



Check

- Check the clips (1) for damage and renew if necessary.
- Check the guides (3) for damage.

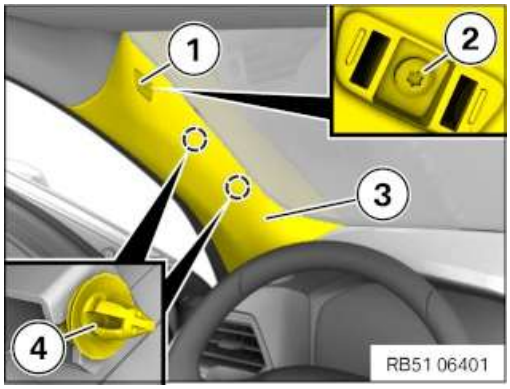
Result

» Guide is damaged.

Measure

- Renew the A-pillar trim panel.

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- Guide in A-pillar trim panel (3) downwards and clip it in with clips (4).
- Tighten down screw (2).

A-pillar trim panel to body

Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

- Clip in the cover (1).

Additional Information

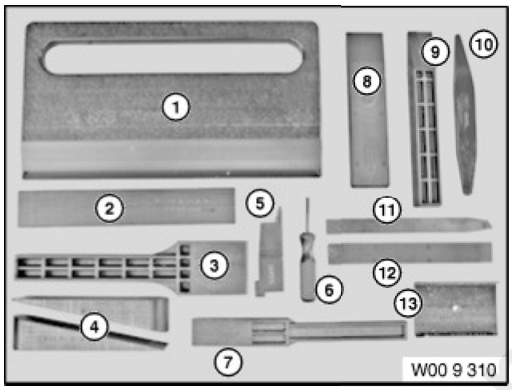
Overview of Tightening Torques

A-pillar trim panel to body Used in step 2

Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

Overview of Special Tools

0 493 752 (00 9 329) Case



Common Used in step 1

Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

Links

General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	1
72 00 ... Safety regulations for handling components with gas generators	1

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51 43 251 Removing and installing or replacing trim from rear left or right roof pillar

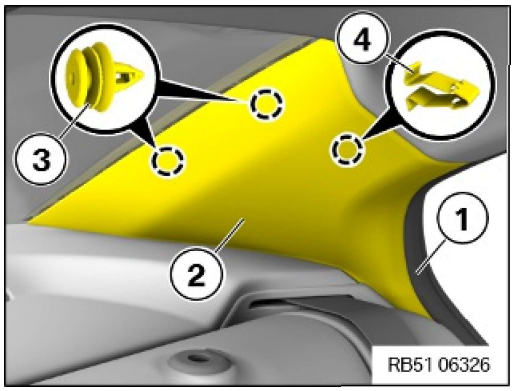
NOTICE

Description is for left component only. Procedure on the right side is identical.

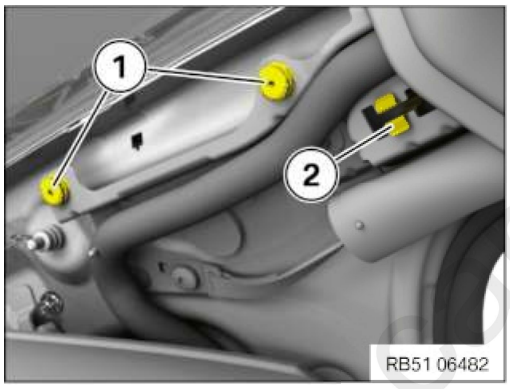
1 – Remove C-pillar trim panel

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

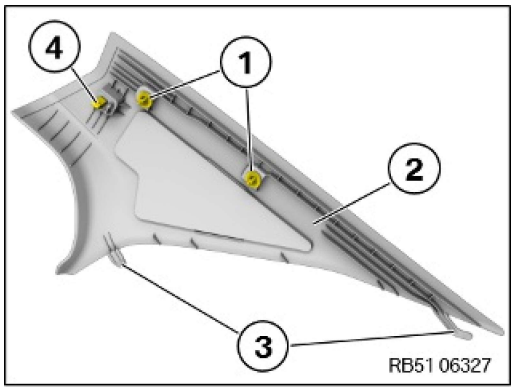


- Unclip clamp (4).
- Unclip clips (3).
- Feed out C-pillar trim panel (2) from the guides to the front.
- Thread out C-pillar trim panel (2) from the lip of edge protection (1).



- If required, remove the clips (1) and the clamp (2) and connect it to the trim panel.

2 – Installing C-pillar trim panel



Check

- Check clips (1) and clamp (4) for damage, renew if necessary.
- Check the guides (3) for damage.

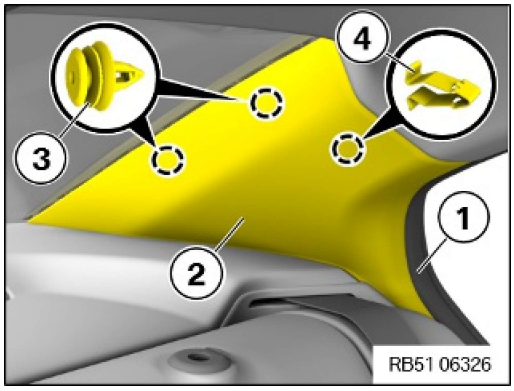
Result

» Guide is damaged.

Measure

- Renew the C-pillar trim panel .

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NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Feed C-pillar trim panel (2) into guides towards the rear.
- Clip in clips (3).
- Clip in clamp (4).
- Guide in C-pillar trim panel (2) under the lip of edge protection (1).

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51 43 771 Removing and installing/replacing both trim panels for rear roof pillar

1 – Remove both C-pillar trim panels

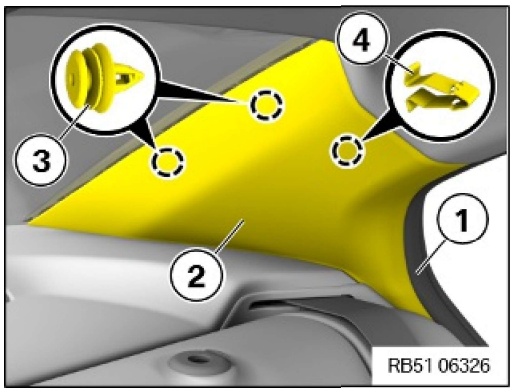
NOTICE

Description is for left component only. Procedure on the right side is identical.

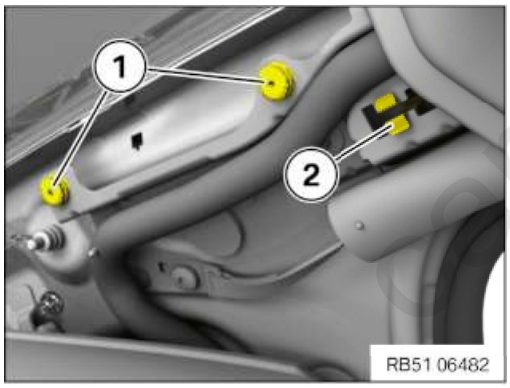
▸ **Remove C-pillar trim panel**

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Unclip clamp (4).
- Unclip clips (3).
- Feed out C-pillar trim panel (2) from the guides to the front.
- Thread out C-pillar trim panel (2) from the lip of edge protection (1).



- If required, remove the clips (1) and the clamp (2) and connect it to the trim panel.

2 – Install both C-pillar trim panels

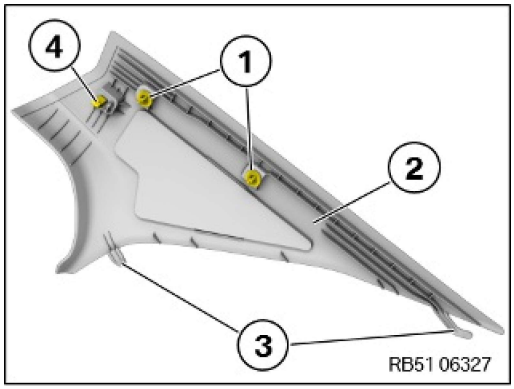
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Installing C-pillar trim panel**

Check

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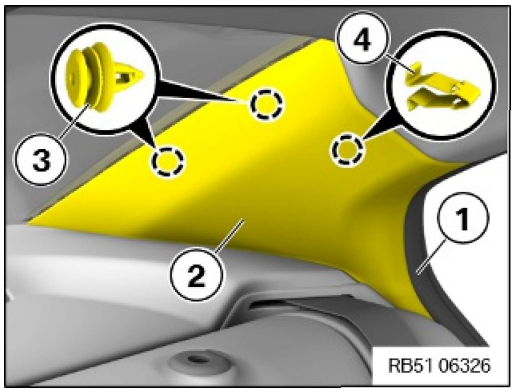
- Check clips (1) and clamp (4) for damage, renew if necessary.
- Check the guides (3) for damage.

Result

» Guide is damaged.

Measure

- Renew the C-pillar trim panel .



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Feed C-pillar trim panel (2) into guides towards the rear.
- Clip in clips (3).
- Clip in clamp (4).
- Guide in C-pillar trim panel (2) under the lip of edge protection (1).

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51 43 721 Removing and installing/replacing both trim panels for roof pillar

1 – Remove both A-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▶ **Remove the A-pillar trim panel**

WARNING

Airbag unit.

Danger! Life-threatening injuries!

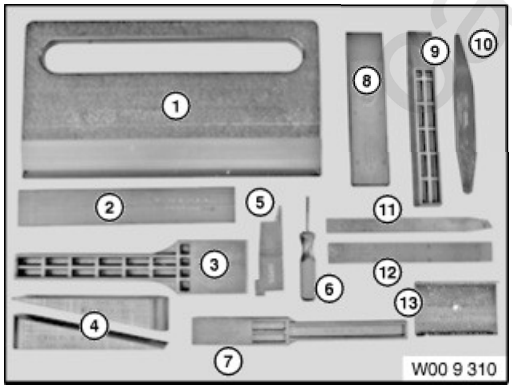
- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

WARNING

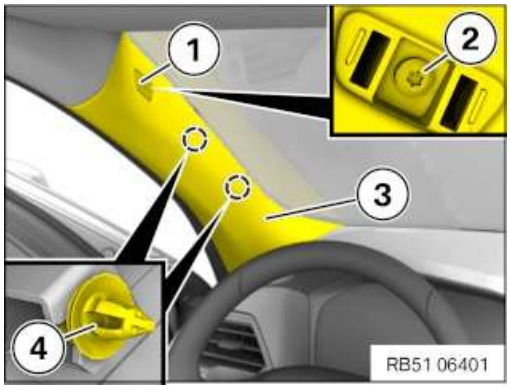
Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



- Have the set of special tools 0 493 752 (00 9 329) ready.



- Unclip the cover (1) with suitable tools.
- Loosen screw (2).
- Unclip A-pillar trim panel (3) with clips (4) and guide it out upwards.

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2 – Install both A-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Installing the A-pillar trim panel**

WARNING

Airbag unit.

Danger! Life-threatening injuries!

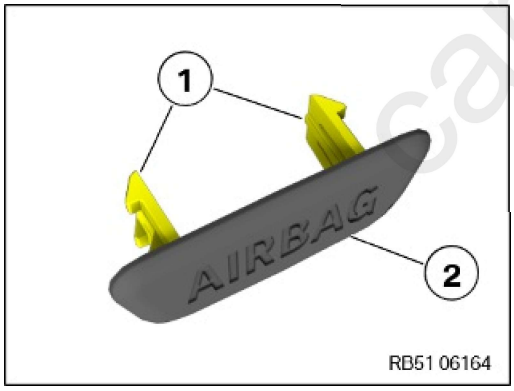
- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

WARNING

Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



Check

- Check retaining lugs (1) of cover (2) for damage.

Result

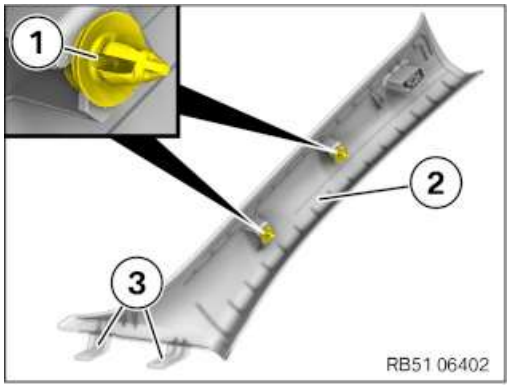
» Retaining lug is damaged.

Measure

- Renew the cover.

Check

cardiagn.com



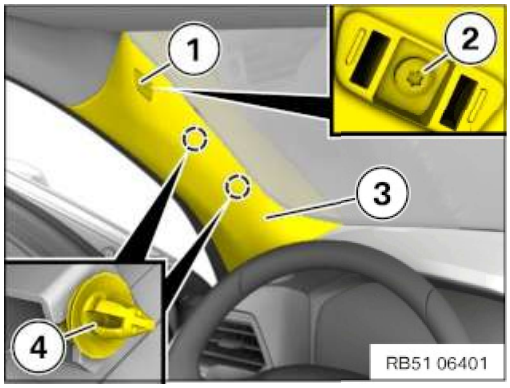
- Check the clips (1) for damage and renew if necessary.
- Check the guides (3) for damage.

Result

» Guide is damaged.

Measure

- Renew the A-pillar trim panel.



- Guide in A-pillar trim panel (3) downwards and clip it in with clips (4).
- Tighten down screw (2).

A-pillar trim panel to body

Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

- Clip in the cover (1).

Additional Information

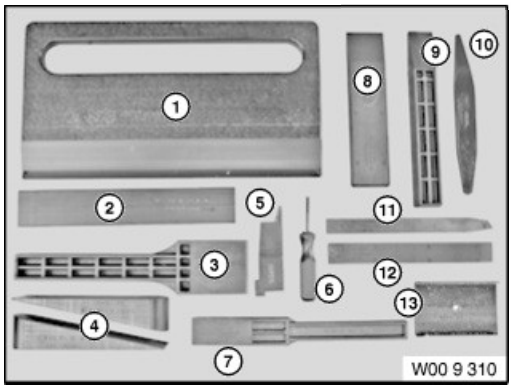
Overview of Tightening Torques

A-pillar trim panel to body Used in step 2

Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

Overview of Special Tools

0 493 752 (00 9 329) Case



Common Used in step 1

Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

Links

General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	1

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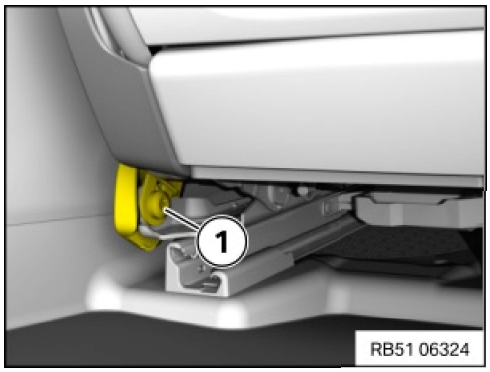
51 43 168 Removing and installing/replacing both trim panels for the body pillars

1 – Removing both B-pillar trim panels

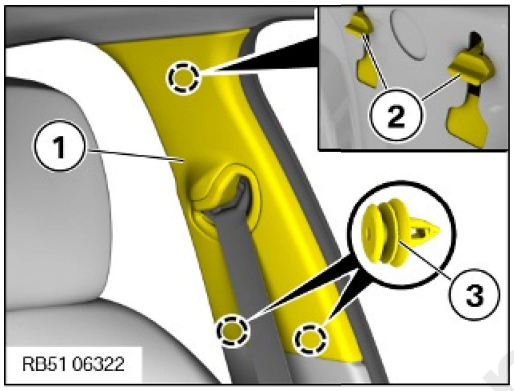
NOTICE

Description is for left component only. Procedure on the right side is identical.

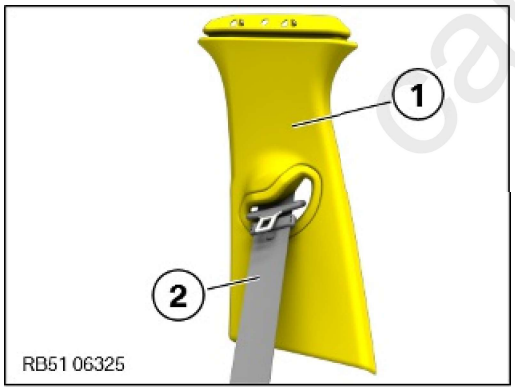
▶ **Remove the B-pillar trim panel**



- Fully position the front seat to the front and top.
- Loosen screw (1).
- Remove end fitting (2).



- Unclip clips (3).
- Feed B-pillar trim panel (1) out of the front and rear lip of edge protections and the guides (2).



- Feed upper seat belt (2) out of B-pillar trim panel (1).

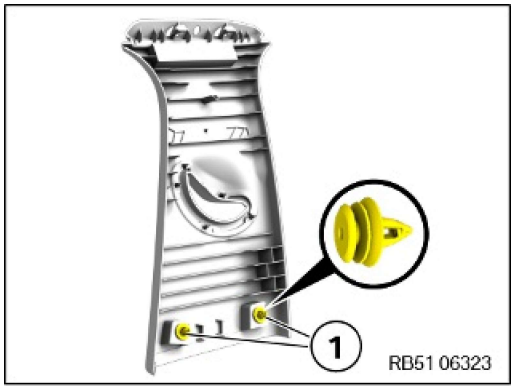
2 – Installing both B-pillar trim panels

NOTICE

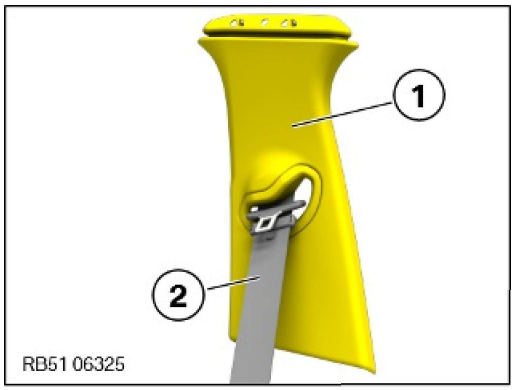
Description is for left component only. Procedure on the right side is identical.

▶ **Install the B-pillar trim panel**

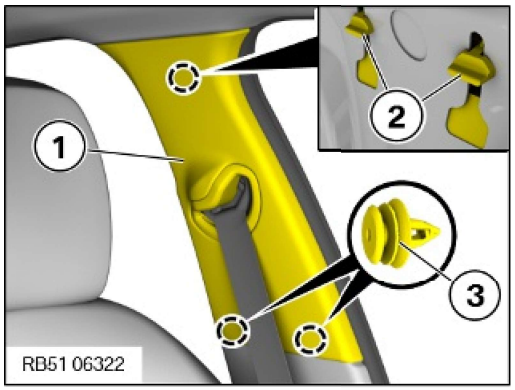
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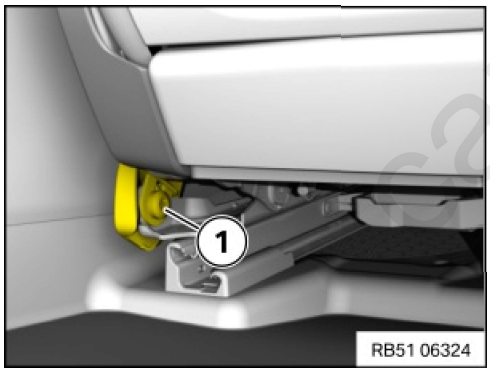
- Check the clips (1) for damage and renew if necessary.



- Guide upper seat belt (2) in B-pillar trim panel (1).



- Insert B-pillar trim panel (1) into guides (2) and under the front and rear lips of edge protection.
- Clip in the B-pillar trim panel (1) with the clips (3).



- Fully position the front seat to the front and top.
- Insert the end fitting (2).
- Renew the screw (1).

  Parts: Screw
- Tighten down screw (1).

End fitting to seat mechanism

Flat-head screwM10	Renew screw.	Tightening torque	42 Nm

Additional Information

Overview of Tightening Torques

End fitting to seat mechanism Used in step 2

Flat-head screwM10	Renew screw.	Tightening torque	42 Nm

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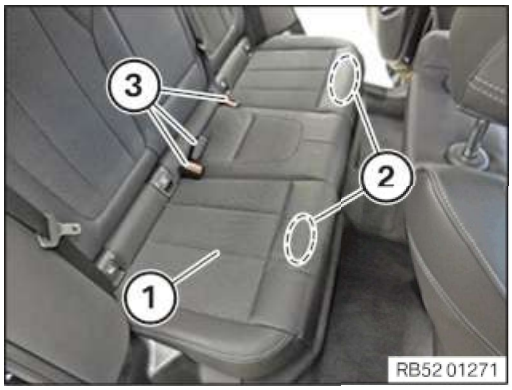
51 43 150 Removing and installing/replacing trim panel for left or right door pillar

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

1 – Removing seat bench



- Disengage the seat bench (1) in area (2) in an upward direction.
- Feed out the seat belt buckle (3) from the seat bench.

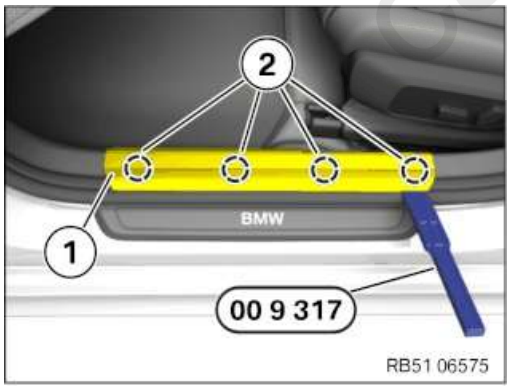


- Pull the seat bench (1) further forward.
- Release screw (2) on the end fitting and guide out belt (3).

Note: If there is a belt lock on the belt, the screw on the end fitting must not be released.

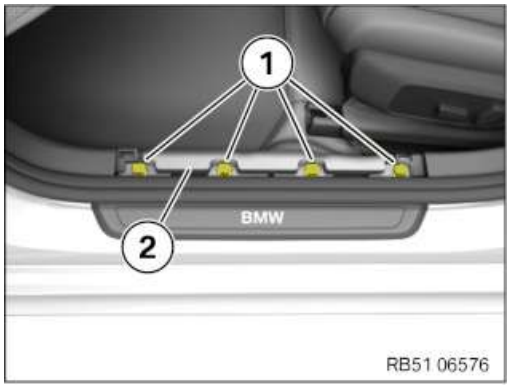
- If necessary, disconnect the present plug connections.
- Lift the seat bench (1) out of the vehicle.

2 – Remove door sill cover strip



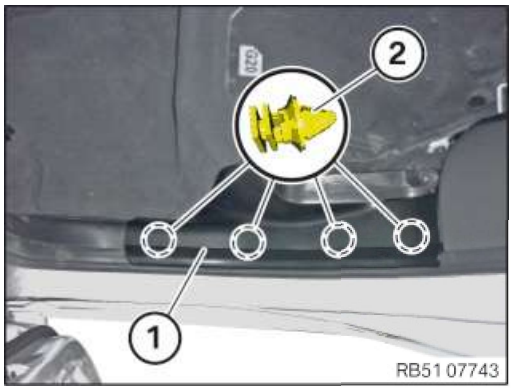
- Detach the door sill cover strip(1) using the special tool 0 490 534 (00 9 317) from the clips (2) in the floor panel.

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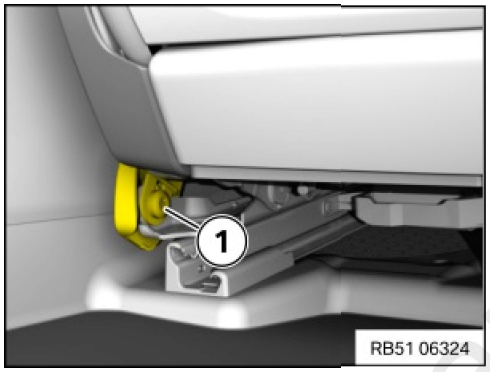
- If necessary, remove the clips (1) from the floor panel (2) and attach to the door sill cover strip.

3 – Removing rear entrance cover strip

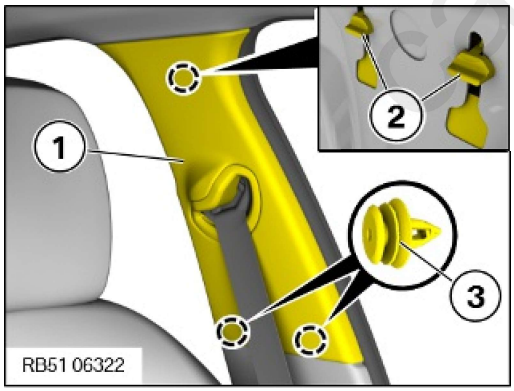


- Release the door sill cover strip (1) using the special tool 0 490 534 (00 9 317) from the clips (2) in the floor panel.
- If required, remove the clips (2) remaining in the body and mount them on the door sill cover strip.

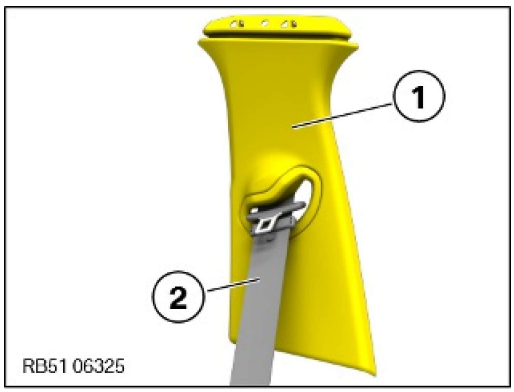
4 – Remove the B-pillar trim panel



- Fully position the front seat to the front and top.
- Loosen screw (1).
- Remove end fitting (2).



- Unclip clips (3).
- Feed B-pillar trim panel (1) out of the front and rear lip of edge protections and the guides (2).

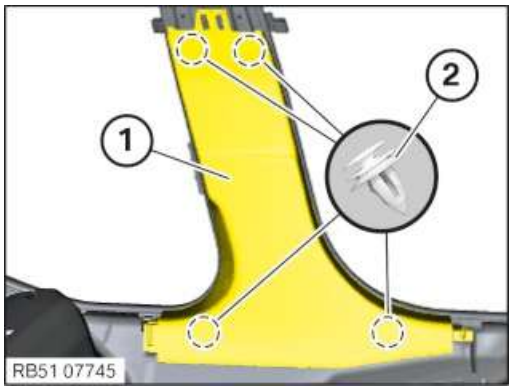


- Feed upper seat belt (2) out of B-pillar trim panel (1).

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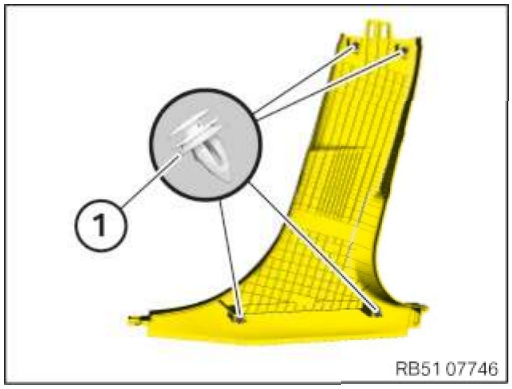
MAIN WORK

5 – Remove the lower B-pillar trim panel



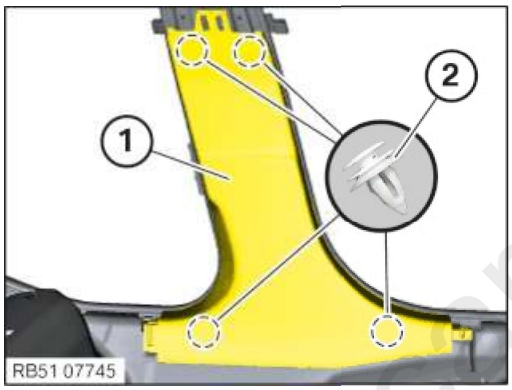
- Unclip the B-pillar trim panel (1) with the special tool 0 496 569 (00 9 325) at the clips (2).
- Feed out and remove the B-pillar trim panel (1) at the front and rear edge protection.

6 – Installing the lower B-pillar trim panel



- Check the clips (1) for damage.

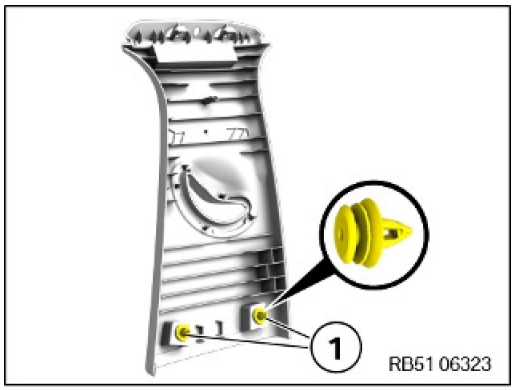
  Replace broken for missing clips (1).



- Insert and correctly position B-pillar trim panel (1) on the front and rear edge protection.
- Clip in the B-pillar trim panel (1) at the clips (2).

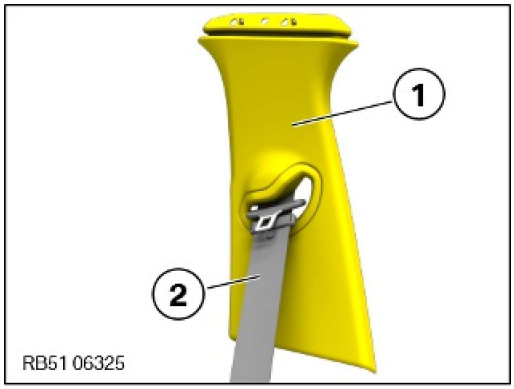
POSTPROCESSES

7 – Install the B-pillar trim panel

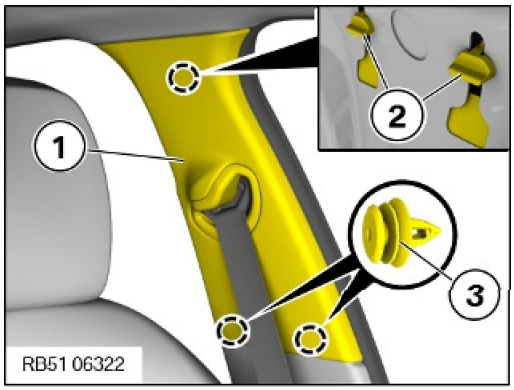


- Check the clips (1) for damage and renew if necessary.

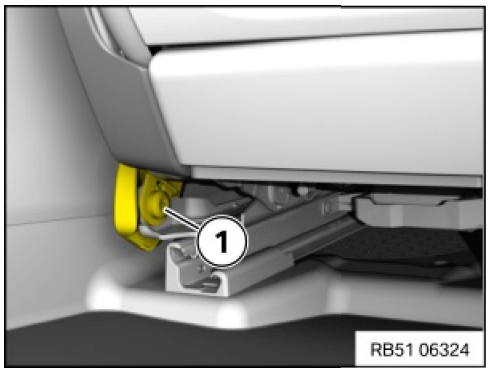
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- Guide upper seat belt (2) in B-pillar trim panel (1).



- Insert B-pillar trim panel (1) into guides (2) and under the front and rear lips of edge protection.
- Clip in the B-pillar trim panel (1) with the clips (3).



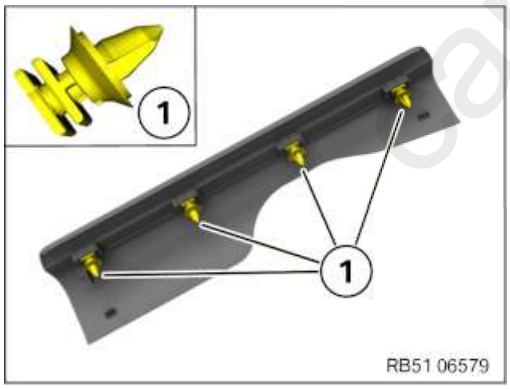
- Fully position the front seat to the front and top.
- Insert the end fitting (2).
- Renew the screw (1).

  Parts: Screw
- Tighten down screw (1).

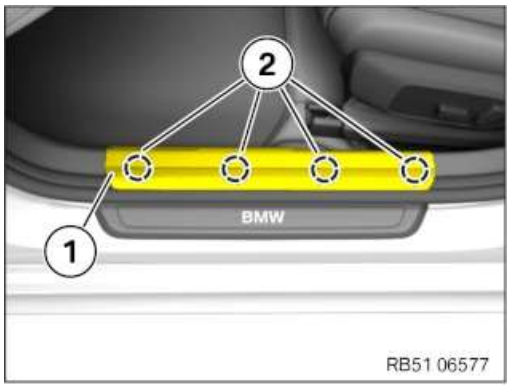
End fitting to seat mechanism

Flat-head screwM10	Renew screw.	Tightening torque	42 Nm

8 – Install the door sill cover strip



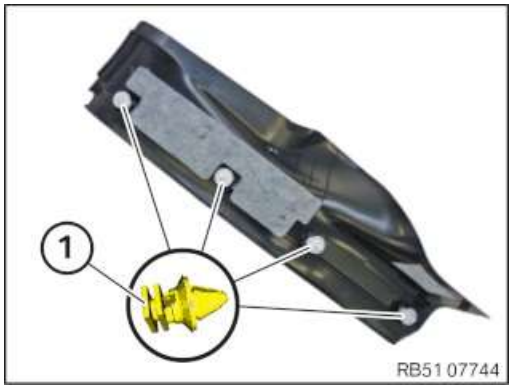
- Check the clips (1) for damage and renew if necessary.



- Clip the door sill cover strip (1) into the floor panel with the clips (2).

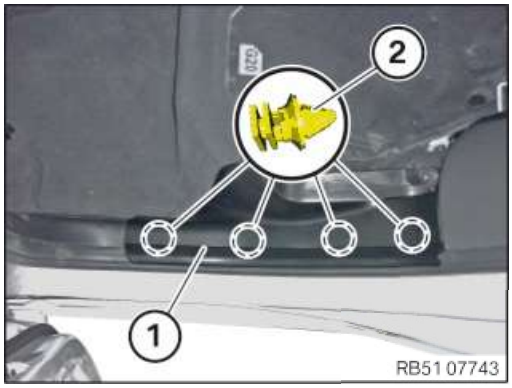
9 – Installing the rear door sill cover strip

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- Check the clips (1) for damage.

  Replace broken for missing clips (1).



- Position the door sill cover strip (1) correctly and clip in at the clips (2).

10 – Installing rear seat bench



- Lift the seat bench (1) into the vehicle.
- Insert the seat belt (3).
- Renew the screw (2).

  Parts: Screw
- Tighten down screw (2).

Rear upper seat belt to bottom body

Screw	Renew screw.	Tightening torque	42 Nm

- Connect available connectors.



- Insert seat bench (1).
- Thread seat belt buckles (3) into the seat bench.
- Engage the seat bench (1) in the area (2).

Additional Information

Overview of Tightening Torques

End fitting to seat mechanism Used in step 7

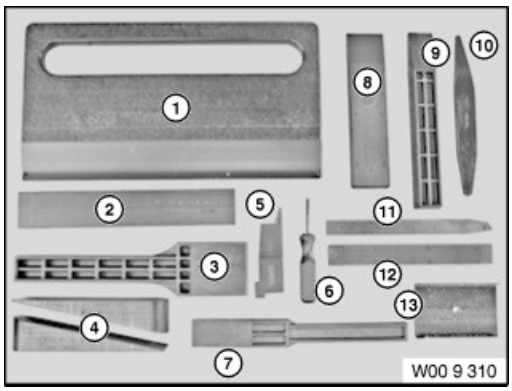
Flat-head screwM10	Renew screw.	Tightening torque	42 Nm

Rear upper seat belt to bottom body Used in step 10

Screw	Renew screw.	Tightening torque	42 Nm

Overview of Special Tools

0 490 534 (00 9 317) Wedge



Common	Used in step 23
Usage	(Trim wedge) Replaced by special tool 00 9 325 from 11/2008 (quality improvement due to new material) Replaced by 00 9 325 (0 496 569)
Included in the tool or work	0 490 527
Storage location	
Replaced by	
In connection with	
SI-Number	

0 496 569 (00 9 325) Wedge



Common	Used in step 5
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

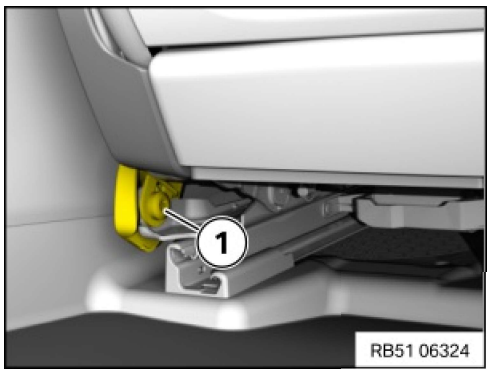
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51 43 148 Removing and installing/replacing trim panel for left or right door pillar

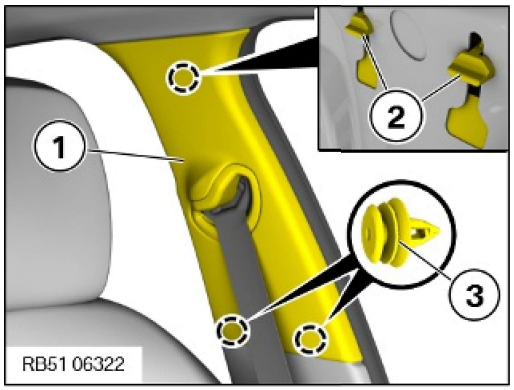
NOTICE

Description is for left component only. Procedure on the right side is identical.

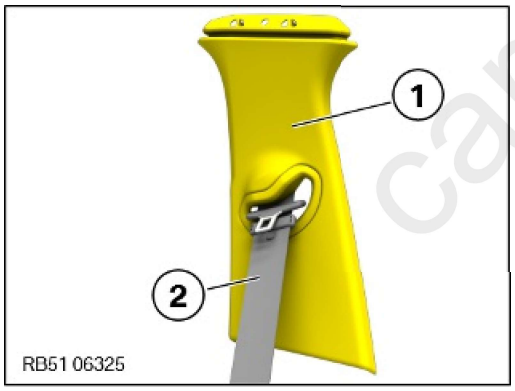
1 – Remove the B-pillar trim panel



- Fully position the front seat to the front and top.
- Loosen screw (1).
- Remove end fitting (2).

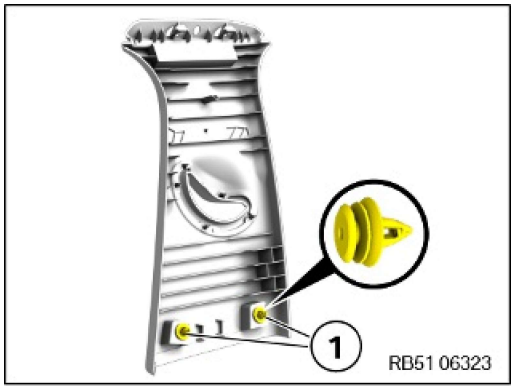


- Unclip clips (3).
- Feed B-pillar trim panel (1) out of the front and rear lip of edge protections and the guides (2).



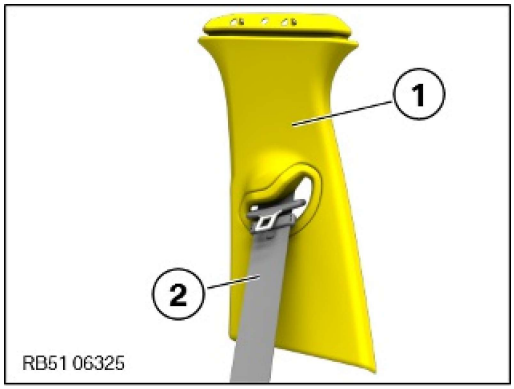
- Feed upper seat belt (2) out of B-pillar trim panel (1).

2 – Install the B-pillar trim panel

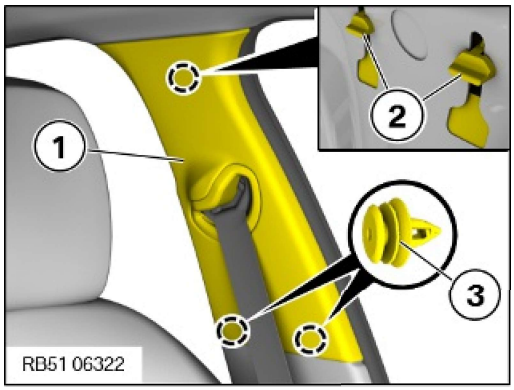


- Check the clips (1) for damage and renew if necessary.

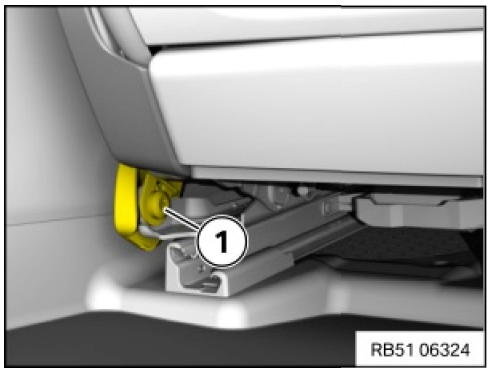
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- Guide upper seat belt (2) in B-pillar trim panel (1).



- Insert B-pillar trim panel (1) into guides (2) and under the front and rear lips of edge protection.
- Clip in the B-pillar trim panel (1) with the clips (3).



- Fully position the front seat to the front and top.
- Insert the end fitting (2).
- Renew the screw (1).

  Parts: Screw
- Tighten down screw (1).

End fitting to seat mechanism

Flat-head screwM10	Renew screw.	Tightening torque	42 Nm

Additional Information

Overview of Tightening Torques

End fitting to seat mechanism Used in step 2

Flat-head screwM10	Renew screw.	Tightening torque	42 Nm

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51 44 915 Lower roofliner

RISK OF DAMAGE

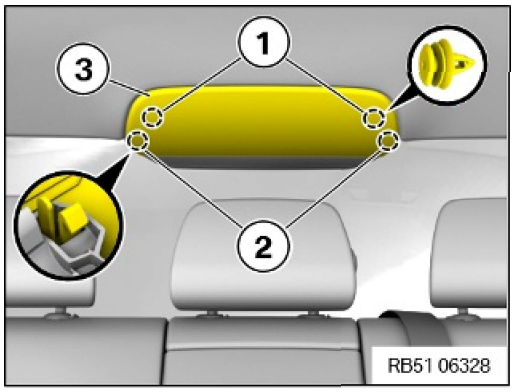
Fold the headlining.

If the headlining is folded, it may have to be replaced.

- Carry out tasks with a second person to assist.
- Support the headlining at the front and back.

PRELIMINARY WORK

1 – Removing the trim of the additional brake light



- Loosen the clips (1).
- Release the latch mechanisms (2) and remove the trim of the additional brake light (3).

2 – Remove both C-pillar trim panels

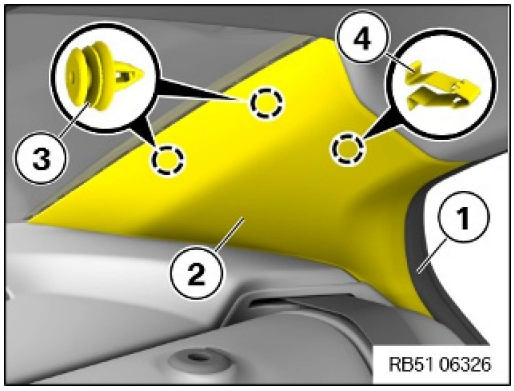
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove C-pillar trim panel**

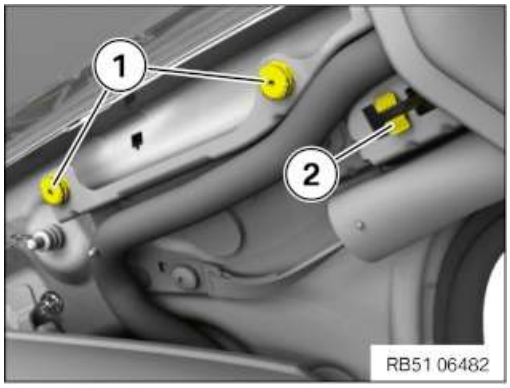
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



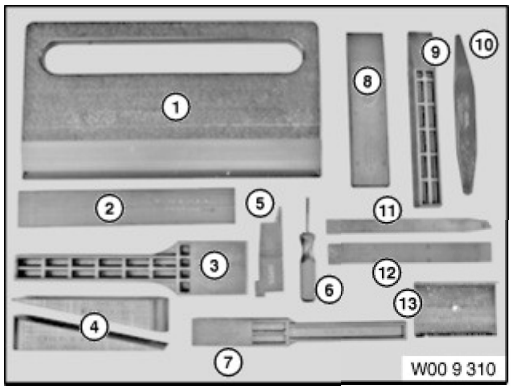
- Unclip clamp (4).
- Unclip clips (3).
- Feed out C-pillar trim panel (2) from the guides to the front.
- Thread out C-pillar trim panel (2) from the lip of edge protection (1).

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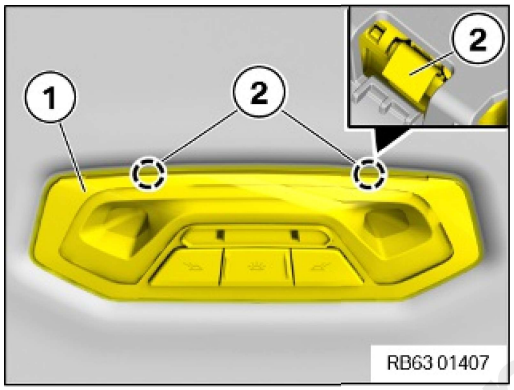


- If required, remove the clips (1) and the clamp (2) and connect it to the trim panel.

3 – Remove interior roof light



- Have the set of special tools 0 493 752 (00 9 329) ready.



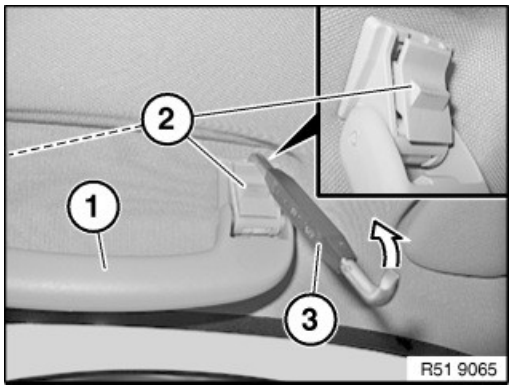
- Lever interior roof light (1) out of clamps (2) using a suitable tool.
- Unlock plug connection and disconnect.

4 – Removing all grab handles

NOTICE

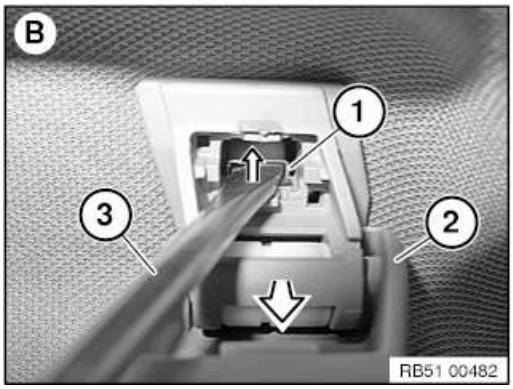
The description is for one component only. The procedure is identical for all further components.

▶ **Removing the grab handle**



- Expand the grab handle (1) towards the bottom.
- Disengage and remove the locking insert (2) with an angle screwdriver (3) as shown.

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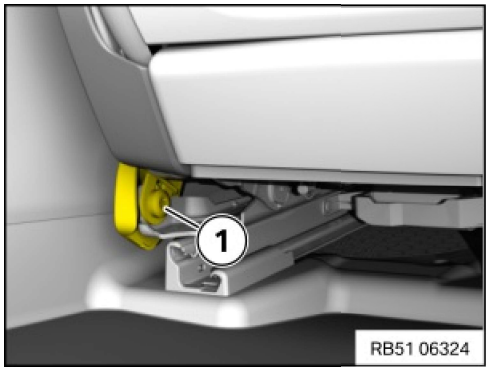
- Pull the grab handle (2) slightly to the inside and hold it.
- Use a suitable screwdriver (3) to detach the upper and lower release tabs (1).
- Guide the grab handle (2) out.
- Repeat the operation on the other side of the grab handle (2).

5 – Removing both B-pillar trim panels

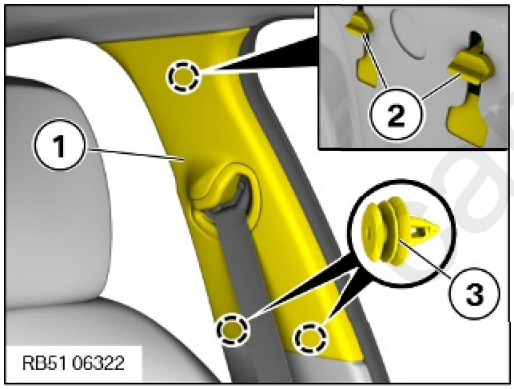
NOTICE

Description is for left component only. Procedure on the right side is identical.

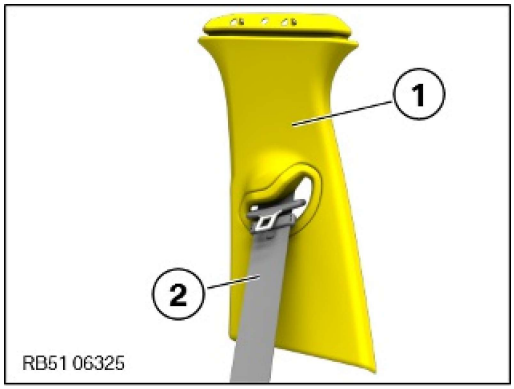
▸ **Remove the B-pillar trim panel**



- Fully position the front seat to the front and top.
- Loosen screw (1).
- Remove end fitting (2).



- Unclip clips (3).
- Feed B-pillar trim panel (1) out of the front and rear lip of edge protections and the guides (2).



- Feed upper seat belt (2) out of B-pillar trim panel (1).

6 – Remove both A-pillar trim panels

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NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the A-pillar trim panel**

WARNING

Airbag unit.

Danger! Life-threatening injuries!

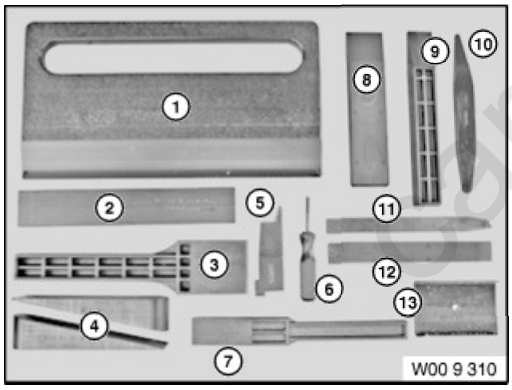
- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

WARNING

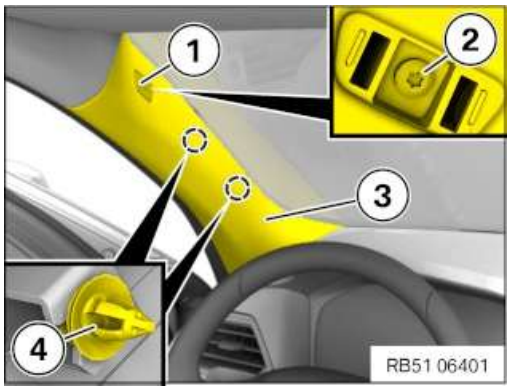
Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



- Have the set of special tools 0 493 752 (00 9 329) ready.



- Unclip the cover (1) with suitable tools.
- Loosen screw (2).
- Unclip A-pillar trim panel (3) with clips (4) and guide it out upwards.

7 – Remove both sun visors

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NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove sun visor**



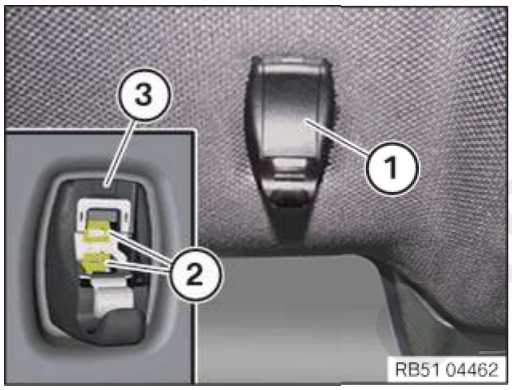
- Pull out the cover (1).
- Detach the sun visor (2) from the counter support .
- Disengage the sun visor (2) in front to the bottom and thread it out of the headlining at the rear.
- Unlock associated plug connection and disconnect.

8 – Remove both counter supports for the sun visors

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the counter support for the sun visor**

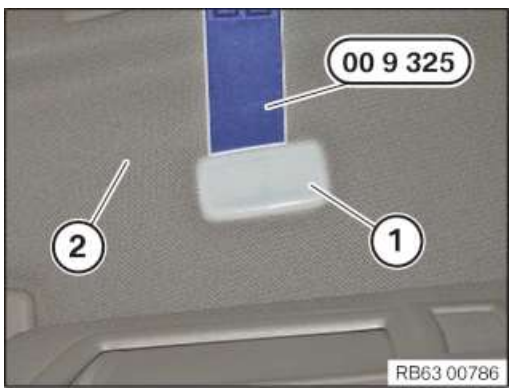


- Pull out the cover (1).
- Push the clamps (2) together and pull the counter support (3) out of the headlining.

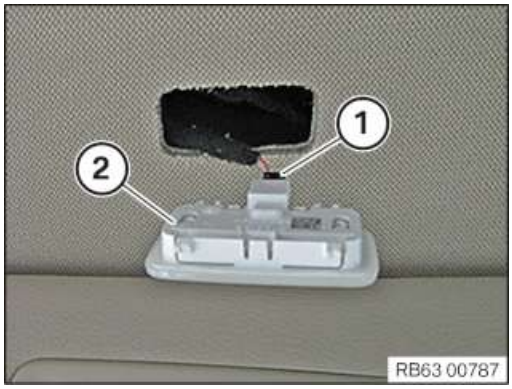
9 – Removing front vanity mirror light

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Lever out the front vanity mirror light (1) using special tool 0 496 569 (00 9 325) from the headlining (2).



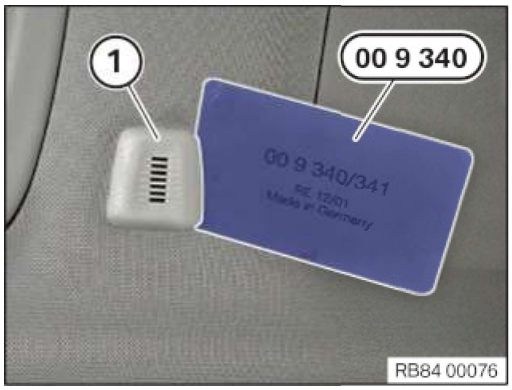
- Unlock and disconnect connector (1).
- Remove the front vanity mirror light (2).

10 – Remove both microphones

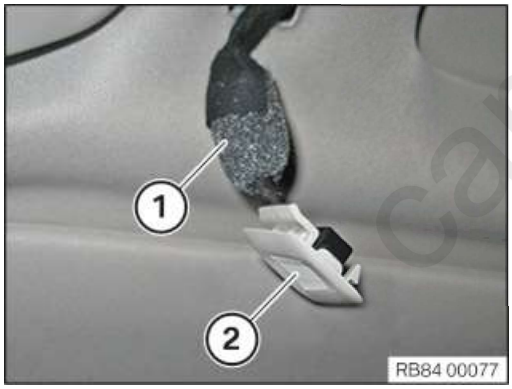
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Removing hands-free microphone**



- Lever out the hands-free microphone (1) with the special tool 0 493 687 (00 9 340).



- Open insulation (1).
- Disconnect plug connection.
- Remove hands-free microphone (2).

11 – Removing the roof function centre (FZD)



- Unclip the cover (1).

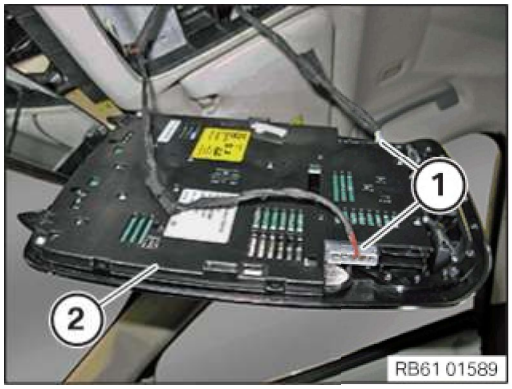
carDiagn.com



- Loosen screws (1).



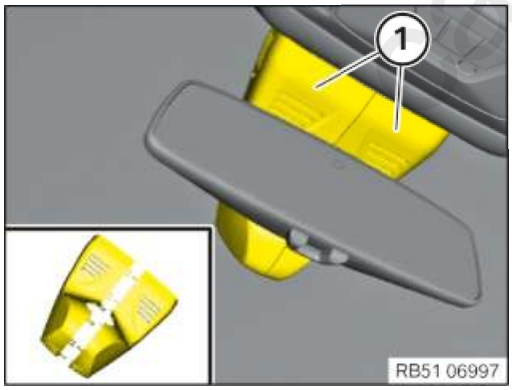
- Unclip the roof function centre (FZD) (1) from the clamps (2).
- Thread the roof function centre (FZD) (1) out of the guides (3).



- Unlock and disconnect plug connections (1).
- Unclip the cable for the roof function centre (FZD) (2) from the cable clip.

12 – Removing the covers for the interior mirror

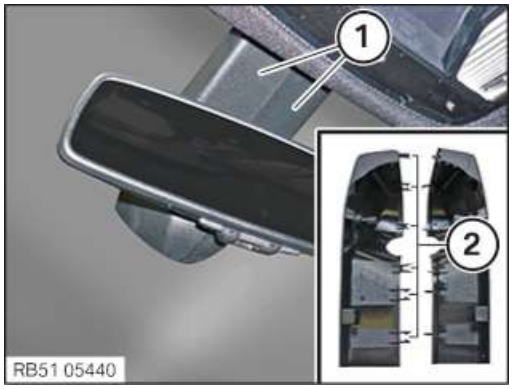
- **Version A:**



- Release the cover (1) at the centre from the latch mechanisms (2) with a suitable plastic wedge and remove.

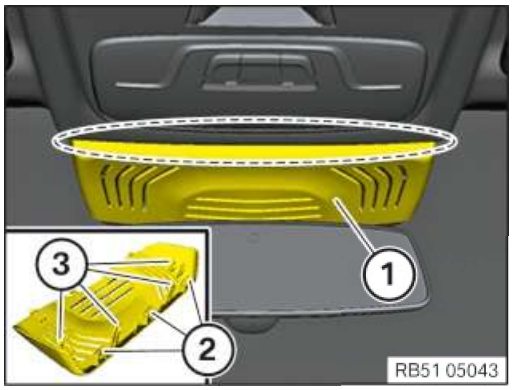
- **Version B:**

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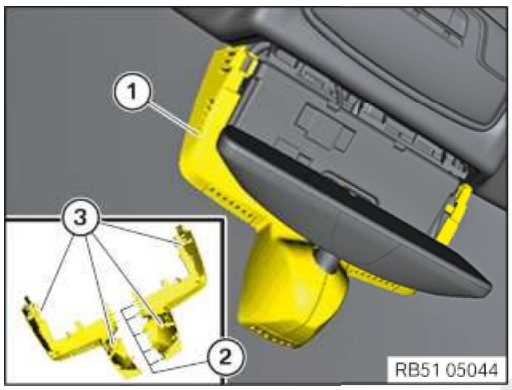


- Release the cover (1) from the latch mechanisms (2) with a suitable plastic wedge and remove sideways.

- **Version C:**



- Detach cover (1) from the clamps (2) in the marked area using a suitable plastic wedge and pull down a certain distance.
- Release cover (1) at the retaining lugs (3) and remove from the guides to the rear.



- Release cover (1) from the latch mechanisms (2) and (3) and remove sideways.
- Remove cover (1) from mirror base (2).

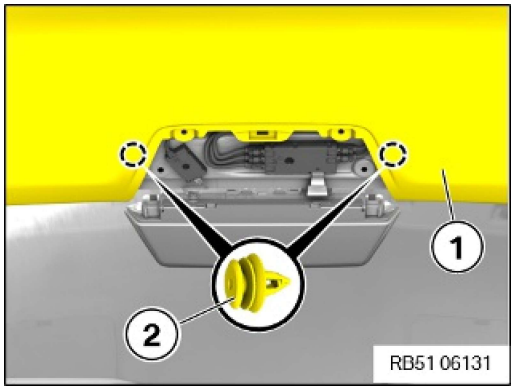
MAIN WORK

13 – Lower roofliner

Prerequisite

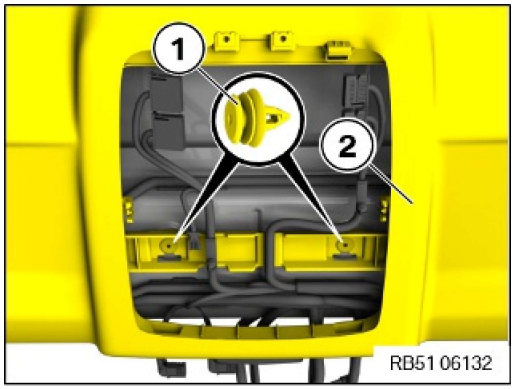
The front seats have been fully adjusted towards the bottom.

The front seat backrests have been fully adjusted towards the rear.



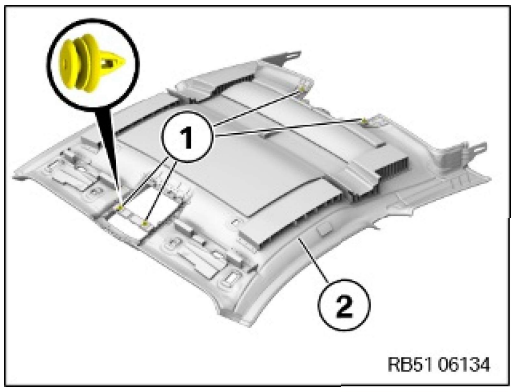
- Unclip the headlining (1) from the clips (2) downward.

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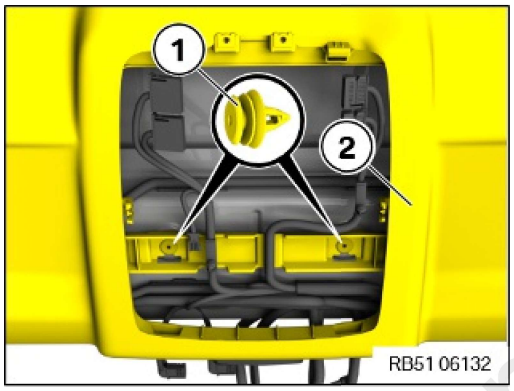


- Release the clips (1) at the headlining (2).
- Feed out headlining (2) with the help of an auxiliary person at the respective edge protection and place it on the seats.

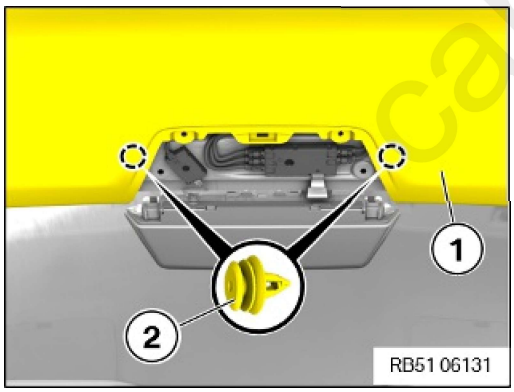
14 – Install the headlining (lowered)



- Check the clips (1) on the headlining (2) for damage and renew if necessary.



- Feed in the headlining (1) with the help of an auxiliary person on the respective edge protection.
- Position the headlining (2) on the clips (1) and clip it in.



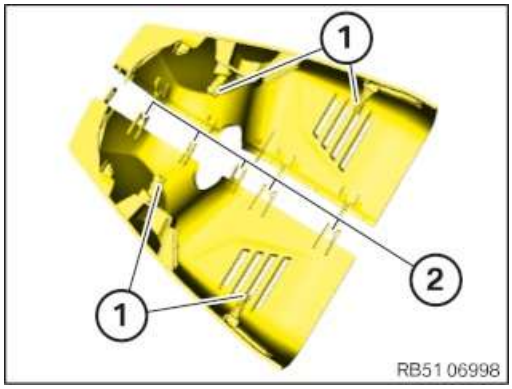
- Clip in clips (2) on the headlining (1).

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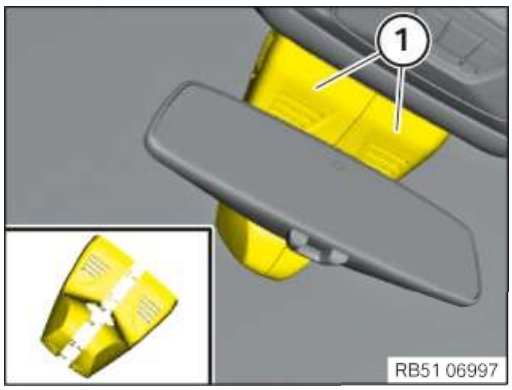
POSTPROCESSES

15 – Installing the covers for the interior mirror

- **Version A:**

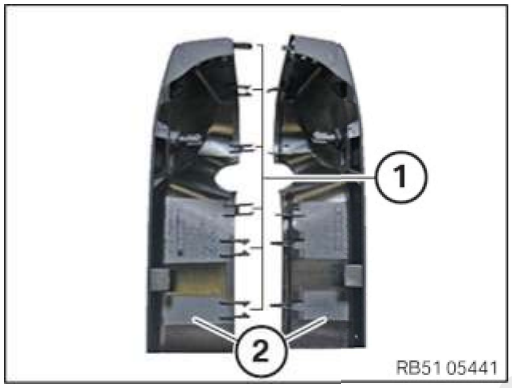


- Check latch mechanisms (1) and (2).
- If the latch mechanisms (1) or (2) are faulty, renew the covers.



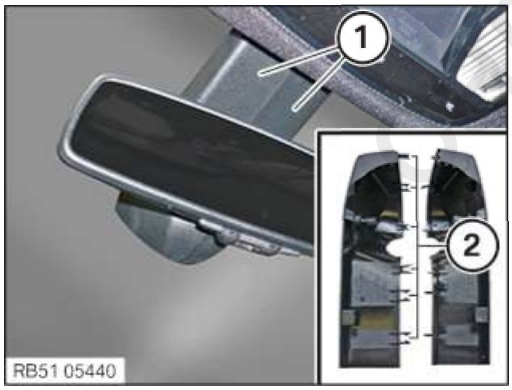
- Feed cover (1) in and lock.

- **Version B:**



- Check the latch mechanisms (1) on the two covers (2) for damage, renew the covers (2) if necessary.

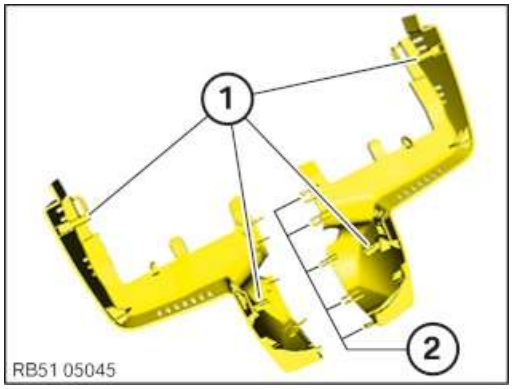
  The covers (2) must not be damaged or missing.



- Position the covers (1) correctly on the mirror and engage with the latch mechanisms (2).

- **Version C:**

Check



- Check the latch mechanisms (1) and (2) of the covers for damage.

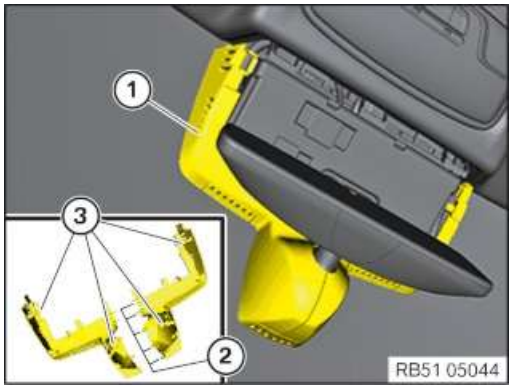
mdiagn.com

Result

» The latch mechanism is damaged.

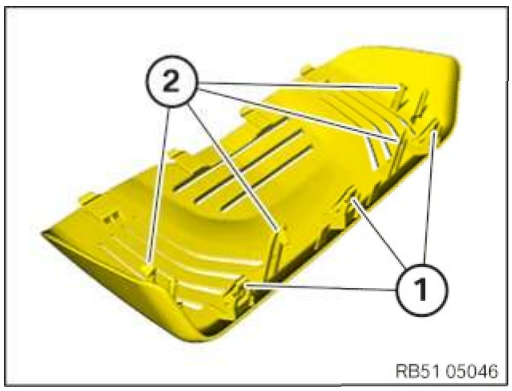
Measure

- Renew the cover.



- Guide in cover (1) on left and right and engage using latch mechanisms (2) and (3).

Check



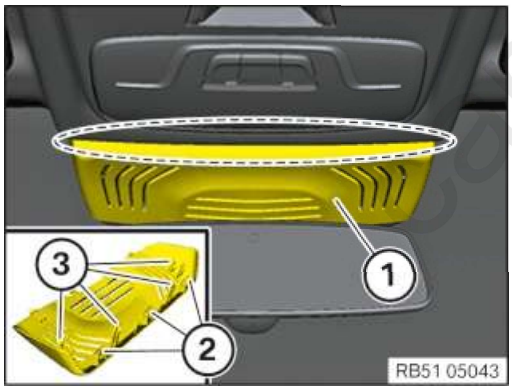
- Check clamps (1) for damage; renew if necessary.
- Check latch mechanisms (2) for damage.

Result

» The latch mechanism is damaged.

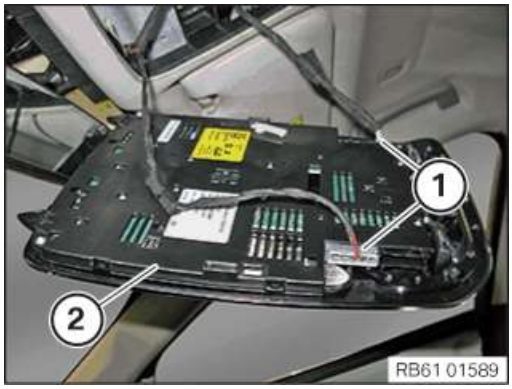
Measure

- Renew the cover.



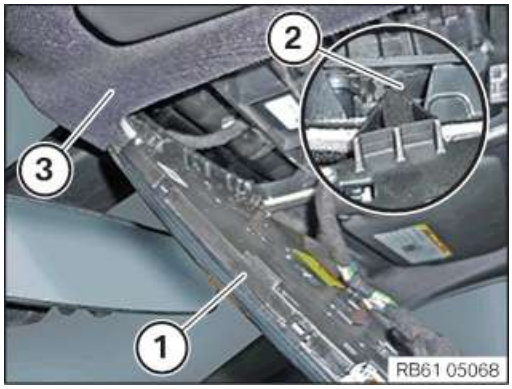
- Guide cover (1) into front guides and engage using retaining lugs (3) and clamps (2).

16 – Installing roof function centre (FZD)



- Connect connectors (1) and lock.
- Clip in the cable for the roof function centre (FZD) (2) in the cable clip.

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- Thread the roof function centre (FZD) (1) as shown at a steep angle into the two guides (2) on the headlining (3).

  Make sure the headlining is not deformed during this operation.



- Clip the roof function centre (FZD) (1) upwards into the clamps (2).



- Pass through the FZD frame and headlining with the special tool 2 298 505 and adjust the headlining correctly.



- Tighten the screws (1).

Roof function centre

	Tightening torque	1,2 Nm



- Clip in the cover (1).

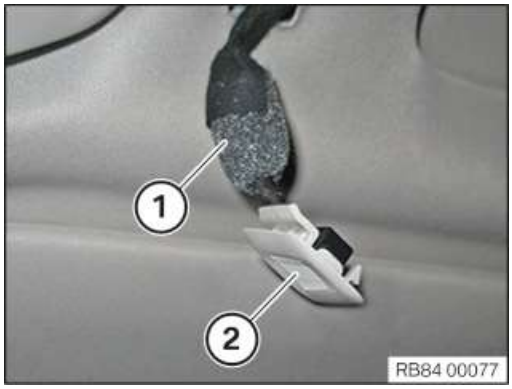
17 – Install both microphones

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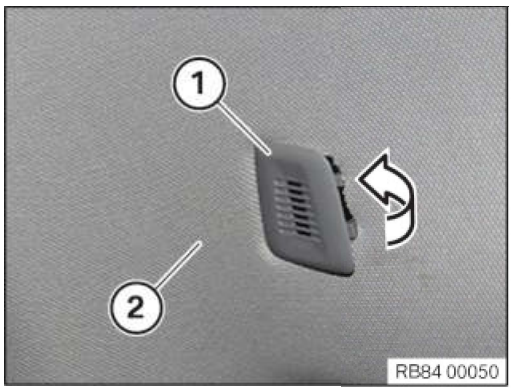
NOTICE

Description is for left component only. Procedure on the right side is identical.

▶ **Installing the hands-free microphone**



- Connect the connector to the hands-free microphone (2).
- Close the insulation (1).

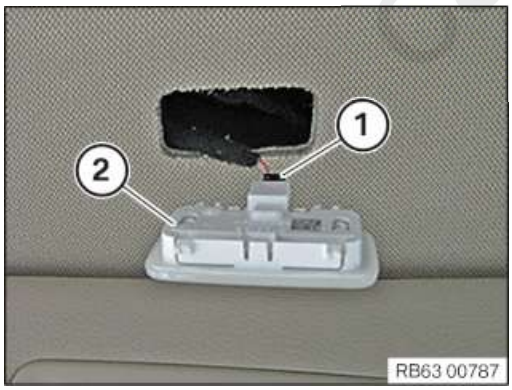


- Position hands-free microphone (1) in headlining (2) in the direction of the arrow.

18 – Installing front vanity mirror light

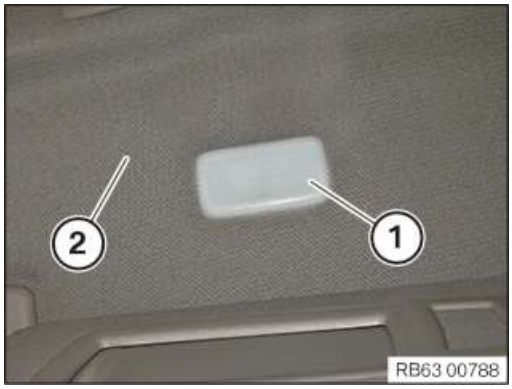
NOTICE

Description is for left component only. Procedure on the right side is identical.



- Connect the connector (1) to the front vanity mirror light (2).

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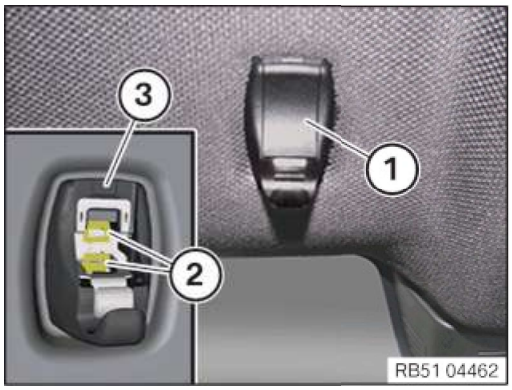


- Position the front vanity mirror light (1) in the headlining (2).

19 – Install both counter supports for the sun visors

NOTICE

Description is for left component only. Procedure on the right side is identical.



▸ **Install the counter support for the sun visor**

- Insert the counter support (3) into the headlining.
- Make sure the clamps (2) are engaged correctly.
- Use cover (1).

20 – Install both sun visors

NOTICE

Description is for left component only. Procedure on the right side is identical.



▸ **Install the sun visor**

- Connect the sun visor (2) with the corresponding connector.
- Guide the sun visor (2) into the headlining.
- Use cover (1).
- Attach the sun visor (2) on the counter support.

21 – Install both A-pillar trim panels

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NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Installing the A-pillar trim panel**

WARNING

Airbag unit.

Danger! Life-threatening injuries!

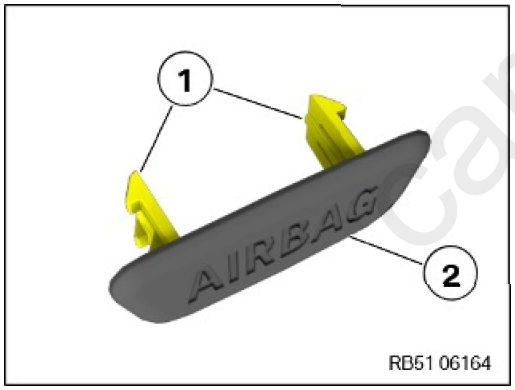
- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

WARNING

Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



Check

- Check retaining lugs (1) of cover (2) for damage.

Result

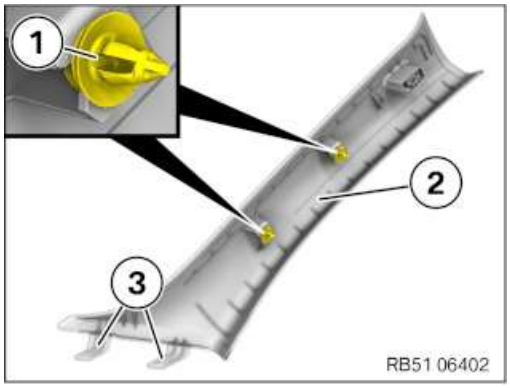
» Retaining lug is damaged.

Measure

- Renew the cover.

Check

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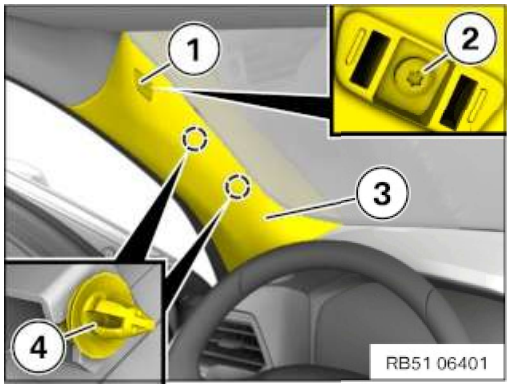
- Check the clips (1) for damage and renew if necessary.
- Check the guides (3) for damage.

Result

» Guide is damaged.

Measure

- Renew the A-pillar trim panel.



- Guide in A-pillar trim panel (3) downwards and clip it in with clips (4).
- Tighten down screw (2).

A-pillar trim panel to body

Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

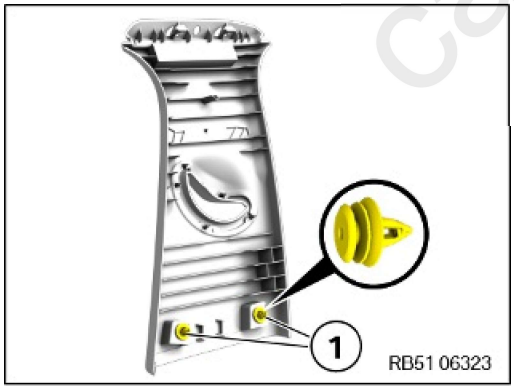
- Clip in the cover (1).

22 – Installing both B-pillar trim panels

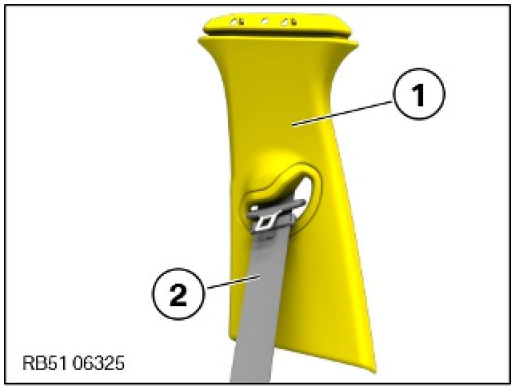
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the B-pillar trim panel**

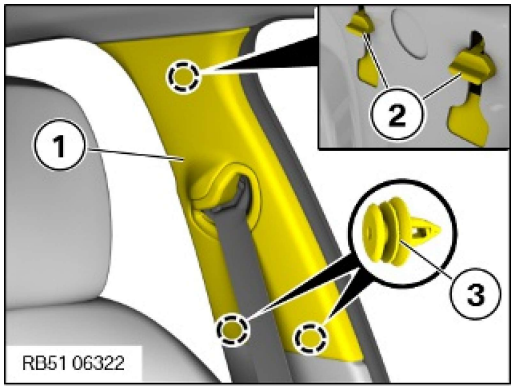


- Check the clips (1) for damage and renew if necessary.

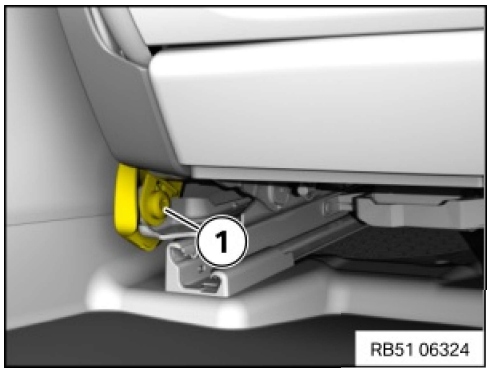


- Guide upper seat belt (2) in B-pillar trim panel (1).

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- Insert B-pillar trim panel (1) into guides (2) and under the front and rear lips of edge protection.
- Clip in the B-pillar trim panel (1) with the clips (3).



- Fully position the front seat to the front and top.
- Insert the end fitting (2).
- Renew the screw (1).

  Parts: Screw
- Tighten down screw (1).

End fitting to seat mechanism

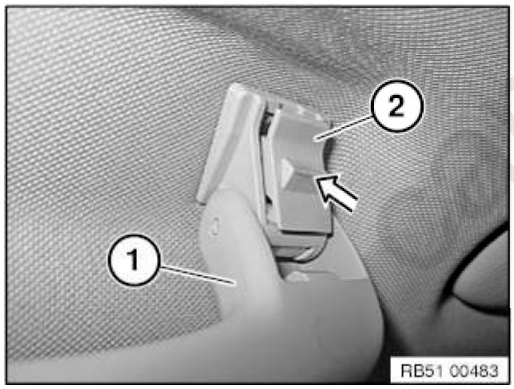
Flat-head screwM10	Renew screw.	Tightening torque	42 Nm

23 – Installing all grab handles

NOTICE

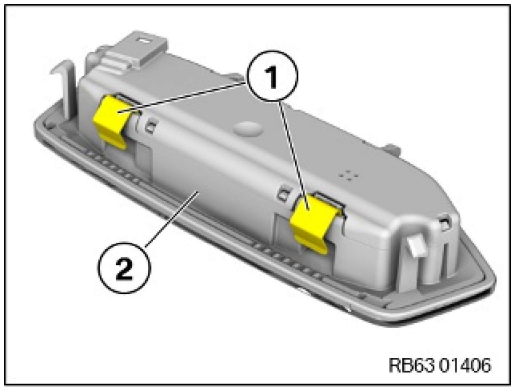
The description is for one component only. The procedure is identical for all further components.

▸ **Installing the grab handle**



- Insert the grab handle (1) into body.
- Correctly clamp in the grab handle (1), as otherwise the locking inserts (2) on the grab handle (1) cannot correctly engage.
- Engage the locking inserts (2) on both sides of the grab handle (1).

24 – Install interior roof light



Check

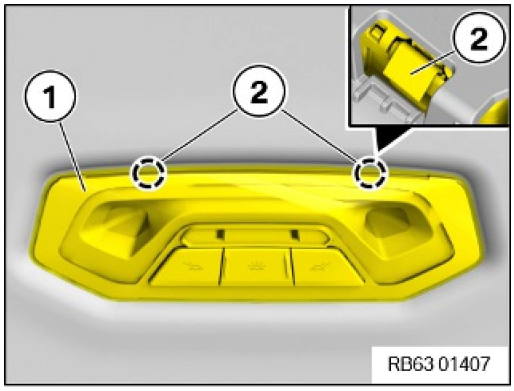
- Check the clamps (1) for damage.

Result

» Clamps (1) are damaged.

Measure

- Renew the interior roof light (2).



- Connect connectors and lock.
- Clip in the interior roof light (1) with clamps (2).

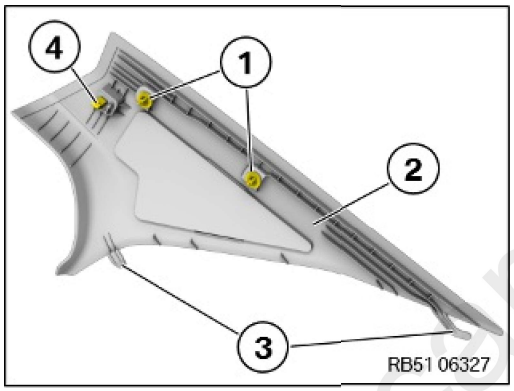
25 – Install both C-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Installing C-pillar trim panel**

Check



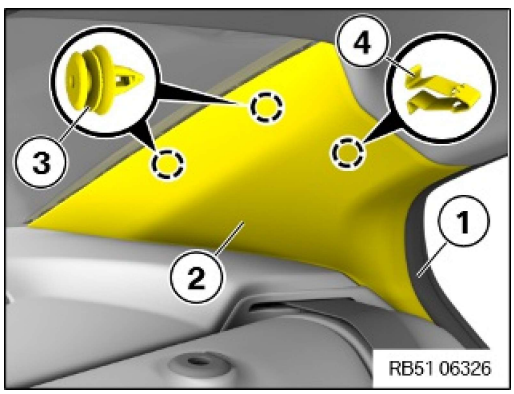
- Check clips (1) and clamp (4) for damage, renew if necessary.
- Check the guides (3) for damage.

Result

» Guide is damaged.

Measure

- Renew the C-pillar trim panel .



NOTICE

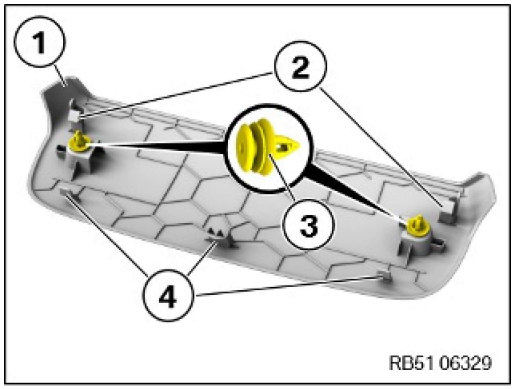
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Feed C-pillar trim panel (2) into guides towards the rear.
- Clip in clips (3).
- Clip in clamp (4).
- Guide in C-pillar trim panel (2) under the lip of edge protection (1).

26 – Installing trim for additional brake light

Check

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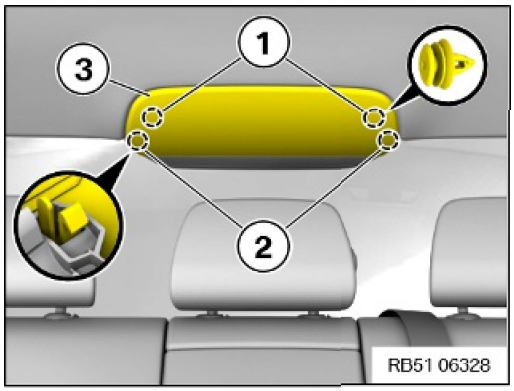
- Check the clips (3) for damage and renew if necessary.
- Check latch mechanisms (2) and guides (4) for damage.

Result

» The latch mechanism or the guide is damaged.

Measure

- Renew the trim for the additional brake light.



- Position trim for additional brake light (1) from the bottom and clip it in with latch mechanisms (2).
- Clip in clips (1).

Additional Information

Overview of Tightening Torques

Roof function centre — Used in step 16

		Tightening torque	1,2 Nm

A-pillar trim panel to body — Used in step 21

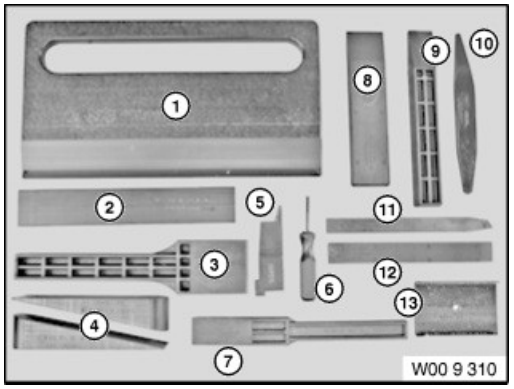
Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

End fitting to seat mechanism — Used in step 22

Flat-head screwM10	Renew screw.	Tightening torque	42 Nm

Overview of Special Tools

0 493 752 (00 9 329) Case



Common — Used in step 36

Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

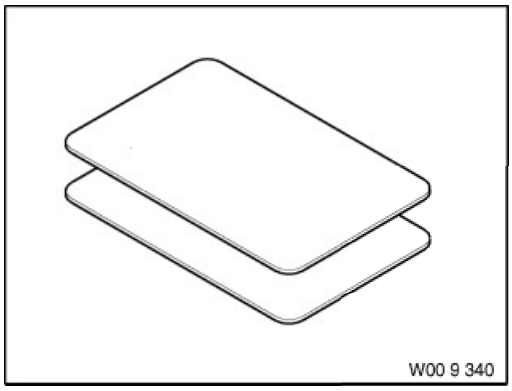
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0 496 569 (00 9 325) Wedge



Common	Used in step 9
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

0 493 687 (00 9 340) Removal aid

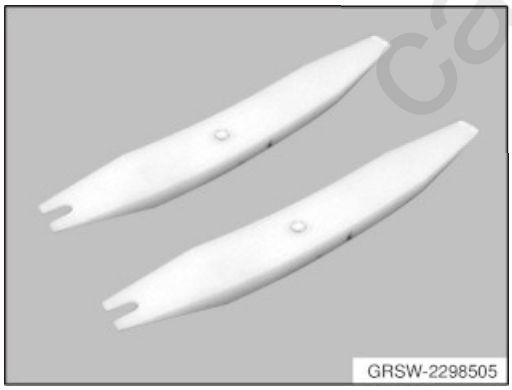


Common	Used in step 10
Usage	(Removal aid (2 x)) For levering out switch block on driver's door.
Included in the tool or work	
Storage location	C2
Replaced by	
In connection with	
SI-Number	01 15 99 (483)

Consisting of

Pos	BMW Order number	Replaced by	Designation	In Connection with
1	0 496 289 (00 9 341)		**Removal aid** Only available as a set (2 tools) under 00 9 340 (= 83 30 0 493 687).	

2 298 505 Wedge



Common	Used in step 16
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

Links

General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	6
72 00 ... Safety regulations for handling components with gas generators	6

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51 44 925 Lowering the headlining with SHD

RISK OF DAMAGE

Fold the headlining.

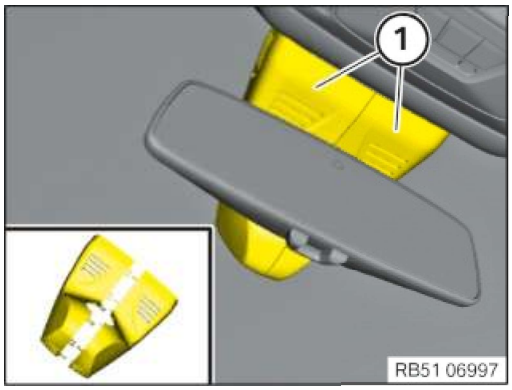
If the headlining is folded, it may have to be replaced.

- Carry out tasks with a second person to assist.
- Support the headlining at the front and back.

PRELIMINARY WORK

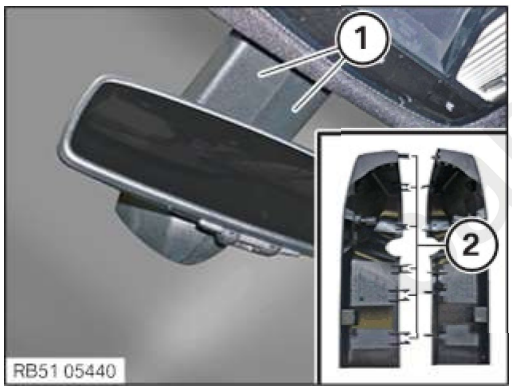
1 – Removing the covers for the interior mirror

- **Version A:**



- Release the cover (1) at the centre from the latch mechanisms (2) with a suitable plastic wedge and remove.

- **Version B:**

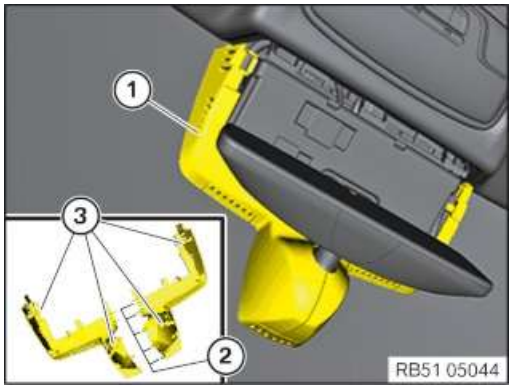


- Release the cover (1) from the latch mechanisms (2) with a suitable plastic wedge and remove sideways.

- **Version C:**



- Detach cover (1) from the clamps (2) in the marked area using a suitable plastic wedge and pull down a certain distance.
- Release cover (1) at the retaining lugs (3) and remove from the guides to the rear.



- Release cover (1) from the latch mechanisms (2) and (3) and remove sideways.
- Remove cover (1) from mirror base (2).

2 – Remove both A-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the A-pillar trim panel**

WARNING

Airbag unit.

Danger! Life-threatening injuries!

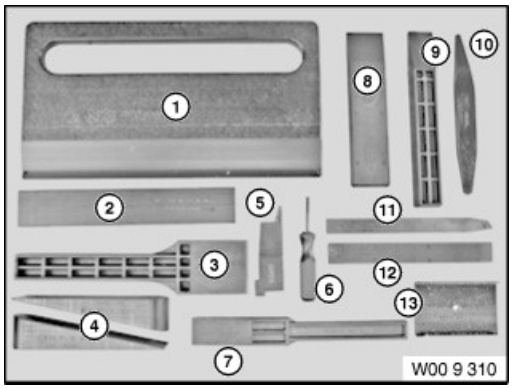
- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

WARNING

Pyrotechnic components.

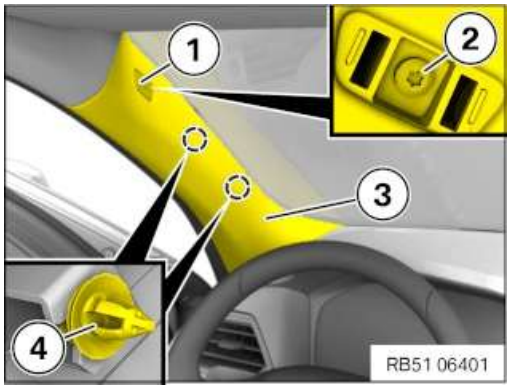
Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



- Have the set of special tools 0 493 752 (00 9 329) ready.

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- Unclip the cover (1) with suitable tools.
- Loosen screw (2).
- Unclip A-pillar trim panel (3) with clips (4) and guide it out upwards.

3 – Remove both sun visors

NOTICE

Description is for left component only. Procedure on the right side is identical.



▸ **Remove sun visor**

- Pull out the cover (1).
- Detach the sun visor (2) from the counter support .
- Disengage the sun visor (2) in front to the bottom and thread it out of the headlining at the rear.
- Unlock associated plug connection and disconnect.

4 – Remove both counter supports for the sun visors

NOTICE

Description is for left component only. Procedure on the right side is identical.



▸ **Remove the counter support for the sun visor**

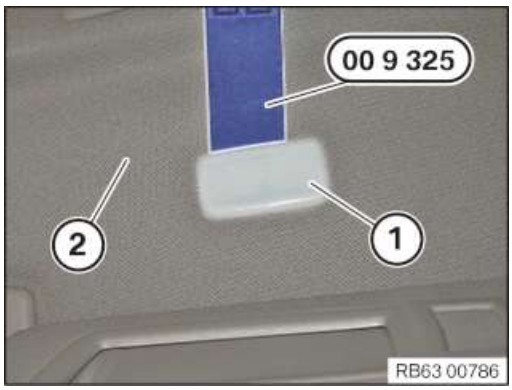
- Pull out the cover (1).
- Push the clamps (2) together and pull the counter support (3) out of the headlining.

5 – Removing front vanity mirror light

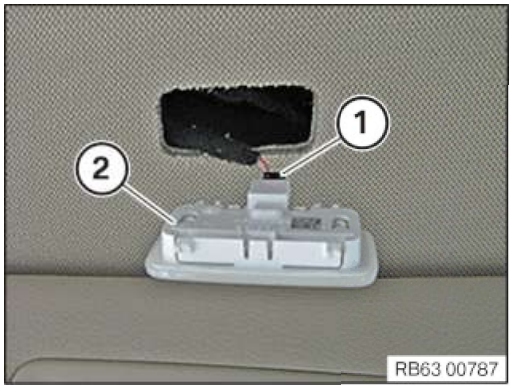
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NOTICE

Description is for left component only. Procedure on the right side is identical.



- Lever out the front vanity mirror light (1) using special tool 0 496 569 (00 9 325) from the headlining (2).



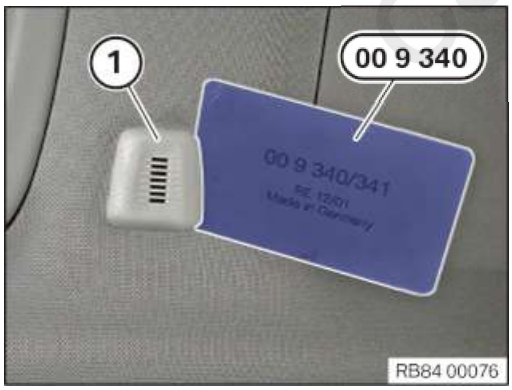
- Unlock and disconnect connector (1).
- Remove the front vanity mirror light (2).

6 – Remove both microphones

NOTICE

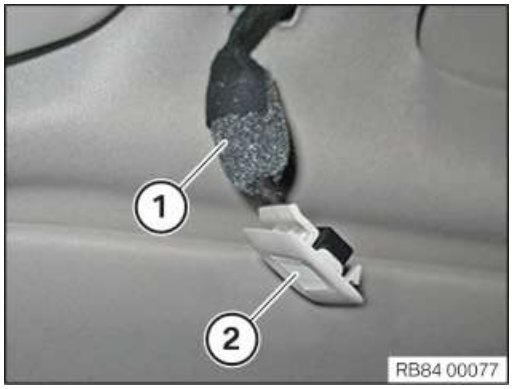
Description is for left component only. Procedure on the right side is identical.

▸ **Removing hands-free microphone**



- Lever out the hands-free microphone (1) with the special tool 0 493 687 (00 9 340).

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- Open insulation (1).
- Disconnect plug connection.
- Remove hands-free microphone (2).

7 – Removing the roof function centre (FZD)



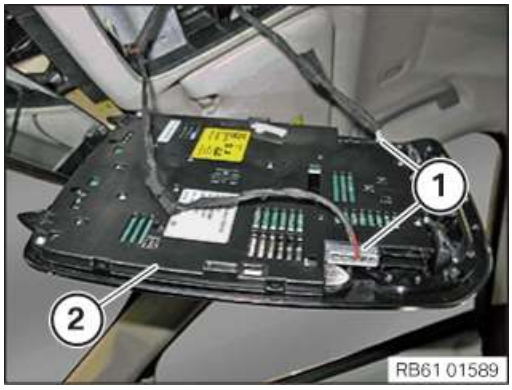
- Unclip the cover (1).



- Loosen screws (1).



- Unclip the roof function centre (FZD) (1) from the clamps (2).
- Thread the roof function centre (FZD) (1) out of the guides (3).



- Unlock and disconnect plug connections (1).
- Unclip the cable for the roof function centre (FZD) (2) from the cable clip.

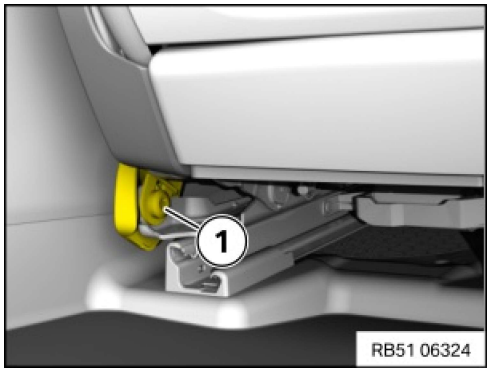
8 – Removing both B-pillar trim panels

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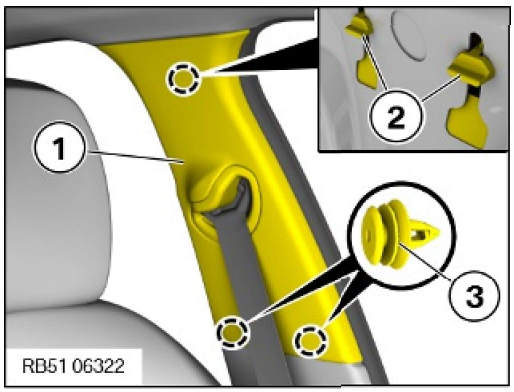
NOTICE

Description is for left component only. Procedure on the right side is identical.

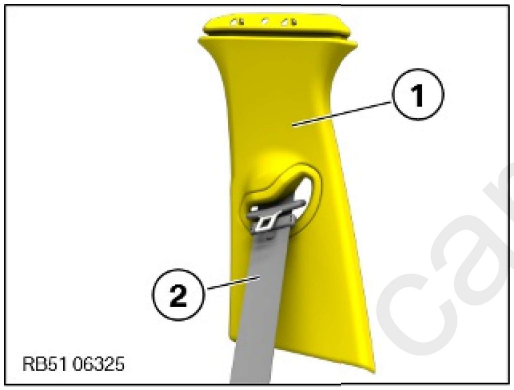
▶ **Remove the B-pillar trim panel**



- Fully position the front seat to the front and top.
- Loosen screw (1).
- Remove end fitting (2).

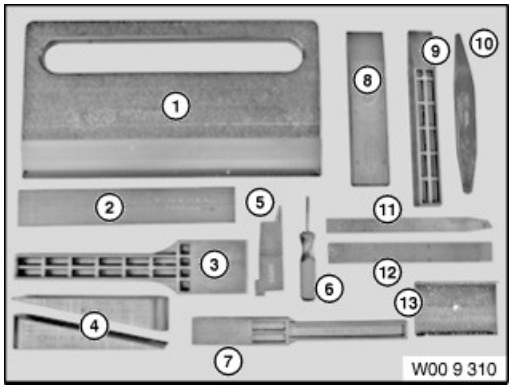


- Unclip clips (3).
- Feed B-pillar trim panel (1) out of the front and rear lip of edge protections and the guides (2).



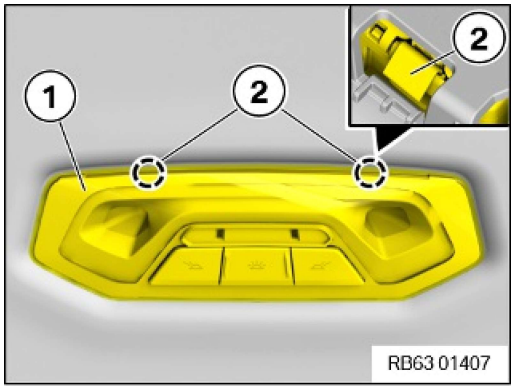
- Feed upper seat belt (2) out of B-pillar trim panel (1).

9 – Remove interior roof light



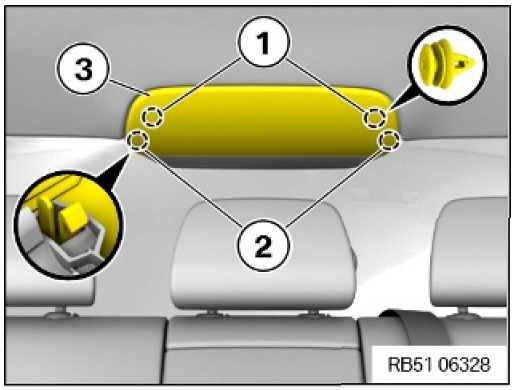
- Have the set of special tools 0 493 752 (00 9 329) ready.

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- Lever interior roof light (1) out of clamps (2) using a suitable tool.
- Unlock plug connection and disconnect.

10 – Removing the trim of the additional brake light



- Loosen the clips (1).
- Release the latch mechanisms (2) and remove the trim of the additional brake light (3).

11 – Remove both C-pillar trim panels

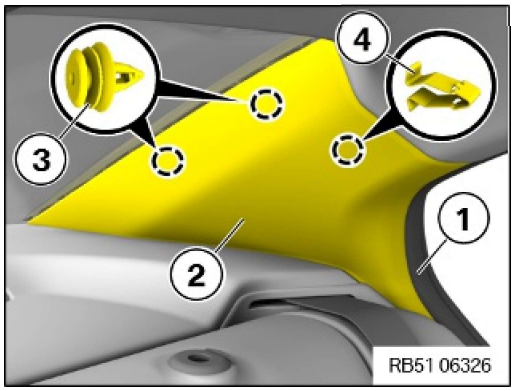
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove C-pillar trim panel**

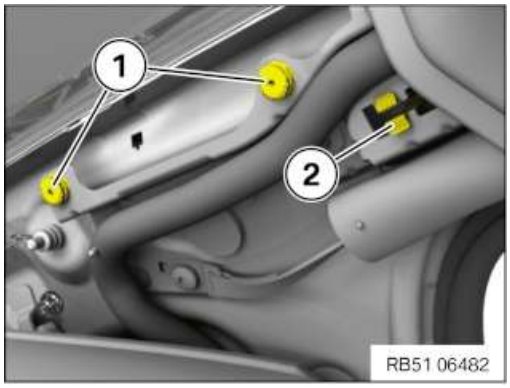
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Unclip clamp (4).
- Unclip clips (3).
- Feed out C-pillar trim panel (2) from the guides to the front.
- Thread out C-pillar trim panel (2) from the lip of edge protection (1).

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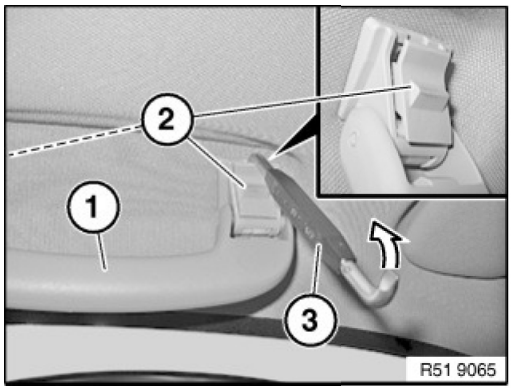
- If required, remove the clips (1) and the clamp (2) and connect it to the trim panel.

12 – Removing all grab handles

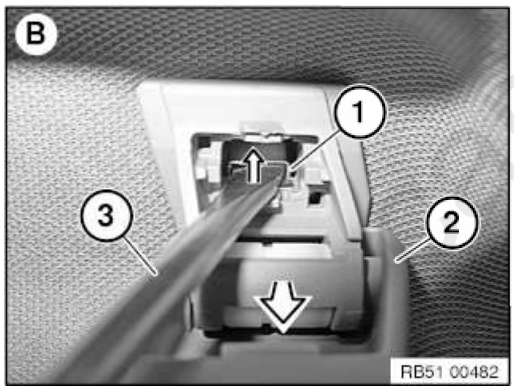
NOTICE

The description is for one component only. The procedure is identical for all further components.

▸ **Removing the grab handle**



- Expand the grab handle (1) towards the bottom.
- Disengage and remove the locking insert (2) with an angle screwdriver (3) as shown.



- Pull the grab handle (2) slightly to the inside and hold it.
- Use a suitable screwdriver (3) to detach the upper and lower release tabs (1).
- Guide the grab handle (2) out.
- Repeat the operation on the other side of the grab handle (2).

MAIN WORK

13 – Lower the headlining (with SHD)

Prerequisite

The front seats have been fully adjusted towards the bottom.

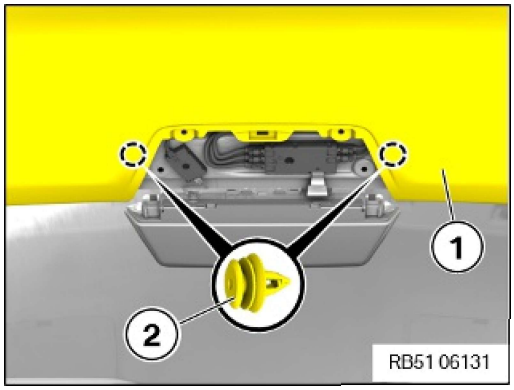
The front seat backrests have been fully adjusted towards the rear.

RISK OF DAMAGE

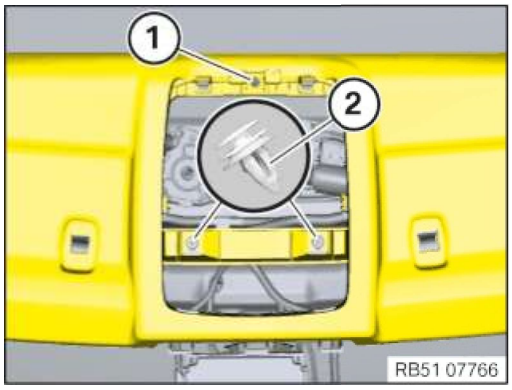
Fold the headlining.

If the headlining is folded, it may have to be replaced.

- Carry out tasks with a second person to assist.
- Support the headlining at the front and back.



- Unclip the headlining (1) on the clips (2) downwards.



- Loosen screw (1).
- Unclip the headlining on the clips (2) downwards.



- Carefully unclip headlining (1) from the slide/tilt sunroof unit and clamps (2) in the area of the dotted line.
- Feed out headlining (1) with the help of an auxiliary person on the particular edge protection and place it on the seats.

14 – Install the headlining (with slide/tilt sunroof) (lowered)

Prerequisite

The front seats have been fully adjusted towards the bottom.

The front seat backrests have been fully adjusted towards the rear.

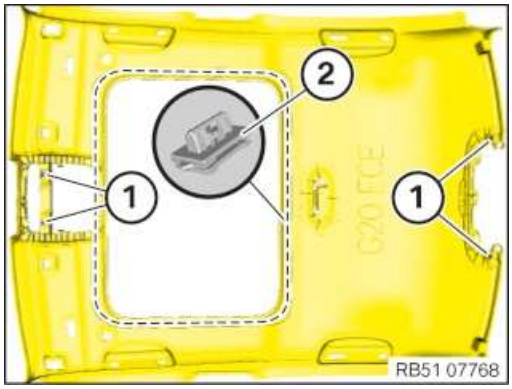
RISK OF DAMAGE

Fold the headlining.

If the headlining is folded, it may have to be replaced.

- Carry out tasks with a second person to assist.
- Support the headlining at the front and back.

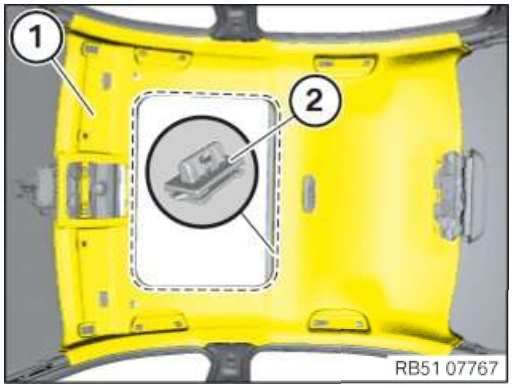
cardiagn.com



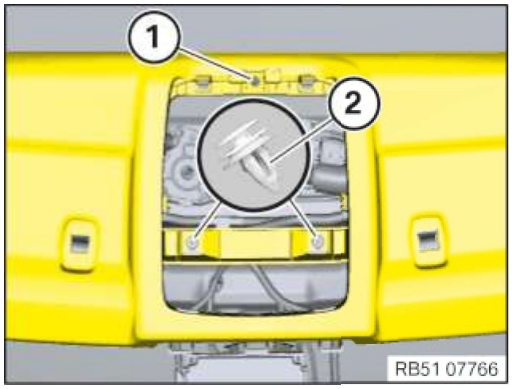
- Check the clips (1) on the headlining (2) for damage.

  Replace broken for missing clips (1).
- Check the clamps (2) along the dotted line.

  Replace broken or missing clamps (2).



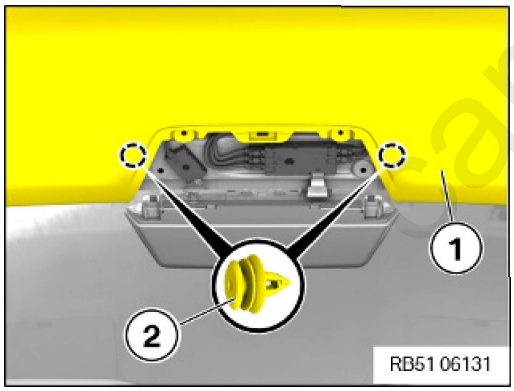
- Feed in the headlining (1) with the help of an auxiliary person on the respective edge protection.
- Clip headlining (1) into the slide/tilt sunroof unit and clamps (2) in the area of the dotted line.



- Clip headlining to the clips (2).
- Tighten down screw (1).

Headlining to frame

Oval-head screw		Tightening torque	1,5 Nm



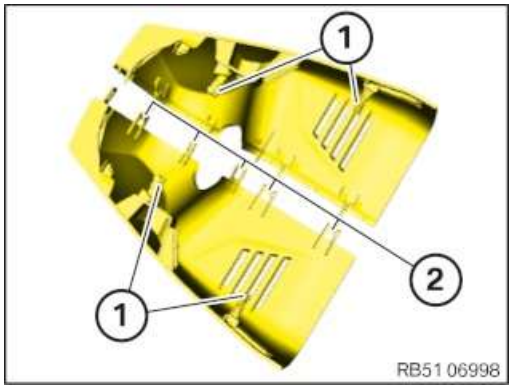
- Clip headlining (1) to the clips (2).

POSTPROCESSES

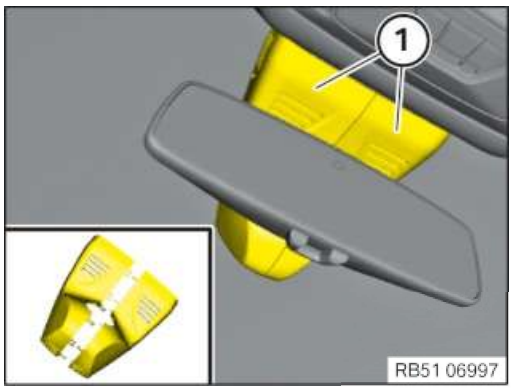
15 – Installing the covers for the interior mirror

- **Version A:**

carsdiagn.com

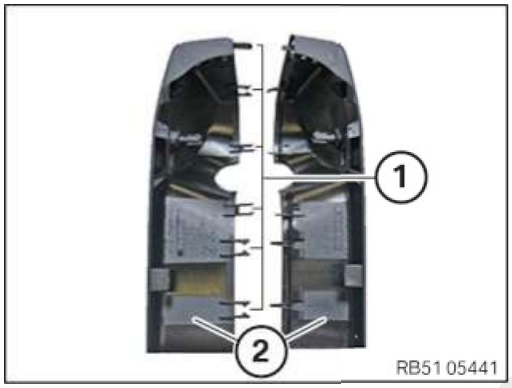


- Check latch mechanisms (1) and (2).
- If the latch mechanisms (1) or (2) are faulty, renew the covers.



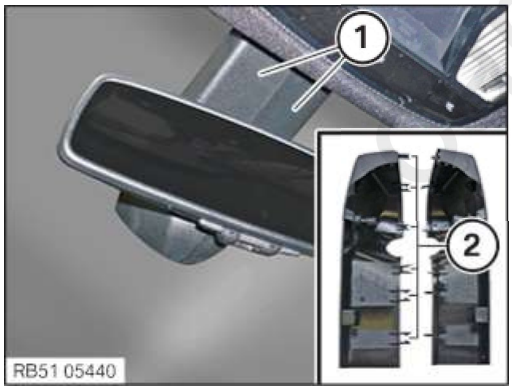
- Feed cover (1) in and lock.

- **Version B:**



- Check the latch mechanisms (1) on the two covers (2) for damage, renew the covers (2) if necessary.

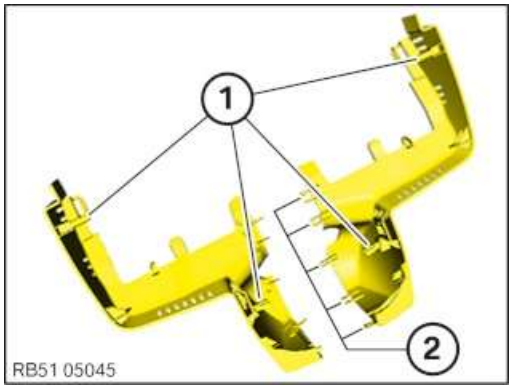
  The covers (2) must not be damaged or missing.



- Position the covers (1) correctly on the mirror and engage with the latch mechanisms (2).

- **Version C:**

Check



- Check the latch mechanisms (1) and (2) of the covers for damage.

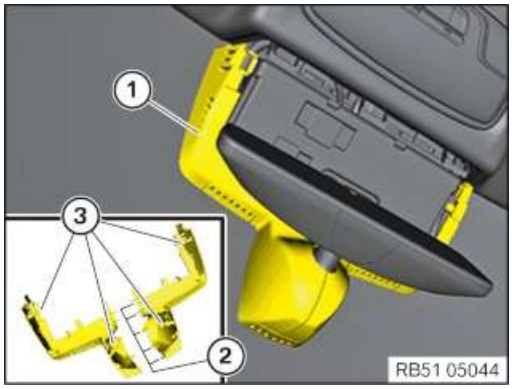
mdiagn.com

Result

» The latch mechanism is damaged.

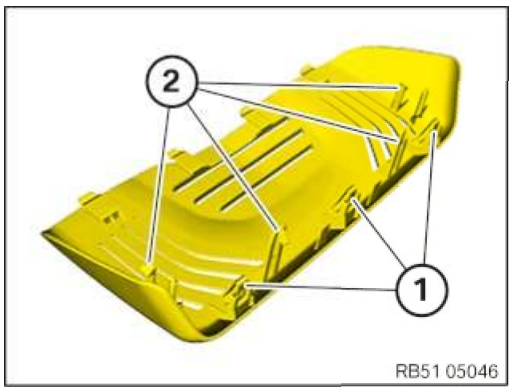
Measure

- Renew the cover.



- Guide in cover (1) on left and right and engage using latch mechanisms (2) and (3).

Check



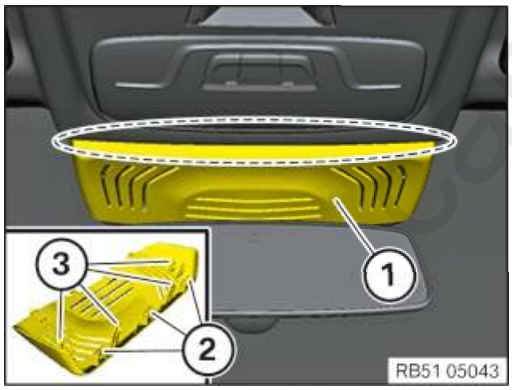
- Check clamps (1) for damage; renew if necessary.
- Check latch mechanisms (2) for damage.

Result

» The latch mechanism is damaged.

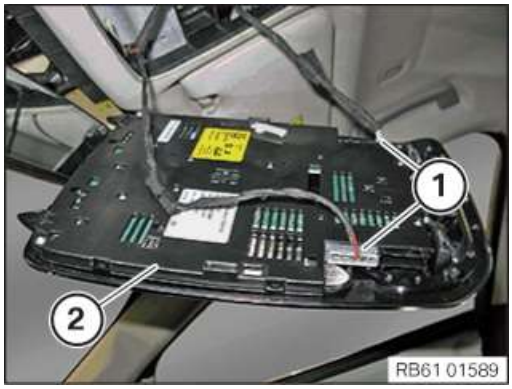
Measure

- Renew the cover.



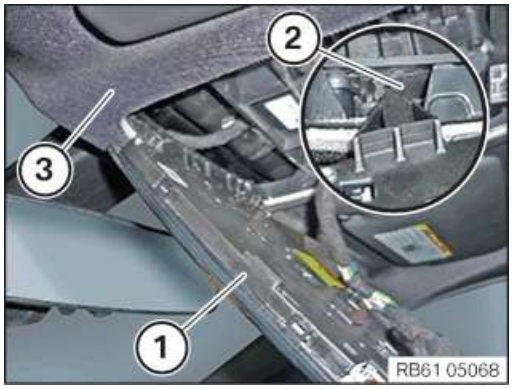
- Guide cover (1) into front guides and engage using retaining lugs (3) and clamps (2).

16 – Installing roof function centre (FZD)



- Connect connectors (1) and lock.
- Clip in the cable for the roof function centre (FZD) (2) in the cable clip.

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- Thread the roof function centre (FZD) (1) as shown at a steep angle into the two guides (2) on the headlining (3).

  Make sure the headlining is not deformed during this operation.



- Clip the roof function centre (FZD) (1) upwards into the clamps (2).



- Pass through the FZD frame and headlining with the special tool 2 298 505 and adjust the headlining correctly.



- Tighten the screws (1).

Roof function centre

	Tightening torque	1,2 Nm



- Clip in the cover (1).

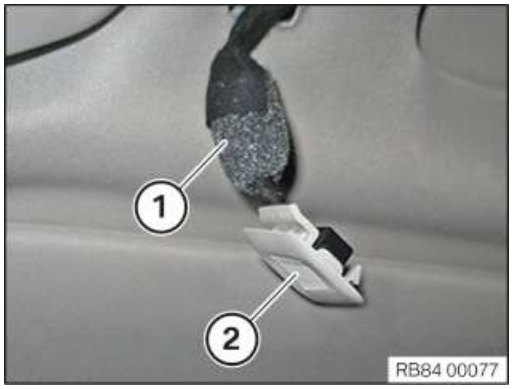
17 – Install both microphones

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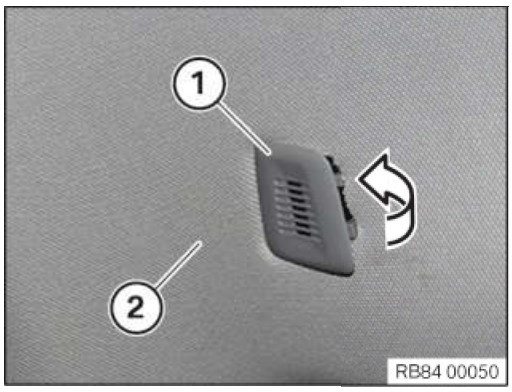
NOTICE

Description is for left component only. Procedure on the right side is identical.

▶ **Installing the hands-free microphone**



- Connect the connector to the hands-free microphone (2).
- Close the insulation (1).

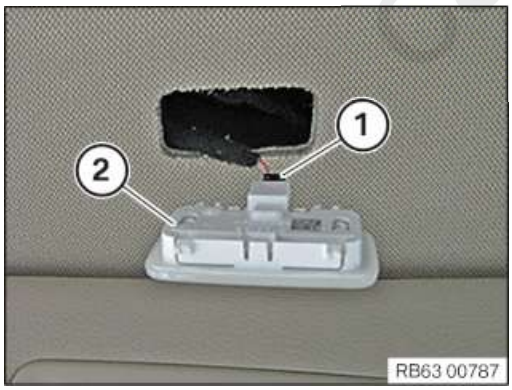


- Position hands-free microphone (1) in headlining (2) in the direction of the arrow.

18 – Installing front vanity mirror light

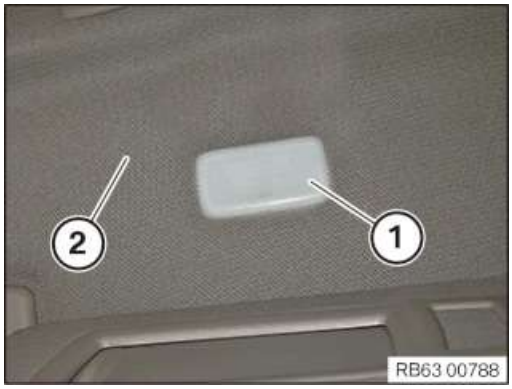
NOTICE

Description is for left component only. Procedure on the right side is identical.



- Connect the connector (1) to the front vanity mirror light (2).

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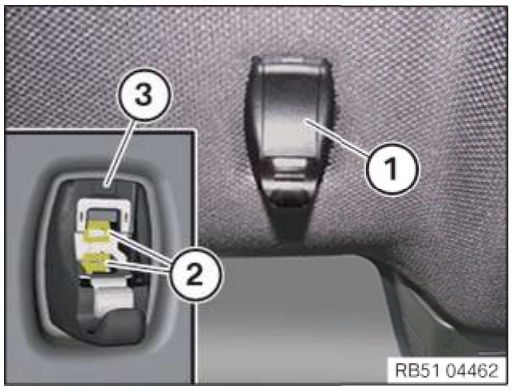


- Position the front vanity mirror light (1) in the headlining (2).

19 – Install both counter supports for the sun visors

NOTICE

Description is for left component only. Procedure on the right side is identical.



▸ **Install the counter support for the sun visor**

- Insert the counter support (3) into the headlining.
- Make sure the clamps (2) are engaged correctly.
- Use cover (1).

20 – Install both sun visors

NOTICE

Description is for left component only. Procedure on the right side is identical.



▸ **Install the sun visor**

- Connect the sun visor (2) with the corresponding connector.
- Guide the sun visor (2) into the headlining.
- Use cover (1).
- Attach the sun visor (2) on the counter support.

21 – Install both A-pillar trim panels

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NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Installing the A-pillar trim panel**

WARNING

Airbag unit.

Danger! Life-threatening injuries!

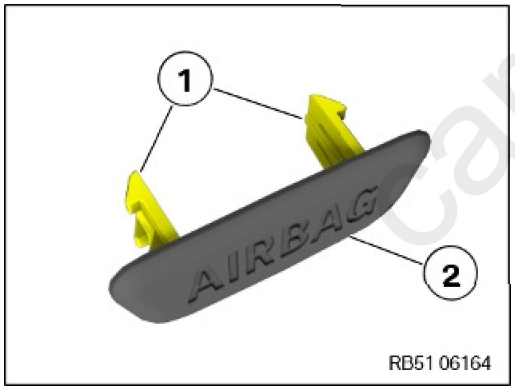
- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

WARNING

Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



Check

- Check retaining lugs (1) of cover (2) for damage.

Result

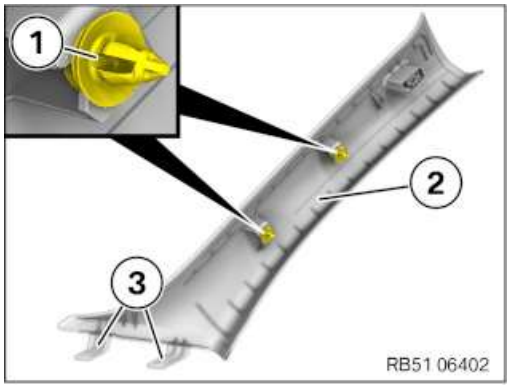
» Retaining lug is damaged.

Measure

- Renew the cover.

Check

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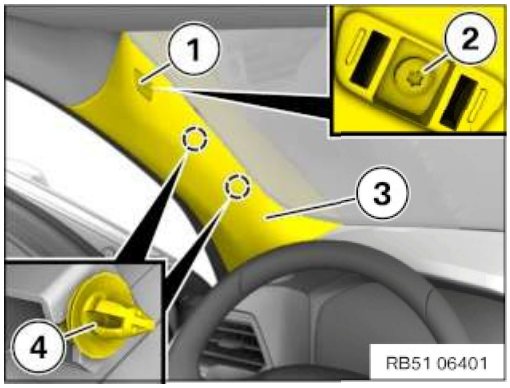
- Check the clips (1) for damage and renew if necessary.
- Check the guides (3) for damage.

Result

» Guide is damaged.

Measure

- Renew the A-pillar trim panel.



- Guide in A-pillar trim panel (3) downwards and clip it in with clips (4).
- Tighten down screw (2).

A-pillar trim panel to body

Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

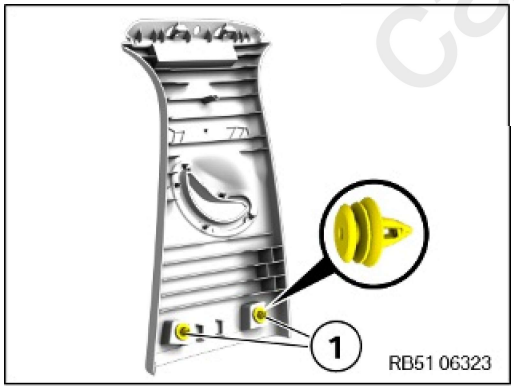
- Clip in the cover (1).

22 – Installing both B-pillar trim panels

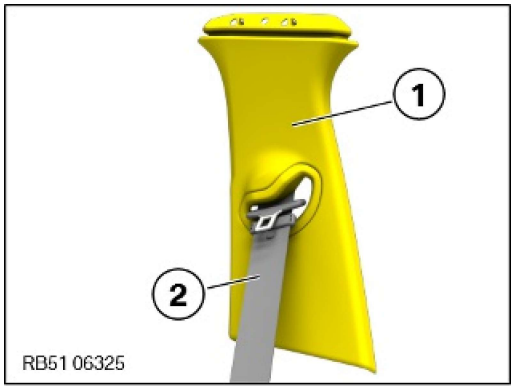
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the B-pillar trim panel**

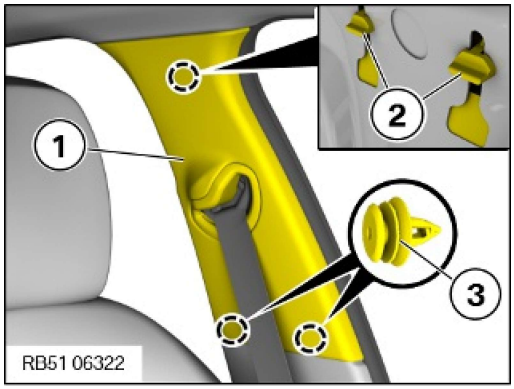


- Check the clips (1) for damage and renew if necessary.

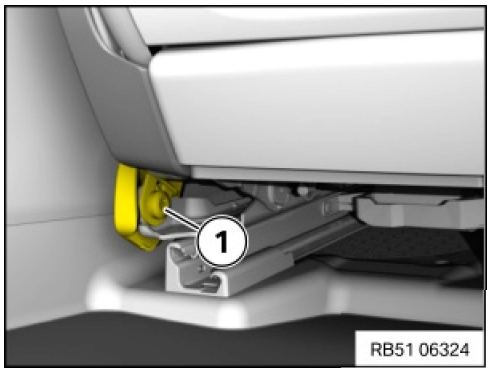


- Guide upper seat belt (2) in B-pillar trim panel (1).

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- Insert B-pillar trim panel (1) into guides (2) and under the front and rear lips of edge protection.
- Clip in the B-pillar trim panel (1) with the clips (3).



- Fully position the front seat to the front and top.
- Insert the end fitting (2).
- Renew the screw (1).

  Parts: Screw
- Tighten down screw (1).

End fitting to seat mechanism

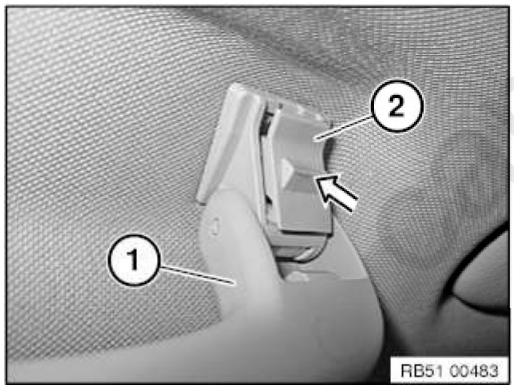
Flat-head screwM10	Renew screw.	Tightening torque	42 Nm

23 – Installing all grab handles

NOTICE

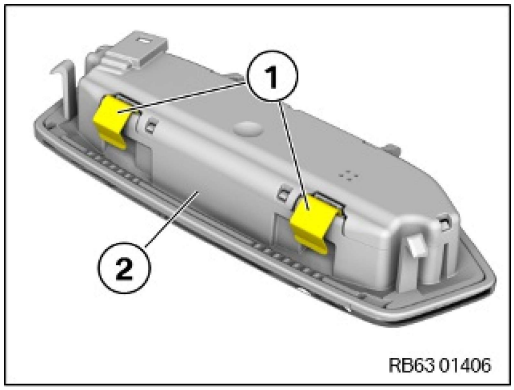
The description is for one component only. The procedure is identical for all further components.

▸ **Installing the grab handle**



- Insert the grab handle (1) into body.
- Correctly clamp in the grab handle (1), as otherwise the locking inserts (2) on the grab handle (1) cannot correctly engage.
- Engage the locking inserts (2) on both sides of the grab handle (1).

24 – Install interior roof light



Check

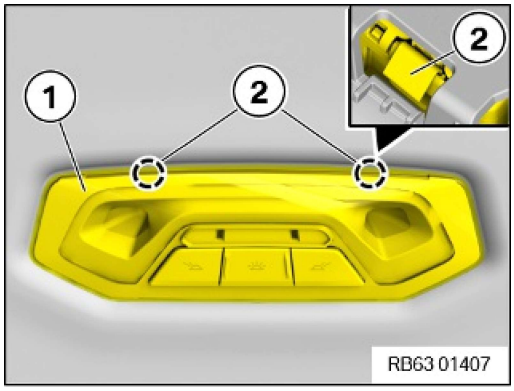
- Check the clamps (1) for damage.

Result

» Clamps (1) are damaged.

Measure

- Renew the interior roof light (2).



- Connect connectors and lock.
- Clip in the interior roof light (1) with clamps (2).

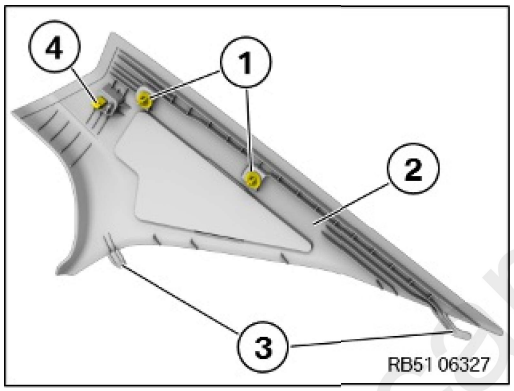
25 – Install both C-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Installing C-pillar trim panel**

Check



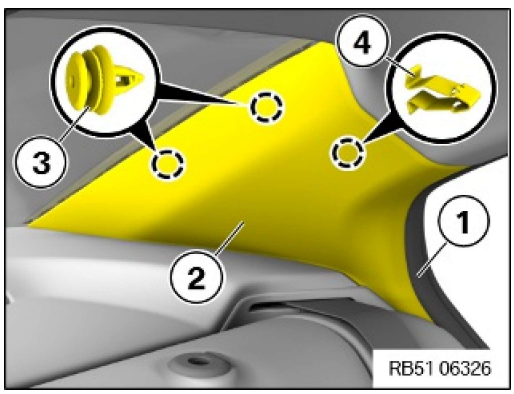
- Check clips (1) and clamp (4) for damage, renew if necessary.
- Check the guides (3) for damage.

Result

» Guide is damaged.

Measure

- Renew the C-pillar trim panel .



NOTICE

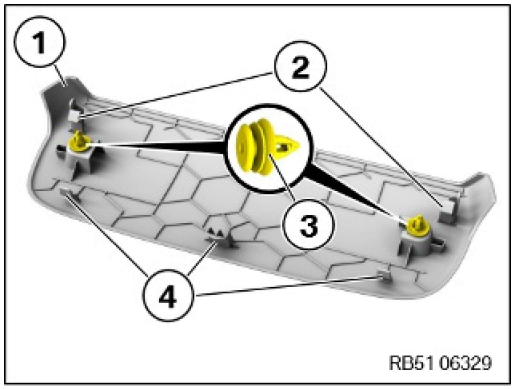
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Feed C-pillar trim panel (2) into guides towards the rear.
- Clip in clips (3).
- Clip in clamp (4).
- Guide in C-pillar trim panel (2) under the lip of edge protection (1).

26 – Installing trim for additional brake light

Check

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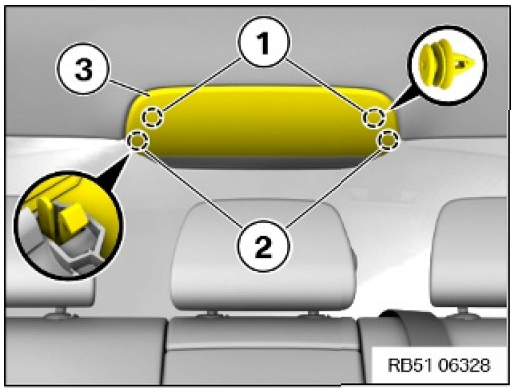
- Check the clips (3) for damage and renew if necessary.
- Check latch mechanisms (2) and guides (4) for damage.

Result

» The latch mechanism or the guide is damaged.

Measure

- Renew the trim for the additional brake light.



- Position trim for additional brake light (1) from the bottom and clip it in with latch mechanisms (2).
- Clip in clips (1).

Additional Information

Overview of Tightening Torques

Headlining to frame			Used in step 14
Oval-head screw		Tightening torque	1,5 Nm

Roof function centre			Used in step 16
		Tightening torque	1,2 Nm

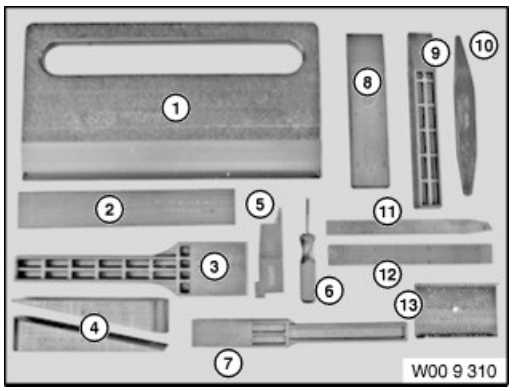
A-pillar trim panel to body			Used in step 21
Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

End fitting to seat mechanism			Used in step 22
Flat-head screwM10	Renew screw.	Tightening torque	42 Nm

Overview of Special Tools

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0 493 752 (00 9 329) Case



Common	Used in step 29
Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

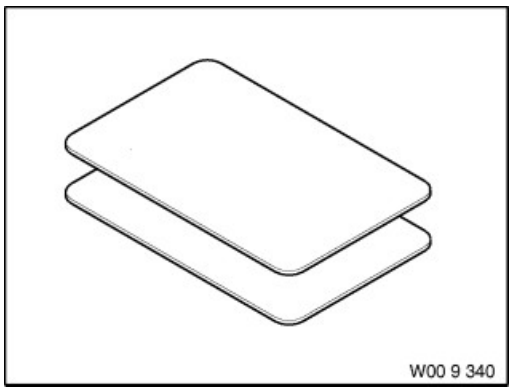
0 496 569 (00 9 325) Wedge



Common	Used in step 5
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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0 493 687 (00 9 340) Removal aid



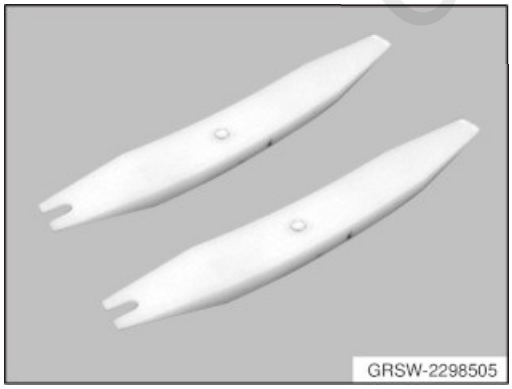
Common Used in step 6

Usage	(Removal aid (2 x)) For levering out switch block on driver's door.
Included in the tool or work	
Storage location	C2
Replaced by	
In connection with	
SI-Number	01 15 99 (483)

Consisting of

Pos	BMW Order number	Replaced by	Designation	In Connection with
1	0 496 289 (00 9 341)		**Removal aid** Only available as a set (2 tools) under 00 9 340 (= 83 30 0 493 687).	

2 298 505 Wedge



Common Used in step 16

Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

Links

General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	2
72 00 ... Safety regulations for handling components with gas generators	2

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51 44 910 Releasing and securing the headlining on the left

RISK OF DAMAGE

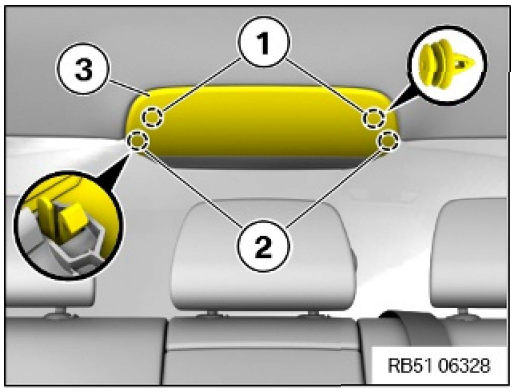
Fold the headlining.

If the headlining is folded, it may have to be replaced.

- Carry out tasks with a second person to assist.
- Support the headlining at the front and back.

PRELIMINARY WORK

1 – Removing the trim of the additional brake light

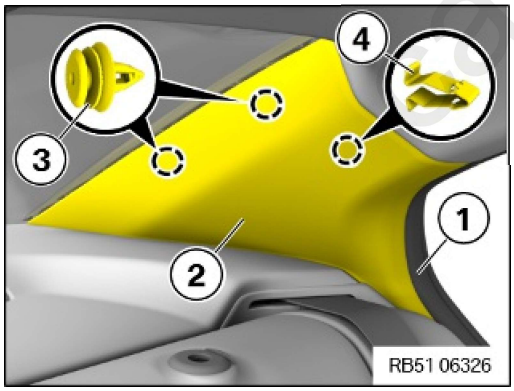


- Loosen the clips (1).
- Release the latch mechanisms (2) and remove the trim of the additional brake light (3).

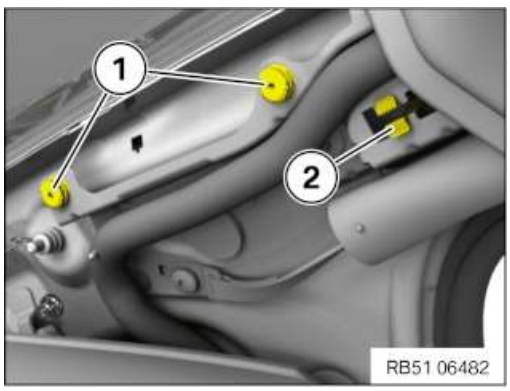
2 – Remove C-pillar trim panel

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



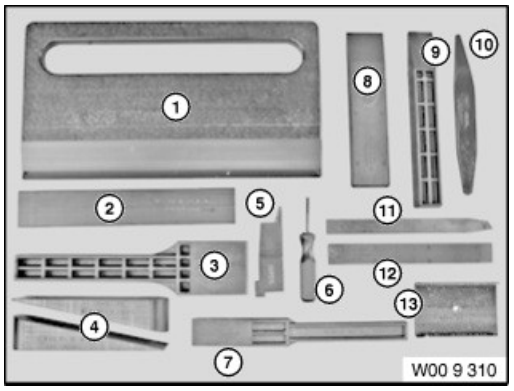
- Unclip clamp (4).
- Unclip clips (3).
- Feed out C-pillar trim panel (2) from the guides to the front.
- Thread out C-pillar trim panel (2) from the lip of edge protection (1).



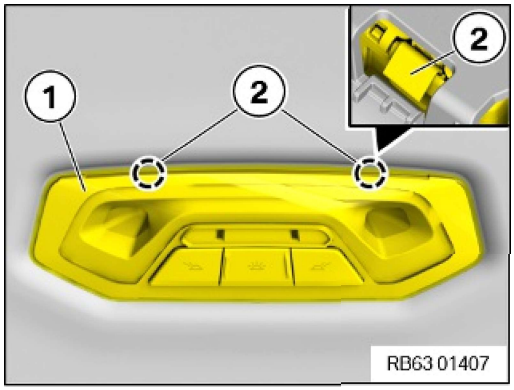
- If required, remove the clips (1) and the clamp (2) and connect it to the trim panel.

3 – Remove interior roof light

3 – Remove interior roof light



- Have the set of special tools 0 493 752 (00 9 329) ready.



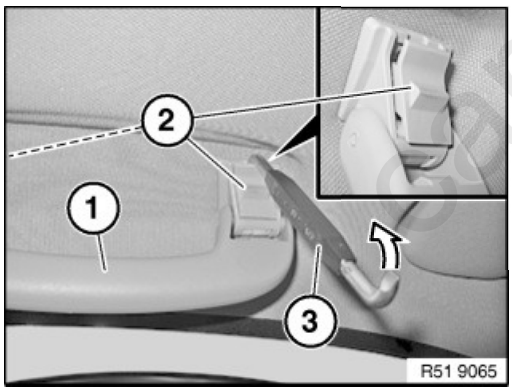
- Lever interior roof light (1) out of clamps (2) using a suitable tool.
- Unlock plug connection and disconnect.

4 – Removing both grab handles on left or right

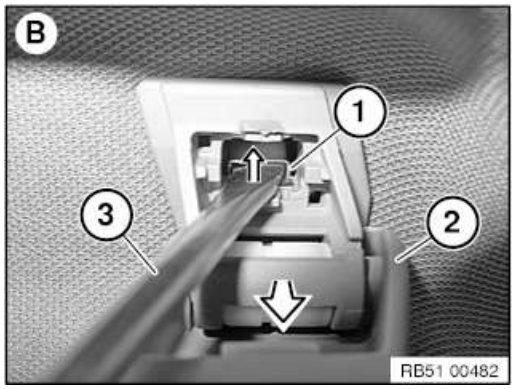
NOTICE

The description is for one component only. The procedure is identical for all further components.

▸ **Removing the grab handle**

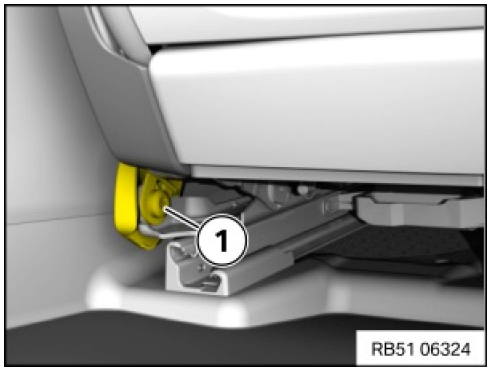


- Expand the grab handle (1) towards the bottom.
- Disengage and remove the locking insert (2) with an angle screwdriver (3) as shown.

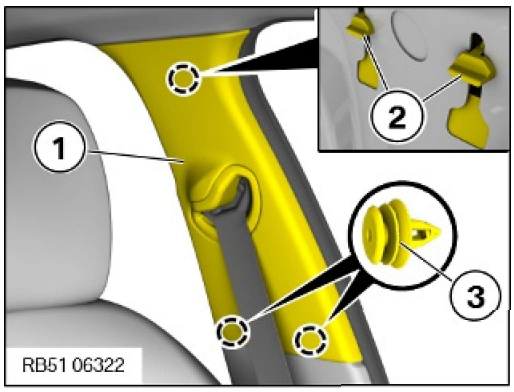


- Pull the grab handle (2) slightly to the inside and hold it.
- Use a suitable screwdriver (3) to detach the upper and lower release tabs (1).
- Guide the grab handle (2) out.
- Repeat the operation on the other side of the grab handle (2).

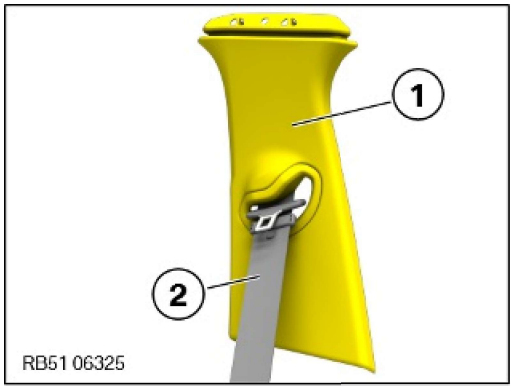
5 – Remove the B-pillar trim panel



- Fully position the front seat to the front and top.
- Loosen screw (1).
- Remove end fitting (2).



- Unclip clips (3).
- Feed B-pillar trim panel (1) out of the front and rear lip of edge protections and the guides (2).



- Feed upper seat belt (2) out of B-pillar trim panel (1).

6 – Remove the A-pillar trim panel

WARNING

Airbag unit.

Danger! Life-threatening injuries!

- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

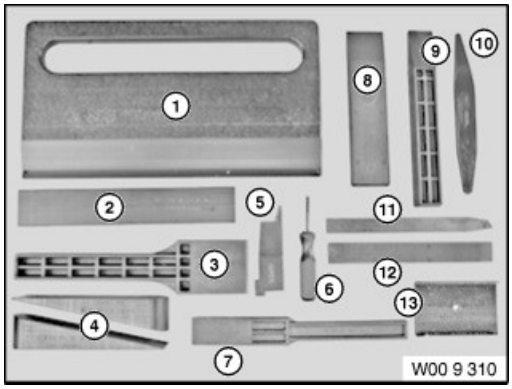
WARNING

Pyrotechnic components.

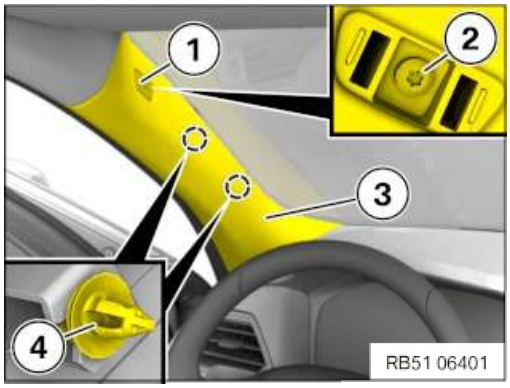
Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.

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- Have the set of special tools 0 493 752 (00 9 329) ready.



- Unclip the cover (1) with suitable tools.
- Loosen screw (2).
- Unclip A-pillar trim panel (3) with clips (4) and guide it out upwards.

7 – Remove sun visor



- Pull out the cover (1).
- Detach the sun visor (2) from the counter support .
- Disengage the sun visor (2) in front to the bottom and thread it out of the headlining at the rear.
- Unlock associated plug connection and disconnect.

8 – Remove the counter support for the sun visor



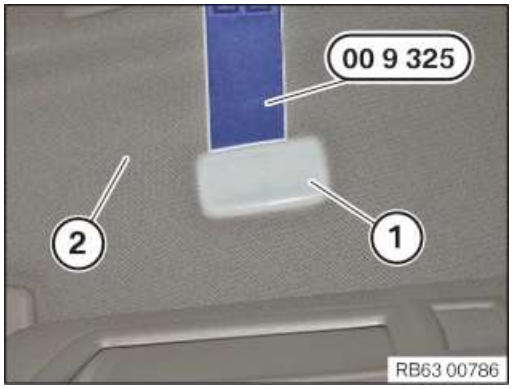
- Pull out the cover (1).
- Push the clamps (2) together and pull the counter support (3) out of the headlining.

9 – Removing front vanity mirror light

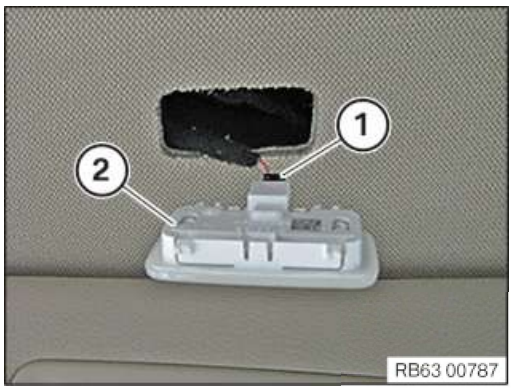
NOTICE

Description is for left component only. Procedure on the right side is identical.

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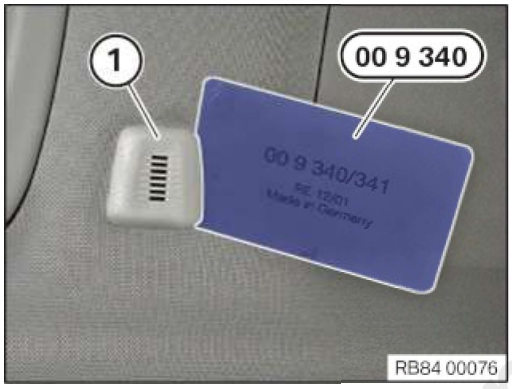


- Lever out the front vanity mirror light (1) using special tool 0 496 569 (00 9 325) from the headlining (2).

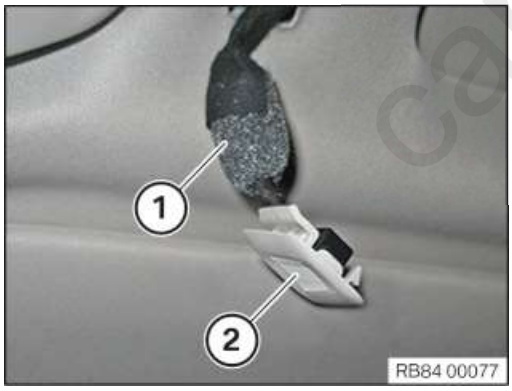


- Unlock and disconnect connector (1).
- Remove the front vanity mirror light (2).

10 – Removing hands-free microphone



- Lever out the hands-free microphone (1) with the special tool 0 493 687 (00 9 340).



- Open insulation (1).
- Disconnect plug connection.
- Remove hands-free microphone (2).

11 – Removing the roof function centre (FZD)



- Unclip the cover (1).

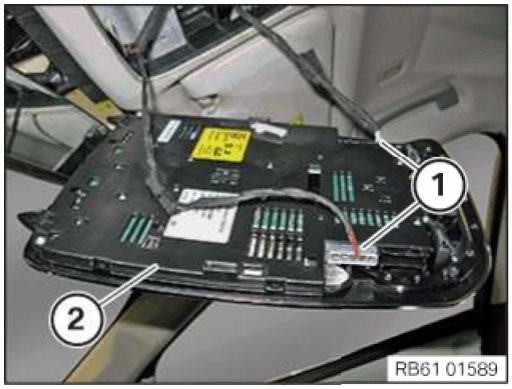
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- Loosen screws (1).



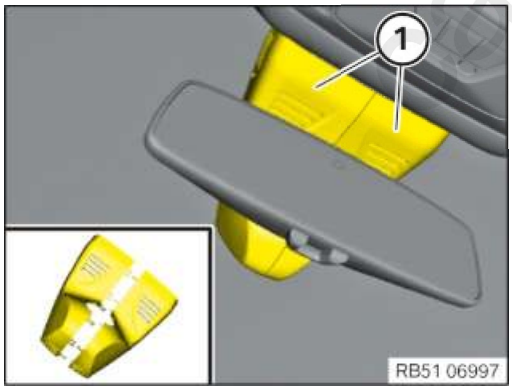
- Unclip the roof function centre (FZD) (1) from the clamps (2).
- Thread the roof function centre (FZD) (1) out of the guides (3).



- Unlock and disconnect plug connections (1).
- Unclip the cable for the roof function centre (FZD) (2) from the cable clip.

12 – Removing the covers for the interior mirror

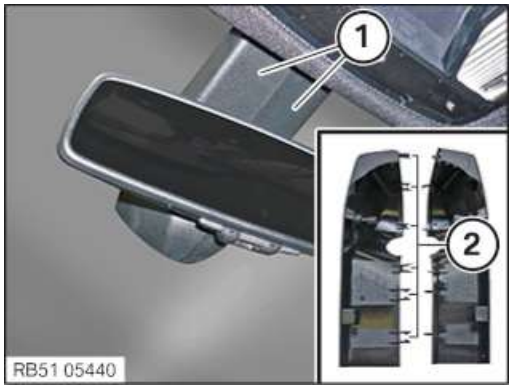
- **Version A:**



- Release the cover (1) at the centre from the latch mechanisms (2) with a suitable plastic wedge and remove.

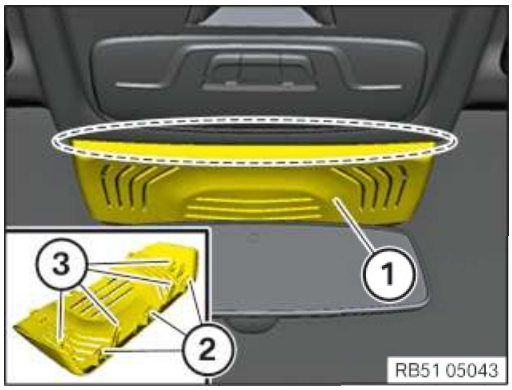
- **Version B:**

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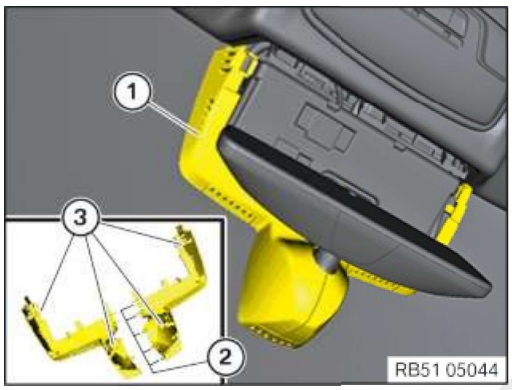


- Release the cover (1) from the latch mechanisms (2) with a suitable plastic wedge and remove sideways.

- **Version C:**



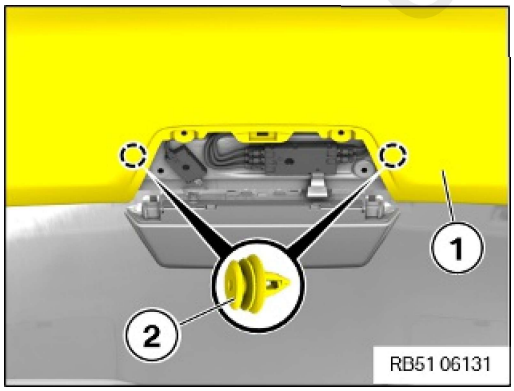
- Detach cover (1) from the clamps (2) in the marked area using a suitable plastic wedge and pull down a certain distance.
- Release cover (1) at the retaining lugs (3) and remove from the guides to the rear.



- Release cover (1) from the latch mechanisms (2) and (3) and remove sideways.
- Remove cover (1) from mirror base (2).

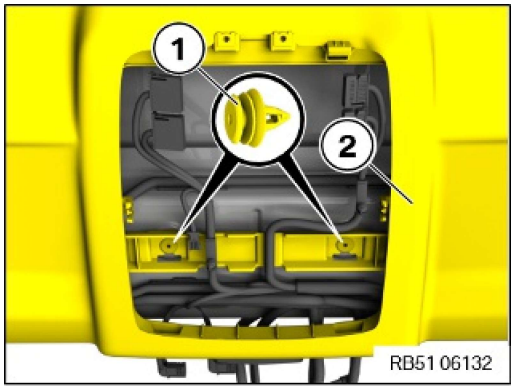
MAIN WORK

13 – Lower the headlining on the left or right



- Unclip the headlining (1) from the clips (2) downward.

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- Release the clips (1) at the headlining (2).

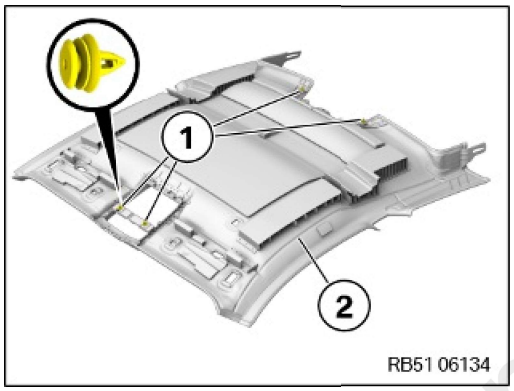


NOTICE

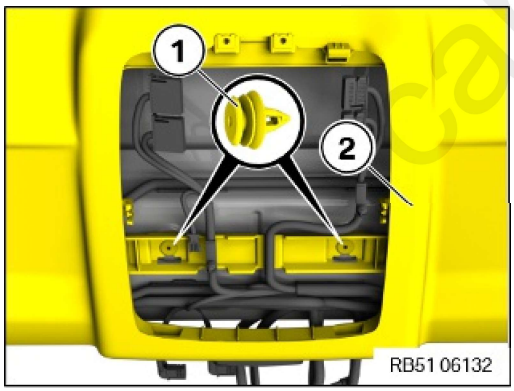
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Guide out the headlining at the respective edge protection.
- Lower the headlining and place it onto the head restraints as shown.

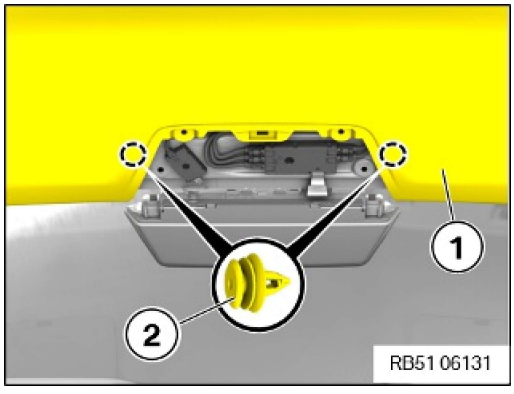
14 – Install the headlining (lowered)



- Check the clips (1) on the headlining (2) for damage and renew if necessary.



- Feed in the headlining (1) with the help of an auxiliary person on the respective edge protection.
- Position the headlining (2) on the clips (1) and clip it in.

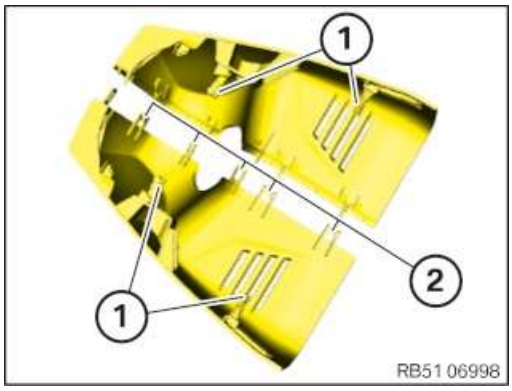


- Clip in clips (2) on the headlining (1).

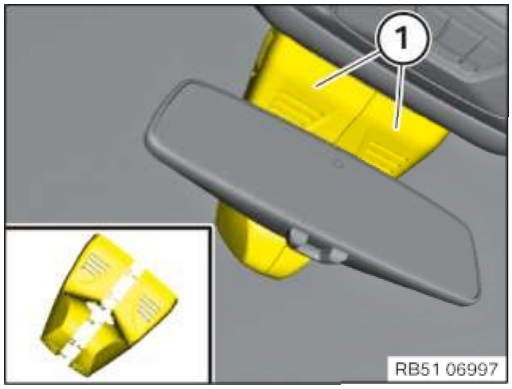
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15 – Installing the covers for the interior mirror

- **Version A:**

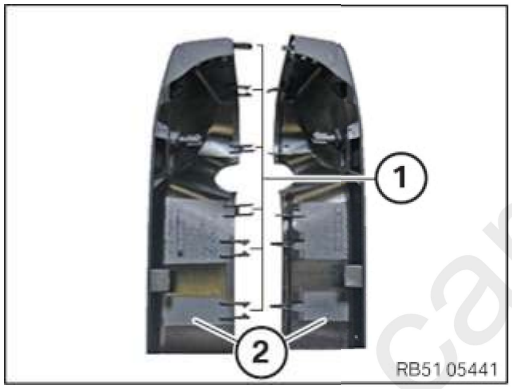


- Check latch mechanisms (1) and (2).
- If the latch mechanisms (1) or (2) are faulty, renew the covers.



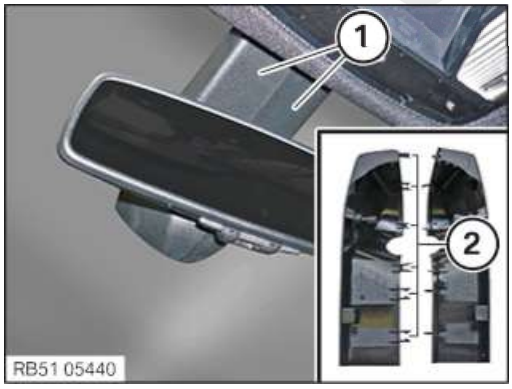
- Feed cover (1) in and lock.

- **Version B:**



- Check the latch mechanisms (1) on the two covers (2) for damage, renew the covers (2) if necessary.

  The covers (2) must not be damaged or missing.

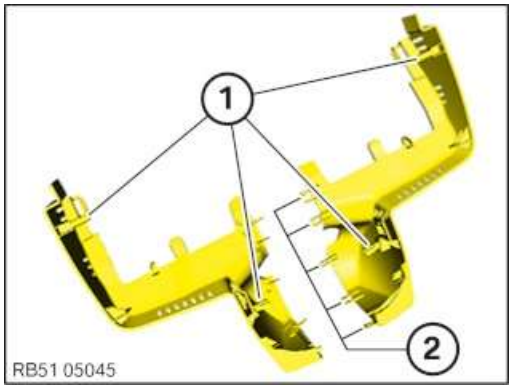


- Position the covers (1) correctly on the mirror and engage with the latch mechanisms (2).

- **Version C:**

Check

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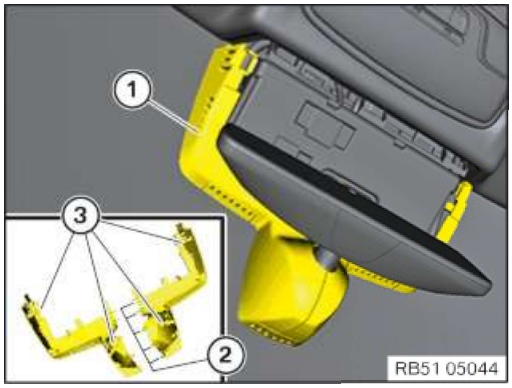
- Check the latch mechanisms (1) and (2) of the covers for damage.

Result

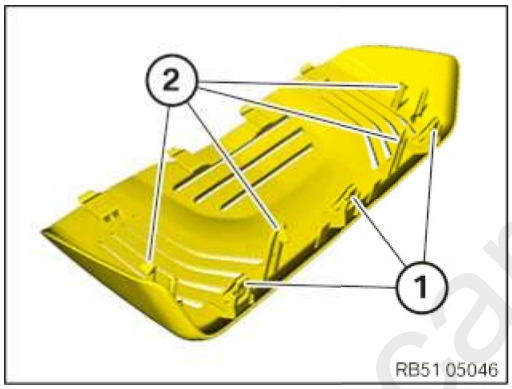
» The latch mechanism is damaged.

Measure

- Renew the cover.



- Guide in cover (1) on left and right and engage using latch mechanisms (2) and (3).



Check

- Check clamps (1) for damage; renew if necessary.
- Check latch mechanisms (2) for damage.

Result

» The latch mechanism is damaged.

Measure

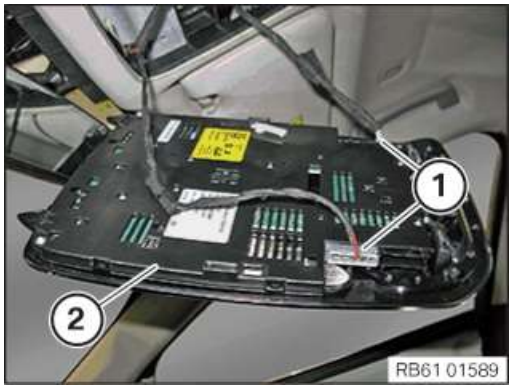
- Renew the cover.



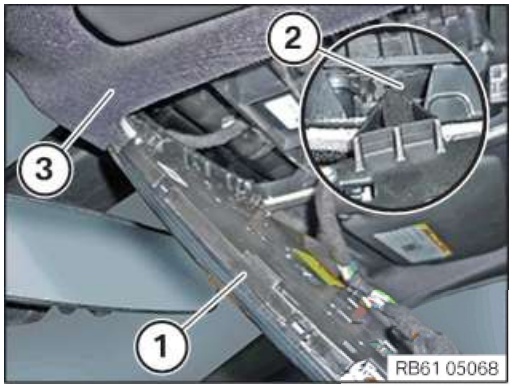
- Guide cover (1) into front guides and engage using retaining lugs (3) and clamps (2).

16 – Installing roof function centre (FZD)

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- Connect connectors (1) and lock.
- Clip in the cable for the roof function centre (FZD) (2) in the cable clip.



- Thread the roof function centre (FZD) (1) as shown at a steep angle into the two guides (2) on the headlining (3).

  Make sure the headlining is not deformed during this operation.



- Clip the roof function centre (FZD) (1) upwards into the clamps (2).



- Pass through the FZD frame and headlining with the special tool 2 298 505 and adjust the headlining correctly.



- Tighten the screws (1).

Roof function centre

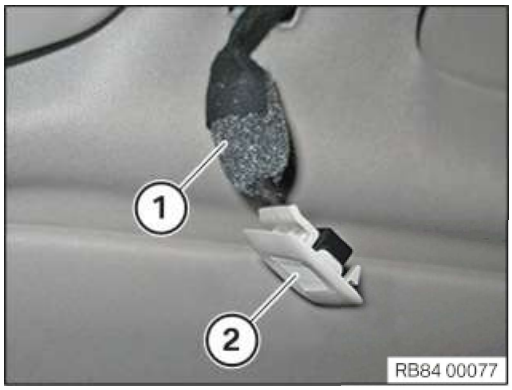
	Tightening torque	1,2 Nm

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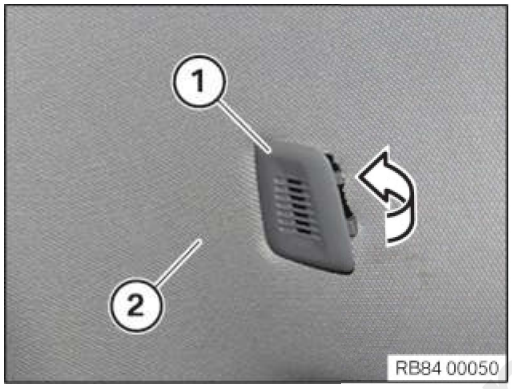


- Clip in the cover (1).

17 – Installing the hands-free microphone



- Connect the connector to the hands-free microphone (2).
- Close the insulation (1).

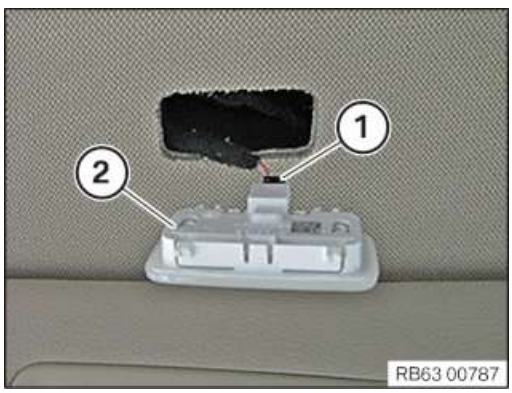


- Position hands-free microphone (1) in headlining (2) in the direction of the arrow.

18 – Installing front vanity mirror light

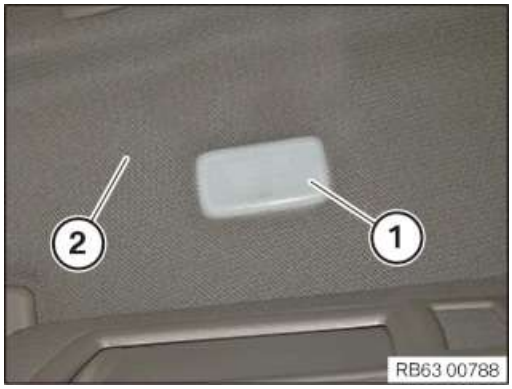
NOTICE

Description is for left component only. Procedure on the right side is identical.



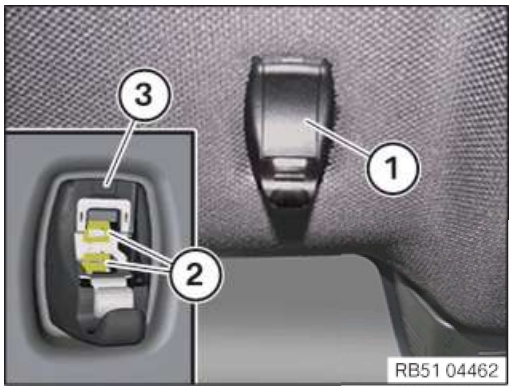
- Connect the connector (1) to the front vanity mirror light (2).

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- Position the front vanity mirror light (1) in the headlining (2).

19 – Install the counter support for the sun visor



- Insert the counter support (3) into the headlining.
- Make sure the clamps (2) are engaged correctly.
- Use cover (1).

20 – Install the sun visor



- Connect the sun visor (2) with the corresponding connector.
- Guide the sun visor (2) into the headlining.
- Use cover (1).
- Attach the sun visor (2) on the counter support.

21 – Installing the A-pillar trim panel

WARNING

Airbag unit.

Danger! Life-threatening injuries!

- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

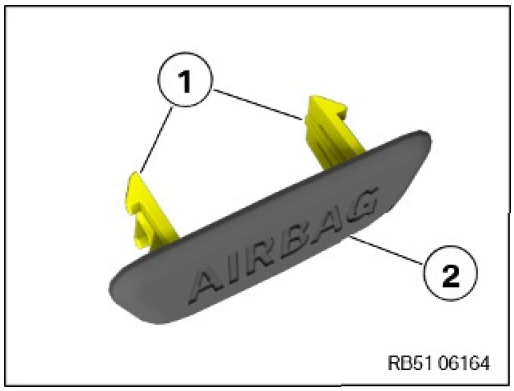
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WARNING

Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



Check

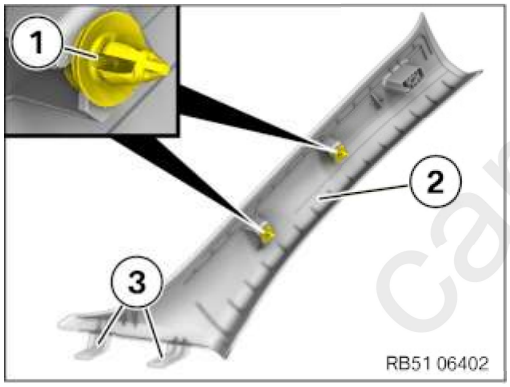
- Check retaining lugs (1) of cover (2) for damage.

Result

» Retaining lug is damaged.

Measure

- Renew the cover.



Check

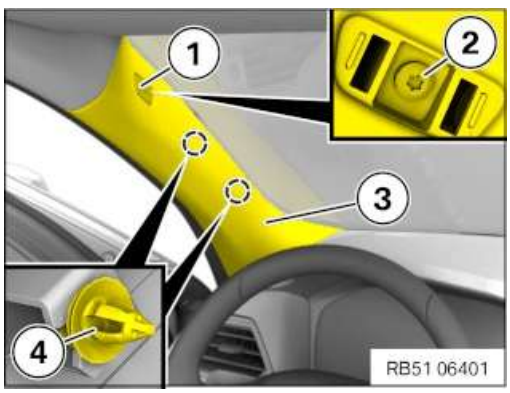
- Check the clips (1) for damage and renew if necessary.
- Check the guides (3) for damage.

Result

» Guide is damaged.

Measure

- Renew the A-pillar trim panel.



- Guide in A-pillar trim panel (3) downwards and clip it in with clips (4).
- Tighten down screw (2).

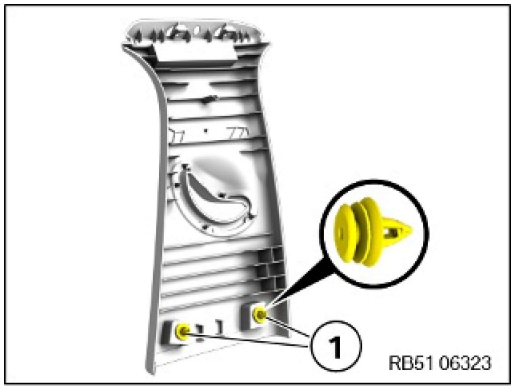
A-pillar trim panel to body

Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

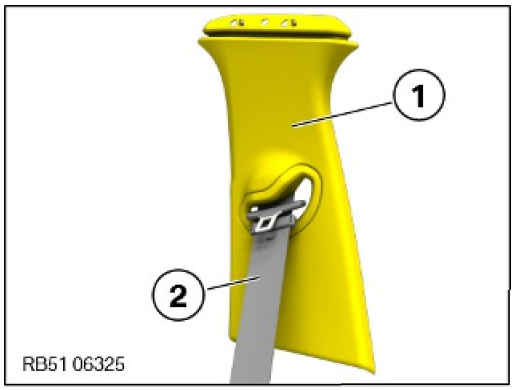
- Clip in the cover (1).

22 – Install the B-pillar trim panel

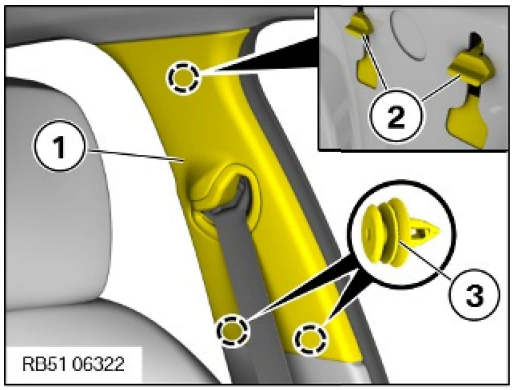
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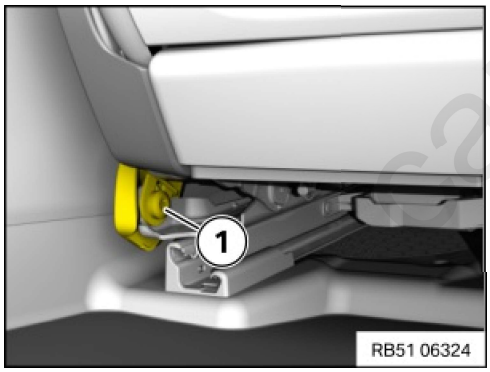
- Check the clips (1) for damage and renew if necessary.



- Guide upper seat belt (2) in B-pillar trim panel (1).



- Insert B-pillar trim panel (1) into guides (2) and under the front and rear lips of edge protection.
- Clip in the B-pillar trim panel (1) with the clips (3).



- Fully position the front seat to the front and top.
- Insert the end fitting (2).
- Renew the screw (1).

  Parts: Screw
- Tighten down screw (1).

End fitting to seat mechanism

Flat-head screwM10	Renew screw.	Tightening torque	42 Nm

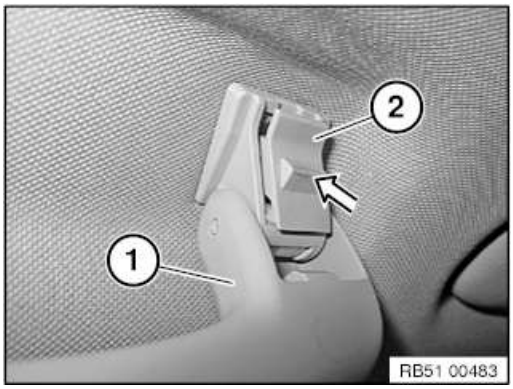
23 – Installing both grab handles on left or right

NOTICE

The description is for one component only. The procedure is identical for all further components.

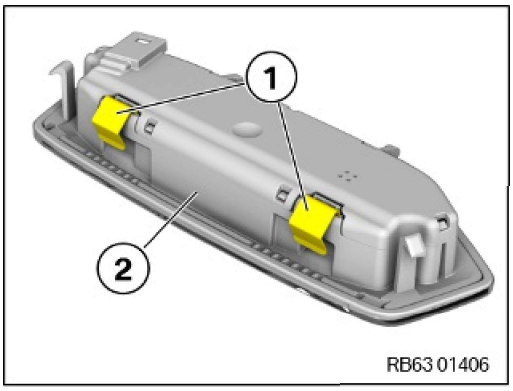
▸ **Installing the grab handle**

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- Insert the grab handle (1) into body.
- Correctly clamp in the grab handle (1), as otherwise the locking inserts (2) on the grab handle (1) cannot correctly engage.
- Engage the locking inserts (2) on both sides of the grab handle (1).

24 – Install interior roof light



Check

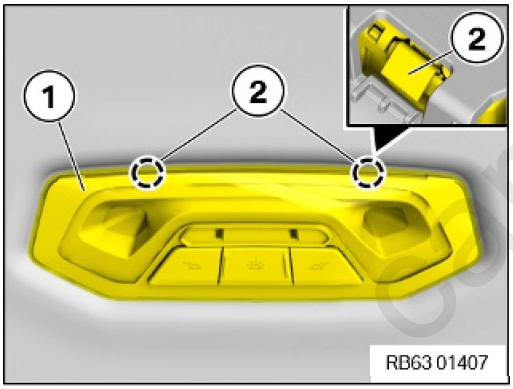
- Check the clamps (1) for damage.

Result

» Clamps (1) are damaged.

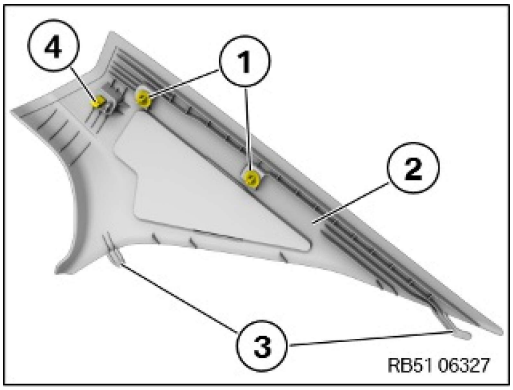
Measure

- Renew the interior roof light (2).



- Connect connectors and lock.
- Clip in the interior roof light (1) with clamps (2).

25 – Installing C-pillar trim panel



Check

- Check clips (1) and clamp (4) for damage, renew if necessary.
- Check the guides (3) for damage.

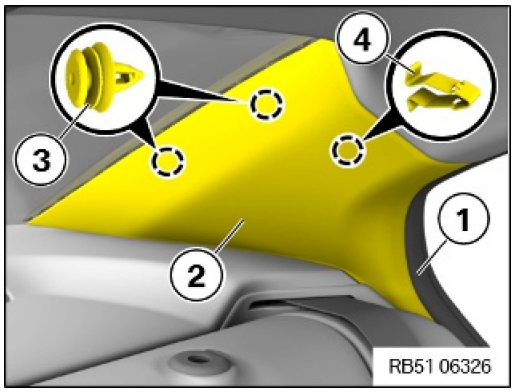
Result

» Guide is damaged.

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Measure

- Renew the C-pillar trim panel .

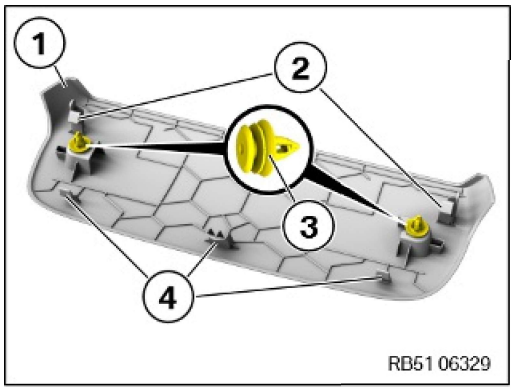


NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Feed C-pillar trim panel (2) into guides towards the rear.
- Clip in clips (3).
- Clip in clamp (4).
- Guide in C-pillar trim panel (2) under the lip of edge protection (1).

26 – Installing trim for additional brake light



Check

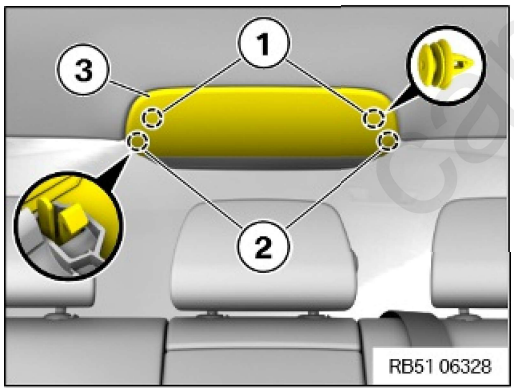
- Check the clips (3) for damage and renew if necessary.
- Check latch mechanisms (2) and guides (4) for damage.

Result

» The latch mechanism or the guide is damaged.

Measure

- Renew the trim for the additional brake light.



- Position trim for additional brake light (1) from the bottom and clip it in with latch mechanisms (2).
- Clip in clips (1).

Additional Information

Overview of Tightening Torques

Roof function centre — Used in step 16

	Tightening torque	1,2 Nm

A-pillar trim panel to body — Used in step 21

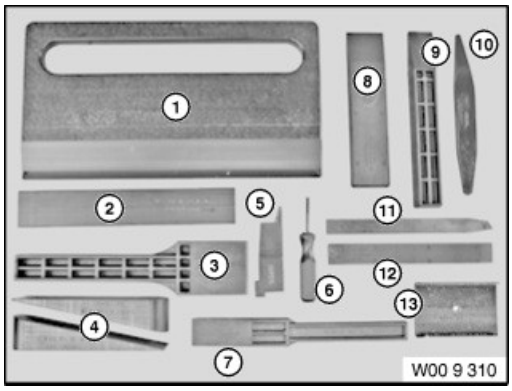
Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

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End fitting to seat mechanism			Used in step 22
Flat-head screwM10	Renew screw.	Tightening torque	42 Nm

Overview of Special Tools

0 493 752 (00 9 329) Case



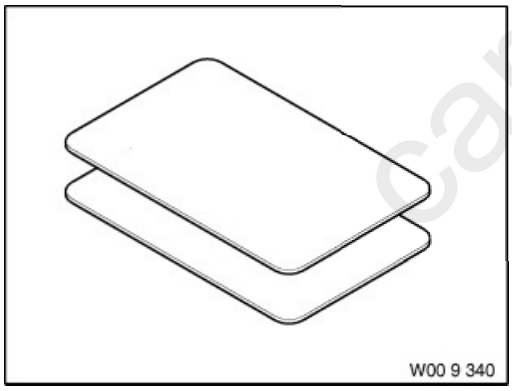
Common	Used in step 36
Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

0 496 569 (00 9 325) Wedge



Common	Used in step 9
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

0 493 687 (00 9 340) Removal aid



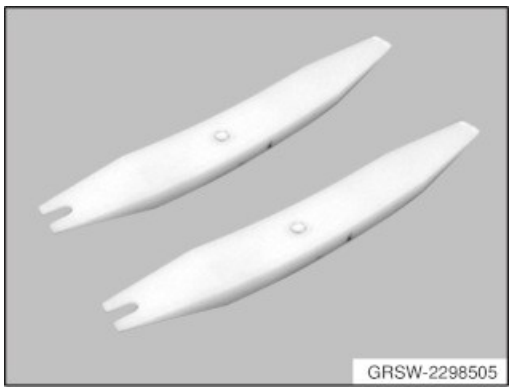
Common	Used in step 10
Usage	(Removal aid (2 x)) For levering out switch block on driver's door.
Included in the tool or work	
Storage location	C2
Replaced by	
In connection with	
SI-Number	01 15 99 (483)

Consisting of

Pos	BMW Order number	Replaced by	Designation	In Connection with
1	0 496 289 (00 9 341)		**Removal aid** Only available as a set (2 tools) under 00 9 340 (= 83 30 0 493 687).	

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2 298 505 Wedge



Common	Used in step 16
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

Links

General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	6
72 00 ... Safety regulations for handling components with gas generators	6

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51 44 911 Releasing and securing the headlining on the right

RISK OF DAMAGE

Fold the headlining.

If the headlining is folded, it may have to be replaced.

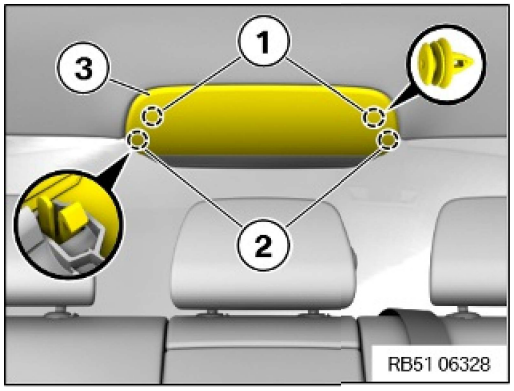
- Carry out tasks with a second person to assist.
- Support the headlining at the front and back.

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

1 – Removing the trim of the additional brake light

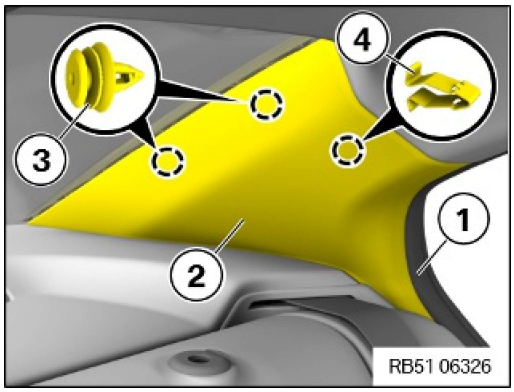


- Loosen the clips (1).
- Release the latch mechanisms (2) and remove the trim of the additional brake light (3).

2 – Remove C-pillar trim panel

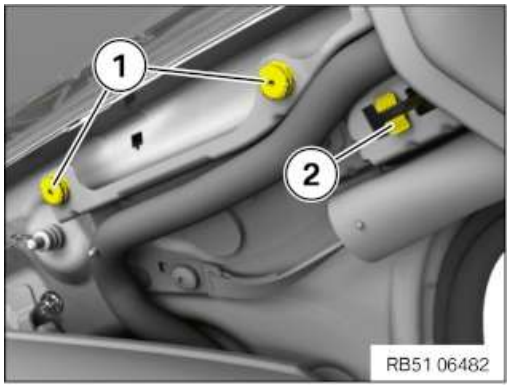
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



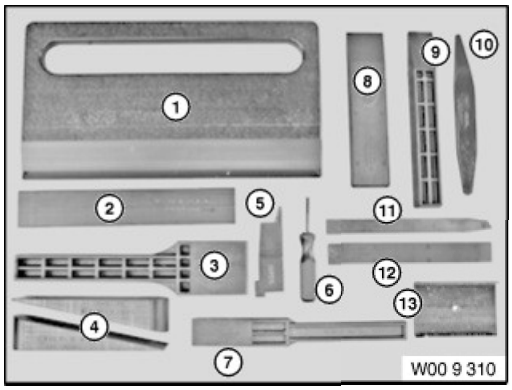
- Unclip clamp (4).
- Unclip clips (3).
- Feed out C-pillar trim panel (2) from the guides to the front.
- Thread out C-pillar trim panel (2) from the lip of edge protection (1).

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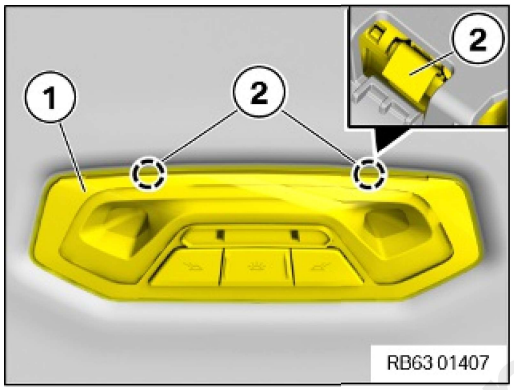


- If required, remove the clips (1) and the clamp (2) and connect it to the trim panel.

3 – Remove interior roof light



- Have the set of special tools 0 493 752 (00 9 329) ready.



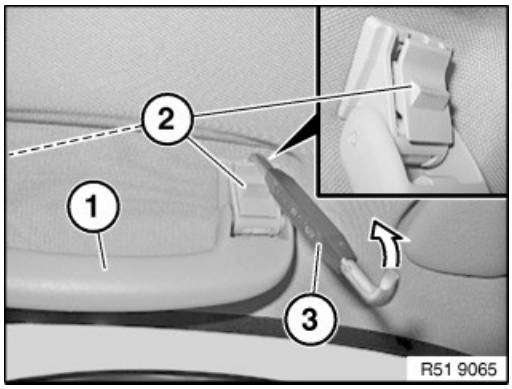
- Lever interior roof light (1) out of clamps (2) using a suitable tool.
- Unlock plug connection and disconnect.

4 – Removing both grab handles on left or right

NOTICE

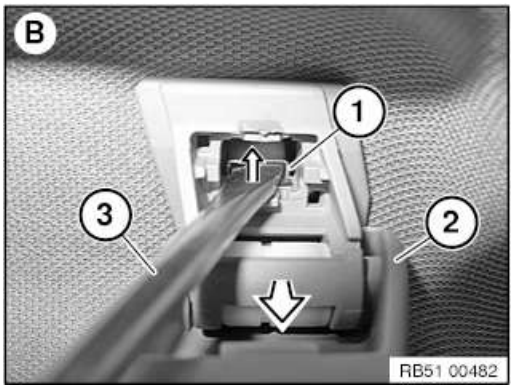
The description is for one component only. The procedure is identical for all further components.

▸ **Removing the grab handle**



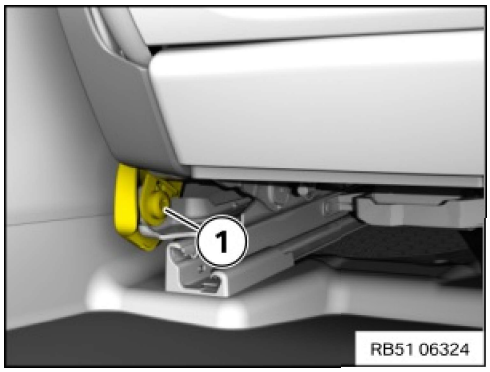
- Expand the grab handle (1) towards the bottom.
- Disengage and remove the locking insert (2) with an angle screwdriver (3) as shown.

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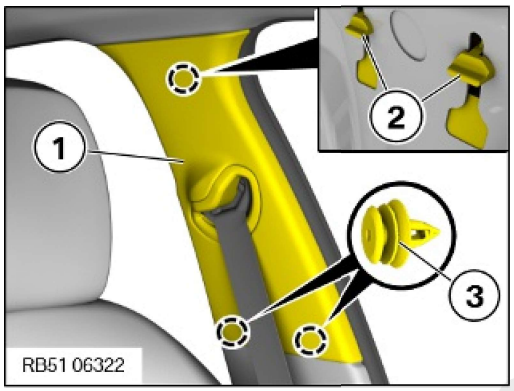


- Pull the grab handle (2) slightly to the inside and hold it.
- Use a suitable screwdriver (3) to detach the upper and lower release tabs (1).
- Guide the grab handle (2) out.
- Repeat the operation on the other side of the grab handle (2).

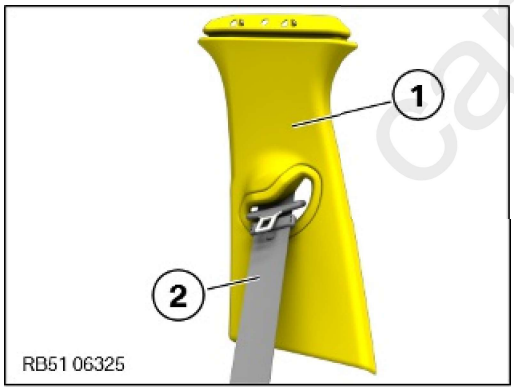
5 – Remove the B-pillar trim panel



- Fully position the front seat to the front and top.
- Loosen screw (1).
- Remove end fitting (2).



- Unclip clips (3).
- Feed B-pillar trim panel (1) out of the front and rear lip of edge protections and the guides (2).



- Feed upper seat belt (2) out of B-pillar trim panel (1).

6 – Remove the A-pillar trim panel

WARNING

Airbag unit.

Danger! Life-threatening injuries!

- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

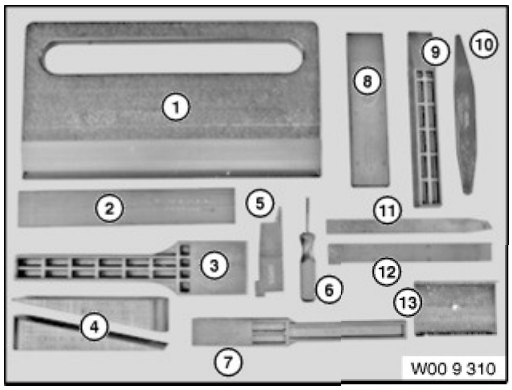
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WARNING

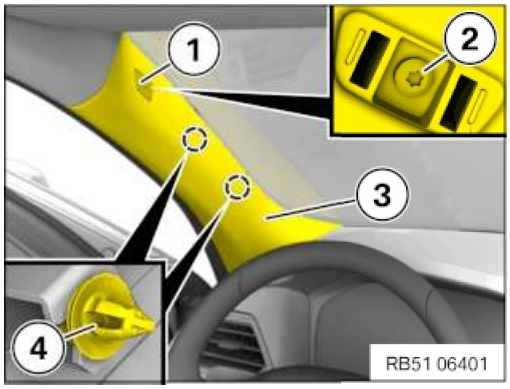
Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



- Have the set of special tools 0 493 752 (00 9 329) ready.



- Unclip the cover (1) with suitable tools.
- Loosen screw (2).
- Unclip A-pillar trim panel (3) with clips (4) and guide it out upwards.

7 – Remove sun visor



- Pull out the cover (1).
- Detach the sun visor (2) from the counter support .
- Disengage the sun visor (2) in front to the bottom and thread it out of the headlining at the rear.
- Unlock associated plug connection and disconnect.

8 – Remove the counter support for the sun visor

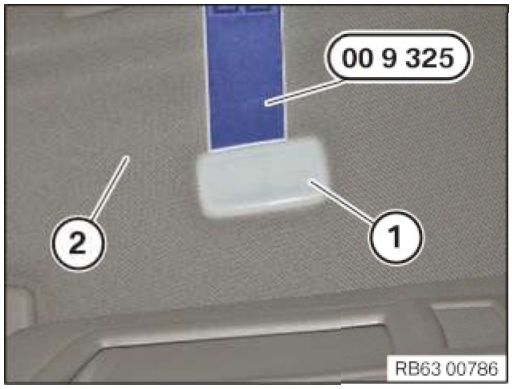


- Pull out the cover (1).
- Push the clamps (2) together and pull the counter support (3) out of the headlining.

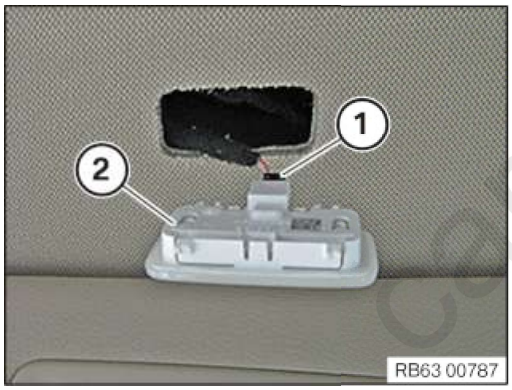
9 – Removing front vanity mirror light

NOTICE

Description is for left component only. Procedure on the right side is identical.

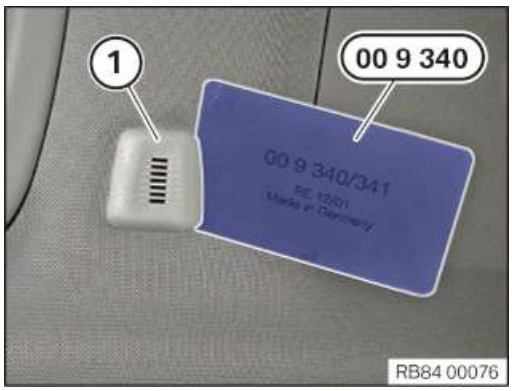


- Lever out the front vanity mirror light (1) using special tool 0 496 569 (00 9 325) from the headlining (2).



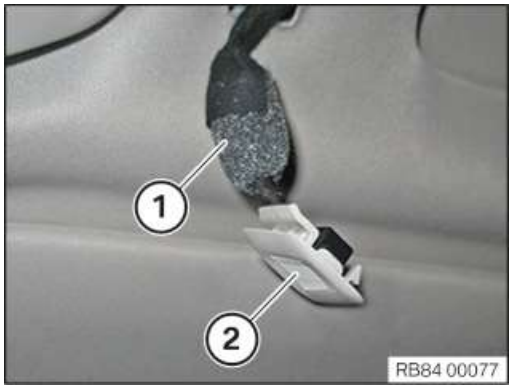
- Unlock and disconnect connector (1).
- Remove the front vanity mirror light (2).

10 – Removing hands-free microphone



- Lever out the hands-free microphone (1) with the special tool 0 493 687 (00 9 340).

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- Open insulation (1).
- Disconnect plug connection.
- Remove hands-free microphone (2).

11 – Removing the roof function centre (FZD)



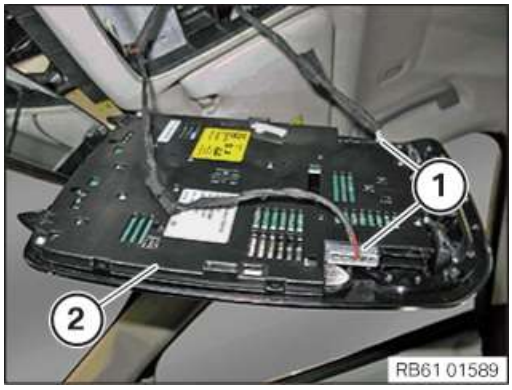
- Unclip the cover (1).



- Loosen screws (1).



- Unclip the roof function centre (FZD) (1) from the clamps (2).
- Thread the roof function centre (FZD) (1) out of the guides (3).

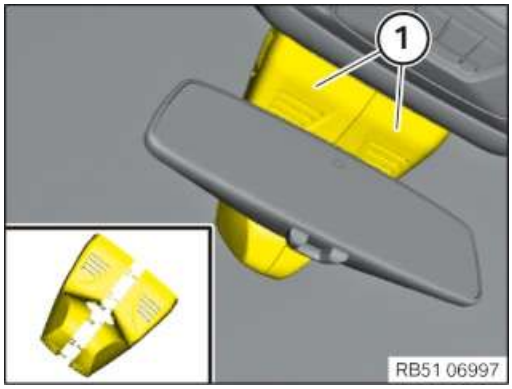


- Unlock and disconnect plug connections (1).
- Unclip the cable for the roof function centre (FZD) (2) from the cable clip.

12 – Removing the covers for the interior mirror

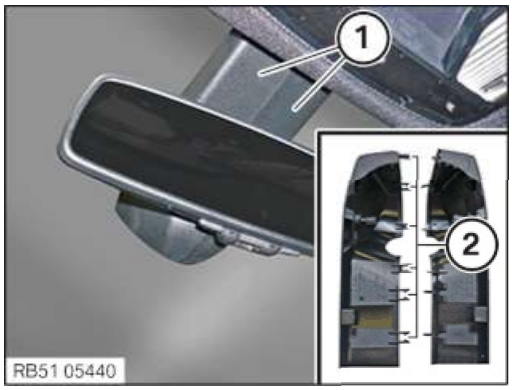
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- **Version A:**



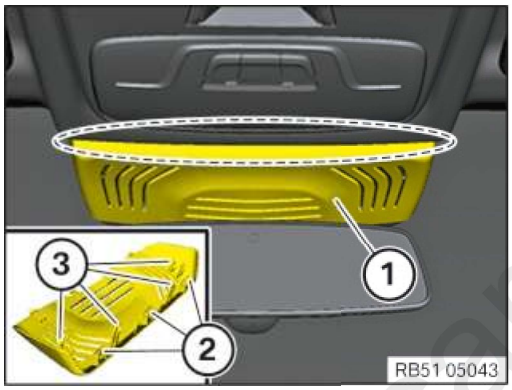
- Release the cover (1) at the centre from the latch mechanisms (2) with a suitable plastic wedge and remove.

- **Version B:**

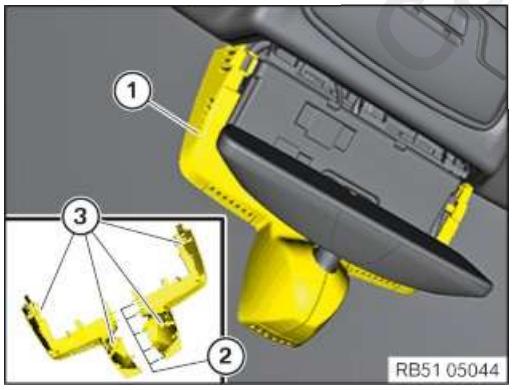


- Release the cover (1) from the latch mechanisms (2) with a suitable plastic wedge and remove sideways.

- **Version C:**



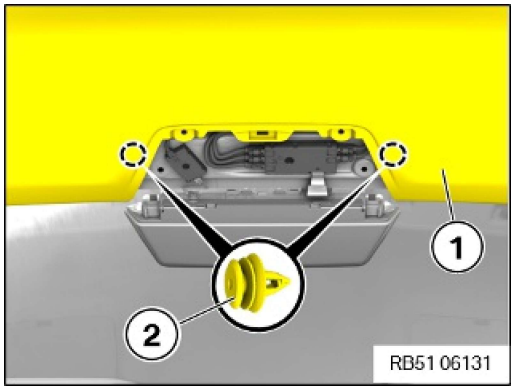
- Detach cover (1) from the clamps (2) in the marked area using a suitable plastic wedge and pull down a certain distance.
- Release cover (1) at the retaining lugs (3) and remove from the guides to the rear.



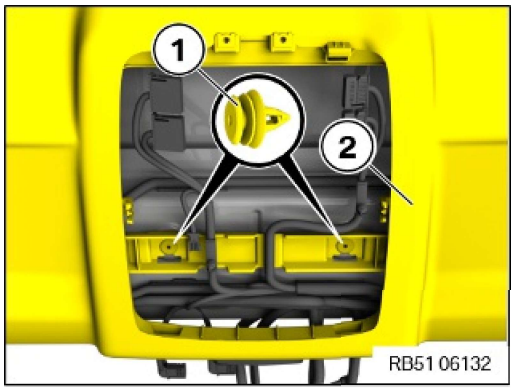
- Release cover (1) from the latch mechanisms (2) and (3) and remove sideways.
- Remove cover (1) from mirror base (2).

MAIN WORK

13 – Lower the headlining on the left or right



- Unclip the headlining (1) from the clips (2) downward.



- Release the clips (1) at the headlining (2).

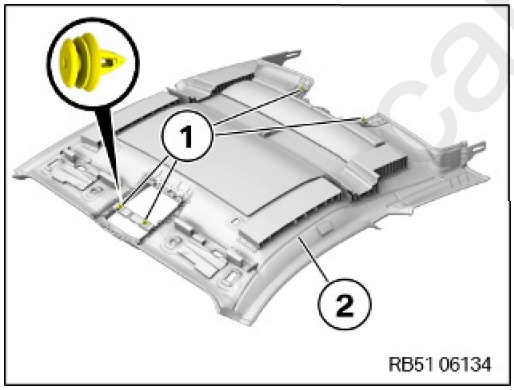


NOTICE

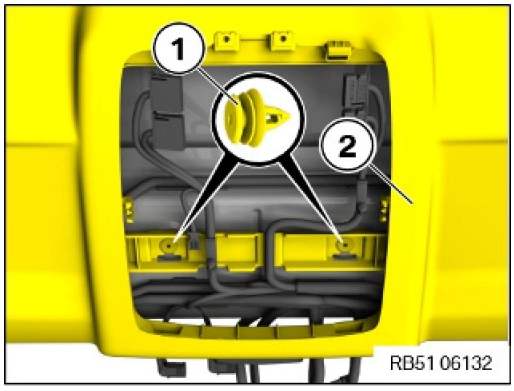
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Guide out the headlining at the respective edge protection.
- Lower the headlining and place it onto the head restraints as shown.

14 – Install the headlining (lowered)

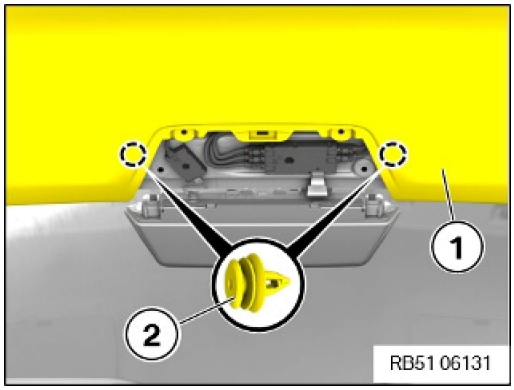


- Check the clips (1) on the headlining (2) for damage and renew if necessary.



- Feed in the headlining (1) with the help of an auxiliary person on the respective edge protection.
- Position the headlining (2) on the clips (1) and clip it in.

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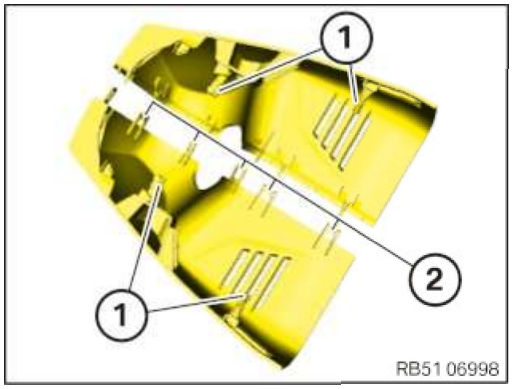


- Clip in clips (2) on the headlining (1).

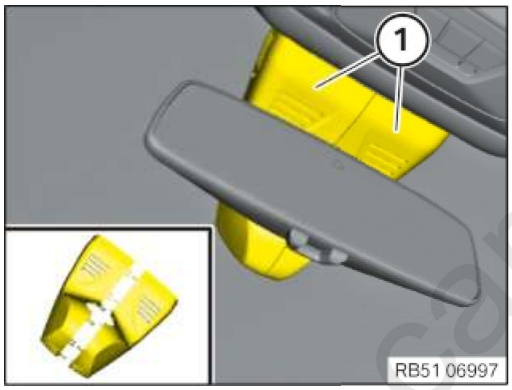
POSTPROCESSES

15 – Installing the covers for the interior mirror

- **Version A:**

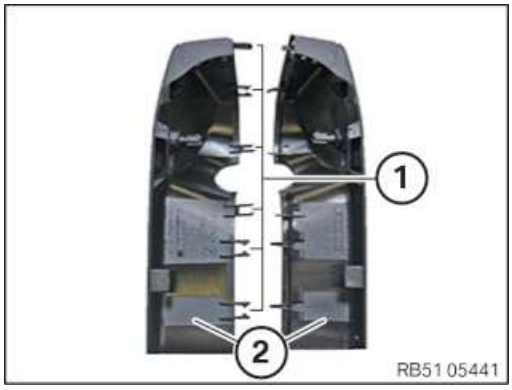


- Check latch mechanisms (1) and (2).
- If the latch mechanisms (1) or (2) are faulty, renew the covers.



- Feed cover (1) in and lock.

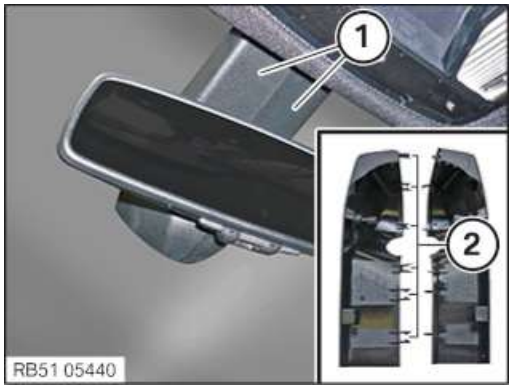
- **Version B:**



- Check the latch mechanisms (1) on the two covers (2) for damage, renew the covers (2) if necessary.

  The covers (2) must not be damaged or missing.

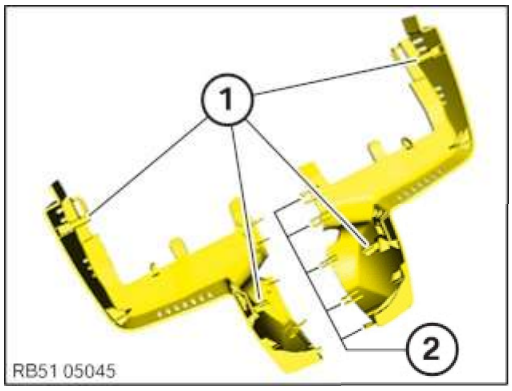
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- Position the covers (1) correctly on the mirror and engage with the latch mechanisms (2).

- **Version C:**

Check



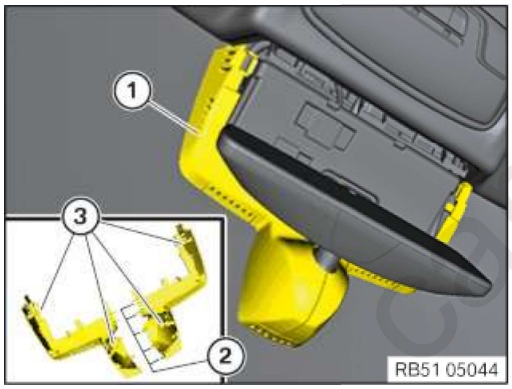
- Check the latch mechanisms (1) and (2) of the covers for damage.

Result

» The latch mechanism is damaged.

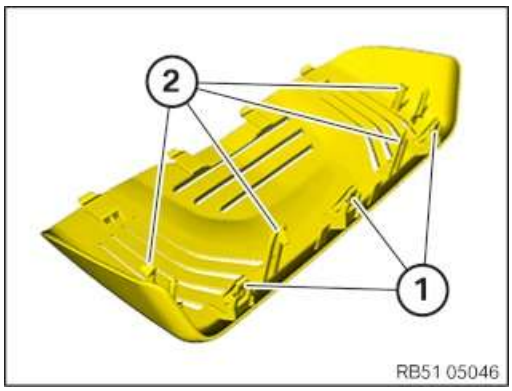
Measure

- Renew the cover.



- Guide in cover (1) on left and right and engage using latch mechanisms (2) and (3).

Check



- Check clamps (1) for damage; renew if necessary.
- Check latch mechanisms (2) for damage.

Result

» The latch mechanism is damaged.

Measure

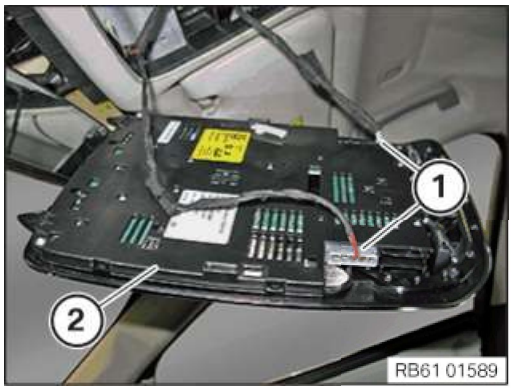
- Renew the cover.

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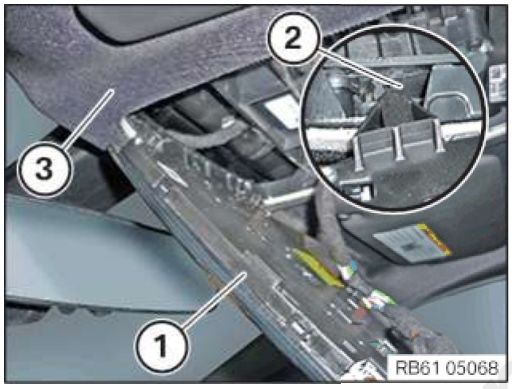


- Guide cover (1) into front guides and engage using retaining lugs (3) and clamps (2).

16 – Installing roof function centre (FZD)



- Connect connectors (1) and lock.
- Clip in the cable for the roof function centre (FZD) (2) in the cable clip.



- Thread the roof function centre (FZD) (1) as shown at a steep angle into the two guides (2) on the headlining (3).

  Make sure the headlining is not deformed during this operation.



- Clip the roof function centre (FZD) (1) upwards into the clamps (2).



- Pass through the FZD frame and headlining with the special tool 2 298 505 and adjust the headlining correctly.

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- Tighten the screws (1).

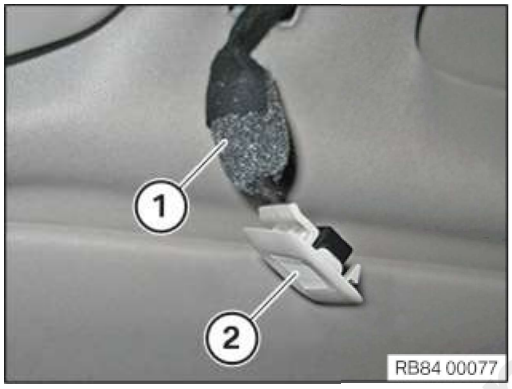
Roof function centre

	Tightening torque	1,2 Nm

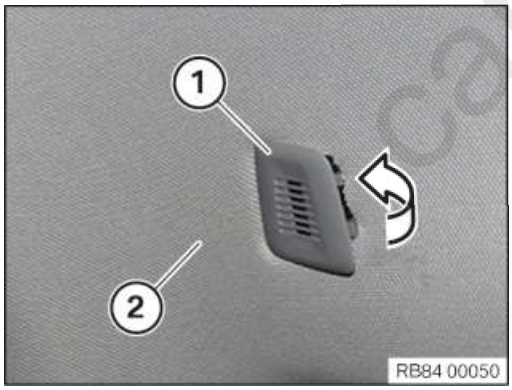


- Clip in the cover (1).

17 – Installing the hands-free microphone



- Connect the connector to the hands-free microphone (2).
- Close the insulation (1).



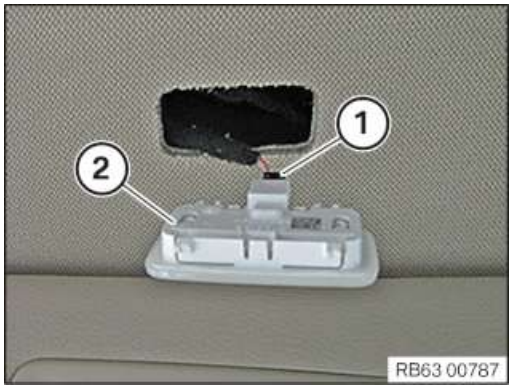
- Position hands-free microphone (1) in headlining (2) in the direction of the arrow.

18 – Installing front vanity mirror light

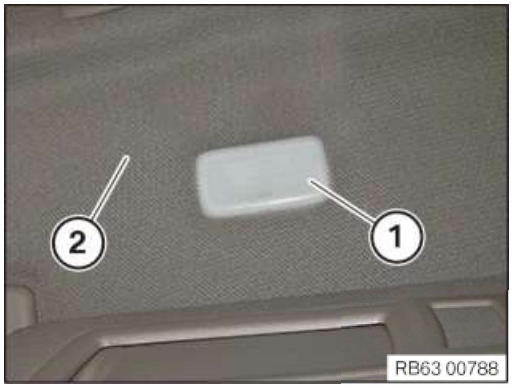
NOTICE

Description is for left component only. Procedure on the right side is identical.

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- Connect the connector (1) to the front vanity mirror light (2).



- Position the front vanity mirror light (1) in the headlining (2).

19 – Install the counter support for the sun visor



- Insert the counter support (3) into the headlining.
- Make sure the clamps (2) are engaged correctly.
- Use cover (1).

20 – Install the sun visor



- Connect the sun visor (2) with the corresponding connector.
- Guide the sun visor (2) into the headlining.
- Use cover (1).
- Attach the sun visor (2) on the counter support.

21 – Installing the A-pillar trim panel

WARNING

Airbag unit.

Danger! Life-threatening injuries!

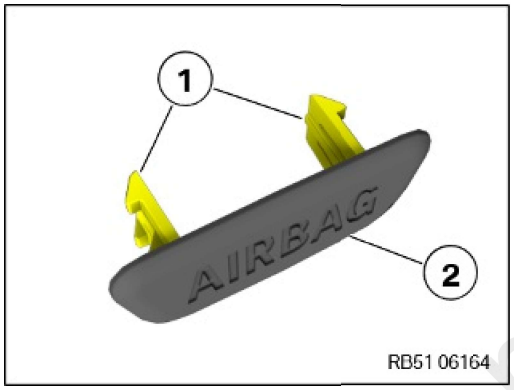
- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

WARNING

Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



Check

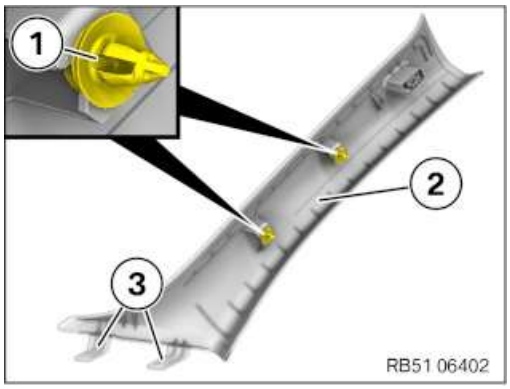
- Check retaining lugs (1) of cover (2) for damage.

Result

» Retaining lug is damaged.

Measure

- Renew the cover.



Check

- Check the clips (1) for damage and renew if necessary.
- Check the guides (3) for damage.

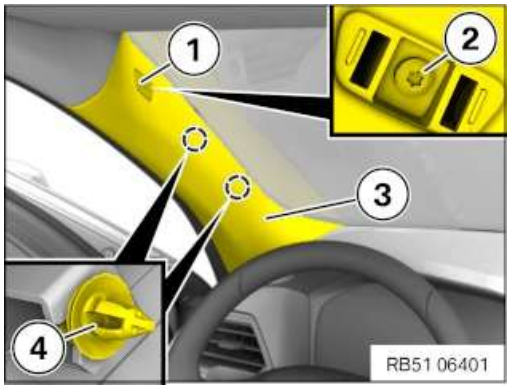
Result

» Guide is damaged.

Measure

- Renew the A-pillar trim panel.

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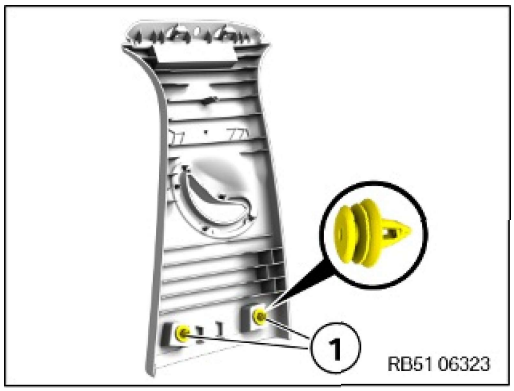
- Guide in A-pillar trim panel (3) downwards and clip it in with clips (4).
- Tighten down screw (2).

A-pillar trim panel to body

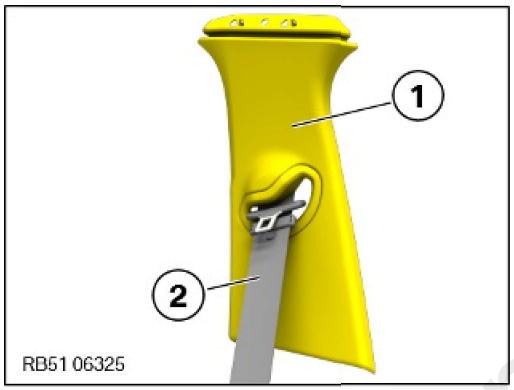
Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

- Clip in the cover (1).

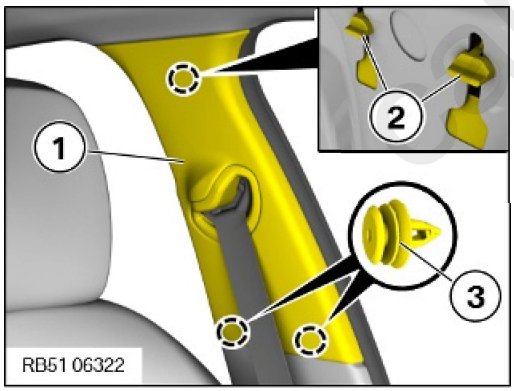
22 – Install the B-pillar trim panel



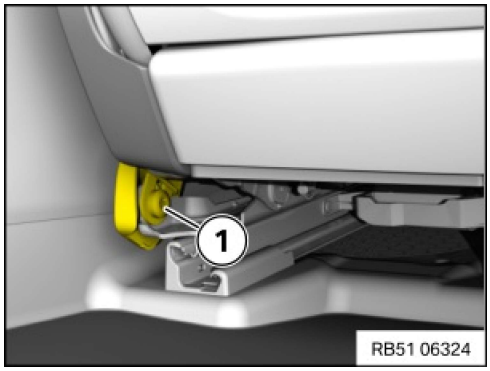
- Check the clips (1) for damage and renew if necessary.



- Guide upper seat belt (2) in B-pillar trim panel (1).



- Insert B-pillar trim panel (1) into guides (2) and under the front and rear lips of edge protection.
- Clip in the B-pillar trim panel (1) with the clips (3).



- Fully position the front seat to the front and top.
- Insert the end fitting (2).
- Renew the screw (1).

  Parts: Screw
- Tighten down screw (1).

End fitting to seat mechanism

Flat-head screwM10	Renew screw.	Tightening torque	42 Nm

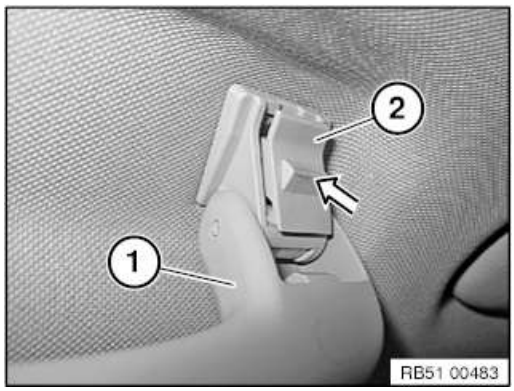
23 – Installing both grab handles on left or right

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NOTICE

The description is for one component only. The procedure is identical for all further components.

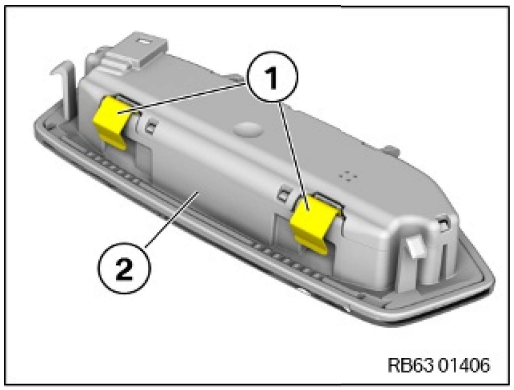
▸ **Installing the grab handle**



- Insert the grab handle (1) into body.
- Correctly clamp in the grab handle (1), as otherwise the locking inserts (2) on the grab handle (1) cannot correctly engage.
- Engage the locking inserts (2) on both sides of the grab handle (1).

24 – Install interior roof light

Check



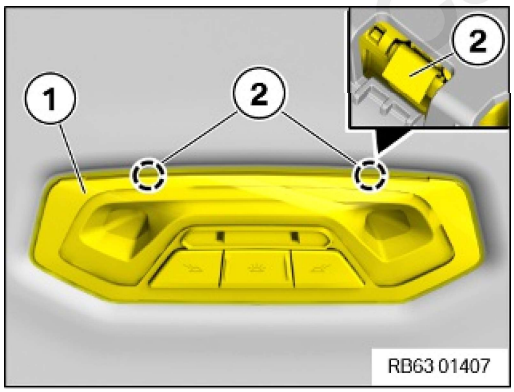
- Check the clamps (1) for damage.

Result

» Clamps (1) are damaged.

Measure

- Renew the interior roof light (2).

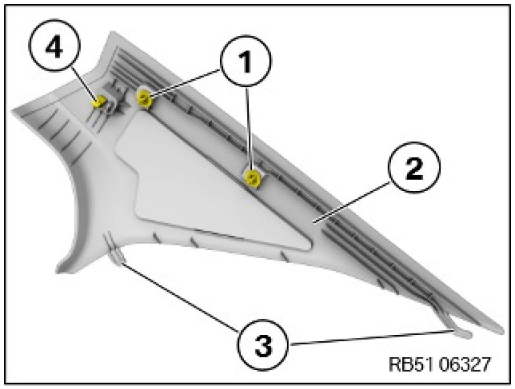


- Connect connectors and lock.
- Clip in the interior roof light (1) with clamps (2).

25 – Installing C-pillar trim panel

Check

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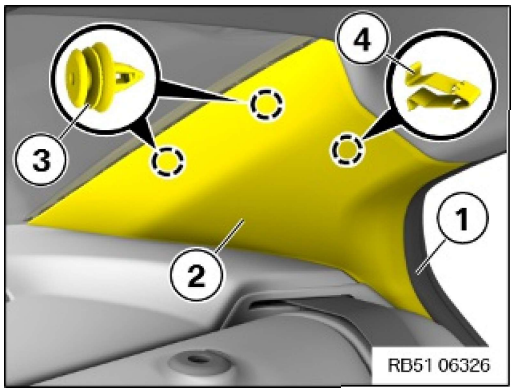
- Check clips (1) and clamp (4) for damage, renew if necessary.
- Check the guides (3) for damage.

Result

» Guide is damaged.

Measure

- Renew the C-pillar trim panel .



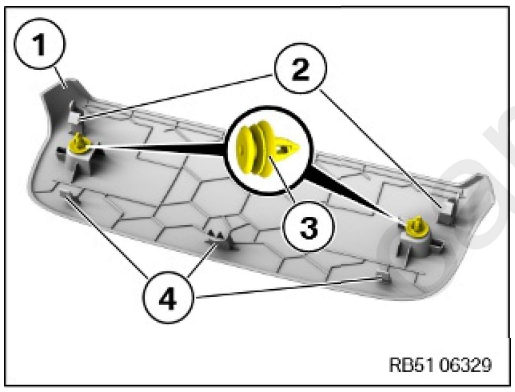
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Feed C-pillar trim panel (2) into guides towards the rear.
- Clip in clips (3).
- Clip in clamp (4).
- Guide in C-pillar trim panel (2) under the lip of edge protection (1).

26 – Installing trim for additional brake light

Check



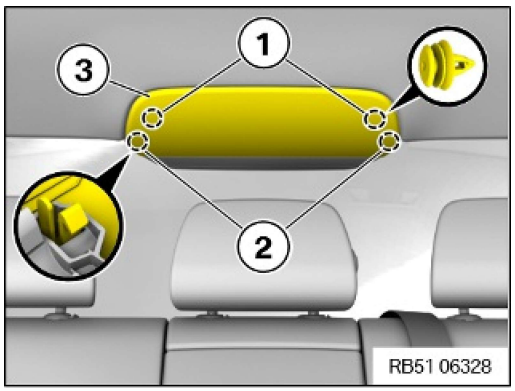
- Check the clips (3) for damage and renew if necessary.
- Check latch mechanisms (2) and guides (4) for damage.

Result

» The latch mechanism or the guide is damaged.

Measure

- Renew the trim for the additional brake light.



- Position trim for additional brake light (1) from the bottom and clip it in with latch mechanisms (2).
- Clip in clips (1).

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Additional Information

Overview of Tightening Torques

Roof function centre — Used in step 16

		Tightening torque	1,2 Nm

A-pillar trim panel to body — Used in step 21

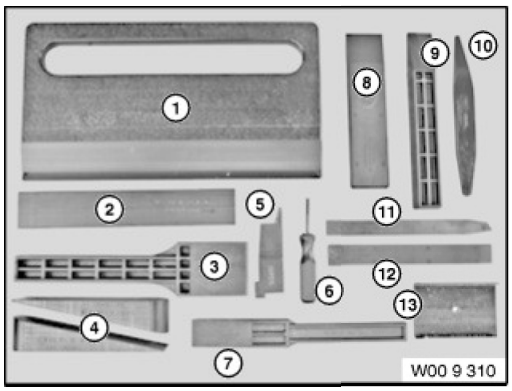
Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

End fitting to seat mechanism — Used in step 22

Flat-head screwM10	Renew screw.	Tightening torque	42 Nm

Overview of Special Tools

0 493 752 (00 9 329) Case



Common — Used in step 36

Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

0 496 569 (00 9 325) Wedge

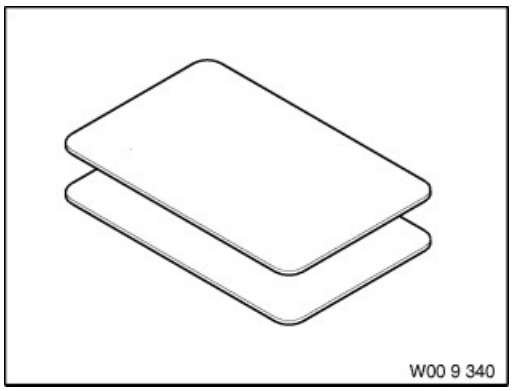


Common — Used in step 9

Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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0 493 687 (00 9 340) Removal aid



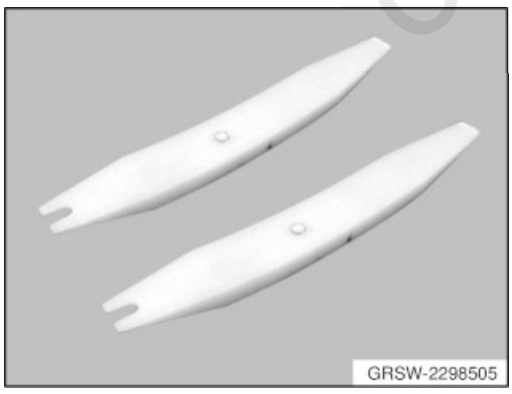
Common Used in step 10

Usage	(Removal aid (2 x)) For levering out switch block on driver's door.
Included in the tool or work	
Storage location	C2
Replaced by	
In connection with	
SI-Number	01 15 99 (483)

Consisting of

Pos	BMW Order number	Replaced by	Designation	In Connection with
1	0 496 289 (00 9 341)		**Removal aid** Only available as a set (2 tools) under 00 9 340 (= 83 30 0 493 687).	

2 298 505 Wedge



Common Used in step 16

Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

Links

General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	6
72 00 ... Safety regulations for handling components with gas generators	6

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51 44 920 Releasing and securing the headlining with the SHD on the left

RISK OF DAMAGE

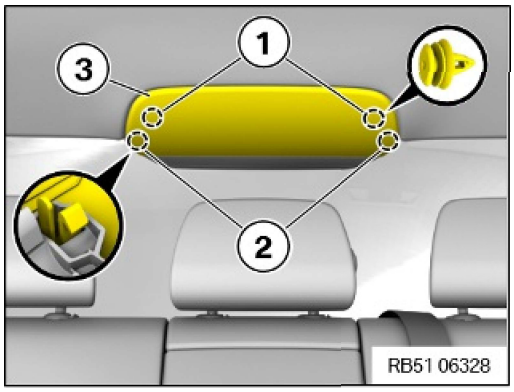
Fold the headlining.

If the headlining is folded, it may have to be replaced.

- Carry out tasks with a second person to assist.
- Support the headlining at the front and back.

PRELIMINARY WORK

1 – Removing the trim of the additional brake light

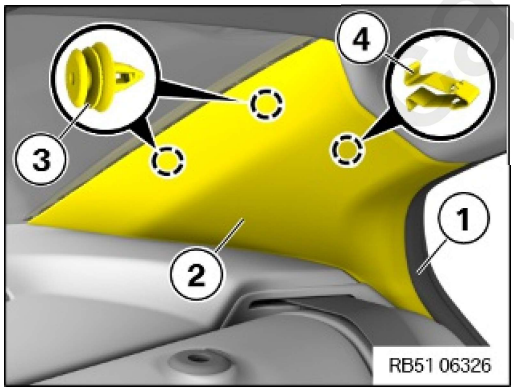


- Loosen the clips (1).
- Release the latch mechanisms (2) and remove the trim of the additional brake light (3).

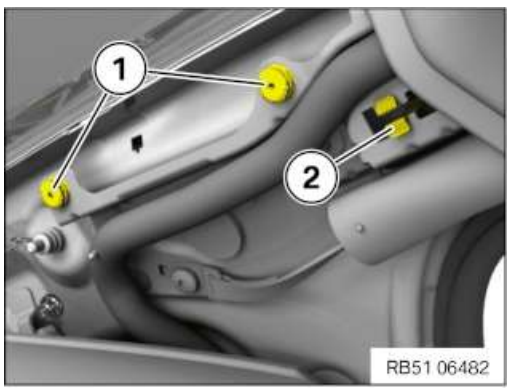
2 – Remove C-pillar trim panel

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



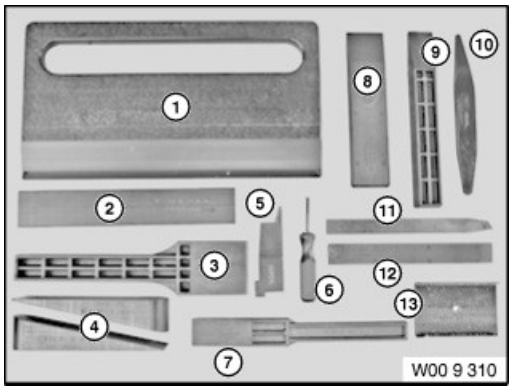
- Unclip clamp (4).
- Unclip clips (3).
- Feed out C-pillar trim panel (2) from the guides to the front.
- Thread out C-pillar trim panel (2) from the lip of edge protection (1).



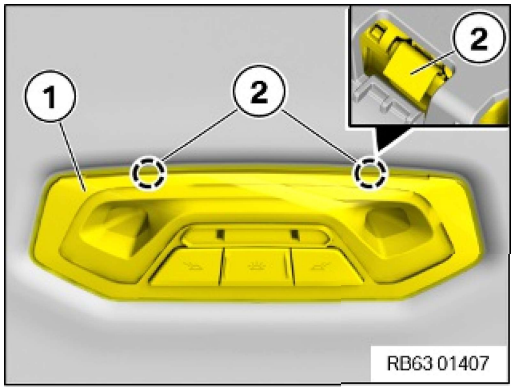
- If required, remove the clips (1) and the clamp (2) and connect it to the trim panel.

3 – Remove interior roof light

3 – Remove interior roof light



- Have the set of special tools 0 493 752 (00 9 329) ready.



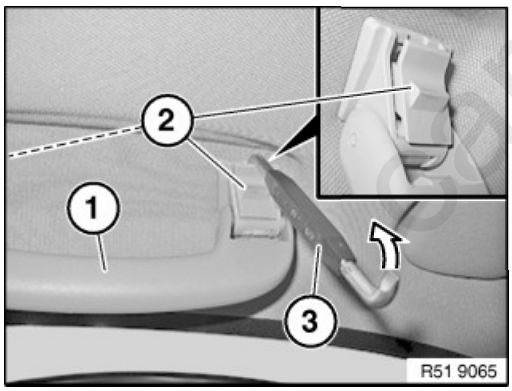
- Lever interior roof light (1) out of clamps (2) using a suitable tool.
- Unlock plug connection and disconnect.

4 – Removing both grab handles on left or right

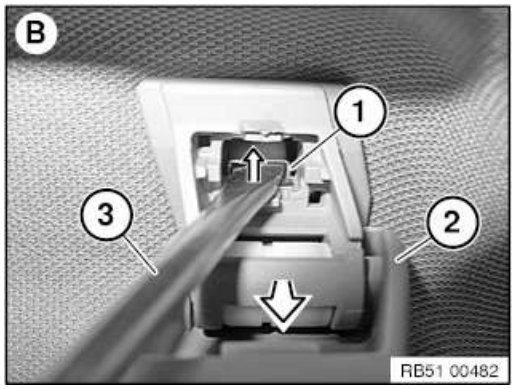
NOTICE

The description is for one component only. The procedure is identical for all further components.

▸ **Removing the grab handle**

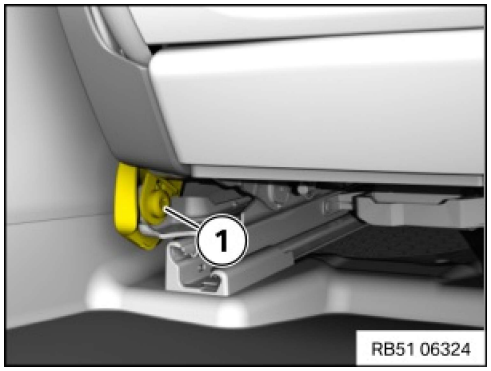


- Expand the grab handle (1) towards the bottom.
- Disengage and remove the locking insert (2) with an angle screwdriver (3) as shown.

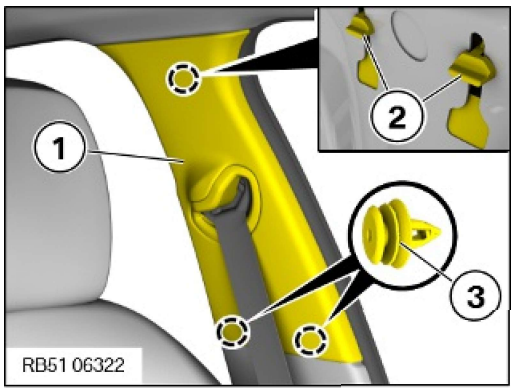


- Pull the grab handle (2) slightly to the inside and hold it.
- Use a suitable screwdriver (3) to detach the upper and lower release tabs (1).
- Guide the grab handle (2) out.
- Repeat the operation on the other side of the grab handle (2).

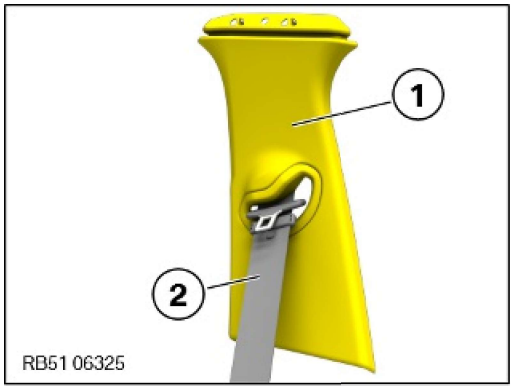
5 – Remove the B-pillar trim panel



- Fully position the front seat to the front and top.
- Loosen screw (1).
- Remove end fitting (2).



- Unclip clips (3).
- Feed B-pillar trim panel (1) out of the front and rear lip of edge protections and the guides (2).



- Feed upper seat belt (2) out of B-pillar trim panel (1).

6 – Remove the A-pillar trim panel

WARNING

Airbag unit.

Danger! Life-threatening injuries!

- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

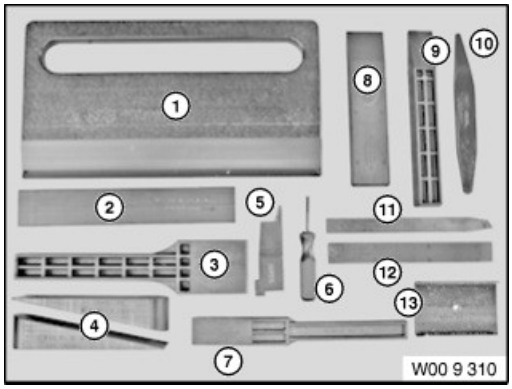
WARNING

Pyrotechnic components.

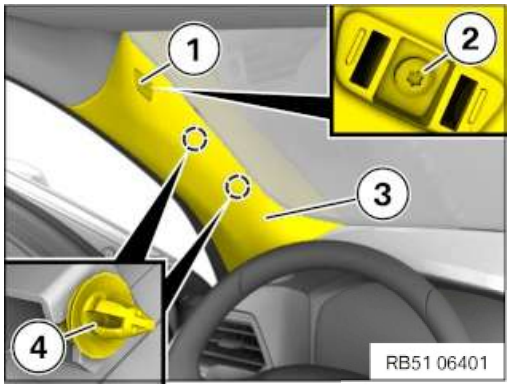
Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.

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- Have the set of special tools 0 493 752 (00 9 329) ready.



- Unclip the cover (1) with suitable tools.
- Loosen screw (2).
- Unclip A-pillar trim panel (3) with clips (4) and guide it out upwards.

7 – Remove sun visor



- Pull out the cover (1).
- Detach the sun visor (2) from the counter support .
- Disengage the sun visor (2) in front to the bottom and thread it out of the headlining at the rear.
- Unlock associated plug connection and disconnect.

8 – Remove the counter support for the sun visor



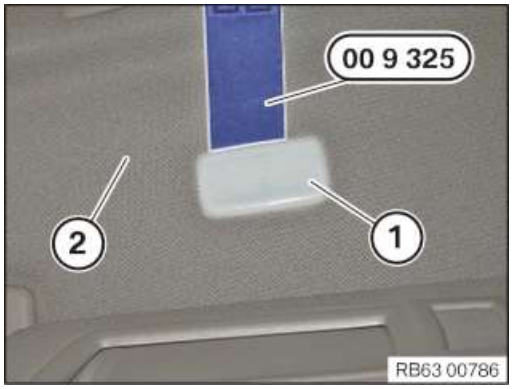
- Pull out the cover (1).
- Push the clamps (2) together and pull the counter support (3) out of the headlining.

9 – Removing front vanity mirror light

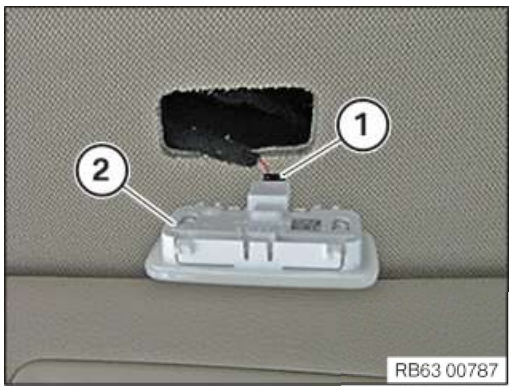
NOTICE

Description is for left component only. Procedure on the right side is identical.

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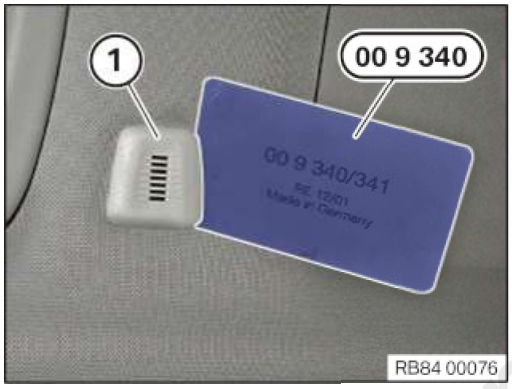


- Lever out the front vanity mirror light (1) using special tool 0 496 569 (00 9 325) from the headlining (2).

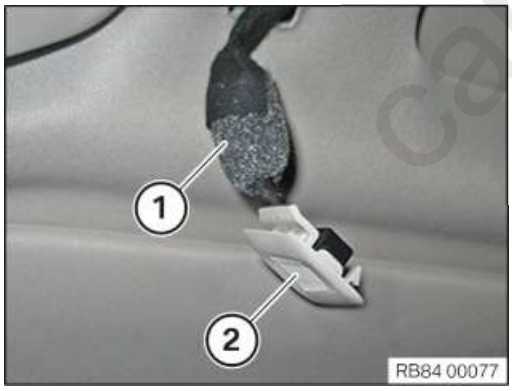


- Unlock and disconnect connector (1).
- Remove the front vanity mirror light (2).

10 – Removing hands-free microphone



- Lever out the hands-free microphone (1) with the special tool 0 493 687 (00 9 340).



- Open insulation (1).
- Disconnect plug connection.
- Remove hands-free microphone (2).

11 – Removing the roof function centre (FZD)



- Unclip the cover (1).

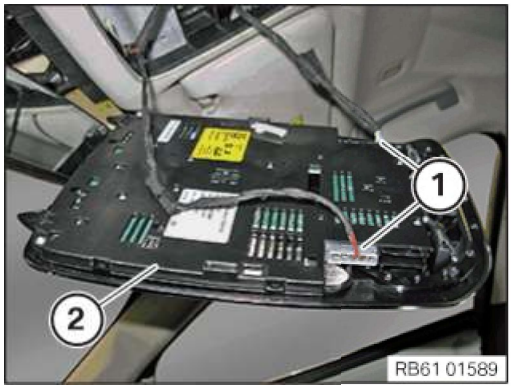
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- Loosen screws (1).



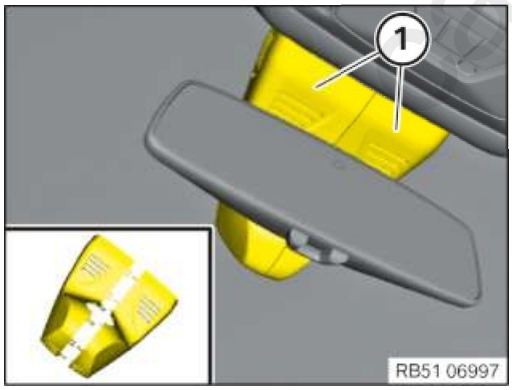
- Unclip the roof function centre (FZD) (1) from the clamps (2).
- Thread the roof function centre (FZD) (1) out of the guides (3).



- Unlock and disconnect plug connections (1).
- Unclip the cable for the roof function centre (FZD) (2) from the cable clip.

12 – Removing the covers for the interior mirror

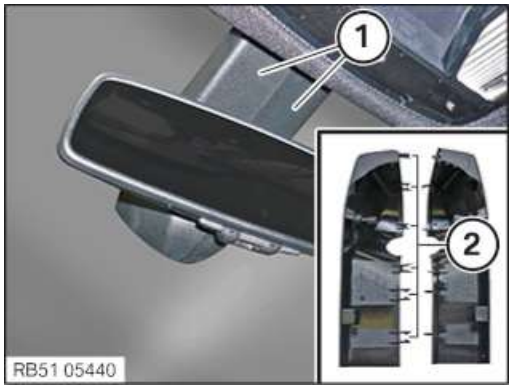
- **Version A:**



- Release the cover (1) at the centre from the latch mechanisms (2) with a suitable plastic wedge and remove.

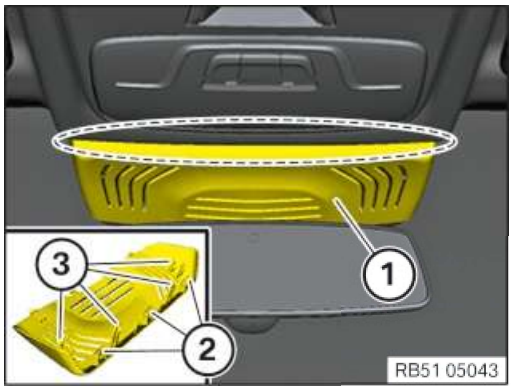
- **Version B:**

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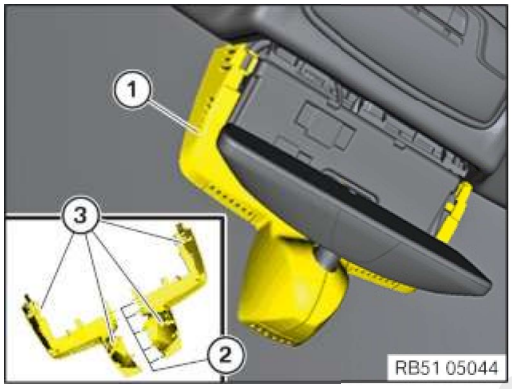


- Release the cover (1) from the latch mechanisms (2) with a suitable plastic wedge and remove sideways.

- **Version C:**



- Detach cover (1) from the clamps (2) in the marked area using a suitable plastic wedge and pull down a certain distance.
- Release cover (1) at the retaining lugs (3) and remove from the guides to the rear.



- Release cover (1) from the latch mechanisms (2) and (3) and remove sideways.
- Remove cover (1) from mirror base (2).

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MAIN WORK

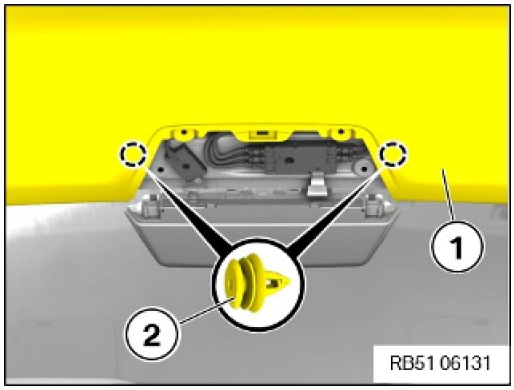
13 – Lower the headlining on the left or right (with slide/tilt sunroof)

RISK OF DAMAGE

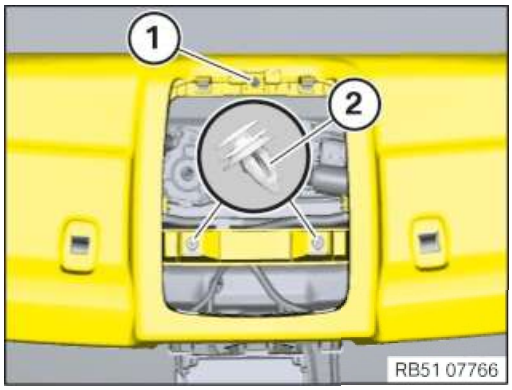
Fold the headlining.

If the headlining is folded, it may have to be replaced.

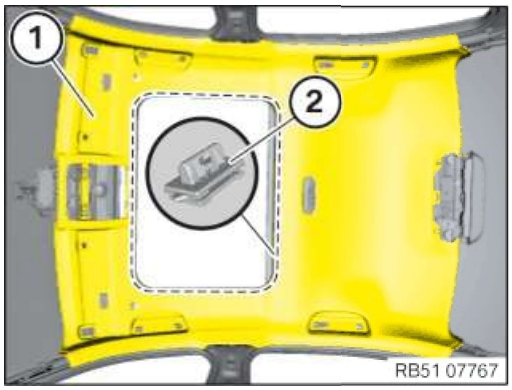
- Carry out tasks with a second person to assist.
- Support the headlining at the front and back.



- Unclip the headlining (1) at the clips (2) downwards.



- Loosen screw (1).
- Unclip the headlining at the clips (2) downwards.



- Unclip headlining (1) from the slide/tilt sunroof unit and clamps (2) in the area of the dotted line.



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Guide out the headlining at the respective edge protection.
- Lower the headlining and place it onto the head restraints as shown.

14 – Install the headlining (with slide/tilt sunroof) (lowered)

Prerequisite

The front seats have been fully adjusted towards the bottom.

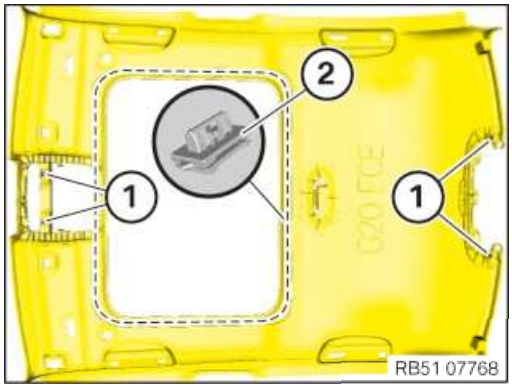
The front seat backrests have been fully adjusted towards the rear.

RISK OF DAMAGE

Fold the headlining.

If the headlining is folded, it may have to be replaced.

- Carry out tasks with a second person to assist.
- Support the headlining at the front and back.



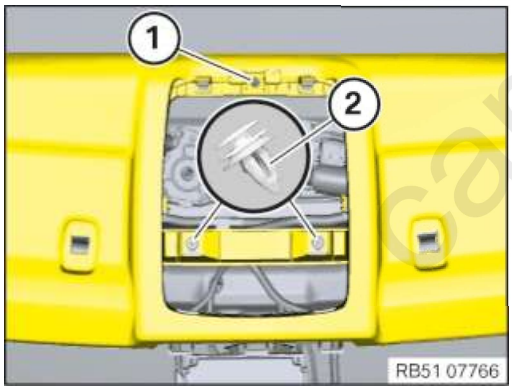
- Check the clips (1) on the headlining (2) for damage.

  Replace broken for missing clips (1).
- Check the clamps (2) along the dotted line.

  Replace broken or missing clamps (2).



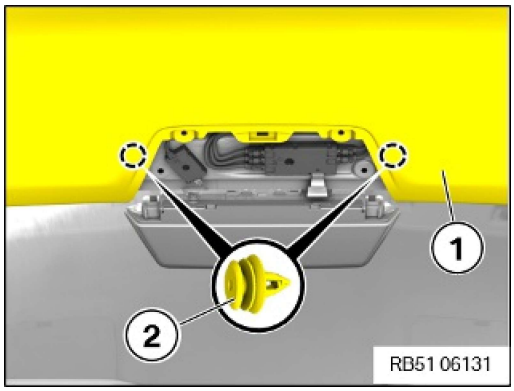
- Feed in the headlining (1) with the help of an auxiliary person on the respective edge protection.
- Clip headlining (1) into the slide/tilt sunroof unit and clamps (2) in the area of the dotted line.



- Clip headlining to the clips (2).
- Tighten down screw (1).

Headlining to frame

Oval-head screw		Tightening torque	1,5 Nm



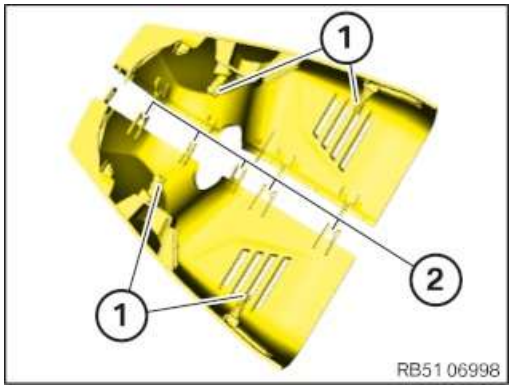
- Clip headlining (1) to the clips (2).

POSTPROCESSES

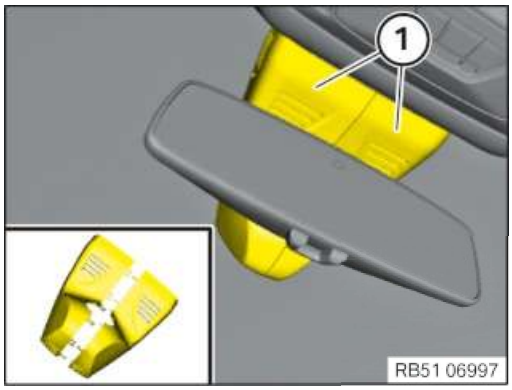
15 – Installing the covers for the interior mirror

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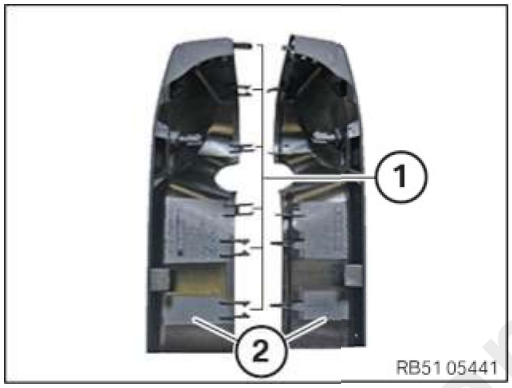
- **Version A:**



- Check latch mechanisms (1) and (2).
- If the latch mechanisms (1) or (2) are faulty, renew the covers.

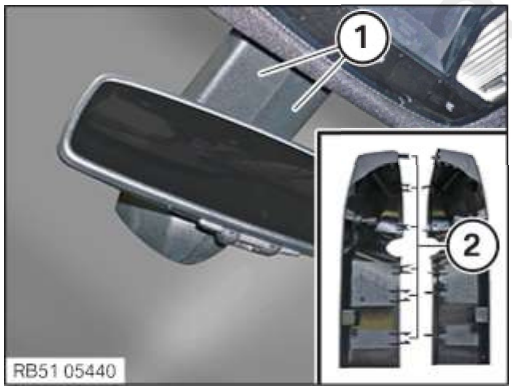


- Feed cover (1) in and lock.
- **Version B:**



- Check the latch mechanisms (1) on the two covers (2) for damage, renew the covers (2) if necessary.

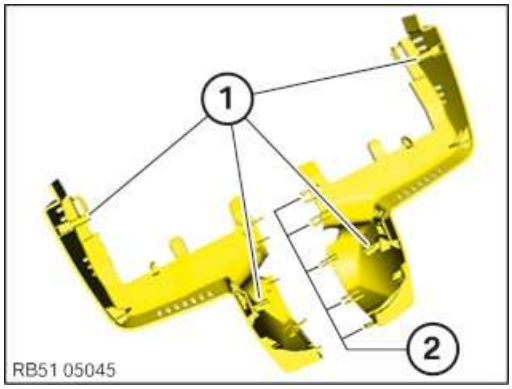
  The covers (2) must not be damaged or missing.



- Position the covers (1) correctly on the mirror and engage with the latch mechanisms (2).
- **Version C:**

Check

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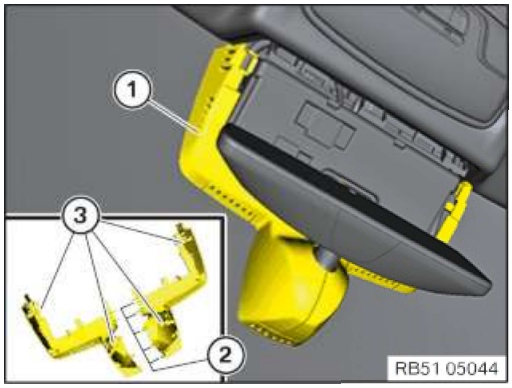
- Check the latch mechanisms (1) and (2) of the covers for damage.

Result

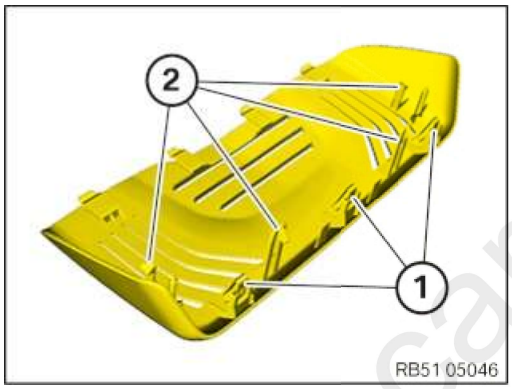
» The latch mechanism is damaged.

Measure

- Renew the cover.



- Guide in cover (1) on left and right and engage using latch mechanisms (2) and (3).



Check

- Check clamps (1) for damage; renew if necessary.
- Check latch mechanisms (2) for damage.

Result

» The latch mechanism is damaged.

Measure

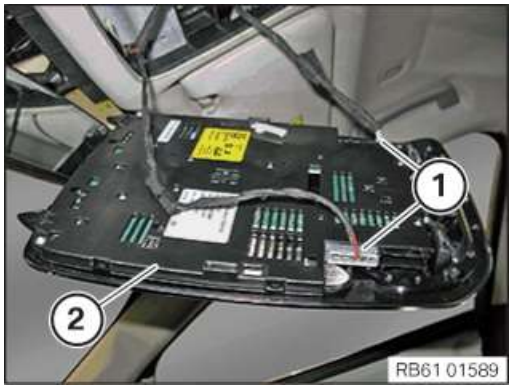
- Renew the cover.



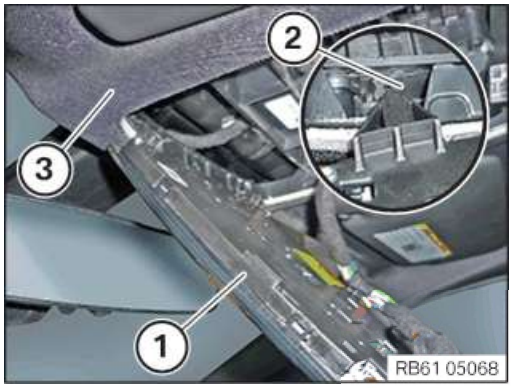
- Guide cover (1) into front guides and engage using retaining lugs (3) and clamps (2).

16 – Installing roof function centre (FZD)

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- Connect connectors (1) and lock.
- Clip in the cable for the roof function centre (FZD) (2) in the cable clip.



- Thread the roof function centre (FZD) (1) as shown at a steep angle into the two guides (2) on the headlining (3).

  Make sure the headlining is not deformed during this operation.



- Clip the roof function centre (FZD) (1) upwards into the clamps (2).



- Pass through the FZD frame and headlining with the special tool 2 298 505 and adjust the headlining correctly.



- Tighten the screws (1).

Roof function centre

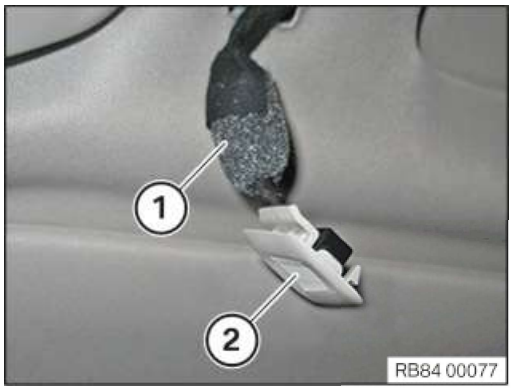
	Tightening torque	1,2 Nm

rdiagn.com

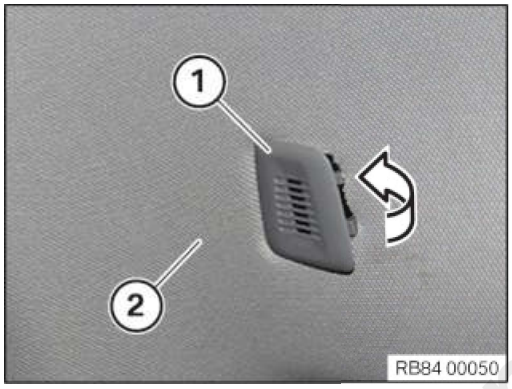


- Clip in the cover (1).

17 – Installing the hands-free microphone



- Connect the connector to the hands-free microphone (2).
- Close the insulation (1).

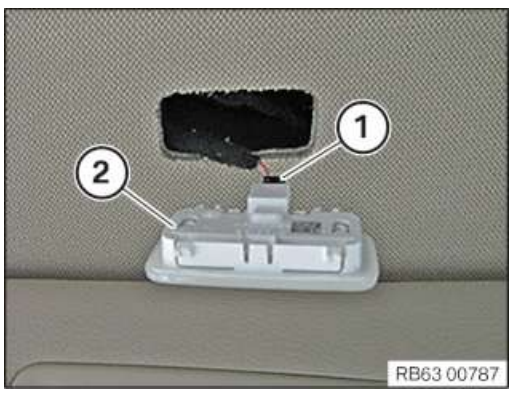


- Position hands-free microphone (1) in headlining (2) in the direction of the arrow.

18 – Installing front vanity mirror light

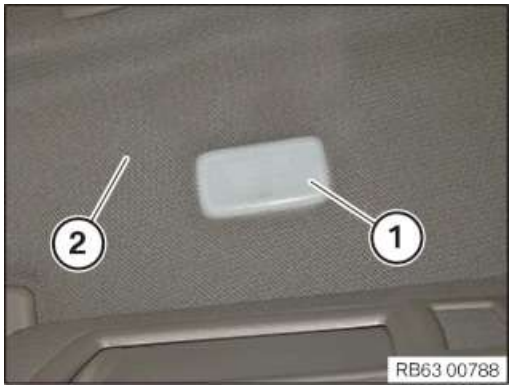
NOTICE

Description is for left component only. Procedure on the right side is identical.



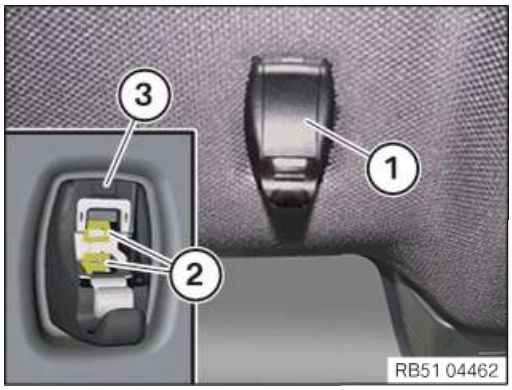
- Connect the connector (1) to the front vanity mirror light (2).

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- Position the front vanity mirror light (1) in the headlining (2).

19 – Install the counter support for the sun visor



- Insert the counter support (3) into the headlining.
- Make sure the clamps (2) are engaged correctly.
- Use cover (1).

20 – Install the sun visor



- Connect the sun visor (2) with the corresponding connector.
- Guide the sun visor (2) into the headlining.
- Use cover (1).
- Attach the sun visor (2) on the counter support.

21 – Installing the A-pillar trim panel

WARNING

Airbag unit.

Danger! Life-threatening injuries!

- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

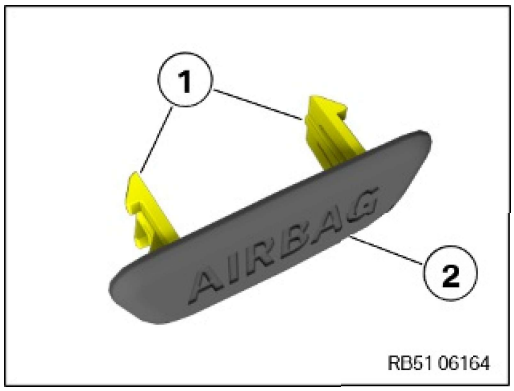
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WARNING

Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



Check

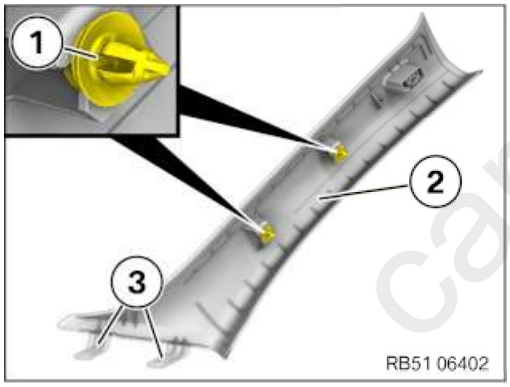
- Check retaining lugs (1) of cover (2) for damage.

Result

» Retaining lug is damaged.

Measure

- Renew the cover.



Check

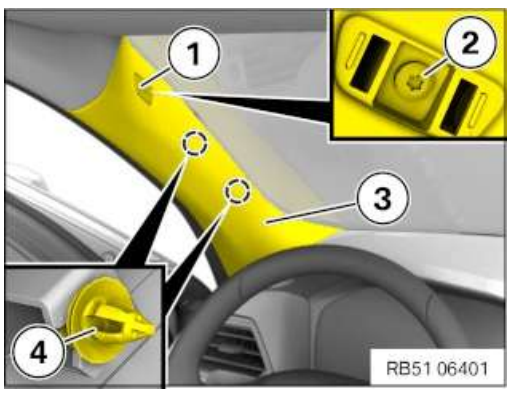
- Check the clips (1) for damage and renew if necessary.
- Check the guides (3) for damage.

Result

» Guide is damaged.

Measure

- Renew the A-pillar trim panel.



- Guide in A-pillar trim panel (3) downwards and clip it in with clips (4).
- Tighten down screw (2).

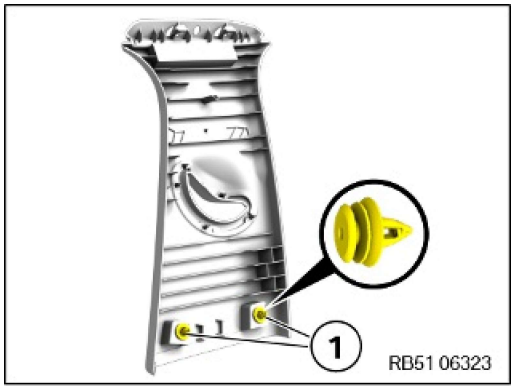
A-pillar trim panel to body

Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

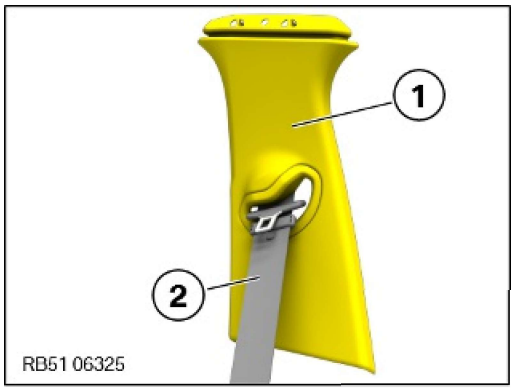
- Clip in the cover (1).

22 – Install the B-pillar trim panel

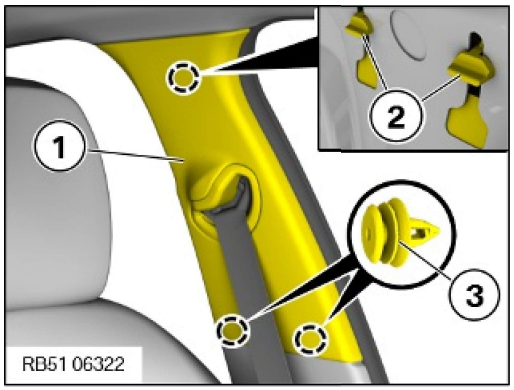
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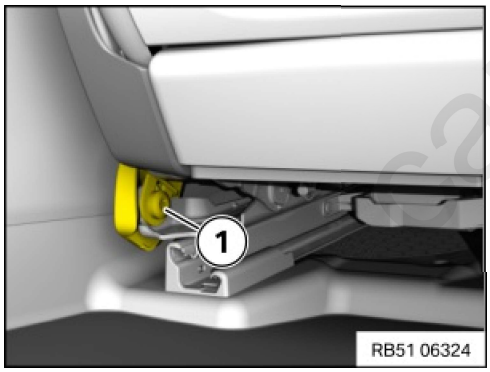
- Check the clips (1) for damage and renew if necessary.



- Guide upper seat belt (2) in B-pillar trim panel (1).



- Insert B-pillar trim panel (1) into guides (2) and under the front and rear lips of edge protection.
- Clip in the B-pillar trim panel (1) with the clips (3).



- Fully position the front seat to the front and top.
- Insert the end fitting (2).
- Renew the screw (1).

  Parts: Screw
- Tighten down screw (1).

End fitting to seat mechanism

Flat-head screwM10	Renew screw.	Tightening torque	42 Nm

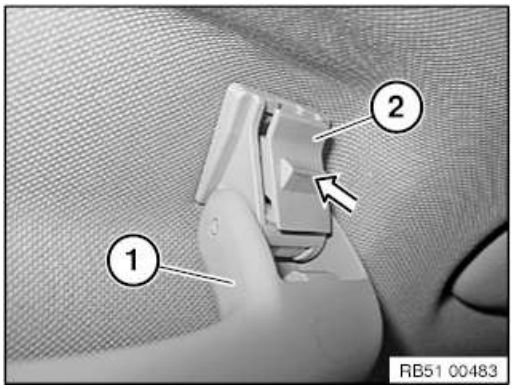
23 – Installing both grab handles on left or right

NOTICE

The description is for one component only. The procedure is identical for all further components.

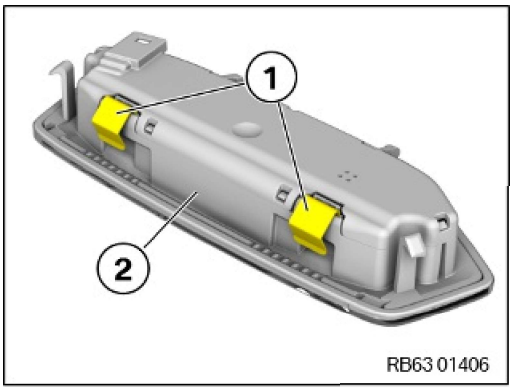
▸ **Installing the grab handle**

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- Insert the grab handle (1) into body.
- Correctly clamp in the grab handle (1), as otherwise the locking inserts (2) on the grab handle (1) cannot correctly engage.
- Engage the locking inserts (2) on both sides of the grab handle (1).

24 – Install interior roof light



Check

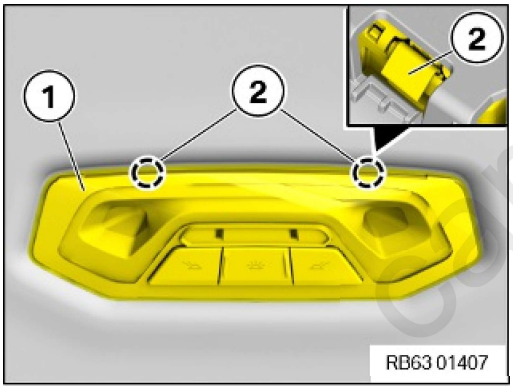
- Check the clamps (1) for damage.

Result

» Clamps (1) are damaged.

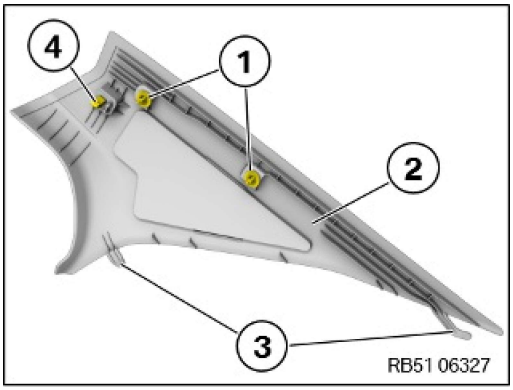
Measure

- Renew the interior roof light (2).



- Connect connectors and lock.
- Clip in the interior roof light (1) with clamps (2).

25 – Installing C-pillar trim panel



Check

- Check clips (1) and clamp (4) for damage, renew if necessary.
- Check the guides (3) for damage.

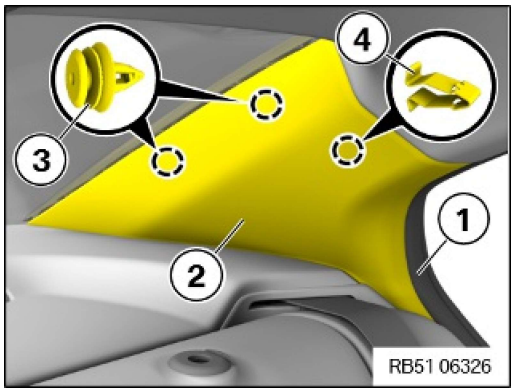
Result

» Guide is damaged.

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Measure

- Renew the C-pillar trim panel .

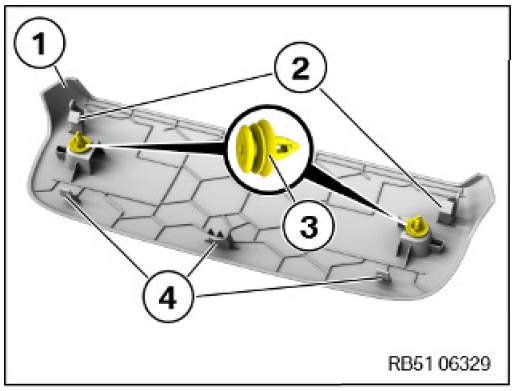


NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Feed C-pillar trim panel (2) into guides towards the rear.
- Clip in clips (3).
- Clip in clamp (4).
- Guide in C-pillar trim panel (2) under the lip of edge protection (1).

26 – Installing trim for additional brake light



Check

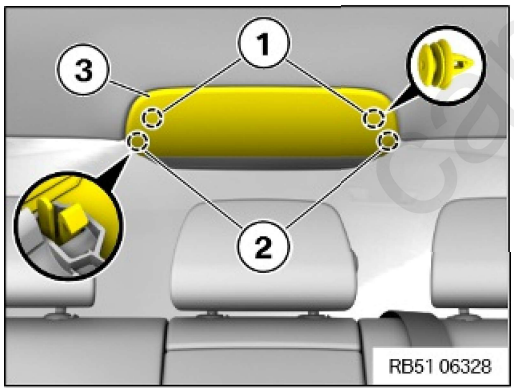
- Check the clips (3) for damage and renew if necessary.
- Check latch mechanisms (2) and guides (4) for damage.

Result

» The latch mechanism or the guide is damaged.

Measure

- Renew the trim for the additional brake light.



- Position trim for additional brake light (1) from the bottom and clip it in with latch mechanisms (2).
- Clip in clips (1).

Additional Information

Overview of Tightening Torques

Headlining to frame — Used in step 14

Oval-head screw		Tightening torque	1,5 Nm

Roof function centre — Used in step 16

		Tightening torque	1,2 Nm

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A-pillar trim panel to body Used in step 21

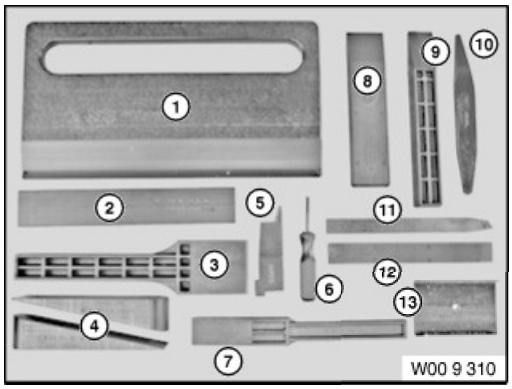
Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

End fitting to seat mechanism Used in step 22

Flat-head screwM10	Renew screw.	Tightening torque	42 Nm

Overview of Special Tools

0 493 752 (00 9 329) Case



Common Used in step 36

Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

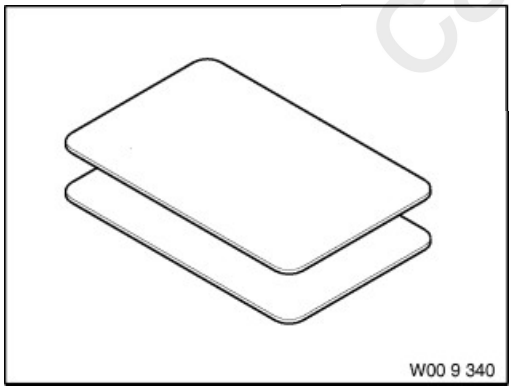
0 496 569 (00 9 325) Wedge



Common Used in step 9

Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

0 493 687 (00 9 340) Removal aid



Common Used in step 10

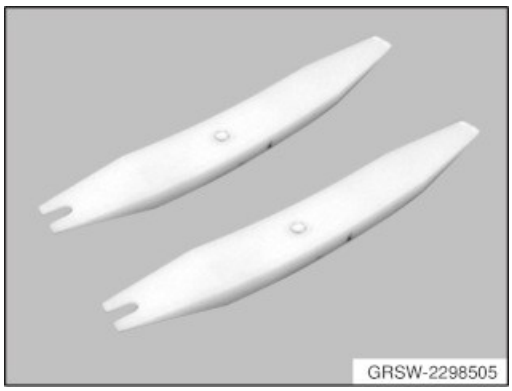
Usage	(Removal aid (2 x)) For levering out switch block on driver's door.
Included in the tool or work	
Storage location	C2
Replaced by	
In connection with	
SI-Number	01 15 99 (483)

Consisting of

Pos	BMW Order number	Replaced by	Designation	In Connection with
1	0 496 289 (00 9 341)		**Removal aid** Only available as a set (2 tools) under 00 9 340 (= 83 30 0 493 687).	

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2 298 505 Wedge



Common	Used in step 16
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

Links

General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	6
72 00 ... Safety regulations for handling components with gas generators	6

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51 44 921 Releasing and securing the headlining with the SHD on the right

RISK OF DAMAGE

Fold the headlining.

If the headlining is folded, it may have to be replaced.

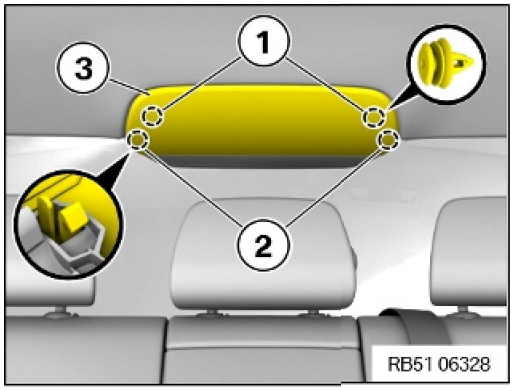
- Carry out tasks with a second person to assist.
- Support the headlining at the front and back.

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

1 – Removing the trim of the additional brake light

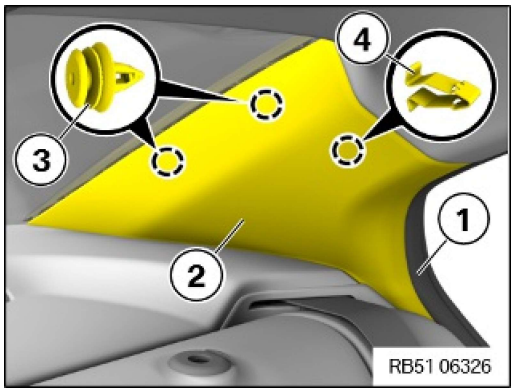


- Loosen the clips (1).
- Release the latch mechanisms (2) and remove the trim of the additional brake light (3).

2 – Remove C-pillar trim panel

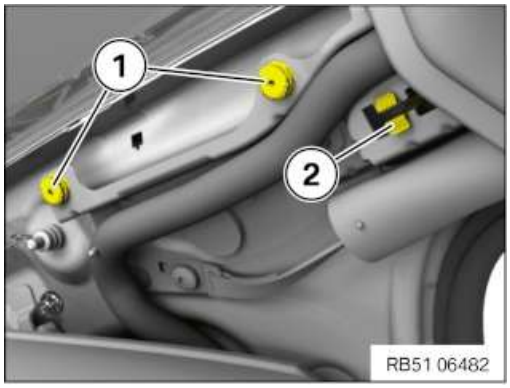
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



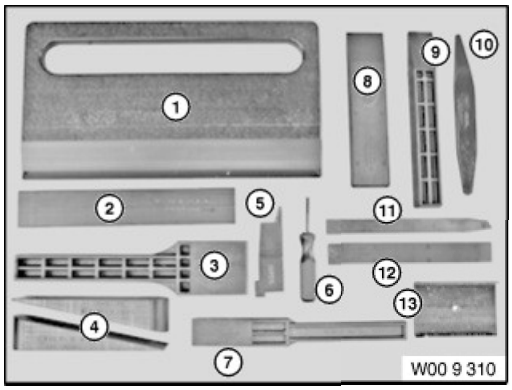
- Unclip clamp (4).
- Unclip clips (3).
- Feed out C-pillar trim panel (2) from the guides to the front.
- Thread out C-pillar trim panel (2) from the lip of edge protection (1).

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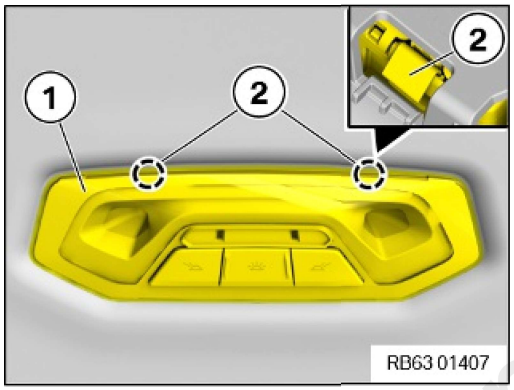


- If required, remove the clips (1) and the clamp (2) and connect it to the trim panel.

3 – Remove interior roof light



- Have the set of special tools 0 493 752 (00 9 329) ready.



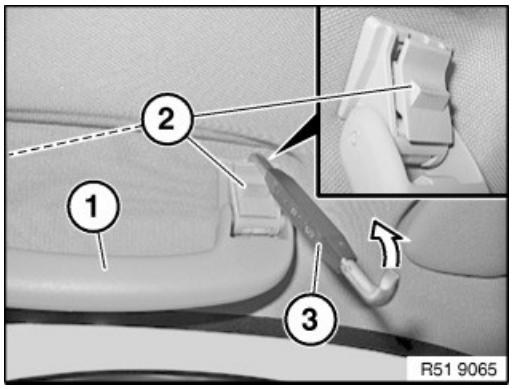
- Lever interior roof light (1) out of clamps (2) using a suitable tool.
- Unlock plug connection and disconnect.

4 – Removing both grab handles on left or right

NOTICE

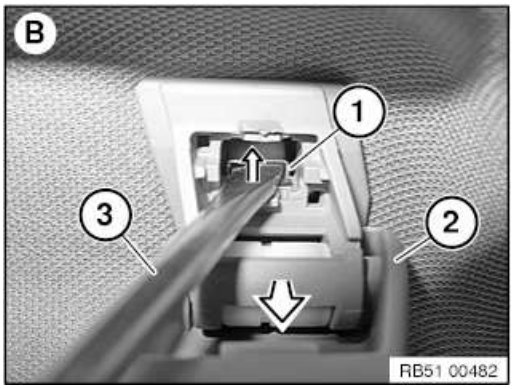
The description is for one component only. The procedure is identical for all further components.

▸ **Removing the grab handle**



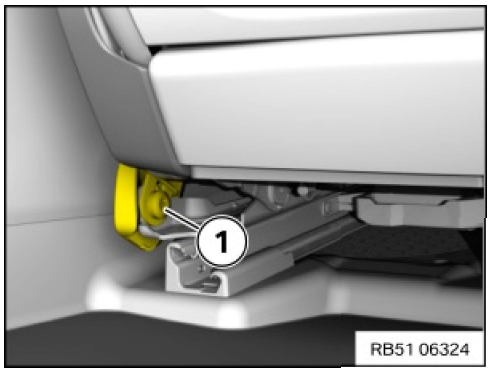
- Expand the grab handle (1) towards the bottom.
- Disengage and remove the locking insert (2) with an angle screwdriver (3) as shown.

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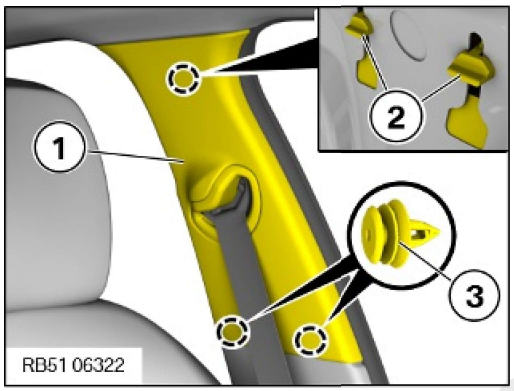


- Pull the grab handle (2) slightly to the inside and hold it.
- Use a suitable screwdriver (3) to detach the upper and lower release tabs (1).
- Guide the grab handle (2) out.
- Repeat the operation on the other side of the grab handle (2).

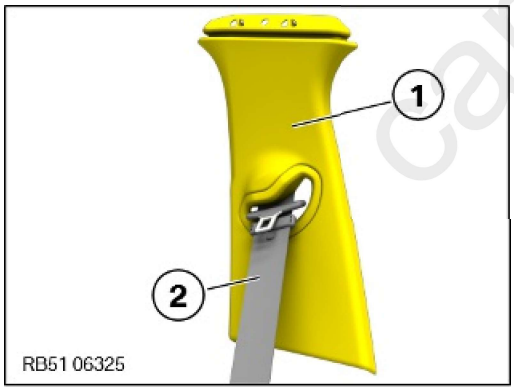
5 – Remove the B-pillar trim panel



- Fully position the front seat to the front and top.
- Loosen screw (1).
- Remove end fitting (2).



- Unclip clips (3).
- Feed B-pillar trim panel (1) out of the front and rear lip of edge protections and the guides (2).



- Feed upper seat belt (2) out of B-pillar trim panel (1).

6 – Remove the A-pillar trim panel

WARNING

Airbag unit.

Danger! Life-threatening injuries!

- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

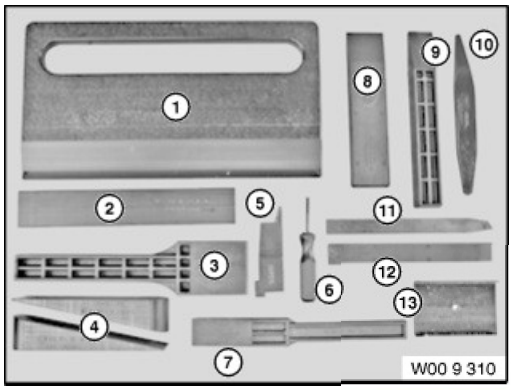
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WARNING

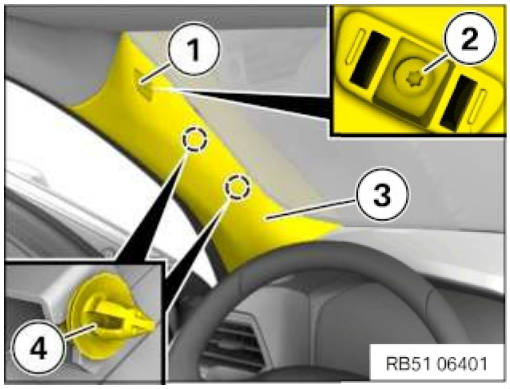
Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



- Have the set of special tools 0 493 752 (00 9 329) ready.



- Unclip the cover (1) with suitable tools.
- Loosen screw (2).
- Unclip A-pillar trim panel (3) with clips (4) and guide it out upwards.

7 – Remove sun visor



- Pull out the cover (1).
- Detach the sun visor (2) from the counter support .
- Disengage the sun visor (2) in front to the bottom and thread it out of the headlining at the rear.
- Unlock associated plug connection and disconnect.

8 – Remove the counter support for the sun visor

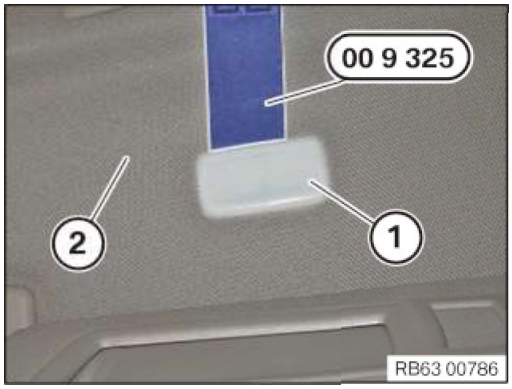


- Pull out the cover (1).
- Push the clamps (2) together and pull the counter support (3) out of the headlining.

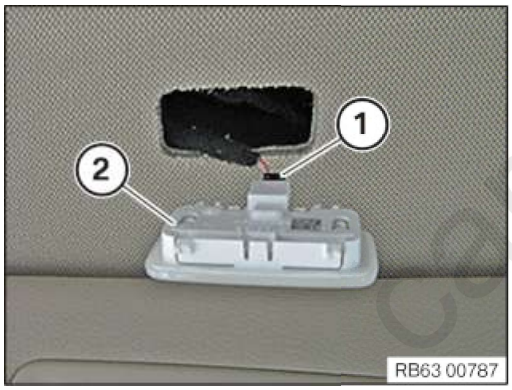
9 – Removing front vanity mirror light

NOTICE

Description is for left component only. Procedure on the right side is identical.

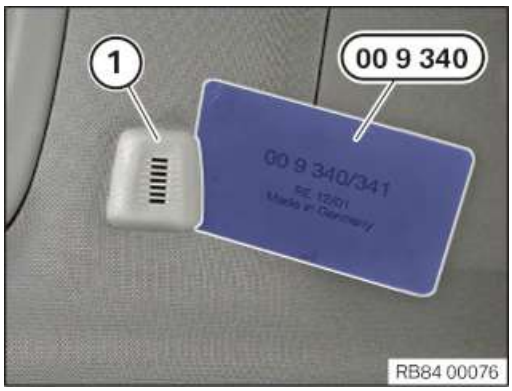


- Lever out the front vanity mirror light (1) using special tool 0 496 569 (00 9 325) from the headlining (2).



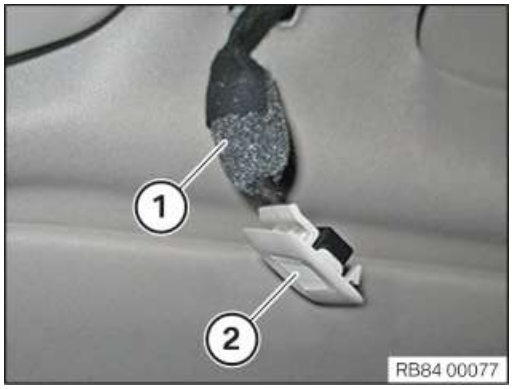
- Unlock and disconnect connector (1).
- Remove the front vanity mirror light (2).

10 – Removing hands-free microphone



- Lever out the hands-free microphone (1) with the special tool 0 493 687 (00 9 340).

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- Open insulation (1).
- Disconnect plug connection.
- Remove hands-free microphone (2).

11 – Removing the roof function centre (FZD)



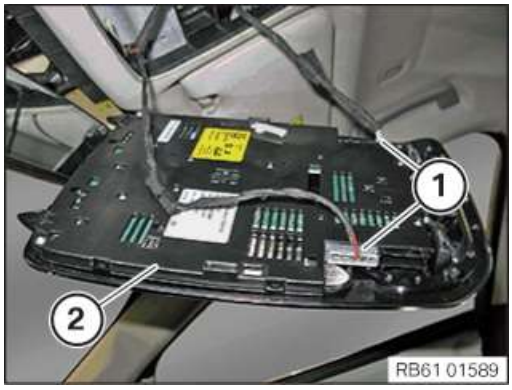
- Unclip the cover (1).



- Loosen screws (1).



- Unclip the roof function centre (FZD) (1) from the clamps (2).
- Thread the roof function centre (FZD) (1) out of the guides (3).

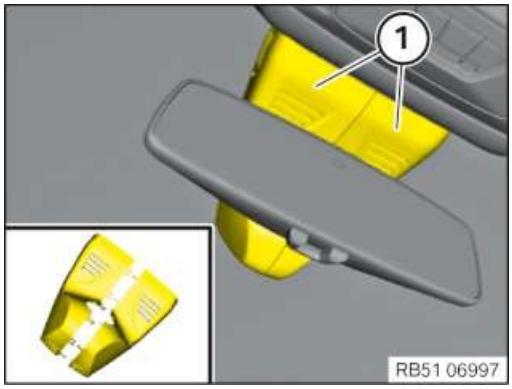


- Unlock and disconnect plug connections (1).
- Unclip the cable for the roof function centre (FZD) (2) from the cable clip.

12 – Removing the covers for the interior mirror

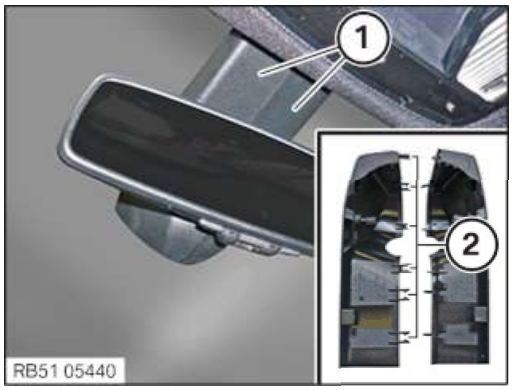
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- **Version A:**



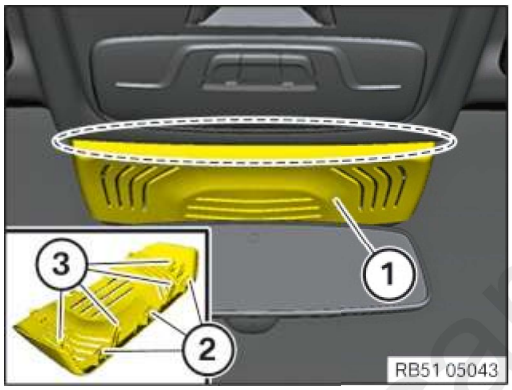
- Release the cover (1) at the centre from the latch mechanisms (2) with a suitable plastic wedge and remove.

- **Version B:**

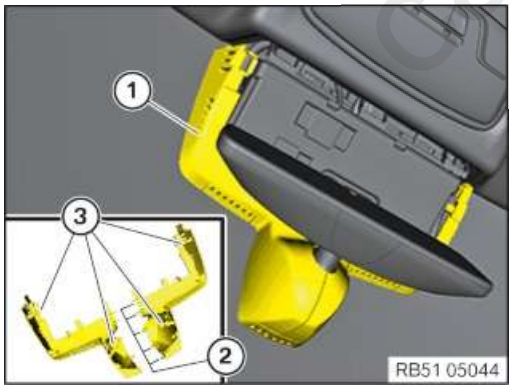


- Release the cover (1) from the latch mechanisms (2) with a suitable plastic wedge and remove sideways.

- **Version C:**



- Detach cover (1) from the clamps (2) in the marked area using a suitable plastic wedge and pull down a certain distance.
- Release cover (1) at the retaining lugs (3) and remove from the guides to the rear.



- Release cover (1) from the latch mechanisms (2) and (3) and remove sideways.
- Remove cover (1) from mirror base (2).

MAIN WORK

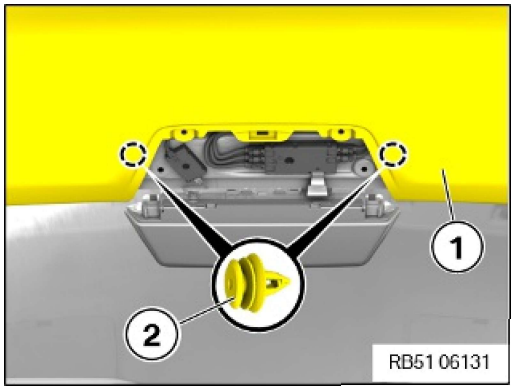
13 – Lower the headlining on the left or right (with slide/tilt sunroof)

RISK OF DAMAGE

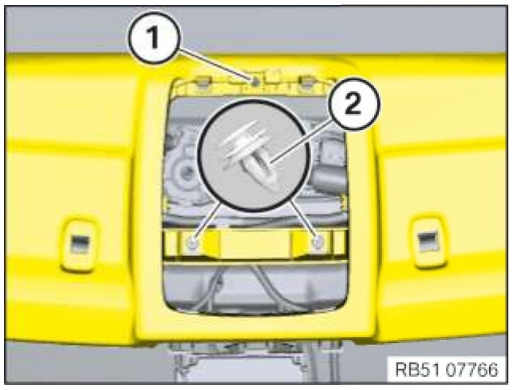
Fold the headlining.

If the headlining is folded, it may have to be replaced.

- Carry out tasks with a second person to assist.
- Support the headlining at the front and back.



- Unclip the headlining (1) at the clips (2) downwards.



- Loosen screw (1).
- Unclip the headlining at the clips (2) downwards.



- Unclip headlining (1) from the slide/tilt sunroof unit and clamps (2) in the area of the dotted line.



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Guide out the headlining at the respective edge protection.
- Lower the headlining and place it onto the head restraints as shown.

14 – Install the headlining (with slide/tilt sunroof) (lowered)

Prerequisite

The front seats have been fully adjusted towards the bottom.

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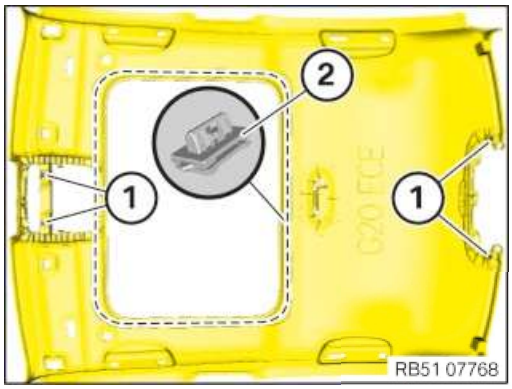
The front seat backrests have been fully adjusted towards the rear.

RISK OF DAMAGE

Fold the headlining.

If the headlining is folded, it may have to be replaced.

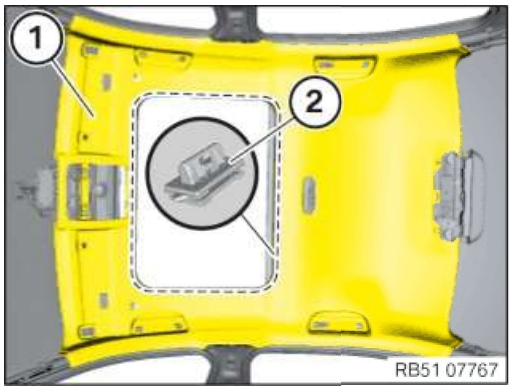
- Carry out tasks with a second person to assist.
- Support the headlining at the front and back.



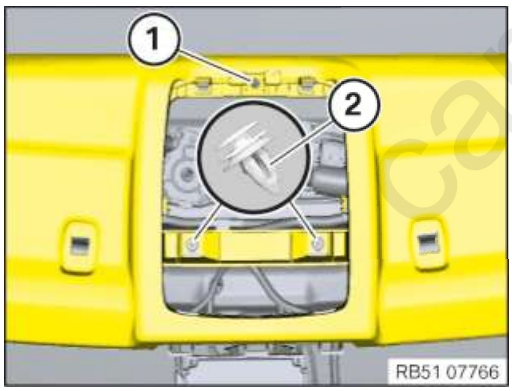
- Check the clips (1) on the headlining (2) for damage.

  Replace broken for missing clips (1).
- Check the clamps (2) along the dotted line.

  Replace broken or missing clamps (2).



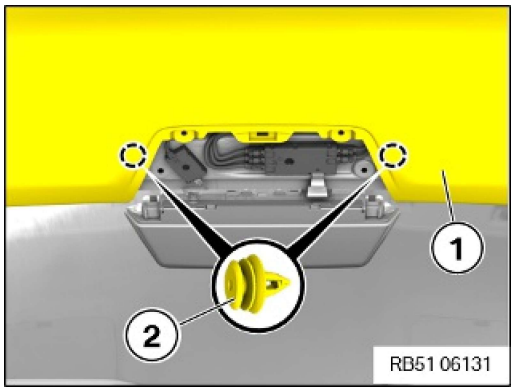
- Feed in the headlining (1) with the help of an auxiliary person on the respective edge protection.
- Clip headlining (1) into the slide/tilt sunroof unit and clamps (2) in the area of the dotted line.



- Clip headlining to the clips (2).
- Tighten down screw (1).

Headlining to frame

Oval-head screw		Tightening torque	1,5 Nm



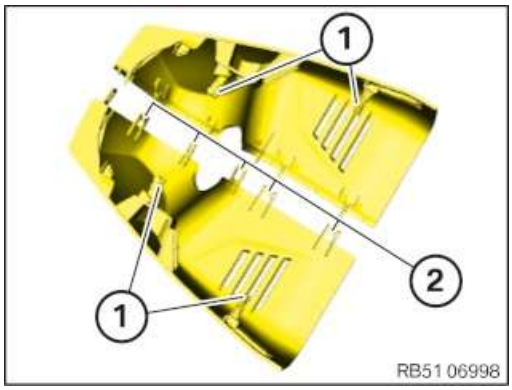
- Clip headlining (1) to the clips (2).

POSTPROCESSES

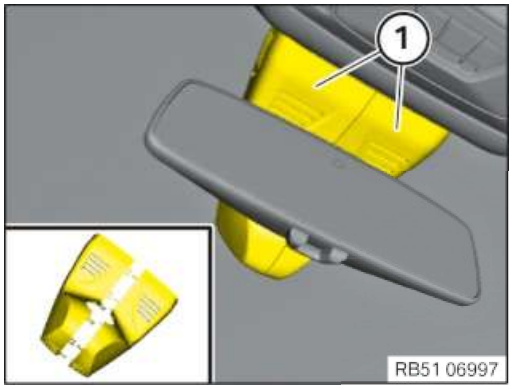
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15 – Installing the covers for the interior mirror

- **Version A:**

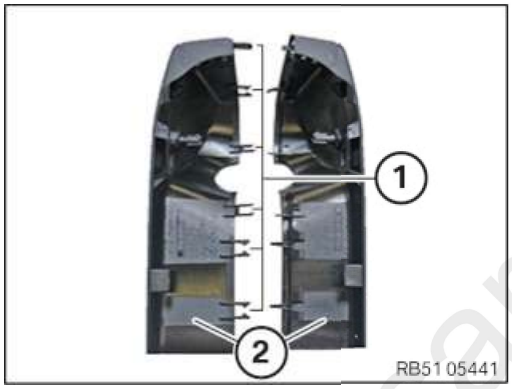


- Check latch mechanisms (1) and (2).
- If the latch mechanisms (1) or (2) are faulty, renew the covers.



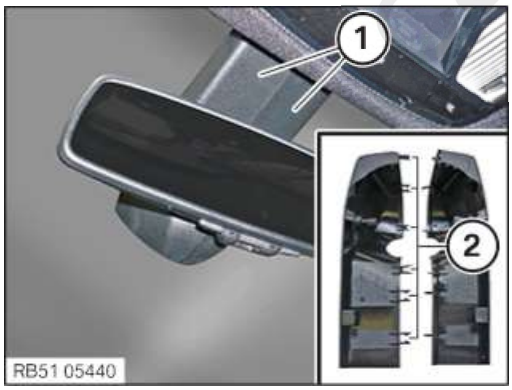
- Feed cover (1) in and lock.

- **Version B:**



- Check the latch mechanisms (1) on the two covers (2) for damage, renew the covers (2) if necessary.

  The covers (2) must not be damaged or missing.

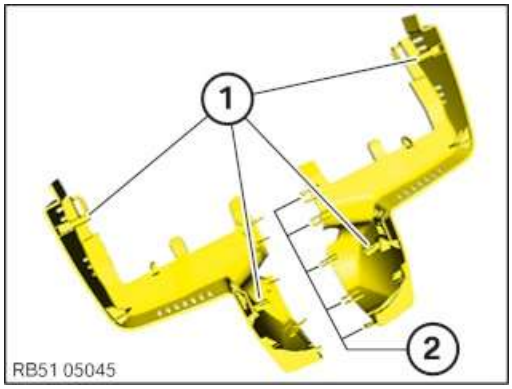


- Position the covers (1) correctly on the mirror and engage with the latch mechanisms (2).

- **Version C:**

Check

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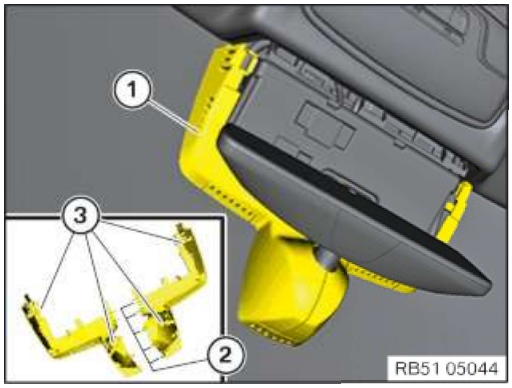
- Check the latch mechanisms (1) and (2) of the covers for damage.

Result

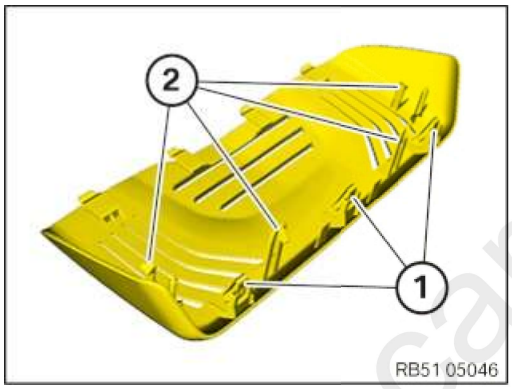
» The latch mechanism is damaged.

Measure

- Renew the cover.



- Guide in cover (1) on left and right and engage using latch mechanisms (2) and (3).



Check

- Check clamps (1) for damage; renew if necessary.
- Check latch mechanisms (2) for damage.

Result

» The latch mechanism is damaged.

Measure

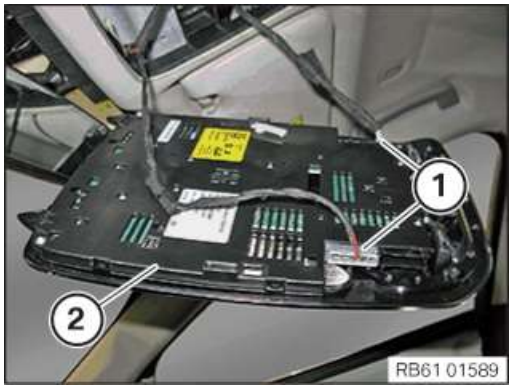
- Renew the cover.



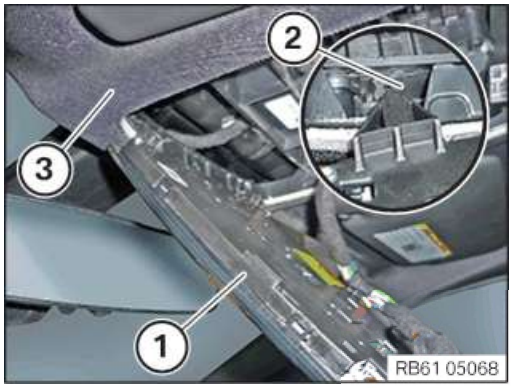
- Guide cover (1) into front guides and engage using retaining lugs (3) and clamps (2).

16 – Installing roof function centre (FZD)

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- Connect connectors (1) and lock.
- Clip in the cable for the roof function centre (FZD) (2) in the cable clip.



- Thread the roof function centre (FZD) (1) as shown at a steep angle into the two guides (2) on the headlining (3).

  Make sure the headlining is not deformed during this operation.



- Clip the roof function centre (FZD) (1) upwards into the clamps (2).



- Pass through the FZD frame and headlining with the special tool 2 298 505 and adjust the headlining correctly.



- Tighten the screws (1).

Roof function centre

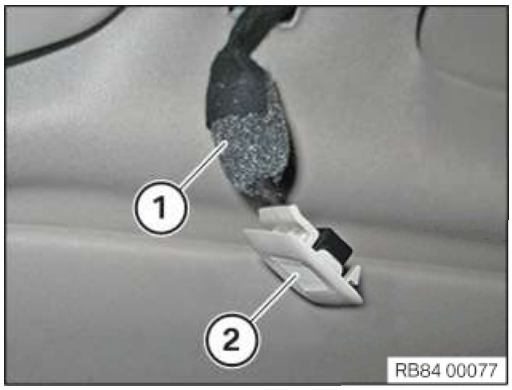
	Tightening torque	1,2 Nm

rdiagn.com

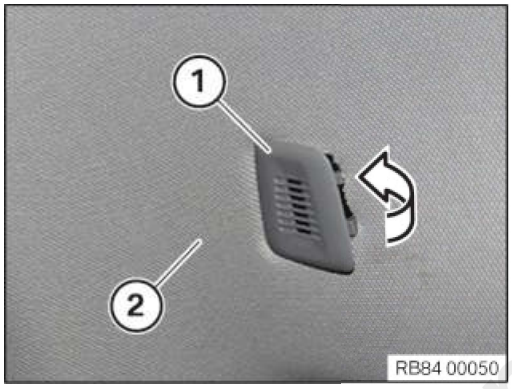


- Clip in the cover (1).

17 – Installing the hands-free microphone



- Connect the connector to the hands-free microphone (2).
- Close the insulation (1).

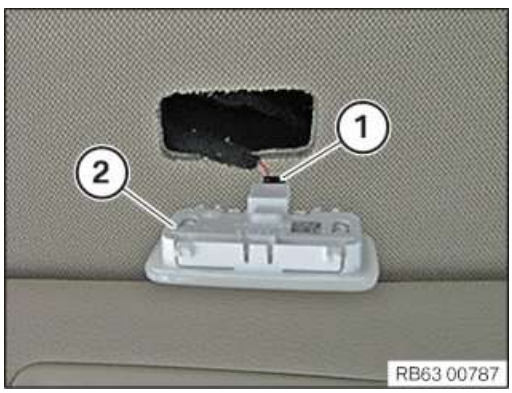


- Position hands-free microphone (1) in headlining (2) in the direction of the arrow.

18 – Installing front vanity mirror light

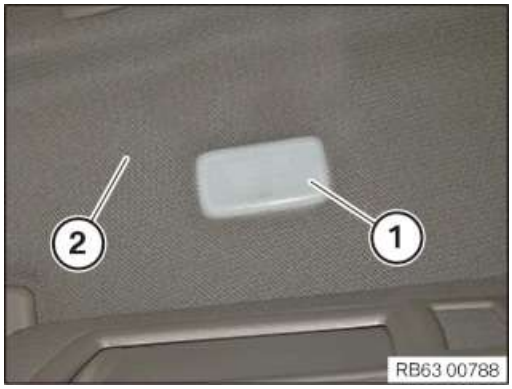
NOTICE

Description is for left component only. Procedure on the right side is identical.



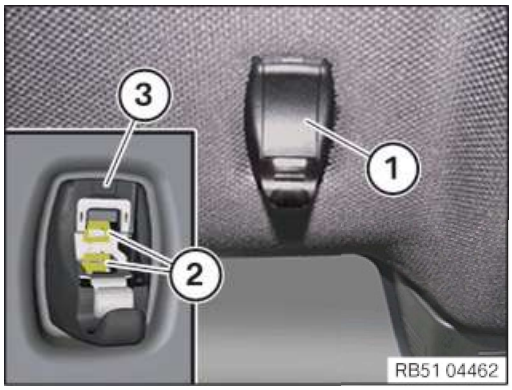
- Connect the connector (1) to the front vanity mirror light (2).

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- Position the front vanity mirror light (1) in the headlining (2).

19 – Install the counter support for the sun visor



- Insert the counter support (3) into the headlining.
- Make sure the clamps (2) are engaged correctly.
- Use cover (1).

20 – Install the sun visor



- Connect the sun visor (2) with the corresponding connector.
- Guide the sun visor (2) into the headlining.
- Use cover (1).
- Attach the sun visor (2) on the counter support.

21 – Installing the A-pillar trim panel

WARNING

Airbag unit.

Danger! Life-threatening injuries!

- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

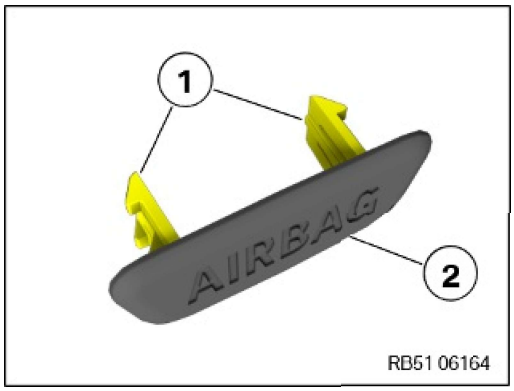
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WARNING

Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



Check

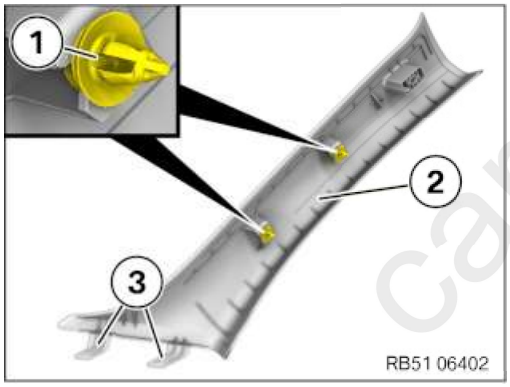
- Check retaining lugs (1) of cover (2) for damage.

Result

» Retaining lug is damaged.

Measure

- Renew the cover.



Check

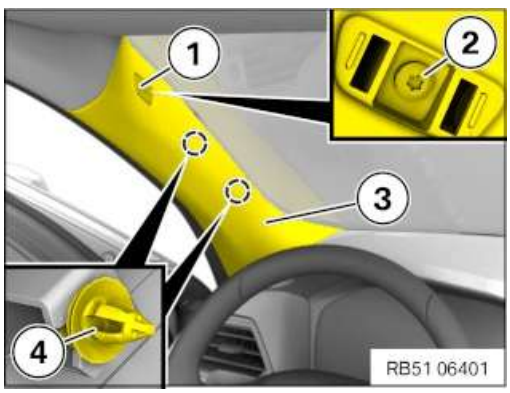
- Check the clips (1) for damage and renew if necessary.
- Check the guides (3) for damage.

Result

» Guide is damaged.

Measure

- Renew the A-pillar trim panel.



- Guide in A-pillar trim panel (3) downwards and clip it in with clips (4).
- Tighten down screw (2).

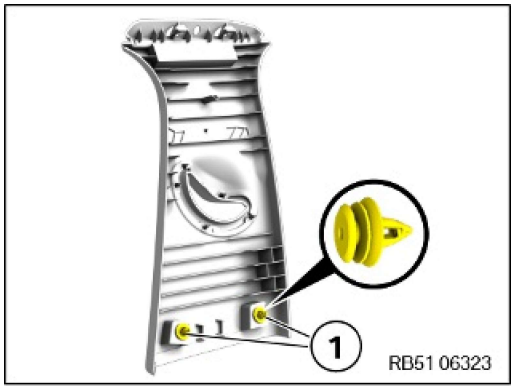
A-pillar trim panel to body

Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

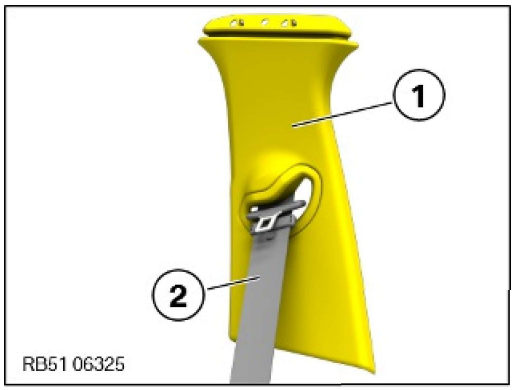
- Clip in the cover (1).

22 – Install the B-pillar trim panel

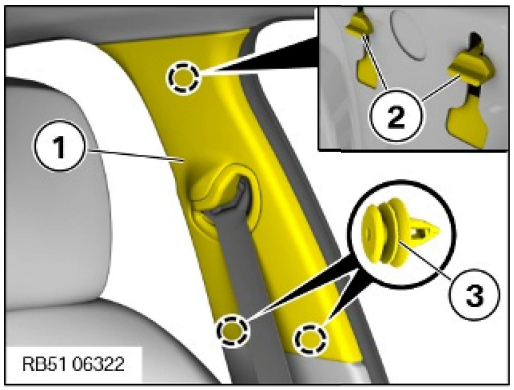
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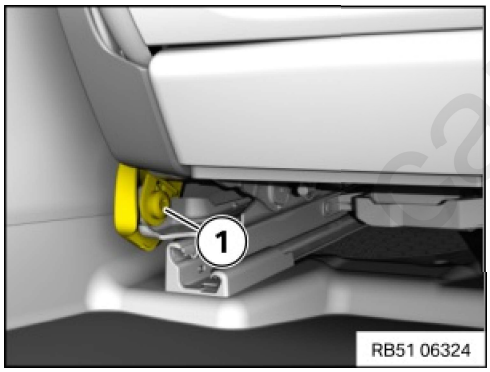
- Check the clips (1) for damage and renew if necessary.



- Guide upper seat belt (2) in B-pillar trim panel (1).



- Insert B-pillar trim panel (1) into guides (2) and under the front and rear lips of edge protection.
- Clip in the B-pillar trim panel (1) with the clips (3).



- Fully position the front seat to the front and top.
- Insert the end fitting (2).
- Renew the screw (1).

  Parts: Screw
- Tighten down screw (1).

End fitting to seat mechanism

Flat-head screwM10	Renew screw.	Tightening torque	42 Nm

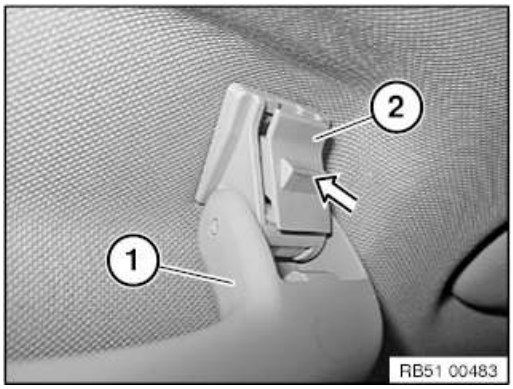
23 – Installing both grab handles on left or right

NOTICE

The description is for one component only. The procedure is identical for all further components.

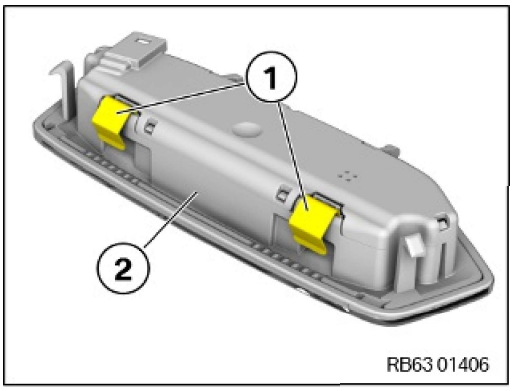
▸ **Installing the grab handle**

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- Insert the grab handle (1) into body.
- Correctly clamp in the grab handle (1), as otherwise the locking inserts (2) on the grab handle (1) cannot correctly engage.
- Engage the locking inserts (2) on both sides of the grab handle (1).

24 – Install interior roof light



Check

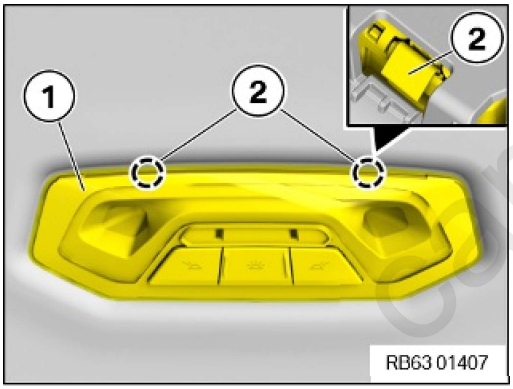
- Check the clamps (1) for damage.

Result

» Clamps (1) are damaged.

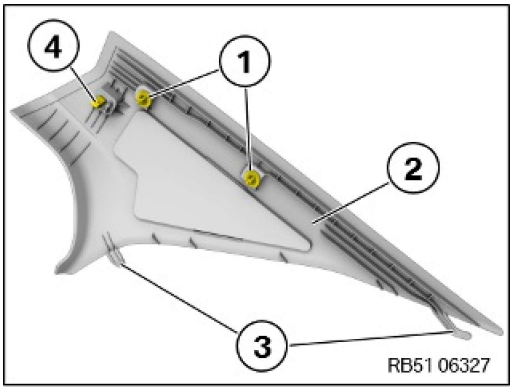
Measure

- Renew the interior roof light (2).



- Connect connectors and lock.
- Clip in the interior roof light (1) with clamps (2).

25 – Installing C-pillar trim panel



Check

- Check clips (1) and clamp (4) for damage, renew if necessary.
- Check the guides (3) for damage.

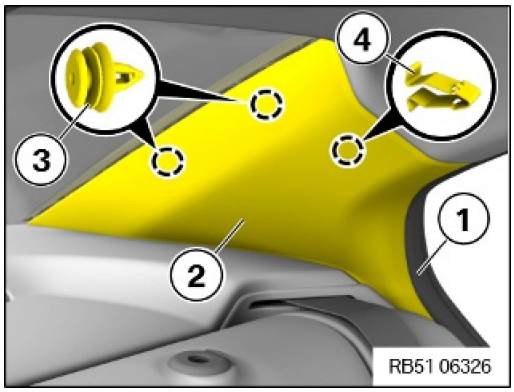
Result

» Guide is damaged.

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Measure

- Renew the C-pillar trim panel .

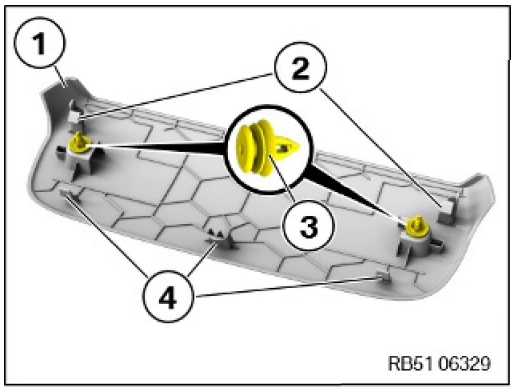


NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Feed C-pillar trim panel (2) into guides towards the rear.
- Clip in clips (3).
- Clip in clamp (4).
- Guide in C-pillar trim panel (2) under the lip of edge protection (1).

26 – Installing trim for additional brake light



Check

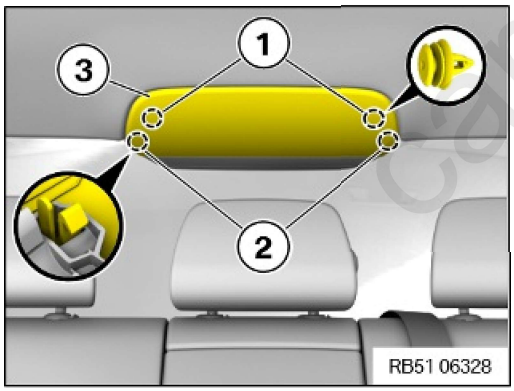
- Check the clips (3) for damage and renew if necessary.
- Check latch mechanisms (2) and guides (4) for damage.

Result

» The latch mechanism or the guide is damaged.

Measure

- Renew the trim for the additional brake light.



- Position trim for additional brake light (1) from the bottom and clip it in with latch mechanisms (2).
- Clip in clips (1).

Additional Information

Overview of Tightening Torques

Headlining to frame — Used in step 14

Oval-head screw		Tightening torque	1,5 Nm

Roof function centre — Used in step 16

		Tightening torque	1,2 Nm

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A-pillar trim panel to body Used in step 21

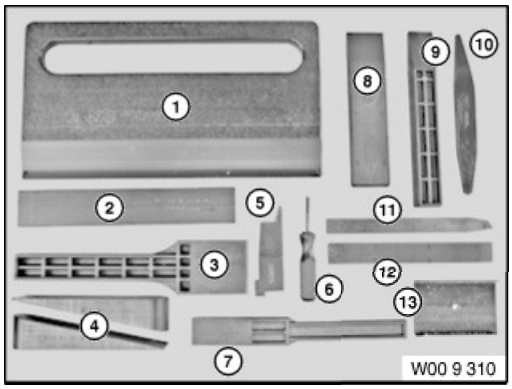
Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

End fitting to seat mechanism Used in step 22

Flat-head screwM10	Renew screw.	Tightening torque	42 Nm

Overview of Special Tools

0 493 752 (00 9 329) Case



Common Used in step 36

Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

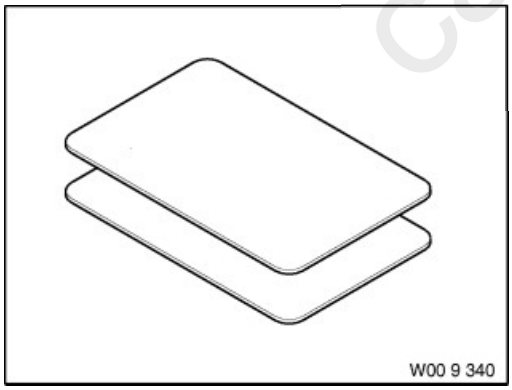
0 496 569 (00 9 325) Wedge



Common Used in step 9

Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

0 493 687 (00 9 340) Removal aid



Common Used in step 10

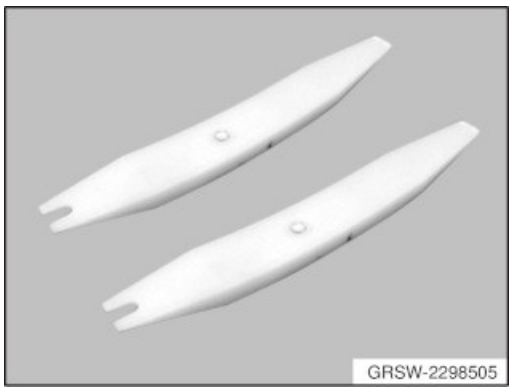
Usage	(Removal aid (2 x)) For levering out switch block on driver's door.
Included in the tool or work	
Storage location	C2
Replaced by	
In connection with	
SI-Number	01 15 99 (483)

Consisting of

Pos	BMW Order number	Replaced by	Designation	In Connection with
1	0 496 289 (00 9 341)		**Removal aid** Only available as a set (2 tools) under 00 9 340 (= 83 30 0 493 687).	

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2 298 505 Wedge



Common	Used in step 16
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

Links

General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	6
72 00 ... Safety regulations for handling components with gas generators	6

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51 44 011 Removing and installing/replacing headlining

RISK OF DAMAGE

Fold the headlining.

If the headlining is folded, it may have to be replaced.

- Carry out tasks with a second person to assist.
- Support the headlining at the front and back.

TECHNICAL INFORMATION

The following procedure forms the basis for these repair instructions and must be observed without fail.
For more information see: 51 31 ... General procedure for disassembly/installation of bonded window glass

TECHNICAL INFORMATION

Perform window removal using the "spider".
For additional information see: 51 31 ... Window glass removal using "spider"

PRELIMINARY WORK

1 – Removing the trim panel for the rear left and right water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.

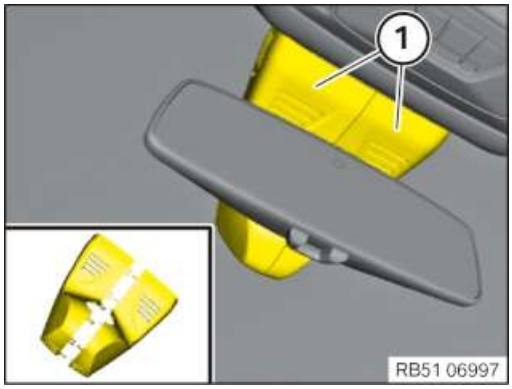


- Unclip the trim panel for the water channel (1) with the special tool 0 496 569 (00 9 325).

2 – Removing the covers for the interior mirror

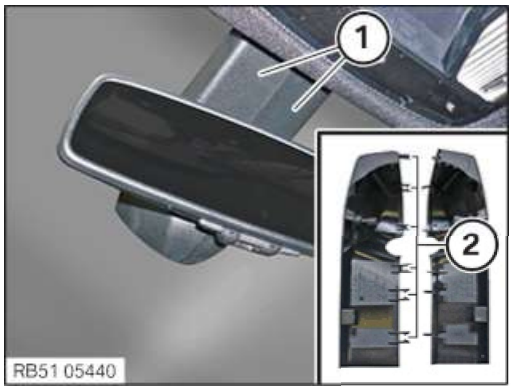
- **Version A:**

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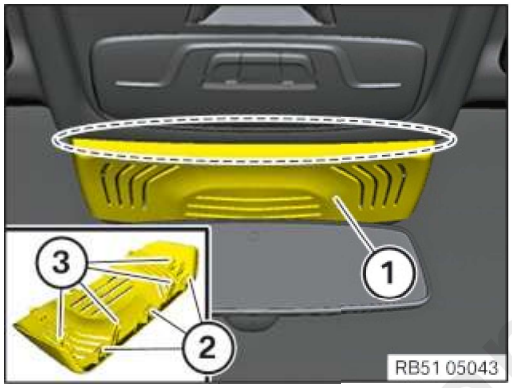
- Release the cover (1) at the centre from the latch mechanisms (2) with a suitable plastic wedge and remove.

- **Version B:**

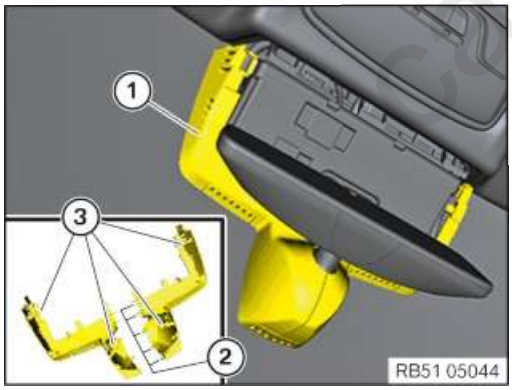


- Release the cover (1) from the latch mechanisms (2) with a suitable plastic wedge and remove sideways.

- **Version C:**



- Detach cover (1) from the clamps (2) in the marked area using a suitable plastic wedge and pull down a certain distance.
- Release cover (1) at the retaining lugs (3) and remove from the guides to the rear.



- Release cover (1) from the latch mechanisms (2) and (3) and remove sideways.
- Remove cover (1) from mirror base (2).

3 – Remove both A-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the A-pillar trim panel**

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WARNING

Airbag unit.

Danger! Life-threatening injuries!

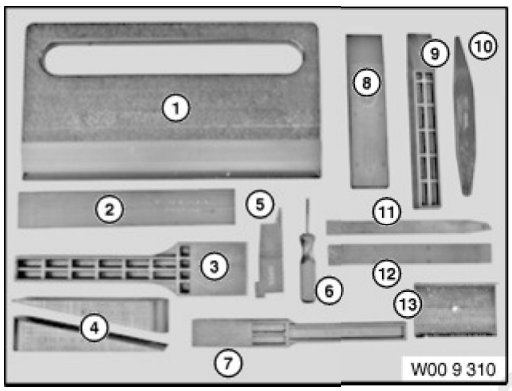
- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

WARNING

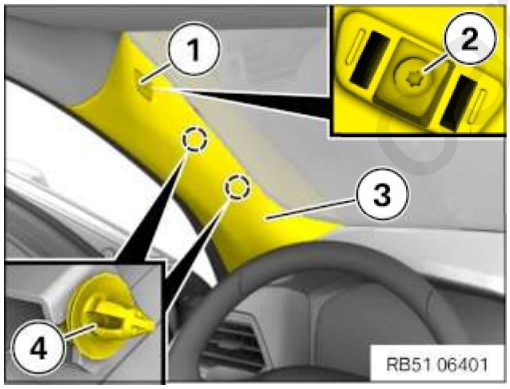
Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



- Have the set of special tools 0 493 752 (00 9 329) ready.



- Unclip the cover (1) with suitable tools.
- Loosen screw (2).
- Unclip A-pillar trim panel (3) with clips (4) and guide it out upwards.

4 – Remove both sun visors

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove sun visor**

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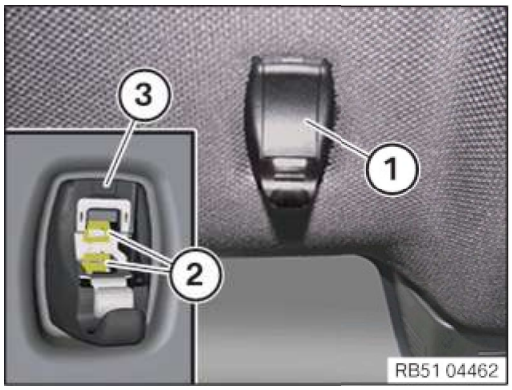
- Pull out the cover (1).
- Detach the sun visor (2) from the counter support .
- Disengage the sun visor (2) in front to the bottom and thread it out of the headlining at the rear.
- Unlock associated plug connection and disconnect.

5 – Remove both counter supports for the sun visors

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the counter support for the sun visor**

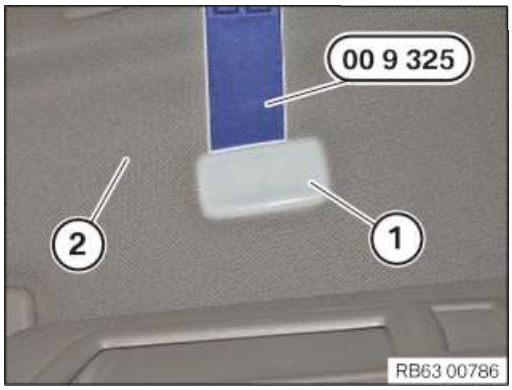


- Pull out the cover (1).
- Push the clamps (2) together and pull the counter support (3) out of the headlining.

6 – Removing front vanity mirror light

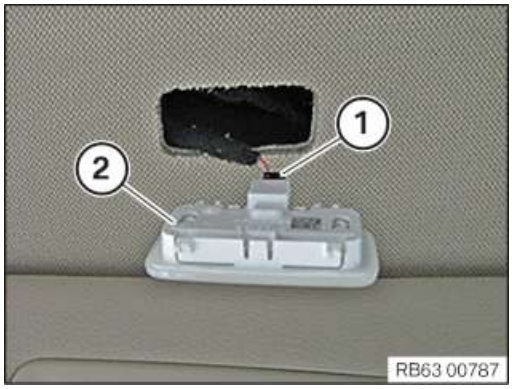
NOTICE

Description is for left component only. Procedure on the right side is identical.



- Lever out the front vanity mirror light (1) using special tool 0 496 569 (00 9 325) from the headlining (2).

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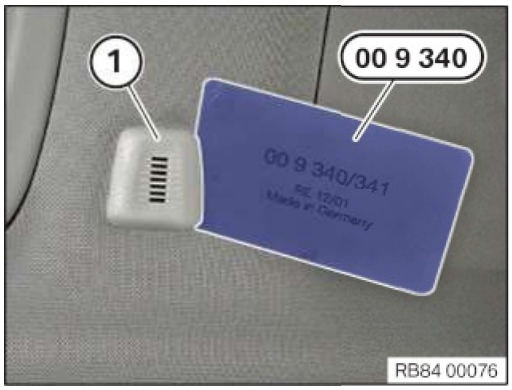
- Unlock and disconnect connector (1).
- Remove the front vanity mirror light (2).

7 – Remove both microphones

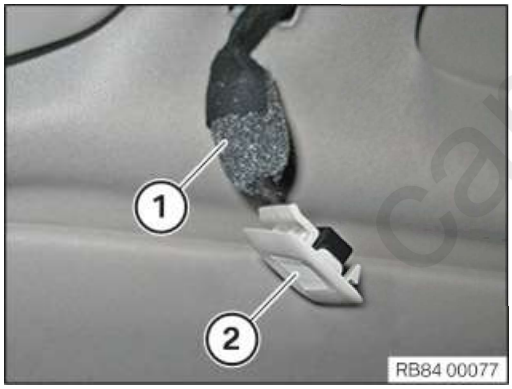
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Removing hands-free microphone**



- Lever out the hands-free microphone (1) with the special tool 0 493 687 (00 9 340).



- Open insulation (1).
- Disconnect plug connection.
- Remove hands-free microphone (2).

8 – Removing the roof function centre (FZD)



- Unclip the cover (1).

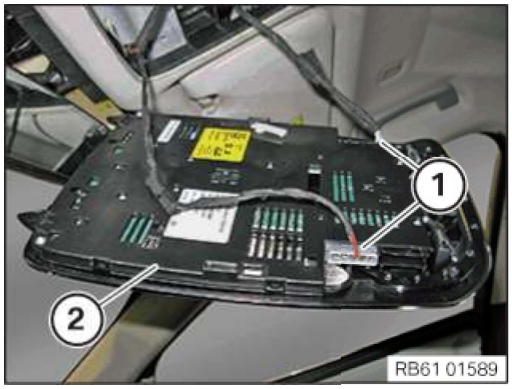
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- Loosen screws (1).



- Unclip the roof function centre (FZD) (1) from the clamps (2).
- Thread the roof function centre (FZD) (1) out of the guides (3).

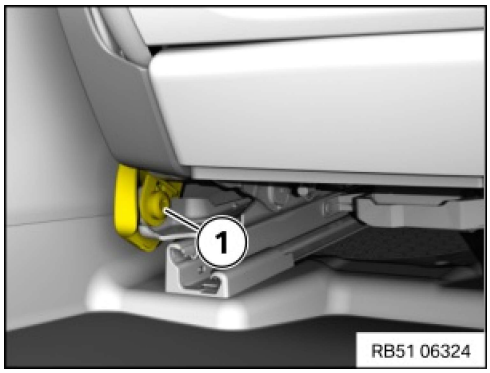


- Unlock and disconnect plug connections (1).
- Unclip the cable for the roof function centre (FZD) (2) from the cable clip.

9 – Removing both B-pillar trim panels

NOTICE

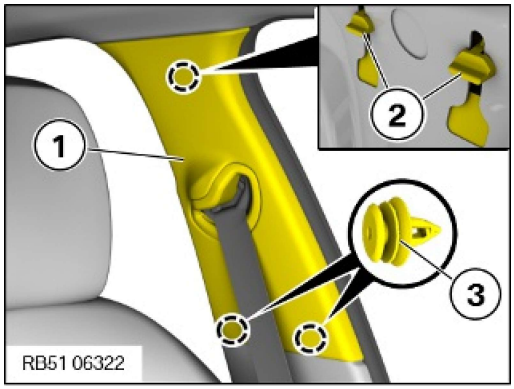
Description is for left component only. Procedure on the right side is identical.



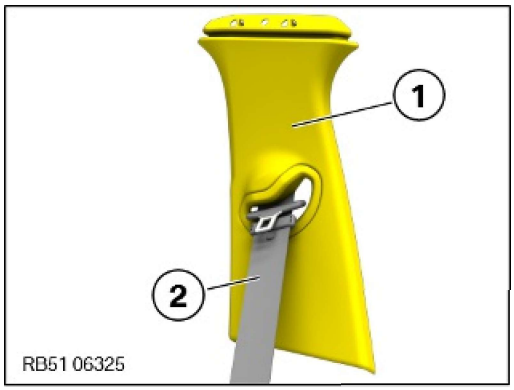
▶ **Remove the B-pillar trim panel**

- Fully position the front seat to the front and top.
- Loosen screw (1).
- Remove end fitting (2).

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- Unclip clips (3).
- Feed B-pillar trim panel (1) out of the front and rear lip of edge protections and the guides (2).



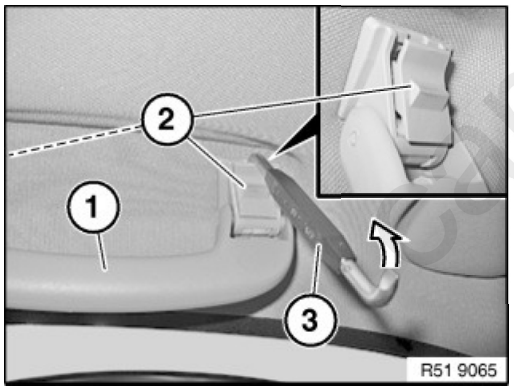
- Feed upper seat belt (2) out of B-pillar trim panel (1).

10 – Removing all grab handles

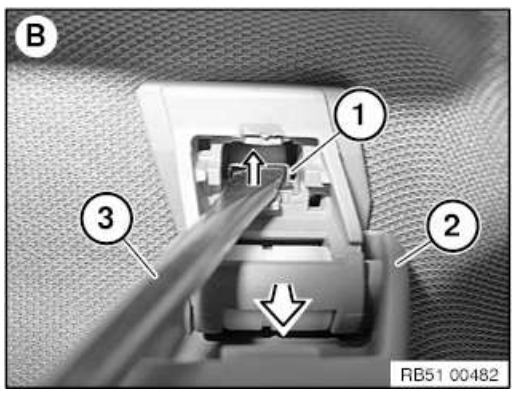
NOTICE

The description is for one component only. The procedure is identical for all further components.

▸ **Removing the grab handle**

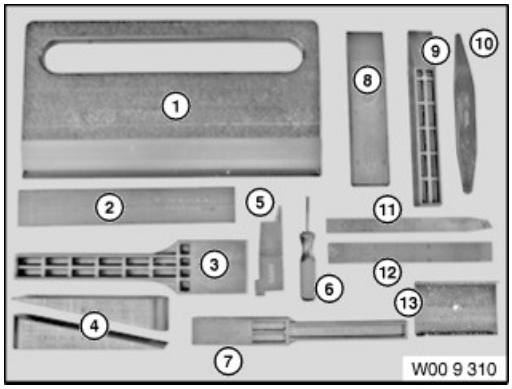


- Expand the grab handle (1) towards the bottom.
- Disengage and remove the locking insert (2) with an angle screwdriver (3) as shown.

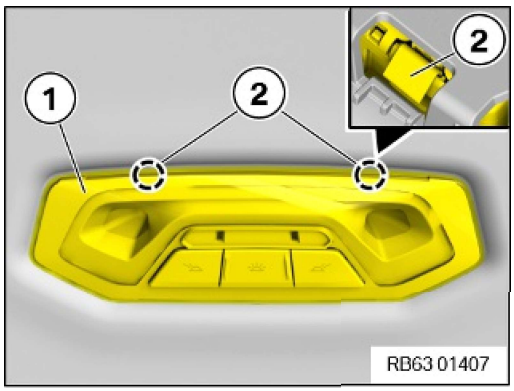


- Pull the grab handle (2) slightly to the inside and hold it.
- Use a suitable screwdriver (3) to detach the upper and lower release tabs (1).
- Guide the grab handle (2) out.
- Repeat the operation on the other side of the grab handle (2).

11 – Remove interior roof light



- Have the set of special tools 0 493 752 (00 9 329) ready.



- Lever interior roof light (1) out of clamps (2) using a suitable tool.
- Unlock plug connection and disconnect.

12 – Remove both C-pillar trim panels

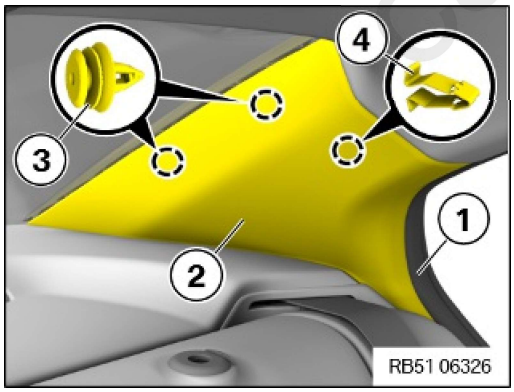
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove C-pillar trim panel**

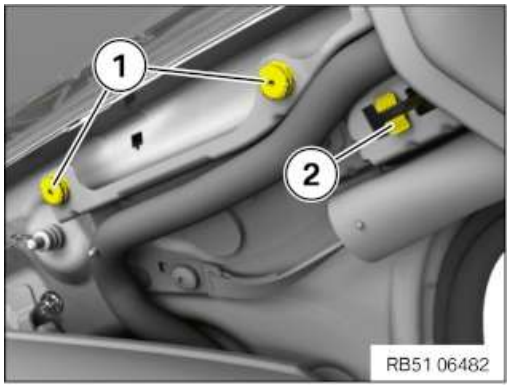
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



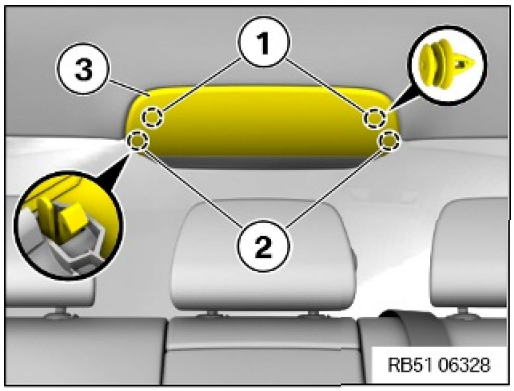
- Unclip clamp (4).
- Unclip clips (3).
- Feed out C-pillar trim panel (2) from the guides to the front.
- Thread out C-pillar trim panel (2) from the lip of edge protection (1).

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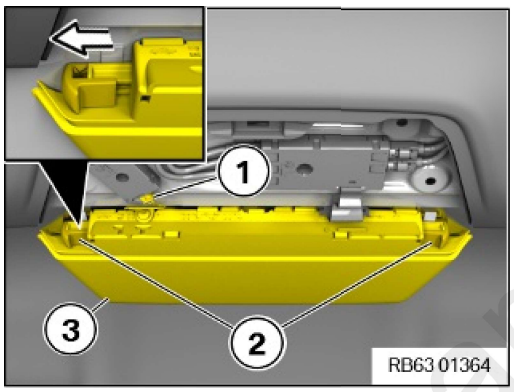
- If required, remove the clips (1) and the clamp (2) and connect it to the trim panel.

13 – Removing the trim of the additional brake light



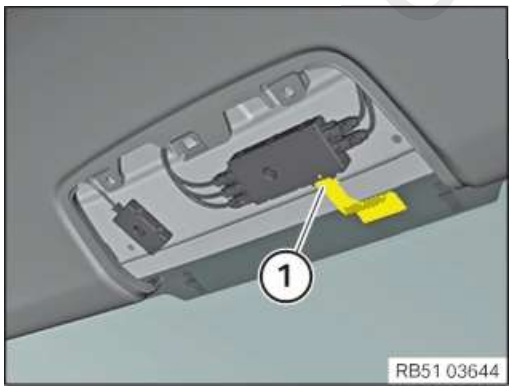
- Loosen the clips (1).
- Release the latch mechanisms (2) and remove the trim of the additional brake light (3).

14 – Remove additional brake light



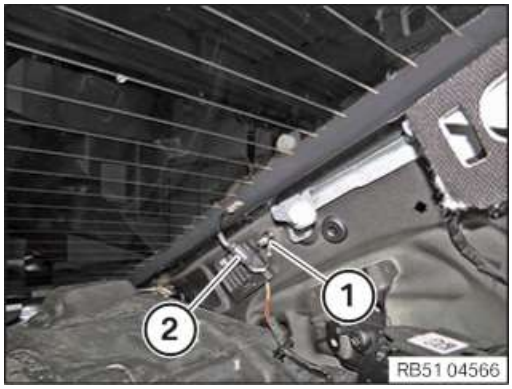
- Disconnect plug connection (1).
- Unlock both slides (2) outwards in the direction of the arrow and remove additional brake light (3).

15 – Remove rear window



- Unlock plug connection (1) and disconnect.
- Secure cable to rear window with adhesive tape.

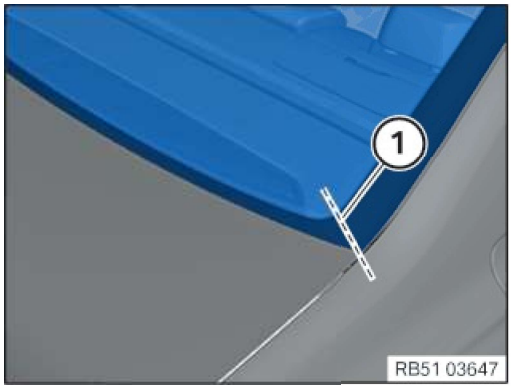
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- Loosen nut (1).
- Secure cable (2) to the rear window.



- Unlock plug connection (1) and disconnect.
- Secure cable (2) to rear window with adhesive tape.



- Tape off body in area of piercing point with fabric adhesive tape.
- Push the thread (1) through the adhesive bead along the line from the inside.
- Cut out the rear window with spider 2 357 248.
- Remove the rear window with the help of the special tool 2 184 377.
- Remove adhesive bead from the body using special tool 0 410 807 and clean the adhesive area.

MAIN WORK

16 – Remove headlining (with slide/tilt sunroof)

Prerequisite

The front seats have been fully adjusted towards the bottom.

The front seat backrests have been fully adjusted towards the rear.

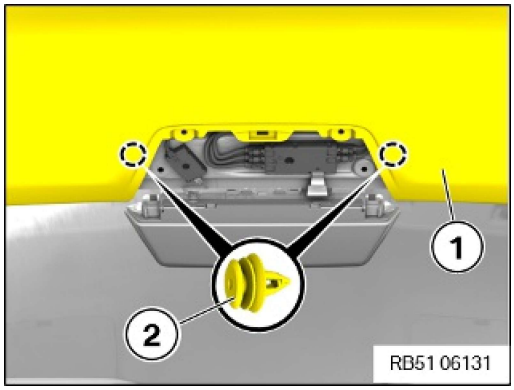
RISK OF DAMAGE

Fold the headlining.

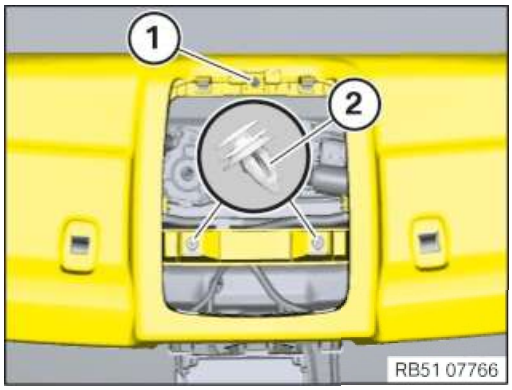
If the headlining is folded, it may have to be replaced.

- Carry out tasks with a second person to assist.
- Support the headlining at the front and back.

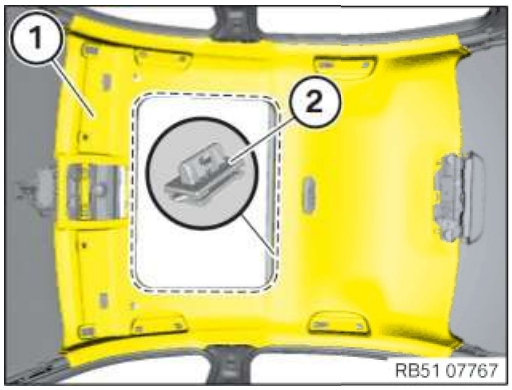
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- Unclip the headlining (1) on the clips (2) downwards.



- Loosen screw (1).
- Unclip the headlining on the clips (2) downwards.



- Carefully unclip headlining (1) from the slide/tilt sunroof unit and clamps (2) in the area of the dotted line.
- Feed out headlining (1) with the help of an auxiliary person on the particular edge protection and place it on the seats.
- Remove the headlining (1) with the help of an auxiliary person through the aperture on the rear window.

17 – Install the headlining (with slide/tilt sunroof)

Prerequisite

The front seats have been fully adjusted towards the bottom.

The front seat backrests have been fully adjusted towards the rear.

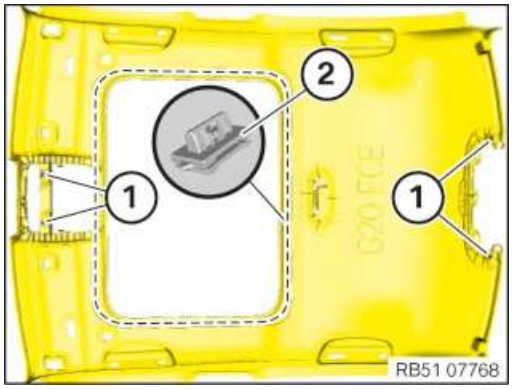
RISK OF DAMAGE

Fold the headlining.

If the headlining is folded, it may have to be replaced.

- Carry out tasks with a second person to assist.
- Support the headlining at the front and back.

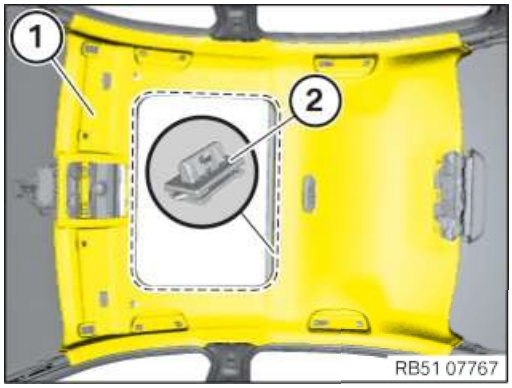
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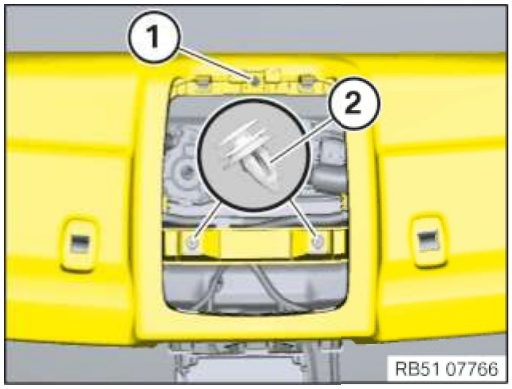
- Check the clips (1) on the headlining (2) for damage.

  Replace broken for missing clips (1).
- Check the clamps (2) along the dotted line.

  Replace broken or missing clamps (2).



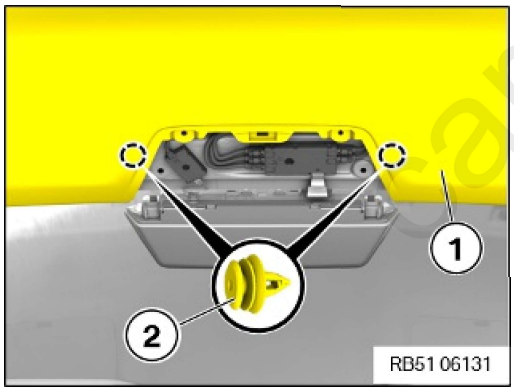
- Thread in headlining (1) with the help of an auxiliary person through the opening of the rear window and set it aside.
- Feed in the headlining (1) with the help of an auxiliary person on the respective edge protection.
- Clip headlining (1) into the slide/tilt sunroof unit and clamps (2) in the area of the dotted line.



- Clip headlining to the clips (2).
- Tighten down screw (1).

Headlining to frame

Oval-head screw		Tightening torque	1,5 Nm

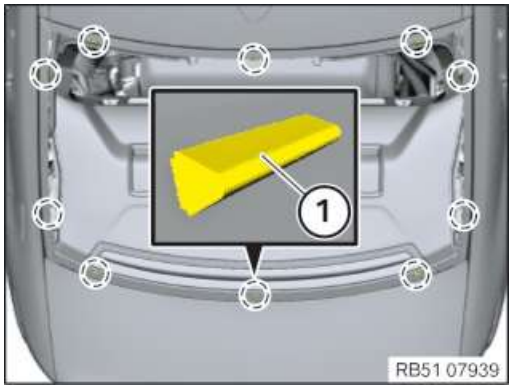


- Clip headlining (1) to the clips (2).

POSTPROCESSES

18 – Replace the spacer

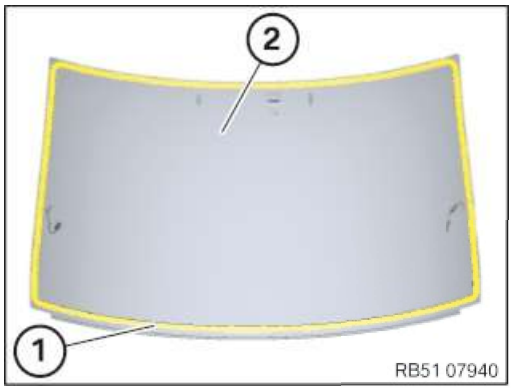
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- Completely remove the available spacer buffers (1).
- Remove the adhesive residue on the body and clean the adhesive area.
- Stick the new spacer buffers (1) in the centre on the engraved markings on the body side.

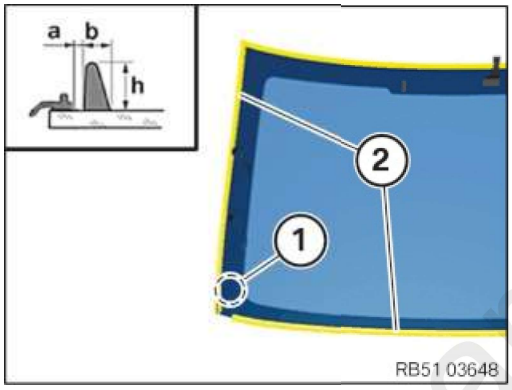
  Parts: Spacer buffer

19 – In case of reusing the rear window



- Remove the adhesive bead (1) on the rear window (2) with the special tool 0 410 807.

20 – Install the rear window

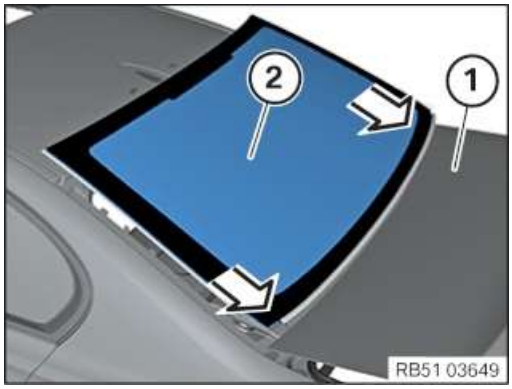


- Clean the bonding surfaces on the body and on the rear window.
- Provide two glue cartridges.
- Prepare a glue cartridge with the standard jet nozzle C.
- Apply bead joint in area (1).
- Apply adhesive bead within the mark on the rear window

Adhesive bead

b = Width	7 mm ... 9 mm
h = Height	11 mm ... 13 mm

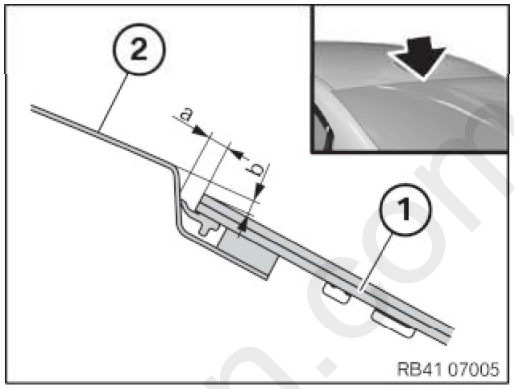
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- Open tailgate (1) approx. 1/3 and secure in this position.
- Carefully perform the following actions on rear window (2) with suction lifters
  - Bring it parallel to C-pillar
  - Feed it in under tailgate
  - Position at top
  - Align sides evenly
  - Press upwards until sealing rests evenly on roof
  - Press it evenly and adjust the gap dimension

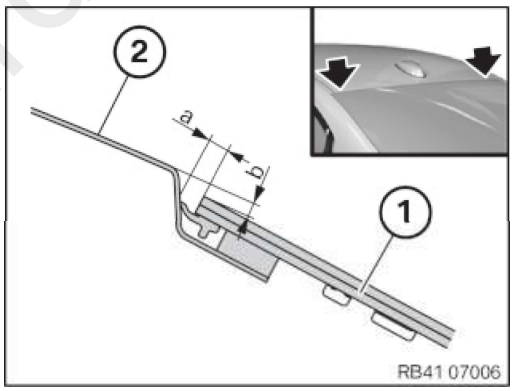
Gap dimension rear window to roof outer skin

1 rear window, 2 roof outer skin	
a	3,2 (1,9 - 4,5) mm
b	2,8 (1,5 - 4,1) mm



Gap dimension rear window to roof outer skin

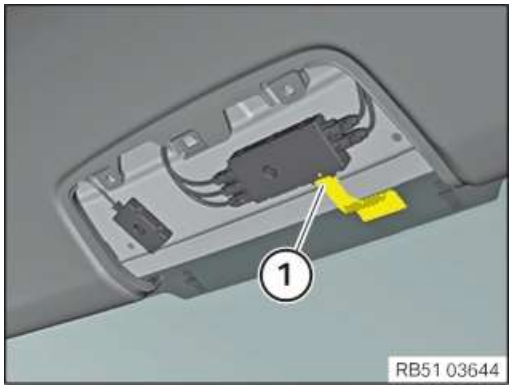
1 rear window, 2 roof outer skin	
a	3,2 (1,9 - 4,5) mm
b	2,6 (1,3 - 3,9) mm



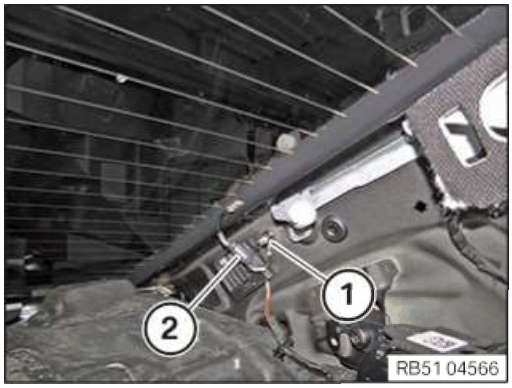
- Measure short length (A) of the rear window (1) to the roof outer skin (2) with the special tool 0 495 259 (51 0 010).

  Measure gap dimension (B) with special tool 0 496 076 (00 9 470).
- Secure rear window (1) with adhesive tap on the roof.

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- Connect connector (1).

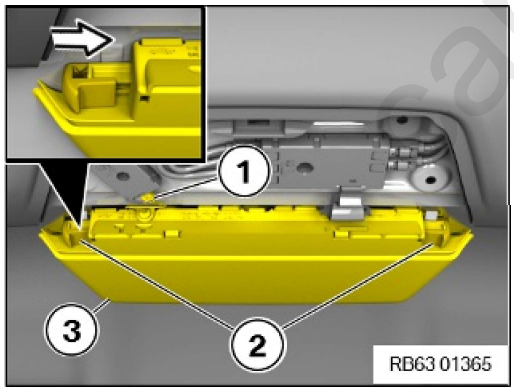


- Secure cable (2) with nuts (1) at the attachment point.



- Loosen cable (2) from the rear window.
- Connect connector (1).

21 – Install the auxiliary stop lamp

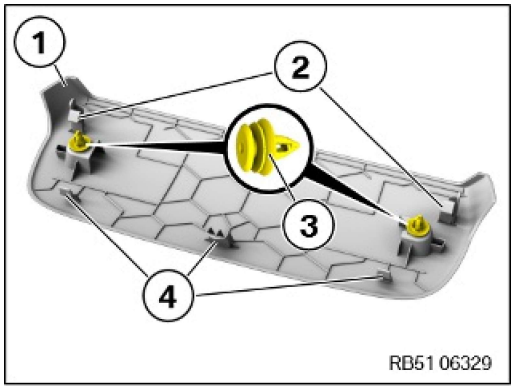


- Position the additional brake light (3).
- Lock both slides (2) inwards in the direction of the arrow.
- Connect connector (1).

22 – Installing trim for additional brake light

Check

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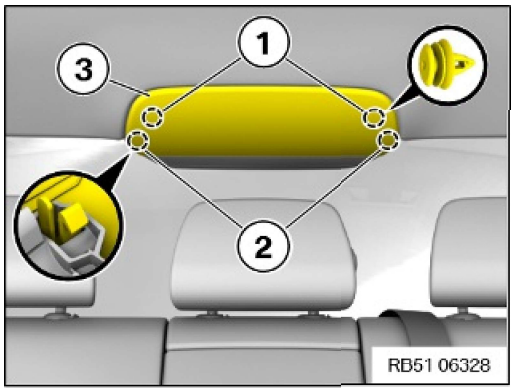
- Check the clips (3) for damage and renew if necessary.
- Check latch mechanisms (2) and guides (4) for damage.

Result

» The latch mechanism or the guide is damaged.

Measure

- Renew the trim for the additional brake light.



- Position trim for additional brake light (1) from the bottom and clip it in with latch mechanisms (2).
- Clip in clips (1).

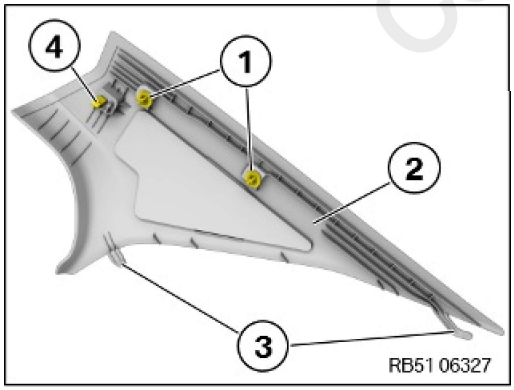
23 – Install both C-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Installing C-pillar trim panel**

Check



- Check clips (1) and clamp (4) for damage, renew if necessary.
- Check the guides (3) for damage.

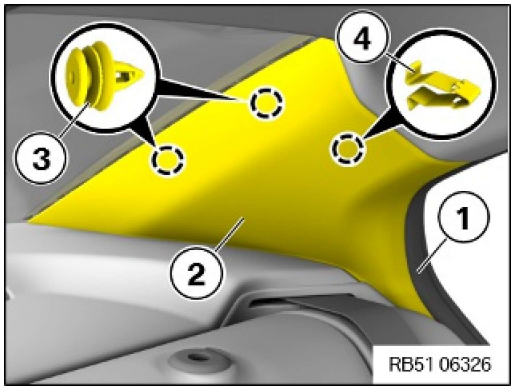
Result

» Guide is damaged.

Measure

- Renew the C-pillar trim panel .

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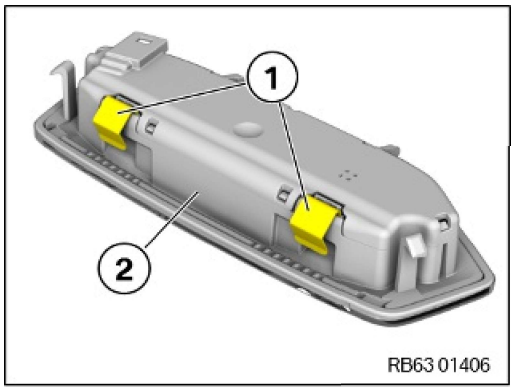


NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Feed C-pillar trim panel (2) into guides towards the rear.
- Clip in clips (3).
- Clip in clamp (4).
- Guide in C-pillar trim panel (2) under the lip of edge protection (1).

24 – Install interior roof light



Check

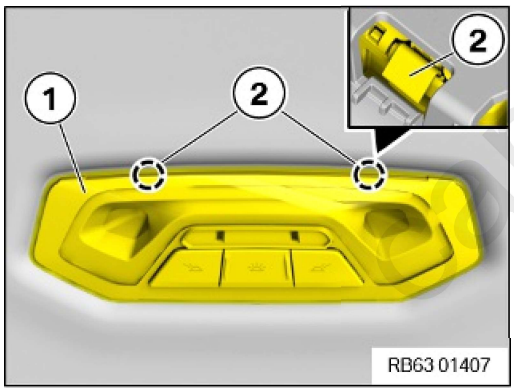
- Check the clamps (1) for damage.

Result

» Clamps (1) are damaged.

Measure

- Renew the interior roof light (2).



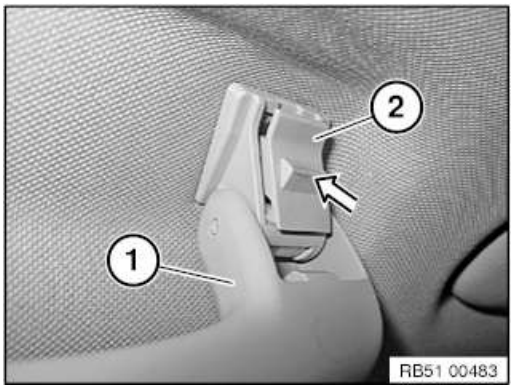
- Connect connectors and lock.
- Clip in the interior roof light (1) with clamps (2).

25 – Installing all grab handles

NOTICE

The description is for one component only. The procedure is identical for all further components.

▸ **Installing the grab handle**



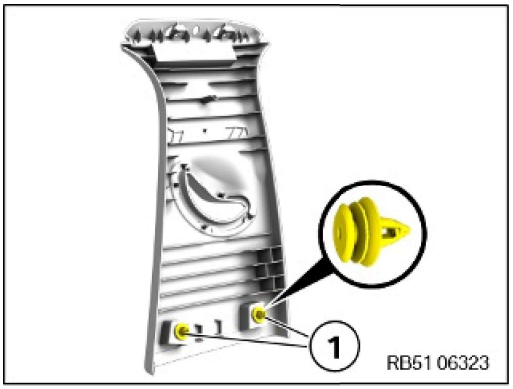
- Insert the grab handle (1) into body.
- Correctly clamp in the grab handle (1), as otherwise the locking inserts (2) on the grab handle (1) cannot correctly engage.
- Engage the locking inserts (2) on both sides of the grab handle (1).

26 – Installing both B-pillar trim panels

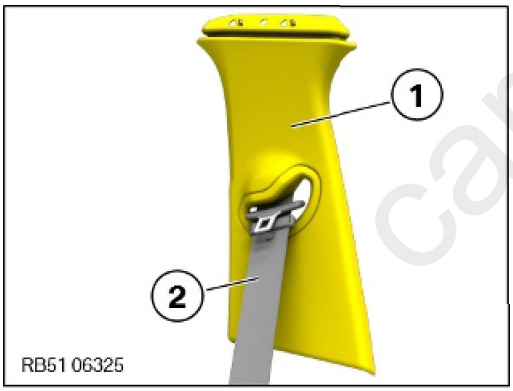
NOTICE

Description is for left component only. Procedure on the right side is identical.

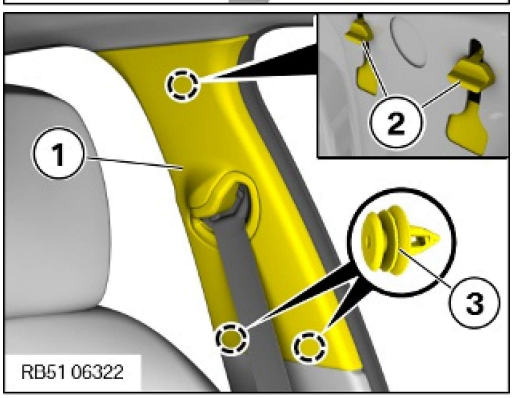
▸ **Install the B-pillar trim panel**



- Check the clips (1) for damage and renew if necessary.

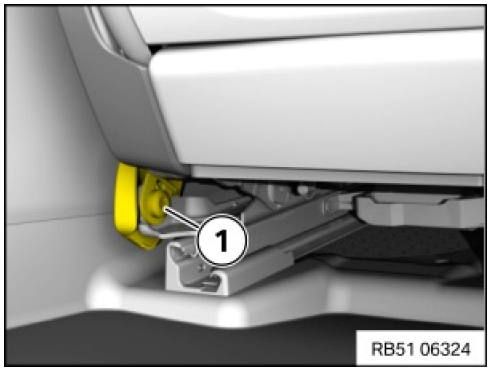


- Guide upper seat belt (2) in B-pillar trim panel (1).



- Insert B-pillar trim panel (1) into guides (2) and under the front and rear lips of edge protection.
- Clip in the B-pillar trim panel (1) with the clips (3).

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- Fully position the front seat to the front and top.
- Insert the end fitting (2).
- Renew the screw (1).

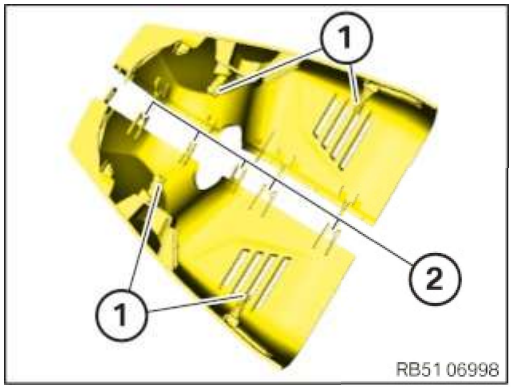
  Parts: Screw
- Tighten down screw (1).

End fitting to seat mechanism

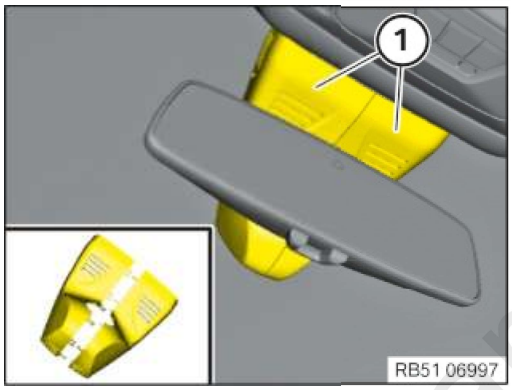
Flat-head screwM10	Renew screw.	Tightening torque	42 Nm

27 – Installing the covers for the interior mirror

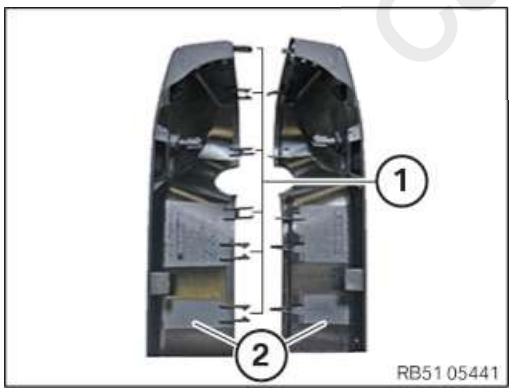
- **Version A:**



- Check latch mechanisms (1) and (2).
- If the latch mechanisms (1) or (2) are faulty, renew the covers.



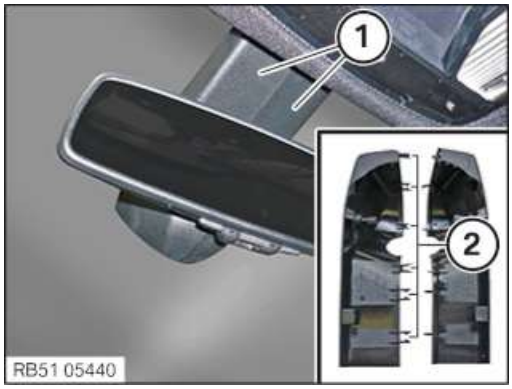
- Feed cover (1) in and lock.
- **Version B:**



- Check the latch mechanisms (1) on the two covers (2) for damage, renew the covers (2) if necessary.

  The covers (2) must not be damaged or missing.

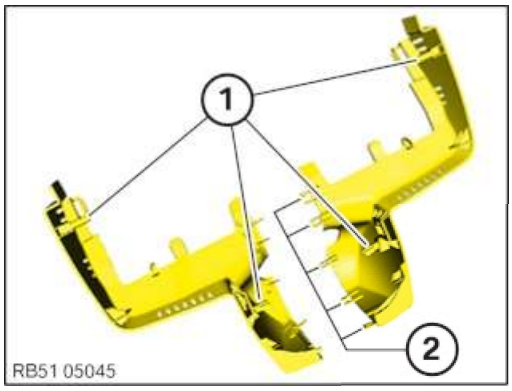
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- Position the covers (1) correctly on the mirror and engage with the latch mechanisms (2).

- **Version C:**

Check



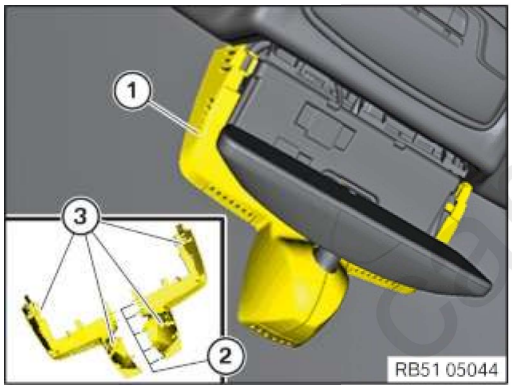
- Check the latch mechanisms (1) and (2) of the covers for damage.

Result

» The latch mechanism is damaged.

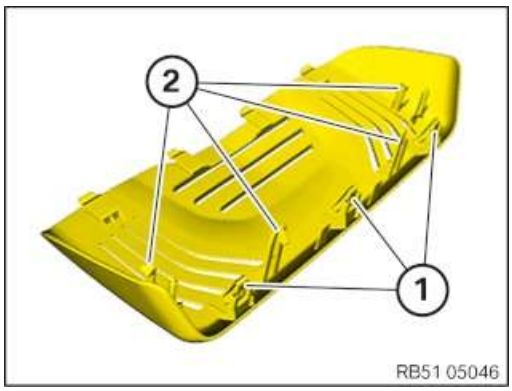
Measure

- Renew the cover.



- Guide in cover (1) on left and right and engage using latch mechanisms (2) and (3).

Check



- Check clamps (1) for damage; renew if necessary.
- Check latch mechanisms (2) for damage.

Result

» The latch mechanism is damaged.

Measure

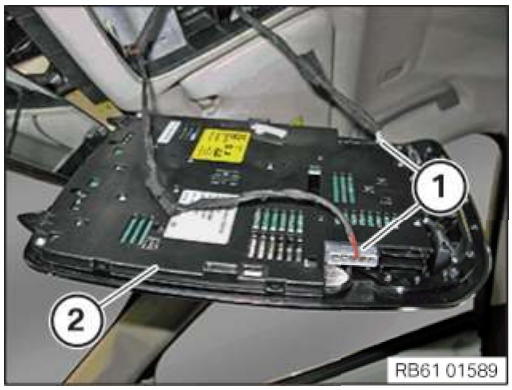
- Renew the cover.

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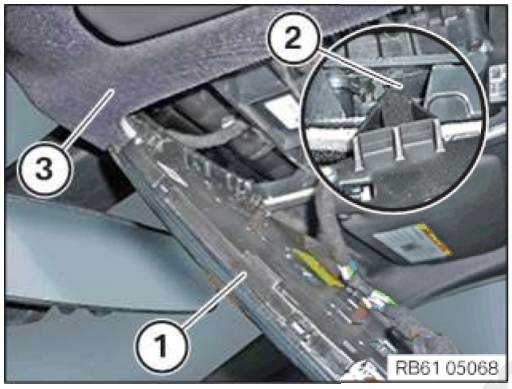


- Guide cover (1) into front guides and engage using retaining lugs (3) and clamps (2).

28 – Installing roof function centre (FZD)



- Connect connectors (1) and lock.
- Clip in the cable for the roof function centre (FZD) (2) in the cable clip.



- Thread the roof function centre (FZD) (1) as shown at a steep angle into the two guides (2) on the headlining (3).

  Make sure the headlining is not deformed during this operation.



- Clip the roof function centre (FZD) (1) upwards into the clamps (2).



- Pass through the FZD frame and headlining with the special tool 2 298 505 and adjust the headlining correctly.

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- Tighten the screws (1).

Roof function centre

	Tightening torque	1,2 Nm



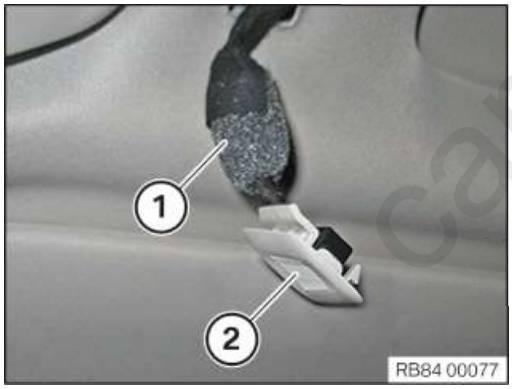
- Clip in the cover (1).

29 – Install both microphones

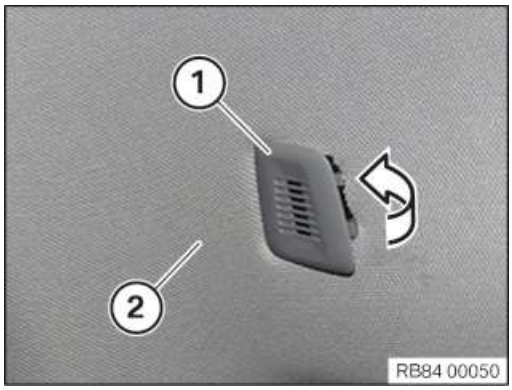
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Installing the hands-free microphone**



- Connect the connector to the hands-free microphone (2).
- Close the insulation (1).



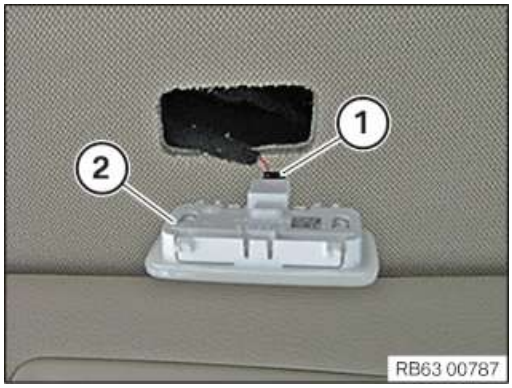
- Position hands-free microphone (1) in headlining (2) in the direction of the arrow.

30 – Installing front vanity mirror light

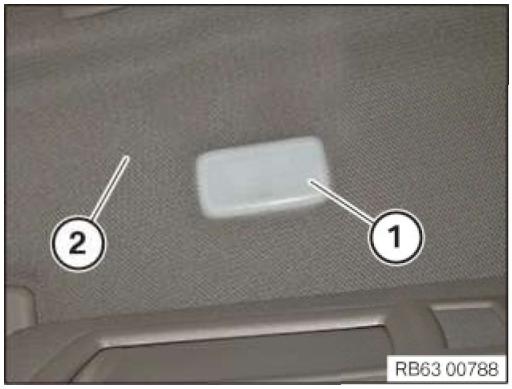
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NOTICE

Description is for left component only. Procedure on the right side is identical.



- Connect the connector (1) to the front vanity mirror light (2).



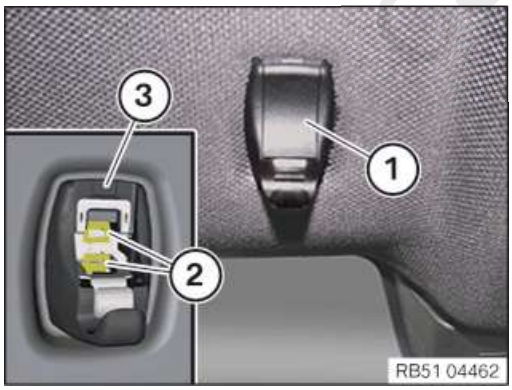
- Position the front vanity mirror light (1) in the headlining (2).

31 – Install both counter supports for the sun visors

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the counter support for the sun visor**



- Insert the counter support (3) into the headlining.
- Make sure the clamps (2) are engaged correctly.
- Use cover (1).

32 – Install both sun visors

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the sun visor**



- Connect the sun visor (2) with the corresponding connector.
- Guide the sun visor (2) into the headlining.
- Use cover (1).
- Attach the sun visor (2) on the counter support.

33 – Install both A-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Installing the A-pillar trim panel**

WARNING

Airbag unit.

Danger! Life-threatening injuries!

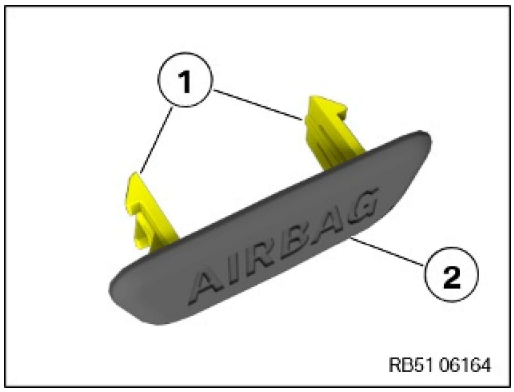
- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

WARNING

Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



Check

- Check retaining lugs (1) of cover (2) for damage.

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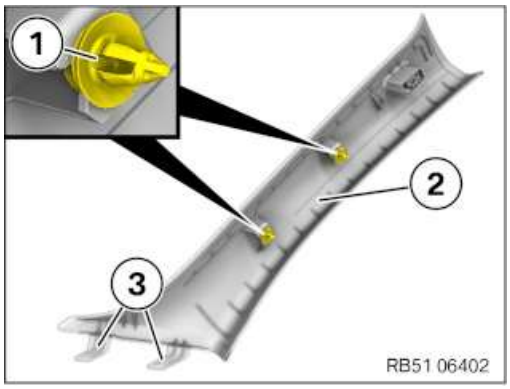
Result

» Retaining lug is damaged.

Measure

- Renew the cover.

Check



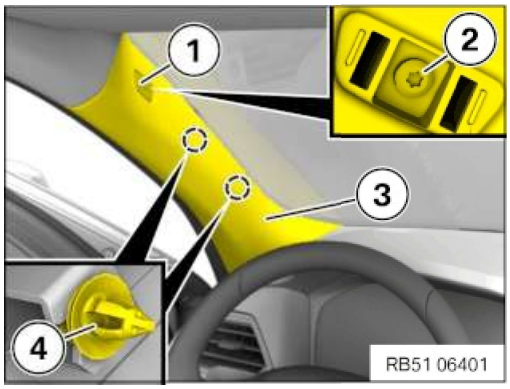
- Check the clips (1) for damage and renew if necessary.
- Check the guides (3) for damage.

Result

» Guide is damaged.

Measure

- Renew the A-pillar trim panel.



- Guide in A-pillar trim panel (3) downwards and clip it in with clips (4).
- Tighten down screw (2).

A-pillar trim panel to body

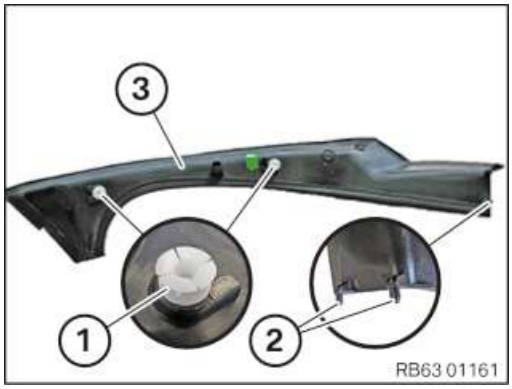
Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

- Clip in the cover (1).

34 – Installing the trim panel for the rear left and right water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Check the clips (1) and guides (2) on the trim panel for the water channel (3) for damage.

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- Clip in the trim panel for the water channel (1).

Additional Information

Overview of Tightening Torques

Headlining to frame — Used in step 17

Oval-head screw		Tightening torque	1,5 Nm

End fitting to seat mechanism — Used in step 26

Flat-head screwM10	Renew screw.	Tightening torque	42 Nm

Roof function centre — Used in step 28

		Tightening torque	1,2 Nm

A-pillar trim panel to body — Used in step 33

Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

Overview of Special Tools

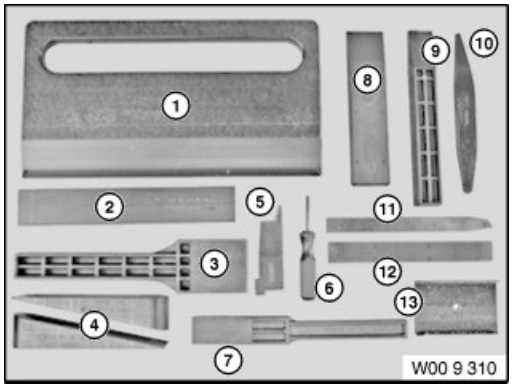
0 496 569 (00 9 325) Wedge



Common — Used in step 16

Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

0 493 752 (00 9 329) Case

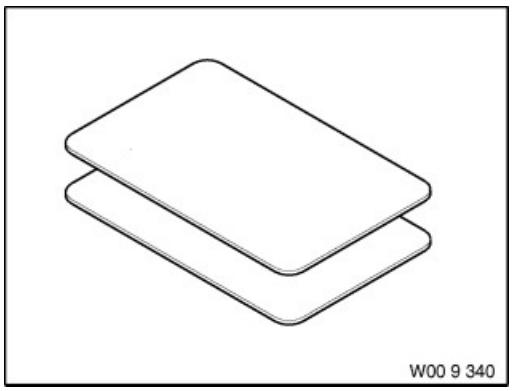


Common — Used in step 311

Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

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0 493 687 (00 9 340) Removal aid



Common Used in step 7

Usage	(Removal aid (2 x)) For levering out switch block on driver's door.
Included in the tool or work	
Storage location	C2
Replaced by	
In connection with	
SI-Number	01 15 99 (483)

Consisting of

Pos	BMW Order number	Replaced by	Designation	In Connection with
1	0 496 289 (00 9 341)		**Removal aid** Only available as a set (2 tools) under 00 9 340 (= 83 30 0 493 687).	

2 357 248 Removal and installation kit



Common Used in step 15

Usage	Removal system for removing glued windshields, side and rear windows without causing damage. The windows are cut out using an ultra-strong cord made from braided polyethylene fibres.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	05 06 13 (934)

2 184 377 Siphon



Common Used in step 15

Usage	Siphon for the removal, installation and positioning of vehicle windows.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	08 01 10 (635)

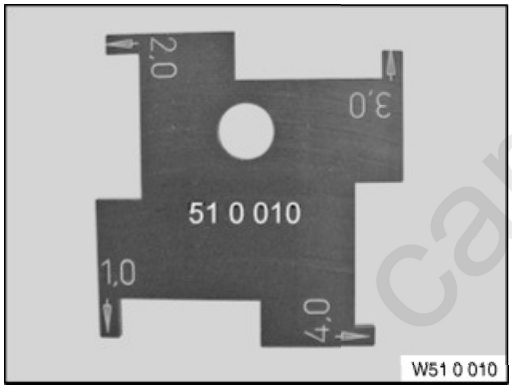
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0 410 807 Accessories



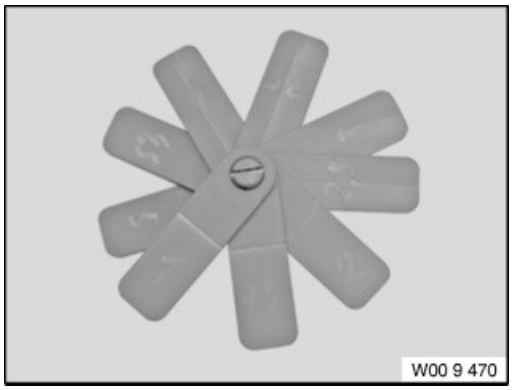
Common	Used in step 1519
Usage	Pinchweld scraper set for removing seal residues such as window glass adhesive or seals in the engine compartment.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	08 02 05 (206)

0 495 259 (51 0 010) Gauge



Common	Used in step 20
Usage	(test gauge for installing windscreen and rear window) (replaces special tool 51 3 210 from 06/2005)
Included in the tool or work	
Storage location	B2
Replaced by	
In connection with	
SI-Number	01 10 05 (189)

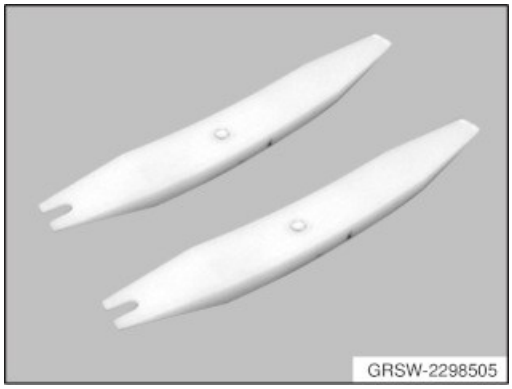
0 496 076 (00 9 470) Gauge



Common	Used in step 20
Usage	(Gap gauge) From 1 to 5 mm (1; 1.5; 2; 2.5 ...). For checking body gap dimensions.
Included in the tool or work	0 496 091
Storage location	A24
Replaced by	
In connection with	
SI-Number	01 03 07 (337)

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2 298 505 Wedge

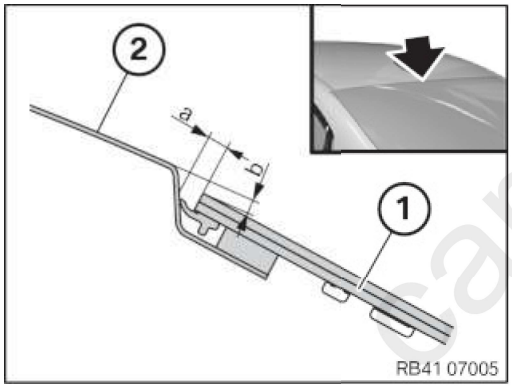


Common	Used in step 28
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

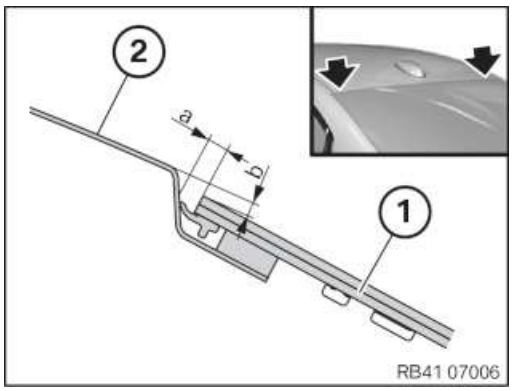
Overview Technical Data

Adhesive bead	Used in step 20
b = Width	7 mm ... 9 mm
h = Height	11 mm ... 13 mm

Gap dimension rear window to roof outer skin	Used in step 20
1 rear window, 2 roof outer skin	
a	3,2 (1,9 - 4,5) mm
b	2,8 (1,5 - 4,1) mm



Gap dimension rear window to roof outer skin	Used in step 20
1 rear window, 2 roof outer skin	
a	3,2 (1,9 - 4,5) mm
b	2,6 (1,3 - 3,9) mm



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Links

General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	3
72 00 ... Safety regulations for handling components with gas generators	3
51 31 ... General procedure for the disassembly and installation of bonded window glass	

Repair instructions	Used in step
51 31 ... Removing windows with a "Spider"	

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51 44 001 Removing and installing/replacing the headlining (equipment specification without slide/tilt sunroof)

RISK OF DAMAGE

Fold the headlining.

If the headlining is folded, it may have to be replaced.

- Carry out tasks with a second person to assist.
- Support the headlining at the front and back.

TECHNICAL INFORMATION

The following procedure forms the basis for these repair instructions and must be observed without fail.
For more information see: 51 31 ... General procedure for disassembly/installation of bonded window glass

TECHNICAL INFORMATION

Perform window removal using the "spider".
For additional information see: 51 31 ... Window glass removal using "spider"

PRELIMINARY WORK

1 – Removing the trim panel for the rear left and right water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.

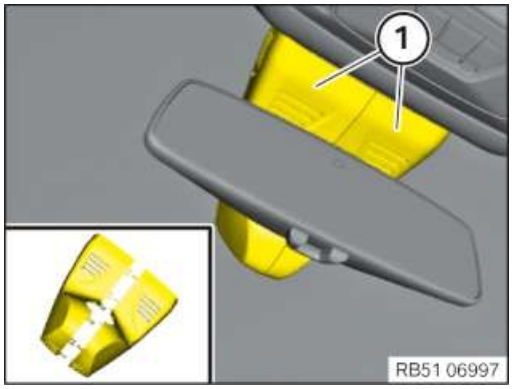


- Unclip the trim panel for the water channel (1) with the special tool 0 496 569 (00 9 325).

2 – Removing the covers for the interior mirror

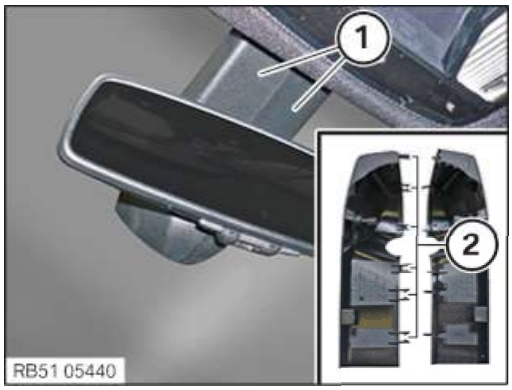
- **Version A:**

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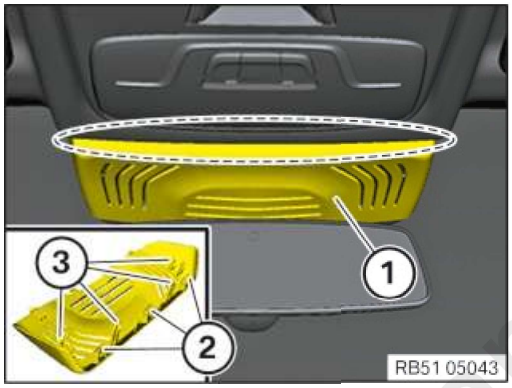
- Release the cover (1) at the centre from the latch mechanisms (2) with a suitable plastic wedge and remove.

- **Version B:**

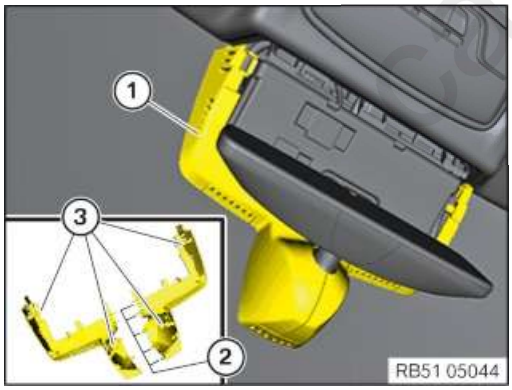


- Release the cover (1) from the latch mechanisms (2) with a suitable plastic wedge and remove sideways.

- **Version C:**



- Detach cover (1) from the clamps (2) in the marked area using a suitable plastic wedge and pull down a certain distance.
- Release cover (1) at the retaining lugs (3) and remove from the guides to the rear.



- Release cover (1) from the latch mechanisms (2) and (3) and remove sideways.
- Remove cover (1) from mirror base (2).

3 – Remove both A-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the A-pillar trim panel**

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WARNING

Airbag unit.

Danger! Life-threatening injuries!

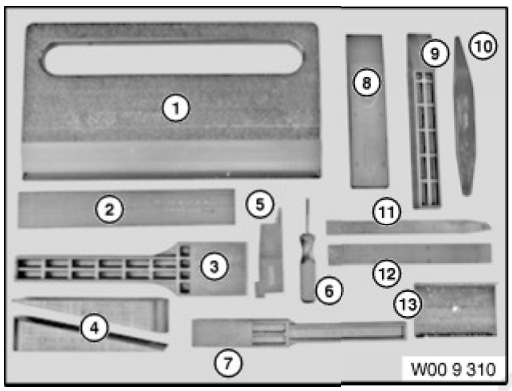
- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

WARNING

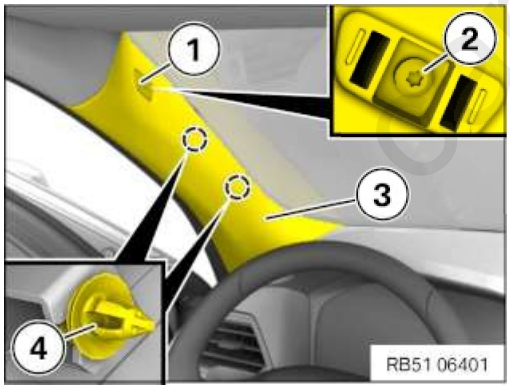
Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



- Have the set of special tools 0 493 752 (00 9 329) ready.



- Unclip the cover (1) with suitable tools.
- Loosen screw (2).
- Unclip A-pillar trim panel (3) with clips (4) and guide it out upwards.

4 – Remove both sun visors

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove sun visor**

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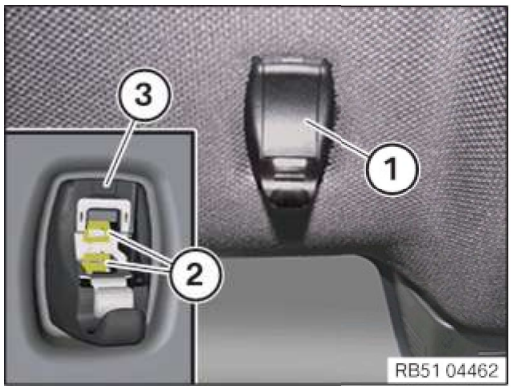
- Pull out the cover (1).
- Detach the sun visor (2) from the counter support .
- Disengage the sun visor (2) in front to the bottom and thread it out of the headlining at the rear.
- Unlock associated plug connection and disconnect.

5 – Remove both counter supports for the sun visors

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the counter support for the sun visor**

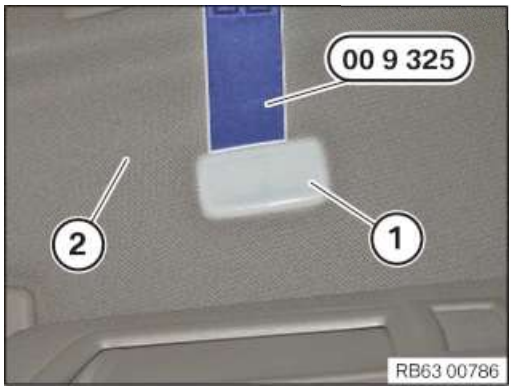


- Pull out the cover (1).
- Push the clamps (2) together and pull the counter support (3) out of the headlining.

6 – Removing front vanity mirror light

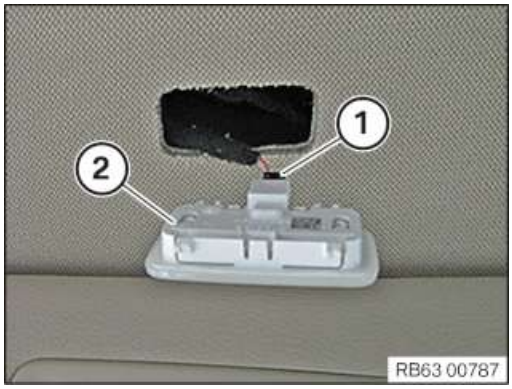
NOTICE

Description is for left component only. Procedure on the right side is identical.



- Lever out the front vanity mirror light (1) using special tool 0 496 569 (00 9 325) from the headlining (2).

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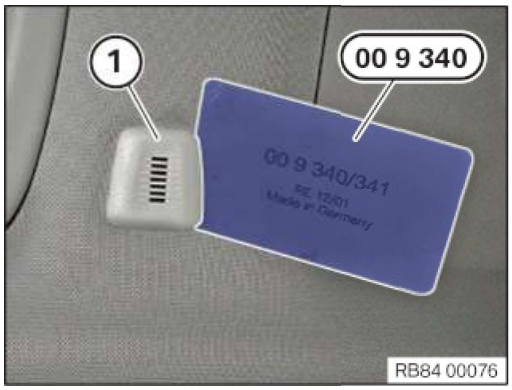
- Unlock and disconnect connector (1).
- Remove the front vanity mirror light (2).

7 – Remove both microphones

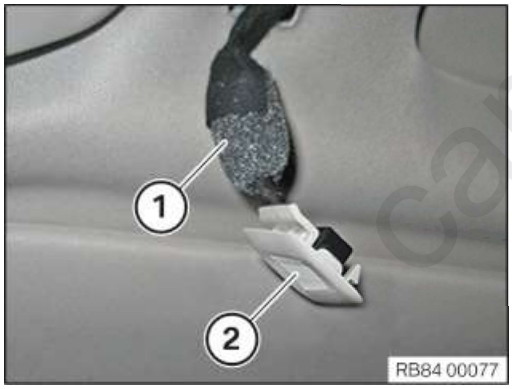
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Removing hands-free microphone**



- Lever out the hands-free microphone (1) with the special tool 0 493 687 (00 9 340).



- Open insulation (1).
- Disconnect plug connection.
- Remove hands-free microphone (2).

8 – Removing the roof function centre (FZD)



- Unclip the cover (1).

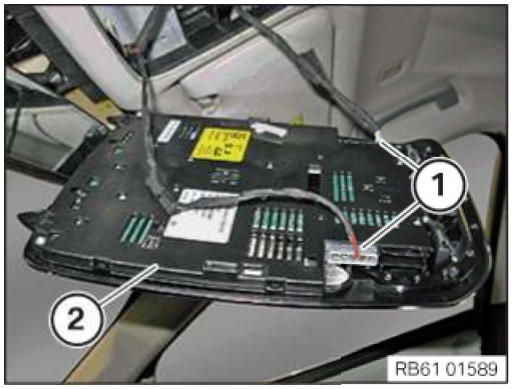
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- Loosen screws (1).



- Unclip the roof function centre (FZD) (1) from the clamps (2).
- Thread the roof function centre (FZD) (1) out of the guides (3).



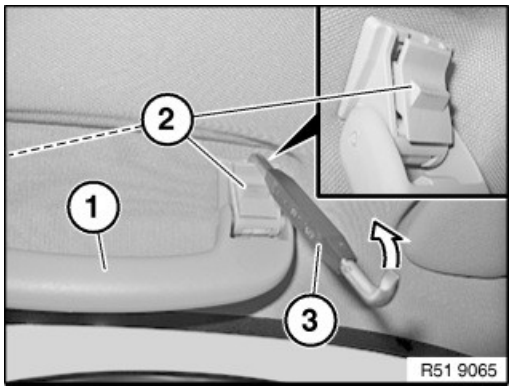
- Unlock and disconnect plug connections (1).
- Unclip the cable for the roof function centre (FZD) (2) from the cable clip.

9 – Removing all grab handles

NOTICE

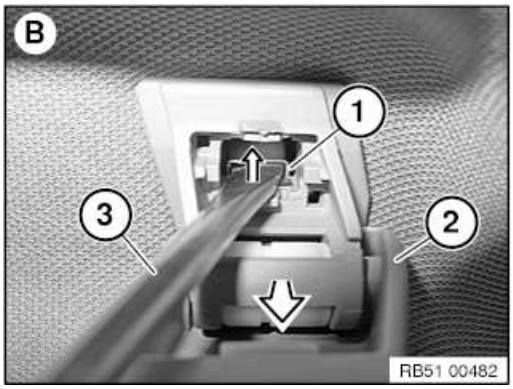
The description is for one component only. The procedure is identical for all further components.

▶ **Removing the grab handle**



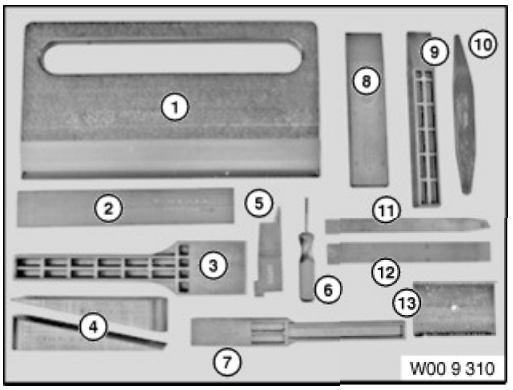
- Expand the grab handle (1) towards the bottom.
- Disengage and remove the locking insert (2) with an angle screwdriver (3) as shown.

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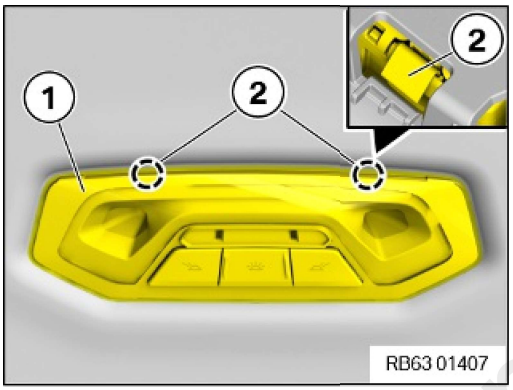


- Pull the grab handle (2) slightly to the inside and hold it.
- Use a suitable screwdriver (3) to detach the upper and lower release tabs (1).
- Guide the grab handle (2) out.
- Repeat the operation on the other side of the grab handle (2).

10 – Remove interior roof light



- Have the set of special tools 0 493 752 (00 9 329) ready.

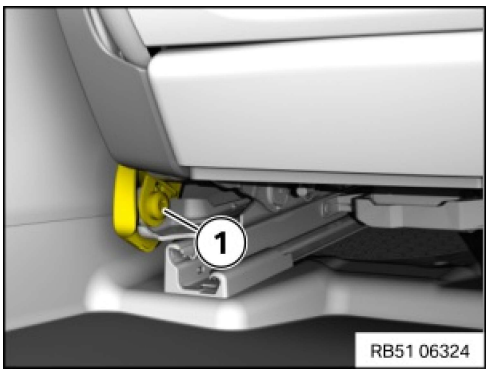


- Lever interior roof light (1) out of clamps (2) using a suitable tool.
- Unlock plug connection and disconnect.

11 – Removing both B-pillar trim panels

NOTICE

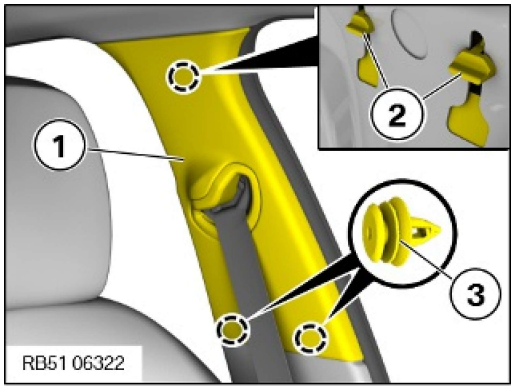
Description is for left component only. Procedure on the right side is identical.



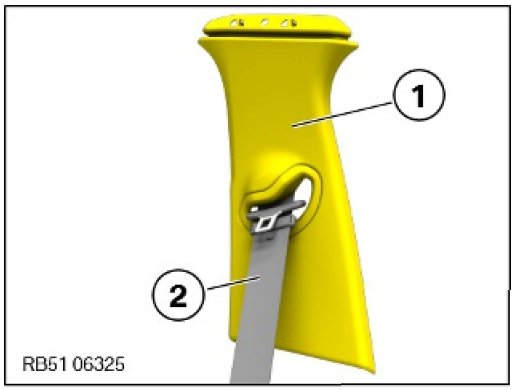
▸ **Remove the B-pillar trim panel**

- Fully position the front seat to the front and top.
- Loosen screw (1).
- Remove end fitting (2).

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- Unclip clips (3).
- Feed B-pillar trim panel (1) out of the front and rear lip of edge protections and the guides (2).



- Feed upper seat belt (2) out of B-pillar trim panel (1).

12 – Remove both C-pillar trim panels

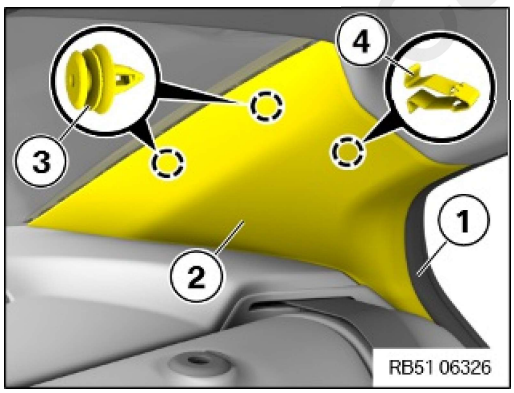
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove C-pillar trim panel**

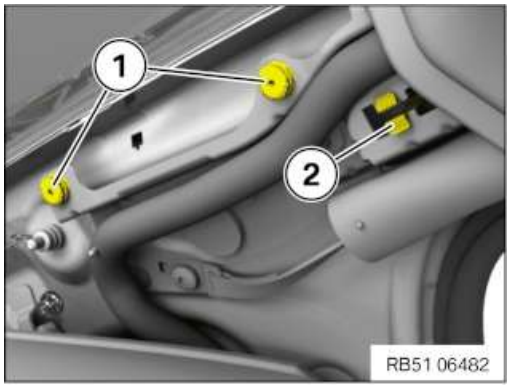
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



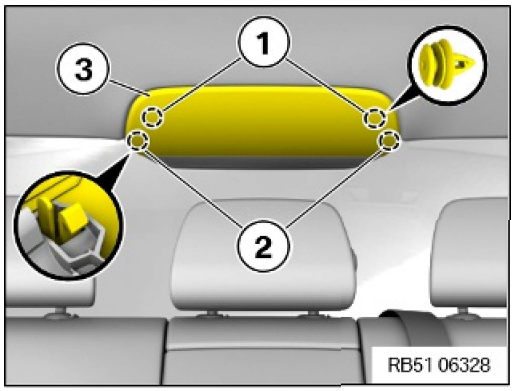
- Unclip clamp (4).
- Unclip clips (3).
- Feed out C-pillar trim panel (2) from the guides to the front.
- Thread out C-pillar trim panel (2) from the lip of edge protection (1).

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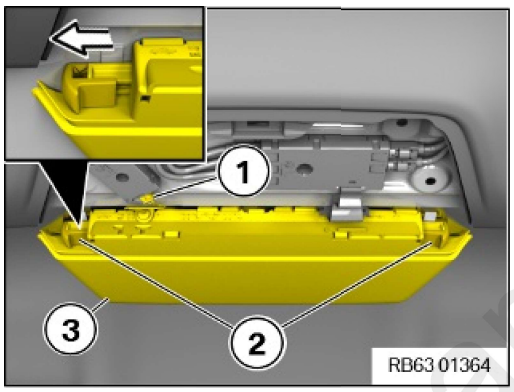
- If required, remove the clips (1) and the clamp (2) and connect it to the trim panel.

13 – Removing the trim of the additional brake light



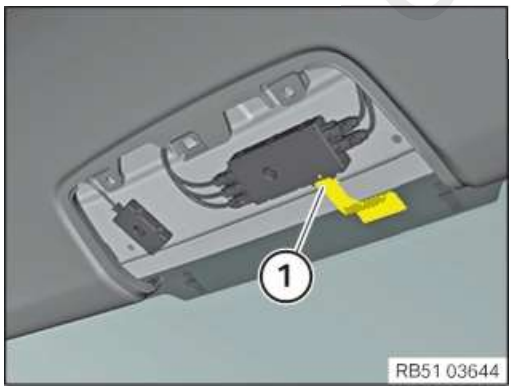
- Loosen the clips (1).
- Release the latch mechanisms (2) and remove the trim of the additional brake light (3).

14 – Remove additional brake light



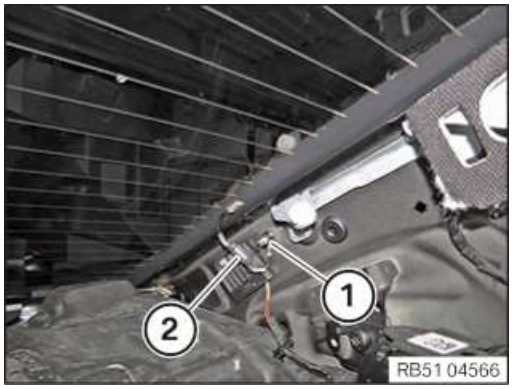
- Disconnect plug connection (1).
- Unlock both slides (2) outwards in the direction of the arrow and remove additional brake light (3).

15 – Remove rear window



- Unlock plug connection (1) and disconnect.
- Secure cable to rear window with adhesive tape.

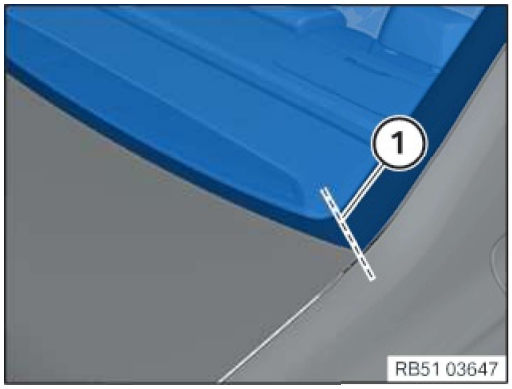
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- Loosen nut (1).
- Secure cable (2) to the rear window.



- Unlock plug connection (1) and disconnect.
- Secure cable (2) to rear window with adhesive tape.



- Tape off body in area of piercing point with fabric adhesive tape.
- Push the thread (1) through the adhesive bead along the line from the inside.
- Cut out the rear window with spider 2 357 248.
- Remove the rear window with the help of the special tool 2 184 377.
- Remove adhesive bead from the body using special tool 0 410 807 and clean the adhesive area.

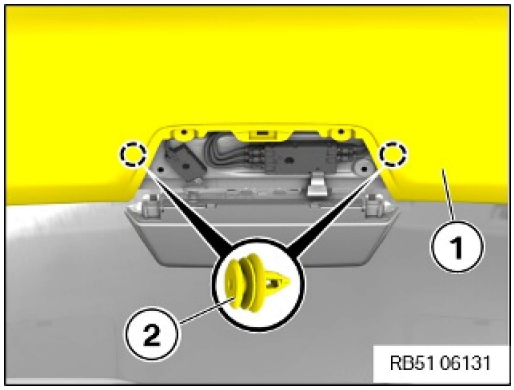
MAIN WORK

16 – Remove headlining

Prerequisite

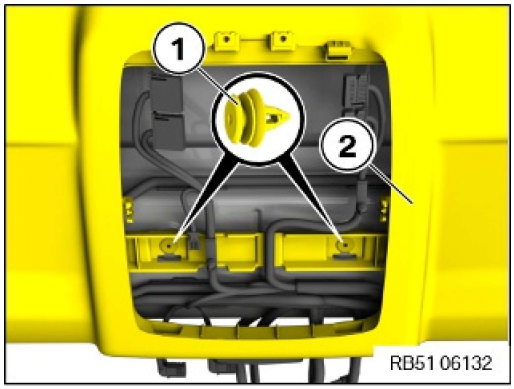
The front seats have been fully adjusted towards the bottom.

The front seat backrests have been fully adjusted towards the rear.



- Unclip the headlining (1) from the clips (2) downward.

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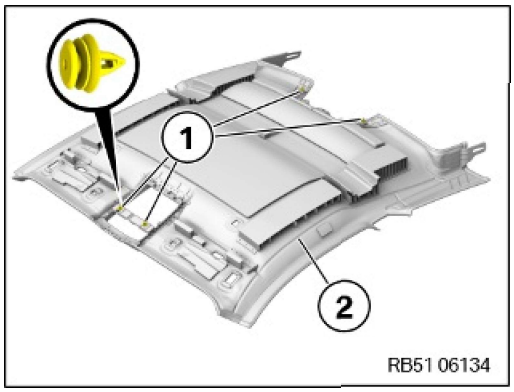
- Release the clips (1) at the headlining (2).
- Remove the headlining (1) with the help of an auxiliary person through the aperture on the rear window.

17 – Fit the roof lining

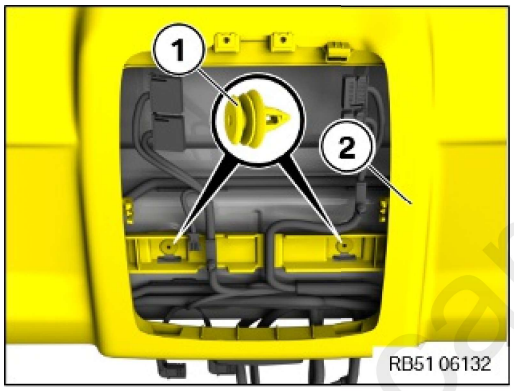
Prerequisite

The front seats have been fully adjusted towards the bottom.

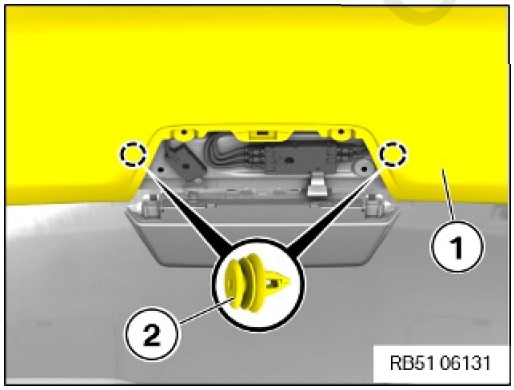
The front seat backrests have been fully adjusted towards the rear.



- Check the clips (1) on the headlining (2) for damage and renew if necessary.



- Install the headlining (1) with the help of an auxiliary person through the opening of the rear window and position it correctly.
- Position the headlining (2) on the clips (1) and clip it in.

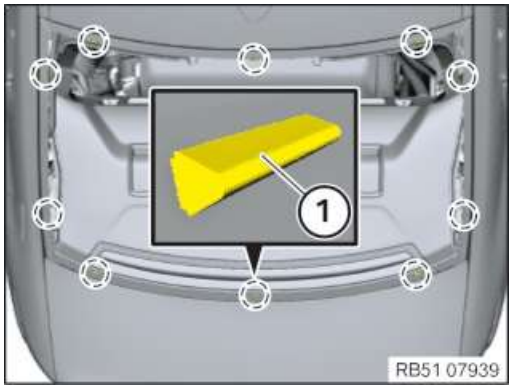


- Clip in clips (2) on the headlining (1).

POSTPROCESSES

18 – Replace the spacer

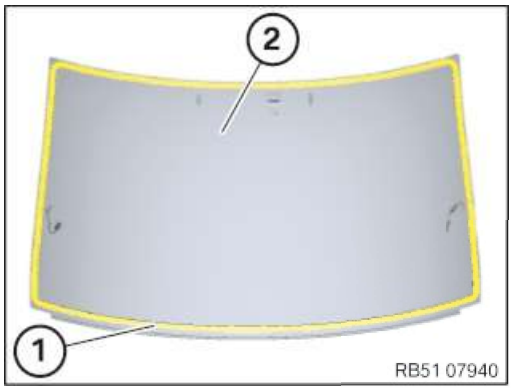
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- Completely remove the available spacer buffers (1).
- Remove the adhesive residue on the body and clean the adhesive area.
- Stick the new spacer buffers (1) in the centre on the engraved markings on the body side.

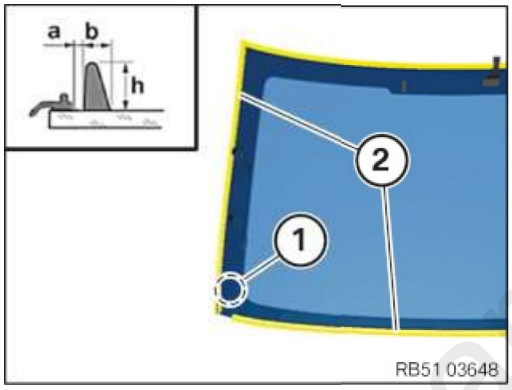
  Parts: Spacer buffer

19 – In case of reusing the rear window



- Remove the adhesive bead (1) on the rear window (2) with the special tool 0 410 807.

20 – Install the rear window

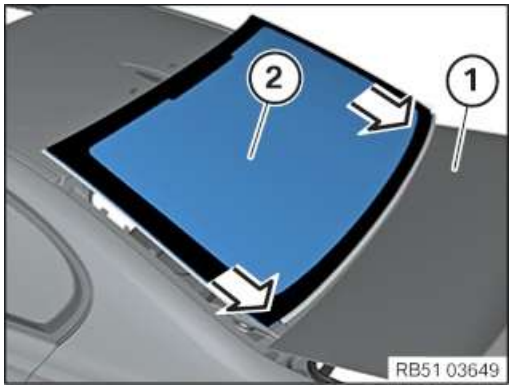


- Clean the bonding surfaces on the body and on the rear window.
- Provide two glue cartridges.
- Prepare a glue cartridge with the standard jet nozzle C.
- Apply bead joint in area (1).
- Apply adhesive bead within the mark on the rear window

Adhesive bead

b = Width	7 mm ... 9 mm
h = Height	11 mm ... 13 mm

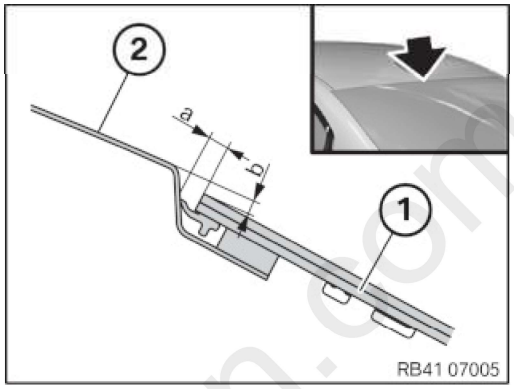
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- Open tailgate (1) approx. 1/3 and secure in this position.
- Carefully perform the following actions on rear window (2) with suction lifters
  - Bring it parallel to C-pillar
  - Feed it in under tailgate
  - Position at top
  - Align sides evenly
  - Press upwards until sealing rests evenly on roof
  - Press it evenly and adjust the gap dimension

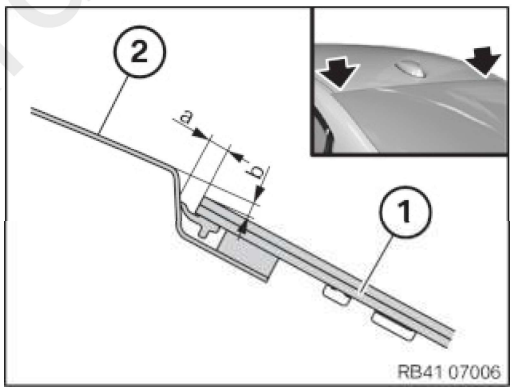
Gap dimension rear window to roof outer skin

1 rear window, 2 roof outer skin	
a	3,2 (1,9 - 4,5) mm
b	2,8 (1,5 - 4,1) mm



Gap dimension rear window to roof outer skin

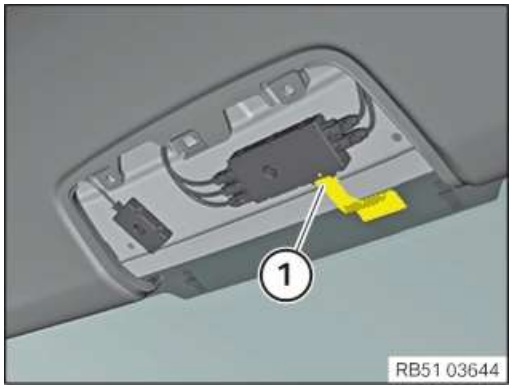
1 rear window, 2 roof outer skin	
a	3,2 (1,9 - 4,5) mm
b	2,6 (1,3 - 3,9) mm



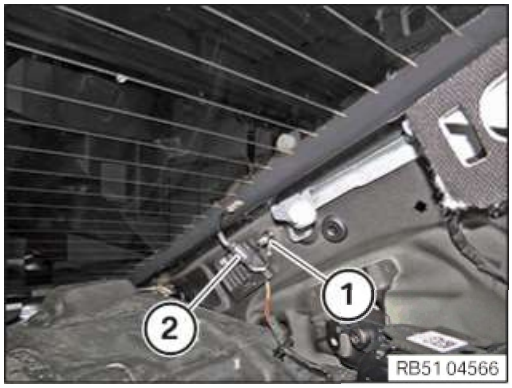
- Measure short length (A) of the rear window (1) to the roof outer skin (2) with the special tool 0 495 259 (51 0 010).

  Measure gap dimension (B) with special tool 0 496 076 (00 9 470).
- Secure rear window (1) with adhesive tap on the roof.

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- Connect connector (1).

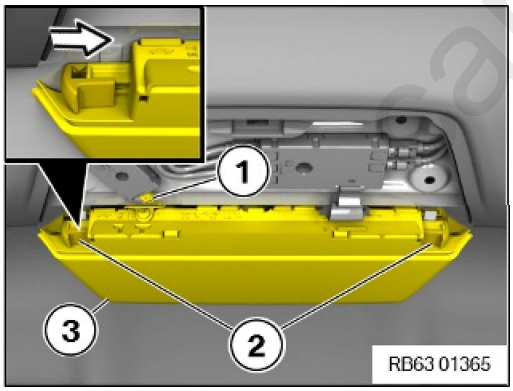


- Secure cable (2) with nuts (1) at the attachment point.



- Loosen cable (2) from the rear window.
- Connect connector (1).

21 – Install the auxiliary stop lamp

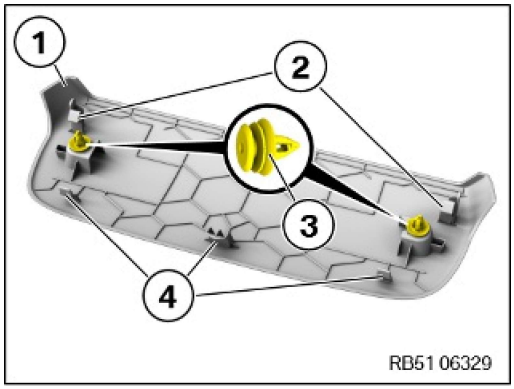


- Position the additional brake light (3).
- Lock both slides (2) inwards in the direction of the arrow.
- Connect connector (1).

22 – Installing trim for additional brake light

Check

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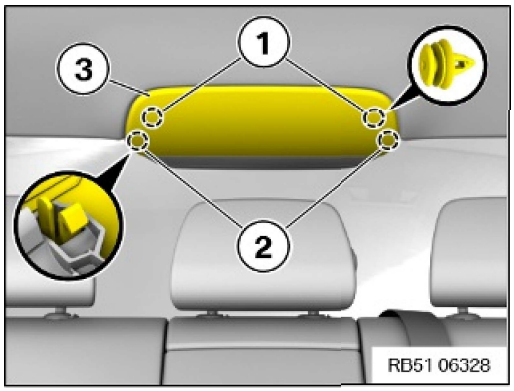
- Check the clips (3) for damage and renew if necessary.
- Check latch mechanisms (2) and guides (4) for damage.

Result

» The latch mechanism or the guide is damaged.

Measure

- Renew the trim for the additional brake light.



- Position trim for additional brake light (1) from the bottom and clip it in with latch mechanisms (2).
- Clip in clips (1).

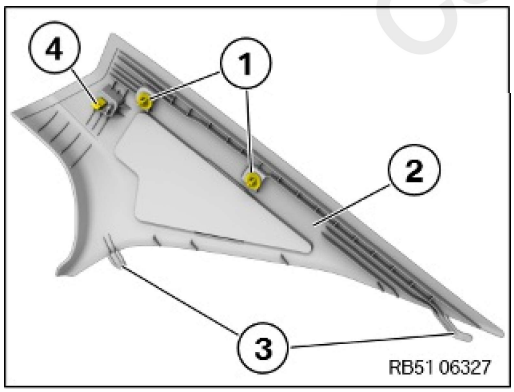
23 – Install both C-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Installing C-pillar trim panel**

Check



- Check clips (1) and clamp (4) for damage, renew if necessary.
- Check the guides (3) for damage.

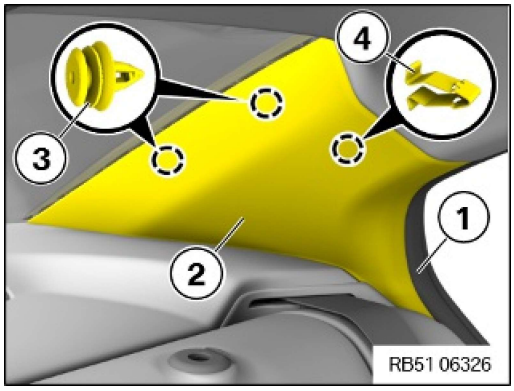
Result

» Guide is damaged.

Measure

- Renew the C-pillar trim panel .

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NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

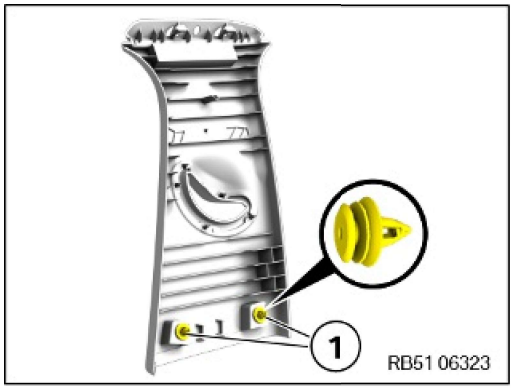
- Feed C-pillar trim panel (2) into guides towards the rear.
- Clip in clips (3).
- Clip in clamp (4).
- Guide in C-pillar trim panel (2) under the lip of edge protection (1).

24 – Installing both B-pillar trim panels

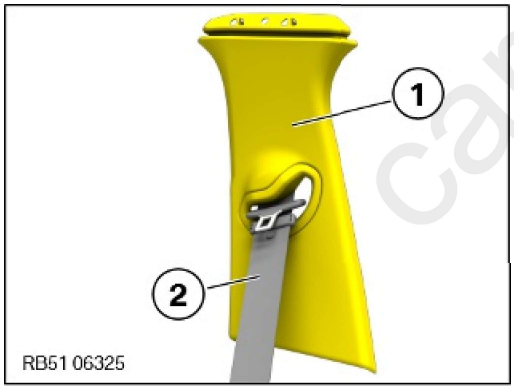
NOTICE

Description is for left component only. Procedure on the right side is identical.

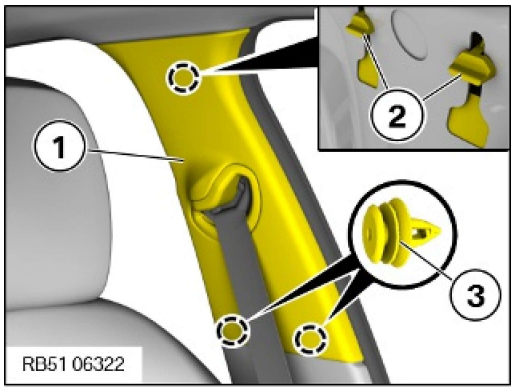
▸ **Install the B-pillar trim panel**



- Check the clips (1) for damage and renew if necessary.

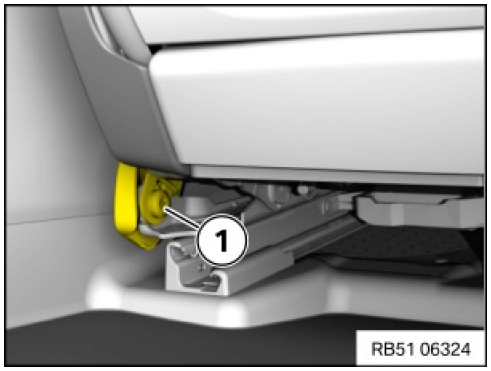


- Guide upper seat belt (2) in B-pillar trim panel (1).



- Insert B-pillar trim panel (1) into guides (2) and under the front and rear lips of edge protection.
- Clip in the B-pillar trim panel (1) with the clips (3).

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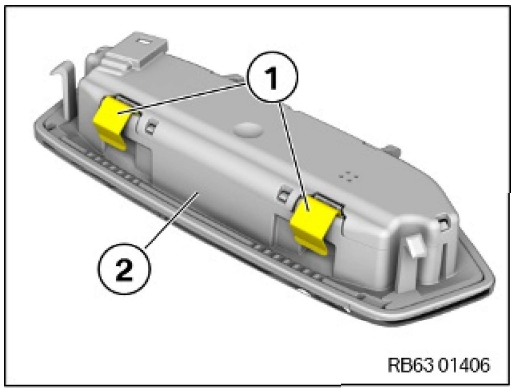
- Fully position the front seat to the front and top.
- Insert the end fitting (2).
- Renew the screw (1).

  Parts: Screw
- Tighten down screw (1).

End fitting to seat mechanism

Flat-head screwM10	Renew screw.	Tightening torque	42 Nm

25 – Install interior roof light



Check

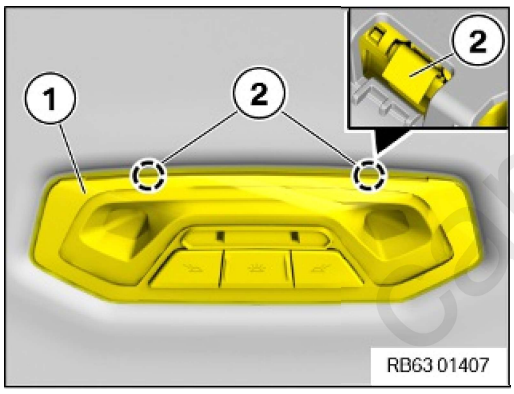
- Check the clamps (1) for damage.

Result

» Clamps (1) are damaged.

Measure

- Renew the interior roof light (2).



- Connect connectors and lock.
- Clip in the interior roof light (1) with clamps (2).

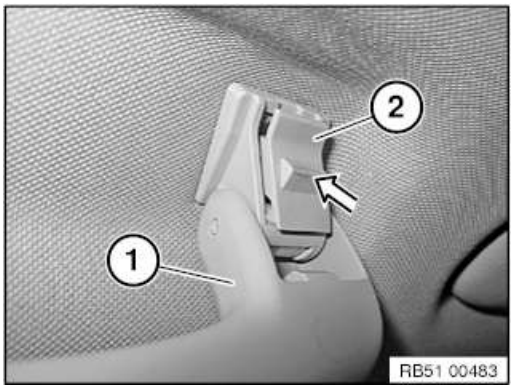
26 – Installing all grab handles

NOTICE

The description is for one component only. The procedure is identical for all further components.

▸ **Installing the grab handle**

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- Insert the grab handle (1) into body.
- Correctly clamp in the grab handle (1), as otherwise the locking inserts (2) on the grab handle (1) cannot correctly engage.
- Engage the locking inserts (2) on both sides of the grab handle (1).

27 – Install both A-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Installing the A-pillar trim panel**

WARNING

Airbag unit.

Danger! Life-threatening injuries!

- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

WARNING

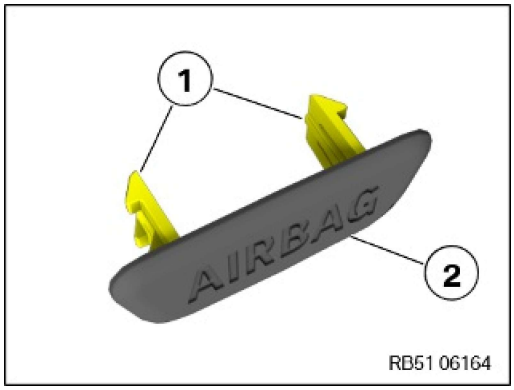
Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.

Check

- Check retaining lugs (1) of cover (2) for damage.



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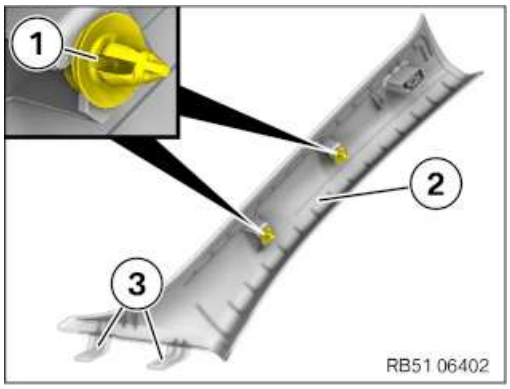
Result

» Retaining lug is damaged.

Measure

- Renew the cover.

Check



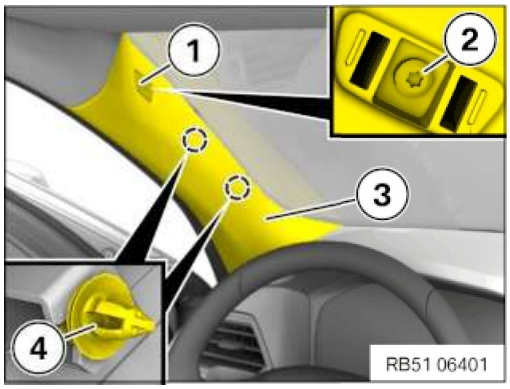
- Check the clips (1) for damage and renew if necessary.
- Check the guides (3) for damage.

Result

» Guide is damaged.

Measure

- Renew the A-pillar trim panel.



- Guide in A-pillar trim panel (3) downwards and clip it in with clips (4).
- Tighten down screw (2).

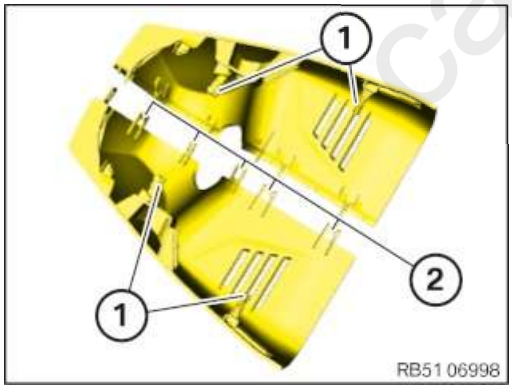
A-pillar trim panel to body

Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

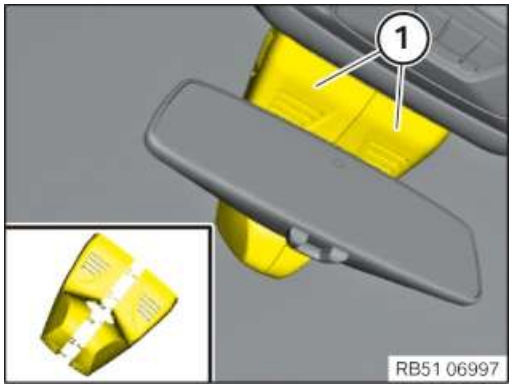
- Clip in the cover (1).

28 – Installing the covers for the interior mirror

- **Version A:**



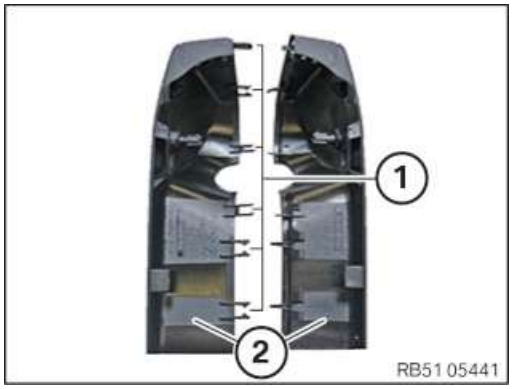
- Check latch mechanisms (1) and (2).
- If the latch mechanisms (1) or (2) are faulty, renew the covers.



- Feed cover (1) in and lock.

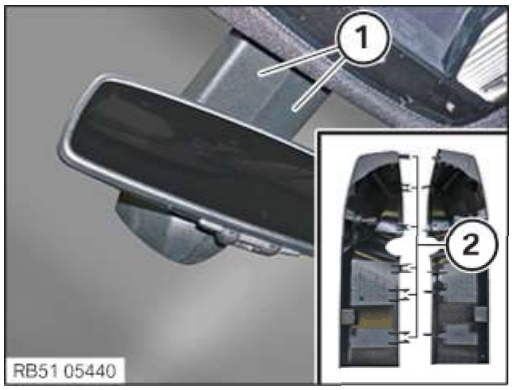
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- **Version B:**



- Check the latch mechanisms (1) on the two covers (2) for damage, renew the covers (2) if necessary.

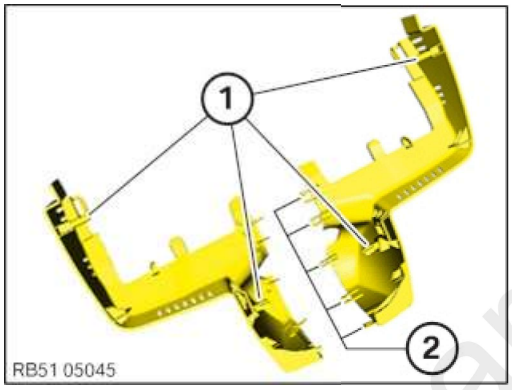
  The covers (2) must not be damaged or missing.



- Position the covers (1) correctly on the mirror and engage with the latch mechanisms (2).

- **Version C:**

Check



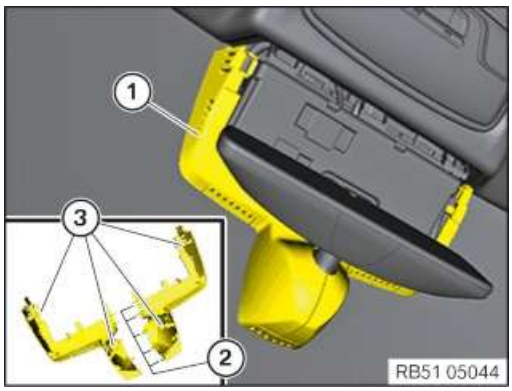
- Check the latch mechanisms (1) and (2) of the covers for damage.

Result

» The latch mechanism is damaged.

Measure

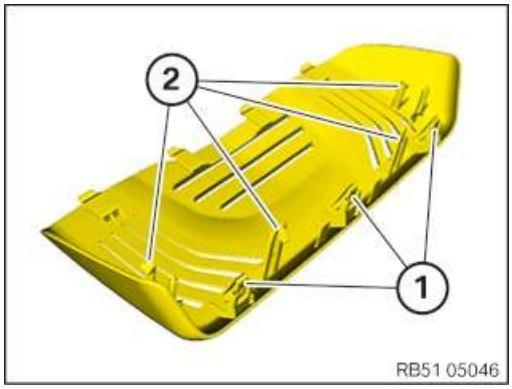
- Renew the cover.



- Guide in cover (1) on left and right and engage using latch mechanisms (2) and (3).

Check

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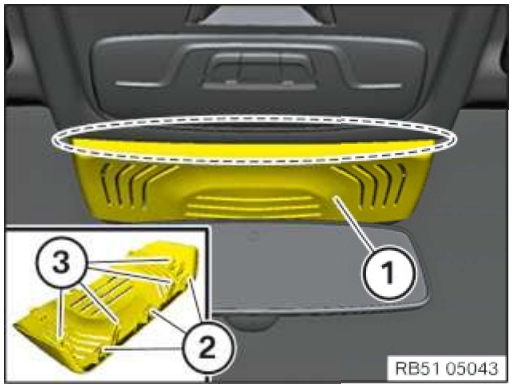
- Check clamps (1) for damage; renew if necessary.
- Check latch mechanisms (2) for damage.

Result

» The latch mechanism is damaged.

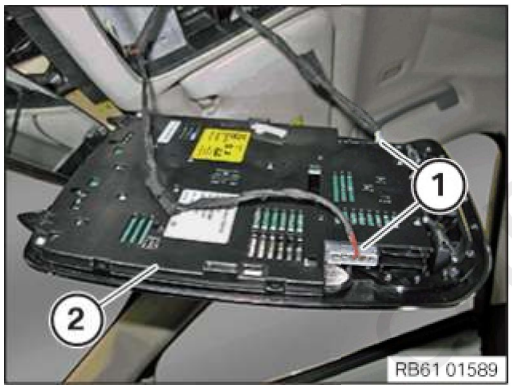
Measure

- Renew the cover.

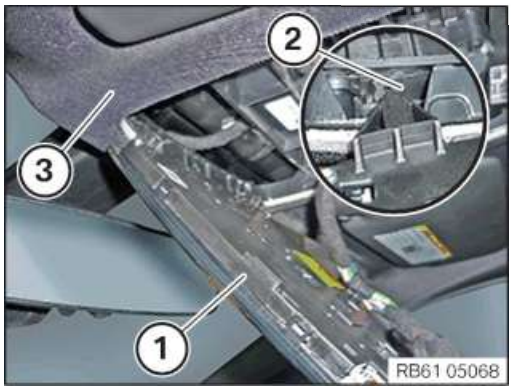


- Guide cover (1) into front guides and engage using retaining lugs (3) and clamps (2).

29 – Installing roof function centre (FZD)



- Connect connectors (1) and lock.
- Clip in the cable for the roof function centre (FZD) (2) in the cable clip.



- Thread the roof function centre (FZD) (1) as shown at a steep angle into the two guides (2) on the headlining (3).

  Make sure the headlining is not deformed during this operation.

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- Clip the roof function centre (FZD) (1) upwards into the clamps (2).



- Pass through the FZD frame and headlining with the special tool 2 298 505 and adjust the headlining correctly.



- Tighten the screws (1).

Roof function centre

	Tightening torque	1,2 Nm



- Clip in the cover (1).

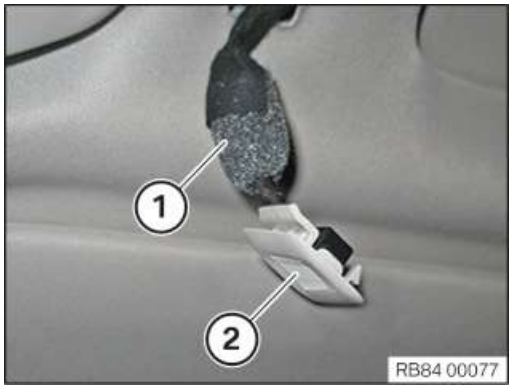
30 – Install both microphones

NOTICE

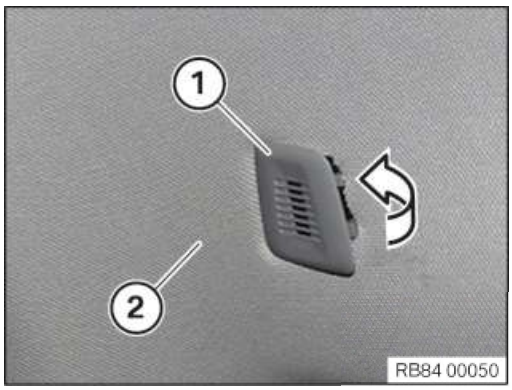
Description is for left component only. Procedure on the right side is identical.

▸ **Installing the hands-free microphone**

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- Connect the connector to the hands-free microphone (2).
- Close the insulation (1).

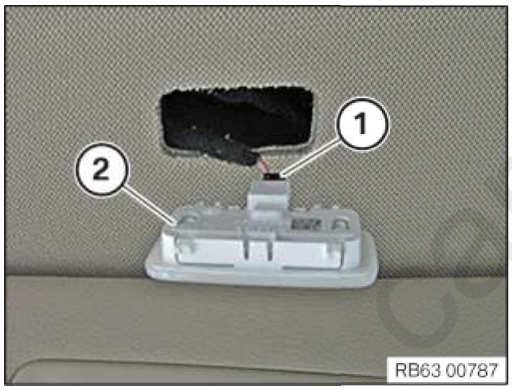


- Position hands-free microphone (1) in headlining (2) in the direction of the arrow.

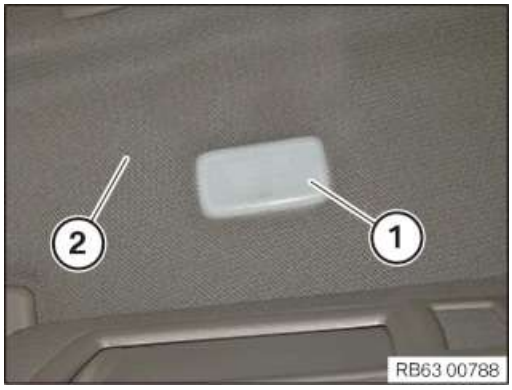
31 – Installing front vanity mirror light

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Connect the connector (1) to the front vanity mirror light (2).



- Position the front vanity mirror light (1) in the headlining (2).

32 – Install both counter supports for the sun visors

NOTICE

Description is for left component only. Procedure on the right side is identical.

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▶ **Install the counter support for the sun visor**



- Insert the counter support (3) into the headlining.
- Make sure the clamps (2) are engaged correctly.
- Use cover (1).

33 – Install both sun visors

NOTICE

Description is for left component only. Procedure on the right side is identical.

▶ **Install the sun visor**

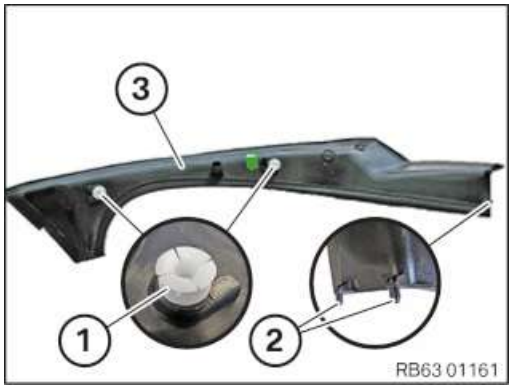


- Connect the sun visor (2) with the corresponding connector.
- Guide the sun visor (2) into the headlining.
- Use cover (1).
- Attach the sun visor (2) on the counter support.

34 – Installing the trim panel for the rear left and right water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Check the clips (1) and guides (2) on the trim panel for the water channel (3) for damage.

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- Clip in the trim panel for the water channel (1).

Additional Information

Overview of Tightening Torques

End fitting to seat mechanism — Used in step 24

Flat-head screwM10	Renew screw.	Tightening torque	42 Nm

A-pillar trim panel to body — Used in step 27

Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

Roof function centre — Used in step 29

		Tightening torque	1,2 Nm

Overview of Special Tools

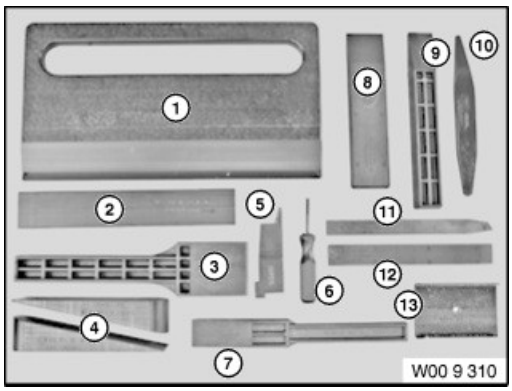
0 496 569 (00 9 325) Wedge



Common — Used in step 16

Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

0 493 752 (00 9 329) Case

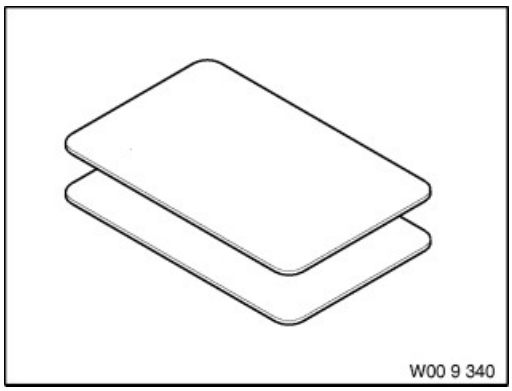


Common — Used in step 310

Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

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0 493 687 (00 9 340) Removal aid



Common Used in step 7

Usage	(Removal aid (2 x)) For levering out switch block on driver's door.
Included in the tool or work	
Storage location	C2
Replaced by	
In connection with	
SI-Number	01 15 99 (483)

Consisting of

Pos	BMW Order number	Replaced by	Designation	In Connection with
1	0 496 289 (00 9 341)		**Removal aid** Only available as a set (2 tools) under 00 9 340 (= 83 30 0 493 687).	

2 357 248 Removal and installation kit



Common Used in step 15

Usage	Removal system for removing glued windshields, side and rear windows without causing damage. The windows are cut out using an ultra-strong cord made from braided polyethylene fibres.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	05 06 13 (934)

2 184 377 Siphon



Common Used in step 15

Usage	Siphon for the removal, installation and positioning of vehicle windows.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	08 01 10 (635)

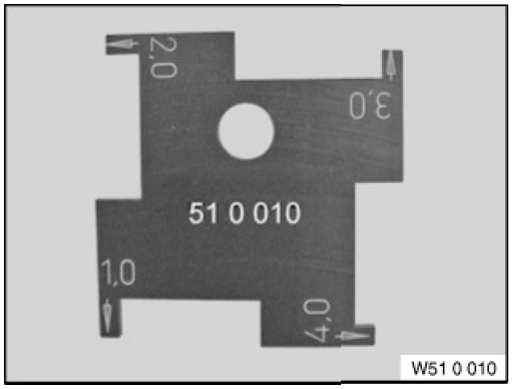
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0 410 807 Accessories



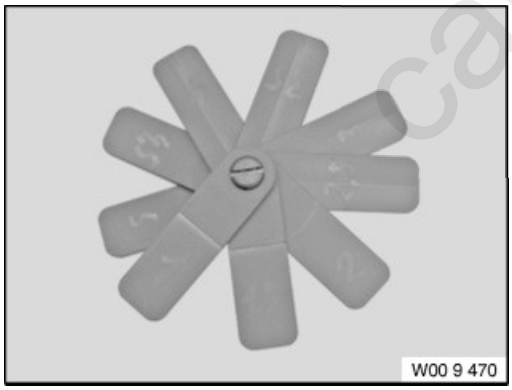
Common	Used in step 1519
Usage	Pinchweld scraper set for removing seal residues such as window glass adhesive or seals in the engine compartment.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	08 02 05 (206)

0 495 259 (51 0 010) Gauge



Common	Used in step 20
Usage	(test gauge for installing windscreen and rear window) (replaces special tool 51 3 210 from 06/2005)
Included in the tool or work	
Storage location	B2
Replaced by	
In connection with	
SI-Number	01 10 05 (189)

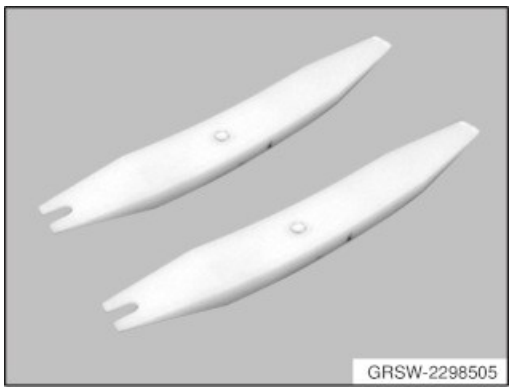
0 496 076 (00 9 470) Gauge



Common	Used in step 20
Usage	(Gap gauge) From 1 to 5 mm (1; 1.5; 2; 2.5 ...). For checking body gap dimensions.
Included in the tool or work	0 496 091
Storage location	A24
Replaced by	
In connection with	
SI-Number	01 03 07 (337)

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2 298 505 Wedge



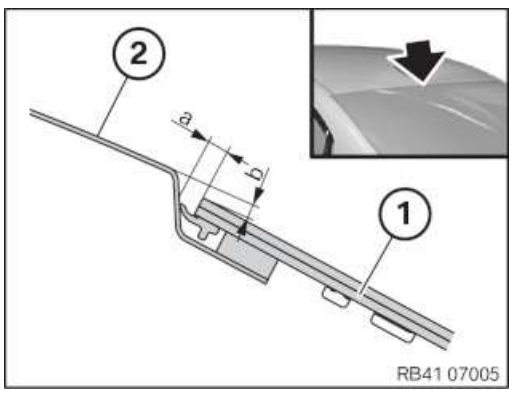
Common	Used in step 29
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

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Overview Technical Data

Adhesive bead	Used in step 20
b = Width	7 mm ... 9 mm
h = Height	11 mm ... 13 mm

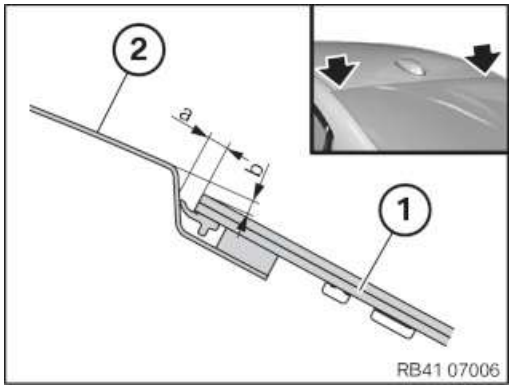
Gap dimension rear window to roof outer skin	Used in step 20
1 rear window, 2 roof outer skin	
a	3,2 (1,9 - 4,5) mm
b	2,8 (1,5 - 4,1) mm



Gap dimension rear window to roof outer skin Used in step 20

1 rear window, 2 roof outer skin

a	3,2 (1,9 - 4,5) mm
b	2,6 (1,3 - 3,9) mm



Links

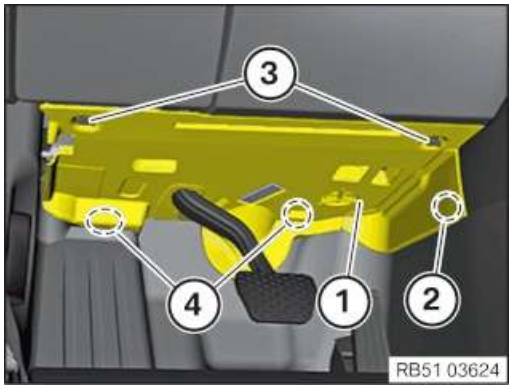
General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	3
72 00 ... Safety regulations for handling components with gas generators	3
51 31 ... General procedure for the disassembly and installation of bonded window glass	

Repair instructions	Used in step
51 31 ... Removing windows with a "Spider"	

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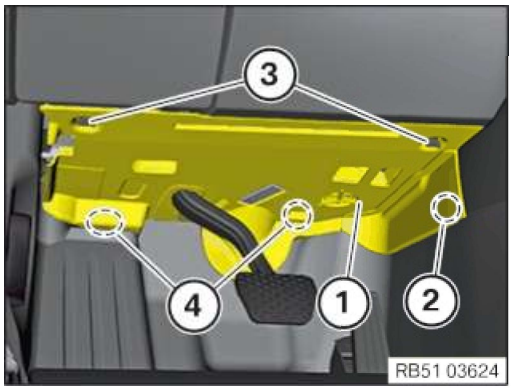
51 45 184 Remove and install tailgate trim

1 – Removing the trim panel for pedal mechanism



- Unclip the trim panel for the pedal mechanism (1) towards the inside in this area (2).
- Turn the locks (3) by 90°.
- Detach the trim panel for the pedal mechanism (1) inwards out of the guides (4).
- Unlock associated plug connection and disconnect.

2 – Installing the trim panel for the pedal mechanism



- Connect associated connector.
- Attach the trim panel for the pedal mechanism (1) in the guides (4) and fold it up.
- Clip the trim panel for the pedal mechanism (1) into the centre console in this area (2).
- Insert locks (3) correctly and turn 90°.

cardiagn.com

51 45 370 Removing and installing decorative strip on left dashboard

RISK OF DAMAGE

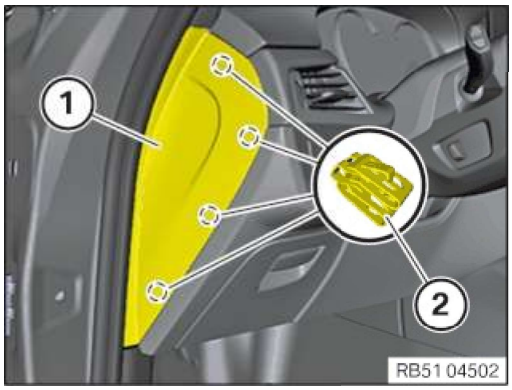
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

PRELIMINARY WORK

1 – Remove the side panel on the left instrument panel

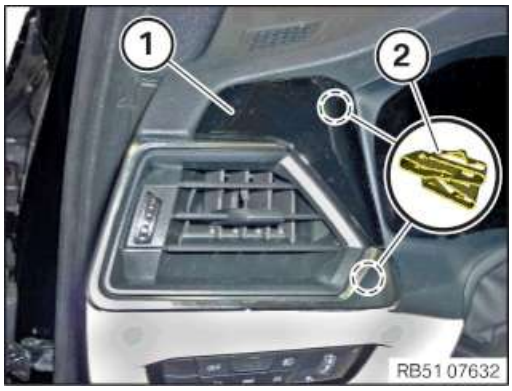


- Unclip and remove the side panel (1) towards the outside from the clamps (2).

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MAIN WORK

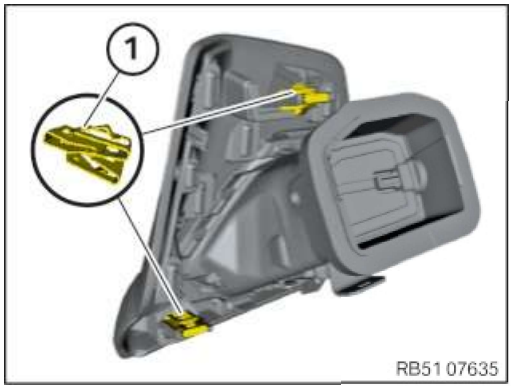
2 – Remove the finisher on the instrument panel on the left



- Unclip decorative strip (1) to the rear out of the clamps (2).
- Unlock associated plug connection and disconnect.

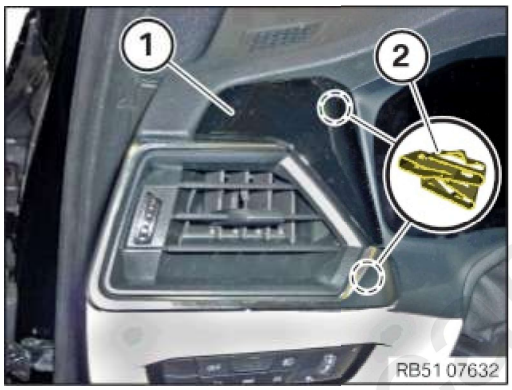
  Remove the decorative strip (1).

3 – Install the finisher on the instrument panel on the left



- Check the clamps (1).

  Replace broken or missing clamps (1).

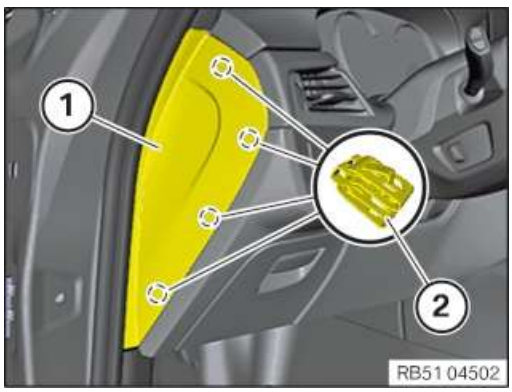


- Install the decorative strip (1).

  Connect and lock the associated connectors.
- Clip decorative strip (1) into clamps (2).

POSTPROCESSES

4 – Install the side panel on left instrument panel



- Feed in the side panel (1) and clip it in at the clamps (2).

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51 45 380 Removing and installing decorative strip on right dashboard

RISK OF DAMAGE

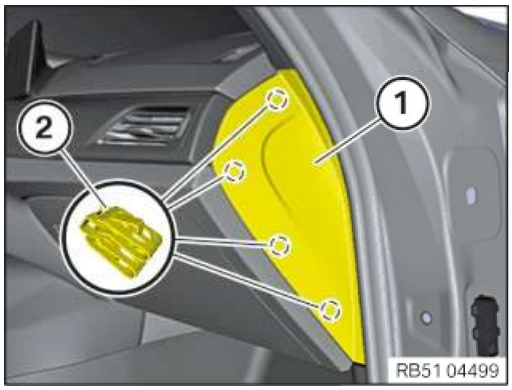
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

PRELIMINARY WORK

1 – Remove the side panel on the right instrument panel

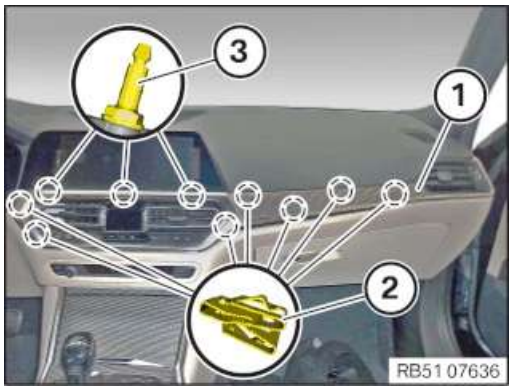


- Unclip and remove the side panel (1) towards the outside from the clamps (2).
- If necessary, unlock associated plug connection and disconnect.

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MAIN WORK

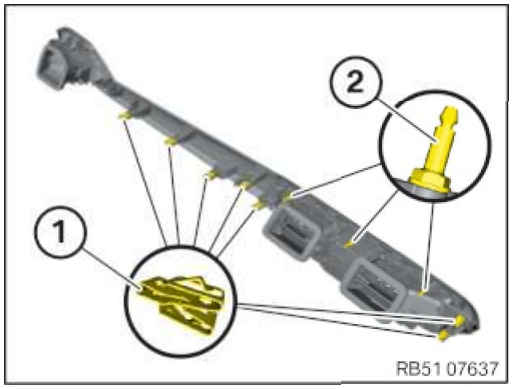
2 – Remove the finisher on the right instrument panel



- Unclip the decorative strip (1) towards rear at the clamps (2) and the pins (3).
- Unlock associated plug connection and disconnect.

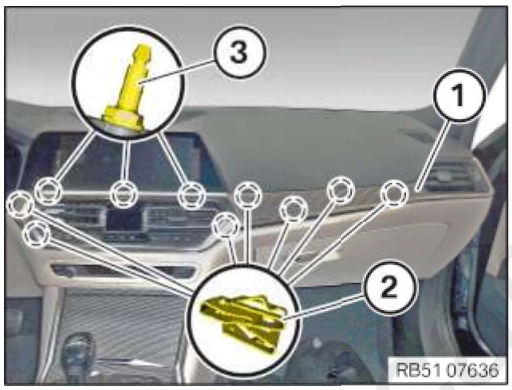
  Remove the decorative strip (1).

3 – Install the finisher on the right instrument panel



- Check the clamps (1).

  Replace broken or missing clamps (1).
- Check the pins (2) and the corresponding clamps on the instrument panel trim and renew if necessary.

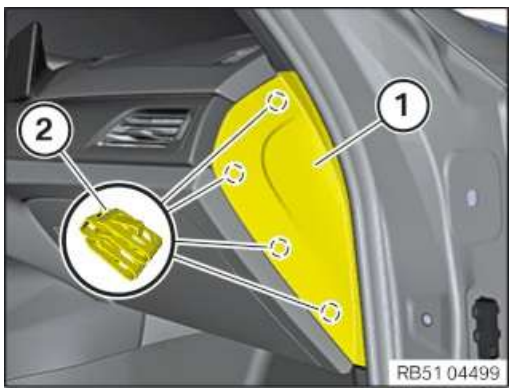


- Install the decorative strip (1).

  Connect and lock the associated connectors.
- Correctly position the decorative strip (1) and at the clamps (2) and clip in the pins (3).

POSTPROCESSES

4 – Install the side panel on instrument panel on the right



- If required, connect the associated connector.
- Feed in the side panel (1) and clip it in at the clamps (2).

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51 45 030 Removing and installing instrument panel trim

PRELIMINARY WORK

1 – Adjust the steering column position



- Adjust the length of the steering column to the maximum length in the direction of arrow (1).
- Move the steering column to the lowest steering column position in the direction of arrow (2).

2 – Remove cupholder

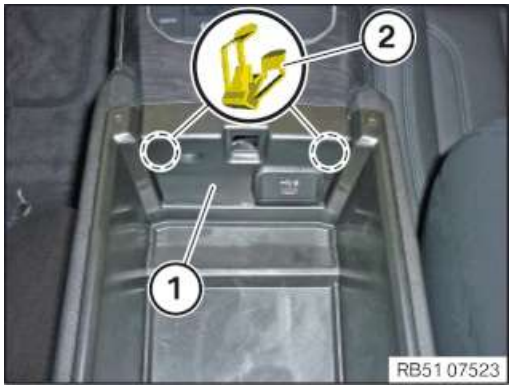


- Remove the insert (1).



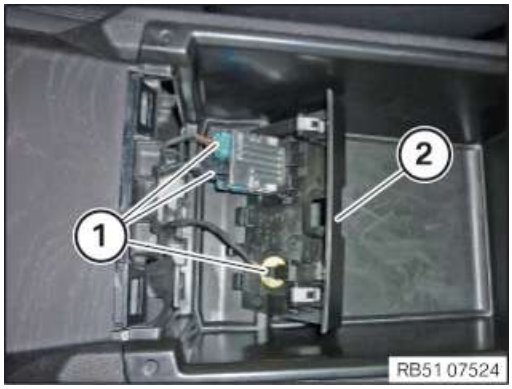
- Loosen screws (1).
- Feed the cup holder (2) out to the top.
- Unlock associated plug connections and disconnect.

3 – Removing the trim in the storage compartment on the centre armrest



- Lever out the trim (1) with the special tool (2) toward the rear from the clamps 2 298 505.

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- Unlock and disconnect the plug connections (1) and remove the trim (2) .

4 – Remove the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



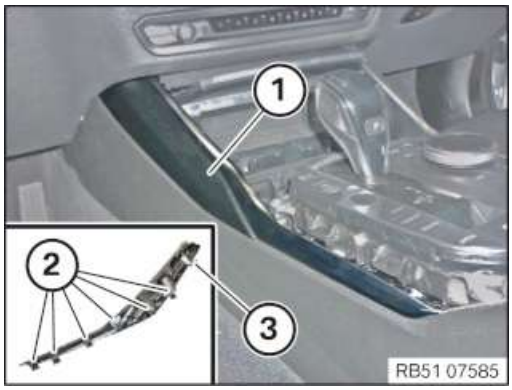
- Release and remove the centre console trim upwards (1) as shown using the special tool 2 298 505 from the latch mechanisms.

5 – Removing the decorative trim on the centre console trim on the left and right

▸ **Remove decorative trim on centre console**

NOTICE

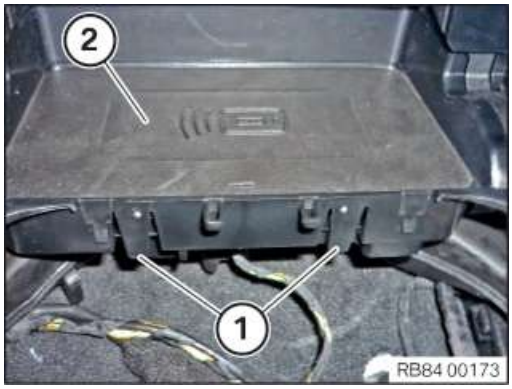
Description is for left component only. Procedure on the right side is identical.



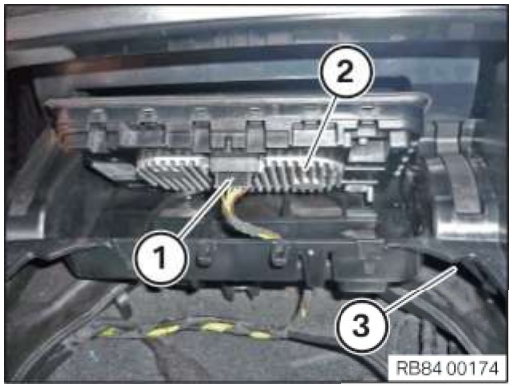
- Lever out the rear decorative trim (1) from the latch mechanisms (2) starting from the top.
- Feed out the decorative trim (1) backwards out of the guide (3) and remove.

6 – Removing the wireless charging station

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- Loosen the latch mechanisms (1) and push out the wireless charging station (2) upwards.



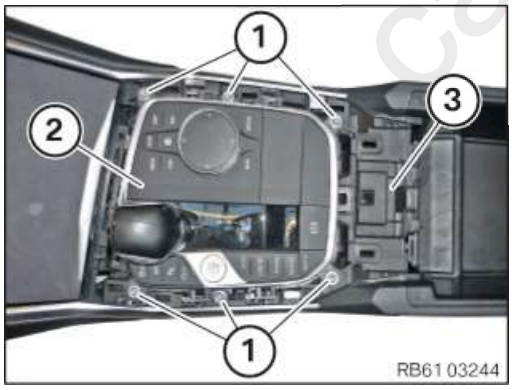
- Disconnect the connector (1) and remove the wireless charging station (2) from the centre console (3).

7 – Remove the operating facility in the centre console

▶ **Disconnecting all battery earth leads**



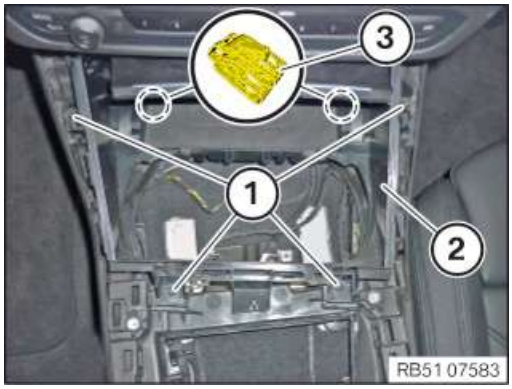
- See additional information.



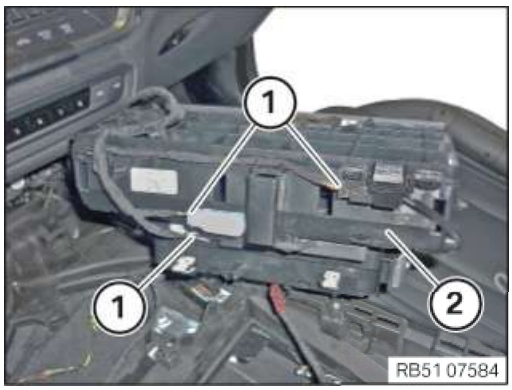
- Loosen screws (1).
- Remove the operating facility in the centre console (2) from the centre console (3).

8 – Removing the storage compartment of the front centre console

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- Loosen screws (1).
- Remove storage compartment trim (2) backwards out of clamps (3).



- Unlock and disconnect all the plug connections (1) and remove the storage compartment (2).

9 – Removing the rear centre console trim

RISK OF DAMAGE

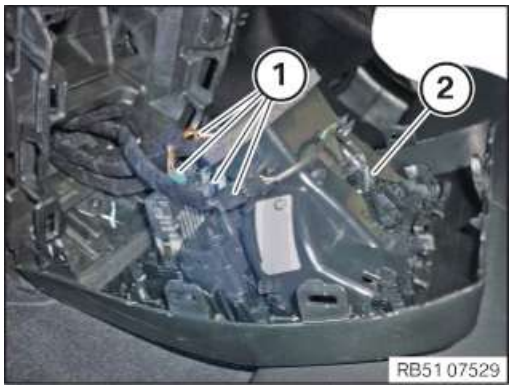
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Release centre console trim (1) backwards from the latch mechanisms at the side and pull it a little way towards the rear.



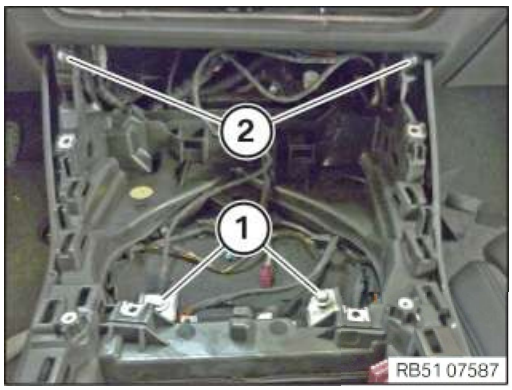
- Unlock and disconnect plug connections (1).
- Remove the centre console trim (2).

10 – Removing the centre console

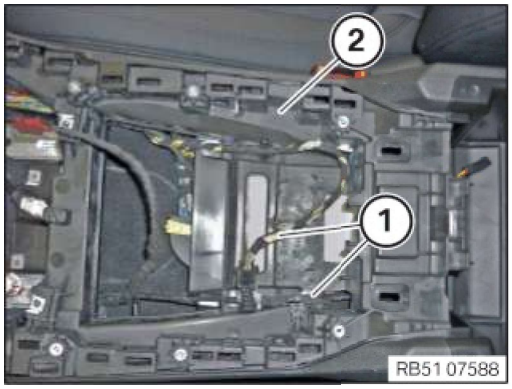
rdiagn.com



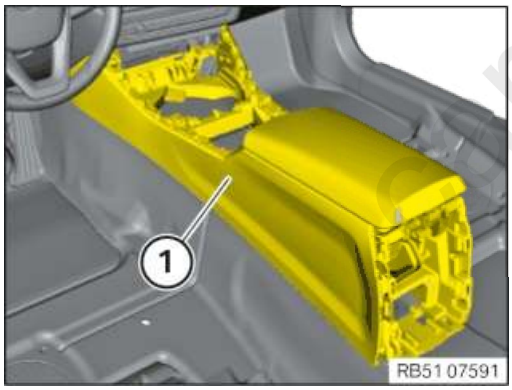
- Loosen screws (1).



- Loosen screws (1) and (2).



- Release the wiring harness (1) from the centre console (2).

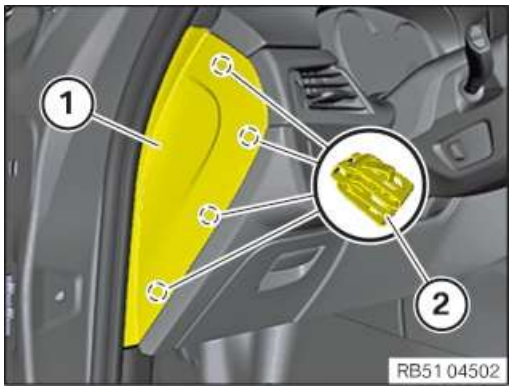


NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

- Carefully raise rear centre console (1).
- Feed out wiring harness from the centre console (1) and unlock and disconnect existing plug connections, if required.
- Feed out and remove the centre console (1) on the instrument panel .

11 – Remove the side panel on the left instrument panel

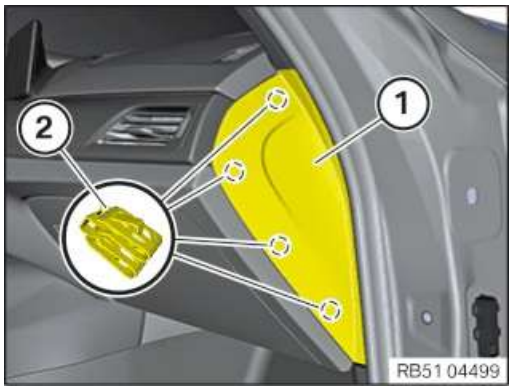


- Unclip and remove the side panel (1) towards the outside from the clamps (2).

12 – Remove the side panel on the right instrument panel

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12 – Remove the side panel on the right instrument panel



- Unclip and remove the side panel (1) towards the outside from the clamps (2).
- If necessary, unlock associated plug connection and disconnect.

13 – Remove both A-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the A-pillar trim panel**

WARNING

Airbag unit.

Danger! Life-threatening injuries!

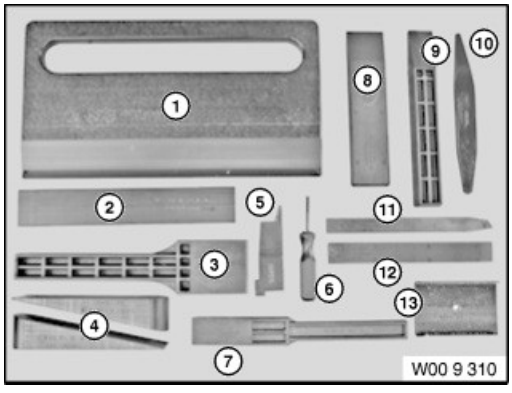
- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

WARNING

Pyrotechnic components.

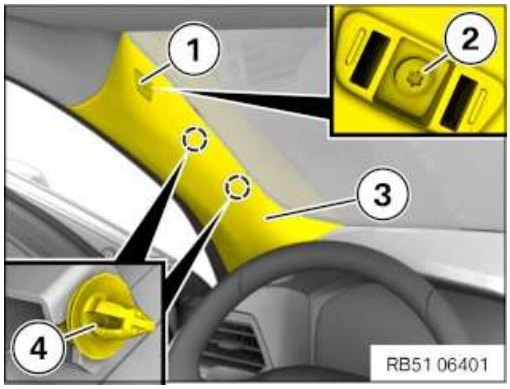
Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



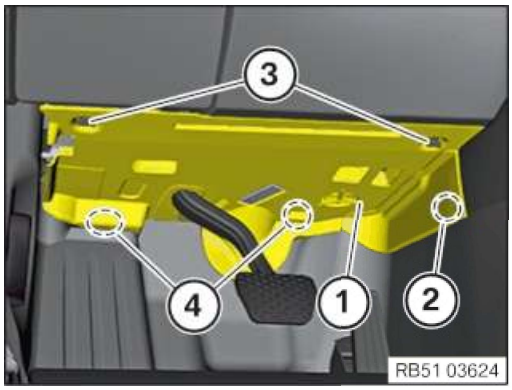
- Have the set of special tools 0 493 752 (00 9 329) ready.

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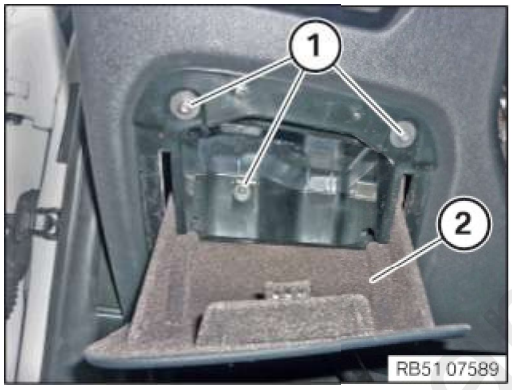
- Unclip the cover (1) with suitable tools.
- Loosen screw (2).
- Unclip A-pillar trim panel (3) with clips (4) and guide it out upwards.

14 – Removing the trim panel for pedal mechanism



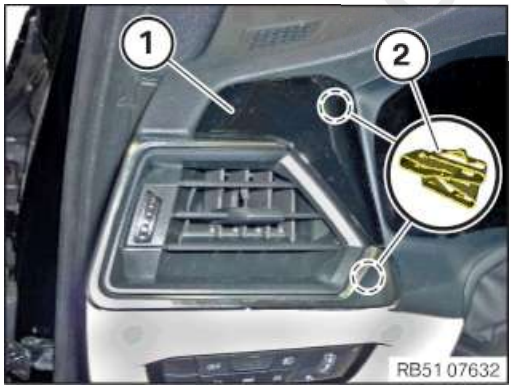
- Unclip the trim panel for the pedal mechanism (1) towards the inside in this area (2).
- Turn the locks (3) by 90°.
- Detach the trim panel for the pedal mechanism (1) inwards out of the guides (4).
- Unlock associated plug connection and disconnect.

15 – Removing the left fold-down compartment



- Loosen screws (1).
- Remove the fold-down compartment (2) toward the bottom.

16 – Remove the finisher on the instrument panel on the left

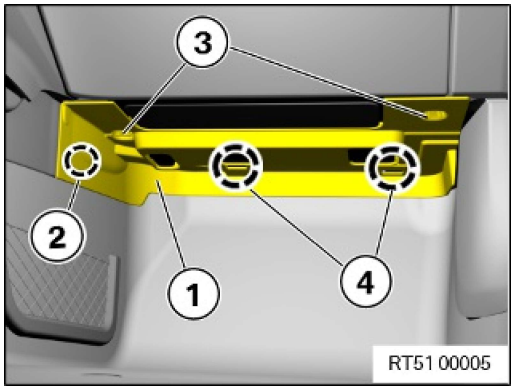


- Unclip decorative strip (1) to the rear out of the clamps (2).
- Unlock associated plug connection and disconnect.

  Remove the decorative strip (1).

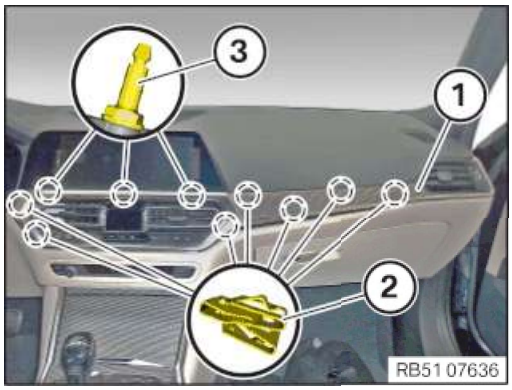
17 – Remove the right footwell trim

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- Turn the locks (3) by 90°.
- Feed the footwell trim (1) out of the guide (2).
- Detach the footwell trim (1) inward out of the guides (4).
- Unlock associated plug connection and disconnect.

18 – Remove the finisher on the right instrument panel



- Unclip the decorative strip (1) towards rear at the clamps (2) and the pins (3).
- Unlock associated plug connection and disconnect.

  Remove the decorative strip (1).

19 – Remove Central Information Display (CID)

RISK OF DAMAGE

Electrostatic discharge.

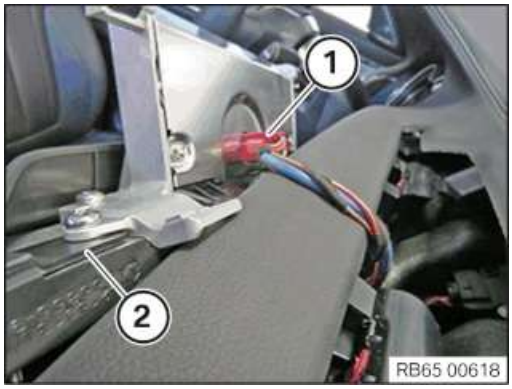
Damage to or destruction of electrical components.

- Leave electrical components in original packaging until just before they are installed. Use the original packaging only for any return shipments. Always package removed components straight away.
- Read and comply with user information on using the associated special tool 12 7 060.
- Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.
- Wear electrically conductive clothing and antistatic shoes (with ESD symbol).
- For additional information see: 61 35 Information on electrostatic discharge (ESD) protection.



- Loosen screws (1).
- Pull out central information display (CID) (2) slightly off the instrument panel.

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- Unlock plug connection (1) and disconnect.
- Remove the central information display (CID) (2).

20 – Removing the airbag unit

WARNING

Airbag unit.

Danger! Life-threatening injuries!

- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

RISK OF DAMAGE

Damage to the steering wheel.

Incorrect handling of the tool may damage the steering wheel.

- Ensure the tool is positioned correctly (angle and inclination).
- When unlocking, do not use "levering" action. Instead, press in the Torx screwdriver toward the centre of steering wheel only.

TECHNICAL INFORMATION

Different variants may be installed depending on the vehicle equipment.



▸ **Version A: Removing the airbag unit (sports steering wheel)**

- Insert Torx screwdriver T25 (1) diagonally upwards in the hidden opening (2) on the rear side of the steering wheel until a spring resistance is felt.

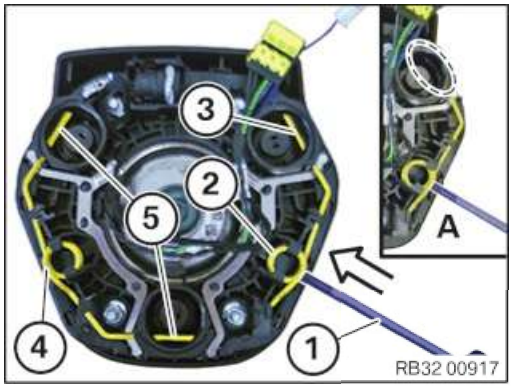
cardiagn.com



NOTICE

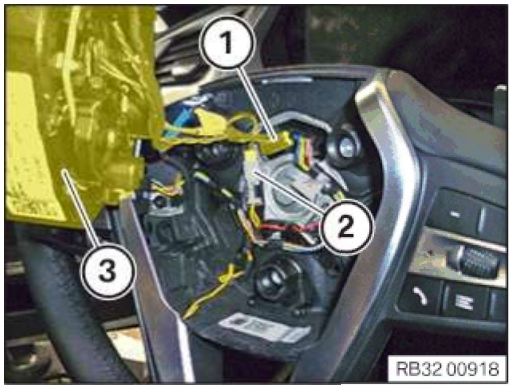
To provide a better overview: Diagram with airbag unit removed.

- To unlock the airbag unit, press Torx screwdriver T25 (1) diagonally upwards in the direction of the arrow to the centre of the steering wheel.



- Press the airbag unit over a large area of the steering wheel.
- Use Torx screwdriver T25 (1) to press wire spring clip (2) in the direction of the arrow towards the centre of the steering wheel and release lock (3).

  (A): Wire spring clip (2) is unlocked.
- Then use Torx screwdriver T25 (1) to press wire spring clip (4) in the direction of the arrow towards the centre of the steering wheel and release locks (5).
- Carefully raise the airbag unit.



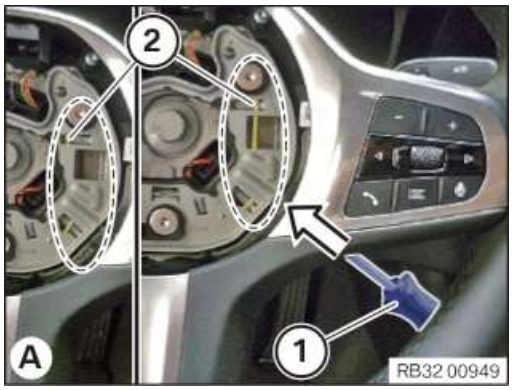
- Unlock and disconnect the plug connections (1) and (2).
- Remove airbag unit (3).

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▸ **Version B: Removing airbag unit (M Sport steering wheel)**



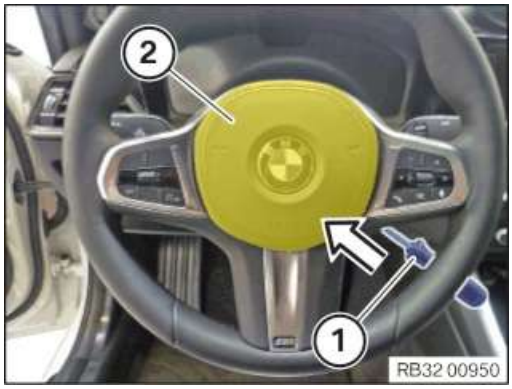
- Locate the pre-punched bore hole (1) on the rear side of the steering wheel by touch.
- Insert the Torx screwdriver T27 (2) diagonally upwards in the pre-punched bore hole (1) on the rear side of the steering wheel until a springing kind of resistance can be felt.



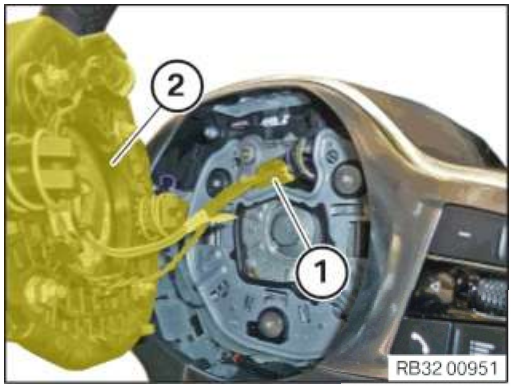
NOTICE

To provide a better overview: Diagram with airbag unit removed.

- Press in Torx screwdriver T27(1) straight in direction of arrow towards the centre of the steering wheel in order to unlock the wire spring clip (2) or to unlock the airbag unit (A).

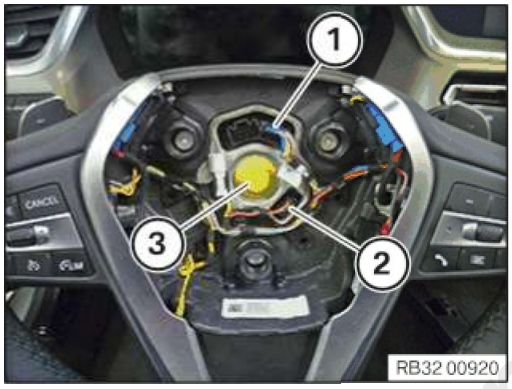


- Press in Torx screwdriver T27 (1) straight in direction of arrow towards the centre of the steering wheel and lift airbag unit (2) on the unlocked side.
- Repeat procedure on left side and carefully remove airbag unit (2) in direction of arrow off the steering wheel.



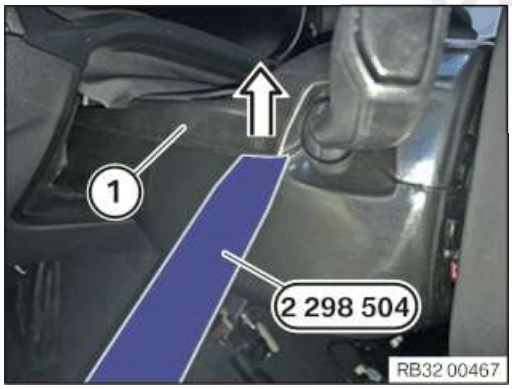
- Unlock and disconnect plug connection (1) and remove the airbag unit (2).

21 – Removing the steering wheel (sports steering wheel)



- Move the steering wheel and wheels to the straight-ahead position.
- Unlock plug connection (1) and disconnect.
- If installed: Unlock plug connection (2) and disconnect.
- Release the screw (3) and pull off and remove the steering wheel.

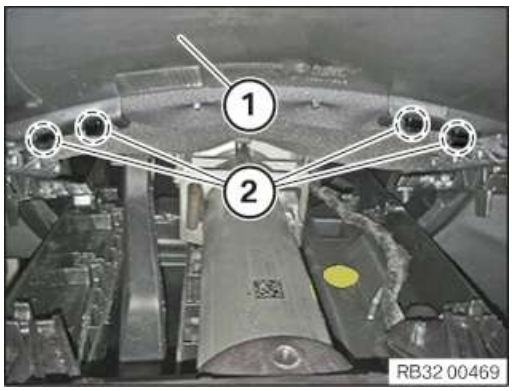
22 – Removing steering column shroud upper section



NOTICE

Perform the operations on the left and right side.

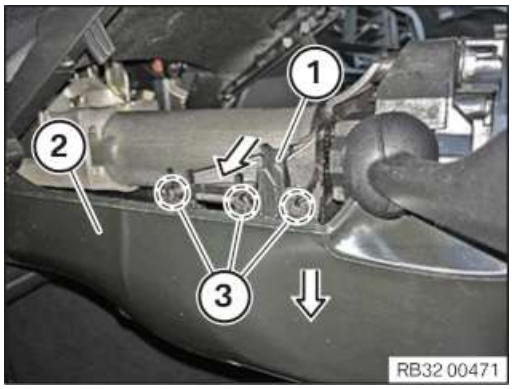
- Unlock the steering column shroud upper section (1) with the special tool 2 298 504 and fold up.



- Unclip the steering column shroud upper section (1) from the brackets (2).
- Remove the steering column shroud upper section (1).

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23 – Removing steering column shroud lower section



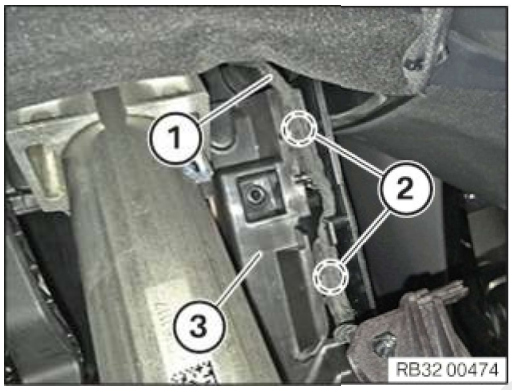
NOTICE

Perform the operations on the left and right side.

- Push the retaining lug (1) to the outside in the direction of the arrow and unclip the steering column shroud lower section (2) from the holders (3) in the direction of the arrow to the bottom at the same time.

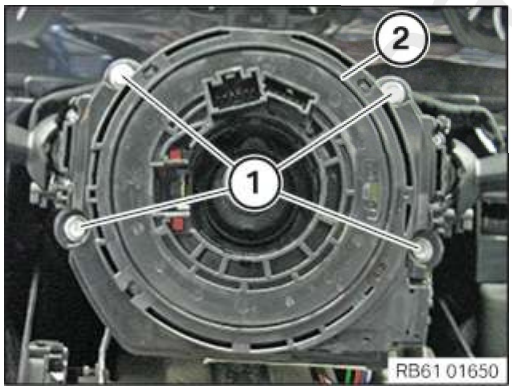


- Fold the steering column shroud lower section down.
- Unlock and disconnect connector (1).

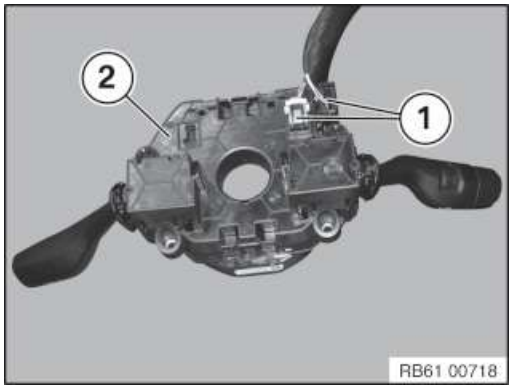


- Detach the cable (1) from the brackets (2).
- Remove the steering column shroud lower section (3).

24 – Removing the steering column switch cluster (SZL)



- Loosen screws (1).
- Remove the steering column switch cluster (SZL) (2).



- Unlock and disconnect the connector (1) on the steering column switch cluster (SZL) (2).

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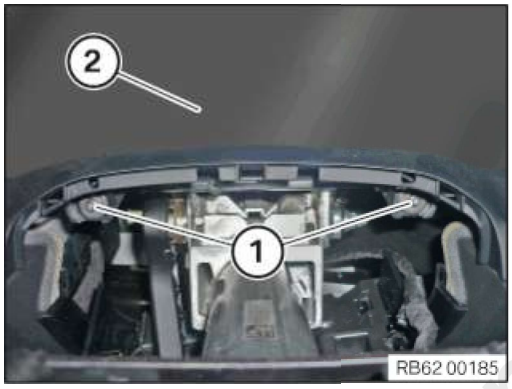
25 – Removing the instrument cluster (KOMBI)



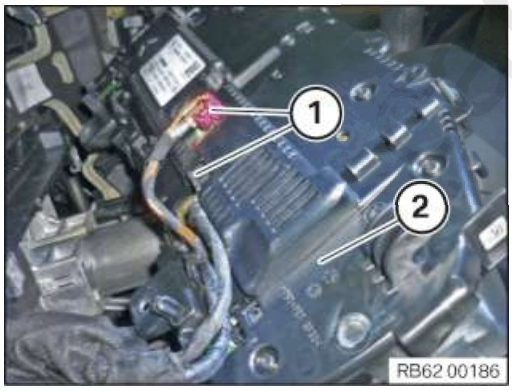
- Loosen screw (1).



- Loosen screw (1).



- Loosen screws (1).
- Feed out instrument cluster (KOMBI) (2).



RISK OF DAMAGE

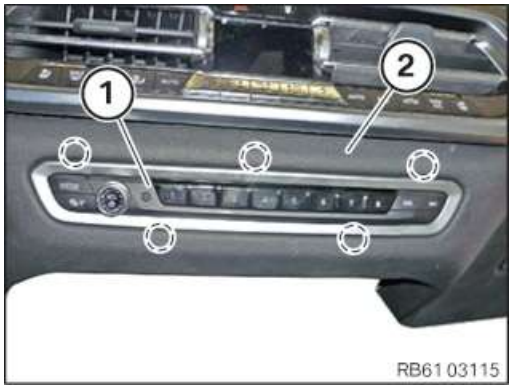
Damage to the instrument cluster (KOMBI)

While releasing and connecting the cable, it could lead to a ground offset. Thereby, currents could arise, that make the instrument cluster (KOMBI) useless.

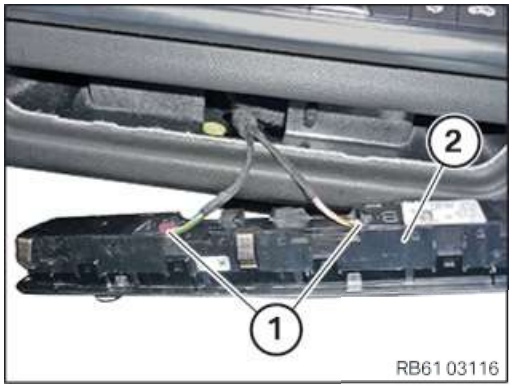
- While releasing: Release APIX data cable (blue) first.
- While connecting: Connect APIX data cable (blue) at the last.

- **If installed:** Release the blue plug connection first.
- Unlock and disconnect plug connections (1) from instrument cluster (KOMBI) (2).
- Remove the instrument cluster (KOMBI) (2).

26 – Remove the audio operating unit

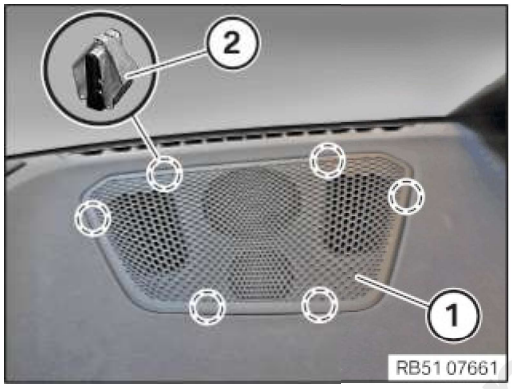


- Unclip the audio operating unit (1) from the instrument panel (2) at the points marked using special tool 0 496 571 (00 9 327).



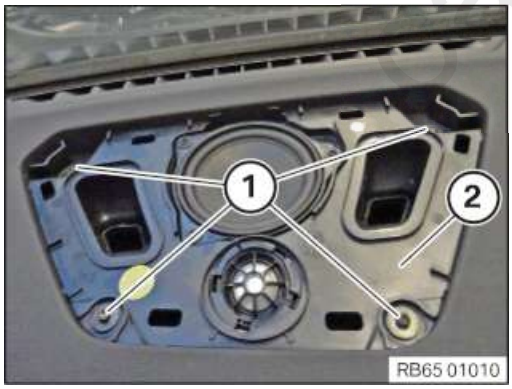
- Disconnect plug connections (1) and remove the audio operating unit (2).

27 – Remove the speaker trim at the instrument panel

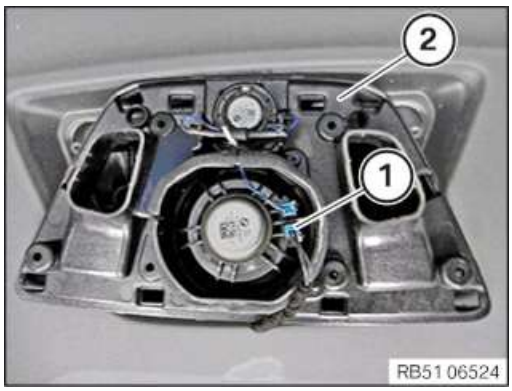


- Lever out the speaker trim (1) with the special tool 0 496 569 (00 9 325) from the clamps (2) toward the top and remove.

28 – Remove the speaker holder at the instrument panel



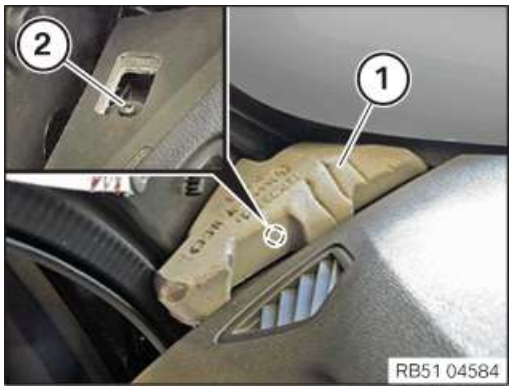
- Loosen screws (1).
- Pull out speaker holder (2) slightly with the loudspeakers and tilt it to the side.



- Unlock plug connection (1) and disconnect.
- Remove the speaker holder (2).

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29 – Remove the instrument panel trim panel



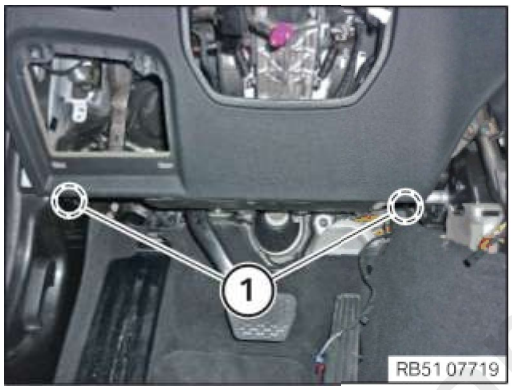
NOTICE

Perform the operations on the left and right side.

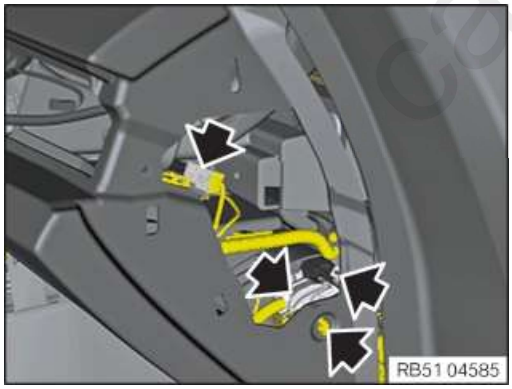
- Remove the sound insulation (1).
- Loosen screw (2).



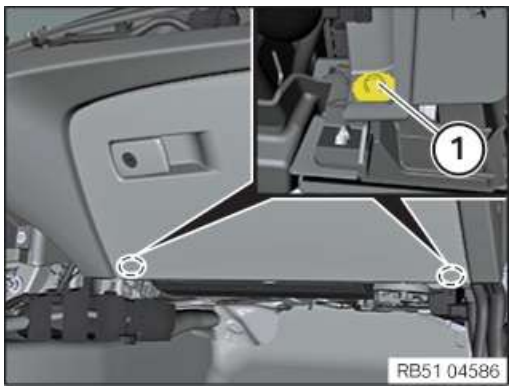
- Loosen screws (1).



- Loosen screws (1).

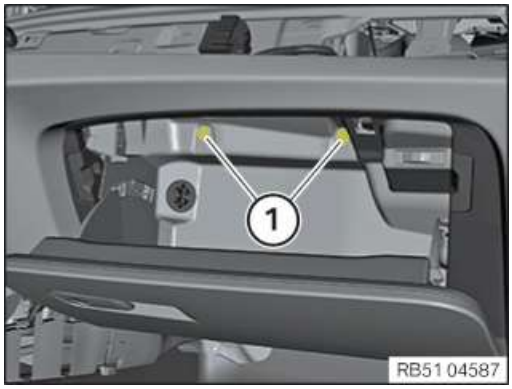


- Release all plug connections and cable clips (arrows) behind the glove box.

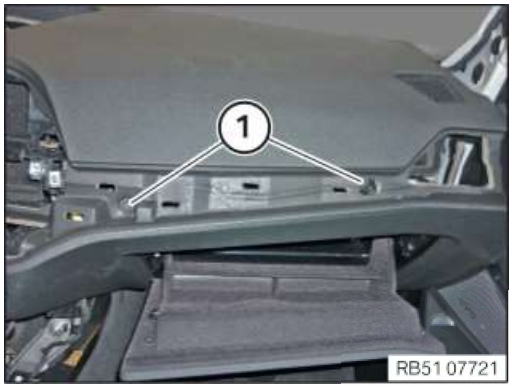


- Release the screws (1) on the lower side of the glove box.

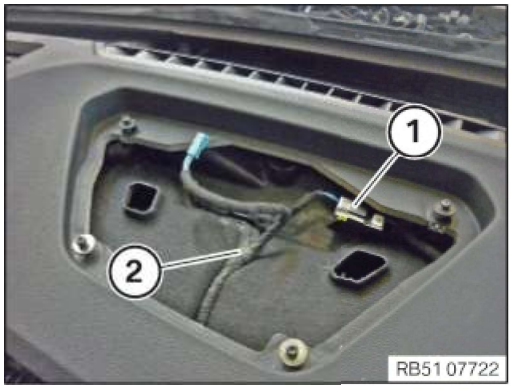
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- Open glovebox.
- Loosen screws (1).



- Loosen screws (1).



- Unlock plug connection (1) and disconnect.
- Release the wiring harness (2) on the holders.



- Unlock the plug connection (1) on the light operating unit and disconnect it.



- Loosen screws (1).

TECHNICAL INFORMATION

Conduct the following operation with the assistance of a second person.

- Pull the instrument panel trim back slightly.

  If necessary, unlock and disconnect additional plug connections.
- Remove the instrument panel trim from the vehicle.

30 – Install the trim panel for the instrument panel

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TECHNICAL INFORMATION

Conduct the following operation with the assistance of a second person.

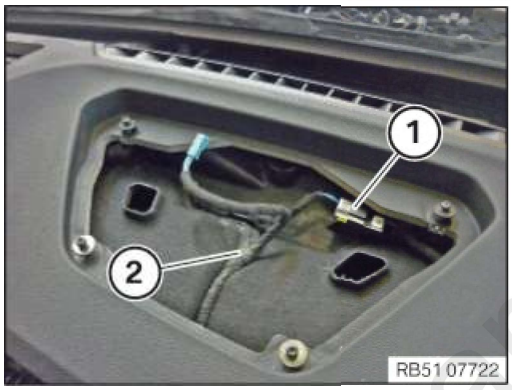
- Insert the instrument panel trim in the vehicle and position it at the support.
- Insert the associated wiring harnesses and connect the connectors.
- Tighten the screws (1).

Dashboard to support

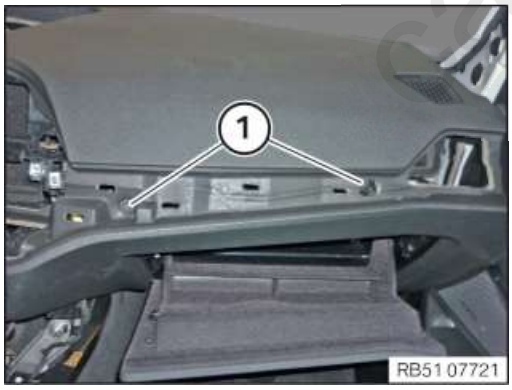
Screw		Tightening torque	2,4 Nm



- Connect connector (1) to the light operating unit and lock.



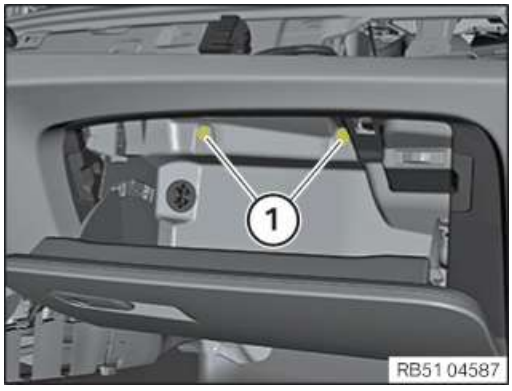
- Secure the wiring harness (2) on the holders.
- Connect plug connection (1) and lock.



- Tighten the screws (1).

Dashboard to support

Screw		Tightening torque	2,4 Nm

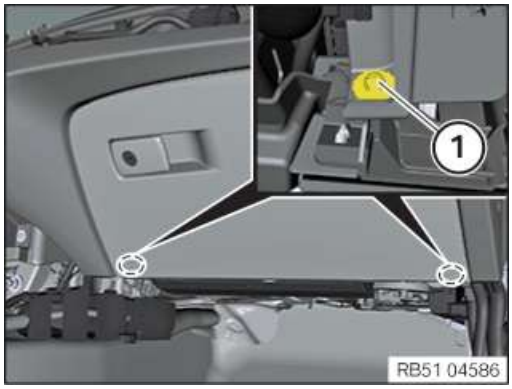


- Open glovebox.
- Tighten the screws (1).

Dashboard to support

Screw		Tightening torque	2,4 Nm

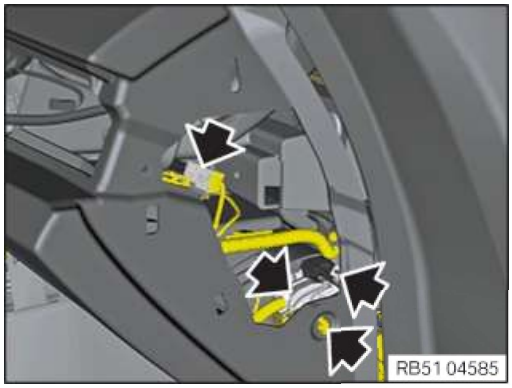
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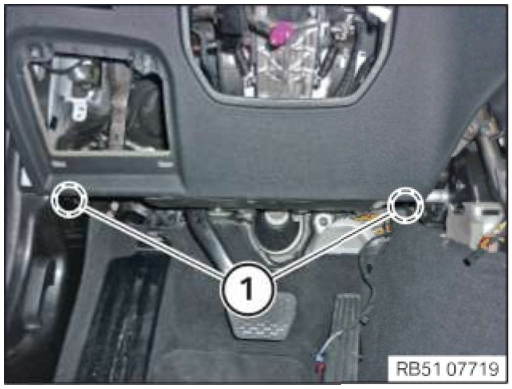
- Tighten the screws (1) on the lower side of the glove box button.

Dashboard to support

Screw		Tightening torque	2,4 Nm



- Connect all plug connections and cable clips (arrows) behind the glove box.



- Tighten the screws (1).

Dashboard to support

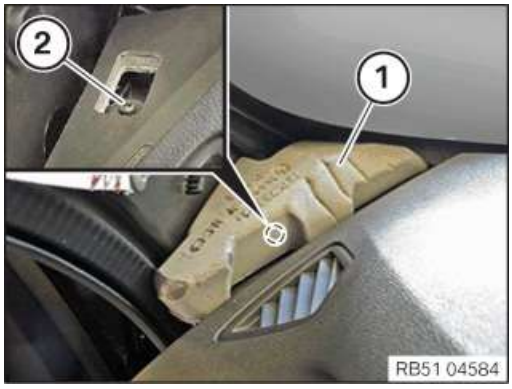
Screw		Tightening torque	2,4 Nm



- Tighten the screws (1).

Dashboard to support

Screw		Tightening torque	2,4 Nm



NOTICE

Perform the operations on the left and right side.

- Tighten down screw (2).

Dashboard to support

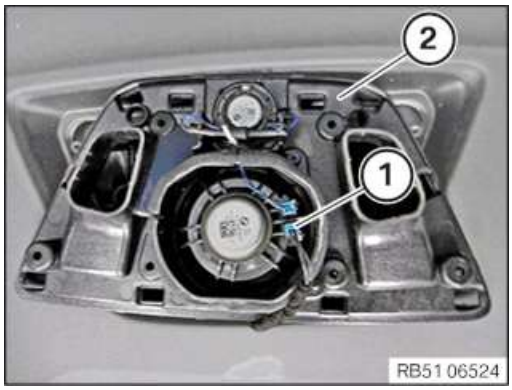
Screw		Tightening torque	2,4 Nm

- Use sound insulation (1).

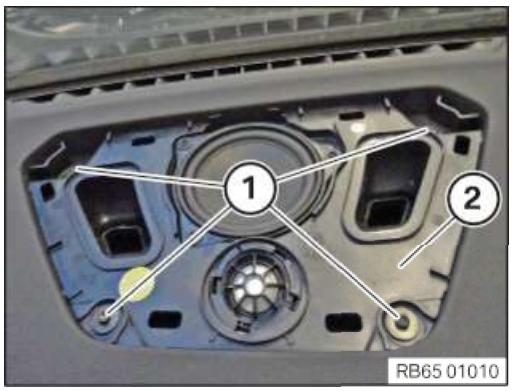
POSTPROCESSES

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31 – Install the speaker holder at the instrument panel



- Position the speaker holder (2).
- Connect connector (1).

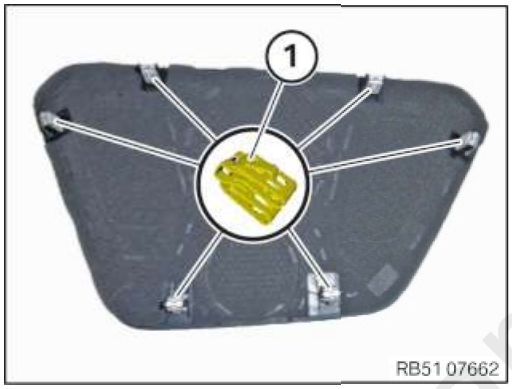


- Install the speaker holder (2).
- Tighten the screws (1).

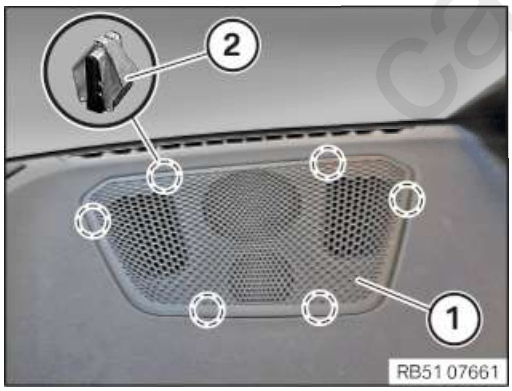
Speaker to support / support to instrument panel / support to body

Screw		Tightening torque	1,8 Nm

32 – Install the speaker trim at the instrument panel



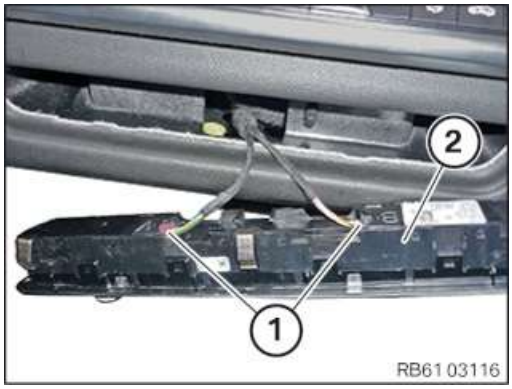
- Check clamps (1) for damage.
- Replace broken or missing clamps (1).



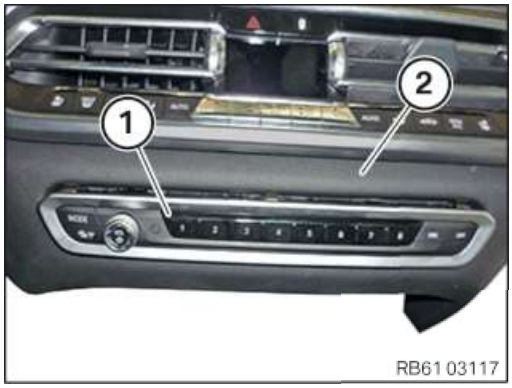
- Position the speaker trim (1) correctly and engage it at the clamps (2).

33 – Install the audio operating unit

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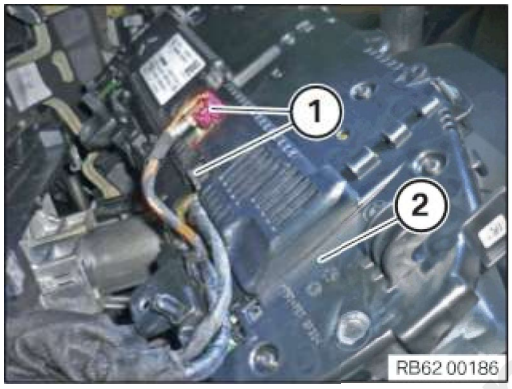


- Connect the connector (1) to the audio operating unit (2).



- Correctly position the audio operating unit (1) and install in the instrument panel(2).

34 – Installing the instrument cluster (KOMBI)



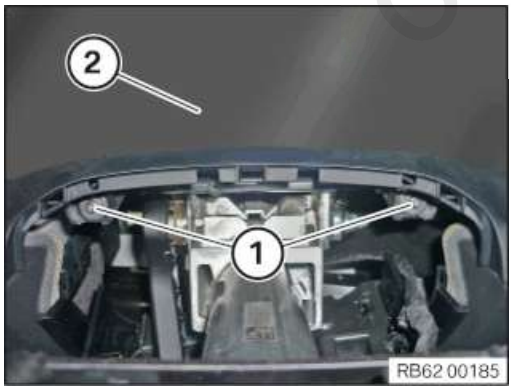
RISK OF DAMAGE

Damage to the instrument cluster (KOMBI)

While releasing and connecting the cable, it could lead to a ground offset. Thereby, currents could arise, that make the instrument cluster (KOMBI) useless.

- While releasing: Release APIX data cable (blue) first.
- While connecting: Connect APIX data cable (blue) at the last.

- **If installed:** Connect the blue connector at the last and lock it.
- Connect and lock connector (1) to the instrument cluster (KOMBI) (2).



- Feed in and position the instrument cluster (KOMBI) (2).
- Tighten the screws (1).

Instrument cluster (KOMBI) to support

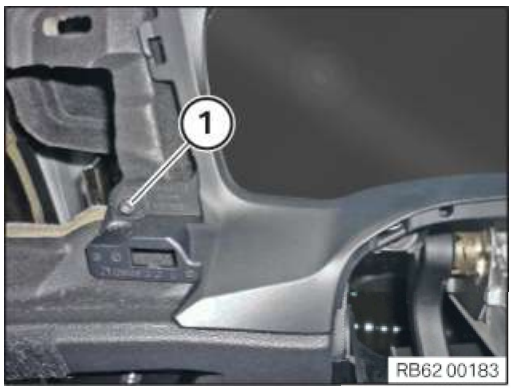
Oval-head screw		Tightening torque	1,8 Nm



- Tighten down screw (1).

Instrument cluster (KOMBI) to support

Oval-head screw		Tightening torque	1,8 Nm

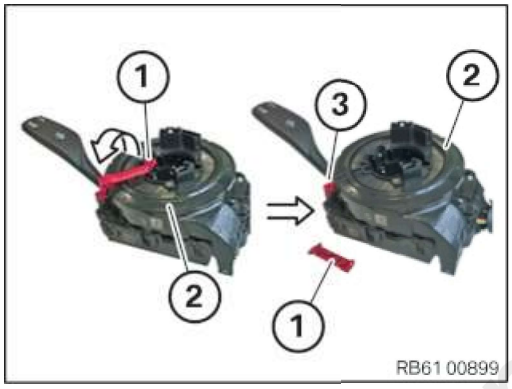


- Tighten down screw (1).

Instrument cluster (KOMBI) to support

Oval-head screw		Tightening torque	1,8 Nm

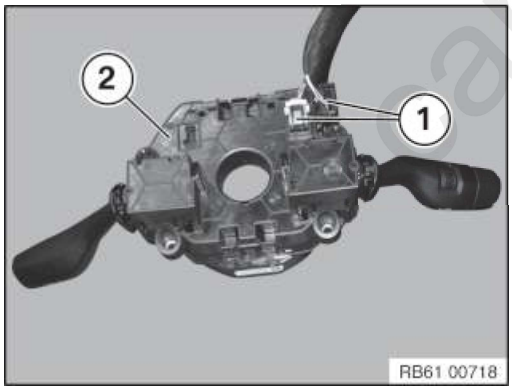
35 – Installing the steering column switch cluster (SZL)



- **Replacement:**

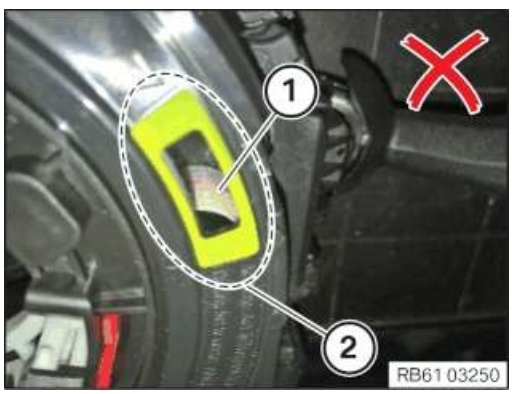
  Break off the transportation retainer (1) on the steering column switch cluster (SZL) (2) in direction of arrow.

  The broken off piece (3) of the transportation retainer (1) remains in the steering column switch cluster (SZL) (2).



- Connect the connector (1) with the steering column switch cluster (SZL) (2).

Check



- **Version A:**

  Check whether the correct marking (1) is seen in inspection glass (2).

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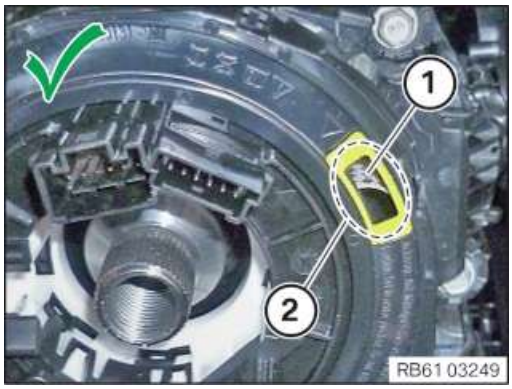
Result

» Ensure that no incorrect marking (1) is seen in inspection glass (2).

Measure

- Turn the coil spring cassette until the right mark (1) becomes visible in the inspection glass (2).

Check



- **Version A:**

  Check whether the correct marking (1) is seen in inspection glass (2).

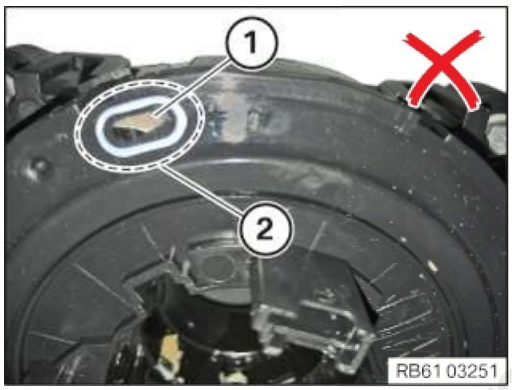
Result

» Correct marking (1) is seen in inspection glass (2).

Measure

- Continue with the next step.

Check



- **Version B:**

  Check whether the correct marking (1) is seen in inspection glass (2).

Result

» Ensure that no incorrect marking (1) is seen in inspection glass (2).

Measure

- Turn the coil spring cassette until the right mark (1) becomes visible in the inspection glass (2).

Check



- **Version B:**

  Check whether the correct marking (1) is seen in inspection glass (2).

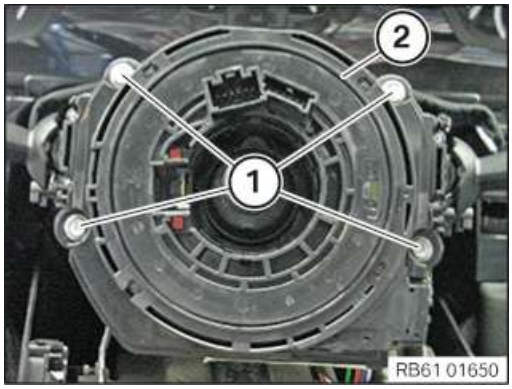
Result

» Correct marking (1) is seen in inspection glass (2).

Measure

- Continue with the next step.

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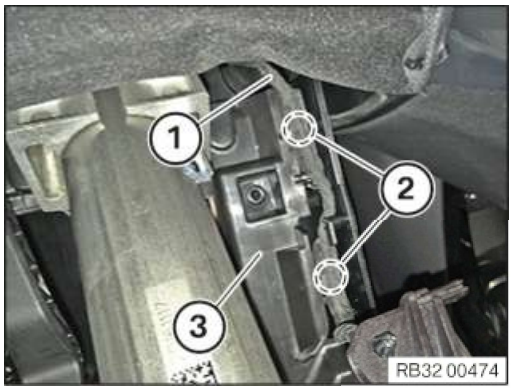


- Position the steering column switch cluster (SZL) (2).
- Tighten the screws (1).

Steering column switch cluster (SZL) on the steering column

Screw TS5x20		Tightening torque	3 Nm

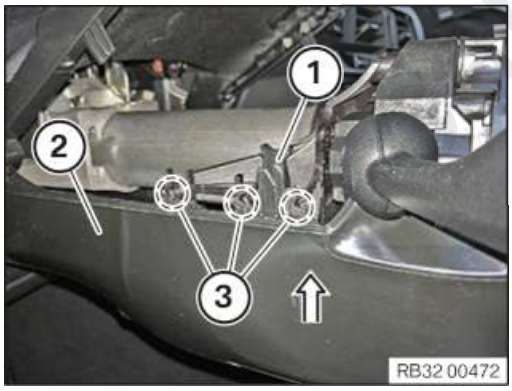
36 – Install steering column shroud lower section



- Position the steering column shroud lower section (3).
- Secure the line (1) on the brackets (2).



- Connect the connector (1).

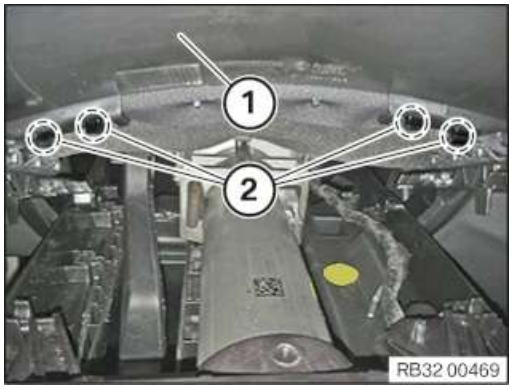


NOTICE

Perform the operations on the left and right side.

- Align the steering column shroud lower section (2) to the steering column using the retaining lug (1).
- Push the steering column shroud lower section (2) up in the direction of the arrow until the brackets (3) engage.

37 – Fit steering column shroud upper section



- Clip in the steering column shroud upper section (1) at the brackets (2).

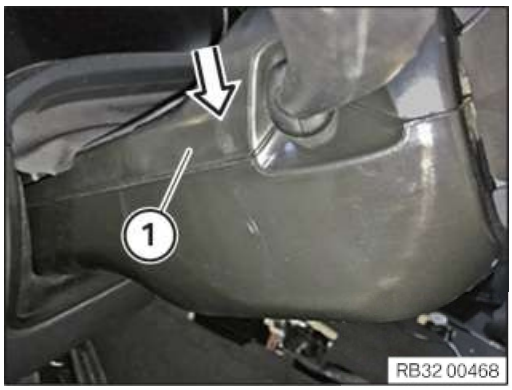
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NOTICE

Perform the operations on the left and right side.

- Clip in the steering column shroud upper section (1)into the guide (2).



NOTICE

Perform the operations on the left and right side.

- Press the upper section of the steering column shroud (1) downwards in direction of arrow.

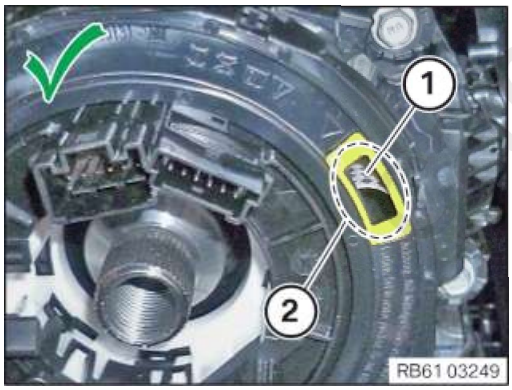
  The upper section of the steering column shroud must engage audibly and perceptibly.

38 – Installing the steering wheel (sports steering wheel)

▸ **Check the neutral position of the clock spring**

TECHNICAL INFORMATION

Different variants may be installed depending on the vehicle equipment.



Check

- **Version A:**

  Check the mark (1) on the coil spring in the inspection glass (2).

Result

» The mark (1) on the coil spring is not visible.

Measure

- Turn the coil spring cassette until the mark (1) on the coil spring becomes visible in the inspection glass (2).

Check



- **Version B:**

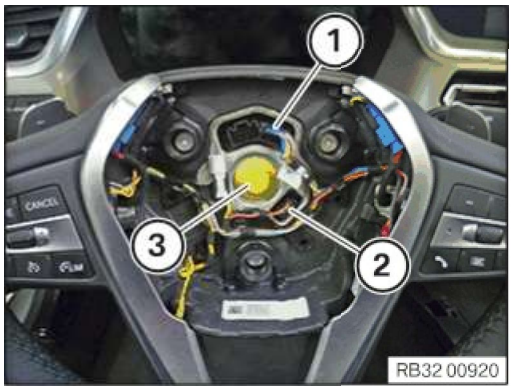
  Check the mark (1) on the coil spring in the inspection glass (2).

Result

» The mark (1) on the coil spring is not visible.

Measure

- Turn the coil spring cassette until the mark (1) on the coil spring becomes visible in the inspection glass (2).



Check

- A micro-encapsulated screw (3) may be fitted.
- Check the screw connection.

Result

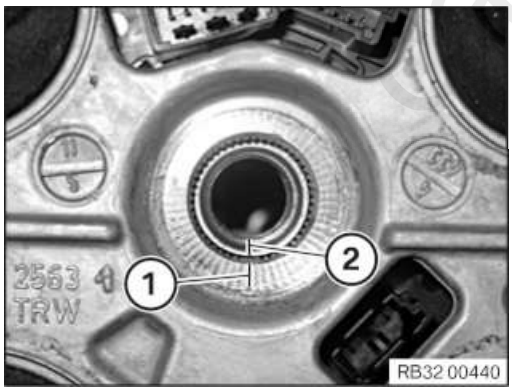
» Screw is (3) micro-encapsulated.

Measure

- Clean thread in the steering column.

  Renew the screw (3).

  Parts: Screw



- Align mark (1) on steering wheel to mark (2) on steering column.
- Connect steering wheel.



- Connect connectors (1) and lock.
- If installed: Connect connectors (2) and lock.
- Tighten screw (3) .

Steering wheel to steering column

M14	Only for a micro-encapsulated screw: Renew screw.	Tightening torque	62,5 Nm

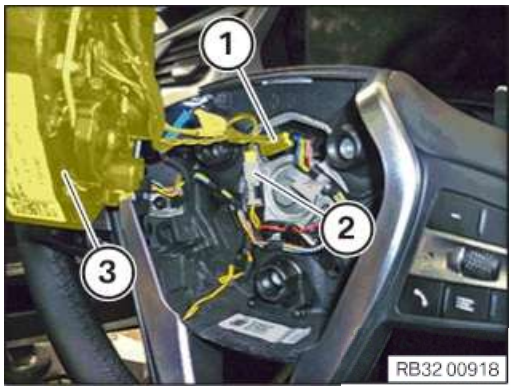
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39 – Installing the airbag unit

TECHNICAL INFORMATION

Different variants may be installed depending on the vehicle equipment.

▸ **Version A: Installing the airbag unit (sports steering wheel)**



- Position airbag unit (3).
- Connect connectors (1) and (2) lock.



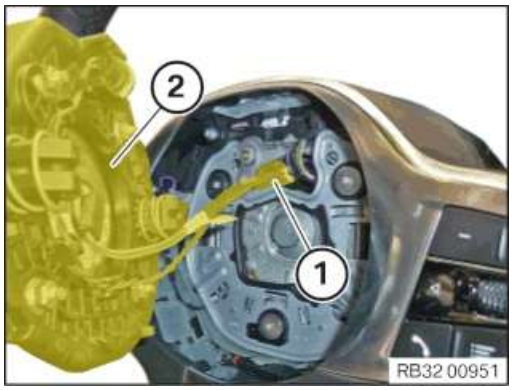
- Press the airbag unit (1) with even pressure in the direction of the arrow into the steering wheel.

  The airbag unit (1) must engage audibly and perceptibly.

▸ **Version B: Installing the airbag unit (M Sport steering wheel)**

TECHNICAL INFORMATION

After replacing the airbag unit (M-sports steering wheel) or after a possible conversion of standard steering wheel and airbag unit to M-sports steering wheel, a software update or a programming/encoding via ISTA must be performed!



- Connect and lock connector (1) of the airbag unit (2).

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- Press the airbag unit (1) with even pressure in the direction of the arrow into the steering wheel.

  The airbag unit (1) must engage audibly and perceptibly.

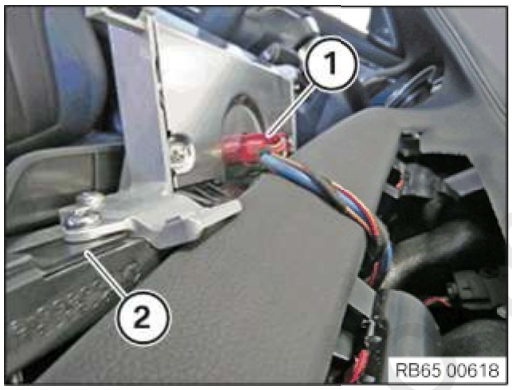
40 – Install the central information display (CID)

RISK OF DAMAGE

Electrostatic discharge.

Damage to or destruction of electrical components.

- Leave electrical components in original packaging until just before they are installed. Use the original packaging only for any return shipments. Always package removed components straight away.
- Read and comply with user information on using the associated special tool 12 7 060.
- Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.
- Wear electrically conductive clothing and antistatic shoes (with ESD symbol).
- For additional information see: 61 35 Information on electrostatic discharge (ESD) protection.



- Position Central Information Display (CID) (2).
- Connect plug connection (1) and lock.



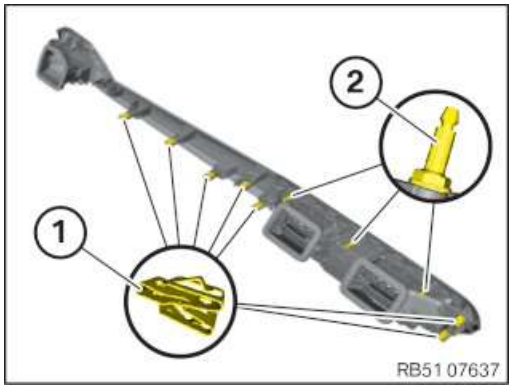
- Insert the central information display (CID) (2) in the instrument panel and position correctly.
- Tighten the screws (1).

Central information display to instrument panel

Screw		Tightening torque	1,8 Nm

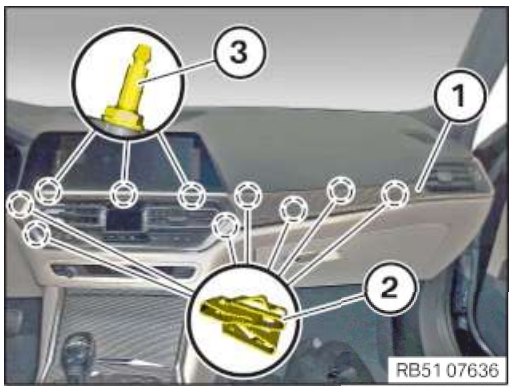
41 – Install the finisher on the right instrument panel

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- Check the clamps (1).

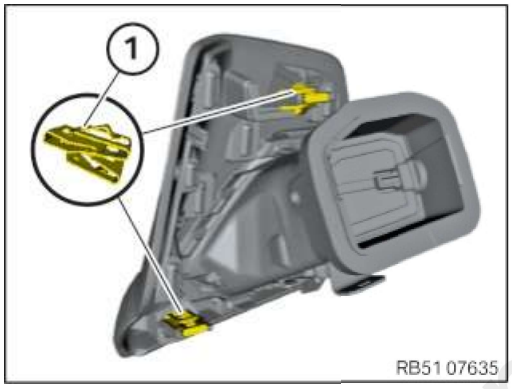
  Replace broken or missing clamps (1).
- Check the pins (2) and the corresponding clamps on the instrument panel trim and renew if necessary.



- Install the decorative strip (1).

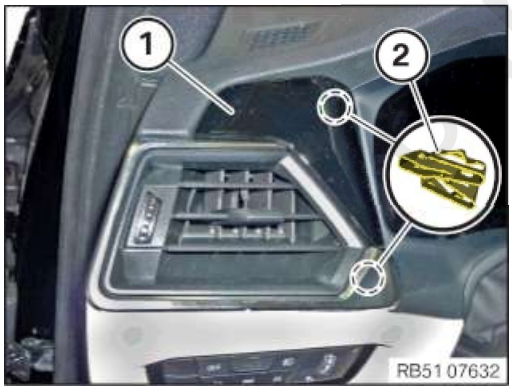
  Connect and lock the associated connectors.
- Correctly position the decorative strip (1) and at the clamps (2) and clip in the pins (3).

42 – Install the finisher on the instrument panel on the left



- Check the clamps (1).

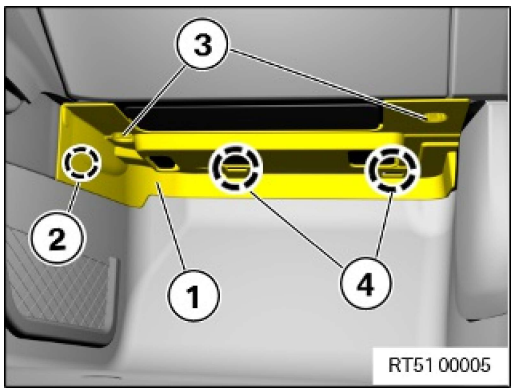
  Replace broken or missing clamps (1).



- Install the decorative strip (1).

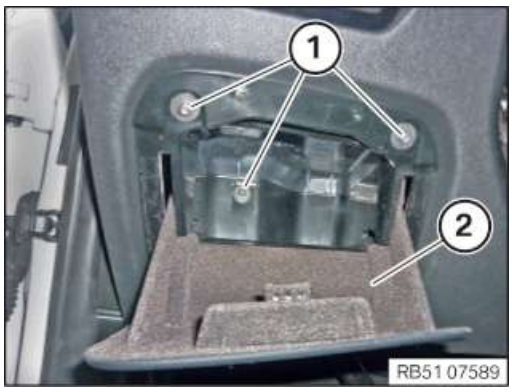
  Connect and lock the associated connectors.
- Clip decorative strip (1) into clamps (2).

43 – Install the right footwell trim panel



- Connect associated connector.
- Attach the footwell trim (1) to the guides (4) and fold up.
- Guide the footwell trim (1) into the guide (2) of the centre console.
- Position locks (3) correctly and turn by 90°.

44 – Installing the left fold-down compartment

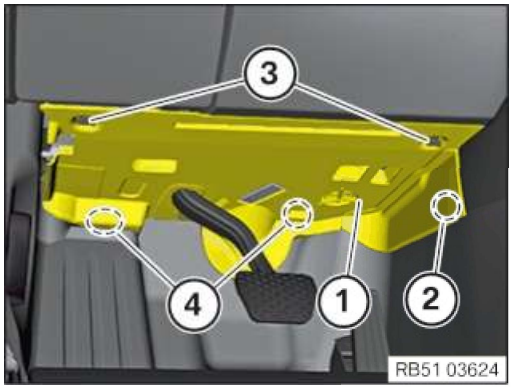


- Install the fold-down compartment (2).
- Tighten the screws (1).

Fold-down compartment to instrument panel

Oval-head screw		Tightening torque	1,8 Nm

45 – Installing the trim panel for the pedal mechanism



- Connect associated connector.
- Attach the trim panel for the pedal mechanism (1) in the guides (4) and fold it up.
- Clip the trim panel for the pedal mechanism (1) into the centre console in this area (2).
- Insert locks (3) correctly and turn 90°.

46 – Install both A-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Installing the A-pillar trim panel**

WARNING

Airbag unit.

Danger! Life-threatening injuries!

- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

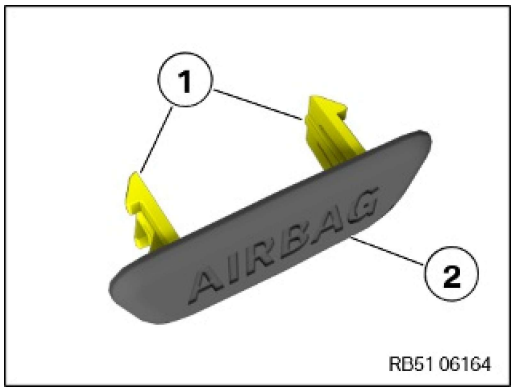
WARNING

Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.

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Check

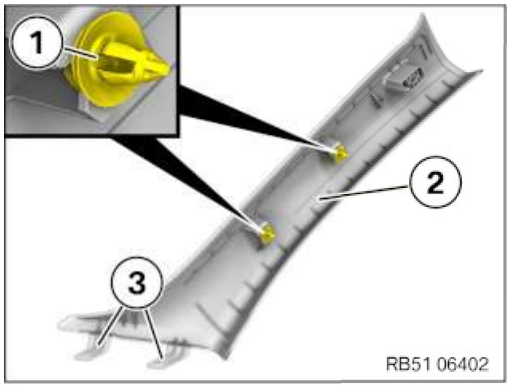
- Check retaining lugs (1) of cover (2) for damage.

Result

» Retaining lug is damaged.

Measure

- Renew the cover.



Check

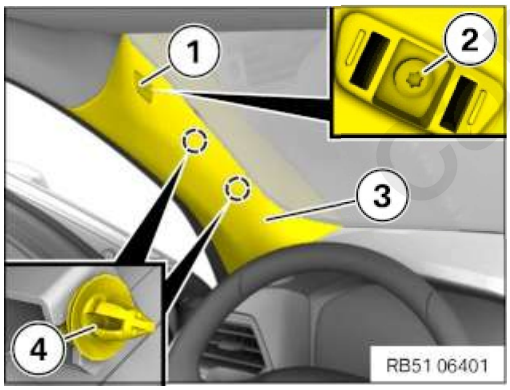
- Check the clips (1) for damage and renew if necessary.
- Check the guides (3) for damage.

Result

» Guide is damaged.

Measure

- Renew the A-pillar trim panel.



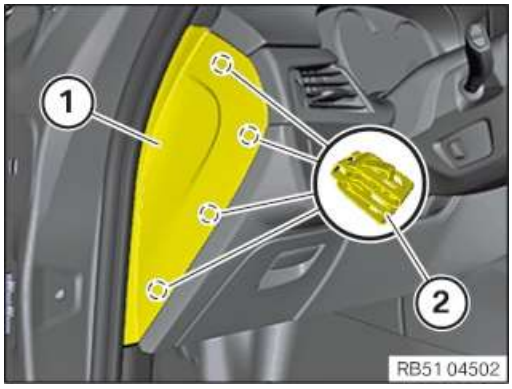
- Guide in A-pillar trim panel (3) downwards and clip it in with clips (4).
- Tighten down screw (2).

A-pillar trim panel to body

Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

- Clip in the cover (1).

47 – Install the side panel on left instrument panel

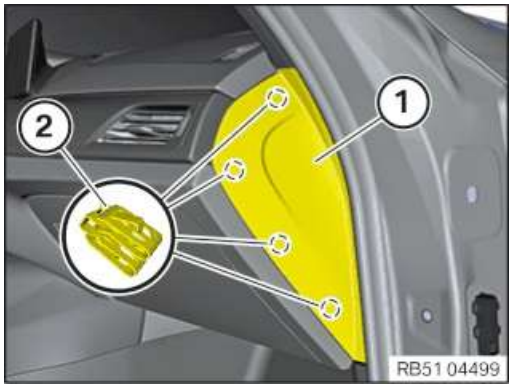


- Feed in the side panel (1) and clip it in at the clamps (2).

48 – Install the side panel on instrument panel on the right

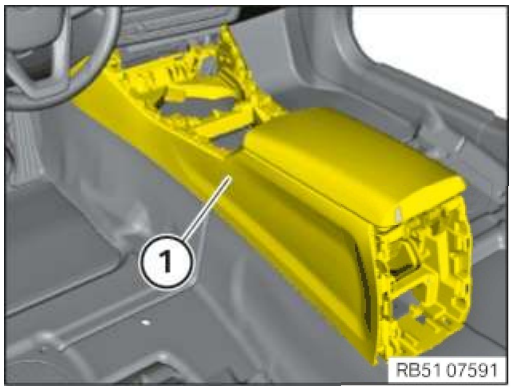
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48 – Install the side panel on instrument panel on the right



- If required, connect the associated connector.
- Feed in the side panel (1) and clip it in at the clamps (2).

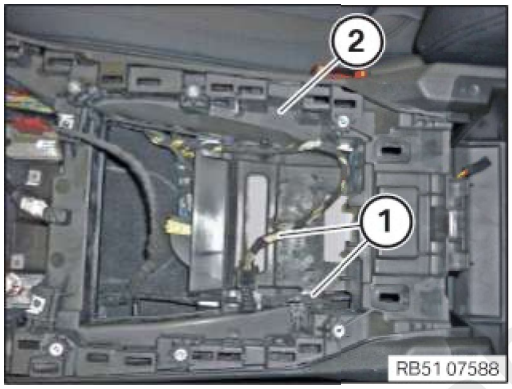
49 – Installing the centre console



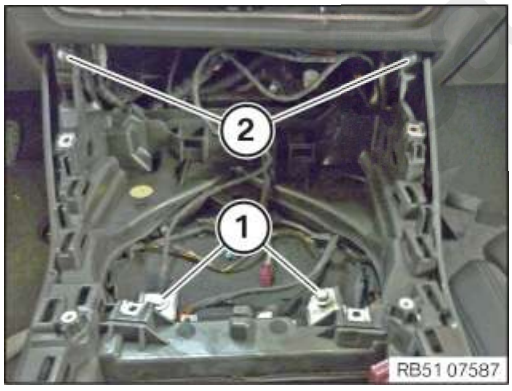
NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

- Install centre console (1) and thereby feed in the wiring harness.
- Feed in the centre console (1) to the instrument panel and position correctly.



- Secure the wiring harness to the centre console (1) and connect and lock the existing plug connections.



- Tighten the screws (1).

Centre console on tunnel

M6x18 Hexagon screw		Tightening torque	4,6 Nm

- Tighten the screws (2).

Centre console to instrument panel

Oval-head screw		Tightening torque	1,8 Nm

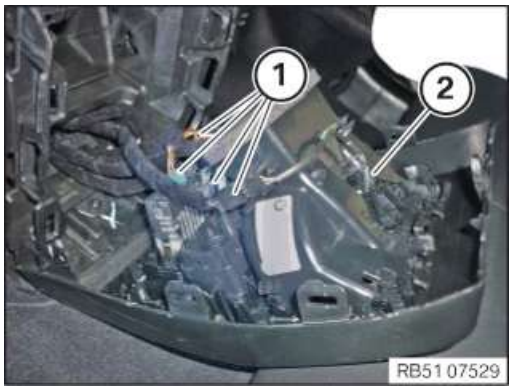


- Tighten the screws (1).

Centre console on tunnel

M6x18 Hexagon screw		Tightening torque	4,6 Nm

50 – Installing the rear centre console trim

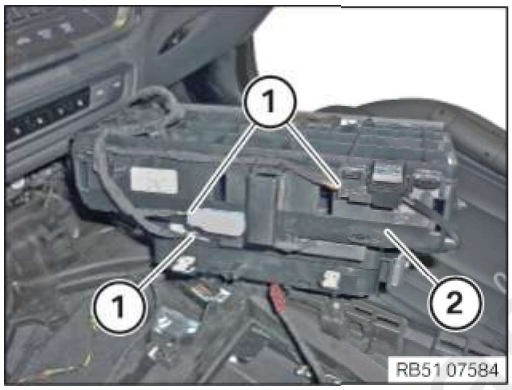


- Install the centre console trim (2).
- Connect connectors (1) and lock.

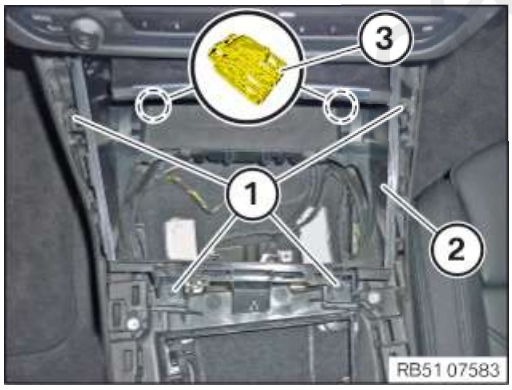


- Position centre console trim (1) and engage at the latch mechanisms at the side.

51 – Installing the storage compartment of the front centre console



- Mount the storage compartment (2) and connect connectors (1).



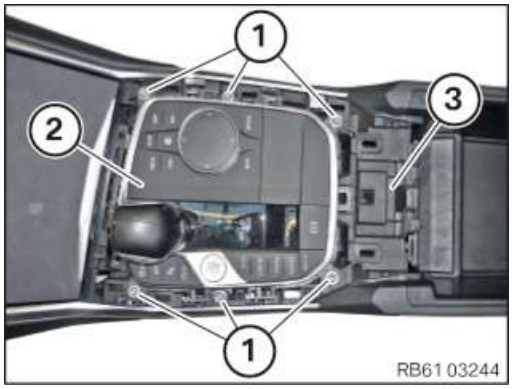
- Engage rear storage compartment trim (2) into clamps (3).
- Tighten the screws (1).

Storage compartment to centre console

Oval-head screw		Tightening torque	1,8 Nm

52 – Install the operating facility in the centre console

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- Position operating facility (2) in the centre console (3).
- Tighten the screws (1).

Gear selector switch to centre console trim

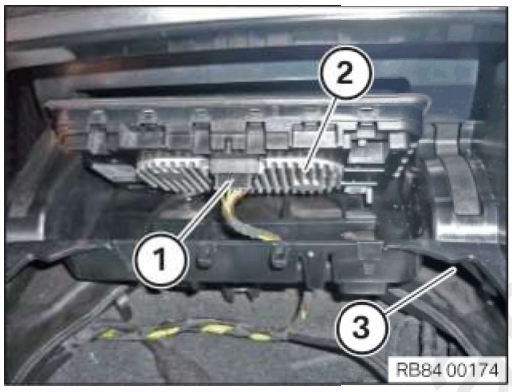
Screw		Tightening torque	1,8 Nm

▸ **Disconnecting all battery earth leads**

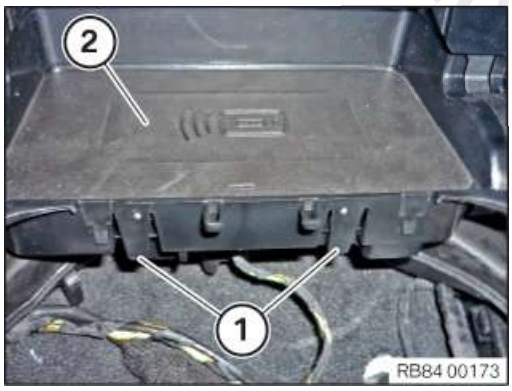


- See additional information.

53 – Installing the wireless charging station



- Connect connector (1).
- Position the wireless charging station (2) in the centre console (3).



- Press the wireless charging station (2) down till the locking units (1) are engaged correctly.

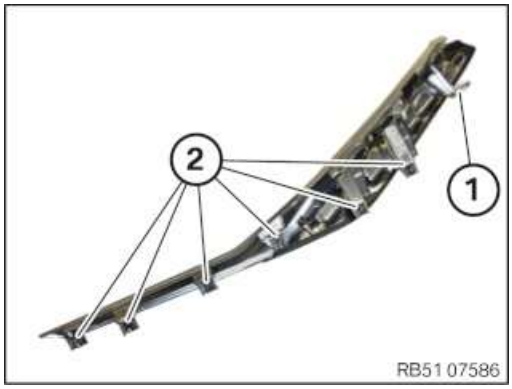
54 – Install decorative trim on centre console on left and right

▸ **Installing the decorative trim to centre console**

NOTICE

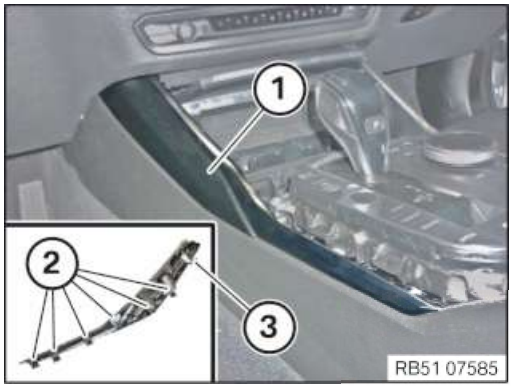
Description is for left component only. Procedure on the right side is identical.

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- Check guide (1) and the latch mechanisms (2).

  Renew defective decorative trim.



- Feed in the decorative trim (1) forward in the guide (3).
- Engage decorative trim (1) in latch mechanisms (2).

55 – Installing the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



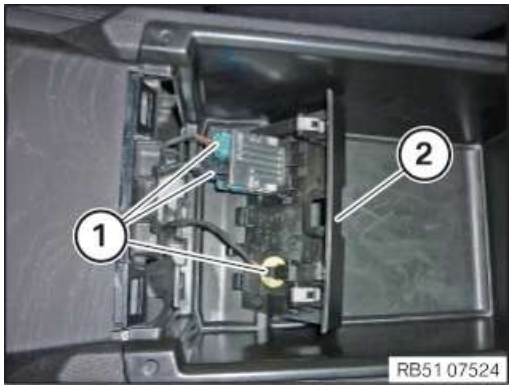
- Check all the latch mechanisms or clamps (arrows).
- In case the latch mechanisms or the clamps (arrows) are faulty, renew the centre console trim .



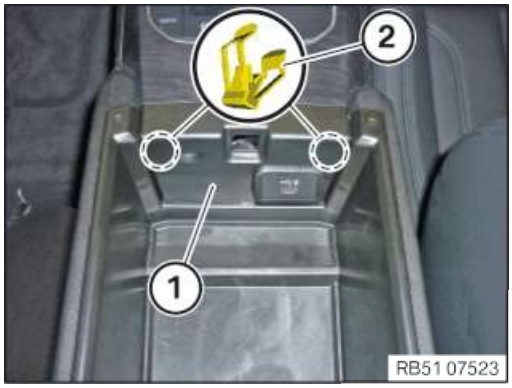
- Correctly position the centre console trim (1) and engage at the latch mechanisms.

56 – Installing the trim in the storage compartment of the centre armrest

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- Mount the trim (2) and connect connector (1) and lock.



- Correctly position trim (1) and snap into the clamps (2).

57 – Install the cup holder



- Fix the cup holder (1) and the belonging connectors.
- Correctly position cup holder (1).
- Tighten the screws (2).

Cup holder to centre console

Oval-head screw		Tightening torque	1,8 Nm



- Insert the insert (1).

Additional Information

Overview of Tightening Torques

Dashboard to support Used in step 30

Screw		Tightening torque	2,4 Nm

Speaker to support / support to instrument panel / support to body Used in step 31

Screw		Tightening torque	1,8 Nm

Instrument cluster (KOMBI) to support			Used in step 34
Oval-head screw		Tightening torque	1,8 Nm

Steering column switch cluster (SZL) on the steering column			Used in step 35
Screw TS5x20		Tightening torque	3 Nm

Steering wheel to steering column			Used in step 38
M14	Only for a micro-encapsulated screw: Renew screw.	Tightening torque	62,5 Nm

Central information display to instrument panel			Used in step 40
Screw		Tightening torque	1,8 Nm

Fold-down compartment to instrument panel			Used in step 44
Oval-head screw		Tightening torque	1,8 Nm

A-pillar trim panel to body			Used in step 46
Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

Centre console on tunnel			Used in step 49
M6x18 Hexagon screw		Tightening torque	4,6 Nm

Centre console to instrument panel			Used in step 49
Oval-head screw		Tightening torque	1,8 Nm

Storage compartment to centre console			Used in step 51
Oval-head screw		Tightening torque	1,8 Nm

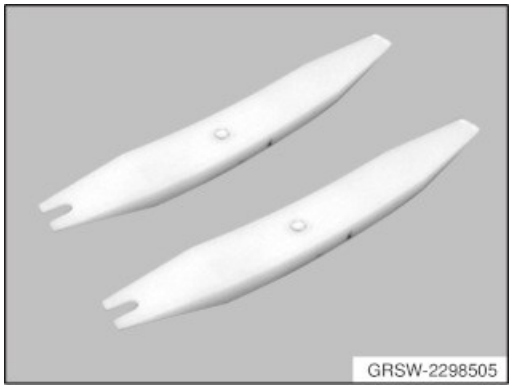
Gear selector switch to centre console trim			Used in step 52
Screw		Tightening torque	1,8 Nm

Cup holder to centre console			Used in step 57
Oval-head screw		Tightening torque	1,8 Nm

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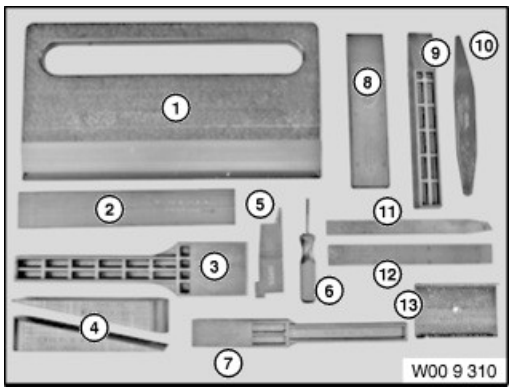
Overview of Special Tools

2 298 505 Wedge



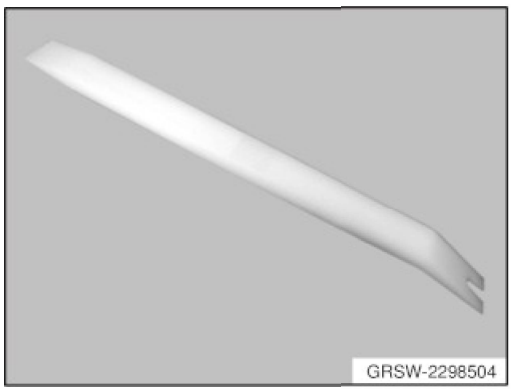
Common		Used in step 34
Usage	Set (delivery of 2 pieces)	
Included in the tool or work		
Storage location	C34	
Replaced by		
In connection with		
SI-Number	01 03 12 (792)	

0 493 752 (00 9 329) Case



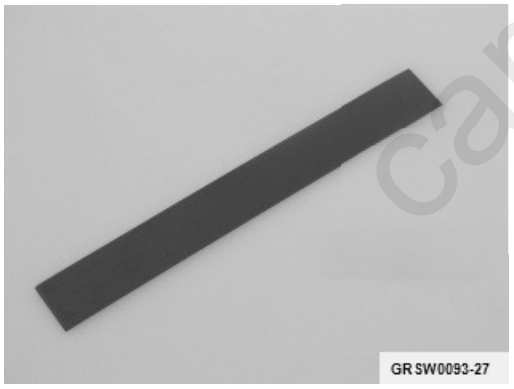
Common	Used in step 13
Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

2 298 504 Wedge



Common	Used in step 22
Usage	Wedge with angled lug
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

0 496 571 (00 9 327) Wedge



Common	Used in step 26
Usage	(Cleaning wedge) From 11/2008 this special tool replaces panel wedge 00 9 323 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

0 496 569 (00 9 325) Wedge



Common	Used in step 27
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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Links

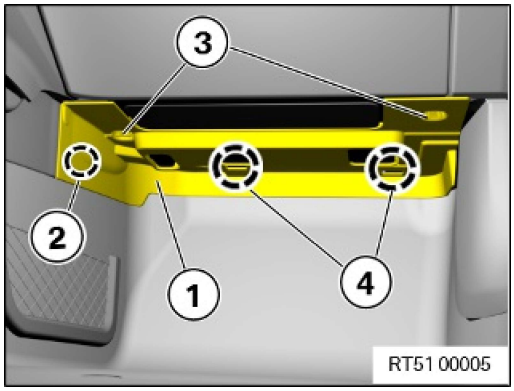
General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	1320
72 00 ... Safety regulations for handling components with gas generators	13

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	752
61 20 900 Disconnecting and connecting battery earth lead	752
61 20 900 Disconnecting and connecting battery earth lead	752
61 20 900 Disconnecting and connecting battery earth lead	752
61 20 900 Disconnecting and connecting battery earth lead	752
61 20 900 Disconnecting and connecting battery earth lead	752
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	752
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	752
61 20 900 Disconnecting and connecting battery earth lead	752
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	752
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	752
61 20 900 Disconnecting and connecting battery earth lead	752
61 20 900 Disconnecting and connecting battery earth lead	752
61 20 900 Disconnecting and connecting battery earth lead	752
61 20 900 Disconnecting and connecting battery earth lead	752
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61 20 900 Disconnecting and connecting battery earth lead	752
61 20 900 Disconnecting and connecting battery earth lead	752
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	752
61 20 900 Disconnecting and connecting battery earth lead	752
61 20 900 Disconnecting and connecting battery earth lead	752
61 20 900 Disconnecting and connecting battery earth lead	752
61 20 900 Disconnecting and connecting battery earth lead	752
61 20 900 Disconnecting and connecting battery earth lead	752
61 20 900 Disconnecting and connecting battery earth lead	752
61 20 900 Disconnecting and connecting battery earth lead	752
61 35 ... Notes on ESD protection (Electro Static Discharge)	1940

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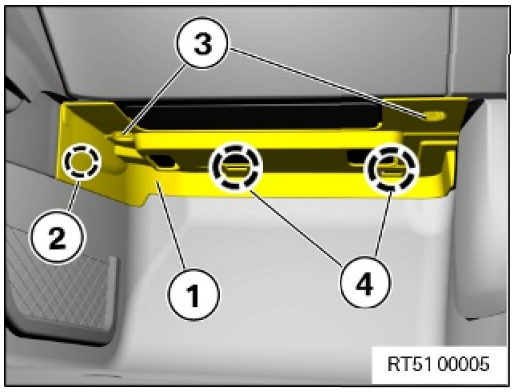
51 45 195 Removing and installing instrument trim panel trim at bottom right

1 – Remove the right footwell trim



- Turn the locks (3) by 90°.
- Feed the footwell trim (1) out of the guide (2).
- Detach the footwell trim (1) inward out of the guides (4).
- Unlock associated plug connection and disconnect.

2 – Install the right footwell trim panel



- Connect associated connector.
- Attach the footwell trim (1) to the guides (4) and fold up.
- Guide the footwell trim (1) into the guide (2) of the centre console.
- Position locks (3) correctly and turn by 90°.

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51 45 075 Removing and installing support for dashboard

Prerequisite

- Air conditioning has been drawn off.

  Refrigerant line on the expansion valve is released.

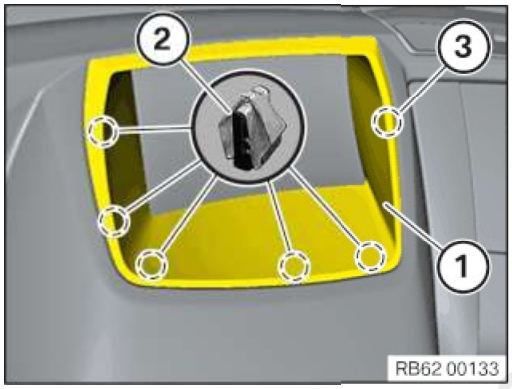
PRELIMINARY WORK

1 – Adjust the steering column position



- Adjust the length of the steering column to the maximum length in the direction of arrow (1).
- Move the steering column to the lowest steering column position in the direction of arrow (2).

2 – Removing trim for the Head-Up Display



- Unclip trim (1) for the Head-Up Display upwards from clamps (2) and latch mechanism (3).

3 – Remove cupholder



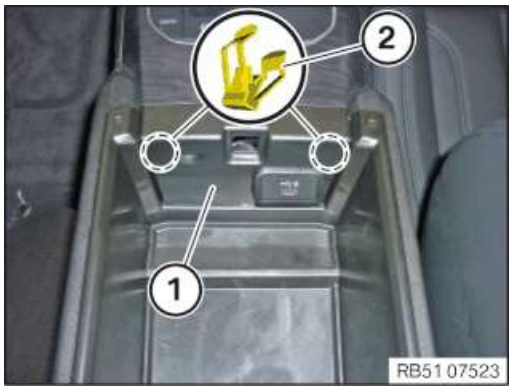
- Remove the insert (1).



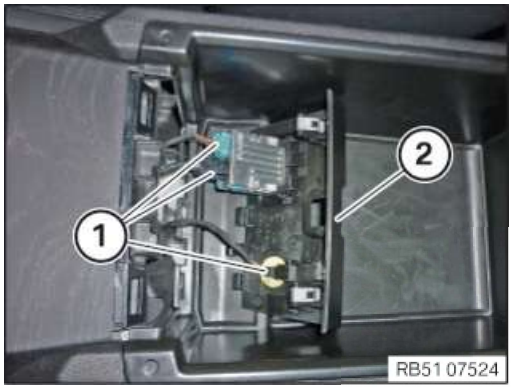
- Loosen screws (1).
- Feed the cup holder (2) out to the top.
- Unlock associated plug connections and disconnect.

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4 – Removing the trim in the storage compartment on the centre armrest



- Lever out the trim (1) with the special tool (2) toward the rear from the clamps 2 298 505.



- Unlock and disconnect the plug connections (1) and remove the trim (2) .

5 – Remove the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Release and remove the centre console trim upwards (1) as shown using the special tool 2 298 505 from the latch mechanisms.

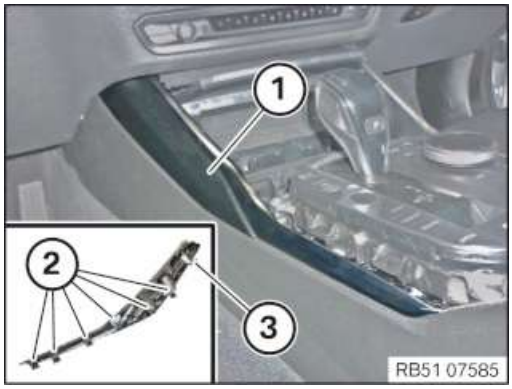
6 – Removing the decorative trim on the centre console trim on the left and right

▸ **Remove decorative trim on centre console**

NOTICE

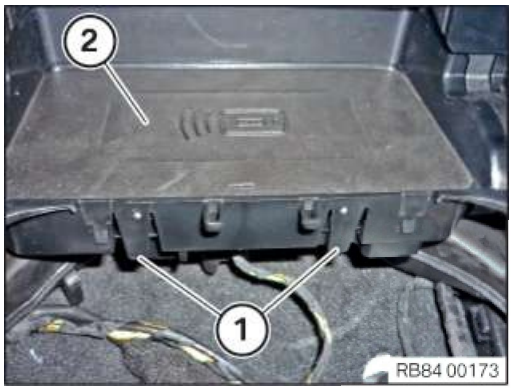
Description is for left component only. Procedure on the right side is identical.

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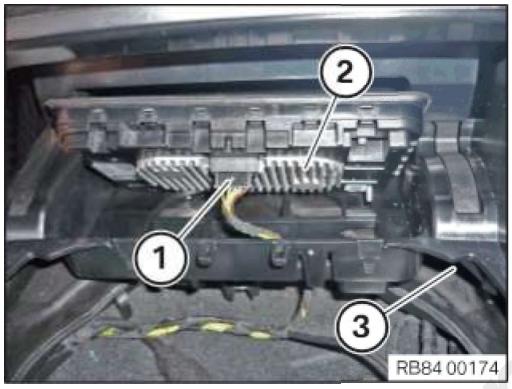


- Lever out the rear decorative trim (1) from the latch mechanisms (2) starting from the top.
- Feed out the decorative trim (1) backwards out of the guide (3) and remove.

7 – Removing the wireless charging station



- Loosen the latch mechanisms (1) and push out the wireless charging station (2) upwards.



- Disconnect the connector (1) and remove the wireless charging station (2) from the centre console (3).

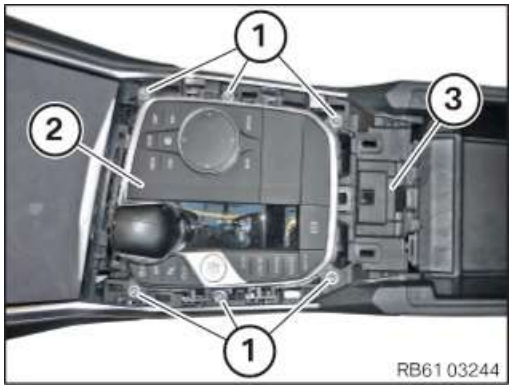
8 – Remove the operating facility in the centre console

▸ **Disconnecting all battery earth leads**



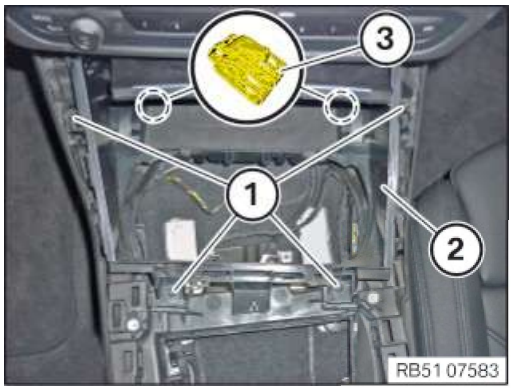
- See additional information.

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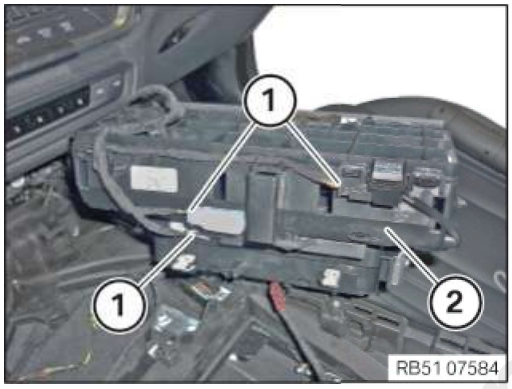


- Loosen screws (1).
- Remove the operating facility in the centre console (2) from the centre console (3).

9 – Removing the storage compartment of the front centre console



- Loosen screws (1).
- Remove storage compartment trim (2) backwards out of clamps (3).



- Unlock and disconnect all the plug connections (1) and remove the storage compartment (2).

10 – Removing the rear centre console trim

RISK OF DAMAGE

Scratches.

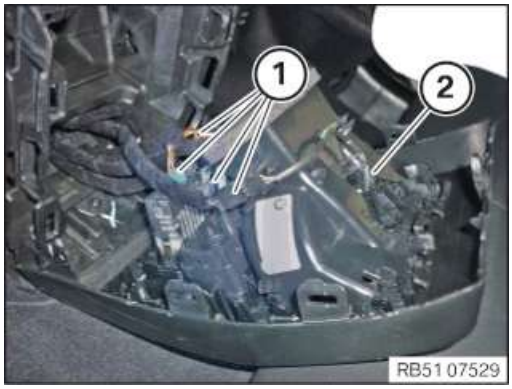
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Release centre console trim (1) backwards from the latch mechanisms at the side and pull it a little way towards the rear.

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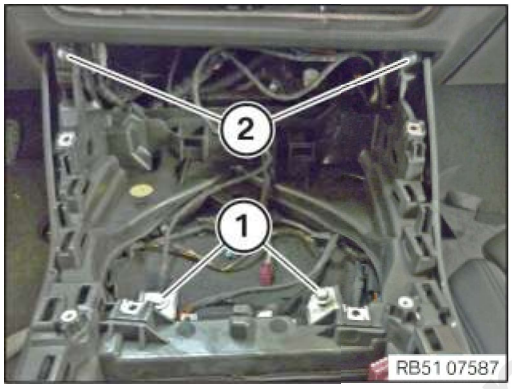


- Unlock and disconnect plug connections (1).
- Remove the centre console trim (2).

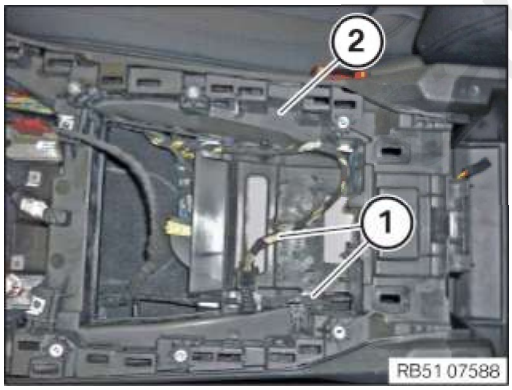
11 – Removing the centre console



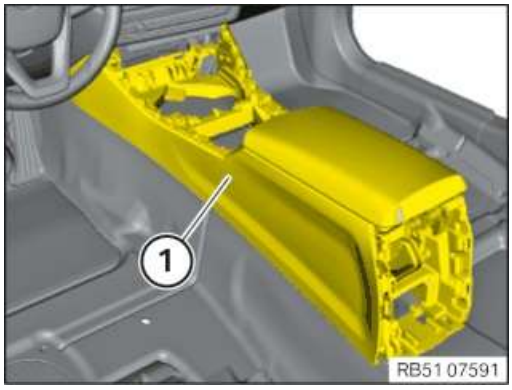
- Loosen screws (1).



- Loosen screws (1) and (2).



- Release the wiring harness (1) from the centre console (2).



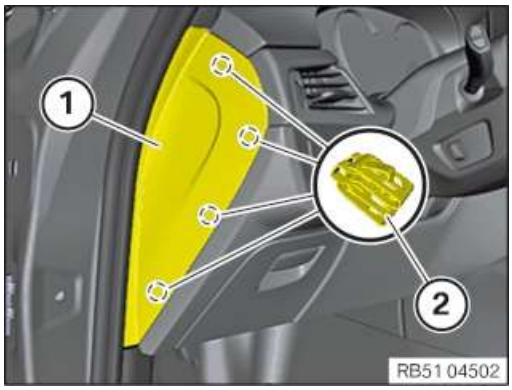
NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

- Carefully raise rear centre console (1).
- Feed out wiring harness from the centre console (1) and unlock and disconnect existing plug connections, if required.
- Feed out and remove the centre console (1) on the instrument panel .

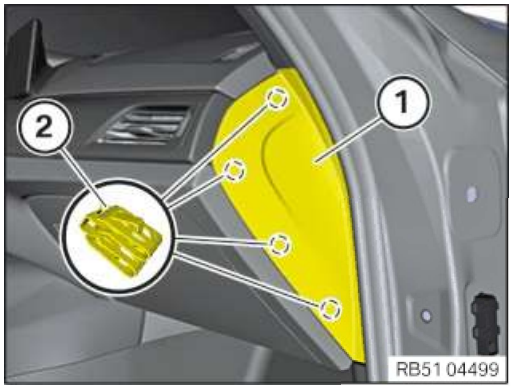
12 – Remove the side panel on the left instrument panel

12 – Remove the side panel on the left instrument panel



- Unclip and remove the side panel (1) towards the outside from the clamps (2).

13 – Remove the side panel on the right instrument panel



- Unclip and remove the side panel (1) towards the outside from the clamps (2).
- If necessary, unlock associated plug connection and disconnect.

14 – Remove both A-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the A-pillar trim panel**

WARNING

Airbag unit.

Danger! Life-threatening injuries!

- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

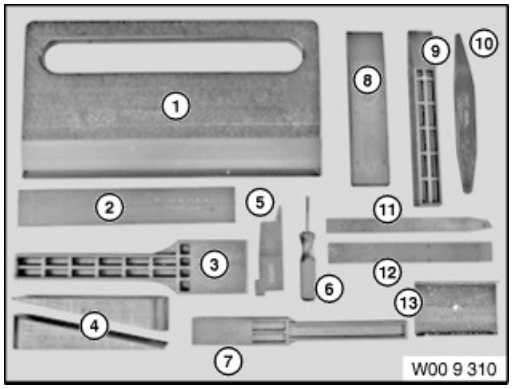
WARNING

Pyrotechnic components.

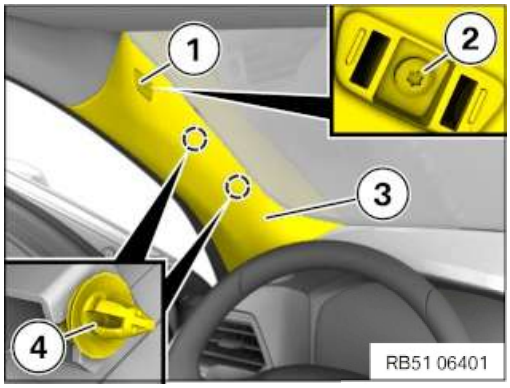
Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.

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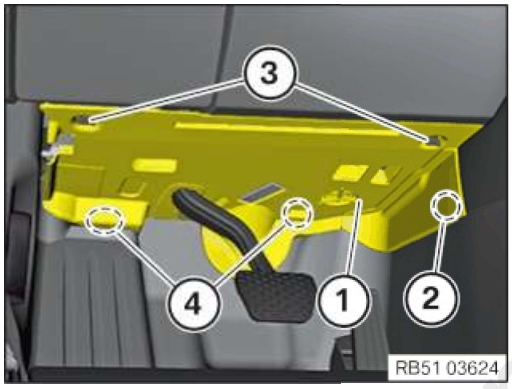


- Have the set of special tools 0 493 752 (00 9 329) ready.



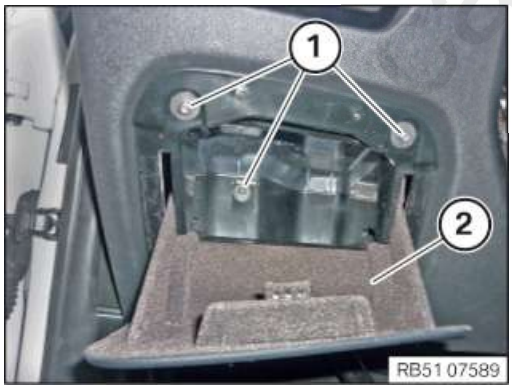
- Unclip the cover (1) with suitable tools.
- Loosen screw (2).
- Unclip A-pillar trim panel (3) with clips (4) and guide it out upwards.

15 – Removing the trim panel for pedal mechanism



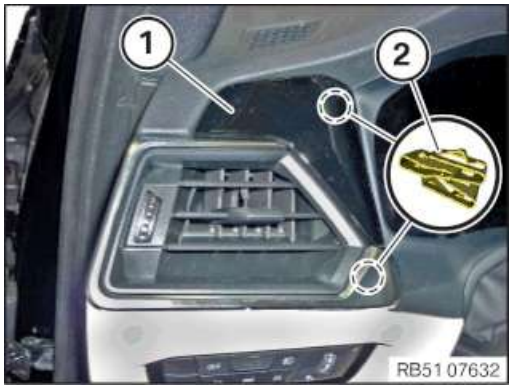
- Unclip the trim panel for the pedal mechanism (1) towards the inside in this area (2).
- Turn the locks (3) by 90°.
- Detach the trim panel for the pedal mechanism (1) inwards out of the guides (4).
- Unlock associated plug connection and disconnect.

16 – Removing the left fold-down compartment



- Loosen screws (1).
- Remove the fold-down compartment (2) toward the bottom.

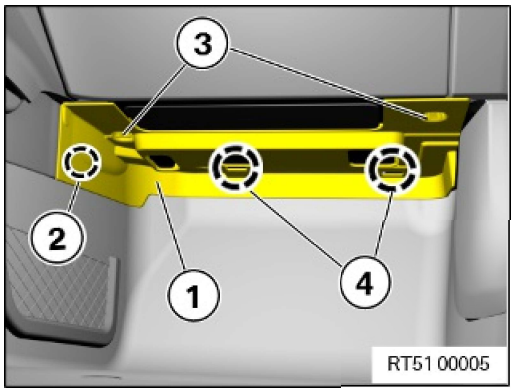
17 – Remove the finisher on the instrument panel on the left



- Unclip decorative strip (1) to the rear out of the clamps (2).
- Unlock associated plug connection and disconnect.

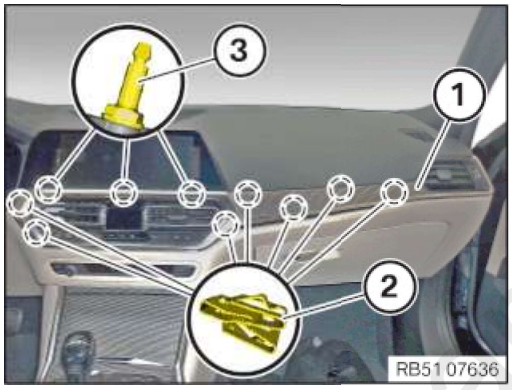
  Remove the decorative strip (1).

18 – Remove the right footwell trim



- Turn the locks (3) by 90°.
- Feed the footwell trim (1) out of the guide (2).
- Detach the footwell trim (1) inward out of the guides (4).
- Unlock associated plug connection and disconnect.

19 – Remove the finisher on the right instrument panel



- Unclip the decorative strip (1) towards rear at the clamps (2) and the pins (3).
- Unlock associated plug connection and disconnect.

  Remove the decorative strip (1).

20 – Remove Central Information Display (CID)

RISK OF DAMAGE

Electrostatic discharge.

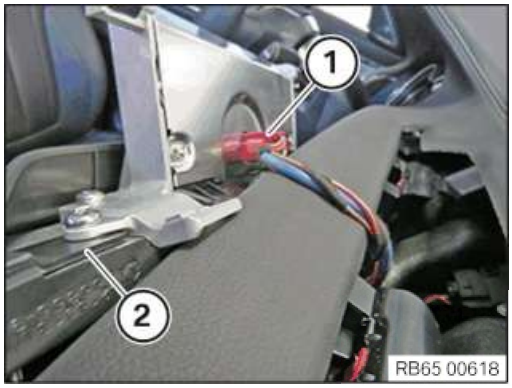
Damage to or destruction of electrical components.

- Leave electrical components in original packaging until just before they are installed. Use the original packaging only for any return shipments. Always package removed components straight away.
- Read and comply with user information on using the associated special tool 12 7 060.
- Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.
- Wear electrically conductive clothing and antistatic shoes (with ESD symbol).
- For additional information see: 61 35 Information on electrostatic discharge (ESD) protection.

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- Loosen screws (1).
- Pull out central information display (CID) (2) slightly off the instrument panel.



- Unlock plug connection (1) and disconnect.
- Remove the central information display (CID) (2).

21 – Removing the airbag unit

WARNING

Airbag unit.

Danger! Life-threatening injuries!

- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

RISK OF DAMAGE

Damage to the steering wheel.

Incorrect handling of the tool may damage the steering wheel.

- Ensure the tool is positioned correctly (angle and inclination).
- When unlocking, do not use "levering" action. Instead, press in the Torx screwdriver toward the centre of steering wheel only.

TECHNICAL INFORMATION

Different variants may be installed depending on the vehicle equipment.

▸ **Version A: Removing the airbag unit (sports steering wheel)**

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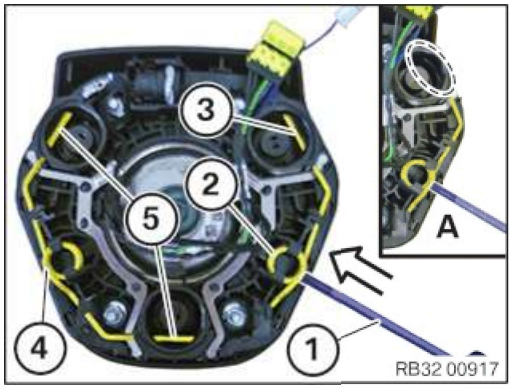
- Insert Torx screwdriver T25 (1) diagonally upwards in the hidden opening (2) on the rear side of the steering wheel until a spring resistance is felt.



NOTICE

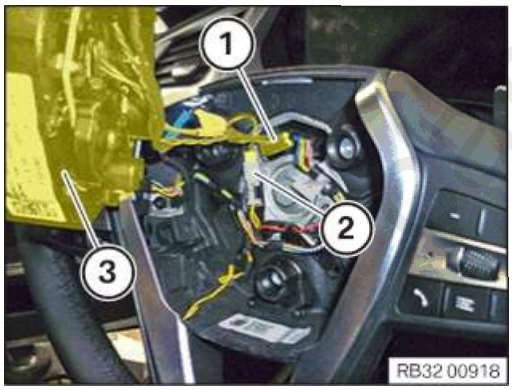
To provide a better overview: Diagram with airbag unit removed.

- To unlock the airbag unit, press Torx screwdriver T25 (1) diagonally upwards in the direction of the arrow to the centre of the steering wheel.



- Press the airbag unit over a large area of the steering wheel.
- Use Torx screwdriver T25 (1) to press wire spring clip (2) in the direction of the arrow towards the centre of the steering wheel and release lock (3).

  (A): Wire spring clip (2) is unlocked.
- Then use Torx screwdriver T25 (1) to press wire spring clip (4) in the direction of the arrow towards the centre of the steering wheel and release locks (5).
- Carefully raise the airbag unit.

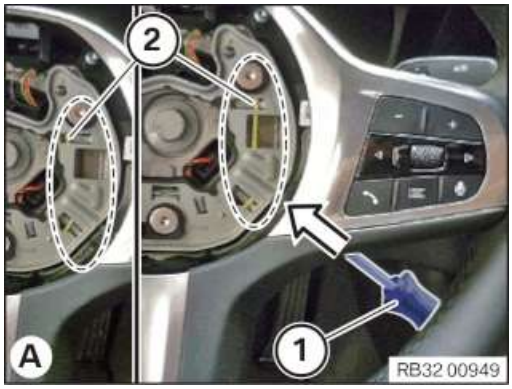


- Unlock and disconnect the plug connections (1) and (2).
- Remove airbag unit (3).

▸ **Version B: Removing airbag unit (M Sport steering wheel)**



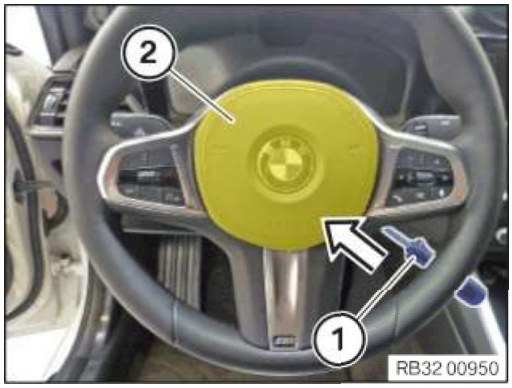
- Locate the pre-punched bore hole (1) on the rear side of the steering wheel by touch.
- Insert the Torx screwdriver T27 (2) diagonally upwards in the pre-punched bore hole (1) on the rear side of the steering wheel until a springing kind of resistance can be felt.



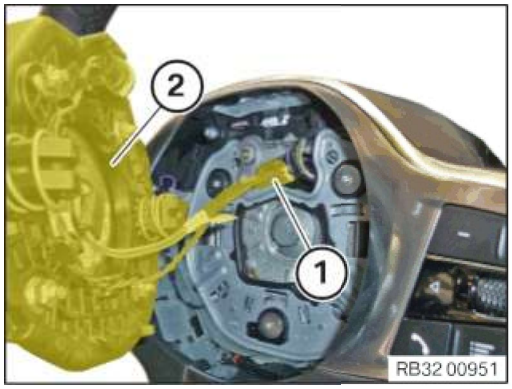
NOTICE

To provide a better overview: Diagram with airbag unit removed.

- Press in Torx screwdriver T27(1) straight in direction of arrow towards the centre of the steering wheel in order to unlock the wire spring clip (2) or to unlock the airbag unit (A).

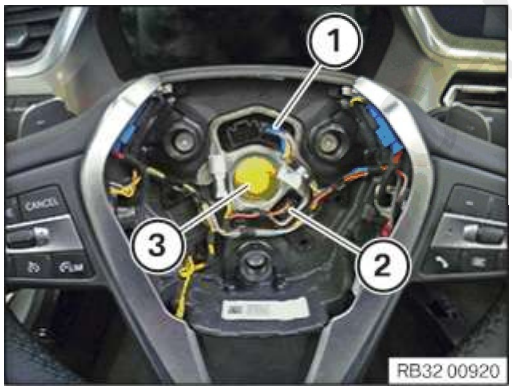


- Press in Torx screwdriver T27 (1) straight in direction of arrow towards the centre of the steering wheel and lift airbag unit (2) on the unlocked side.
- Repeat procedure on left side and carefully remove airbag unit (2) in direction of arrow off the steering wheel.



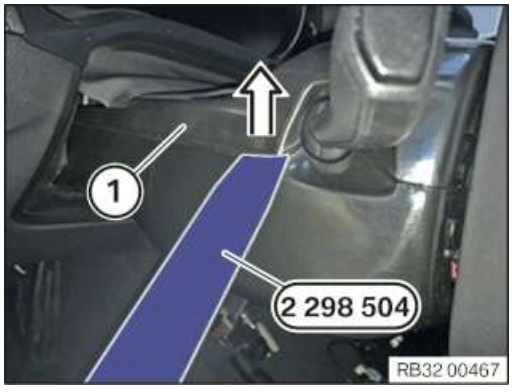
- Unlock and disconnect plug connection (1) and remove the airbag unit (2).

22 – Removing the steering wheel (sports steering wheel)



- Move the steering wheel and wheels to the straight-ahead position.
- Unlock plug connection (1) and disconnect.
- If installed: Unlock plug connection (2) and disconnect.
- Release the screw (3) and pull off and remove the steering wheel.

23 – Removing steering column shroud upper section

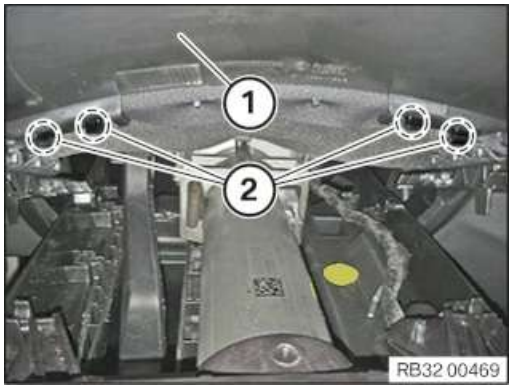


NOTICE

Perform the operations on the left and right side.

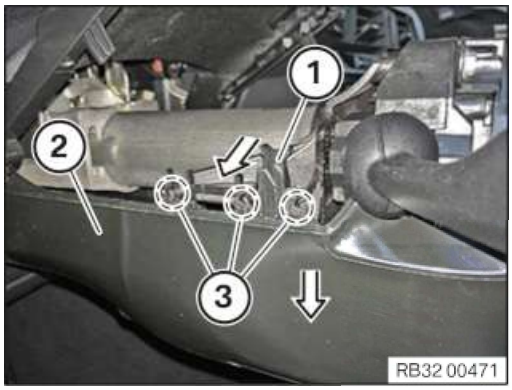
- Unlock the steering column shroud upper section (1) with the special tool 2 298 504 and fold up.

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- Unclip the steering column shroud upper section (1) from the brackets (2).
- Remove the steering column shroud upper section (1).

24 – Removing steering column shroud lower section



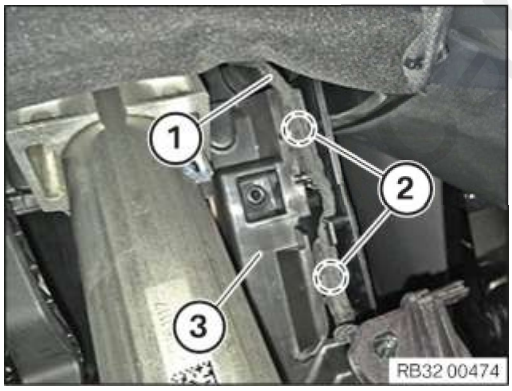
NOTICE

Perform the operations on the left and right side.

- Push the retaining lug (1) to the outside in the direction of the arrow and unclip the steering column shroud lower section (2) from the holders (3) in the direction of the arrow to the bottom at the same time.

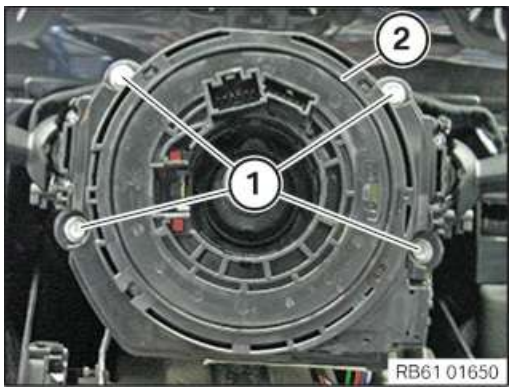


- Fold the steering column shroud lower section down.
- Unlock and disconnect connector (1).

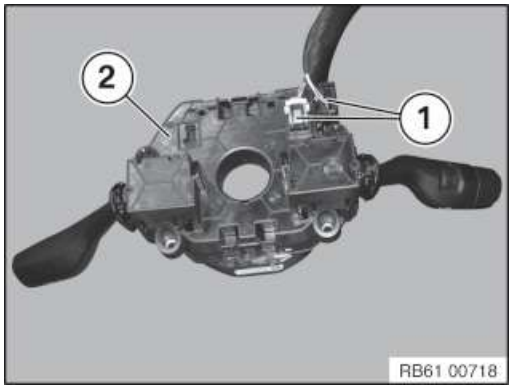


- Detach the cable (1) from the brackets (2).
- Remove the steering column shroud lower section (3).

25 – Removing the steering column switch cluster (SZL)

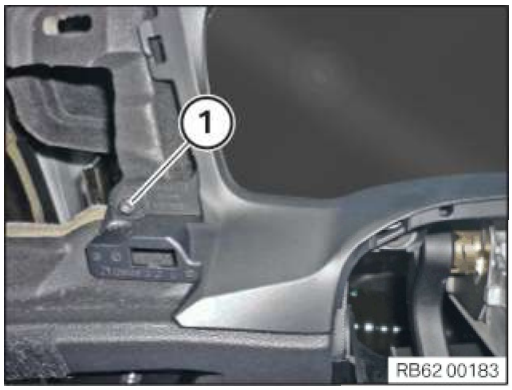


- Loosen screws (1).
- Remove the steering column switch cluster (SZL) (2).



- Unlock and disconnect the connector (1) on the steering column switch cluster (SZL) (2).

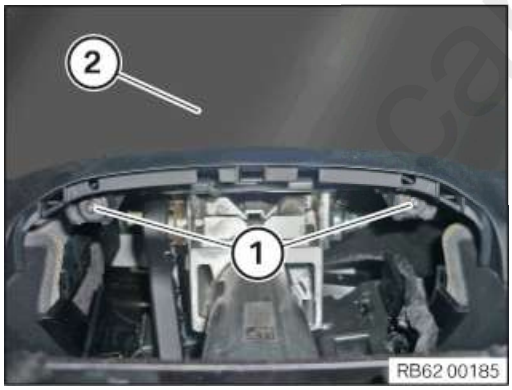
26 – Removing the instrument cluster (KOMBI)



- Loosen screw (1).

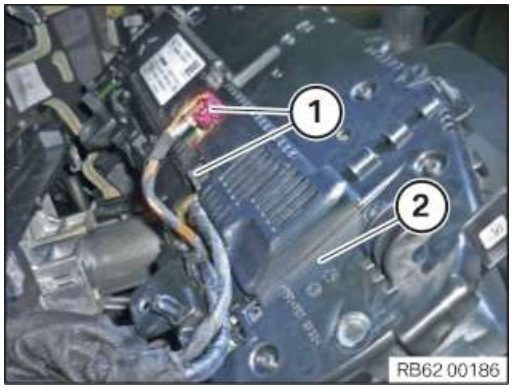


- Loosen screw (1).



- Loosen screws (1).
- Feed out instrument cluster (KOMBI) (2).

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RISK OF DAMAGE

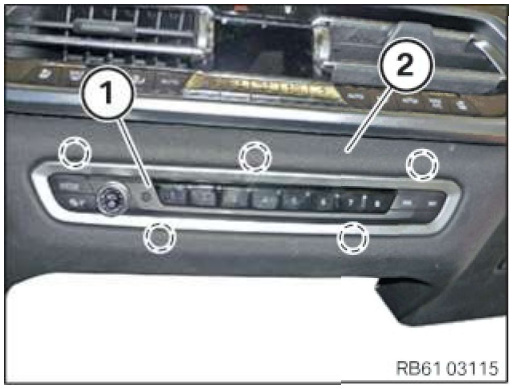
Damage to the instrument cluster (KOMBI)

While releasing and connecting the cable, it could lead to a ground offset. Thereby, currents could arise, that make the instrument cluster (KOMBI) useless.

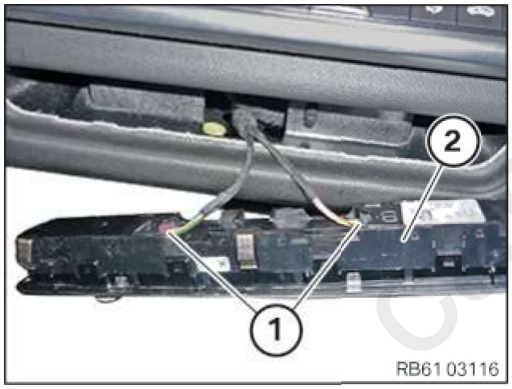
- While releasing: Release APIX data cable (blue) first.
- While connecting: Connect APIX data cable (blue) at the last.

- **If installed:** Release the blue plug connection first.
- Unlock and disconnect plug connections (1) from instrument cluster (KOMBI) (2).
- Remove the instrument cluster (KOMBI) (2).

27 – Remove the audio operating unit

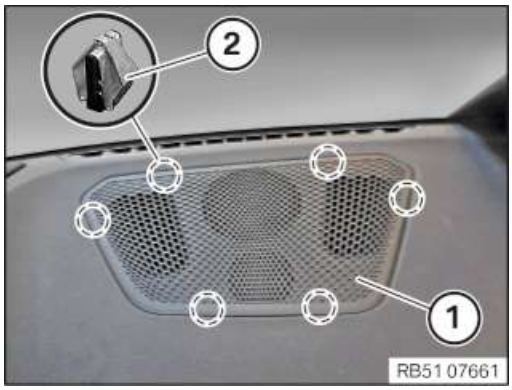


- Unclip the audio operating unit (1) from the instrument panel (2) at the points marked using special tool 0 496 571 (00 9 327).



- Disconnect plug connections (1) and remove the audio operating unit (2).

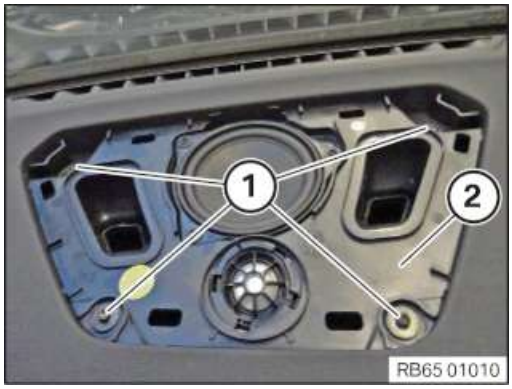
28 – Remove the speaker trim at the instrument panel



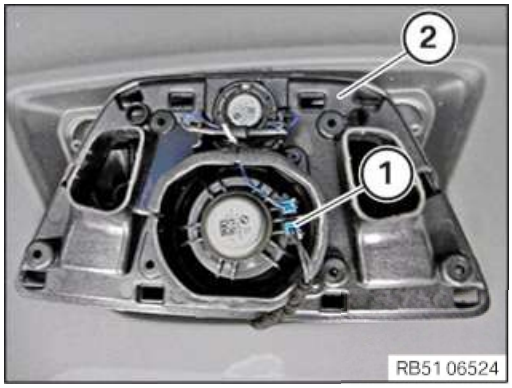
- Lever out the speaker trim (1) with the special tool 0 496 569 (00 9 325) from the clamps (2) toward the top and remove.

29 – Remove the speaker holder at the instrument panel

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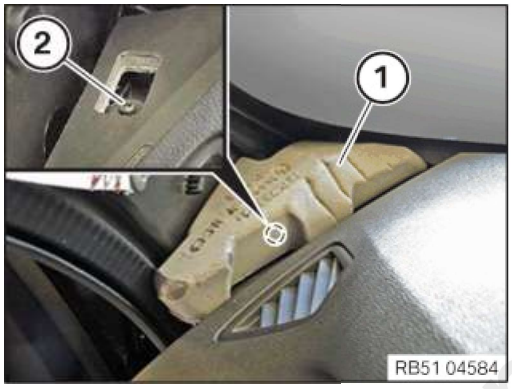


- Loosen screws (1).
- Pull out speaker holder (2) slightly with the loudspeakers and tilt it to the side.



- Unlock plug connection (1) and disconnect.
- Remove the speaker holder (2).

30 – Remove the instrument panel trim panel



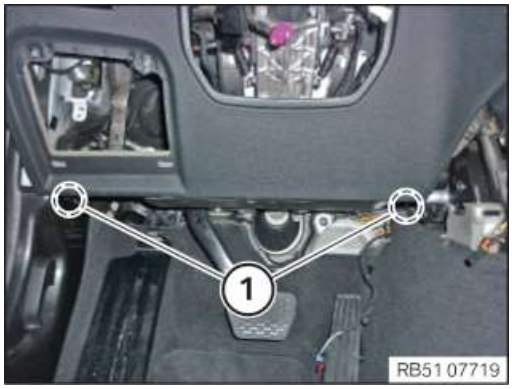
NOTICE

Perform the operations on the left and right side.

- Remove the sound insulation (1).
- Loosen screw (2).

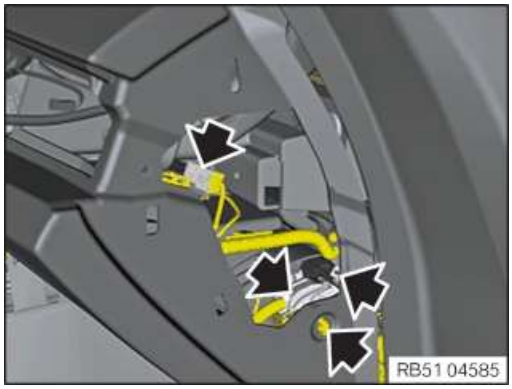


- Loosen screws (1).

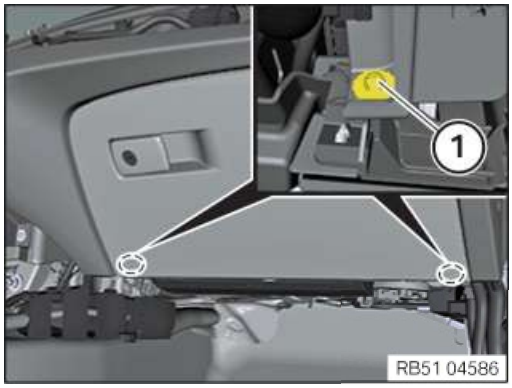


- Loosen screws (1).

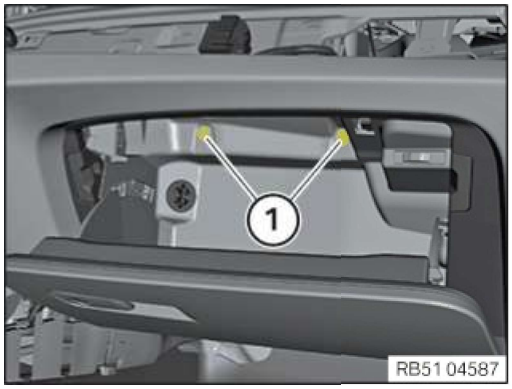
ardiag.com



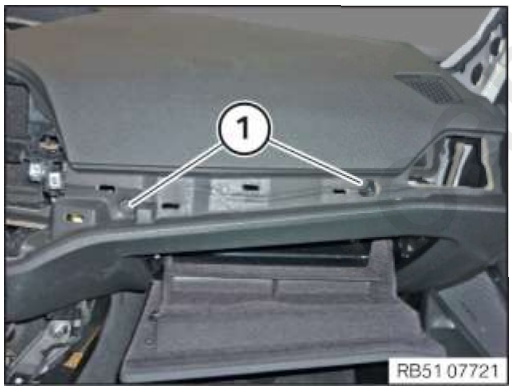
- Release all plug connections and cable clips (arrows) behind the glove box.



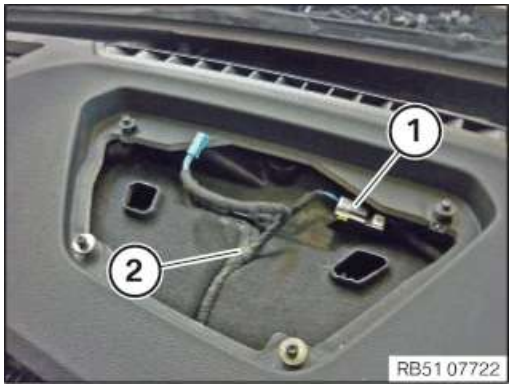
- Release the screws (1) on the lower side of the glove box.



- Open glovebox.
- Loosen screws (1).



- Loosen screws (1).



- Unlock plug connection (1) and disconnect.
- Release the wiring harness (2) on the holders.

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- Unlock the plug connection (1) on the light operating unit and disconnect it.



- Loosen screws (1).

TECHNICAL INFORMATION

Conduct the following operation with the assistance of a second person.

- Pull the instrument panel trim back slightly.

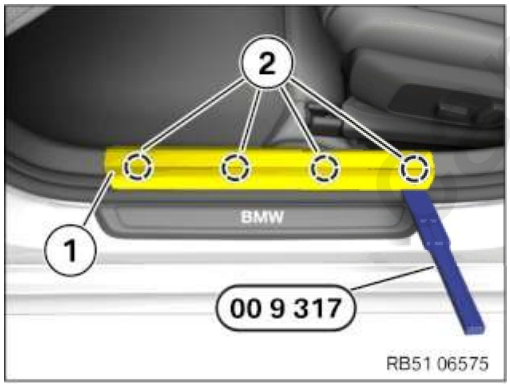
  If necessary, unlock and disconnect additional plug connections.
- Remove the instrument panel trim from the vehicle.

31 – Remove right door sill cover strip

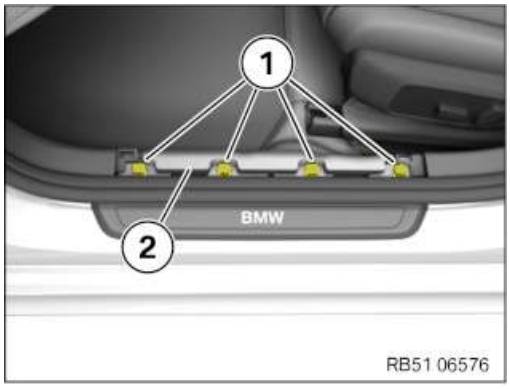
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove door sill cover strip**



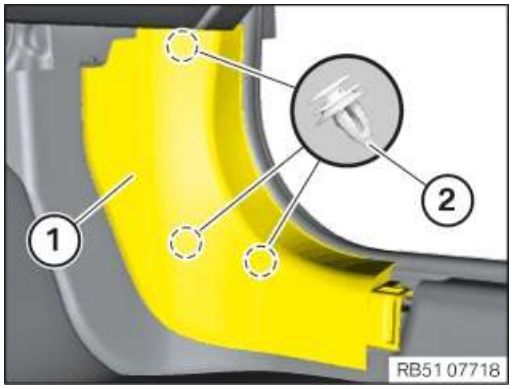
- Detach the door sill cover strip(1) using the special tool 0 490 534 (00 9 317) from the clips (2) in the floor panel.



- If necessary, remove the clips (1) from the floor panel (2) and attach to the door sill cover strip.

32 – Removing the side trim panel in the footwell at the right-hand A-pillar

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- Loosen the side trim panel (1) at the clips (2) and remove it toward the inside.

33 – Removing knee airbag

WARNING

Airbag unit.

Danger! Life-threatening injuries!

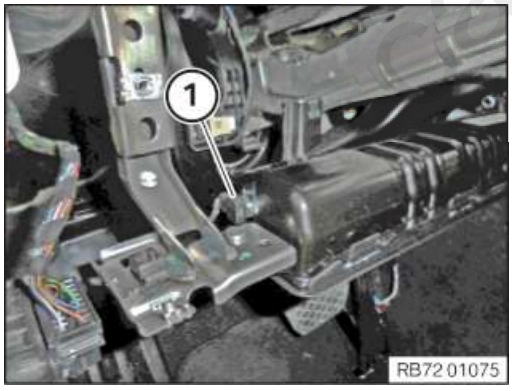
- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

WARNING

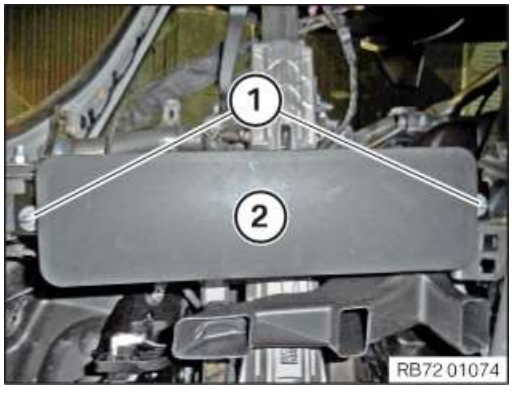
Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



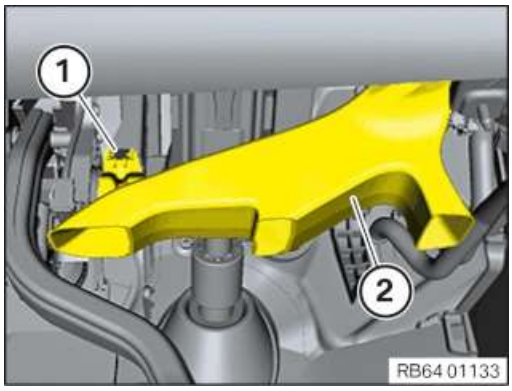
- Unlock plug connection (1) and disconnect.



- Loosen nuts (1).
- Remove knee airbag (2).

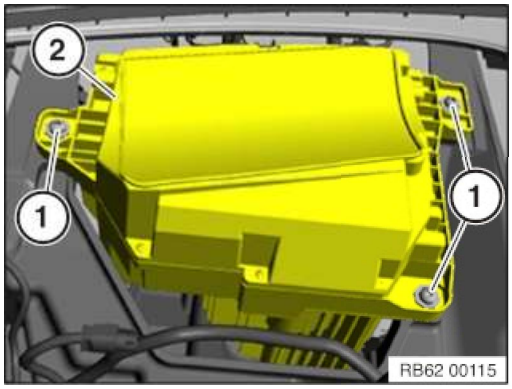
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34 – Remove left air duct



- Unclip the air duct (2) from the air conditioning housing at an angle towards the bottom at the clamp (1).

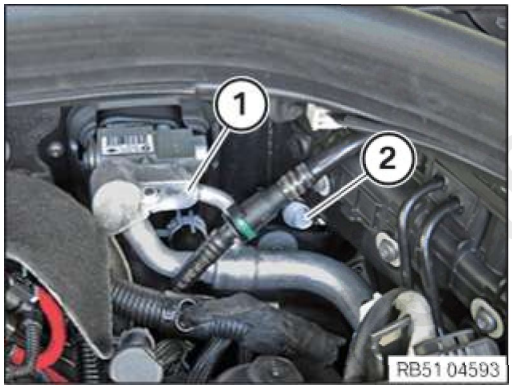
35 – Removing the Head-Up Display



- Loosen screws (1).
- Remove head-up display (2) from support.
- Unlock associated cable and disconnect.

MAIN WORK

36 – Removing the support for the instrument panel

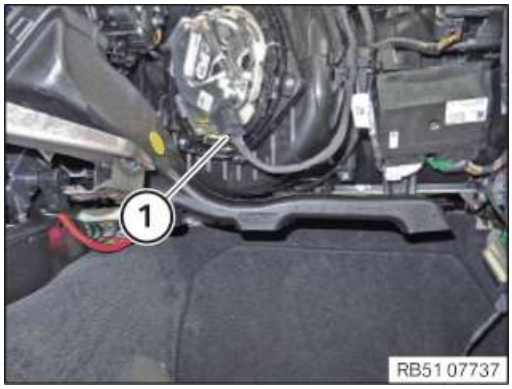


- Push the refrigerant line (1) slightly to one side and loosen the screw (2).

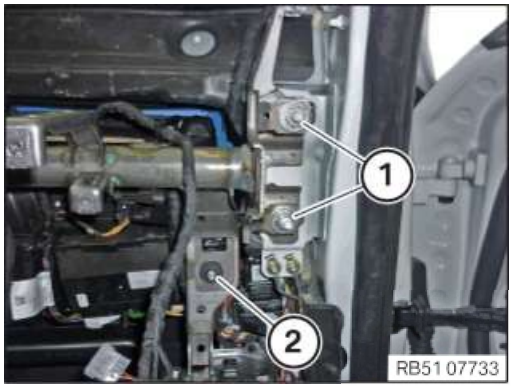


- Push the carpet in the area of the right B-pillar to the side.
- Unlock and disconnect plug connections (1).

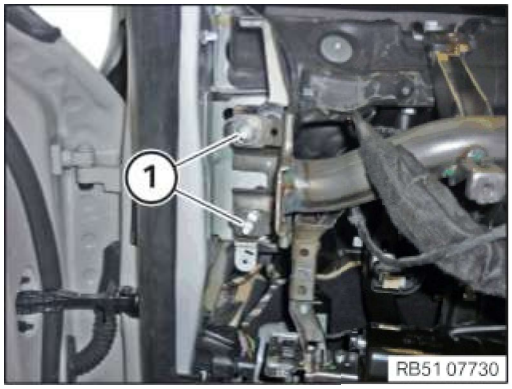
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- Unlock and disconnect the plug connection (1) on the blower motor.



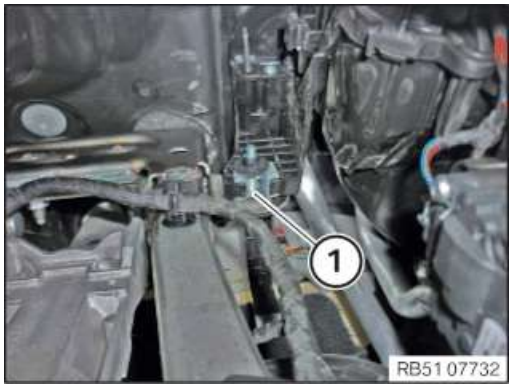
- Loosen nuts (1) and (2).



- Loosen nuts (1).

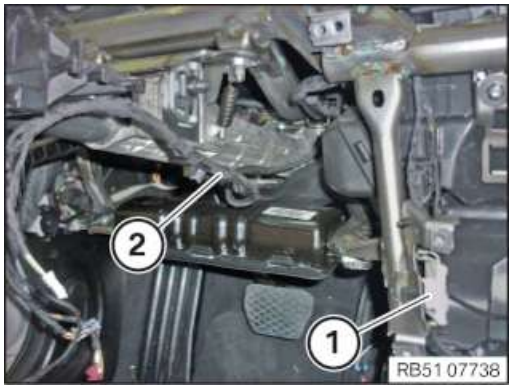


- Loosen screws (1).

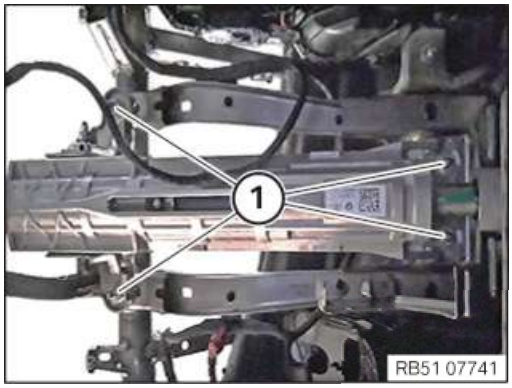


- Slacken the nut (1) in the left footwell on the heating and air-conditioning unit.

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- Release plug connection (1).
- Release the wiring harness (2) from the steering column.

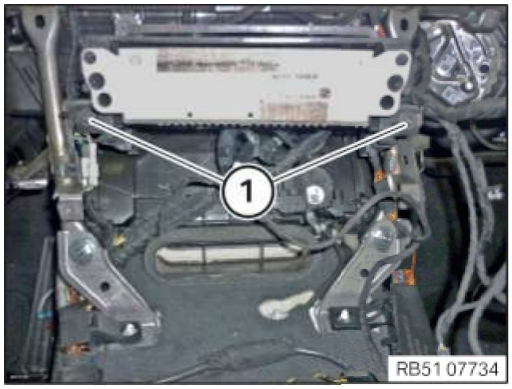


TECHNICAL INFORMATION

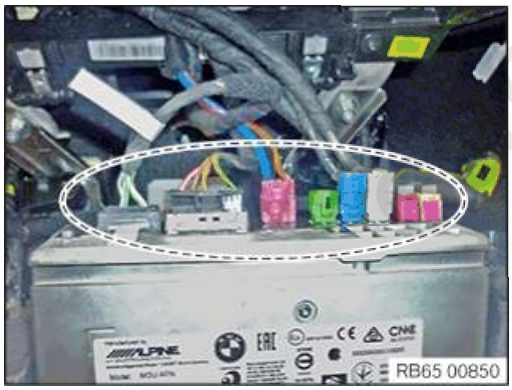
Secure component against falling.

- Release the nuts (1) at the steering column.
- Drop steering column (1) a little away and support it in the footwell.

  Drop steering column not too far away and support it absolutely.



- Loosen screws (1).
- Feed out Head Unit High.



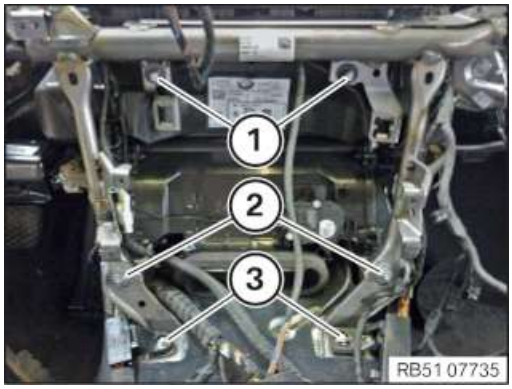
- Unlock and disconnect all connectors in the marked area.

  Remove headunit.



- Unlock and disconnect plug connection (1) from airbag control unit.
- Release the wiring harness (2) on the holders.

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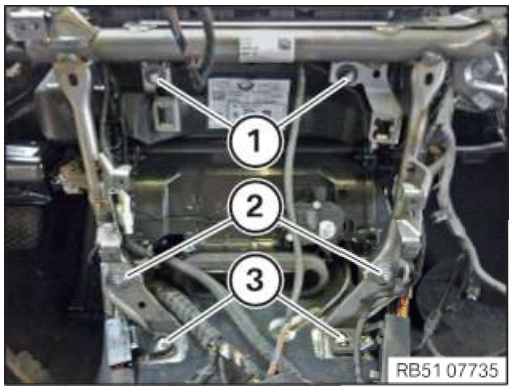


- Loosen nuts (1).
- Loosen nuts (2).
- Remove cable clip and release the nuts (3).

  Remove retaining bracket from left and right sides.
- Carefully feed out the support for the instrument panel to the rear.

  If necessary, unlock and disconnect additional plug connections.
- Carefully remove support for the instrument panel from the vehicle.

37 – Installing the support for instrument panel



- Install the instrument panel support into the vehicle carefully.
- Insert the instrument panel support carefully.

  If necessary, connect and lock the additional connector.
- Tighten nuts (1).

Heating and air-conditioning unit on support

Nut M6		Tightening torque	4 Nm

- Mount retaining bracket on left and right.

  Tighten nuts (2).

Support for instrument panel

M8 hexagon nut		Tightening torque	21 Nm
Hexagon screw		Tightening torque	21 Nm

- Tighten nuts (3) and fit cable clip .

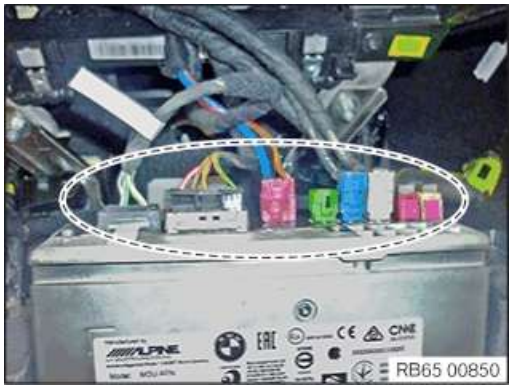
Support for instrument panel

M8 hexagon nut		Tightening torque	21 Nm
Hexagon screw		Tightening torque	21 Nm



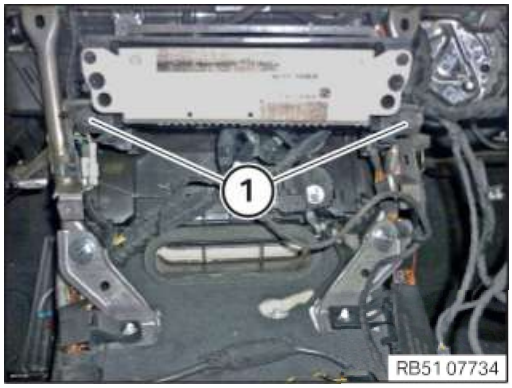
- Connect the connector (1) to the airbag control unit and lock.
- Secure the wiring harness (2) on the holders.

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- Installing head unit.

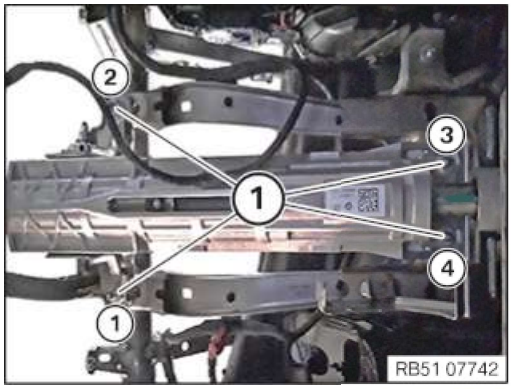
  Connect and lock all connectors in the marked area.



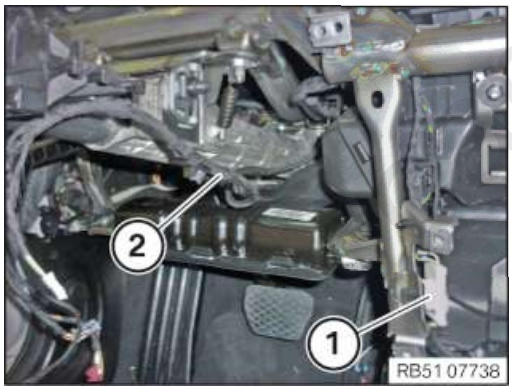
- Feed in the head unit.
- Tighten the screws (1).

Head unit to holder / holder to support

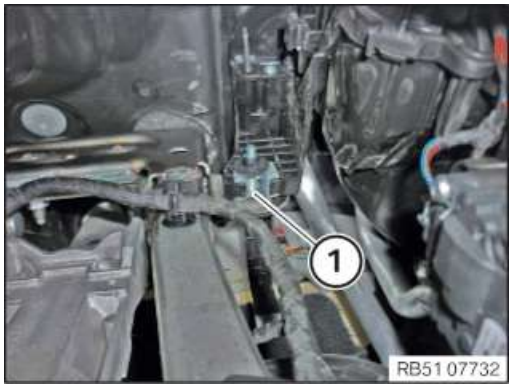
Screw		Tightening torque	1,8 Nm



- Correctly position the steering column (2) and tighten the nuts (1) in the sequence (1), (2), (3) and (4).



- Connect connectors (1) and lock.
- Secure the vehicle wiring harness (2) to the steering column.



- Tighten nut (1) in the left foot well on the heating and air-conditioning unit.

Heating and air-conditioning unit on support

Nut M6		Tightening torque	4 Nm

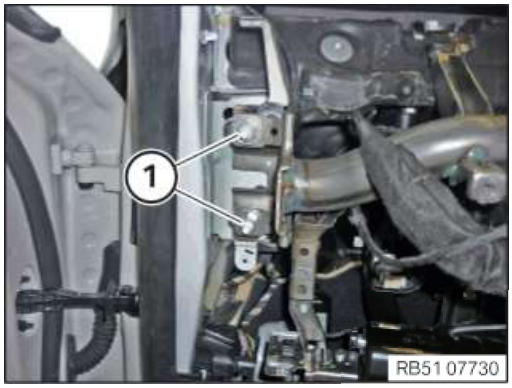
ardiagn.com



- Tighten the screws (1).

Support for instrument panel

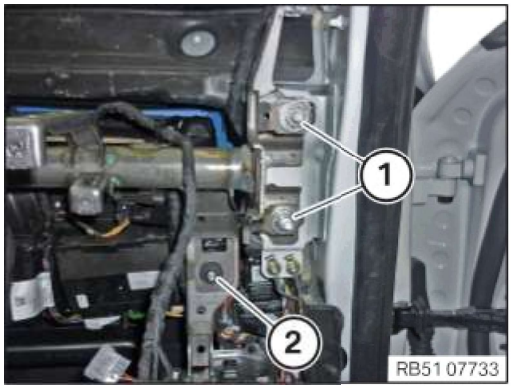
M8 hexagon nut		Tightening torque	21 Nm
Hexagon screw		Tightening torque	21 Nm



- Tighten nuts (1).

Support for instrument panel

M8 hexagon nut		Tightening torque	21 Nm
Hexagon screw		Tightening torque	21 Nm



- Tighten nuts (1).

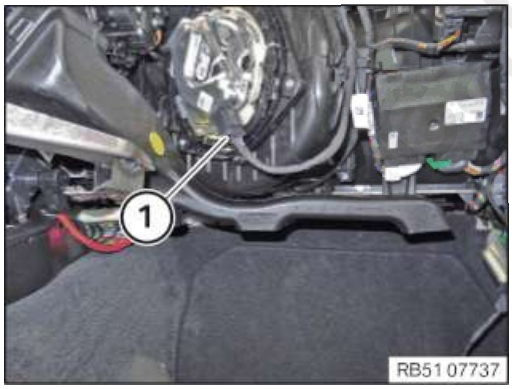
Support for instrument panel

M8 hexagon nut		Tightening torque	21 Nm
Hexagon screw		Tightening torque	21 Nm

- Tighten nut (2).

Heating and air-conditioning unit on support

Nut M6		Tightening torque	4 Nm

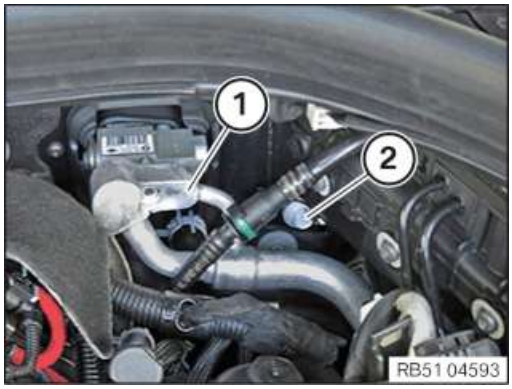


- Connect the connector (1) to the blower motor and lock.



- Connect connector (1) and lock.
- Correctly position the carpet in the area of B-pillar at the right.

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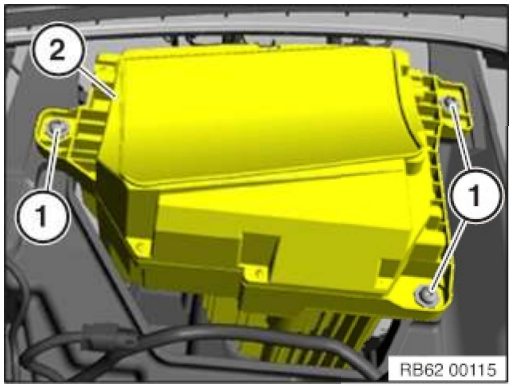
- Push the refrigerant line (1) slightly to one side and tighten the screw (2).

Support for instrument panel

M8 hexagon nut		Tightening torque	21 Nm
Hexagon screw		Tightening torque	21 Nm

POSTPROCESSES

38 – Installing the head-up display

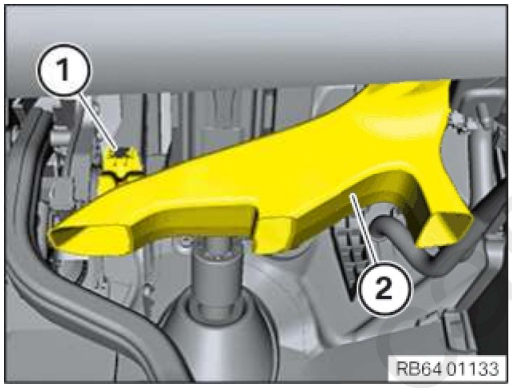


- Connect the associated connector to the Head-Up Display.
- Guide the Head-Up Display (2) into the support.
- Tighten the screws (1).

Head-Up Display to support

M6x25 screw		Tightening torque	13 Nm

39 – Installing the air duct, left



- Clip in the air duct (2) at the clamp (1) in the air conditioning housing at an angle towards the top.

40 – Installing knee airbag

WARNING

Airbag unit.

Danger! Life-threatening injuries!

- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

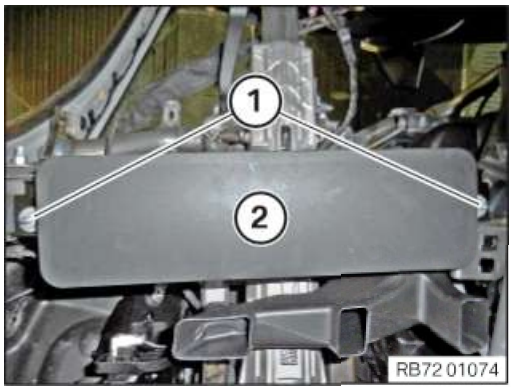
partdiagn.com

WARNING

Pyrotechnic components.

Danger! Life-threatening injuries!

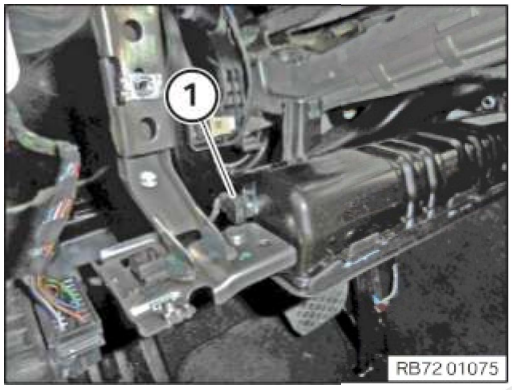
- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



- Position knee airbag (2) correctly.
- Tighten nuts (1).

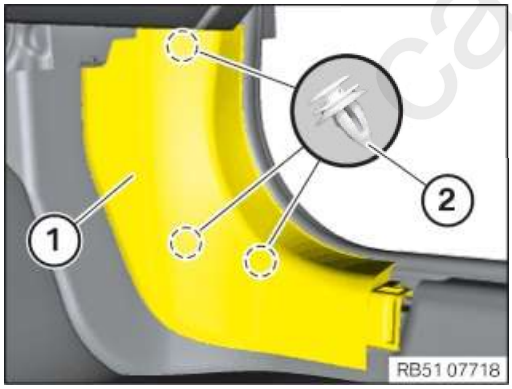
Knee airbag on support structure

Nut		Tlghtening torque	8 Nm



- Connect connectors (1) and lock.

41 – Installing side trim panel in footwell on right A-pillar



- Check the clips (2) for damage.

  Renew damaged or missing clips (2).
- Correctly position the side trim panel (1) and clip in to the clips (2).
- Make sure that the side trim panel (1) is correctly fitted against edge protection.

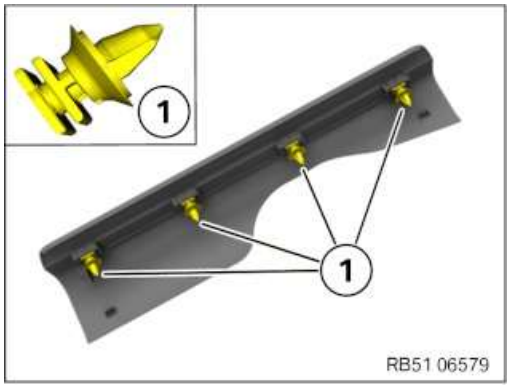
42 – Install right door sill cover strip

NOTICE

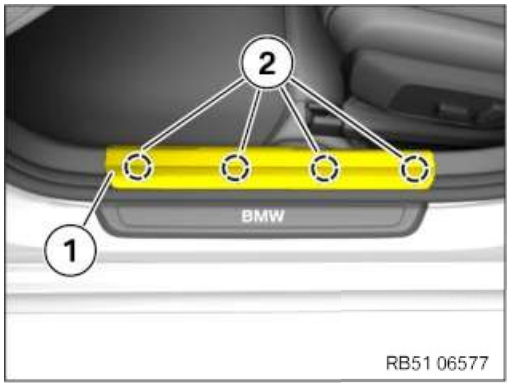
Description is for left component only. Procedure on the right side is identical.

▸ **Install the door sill cover strip**

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- Check the clips (1) for damage and renew if necessary.



- Clip the door sill cover strip (1) into the floor panel with the clips (2).

43 – Install the trim panel for the instrument panel



TECHNICAL INFORMATION

Conduct the following operation with the assistance of a second person.

- Insert the instrument panel trim in the vehicle and position it at the support.
- Insert the associated wiring harnesses and connect the connectors.
- Tighten the screws (1).

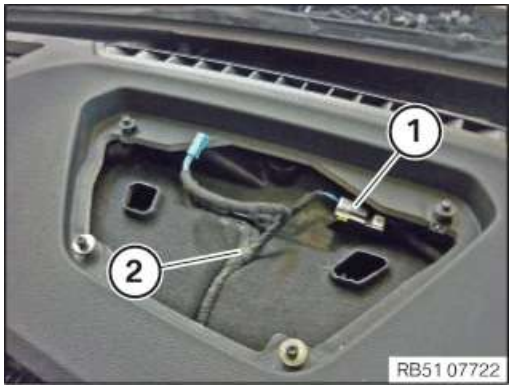
Dashboard to support

Screw		Tightening torque	2,4 Nm

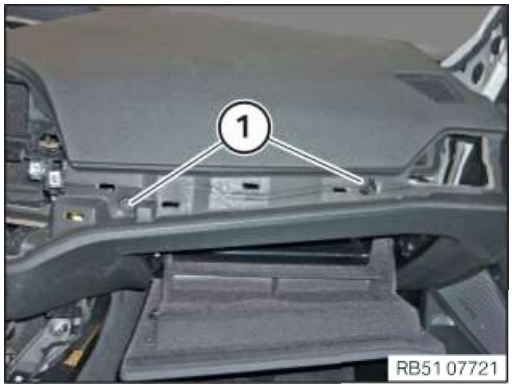


- Connect connector (1) to the light operating unit and lock.

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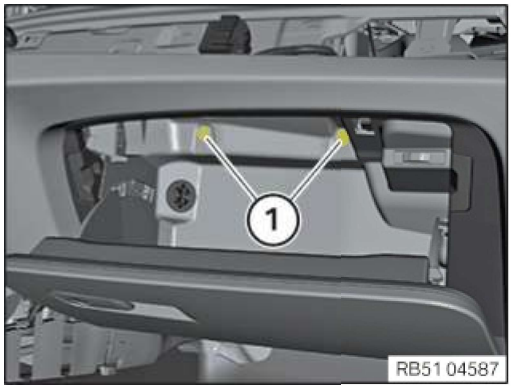
- Secure the wiring harness (2) on the holders.
- Connect plug connection (1) and lock.



- Tighten the screws (1).

Dashboard to support

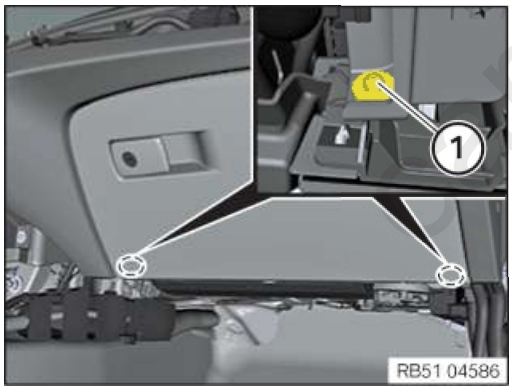
Screw		Tightening torque	2,4 Nm



- Open glovebox.
- Tighten the screws (1).

Dashboard to support

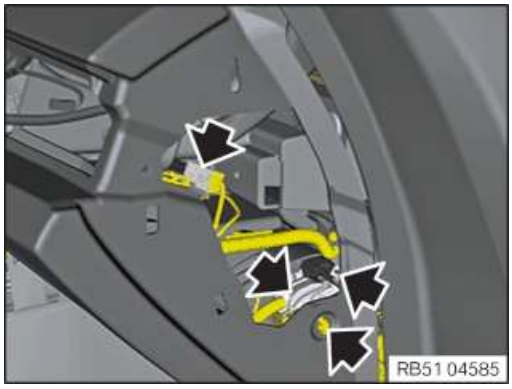
Screw		Tightening torque	2,4 Nm



- Tighten the screws (1) on the lower side of the glove box button.

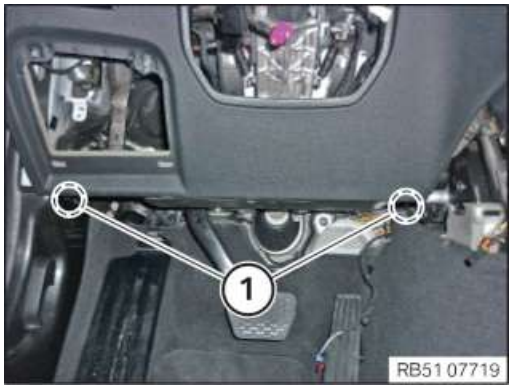
Dashboard to support

Screw		Tightening torque	2,4 Nm



- Connect all plug connections and cable clips (arrows) behind the glove box.

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- Tighten the screws (1).

Dashboard to support

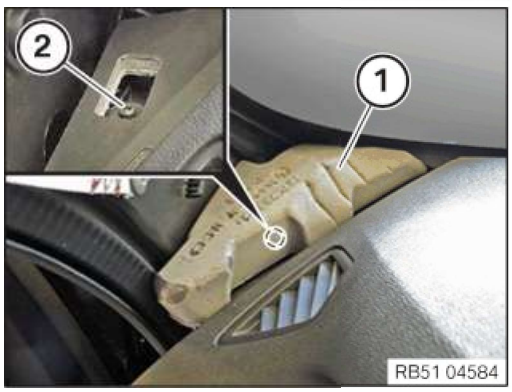
Screw		Tightening torque	2,4 Nm



- Tighten the screws (1).

Dashboard to support

Screw		Tightening torque	2,4 Nm



NOTICE

Perform the operations on the left and right side.

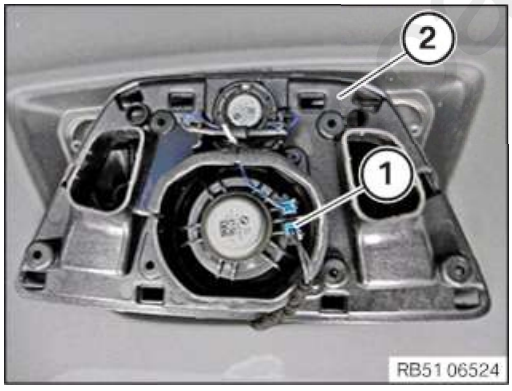
- Tighten down screw (2).

Dashboard to support

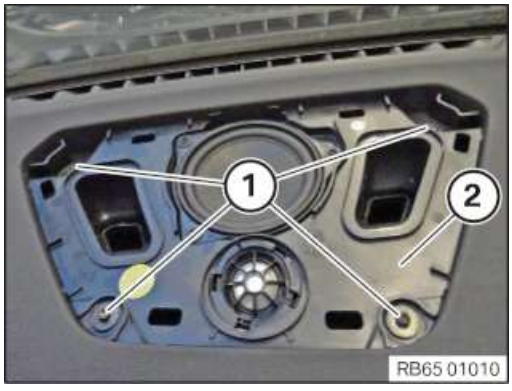
Screw		Tightening torque	2,4 Nm

- Use sound insulation (1).

44 – Install the speaker holder at the instrument panel



- Position the speaker holder (2).
- Connect connector (1).



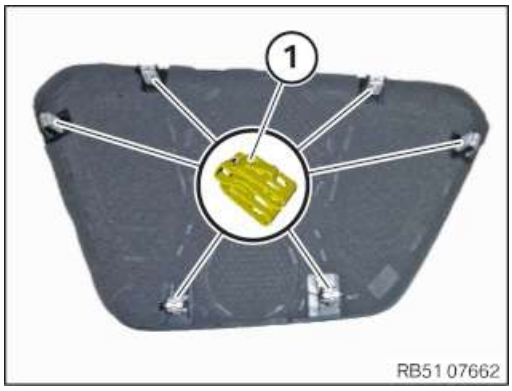
- Install the speaker holder (2).
- Tighten the screws (1).

Speaker to support / support to instrument panel / support to body

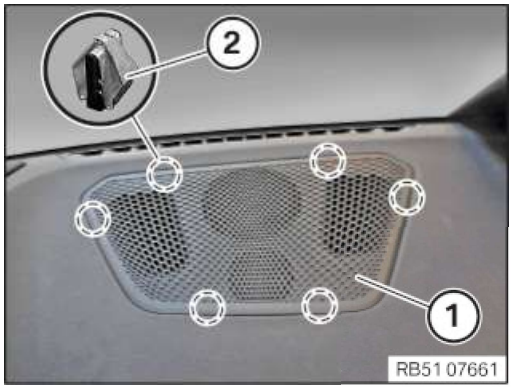
Screw		Tightening torque	1,8 Nm

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45 – Install the speaker trim at the instrument panel

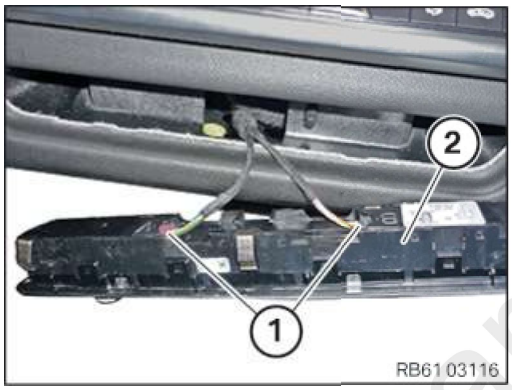


- Check clamps (1) for damage.
- Replace broken or missing clamps (1).

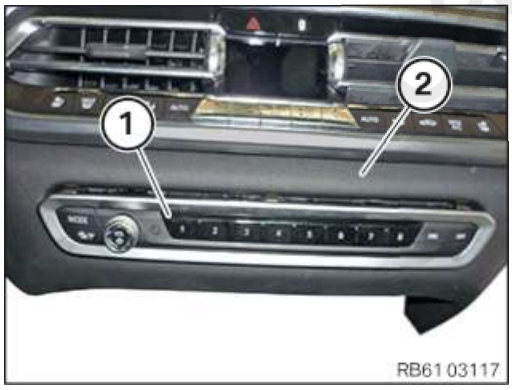


- Position the speaker trim (1) correctly and engage it at the clamps (2).

46 – Install the audio operating unit

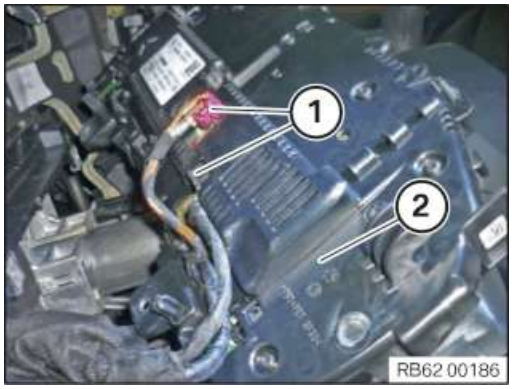


- Connect the connector (1) to the audio operating unit (2).



- Correctly position the audio operating unit (1) and install in the instrument panel(2).

47 – Installing the instrument cluster (KOMBI)



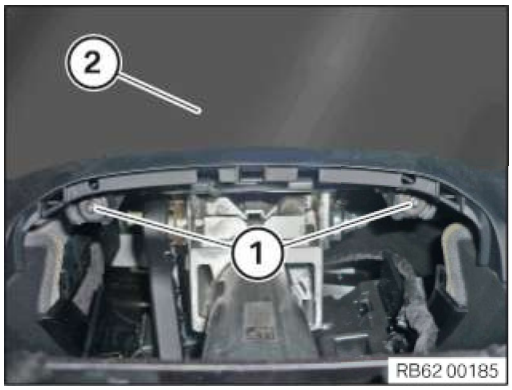
RISK OF DAMAGE

Damage to the instrument cluster (KOMBI)

While releasing and connecting the cable, it could lead to a ground offset. Thereby, currents could arise, that make the instrument cluster (KOMBI) useless.

- While releasing: Release APIX data cable (blue) first.
- While connecting: Connect APIX data cable (blue) at the last.

- **If installed:** Connect the blue connector at the last and lock it.
- Connect and lock connector (1) to the instrument cluster (KOMBI) (2).



- Feed in and position the instrument cluster (KOMBI) (2).
- Tighten the screws (1).

Instrument cluster (KOMBI) to support

Oval-head screw		Tightening torque	1,8 Nm



- Tighten down screw (1).

Instrument cluster (KOMBI) to support

Oval-head screw		Tightening torque	1,8 Nm

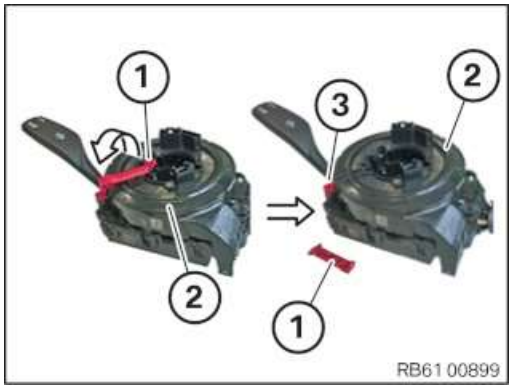


- Tighten down screw (1).

Instrument cluster (KOMBI) to support

Oval-head screw		Tightening torque	1,8 Nm

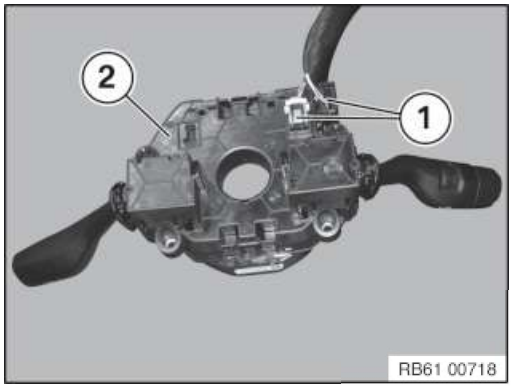
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- **Replacement:**

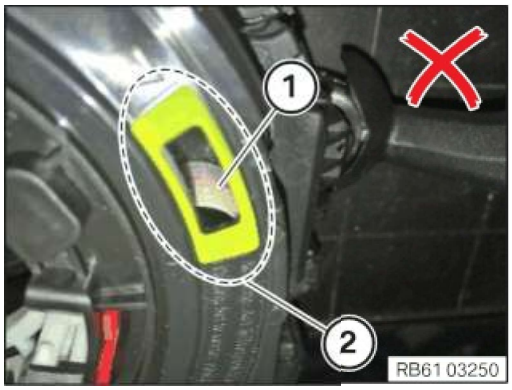
  Break off the transportation retainer (1) on the steering column switch cluster (SZL) (2) in direction of arrow.

  The broken off piece (3) of the transportation retainer (1) remains in the steering column switch cluster (SZL) (2).



- Connect the connector (1) with the steering column switch cluster (SZL) (2).

Check



- **Version A:**

  Check whether the correct marking (1) is seen in inspection glass (2).

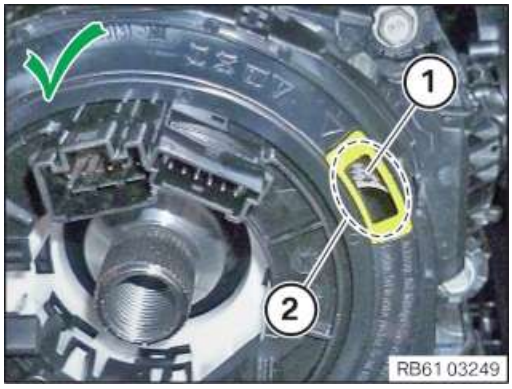
Result

» Ensure that no incorrect marking (1) is seen in inspection glass (2).

Measure

- Turn the coil spring cassette until the right mark (1) becomes visible in the inspection glass (2).

Check



- **Version A:**

  Check whether the correct marking (1) is seen in inspection glass (2).

Result

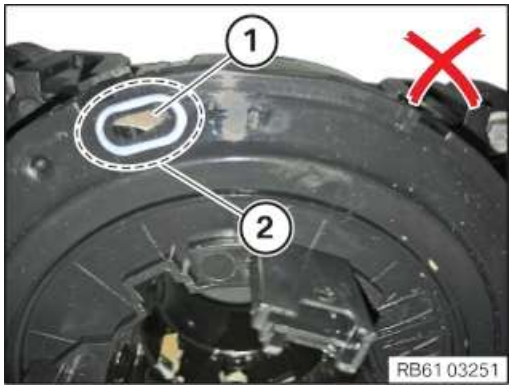
» Correct marking (1) is seen in inspection glass (2).

Measure

- Continue with the next step.

Check

cardiagn.com



- **Version B:**

  Check whether the correct marking (1) is seen in inspection glass (2).

Result

» Ensure that no incorrect marking (1) is seen in inspection glass (2).

Measure

- Turn the coil spring cassette until the right mark (1) becomes visible in the inspection glass (2).

Check



- **Version B:**

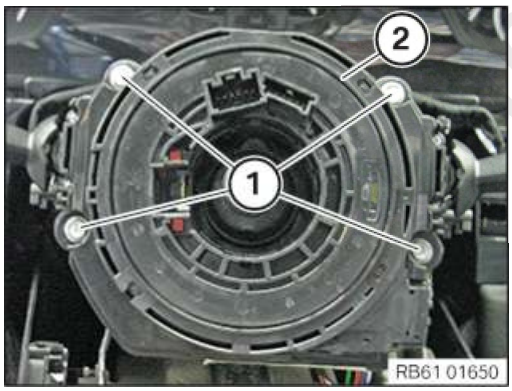
  Check whether the correct marking (1) is seen in inspection glass (2).

Result

» Correct marking (1) is seen in inspection glass (2).

Measure

- Continue with the next step.

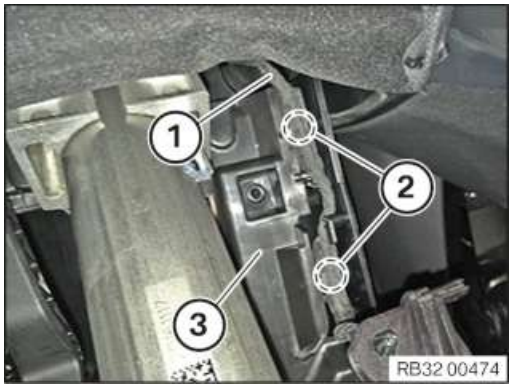


- Position the steering column switch cluster (SZL) (2).
- Tighten the screws (1).

Steering column switch cluster (SZL) on the steering column

Screw TS5x20		Tightening torque	3 Nm

49 – Install steering column shroud lower section

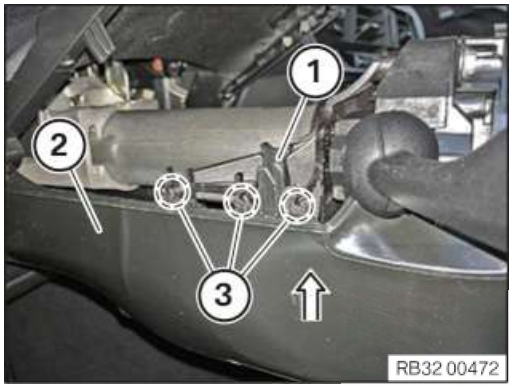


- Position the steering column shroud lower section (3).
- Secure the line (1) on the brackets (2).

vwdiagn.com



- Connect the connector (1).

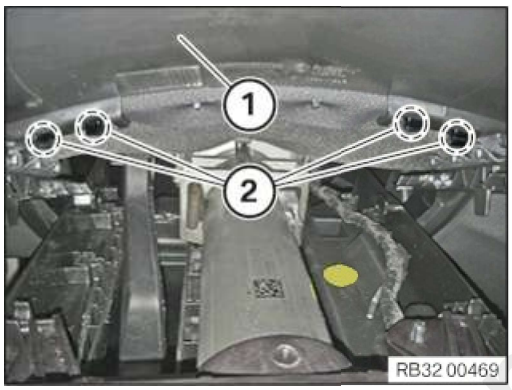


NOTICE

Perform the operations on the left and right side.

- Align the steering column shroud lower section (2) to the steering column using the retaining lug (1).
- Push the steering column shroud lower section (2) up in the direction of the arrow until the brackets (3) engage.

50 – Fit steering column shroud upper section



- Clip in the steering column shroud upper section (1) at the brackets (2).



NOTICE

Perform the operations on the left and right side.

- Clip in the steering column shroud upper section (1)into the guide (2).



NOTICE

Perform the operations on the left and right side.

- Press the upper section of the steering column shroud (1) downwards in direction of arrow.

  The upper section of the steering column shroud must engage audibly and perceptibly.

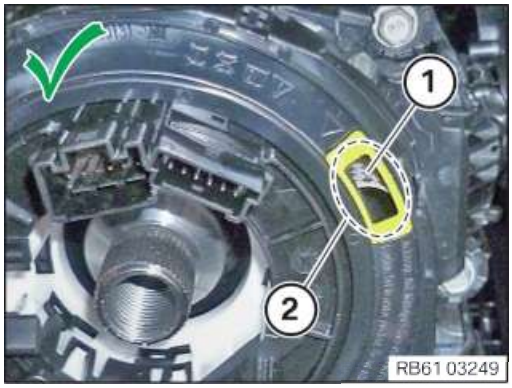
51 – Installing the steering wheel (sports steering wheel)

diag.com

▸ **Check the neutral position of the clock spring**

TECHNICAL INFORMATION

Different variants may be installed depending on the vehicle equipment.



Check

- **Version A:**

  Check the mark (1) on the coil spring in the inspection glass (2).

Result

» The mark (1) on the coil spring is not visible.

Measure

- Turn the coil spring cassette until the mark (1) on the coil spring becomes visible in the inspection glass (2).



Check

- **Version B:**

  Check the mark (1) on the coil spring in the inspection glass (2).

Result

» The mark (1) on the coil spring is not visible.

Measure

- Turn the coil spring cassette until the mark (1) on the coil spring becomes visible in the inspection glass (2).



Check

- A micro-encapsulated screw (3) may be fitted.
- Check the screw connection.

Result

» Screw is (3) micro-encapsulated.

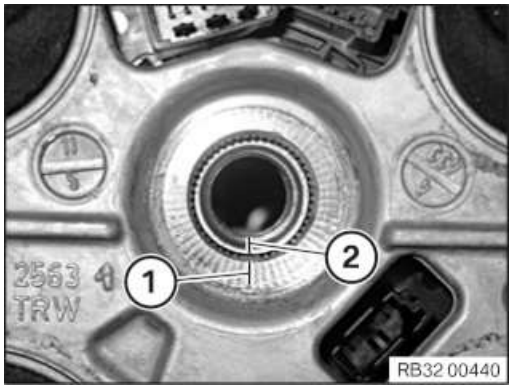
carfdiagn.com

Measure

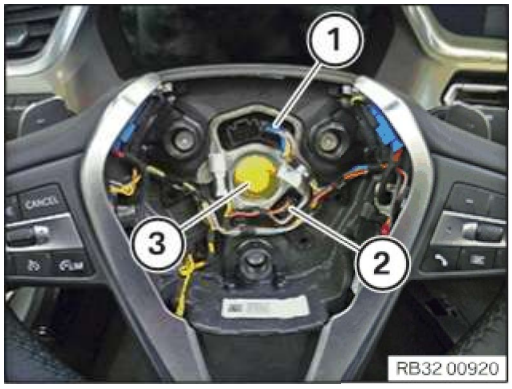
- Clean thread in the steering column.

  Renew the screw (3).

  Parts: Screw



- Align mark (1) on steering wheel to mark (2) on steering column.
- Connect steering wheel.



- Connect connectors (1) and lock.
- If installed: Connect connectors (2) and lock.
- Tighten screw (3) .

Steering wheel to steering column

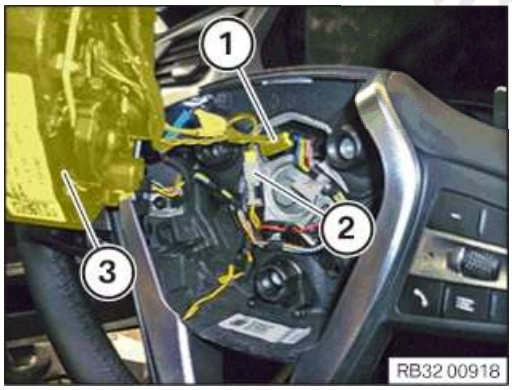
M14	Only for a micro-encapsulated screw: Renew screw.	Tightening torque	62,5 Nm

52 – Installing the airbag unit

TECHNICAL INFORMATION

Different variants may be installed depending on the vehicle equipment.

▸ **Version A: Installing the airbag unit (sports steering wheel)**



- Position airbag unit (3).
- Connect connectors (1) and (2) lock.



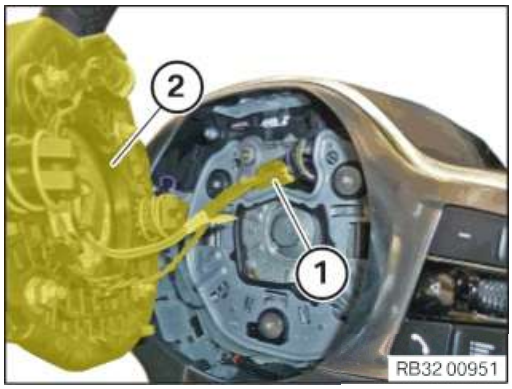
- Press the airbag unit (1) with even pressure in the direction of the arrow into the steering wheel.

  The airbag unit (1) must engage audibly and perceptibly.

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TECHNICAL INFORMATION

After replacing the airbag unit (M-sports steering wheel) or after a possible conversion of standard steering wheel and airbag unit to M-sports steering wheel, a software update or a programming/encoding via ISTA must be performed!



- Connect and lock connector (1) of the airbag unit (2).



- Press the airbag unit (1) with even pressure in the direction of the arrow into the steering wheel.

  The airbag unit (1) must engage audibly and perceptibly.

53 – Install the central information display (CID)

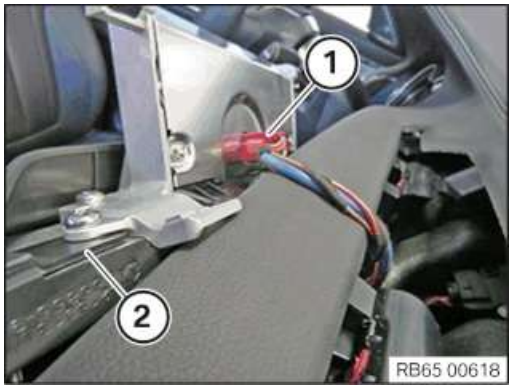
RISK OF DAMAGE

Electrostatic discharge.

Damage to or destruction of electrical components.

- Leave electrical components in original packaging until just before they are installed. Use the original packaging only for any return shipments. Always package removed components straight away.
- Read and comply with user information on using the associated special tool 12 7 060.
- Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.
- Wear electrically conductive clothing and antistatic shoes (with ESD symbol).
- For additional information see: 61 35 Information on electrostatic discharge (ESD) protection.

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- Position Central Information Display (CID) (2).
- Connect plug connection (1) and lock.

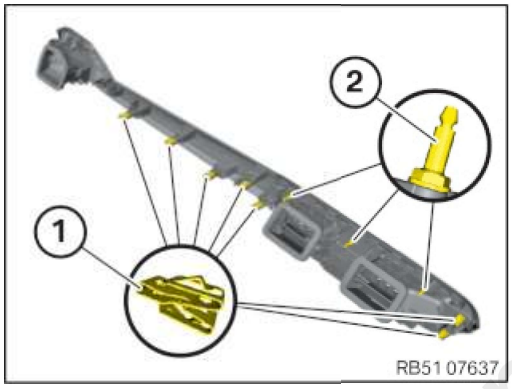


- Insert the central information display (CID) (2) in the instrument panel and position correctly.
- Tighten the screws (1).

Central information display to instrument panel

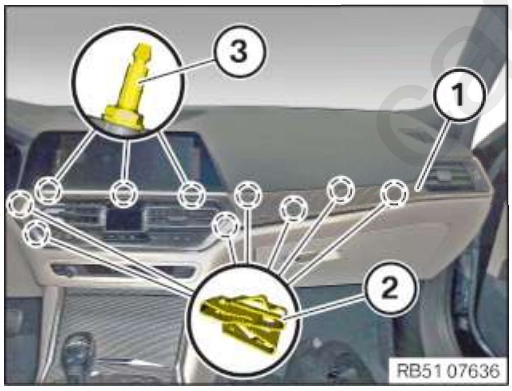
Screw		Tightening torque	1,8 Nm

54 – Install the finisher on the right instrument panel



- Check the clamps (1).

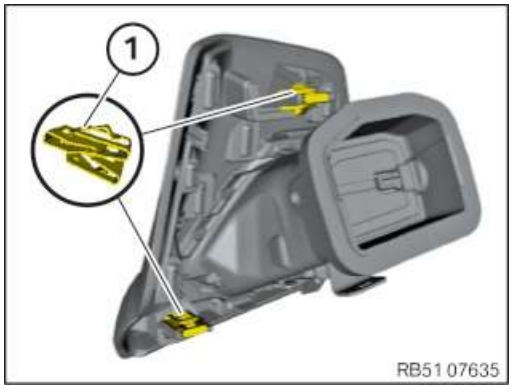
  Replace broken or missing clamps (1).
- Check the pins (2) and the corresponding clamps on the instrument panel trim and renew if necessary.



- Install the decorative strip (1).

  Connect and lock the associated connectors.
- Correctly position the decorative strip (1) and at the clamps (2) and clip in the pins (3).

55 – Install the finisher on the instrument panel on the left



- Check the clamps (1).

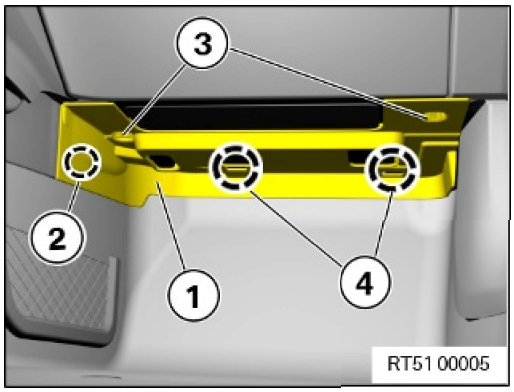
  Replace broken or missing clamps (1).



- Install the decorative strip (1).

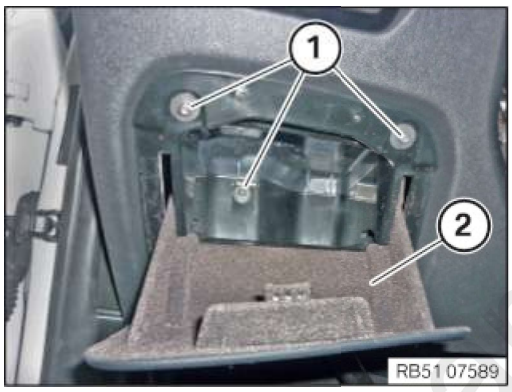
  Connect and lock the associated connectors.
- Clip decorative strip (1) into clamps (2).

56 – Install the right footwell trim panel



- Connect associated connector.
- Attach the footwell trim (1) to the guides (4) and fold up.
- Guide the footwell trim (1) into the guide (2) of the centre console.
- Position locks (3) correctly and turn by 90°.

57 – Installing the left fold-down compartment

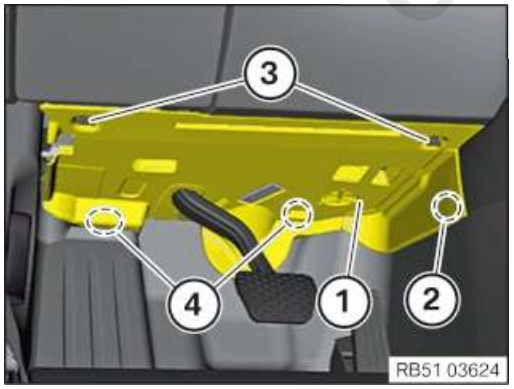


- Install the fold-down compartment (2).
- Tighten the screws (1).

Fold-down compartment to instrument panel

Oval-head screw		Tightening torque	1,8 Nm

58 – Installing the trim panel for the pedal mechanism



- Connect associated connector.
- Attach the trim panel for the pedal mechanism (1) in the guides (4) and fold it up.
- Clip the trim panel for the pedal mechanism (1) into the centre console in this area (2).
- Insert locks (3) correctly and turn 90°.

59 – Install both A-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

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▸ **Installing the A-pillar trim panel**

WARNING

Airbag unit.

Danger! Life-threatening injuries!

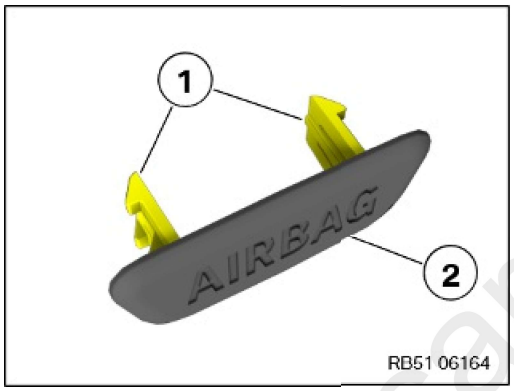
- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

WARNING

Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



Check

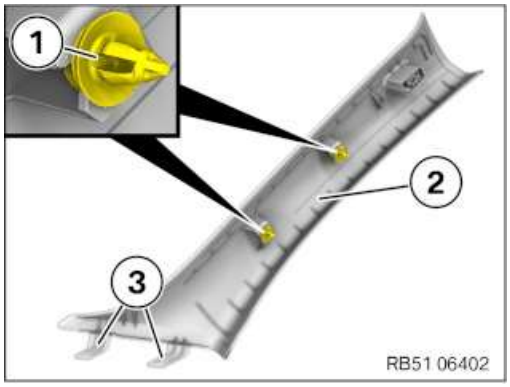
- Check retaining lugs (1) of cover (2) for damage.

Result

» Retaining lug is damaged.

Measure

- Renew the cover.



Check

- Check the clips (1) for damage and renew if necessary.
- Check the guides (3) for damage.

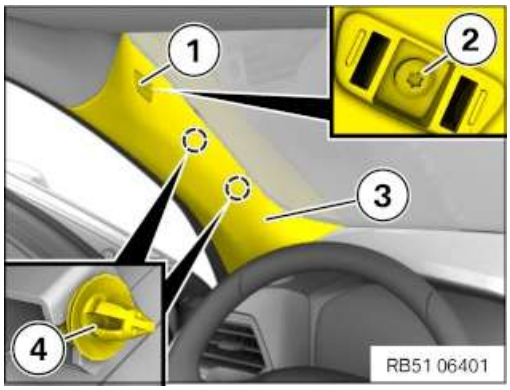
Result

» Guide is damaged.

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Measure

- Renew the A-pillar trim panel.



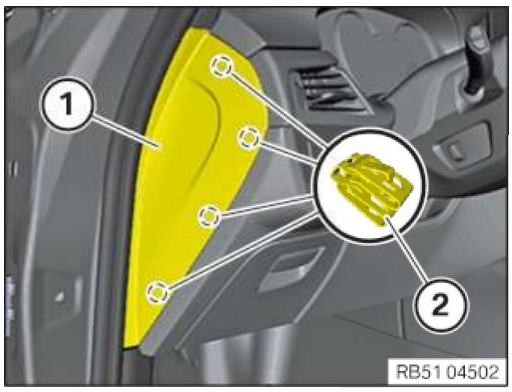
- Guide in A-pillar trim panel (3) downwards and clip it in with clips (4).
- Tighten down screw (2).

A-pillar trim panel to body

Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

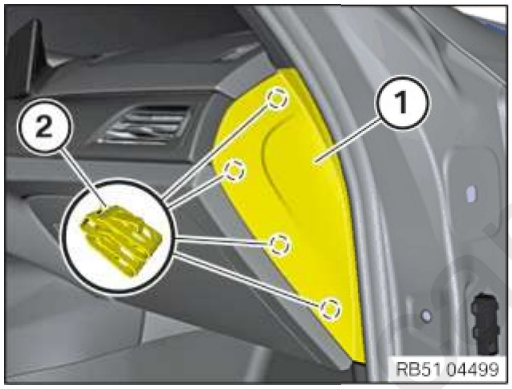
- Clip in the cover (1).

60 – Install the side panel on left instrument panel



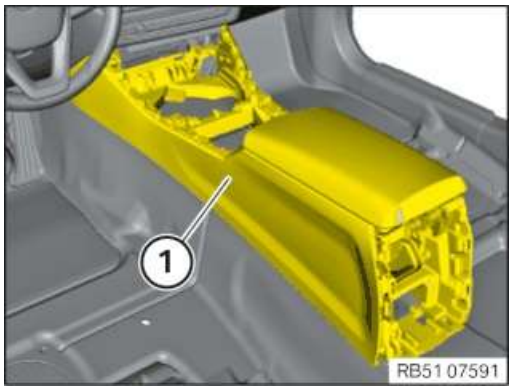
- Feed in the side panel (1) and clip it in at the clamps (2).

61 – Install the side panel on instrument panel on the right



- If required, connect the associated connector.
- Feed in the side panel (1) and clip it in at the clamps (2).

62 – Installing the centre console

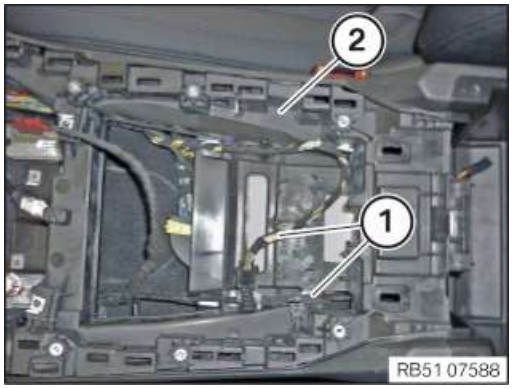


NOTICE

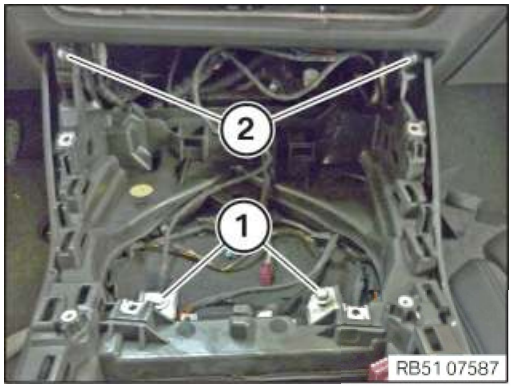
To provide a better overview: Schematic diagram with partially hidden components.

- Install centre console (1) and thereby feed in the wiring harness.
- Feed in the centre console (1) to the instrument panel and position correctly.

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- Secure the wiring harness to the centre console (1) and connect and lock the existing plug connections.



- Tighten the screws (1).

Centre console on tunnel

M6x18 Hexagon screw		Tightening torque	4,6 Nm

- Tighten the screws (2).

Centre console to instrument panel

Oval-head screw		Tightening torque	1,8 Nm

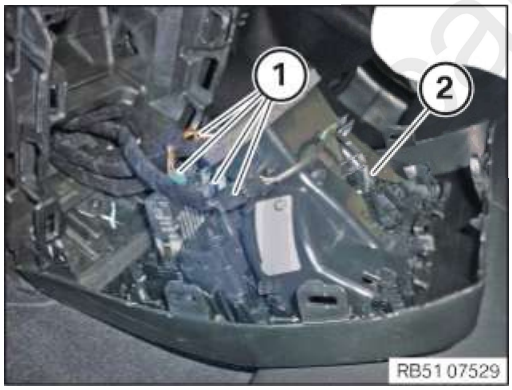


- Tighten the screws (1).

Centre console on tunnel

M6x18 Hexagon screw		Tightening torque	4,6 Nm

63 – Installing the rear centre console trim



- Install the centre console trim (2).
- Connect connectors (1) and lock.

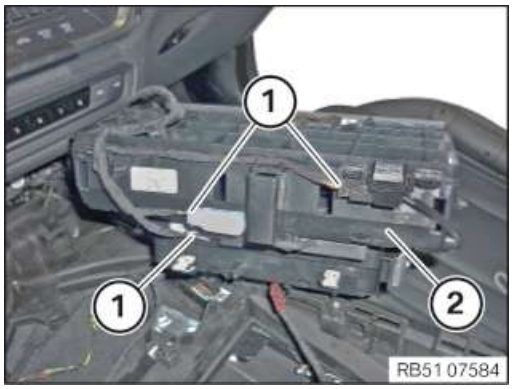


- Position centre console trim (1) and engage at the latch mechanisms at the side.

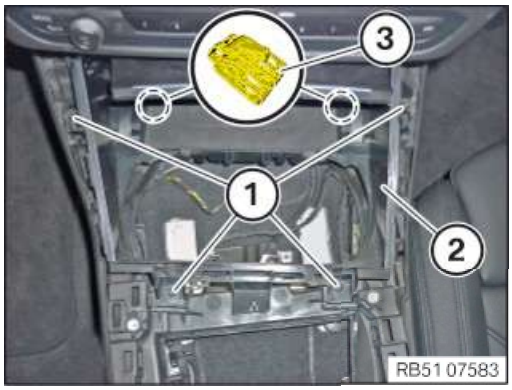
64 – Installing the storage compartment of the front centre console

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64 – Installing the storage compartment of the front centre console



- Mount the storage compartment (2) and connect connectors (1).

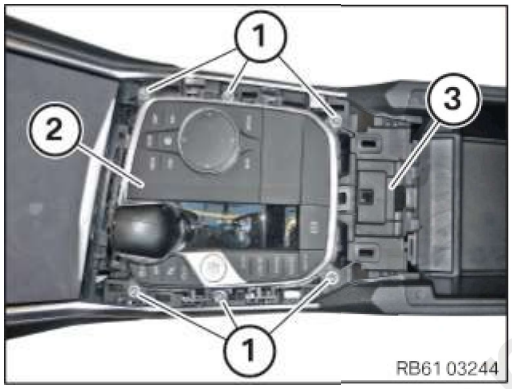


- Engage rear storage compartment trim (2) into clamps (3).
- Tighten the screws (1).

Storage compartment to centre console

Oval-head screw		Tightening torque	1,8 Nm

65 – Install the operating facility in the centre console



- Position operating facility (2) in the centre console (3).
- Tighten the screws (1).

Gear selector switch to centre console trim

Screw	Tightening torque	1,8 Nm

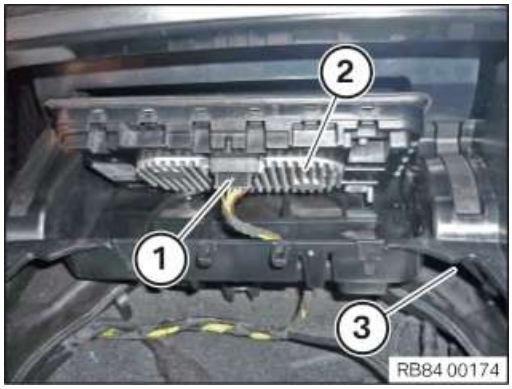
▸ **Disconnecting all battery earth leads**



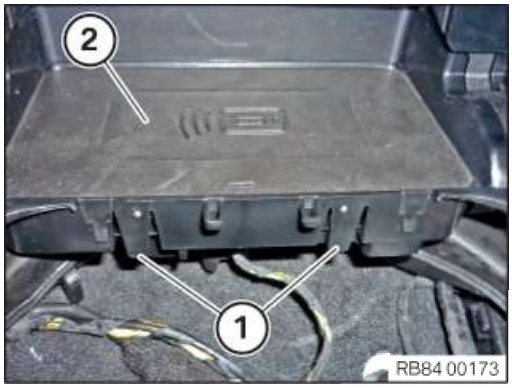
- See additional information.

66 – Installing the wireless charging station

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- Connect connector (1).
- Position the wireless charging station (2) in the centre console (3).



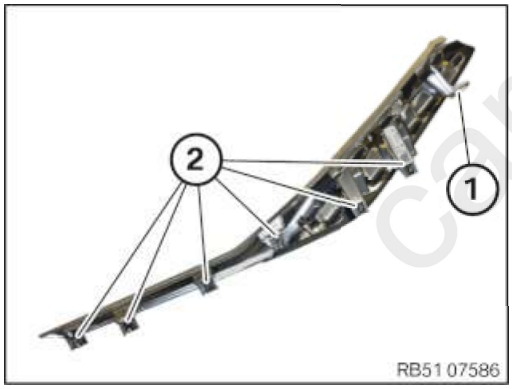
- Press the wireless charging station (2) down till the locking units (1) are engaged correctly.

67 – Install decorative trim on centre console on left and right

▸ **Installing the decorative trim to centre console**

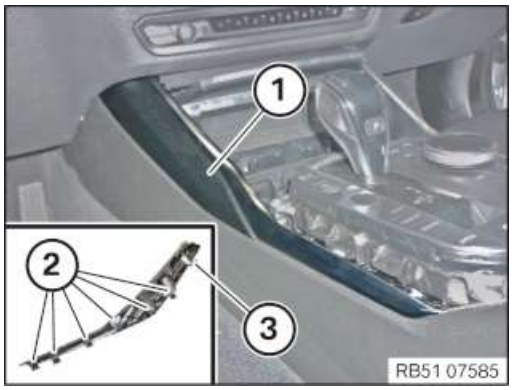
NOTICE

Description is for left component only. Procedure on the right side is identical.



- Check guide (1) and the latch mechanisms (2).

  Renew defective decorative trim.



- Feed in the decorative trim (1) forward in the guide (3).
- Engage decorative trim (1) in latch mechanisms (2).

68 – Installing the centre console trim

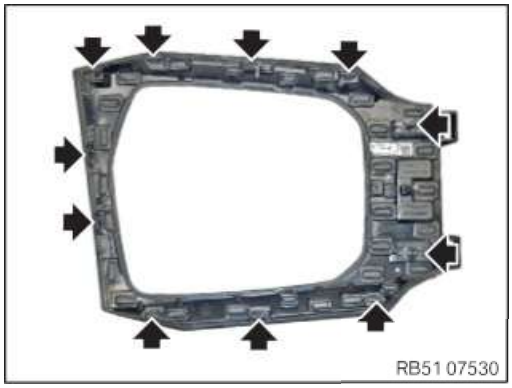
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RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

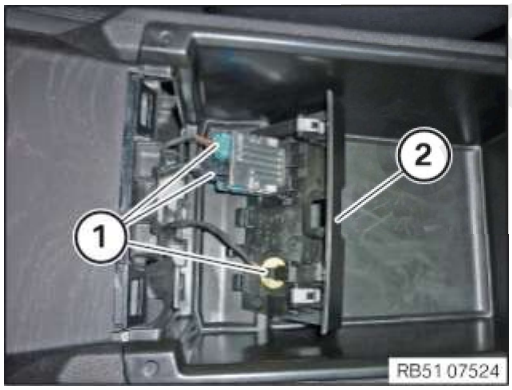


- Check all the latch mechanisms or clamps (arrows).
- In case the latch mechanisms or the clamps (arrows) are faulty, renew the centre console trim .

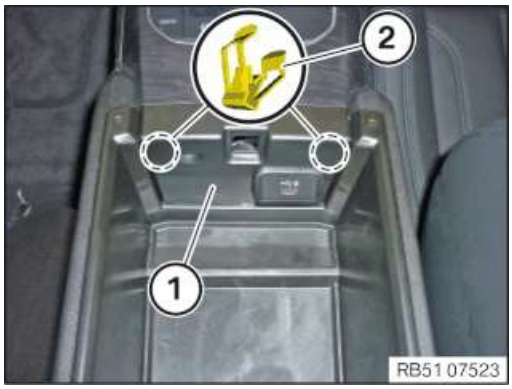


- Correctly position the centre console trim (1) and engage at the latch mechanisms.

69 – Installing the trim in the storage compartment of the centre armrest



- Mount the trim (2) and connect connector (1) and lock.



- Correctly position trim (1) and snap into the clamps (2).

70 – Install the cup holder



- Fix the cup holder (1) and the belonging connectors.
- Correctly position cup holder (1).
- Tighten the screws (2).

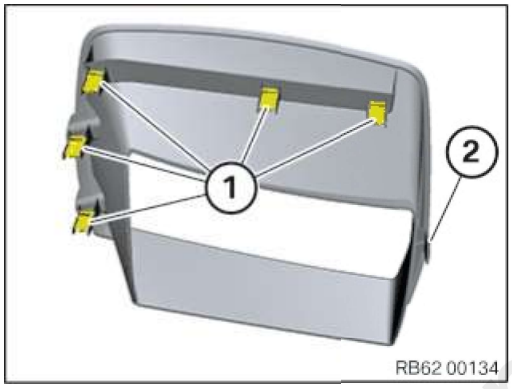
Cup holder to centre console

Oval-head screw		Tightening torque	1,8 Nm

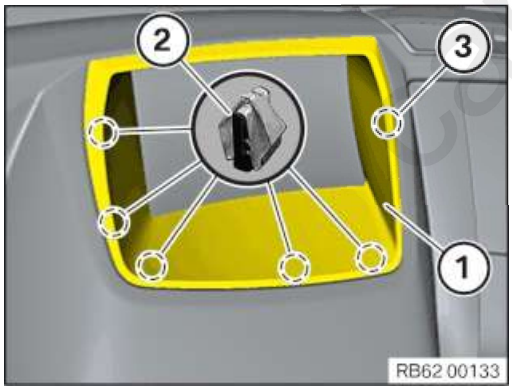


- Insert the insert (1).

71 – Installing the trim for the Head-Up Display



- Check clamps (1) and the latch mechanism (2) for damage, renew if necessary.



- Correctly position the trim (1) for the BMW Head-Up Display and engage it on the clamps (2) and the retaining lug (3).

Additional Information

Overview of Tightening Torques

Heating and air-conditioning unit on support Used in step 37

Nut M6		Tightening torque	4 Nm

Support for instrument panel Used in step 37

M8 hexagon nut		Tightening torque	21 Nm
Hexagon screw		Tightening torque	21 Nm

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Head unit to holder / holder to support			Used in step 37
Screw		Tightening torque	1,8 Nm

Head-Up Display to support			Used in step 38
M6x25 screw		Tightening torque	13 Nm

Knee airbag on support structure			Used in step 40
Nut		TIghtening torque	8 Nm

Dashboard to support			Used in step 43
Screw		Tightening torque	2,4 Nm

Speaker to support / support to instrument panel / support to body			Used in step 44
Screw		Tightening torque	1,8 Nm

Instrument cluster (KOMBI) to support			Used in step 47
Oval-head screw		Tightening torque	1,8 Nm

Steering column switch cluster (SZL) on the steering column			Used in step 48
Screw TS5x20		Tightening torque	3 Nm

Steering wheel to steering column			Used in step 51
M14	Only for a micro-encapsulated screw: Renew screw.	Tightening torque	62,5 Nm

Central information display to instrument panel			Used in step 53
Screw		Tightening torque	1,8 Nm

Fold-down compartment to instrument panel			Used in step 57
Oval-head screw		Tightening torque	1,8 Nm

A-pillar trim panel to body			Used in step 59
Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

Centre console on tunnel			Used in step 62
M6x18 Hexagon screw		Tightening torque	4,6 Nm

Centre console to instrument panel			Used in step 62
Oval-head screw		Tightening torque	1,8 Nm

Storage compartment to centre console			Used in step 64
Oval-head screw		Tightening torque	1,8 Nm

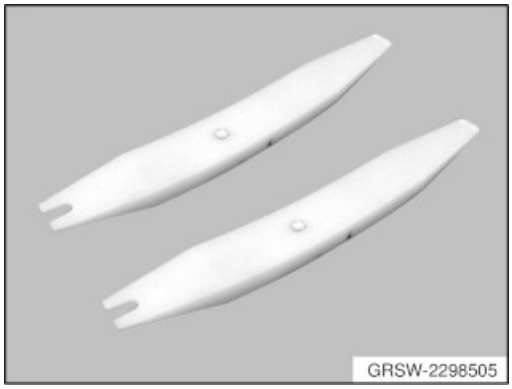
Gear selector switch to centre console trim			Used in step 65
Screw		Tightening torque	1,8 Nm

Cup holder to centre console			Used in step 70
Oval-head screw		Tightening torque	1,8 Nm

Overview of Special Tools

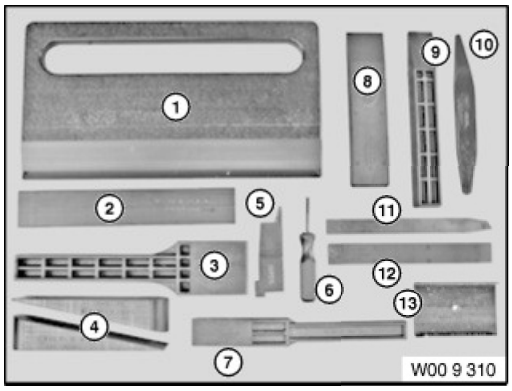
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2 298 505 Wedge



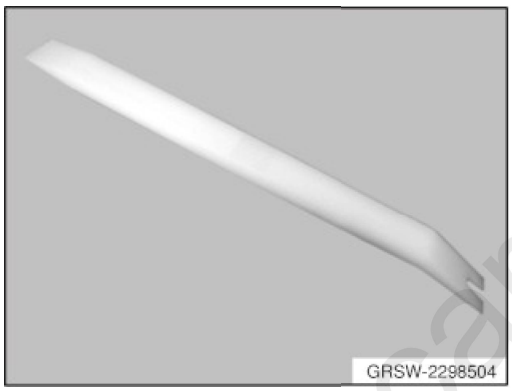
Common	Used in step 45
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

0 493 752 (00 9 329) Case



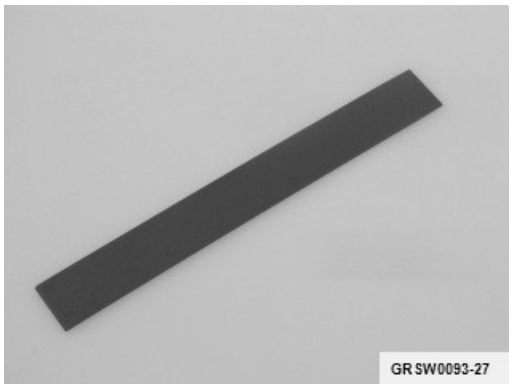
Common	Used in step 14
Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

2 298 504 Wedge



Common	Used in step 23
Usage	Wedge with angled lug
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

0 496 571 (00 9 327) Wedge



Common	Used in step 27
Usage	(Cleaning wedge) From 11/2008 this special tool replaces panel wedge 00 9 323 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

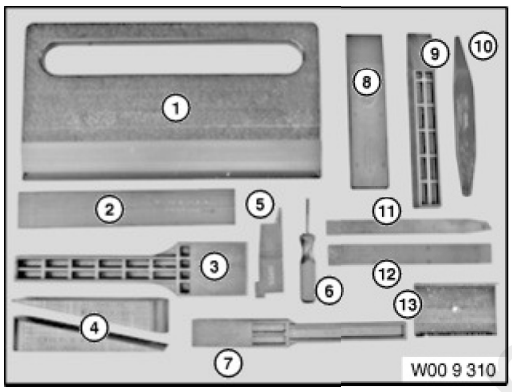
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0 496 569 (00 9 325) Wedge



Common	Used in step 28
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

0 490 534 (00 9 317) Wedge



Common	Used in step 31
Usage	(Trim wedge) Replaced by special tool 00 9 325 from 11/2008 (quality improvement due to new material) Replaced by 00 9 325 (0 496 569)
Included in the tool or work	0 490 527
Storage location	
Replaced by	
In connection with	
SI-Number	

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Links

General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	14213340
72 00 ... Safety regulations for handling components with gas generators	14

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	865
61 20 900 Disconnecting and connecting battery earth lead	865
61 20 900 Disconnecting and connecting battery earth lead	865
61 20 900 Disconnecting and connecting battery earth lead	865
61 20 900 Disconnecting and connecting battery earth lead	865
61 20 900 Disconnecting and connecting battery earth lead	865
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	865
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	865
61 20 900 Disconnecting and connecting battery earth lead	865
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	865

61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	865
61 20 900 Disconnecting and connecting battery earth lead	865
61 20 900 Disconnecting and connecting battery earth lead	865
61 20 900 Disconnecting and connecting battery earth lead	865
61 20 900 Disconnecting and connecting battery earth lead	865
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61 20 900 Disconnecting and connecting battery earth lead	865
61 20 900 Disconnecting and connecting battery earth lead	865
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	865
61 20 900 Disconnecting and connecting battery earth lead	865
61 20 900 Disconnecting and connecting battery earth lead	865
61 20 900 Disconnecting and connecting battery earth lead	865
61 20 900 Disconnecting and connecting battery earth lead	865
61 20 900 Disconnecting and connecting battery earth lead	865
61 20 900 Disconnecting and connecting battery earth lead	865
61 35 ... Notes on ESD protection (Electro Static Discharge)	2053

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51 45 382 Replace decorative strip on instrument panel at right

RISK OF DAMAGE

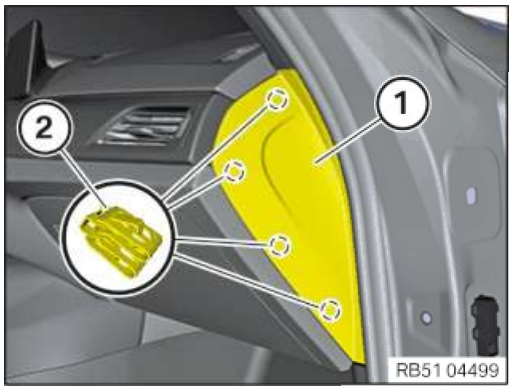
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

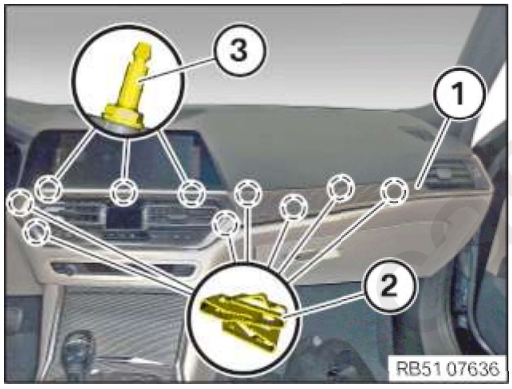
PRELIMINARY WORK

1 – Remove the side panel on the right instrument panel



- Unclip and remove the side panel (1) towards the outside from the clamps (2).
- If necessary, unlock associated plug connection and disconnect.

2 – Remove the finisher on the right instrument panel

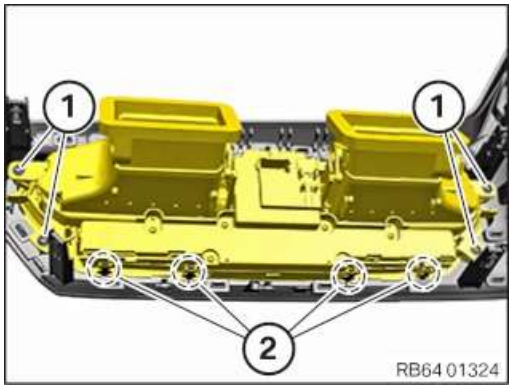


- Unclip the decorative strip (1) towards rear at the clamps (2) and the pins (3).
- Unlock associated plug connection and disconnect.

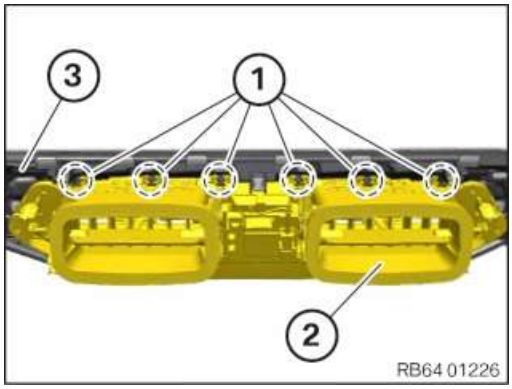
  Remove the decorative strip (1).

MAIN WORK

3 – Removing fresh air grille centre with integrated air conditioning control panel

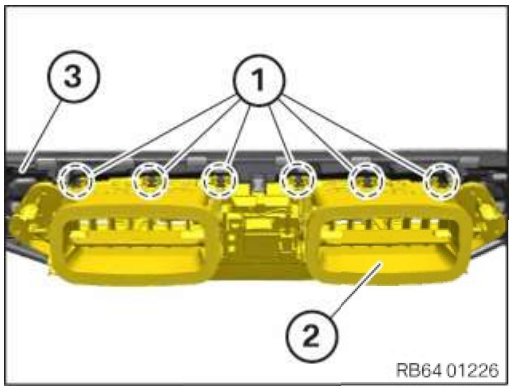


- Loosen screws (1).
- Disengage the latch mechanisms (2).

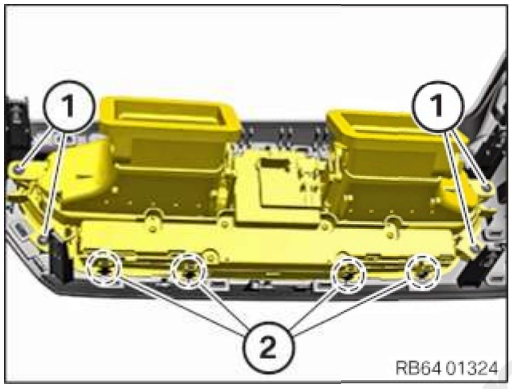


- Disengage the latch mechanism (1) from the fresh air grille (2).
- Remove fresh air grille (2) with the integrated air conditioning control panel from the decorative strip (3).

4 – Installing fresh air grille centre with integrated air conditioning control panel



- Set fresh air grille (2) with the integrated air conditioning control panel on decorative strip (3) and position it correctly.
- Engage latch mechanisms (1) on fresh air grille (2).



- Engage the latch mechanisms (2).
- Tighten the screws (1).

Fresh air grille on decorative strip / instrument panel

Screw	Tightening torque	1,8 Nm

5 – Removing the right fresh air grille

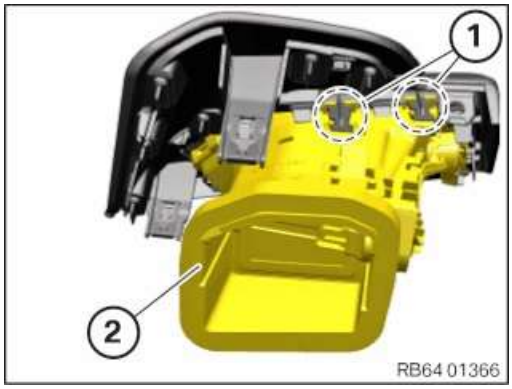
NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

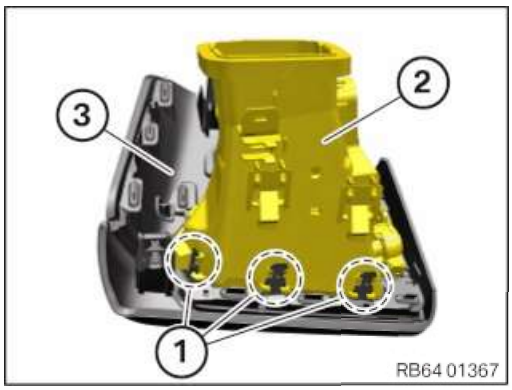
NOTICE

Description is for left component only. Procedure on the right side is identical.

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- Disengage the latch mechanisms (1) from the fresh air grille (2).



- Disengage the latch mechanisms (1) from the fresh air grille (2).
- Remove fresh air grille (2) from the decorative strip (3) on the right side.

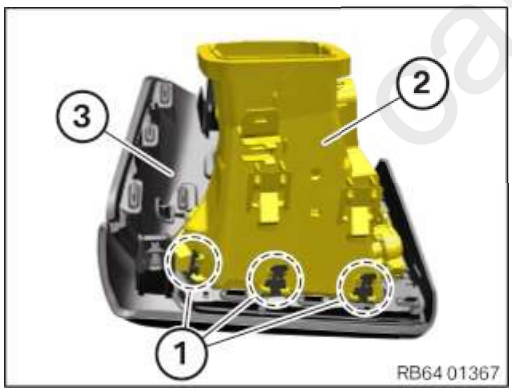
6 – Installing the right fresh-air grille

NOTICE

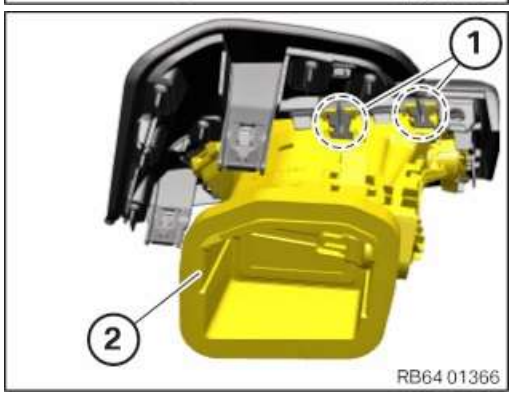
To provide a better overview: Schematic diagram with partially hidden components.

NOTICE

Description is for left component only. Procedure on the right side is identical.



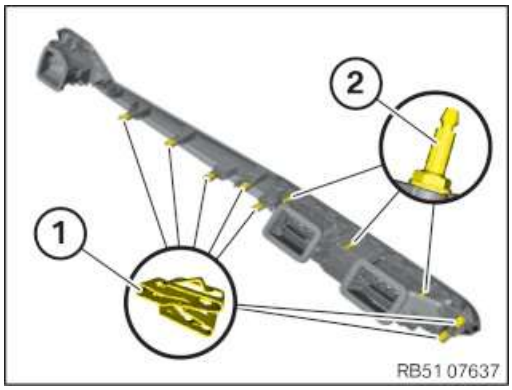
- Set the fresh air grille (2) on the right side of the decorative strip (3) and position it correctly.
- Engage latch mechanisms (1) on fresh air grille (2).



- Engage latch mechanisms (1) on fresh air grille (2).

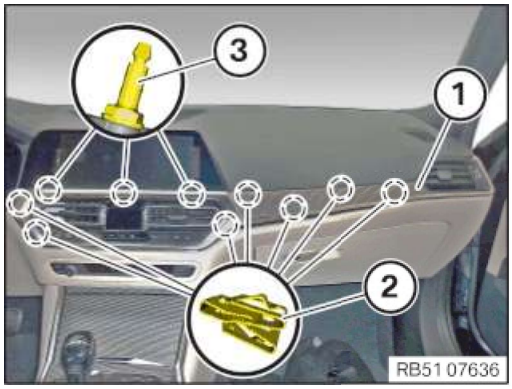
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7 – Install the finisher on the right instrument panel



- Check the clamps (1).

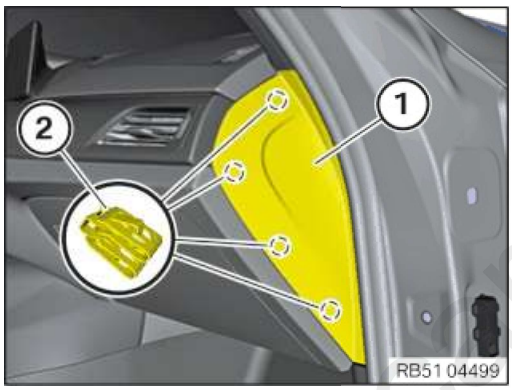
  Replace broken or missing clamps (1).
- Check the pins (2) and the corresponding clamps on the instrument panel trim and renew if necessary.



- Install the decorative strip (1).

  Connect and lock the associated connectors.
- Correctly position the decorative strip (1) and at the clamps (2) and clip in the pins (3).

8 – Install the side panel on instrument panel on the right



- If required, connect the associated connector.
- Feed in the side panel (1) and clip it in at the clamps (2).

Additional Information

Overview of Tightening Torques

Fresh air grille on decorative strip / instrument panel Used in step 4

Screw		Tightening torque	1,8 Nm

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51 45 371 Replace the decorative strip on the dashboard, left.

RISK OF DAMAGE

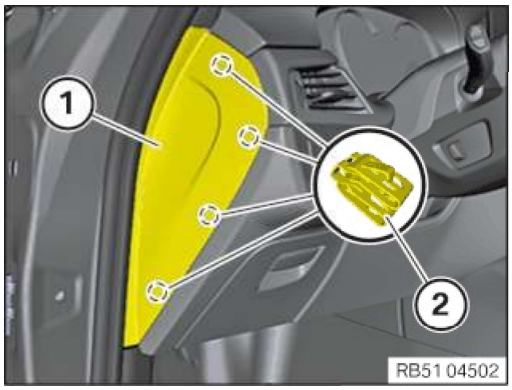
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

PRELIMINARY WORK

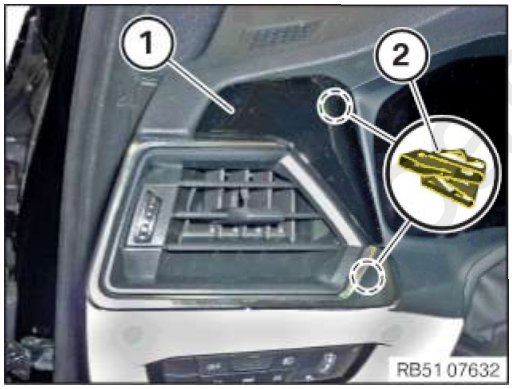
1 – Remove the side panel on the left instrument panel



- Unclip and remove the side panel (1) towards the outside from the clamps (2).

MAIN WORK

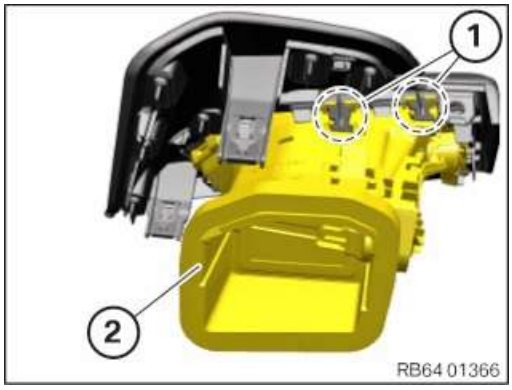
2 – Remove the finisher on the instrument panel on the left



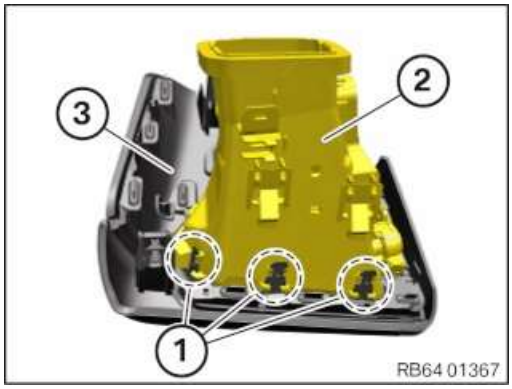
- Unclip decorative strip (1) to the rear out of the clamps (2).
- Unlock associated plug connection and disconnect.

  Remove the decorative strip (1).

3 – Removing left fresh air grille

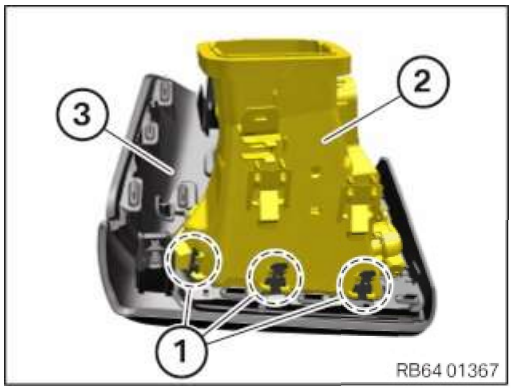


- Disengage the latch mechanisms (1) from the fresh air grille (2).

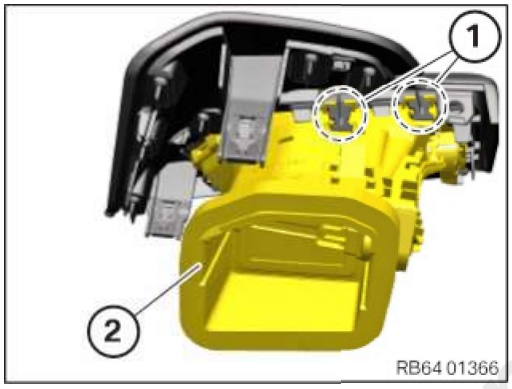


- Disengage the latch mechanisms (1) from the fresh air grille (2).
- Remove the fresh air grille (2) from the decorative strip (3).

4 – Installing the left fresh air grille

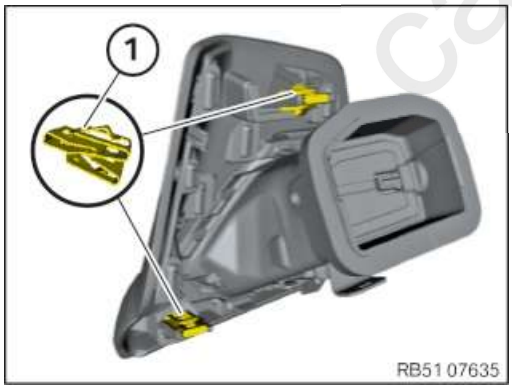


- Set the fresh air grille (2) on the decorative strip (3) and position it correctly.
- Engage latch mechanisms (1) on fresh air grille (2).



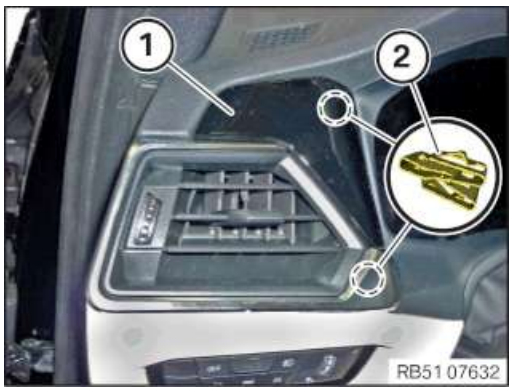
- Engage latch mechanisms (1) on fresh air grille (2).

5 – Install the finisher on the instrument panel on the left



- Check the clamps (1).

  Replace broken or missing clamps (1).

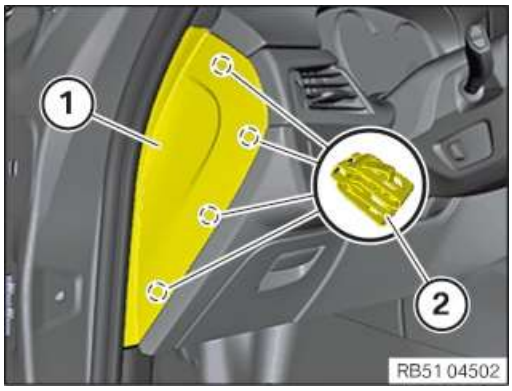


- Install the decorative strip (1).

  Connect and lock the associated connectors.
- Clip decorative strip (1) into clamps (2).

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6 – Install the side panel on left instrument panel



- Feed in the side panel (1) and clip it in at the clamps (2).

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51 45 076 Replacing carrier for dashboard

Prerequisite

- Air conditioning has been drawn off.

  Refrigerant line to the expansion valve is released.

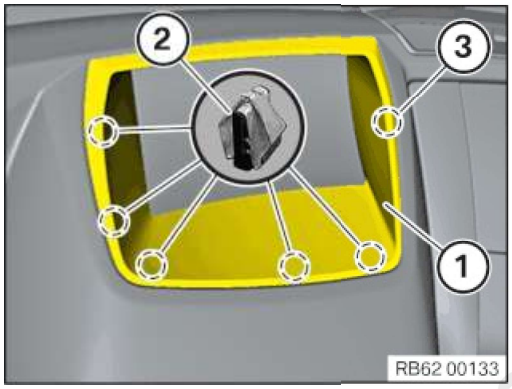
PRELIMINARY WORK

1 – Adjust the steering column position



- Adjust the length of the steering column to the maximum length in the direction of arrow (1).
- Move the steering column to the lowest steering column position in the direction of arrow (2).

2 – Removing trim for the Head-Up Display



- Unclip trim (1) for the Head-Up Display upwards from clamps (2) and latch mechanism (3).

3 – Remove cupholder



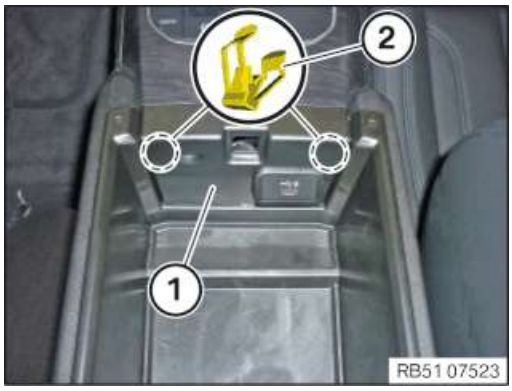
- Remove the insert (1).



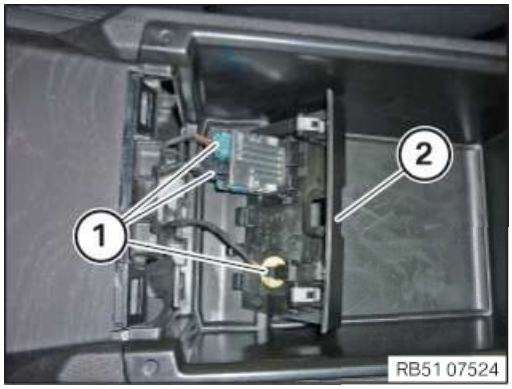
- Loosen screws (1).
- Feed the cup holder (2) out to the top.
- Unlock associated plug connections and disconnect.

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4 – Removing the trim in the storage compartment on the centre armrest



- Lever out the trim (1) with the special tool (2) toward the rear from the clamps 2 298 505.



- Unlock and disconnect the plug connections (1) and remove the trim (2) .

5 – Remove the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Release and remove the centre console trim upwards (1) as shown using the special tool 2 298 505 from the latch mechanisms.

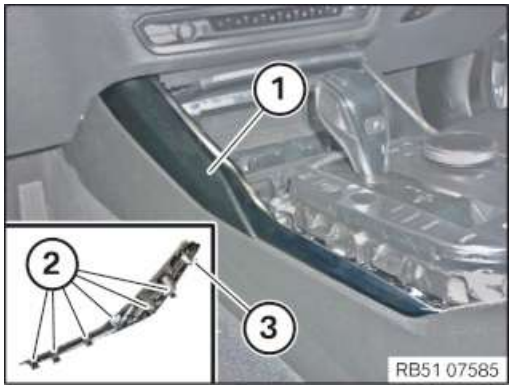
6 – Removing the decorative trim on the centre console trim on the left and right

▸ **Remove decorative trim on centre console**

NOTICE

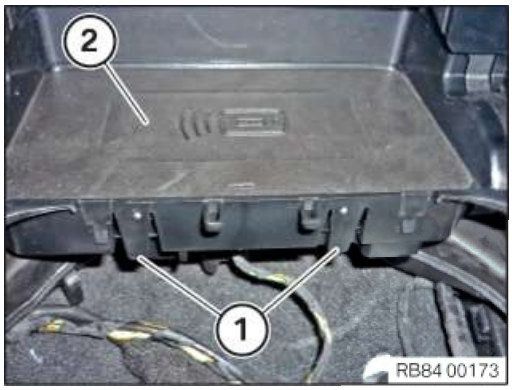
Description is for left component only. Procedure on the right side is identical.

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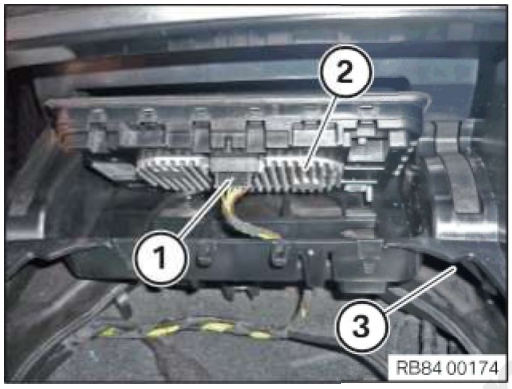


- Lever out the rear decorative trim (1) from the latch mechanisms (2) starting from the top.
- Feed out the decorative trim (1) backwards out of the guide (3) and remove.

7 – Removing the wireless charging station



- Loosen the latch mechanisms (1) and push out the wireless charging station (2) upwards.



- Disconnect the connector (1) and remove the wireless charging station (2) from the centre console (3).

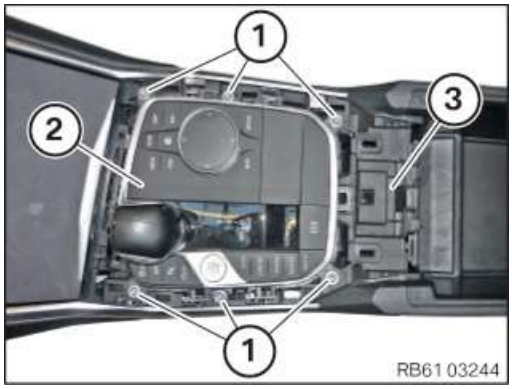
8 – Remove the operating facility in the centre console

▸ **Disconnecting all battery earth leads**



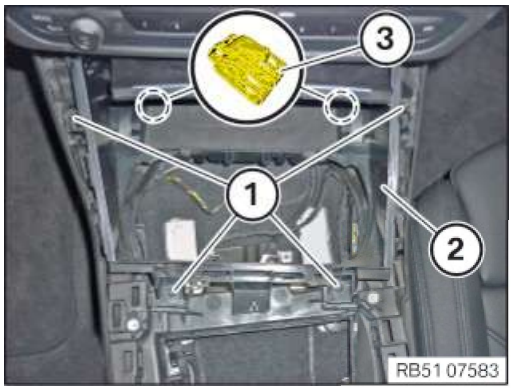
- See additional information.

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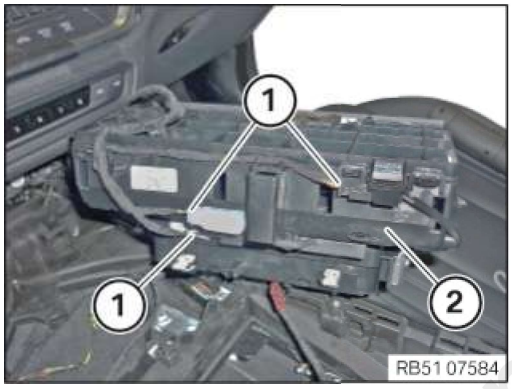


- Loosen screws (1).
- Remove the operating facility in the centre console (2) from the centre console (3).

9 – Removing the storage compartment of the front centre console



- Loosen screws (1).
- Remove storage compartment trim (2) backwards out of clamps (3).



- Unlock and disconnect all the plug connections (1) and remove the storage compartment (2).

10 – Removing the rear centre console trim

RISK OF DAMAGE

Scratches.

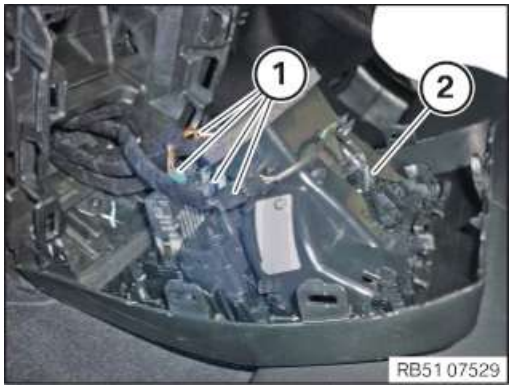
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Release centre console trim (1) backwards from the latch mechanisms at the side and pull it a little way towards the rear.

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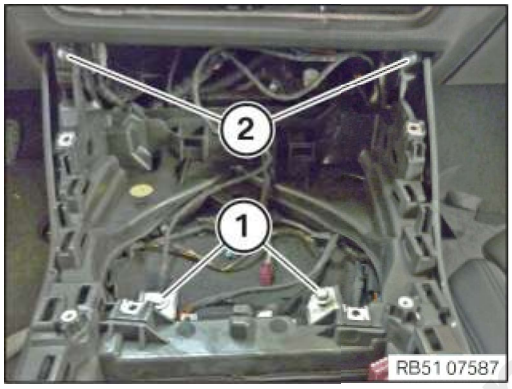


- Unlock and disconnect plug connections (1).
- Remove the centre console trim (2).

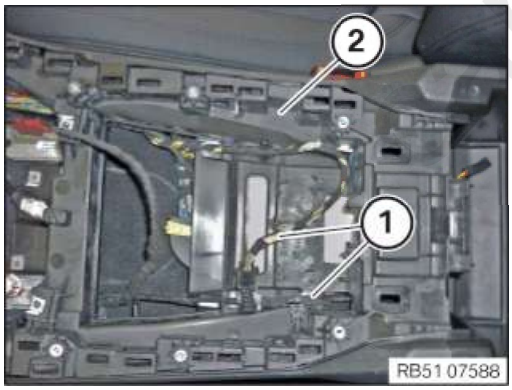
11 – Removing the centre console



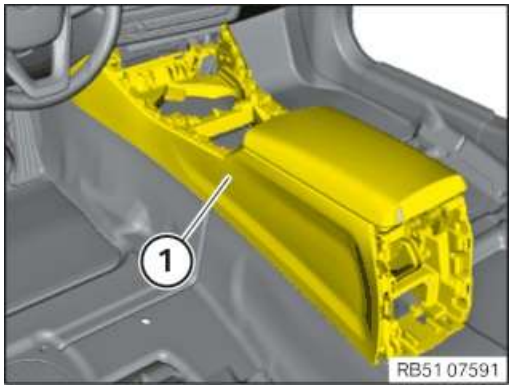
- Loosen screws (1).



- Loosen screws (1) and (2).



- Release the wiring harness (1) from the centre console (2).



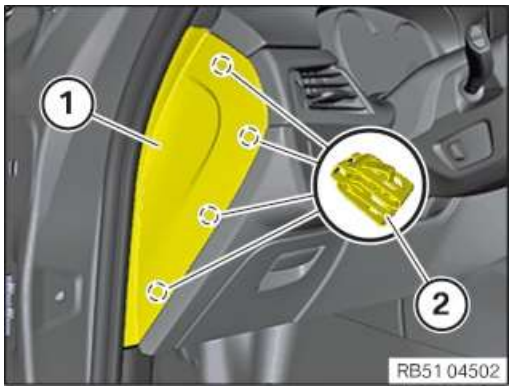
NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

- Carefully raise rear centre console (1).
- Feed out wiring harness from the centre console (1) and unlock and disconnect existing plug connections, if required.
- Feed out and remove the centre console (1) on the instrument panel .

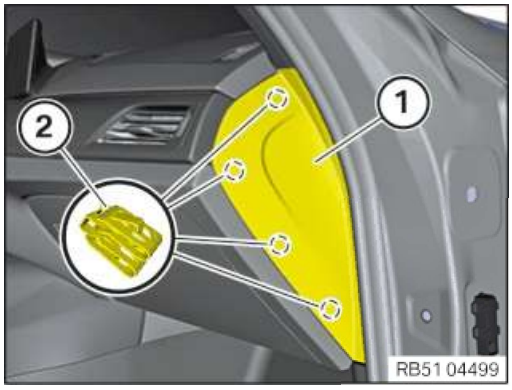
12 – Remove the side panel on the left instrument panel

12 – Remove the side panel on the left instrument panel



- Unclip and remove the side panel (1) towards the outside from the clamps (2).

13 – Remove the side panel on the right instrument panel



- Unclip and remove the side panel (1) towards the outside from the clamps (2).
- If necessary, unlock associated plug connection and disconnect.

14 – Remove both A-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the A-pillar trim panel**

WARNING

Airbag unit.

Danger! Life-threatening injuries!

- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

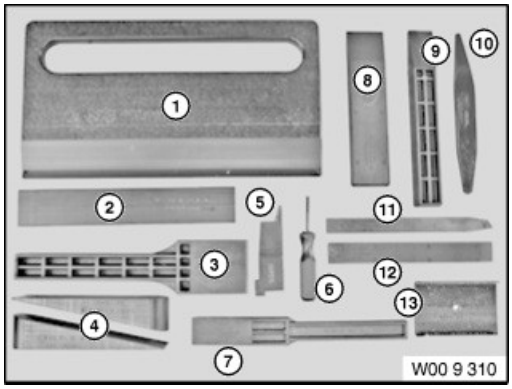
WARNING

Pyrotechnic components.

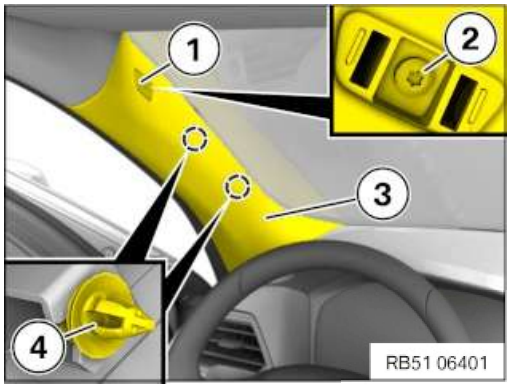
Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.

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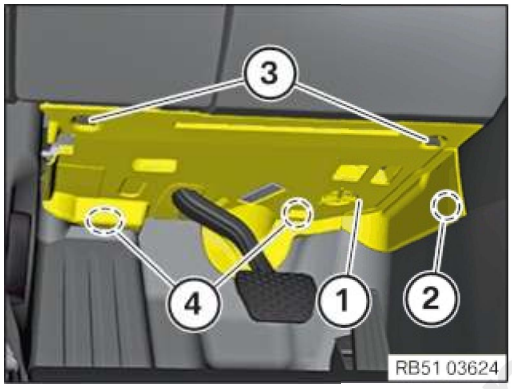


- Have the set of special tools 0 493 752 (00 9 329) ready.



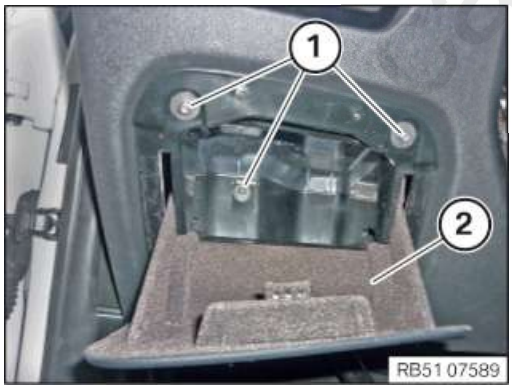
- Unclip the cover (1) with suitable tools.
- Loosen screw (2).
- Unclip A-pillar trim panel (3) with clips (4) and guide it out upwards.

15 – Removing the trim panel for pedal mechanism



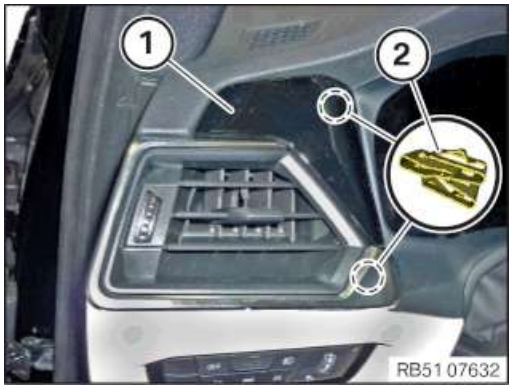
- Unclip the trim panel for the pedal mechanism (1) towards the inside in this area (2).
- Turn the locks (3) by 90°.
- Detach the trim panel for the pedal mechanism (1) inwards out of the guides (4).
- Unlock associated plug connection and disconnect.

16 – Removing the left fold-down compartment



- Loosen screws (1).
- Remove the fold-down compartment (2) toward the bottom.

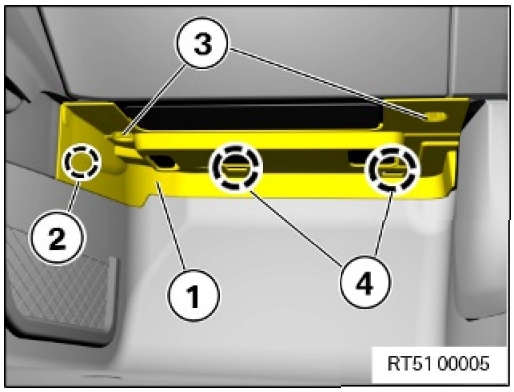
17 – Remove the finisher on the instrument panel on the left



- Unclip decorative strip (1) to the rear out of the clamps (2).
- Unlock associated plug connection and disconnect.

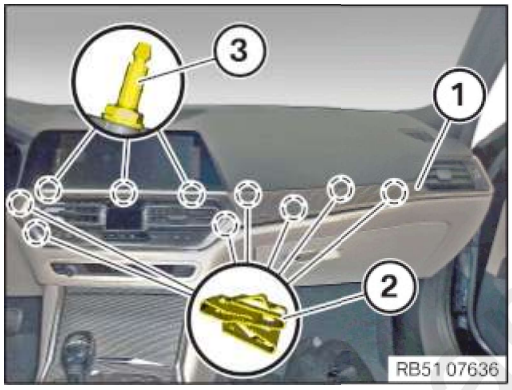
  Remove the decorative strip (1).

18 – Remove the right footwell trim



- Turn the locks (3) by 90°.
- Feed the footwell trim (1) out of the guide (2).
- Detach the footwell trim (1) inward out of the guides (4).
- Unlock associated plug connection and disconnect.

19 – Remove the finisher on the right instrument panel



- Unclip the decorative strip (1) towards rear at the clamps (2) and the pins (3).
- Unlock associated plug connection and disconnect.

  Remove the decorative strip (1).

20 – Remove Central Information Display (CID)

RISK OF DAMAGE

Electrostatic discharge.

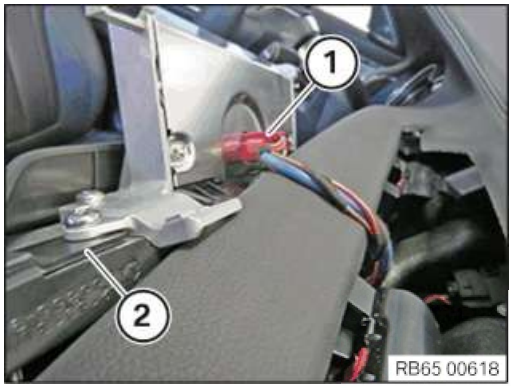
Damage to or destruction of electrical components.

- Leave electrical components in original packaging until just before they are installed. Use the original packaging only for any return shipments. Always package removed components straight away.
- Read and comply with user information on using the associated special tool 12 7 060.
- Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.
- Wear electrically conductive clothing and antistatic shoes (with ESD symbol).
- For additional information see: 61 35 Information on electrostatic discharge (ESD) protection.

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- Loosen screws (1).
- Pull out central information display (CID) (2) slightly off the instrument panel.



- Unlock plug connection (1) and disconnect.
- Remove the central information display (CID) (2).

21 – Removing the airbag unit

WARNING

Airbag unit.

Danger! Life-threatening injuries!

- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

RISK OF DAMAGE

Damage to the steering wheel.

Incorrect handling of the tool may damage the steering wheel.

- Ensure the tool is positioned correctly (angle and inclination).
- When unlocking, do not use "levering" action. Instead, press in the Torx screwdriver toward the centre of steering wheel only.

TECHNICAL INFORMATION

Different variants may be installed depending on the vehicle equipment.

▸ **Version A: Removing the airbag unit (sports steering wheel)**

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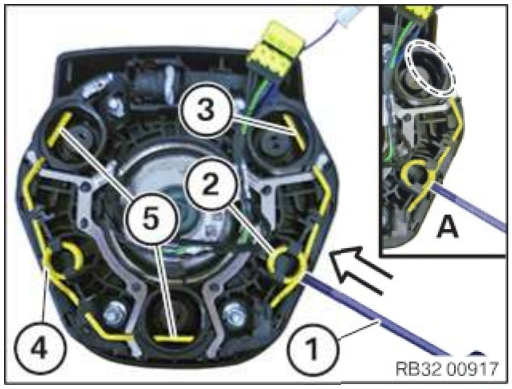
- Insert Torx screwdriver T25 (1) diagonally upwards in the hidden opening (2) on the rear side of the steering wheel until a spring resistance is felt.



NOTICE

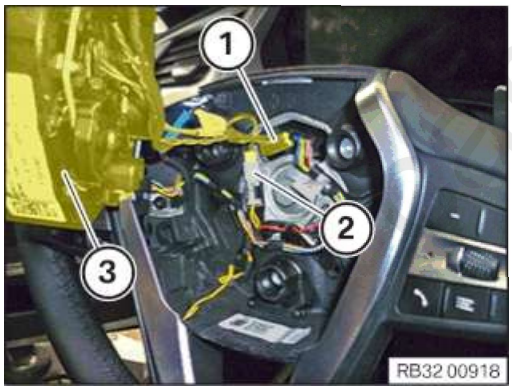
To provide a better overview: Diagram with airbag unit removed.

- To unlock the airbag unit, press Torx screwdriver T25 (1) diagonally upwards in the direction of the arrow to the centre of the steering wheel.



- Press the airbag unit over a large area of the steering wheel.
- Use Torx screwdriver T25 (1) to press wire spring clip (2) in the direction of the arrow towards the centre of the steering wheel and release lock (3).

  (A): Wire spring clip (2) is unlocked.
- Then use Torx screwdriver T25 (1) to press wire spring clip (4) in the direction of the arrow towards the centre of the steering wheel and release locks (5).
- Carefully raise the airbag unit.

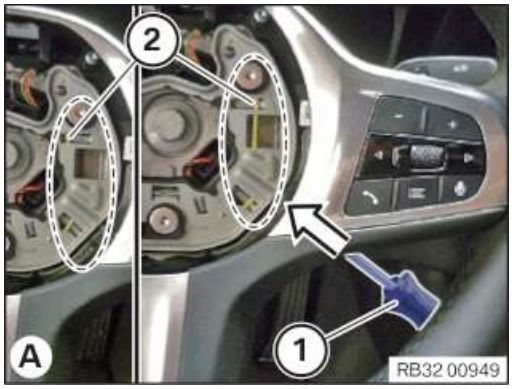


- Unlock and disconnect the plug connections (1) and (2).
- Remove airbag unit (3).

▸ **Version B: Removing airbag unit (M Sport steering wheel)**



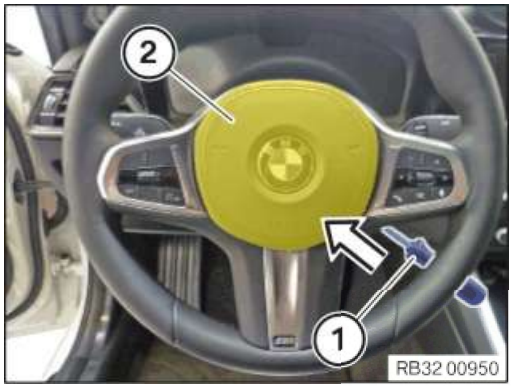
- Locate the pre-punched bore hole (1) on the rear side of the steering wheel by touch.
- Insert the Torx screwdriver T27 (2) diagonally upwards in the pre-punched bore hole (1) on the rear side of the steering wheel until a springing kind of resistance can be felt.



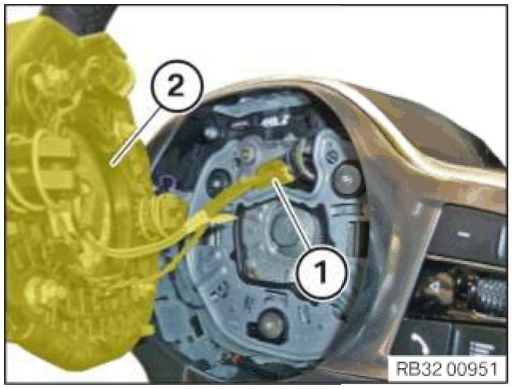
NOTICE

To provide a better overview: Diagram with airbag unit removed.

- Press in Torx screwdriver T27(1) straight in direction of arrow towards the centre of the steering wheel in order to unlock the wire spring clip (2) or to unlock the airbag unit (A).

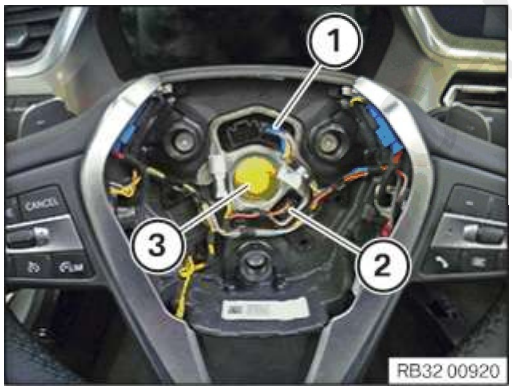


- Press in Torx screwdriver T27 (1) straight in direction of arrow towards the centre of the steering wheel and lift airbag unit (2) on the unlocked side.
- Repeat procedure on left side and carefully remove airbag unit (2) in direction of arrow off the steering wheel.



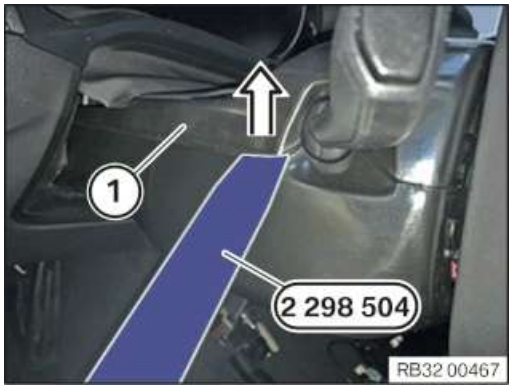
- Unlock and disconnect plug connection (1) and remove the airbag unit (2).

22 – Removing the steering wheel (sports steering wheel)



- Move the steering wheel and wheels to the straight-ahead position.
- Unlock plug connection (1) and disconnect.
- If installed: Unlock plug connection (2) and disconnect.
- Release the screw (3) and pull off and remove the steering wheel.

23 – Removing steering column shroud upper section

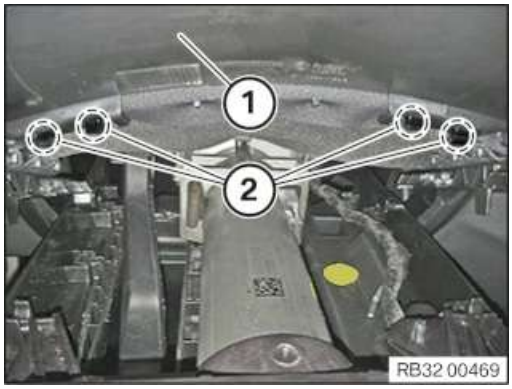


NOTICE

Perform the operations on the left and right side.

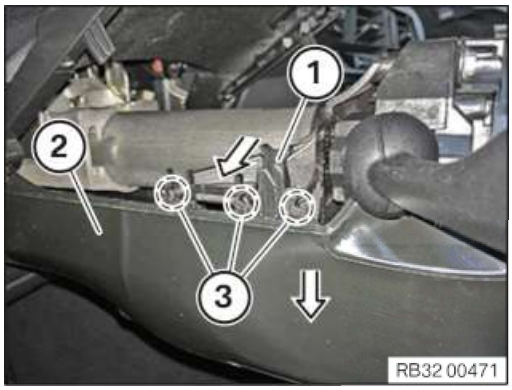
- Unlock the steering column shroud upper section (1) with the special tool 2 298 504 and fold up.

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- Unclip the steering column shroud upper section (1) from the brackets (2).
- Remove the steering column shroud upper section (1).

24 – Removing steering column shroud lower section



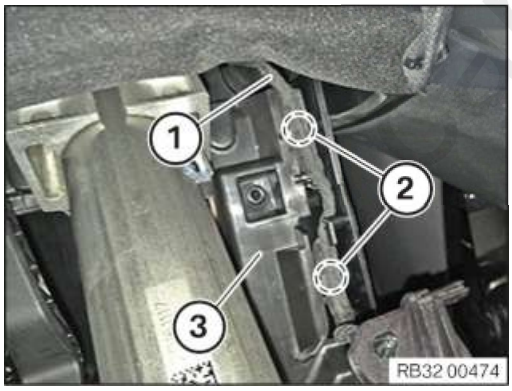
NOTICE

Perform the operations on the left and right side.

- Push the retaining lug (1) to the outside in the direction of the arrow and unclip the steering column shroud lower section (2) from the holders (3) in the direction of the arrow to the bottom at the same time.

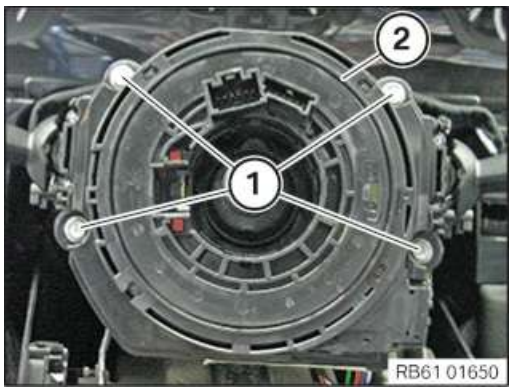


- Fold the steering column shroud lower section down.
- Unlock and disconnect connector (1).

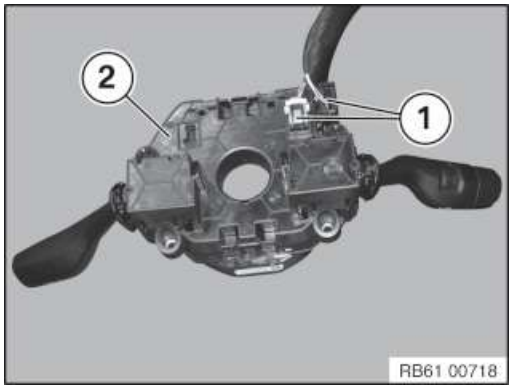


- Detach the cable (1) from the brackets (2).
- Remove the steering column shroud lower section (3).

25 – Removing the steering column switch cluster (SZL)

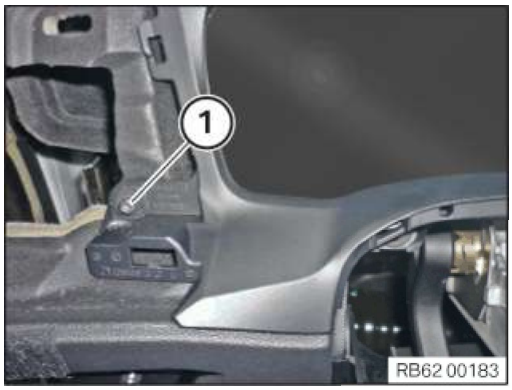


- Loosen screws (1).
- Remove the steering column switch cluster (SZL) (2).



- Unlock and disconnect the connector (1) on the steering column switch cluster (SZL) (2).

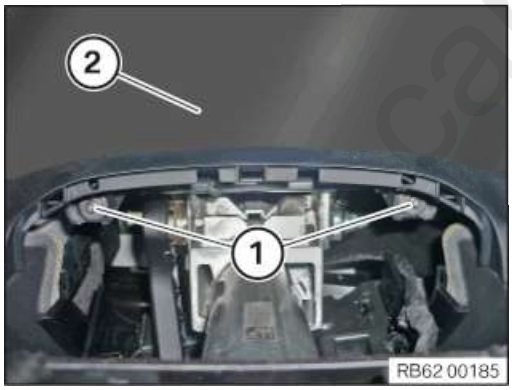
26 – Removing the instrument cluster (KOMBI)



- Loosen screw (1).

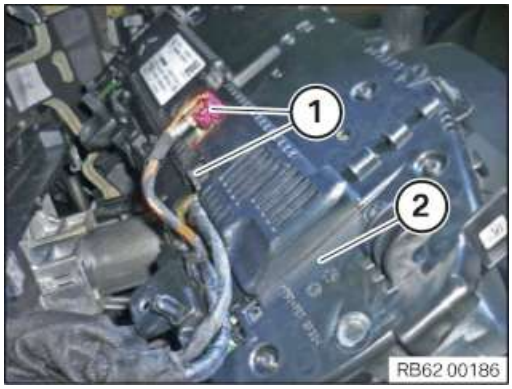


- Loosen screw (1).



- Loosen screws (1).
- Feed out instrument cluster (KOMBI) (2).

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RISK OF DAMAGE

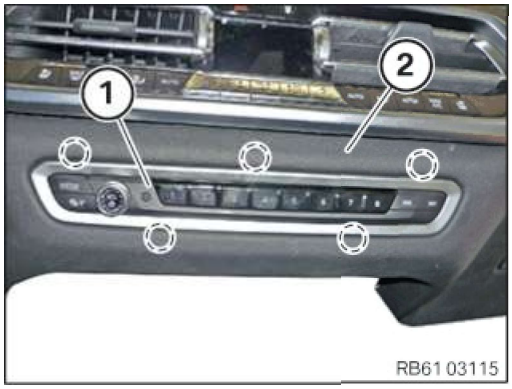
Damage to the instrument cluster (KOMBI)

While releasing and connecting the cable, it could lead to a ground offset. Thereby, currents could arise, that make the instrument cluster (KOMBI) useless.

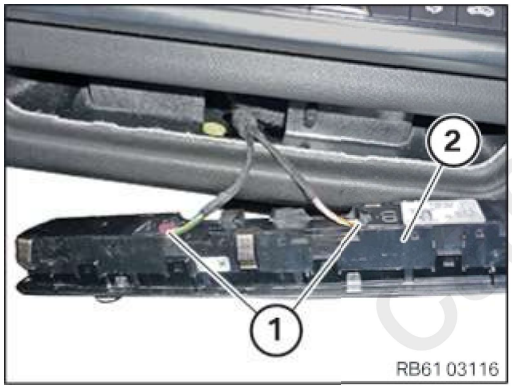
- While releasing: Release APIX data cable (blue) first.
- While connecting: Connect APIX data cable (blue) at the last.

- **If installed:** Release the blue plug connection first.
- Unlock and disconnect plug connections (1) from instrument cluster (KOMBI) (2).
- Remove the instrument cluster (KOMBI) (2).

27 – Remove the audio operating unit

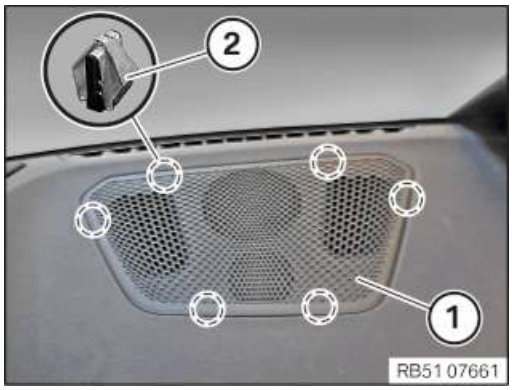


- Unclip the audio operating unit (1) from the instrument panel (2) at the points marked using special tool 0 496 571 (00 9 327).



- Disconnect plug connections (1) and remove the audio operating unit (2).

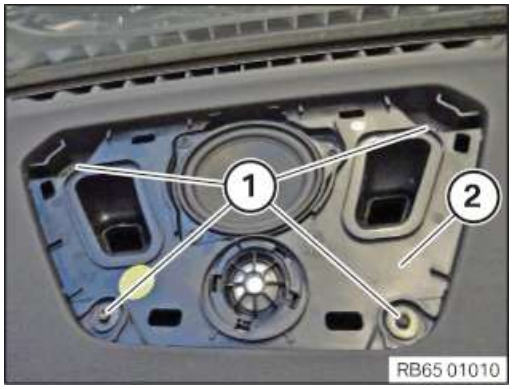
28 – Remove the speaker trim at the instrument panel



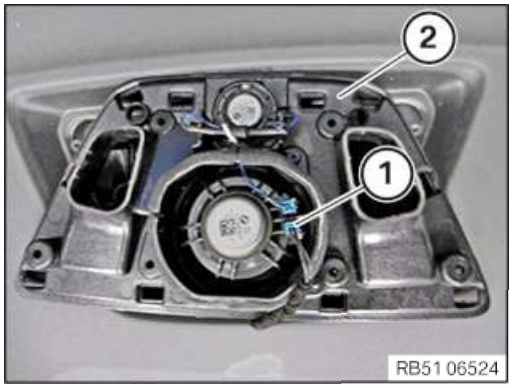
- Lever out the speaker trim (1) with the special tool 0 496 569 (00 9 325) from the clamps (2) toward the top and remove.

29 – Remove the speaker holder at the instrument panel

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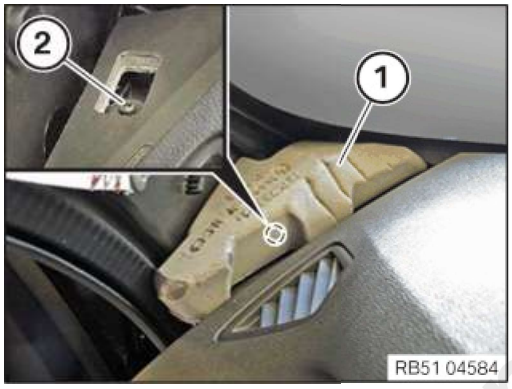


- Loosen screws (1).
- Pull out speaker holder (2) slightly with the loudspeakers and tilt it to the side.



- Unlock plug connection (1) and disconnect.
- Remove the speaker holder (2).

30 – Remove the instrument panel trim panel



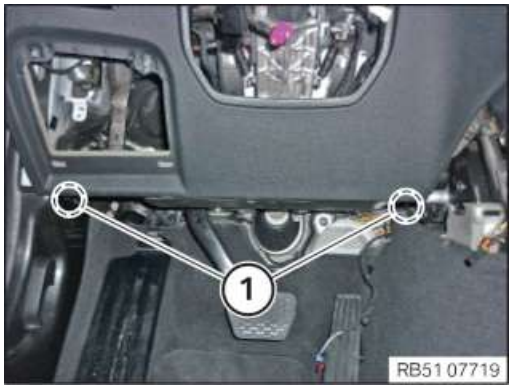
NOTICE

Perform the operations on the left and right side.

- Remove the sound insulation (1).
- Loosen screw (2).

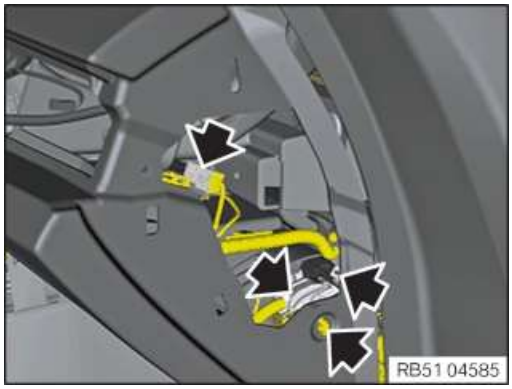


- Loosen screws (1).

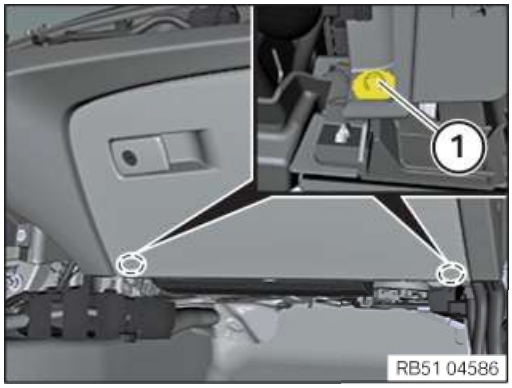


- Loosen screws (1).

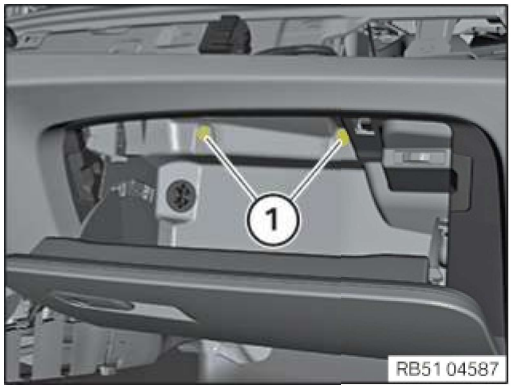
ardiag.com



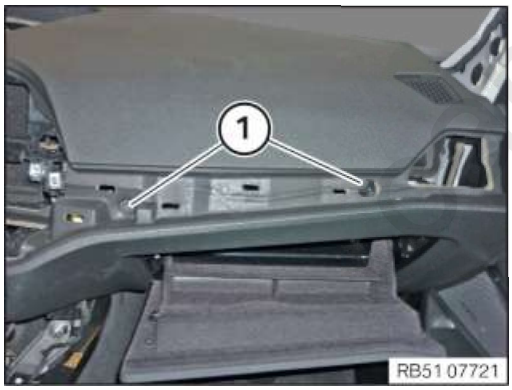
- Release all plug connections and cable clips (arrows) behind the glove box.



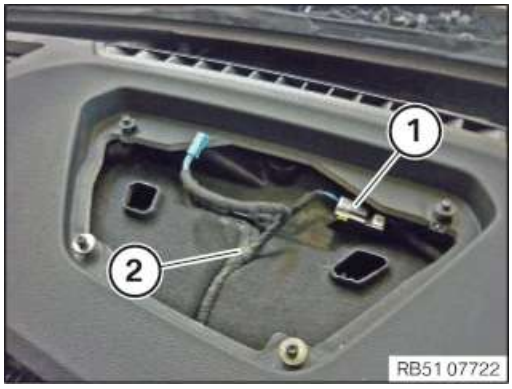
- Release the screws (1) on the lower side of the glove box.



- Open glovebox.
- Loosen screws (1).



- Loosen screws (1).



- Unlock plug connection (1) and disconnect.
- Release the wiring harness (2) on the holders.

rdiagn.com



- Unlock the plug connection (1) on the light operating unit and disconnect it.



- Loosen screws (1).

TECHNICAL INFORMATION

Conduct the following operation with the assistance of a second person.

- Pull the instrument panel trim back slightly.

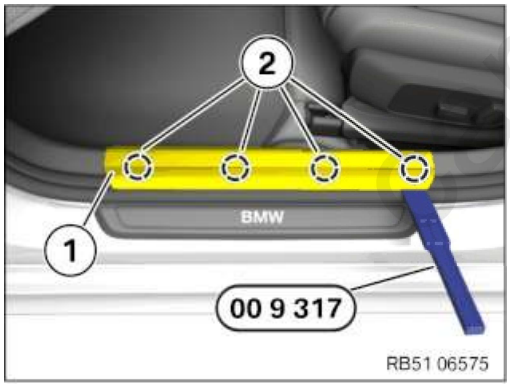
  If necessary, unlock and disconnect additional plug connections.
- Remove the instrument panel trim from the vehicle.

31 – Remove right door sill cover strip

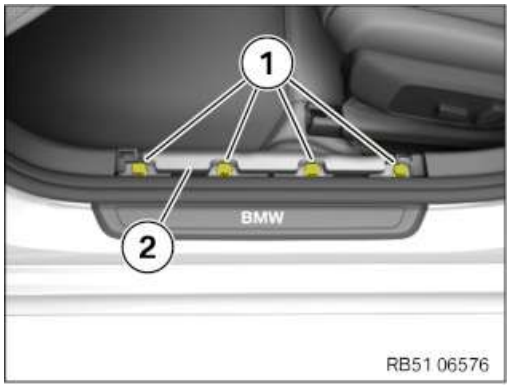
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove door sill cover strip**



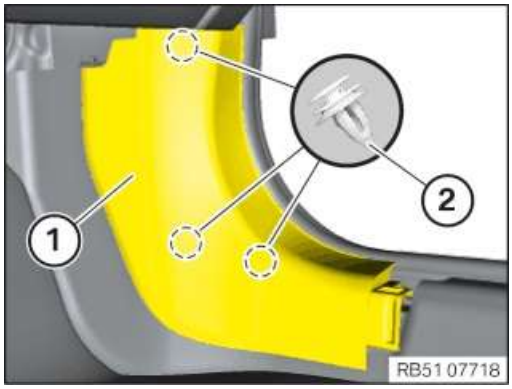
- Detach the door sill cover strip(1) using the special tool 0 490 534 (00 9 317) from the clips (2) in the floor panel.



- If necessary, remove the clips (1) from the floor panel (2) and attach to the door sill cover strip.

32 – Removing the side trim panel in the footwell at the right-hand A-pillar

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- Loosen the side trim panel (1) at the clips (2) and remove it toward the inside.

33 – Removing knee airbag

WARNING

Airbag unit.

Danger! Life-threatening injuries!

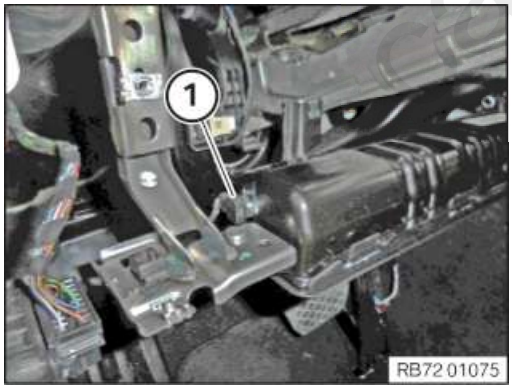
- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

WARNING

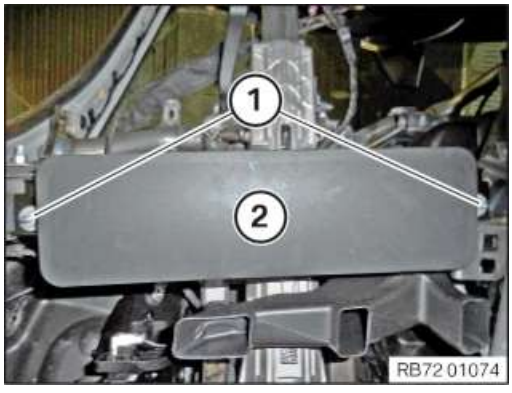
Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



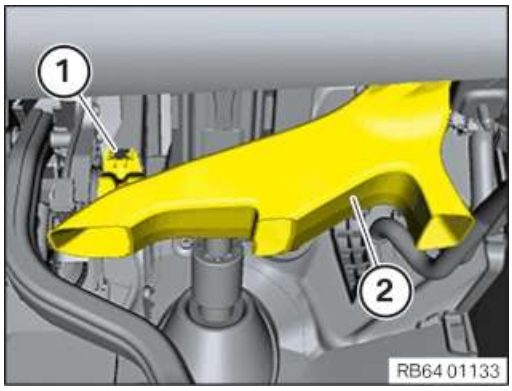
- Unlock plug connection (1) and disconnect.



- Loosen nuts (1).
- Remove knee airbag (2).

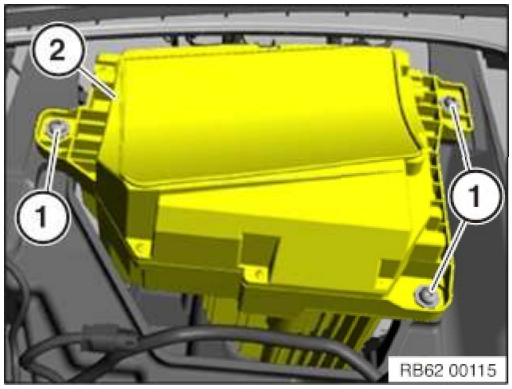
cardiagn.com

34 – Remove left air duct



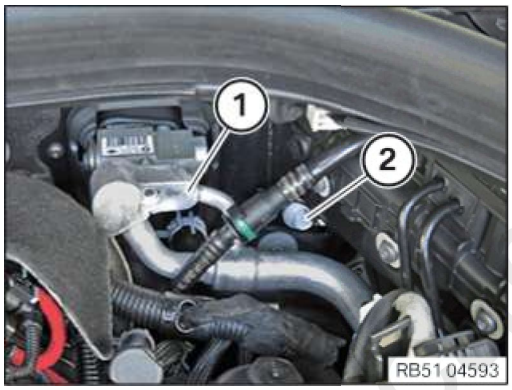
- Unclip the air duct (2) from the air conditioning housing at an angle towards the bottom at the clamp (1).

35 – Removing the Head-Up Display

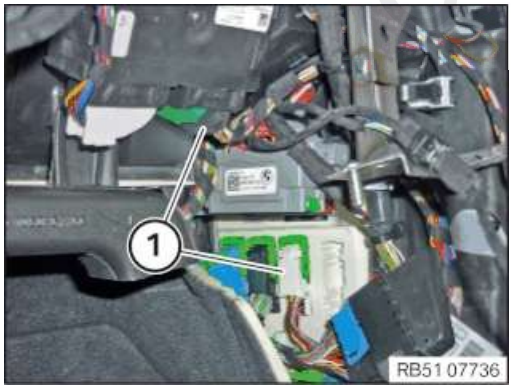


- Loosen screws (1).
- Remove head-up display (2) from support.
- Unlock associated cable and disconnect.

36 – Removing the support for the instrument panel

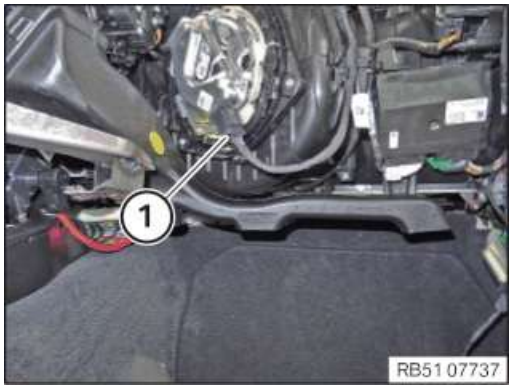


- Push the refrigerant line (1) slightly to one side and loosen the screw (2).

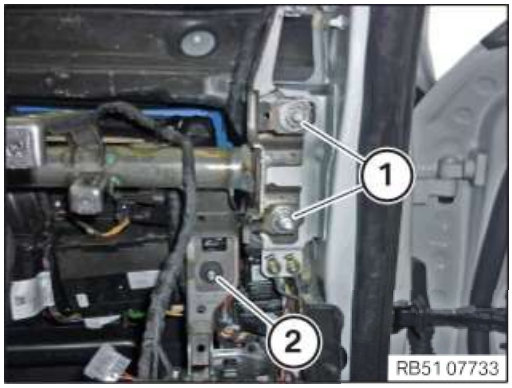


- Push the carpet in the area of the right B-pillar to the side.
- Unlock and disconnect plug connections (1).

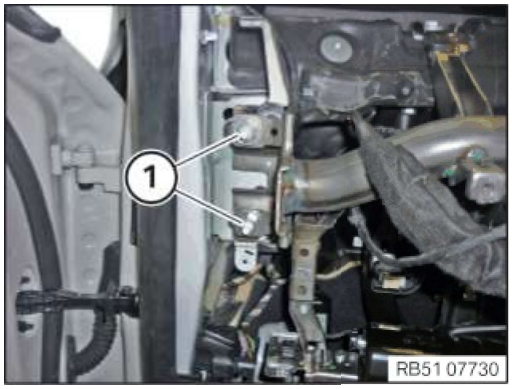
diag.com



- Unlock and disconnect the plug connection (1) on the blower motor.



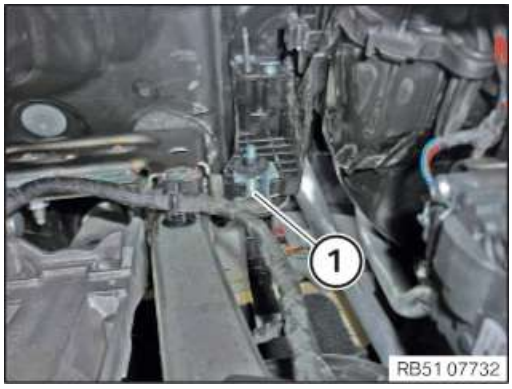
- Loosen nuts (1) and (2).



- Loosen nuts (1).

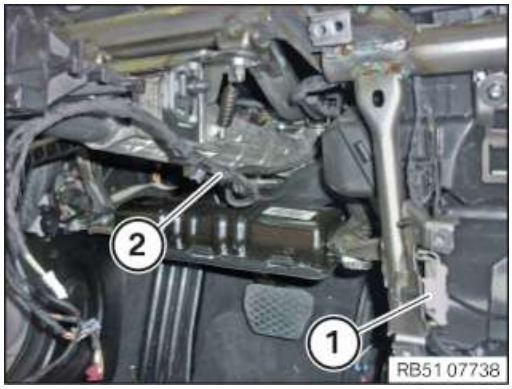


- Loosen screws (1).

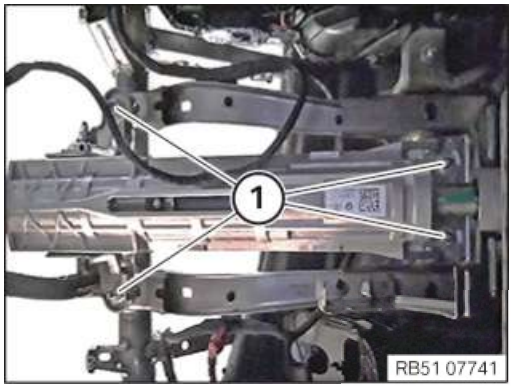


- Slacken the nut (1) in the left footwell on the heating and air-conditioning unit.

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- Release plug connection (1).
- Release the wiring harness (2) from the steering column.

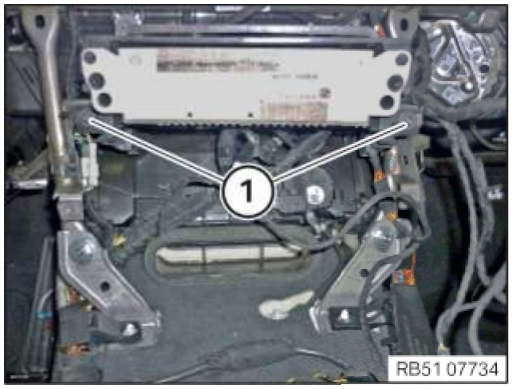


TECHNICAL INFORMATION

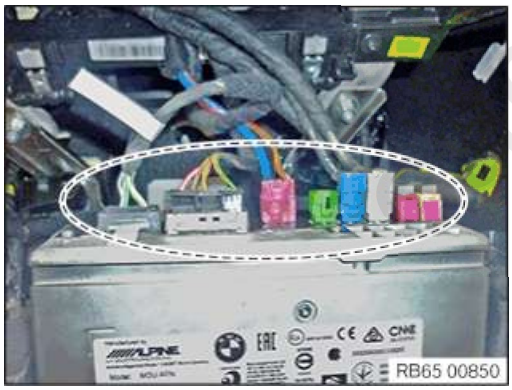
Secure component against falling.

- Release the nuts (1) at the steering column.
- Drop steering column (1) a little away and support it in the footwell.

  Drop steering column not too far away and support it absolutely.



- Loosen screws (1).
- Feed out Head Unit High.



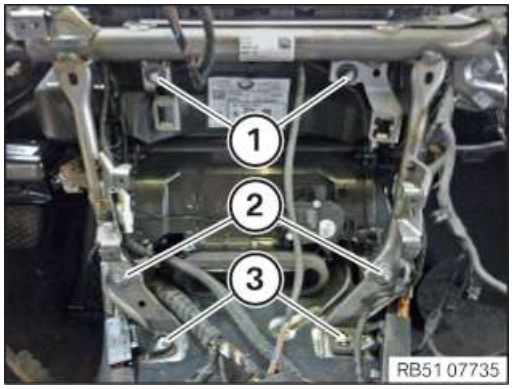
- Unlock and disconnect all connectors in the marked area.

  Remove headunit.



- Unlock and disconnect plug connection (1) from airbag control unit.
- Release the wiring harness (2) on the holders.

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- Loosen nuts (1).
- Loosen nuts (2).
- Remove cable clip and release the nuts (3).

  Remove retaining bracket from left and right sides.
- Carefully feed out the support for the instrument panel to the rear.

  If necessary, unlock and disconnect additional plug connections.
- Carefully remove support for the instrument panel from the vehicle.

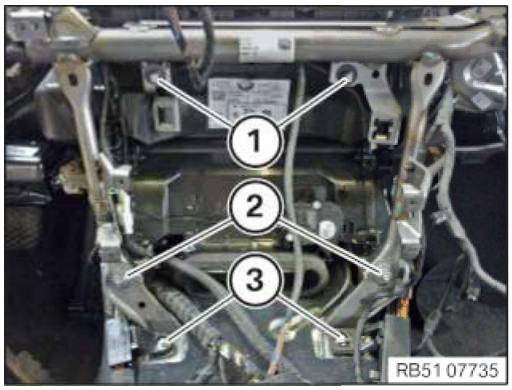
MAIN WORK

37 – When replacing the support for the instrument panel

- Remount the wiring harness on the new support for the instrument panel.
- Remount small parts and holder.

POSTPROCESSES

38 – Installing the support for instrument panel



- Install the instrument panel support into the vehicle carefully.
- Insert the instrument panel support carefully.

  If necessary, connect and lock the additional connector.
- Tighten nuts (1).

Heating and air-conditioning unit on support

Nut M6		Tightening torque	4 Nm

- Mount retaining bracket on left and right.

  Tighten nuts (2).

Support for instrument panel

M8 hexagon nut		Tightening torque	21 Nm
Hexagon screw		Tightening torque	21 Nm

- Tighten nuts (3) and fit cable clip .

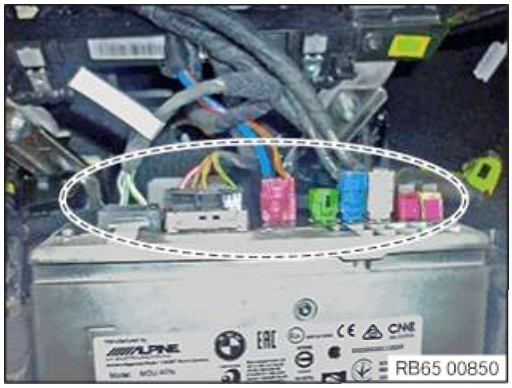
Support for instrument panel

M8 hexagon nut		Tightening torque	21 Nm
Hexagon screw		Tightening torque	21 Nm

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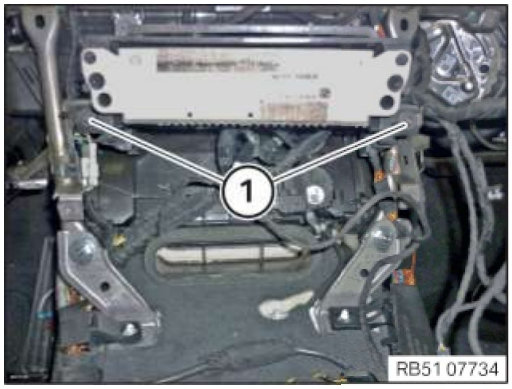


- Connect the connector (1) to the airbag control unit and lock.
- Secure the wiring harness (2) on the holders.



- Installing head unit.

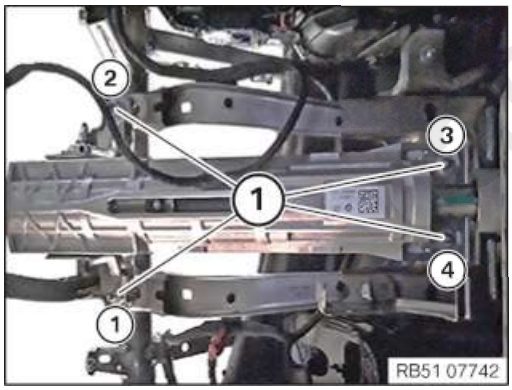
  Connect and lock all connectors in the marked area.



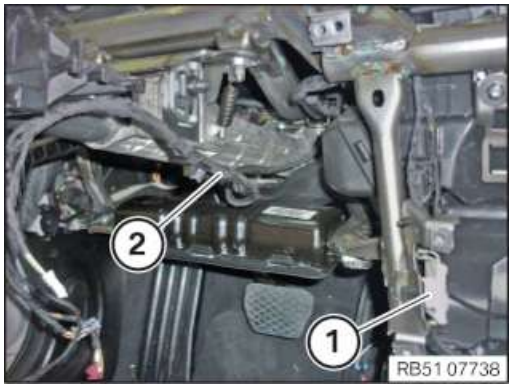
- Feed in the head unit.
- Tighten the screws (1).

Head unit to holder / holder to support

Screw		Tightening torque	1,8 Nm

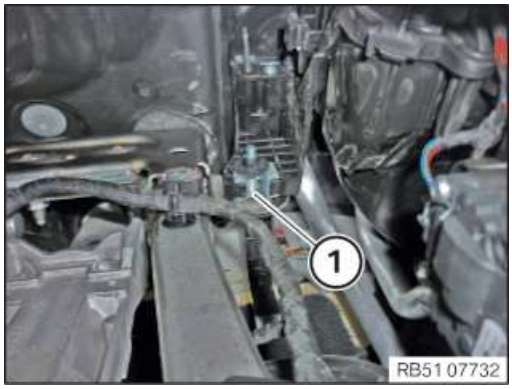


- Correctly position the steering column (2) and tighten the nuts (1) in the sequence (1), (2), (3) and (4).



- Connect connectors (1) and lock.
- Secure the vehicle wiring harness (2) to the steering column.

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- Tighten nut (1) in the left foot well on the heating and air-conditioning unit.

Heating and air-conditioning unit on support

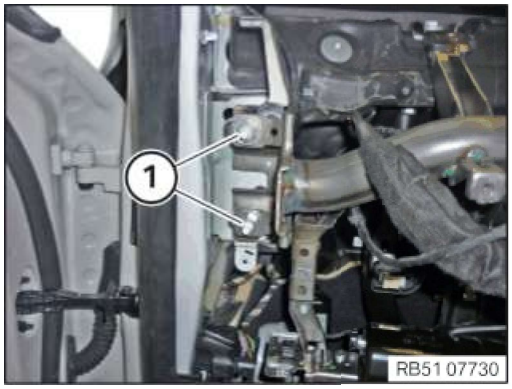
Nut M6		Tightening torque	4 Nm



- Tighten the screws (1).

Support for instrument panel

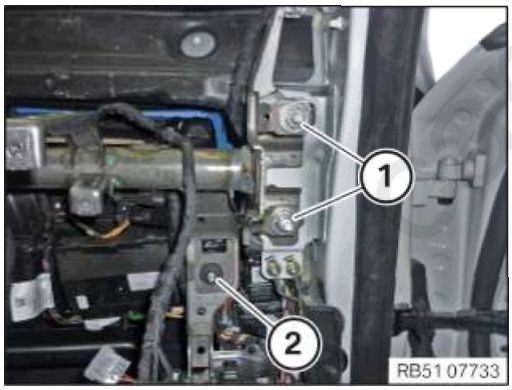
M8 hexagon nut		Tightening torque	21 Nm
Hexagon screw		Tightening torque	21 Nm



- Tighten nuts (1).

Support for instrument panel

M8 hexagon nut		Tightening torque	21 Nm
Hexagon screw		Tightening torque	21 Nm



- Tighten nuts (1).

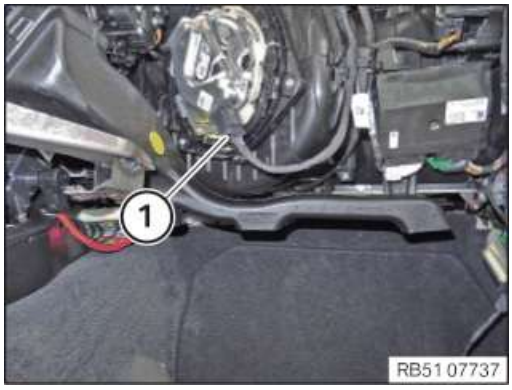
Support for instrument panel

M8 hexagon nut		Tightening torque	21 Nm
Hexagon screw		Tightening torque	21 Nm

- Tighten nut (2).

Heating and air-conditioning unit on support

Nut M6		Tightening torque	4 Nm

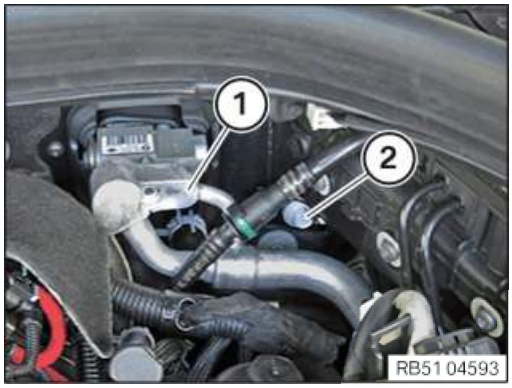


- Connect the connector (1) to the blower motor and lock.

.com



- Connect connector (1) and lock.
- Correctly position the carpet in the area of B-pillar at the right.

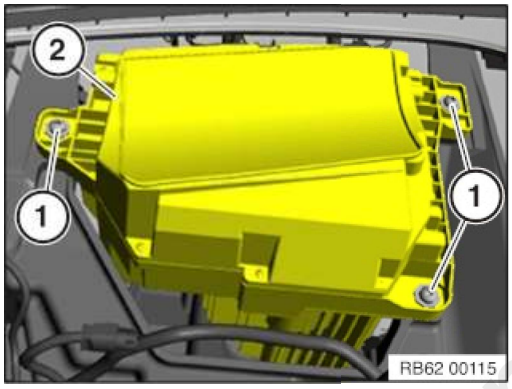


- Push the refrigerant line (1) slightly to one side and tighten the screw (2).

Support for instrument panel

M8 hexagon nut		Tightening torque	21 Nm
Hexagon screw		Tightening torque	21 Nm

39 – Installing the head-up display

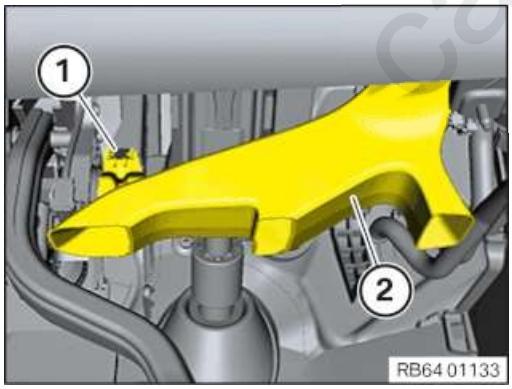


- Connect the associated connector to the Head-Up Display.
- Guide the Head-Up Display (2) into the support.
- Tighten the screws (1).

Head-Up Display to support

M6x25 screw		Tightening torque	13 Nm

40 – Installing the air duct, left



- Clip in the air duct (2) at the clamp (1) in the air conditioning housing at an angle towards the top.

41 – Installing knee airbag

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WARNING

Airbag unit.

Danger! Life-threatening injuries!

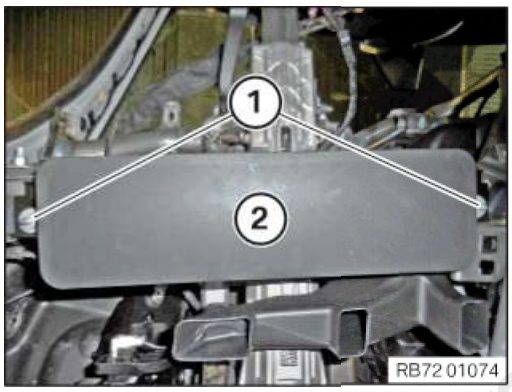
- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

WARNING

Pyrotechnic components.

Danger! Life-threatening injuries!

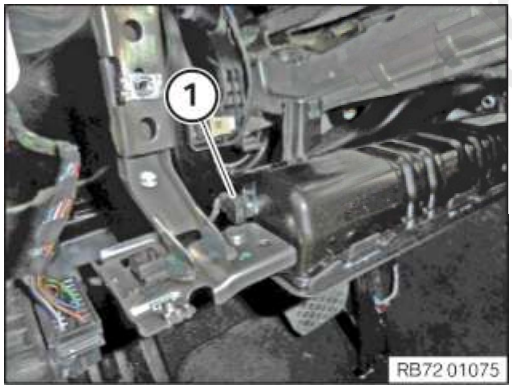
- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



- Position knee airbag (2) correctly.
- Tighten nuts (1).

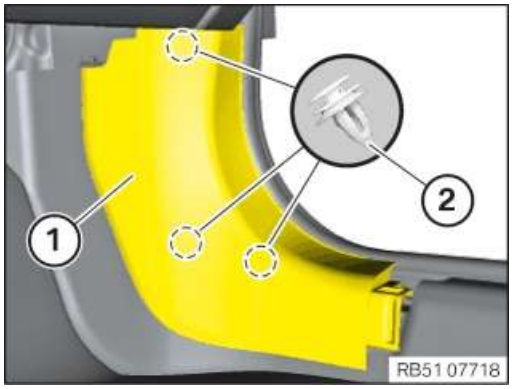
Knee airbag on support structure

Nut		Tlghtening torque	8 Nm



- Connect connectors (1) and lock.

42 – Installing side trim panel in footwell on right A-pillar



- Check the clips (2) for damage.

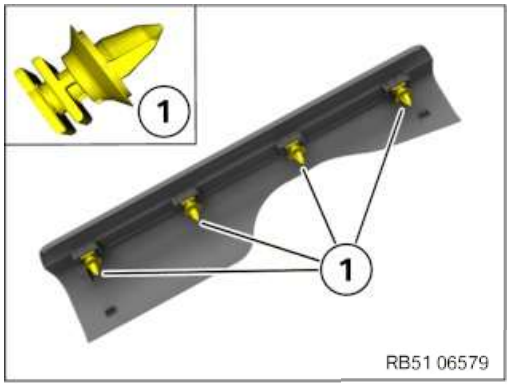
  Renew damaged or missing clips (2).
- Correctly position the side trim panel (1) and clip in to the clips (2).
- Make sure that the side trim panel (1) is correctly fitted against edge protection.

43 – Install right door sill cover strip

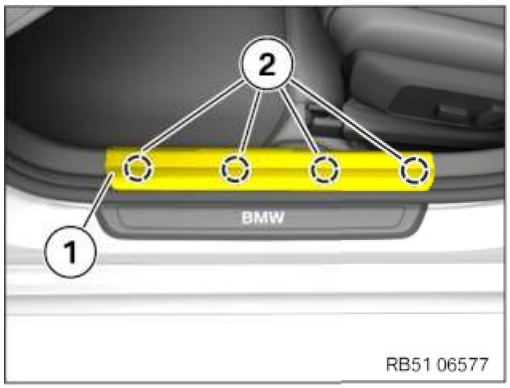
NOTICE

Description is for left component only. Procedure on the right side is identical.

▶ **Install the door sill cover strip**



- Check the clips (1) for damage and renew if necessary.



- Clip the door sill cover strip (1) into the floor panel with the clips (2).

44 – Install the trim panel for the instrument panel



TECHNICAL INFORMATION

Conduct the following operation with the assistance of a second person.

- Insert the instrument panel trim in the vehicle and position it at the support.
- Insert the associated wiring harnesses and connect the connectors.
- Tighten the screws (1).

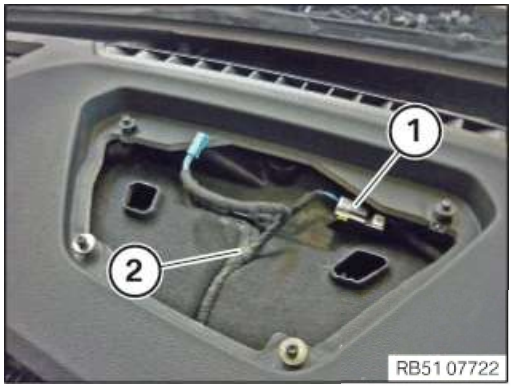
Dashboard to support

Screw		Tightening torque	2,4 Nm

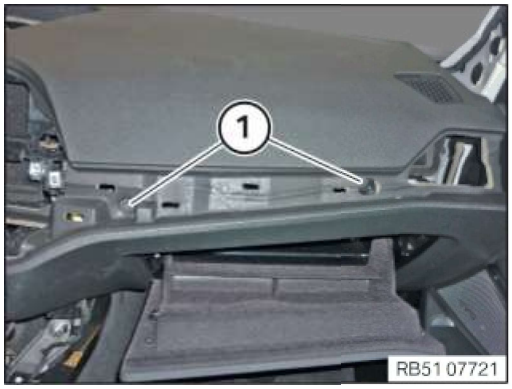
diag.com



- Connect connector (1) to the light operating unit and lock.



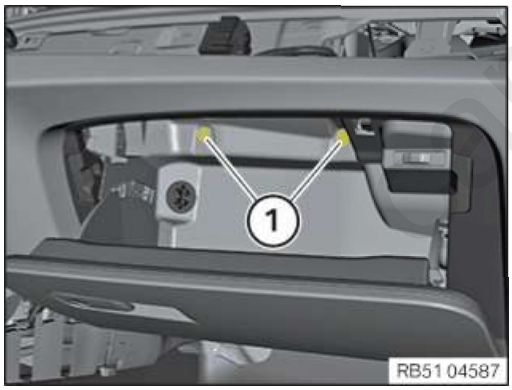
- Secure the wiring harness (2) on the holders.
- Connect plug connection (1) and lock.



- Tighten the screws (1).

Dashboard to support

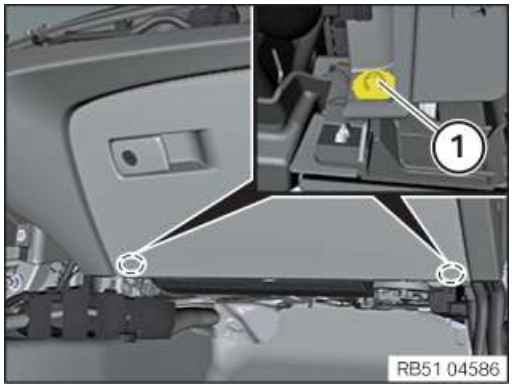
Screw		Tightening torque	2,4 Nm



- Open glovebox.
- Tighten the screws (1).

Dashboard to support

Screw		Tightening torque	2,4 Nm

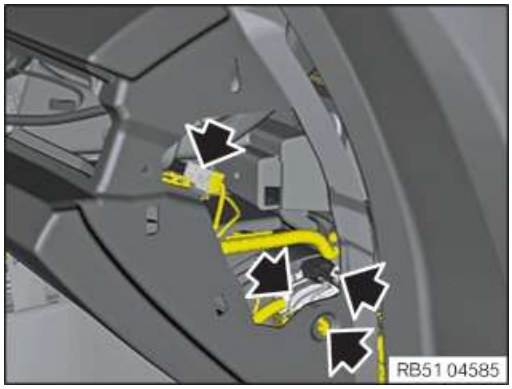


- Tighten the screws (1) on the lower side of the glove box button.

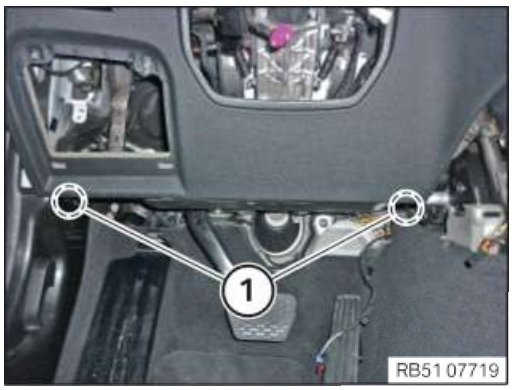
Dashboard to support

Screw		Tightening torque	2,4 Nm

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- Connect all plug connections and cable clips (arrows) behind the glove box.



- Tighten the screws (1).

Dashboard to support

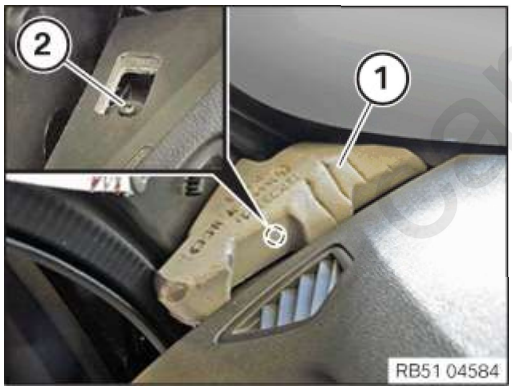
Screw		Tightening torque	2,4 Nm



- Tighten the screws (1).

Dashboard to support

Screw		Tightening torque	2,4 Nm



NOTICE

Perform the operations on the left and right side.

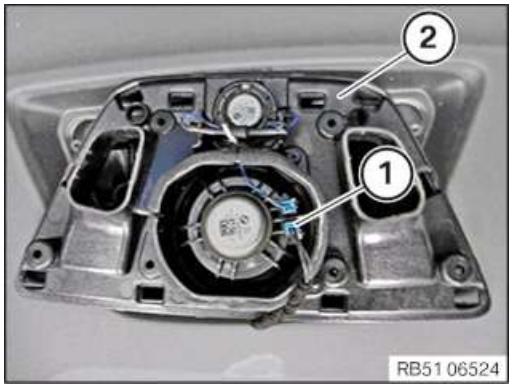
- Tighten down screw (2).

Dashboard to support

Screw		Tightening torque	2,4 Nm

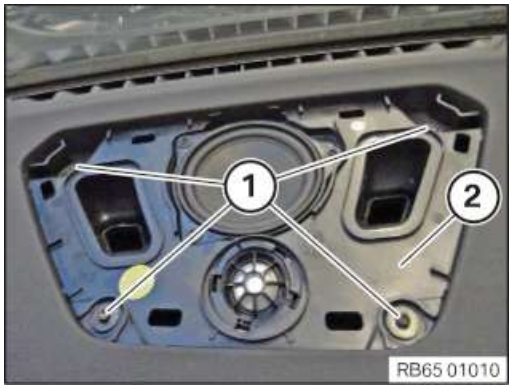
- Use sound insulation (1).

45 – Install the speaker holder at the instrument panel



- Position the speaker holder (2).
- Connect connector (1).

carmanualsdiagn.com

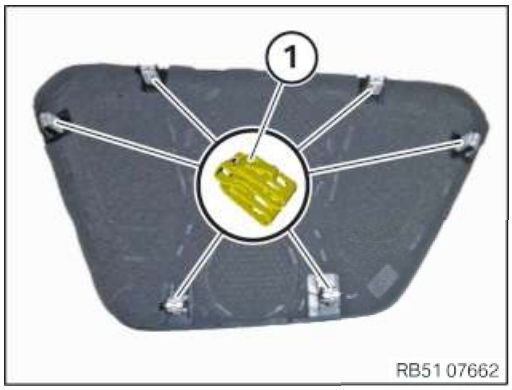


- Install the speaker holder (2).
- Tighten the screws (1).

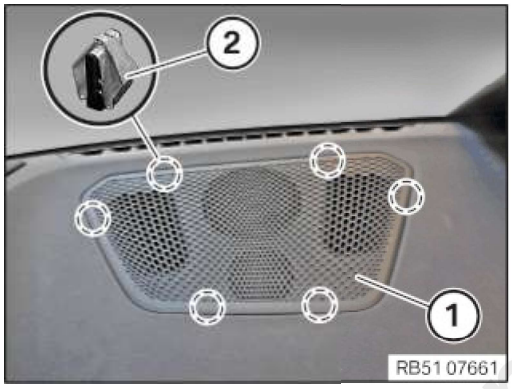
Speaker to support / support to instrument panel / support to body

Screw		Tightening torque	1,8 Nm

46 – Install the speaker trim at the instrument panel

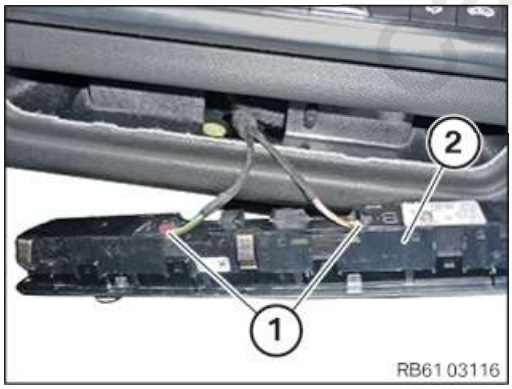


- Check clamps (1) for damage.
- Replace broken or missing clamps (1).

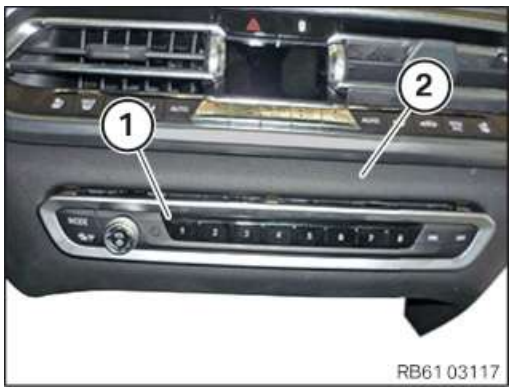


- Position the speaker trim (1) correctly and engage it at the clamps (2).

47 – Install the audio operating unit



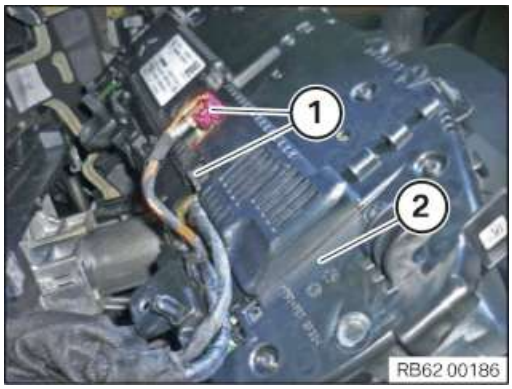
- Connect the connector (1) to the audio operating unit (2).



- Correctly position the audio operating unit (1) and install in the instrument panel(2).

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48 – Installing the instrument cluster (KOMBI)



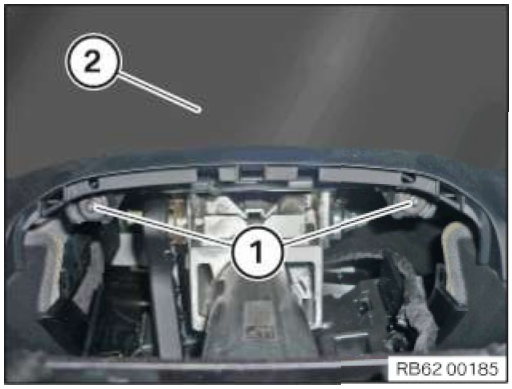
RISK OF DAMAGE

Damage to the instrument cluster (KOMBI)

While releasing and connecting the cable, it could lead to a ground offset. Thereby, currents could arise, that make the instrument cluster (KOMBI) useless.

- While releasing: Release APIX data cable (blue) first.
- While connecting: Connect APIX data cable (blue) at the last.

- **If installed:** Connect the blue connector at the last and lock it.
- Connect and lock connector (1) to the instrument cluster (KOMBI) (2).



- Feed in and position the instrument cluster (KOMBI) (2).
- Tighten the screws (1).

Instrument cluster (KOMBI) to support

Oval-head screw		Tightening torque	1,8 Nm



- Tighten down screw (1).

Instrument cluster (KOMBI) to support

Oval-head screw		Tightening torque	1,8 Nm

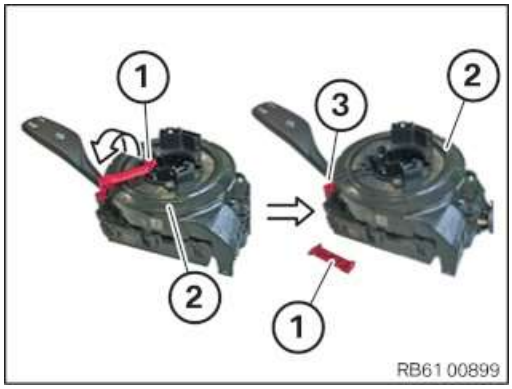


- Tighten down screw (1).

Instrument cluster (KOMBI) to support

Oval-head screw		Tightening torque	1,8 Nm

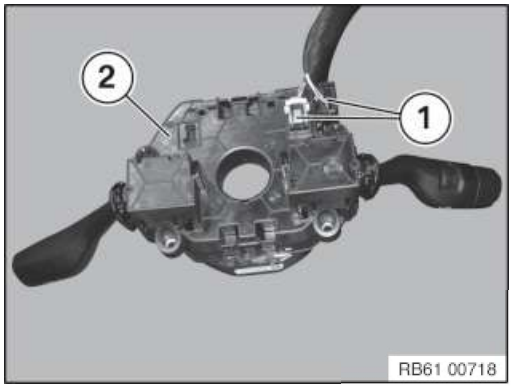
49 – Installing the steering column switch cluster (SZL)



- **Replacement:**

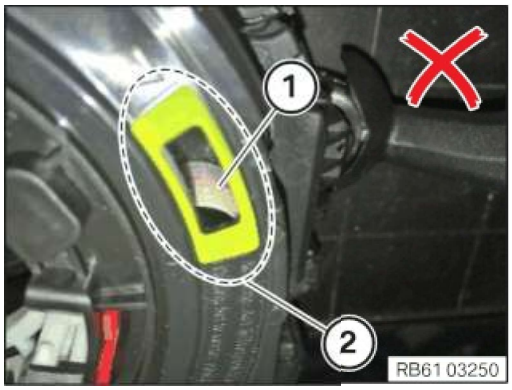
  Break off the transportation retainer (1) on the steering column switch cluster (SZL) (2) in direction of arrow.

  The broken off piece (3) of the transportation retainer (1) remains in the steering column switch cluster (SZL) (2).



- Connect the connector (1) with the steering column switch cluster (SZL) (2).

Check



- **Version A:**

  Check whether the correct marking (1) is seen in inspection glass (2).

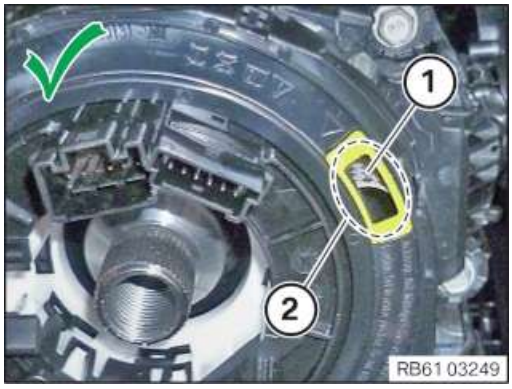
Result

» Ensure that no incorrect marking (1) is seen in inspection glass (2).

Measure

- Turn the coil spring cassette until the right mark (1) becomes visible in the inspection glass (2).

Check



- **Version A:**

  Check whether the correct marking (1) is seen in inspection glass (2).

Result

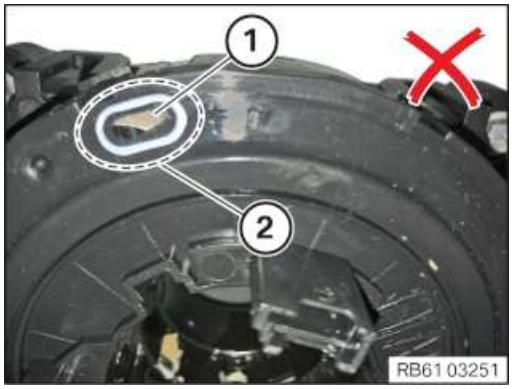
» Correct marking (1) is seen in inspection glass (2).

Measure

- Continue with the next step.

Check

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- **Version B:**

  Check whether the correct marking (1) is seen in inspection glass (2).

Result

» Ensure that no incorrect marking (1) is seen in inspection glass (2).

Measure

- Turn the coil spring cassette until the right mark (1) becomes visible in the inspection glass (2).

Check



- **Version B:**

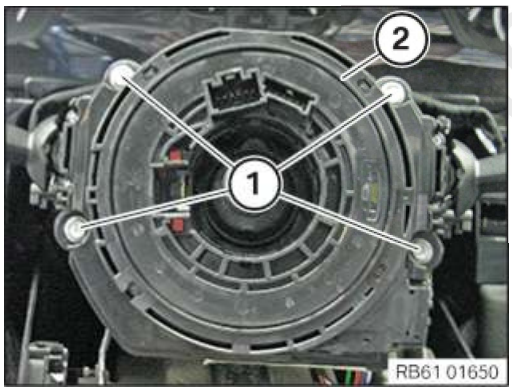
  Check whether the correct marking (1) is seen in inspection glass (2).

Result

» Correct marking (1) is seen in inspection glass (2).

Measure

- Continue with the next step.

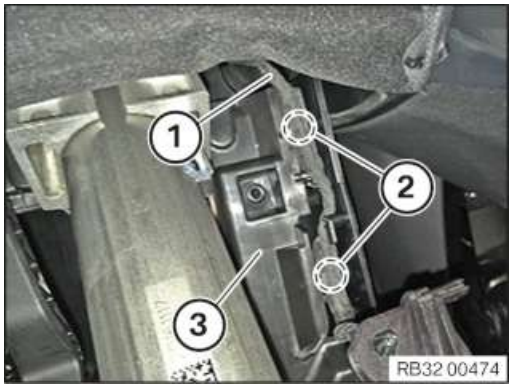


- Position the steering column switch cluster (SZL) (2).
- Tighten the screws (1).

Steering column switch cluster (SZL) on the steering column

Screw TS5x20		Tightening torque	3 Nm

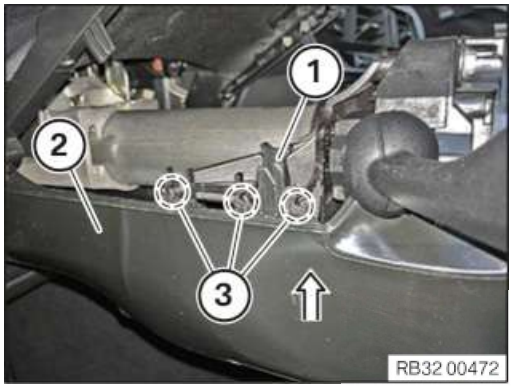
50 – Install steering column shroud lower section



- Position the steering column shroud lower section (3).
- Secure the line (1) on the brackets (2).



- Connect the connector (1).

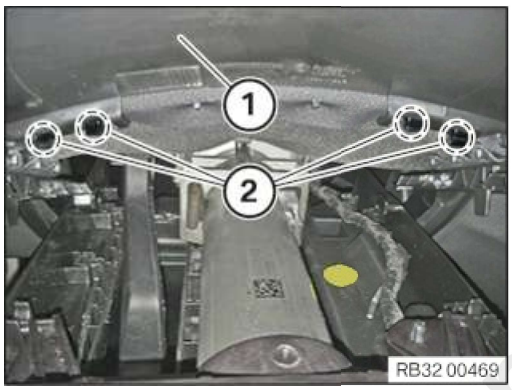


NOTICE

Perform the operations on the left and right side.

- Align the steering column shroud lower section (2) to the steering column using the retaining lug (1).
- Push the steering column shroud lower section (2) up in the direction of the arrow until the brackets (3) engage.

51 – Fit steering column shroud upper section



- Clip in the steering column shroud upper section (1) at the brackets (2).



NOTICE

Perform the operations on the left and right side.

- Clip in the steering column shroud upper section (1)into the guide (2).



NOTICE

Perform the operations on the left and right side.

- Press the upper section of the steering column shroud (1) downwards in direction of arrow.

  The upper section of the steering column shroud must engage audibly and perceptibly.

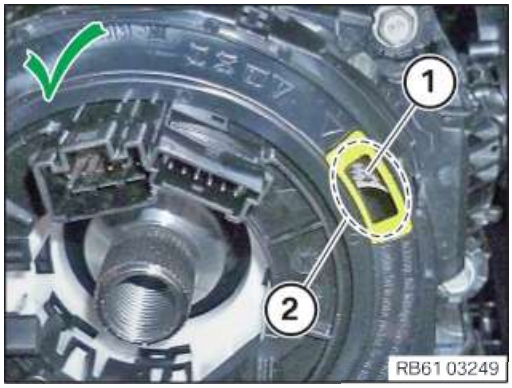
52 – Installing the steering wheel (sports steering wheel)

diag.com

▸ **Check the neutral position of the clock spring**

TECHNICAL INFORMATION

Different variants may be installed depending on the vehicle equipment.



Check

- **Version A:**

  Check the mark (1) on the coil spring in the inspection glass (2).

Result

» The mark (1) on the coil spring is not visible.

Measure

- Turn the coil spring cassette until the mark (1) on the coil spring becomes visible in the inspection glass (2).



Check

- **Version B:**

  Check the mark (1) on the coil spring in the inspection glass (2).

Result

» The mark (1) on the coil spring is not visible.

Measure

- Turn the coil spring cassette until the mark (1) on the coil spring becomes visible in the inspection glass (2).



Check

- A micro-encapsulated screw (3) may be fitted.
- Check the screw connection.

Result

» Screw is (3) micro-encapsulated.

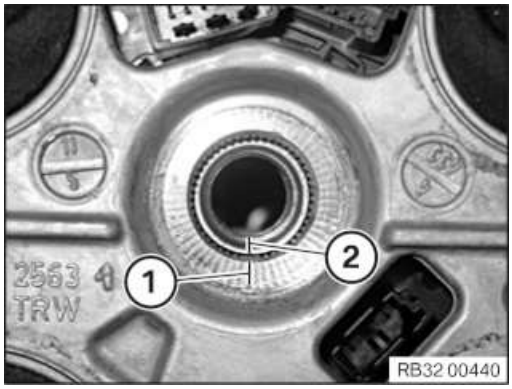
carfdiagn.com

Measure

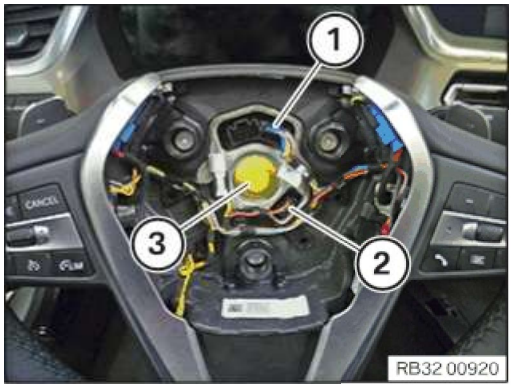
- Clean thread in the steering column.

  Renew the screw (3).

  Parts: Screw



- Align mark (1) on steering wheel to mark (2) on steering column.
- Connect steering wheel.



- Connect connectors (1) and lock.
- If installed: Connect connectors (2) and lock.
- Tighten screw (3) .

Steering wheel to steering column

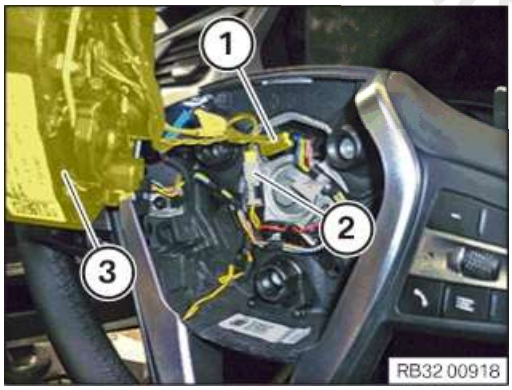
M14	Only for a micro-encapsulated screw: Renew screw.	Tightening torque	62,5 Nm

53 – Installing the airbag unit

TECHNICAL INFORMATION

Different variants may be installed depending on the vehicle equipment.

▸ **Version A: Installing the airbag unit (sports steering wheel)**



- Position airbag unit (3).
- Connect connectors (1) and (2) lock.



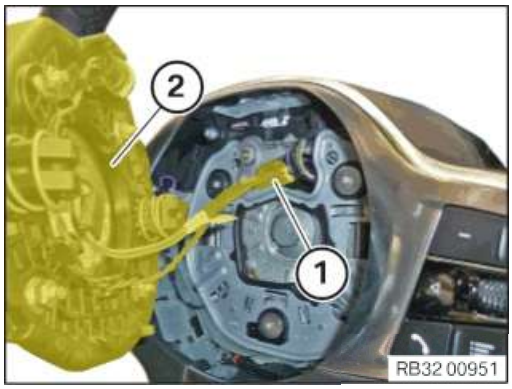
- Press the airbag unit (1) with even pressure in the direction of the arrow into the steering wheel.

  The airbag unit (1) must engage audibly and perceptibly.

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TECHNICAL INFORMATION

After replacing the airbag unit (M-sports steering wheel) or after a possible conversion of standard steering wheel and airbag unit to M-sports steering wheel, a software update or a programming/encoding via ISTA must be performed!



- Connect and lock connector (1) of the airbag unit (2).



- Press the airbag unit (1) with even pressure in the direction of the arrow into the steering wheel.

  The airbag unit (1) must engage audibly and perceptibly.

54 – Install the central information display (CID)

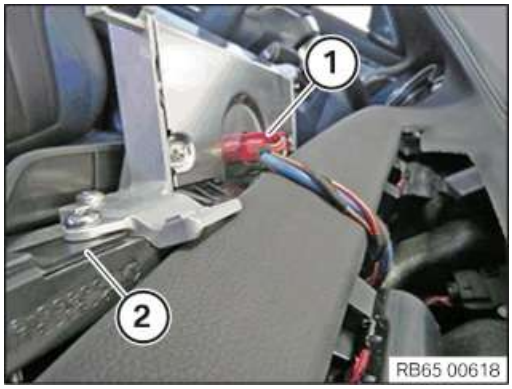
RISK OF DAMAGE

Electrostatic discharge.

Damage to or destruction of electrical components.

- Leave electrical components in original packaging until just before they are installed. Use the original packaging only for any return shipments. Always package removed components straight away.
- Read and comply with user information on using the associated special tool 12 7 060.
- Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.
- Wear electrically conductive clothing and antistatic shoes (with ESD symbol).
- For additional information see: 61 35 Information on electrostatic discharge (ESD) protection.

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- Position Central Information Display (CID) (2).
- Connect plug connection (1) and lock.

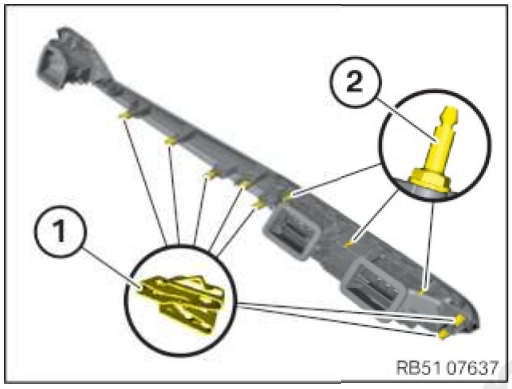


- Insert the central information display (CID) (2) in the instrument panel and position correctly.
- Tighten the screws (1).

Central information display to instrument panel

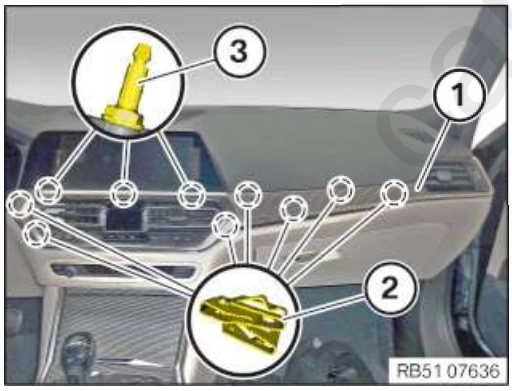
Screw		Tightening torque	1,8 Nm

55 – Install the finisher on the right instrument panel



- Check the clamps (1).

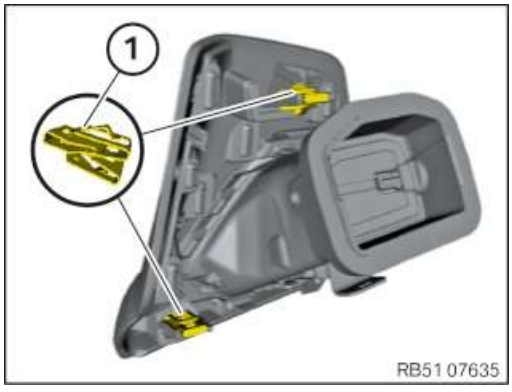
  Replace broken or missing clamps (1).
- Check the pins (2) and the corresponding clamps on the instrument panel trim and renew if necessary.



- Install the decorative strip (1).

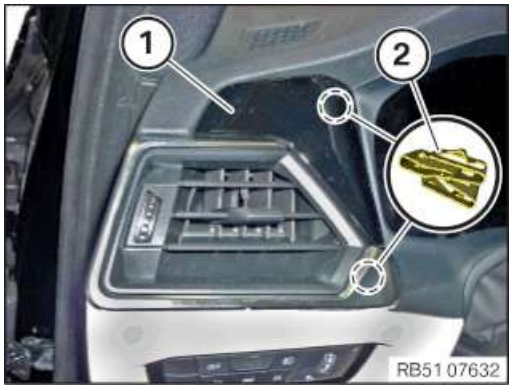
  Connect and lock the associated connectors.
- Correctly position the decorative strip (1) and at the clamps (2) and clip in the pins (3).

56 – Install the finisher on the instrument panel on the left



- Check the clamps (1).

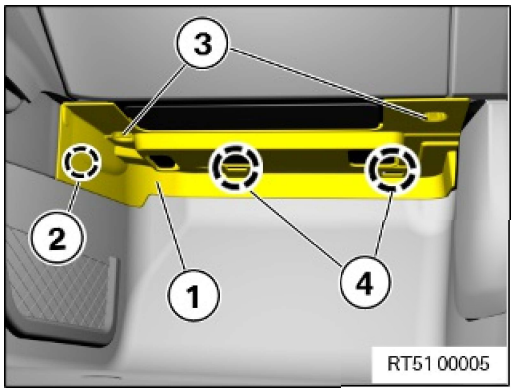
  Replace broken or missing clamps (1).



- Install the decorative strip (1).

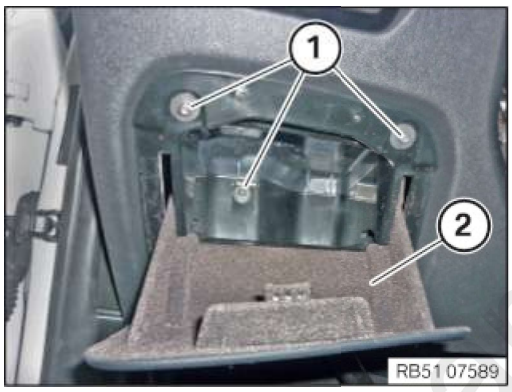
  Connect and lock the associated connectors.
- Clip decorative strip (1) into clamps (2).

57 – Install the right footwell trim panel



- Connect associated connector.
- Attach the footwell trim (1) to the guides (4) and fold up.
- Guide the footwell trim (1) into the guide (2) of the centre console.
- Position locks (3) correctly and turn by 90°.

58 – Installing the left fold-down compartment

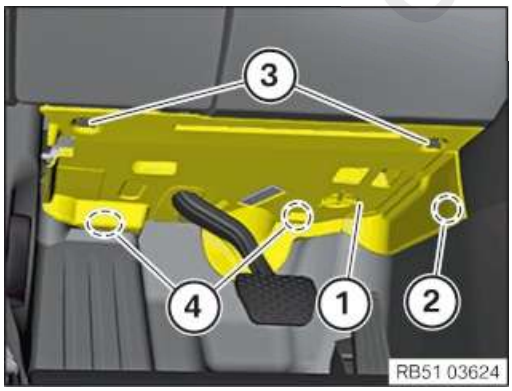


- Install the fold-down compartment (2).
- Tighten the screws (1).

Fold-down compartment to instrument panel

Oval-head screw		Tightening torque	1,8 Nm

59 – Installing the trim panel for the pedal mechanism



- Connect associated connector.
- Attach the trim panel for the pedal mechanism (1) in the guides (4) and fold it up.
- Clip the trim panel for the pedal mechanism (1) into the centre console in this area (2).
- Insert locks (3) correctly and turn 90°.

60 – Install both A-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

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▸ **Installing the A-pillar trim panel**

WARNING

Airbag unit.

Danger! Life-threatening injuries!

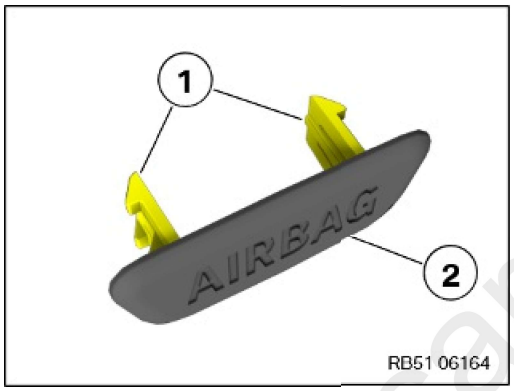
- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

WARNING

Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



Check

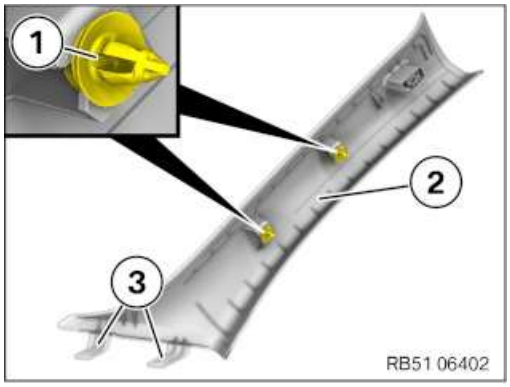
- Check retaining lugs (1) of cover (2) for damage.

Result

» Retaining lug is damaged.

Measure

- Renew the cover.



Check

- Check the clips (1) for damage and renew if necessary.
- Check the guides (3) for damage.

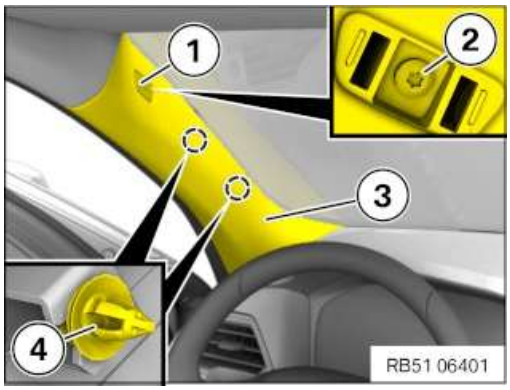
Result

» Guide is damaged.

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Measure

- Renew the A-pillar trim panel.



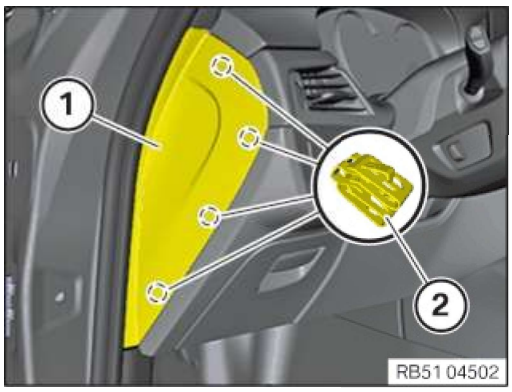
- Guide in A-pillar trim panel (3) downwards and clip it in with clips (4).
- Tighten down screw (2).

A-pillar trim panel to body

Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

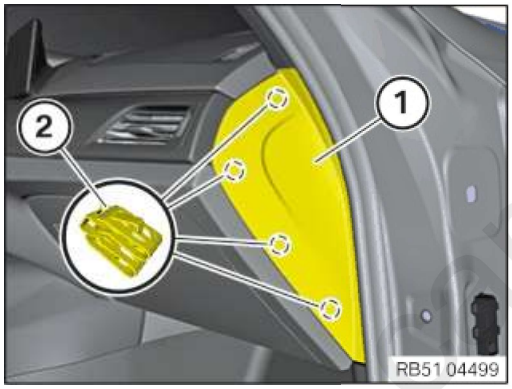
- Clip in the cover (1).

61 – Install the side panel on left instrument panel



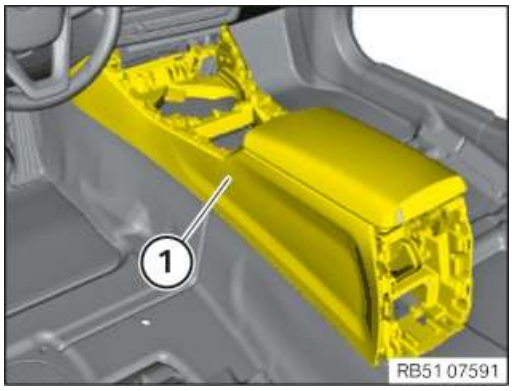
- Feed in the side panel (1) and clip it in at the clamps (2).

62 – Install the side panel on instrument panel on the right



- If required, connect the associated connector.
- Feed in the side panel (1) and clip it in at the clamps (2).

63 – Installing the centre console

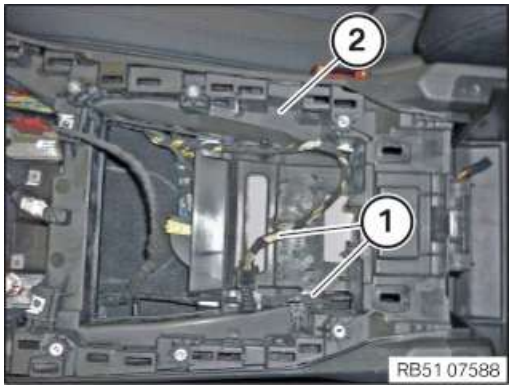


NOTICE

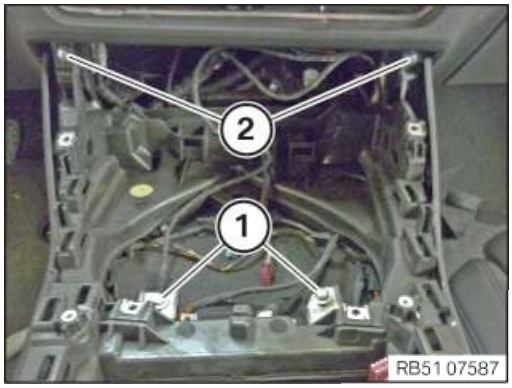
To provide a better overview: Schematic diagram with partially hidden components.

- Install centre console (1) and thereby feed in the wiring harness.
- Feed in the centre console (1) to the instrument panel and position correctly.

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- Secure the wiring harness to the centre console (1) and connect and lock the existing plug connections.



- Tighten the screws (1).

Centre console on tunnel

M6x18 Hexagon screw		Tightening torque	4,6 Nm

- Tighten the screws (2).

Centre console to instrument panel

Oval-head screw		Tightening torque	1,8 Nm

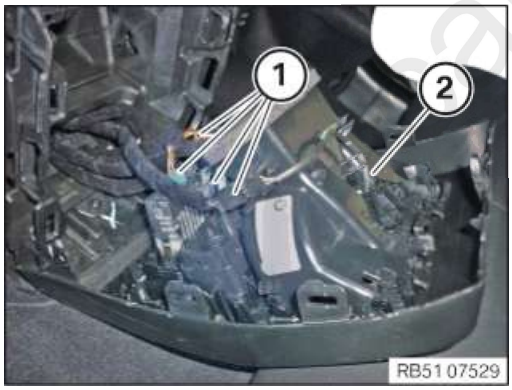


- Tighten the screws (1).

Centre console on tunnel

M6x18 Hexagon screw		Tightening torque	4,6 Nm

64 – Installing the rear centre console trim



- Install the centre console trim (2).
- Connect connectors (1) and lock.

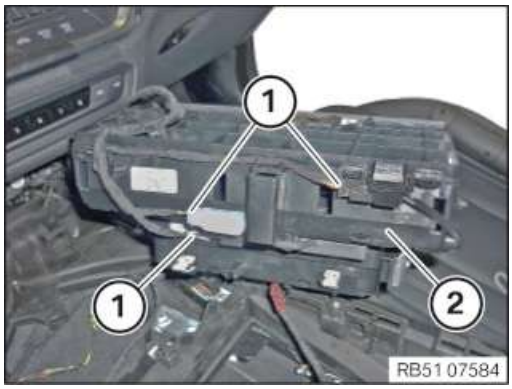


- Position centre console trim (1) and engage at the latch mechanisms at the side.

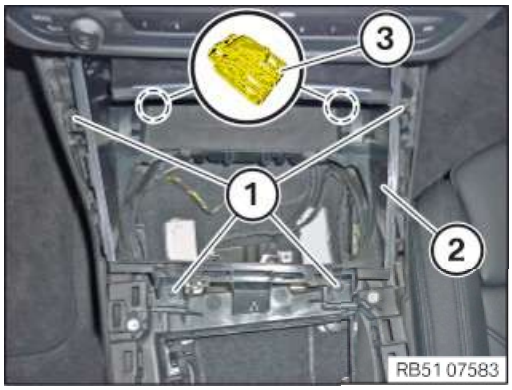
65 – Installing the storage compartment of the front centre console

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65 – Installing the storage compartment of the front centre console



- Mount the storage compartment (2) and connect connectors (1).

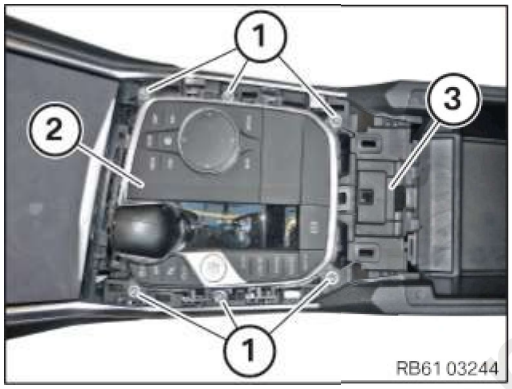


- Engage rear storage compartment trim (2) into clamps (3).
- Tighten the screws (1).

Storage compartment to centre console

Oval-head screw		Tightening torque	1,8 Nm

66 – Install the operating facility in the centre console



- Position operating facility (2) in the centre console (3).
- Tighten the screws (1).

Gear selector switch to centre console trim

Screw	Tightening torque	1,8 Nm

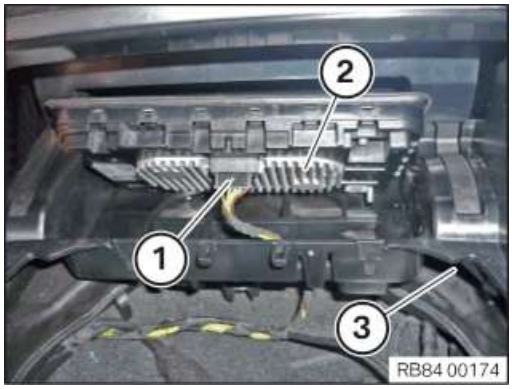
▸ **Disconnecting all battery earth leads**



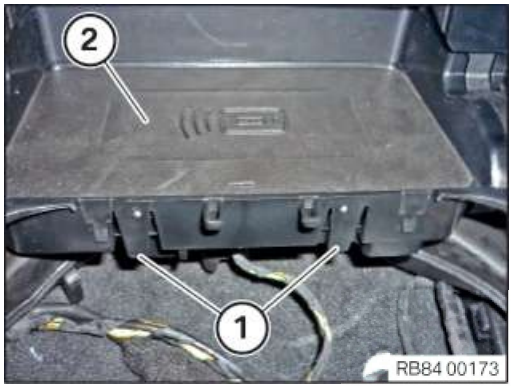
- See additional information.

67 – Installing the wireless charging station

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- Connect connector (1).
- Position the wireless charging station (2) in the centre console (3).



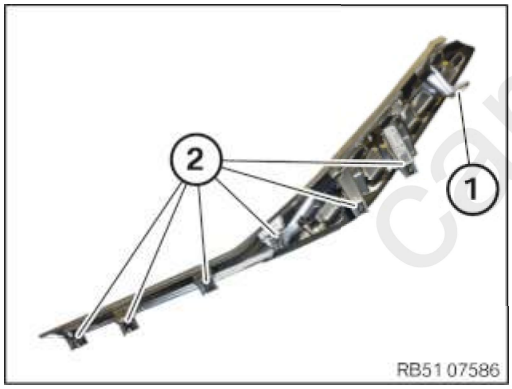
- Press the wireless charging station (2) down till the locking units (1) are engaged correctly.

68 – Install decorative trim on centre console on left and right

▸ Installing the decorative trim to centre console

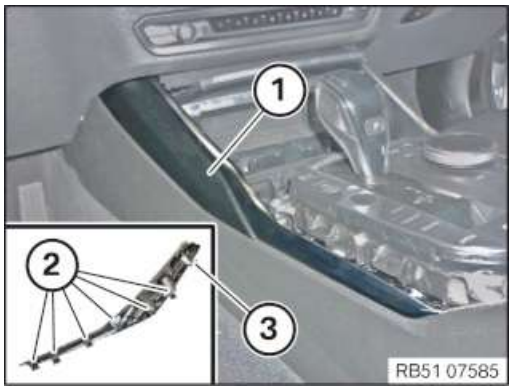
NOTICE

Description is for left component only. Procedure on the right side is identical.



- Check guide (1) and the latch mechanisms (2).

  Renew defective decorative trim.



- Feed in the decorative trim (1) forward in the guide (3).
- Engage decorative trim (1) in latch mechanisms (2).

69 – Installing the centre console trim

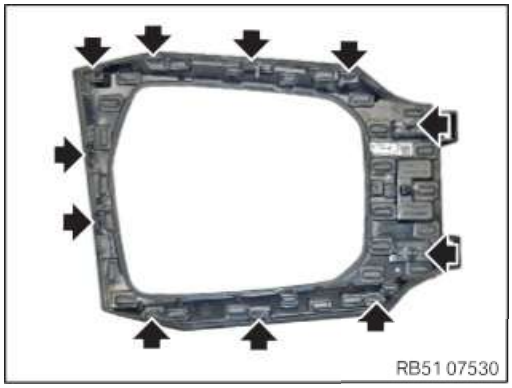
cardiagn.com

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

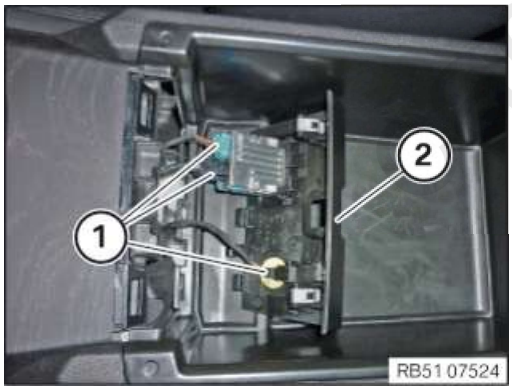


- Check all the latch mechanisms or clamps (arrows).
- In case the latch mechanisms or the clamps (arrows) are faulty, renew the centre console trim .

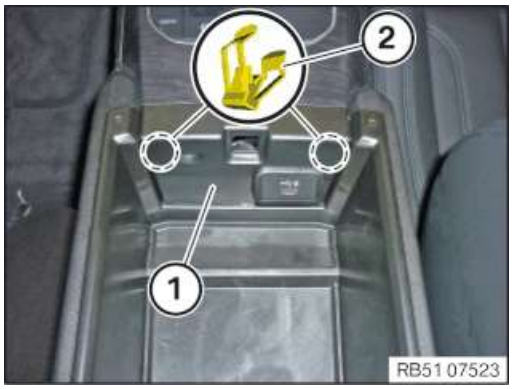


- Correctly position the centre console trim (1) and engage at the latch mechanisms.

70 – Installing the trim in the storage compartment of the centre armrest



- Mount the trim (2) and connect connector (1) and lock.



- Correctly position trim (1) and snap into the clamps (2).

71 – Install the cup holder

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- Fix the cup holder (1) and the belonging connectors.
- Correctly position cup holder (1).
- Tighten the screws (2).

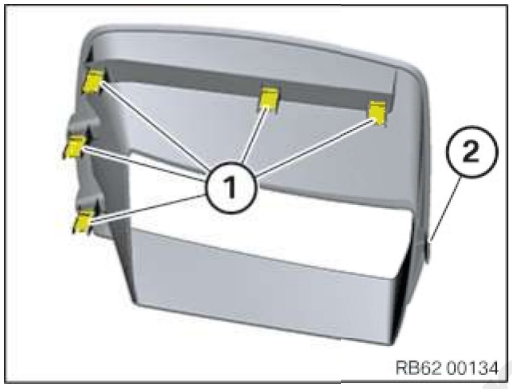
Cup holder to centre console

Oval-head screw		Tightening torque	1,8 Nm

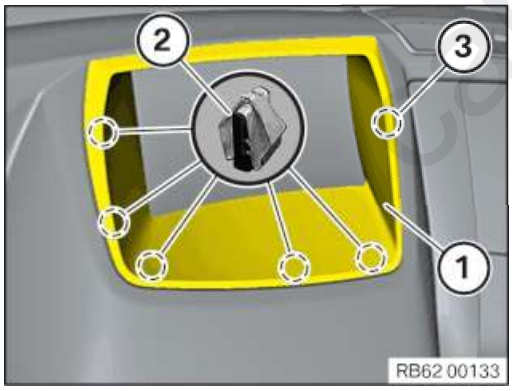


- Insert the insert (1).

72 – Installing the trim for the Head-Up Display



- Check clamps (1) and the latch mechanism (2) for damage, renew if necessary.



- Correctly position the trim (1) for the BMW Head-Up Display and engage it on the clamps (2) and the retaining lug (3).

Additional Information

Overview of Tightening Torques

Heating and air-conditioning unit on support Used in step 38

Nut M6		Tightening torque	4 Nm

Support for instrument panel Used in step 38

M8 hexagon nut		Tightening torque	21 Nm
Hexagon screw		Tightening torque	21 Nm

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Head unit to holder / holder to support			Used in step 38
Screw		Tightening torque	1,8 Nm

Head-Up Display to support			Used in step 39
M6x25 screw		Tightening torque	13 Nm

Knee airbag on support structure			Used in step 41
Nut		TIghtening torque	8 Nm

Dashboard to support			Used in step 44
Screw		Tightening torque	2,4 Nm

Speaker to support / support to instrument panel / support to body			Used in step 45
Screw		Tightening torque	1,8 Nm

Instrument cluster (KOMBI) to support			Used in step 48
Oval-head screw		Tightening torque	1,8 Nm

Steering column switch cluster (SZL) on the steering column			Used in step 49
Screw TS5x20		Tightening torque	3 Nm

Steering wheel to steering column			Used in step 52
M14	Only for a micro-encapsulated screw: Renew screw.	Tightening torque	62,5 Nm

Central information display to instrument panel			Used in step 54
Screw		Tightening torque	1,8 Nm

Fold-down compartment to instrument panel			Used in step 58
Oval-head screw		Tightening torque	1,8 Nm

A-pillar trim panel to body			Used in step 60
Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

Centre console on tunnel			Used in step 63
M6x18 Hexagon screw		Tightening torque	4,6 Nm

Centre console to instrument panel			Used in step 63
Oval-head screw		Tightening torque	1,8 Nm

Storage compartment to centre console			Used in step 65
Oval-head screw		Tightening torque	1,8 Nm

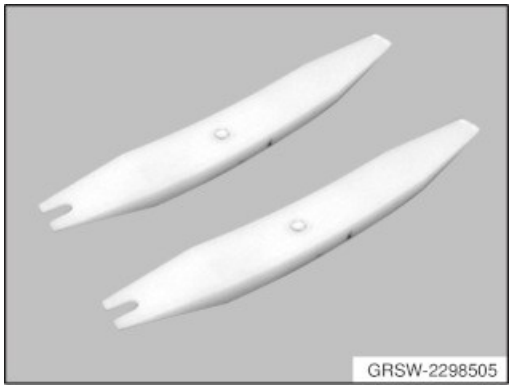
Gear selector switch to centre console trim			Used in step 66
Screw		Tightening torque	1,8 Nm

Cup holder to centre console			Used in step 71
Oval-head screw		Tightening torque	1,8 Nm

Overview of Special Tools

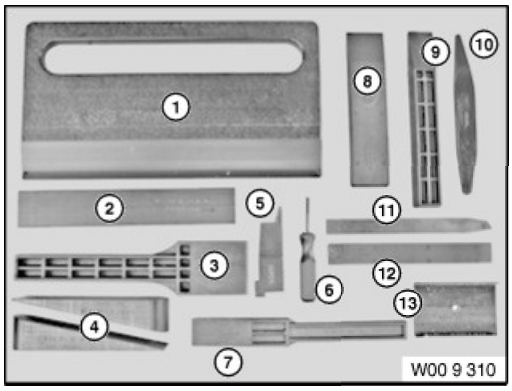
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2 298 505 Wedge



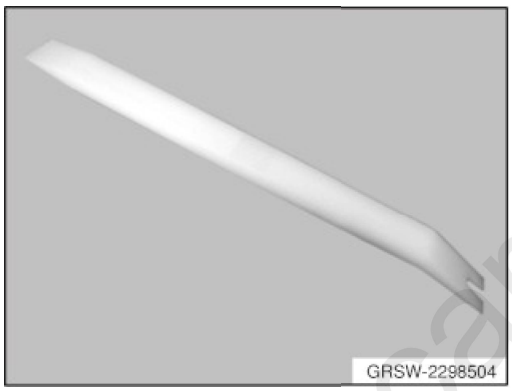
Common	Used in step 45
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

0 493 752 (00 9 329) Case



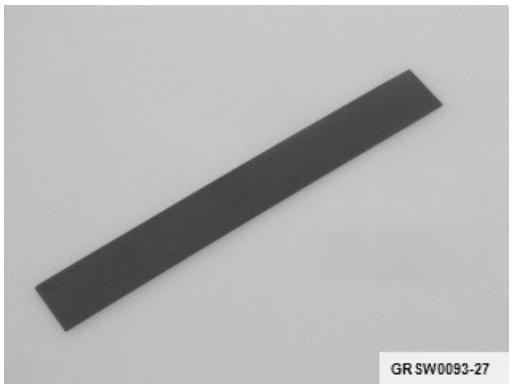
Common	Used in step 14
Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

2 298 504 Wedge



Common	Used in step 23
Usage	Wedge with angled lug
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

0 496 571 (00 9 327) Wedge



Common	Used in step 27
Usage	(Cleaning wedge) From 11/2008 this special tool replaces panel wedge 00 9 323 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

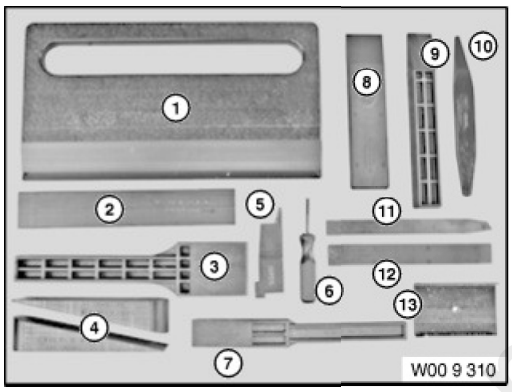
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0 496 569 (00 9 325) Wedge



Common	Used in step 28
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

0 490 534 (00 9 317) Wedge



Common	Used in step 31
Usage	(Trim wedge) Replaced by special tool 00 9 325 from 11/2008 (quality improvement due to new material) Replaced by 00 9 325 (0 496 569)
Included in the tool or work	0 490 527
Storage location	
Replaced by	
In connection with	
SI-Number	

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Links

General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	14213341
72 00 ... Safety regulations for handling components with gas generators	14

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	866
61 20 900 Disconnecting and connecting battery earth lead	866
61 20 900 Disconnecting and connecting battery earth lead	866
61 20 900 Disconnecting and connecting battery earth lead	866
61 20 900 Disconnecting and connecting battery earth lead	866
61 20 900 Disconnecting and connecting battery earth lead	866
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	866
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	866
61 20 900 Disconnecting and connecting battery earth lead	866
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	866

61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	866
61 20 900 Disconnecting and connecting battery earth lead	866
61 20 900 Disconnecting and connecting battery earth lead	866
61 20 900 Disconnecting and connecting battery earth lead	866
61 20 900 Disconnecting and connecting battery earth lead	866
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61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	866
61 20 900 Disconnecting and connecting battery earth lead	866
61 20 900 Disconnecting and connecting battery earth lead	866
61 20 900 Disconnecting and connecting battery earth lead	866
61 20 900 Disconnecting and connecting battery earth lead	866
61 20 900 Disconnecting and connecting battery earth lead	866
61 20 900 Disconnecting and connecting battery earth lead	866
61 35 ... Notes on ESD protection (Electro Static Discharge)	2054

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51 45 031 Replacing instrument panel trim

PRELIMINARY WORK

1 – Adjust the steering column position



- Adjust the length of the steering column to the maximum length in the direction of arrow (1).
- Move the steering column to the lowest steering column position in the direction of arrow (2).

2 – Remove cupholder

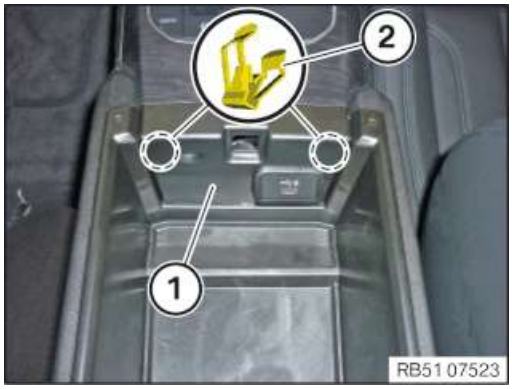


- Remove the insert (1).



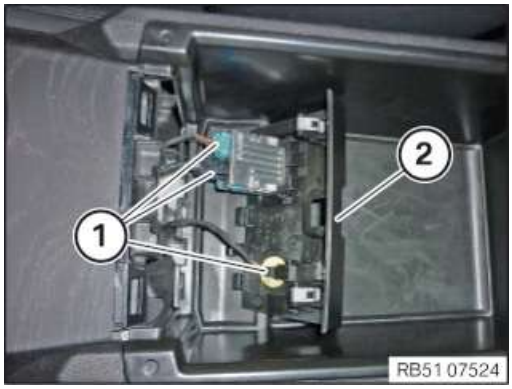
- Loosen screws (1).
- Feed the cup holder (2) out to the top.
- Unlock associated plug connections and disconnect.

3 – Removing the trim in the storage compartment on the centre armrest



- Lever out the trim (1) with the special tool (2) toward the rear from the clamps 2 298 505.

ftdiagn.com



- Unlock and disconnect the plug connections (1) and remove the trim (2) .

4 – Remove the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



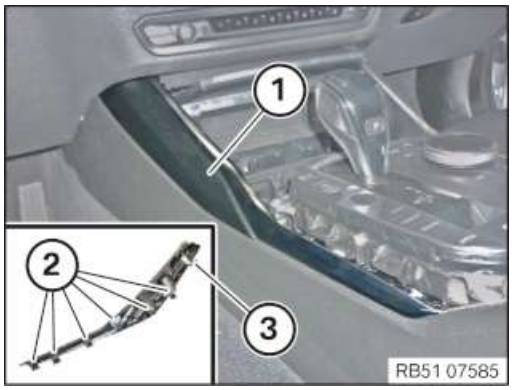
- Release and remove the centre console trim upwards (1) as shown using the special tool 2 298 505 from the latch mechanisms.

5 – Removing the decorative trim on the centre console trim on the left and right

▸ **Remove decorative trim on centre console**

NOTICE

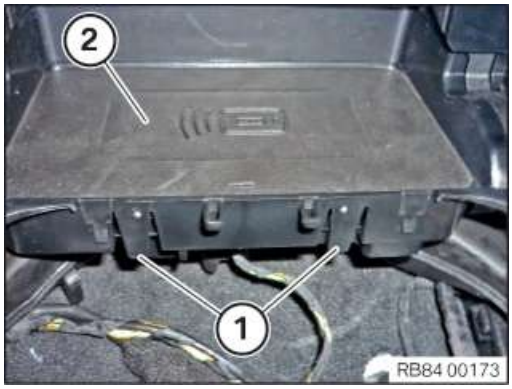
Description is for left component only. Procedure on the right side is identical.



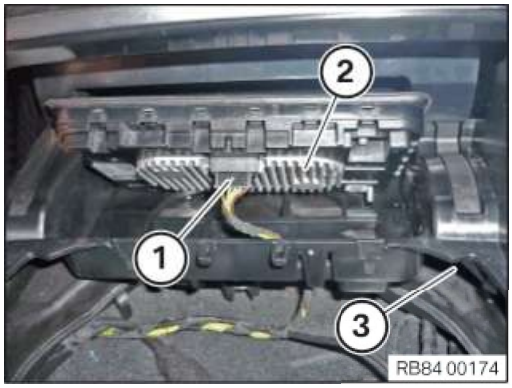
- Lever out the rear decorative trim (1) from the latch mechanisms (2) starting from the top.
- Feed out the decorative trim (1) backwards out of the guide (3) and remove.

6 – Removing the wireless charging station

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- Loosen the latch mechanisms (1) and push out the wireless charging station (2) upwards.



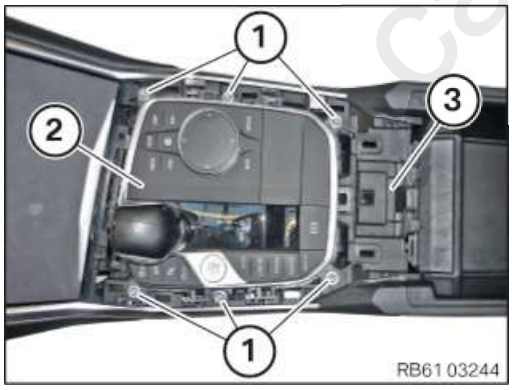
- Disconnect the connector (1) and remove the wireless charging station (2) from the centre console (3).

7 – Remove the operating facility in the centre console

▶ **Disconnecting all battery earth leads**



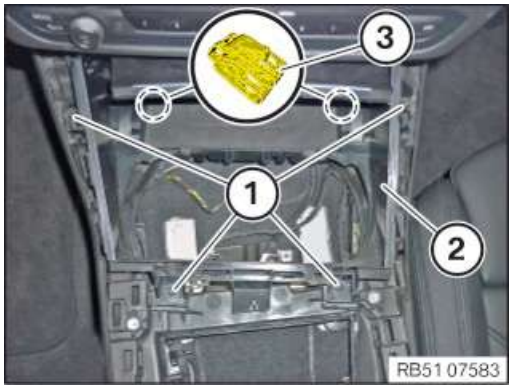
- See additional information.



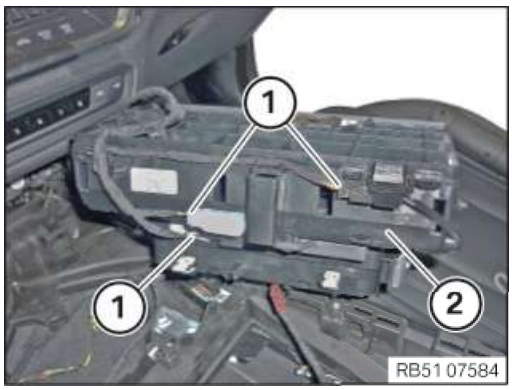
- Loosen screws (1).
- Remove the operating facility in the centre console (2) from the centre console (3).

8 – Removing the storage compartment of the front centre console

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- Loosen screws (1).
- Remove storage compartment trim (2) backwards out of clamps (3).



- Unlock and disconnect all the plug connections (1) and remove the storage compartment (2).

9 – Removing the rear centre console trim

RISK OF DAMAGE

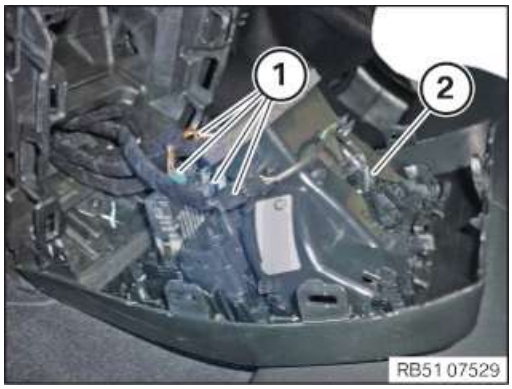
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Release centre console trim (1) backwards from the latch mechanisms at the side and pull it a little way towards the rear.



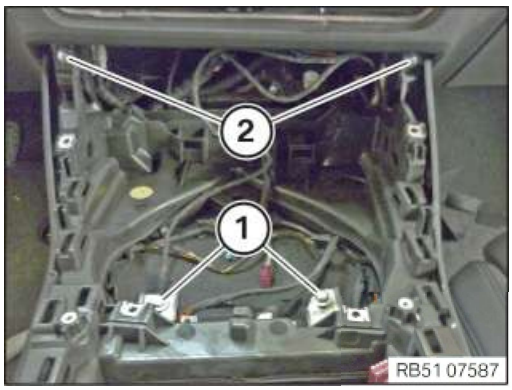
- Unlock and disconnect plug connections (1).
- Remove the centre console trim (2).

10 – Removing the centre console

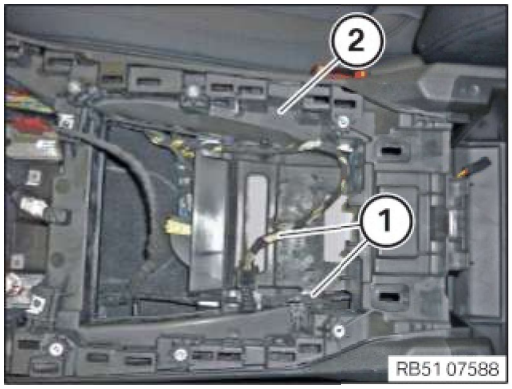
rdiagn.com



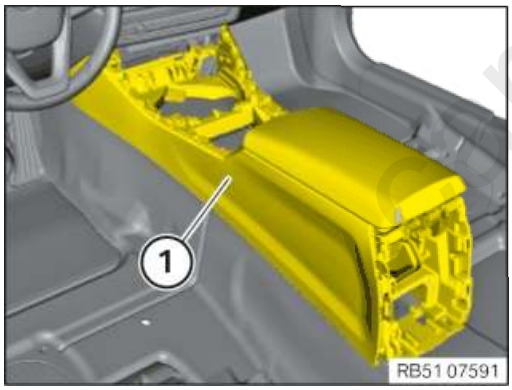
- Loosen screws (1).



- Loosen screws (1) and (2).



- Release the wiring harness (1) from the centre console (2).

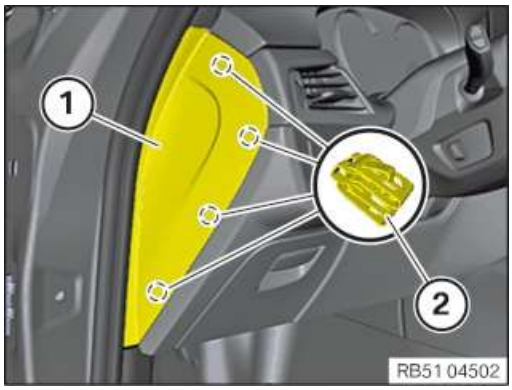


NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

- Carefully raise rear centre console (1).
- Feed out wiring harness from the centre console (1) and unlock and disconnect existing plug connections, if required.
- Feed out and remove the centre console (1) on the instrument panel .

11 – Remove the side panel on the left instrument panel

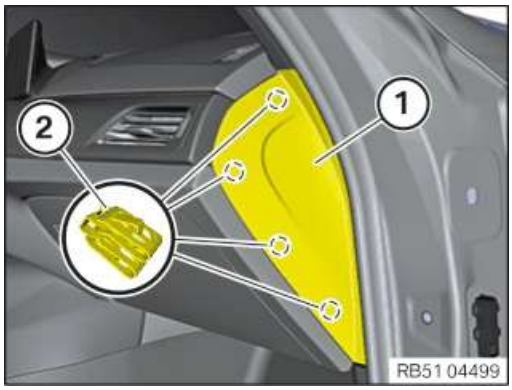


- Unclip and remove the side panel (1) towards the outside from the clamps (2).

12 – Remove the side panel on the right instrument panel

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12 – Remove the side panel on the right instrument panel



- Unclip and remove the side panel (1) towards the outside from the clamps (2).
- If necessary, unlock associated plug connection and disconnect.

13 – Remove both A-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the A-pillar trim panel**

WARNING

Airbag unit.

Danger! Life-threatening injuries!

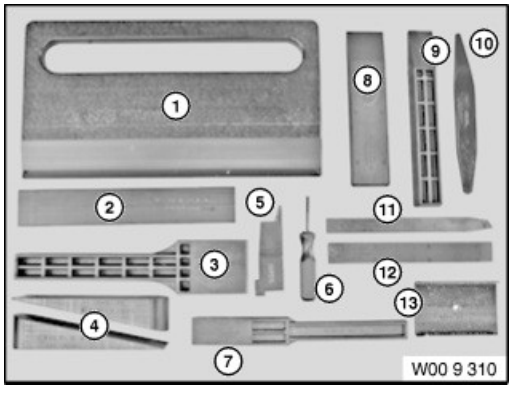
- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

WARNING

Pyrotechnic components.

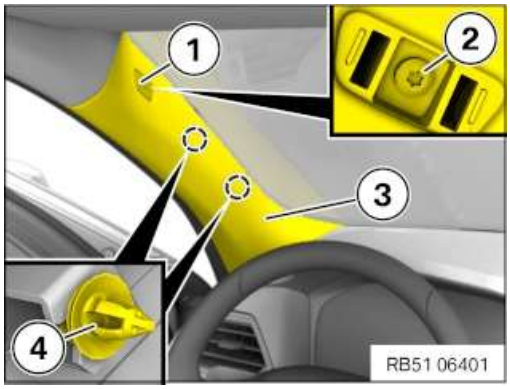
Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



- Have the set of special tools 0 493 752 (00 9 329) ready.

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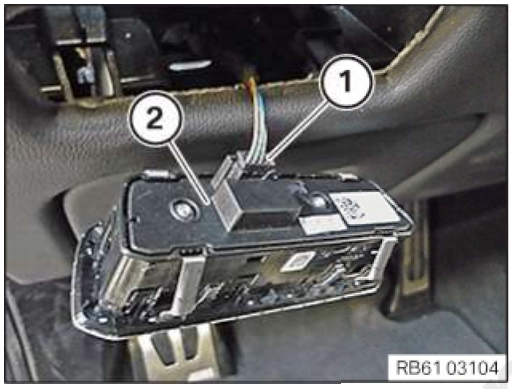


- Unclip the cover (1) with suitable tools.
- Loosen screw (2).
- Unclip A-pillar trim panel (3) with clips (4) and guide it out upwards.

14 – Removing the light operating unit

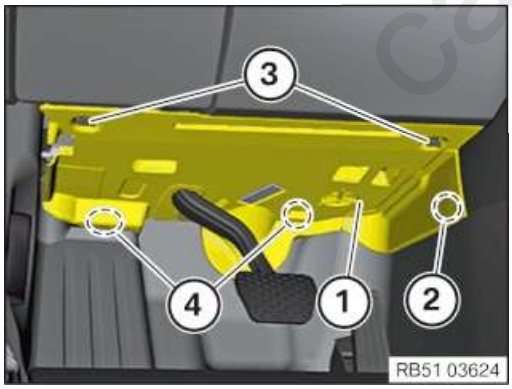


- Unclip light operating unit (1) at the marked positions of the rear.



- Unlock the plug connection (1) on the light operating unit (2) and disconnect it.

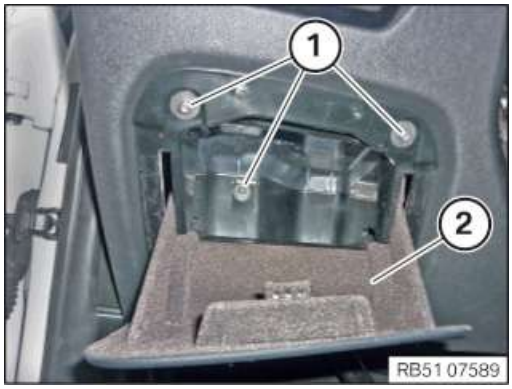
15 – Removing the trim panel for pedal mechanism



- Unclip the trim panel for the pedal mechanism (1) towards the inside in this area (2).
- Turn the locks (3) by 90°.
- Detach the trim panel for the pedal mechanism (1) inwards out of the guides (4).
- Unlock associated plug connection and disconnect.

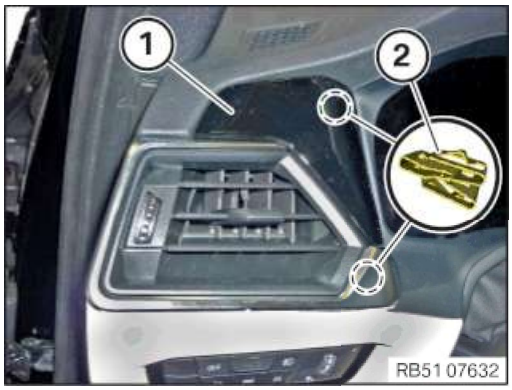
16 – Removing the left fold-down compartment

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- Loosen screws (1).
- Remove the fold-down compartment (2) toward the bottom.

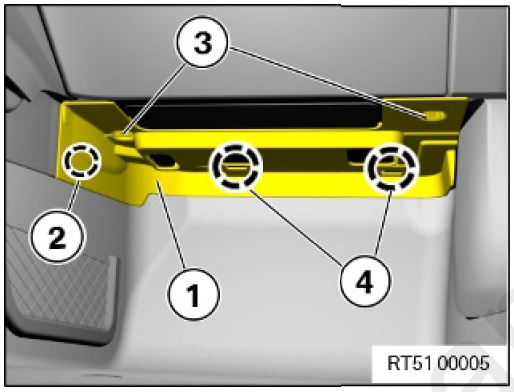
17 – Remove the finisher on the instrument panel on the left



- Unclip decorative strip (1) to the rear out of the clamps (2).
- Unlock associated plug connection and disconnect.

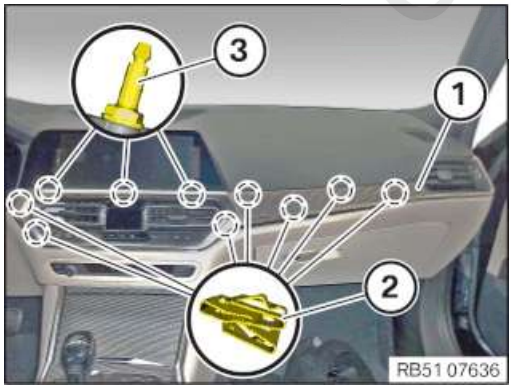
  Remove the decorative strip (1).

18 – Remove the right footwell trim



- Turn the locks (3) by 90°.
- Feed the footwell trim (1) out of the guide (2).
- Detach the footwell trim (1) inward out of the guides (4).
- Unlock associated plug connection and disconnect.

19 – Remove the finisher on the right instrument panel



- Unclip the decorative strip (1) towards rear at the clamps (2) and the pins (3).
- Unlock associated plug connection and disconnect.

  Remove the decorative strip (1).

20 – Remove Central Information Display (CID)

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RISK OF DAMAGE

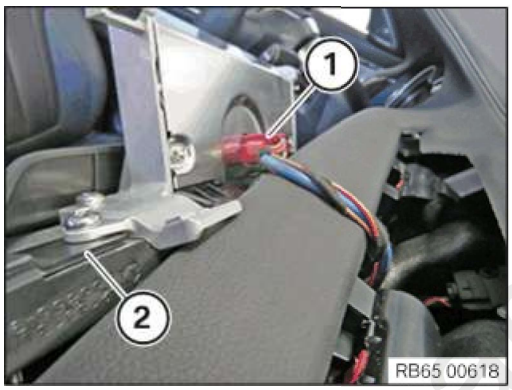
Electrostatic discharge.

Damage to or destruction of electrical components.

- Leave electrical components in original packaging until just before they are installed. Use the original packaging only for any return shipments. Always package removed components straight away.
- Read and comply with user information on using the associated special tool 12 7 060.
- Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.
- Wear electrically conductive clothing and antistatic shoes (with ESD symbol).
- For additional information see: 61 35 Information on electrostatic discharge (ESD) protection.



- Loosen screws (1).
- Pull out central information display (CID) (2) slightly off the instrument panel.



- Unlock plug connection (1) and disconnect.
- Remove the central information display (CID) (2).

21 – Removing the airbag unit

WARNING

Airbag unit.

Danger! Life-threatening injuries!

- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

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RISK OF DAMAGE

Damage to the steering wheel.

Incorrect handling of the tool may damage the steering wheel.

- Ensure the tool is positioned correctly (angle and inclination).
- When unlocking, do not use "levering" action. Instead, press in the Torx screwdriver toward the centre of steering wheel only.

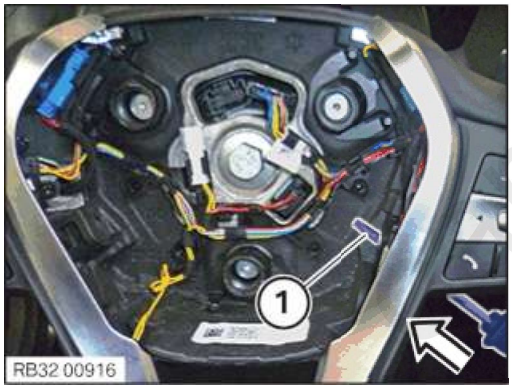
TECHNICAL INFORMATION

Different variants may be installed depending on the vehicle equipment.

▸ **Version A: Removing the airbag unit (sports steering wheel)**



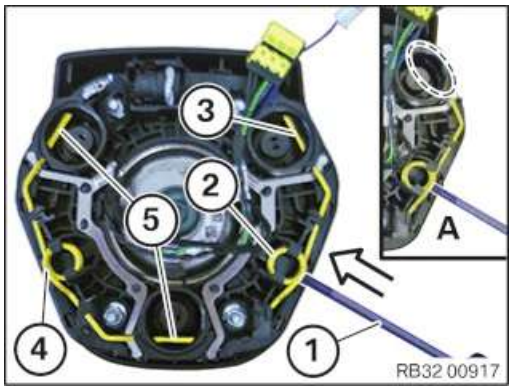
- Insert Torx screwdriver T25 (1) diagonally upwards in the hidden opening (2) on the rear side of the steering wheel until a spring resistance is felt.



NOTICE

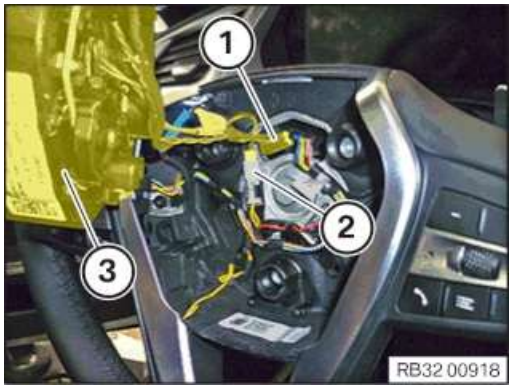
To provide a better overview: Diagram with airbag unit removed.

- To unlock the airbag unit, press Torx screwdriver T25 (1) diagonally upwards in the direction of the arrow to the centre of the steering wheel.



- Press the airbag unit over a large area of the steering wheel.
- Use Torx screwdriver T25 (1) to press wire spring clip (2) in the direction of the arrow towards the centre of the steering wheel and release lock (3).

  (A): Wire spring clip (2) is unlocked.
- Then use Torx screwdriver T25 (1) to press wire spring clip (4) in the direction of the arrow towards the centre of the steering wheel and release locks (5).
- Carefully raise the airbag unit.

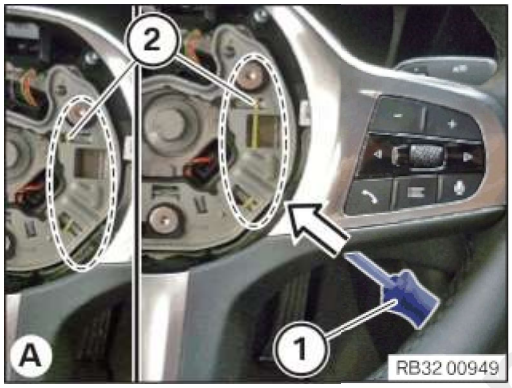


- Unlock and disconnect the plug connections (1) and (2).
- Remove airbag unit (3).

▸ **Version B: Removing airbag unit (M Sport steering wheel)**



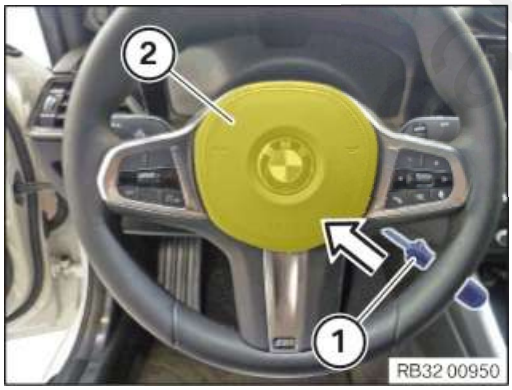
- Locate the pre-punched bore hole (1) on the rear side of the steering wheel by touch.
- Insert the Torx screwdriver T27 (2) diagonally upwards in the pre-punched bore hole (1) on the rear side of the steering wheel until a springing kind of resistance can be felt.



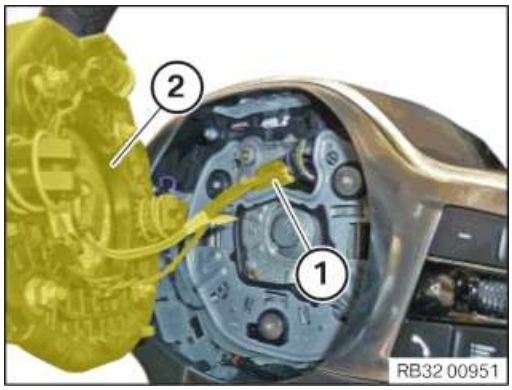
NOTICE

To provide a better overview: Diagram with airbag unit removed.

- Press in Torx screwdriver T27(1) straight in direction of arrow towards the centre of the steering wheel in order to unlock the wire spring clip (2) or to unlock the airbag unit (A).



- Press in Torx screwdriver T27 (1) straight in direction of arrow towards the centre of the steering wheel and lift airbag unit (2) on the unlocked side.
- Repeat procedure on left side and carefully remove airbag unit (2) in direction of arrow off the steering wheel.



- Unlock and disconnect plug connection (1) and remove the airbag unit (2).



- Move the steering wheel and wheels to the straight-ahead position.
- Unlock plug connection (1) and disconnect.
- If installed: Unlock plug connection (2) and disconnect.
- Release the screw (3) and pull off and remove the steering wheel.

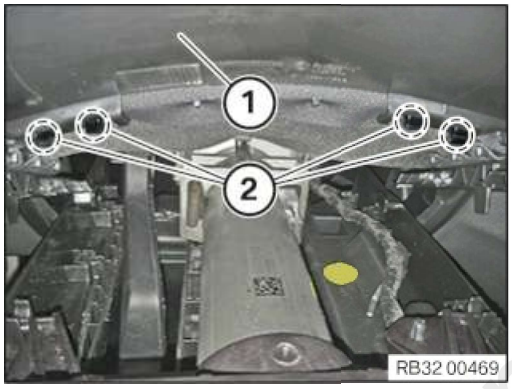
23 – Removing steering column shroud upper section



NOTICE

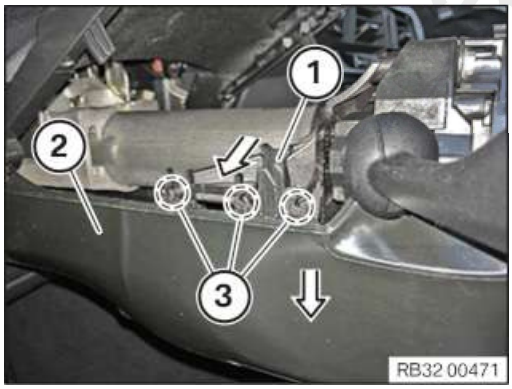
Perform the operations on the left and right side.

- Unlock the steering column shroud upper section (1) with the special tool 2 298 504 and fold up.



- Unclip the steering column shroud upper section (1) from the brackets (2).
- Remove the steering column shroud upper section (1).

24 – Removing steering column shroud lower section



NOTICE

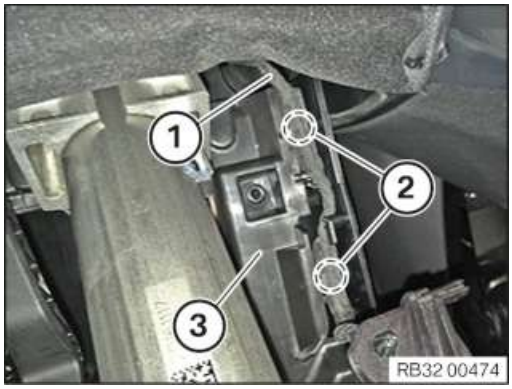
Perform the operations on the left and right side.

- Push the retaining lug (1) to the outside in the direction of the arrow and unclip the steering column shroud lower section (2) from the holders (3) in the direction of the arrow to the bottom at the same time.



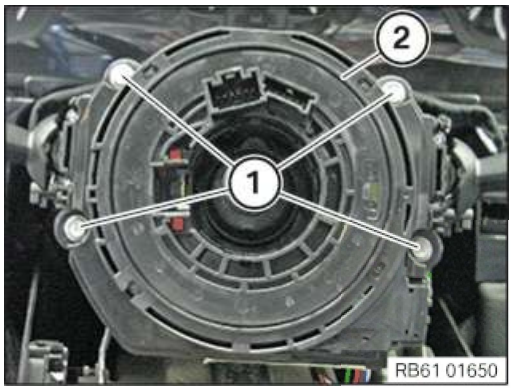
- Fold the steering column shroud lower section down.
- Unlock and disconnect connector (1).

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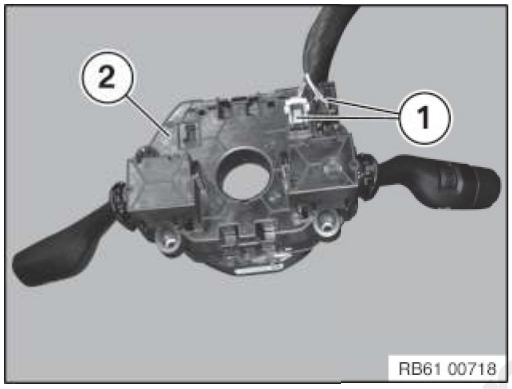


- Detach the cable (1) from the brackets (2).
- Remove the steering column shroud lower section (3).

25 – Removing the steering column switch cluster (SZL)



- Loosen screws (1).
- Remove the steering column switch cluster (SZL) (2).



- Unlock and disconnect the connector (1) on the steering column switch cluster (SZL) (2).

26 – Removing the instrument cluster (KOMBI)

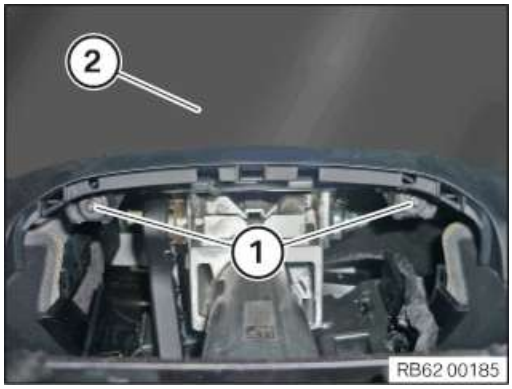


- Loosen screw (1).

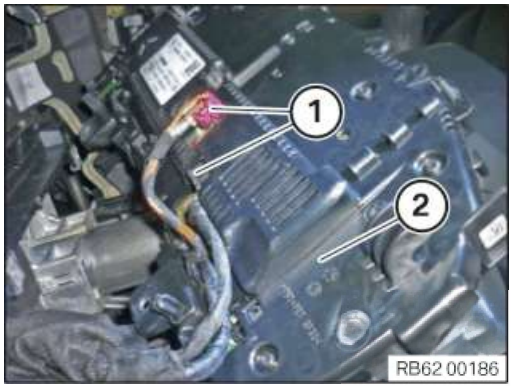


- Loosen screw (1).

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- Loosen screws (1).
- Feed out instrument cluster (KOMBI) (2).



RISK OF DAMAGE

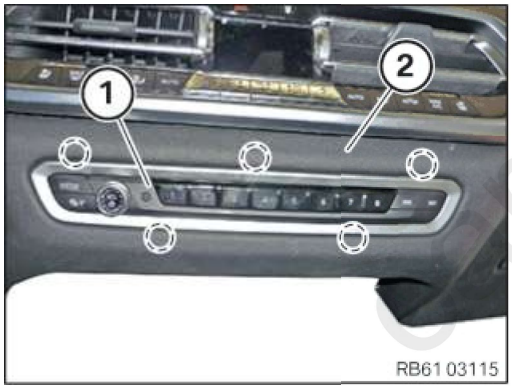
Damage to the instrument cluster (KOMBI)

While releasing and connecting the cable, it could lead to a ground offset. Thereby, currents could arise, that make the instrument cluster (KOMBI) useless.

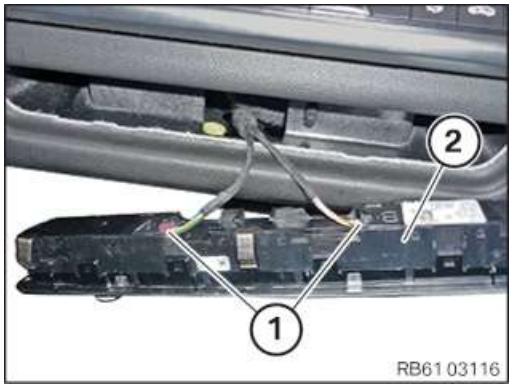
- While releasing: Release APIX data cable (blue) first.
- While connecting: Connect APIX data cable (blue) at the last.

- **If installed:** Release the blue plug connection first.
- Unlock and disconnect plug connections (1) from instrument cluster (KOMBI) (2).
- Remove the instrument cluster (KOMBI) (2).

27 – Remove the audio operating unit



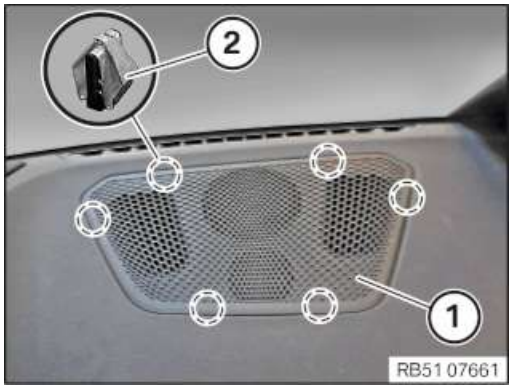
- Unclip the audio operating unit (1) from the instrument panel (2) at the points marked using special tool 0 496 571 (00 9 327).



- Disconnect plug connections (1) and remove the audio operating unit (2).

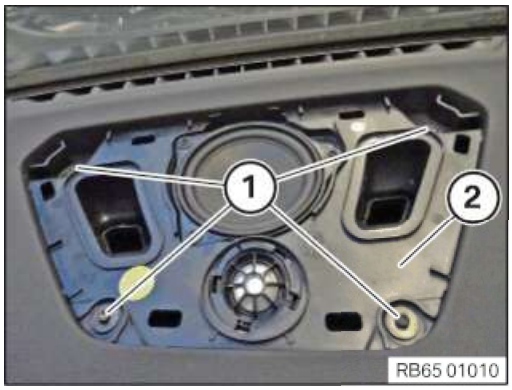
28 – Remove the speaker trim at the instrument panel

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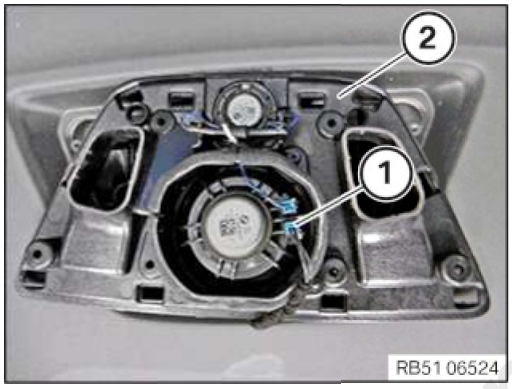


- Lever out the speaker trim (1) with the special tool 0 496 569 (00 9 325) from the clamps (2) toward the top and remove.

29 – Remove the speaker holder at the instrument panel

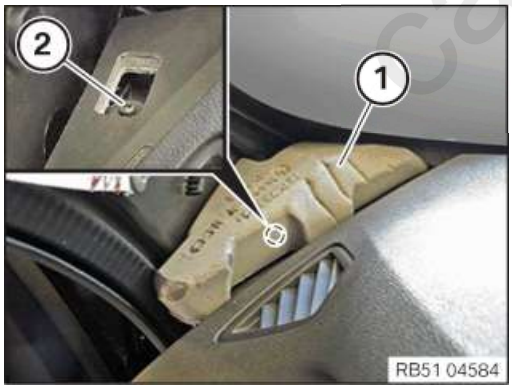


- Loosen screws (1).
- Pull out speaker holder (2) slightly with the loudspeakers and tilt it to the side.



- Unlock plug connection (1) and disconnect.
- Remove the speaker holder (2).

30 – Remove the instrument panel trim panel



NOTICE

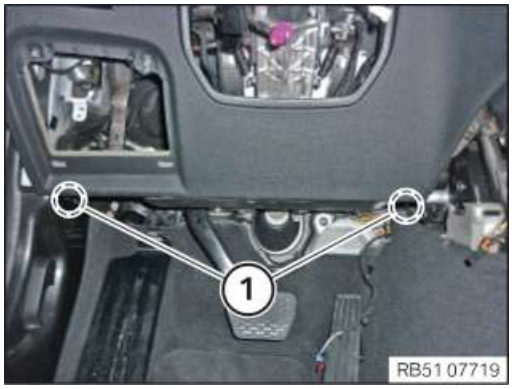
Perform the operations on the left and right side.

- Remove the sound insulation (1).
- Loosen screw (2).

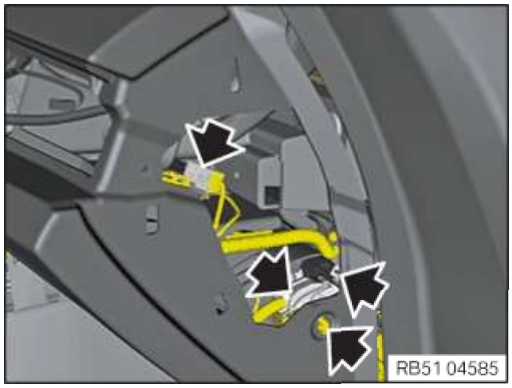


- Loosen screws (1).

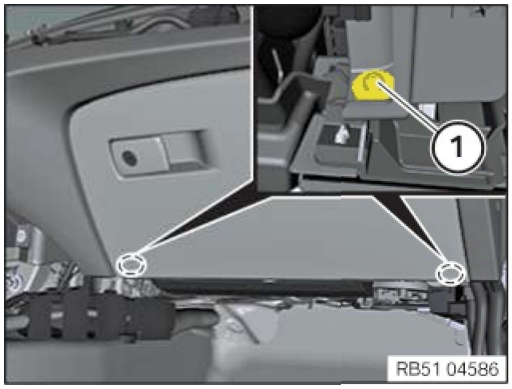
cardiagn.com



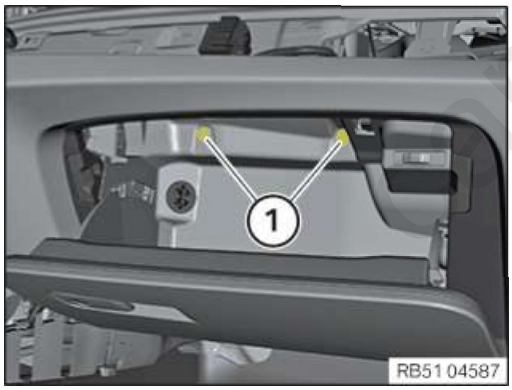
- Loosen screws (1).



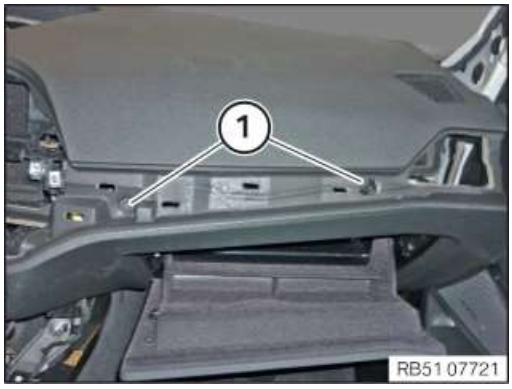
- Release all plug connections and cable clips (arrows) behind the glove box.



- Release the screws (1) on the lower side of the glove box.

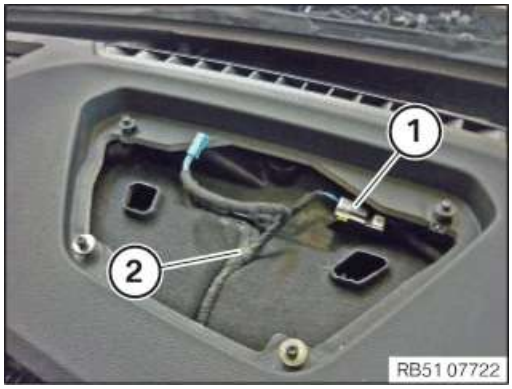


- Open glovebox.
- Loosen screws (1).



- Loosen screws (1).

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- Unlock plug connection (1) and disconnect.
- Release the wiring harness (2) on the holders.



- Unlock the plug connection (1) on the light operating unit and disconnect it.



- Loosen screws (1).

TECHNICAL INFORMATION

Conduct the following operation with the assistance of a second person.

- Pull the instrument panel trim back slightly.

  If necessary, unlock and disconnect additional plug connections.
- Remove the instrument panel trim from the vehicle.

MAIN WORK

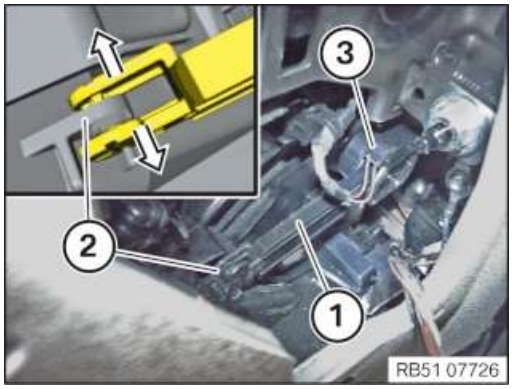
31 – Remounting for replacement of the instrument panel trim

▸ **Remove glove box damper**



- Release plug connection (1) from the instrument panel and pull to the outside.

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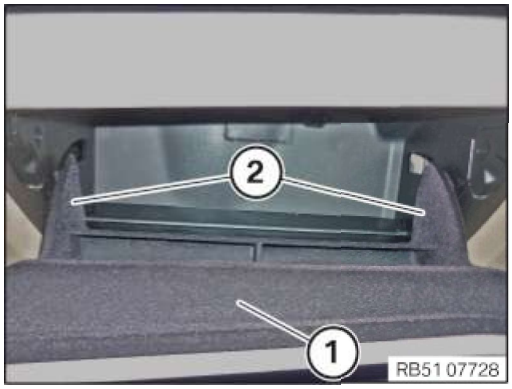


- Release damper (1) from retaining bracket (2) (spread slightly in the direction of the arrow).
- Open glove box cover.
- Twist damper (1) slightly in the clockwise direction and remove it outwards.
- Feed damper (1) out of the instrument panel.
- Disconnect plug connection (3).

▸ Remove glove box lid

Prerequisite

The glove box lid is open.

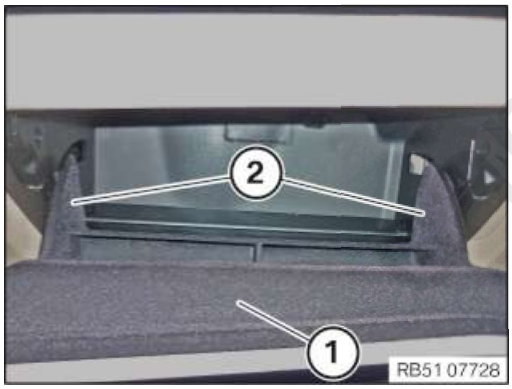


- Raise the glove box lid (1) slightly.
- Carefully bend the side section (2)of glove box lid (1) inside so that the glove box lid (1) can be fed out of the instrument panel .
- Swivel the glove box lid (1) further down until it feeds out of the hinges.

▸ Install glovebox cover

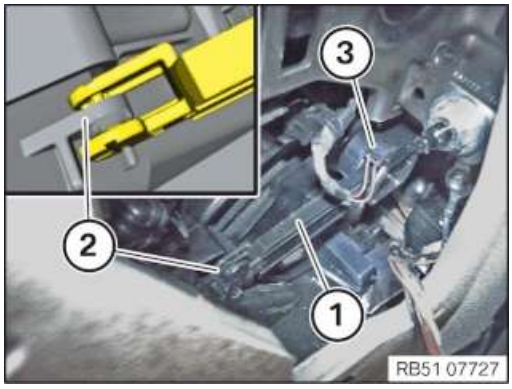
Prerequisite

The glove box lid is open.



- Insert glove box lid (1) on the hinges and swivel to the top.
- Bend the side section (2) of the glove box lid (1) carefully inward and feed in at the instrument panel.

▸ Installing glove box damper



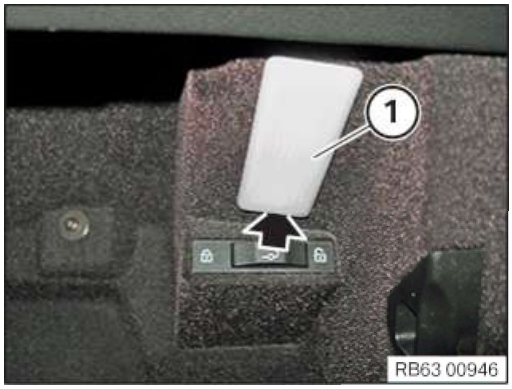
- Connect connector (3).
- Insert damper (1) in instrument panel.
- Open glove box cover.
- Install damper (1) and twist it slightly in the anticlockwise direction.
- Engage the damper (1) in the retaining bracket (2).

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- Install plug connection (1) and secure at the instrument panel.

▶ **Remove glove box light**



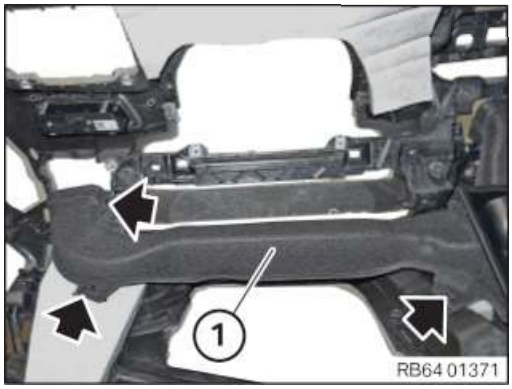
- Lever out the glove box light (1) at the marked position (arrow).
- Disconnect associated plug connection.

▶ **Installing the glove box light**



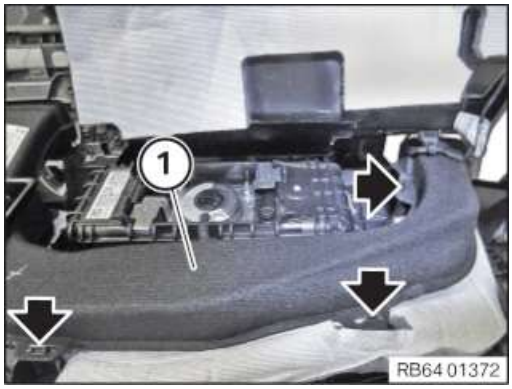
- Connect associated connector.
- Install the glove box light (1).

▶ **Removing the air duct in the instrument panel**

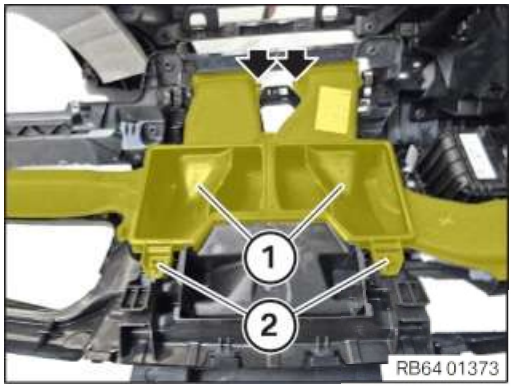


- Disengage left air duct (1) from latch mechanisms (arrows).

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- Disengage right air duct (1) from latch mechanisms (arrows).



- Disengage air ducts (1) from latch mechanisms (arrows).
- Disengage the air ducts (1) from the latch mechanisms (2) towards the top.
- Feed the air ducts (1) out of the instrument panel and remove it.

▸ **Remove front passenger airbag**

WARNING

Pyrotechnic components.

Danger! Life-threatening injuries!

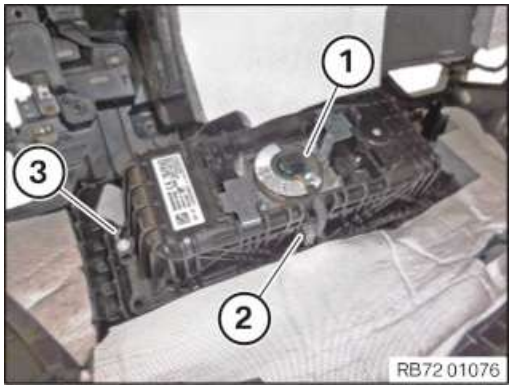
- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.

WARNING

Airbag unit.

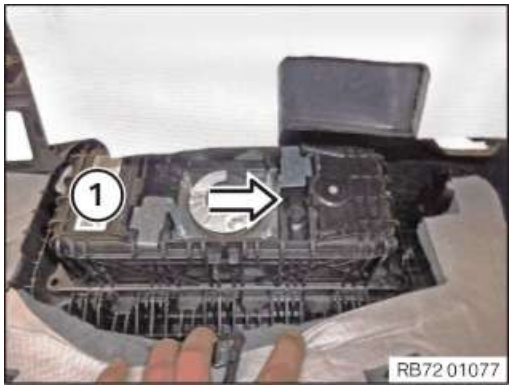
Danger! Life-threatening injuries!

- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators



- Unlock plug connection (1) and disconnect.
- Unclip the cable clip (2).
- Loosen screw (3).

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- Unlock front passenger airbag (1) in direction of arrow and remove upwards.

▸ **Installing front passenger airbag**

WARNING

Airbag unit.

Danger! Life-threatening injuries!

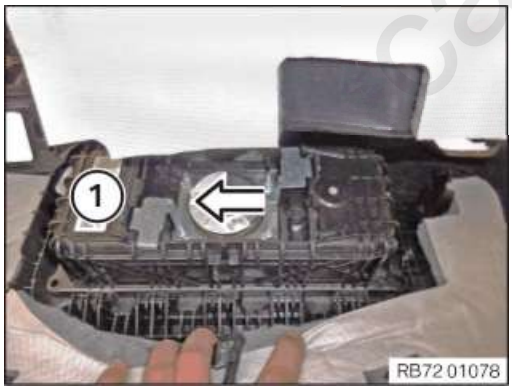
- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

WARNING

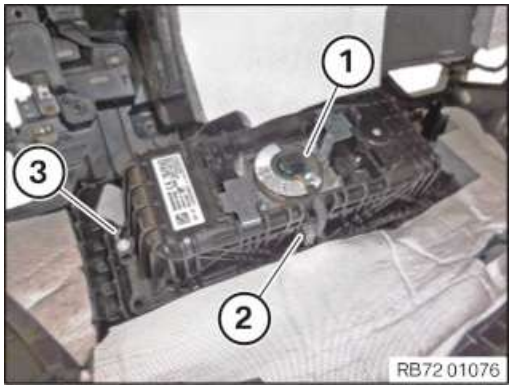
Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



- Correctly position front passenger airbag (1) correctly and lock in the direction of the arrow.



- Tighten down screw (3).

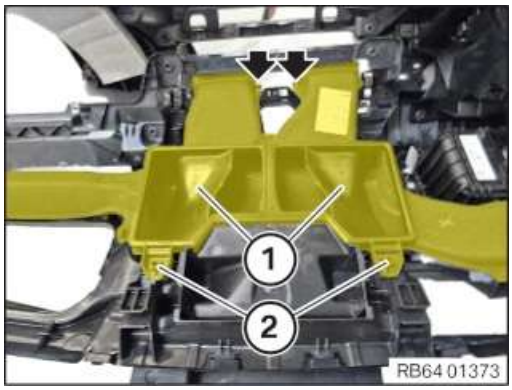
Front passenger airbag on instrument panel trim

Screw		Tightening torque	2,6 Nm

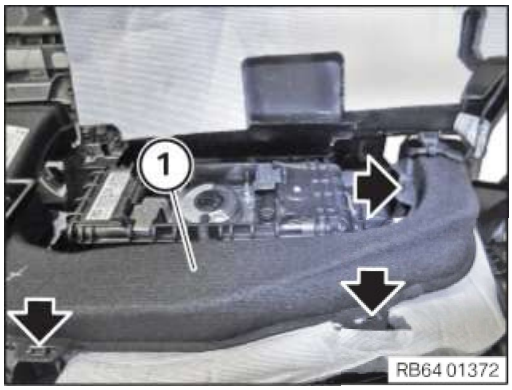
- Clip in the cable clip (2).
- Connect plug connection (1) and lock.

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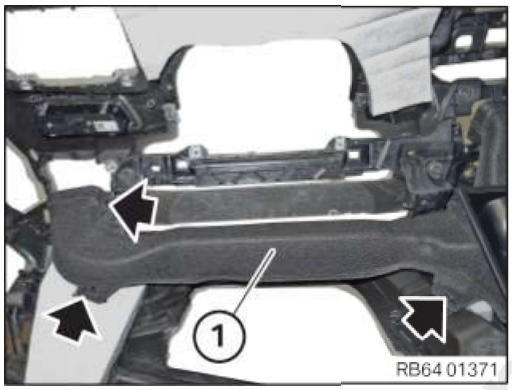
▶ **Installing air ducts in the instrument panel**



- Guide in and position air ducts (1) in the instrument panel.
- Engage the air ducts (1) into the latch mechanisms (2) from the top.
- Engage the air ducts (1) into the latch mechanisms (arrows).



- Engage the right air duct (2) into the latch mechanisms (arrows).



- Engage the left air duct (1) into the latch mechanisms (arrows).



- Remove wiring harness (1) and remount on the new instrument panel trim.

POSTPROCESSES

32 – Install the trim panel for the instrument panel



TECHNICAL INFORMATION

Conduct the following operation with the assistance of a second person.

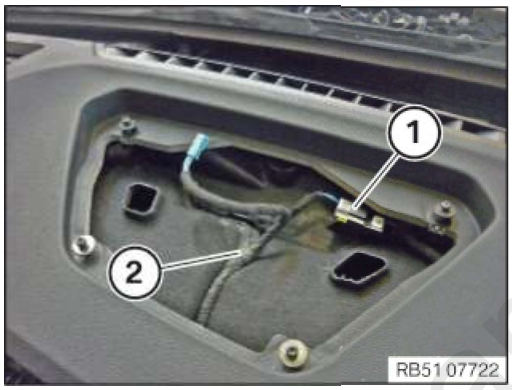
- Insert the instrument panel trim in the vehicle and position it at the support.
- Insert the associated wiring harnesses and connect the connectors.
- Tighten the screws (1).

Dashboard to support

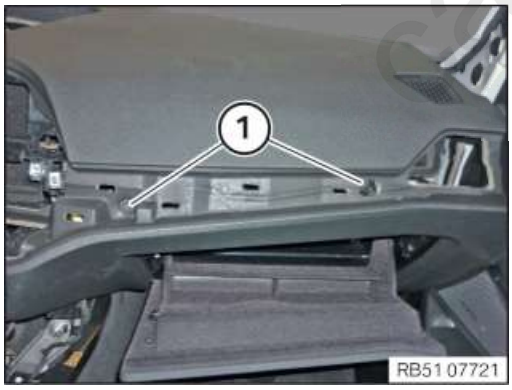
Screw		Tightening torque	2,4 Nm



- Connect connector (1) to the light operating unit and lock.



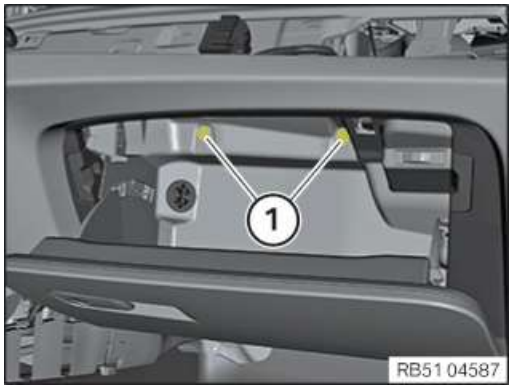
- Secure the wiring harness (2) on the holders.
- Connect plug connection (1) and lock.



- Tighten the screws (1).

Dashboard to support

Screw		Tightening torque	2,4 Nm

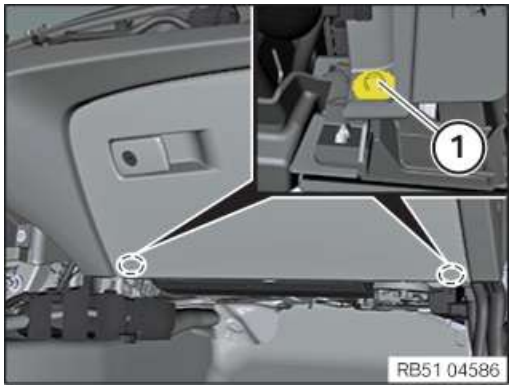


- Open glovebox.
- Tighten the screws (1).

Dashboard to support

Screw		Tightening torque	2,4 Nm

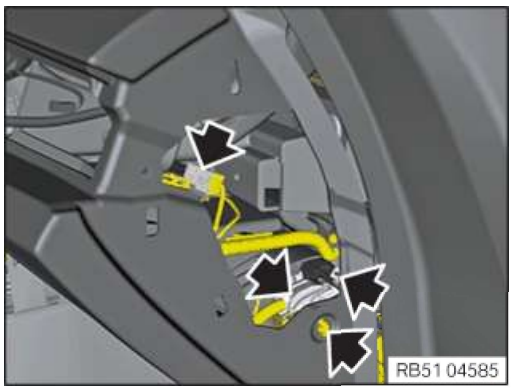
carldiag.com



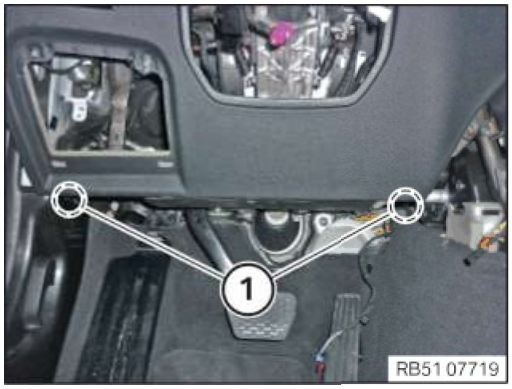
- Tighten the screws (1) on the lower side of the glove box button.

Dashboard to support

Screw		Tightening torque	2,4 Nm



- Connect all plug connections and cable clips (arrows) behind the glove box.



- Tighten the screws (1).

Dashboard to support

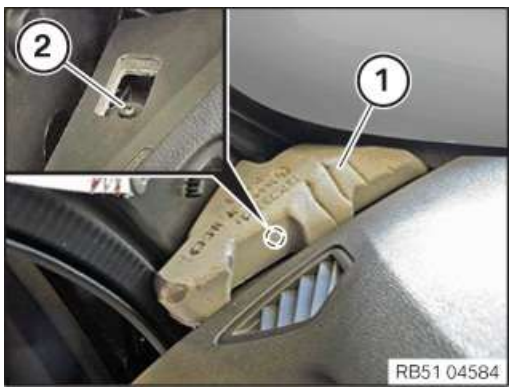
Screw		Tightening torque	2,4 Nm



- Tighten the screws (1).

Dashboard to support

Screw		Tightening torque	2,4 Nm



NOTICE

Perform the operations on the left and right side.

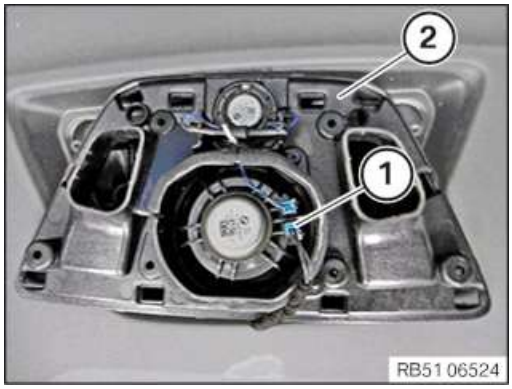
- Tighten down screw (2).

Dashboard to support

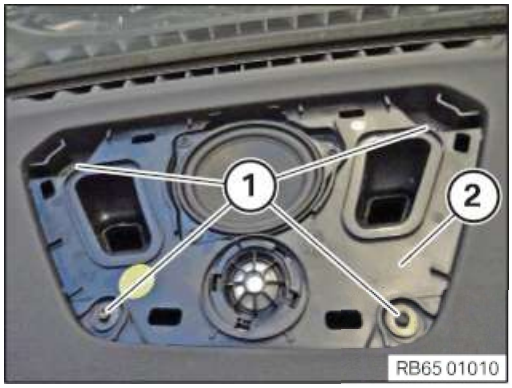
Screw		Tightening torque	2,4 Nm

- Use sound insulation (1).

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- Position the speaker holder (2).
- Connect connector (1).

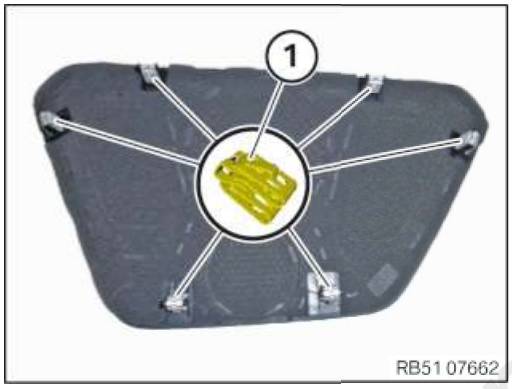


- Install the speaker holder (2).
- Tighten the screws (1).

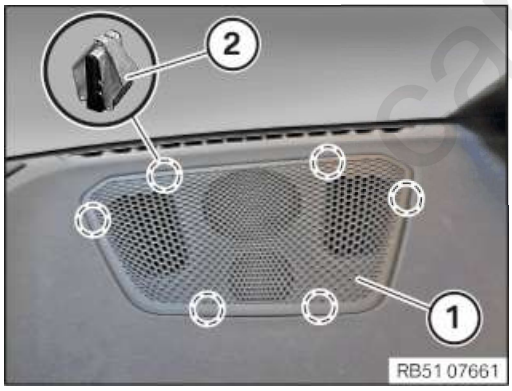
Speaker to support / support to instrument panel / support to body

Screw		Tightening torque	1,8 Nm

34 – Install the speaker trim at the instrument panel

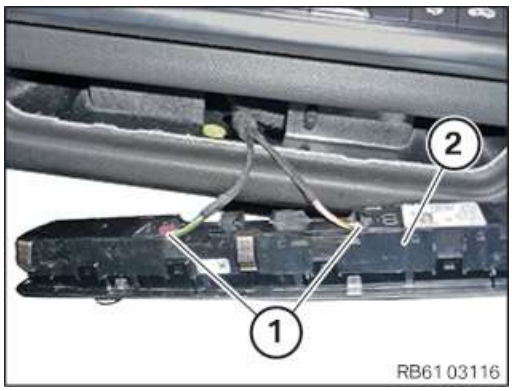


- Check clamps (1) for damage.
- Replace broken or missing clamps (1).



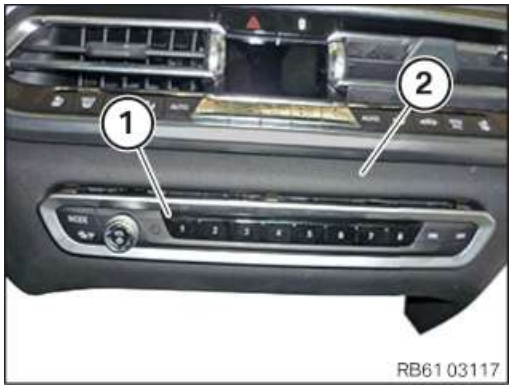
- Position the speaker trim (1) correctly and engage it at the clamps (2).

35 – Install the audio operating unit



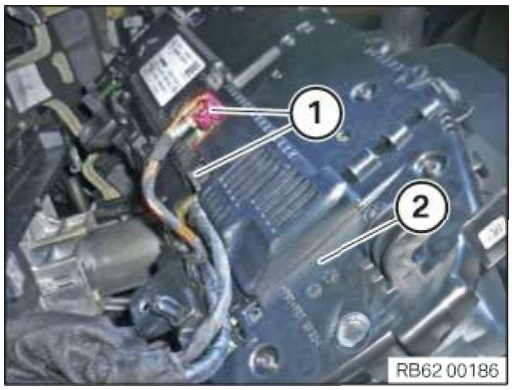
- Connect the connector (1) to the audio operating unit (2).

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- Correctly position the audio operating unit (1) and install in the instrument panel(2).

36 – Installing the instrument cluster (KOMBI)



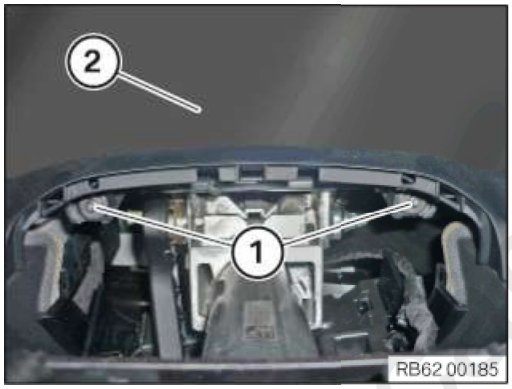
RISK OF DAMAGE

Damage to the instrument cluster (KOMBI)

While releasing and connecting the cable, it could lead to a ground offset. Thereby, currents could arise, that make the instrument cluster (KOMBI) useless.

- While releasing: Release APIX data cable (blue) first.
- While connecting: Connect APIX data cable (blue) at the last.

- **If installed:** Connect the blue connector at the last and lock it.
- Connect and lock connector (1) to the instrument cluster (KOMBI) (2).



- Feed in and position the instrument cluster (KOMBI) (2).
- Tighten the screws (1).

Instrument cluster (KOMBI) to support

Oval-head screw		Tightening torque	1,8 Nm



- Tighten down screw (1).

Instrument cluster (KOMBI) to support

Oval-head screw		Tightening torque	1,8 Nm

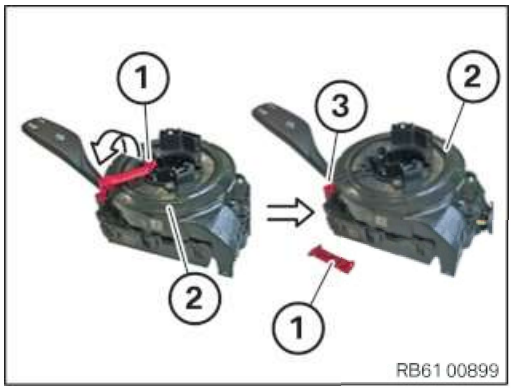


- Tighten down screw (1).

Instrument cluster (KOMBI) to support

Oval-head screw		Tightening torque	1,8 Nm

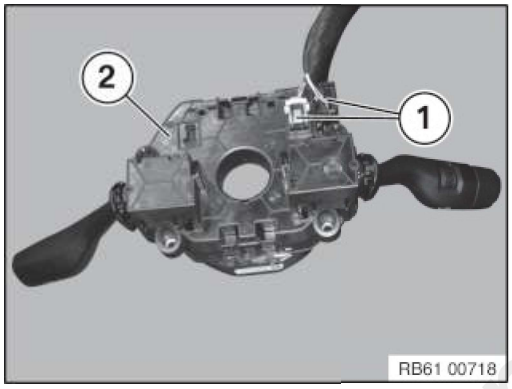
37 – Installing the steering column switch cluster (SZL)



- **Replacement:**

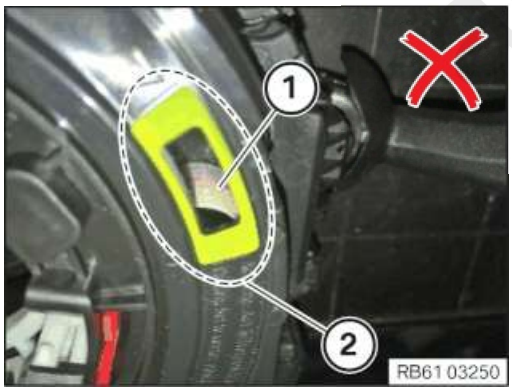
  Break off the transportation retainer (1) on the steering column switch cluster (SZL) (2) in direction of arrow.

  The broken off piece (3) of the transportation retainer (1) remains in the steering column switch cluster (SZL) (2).



- Connect the connector (1) with the steering column switch cluster (SZL) (2).

Check



- **Version A:**

  Check whether the correct marking (1) is seen in inspection glass (2).

Result

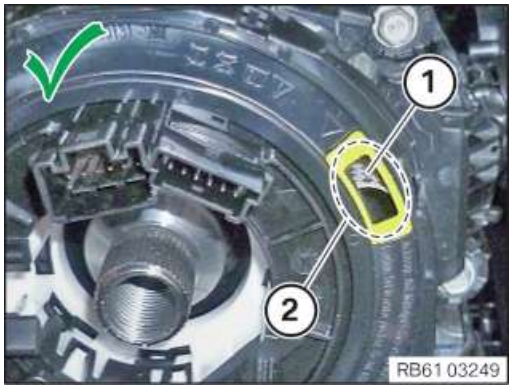
» Ensure that no incorrect marking (1) is seen in inspection glass (2).

Measure

- Turn the coil spring cassette until the right mark (1) becomes visible in the inspection glass (2).

Check

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- **Version A:**

  Check whether the correct marking (1) is seen in inspection glass (2).

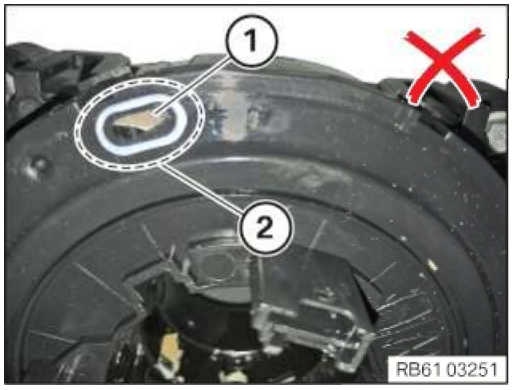
Result

» Correct marking (1) is seen in inspection glass (2).

Measure

- Continue with the next step.

Check



- **Version B:**

  Check whether the correct marking (1) is seen in inspection glass (2).

Result

» Ensure that no incorrect marking (1) is seen in inspection glass (2).

Measure

- Turn the coil spring cassette until the right mark (1) becomes visible in the inspection glass (2).

Check



- **Version B:**

  Check whether the correct marking (1) is seen in inspection glass (2).

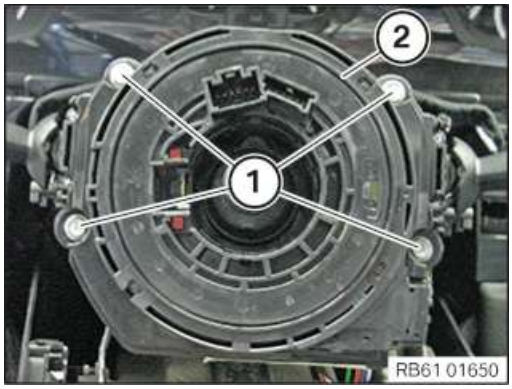
Result

» Correct marking (1) is seen in inspection glass (2).

Measure

- Continue with the next step.

erdiagn.com

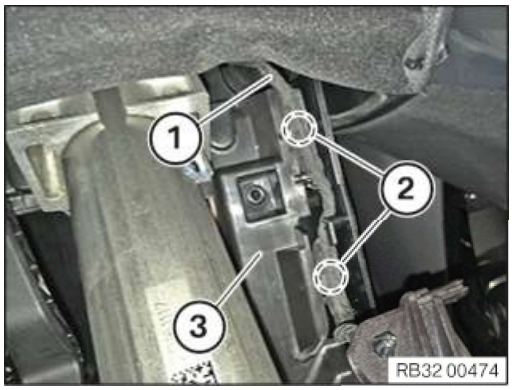


- Position the steering column switch cluster (SZL) (2).
- Tighten the screws (1).

Steering column switch cluster (SZL) on the steering column

Screw TS5x20		Tightening torque	3 Nm

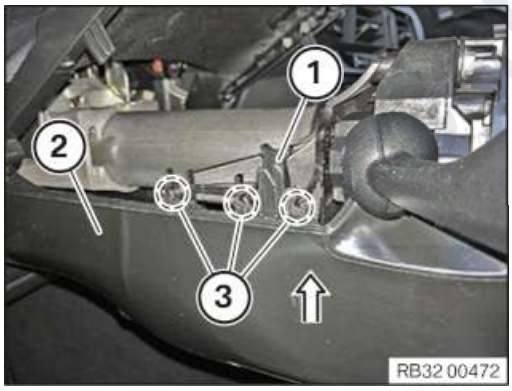
38 – Install steering column shroud lower section



- Position the steering column shroud lower section (3).
- Secure the line (1) on the brackets (2).



- Connect the connector (1).

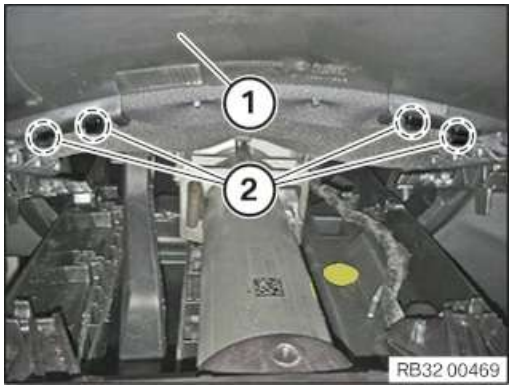


NOTICE

Perform the operations on the left and right side.

- Align the steering column shroud lower section (2) to the steering column using the retaining lug (1).
- Push the steering column shroud lower section (2) up in the direction of the arrow until the brackets (3) engage.

39 – Fit steering column shroud upper section



- Clip in the steering column shroud upper section (1) at the brackets (2).

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NOTICE

Perform the operations on the left and right side.

- Clip in the steering column shroud upper section (1)into the guide (2).



NOTICE

Perform the operations on the left and right side.

- Press the upper section of the steering column shroud (1) downwards in direction of arrow.

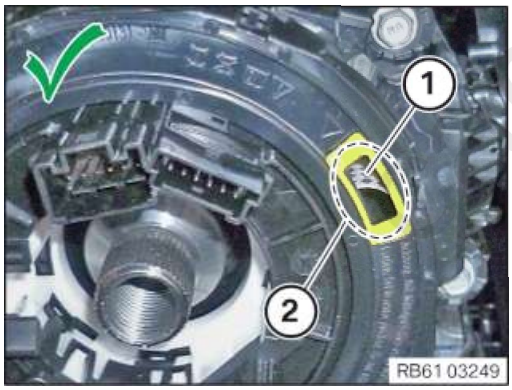
  The upper section of the steering column shroud must engage audibly and perceptibly.

40 – Installing the steering wheel (sports steering wheel)

▸ **Check the neutral position of the clock spring**

TECHNICAL INFORMATION

Different variants may be installed depending on the vehicle equipment.



Check

- **Version A:**

  Check the mark (1) on the coil spring in the inspection glass (2).

Result

» The mark (1) on the coil spring is not visible.

Measure

- Turn the coil spring cassette until the mark (1) on the coil spring becomes visible in the inspection glass (2).

Check



- **Version B:**

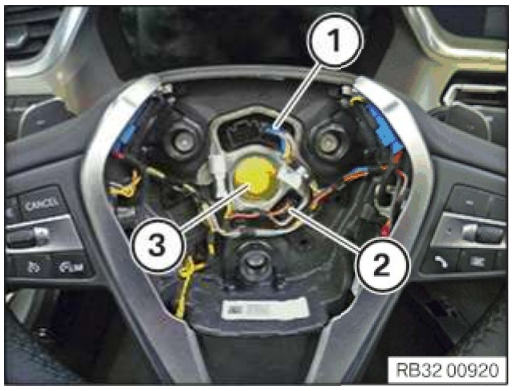
  Check the mark (1) on the coil spring in the inspection glass (2).

Result

» The mark (1) on the coil spring is not visible.

Measure

- Turn the coil spring cassette until the mark (1) on the coil spring becomes visible in the inspection glass (2).



Check

- A micro-encapsulated screw (3) may be fitted.
- Check the screw connection.

Result

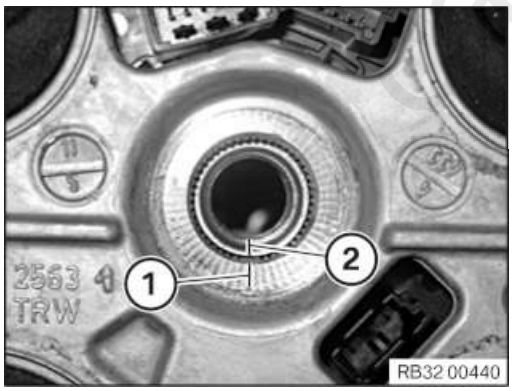
» Screw is (3) micro-encapsulated.

Measure

- Clean thread in the steering column.

  Renew the screw (3).

  Parts: Screw



- Align mark (1) on steering wheel to mark (2) on steering column.
- Connect steering wheel.



- Connect connectors (1) and lock.
- If installed: Connect connectors (2) and lock.
- Tighten screw (3) .

Steering wheel to steering column

M14	Only for a micro-encapsulated screw: Renew screw.	Tightening torque	62,5 Nm

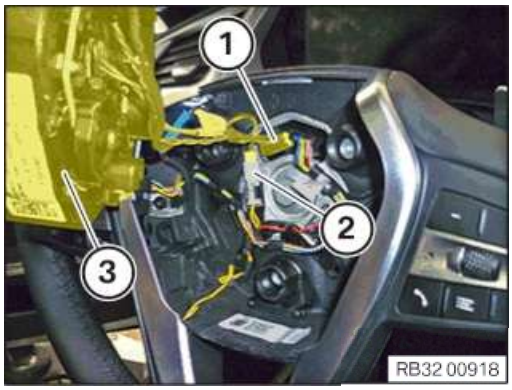
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41 – Installing the airbag unit

TECHNICAL INFORMATION

Different variants may be installed depending on the vehicle equipment.

▸ **Version A: Installing the airbag unit (sports steering wheel)**



- Position airbag unit (3).
- Connect connectors (1) and (2) lock.



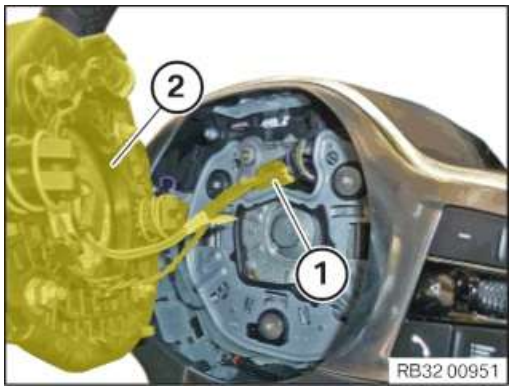
- Press the airbag unit (1) with even pressure in the direction of the arrow into the steering wheel.

  The airbag unit (1) must engage audibly and perceptibly.

▸ **Version B: Installing the airbag unit (M Sport steering wheel)**

TECHNICAL INFORMATION

After replacing the airbag unit (M-sports steering wheel) or after a possible conversion of standard steering wheel and airbag unit to M-sports steering wheel, a software update or a programming/encoding via ISTA must be performed!



- Connect and lock connector (1) of the airbag unit (2).

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- Press the airbag unit (1) with even pressure in the direction of the arrow into the steering wheel.

  The airbag unit (1) must engage audibly and perceptibly.

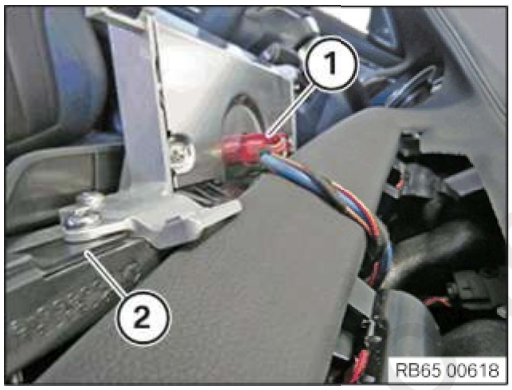
42 – Install the central information display (CID)

RISK OF DAMAGE

Electrostatic discharge.

Damage to or destruction of electrical components.

- Leave electrical components in original packaging until just before they are installed. Use the original packaging only for any return shipments. Always package removed components straight away.
- Read and comply with user information on using the associated special tool 12 7 060.
- Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.
- Wear electrically conductive clothing and antistatic shoes (with ESD symbol).
- For additional information see: 61 35 Information on electrostatic discharge (ESD) protection.



- Position Central Information Display (CID) (2).
- Connect plug connection (1) and lock.



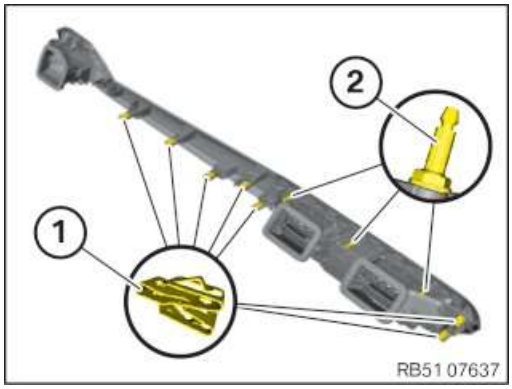
- Insert the central information display (CID) (2) in the instrument panel and position correctly.
- Tighten the screws (1).

Central information display to instrument panel

Screw		Tightening torque	1,8 Nm

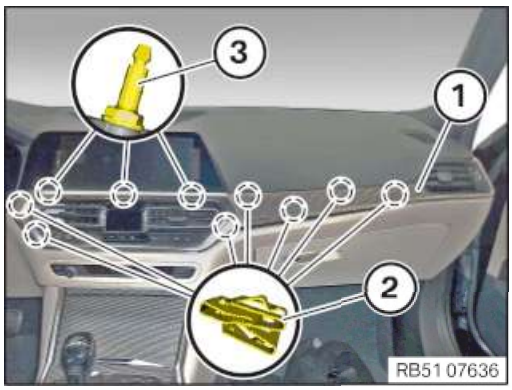
43 – Install the finisher on the right instrument panel

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- Check the clamps (1).

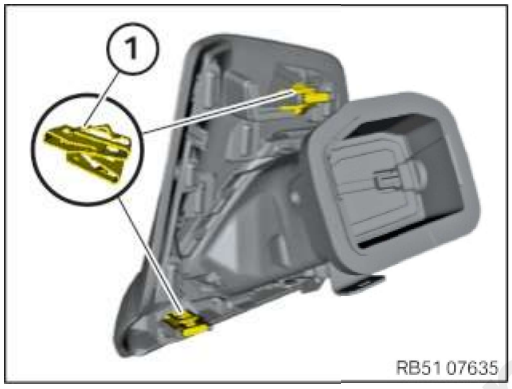
  Replace broken or missing clamps (1).
- Check the pins (2) and the corresponding clamps on the instrument panel trim and renew if necessary.



- Install the decorative strip (1).

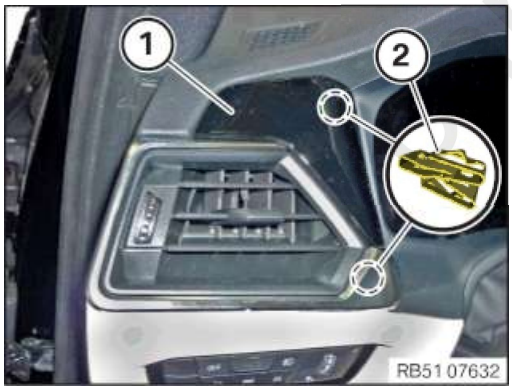
  Connect and lock the associated connectors.
- Correctly position the decorative strip (1) and at the clamps (2) and clip in the pins (3).

44 – Install the finisher on the instrument panel on the left



- Check the clamps (1).

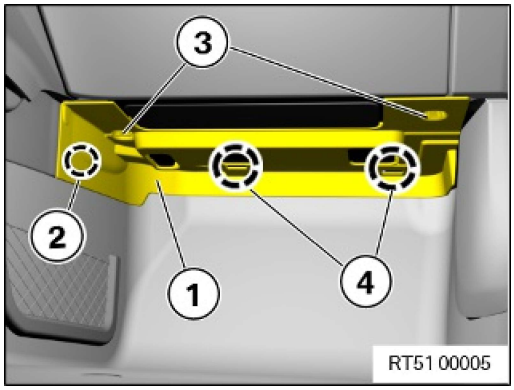
  Replace broken or missing clamps (1).



- Install the decorative strip (1).

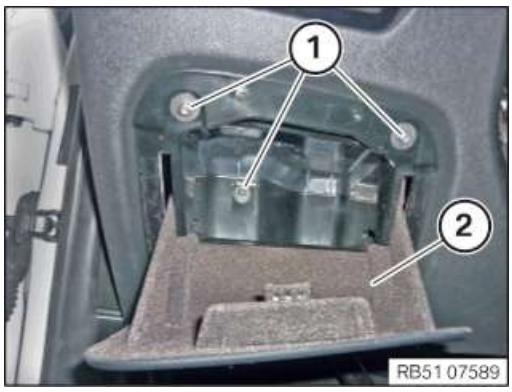
  Connect and lock the associated connectors.
- Clip decorative strip (1) into clamps (2).

45 – Install the right footwell trim panel



- Connect associated connector.
- Attach the footwell trim (1) to the guides (4) and fold up.
- Guide the footwell trim (1) into the guide (2) of the centre console.
- Position locks (3) correctly and turn by 90°.

46 – Installing the left fold-down compartment

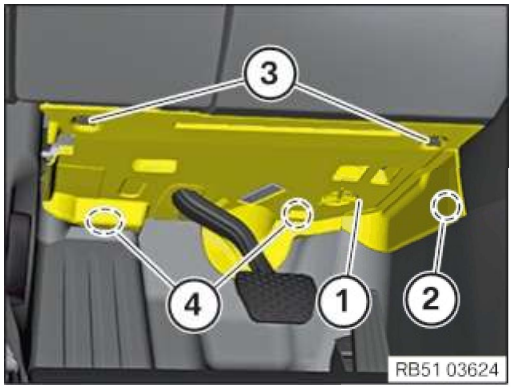


- Install the fold-down compartment (2).
- Tighten the screws (1).

Fold-down compartment to instrument panel

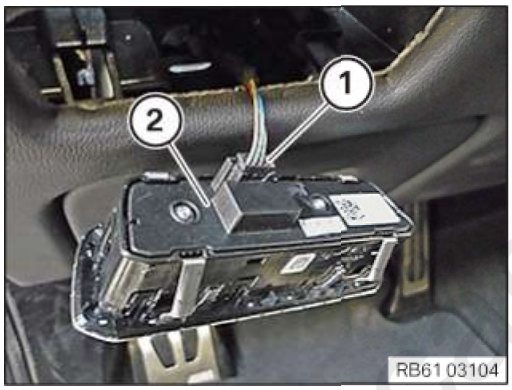
Oval-head screw		Tightening torque	1,8 Nm

47 – Installing the trim panel for the pedal mechanism



- Connect associated connector.
- Attach the trim panel for the pedal mechanism (1) in the guides (4) and fold it up.
- Clip the trim panel for the pedal mechanism (1) into the centre console in this area (2).
- Insert locks (3) correctly and turn 90°.

48 – Installing the light operating unit



- Connect the connector (1) to the light operating unit (2).



- Correctly position the light operating unit (1) and clip in at the marked points.

49 – Install both A-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Installing the A-pillar trim panel**

WARNING

Airbag unit.

Danger! Life-threatening injuries!

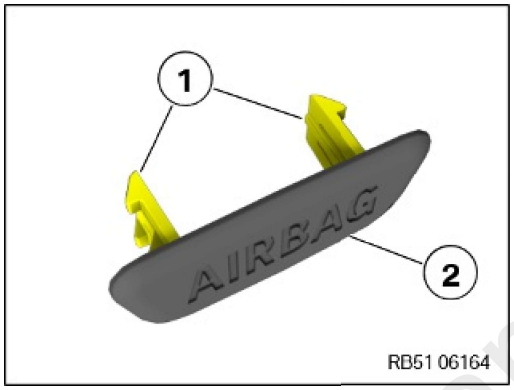
- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

WARNING

Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



Check

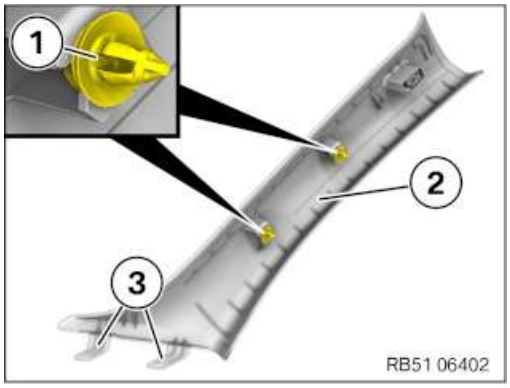
- Check retaining lugs (1) of cover (2) for damage.

Result

» Retaining lug is damaged.

Measure

- Renew the cover.



Check

- Check the clips (1) for damage and renew if necessary.
- Check the guides (3) for damage.

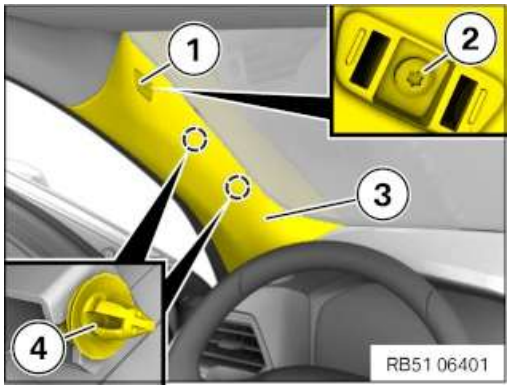
Result

» Guide is damaged.

Measure

- Renew the A-pillar trim panel.

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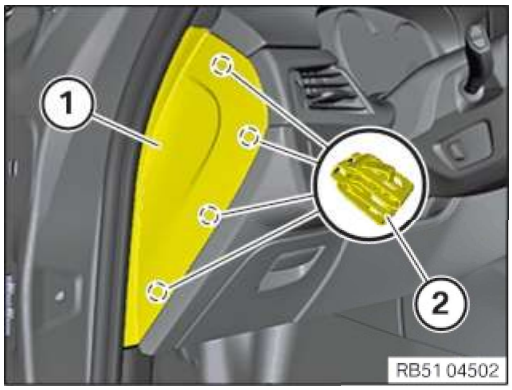
- Guide in A-pillar trim panel (3) downwards and clip it in with clips (4).
- Tighten down screw (2).

A-pillar trim panel to body

Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

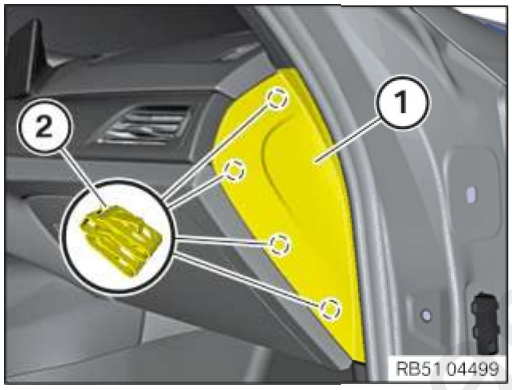
- Clip in the cover (1).

50 – Install the side panel on left instrument panel



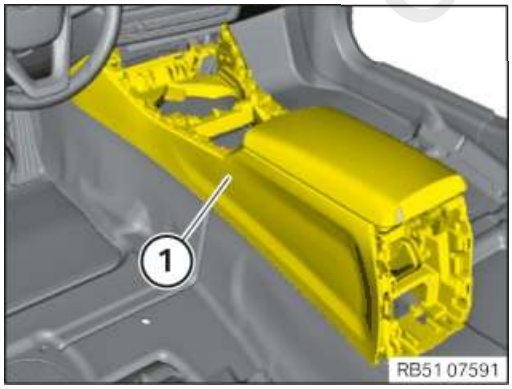
- Feed in the side panel (1) and clip it in at the clamps (2).

51 – Install the side panel on instrument panel on the right



- If required, connect the associated connector.
- Feed in the side panel (1) and clip it in at the clamps (2).

52 – Installing the centre console

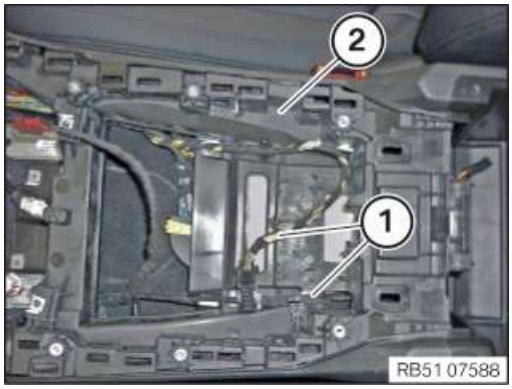


NOTICE

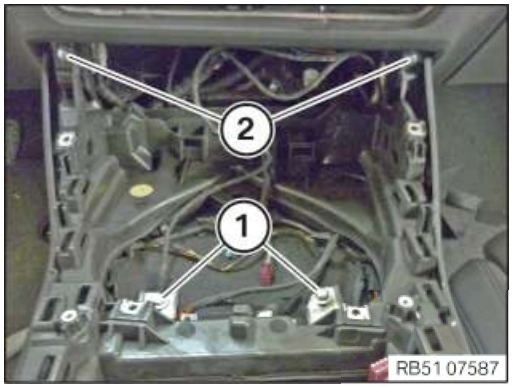
To provide a better overview: Schematic diagram with partially hidden components.

- Install centre console (1) and thereby feed in the wiring harness.
- Feed in the centre console (1) to the instrument panel and position correctly.

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- Secure the wiring harness to the centre console (1) and connect and lock the existing plug connections.



- Tighten the screws (1).

Centre console on tunnel

M6x18 Hexagon screw		Tightening torque	4,6 Nm

- Tighten the screws (2).

Centre console to instrument panel

Oval-head screw		Tightening torque	1,8 Nm

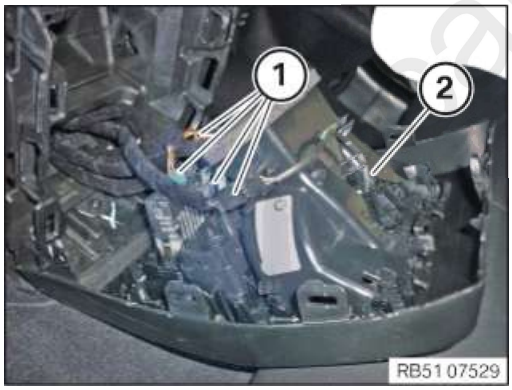


- Tighten the screws (1).

Centre console on tunnel

M6x18 Hexagon screw		Tightening torque	4,6 Nm

53 – Installing the rear centre console trim



- Install the centre console trim (2).
- Connect connectors (1) and lock.

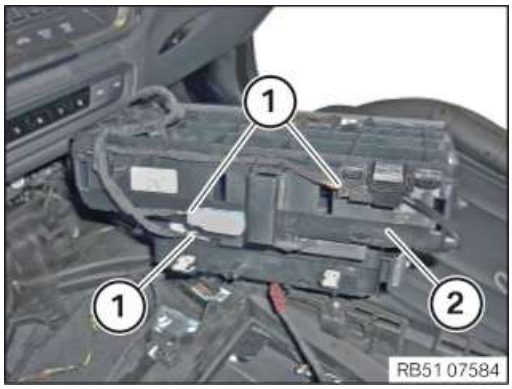


- Position centre console trim (1) and engage at the latch mechanisms at the side.

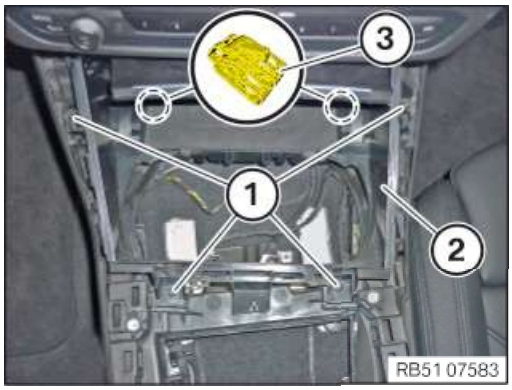
54 – Installing the storage compartment of the front centre console

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54 – Installing the storage compartment of the front centre console



- Mount the storage compartment (2) and connect connectors (1).

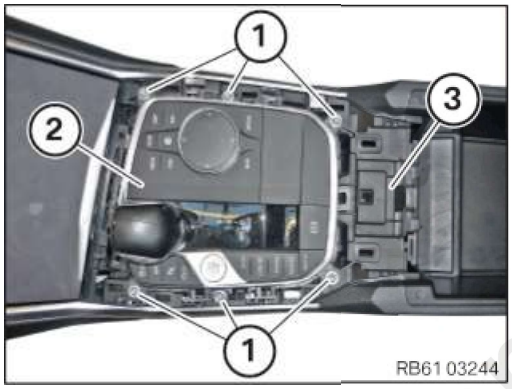


- Engage rear storage compartment trim (2) into clamps (3).
- Tighten the screws (1).

Storage compartment to centre console

Oval-head screw		Tightening torque	1,8 Nm

55 – Install the operating facility in the centre console



- Position operating facility (2) in the centre console (3).
- Tighten the screws (1).

Gear selector switch to centre console trim

Screw	Tightening torque	1,8 Nm

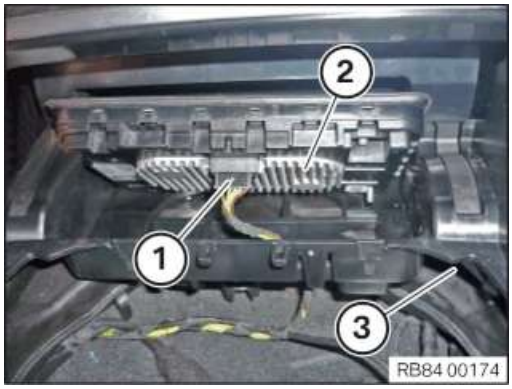
▸ **Disconnecting all battery earth leads**



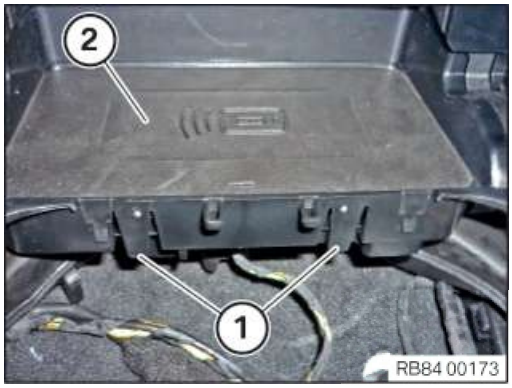
- See additional information.

56 – Installing the wireless charging station

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- Connect connector (1).
- Position the wireless charging station (2) in the centre console (3).



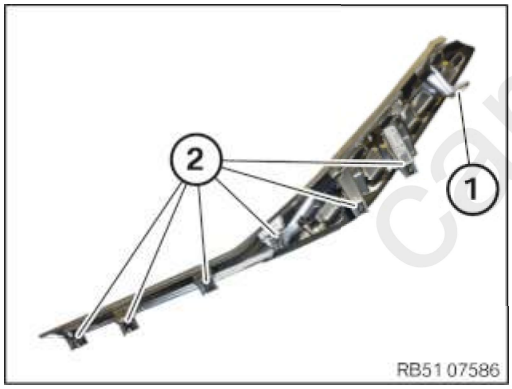
- Press the wireless charging station (2) down till the locking units (1) are engaged correctly.

57 – Install decorative trim on centre console on left and right

▸ Installing the decorative trim to centre console

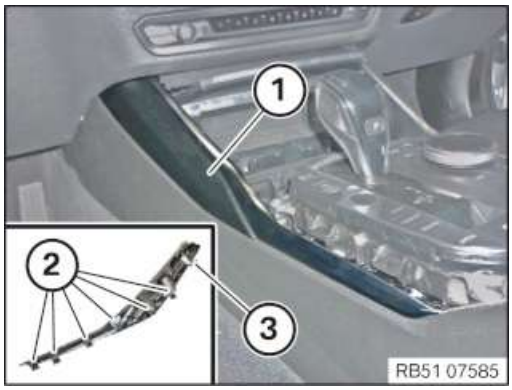
NOTICE

Description is for left component only. Procedure on the right side is identical.



- Check guide (1) and the latch mechanisms (2).

  Renew defective decorative trim.



- Feed in the decorative trim (1) forward in the guide (3).
- Engage decorative trim (1) in latch mechanisms (2).

58 – Installing the centre console trim

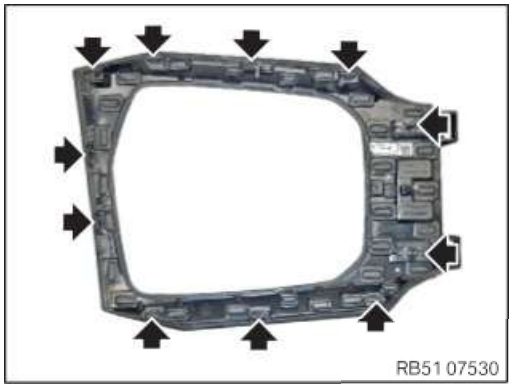
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RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

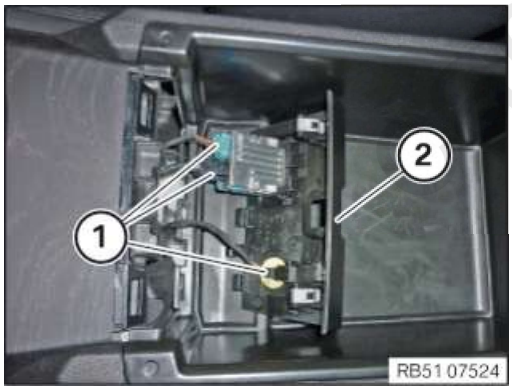


- Check all the latch mechanisms or clamps (arrows).
- In case the latch mechanisms or the clamps (arrows) are faulty, renew the centre console trim .

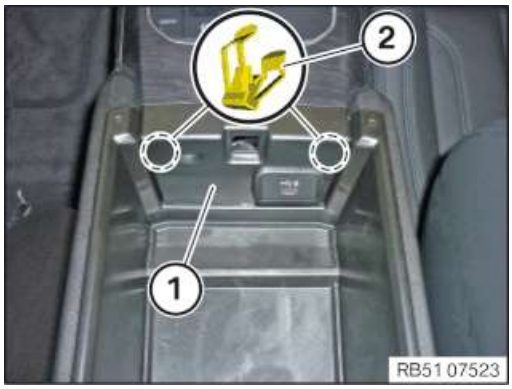


- Correctly position the centre console trim (1) and engage at the latch mechanisms.

59 – Installing the trim in the storage compartment of the centre armrest



- Mount the trim (2) and connect connector (1) and lock.



- Correctly position trim (1) and snap into the clamps (2).

60 – Install the cup holder

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- Fix the cup holder (1) and the belonging connectors.
- Correctly position cup holder (1).
- Tighten the screws (2).

Cup holder to centre console

Oval-head screw		Tightening torque	1,8 Nm



- Insert the insert (1).

Additional Information

Overview of Tightening Torques

Front passenger airbag on instrument panel trim Used in step 31

Screw		Tightening torque	2,6 Nm

Dashboard to support Used in step 32

Screw		Tightening torque	2,4 Nm

Speaker to support / support to instrument panel / support to body Used in step 33

Screw		Tightening torque	1,8 Nm

Instrument cluster (KOMBI) to support Used in step 36

Oval-head screw		Tightening torque	1,8 Nm

Steering column switch cluster (SZL) on the steering column Used in step 37

Screw TS5x20		Tightening torque	3 Nm

Steering wheel to steering column Used in step 40

M14	Only for a micro-encapsulated screw: Renew screw.	Tightening torque	62,5 Nm

Central information display to instrument panel Used in step 42

Screw		Tightening torque	1,8 Nm

Fold-down compartment to instrument panel Used in step 46

Oval-head screw		Tightening torque	1,8 Nm

A-pillar trim panel to body Used in step 49

Sheet metal screw 4,8x38		Tightening torque	2,6 Nm

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Centre console on tunnel			Used in step 52
M6x18 Hexagon screw		Tightening torque	4,6 Nm

Centre console to instrument panel			Used in step 52
Oval-head screw		Tightening torque	1,8 Nm

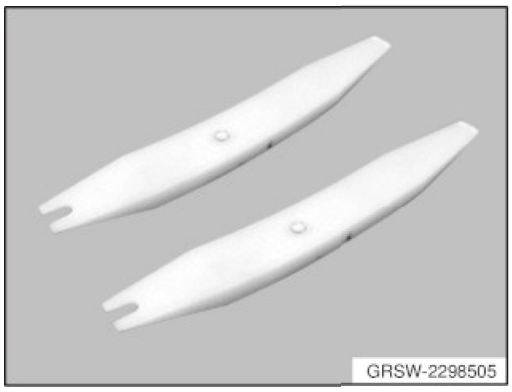
Storage compartment to centre console			Used in step 54
Oval-head screw		Tightening torque	1,8 Nm

Gear selector switch to centre console trim			Used in step 55
Screw		Tightening torque	1,8 Nm

Cup holder to centre console			Used in step 60
Oval-head screw		Tightening torque	1,8 Nm

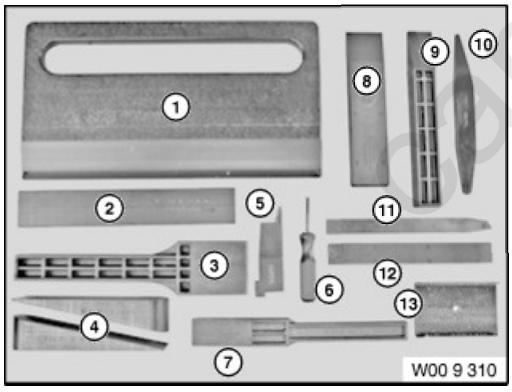
Overview of Special Tools

2 298 505 Wedge



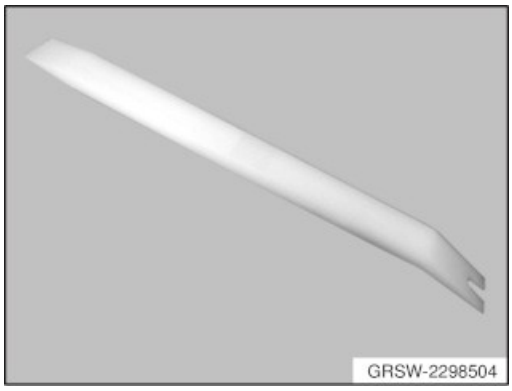
Common	Used in step 34
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

0 493 752 (00 9 329) Case



Common	Used in step 13
Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

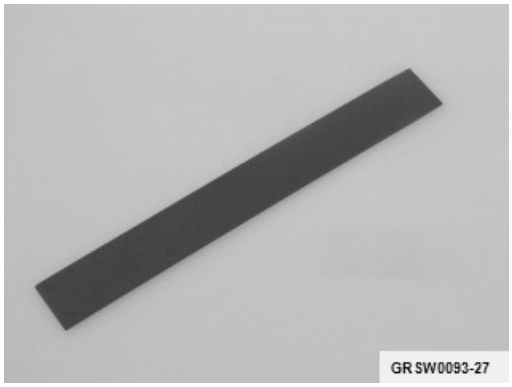
2 298 504 Wedge



Common	Used in step 23
Usage	Wedge with angled lug
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

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0 496 571 (00 9 327) Wedge



Common	Used in step 27
Usage	(Cleaning wedge) From 11/2008 this special tool replaces panel wedge 00 9 323 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

0 496 569 (00 9 325) Wedge



Common	Used in step 28
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

Links

General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	1321
72 00 ... Safety regulations for handling components with gas generators	13

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	755
61 20 900 Disconnecting and connecting battery earth lead	755
61 20 900 Disconnecting and connecting battery earth lead	755
61 20 900 Disconnecting and connecting battery earth lead	755
61 20 900 Disconnecting and connecting battery earth lead	755
61 20 900 Disconnecting and connecting battery earth lead	755
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	755
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	755
61 20 900 Disconnecting and connecting battery earth lead	755
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	755
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	755
61 20 900 Disconnecting and connecting battery earth lead	755
61 20 900 Disconnecting and connecting battery earth lead	755
61 20 900 Disconnecting and connecting battery earth lead	755
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61 20 900 Disconnecting and connecting battery earth lead	755
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61 20 900 Disconnecting and connecting battery earth lead	755
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	755
61 20 900 Disconnecting and connecting battery earth lead	755
61 20 900 Disconnecting and connecting battery earth lead	755
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61 20 900 Disconnecting and connecting battery earth lead	755
61 20 900 Disconnecting and connecting battery earth lead	755
61 20 900 Disconnecting and connecting battery earth lead	755
61 20 900 Disconnecting and connecting battery earth lead	755
61 35 ... Notes on ESD protection (Electro Static Discharge)	2042

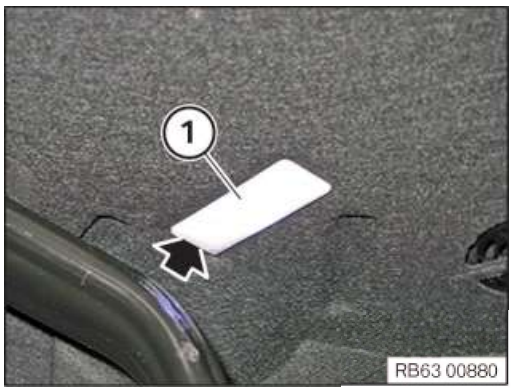
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51 45 196 Replacing instrument panel trim at bottom right

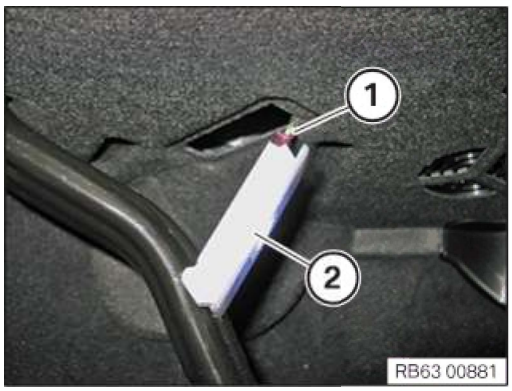
1 – Removing the footwell light at the front left or right

NOTICE

Description is for left component only. Procedure on the right side is identical.

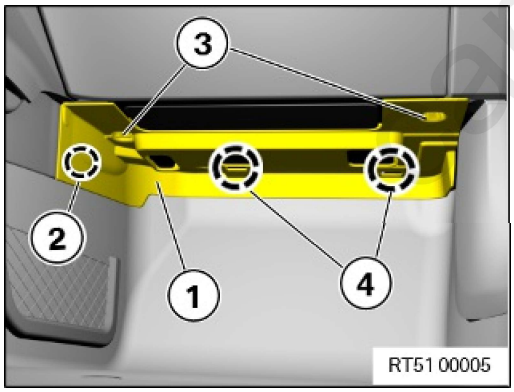


- Lever out the footwell light (1) from the footwell trim in the highlighted area.



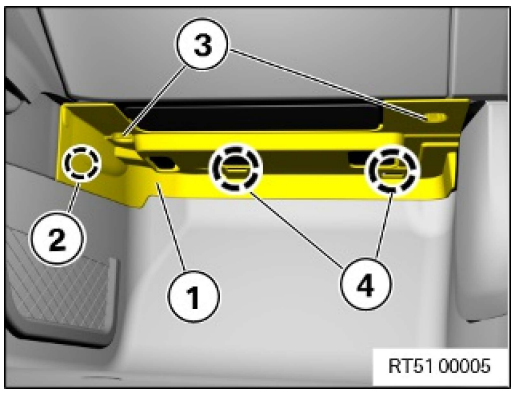
- Unlock and disconnect connector (1).
- Remove the footwell light (2).

2 – Remove the right footwell trim



- Turn the locks (3) by 90°.
- Feed the footwell trim (1) out of the guide (2).
- Detach the footwell trim (1) inward out of the guides (4).
- Unlock associated plug connection and disconnect.

3 – Install the right footwell trim panel

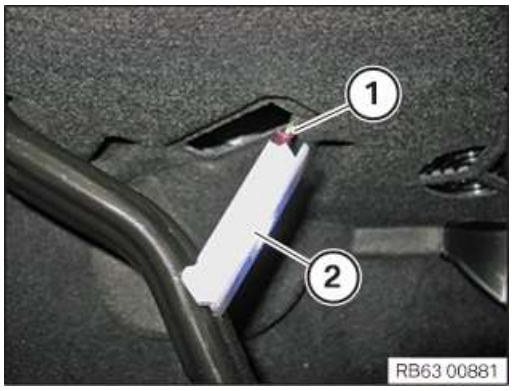


- Connect associated connector.
- Attach the footwell trim (1) to the guides (4) and fold up.
- Guide the footwell trim (1) into the guide (2) of the centre console.
- Position locks (3) correctly and turn by 90°.

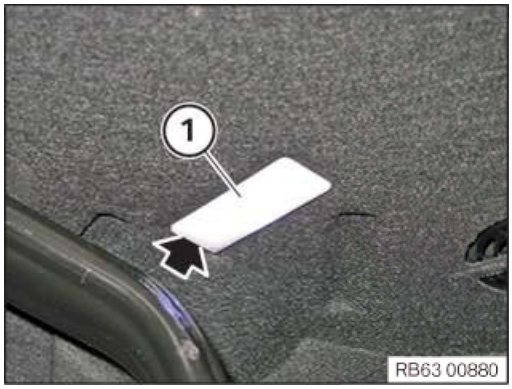
4 – Installing the footwell light at the front left or right

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Connect and lock the connector (1) with the footwell light (2).



- Position the footwell light (1) in the footwell trim (arrow).

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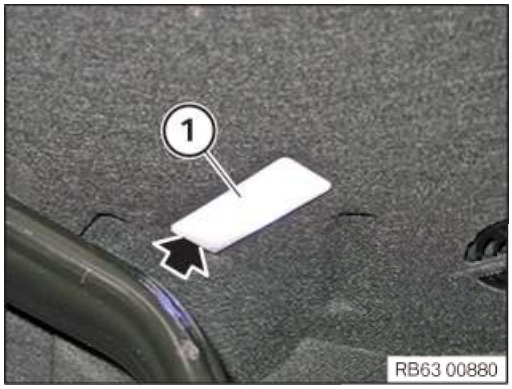
51 45 186 Replacing trim panel for pedal mechanism

PRELIMINARY WORK

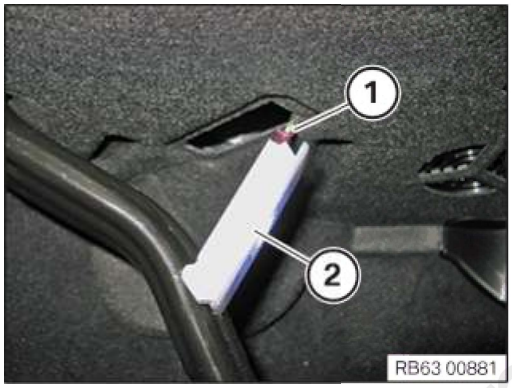
1 – Removing the footwell light at the front left or right

NOTICE

Description is for left component only. Procedure on the right side is identical.



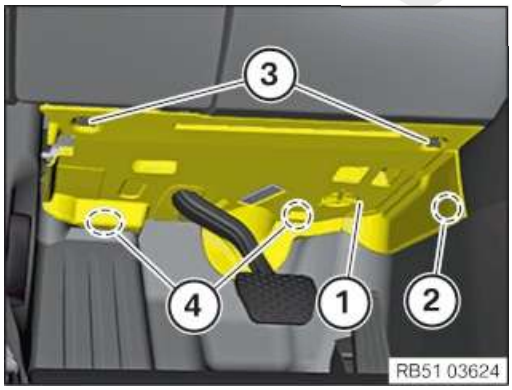
- Lever out the footwell light (1) from the footwell trim in the highlighted area.



- Unlock and disconnect connector (1).
- Remove the footwell light (2).

MAIN WORK

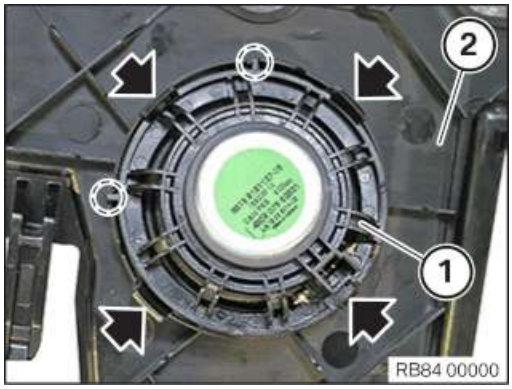
2 – Removing the trim panel for pedal mechanism



- Unclip the trim panel for the pedal mechanism (1) towards the inside in this area (2).
- Turn the locks (3) by 90°.
- Detach the trim panel for the pedal mechanism (1) inwards out of the guides (4).
- Unlock associated plug connection and disconnect.

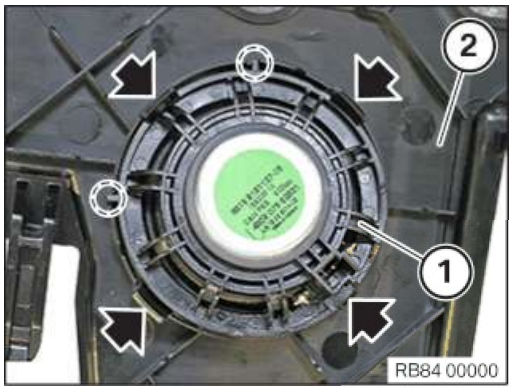
3 – Remove emergency loudspeaker

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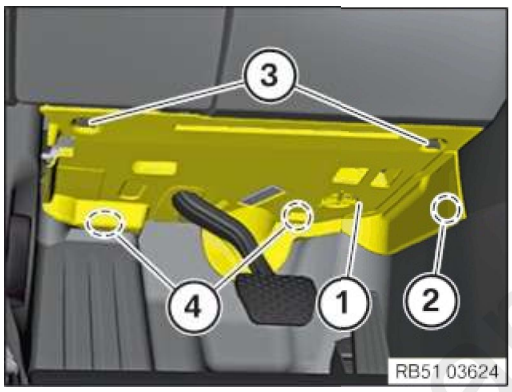
- Unclip the emergency loudspeaker (1) from the trim panel for pedal mechanism (2).

4 – Install emergency loudspeaker



- Clip in the emergency loudspeaker (1) in the trim panel for pedal mechanism (2).
- Check that the emergency loudspeaker (1)is engaged correctly (arrows).

5 – Installing the trim panel for the pedal mechanism



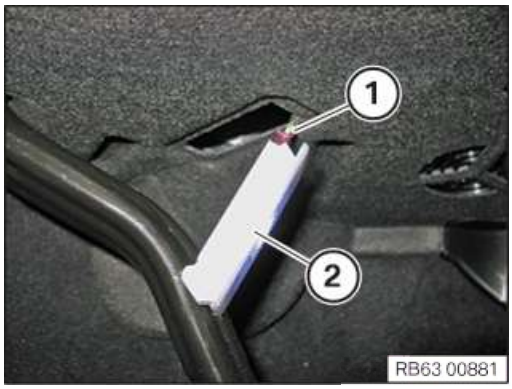
- Connect associated connector.
- Attach the trim panel for the pedal mechanism (1) in the guides (4) and fold it up.
- Clip the trim panel for the pedal mechanism (1) into the centre console in this area (2).
- Insert locks (3) correctly and turn 90°.

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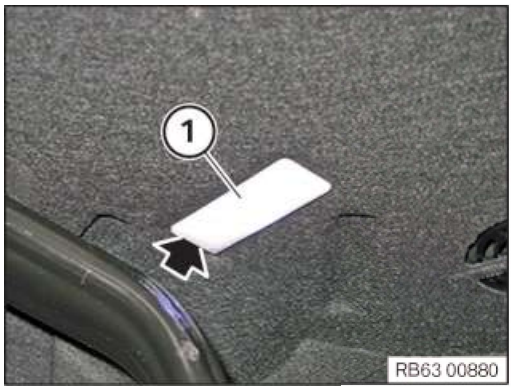
6 – Installing the footwell light at the front left or right

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Connect and lock the connector (1) with the footwell light (2).



- Position the footwell light (1) in the footwell trim (arrow).

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51 46 001 Remove and install trim panel for storage shelf

PRELIMINARY WORK

1 – Removing seat bench



- Disengage the seat bench (1) in area (2) in an upward direction.
- Feed out the seat belt buckle (3) from the seat bench.

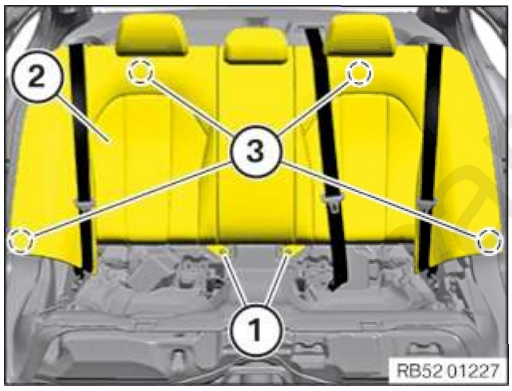


- Pull the seat bench (1) further forward.
- Release screw (2) on the end fitting and guide out belt (3).

Note: If there is a belt lock on the belt, the screw on the end fitting must not be released.

- If necessary, disconnect the present plug connections.
- Lift the seat bench (1) out of the vehicle.

2 – Remove rear seat backrest



- Loosen screws (1).
- Detach the rear seat backrest (2) upwards out of the guides (3).
- Guide the rear seat backrest (2) out of the seat belts and remove it.

3 – Remove both C-pillar trim panels

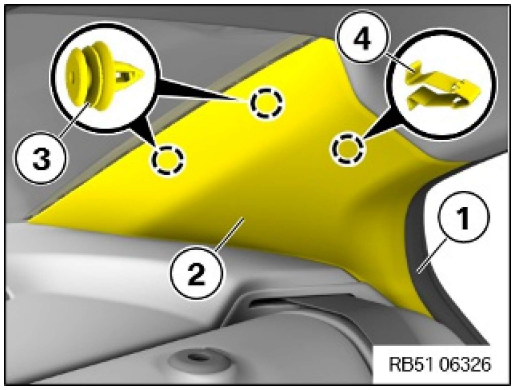
NOTICE

Description is for left component only. Procedure on the right side is identical.

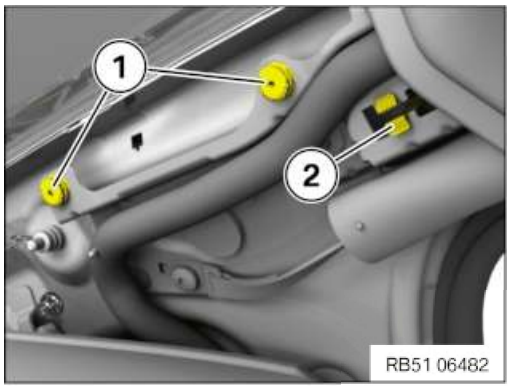
▸ **Remove C-pillar trim panel**

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



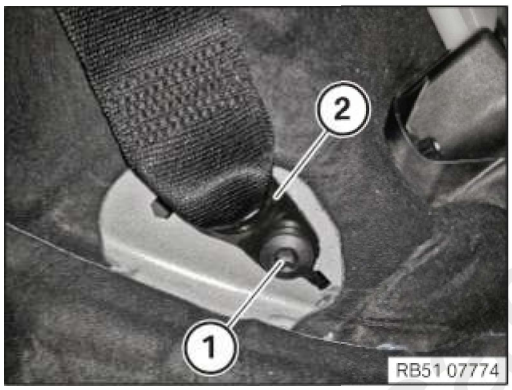
- Unclip clamp (4).
- Unclip clips (3).
- Feed out C-pillar trim panel (2) from the guides to the front.
- Thread out C-pillar trim panel (2) from the lip of edge protection (1).



- If required, remove the clips (1) and the clamp (2) and connect it to the trim panel.

MAIN WORK

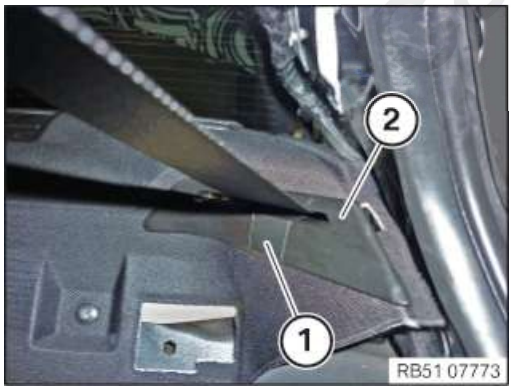
4 – Remove the trim panel for the storage shelf



NOTICE

Perform the operations on the left and right side.

- Release screws (1) on end fitting (2) at rear left and right.
- Feed out the end fitting (2) from the body at rear left and right.

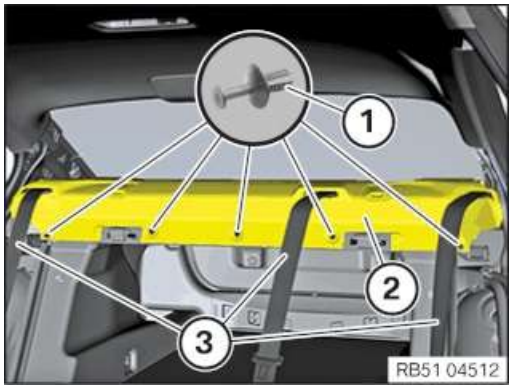


NOTICE

The description is for one component only. The procedure is identical for all further components.

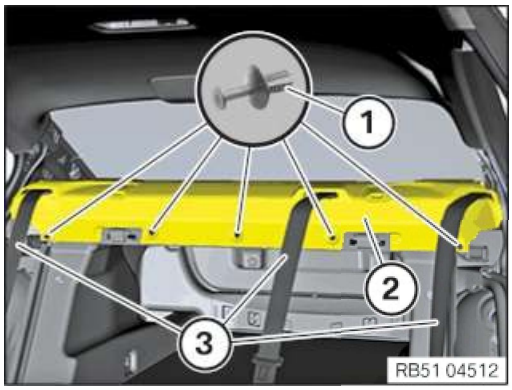
- Unclip the cover (1) forwards.
- Unclip the outer belt feed trim (2) starting from front and feed it out.

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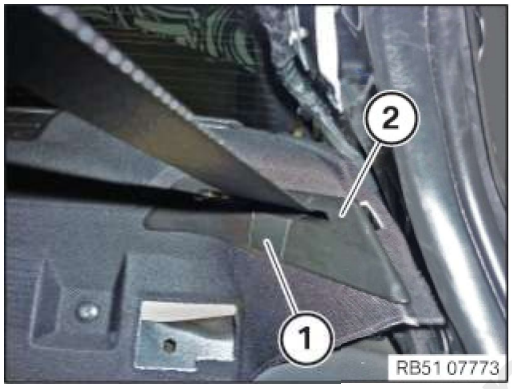


- Loosen the expanding rivet (1).
- Lift the trim panel for the storage shelf (2) a little and disconnect the underlying plug connections.
- Remove the trim panel for the storage shelf (2) to the front and feed out the seat belt (3).

5 – Install the trim panel for the storage shelf



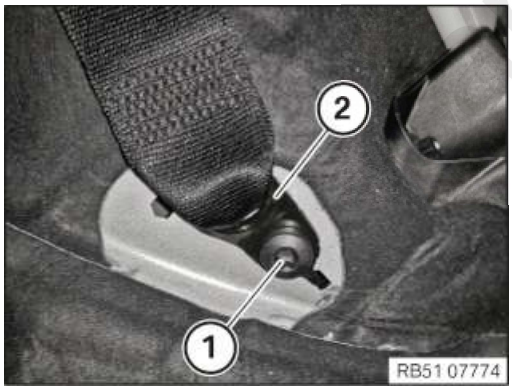
- Install the trim panel for the storage shelf (2) and feed in the seat belts (3).
- Lift the trim panel for the storage shelf (2) a little and connect the underlying connectors.
- Feed in the trim panel for the storage shelf (2) on the rear guide and position it correctly.
- Mount the expanding rivets (1).



NOTICE

The description is for one component only. The procedure is identical for all further components.

- Insert the belt feed trim (2).
- Clip in the cover (1).



NOTICE

Perform the operations on the left and right side.

- Insert the end fitting (2) on the left and right into the body.
- Renew screws (1).

  Parts: Bolts
- Tighten screws (1) on left and right.

End fitting to body

M10	Renew screw.		42 Nm

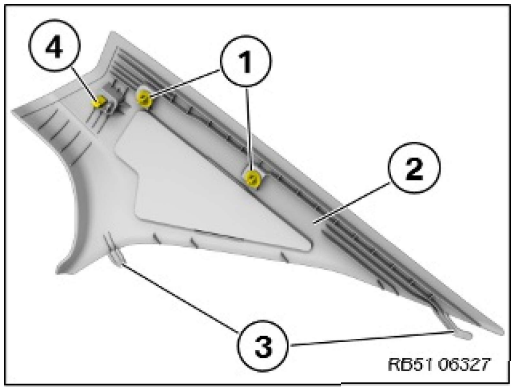
POSTPROCESSES

6 – Install both C-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Installing C-pillar trim panel**



Check

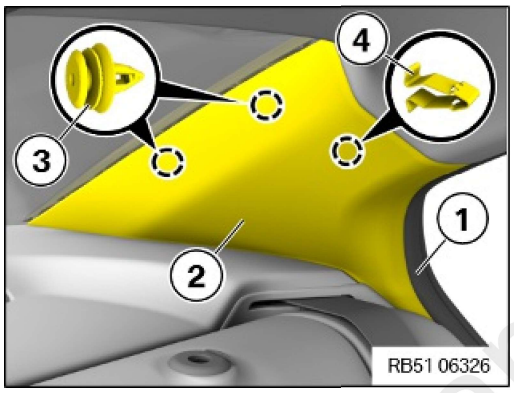
- Check clips (1) and clamp (4) for damage, renew if necessary.
- Check the guides (3) for damage.

Result

» Guide is damaged.

Measure

- Renew the C-pillar trim panel.

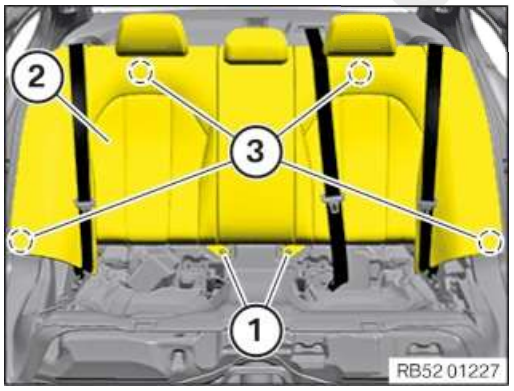


NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Feed C-pillar trim panel (2) into guides towards the rear.
- Clip in clips (3).
- Clip in clamp (4).
- Guide in C-pillar trim panel (2) under the lip of edge protection (1).

7 – Remove rear seat backrest



- Guide the rear seat backrest (2) into the seat belts and position it.
- Attach the rear seat backrest (2) in the guides (3) from the top.
- Renew screws (1).

  Parts: Bolts
- Tighten the screws (1).

Rear seat backrest on body

Screw	Renew screw.	Tightening torque	42 Nm

8 – Installing rear seat bench

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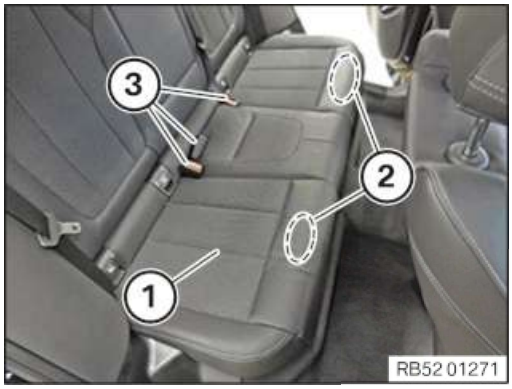
- Lift the seat bench (1) into the vehicle.
- Insert the seat belt (3).
- Renew the screw (2).

  Parts: Screw
- Tighten down screw (2).

Rear upper seat belt to bottom body

Screw	Renew screw.	Tightening torque	42 Nm

- Connect available connectors.



- Insert seat bench (1).
- Thread seat belt buckles (3) into the seat bench.
- Engage the seat bench (1) in the area (2).

Additional Information

Overview of Tightening Torques

End fitting to body — Used in step 5

M10	Renew screw.		42 Nm

Rear seat backrest on body — Used in step 7

Screw	Renew screw.	Tightening torque	42 Nm

Rear upper seat belt to bottom body — Used in step 8

Screw	Renew screw.	Tightening torque	42 Nm

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51 46 011 Remove and install trim panel for storage shelf

Prerequisite

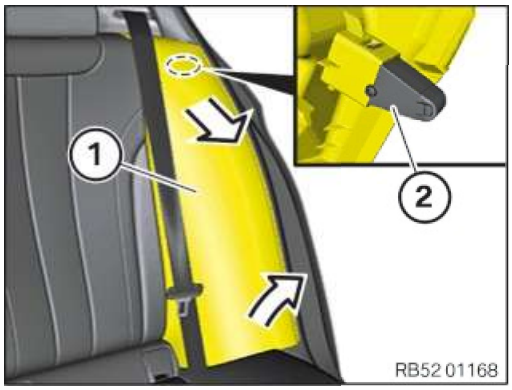
- Rear seat backrests are folded down.

PRELIMINARY WORK

1 – Remove backrest side section on left and right

NOTICE

Description is for left component only. Procedure on the right side is identical.



▸ **Remove armrest side section**

- Reach behind the backrest side section (1) from the top and unclip the backrest side section from the latch mechanism (2) to the front.
- Remove the backrest side section (1) from the rear seat in direction of arrow.

2 – Remove both C-pillar trim panels

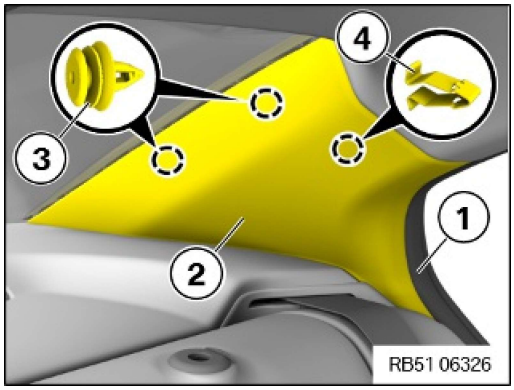
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove C-pillar trim panel**

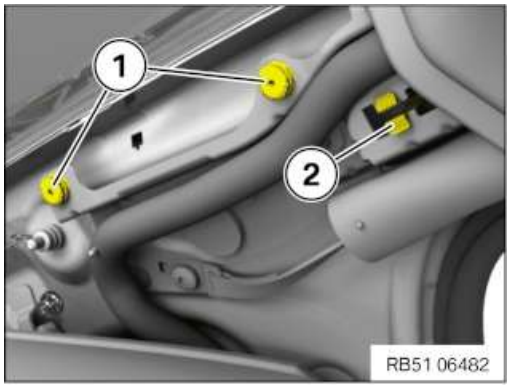
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Unclip clamp (4).
- Unclip clips (3).
- Feed out C-pillar trim panel (2) from the guides to the front.
- Thread out C-pillar trim panel (2) from the lip of edge protection (1).

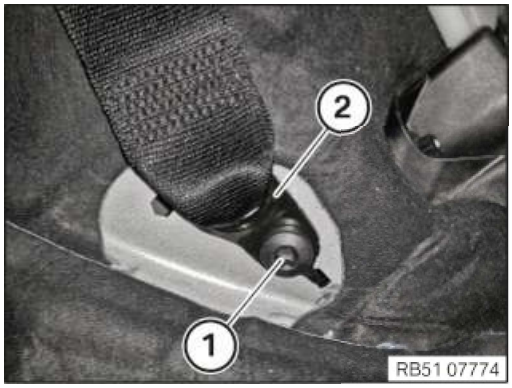
cardiagn.com



- If required, remove the clips (1) and the clamp (2) and connect it to the trim panel.

MAIN WORK

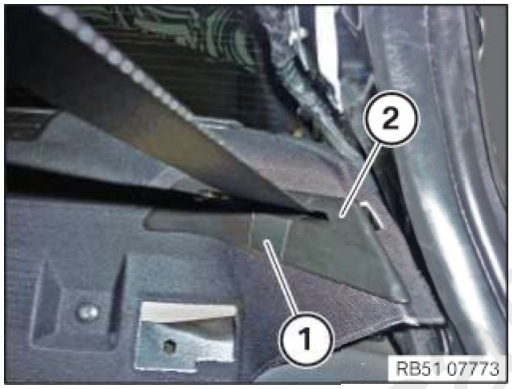
3 – Remove the trim panel for the storage shelf



NOTICE

Perform the operations on the left and right side.

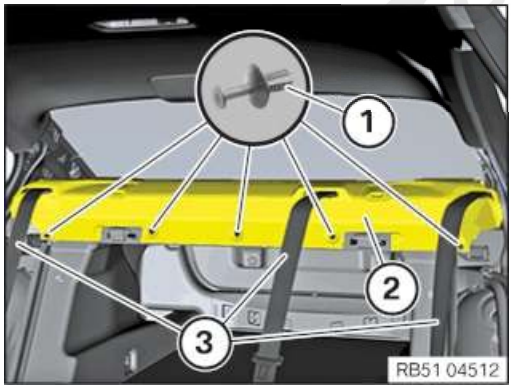
- Release screws (1) on end fitting (2) at rear left and right.
- Feed out the end fitting (2) from the body at rear left and right.



NOTICE

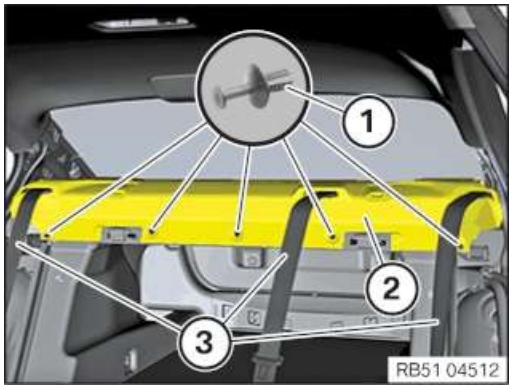
The description is for one component only. The procedure is identical for all further components.

- Unclip the cover (1) forwards.
- Unclip the outer belt feed trim (2) starting from front and feed it out.

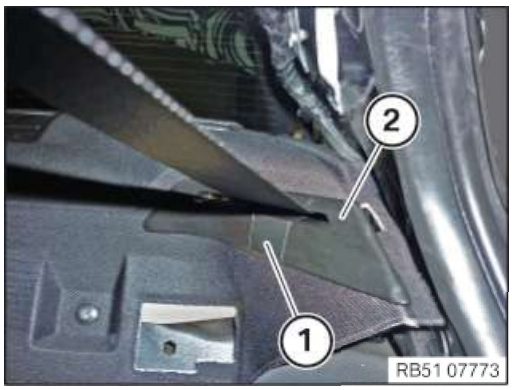


- Loosen the expanding rivet (1).
- Lift the trim panel for the storage shelf (2) a little and disconnect the underlying plug connections.
- Remove the trim panel for the storage shelf (2) to the front and feed out the seat belt (3).

4 – Install the trim panel for the storage shelf



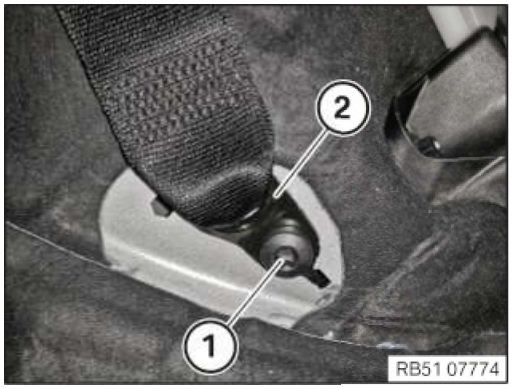
- Install the trim panel for the storage shelf (2) and feed in the seat belts (3).
- Lift the trim panel for the storage shelf (2) a little and connect the underlying connectors.
- Feed in the trim panel for the storage shelf (2) on the rear guide and position it correctly.
- Mount the expanding rivets (1).



NOTICE

The description is for one component only. The procedure is identical for all further components.

- Insert the belt feed trim (2).
- Clip in the cover (1).



NOTICE

Perform the operations on the left and right side.

- Insert the end fitting (2) on the left and right into the body.
- Renew screws (1).

  Parts: Bolts
- Tighten screws (1) on left and right.

End fitting to body

M10	Renew screw.		42 Nm

POSTPROCESSES

5 – Install both C-pillar trim panels

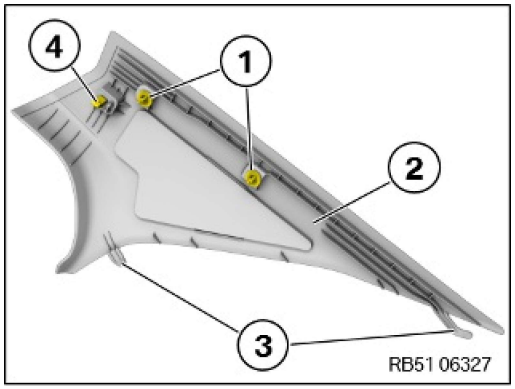
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Installing C-pillar trim panel**

Check

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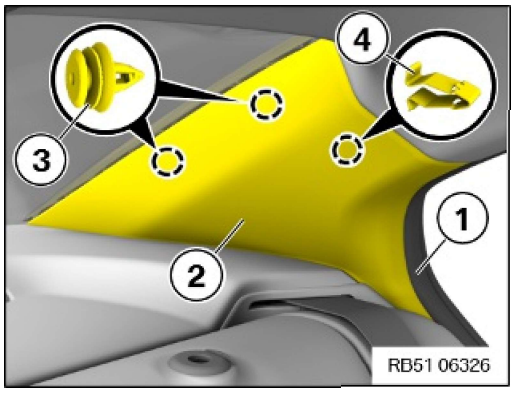
- Check clips (1) and clamp (4) for damage, renew if necessary.
- Check the guides (3) for damage.

Result

» Guide is damaged.

Measure

- Renew the C-pillar trim panel .



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

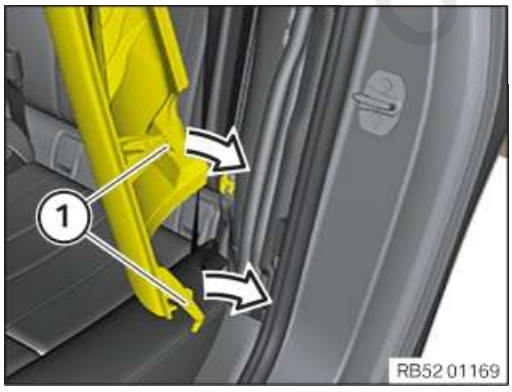
- Feed C-pillar trim panel (2) into guides towards the rear.
- Clip in clips (3).
- Clip in clamp (4).
- Guide in C-pillar trim panel (2) under the lip of edge protection (1).

6 – Install the backrest side section on the left and right

NOTICE

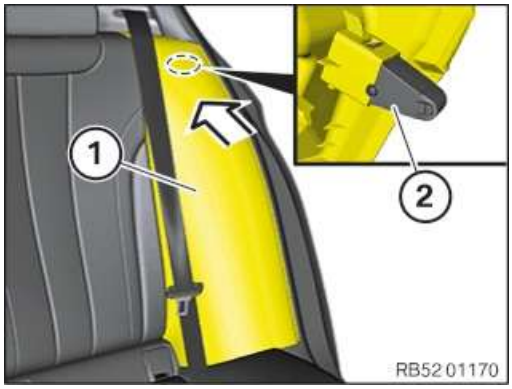
Description is for left component only. Procedure on the right side is identical.

▸ **Install backrest side section**



- Slide the guides (1) of the backrest side section in direction of arrow at the bottom.

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- Clip in the top backrest side section (1) at the latch mechanism (2).

Additional Information

Overview of Tightening Torques

End fitting to body			Used in step 4
M10	Renew screw.		42 Nm

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51 46 002 Replace the trim panel for the storage shelf

PRELIMINARY WORK

1 – Removing seat bench



- Disengage the seat bench (1) in area (2) in an upward direction.
- Feed out the seat belt buckle (3) from the seat bench.

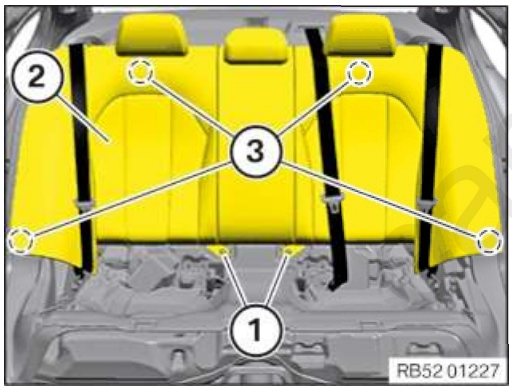


- Pull the seat bench (1) further forward.
- Release screw (2) on the end fitting and guide out belt (3).

Note: If there is a belt lock on the belt, the screw on the end fitting must not be released.

- If necessary, disconnect the present plug connections.
- Lift the seat bench (1) out of the vehicle.

2 – Remove rear seat backrest



- Loosen screws (1).
- Detach the rear seat backrest (2) upwards out of the guides (3).
- Guide the rear seat backrest (2) out of the seat belts and remove it.

3 – Remove both C-pillar trim panels

NOTICE

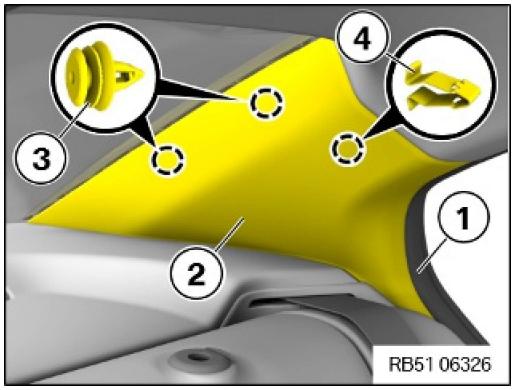
Description is for left component only. Procedure on the right side is identical.

▸ **Remove C-pillar trim panel**

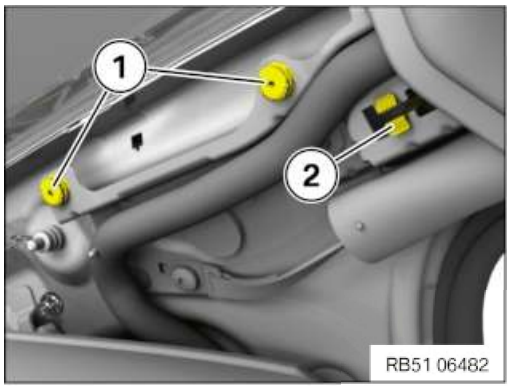
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

erdiagn.com

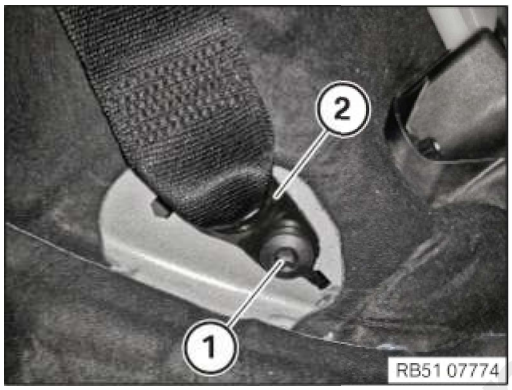


- Unclip clamp (4).
- Unclip clips (3).
- Feed out C-pillar trim panel (2) from the guides to the front.
- Thread out C-pillar trim panel (2) from the lip of edge protection (1).



- If required, remove the clips (1) and the clamp (2) and connect it to the trim panel.

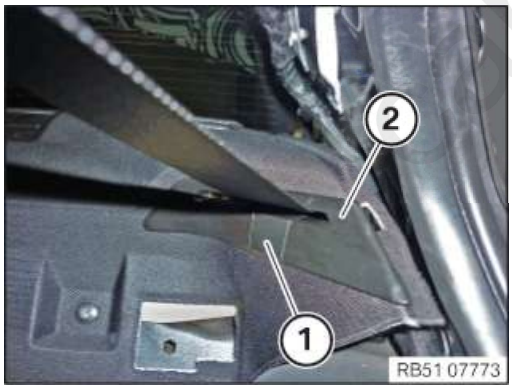
4 – Remove the trim panel for the storage shelf



NOTICE

Perform the operations on the left and right side.

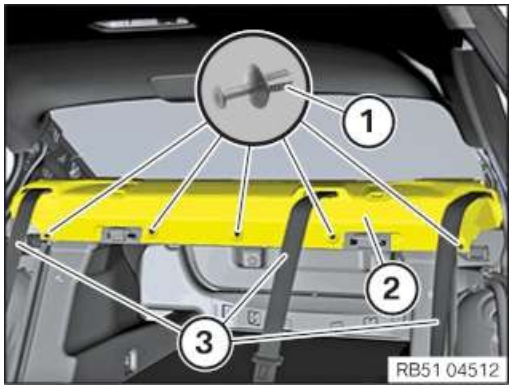
- Release screws (1) on end fitting (2) at rear left and right.
- Feed out the end fitting (2) from the body at rear left and right.



NOTICE

The description is for one component only. The procedure is identical for all further components.

- Unclip the cover (1) forwards.
- Unclip the outer belt feed trim (2) starting from front and feed it out.

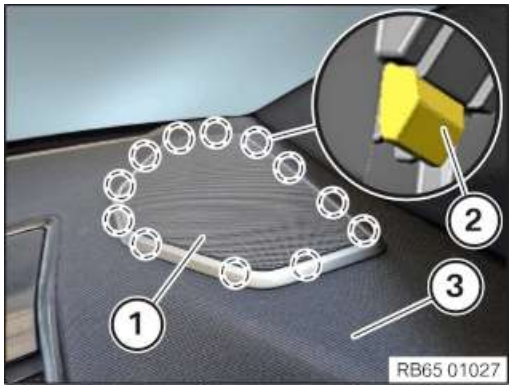


- Loosen the expanding rivet (1).
- Lift the trim panel for the storage shelf (2) a little and disconnect the underlying plug connections.
- Remove the trim panel for the storage shelf (2) to the front and feed out the seat belt (3).

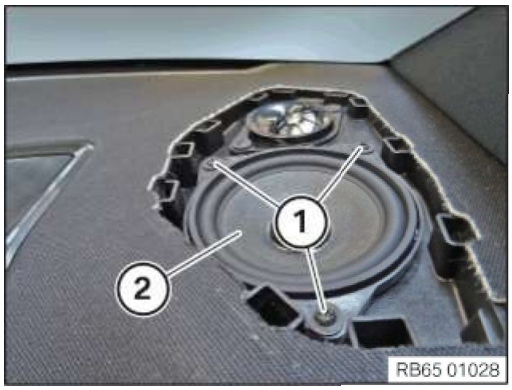
mdiag.com

5 – Remounting during replacement of the trim panel for the storage box

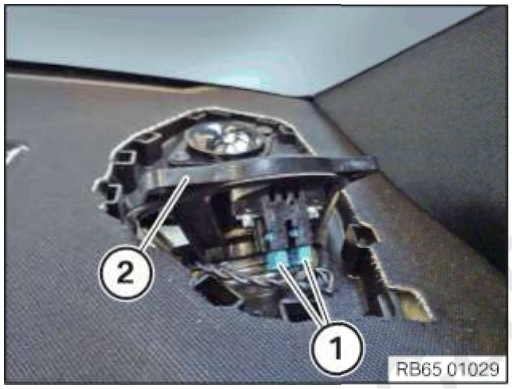
▸ Remove rear mid-range speaker



- Unclip the cover (1) with the special tool 0 496 571 (00 9 327) from the latch mechanisms (2) towards the top.
- Remove cover (1) from storage shelf (3).

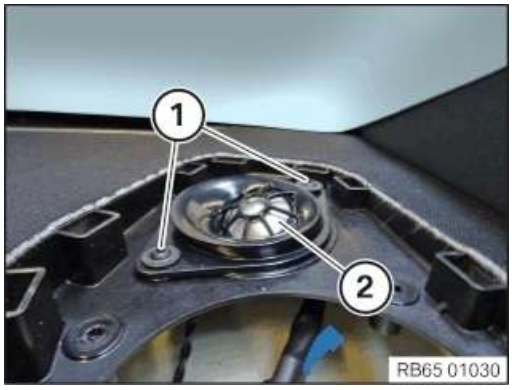


- Loosen screws (1).
- Raise mid-range speaker (2) slightly.



- Unlock and disconnect connector (1).
- Remove the mid-range speaker (2).

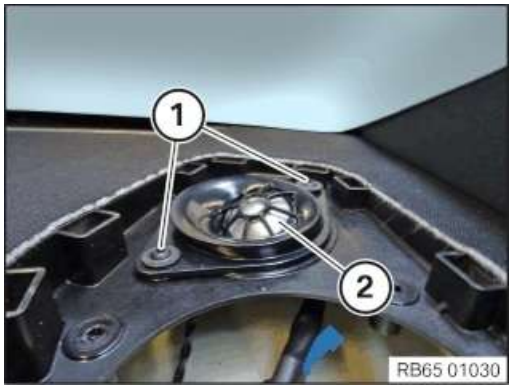
▸ Remove rear tweeter



- Loosen screws (1).
- Pull out the high-range speaker (2) with the cable and remove.

▸ Installing the rear tweeter

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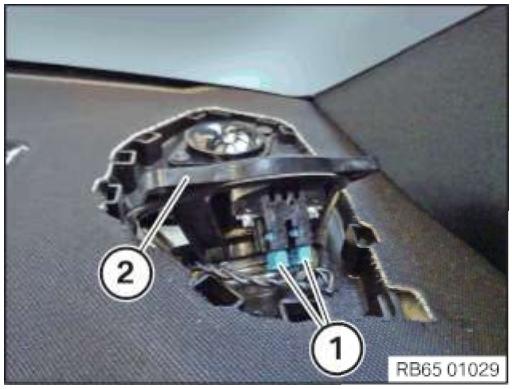


- Feed in the tweeter (2) with the cable and position correctly
- Tighten the screws (1).

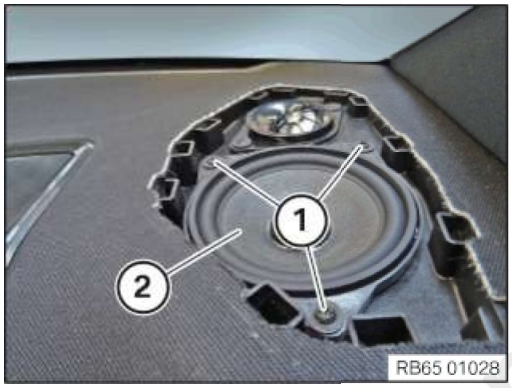
Speaker to storage shelf/support

Screw		Tightening torque	1,8 Nm

▶ **Installing the rear mid-range speaker**



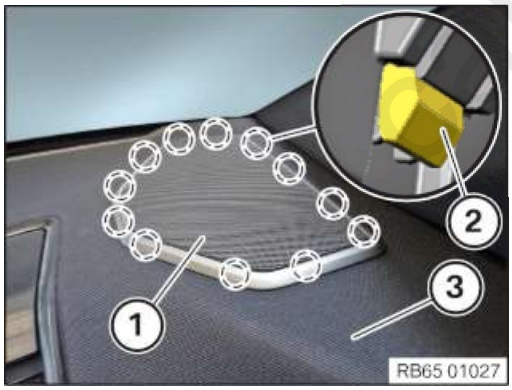
- Position the mid-range speaker (2).
- Connect connectors (1) and lock.



- Correctly position the mid-range speaker (2).
- Tighten the screws (1).

Speaker to storage shelf/support

Screw		Tightening torque	1,8 Nm



- Correctly position the cover (1) on the storage shelf (3).
- Clip in the cover (1) with the latch mechanisms (2) in storage shelf (3).

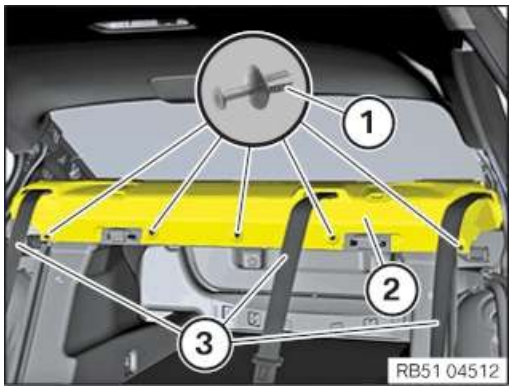


NOTICE

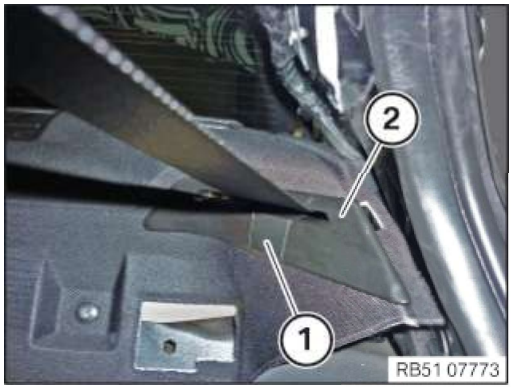
The description is for one component only. The procedure is identical for all further components.

- Detach the trim (1) with the special tool 0 493 681 (64 1 020) on the latch mechanisms (2) and feed out from the front.

6 – Install the trim panel for the storage shelf



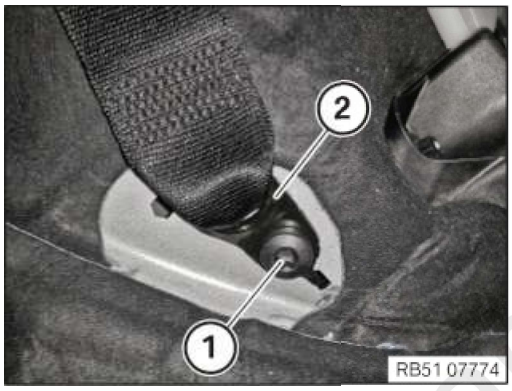
- Install the trim panel for the storage shelf (2) and feed in the seat belts (3).
- Lift the trim panel for the storage shelf (2) a little and connect the underlying connectors.
- Feed in the trim panel for the storage shelf (2) on the rear guide and position it correctly.
- Mount the expanding rivets (1).



NOTICE

The description is for one component only. The procedure is identical for all further components.

- Insert the belt feed trim (2).
- Clip in the cover (1).



NOTICE

Perform the operations on the left and right side.

- Insert the end fitting (2) on the left and right into the body.
- Renew screws (1).

  Parts: Bolts
- Tighten screws (1) on left and right.

End fitting to body

M10	Renew screw.		42 Nm

7 – Install both C-pillar trim panels

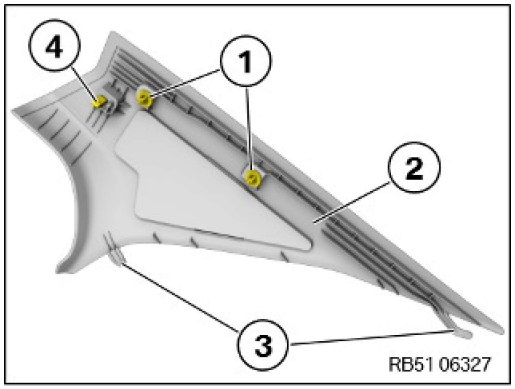
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Installing C-pillar trim panel**

Check

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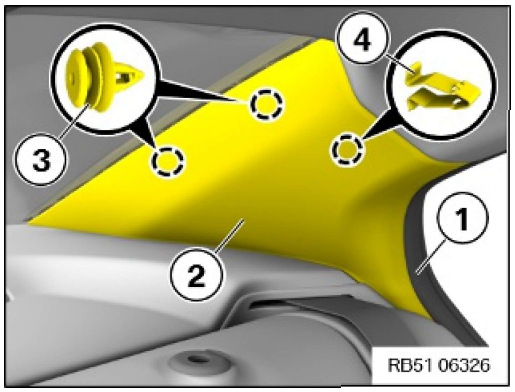
- Check clips (1) and clamp (4) for damage, renew if necessary.
- Check the guides (3) for damage.

Result

» Guide is damaged.

Measure

- Renew the C-pillar trim panel .

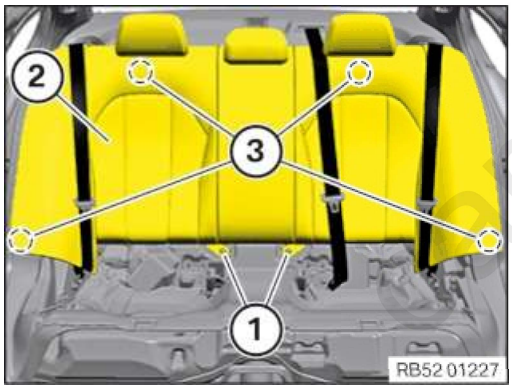


NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Feed C-pillar trim panel (2) into guides towards the rear.
- Clip in clips (3).
- Clip in clamp (4).
- Guide in C-pillar trim panel (2) under the lip of edge protection (1).

8 – Remove rear seat backrest



- Guide the rear seat backrest (2) into the seat belts and position it.
- Attach the rear seat backrest (2) in the guides (3) from the top.
- Renew screws (1).

  Parts: Bolts
- Tighten the screws (1).

Rear seat backrest on body

Screw	Renew screw.	Tightening torque	42 Nm

9 – Installing rear seat bench



- Lift the seat bench (1) into the vehicle.
- Insert the seat belt (3).
- Renew the screw (2).

  Parts: Screw
- Tighten down screw (2).

Rear upper seat belt to bottom body

Screw	Renew screw.	Tightening torque	42 Nm

- Connect available connectors.



- Insert seat bench (1).
- Thread seat belt buckles (3) into the seat bench.
- Engage the seat bench (1) in the area (2).

Additional Information

Overview of Tightening Torques

Speaker to storage shelf/support			Used in step 5
Screw		Tightening torque	1,8 Nm

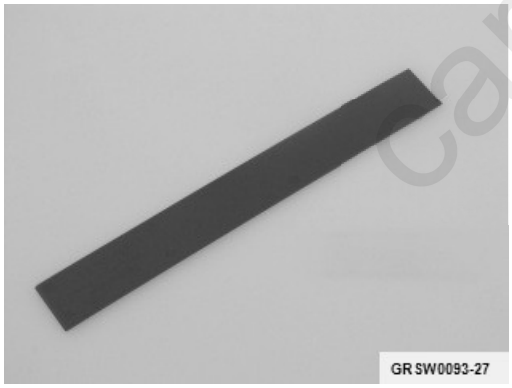
End fitting to body			Used in step 6
M10	Renew screw.		42 Nm

Rear seat backrest on body			Used in step 8
Screw	Renew screw.	Tightening torque	42 Nm

Rear upper seat belt to bottom body			Used in step 9
Screw	Renew screw.	Tightening torque	42 Nm

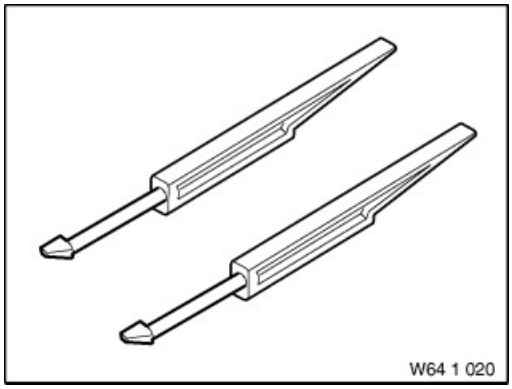
Overview of Special Tools

0 496 571 (00 9 327) Wedge



Common	Used in step 5
Usage	(Cleaning wedge) From 11/2008 this special tool replaces panel wedge 00 9 323 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

0 493 681 (64 1 020) Hook



Common	Used in step 5
Usage	(release hook) For releasing and removing fresh air grille. For removing various covers.
Included in the tool or work	
Storage location	C2
Replaced by	
In connection with	
SI-Number	01 15 99 (483)

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51 46 007 Replace the trim panel for the storage shelf

Prerequisite

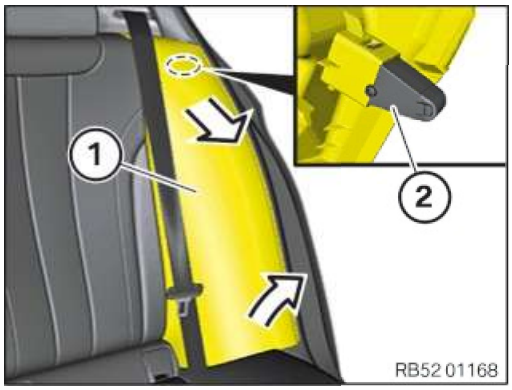
- Rear seat backrests are folded down.

PRELIMINARY WORK

1 – Remove backrest side section on left and right

NOTICE

Description is for left component only. Procedure on the right side is identical.



▸ **Remove armrest side section**

- Reach behind the backrest side section (1) from the top and unclip the backrest side section from the latch mechanism (2) to the front.
- Remove the backrest side section (1) from the rear seat in direction of arrow.

2 – Remove both C-pillar trim panels

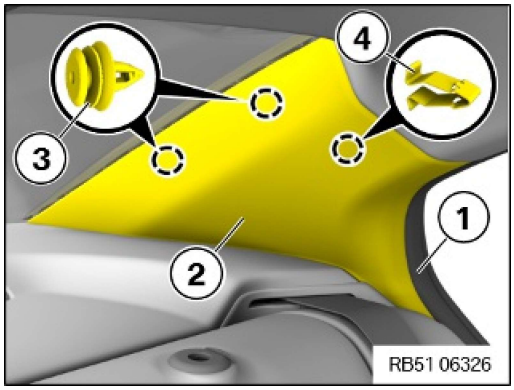
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove C-pillar trim panel**

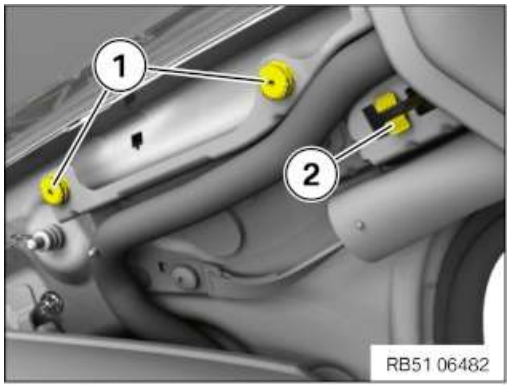
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



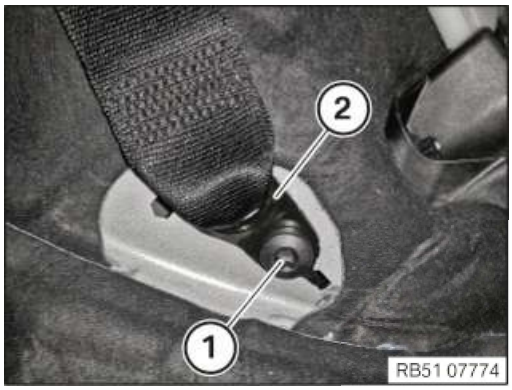
- Unclip clamp (4).
- Unclip clips (3).
- Feed out C-pillar trim panel (2) from the guides to the front.
- Thread out C-pillar trim panel (2) from the lip of edge protection (1).

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- If required, remove the clips (1) and the clamp (2) and connect it to the trim panel.

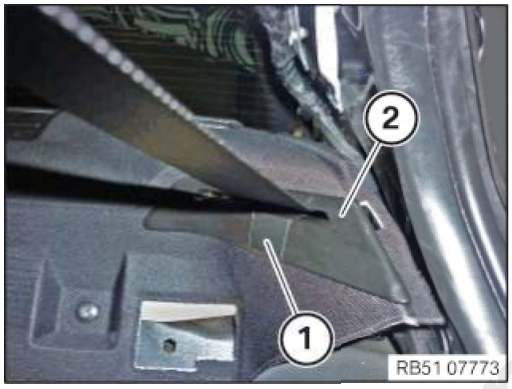
3 – Remove the trim panel for the storage shelf



NOTICE

Perform the operations on the left and right side.

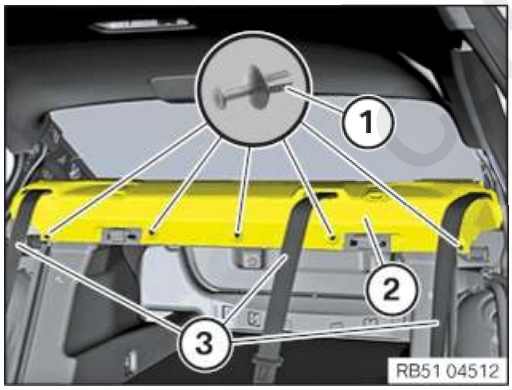
- Release screws (1) on end fitting (2) at rear left and right.
- Feed out the end fitting (2) from the body at rear left and right.



NOTICE

The description is for one component only. The procedure is identical for all further components.

- Unclip the cover (1) forwards.
- Unclip the outer belt feed trim (2) starting from front and feed it out.

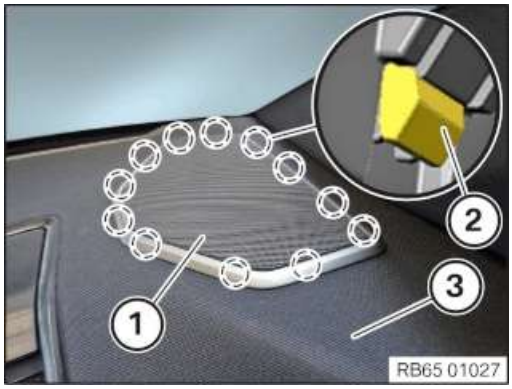


- Loosen the expanding rivet (1).
- Lift the trim panel for the storage shelf (2) a little and disconnect the underlying plug connections.
- Remove the trim panel for the storage shelf (2) to the front and feed out the seat belt (3).

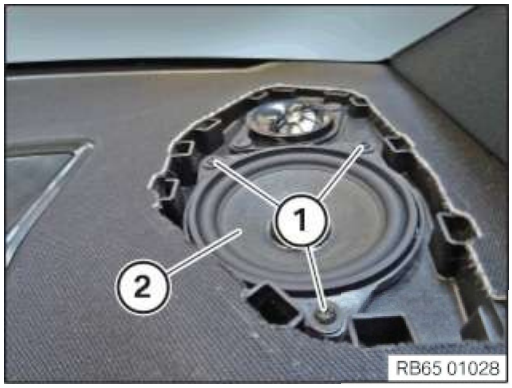
MAIN WORK

4 – Remounting during replacement of the trim panel for the storage box

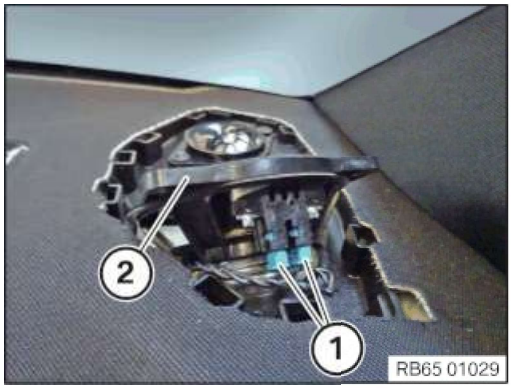
▸ **Remove rear mid-range speaker**



- Unclip the cover (1) with the special tool 0 496 571 (00 9 327) from the latch mechanisms (2) towards the top.
- Remove cover (1) from storage shelf (3).

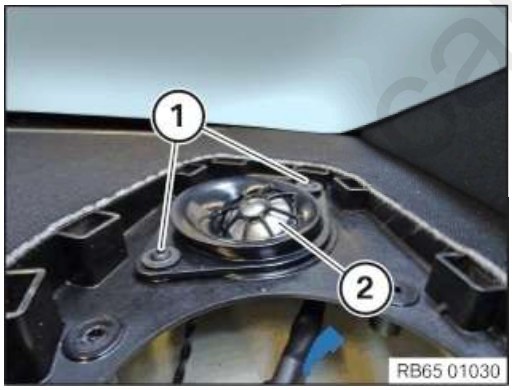


- Loosen screws (1).
- Raise mid-range speaker (2) slightly.



- Unlock and disconnect connector (1).
- Remove the mid-range speaker (2).

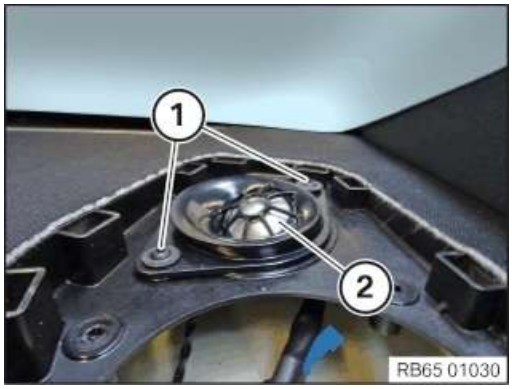
▸ Remove rear tweeter



- Loosen screws (1).
- Pull out the high-range speaker (2) with the cable and remove.

▸ Installing the rear tweeter

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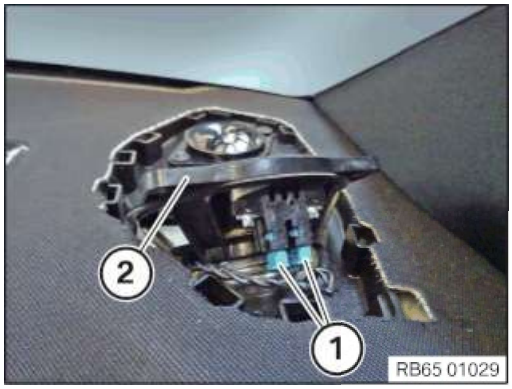


- Feed in the tweeter (2) with the cable and position correctly
- Tighten the screws (1).

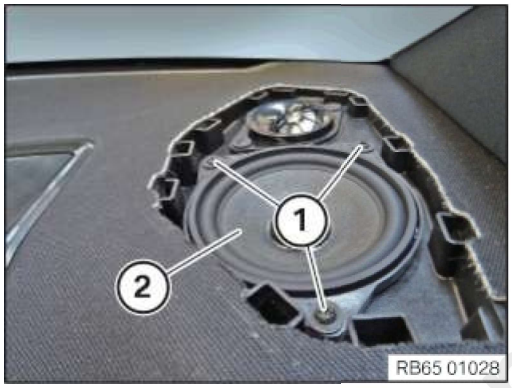
Speaker to storage shelf/support

Screw		Tightening torque	1,8 Nm

▶ **Installing the rear mid-range speaker**



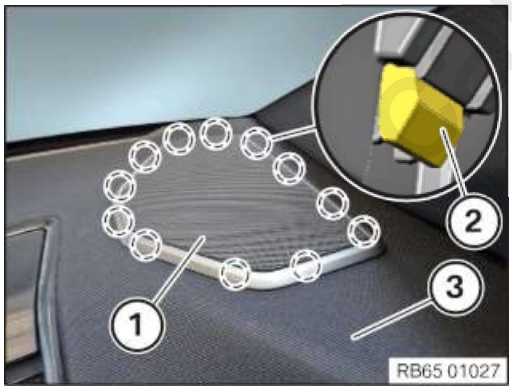
- Position the mid-range speaker (2).
- Connect connectors (1) and lock.



- Correctly position the mid-range speaker (2).
- Tighten the screws (1).

Speaker to storage shelf/support

Screw		Tightening torque	1,8 Nm



- Correctly position the cover (1) on the storage shelf (3).
- Clip in the cover (1) with the latch mechanisms (2) in storage shelf (3).

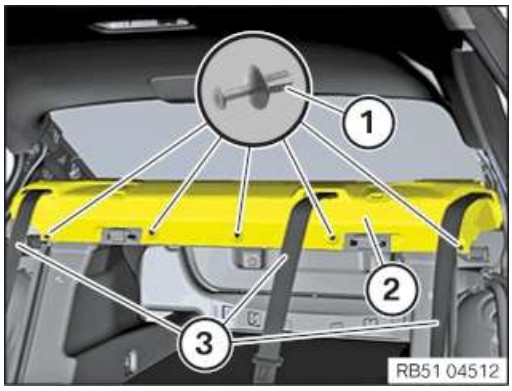


NOTICE

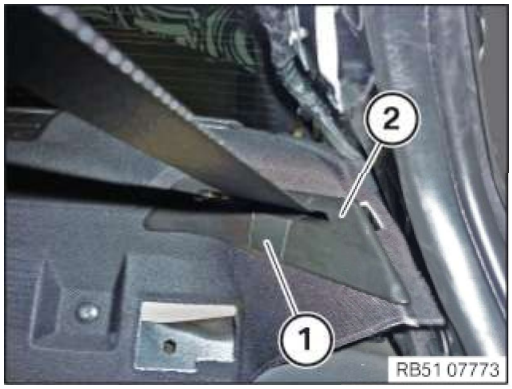
The description is for one component only. The procedure is identical for all further components.

- Detach the trim (1) with the special tool 0 493 681 (64 1 020) on the latch mechanisms (2) and feed out from the front.

5 – Install the trim panel for the storage shelf



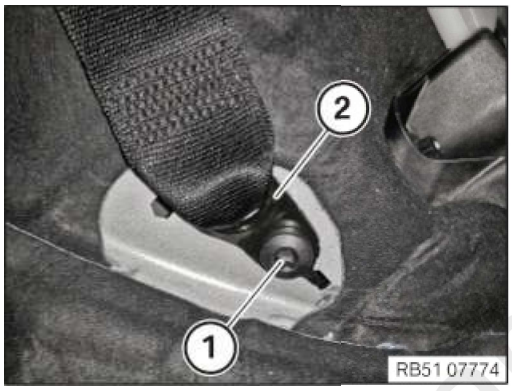
- Install the trim panel for the storage shelf (2) and feed in the seat belts (3).
- Lift the trim panel for the storage shelf (2) a little and connect the underlying connectors.
- Feed in the trim panel for the storage shelf (2) on the rear guide and position it correctly.
- Mount the expanding rivets (1).



NOTICE

The description is for one component only. The procedure is identical for all further components.

- Insert the belt feed trim (2).
- Clip in the cover (1).



NOTICE

Perform the operations on the left and right side.

- Insert the end fitting (2) on the left and right into the body.
- Renew screws (1).

  Parts: Bolts
- Tighten screws (1) on left and right.

End fitting to body

M10	Renew screw.		42 Nm

6 – Install both C-pillar trim panels

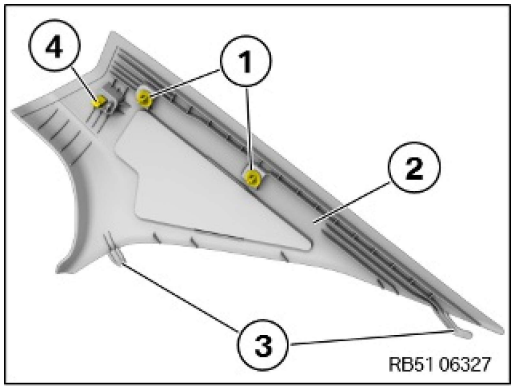
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Installing C-pillar trim panel**

Check

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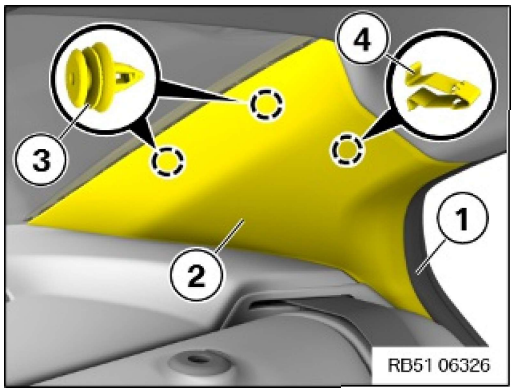
- Check clips (1) and clamp (4) for damage, renew if necessary.
- Check the guides (3) for damage.

Result

» Guide is damaged.

Measure

- Renew the C-pillar trim panel .



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

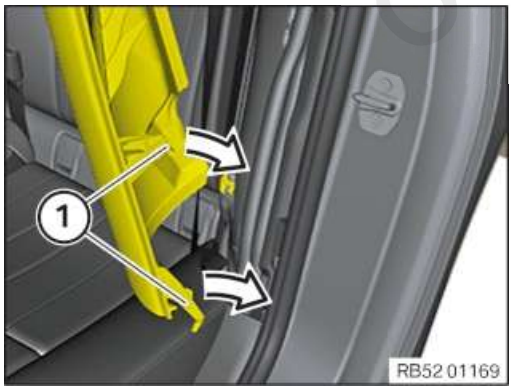
- Feed C-pillar trim panel (2) into guides towards the rear.
- Clip in clips (3).
- Clip in clamp (4).
- Guide in C-pillar trim panel (2) under the lip of edge protection (1).

7 – Install the backrest side section on the left and right

NOTICE

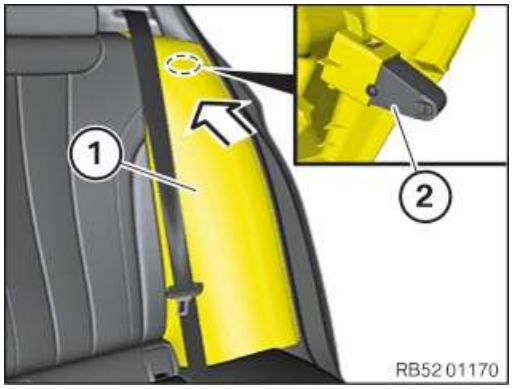
Description is for left component only. Procedure on the right side is identical.

▸ **Install backrest side section**



- Slide the guides (1) of the backrest side section in direction of arrow at the bottom.

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- Clip in the top backrest side section (1) at the latch mechanism (2).

Additional Information

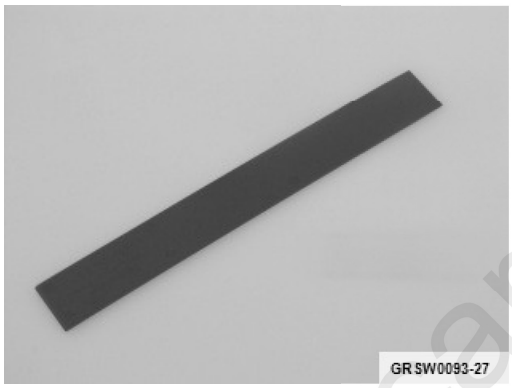
Overview of Tightening Torques

Speaker to storage shelf/support			Used in step 4
Screw		Tightening torque	1,8 Nm

End fitting to body			Used in step 5
M10	Renew screw.		42 Nm

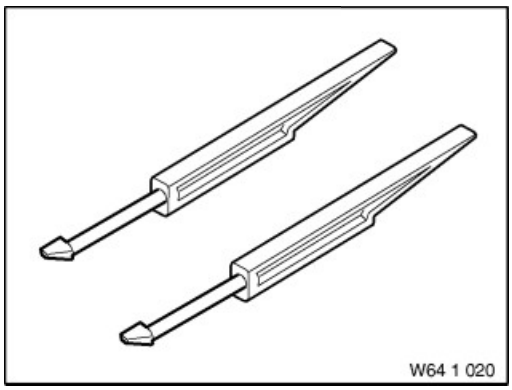
Overview of Special Tools

0 496 571 (00 9 327) Wedge



Common	Used in step 4
Usage	(Cleaning wedge) From 11/2008 this special tool replaces panel wedge 00 9 323 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

0 493 681 (64 1 020) Hook



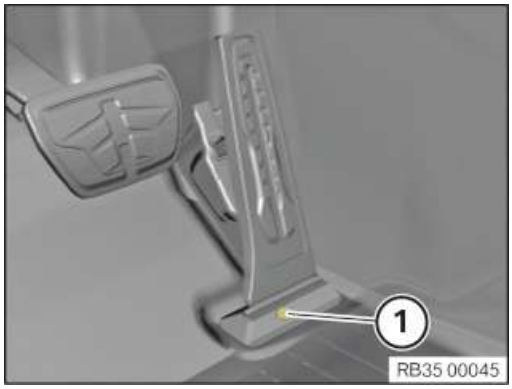
Common	Used in step 4
Usage	(release hook) For releasing and removing fresh air grille. For removing various covers.
Included in the tool or work	
Storage location	C2
Replaced by	
In connection with	
SI-Number	01 15 99 (483)

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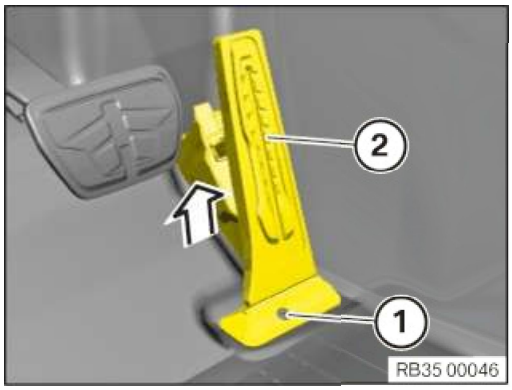
51 47 315 Removing and installing/replacing carpet for vehicle interior

PRELIMINARY WORK

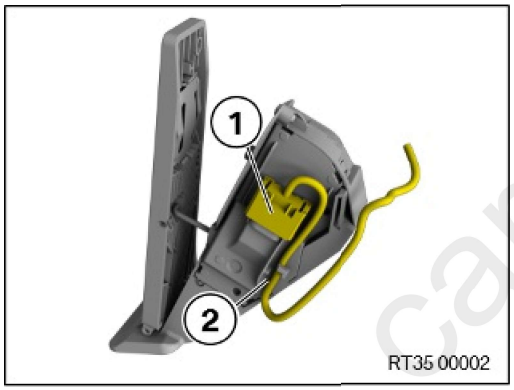
1 – Remove accelerator pedal module



- Lever out cover (1) towards the top.



- Release the hexagon socket screw (1).
- Feed out accelerator pedal module (2) towards the top.



- Unlock plug connection (1) and disconnect.
- Feed the wiring harness out of the holder (2).

2 – Remove the front seats on the left and right

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove front seat**

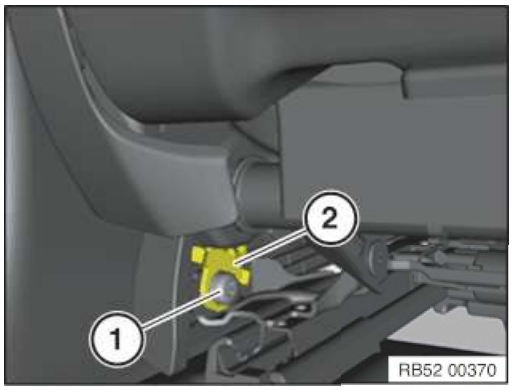
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WARNING

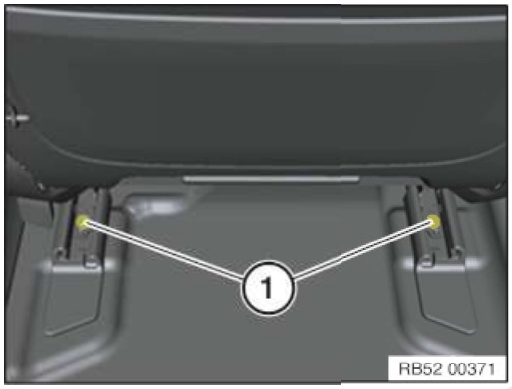
Pyrotechnic components.

Danger! Life-threatening injuries!

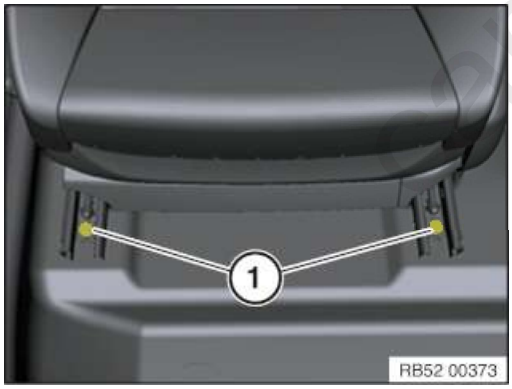
- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



- Fully adjust the front seat to the front and top.
- Loosen screw (1).
- Remove end fitting (2).



- Loosen screws (1).



- Loosen screws (1).
- Adjust the front seat to the centre position.
- **When removing the driver's seat:**

  Completely retract the steering column

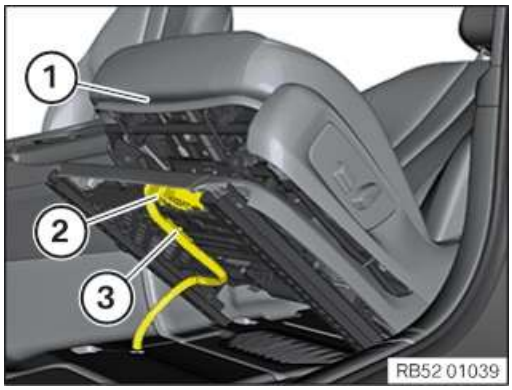
  Adjust the steering column completely upwards.

▹ **Disconnecting all battery earth leads**



- See additional information.

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RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Cover the door sill using protective covers.
- Place front seat (1) to the rear.
- Unlock plug connection (2) and disconnect.
- Loosen the cable clip (3).

RISK OF DAMAGE

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

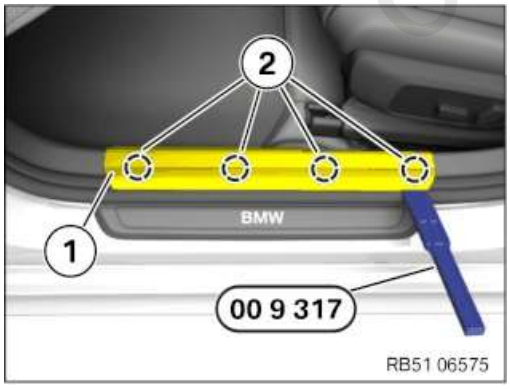
- Lift out front seat (1) with the assistance of a second person.

3 – Remove the door sill cover strip on the left and right

NOTICE

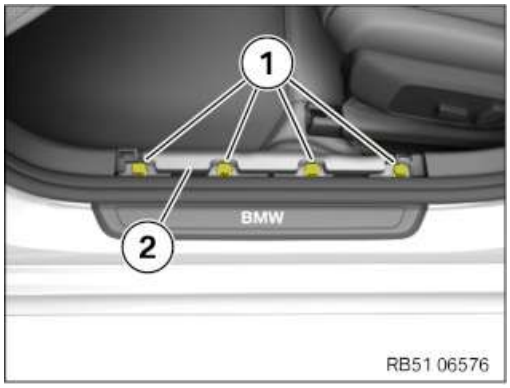
Description is for left component only. Procedure on the right side is identical.

▸ **Remove door sill cover strip**



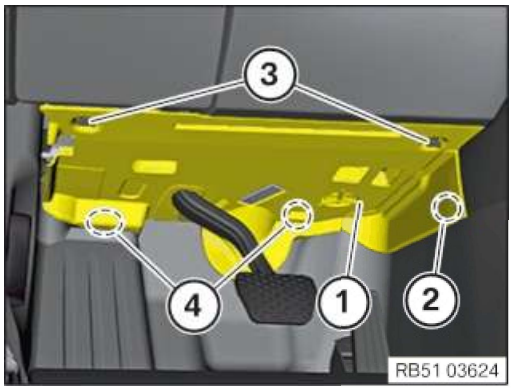
- Detach the door sill cover strip(1) using the special tool 0 490 534 (00 9 317) from the clips (2) in the floor panel.

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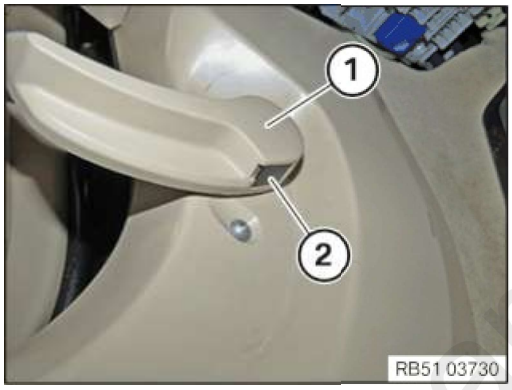
- If necessary, remove the clips (1) from the floor panel (2) and attach to the door sill cover strip.

4 – Removing the trim panel for pedal mechanism

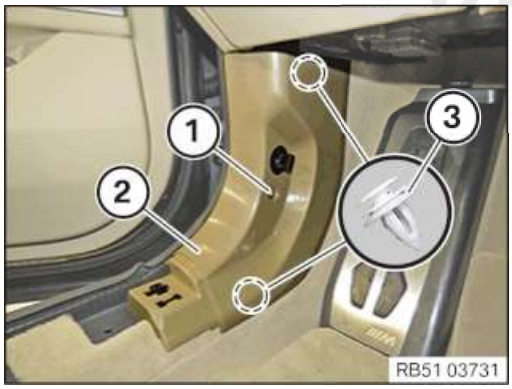


- Unclip the trim panel for the pedal mechanism (1) towards the inside in this area (2).
- Turn the locks (3) by 90°.
- Detach the trim panel for the pedal mechanism (1) inwards out of the guides (4).
- Unlock associated plug connection and disconnect.

5 – Remove the side trim panel in the footwell at the left A-pillar



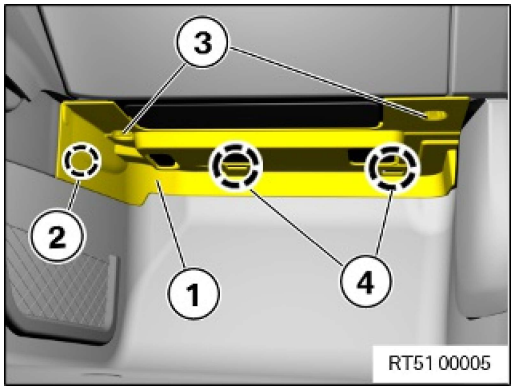
- Pull bonnet release lever (1) towards the rear.
- Lever out the locking wedge (2).
- Remove the bonnet release lever (1) inward.



- Loosen screw (1).
- Loosen the side trim panel (2) at the clips (3) and remove it toward the inside.

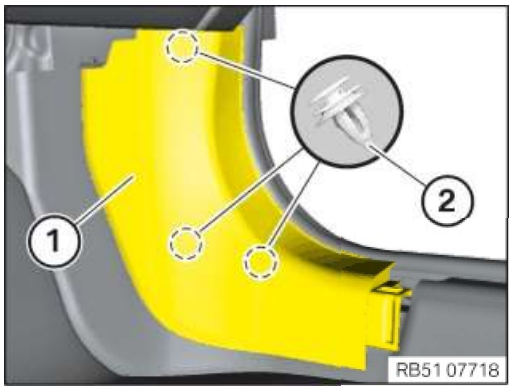
6 – Remove the right footwell trim

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- Turn the locks (3) by 90°.
- Feed the footwell trim (1) out of the guide (2).
- Detach the footwell trim (1) inward out of the guides (4).
- Unlock associated plug connection and disconnect.

7 – Removing the side trim panel in the footwell at the right-hand A-pillar



- Loosen the side trim panel (1) at the clips (2) and remove it toward the inside.

8 – Remove cupholder



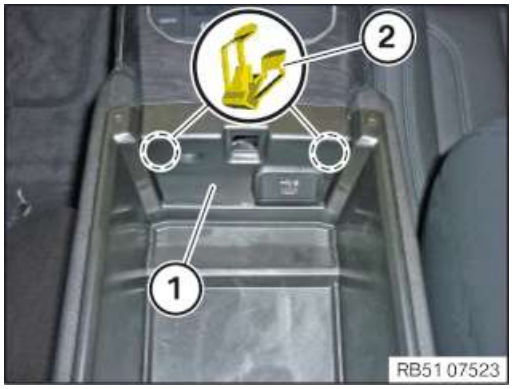
- Remove the insert (1).



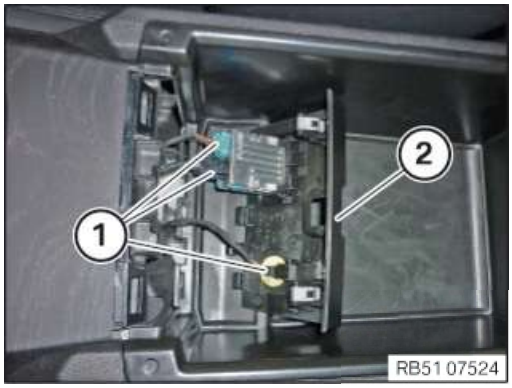
- Loosen screws (1).
- Feed the cup holder (2) out to the top.
- Unlock associated plug connections and disconnect.

9 – Removing the trim in the storage compartment on the centre armrest

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- Lever out the trim (1) with the special tool (2) toward the rear from the clamps 2 298 505.



- Unlock and disconnect the plug connections (1) and remove the trim (2) .

10 – Remove the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Release and remove the centre console trim upwards (1) as shown using the special tool 2 298 505 from the latch mechanisms.

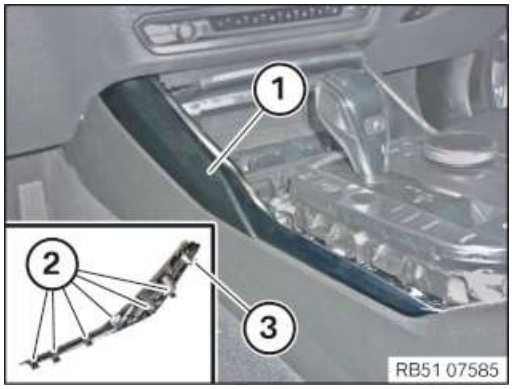
11 – Removing the decorative trim on the centre console trim on the left and right

▸ **Remove decorative trim on centre console**

NOTICE

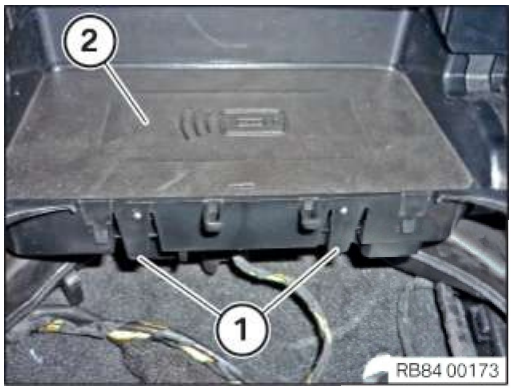
Description is for left component only. Procedure on the right side is identical.

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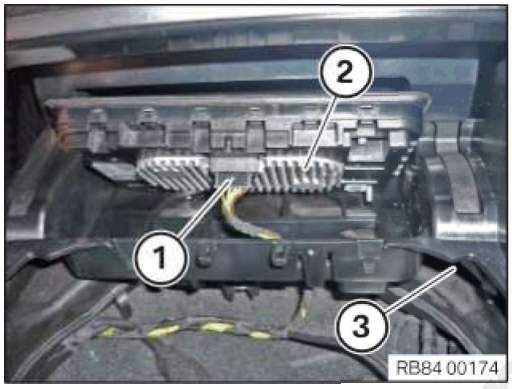


- Lever out the rear decorative trim (1) from the latch mechanisms (2) starting from the top.
- Feed out the decorative trim (1) backwards out of the guide (3) and remove.

12 – Removing the wireless charging station



- Loosen the latch mechanisms (1) and push out the wireless charging station (2) upwards.



- Disconnect the connector (1) and remove the wireless charging station (2) from the centre console (3).

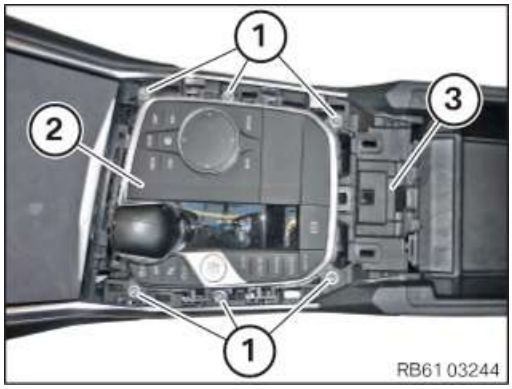
13 – Remove the operating facility in the centre console

▸ **Disconnecting all battery earth leads**



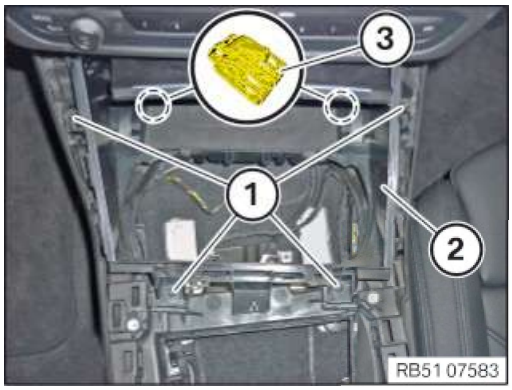
- See additional information.

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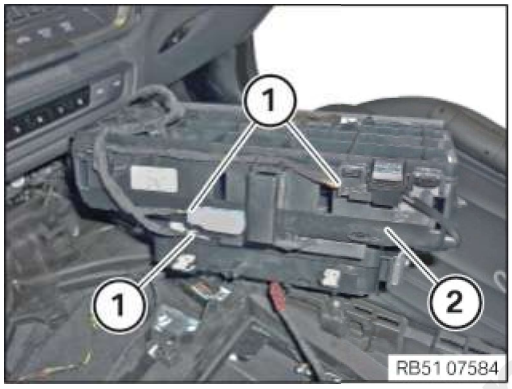


- Loosen screws (1).
- Remove the operating facility in the centre console (2) from the centre console (3).

14 – Removing the storage compartment of the front centre console



- Loosen screws (1).
- Remove storage compartment trim (2) backwards out of clamps (3).



- Unlock and disconnect all the plug connections (1) and remove the storage compartment (2).

15 – Removing the rear centre console trim

RISK OF DAMAGE

Scratches.

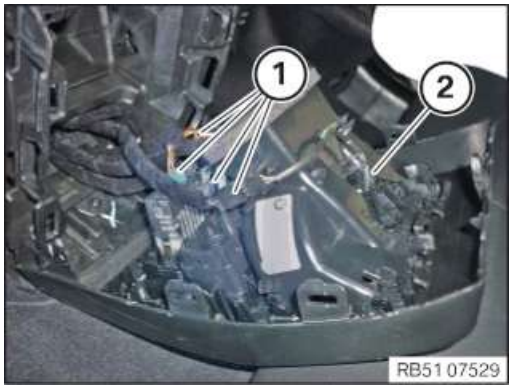
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Release centre console trim (1) backwards from the latch mechanisms at the side and pull it a little way towards the rear.

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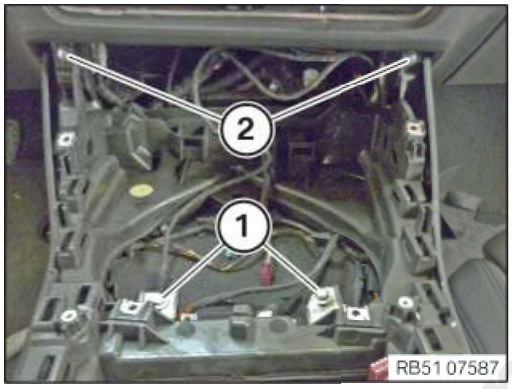


- Unlock and disconnect plug connections (1).
- Remove the centre console trim (2).

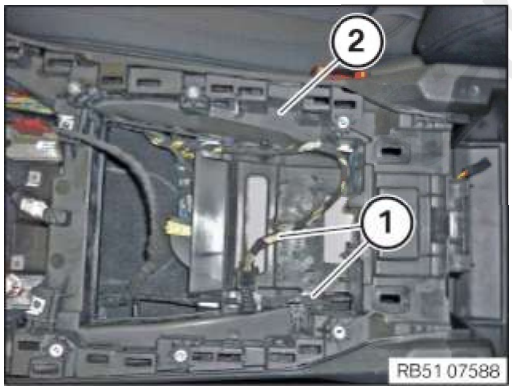
16 – Removing the centre console



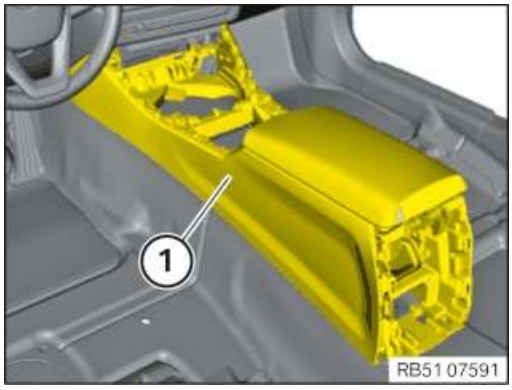
- Loosen screws (1).



- Loosen screws (1) and (2).



- Release the wiring harness (1) from the centre console (2).



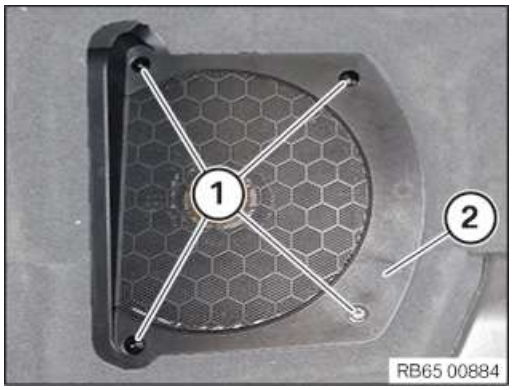
NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

- Carefully raise rear centre console (1).
- Feed out wiring harness from the centre console (1) and unlock and disconnect existing plug connections, if required.
- Feed out and remove the centre console (1) on the instrument panel .

17 – Remove the speaker trim for the central bass

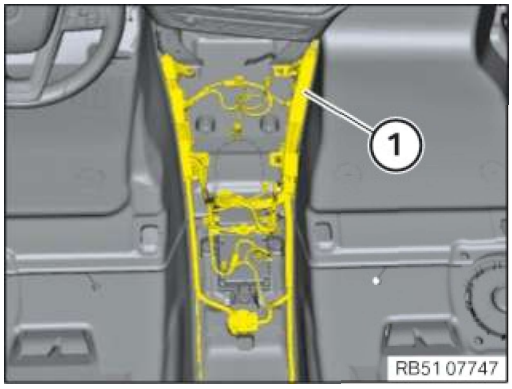
17 – Remove the speaker trim for the central bass



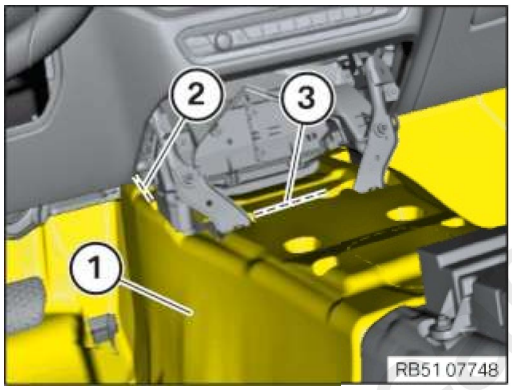
- Loosen screws (1).
- Remove the speaker trim for the central bass (2).

MAIN WORK

18 – Removing the front carpet



- Unclip wiring harness (1) using the holders and unlock and disconnect the plug connections.

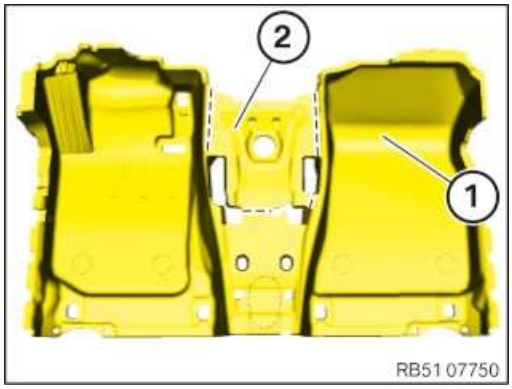


- Cut carpet (1) along the dotted line (2) on the left and right of the heating and air-conditioning unit.
- Cut carpet (1) along the dotted line (3) of the heating and air-conditioning unit.



- Feed out carpet (1) and remove from the vehicle.

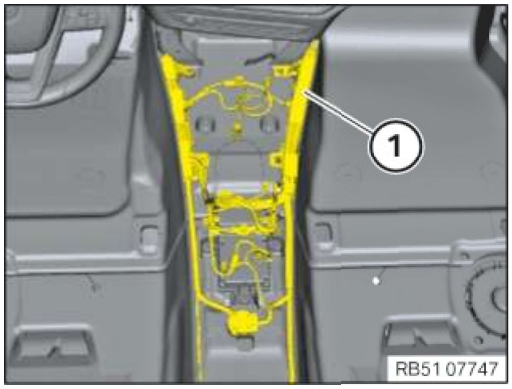
19 – Installing the front carpet



- Place the removed carpet on top of the new carpet (1) and transfer the cuts to the new carpet (1).
- Cut off the highlighted area (2) on the new carpet (1).



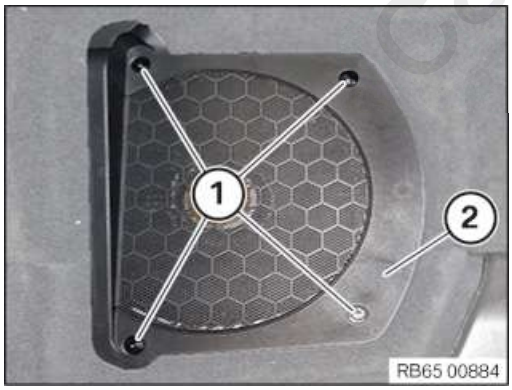
- Install the carpet (1) in the motor vehicle.
- Make sure the carpet (1) is positioned correctly on all adjacent parts and in the area of the heating and air conditioning unit .



- Clip in wiring harness (1) with the holders and connect and lock the connectors.

POSTPROCESSES

20 – Install the speaker trim for the central bass



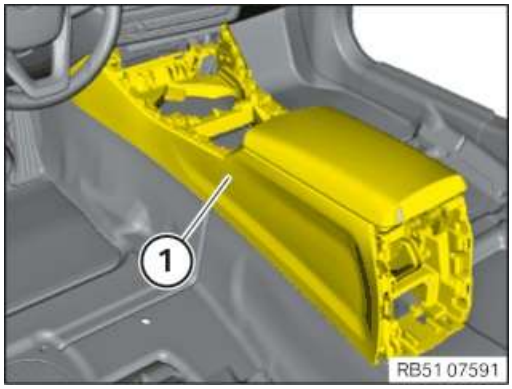
- Position the speaker trim for the central bass (2).
- Tighten the screws (1).

Central bass speaker trim

Screw		Tightening torque	2 Nm

21 – Installing the centre console

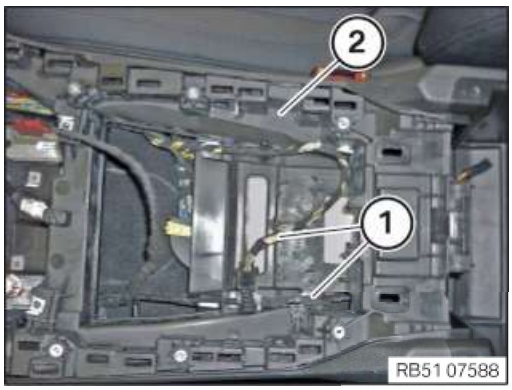
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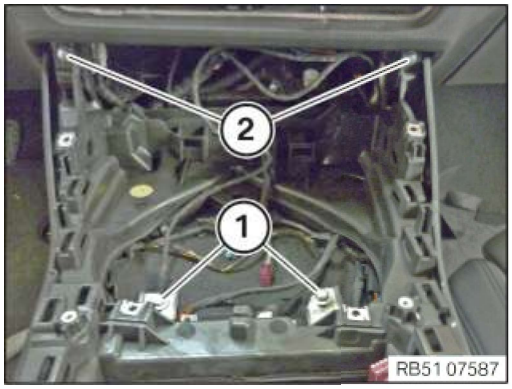
NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

- Install centre console (1) and thereby feed in the wiring harness.
- Feed in the centre console (1) to the instrument panel and position correctly.



- Secure the wiring harness to the centre console (1) and connect and lock the existing plug connections.



- Tighten the screws (1).

Centre console on tunnel

M6x18 Hexagon screw		Tightening torque	4,6 Nm

- Tighten the screws (2).

Centre console to instrument panel

Oval-head screw		Tightening torque	1,8 Nm

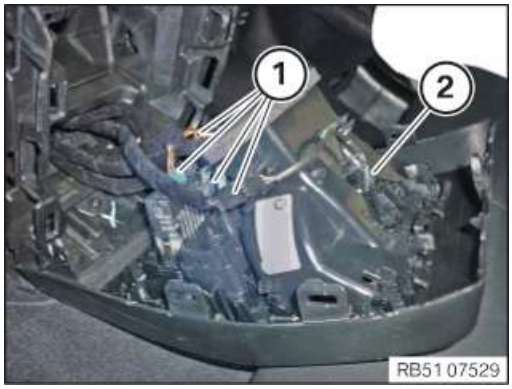


- Tighten the screws (1).

Centre console on tunnel

M6x18 Hexagon screw		Tightening torque	4,6 Nm

22 – Installing the rear centre console trim



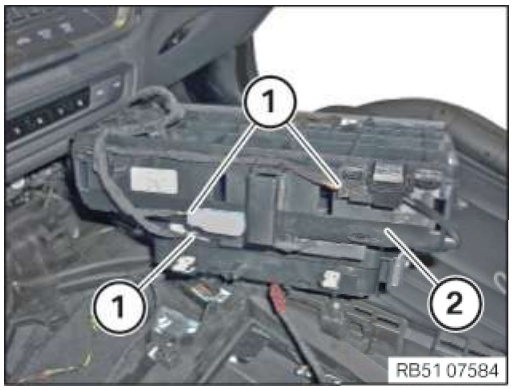
- Install the centre console trim (2).
- Connect connectors (1) and lock.

rdrag.com

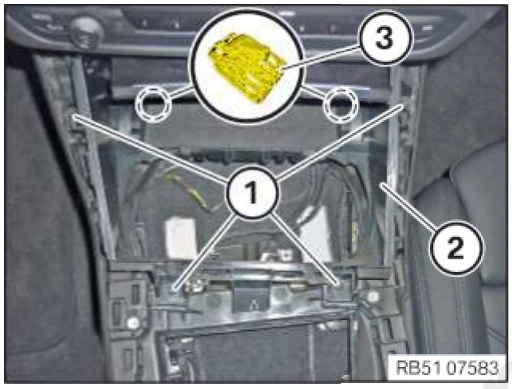


- Position centre console trim (1) and engage at the latch mechanisms at the side.

23 – Installing the storage compartment of the front centre console



- Mount the storage compartment (2) and connect connectors (1).

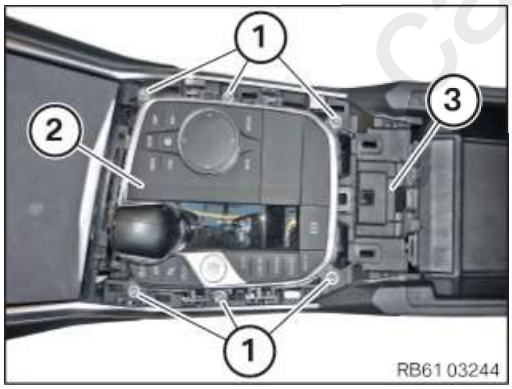


- Engage rear storage compartment trim (2) into clamps (3).
- Tighten the screws (1).

Storage compartment to centre console

Oval-head screw		Tightening torque	1,8 Nm

24 – Install the operating facility in the centre console



- Position operating facility (2) in the centre console (3).
- Tighten the screws (1).

Gear selector switch to centre console trim

Screw		Tightening torque	1,8 Nm

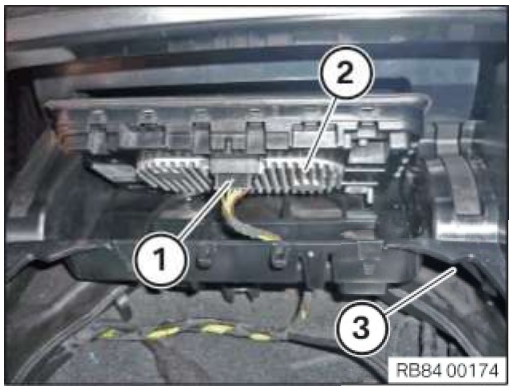
► **Disconnecting all battery earth leads**

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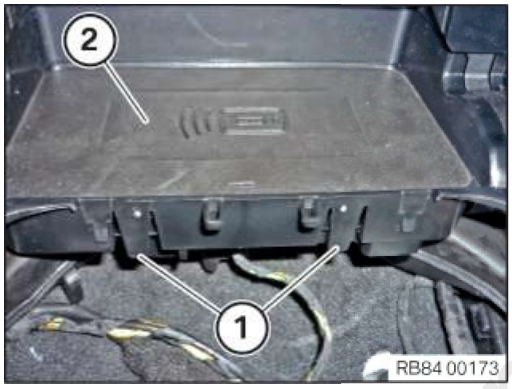


- See additional information.

25 – Installing the wireless charging station



- Connect connector (1).
- Position the wireless charging station (2) in the centre console (3).



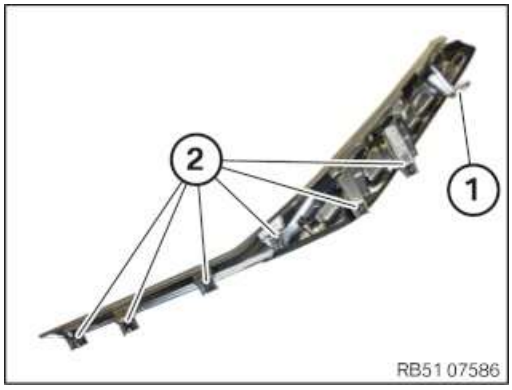
- Press the wireless charging station (2) down till the locking units (1) are engaged correctly.

26 – Install decorative trim on centre console on left and right

▸ **Installing the decorative trim to centre console**

NOTICE

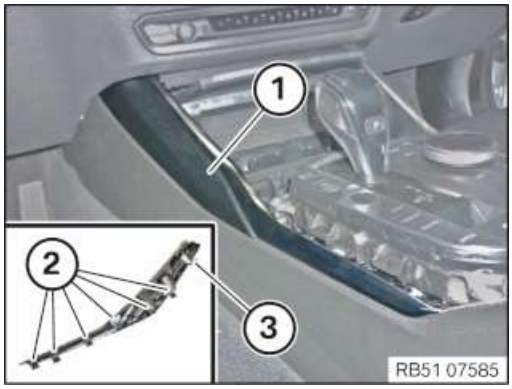
Description is for left component only. Procedure on the right side is identical.



- Check guide (1) and the latch mechanisms (2).

  Renew defective decorative trim.

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- Feed in the decorative trim (1) forward in the guide (3).
- Engage decorative trim (1) in latch mechanisms (2).

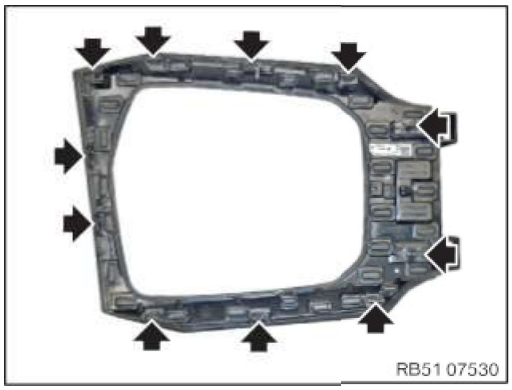
27 – Installing the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

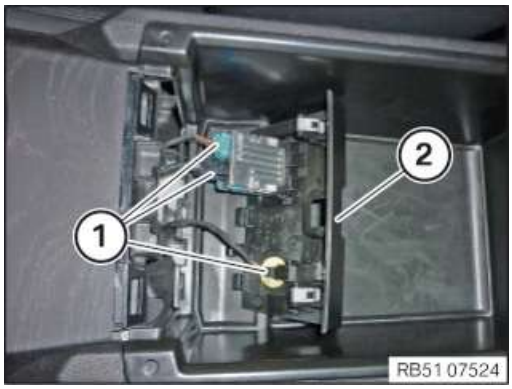


- Check all the latch mechanisms or clamps (arrows).
- In case the latch mechanisms or the clamps (arrows) are faulty, renew the centre console trim .



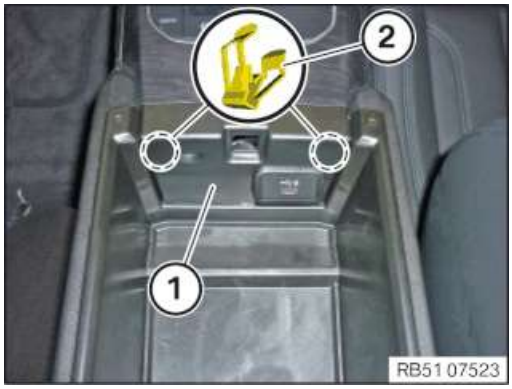
- Correctly position the centre console trim (1) and engage at the latch mechanisms.

28 – Installing the trim in the storage compartment of the centre armrest



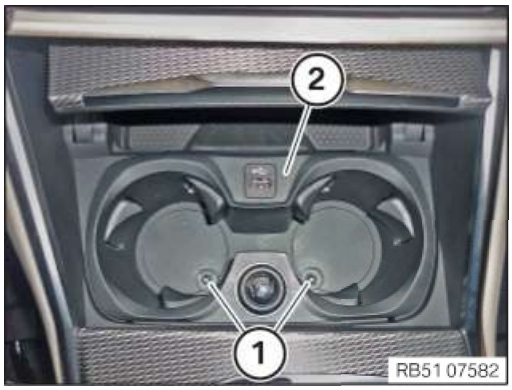
- Mount the trim (2) and connect connector (1) and lock.

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- Correctly position trim (1) and snap into the clamps (2).

29 – Install the cup holder



- Fix the cup holder (1) and the belonging connectors.
- Correctly position cup holder (1).
- Tighten the screws (2).

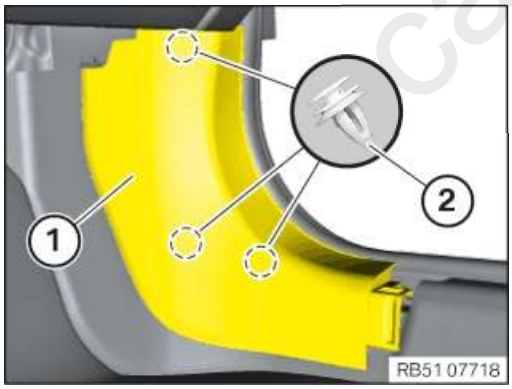
Cup holder to centre console

Oval-head screw		Tightening torque	1,8 Nm



- Insert the insert (1).

30 – Installing side trim panel in footwell on right A-pillar

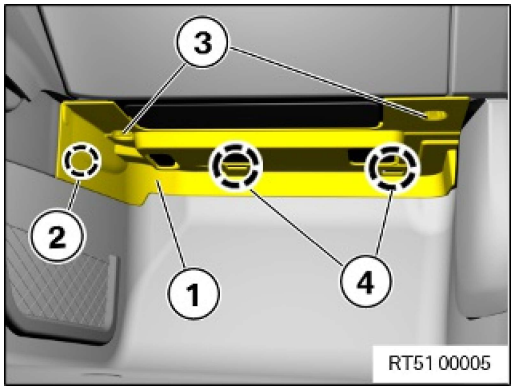


- Check the clips (2) for damage.

  Renew damaged or missing clips (2).
- Correctly position the side trim panel (1) and clip in to the clips (2).
- Make sure that the side trim panel (1) is correctly fitted against edge protection.

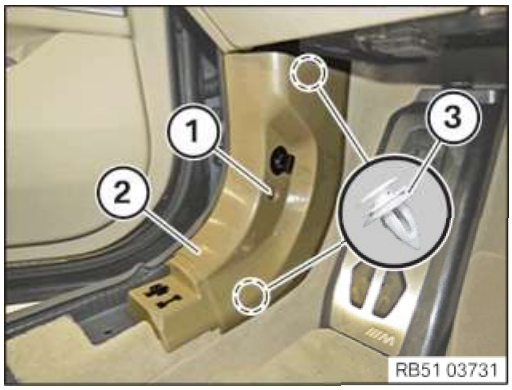
31 – Install the right footwell trim panel

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- Connect associated connector.
- Attach the footwell trim (1) to the guides (4) and fold up.
- Guide the footwell trim (1) into the guide (2) of the centre console.
- Position locks (3) correctly and turn by 90°.

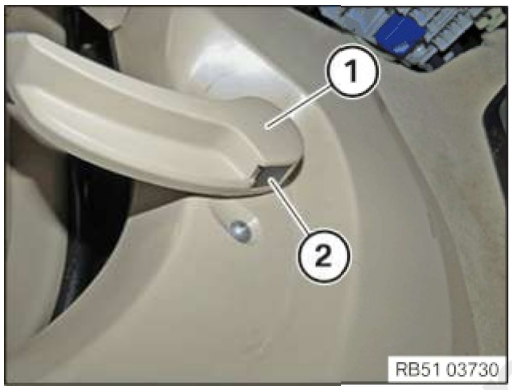
32 – Install the side trim panel in the footwell at the left A-pillar



- Check the clips (3) for damage and renew if necessary.
- Position the side trim panel (2) and engage it in the clips (3).
- Make sure that the side trim panel (2) is correctly fitted against edge protection.
- Tighten down screw (1).

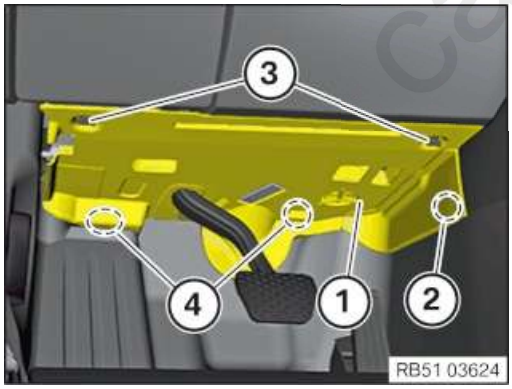
A-pillar footwell side trim panel

Screw		Tightening torque	2,5 Nm



- Install bonnet release lever (1).
- Pull bonnet release lever (1) towards the rear.
- Install locking wedge (2).

33 – Installing the trim panel for the pedal mechanism



- Connect associated connector.
- Attach the trim panel for the pedal mechanism (1) in the guides (4) and fold it up.
- Clip the trim panel for the pedal mechanism (1) into the centre console in this area (2).
- Insert locks (3) correctly and turn 90°.

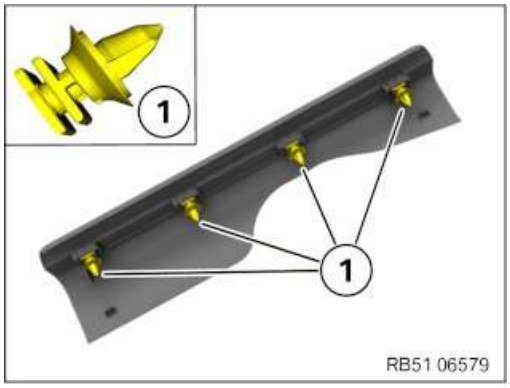
34 – Install the left and right door sill cover strips

NOTICE

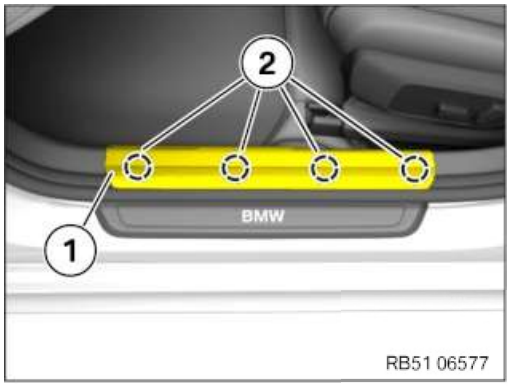
Description is for left component only. Procedure on the right side is identical.

▸ **Install the door sill cover strip**

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- Check the clips (1) for damage and renew if necessary.



- Clip the door sill cover strip (1) into the floor panel with the clips (2).

35 – Install the front seat on the left and right

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install front seat**

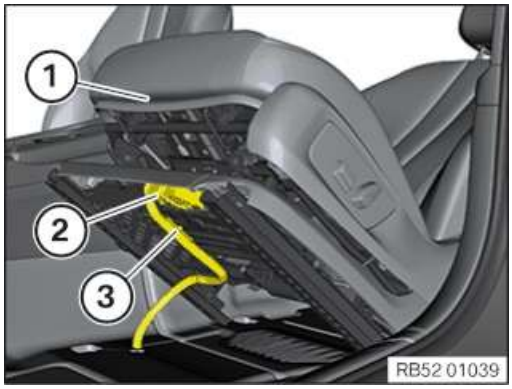
WARNING

Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.

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RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Cover the door sill using protective covers.

RISK OF DAMAGE

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

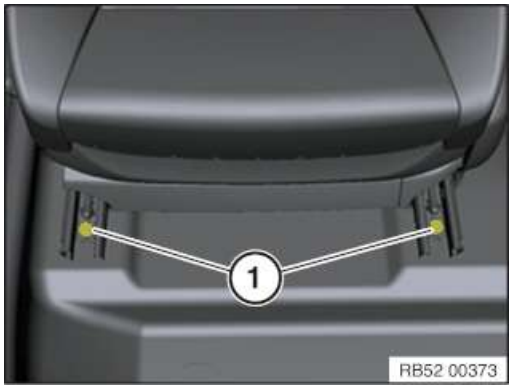
- Lift front seat (1) into the vehicle with the assistance of a second person.
- Place front seat (1) to the rear.
- Connect connector (2).
- Attach the cable clip (3).

▷ **Disconnecting all battery earth leads**



- See additional information.

◁



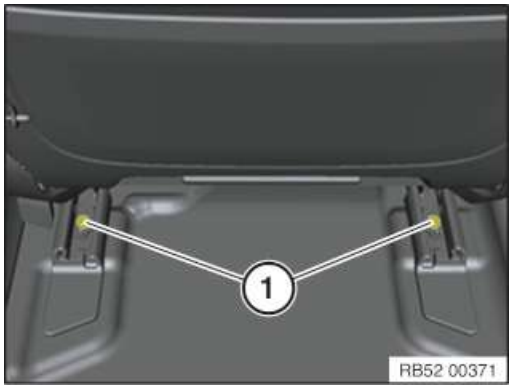
- Adjust the front seat to the rear.
- Renew screws (1).

  Parts: Bolts
- Tighten the screws (1).

Seat to body

M10	Renew screw.	Tightening torque	42 Nm

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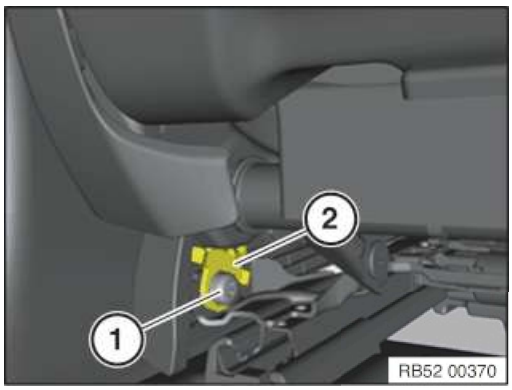


- Move front seat forwards.
- Renew screws (1).

  Parts: Bolts
- Tighten the screws (1).

Seat to body

M10	Renew screw.	Tightening torque	42 Nm



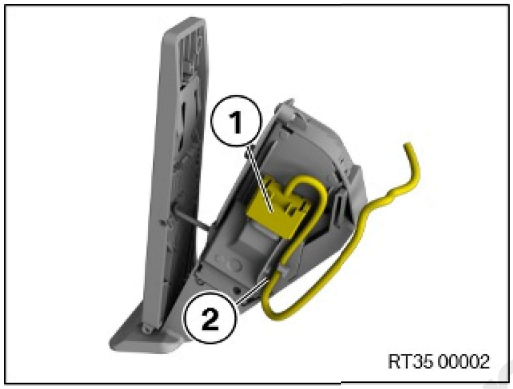
- Fully adjust the front seat to the front and top.
- Insert the end fitting (2).
- Renew the screw (1).

  Parts: Screw
- Tighten down screw (1).

End fitting to seat mechanism

M10	Renew screw.	Tightening torque	42 Nm

36 – Install accelerator pedal module

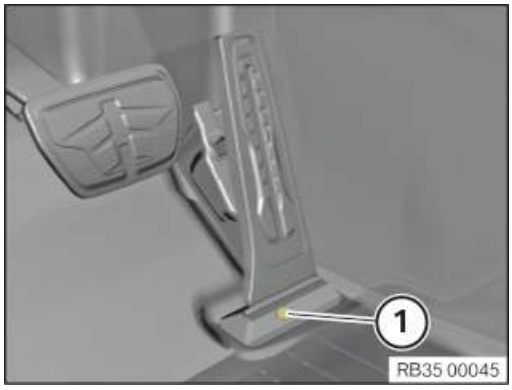


- Connect connectors (1) and lock.
- Feed the wiring harness into the holder (2).



- Feed in accelerator pedal module (2) from above.
- Renew the hexagon socket screw (1).

  Parts: Hexagon socket screw
- Fit the hexagon socket screw (1) and tighten.



- Clip in the cover (1).

Additional Information

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Overview of Tightening Torques

Central bass speaker trim			Used in step 20
Screw		Tightening torque	2 Nm

Centre console on tunnel			Used in step 21
M6x18 Hexagon screw		Tightening torque	4,6 Nm

Centre console to instrument panel			Used in step 21
Oval-head screw		Tightening torque	1,8 Nm

Storage compartment to centre console			Used in step 23
Oval-head screw		Tightening torque	1,8 Nm

Gear selector switch to centre console trim			Used in step 24
Screw		Tightening torque	1,8 Nm

Cup holder to centre console			Used in step 29
Oval-head screw		Tightening torque	1,8 Nm

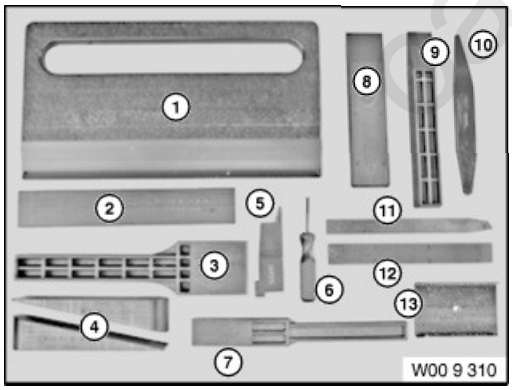
A-pillar footwell side trim panel			Used in step 32
Screw		Tightening torque	2,5 Nm

Seat to body			Used in step 35
M10	Renew screw.	Tightening torque	42 Nm

End fitting to seat mechanism			Used in step 35
M10	Renew screw.	Tightening torque	42 Nm

Overview of Special Tools

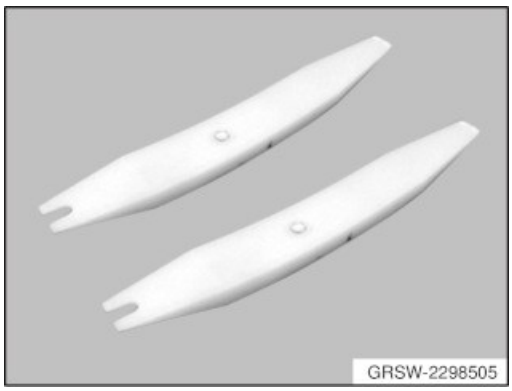
0 490 534 (00 9 317) Wedge



Common		Used in step 3
Usage	(Trim wedge) Replaced by special tool 00 9 325 from 11/2008 (quality improvement due to new material) Replaced by 00 9 325 (0 496 569)	
Included in the tool or work	0 490 527	
Storage location		
Replaced by		
In connection with		
SI-Number		

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2 298 505 Wedge



Common	Used in step 910
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

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Links

General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	235

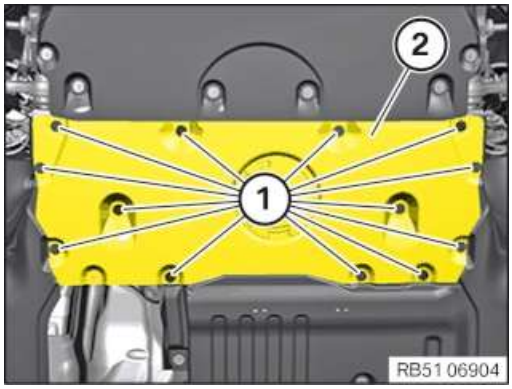
Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	2132435
61 20 900 Disconnecting and connecting battery earth lead	2132435
61 20 900 Disconnecting and connecting battery earth lead	2132435
61 20 900 Disconnecting and connecting battery earth lead	2132435
61 20 900 Disconnecting and connecting battery earth lead	2132435
61 20 900 Disconnecting and connecting battery earth lead	2132435
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	2132435
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	2132435
61 20 900 Disconnecting and connecting battery earth lead	2132435
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	2132435
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	2132435
61 20 900 Disconnecting and connecting battery earth lead	2132435
61 20 900 Disconnecting and connecting battery earth lead	2132435
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61 20 900 Disconnecting and connecting battery earth lead	2132435
61 20 900 Disconnecting and connecting battery earth lead	2132435
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	2132435
61 20 900 Disconnecting and connecting battery earth lead	2132435
61 20 900 Disconnecting and connecting battery earth lead	2132435
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61 20 900 Disconnecting and connecting battery earth lead	2132435
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61 20 900 Disconnecting and connecting battery earth lead	2132435

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51 47 492 Removing and installing/replacing centre underbody protection

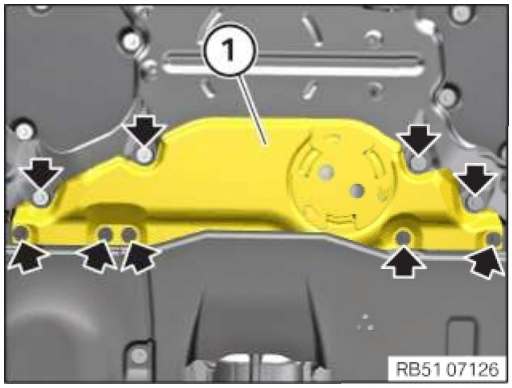
1 – Removing the centre underbody protection



- **Version with rear-wheel drive:**

  Loosen screws (1).

  Remove centre underbody protection (2) .

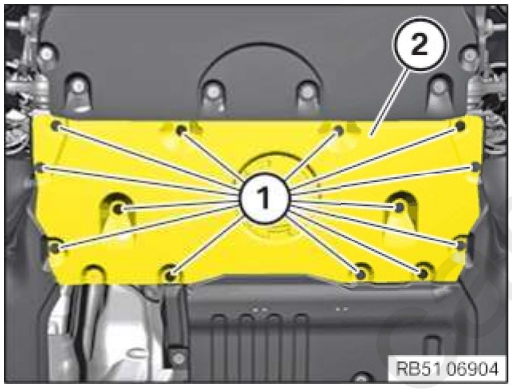


- **Version with all-wheel drive:**

  Remove screws (arrows).

  Feed out and remove the centre underbody protection (1).

2 – Installing the centre underbody protection



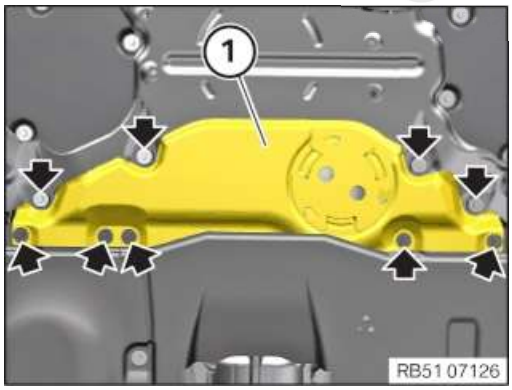
- **Version with rear-wheel drive:**

  Position central underbody protection (2).

  Tighten the screws (1).

Underbody protection

Hexagon screw		Tightening torque	3 Nm



- **Version with all-wheel drive:**

  Guide in and install the centre of underbody protection (1).

  Tighten screws (arrows).

Underbody protection

Hexagon screw		Tightening torque	3 Nm

Additional Information

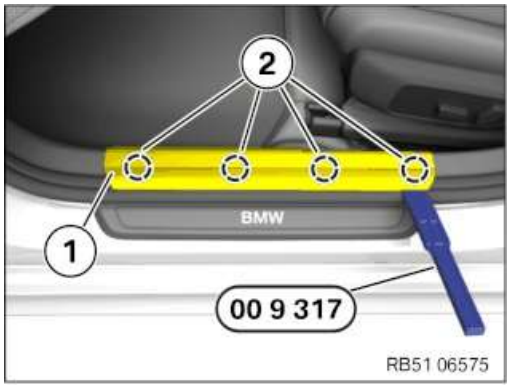
Overview of Tightening Torques

Underbody protection Used in step 2

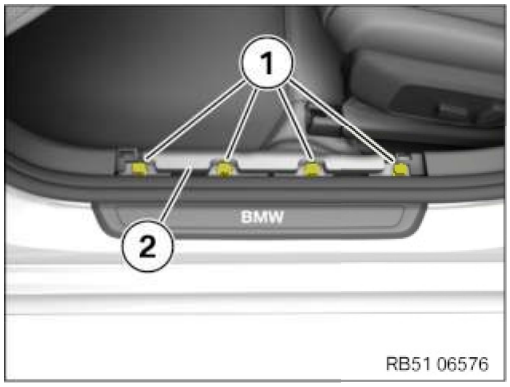
Hexagon screw		Tightening torque	3 Nm

51 47 000 Removing and installing/replacing front left door sill cover strip

1 – Remove door sill cover strip

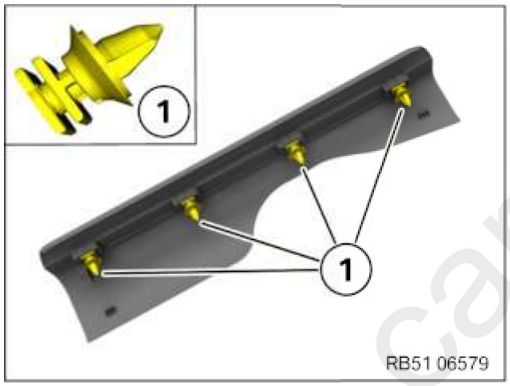


- Detach the door sill cover strip(1) using the special tool 0 490 534 (00 9 317) from the clips (2) in the floor panel.

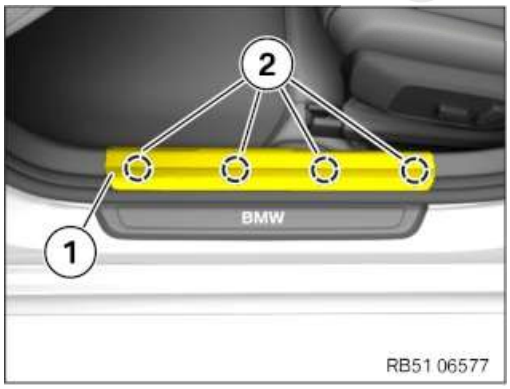


- If necessary, remove the clips (1) from the floor panel (2) and attach to the door sill cover strip.

2 – Install the door sill cover strip



- Check the clips (1) for damage and renew if necessary.



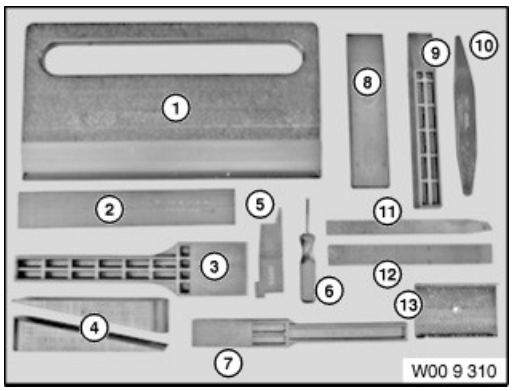
- Clip the door sill cover strip (1) into the floor panel with the clips (2).

Additional Information

Overview of Special Tools

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0 490 534 (00 9 317) Wedge



Common	Used in step 1
Usage	(Trim wedge) Replaced by special tool 00 9 325 from 11/2008 (quality improvement due to new material) Replaced by 00 9 325 (0 496 569)
Included in the tool or work	0 490 527
Storage location	
Replaced by	
In connection with	
SI-Number	

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51 47 151 Removing and installing/replacing left luggage compartment wheel arch trim

PRELIMINARY WORK

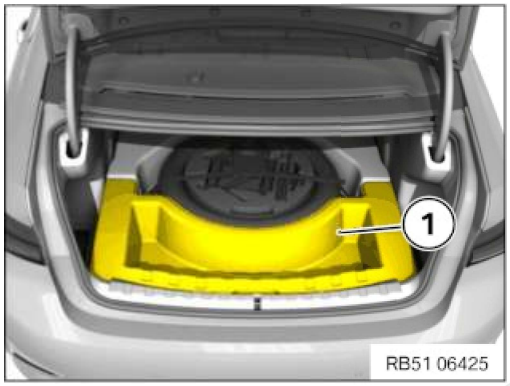
1 – Removing the luggage compartment floor trim panel



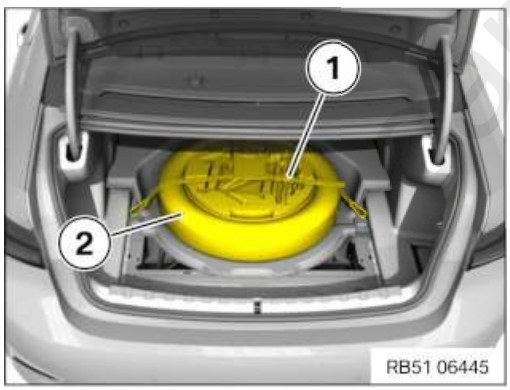
- Remove luggage compartment floor trim panel (1).

2 – If installed: Removing the compact spare wheel

▸ **Removing rear luggage compartment well**

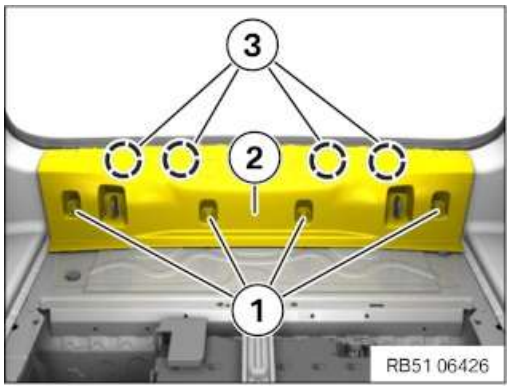


- Remove rear luggage compartment well (1).



- Open buckle on seat belt strap (1) and set it aside.
- Remove emergency wheel (2) with the insert.

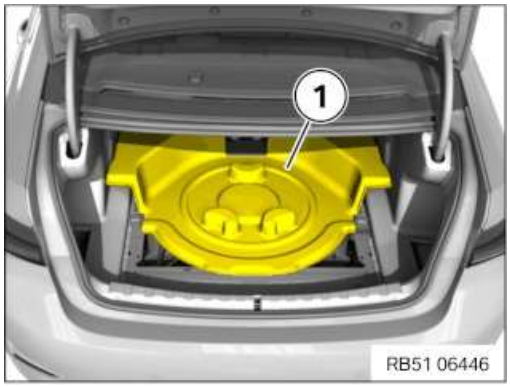
3 – Removing the loading edge trim



- Loosen the expanding rivet (1).
- Unclip loading edge trim(2) upwards from latch mechanisms (3).
- Guide out and remove loading edge trim (2) under the sealing lip of the tailgate seal.

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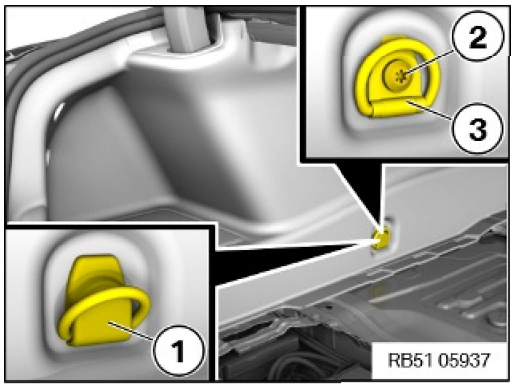
4 – Removing front luggage compartment well



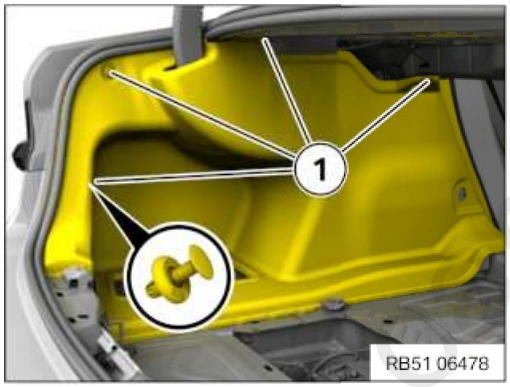
- Guide out and remove front luggage compartment well (1) on the seat belt strap.

MAIN WORK

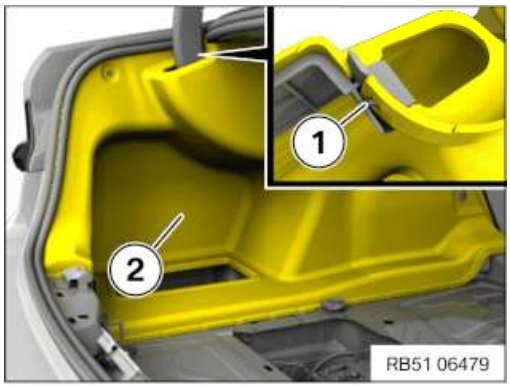
5 – Remove luggage compartment wheel arch trim panel on left.



- Remove the cover (1).
- Loosen screw (2).
- Remove lashing eye (3).

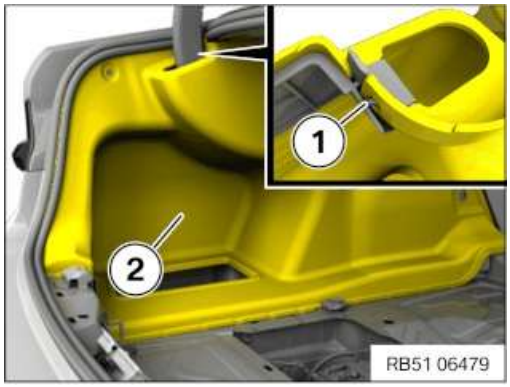


- Reposition left rear seat backrest.
- Loosen the expanding rivet (1).

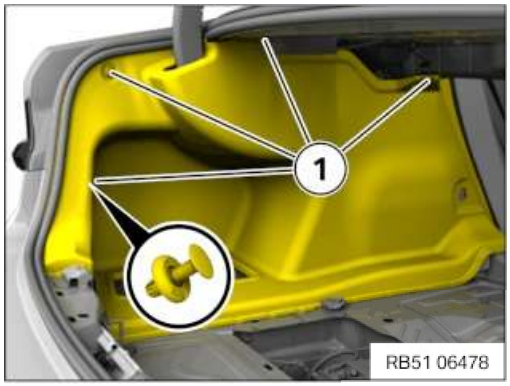


- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip for the tailgate and the side trim panel in the rear passenger compartment.
- Remove luggage compartment wheel arch trim panel (2).

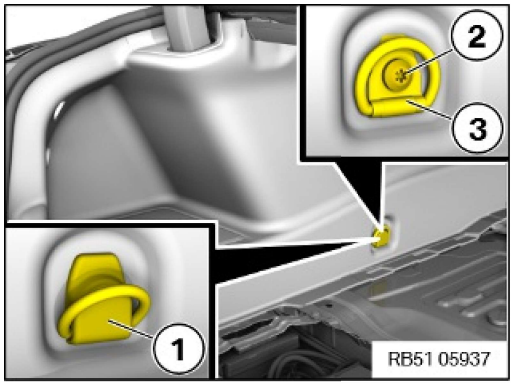
6 – Install luggage compartment wheel arch trim panel at left



- Feed luggage compartment wheel arch trim panel (2) under the side trim panel in the rear passenger compartment and the sealing lip for the tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).



- Secure expanding rivet (1).
- Raise the link rear seat backrest.



- Position the lashing eye (3).
- Tighten down screw (2).

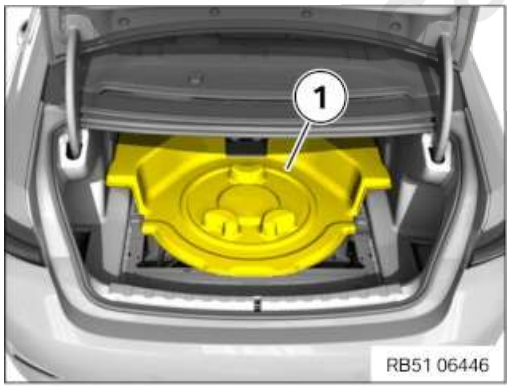
Lashing eye to body

	Tightening torque	19 Nm

- Install the cover (1).

POSTPROCESSES

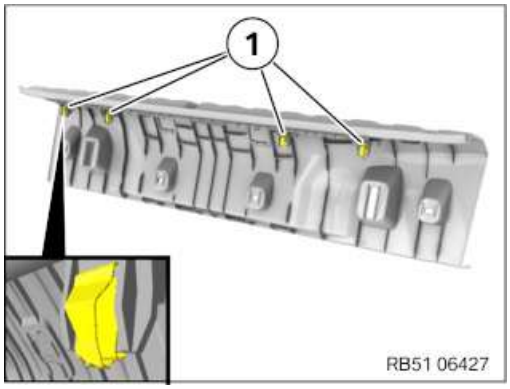
7 – Install the luggage compartment well in front



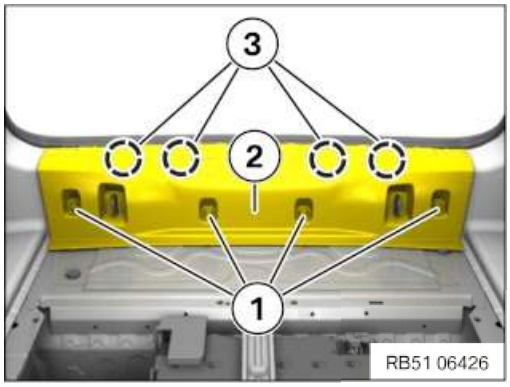
- Feed in and insert front luggage compartment well (1) on the seat belt strap.

8 – Installing loading edge trim

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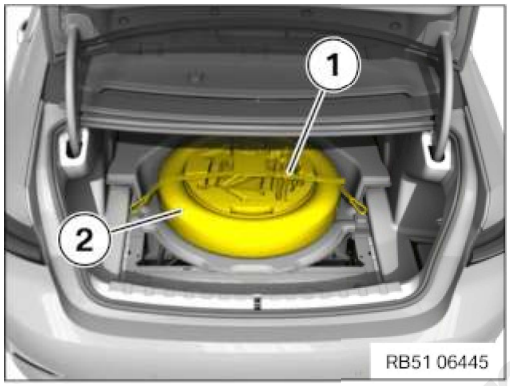


- Check the clamps (1) for damage and renew if necessary.



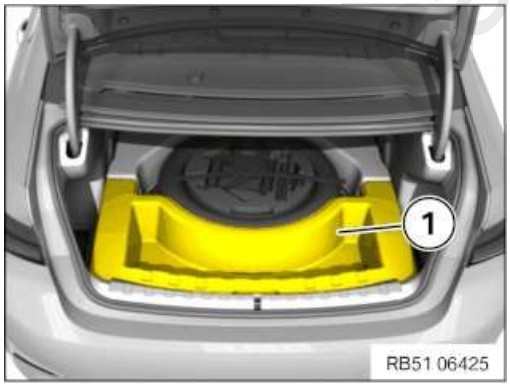
- Insert the loading edge trim (2) under the sealing lip of the tailgate seal.
- Fit the trim of the loading edge (2) at the latch mechanisms (3) and clip it in to the bottom.
- Secure expanding rivet (1).

9 – If installed: Install the emergency wheel



- Install the emergency wheel (2) with the insert.
- Position the seat belt strap above the emergency wheel and close the buckle on the seat belt strap (1).

▶ **Installing rear luggage compartment well**



- Install rear luggage compartment well (1).

10 – Installing the luggage compartment floor trim panel



- Insert the luggage compartment floor trim panel (1).

Additional Information

Overview of Tightening Torques

Lashing eye to body		Used in step 6
	Tightening torque	19 Nm

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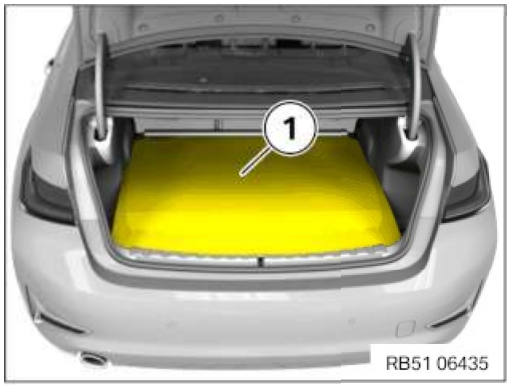
51 47 101 Removing and installing/replacing luggage compartment floor trim panel

1 – Removing the luggage compartment floor trim panel



- Remove luggage compartment floor trim panel (1).

2 – Installing the luggage compartment floor trim panel



- Insert the luggage compartment floor trim panel (1).

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51 47 161 Removing and installing/replacing right luggage compartment wheel arch panel

PRELIMINARY WORK

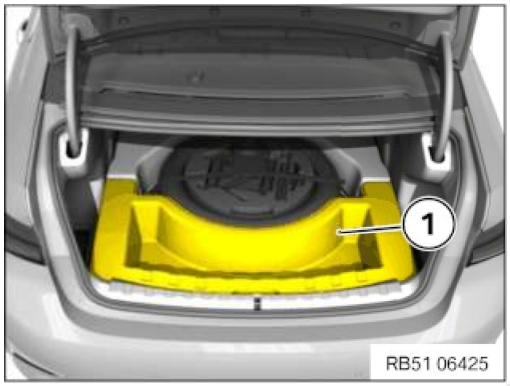
1 – Removing the luggage compartment floor trim panel



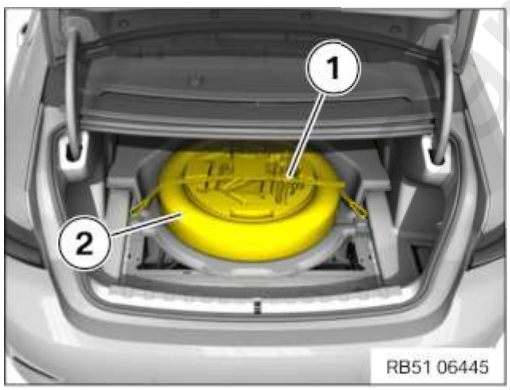
- Remove luggage compartment floor trim panel (1).

2 – If installed: Removing the compact spare wheel

▸ **Removing rear luggage compartment well**

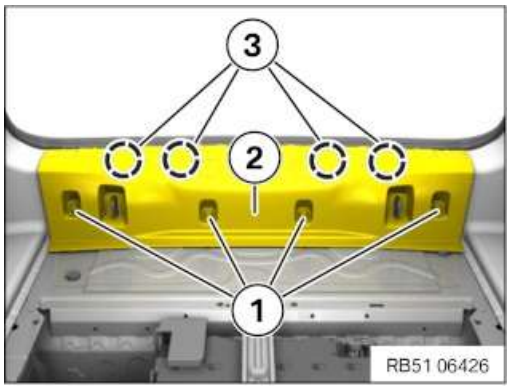


- Remove rear luggage compartment well (1).



- Open buckle on seat belt strap (1) and set it aside.
- Remove emergency wheel (2) with the insert.

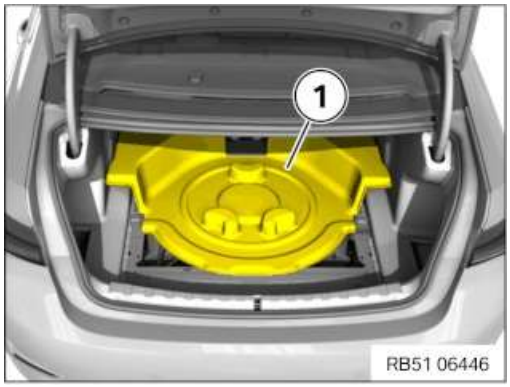
3 – Removing the loading edge trim



- Loosen the expanding rivet (1).
- Unclip loading edge trim(2) upwards from latch mechanisms (3).
- Guide out and remove loading edge trim (2) under the sealing lip of the tailgate seal.

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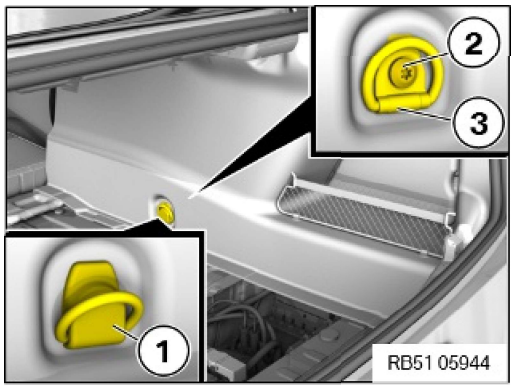
4 – Removing front luggage compartment well



- Guide out and remove front luggage compartment well (1) on the seat belt strap.

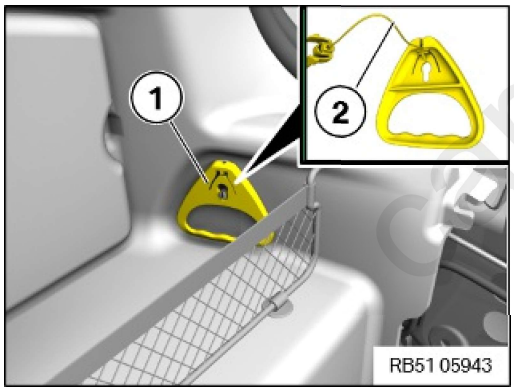
MAIN WORK

5 – Removing right luggage compartment wheel arch trim panel

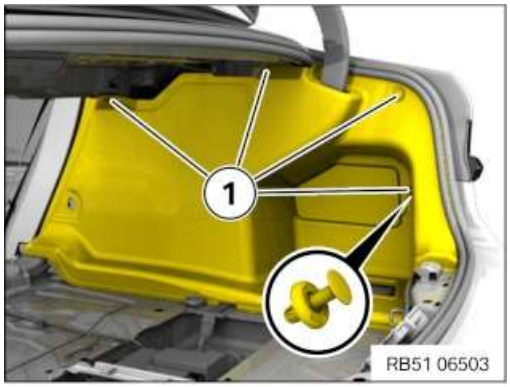


- Remove the cover (1).
- Loosen screw (2).
- Remove the lashing eye (3).

▸ If installed: Remove the emergency release handle for the tailgate (additional work in the US version)



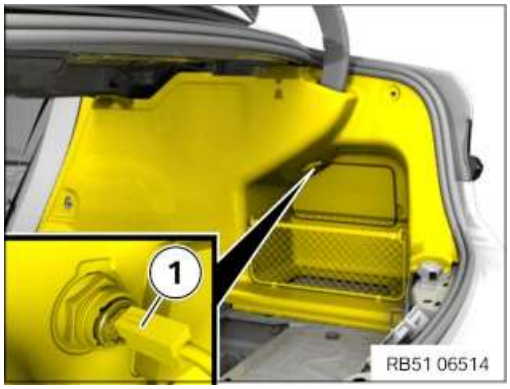
- Release the emergency release handle for tailgate (1) from the holder.
- Detach Bowden cable (2) and remove the emergency release handle for tailgate (1).



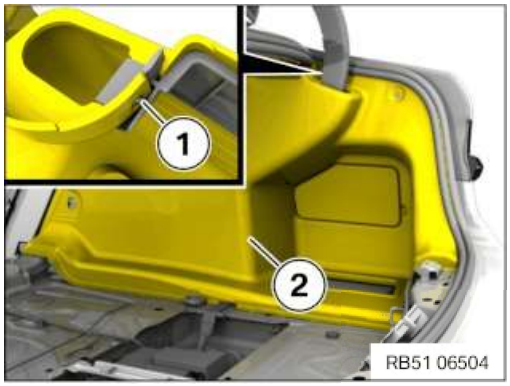
- Reposition the right rear seat backrest.
- Loosen the expanding rivet (1).

▸ If installed: Disconnect plug connection of the 12 V connection (additional work with storage package equipment specification)

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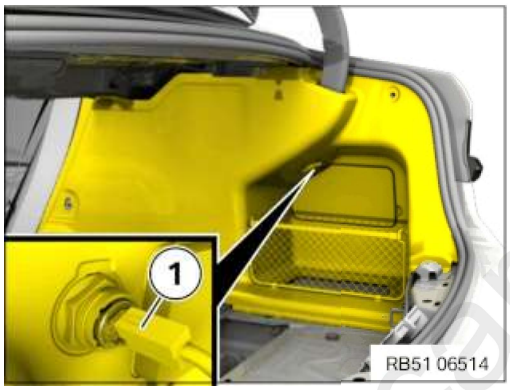
- Unlock and disconnect the plug connection (1) of the 12 V power socket.



- Press the tab for luggage compartment wheel arch trim panel (2) on the outer side of the hinge to the front using the stop on trim (1).
- Guide out luggage compartment wheel arch trim panel (2) under the sealing lip for the tailgate and the side trim panel in the rear passenger compartment.
- Remove luggage compartment wheel arch trim panel (2).

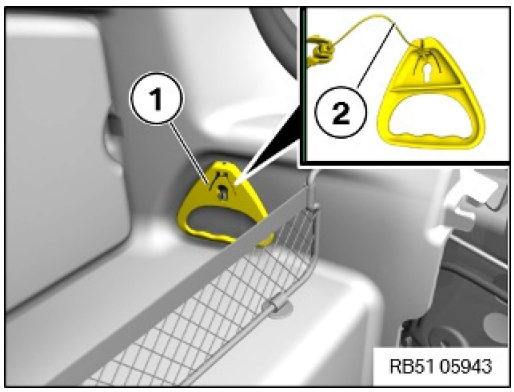
6 – Installing the luggage compartment wheel arch trim panel on the right

▸ If installed: Connecting plug of the 12 V power socket (additional work for equipment specification with storage package)



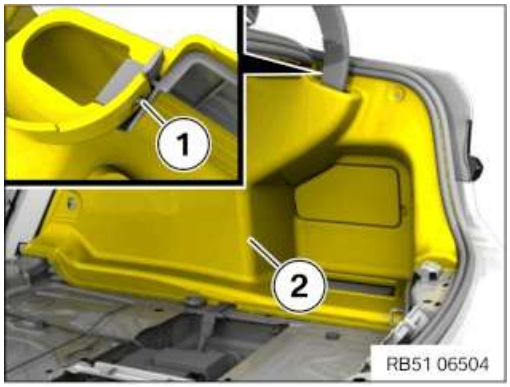
- Connect and lock connector (1) of the 12 V power socket.

▸ If installed: Installing the emergency tailgate release handle (additional work for US version)

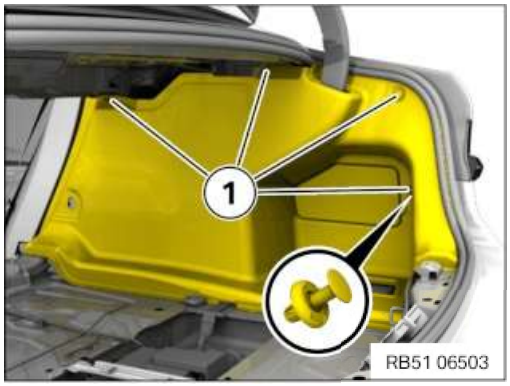


- Attach the Bowden cable (2).
- Fasten emergency tailgate release handle (1) to the bracket.

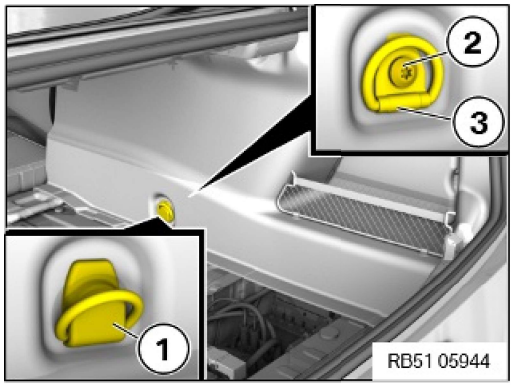
cardiagn.com



- Feed luggage compartment wheel arch trim panel (2) under the side trim panel in the rear passenger compartment and the sealing lip for the tailgate.
- Feed the tab of the luggage compartment wheel arch trim panel (2) on the outer side of the hinge into the stop on the trim (1).



- Secure expanding rivet (1).
- Raise the right rear seat backrest.



- Position the lashing eye (3).
- Tighten down screw (2).

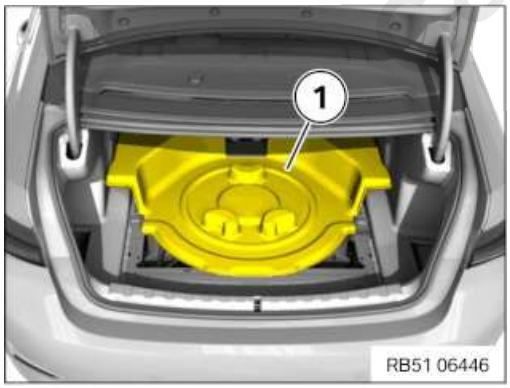
Lashing eye to body

	Tightening torque	19 Nm

- Install the cover (1).

POSTPROCESSES

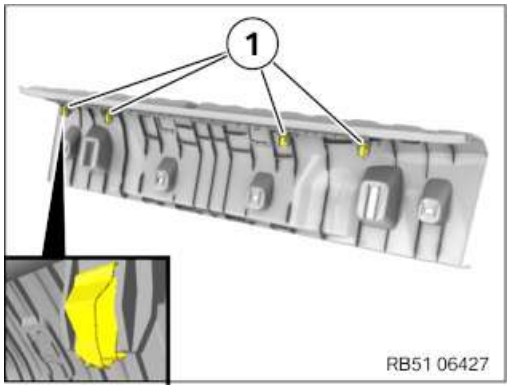
7 – Install the luggage compartment well in front



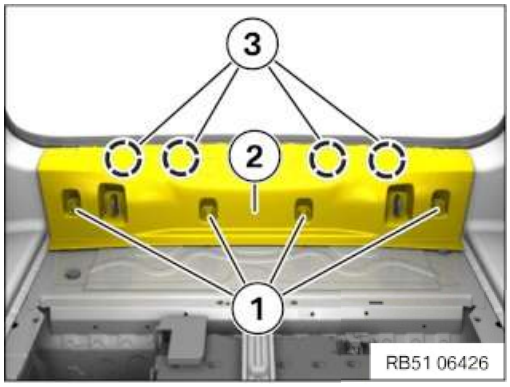
- Feed in and insert front luggage compartment well (1) on the seat belt strap.

8 – Installing loading edge trim

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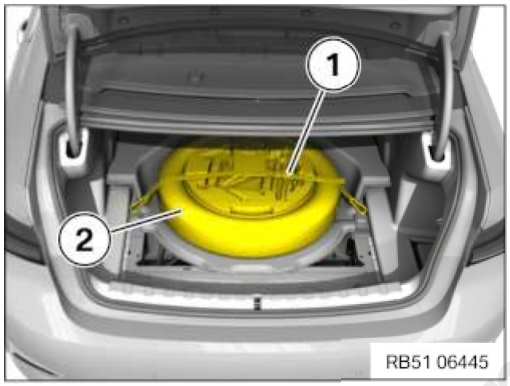


- Check the clamps (1) for damage and renew if necessary.



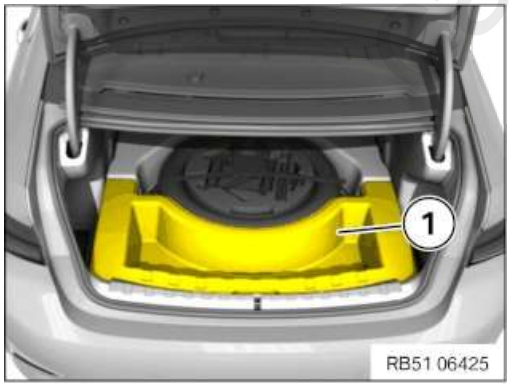
- Insert the loading edge trim (2) under the sealing lip of the tailgate seal.
- Fit the trim of the loading edge (2) at the latch mechanisms (3) and clip it in to the bottom.
- Secure expanding rivet (1).

9 – If installed: Install the emergency wheel



- Install the emergency wheel (2) with the insert.
- Position the seat belt strap above the emergency wheel and close the buckle on the seat belt strap (1).

▶ **Installing rear luggage compartment well**



- Install rear luggage compartment well (1).

10 – Installing the luggage compartment floor trim panel

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- Insert the luggage compartment floor trim panel (1).

Additional Information

Overview of Tightening Torques

Lashing eye to body		Used in step 6
	Tightening torque	19 Nm

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51 47 065 Removing and installing/replacing sill trim, front left or right

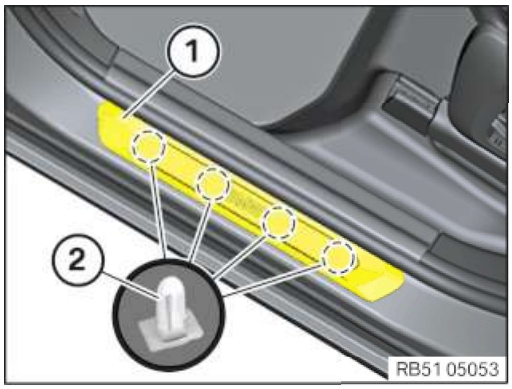
NOTICE

Description is for left component only. Procedure on the right side is identical.

1 – Remove the front sill trim

NOTICE

Description is for left component only. Procedure on the right side is identical.

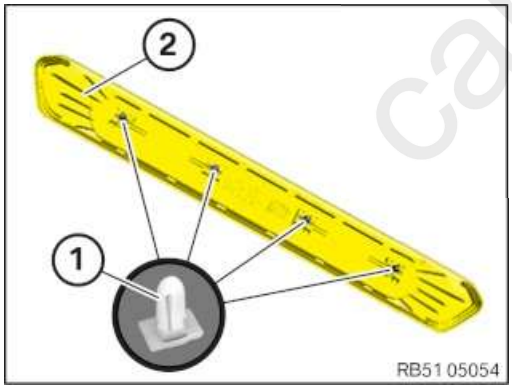


- Lever the front sill trim (1) out of the clips (2) with the special tool 0 496 569 (00 9 325) to the top.
- Remove the front sill trim (1).

2 – Installing the front sill trim

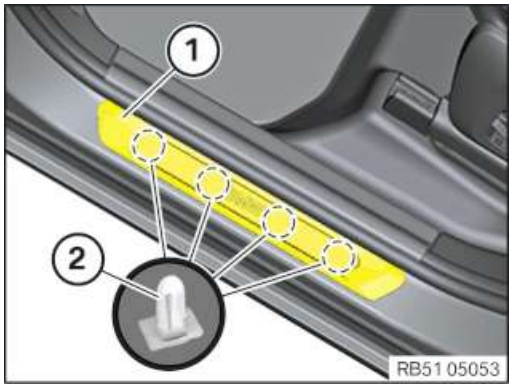
NOTICE

Description is for left component only. Procedure on the right side is identical.



- Remove the remaining clips (1) in the body and mount them on the front sill trim (2).
- Check the clip mounts and the clips (1) for damage and renew them if necessary.

  The clip mounts and the clips (1) must not be damaged or missing.



- Position front sill trim (1) correctly and clip in with the clips (2).

Additional Information

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Additional Information

Overview of Special Tools

0 496 569 (00 9 325) Wedge



Common	Used in step 1
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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51 47 219 Removing and installing/replacing the loading edge trim

PRELIMINARY WORK

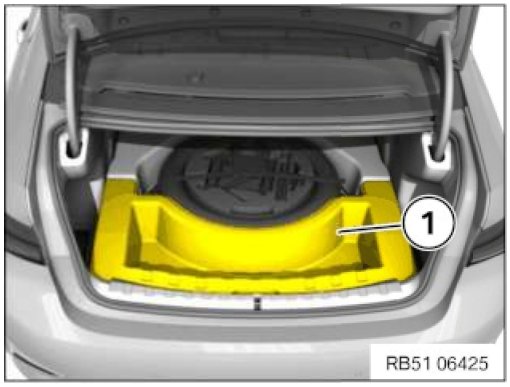
1 – Removing the luggage compartment floor trim panel



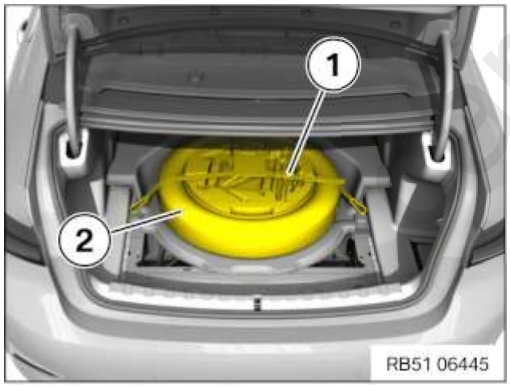
- Remove luggage compartment floor trim panel (1).

2 – If installed: Removing the compact spare wheel

▶ **Removing rear luggage compartment well**



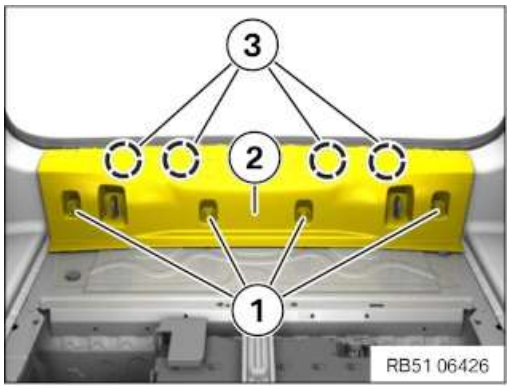
- Remove rear luggage compartment well (1).



- Open buckle on seat belt strap (1) and set it aside.
- Remove emergency wheel (2) with the insert.

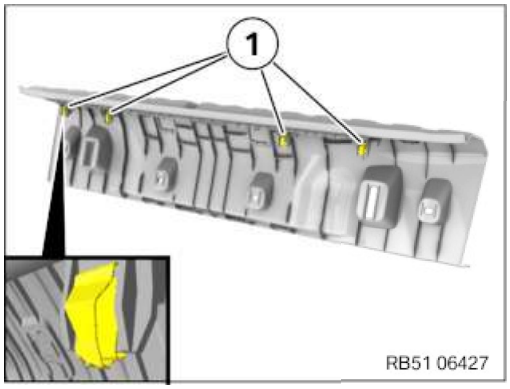
rdiagn.com

3 – Removing the loading edge trim

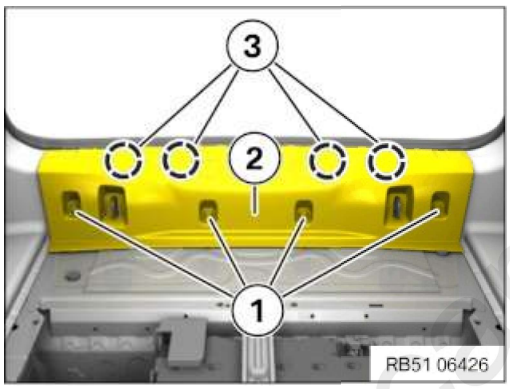


- Loosen the expanding rivet (1).
- Unclip loading edge trim(2) upwards from latch mechanisms (3).
- Guide out and remove loading edge trim (2) under the sealing lip of the tailgate seal.

4 – Installing loading edge trim



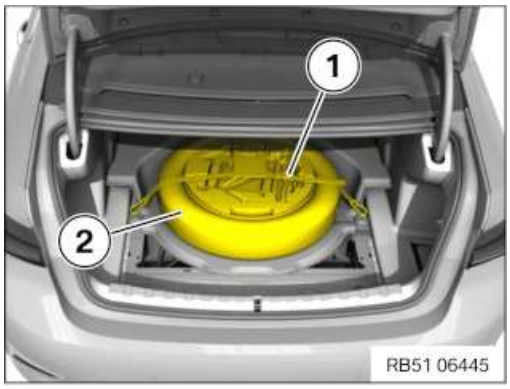
- Check the clamps (1) for damage and renew if necessary.



- Insert the loading edge trim (2) under the sealing lip of the tailgate seal.
- Fit the trim of the loading edge (2) at the latch mechanisms (3) and clip it in to the bottom.
- Secure expanding rivet (1).

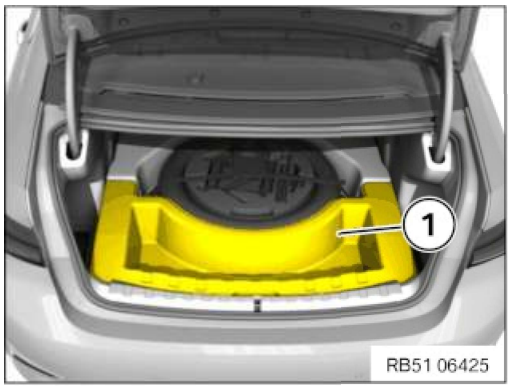
cardiagn.com

5 – If installed: Install the emergency wheel



- Install the emergency wheel (2) with the insert.
- Position the seat belt strap above the emergency wheel and close the buckle on the seat belt strap (1).

▶ **Installing rear luggage compartment well**



- Install rear luggage compartment well (1).

6 – Installing the luggage compartment floor trim panel



- Insert the luggage compartment floor trim panel (1).

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51 47 440 Removing and installing/replacing the rear carpet

PRELIMINARY WORK

1 – Remove the front seats on the left and right

NOTICE

Description is for left component only. Procedure on the right side is identical.

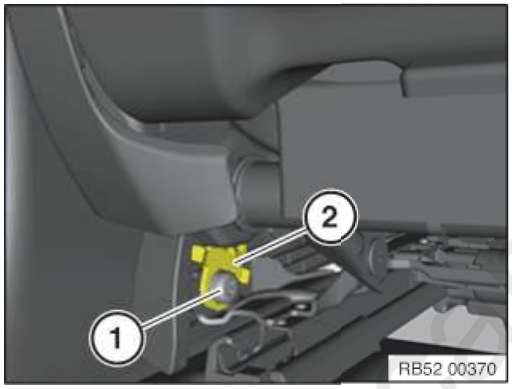
▸ **Remove front seat**

WARNING

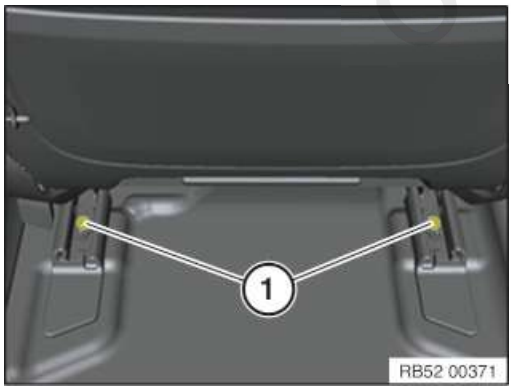
Pyrotechnic components.

Danger! Life-threatening injuries!

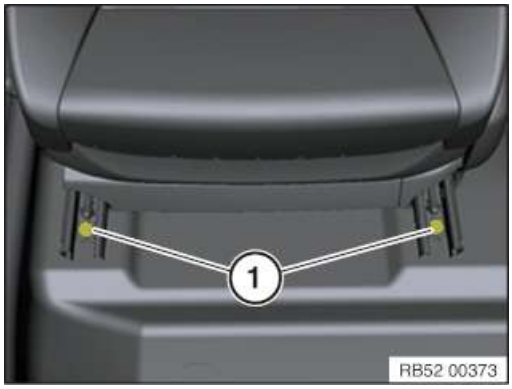
- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



- Fully adjust the front seat to the front and top.
- Loosen screw (1).
- Remove end fitting (2).



- Loosen screws (1).



- Loosen screws (1).
- Adjust the front seat to the centre position.
- **When removing the driver's seat:**

  Completely retract the steering column

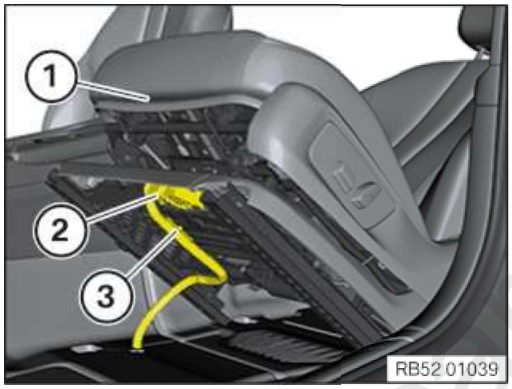
  Adjust the steering column completely upwards.

▷ **Disconnecting all battery earth leads**



- See additional information.

◁



RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Cover the door sill using protective covers.
- Place front seat (1) to the rear.
- Unlock plug connection (2) and disconnect.
- Loosen the cable clip (3).

RISK OF DAMAGE

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

- Lift out front seat (1) with the assistance of a second person.

2 – Removing seat bench

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- Disengage the seat bench (1) in area (2) in an upward direction.
- Feed out the seat belt buckle (3) from the seat bench.



- Pull the seat bench (1) further forward.
- Release screw (2) on the end fitting and guide out belt (3).

Note: If there is a belt lock on the belt, the screw on the end fitting must not be released.

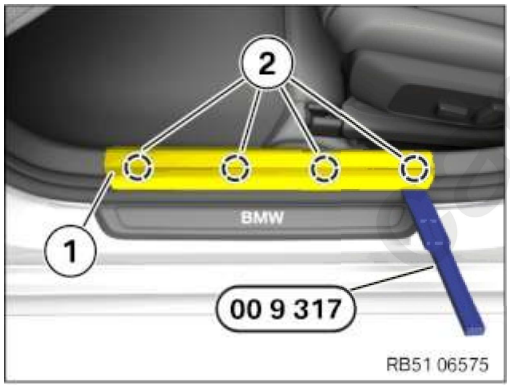
- If necessary, disconnect the present plug connections.
- Lift the seat bench (1) out of the vehicle.

3 – Remove the door sill cover strip on the left and right

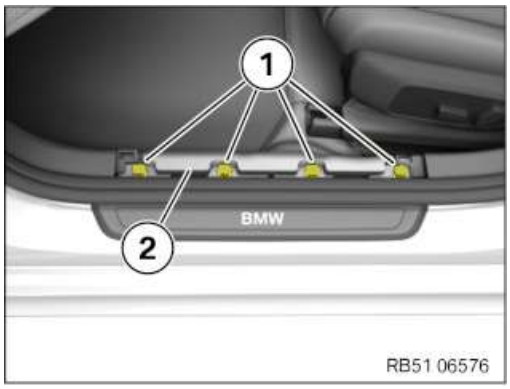
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove door sill cover strip**



- Detach the door sill cover strip(1) using the special tool 0 490 534 (00 9 317) from the clips (2) in the floor panel.



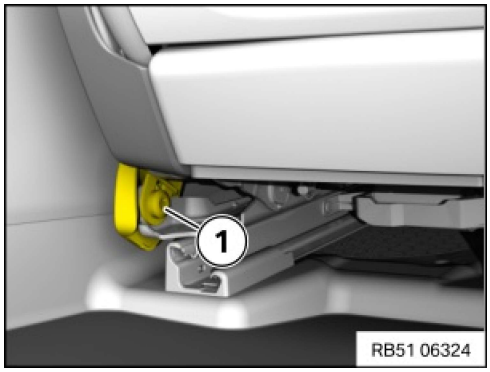
- If necessary, remove the clips (1) from the floor panel (2) and attach to the door sill cover strip.

4 – Removing both B-pillar trim panels

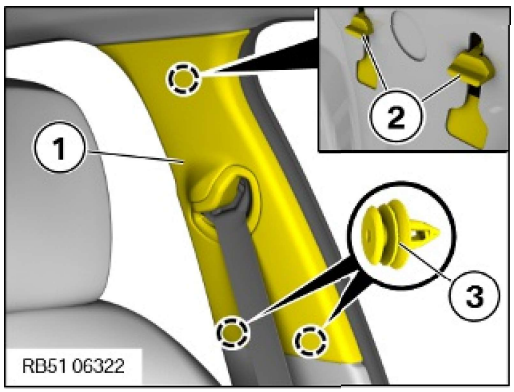
NOTICE

Description is for left component only. Procedure on the right side is identical.

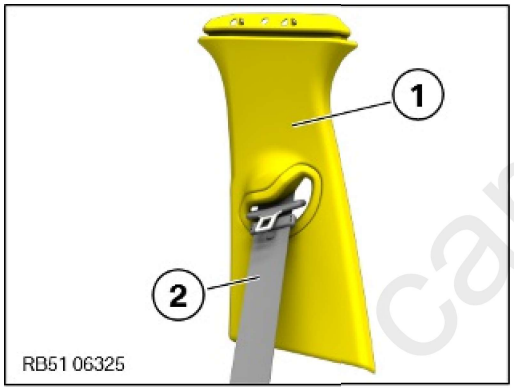
▸ **Remove the B-pillar trim panel**



- Fully position the front seat to the front and top.
- Loosen screw (1).
- Remove end fitting (2).



- Unclip clips (3).
- Feed B-pillar trim panel (1) out of the front and rear lip of edge protections and the guides (2).



- Feed upper seat belt (2) out of B-pillar trim panel (1).

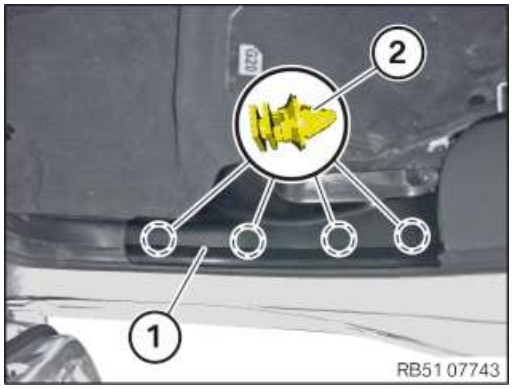
5 – Remove the door sill cover strip on the rear left and right

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Removing rear entrance cover strip**

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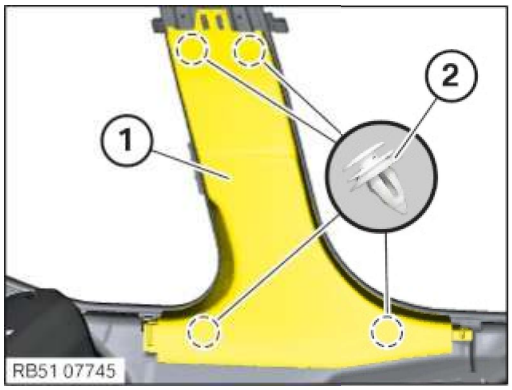
- Release the door sill cover strip (1) using the special tool 0 490 534 (00 9 317) from the clips (2) in the floor panel.
- If required, remove the clips (2) remaining in the body and mount them on the door sill cover strip.

6 – Removing B-pillar trim panel, bottom left and right

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the lower B-pillar trim panel**



- Unclip the B-pillar trim panel (1) with the special tool 0 496 569 (00 9 325) at the clips (2).
- Feed out and remove the B-pillar trim panel (1) at the front and rear edge protection.

7 – Remove cupholder



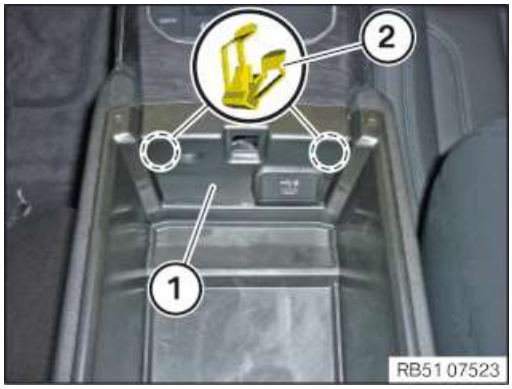
- Remove the insert (1).



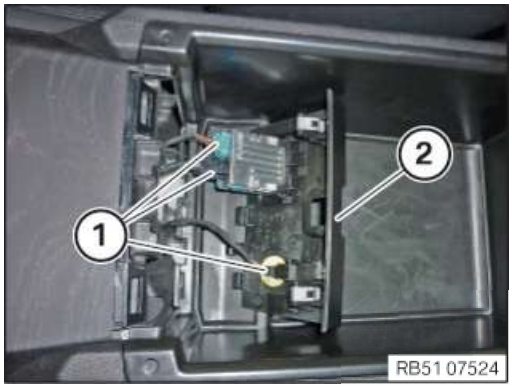
- Loosen screws (1).
- Feed the cup holder (2) out to the top.
- Unlock associated plug connections and disconnect.

8 – Removing the trim in the storage compartment on the centre armrest

carmanualsdiagn.com



- Lever out the trim (1) with the special tool (2) toward the rear from the clamps 2 298 505.



- Unlock and disconnect the plug connections (1) and remove the trim (2) .

9 – Remove the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Release and remove the centre console trim upwards (1) as shown using the special tool 2 298 505 from the latch mechanisms.

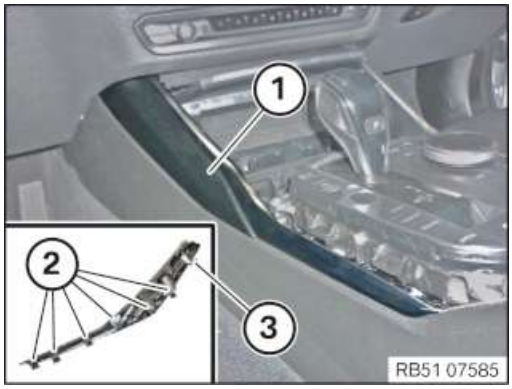
10 – Removing the decorative trim on the centre console trim on the left and right

▸ **Remove decorative trim on centre console**

NOTICE

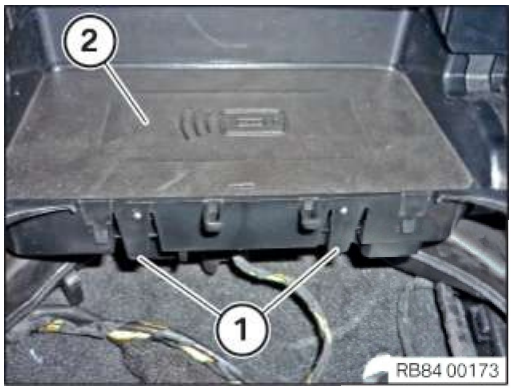
Description is for left component only. Procedure on the right side is identical.

mdiagn.com

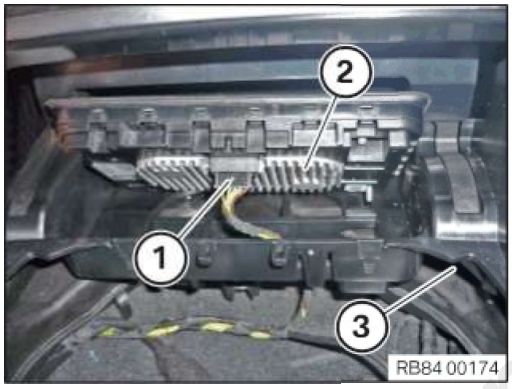


- Lever out the rear decorative trim (1) from the latch mechanisms (2) starting from the top.
- Feed out the decorative trim (1) backwards out of the guide (3) and remove.

11 – Removing the wireless charging station



- Loosen the latch mechanisms (1) and push out the wireless charging station (2) upwards.



- Disconnect the connector (1) and remove the wireless charging station (2) from the centre console (3).

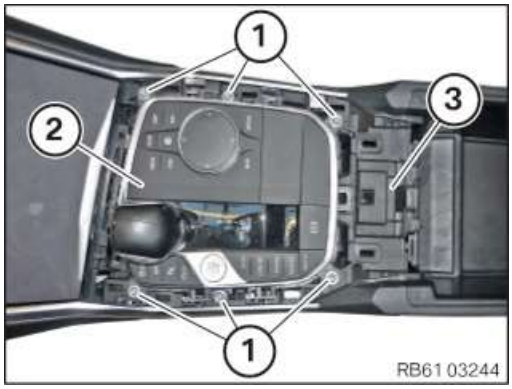
12 – Remove the operating facility in the centre console

▸ **Disconnecting all battery earth leads**



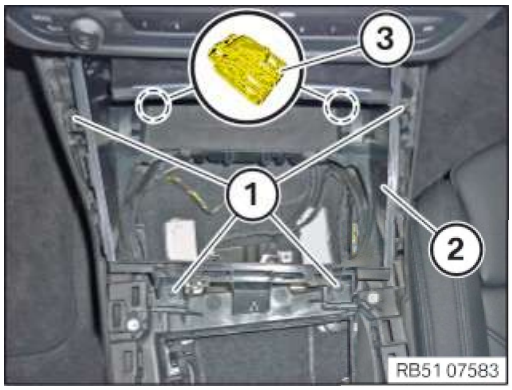
- See additional information.

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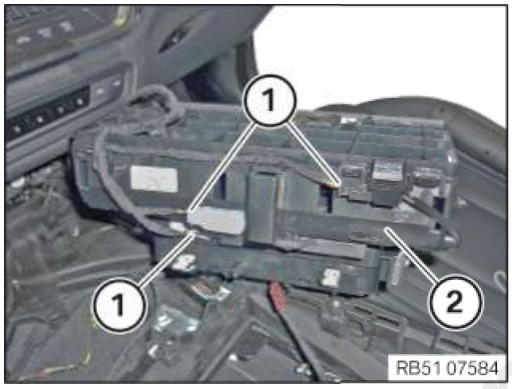


- Loosen screws (1).
- Remove the operating facility in the centre console (2) from the centre console (3).

13 – Removing the storage compartment of the front centre console



- Loosen screws (1).
- Remove storage compartment trim (2) backwards out of clamps (3).



- Unlock and disconnect all the plug connections (1) and remove the storage compartment (2).

14 – Removing the rear centre console trim

RISK OF DAMAGE

Scratches.

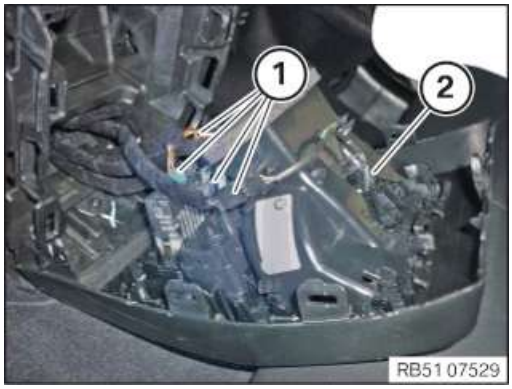
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Release centre console trim (1) backwards from the latch mechanisms at the side and pull it a little way towards the rear.

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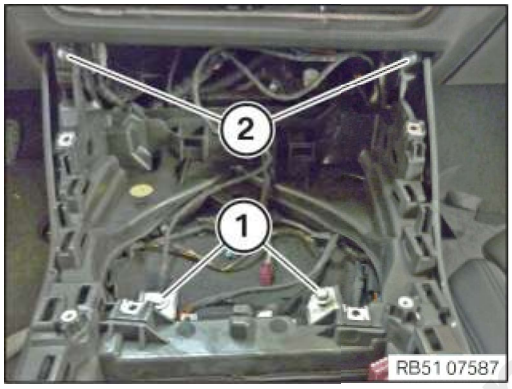


- Unlock and disconnect plug connections (1).
- Remove the centre console trim (2).

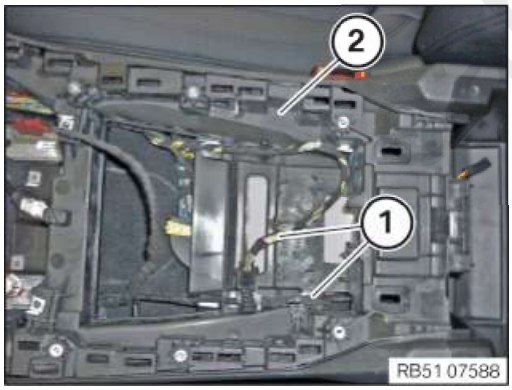
15 – Removing the centre console



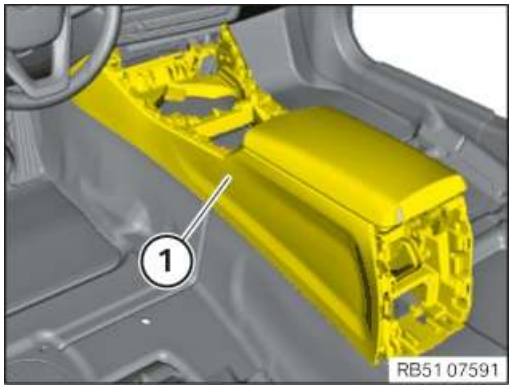
- Loosen screws (1).



- Loosen screws (1) and (2).



- Release the wiring harness (1) from the centre console (2).



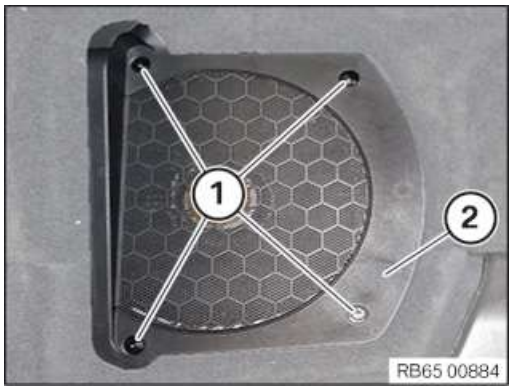
NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

- Carefully raise rear centre console (1).
- Feed out wiring harness from the centre console (1) and unlock and disconnect existing plug connections, if required.
- Feed out and remove the centre console (1) on the instrument panel .

16 – Remove the speaker trim for the central bass

16 – Remove the speaker trim for the central bass



- Loosen screws (1).
- Remove the speaker trim for the central bass (2).

17 – Removing the airbag control unit

WARNING

Airbag unit.

Danger! Life-threatening injuries!

- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

RISK OF DAMAGE

Electrostatic discharge.

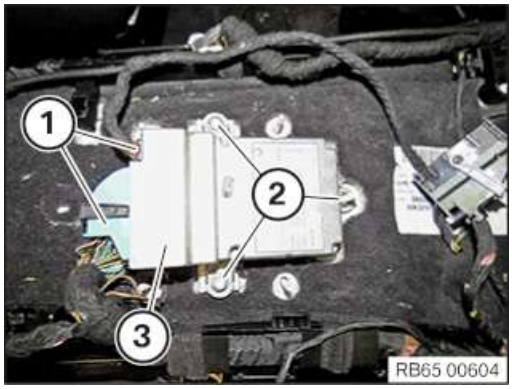
Damage to or destruction of electrical components.

- Leave electrical components in original packaging until just before they are installed. Use the original packaging only for any return shipments. Always package removed components straight away.
- Read and comply with user information on using the associated special tool 12 7 060.
- Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.
- Wear electrically conductive clothing and antistatic shoes (with ESD symbol).
- For additional information see: 61 35 Information on electrostatic discharge (ESD) protection.



- Release insulation (1) from airbag control unit (2) and fold to one side.

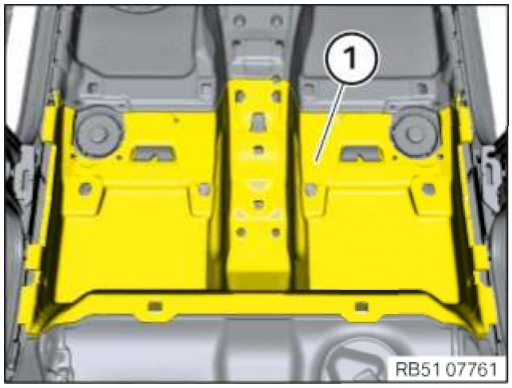
carlagn.com



- Unlock plug connection (1) and disconnect.
- Loosen nuts (2).
- Remove airbag control unit (3).

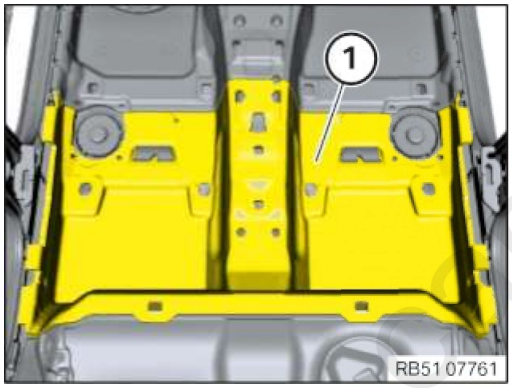
MAIN WORK

18 – Remove the rear carpet



- Feed out the carpet (1) and remove from the vehicle.

19 – Install the rear carpet



- Place the carpet (1) in the motor vehicle.

POSTPROCESSES

20 – Installing the airbag control unit

WARNING

Airbag unit.

Danger! Life-threatening injuries!

- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

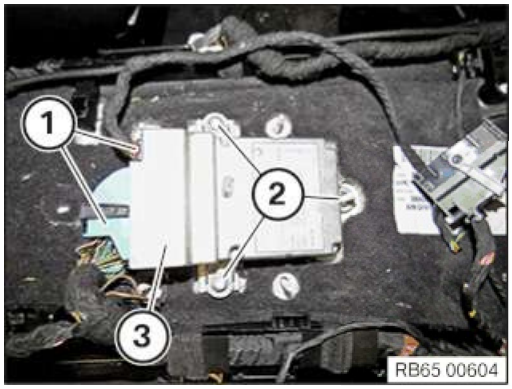
carfdiag.com

RISK OF DAMAGE

Electrostatic discharge.

Damage to or destruction of electrical components.

- Leave electrical components in original packaging until just before they are installed. Use the original packaging only for any return shipments. Always package removed components straight away.
- Read and comply with user information on using the associated special tool 12 7 060.
- Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.
- Wear electrically conductive clothing and antistatic shoes (with ESD symbol).
- For additional information see: 61 35 Information on electrostatic discharge (ESD) protection.



- Position airbag control unit (3) correctly.
- Tighten nuts (2).

Airbag control unit to body

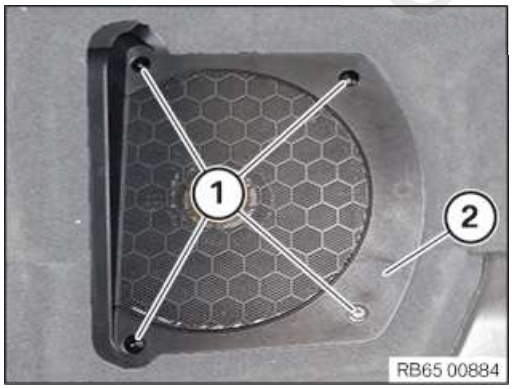
Screw		Tightening torque	8 Nm

- Connect connectors (1) and lock.



- Position the insulation (1) correctly and secure on the airbag control unit (2).

21 – Install the speaker trim for the central bass



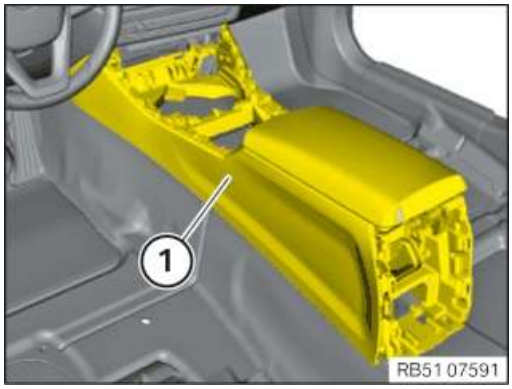
- Position the speaker trim for the central bass (2).
- Tighten the screws (1).

Central bass speaker trim

Screw		Tightening torque	2 Nm

22 – Installing the centre console

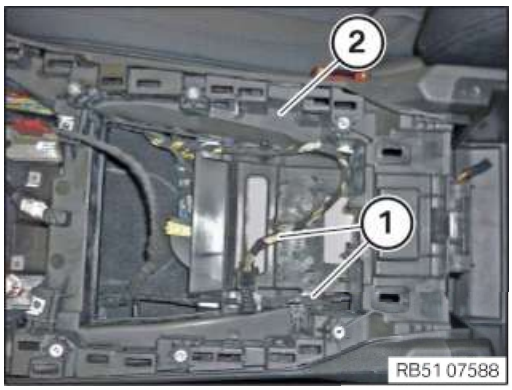
cardiagn.com



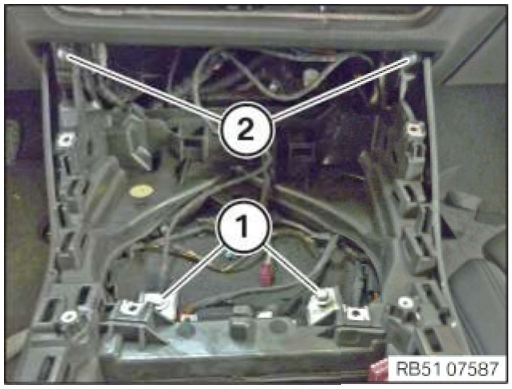
NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

- Install centre console (1) and thereby feed in the wiring harness.
- Feed in the centre console (1) to the instrument panel and position correctly.



- Secure the wiring harness to the centre console (1) and connect and lock the existing plug connections.



- Tighten the screws (1).

Centre console on tunnel

M6x18 Hexagon screw		Tightening torque	4,6 Nm

- Tighten the screws (2).

Centre console to instrument panel

Oval-head screw		Tightening torque	1,8 Nm

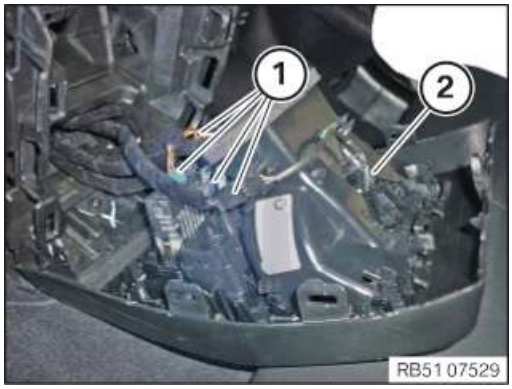


- Tighten the screws (1).

Centre console on tunnel

M6x18 Hexagon screw		Tightening torque	4,6 Nm

23 – Installing the rear centre console trim



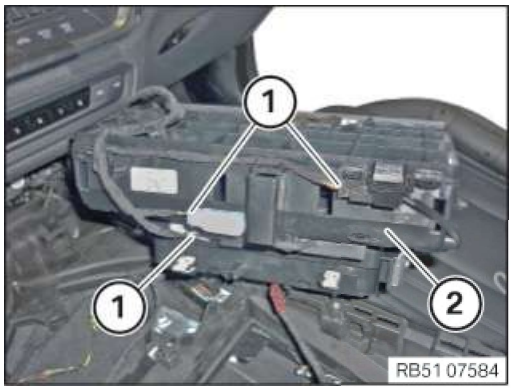
- Install the centre console trim (2).
- Connect connectors (1) and lock.

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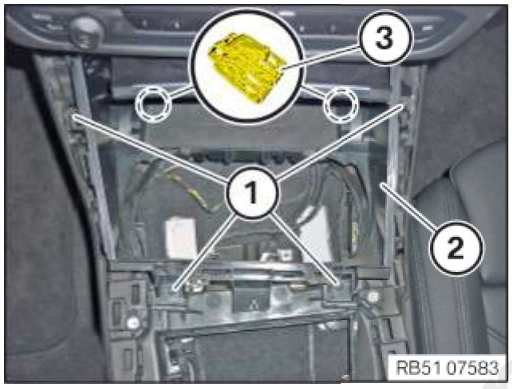


- Position centre console trim (1) and engage at the latch mechanisms at the side.

24 – Installing the storage compartment of the front centre console



- Mount the storage compartment (2) and connect connectors (1).

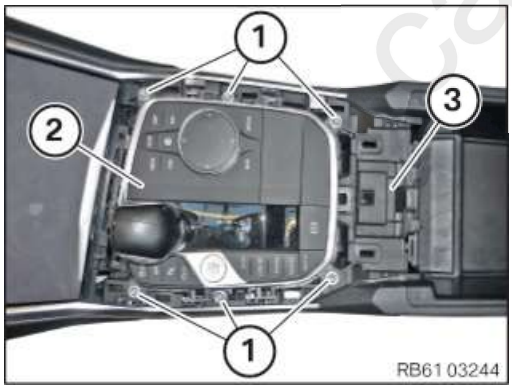


- Engage rear storage compartment trim (2) into clamps (3).
- Tighten the screws (1).

Storage compartment to centre console

Oval-head screw		Tightening torque	1,8 Nm

25 – Install the operating facility in the centre console



- Position operating facility (2) in the centre console (3).
- Tighten the screws (1).

Gear selector switch to centre console trim

Screw		Tightening torque	1,8 Nm

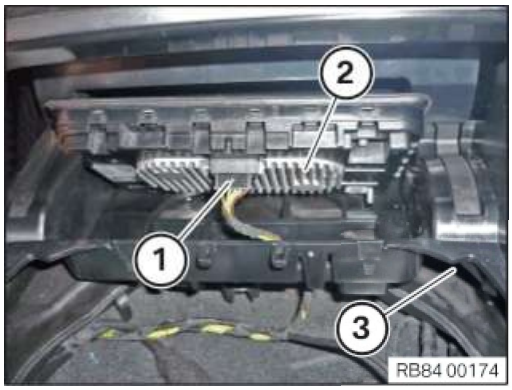
► **Disconnecting all battery earth leads**

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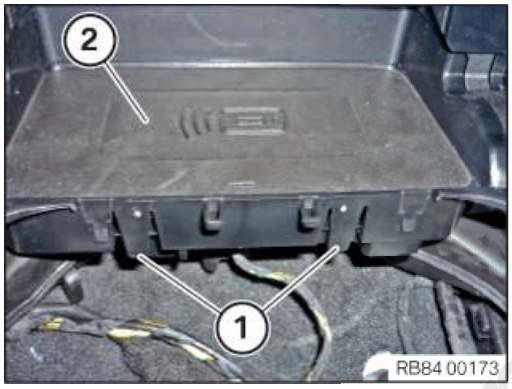


- See additional information.

26 – Installing the wireless charging station



- Connect connector (1).
- Position the wireless charging station (2) in the centre console (3).



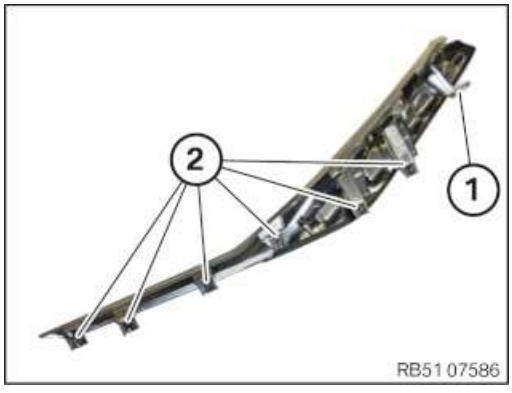
- Press the wireless charging station (2) down till the locking units (1) are engaged correctly.

27 – Install decorative trim on centre console on left and right

▸ Installing the decorative trim to centre console

NOTICE

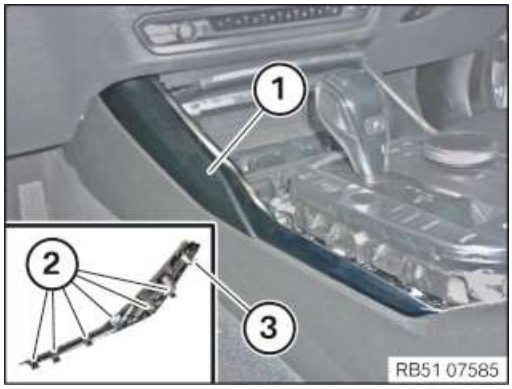
Description is for left component only. Procedure on the right side is identical.



- Check guide (1) and the latch mechanisms (2).

  Renew defective decorative trim.

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- Feed in the decorative trim (1) forward in the guide (3).
- Engage decorative trim (1) in latch mechanisms (2).

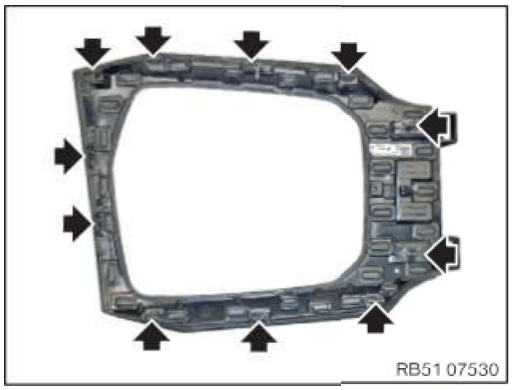
28 – Installing the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

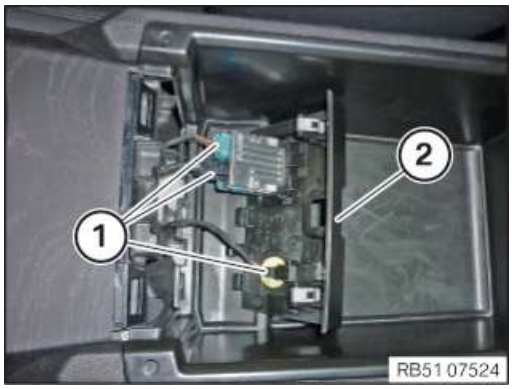


- Check all the latch mechanisms or clamps (arrows).
- In case the latch mechanisms or the clamps (arrows) are faulty, renew the centre console trim .



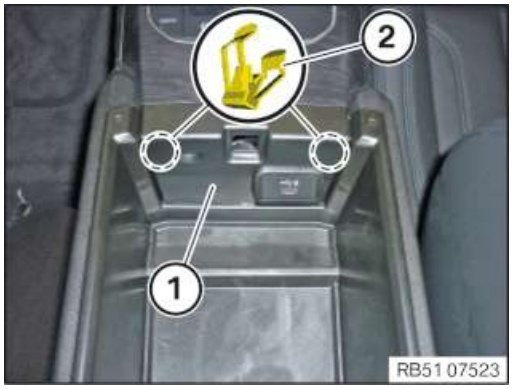
- Correctly position the centre console trim (1) and engage at the latch mechanisms.

29 – Installing the trim in the storage compartment of the centre armrest



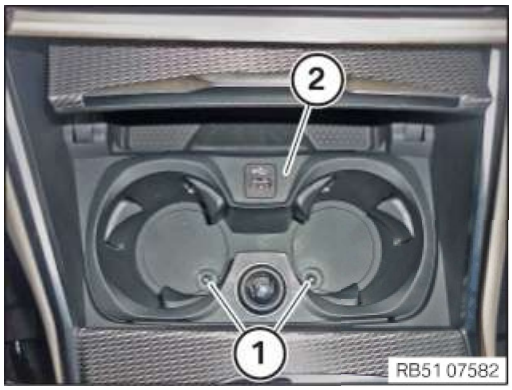
- Mount the trim (2) and connect connector (1) and lock.

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- Correctly position trim (1) and snap into the clamps (2).

30 – Install the cup holder



- Fix the cup holder (1) and the belonging connectors.
- Correctly position cup holder (1).
- Tighten the screws (2).

Cup holder to centre console

Oval-head screw		Tightening torque	1,8 Nm



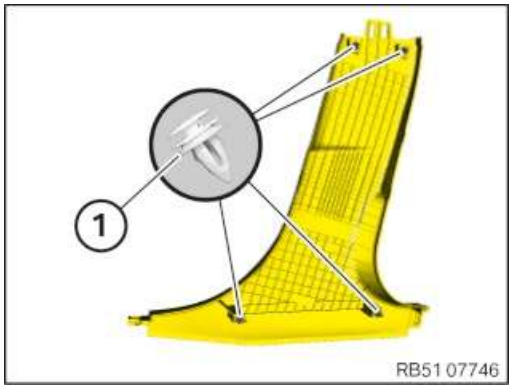
- Insert the insert (1).

31 – Installing the bottom left and right B-pillar trim panel

NOTICE

Description is for left component only. Procedure on the right side is identical.

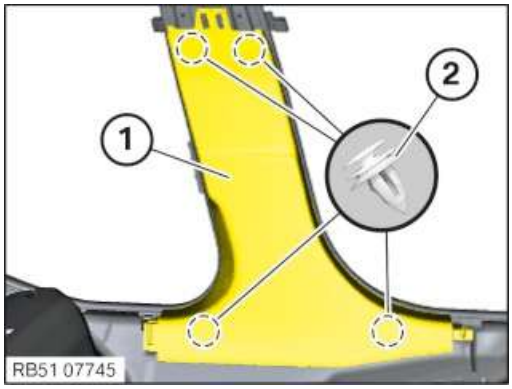
▸ **Installing the lower B-pillar trim panel**



- Check the clips (1) for damage.

  Replace broken for missing clips (1).

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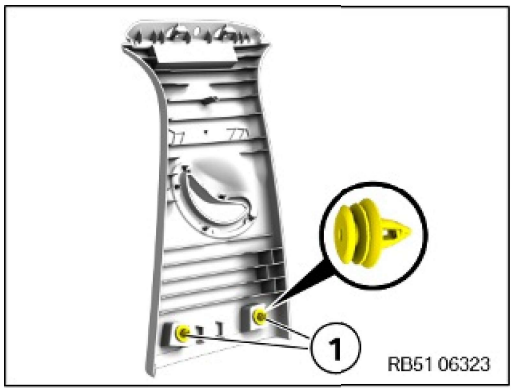
- Insert and correctly position B-pillar trim panel (1) on the front and rear edge protection.
- Clip in the B-pillar trim panel (1) at the clips (2).

32 – Installing both B-pillar trim panels

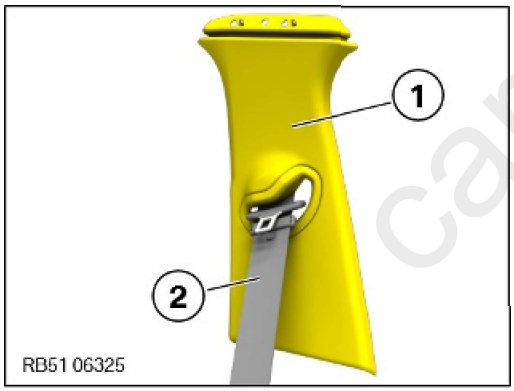
NOTICE

Description is for left component only. Procedure on the right side is identical.

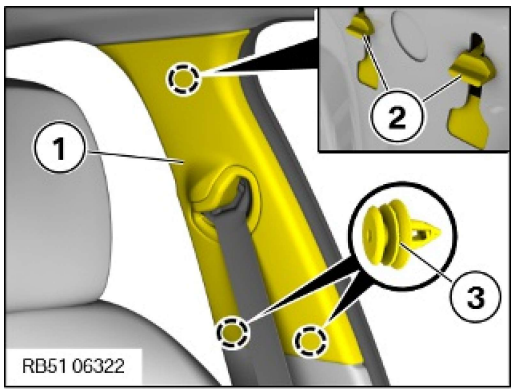
▸ **Install the B-pillar trim panel**



- Check the clips (1) for damage and renew if necessary.

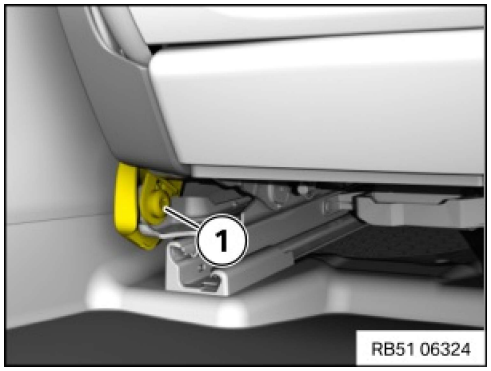


- Guide upper seat belt (2) in B-pillar trim panel (1).



- Insert B-pillar trim panel (1) into guides (2) and under the front and rear lips of edge protection.
- Clip in the B-pillar trim panel (1) with the clips (3).

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- Fully position the front seat to the front and top.
- Insert the end fitting (2).
- Renew the screw (1).

  Parts: Screw
- Tighten down screw (1).

End fitting to seat mechanism

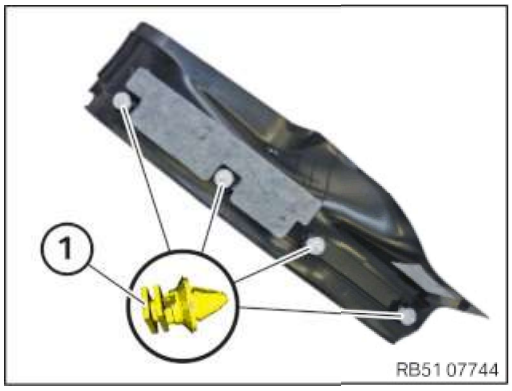
Flat-head screwM10	Renew screw.	Tightening torque	42 Nm

33 – Install the door sill cover strip on the rear left and right

NOTICE

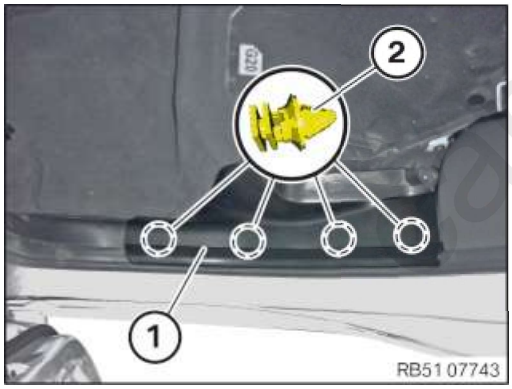
Description is for left component only. Procedure on the right side is identical.

▸ **Installing the rear door sill cover strip**



- Check the clips (1) for damage.

  Replace broken for missing clips (1).



- Position the door sill cover strip (1) correctly and clip in at the clips (2).

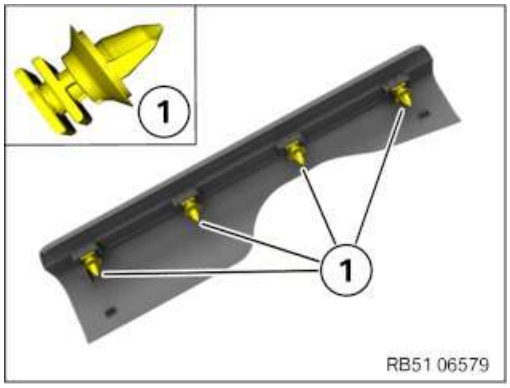
34 – Install the left and right door sill cover strips

NOTICE

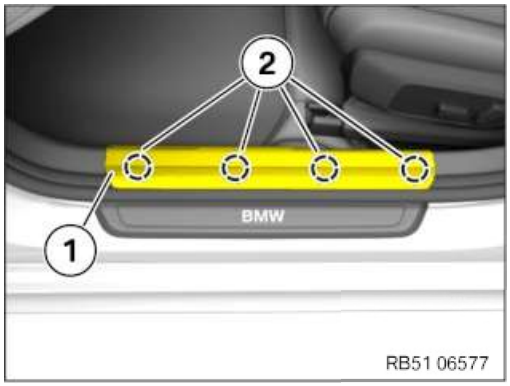
Description is for left component only. Procedure on the right side is identical.

▸ **Install the door sill cover strip**

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- Check the clips (1) for damage and renew if necessary.



- Clip the door sill cover strip (1) into the floor panel with the clips (2).

35 – Installing rear seat bench



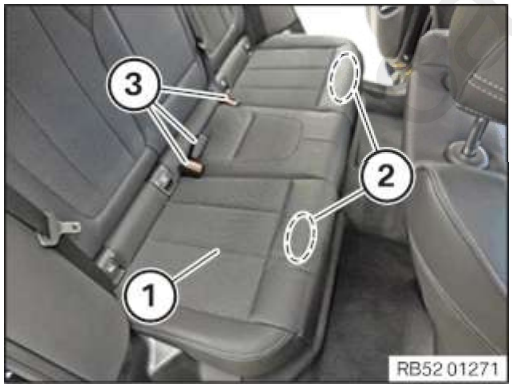
- Lift the seat bench (1) into the vehicle.
- Insert the seat belt (3).
- Renew the screw (2).

  Parts: Screw
- Tighten down screw (2).

Rear upper seat belt to bottom body

Screw	Renew screw.	Tightening torque	42 Nm

- Connect available connectors.



- Insert seat bench (1).
- Thread seat belt buckles (3) into the seat bench.
- Engage the seat bench (1) in the area (2).

36 – Install the front seat on the left and right

NOTICE

Description is for left component only. Procedure on the right side is identical.

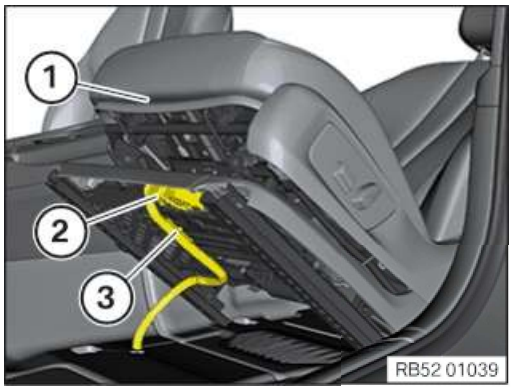
▸ **Install front seat**

WARNING

Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.



RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

- Cover the door sill using protective covers.

RISK OF DAMAGE

Heavy component.

Heavy components can lead to injury or damage.

- Remove and install heavy components with the aid of another person/other persons.

- Lift front seat (1) into the vehicle with the assistance of a second person.
- Place front seat (1) to the rear.
- Connect connector (2).
- Attach the cable clip (3).

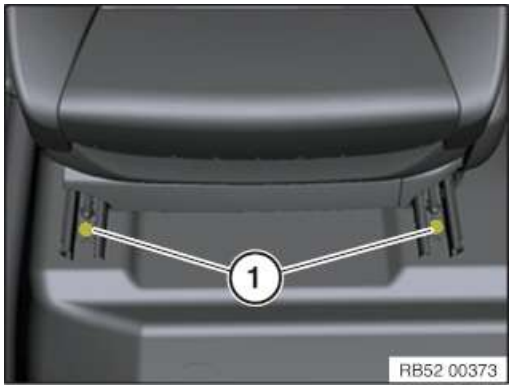
▷ **Disconnecting all battery earth leads**

- See additional information.



◁

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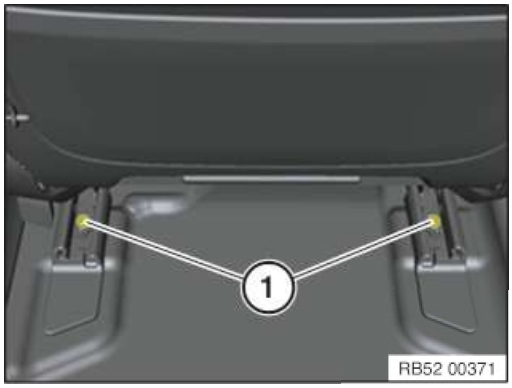


- Adjust the front seat to the rear.
- Renew screws (1).

  Parts: Bolts
- Tighten the screws (1).

Seat to body

M10	Renew screw.	Tightening torque	42 Nm

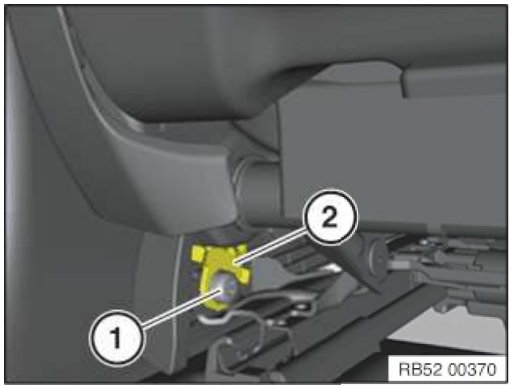


- Move front seat forwards.
- Renew screws (1).

  Parts: Bolts
- Tighten the screws (1).

Seat to body

M10	Renew screw.	Tightening torque	42 Nm



- Fully adjust the front seat to the front and top.
- Insert the end fitting (2).
- Renew the screw (1).

  Parts: Screw
- Tighten down screw (1).

End fitting to seat mechanism

M10	Renew screw.	Tightening torque	42 Nm

Additional Information

Overview of Tightening Torques

Airbag control unit to body Used in step 20

Screw		Tightening torque	8 Nm

Central bass speaker trim Used in step 21

Screw		Tightening torque	2 Nm

Centre console on tunnel Used in step 22

M6x18 Hexagon screw		Tightening torque	4,6 Nm

Centre console to instrument panel Used in step 22

Oval-head screw		Tightening torque	1,8 Nm

Storage compartment to centre console Used in step 24

Oval-head screw		Tightening torque	1,8 Nm

Gear selector switch to centre console trim Used in step 25

Screw		Tightening torque	1,8 Nm

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Cup holder to centre console			Used in step 30
Oval-head screw		Tightening torque	1,8 Nm

End fitting to seat mechanism			Used in step 32
Flat-head screwM10	Renew screw.	Tightening torque	42 Nm

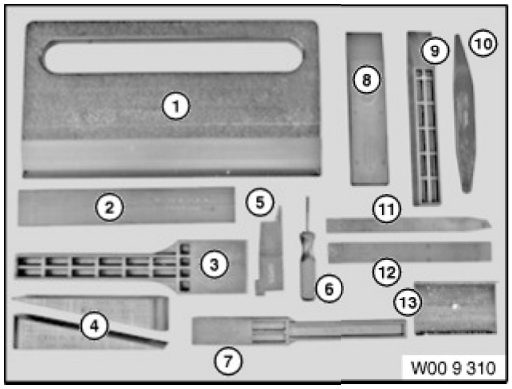
Rear upper seat belt to bottom body			Used in step 35
Screw	Renew screw.	Tightening torque	42 Nm

Seat to body			Used in step 36
M10	Renew screw.	Tightening torque	42 Nm

End fitting to seat mechanism			Used in step 36
M10	Renew screw.	Tightening torque	42 Nm

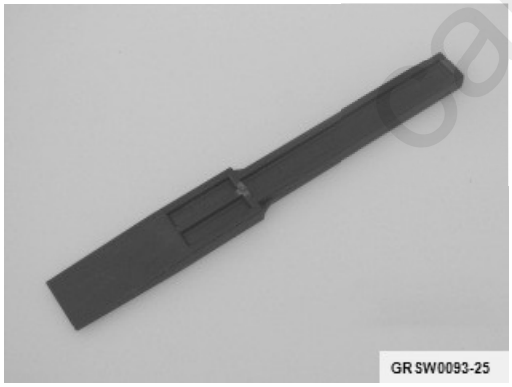
Overview of Special Tools

0 490 534 (00 9 317) Wedge



Common	Used in step 35
Usage	(Trim wedge) Replaced by special tool 00 9 325 from 11/2008 (quality improvement due to new material) Replaced by 00 9 325 (0 496 569)
Included in the tool or work	0 490 527
Storage location	
Replaced by	
In connection with	
SI-Number	

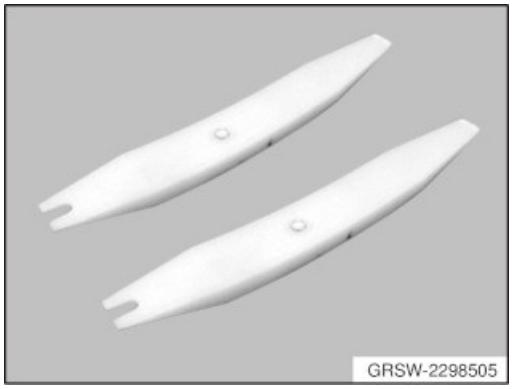
0 496 569 (00 9 325) Wedge



Common	Used in step 6
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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2 298 505 Wedge



Common	Used in step 89
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

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Links

General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	1172036

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	1122536
61 20 900 Disconnecting and connecting battery earth lead	1122536
61 20 900 Disconnecting and connecting battery earth lead	1122536
61 20 900 Disconnecting and connecting battery earth lead	1122536
61 20 900 Disconnecting and connecting battery earth lead	1122536
61 20 900 Disconnecting and connecting battery earth lead	1122536
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1122536
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1122536
61 20 900 Disconnecting and connecting battery earth lead	1122536
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1122536
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	1122536
61 20 900 Disconnecting and connecting battery earth lead	1122536
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61 20 900 Disconnecting and connecting battery earth lead	1122536
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1122536
61 20 900 Disconnecting and connecting battery earth lead	1122536
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61 20 900 Disconnecting and connecting battery earth lead	1122536
61 20 900 Disconnecting and connecting battery earth lead	1122536
61 20 900 Disconnecting and connecting battery earth lead	1122536
61 35 ... Notes on ESD protection (Electro Static Discharge)	1720

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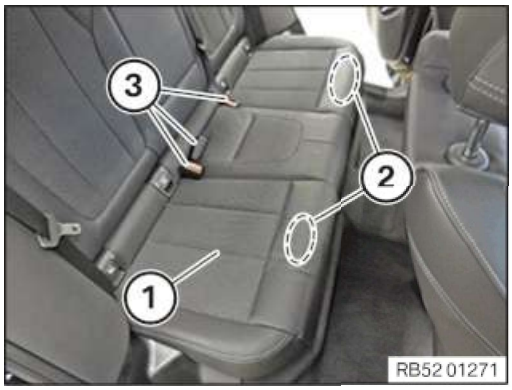
51 47 030 Removing and installing/replacing the rear left or right left door sill cover strip

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

1 – Removing seat bench



- Disengage the seat bench (1) in area (2) in an upward direction.
- Feed out the seat belt buckle (3) from the seat bench.



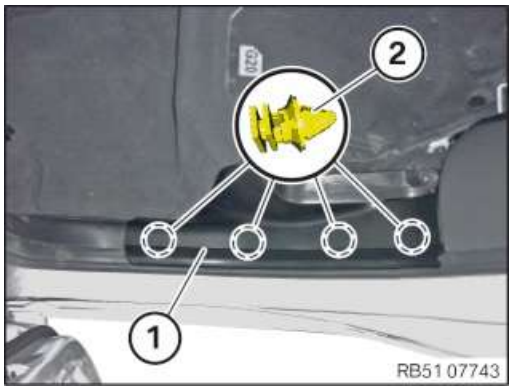
- Pull the seat bench (1) further forward.
- Release screw (2) on the end fitting and guide out belt (3).

Note: If there is a belt lock on the belt, the screw on the end fitting must not be released.

- If necessary, disconnect the present plug connections.
- Lift the seat bench (1) out of the vehicle.

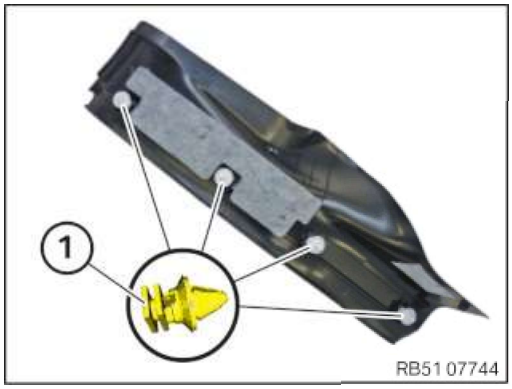
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2 – Removing rear entrance cover strip



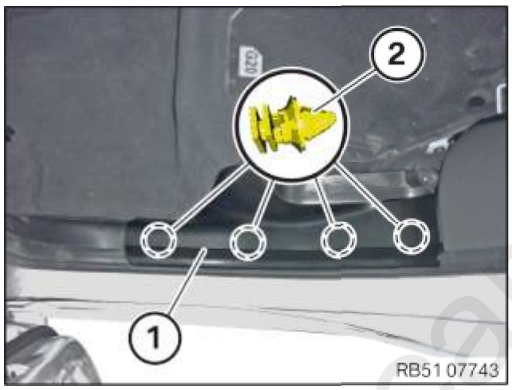
- Release the door sill cover strip (1) using the special tool 0 490 534 (00 9 317) from the clips (2) in the floor panel.
- If required, remove the clips (2) remaining in the body and mount them on the door sill cover strip.

3 – Installing the rear door sill cover strip



- Check the clips (1) for damage.

  Replace broken for missing clips (1).



- Position the door sill cover strip (1) correctly and clip in at the clips (2).

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4 – Installing rear seat bench



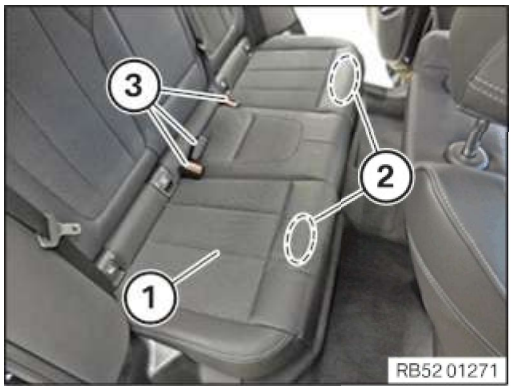
- Lift the seat bench (1) into the vehicle.
- Insert the seat belt (3).
- Renew the screw (2).

  Parts: Screw
- Tighten down screw (2).

Rear upper seat belt to bottom body

Screw	Renew screw.	Tightening torque	42 Nm

- Connect available connectors.



- Insert seat bench (1).
- Thread seat belt buckles (3) into the seat bench.
- Engage the seat bench (1) in the area (2).

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Additional Information

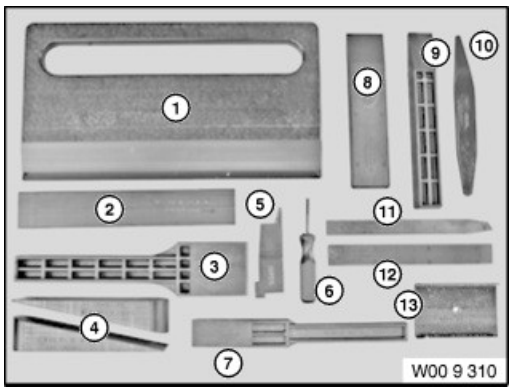
Overview of Tightening Torques

Rear upper seat belt to bottom body Used in step 4

Screw	Renew screw.	Tightening torque	42 Nm

Overview of Special Tools

0 490 534 (00 9 317) Wedge

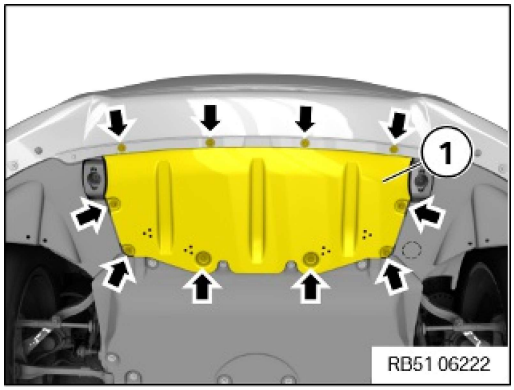


Common	Used in step 2
Usage	(Trim wedge) Replaced by special tool 00 9 325 from 11/2008 (quality improvement due to new material) Replaced by 00 9 325 (0 496 569)
Included in the tool or work	0 490 527
Storage location	
Replaced by	
In connection with	
SI-Number	

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51 47 490 Removing and installing/replacing underbody protection (front)

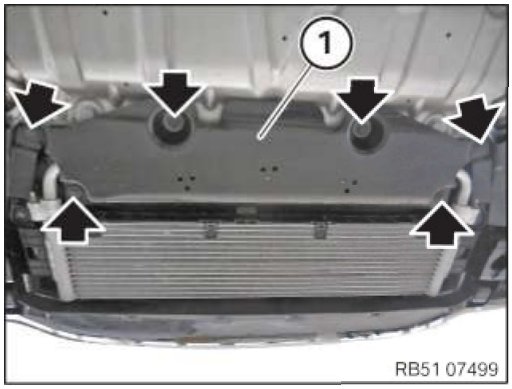
1 – Removing the front underbody protection



- **Version 1:**

  Remove screws (arrows).

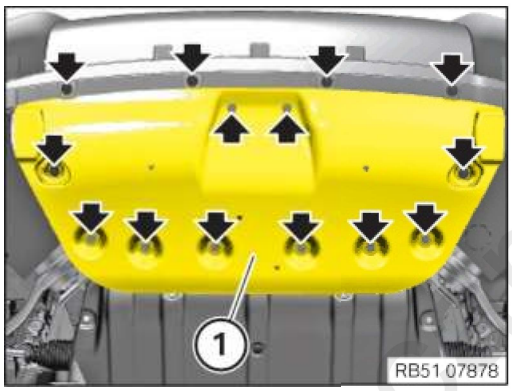
  Feed front underbody protection (1) backwards out of the bumper panel.



- **Version 2:**

  Remove screws (arrows).

  Guide out front underbody protection (1) and remove it.

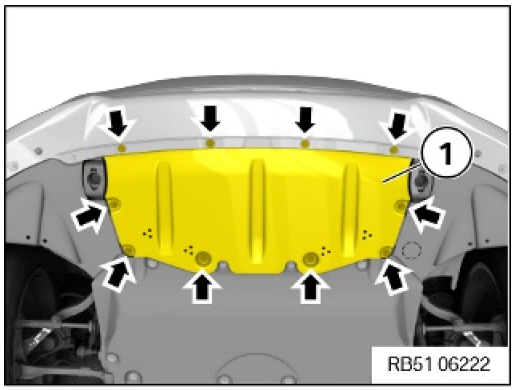


- **Version 3:**

  Remove screws (arrows).

  Guide out front underbody protection (1) and remove it.

2 – Installing the front underbody protection



- **Version 1:**

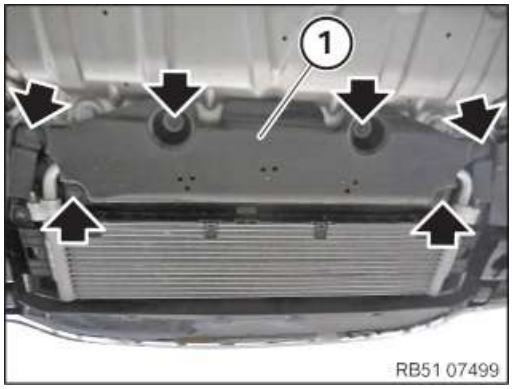
  Feed in the front underbody protection (1) towards the front under the bumper panel and position.

  Tighten screws (arrows).

Underbody protection front

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm
Hexagon screw M6x20		Tightening torque	8 Nm

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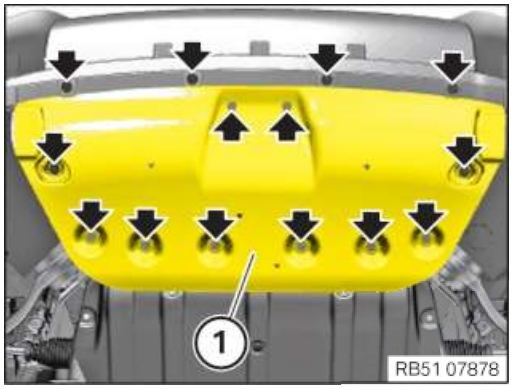
- **Version 2:**

  Feed in and position the front underbody protection (1).

  Tighten screws (arrows).

Underbody protection front

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm
Hexagon screw M6x20		Tightening torque	8 Nm



- **Version 3:**

  Feed in and install front underbody protection (1).

  Tighten screws (arrows).

Underbody protection front

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm
Hexagon screw M6x20		Tightening torque	8 Nm

Additional Information

Overview of Tightening Torques

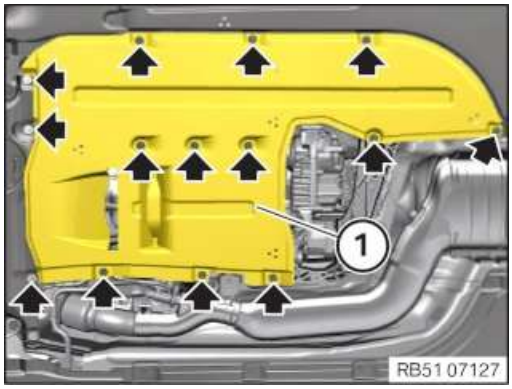
Underbody protection front Used in step 2

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm
Hexagon screw M6x20		Tightening torque	8 Nm

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51 47 491 Removing refitting/replacing rear engine undercover

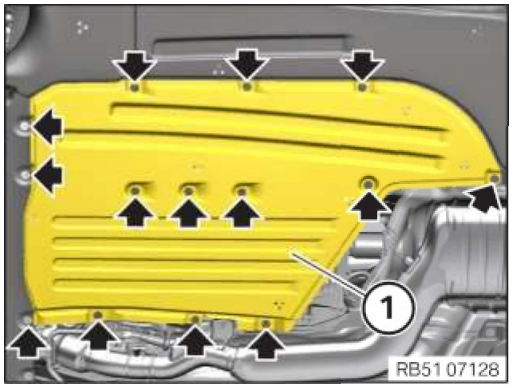
1 – Remove rear underbody protection



- **Version 1:**

  Remove screws (arrows).

  Feed out the rear underbody protection (1).

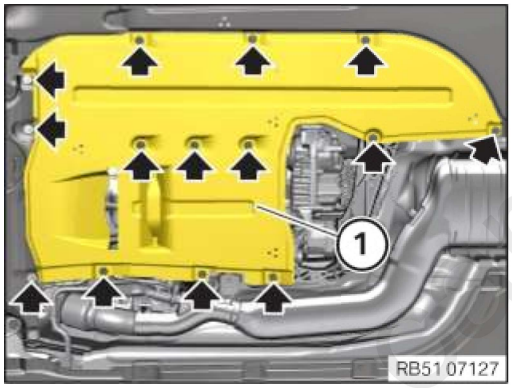


- **Version 2:**

  Remove screws (arrows).

  Guide out rear underbody protection (1) and remove it.

2 – Installing underbody protection at rear



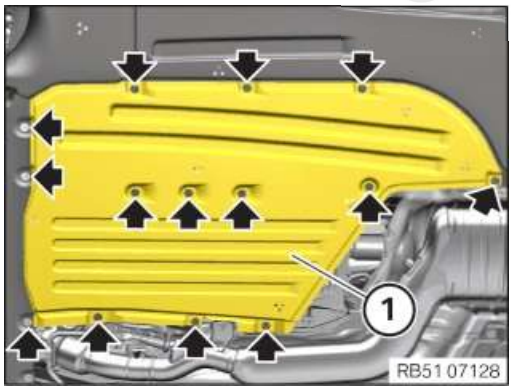
- **Version 1:**

  Insert and install the rear underbody protection (1).

  Tighten screws (arrows).

Underbody protection

Hexagon screw		Tightening torque	3 Nm



- **Version 2:**

  Insert and install the rear underbody protection (1).

  Tighten screws (arrows).

Underbody protection

Hexagon screw		Tightening torque	3 Nm

Additional Information

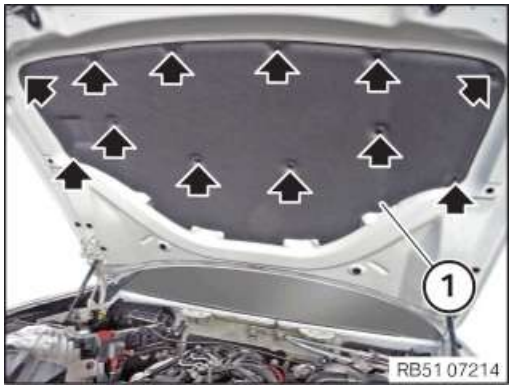
Overview of Tightening Torques

Underbody protection Used in step 2

Hexagon screw		Tightening torque	3 Nm

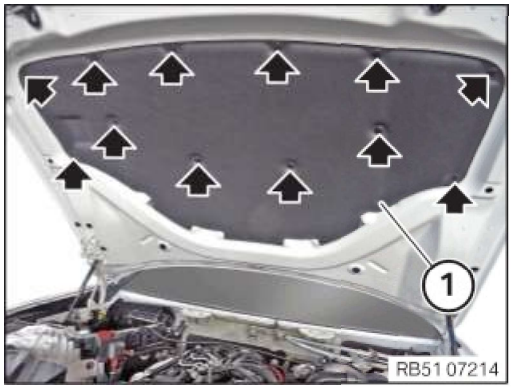
51 48 001 Removing and installing/replacing insulation lining on engine hood/bonnet

1 – Remove the damping material on the bonnet



- Release all clips (arrows) using the special tool 2 298 505.
- Remove damping material (1).

2 – Install the damping material on the bonnet

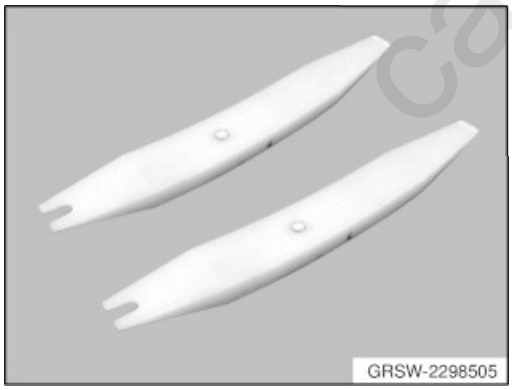


- Fit damping material (1).
- Fit all clips (arrows).

Additional Information

Overview of Special Tools

2 298 505 Wedge

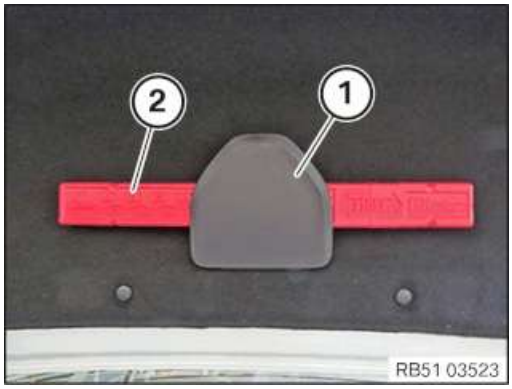


Common	Used in step 1
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

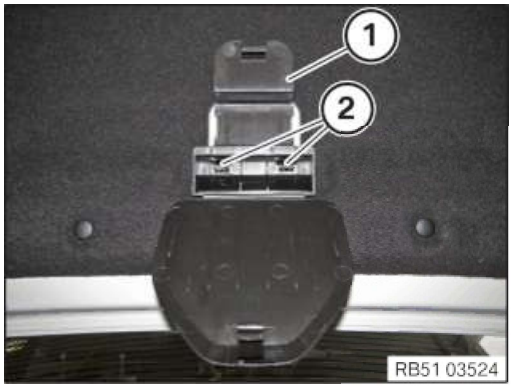
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51 49 000 Removing and installing/replacing the tailgate trim panel

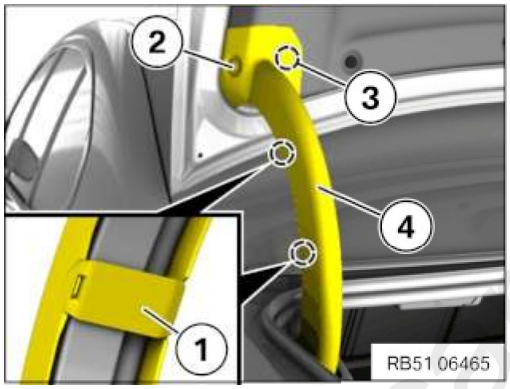
1 – Remove tailgate trim panel



- Fold the cover (1) towards the bottom.
- Remove the warning triangle (2).



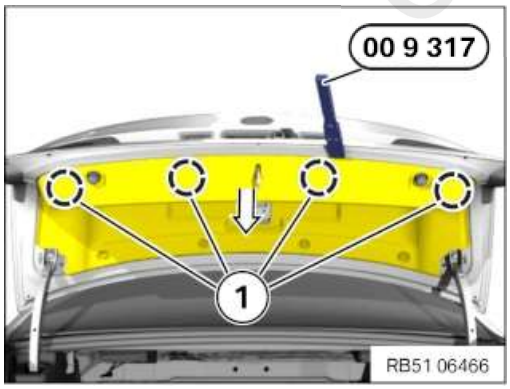
- Detach the warning triangle holder (1) from the latch mechanisms (2) and slide downwards.



NOTICE

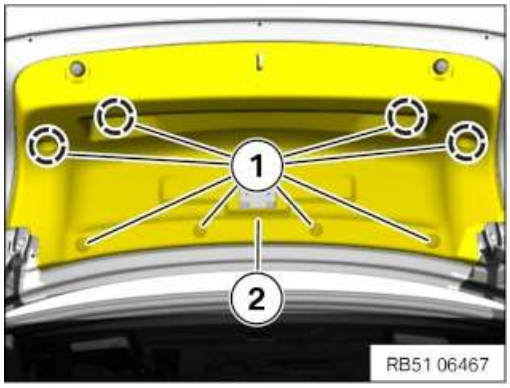
Description is for left component only. Procedure on the right side is identical.

- Unclip the tabs (1).
- Loosen expanding rivet (2).
- To avoid damage, release the trim panel for the hinge of the tailgate (4) without using a tool by jerking it along the hinge bracket and out of the clip fastening (3).



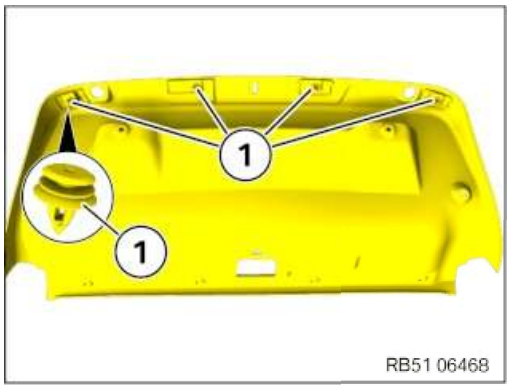
- Unclip clips (1) with special tool 0 490 534 (00 9 317) in the direction of arrow.

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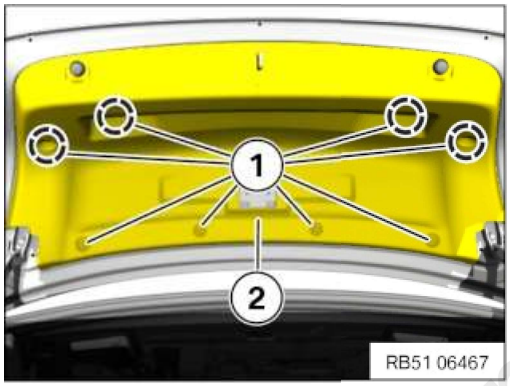


- Release expanding rivet (1) on the tailgate trim panel (2).
- Remove tailgate trim panel (2).
- **If installed**: Unlock plug connection of the switch for the tailgate lift and disconnect.

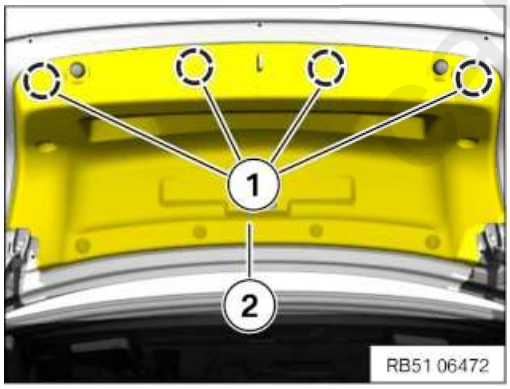
2 – Installing the tailgate trim panel



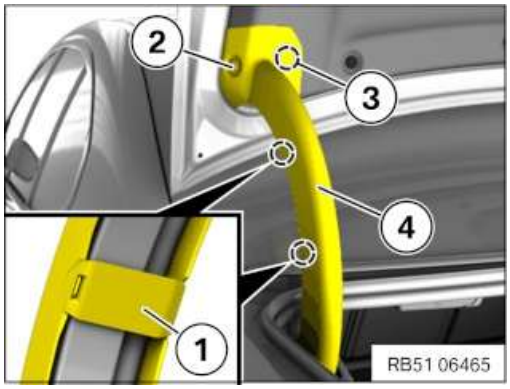
- Check the clips (1) for damage and renew if necessary.



- Fit the tailgate trim panel (2) and fasten in place with the expanding rivets (1).
- **If installed**: Connect and lock plug connection on the switch for the tailgate lift.



- Clip in the tailgate trim panel (2) with the clips (1).

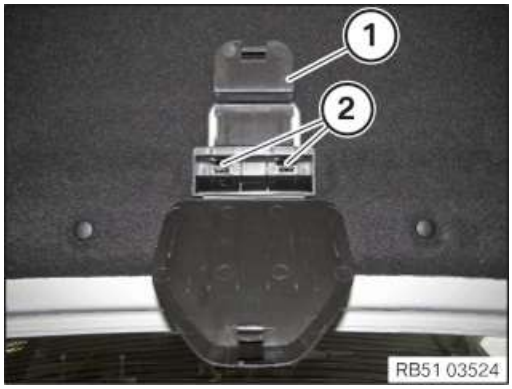


NOTICE

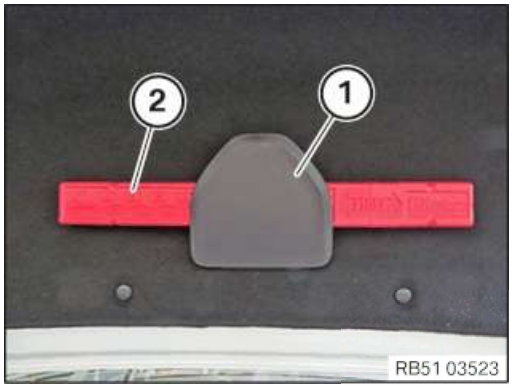
Description is for left component only. Procedure on the right side is identical.

- Clip in the trim panel for the hinge of the tailgate (4) to the clip fastening (3).
- Fasten expanding rivet (2).
- Clip in tabs (1).

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- Position the warning triangle holder (1) and snap into the latch mechanisms (2).

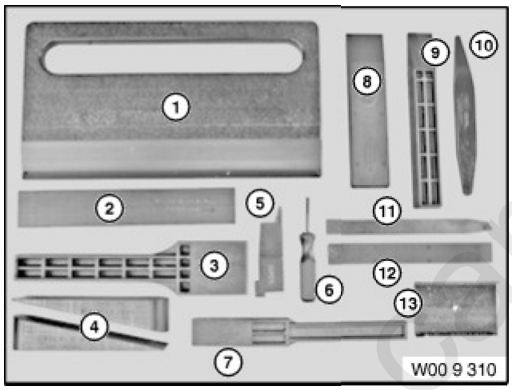


- Install the warning triangle (2).
- Clip in the cover (1).

Additional Information

Overview of Special Tools

0 490 534 (00 9 317) Wedge



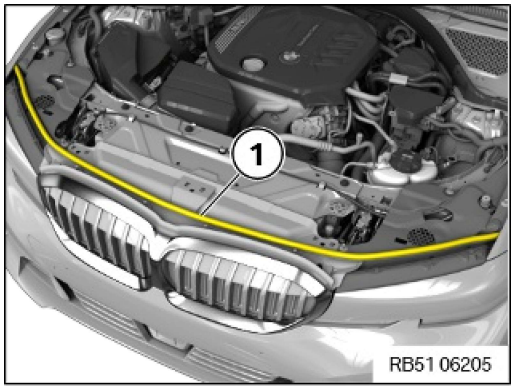
Common	Used in step 1
Usage	(Trim wedge) Replaced by special tool 00 9 325 from 11/2008 (quality improvement due to new material) Replaced by 00 9 325 (0 496 569)
Included in the tool or work	0 490 527
Storage location	
Replaced by	
In connection with	
SI-Number	

ondiagn.com

51 64 020 Remove and install top rear connection

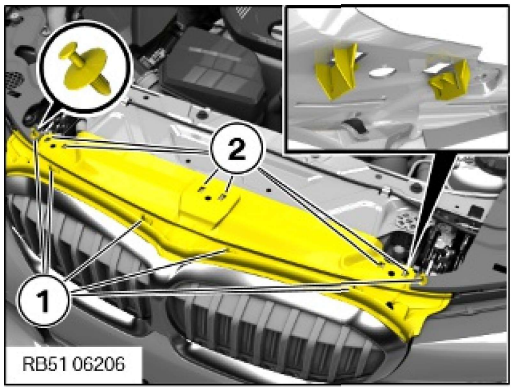
PRELIMINARY WORK

1 – Remove the seal for the bonnet in front



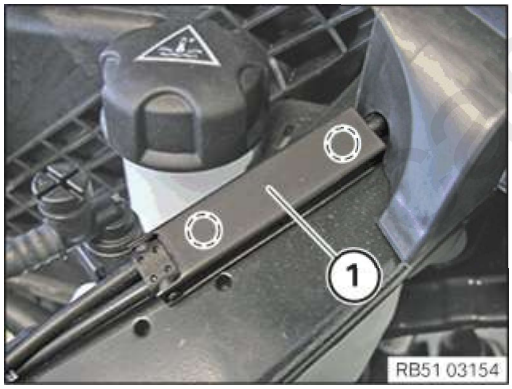
- Pull off front bonnet seal (1) upwards.

2 – Removing the centre engine compartment cover

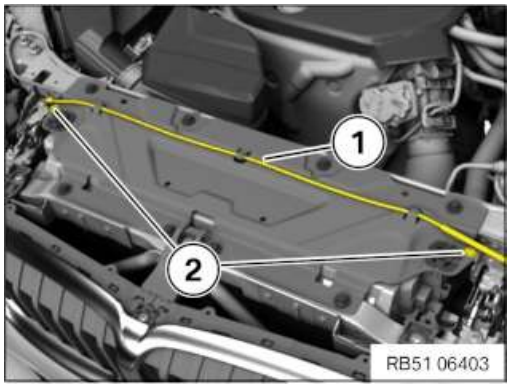


- Detach all expanding rivets (1).
- Release the cover of the centre engine compartment with the latch mechanisms (2) .
- Feed the cover for the centre engine compartment out to the rear.

3 – Removing the top cross connection

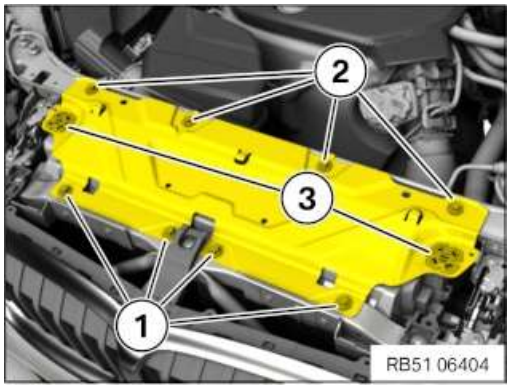


- Release the housing for the coupling of the Bowden cables (1) from the body.



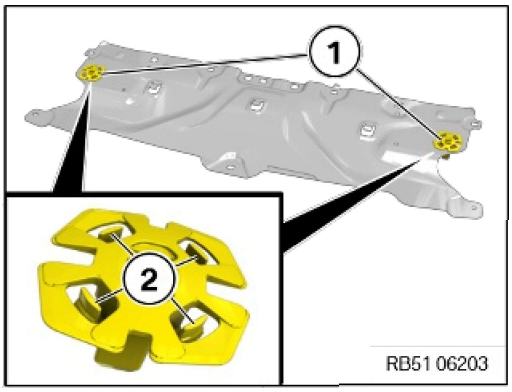
- Detach Bowden cable (1) at the top cross connection.
- Loosen screws (2).

bmwfdiagn.com

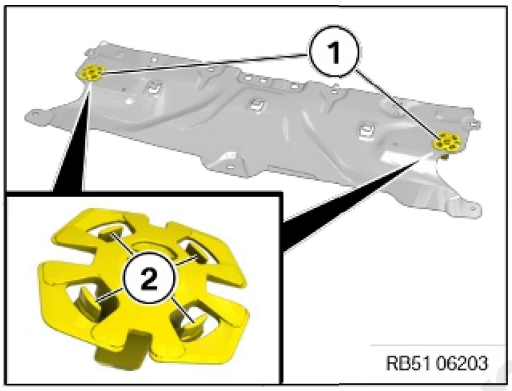


- Loosen screws (1) and (2).
- Remove the top cross connection with the holders(3) towards the top.

4 – Replacement: Remounting the bracket



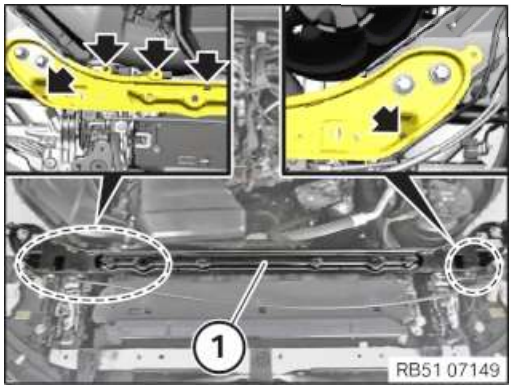
- Release and remove holder (1) with latch mechanisms (2) from upper cross connection.



- Check latch mechanisms (2) of the holder for damage and, if necessary, renew the holder.
- Clip in holder (1) with latch mechanisms (2) in the new upper cross connection.

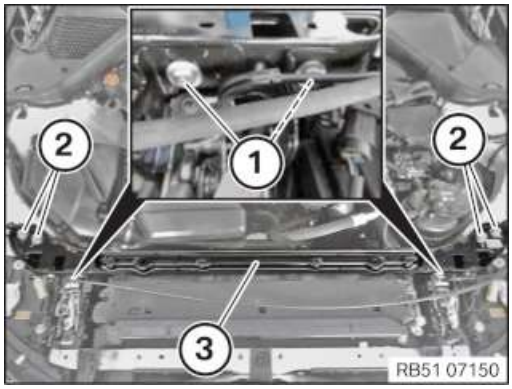
MAIN WORK

5 – Remove the rear top cross connection



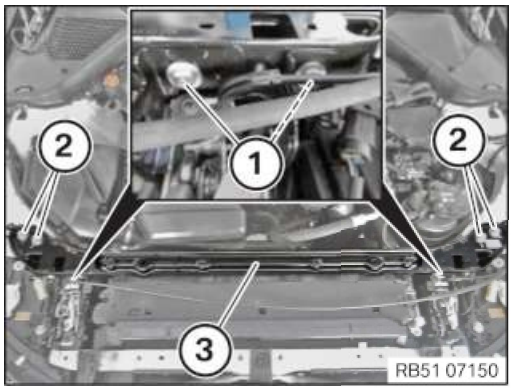
- Release the clips (arrows) in the marked areas from the top rear cross connection (1).

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- Loosen screws (1).
- Loosen screws (2).
- Guide out and remove top rear cross connection (3).

6 – Install the rear top cross connection



- Guide in and position the top rear cross connection (3).
- Tighten the screws (1).

Top rear cross connection to bonnet catch support

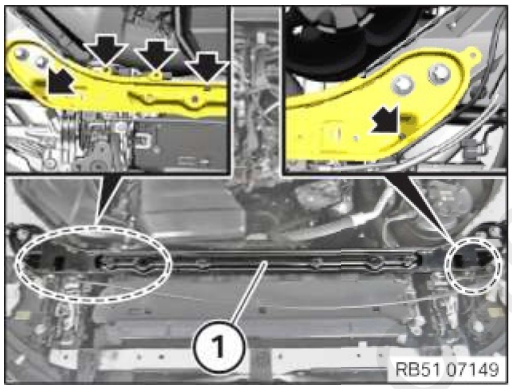
Flat-head screw M6x20		Tightening torque	11,8 Nm

- Renew screws (2).

  Parts: Bolts
- Tighten the screws (2).

Rear top cross connection to wheel arch carrier support

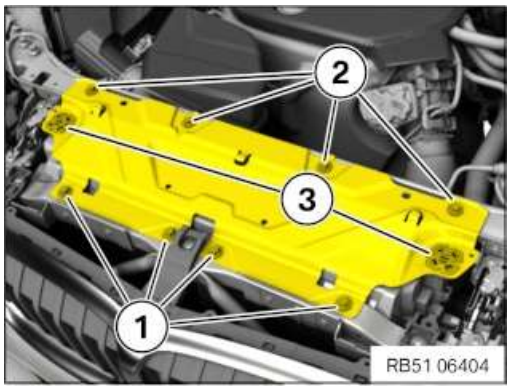
M10x20 screw	Renew screw.	Jointing torque	56 Nm
		Angle of rotation	90 °



- Secure the clips (arrows) in the marked areas to the top rear cross connection (1).

POSTPROCESSES

7 – Installing the top cross connection

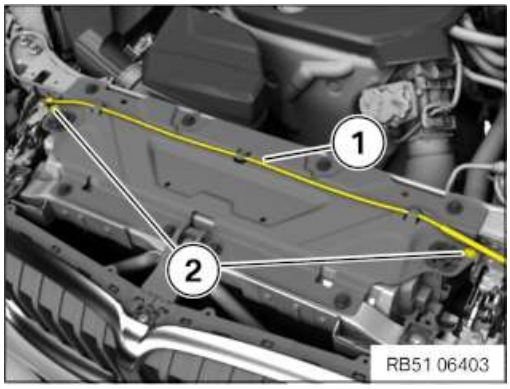


- Set and position upper cross connection with holders (3) from above.
- Tighten down screws (1) and (2).

Cross connection, top

M8x20		Tightening torque	28 Nm

carldiagn.com

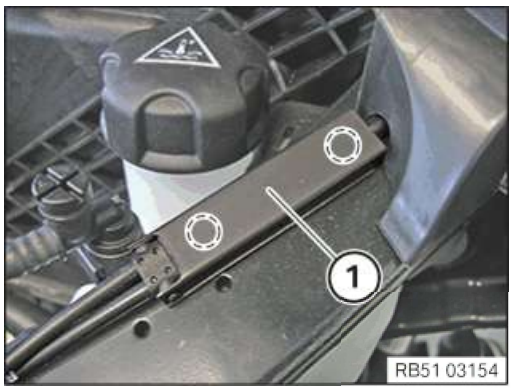


- Tighten down screws (2).

Cross connection, top

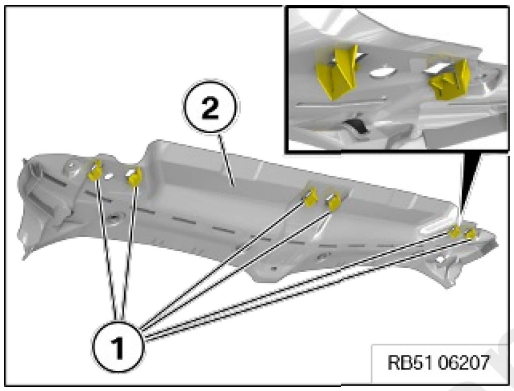
M6x20		Tightening torque	11,8 Nm

- Attach Bowden cable (1) on the upper cross connection.



- Clip in the housing for the coupling of the Bowden cables (1).

8 – Installing cover for engine compartment centre



Check

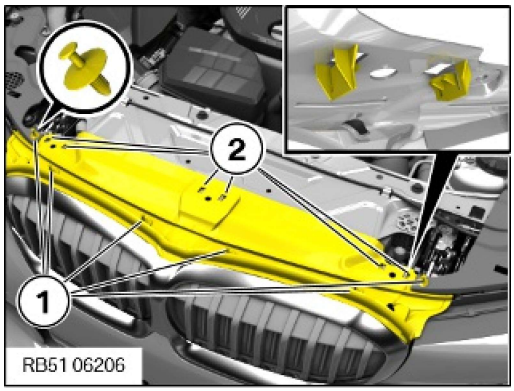
- Check latch mechanisms (1) of cover for engine compartment centre (2) for damage.

Result

» The latch mechanism (1) is damaged.

Measure

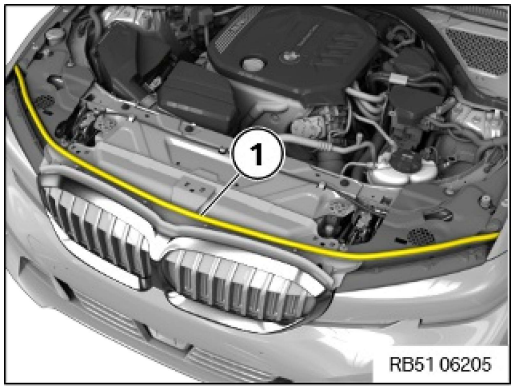
- Renew cover for engine compartment centre (2).



- Guide in the cover for the engine compartment centre from the rear and position it.
- Clip in the cover for the engine compartment centre with latch mechanisms (2).
- Mount all expanding rivets (1).

9 – Install the seal for the front bonnet

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- Position the bonnet seal(1) and connect it on the mounting on the bumper and on the headlights.

Additional Information

Overview of Tightening Torques

Top rear cross connection to bonnet catch support			Used in step 6
Flat-head screw M6x20		Tightening torque	11,8 Nm

Rear top cross connection to wheel arch carrier support			Used in step 6
M10x20 screw	Renew screw.	Jointing torque	56 Nm
		Angle of rotation	90 °

Cross connection, top			Used in step 7
M8x20		Tightening torque	28 Nm

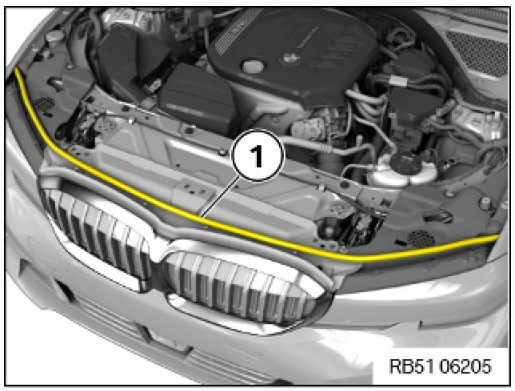
Cross connection, top			Used in step 7
M6x20		Tightening torque	11,8 Nm

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51 64 025 Remove and install/replace the top front connection (connection of both bonnet locks)

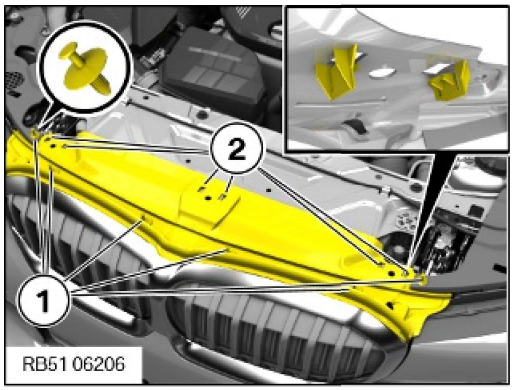
PRELIMINARY WORK

1 – Remove the seal for the bonnet in front



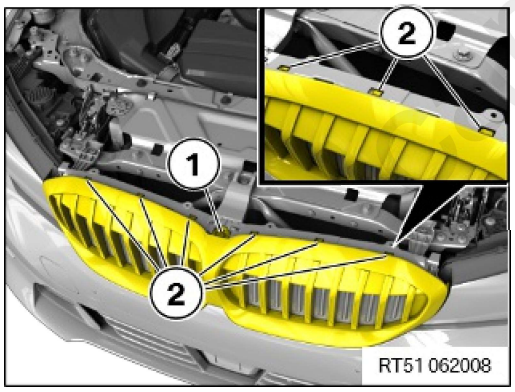
- Pull off front bonnet seal (1) upwards.

2 – Removing the centre engine compartment cover



- Detach all expanding rivets (1).
- Release the cover of the centre engine compartment with the latch mechanisms (2) .
- Feed the cover for the centre engine compartment out to the rear.

3 – Remove centre radiator ornamental grille



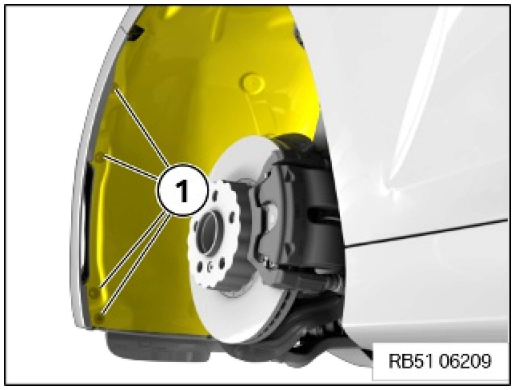
- Loosen screw (1).
- Release the centre front ornamental grille from the latch mechanisms (2).
- Release the centre front ornamental grille from the remaining latch mechanism towards the front and remove it.
- Unlock and disconnect plug connections according to the equipment.

4 – Partially remove both front wheel arch trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially removing front wheel arch trim panel**

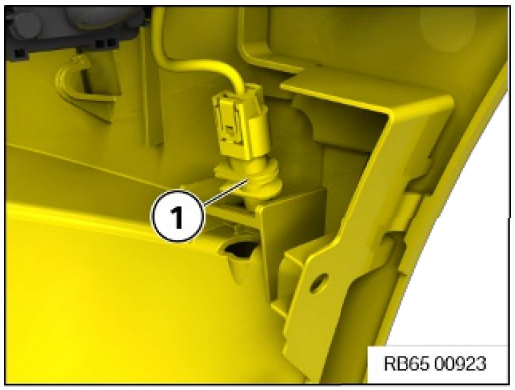


NOTICE

To provide a better overview: Schematic diagram without front wheel.

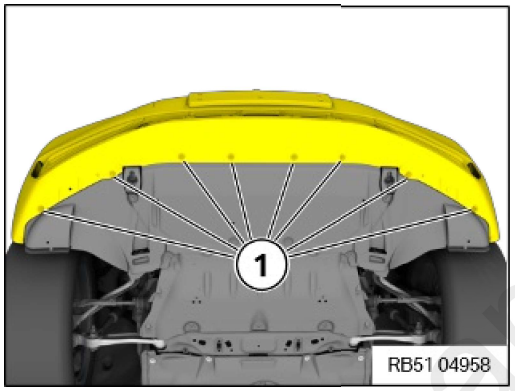
- Loosen screws (1).
- Fold the front wheel arch trim panel to one side.

5 – Partially removing the temperature sensor



- Unclip temperature sensor (1) from the front bumper panel to the top.

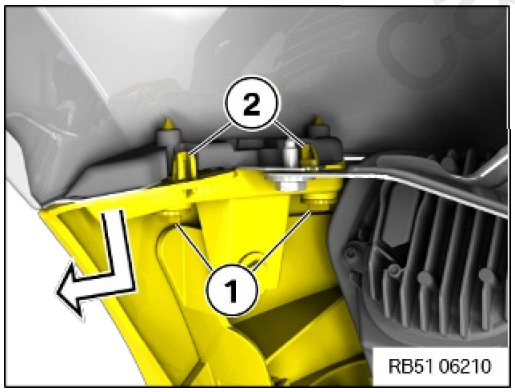
6 – Remove front bumper panel



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

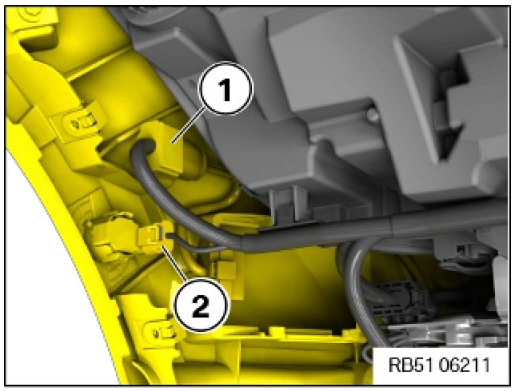
- Loosen screws (1).



NOTICE

Perform the operations on the left and right side.

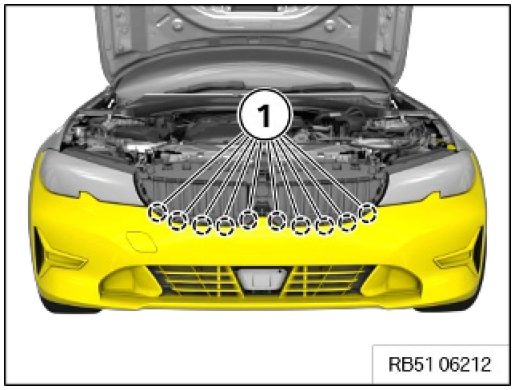
- Loosen screws (1).
- Release the front bumper panel along with the latch mechanisms (2) and feed out in the direction of arrow out of the guide.



NOTICE

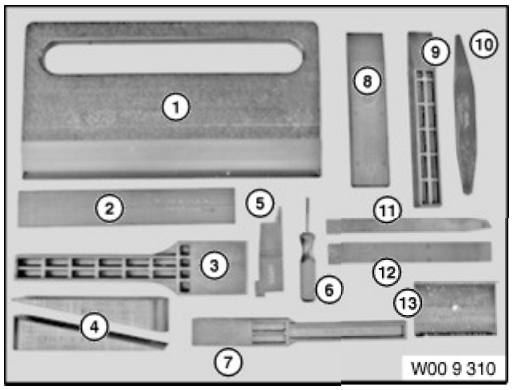
Perform the operations on the left and right side.

- Unlock plug connection (1) and disconnect.
- If necessary, unlock plug connection (2) and disconnect.

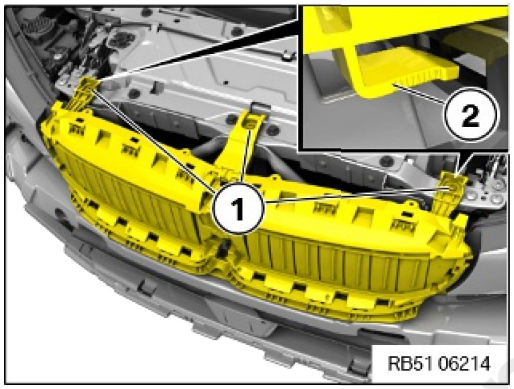


- Release the front bumper panel from the latch mechanisms (1) towards the front.
- Remove the front bumper panel.

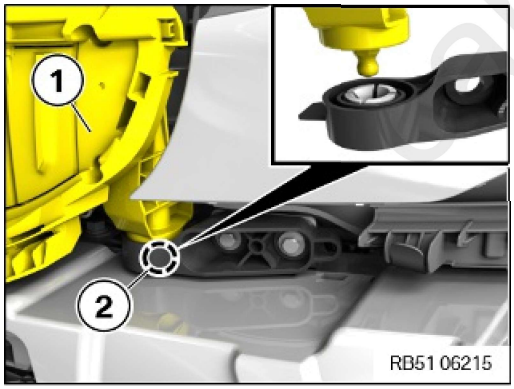
7 – Remove top automatic air flap control



- Have the set of special tools 0 493 752 (00 9 329) ready.



- Loosen screws (1).
- Carefully release the top air flap control towards the front with the latch mechanisms(2).



NOTICE

The operations shown only for one side must be carried out on both sides.

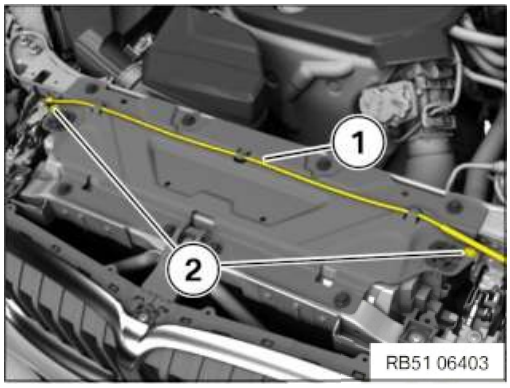
- Release the top air flap control (1)with a suitable special tool.

  Lever out the ball head (2) upwards.
- Feed out the top air flap control (1)upwards.
- Unlock associated plug connections and disconnect.

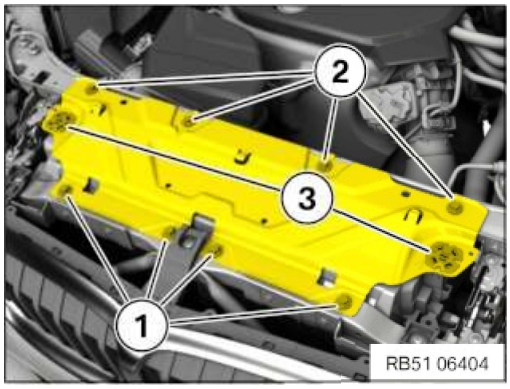
8 – Removing the top cross connection



- Release the housing for the coupling of the Bowden cables (1) from the body.



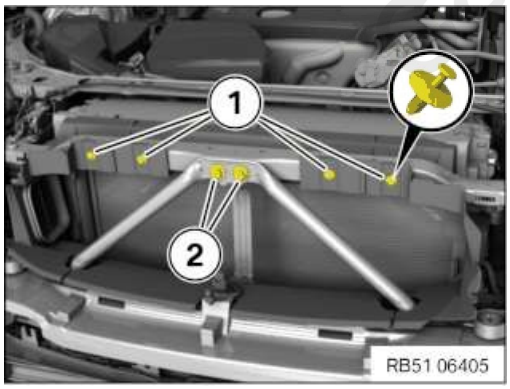
- Detach Bowden cable (1) at the top cross connection.
- Loosen screws (2).



- Loosen screws (1) and (2).
- Remove the top cross connection with the holders(3) towards the top.

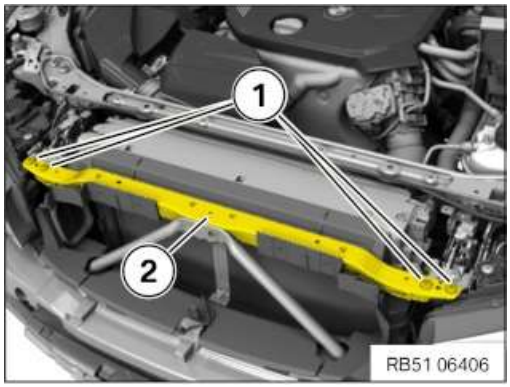
MAIN WORK

9 – Removing top front connection



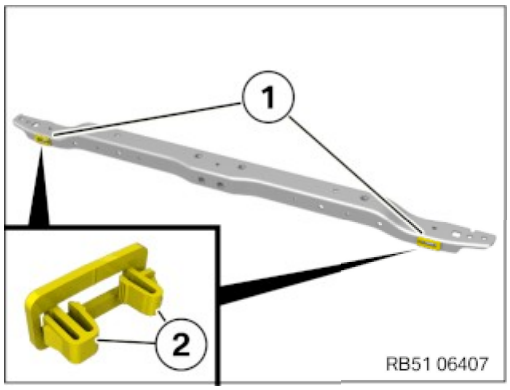
- Loosen the expanding rivet (1).
- Loosen screws (2).

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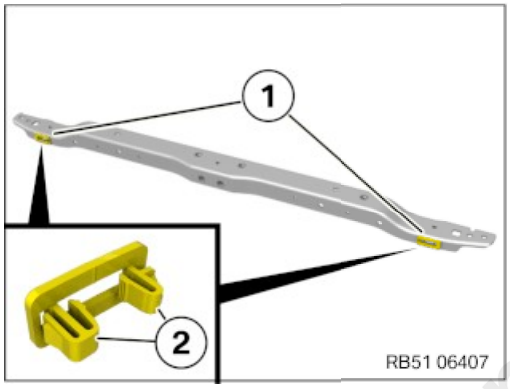


- Loosen screws (2).
- Feed out and remove top front connection (2) to the top.

10 – Replacement: Remounting mounting elements

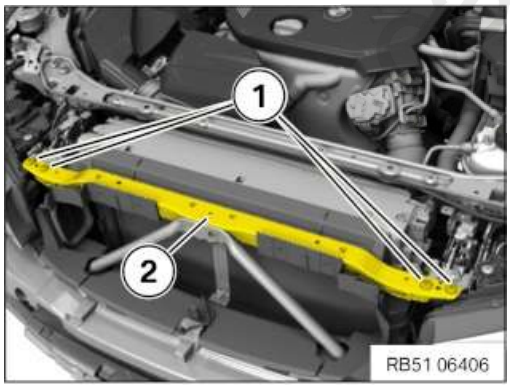


- Release and remove mounting elements (1) with latch mechanisms (2).



- Check latch mechanisms (2) of the mounting elements for damage and, if necessary, renew the mounting element.
- Fix mounting elements (1) and clip them in with latch mechanisms (2).

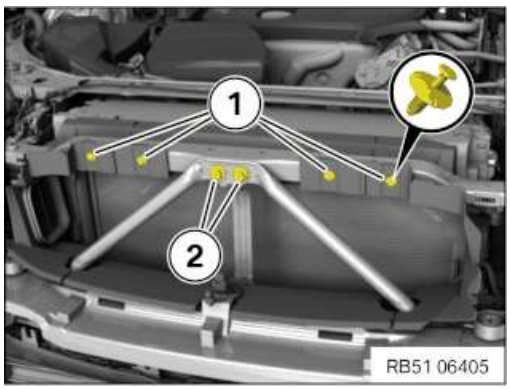
11 – Install top front connection



- Feed in the top front connection from the top (2) and position it.
- Tighten down screws (2).

Top front connection to support lock

Combination oval-head machine screw		Tightening torque	28 Nm



- Tighten down screws (2).

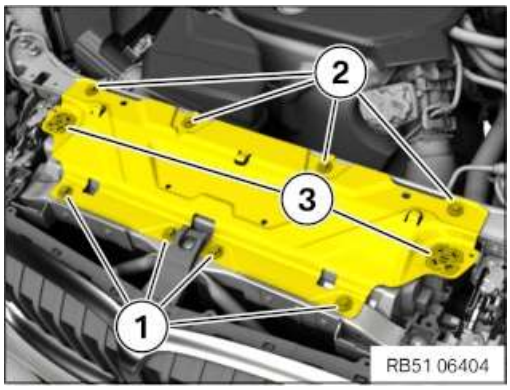
Strut on front end

Hexagon screw		Tightening torque	28 Nm

- Secure expanding rivet (1).

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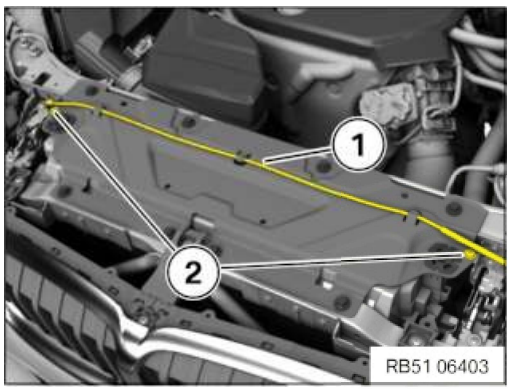
12 – Installing the top cross connection



- Set and position upper cross connection with holders (3) from above.
- Tighten down screws (1) and (2).

Cross connection, top

M8x20		Tightening torque	28 Nm

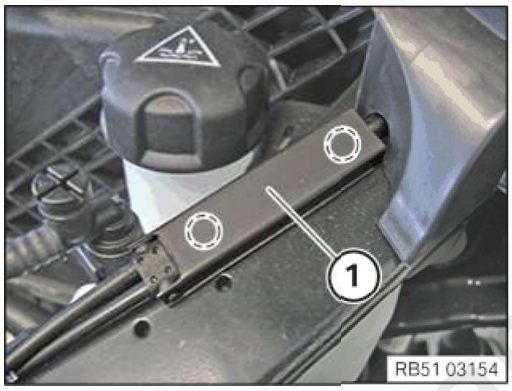


- Tighten down screws (2).

Cross connection, top

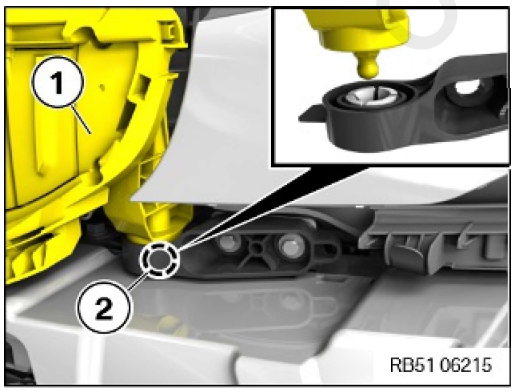
M6x20		Tightening torque	11,8 Nm

- Attach Bowden cable (1) on the upper cross connection.



- Clip in the housing for the coupling of the Bowden cables (1).

13 – Insert top automatic air flap control

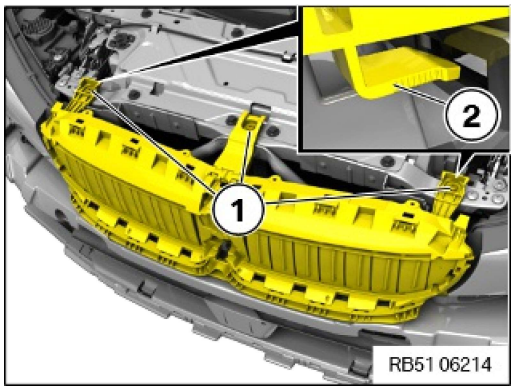


NOTICE

The operations shown only for one side must be carried out on both sides.

- Position top air flap control (1).
- Connect and lock the relevant connectors.
- Feed in the top air flap control (1) and clip in with the ball head(2) .

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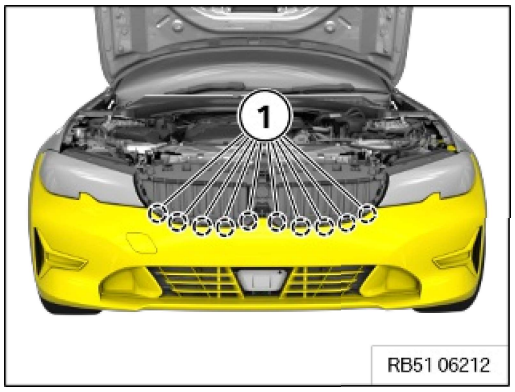


- Clip the top air flap control in the latch mechanisms(2) .
- Tighten the screws (1).

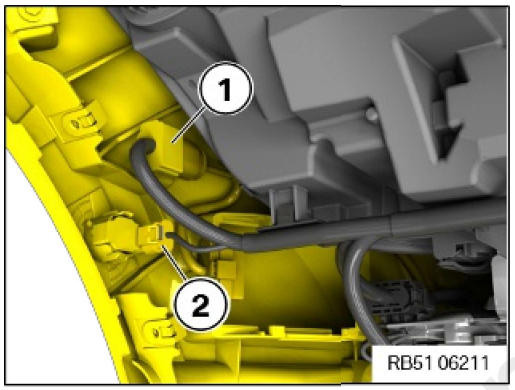
Air flap control to front end

Oval-head screw with spring washer		Tightening torque	4,6 Nm

14 – Install bumper panel, front



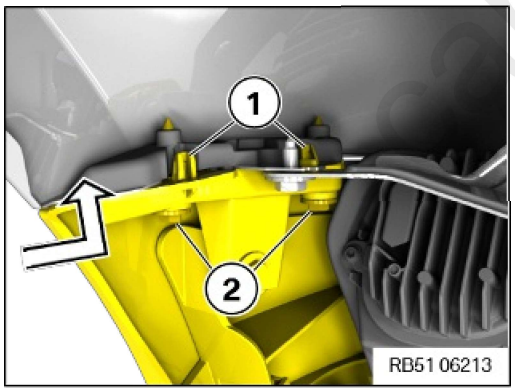
- Position the front bumper panel.
- Clip the front bumper panel into latch mechanisms (1).



NOTICE

Perform the operations on the left and right side.

- Connect connectors (1) and lock.
- If necessary, connect the connector (2) and lock it.



NOTICE

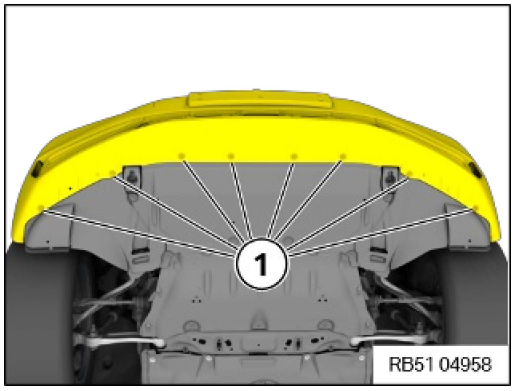
Perform the operations on the left and right side.

- Feed the bumper panel in arrow direction into the guide and clip in with the latch mechanism(1).
- Tighten down screws (2).

Front bumper panel to front side panel

Torx screw 5x35		Tightening torque	3 Nm

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NOTICE

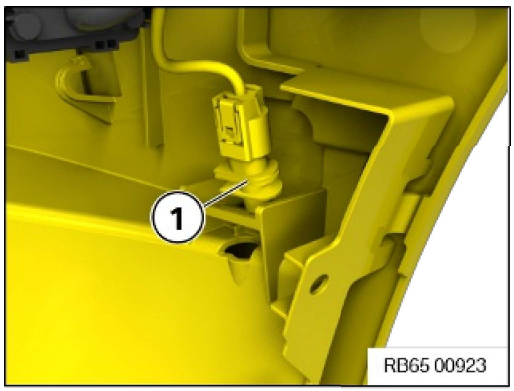
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Tighten the screws (1).

Front bumper panel to underbody protection

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

15 – Partially installing the temperature sensor



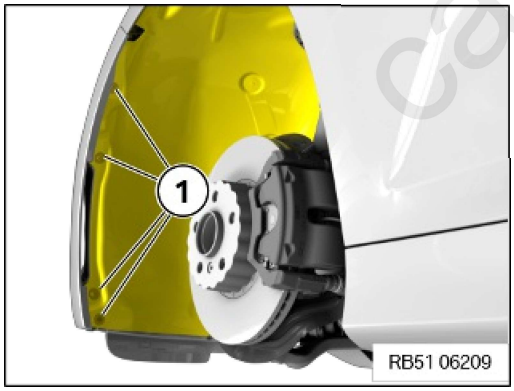
- Clip the temperature sensor (1) downwards into the front bumper panel.

16 – Partially installing both front wheel arch trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially installing front wheel arch trim panel**



NOTICE

To provide a better overview: Schematic diagram without front wheel.

- Fold back the front wheel arch trim panel.
- Tighten the screws (1).

Wheel arch trim panel, front

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

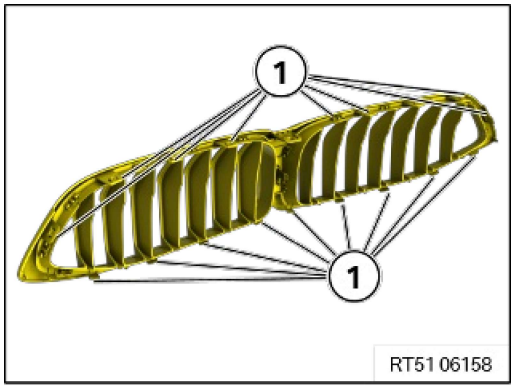
17 – Install centre radiator grille

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

Check

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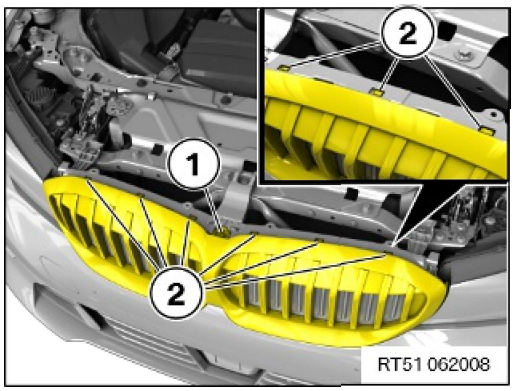
- Check latch mechanisms (1) for damage.

Result

» The latch mechanism (1) is damaged.

Measure

- Renew the front ornamental grille, centre.

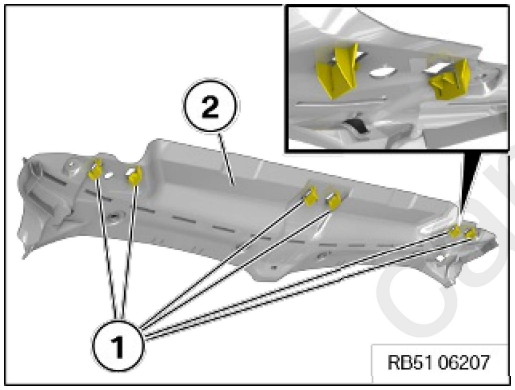


- Depending on the equipment, connect and lock connectors.
- Position the front ornamental grille, centre and clip in all latch mechanisms (2) from the front.
- Tighten down screw (1).

Centre of front ornamental grille to top air flap control

Oval-head screwM6		Tightening torque	4,6 Nm

18 – Installing cover for engine compartment centre



Check

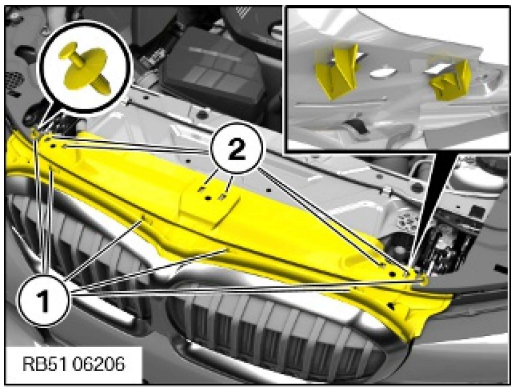
- Check latch mechanisms (1) of cover for engine compartment centre (2) for damage.

Result

» The latch mechanism (1) is damaged.

Measure

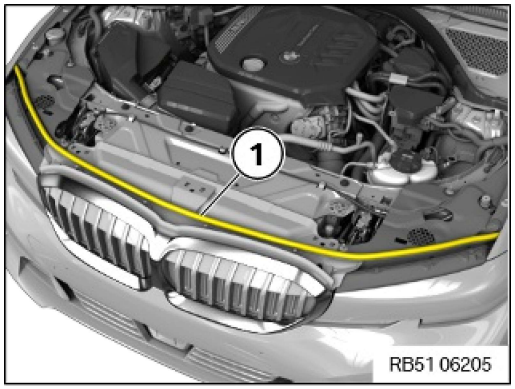
- Renew cover for engine compartment centre (2).



- Guide in the cover for the engine compartment centre from the rear and position it.
- Clip in the cover for the engine compartment centre with latch mechanisms (2).
- Mount all expanding rivets (1).

19 – Install the seal for the front bonnet

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- Position the bonnet seal(1) and connect it on the mounting on the bumper and on the headlights.

Additional Information

Overview of Tightening Torques

Top front connection to support lock			Used in step 11
Combination oval-head machine screw		Tightening torque	28 Nm

Strut on front end			Used in step 11
Hexagon screw		Tightening torque	28 Nm

Cross connection, top			Used in step 12
M8x20		Tightening torque	28 Nm

Cross connection, top			Used in step 12
M6x20		Tightening torque	11,8 Nm

Air flap control to front end			Used in step 13
Oval-head screw with spring washer		Tightening torque	4,6 Nm

Front bumper panel to front side panel			Used in step 14
Torx screw 5x35		Tightening torque	3 Nm

Front bumper panel to underbody protection			Used in step 14
Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

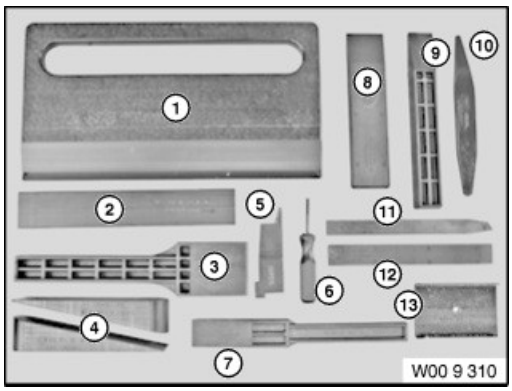
Wheel arch trim panel, front			Used in step 16
Thermoplastic hexagon screw		Tightening torque	2,6 Nm

Centre of front ornamental grille to top air flap control			Used in step 17
Oval-head screwM6		Tightening torque	4,6 Nm

Overview of Special Tools

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0 493 752 (00 9 329) Case



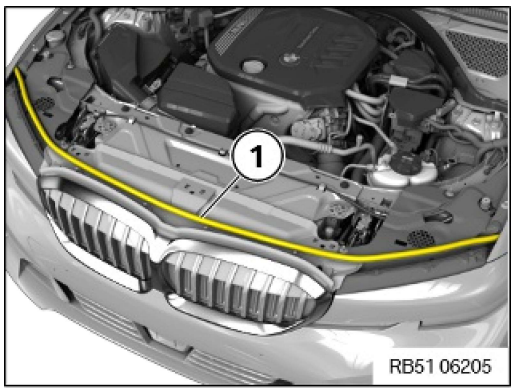
Common	Used in step 7
Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

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51 64 012 Removing and installing/replacing the bracing strut (in the fan duct of the engine oil cooler)

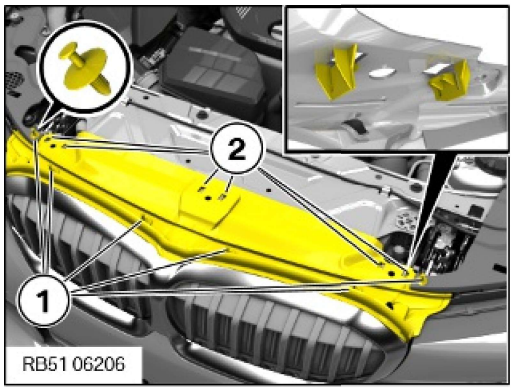
PRELIMINARY WORK

1 – Remove the seal for the bonnet in front



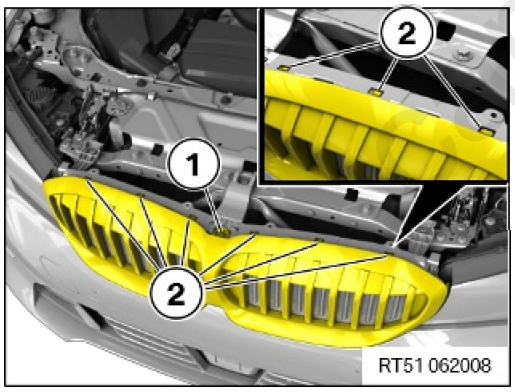
- Pull off front bonnet seal (1) upwards.

2 – Removing the centre engine compartment cover



- Detach all expanding rivets (1).
- Release the cover of the centre engine compartment with the latch mechanisms (2) .
- Feed the cover for the centre engine compartment out to the rear.

3 – Remove centre radiator ornamental grille



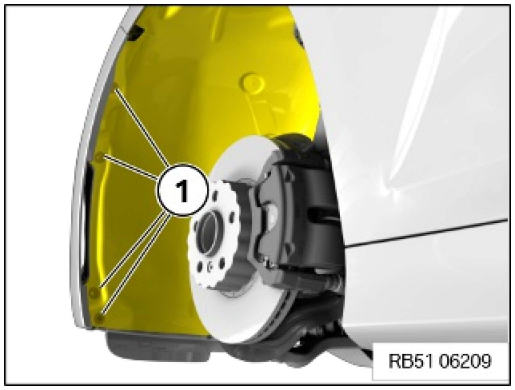
- Loosen screw (1).
- Release the centre front ornamental grille from the latch mechanisms (2).
- Release the centre front ornamental grille from the remaining latch mechanism towards the front and remove it.
- Unlock and disconnect plug connections according to the equipment.

4 – Partially remove both front wheel arch trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially removing front wheel arch trim panel**

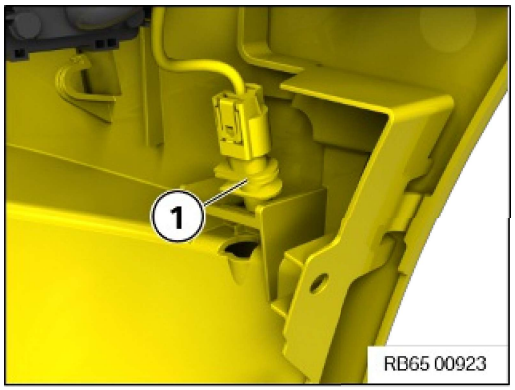


NOTICE

To provide a better overview: Schematic diagram without front wheel.

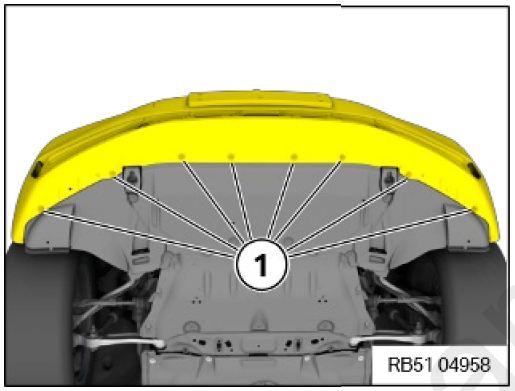
- Loosen screws (1).
- Fold the front wheel arch trim panel to one side.

5 – Partially removing the temperature sensor



- Unclip temperature sensor (1) from the front bumper panel to the top.

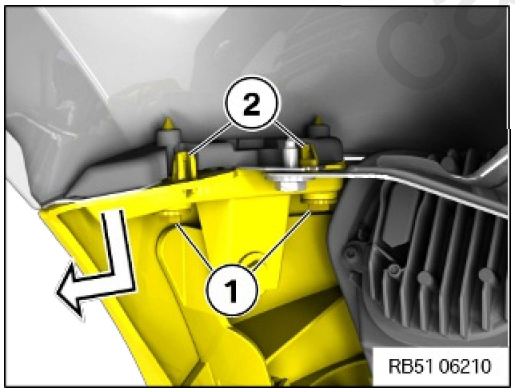
6 – Remove front bumper panel



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

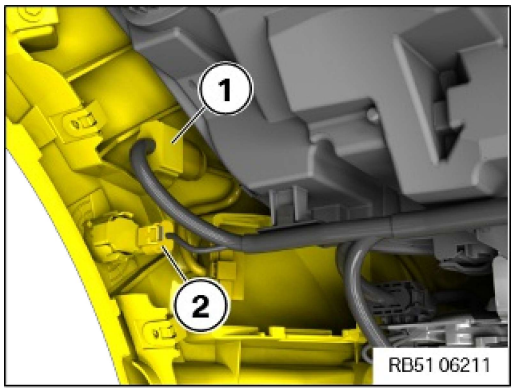
- Loosen screws (1).



NOTICE

Perform the operations on the left and right side.

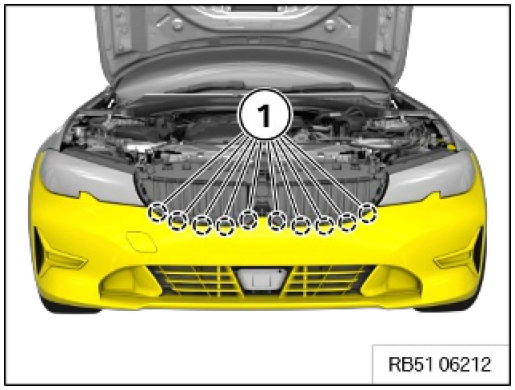
- Loosen screws (1).
- Release the front bumper panel along with the latch mechanisms (2) and feed out in the direction of arrow out of the guide.



NOTICE

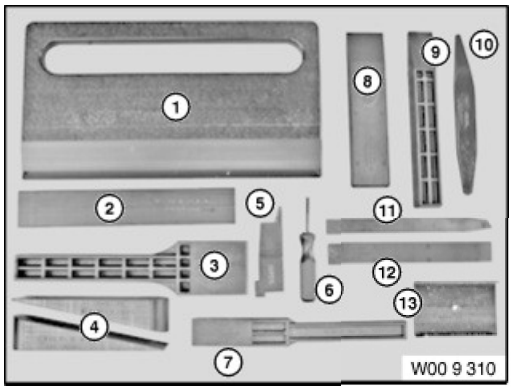
Perform the operations on the left and right side.

- Unlock plug connection (1) and disconnect.
- If necessary, unlock plug connection (2) and disconnect.

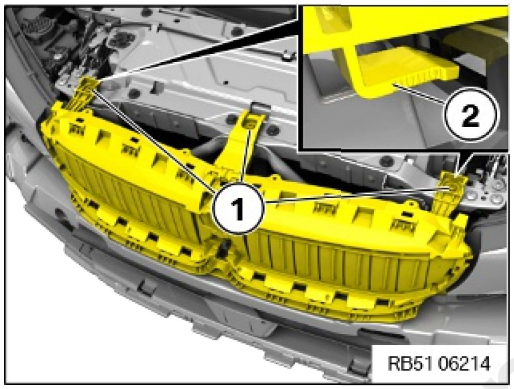


- Release the front bumper panel from the latch mechanisms (1) towards the front.
- Remove the front bumper panel.

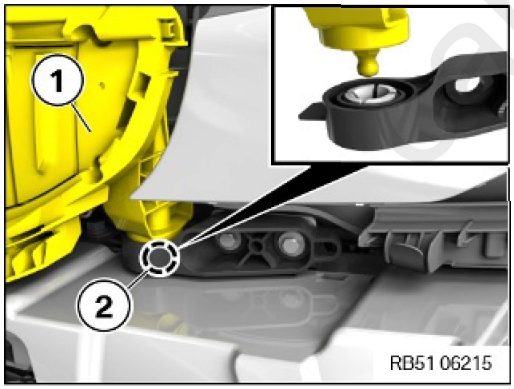
7 – Remove top automatic air flap control



- Have the set of special tools 0 493 752 (00 9 329) ready.



- Loosen screws (1).
- Carefully release the top air flap control towards the front with the latch mechanisms(2).



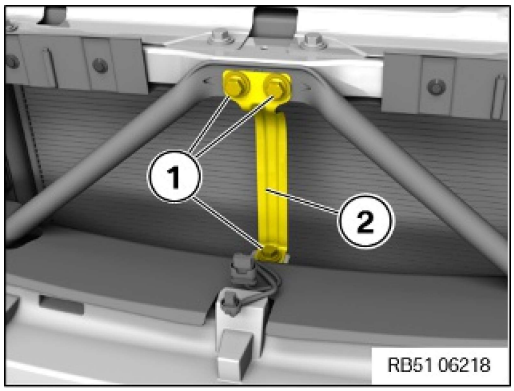
NOTICE

The operations shown only for one side must be carried out on both sides.

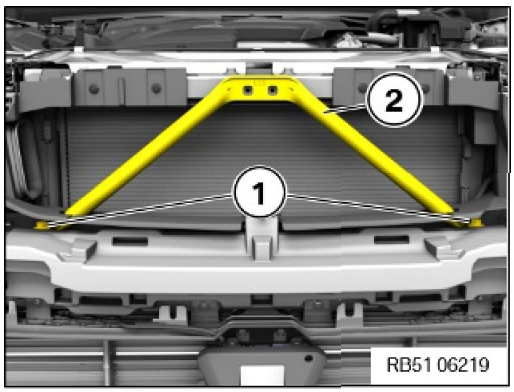
- Release the top air flap control (1)with a suitable special tool.

  Lever out the ball head (2) upwards.
- Feed out the top air flap control (1)upwards.
- Unlock associated plug connections and disconnect.

8 – Remove stiffening strut

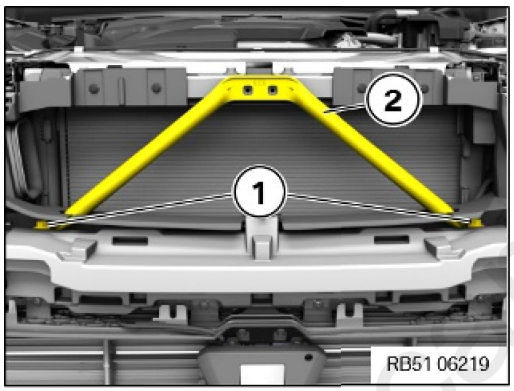


- Loosen screws (1).
- Remove the support (2).



- Loosen screws (1).
- Remove the bracing strut (2).

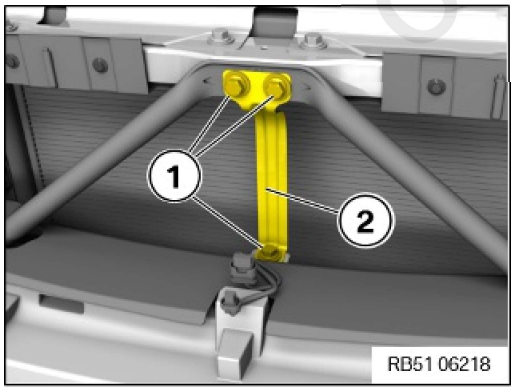
9 – Install bracing strut



- Install the bracing strut (2).
- Tighten the screws (1).

Bracing strut on support for top bumper panel

Hexagon screw		Tightening torque	28 Nm

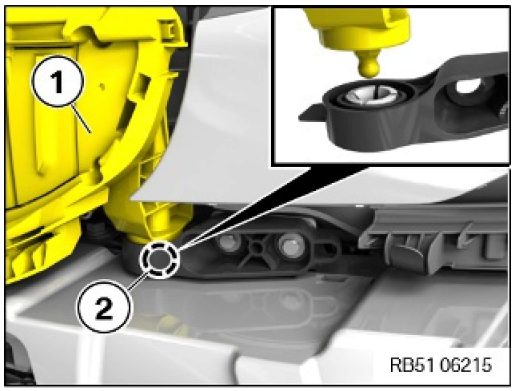


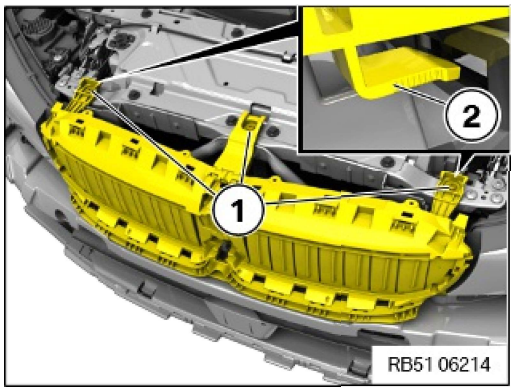
- Install support (2).
- Tighten the screws (1).

Strut on front end

Hexagon screw		Tightening torque	28 Nm

10 – Insert top automatic air flap control





NOTICE

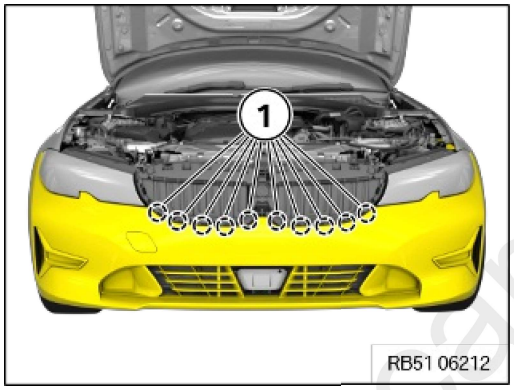
The operations shown only for one side must be carried out on both sides.

- Position top air flap control (1).
- Connect and lock the relevant connectors.
- Feed in the top air flap control (1) and clip in with the ball head(2) .
- Clip the top air flap control in the latch mechanisms(2) .
- Tighten the screws (1).

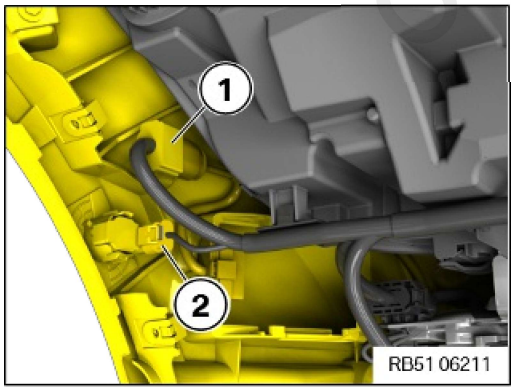
Air flap control to front end

Oval-head screw with spring washer		Tightening torque	4,6 Nm

11 – Install bumper panel, front



- Position the front bumper panel.
- Clip the front bumper panel into latch mechanisms (1).

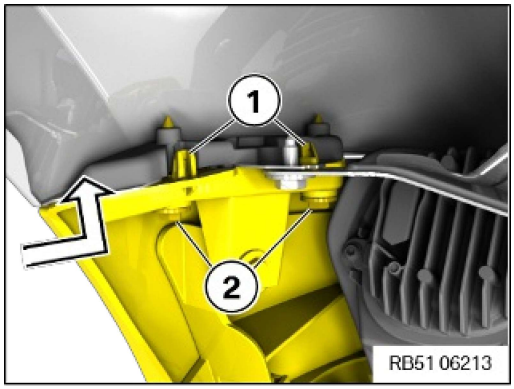


NOTICE

Perform the operations on the left and right side.

- Connect connectors (1) and lock.
- If necessary, connect the connector (2) and lock it.

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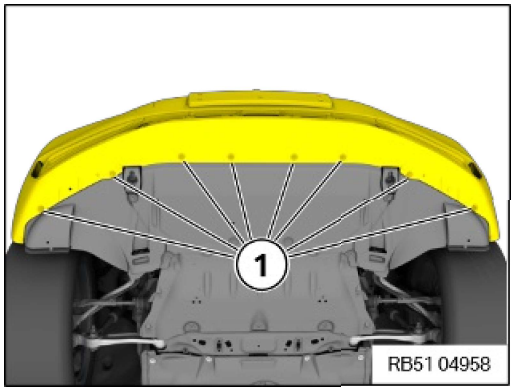
NOTICE

Perform the operations on the left and right side.

- Feed the bumper panel in arrow direction into the guide and clip in with the latch mechanism(1).
- Tighten down screws (2).

Front bumper panel to front side panel

Torx screw 5x35		Tightening torque	3 Nm



NOTICE

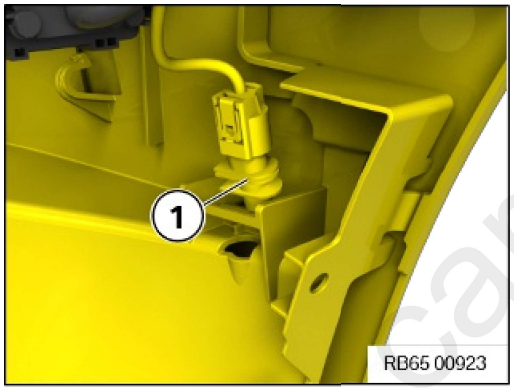
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Tighten the screws (1).

Front bumper panel to underbody protection

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

12 – Partially installing the temperature sensor



- Clip the temperature sensor (1) downwards into the front bumper panel.

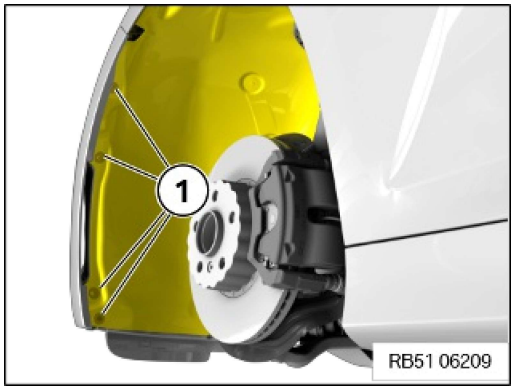
13 – Partially installing both front wheel arch trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially installing front wheel arch trim panel**

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NOTICE

To provide a better overview: Schematic diagram without front wheel.

- Fold back the front wheel arch trim panel.
- Tighten the screws (1).

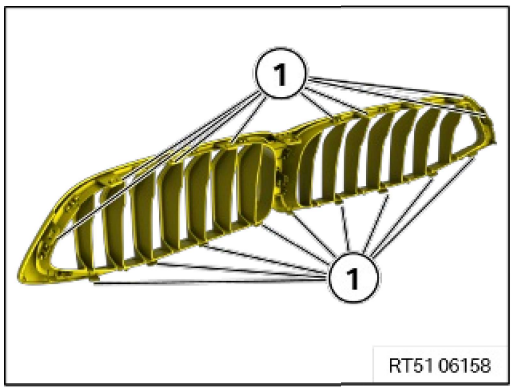
Wheel arch trim panel, front

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

14 – Install centre radiator grille

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



Check

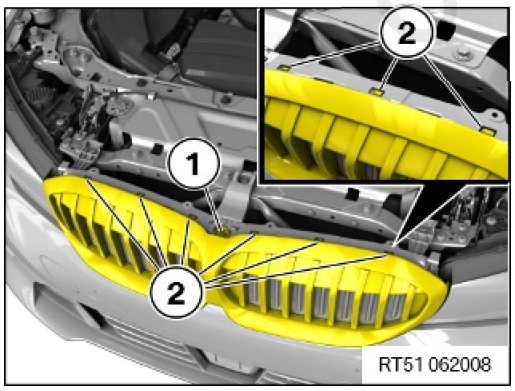
- Check latch mechanisms (1) for damage.

Result

» The latch mechanism (1) is damaged.

Measure

- Renew the front ornamental grille, centre.



- Depending on the equipment, connect and lock connectors.
- Position the front ornamental grille, centre and clip in all latch mechanisms (2) from the front.
- Tighten down screw (1).

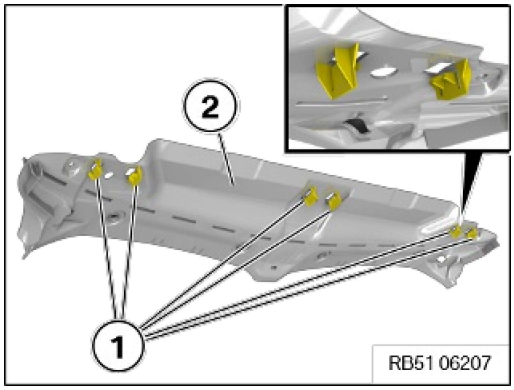
Centre of front ornamental grille to top air flap control

Oval-head screwM6		Tightening torque	4,6 Nm

15 – Installing cover for engine compartment centre

Check

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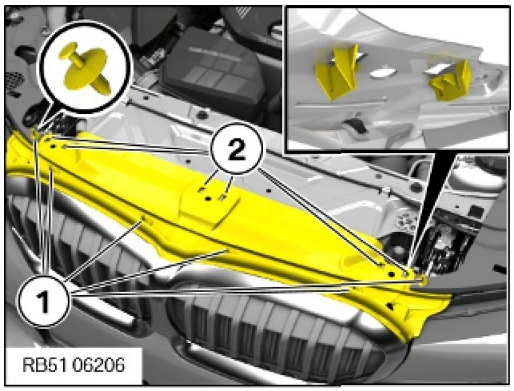
- Check latch mechanisms (1) of cover for engine compartment centre (2) for damage.

Result

» The latch mechanism (1) is damaged.

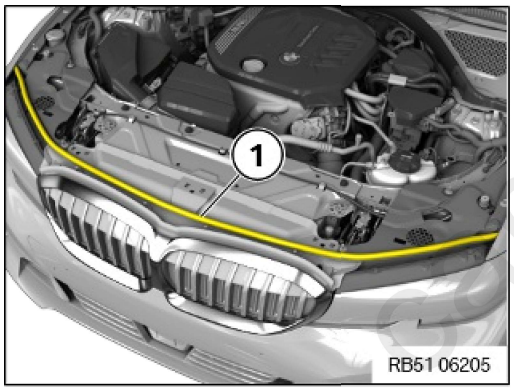
Measure

- Renew cover for engine compartment centre (2).



- Guide in the cover for the engine compartment centre from the rear and position it.
- Clip in the cover for the engine compartment centre with latch mechanisms (2).
- Mount all expanding rivets (1).

16 – Install the seal for the front bonnet



- Position the bonnet seal(1) and connect it on the mounting on the bumper and on the headlights.

Additional Information

Overview of Tightening Torques

Bracing strut on support for top bumper panel — Used in step 9

Hexagon screw		Tightening torque	28 Nm

Strut on front end — Used in step 9

Hexagon screw		Tightening torque	28 Nm

Air flap control to front end — Used in step 10

Oval-head screw with spring washer		Tightening torque	4,6 Nm

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Front bumper panel to front side panel — Used in step 11

Torx screw 5x35		Tightening torque	3 Nm

Front bumper panel to underbody protection — Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

Wheel arch trim panel, front — Used in step 13

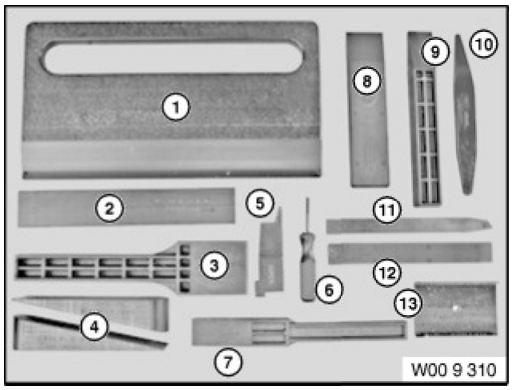
Thermoplastic hexagon screw		Tightening torque	2,6 Nm

Centre of front ornamental grille to top air flap control — Used in step 14

Oval-head screwM6		Tightening torque	4,6 Nm

Overview of Special Tools

0 493 752 (00 9 329) Case



Common — Used in step 7

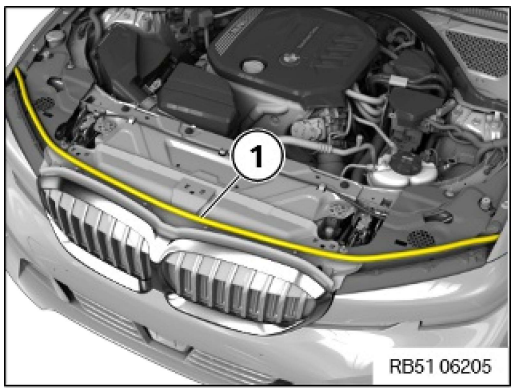
Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

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51 64 035 Removing and installing/replacing the upper section cross connection

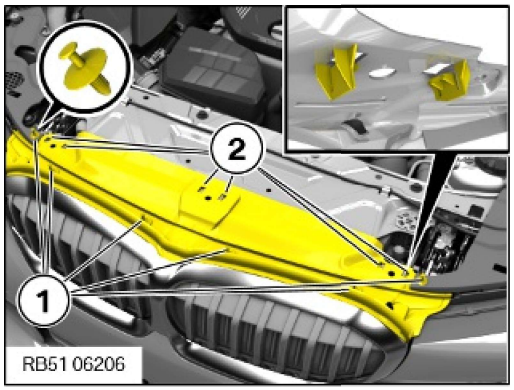
PRELIMINARY WORK

1 – Remove the seal for the bonnet in front



- Pull off front bonnet seal (1) upwards.

2 – Removing the centre engine compartment cover



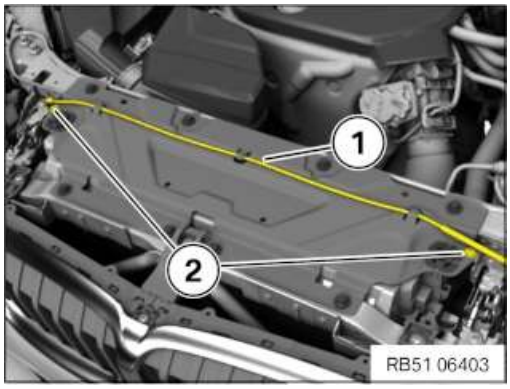
- Detach all expanding rivets (1).
- Release the cover of the centre engine compartment with the latch mechanisms (2) .
- Feed the cover for the centre engine compartment out to the rear.

MAIN WORK

3 – Removing the top cross connection

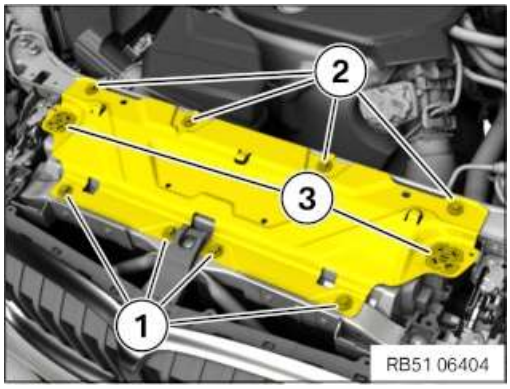


- Release the housing for the coupling of the Bowden cables (1) from the body.



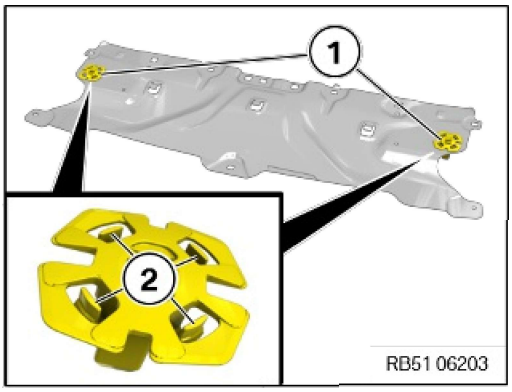
- Detach Bowden cable (1) at the top cross connection.
- Loosen screws (2).

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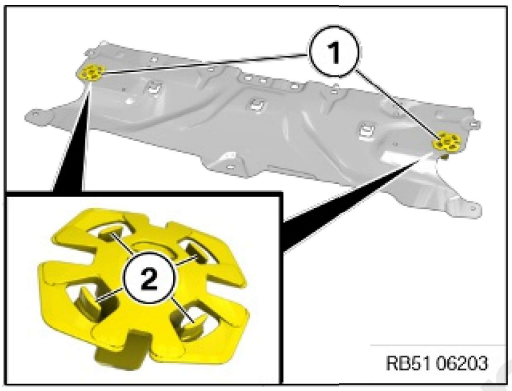


- Loosen screws (1) and (2).
- Remove the top cross connection with the holders(3) towards the top.

4 – Replacement: Remounting the bracket

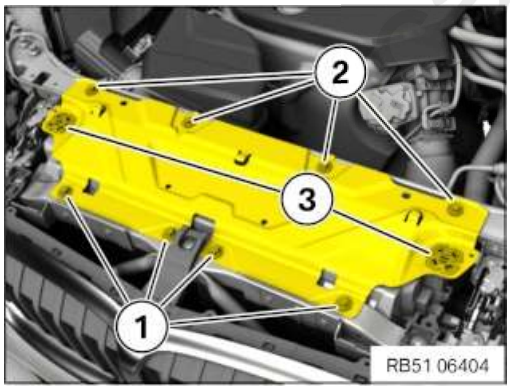


- Release and remove holder (1) with latch mechanisms (2) from upper cross connection.



- Check latch mechanisms (2) of the holder for damage and, if necessary, renew the holder.
- Clip in holder (1) with latch mechanisms (2) in the new upper cross connection.

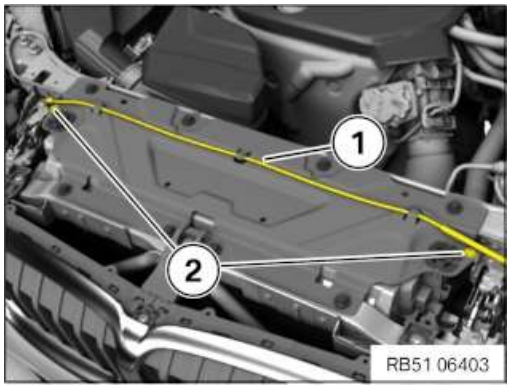
5 – Installing the top cross connection



- Set and position upper cross connection with holders (3) from above.
- Tighten down screws (1) and (2).

Cross connection, top

M8x20		Tightening torque	28 Nm



- Tighten down screws (2).

Cross connection, top

M6x20		Tightening torque	11,8 Nm

- Attach Bowden cable (1) on the upper cross connection.

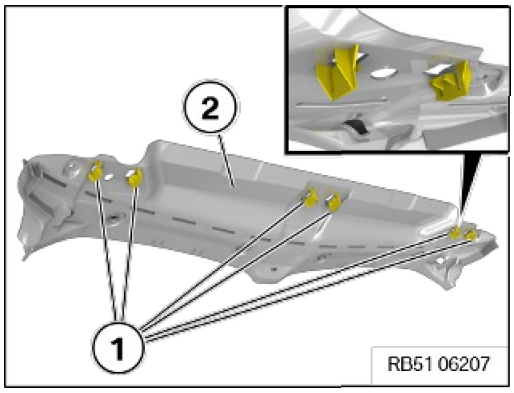
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- Clip in the housing for the coupling of the Bowden cables (1).

POSTPROCESSES

6 – Installing cover for engine compartment centre



Check

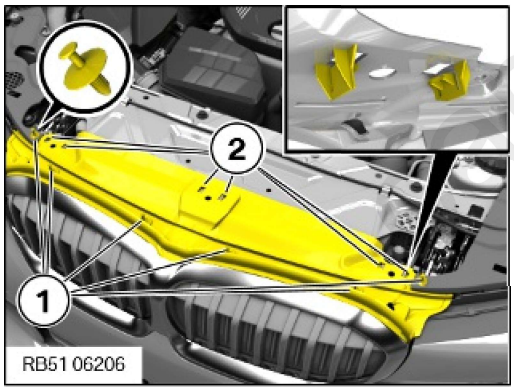
- Check latch mechanisms (1) of cover for engine compartment centre (2) for damage.

Result

» The latch mechanism (1) is damaged.

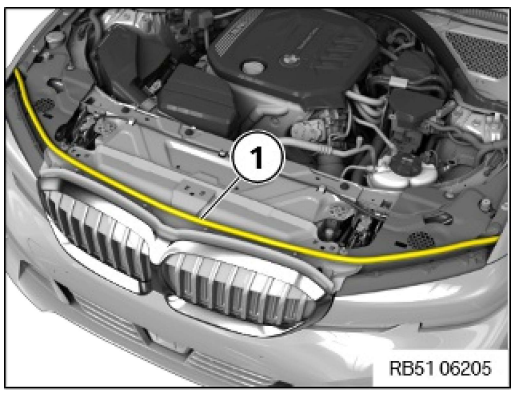
Measure

- Renew cover for engine compartment centre (2).



- Guide in the cover for the engine compartment centre from the rear and position it.
- Clip in the cover for the engine compartment centre with latch mechanisms (2).
- Mount all expanding rivets (1).

7 – Install the seal for the front bonnet



- Position the bonnet seal(1) and connect it on the mounting on the bumper and on the headlights.

Additional Information

Overview of Tightening Torques

Cross connection, top — Used in step 5

M8x20		Tightening torque	28 Nm

Cross connection, top — Used in step 5

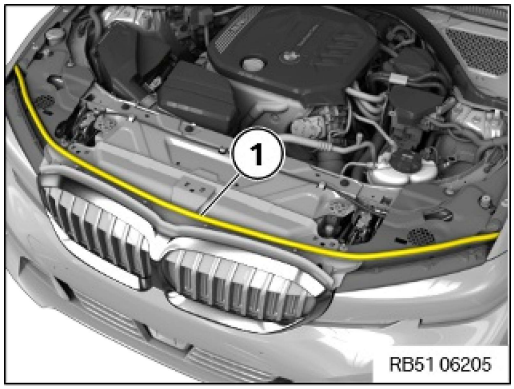
M6x20		Tightening torque	11,8 Nm

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51 64 705 Rep. bottom automatic air flap control

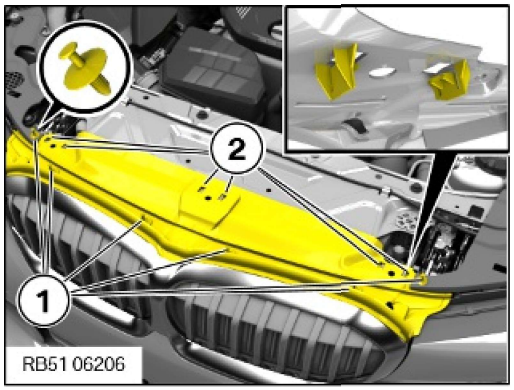
PRELIMINARY WORK

1 – Remove the seal for the bonnet in front



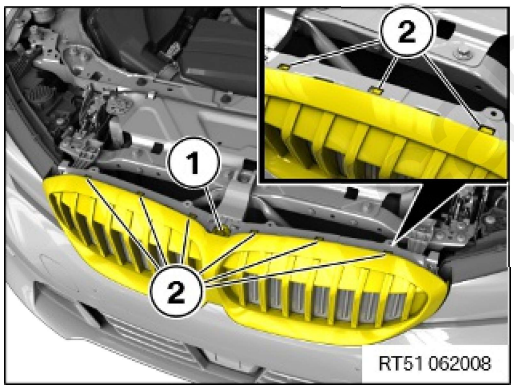
- Pull off front bonnet seal (1) upwards.

2 – Removing the centre engine compartment cover



- Detach all expanding rivets (1).
- Release the cover of the centre engine compartment with the latch mechanisms (2) .
- Feed the cover for the centre engine compartment out to the rear.

3 – Remove centre radiator ornamental grille



- Loosen screw (1).
- Release the centre front ornamental grille from the latch mechanisms (2).
- Release the centre front ornamental grille from the remaining latch mechanism towards the front and remove it.
- Unlock and disconnect plug connections according to the equipment.

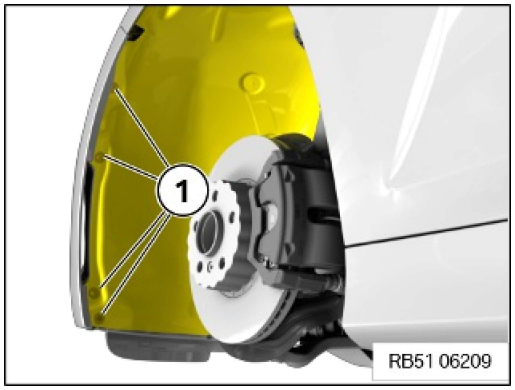
4 – Partially remove both front wheel arch trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially removing front wheel arch trim panel**

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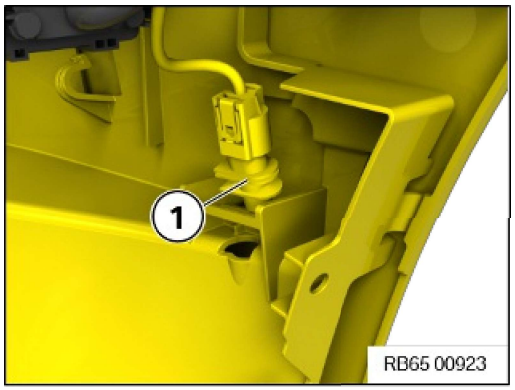


NOTICE

To provide a better overview: Schematic diagram without front wheel.

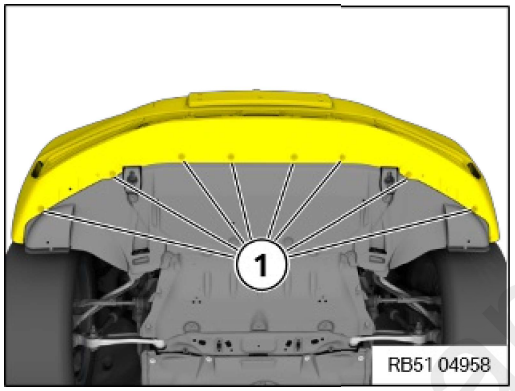
- Loosen screws (1).
- Fold the front wheel arch trim panel to one side.

5 – Partially removing the temperature sensor



- Unclip temperature sensor (1) from the front bumper panel to the top.

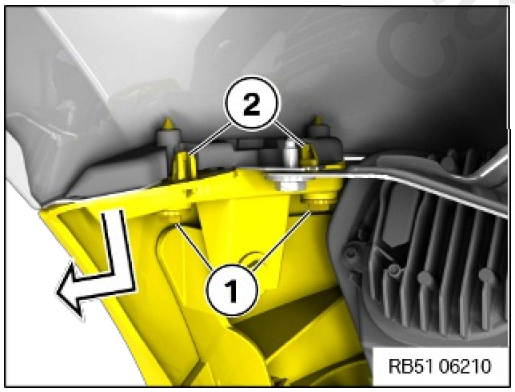
6 – Remove front bumper panel



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

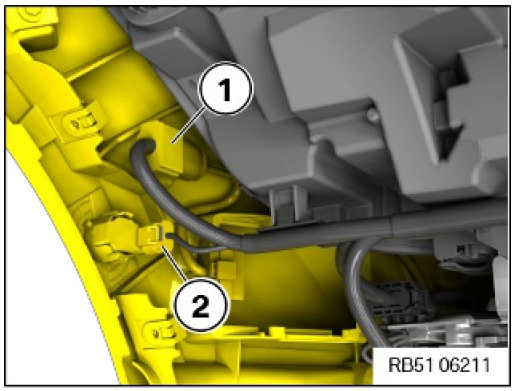
- Loosen screws (1).



NOTICE

Perform the operations on the left and right side.

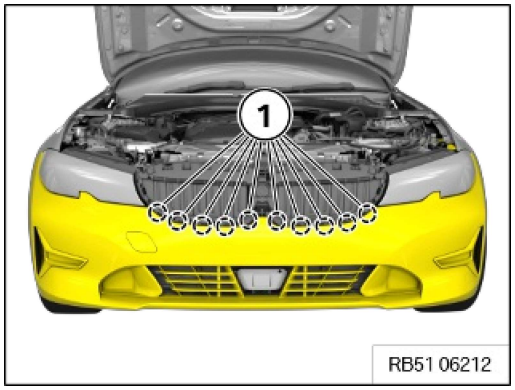
- Loosen screws (1).
- Release the front bumper panel along with the latch mechanisms (2) and feed out in the direction of arrow out of the guide.



NOTICE

Perform the operations on the left and right side.

- Unlock plug connection (1) and disconnect.
- If necessary, unlock plug connection (2) and disconnect.

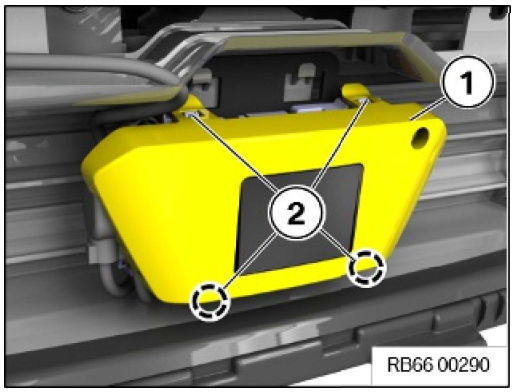


- Release the front bumper panel from the latch mechanisms (1) towards the front.
- Remove the front bumper panel.

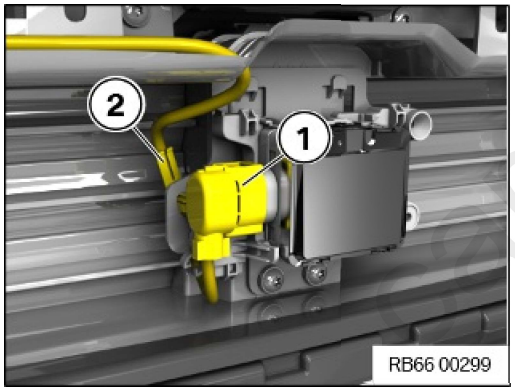
7 – If installed: Removing the front radar sensor (FRS)

NOTICE

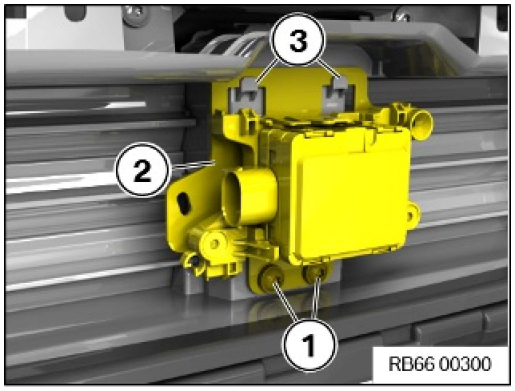
Schematic diagram is for example purposes. Some parts may differ in certain details.



- Release cover (1) from the latch mechanisms (2) and remove it to the front.

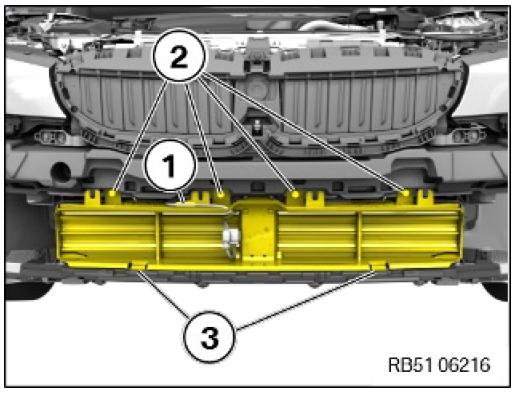


- Unlock plug connection (1) and disconnect.
- Unclip the vehicle wiring harness with the bracket (2) and place aside.



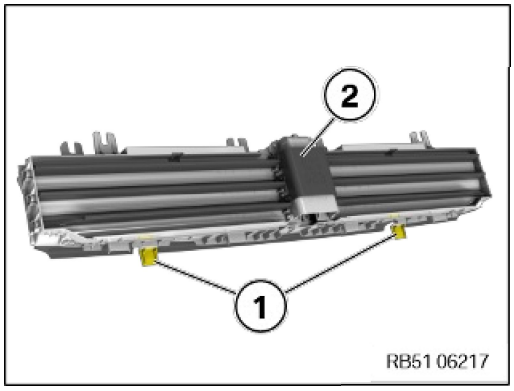
- Loosen screws (1).
- Guide out and remove the front radar sensor (FRS) with holder (2) out of tabs (3) .

8 – Removing the bottom automatic air flap control



- If necessary, release the wiring harness from holder (1).
- Loosen screws (2).
- Guide out the bottom air flap control with guides (3) to the front.
- Unlock associated plug connection and disconnect.

9 – Installing the bottom automatic air flap control



Check

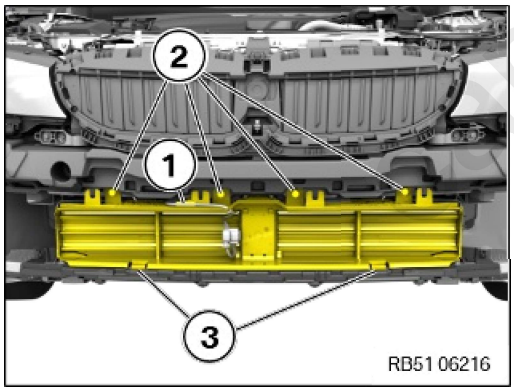
- Check the guides (1) on the bottom air flap control (2)for damage.

Result

» Guide is damaged.

Measure

- Renew the bottom air flap control.



- Connect and lock corresponding connectors.
- Fit the bottom air flap control and feed in with the guides (3).
- Tighten down screws (2).

Bottom air flap control on top bumper panel support

Oval-head screw		Tightening torque	4,6 Nm

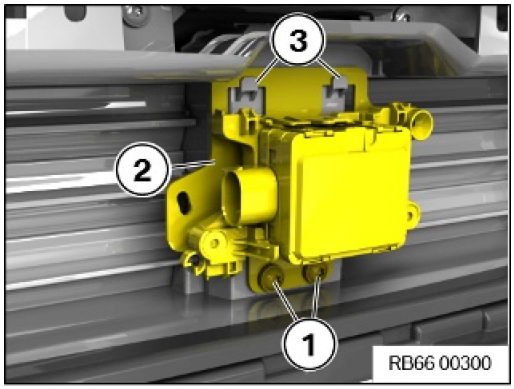
- If applicable, clip in the vehicle wiring harness with the holder (1).

POSTPROCESSES

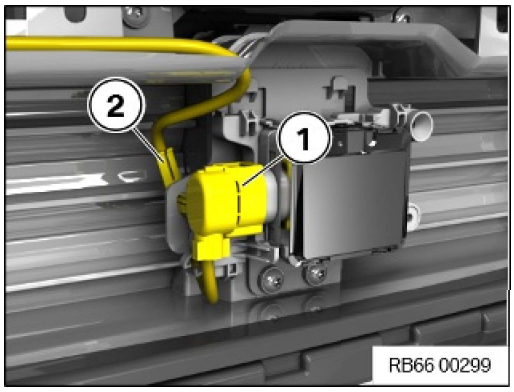
10 – If installed: Installing the front radar sensor (FRS)

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

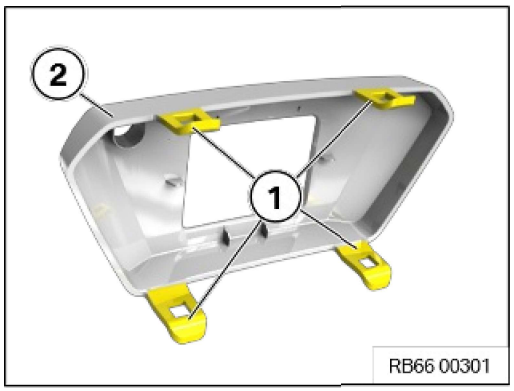


- Fit the front radar sensor (FRS) with the holder (2) in the tabs(3) .
- Tighten the screws (1).



- Clip in the vehicle wiring harness including bracket. (2)
- Connect connectors (1) and lock.

Check



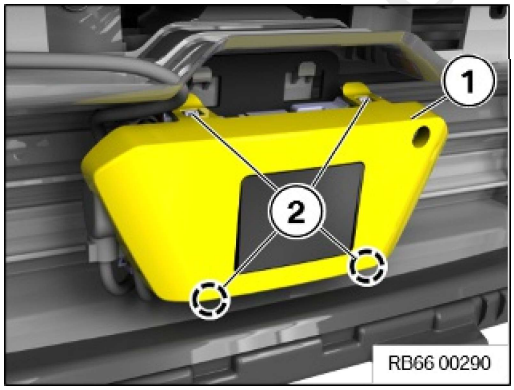
- Check tabs (1) on cover(2) for damage.

Result

» The tab is damaged.

Measure

- Renew the cover.



- Position cover (1) and clip it into latch mechanisms .

▸ **Adjusting front radar sensor (FRS)**

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TECHNICAL INFORMATION

Notes on adjusting the ACC sensor are a fundamental requirement for these repair instructions and must be complied with at all times.

For additional information see: 66 31 ... Notes on adjusting the ACC sensor

TECHNICAL INFORMATION

If there is a "Sensor misaligned" fault memory entry and the sensor cannot be aligned correctly using the adjusting screw, a front impact damage may be suspected.

In this case, the vehicle must be inspected thoroughly for damage. Damaged parts must be renewed if necessary. Then adjust the ACC sensor again.

A damaged/bent holder indicates mechanical misuse of the vehicle and must not be charged as a warranty case.

▷ **Checking vehicle and components for damage**

Check

- In the visible areas, visually check for:
  - damage
  - Deformation

Result

» Damage or deformation.

Measure

- Identify and renew damaged, deformed vehicle parts.

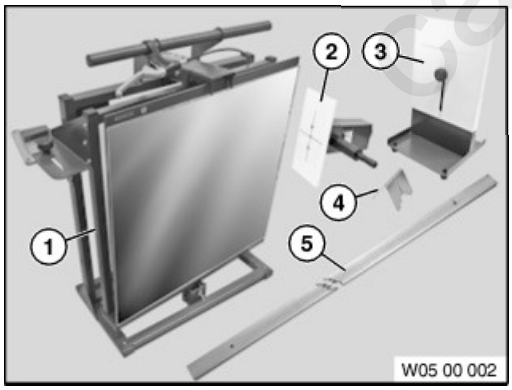
Result

» No damage or deformation

Measure

- Adjust the front radar sensor (FRS).

◁





- Stage special tools 0 442 898 and 2 338 466.
- Set up special tool as per enclosed operating instructions.
- Connect diagnosis system.
  - Service functions
  - Driver assistance
  - Front radar sensor (FRS)
  - Front radar sensor start-up (FRS)

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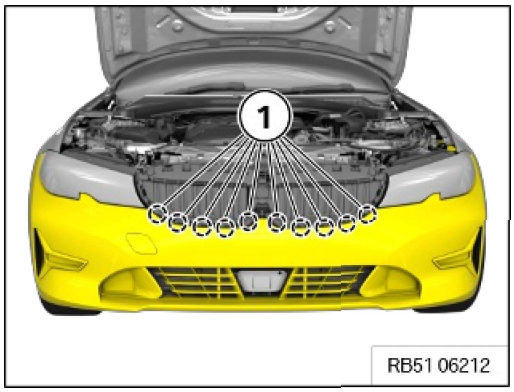


NOTICE

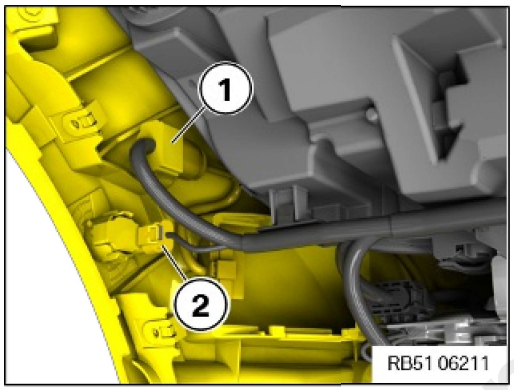
Schematic diagram is for example purposes. Some parts may differ in certain details.

- To adjust the front radar sensor (FRS), twist screw (1) with special tool .

11 – Install bumper panel, front



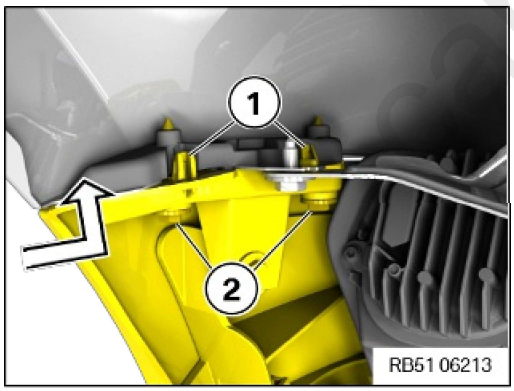
- Position the front bumper panel.
- Clip the front bumper panel into latch mechanisms (1).



NOTICE

Perform the operations on the left and right side.

- Connect connectors (1) and lock.
- If necessary, connect the connector (2) and lock it.



NOTICE

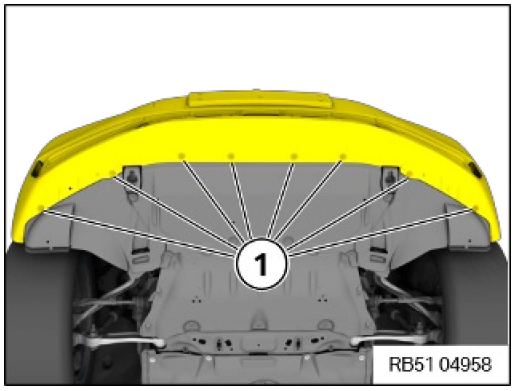
Perform the operations on the left and right side.

- Feed the bumper panel in arrow direction into the guide and clip in with the latch mechanism(1).
- Tighten down screws (2).

Front bumper panel to front side panel

Torx screw 5x35		Tightening torque	3 Nm

.com



NOTICE

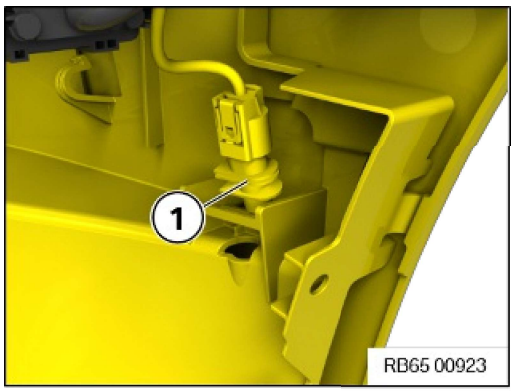
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Tighten the screws (1).

Front bumper panel to underbody protection

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

12 – Partially installing the temperature sensor



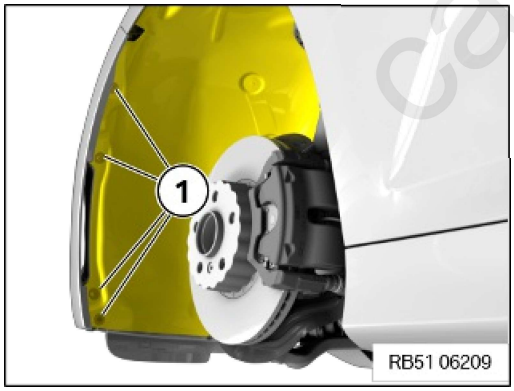
- Clip the temperature sensor (1) downwards into the front bumper panel.

13 – Partially installing both front wheel arch trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially installing front wheel arch trim panel**



NOTICE

To provide a better overview: Schematic diagram without front wheel.

- Fold back the front wheel arch trim panel.
- Tighten the screws (1).

Wheel arch trim panel, front

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

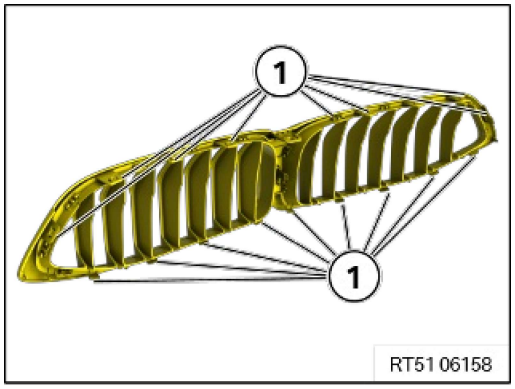
14 – Install centre radiator grille

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

Check

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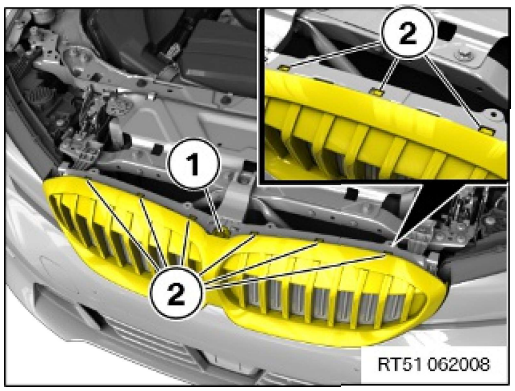
- Check latch mechanisms (1) for damage.

Result

» The latch mechanism (1) is damaged.

Measure

- Renew the front ornamental grille, centre.

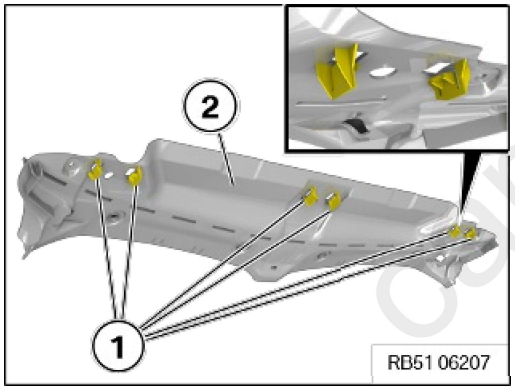


- Depending on the equipment, connect and lock connectors.
- Position the front ornamental grille, centre and clip in all latch mechanisms (2) from the front.
- Tighten down screw (1).

Centre of front ornamental grille to top air flap control

Oval-head screwM6		Tightening torque	4,6 Nm

15 – Installing cover for engine compartment centre



Check

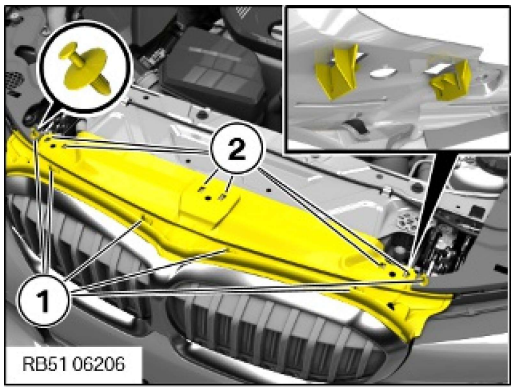
- Check latch mechanisms (1) of cover for engine compartment centre (2) for damage.

Result

» The latch mechanism (1) is damaged.

Measure

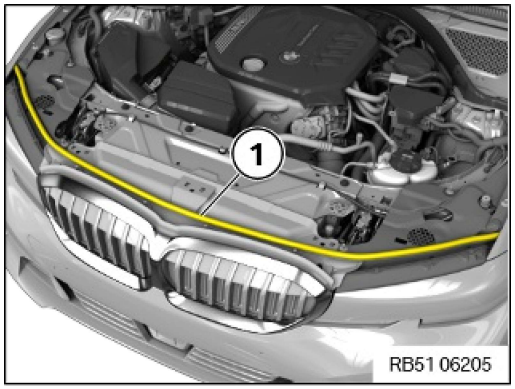
- Renew cover for engine compartment centre (2).



- Guide in the cover for the engine compartment centre from the rear and position it.
- Clip in the cover for the engine compartment centre with latch mechanisms (2).
- Mount all expanding rivets (1).

16 – Install the seal for the front bonnet

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- Position the bonnet seal(1) and connect it on the mounting on the bumper and on the headlights.

17 – Adjusting front radar sensor (FRS)

TECHNICAL INFORMATION

Notes on adjusting the ACC sensor are a fundamental requirement for these repair instructions and must be complied with at all times.

For additional information see: 66 31 ... Notes on adjusting the ACC sensor

TECHNICAL INFORMATION

If there is a "Sensor misaligned" fault memory entry and the sensor cannot be aligned correctly using the adjusting screw, a front impact damage may be suspected.

In this case, the vehicle must be inspected thoroughly for damage. Damaged parts must be renewed if necessary. Then adjust the ACC sensor again.

A damaged/bent holder indicates mechanical misuse of the vehicle and must not be charged as a warranty case.

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▸ **Checking vehicle and components for damage**

Check

- In the visible areas, visually check for:
  - damage
  - Deformation

Result

» Damage or deformation.

Measure

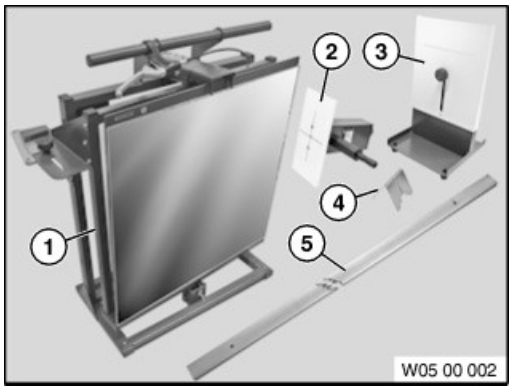
- Identify and renew damaged, deformed vehicle parts.

Result

» No damage or deformation

Measure

- Adjust the front radar sensor (FRS).



- Stage special tools 0 442 898 and 2 338 466.
- Set up special tool as per enclosed operating instructions.

- Connect diagnosis system.
  - Service functions
  - Driver assistance
  - Front radar sensor (FRS)
  - Front radar sensor start-up (FRS)



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- To adjust the front radar sensor (FRS), twist screw (1) with special tool .

Additional Information

Overview of Tightening Torques

Bottom air flap control on top bumper panel support — Used in step 9

Oval-head screw		Tightening torque	4,6 Nm

Front bumper panel to front side panel — Used in step 11

Torx screw 5x35		Tightening torque	3 Nm

Front bumper panel to underbody protection — Used in step 11

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

Wheel arch trim panel, front — Used in step 13

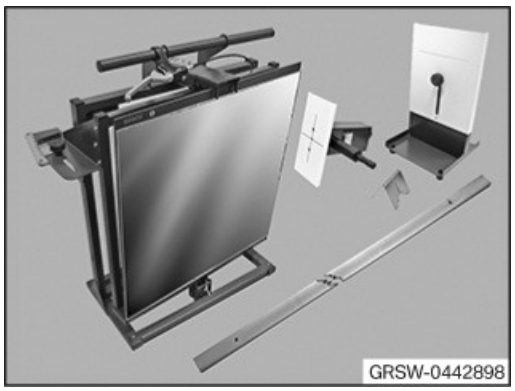
Thermoplastic hexagon screw		Tightening torque	2,6 Nm

Centre of front ornamental grille to top air flap control — Used in step 14

Oval-head screwM6		Tightening torque	4,6 Nm

Overview of Special Tools

0 442 898 Measuring device

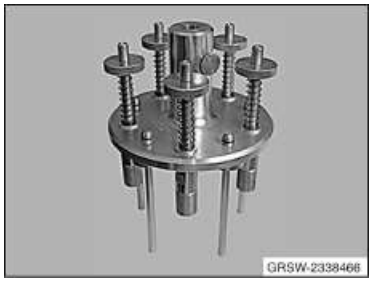


Common — Used in step 1017

Usage	ACC adjusting device. Using this adjusting device, an ACC sensor built into the vehicle can be adjusted in the workshop. Prerequisite is a suitable measuring station.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	02 04 05 (208)

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2 338 466 Holder



Common	Used in step 1017
Usage	Replacement for holder 36 1 100 (0493771). Holder has longer guide pins and lengthened magnetic guides.
Included in the tool or work	
Storage location	Individual
Replaced by	
In connection with	
SI-Number	

Links

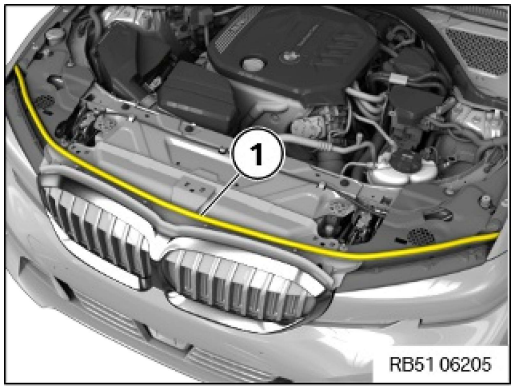
Repair instructions	Used in step
66 31 010 Instructions for ACC adjusting device	1017

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51 64 700 Replace top automatic air flap control

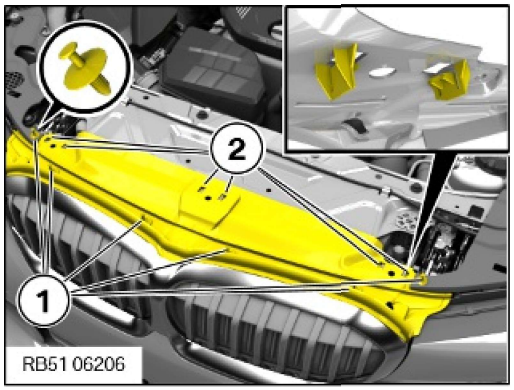
PRELIMINARY WORK

1 – Remove the seal for the bonnet in front



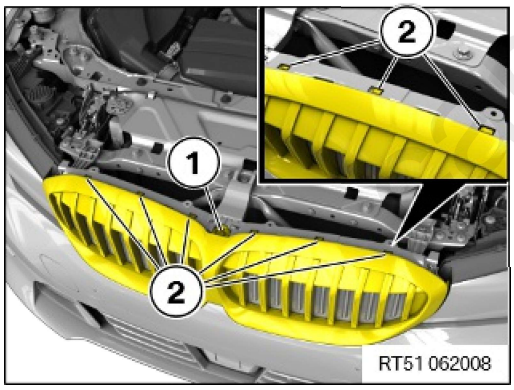
- Pull off front bonnet seal (1) upwards.

2 – Removing the centre engine compartment cover



- Detach all expanding rivets (1).
- Release the cover of the centre engine compartment with the latch mechanisms (2) .
- Feed the cover for the centre engine compartment out to the rear.

3 – Remove centre radiator ornamental grille



- Loosen screw (1).
- Release the centre front ornamental grille from the latch mechanisms (2).
- Release the centre front ornamental grille from the remaining latch mechanism towards the front and remove it.
- Unlock and disconnect plug connections according to the equipment.

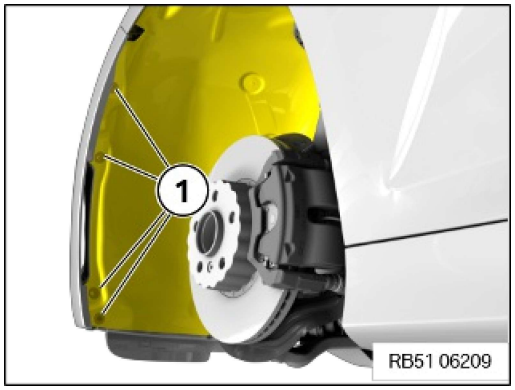
4 – Partially remove both front wheel arch trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially removing front wheel arch trim panel**

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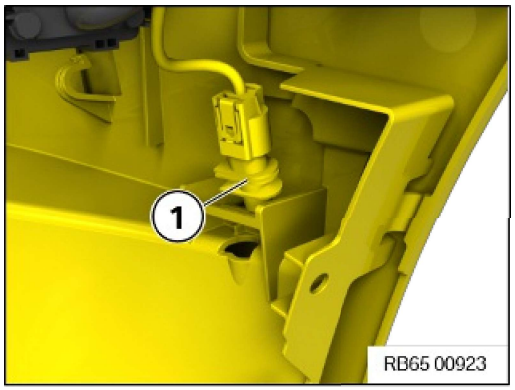


NOTICE

To provide a better overview: Schematic diagram without front wheel.

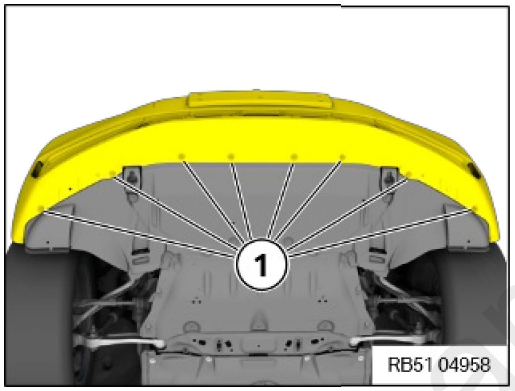
- Loosen screws (1).
- Fold the front wheel arch trim panel to one side.

5 – Partially removing the temperature sensor



- Unclip temperature sensor (1) from the front bumper panel to the top.

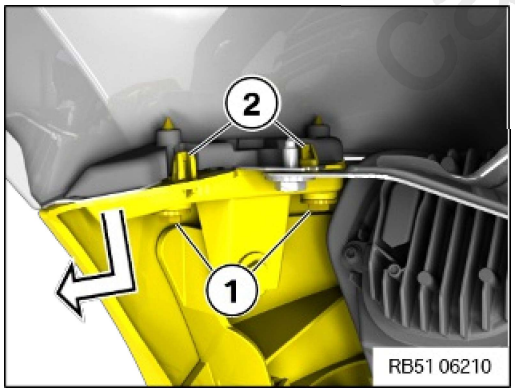
6 – Remove front bumper panel



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

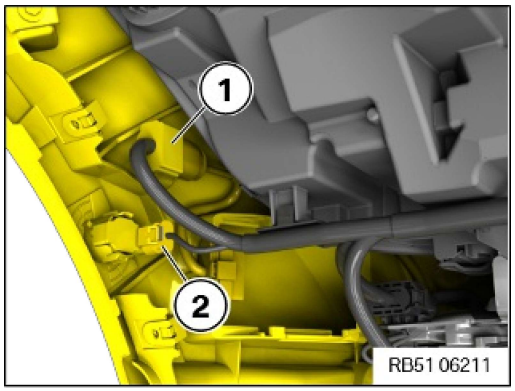
- Loosen screws (1).



NOTICE

Perform the operations on the left and right side.

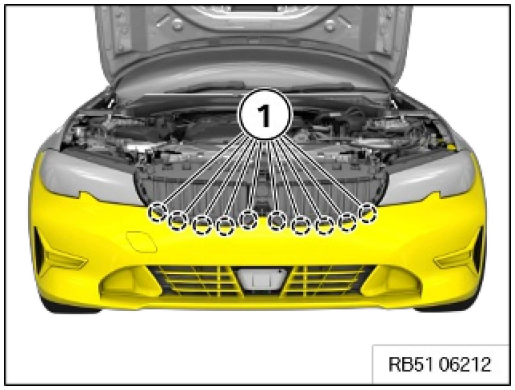
- Loosen screws (1).
- Release the front bumper panel along with the latch mechanisms (2) and feed out in the direction of arrow out of the guide.



NOTICE

Perform the operations on the left and right side.

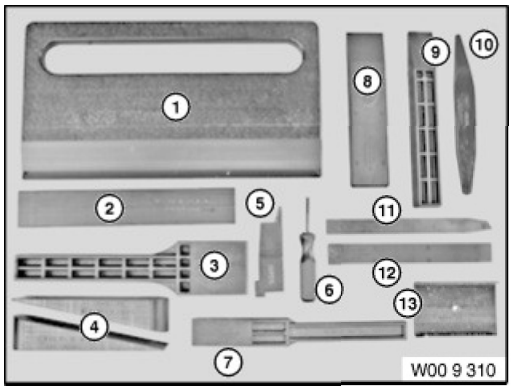
- Unlock plug connection (1) and disconnect.
- If necessary, unlock plug connection (2) and disconnect.



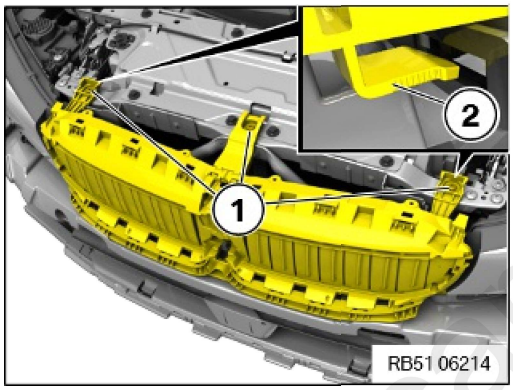
- Release the front bumper panel from the latch mechanisms (1) towards the front.
- Remove the front bumper panel.

MAIN WORK

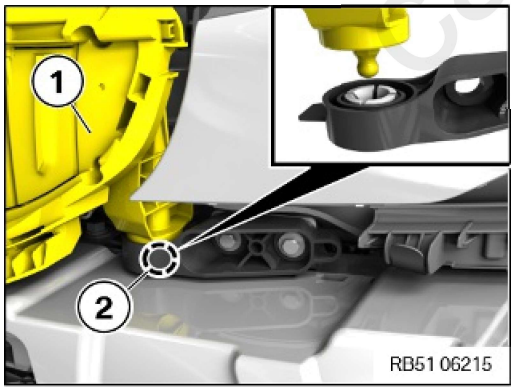
7 – Remove top automatic air flap control



- Have the set of special tools 0 493 752 (00 9 329) ready.



- Loosen screws (1).
- Carefully release the top air flap control towards the front with the latch mechanisms(2).



NOTICE

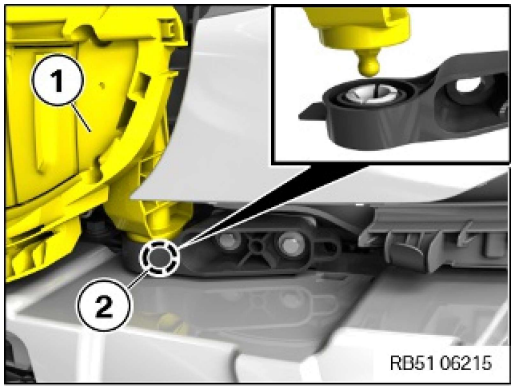
The operations shown only for one side must be carried out on both sides.

- Release the top air flap control (1)with a suitable special tool.

  Lever out the ball head (2) upwards.
- Feed out the top air flap control (1)upwards.
- Unlock associated plug connections and disconnect.

8 – Insert top automatic air flap control

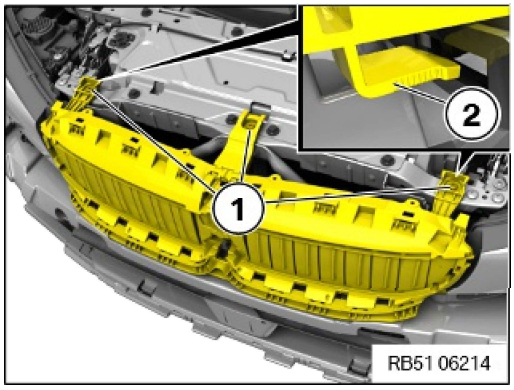
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NOTICE

The operations shown only for one side must be carried out on both sides.

- Position top air flap control (1).
- Connect and lock the relevant connectors.
- Feed in the top air flap control (1) and clip in with the ball head(2) .



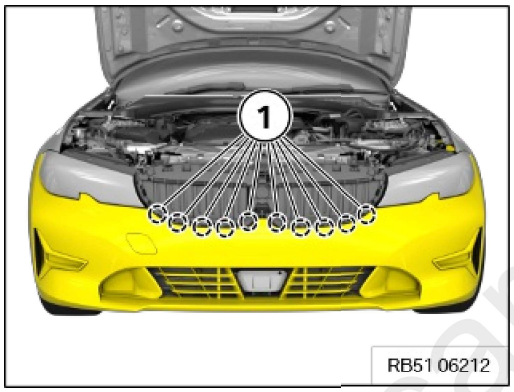
- Clip the top air flap control in the latch mechanisms(2) .
- Tighten the screws (1).

Air flap control to front end

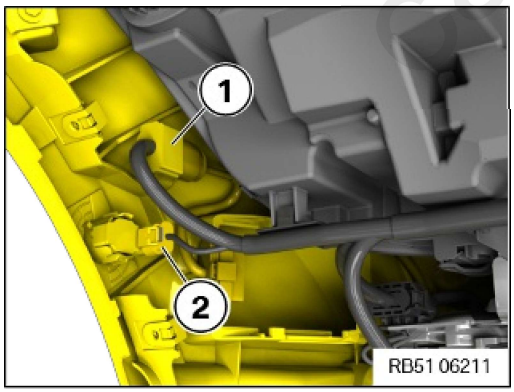
Oval-head screw with spring washer		Tightening torque	4,6 Nm

POSTPROCESSES

9 – Install bumper panel, front



- Position the front bumper panel.
- Clip the front bumper panel into latch mechanisms (1).

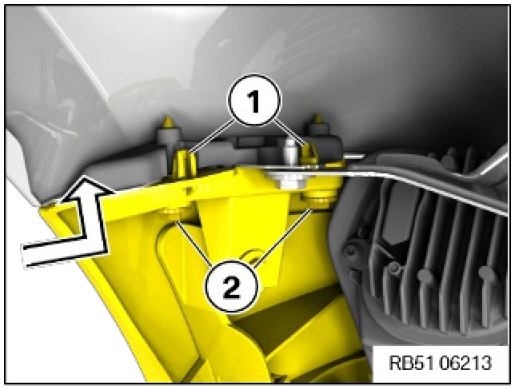


NOTICE

Perform the operations on the left and right side.

- Connect connectors (1) and lock.
- If necessary, connect the connector (2) and lock it.

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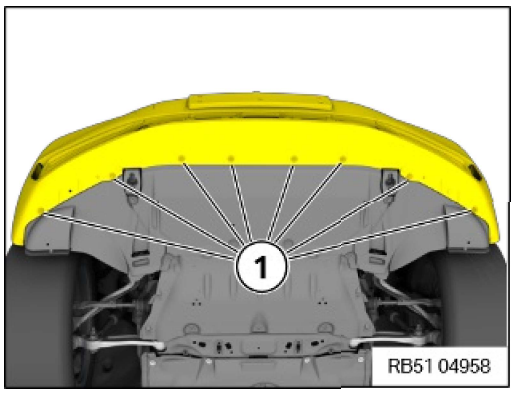
NOTICE

Perform the operations on the left and right side.

- Feed the bumper panel in arrow direction into the guide and clip in with the latch mechanism(1).
- Tighten down screws (2).

Front bumper panel to front side panel

Torx screw 5x35		Tightening torque	3 Nm



NOTICE

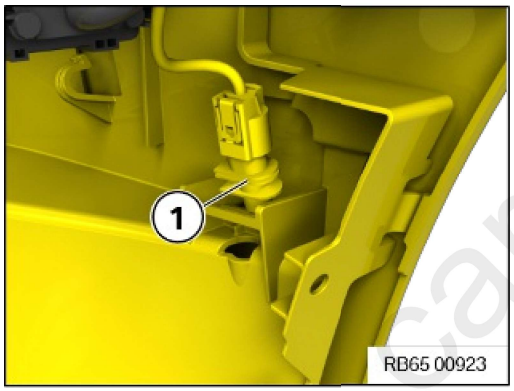
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Tighten the screws (1).

Front bumper panel to underbody protection

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

10 – Partially installing the temperature sensor



- Clip the temperature sensor (1) downwards into the front bumper panel.

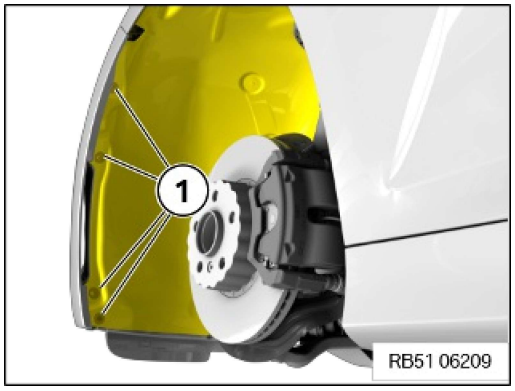
11 – Partially installing both front wheel arch trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially installing front wheel arch trim panel**

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NOTICE

To provide a better overview: Schematic diagram without front wheel.

- Fold back the front wheel arch trim panel.
- Tighten the screws (1).

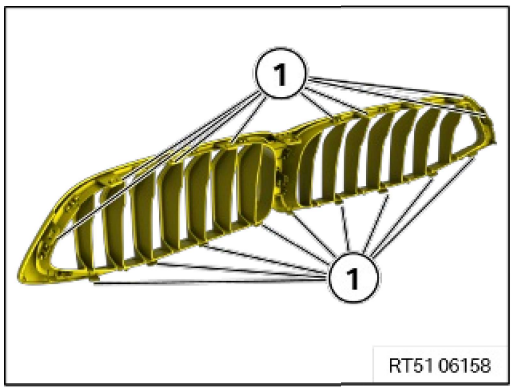
Wheel arch trim panel, front

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

12 – Install centre radiator grille

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



Check

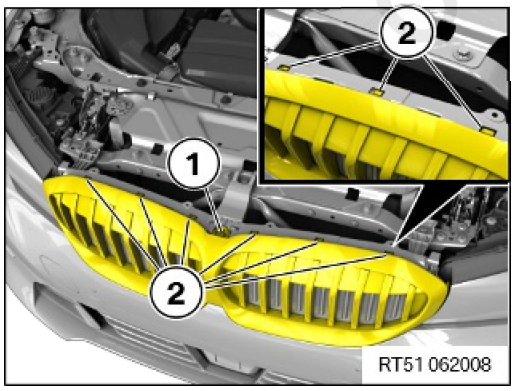
- Check latch mechanisms (1) for damage.

Result

» The latch mechanism (1) is damaged.

Measure

- Renew the front ornamental grille, centre.



- Depending on the equipment, connect and lock connectors.
- Position the front ornamental grille, centre and clip in all latch mechanisms (2) from the front.
- Tighten down screw (1).

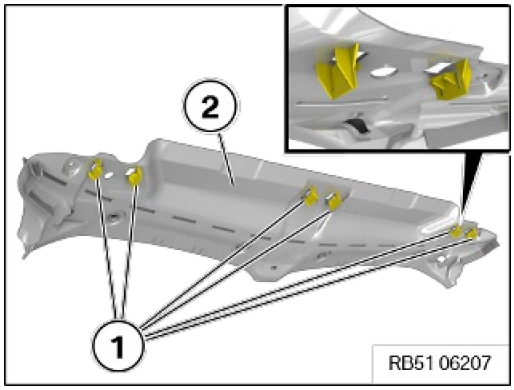
Centre of front ornamental grille to top air flap control

Oval-head screwM6		Tightening torque	4,6 Nm

13 – Installing cover for engine compartment centre

Check

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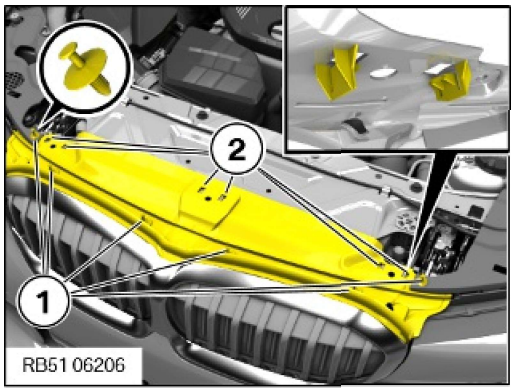
- Check latch mechanisms (1) of cover for engine compartment centre (2) for damage.

Result

» The latch mechanism (1) is damaged.

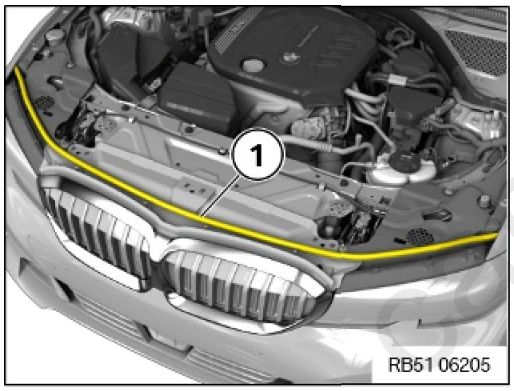
Measure

- Renew cover for engine compartment centre (2).



- Guide in the cover for the engine compartment centre from the rear and position it.
- Clip in the cover for the engine compartment centre with latch mechanisms (2).
- Mount all expanding rivets (1).

14 – Install the seal for the front bonnet



- Position the bonnet seal(1) and connect it on the mounting on the bumper and on the headlights.

Additional Information

Overview of Tightening Torques

Air flap control to front end — Used in step 8

Oval-head screw with spring washer		Tightening torque	4,6 Nm

Front bumper panel to front side panel — Used in step 9

Torx screw 5x35		Tightening torque	3 Nm

Front bumper panel to underbody protection — Used in step 9

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

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Wheel arch trim panel, front Used in step 11

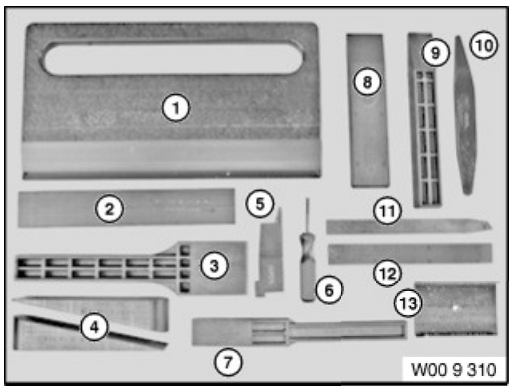
Thermoplastic hexagon screw		Tightening torque	2,6 Nm

Centre of front ornamental grille to top air flap control Used in step 12

Oval-head screwM6		Tightening torque	4,6 Nm

Overview of Special Tools

0 493 752 (00 9 329) Case



Common Used in step 7

Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

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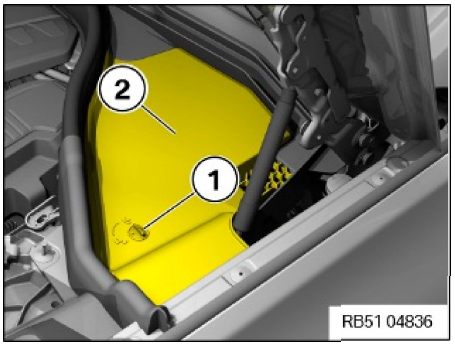
51 71 341 Remove & install/replace strut brace

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

1 – Remove the cover of the engine compartment at the rear left



- Loosen the lock (1).
- Remove rear left cover of engine compartment (2).

2 – Removing both wiper arms

NOTICE

Description is for left component only. Procedure on the right side is identical.

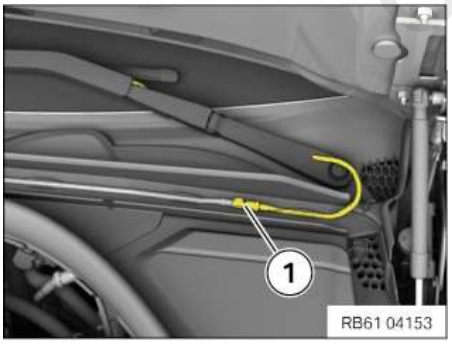
▸ **Remove the wiper arm**

RISK OF DAMAGE

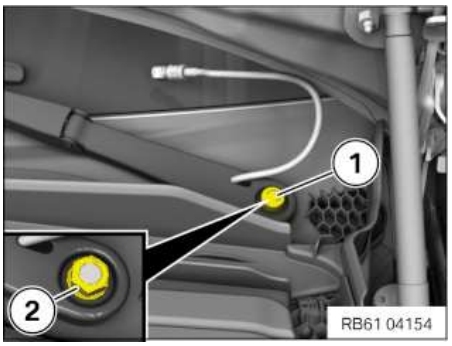
Damage to wiper console

While removing the wiper arms without using special tool, the wiper console can break.

- Removing the wiper arms must be carried out only using the prescribed special tool.
- Do not lift off wiper arm, else the wiper console may break on the predetermined breaking point for the pedestrian protection.

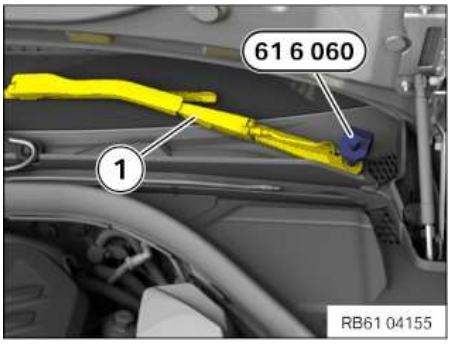


- Disconnect the windscreen wash hose(1) at the separation point and remove from the cowl guide.



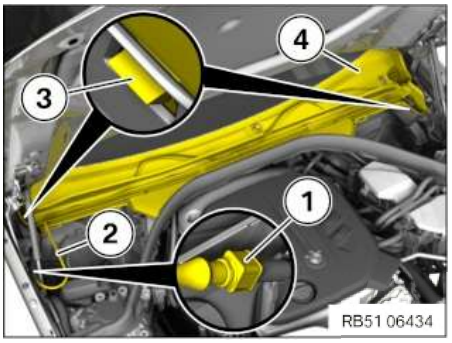
- Remove the protective cap (1).
- Loosen nut (2).

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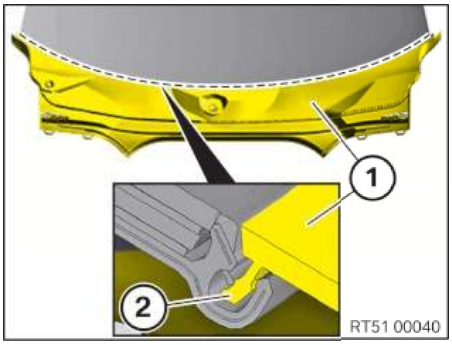


- Pull off the wiper arm (1) using special tool .

3 – Remove cowl panel cover



- Release snap fastener of the washer fluid hose (1) and put the washer fluid hose(2) to one side.
- Unclip clips (3) on the cowl panel cover (4).



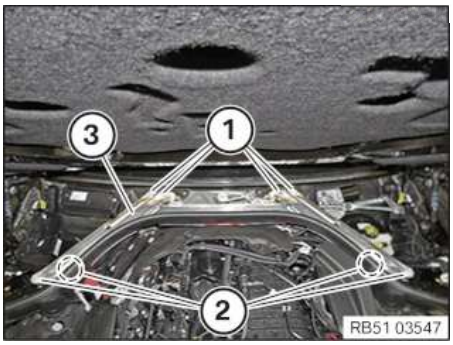
- Pull the cowl panel cover (1) upward out of the latch mechanism (2) beginning on the side.

MAIN WORK

4 – Remove trailing link at spring strut dome

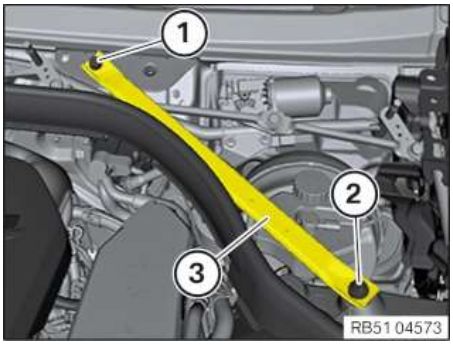
TECHNICAL INFORMATION

Driving without the strut brace/front end or tension strut is not permitted.



- **Version 1:**
- Loosen screws (1) and (2).
- Remove tension strut (3) in the spring strut dome upwards.

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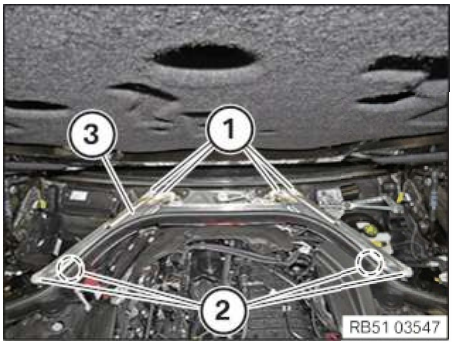


- **Version 2:**
- Loosen screws (1) and (2).
- Remove tension strut (3) in the spring strut dome upwards.

5 – Install tension strut on spring strut dome.

TECHNICAL INFORMATION

Driving without the strut brace/front end or tension strut is not permitted.



- **Version 1:**
- Install the tension strut (3) on the spring strut dome.
- Tighten the screws (1).

Tension strut on bulkhead

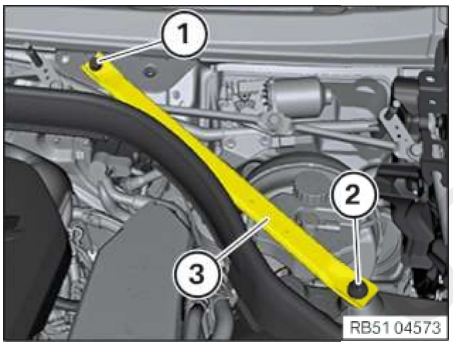
M10x25 screw		Tightening torque	56 Nm

- Renew screws (2).

  Parts: Bolts
- Tighten down screws (2).

Tension strut to spring strut dome

Screw	Renew screws.	Jointing torque	56 Nm
		Angle of rotation	90 °



- **Version 2:**
- Install tension strut on spring strut dome (3).
- Tighten down screw (1).

Tension strut on bulkhead

M10x25 screw		Tightening torque	56 Nm

- Renew the screw (2).

  Parts: Screw
- Tighten down screw (2).

Tension strut to spring strut dome

Screw	Renew screws.	Jointing torque	56 Nm
		Angle of rotation	90 °

POSTPROCESSES

6 – Installing cowl panel cover

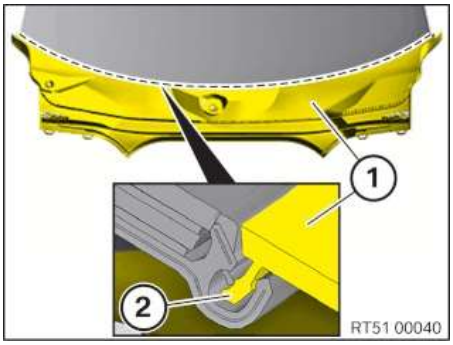
RISK OF DAMAGE

Damage caused by water ingress into the vehicle.

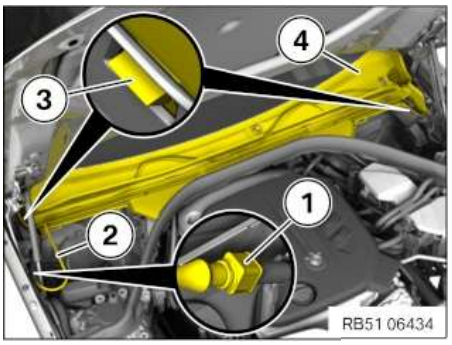
Water ingress into the vehicle may result in damage to components, malfunctions and corrosion.

- Ensure correct installation of the components.
- Only use undamaged components.

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- Push the cowl panel cover (1) into the latch mechanism (2) beginning on the side.



- Clip cowl panel cover (4)in by means of the latch mechanisms (3).
- Position windscreen wash hose (2) and connect windscreen wash hose (1)quick lock.

7 – Installing both wiper arms

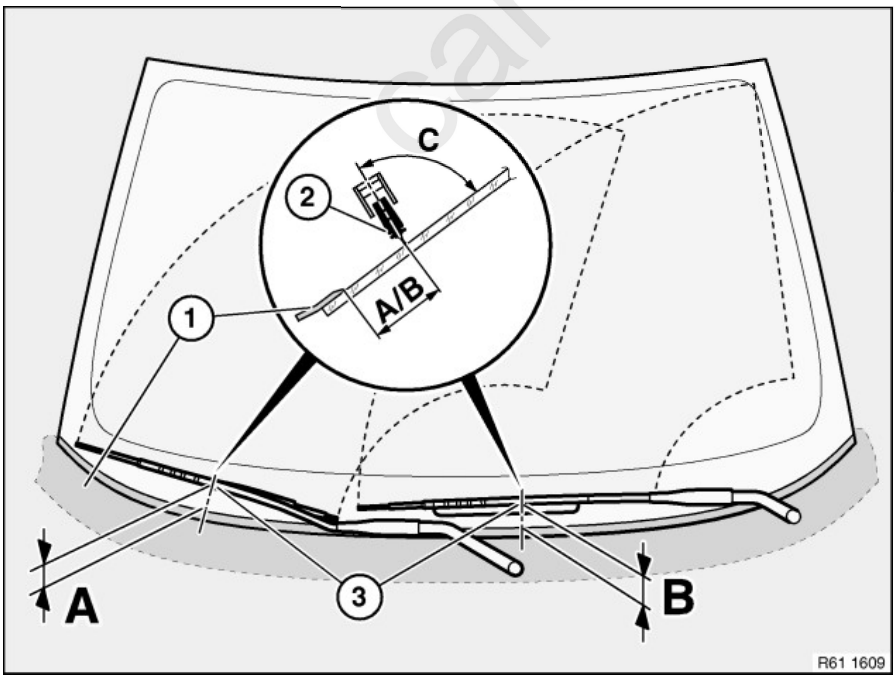
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the wiper arm**

TECHNICAL INFORMATION

The wiper system must be in zero position.
After installing the cowl panel cover and before fitting the wiper arm:
Activate the wiper system once to ensure that it has the correct installation position.

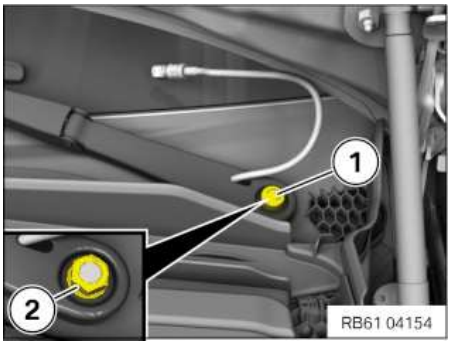


- Connect the wiper arm (3).
- Correctly position the wiper arm (2) in relation to the window edge (1).

Distance from window pane edge to wiper blade

Wiper arm right (A)	57,5 ± 5 mm
Wiper arm left (B)	63,3 ± 4 mm

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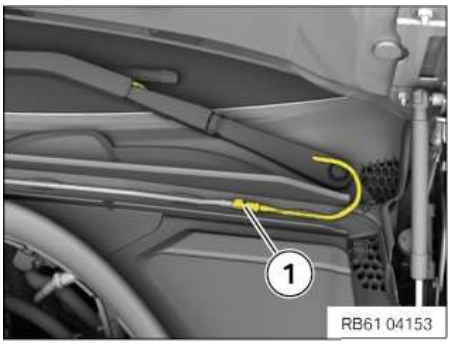


- Tighten nut (2).

Windscreen wiper arm

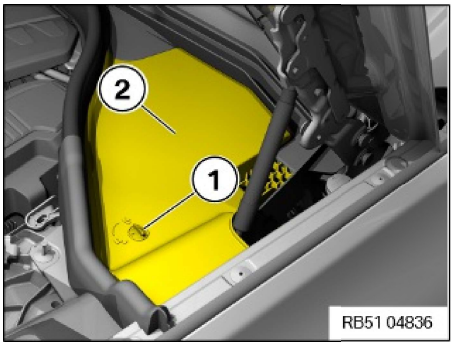
Combination hexagon nut		Tightening torque	35 Nm

- Connect the protective cap (1).



- Insert windscreen wash hose (1) into the cowl and connect at the separating point.

8 – Install the cover of the engine compartment on the rear left



- Position the engine compartment cover at the rear left (2) .
- Close lock (1).

Additional Information

Overview of Tightening Torques

Tension strut on bulkhead — Used in step 5

M10x25 screw		Tightening torque	56 Nm

Tension strut to spring strut dome — Used in step 5

Screw	Renew screws.	Jointing torque	56 Nm
		Angle of rotation	90 °

Windscreen wiper arm — Used in step 7

Combination hexagon nut		Tightening torque	35 Nm

Overview of Special Tools

Overview Technical Data

Distance from window pane edge to wiper blade — Used in step 7

Wiper arm right (A)	57,5 ± 5 mm
Wiper arm left (B)	63,3 ± 4 mm

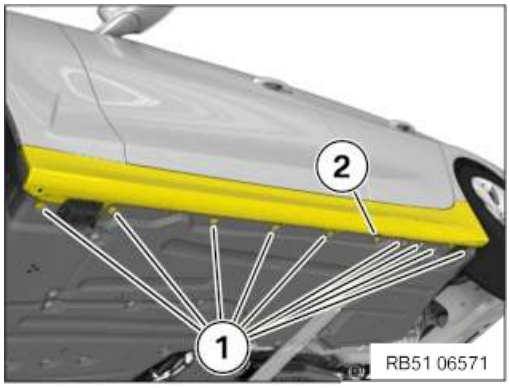
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51 71 447 Remove and install/replace left or right side sill trim panel

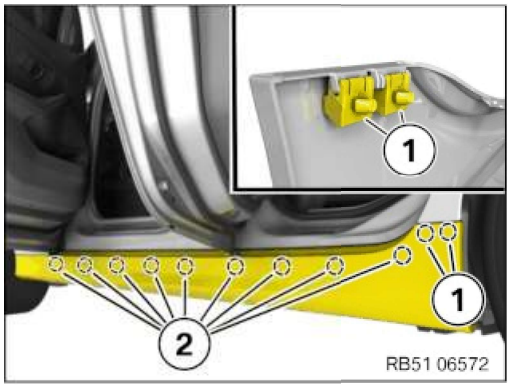
NOTICE

Description is for left component only. Procedure on the right side is identical.

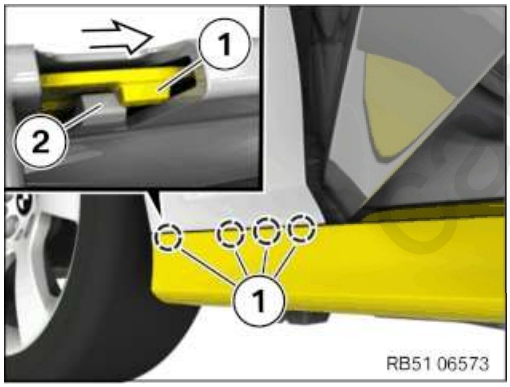
1 – Removing the side sill trim panel



- Loosen screws (1).
- Loosen nut (2).

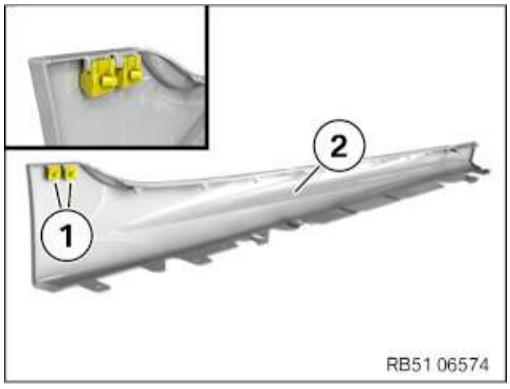


- Using a suitable tool, unclip the side sill trim panel starting from the rear with holding clips (1) and from holding clips (2).



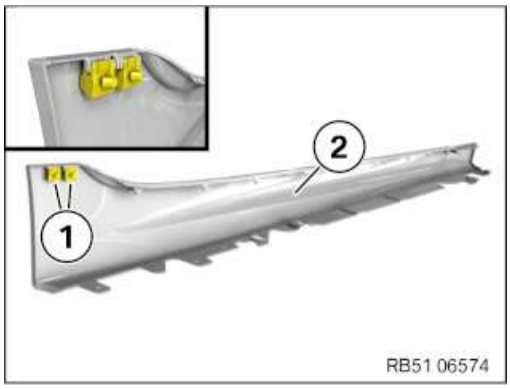
- Slide the side sill trim panel to the front in the direction of the arrow to release latch mechanisms (1) from supporting strip (2).
- Remove the side sill trim panel with the assistance of a second person.

2 – Replacement: Side sill trim panel



- Remount holding clips (1) of side sill trim panel (2).

3 – Installing the side sill trim panel



Check

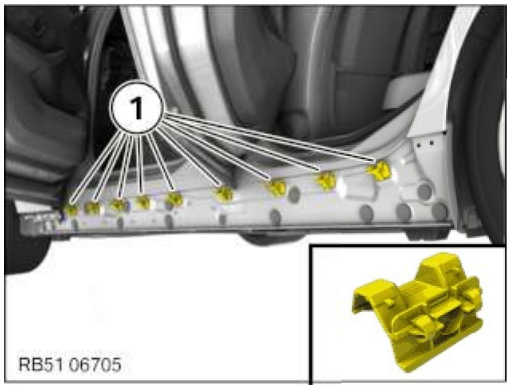
- Check holding clips (1) on the side sill trim panel (2) for damage.

Result

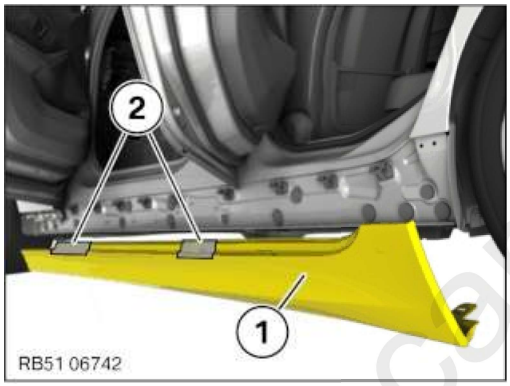
» Holding clip is damaged.

Measure

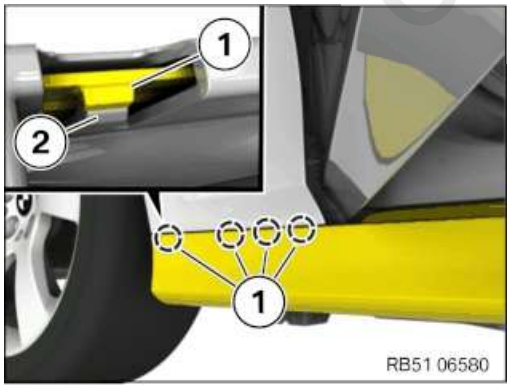
- Replace retaining clip.



- Check the holding clips (1) for damage and renew if necessary.
- If necessary, clip the holding clips (1) into the body.

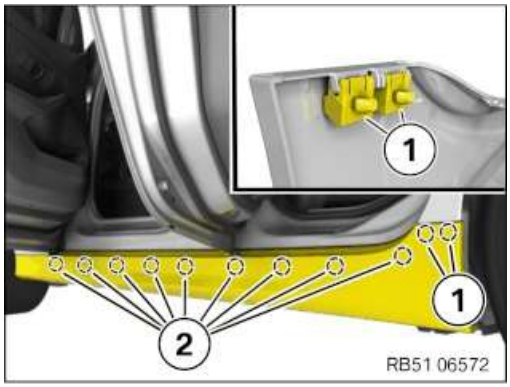


- Mask off side sill trim panel (1) in the areas (2) with adhesive tape.

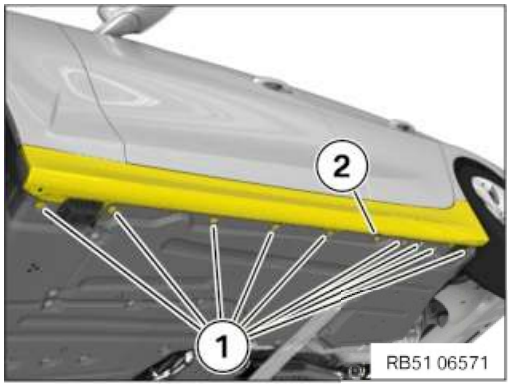


- Position the side sill trim panel.
- Clip front side sill trim panel with the latch mechanisms (1) into the supporting strip (2).

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- Continue to clip side sill trim panel into the holding clips (2) at the rear.
- Clip side sill trim panel with clips (1) into the body.



- Tighten nut (2).

Side sill trim panel to body

Plastic nut with flange for coarse thread		Tightening torque	2,5 Nm

- Tighten the screws (1).

Side sill trim panel to body

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm



- Remove the adhesive tape (1).

Additional Information

Overview of Tightening Torques

Side sill trim panel to body Used in step 3

Plastic nut with flange for coarse thread		Tightening torque	2,5 Nm

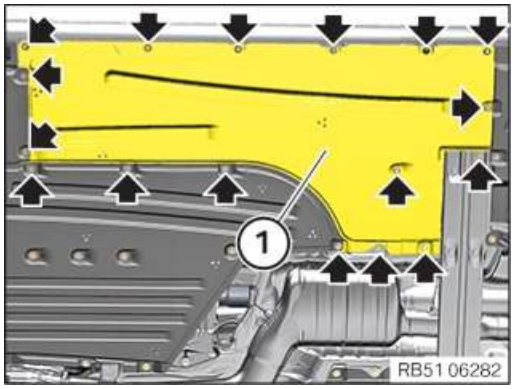
Side sill trim panel to body Used in step 3

Hexagon screw for thermoplastic		Tightening torque	2,5 Nm

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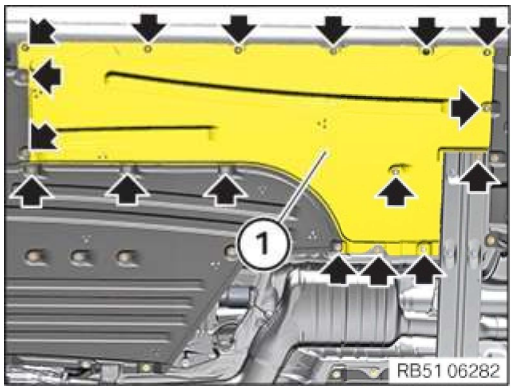
51 71 017 Remove and install/replace left underbody panelling

1 – Removing the underbody panelling on the left-hand side



- Unscrew all bolts and nuts (arrows).
- Remove the underbody panelling (1).

2 – Installing the underbody panelling on the sides on left



- Insert the underbody panelling (1).
- Tighten all bolts and nuts (arrows).

Underbody panelling, side

Hexagon screw		Tightening torque	2,6 Nm
Plastic nut		Tightening torque	2,6 Nm

Additional Information

Overview of Tightening Torques

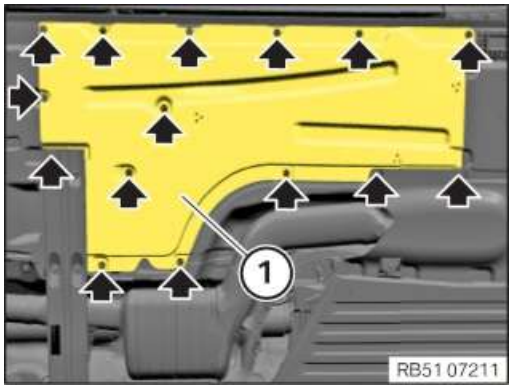
Underbody panelling, side Used in step 2

Hexagon screw		Tightening torque	2,6 Nm
Plastic nut		Tightening torque	2,6 Nm

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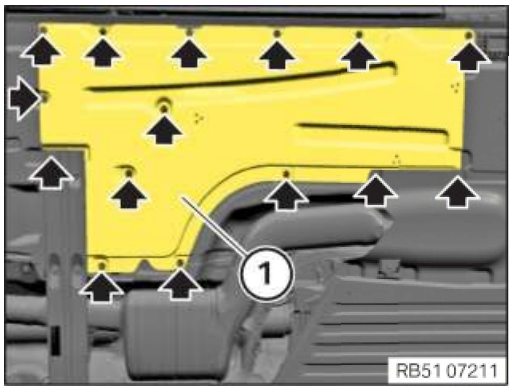
51 71 018 Remove and install/replace right underbody panelling

1 – Remove side right underbody panelling



- Unscrew all bolts and nuts (arrows).
- Remove the underbody panelling (1).

2 – Installing the underbody panelling on the right side



- Insert the underbody panelling (1).
- Tighten all bolts and nuts (arrows).

Underbody panelling

Screw		Tightening torque	2,6 Nm
Plastic nut		Tightening torque	2,6 Nm

Additional Information

Overview of Tightening Torques

Underbody panelling Used in step 2

Screw		Tightening torque	2,6 Nm
Plastic nut		Tightening torque	2,6 Nm

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51 71 040 Removing and installing/replacing front left or right wheel arch cover

WARNING

Vehicle may slip off the vehicle hoist if the vehicle hoist is handled incorrectly.

Danger! Life-threatening injuries!

- Observe safety information on raising the vehicle using a vehicle hoist.
- For additional information see: 00 ... Raising the vehicle using a vehicle hoist.

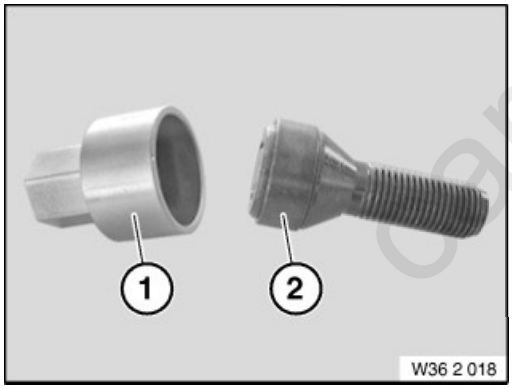
PRELIMINARY WORK

1 – Removing the wheel



- If several wheels are removed simultaneously, mark each tyre with a piece of chalk to show the axle and side on which the corresponding wheel is fitted.
- Release the wheel bolts (arrows) crosswise and remove the wheel.

▸ **If installed: Remove the locking wheel bolt**



- To unscrew and tighten the wheel bolts with locking wheel bolts (2), use the correct adapter (1) from the set of special tools .

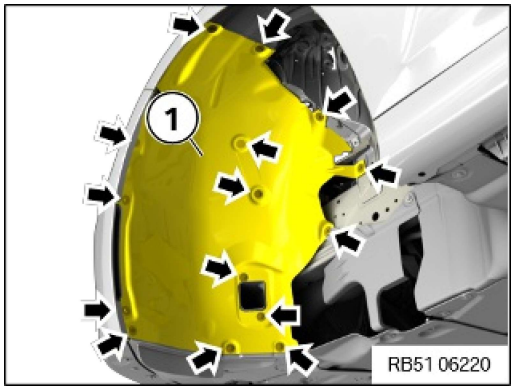
MAIN WORK

2 – Removing the front section of the front wheel arch cover

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

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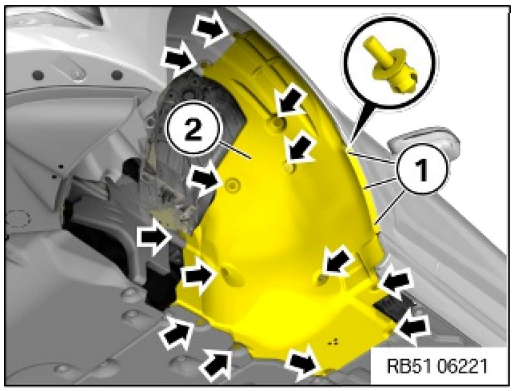


- Remove screws (arrows).
- Remove front section of the front wheel arch cover (1).

3 – Removing the rear section of the front wheel arch cover front

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

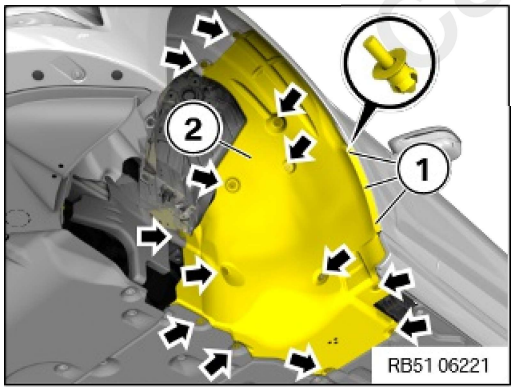


- Loosen the expanding rivet (1).
- Remove screws (arrows).
- Remove the rear section of the front wheel arch cover (2).

4 – Install the rear section of the front wheel arch cover

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.



- Install the rear section of the front wheel arch cover(2) .
- Tighten screws (arrows).

Wheel arch trim panel, front

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

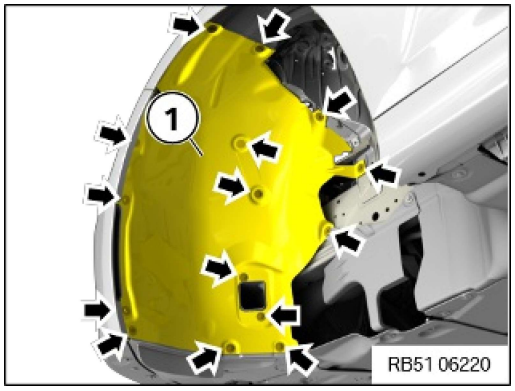
- Secure expanding rivet (1).

5 – Install the front section of the front wheel arch cover

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

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- Install the front section of the front wheel arch cover (1).
- Tighten screws (arrows).

Wheel arch trim panel, front

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

POSTPROCESSES

6 – Mounting the wheel

▸ Clean the contact surfaces between the brake disc and the wheel rim



TECHNICAL INFORMATION

The contact surface between the brake disc and the wheel rim must be clean and free from oil and grease. There is otherwise a risk of the wheel becoming loose at a later time.

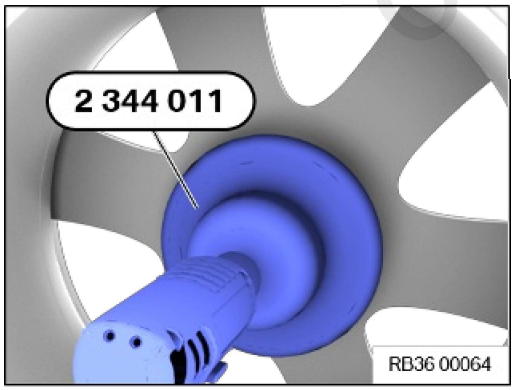
- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool 2 344 011.

  Do not operate special tool 2 344 011 with an impact screwdriver.
- Degrease contact surfaces.

Expendable materials

Universal cleaner	20 l, Canister	83192360981

- In the event of grease residue in the area of the wheel bolt holes, remove and clean the brake disc.



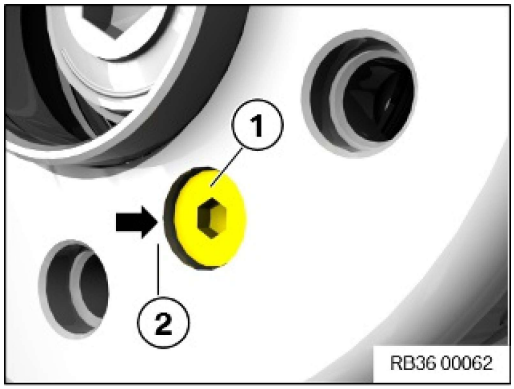
- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool 2 344 011.

  Do not operate special tool 2 344 011 with an impact screwdriver.
- Degrease contact surfaces.

Expendable materials

Universal cleaner	20 l, Canister	83192360981

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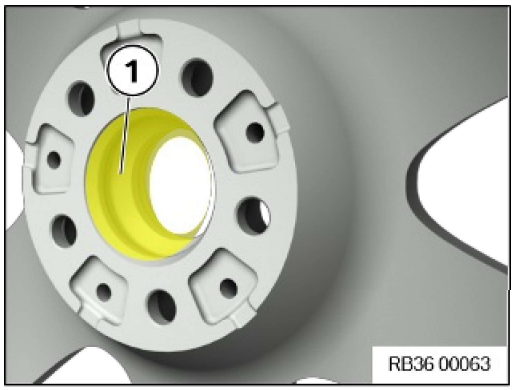


- Check that the mounting bolt (1) for the brake disc is securely seated.

  The mounting bolt (1) for the brake disc may not protrude under any circumstances on the contact surface (2) between the brake disc and the wheel rim.

Brake disc to wheel hub

M8	Renew screw.	Tightening torque	16 Nm



- Thinly grease the wheel centring (1) in the wheel rim.

Expendable materials

Brake block paste * TU = Trade Unit. TU numbers cannot be ordered! For invoicing purposes only.	3 g, Bag	83192158851
	100 g, Tube	83192158852
	5 g, TU*	83230140233

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TECHNICAL INFORMATION

Never use impact screwdrivers or electric screwdrivers to screw in and tighten the wheel bolts.

The wheel rim must rest uniformly against the brake disc.

In the case of non-original BMW wheel bolts/wheel rims, it may be necessary to retighten the wheel bolts on account of setting properties (refer to the documentation from the manufacturer).

Do not apply oil to new wheel bolts.

- Clean the wheel bolts.
- Check the wheel bolts and threads for damage, renew the wheel bolts if necessary.
- Renew corroded wheel bolts.

  Parts: Wheel bolts
- Tighten the wheel bolts (arrows) as follows:

  Screw in the wheel bolts crosswise by hand.

  Hand-tighten the wheel bolts evenly crosswise to centre the wheel rim.

  Use the torque wrench to tighten the wheel bolts crosswise.

  Tighten all wheel bolts crosswise again to check.

Wheel bolts

M14 / SW17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim.	Tightening torque	140 Nm
	Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence.		
	Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Check	140 Nm

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Additional Information

Overview of Tightening Torques

Wheel arch trim panel, front — Used in step 45

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

Brake disc to wheel hub — Used in step 6

M8	Renew screw.	Tightening torque	16 Nm

Wheel bolts — Used in step 6

M14 / SW17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

Overview of Special Tools

2 344 011 Tool



Common — Used in step 6

Usage	Tool (wheel hub grinder) for cleaning the connection of the wheel rim (wheel contact face) to the wheel hub.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	08 08 12 (872)

Replacement tools:

0 495 221 (36 1 323) Wheel stud



Common — Used in step 1

Usage	(Code 30) Code 39 available separately, (see EPC) under 36 13 1 181 259
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

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0 495 224 (36 1 326) Wheel stud



Common	Used in step 1
Usage	(Code 33) With centring bore available separately, (see EPC) under 36 13 6 765 546
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 225 (36 1 327) Wheel stud



Common	Used in step 1
Usage	(Code 34) With centring bore available separately (see EPC) under 36 13 6 765 547
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 226 (36 1 328) Wheel stud



Common	Used in step 1
Usage	(Code 35) With centring bore available separately, (see EPC) under 36 13 6 762 340
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

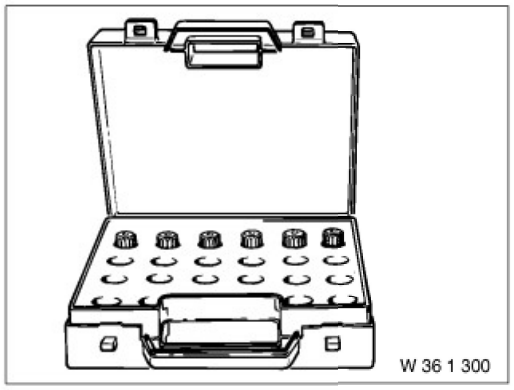
cardiagn.com

0 495 227 (36 1 329) Wheel stud



Common	Used in step 1
Usage	(Code 36) With centring bore available separately (see EPC) under 36 13 6 762 341
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 228 (36 1 331) Wheel stud



Common	Used in step 1
Usage	(Code 37) With centring bore available separately (see EPC) under 36 13 6 762 342
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 229 (36 1 332) Wheel stud



Common	Used in step 1
Usage	(Code 38) With centring bore available separately (see EPC) under 36 13 6 762 343
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

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0 495 230 (36 1 333) Wheel stud



Common	Used in step 1
Usage	(Code 40) With centring bore available separately (see EPC) under 36 13 6 762 344
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

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Links

Repair instructions	**Used in step**
00 .. ... Raising the vehicle using a vehicle hoist	

51 71 038 Removing and installing/replacing front left or right wheel arch cover

WARNING

Vehicle may slip off the vehicle hoist if the vehicle hoist is handled incorrectly.

Danger! Life-threatening injuries!

- Observe safety information on raising the vehicle using a vehicle hoist.
- For additional information see: 00 ... Raising the vehicle using a vehicle hoist.

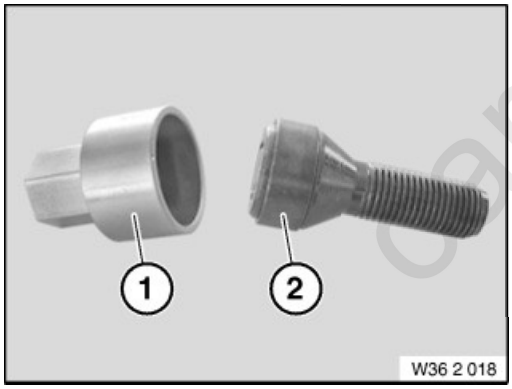
PRELIMINARY WORK

1 – Removing the wheel



- If several wheels are removed simultaneously, mark each tyre with a piece of chalk to show the axle and side on which the corresponding wheel is fitted.
- Release the wheel bolts (arrows) crosswise and remove the wheel.

▸ **If installed: Remove the locking wheel bolt**



- To unscrew and tighten the wheel bolts with locking wheel bolts (2), use the correct adapter (1) from the set of special tools .

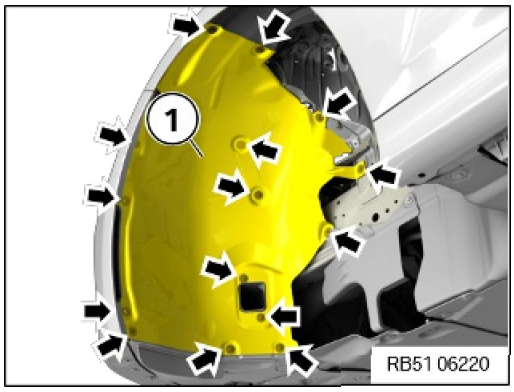
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MAIN WORK

2 – Removing the front section of the front wheel arch cover

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

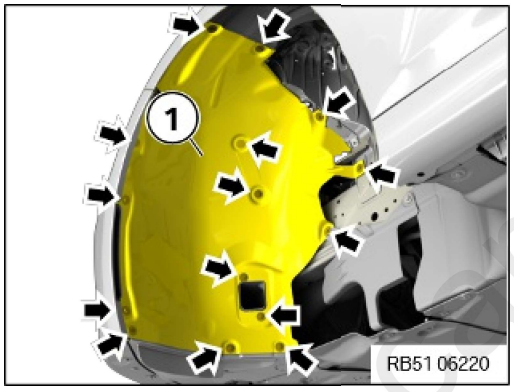


- Remove screws (arrows).
- Remove front section of the front wheel arch cover (1).

3 – Install the front section of the front wheel arch cover

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.



- Install the front section of the front wheel arch cover (1).
- Tighten screws (arrows).

Wheel arch trim panel, front

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

POSTPROCESSES

4 – Mounting the wheel

▸ Clean the contact surfaces between the brake disc and the wheel rim



TECHNICAL INFORMATION

The contact surface between the brake disc and the wheel rim must be clean and free from oil and grease. There is otherwise a risk of the wheel becoming loose at a later time.

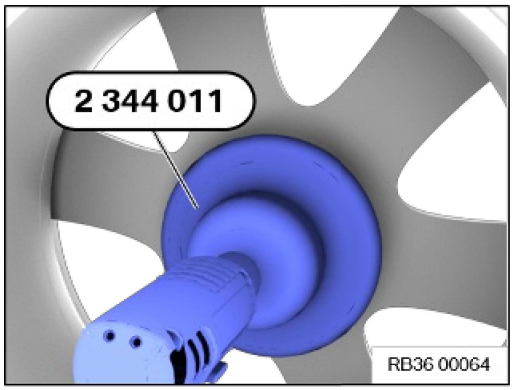
- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool 2 344 011.

  Do not operate special tool 2 344 011 with an impact screwdriver.
- Degrease contact surfaces.

Expendable materials

Universal cleaner	20 l, Canister	83192360981

- In the event of grease residue in the area of the wheel bolt holes, remove and clean the brake disc.

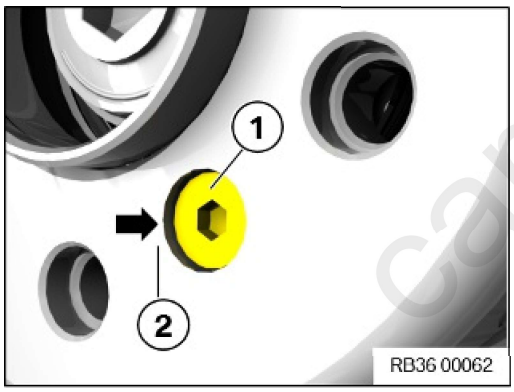


- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool 2 344 011.

  Do not operate special tool 2 344 011 with an impact screwdriver.
- Degrease contact surfaces.

Expendable materials

Universal cleaner	20 l, Canister	83192360981

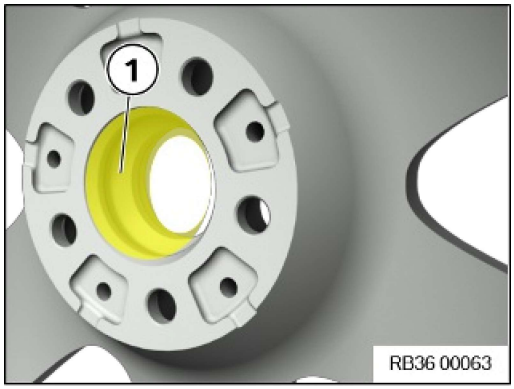


- Check that the mounting bolt (1) for the brake disc is securely seated.

  The mounting bolt (1) for the brake disc may not protrude under any circumstances on the contact surface (2) between the brake disc and the wheel rim.

Brake disc to wheel hub

M8	Renew screw.	Tightening torque	16 Nm



- Thinly grease the wheel centring (1) in the wheel rim.

Expendable materials

Brake block paste * TU = Trade Unit. TU numbers cannot be ordered! For invoicing purposes only.	3 g, Bag	83192158851
	100 g, Tube	83192158852
	5 g, TU*	83230140233

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TECHNICAL INFORMATION

Never use impact screwdrivers or electric screwdrivers to screw in and tighten the wheel bolts.

The wheel rim must rest uniformly against the brake disc.

In the case of non-original BMW wheel bolts/wheel rims, it may be necessary to retighten the wheel bolts on account of setting properties (refer to the documentation from the manufacturer).

Do not apply oil to new wheel bolts.

- Clean the wheel bolts.
- Check the wheel bolts and threads for damage, renew the wheel bolts if necessary.
- Renew corroded wheel bolts.

  Parts: Wheel bolts
- Tighten the wheel bolts (arrows) as follows:

  Screw in the wheel bolts crosswise by hand.

  Hand-tighten the wheel bolts evenly crosswise to centre the wheel rim.

  Use the torque wrench to tighten the wheel bolts crosswise.

  Tighten all wheel bolts crosswise again to check.

Wheel bolts

M14 / SW17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim.	Tightening torque	140 Nm
	Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence.	Check	140 Nm
	Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.		

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Additional Information

Overview of Tightening Torques

Wheel arch trim panel, front — Used in step 3

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

Brake disc to wheel hub — Used in step 4

M8	Renew screw.	Tightening torque	16 Nm

Wheel bolts Used in step 4

M14 / SW17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

Overview of Special Tools

2 344 011 Tool

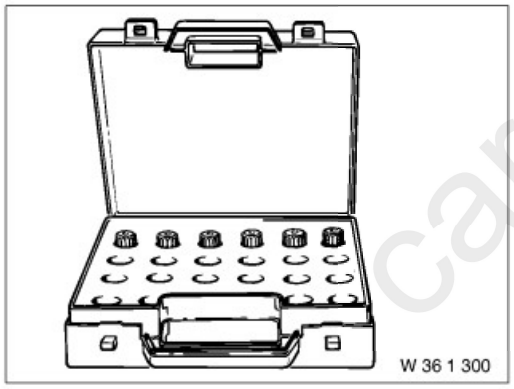


Common Used in step 4

Usage	Tool (wheel hub grinder) for cleaning the connection of the wheel rim (wheel contact face) to the wheel hub.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	08 08 12 (872)

Replacement tools:

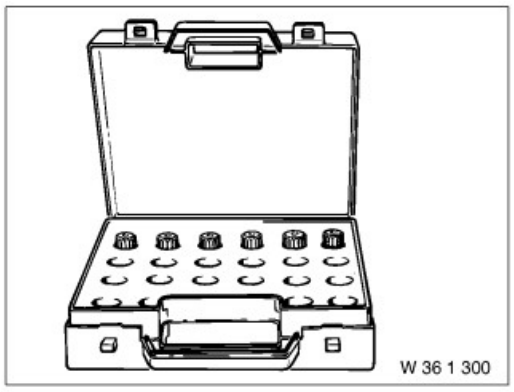
0 495 221 (36 1 323) Wheel stud



Common Used in step 1

Usage	(Code 30) Code 39 available separately, (see EPC) under 36 13 1 181 259
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 224 (36 1 326) Wheel stud



Common Used in step 1

Usage	(Code 33) With centring bore available separately, (see EPC) under 36 13 6 765 546
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

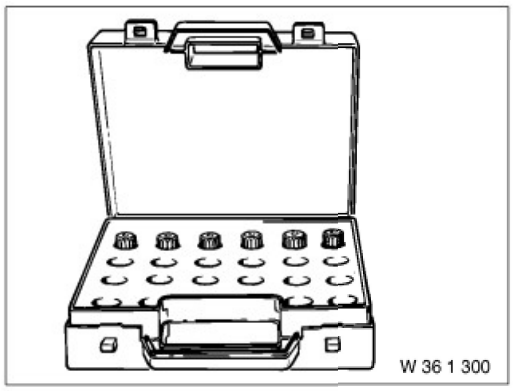
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0 495 225 (36 1 327) Wheel stud



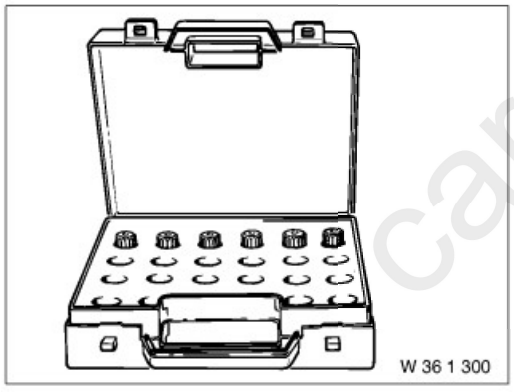
Common	Used in step 1
Usage	(Code 34) With centring bore available separately (see EPC) under 36 13 6 765 547
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 226 (36 1 328) Wheel stud



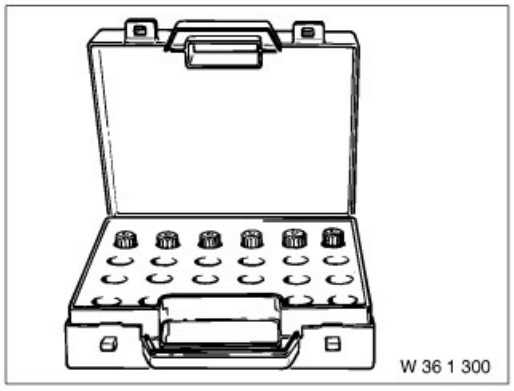
Common	Used in step 1
Usage	(Code 35) With centring bore available separately, (see EPC) under 36 13 6 762 340
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 227 (36 1 329) Wheel stud



Common	Used in step 1
Usage	(Code 36) With centring bore available separately (see EPC) under 36 13 6 762 341
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 228 (36 1 331) Wheel stud



Common	Used in step 1
Usage	(Code 37) With centring bore available separately (see EPC) under 36 13 6 762 342
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

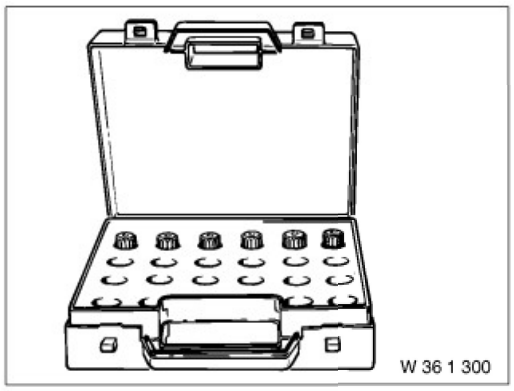
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0 495 229 (36 1 332) Wheel stud



Common	Used in step 1
Usage	(Code 38) With centring bore available separately (see EPC) under 36 13 6 762 343
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 230 (36 1 333) Wheel stud



Common	Used in step 1
Usage	(Code 40) With centring bore available separately (see EPC) under 36 13 6 762 344
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

Links

Repair instructions	Used in step
00 .. ... Raising the vehicle using a vehicle hoist	

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51 71 039 Removing and installing/replacing front left or right wheel arch cover (rear section)

WARNING

Vehicle may slip off the vehicle hoist if the vehicle hoist is handled incorrectly.

Danger! Life-threatening injuries!

- Observe safety information on raising the vehicle using a vehicle hoist.
- For additional information see: 00 ... Raising the vehicle using a vehicle hoist.

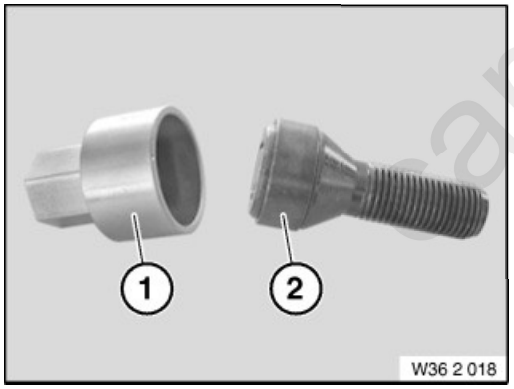
PRELIMINARY WORK

1 – Removing the wheel



- If several wheels are removed simultaneously, mark each tyre with a piece of chalk to show the axle and side on which the corresponding wheel is fitted.
- Release the wheel bolts (arrows) crosswise and remove the wheel.

▸ **If installed: Remove the locking wheel bolt**



- To unscrew and tighten the wheel bolts with locking wheel bolts (2), use the correct adapter (1) from the set of special tools .

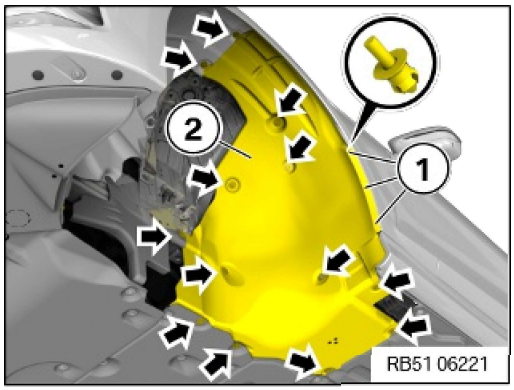
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MAIN WORK

2 – Removing the rear section of the front wheel arch cover front

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

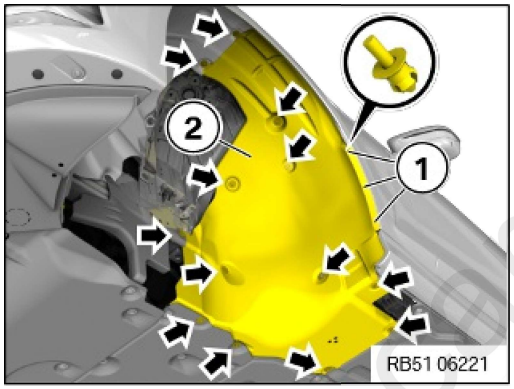


- Loosen the expanding rivet (1).
- Remove screws (arrows).
- Remove the rear section of the front wheel arch cover (2).

3 – Install the rear section of the front wheel arch cover

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.



- Install the rear section of the front wheel arch cover(2) .
- Tighten screws (arrows).

Wheel arch trim panel, front

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

- Secure expanding rivet (1).

POSTPROCESSES

4 – Mounting the wheel

▸ Clean the contact surfaces between the brake disc and the wheel rim



TECHNICAL INFORMATION

The contact surface between the brake disc and the wheel rim must be clean and free from oil and grease. There is otherwise a risk of the wheel becoming loose at a later time.

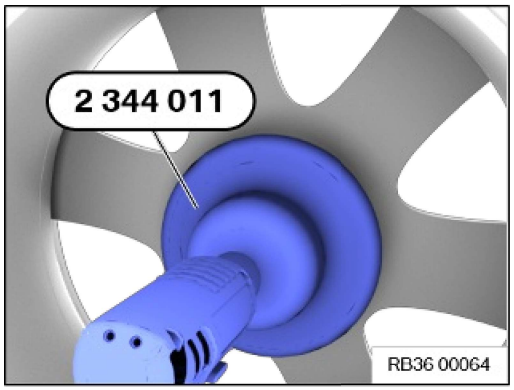
- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool 2 344 011.

  Do not operate special tool 2 344 011 with an impact screwdriver.
- Degrease contact surfaces.

Expendable materials

Universal cleaner	20 l, Canister	83192360981

- In the event of grease residue in the area of the wheel bolt holes, remove and clean the brake disc.

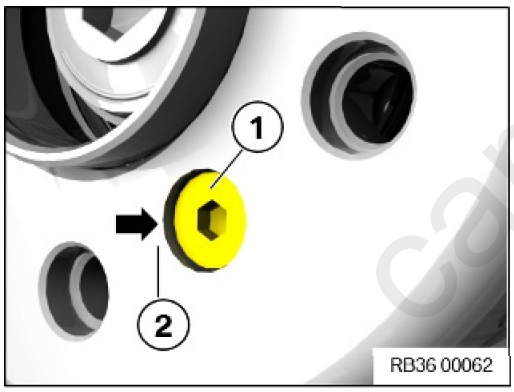


- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool 2 344 011.

  Do not operate special tool 2 344 011 with an impact screwdriver.
- Degrease contact surfaces.

Expendable materials

Universal cleaner	20 l, Canister	83192360981

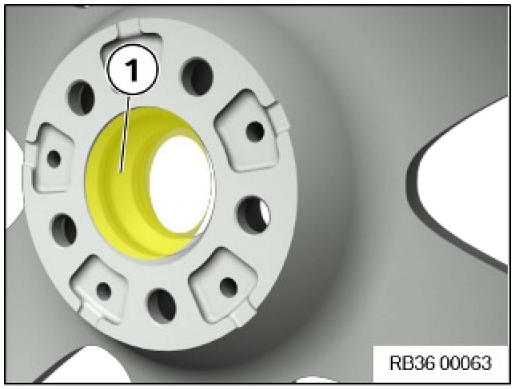


- Check that the mounting bolt (1) for the brake disc is securely seated.

  The mounting bolt (1) for the brake disc may not protrude under any circumstances on the contact surface (2) between the brake disc and the wheel rim.

Brake disc to wheel hub

M8	Renew screw.	Tightening torque	16 Nm



- Thinly grease the wheel centring (1) in the wheel rim.

Expendable materials

Brake block paste * TU = Trade Unit. TU numbers cannot be ordered! For invoicing purposes only.	3 g, Bag	83192158851
	100 g, Tube	83192158852
	5 g, TU*	83230140233

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TECHNICAL INFORMATION

Never use impact screwdrivers or electric screwdrivers to screw in and tighten the wheel bolts.

The wheel rim must rest uniformly against the brake disc.

In the case of non-original BMW wheel bolts/wheel rims, it may be necessary to retighten the wheel bolts on account of setting properties (refer to the documentation from the manufacturer).

Do not apply oil to new wheel bolts.

- Clean the wheel bolts.
- Check the wheel bolts and threads for damage, renew the wheel bolts if necessary.
- Renew corroded wheel bolts.

  Parts: Wheel bolts
- Tighten the wheel bolts (arrows) as follows:

  Screw in the wheel bolts crosswise by hand.

  Hand-tighten the wheel bolts evenly crosswise to centre the wheel rim.

  Use the torque wrench to tighten the wheel bolts crosswise.

  Tighten all wheel bolts crosswise again to check.

Wheel bolts

M14 / SW17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim.	Tightening torque	140 Nm
	Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence.	Check	140 Nm
	Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.		

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Additional Information

Overview of Tightening Torques

Wheel arch trim panel, front — Used in step 3

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

Brake disc to wheel hub — Used in step 4

M8	Renew screw.	Tightening torque	16 Nm

Wheel bolts Used in step 4

M14 / SW17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

Overview of Special Tools

2 344 011 Tool

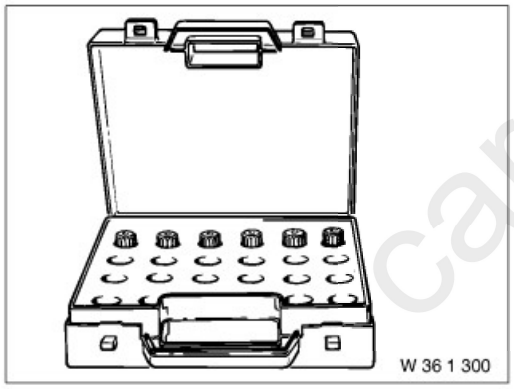


Common Used in step 4

Usage	Tool (wheel hub grinder) for cleaning the connection of the wheel rim (wheel contact face) to the wheel hub.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	08 08 12 (872)

Replacement tools:

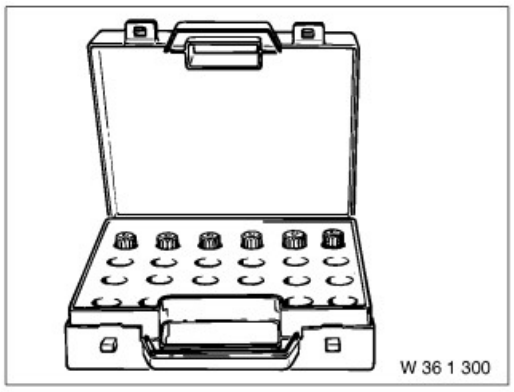
0 495 221 (36 1 323) Wheel stud



Common Used in step 1

Usage	(Code 30) Code 39 available separately, (see EPC) under 36 13 1 181 259
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 224 (36 1 326) Wheel stud



Common Used in step 1

Usage	(Code 33) With centring bore available separately, (see EPC) under 36 13 6 765 546
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

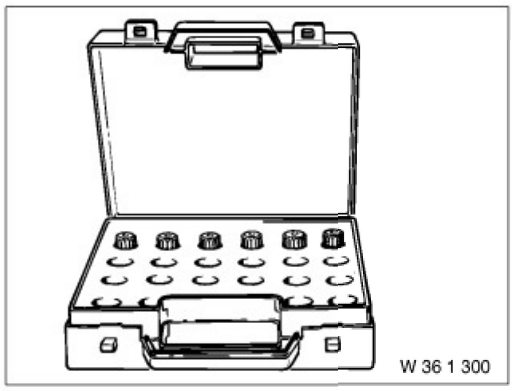
cardiagn.com

0 495 225 (36 1 327) Wheel stud



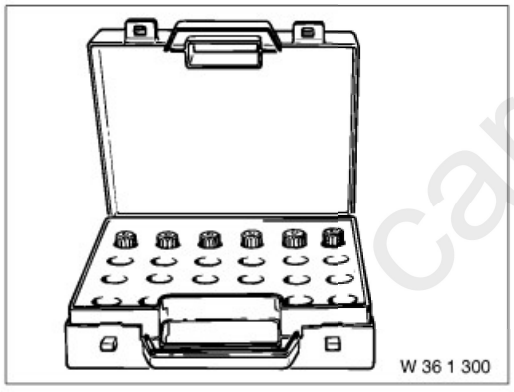
Common	Used in step 1
Usage	(Code 34) With centring bore available separately (see EPC) under 36 13 6 765 547
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 226 (36 1 328) Wheel stud



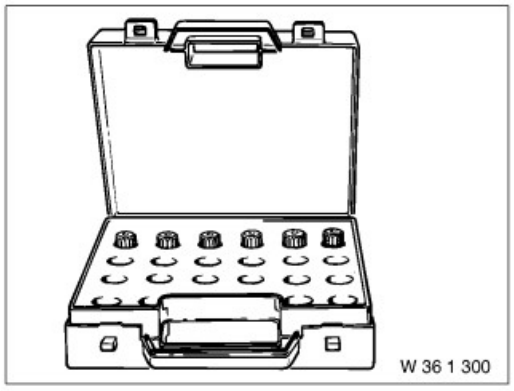
Common	Used in step 1
Usage	(Code 35) With centring bore available separately, (see EPC) under 36 13 6 762 340
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 227 (36 1 329) Wheel stud



Common	Used in step 1
Usage	(Code 36) With centring bore available separately (see EPC) under 36 13 6 762 341
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 228 (36 1 331) Wheel stud



Common	Used in step 1
Usage	(Code 37) With centring bore available separately (see EPC) under 36 13 6 762 342
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

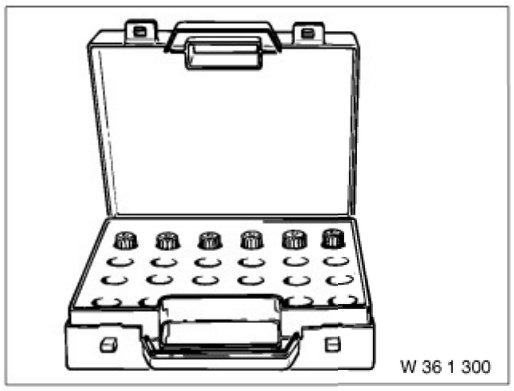
cardiagn.com

0 495 229 (36 1 332) Wheel stud



Common	Used in step 1
Usage	(Code 38) With centring bore available separately (see EPC) under 36 13 6 762 343
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 230 (36 1 333) Wheel stud



Common	Used in step 1
Usage	(Code 40) With centring bore available separately (see EPC) under 36 13 6 762 344
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

Links

Repair instructions	Used in step
00 .. ... Raising the vehicle using a vehicle hoist	

cardiagn.com

51 71 041 Removing and installing/replacing rear left or right wheel arch cover

WARNING

Vehicle may slip off the vehicle hoist if the vehicle hoist is handled incorrectly.

Danger! Life-threatening injuries!

- Observe safety information on raising the vehicle using a vehicle hoist.
- For additional information see: 00 ... Raising the vehicle using a vehicle hoist.

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

1 – Removing the wheel



- In vehicles with M Carbon ceramic brake: The wheel assembly jack must be used to remove the wheel (see workshop equipment).

  This process is intended to prevent damage to the brake disc.



- If several wheels are removed simultaneously: Use a piece of chalk to mark on each tyre the axle and side on which the corresponding wheel is fitted.
- Release the wheel bolts (arrows) crosswise and remove the wheel.
- To release and tighten wheel bolts with a security code: Use a suitable adapter from the tool set .

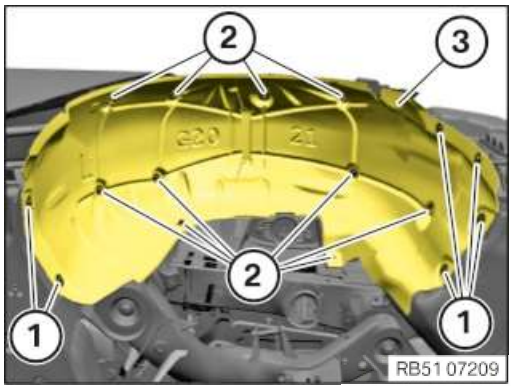
cardiagn.com

MAIN WORK

2 – Removing rear wheel arch cover

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

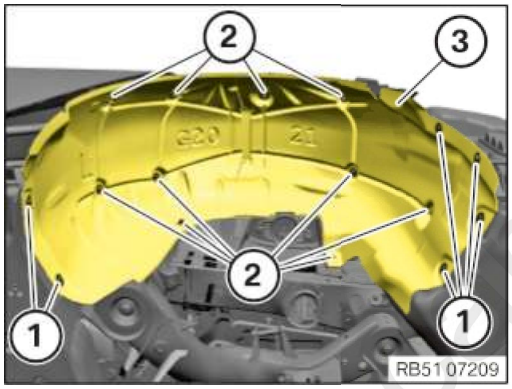


- Loosen screws (1).
- Loosen nuts (2).
- Guide the wheel arch cover (3) out.

3 – Removing the rear wheel arch cover

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.



- Guide the wheel arch cover (3) in.
- Tighten the screws (1).
- Tighten nuts (2).

POSTPROCESSES

4 – Mounting the wheel

carfdiagn.com



TECHNICAL INFORMATION

The contact surface between the brake disc and the wheel rim must be clean and free from oil and grease. There is otherwise a risk of the wheel becoming loose at a later time.

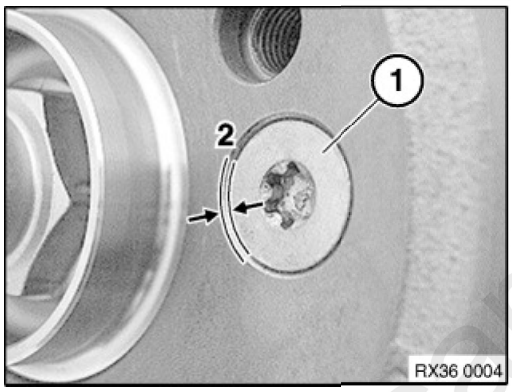
- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool 2 344 011.

  Do not operate special tool 2 344 011 with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).
- In the event of grease residue in the area of the wheel bolt holes, remove and clean the brake disc.



- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool 2 344 011.

  Do not operate special tool 2 344 011 with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).



- Check that the mounting bolt (1) for the brake disc is securely seated.

  The mounting bolt (1) for the brake disc may not protrude under any circumstances on the contact surface (2) between the brake disc and the wheel rim.

Brake disc to front wheel hub

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to rear wheel hub

M8	Renew screw.	Tightening torque	16 Nm



- Thinly grease the wheel centring (1) in the wheel rim.

Expendable materials

Brake block paste * TU = Trade Unit. TU numbers cannot be ordered! For invoicing purposes only.	3 g, Bag	83192158851
	100 g, Tube	83192158852
	5 g, TU*	83230140233

catalagn.com



- Lightly grease the front and rear wheel hubs in this area (1) to protect from corrosion.

Expendable materials

Brake block paste * TU = Trade Unit. TU numbers cannot be ordered! For invoicing purposes only.	3 g, Bag	83192158851
	100 g, Tube	83192158852
	5 g, TU*	83230140233



- In vehicles with M Carbon ceramic brake: The wheel assembly jack must be used to install the wheel (see workshop equipment).

  This process is intended to prevent damage to the brake disc.

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TECHNICAL INFORMATION

Never use impact screwdrivers or electric screwdrivers to screw in and tighten the wheel bolts.

The wheel rim must rest uniformly against the brake disc.

In the case of non-original BMW wheel bolts/wheel rims, it may be necessary to retighten the wheel bolts on account of setting properties (refer to the documentation from the manufacturer).

Do not apply oil to new wheel bolts.

- Renew corroded wheel bolts.

  Parts: Wheel bolts
- Clean the wheel bolts.
- Check wheel bolts and threads for damage, renew the wheel bolts if necessary.
- Join and tighten the wheel bolts (arrows).

Wheel bolts

M14 / SW17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

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Additional Information

Overview of Tightening Torques

Brake disc to front wheel hub Used in step 4

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to rear wheel hub Used in step 4

M8	Renew screw.	Tightening torque	16 Nm

Wheel bolts Used in step 4

M14 / SW17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque Check	140 Nm 140 Nm

Overview of Special Tools

2 344 011 Tool

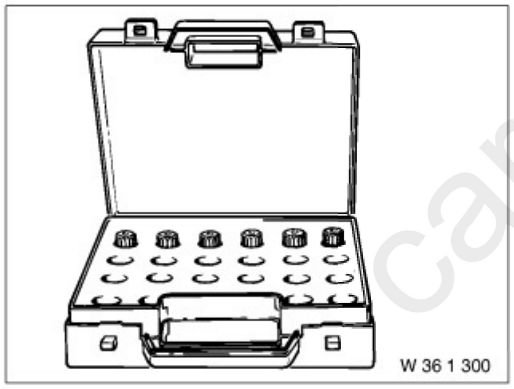


Common Used in step 4

Usage	Tool (wheel hub grinder) for cleaning the connection of the wheel rim (wheel contact face) to the wheel hub.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	08 08 12 (872)

Replacement tools:

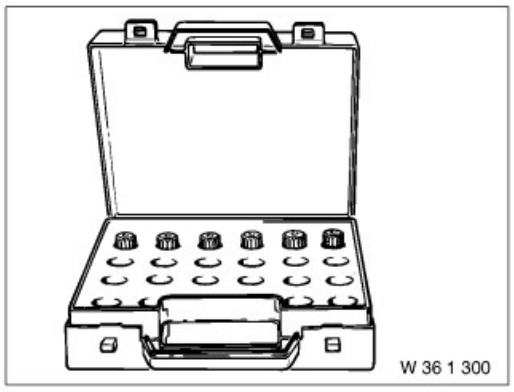
0 495 221 (36 1 323) Wheel stud



Common Used in step 1

Usage	(Code 30) Code 39 available separately, (see EPC) under 36 13 1 181 259
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 224 (36 1 326) Wheel stud



Common Used in step 1

Usage	(Code 33) With centring bore available separately, (see EPC) under 36 13 6 765 546
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

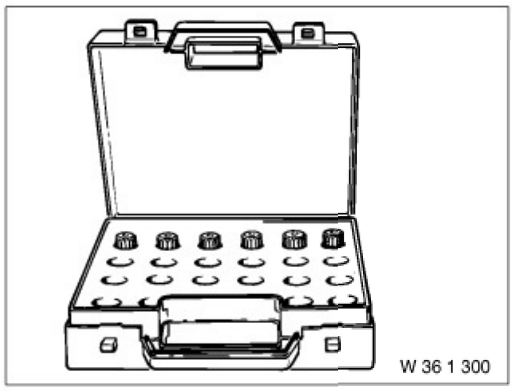
cardiagn.com

0 495 225 (36 1 327) Wheel stud



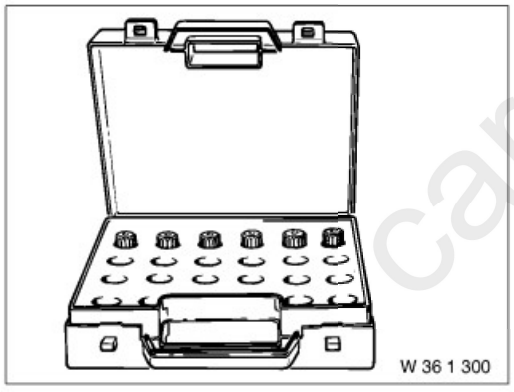
Common	Used in step 1
Usage	(Code 34) With centring bore available separately (see EPC) under 36 13 6 765 547
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 226 (36 1 328) Wheel stud



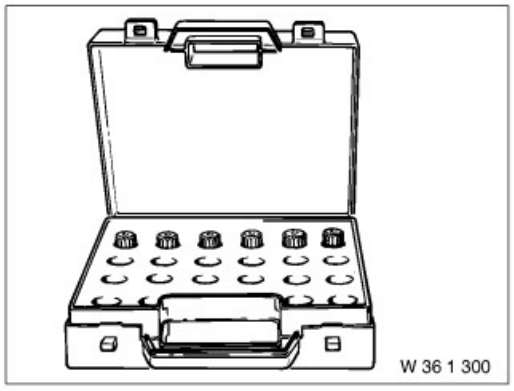
Common	Used in step 1
Usage	(Code 35) With centring bore available separately, (see EPC) under 36 13 6 762 340
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 227 (36 1 329) Wheel stud



Common	Used in step 1
Usage	(Code 36) With centring bore available separately (see EPC) under 36 13 6 762 341
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 228 (36 1 331) Wheel stud



Common	Used in step 1
Usage	(Code 37) With centring bore available separately (see EPC) under 36 13 6 762 342
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

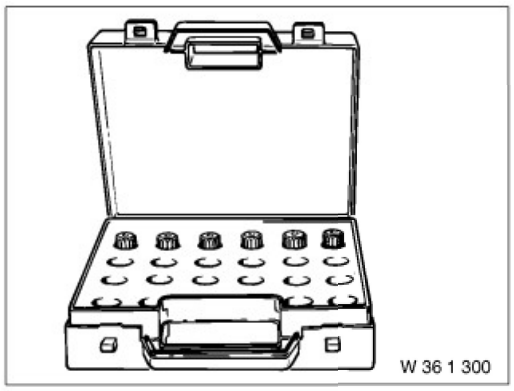
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0 495 229 (36 1 332) Wheel stud



Common	Used in step 1
Usage	(Code 38) With centring bore available separately (see EPC) under 36 13 6 762 343
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 230 (36 1 333) Wheel stud



Common	Used in step 1
Usage	(Code 40) With centring bore available separately (see EPC) under 36 13 6 762 344
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

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51 71 099 Removing and installing/replacing the air duct for the coolant radiator

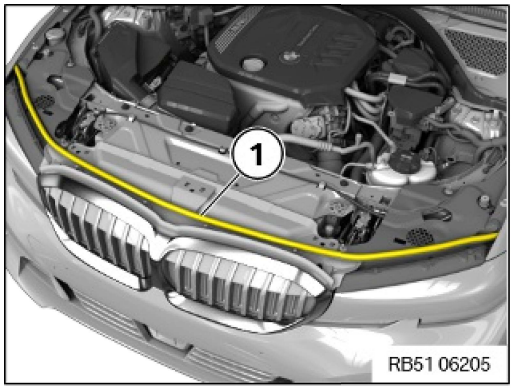
PRELIMINARY WORK

1 – Disconnecting all battery earth leads



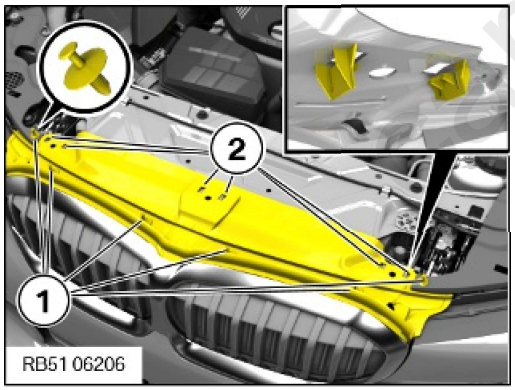
- See additional information.

2 – Remove the seal for the bonnet in front



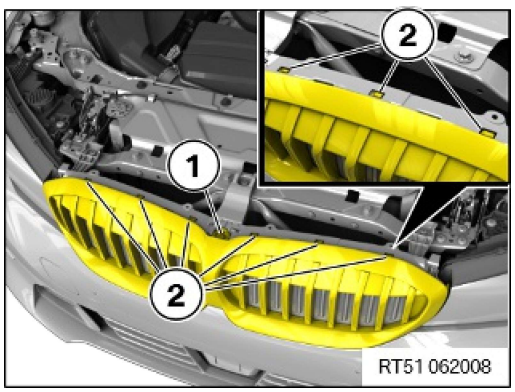
- Pull off front bonnet seal (1) upwards.

3 – Removing the centre engine compartment cover



- Detach all expanding rivets (1).
- Release the cover of the centre engine compartment with the latch mechanisms (2) .
- Feed the cover for the centre engine compartment out to the rear.

4 – Remove centre radiator ornamental grille



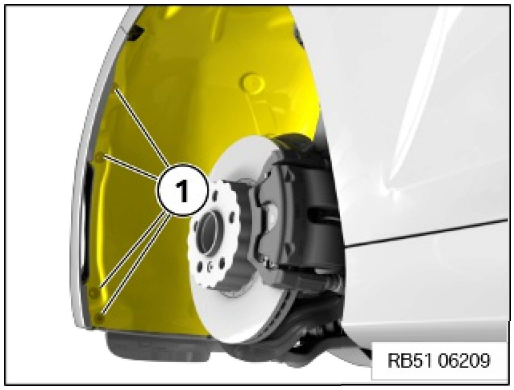
- Loosen screw (1).
- Release the centre front ornamental grille from the latch mechanisms (2).
- Release the centre front ornamental grille from the remaining latch mechanism towards the front and remove it.
- Unlock and disconnect plug connections according to the equipment.

5 – Partially remove both front wheel arch trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially removing front wheel arch trim panel**

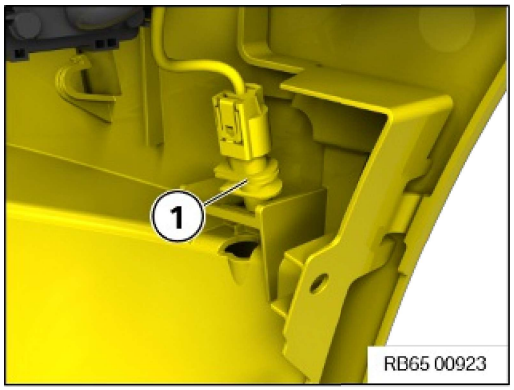


NOTICE

To provide a better overview: Schematic diagram without front wheel.

- Loosen screws (1).
- Fold the front wheel arch trim panel to one side.

6 – Partially removing the temperature sensor



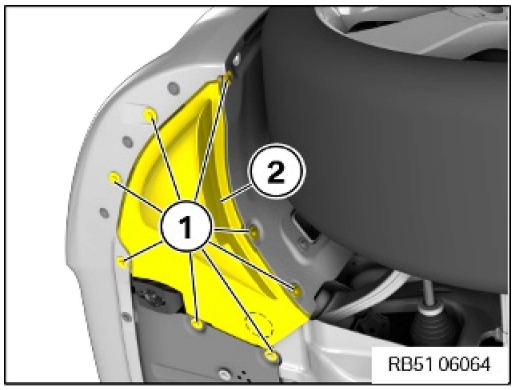
- Unclip temperature sensor (1) from the front bumper panel to the top.

7 – Removing both front bottom covers at side

NOTICE

Description is for left component only. Procedure on the right side is identical.

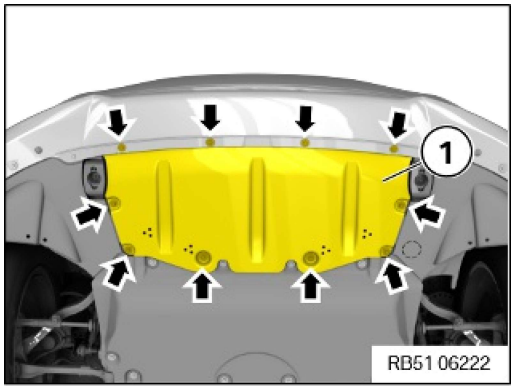
▸ **Removing the lower front cover at the side**



- Loosen screws (1).
- Removing the lower front cover at the side (2).

8 – Removing the front underbody protection

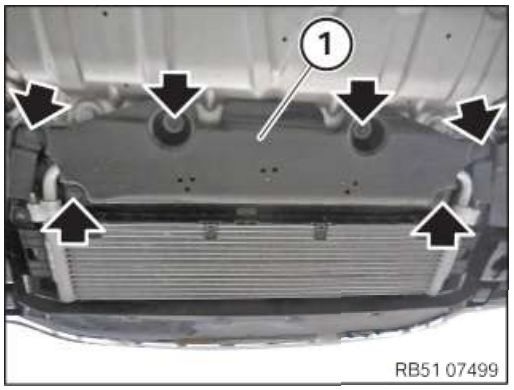
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- **Version 1:**

  Remove screws (arrows).

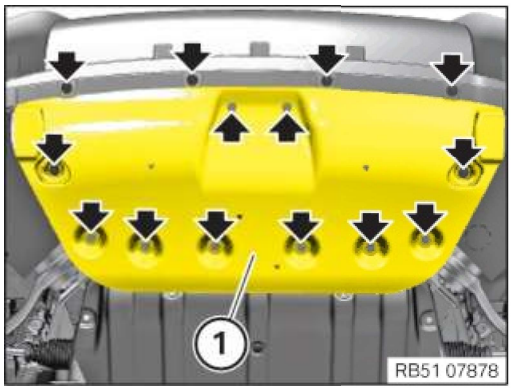
  Feed front underbody protection (1) backwards out of the bumper panel.



- **Version 2:**

  Remove screws (arrows).

  Guide out front underbody protection (1) and remove it.

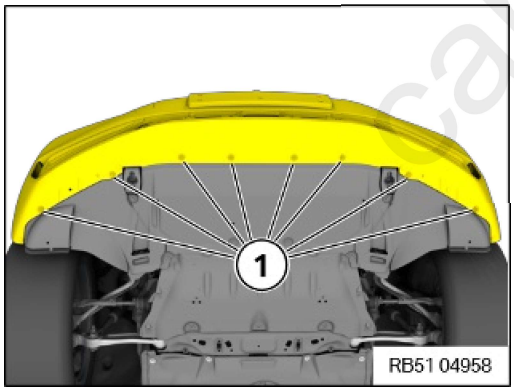


- **Version 3:**

  Remove screws (arrows).

  Guide out front underbody protection (1) and remove it.

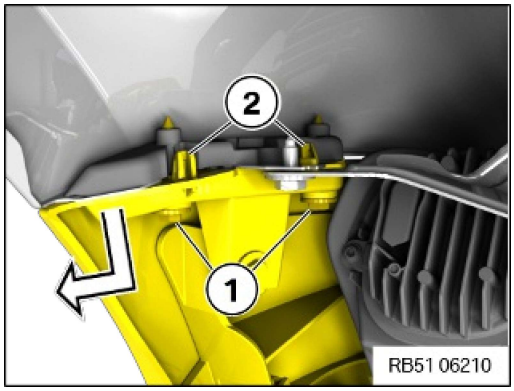
9 – Remove front bumper panel



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Loosen screws (1).

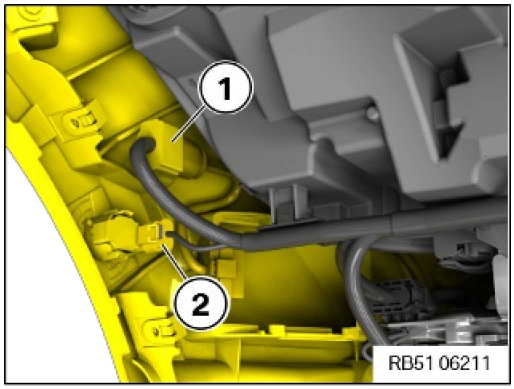


NOTICE

Perform the operations on the left and right side.

- Loosen screws (1).
- Release the front bumper panel along with the latch mechanisms (2) and feed out in the direction of arrow out of the guide.

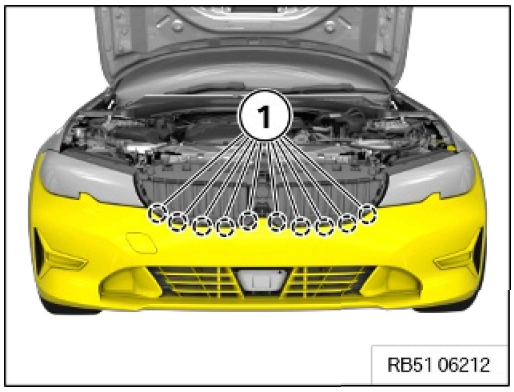
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NOTICE

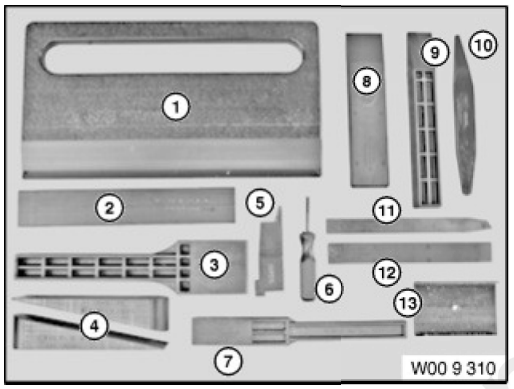
Perform the operations on the left and right side.

- Unlock plug connection (1) and disconnect.
- If necessary, unlock plug connection (2) and disconnect.

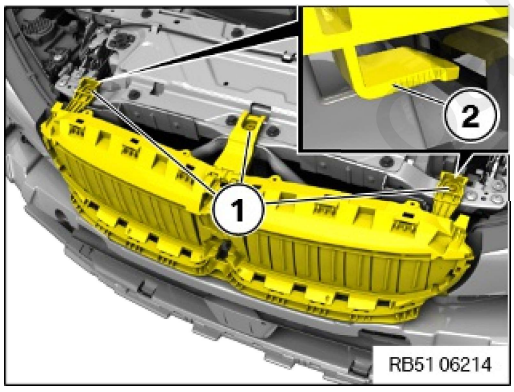


- Release the front bumper panel from the latch mechanisms (1) towards the front.
- Remove the front bumper panel.

10 – Remove top automatic air flap control



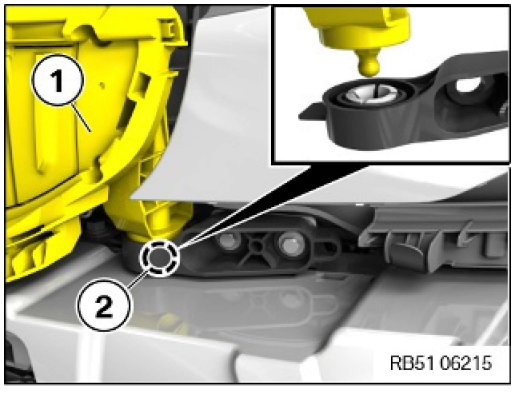
- Have the set of special tools 0 493 752 (00 9 329) ready.



- Loosen screws (1).
- Carefully release the top air flap control towards the front with the latch mechanisms(2).

NOTICE

The operations shown only for one side must be carried out on both sides.



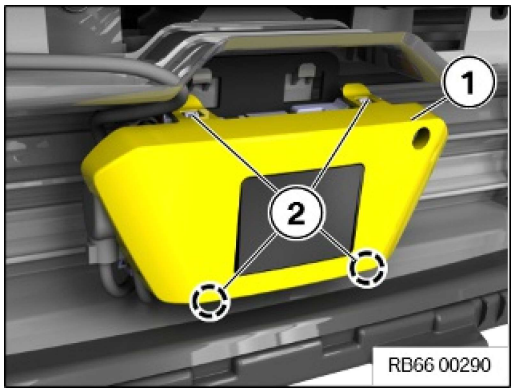
- Release the top air flap control (1)with a suitable special tool.

  Lever out the ball head (2) upwards.
- Feed out the top air flap control (1)upwards.
- Unlock associated plug connections and disconnect.

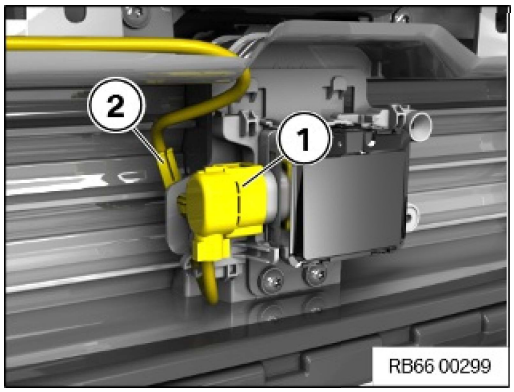
11 – If installed: Removing the front radar sensor (FRS)

NOTICE

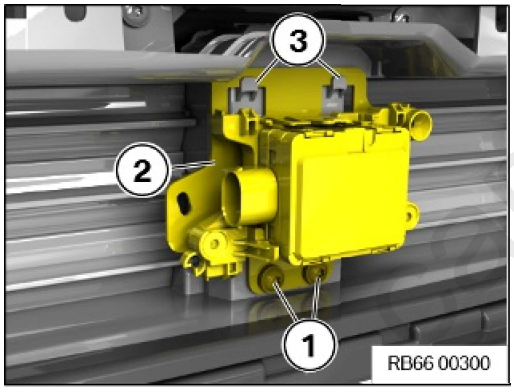
Schematic diagram is for example purposes. Some parts may differ in certain details.



- Release cover (1) from the latch mechanisms (2) and remove it to the front.

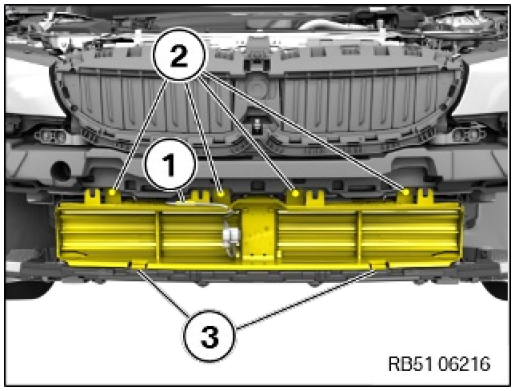


- Unlock plug connection (1) and disconnect.
- Unclip the vehicle wiring harness with the bracket (2) and place aside.



- Loosen screws (1).
- Guide out and remove the front radar sensor (FRS) with holder (2) out of tabs (3) .

12 – Removing the bottom automatic air flap control



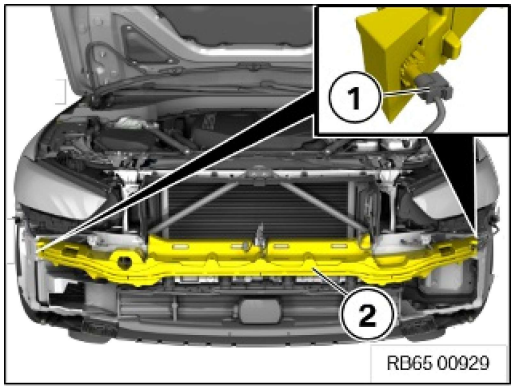
- If necessary, release the wiring harness from holder (1).
- Loosen screws (2).
- Guide out the bottom air flap control with guides (3) to the front.
- Unlock associated plug connection and disconnect.

13 – Removing pedestrian protection sensor

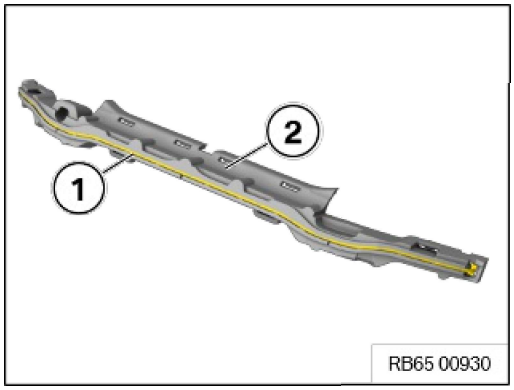
autodiagn.com

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Unlock and disconnect plug connections (1).
- Remove the impact absorber (2).



- Remove pedestrian protection sensor (1) from impact absorber (2).

  Impact absorber (2) must not be reused.
- Dispose of the impact absorber (2).

14 – Remove both fanfares

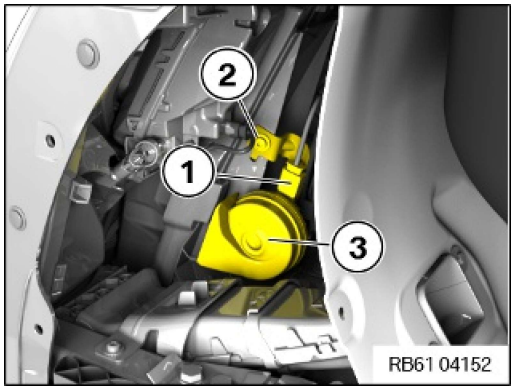
NOTICE

Description is for left component only. Procedure on the right side is identical.

▶ **Removing the fanfare on the left**

TECHNICAL INFORMATION

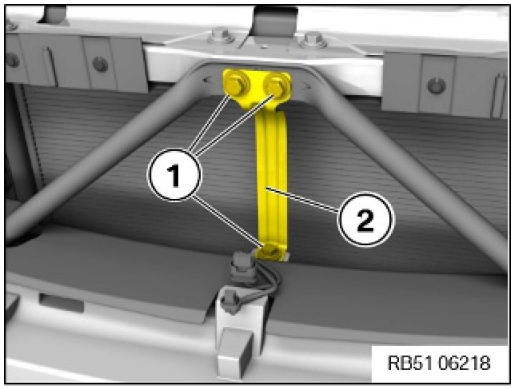
Replace the fanfare only complete with the holder.



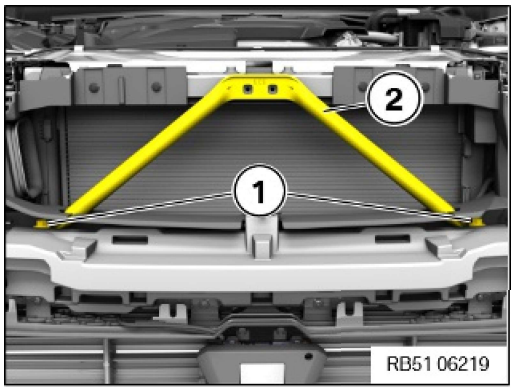
- Unlock plug connection (1) and disconnect.
- Release the screw (2) and remove the left fanfare horn (3) with the bracket.

15 – Remove stiffening strut

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- Loosen screws (1).
- Remove the support (2).



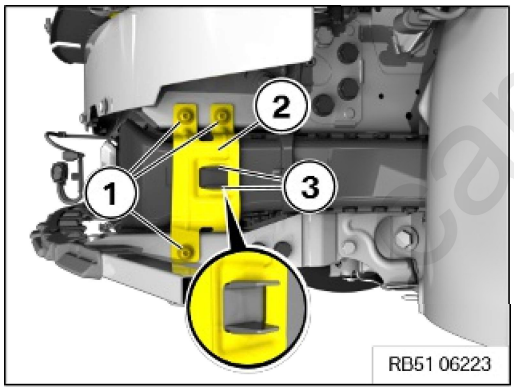
- Loosen screws (1).
- Remove the bracing strut (2).

16 – Removing both brake air ducts

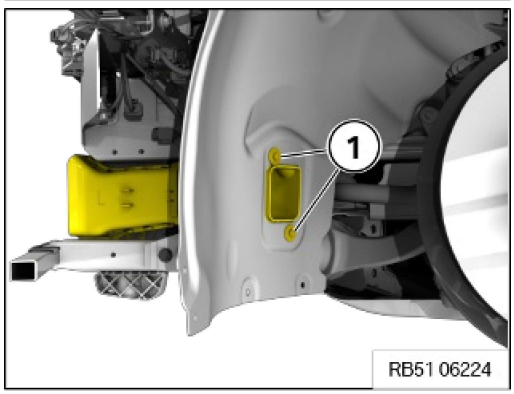
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the brake air duct**



- Loosen screws (1).
- Release and remove the vertical connection (2) from the latch mechanisms (3).

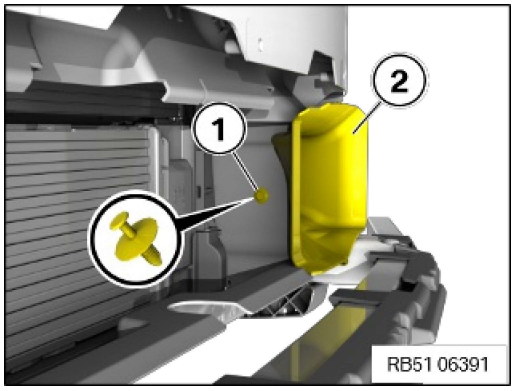


NOTICE

To provide a better overview: Schematic diagram without front wheel.

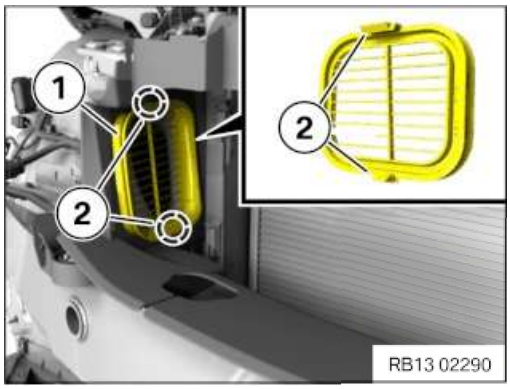
- Loosen screws (1).

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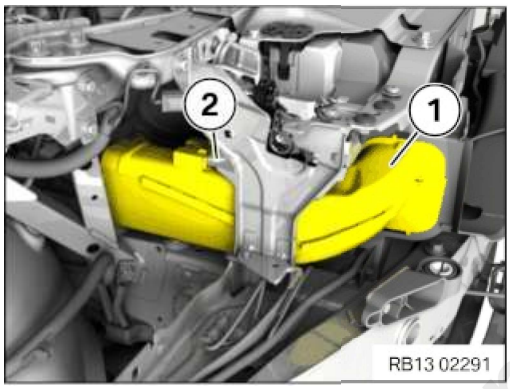


- Loosen expanding rivet (1).
- Feed out the brake air duct (2) toward the front.

17 – Removing intake port



- Release and remove the grille (1) with the latch mechanisms (2).



- Feed intake port (1) backward out of the guide (2) on the lock support.
- Remove the intake port (1) to the rear.

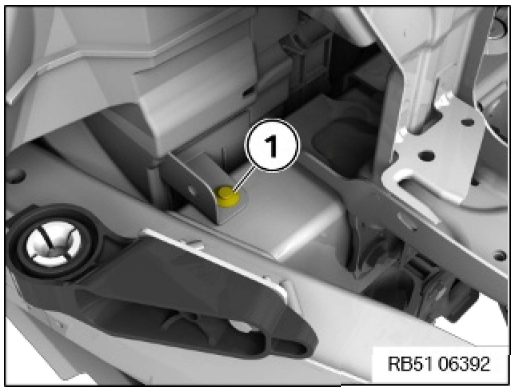
cardiagn.com

MAIN WORK

18 – Removing the air duct of radiator

NOTICE

The operations shown only for one side must be carried out on both sides.

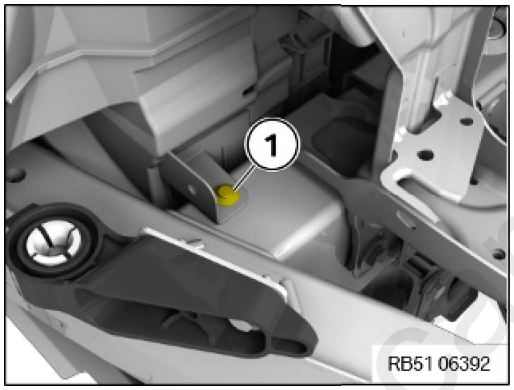


- Loosen expanding rivet (1).

19 – Install air duct radiator

NOTICE

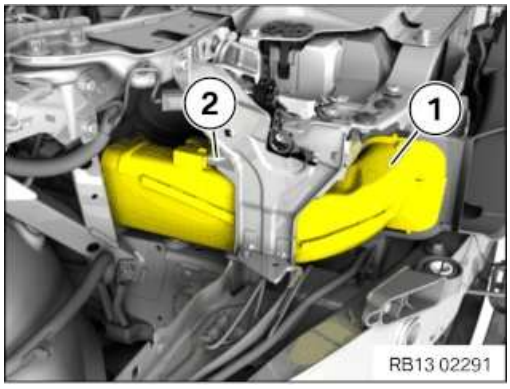
The operations shown only for one side must be carried out on both sides.



- Fasten expanding rivet (1).

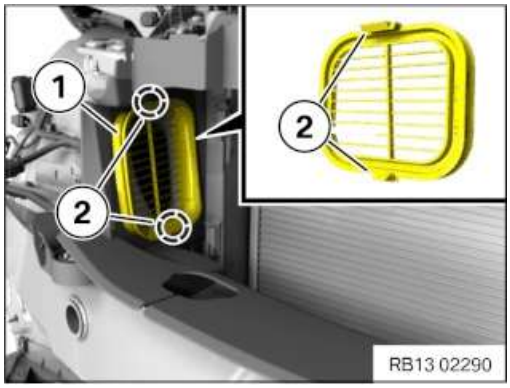
POSTPROCESSES

20 – Installing intake port



- Guide in intake port (1) from the rear.
- Slide intake port (1) onto guide (2) on the lock support.

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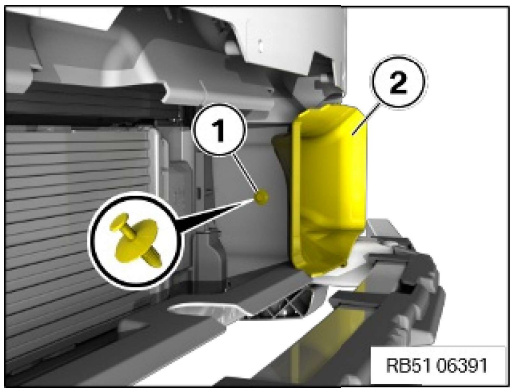
- Check latch mechanisms (2) for damage and, if necessary, renew them.
- Position grille (1) and clip it into latch mechanisms (2) .

21 – Install both brake air ducts

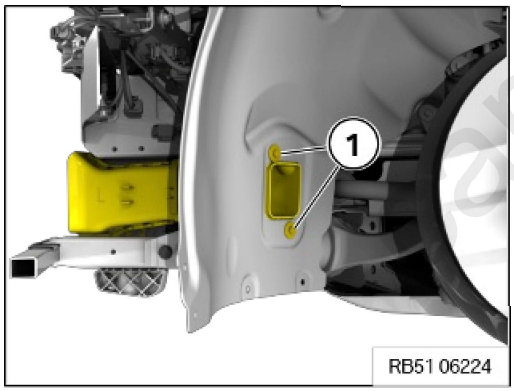
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the brake air duct**



- Guide in and position brake air duct (2).
- Fasten expanding rivet (1).



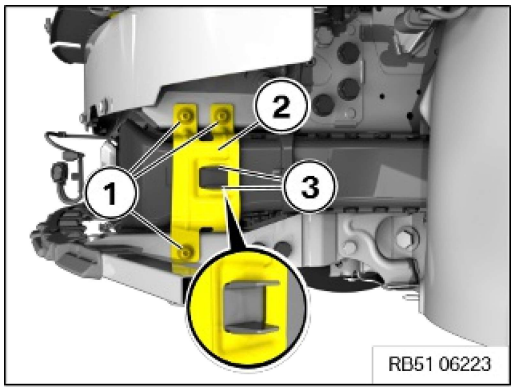
NOTICE

To provide a better overview: Schematic diagram without front wheel.

- Tighten the screws (1).

Brake air duct to front wheel arch cover of front section

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

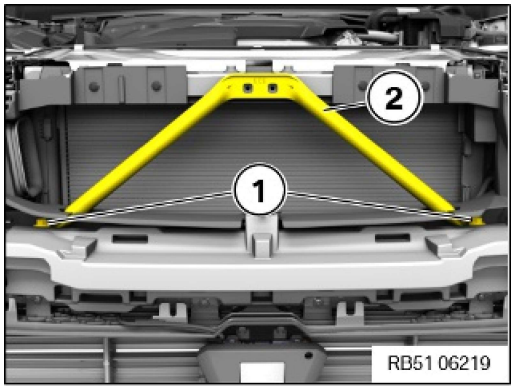


- Position vertical connection (2) and clip it into latch mechanism (3).
- Tighten the screws (1).

Vertical connection to deformation element

Flat-head screw M6x20		Tightening torque	11,8 Nm

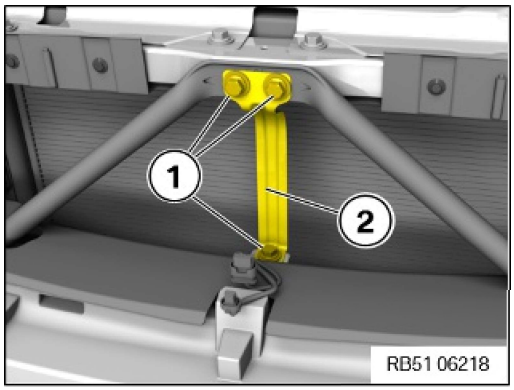
22 – Install bracing strut



- Install the bracing strut (2).
- Tighten the screws (1).

Bracing strut on support for top bumper panel

Hexagon screw		Tightening torque	28 Nm



- Install support (2).
- Tighten the screws (1).

Strut on front end

Hexagon screw		Tightening torque	28 Nm

23 – Install both fanfares

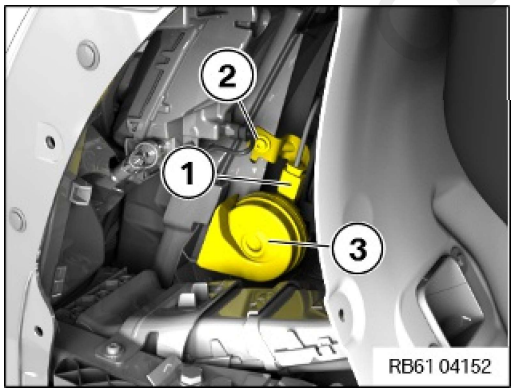
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Installing the fanfare on the left**

TECHNICAL INFORMATION

Replace the fanfare only complete with the holder.



- Correctly position the left fanfare horn (3) and tighten screw(2) .

Fanfare to support for bumper panel

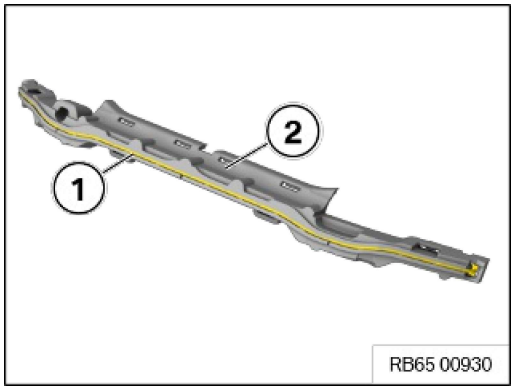
M6x20 screw		Tightening torque	8,8 Nm

- Connect connectors (1) and lock.

24 – Installing the pedestrian protection sensor

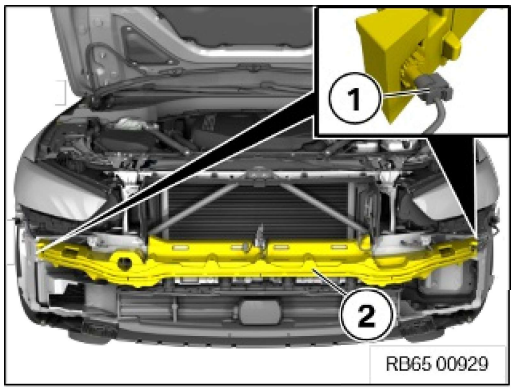
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



- Renew the impact absorber (2).

  Parts: Impact absorber
- Carefully insert pedestrian protection (1) in the impact absorber (2).

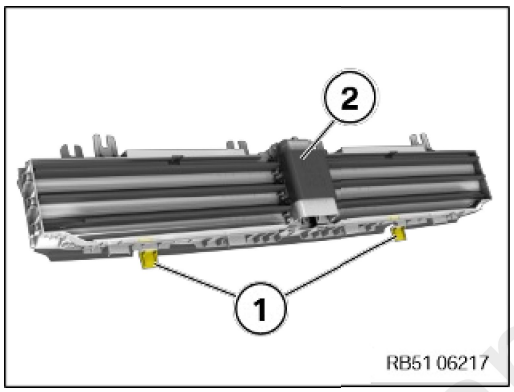


- Connect connectors (1) and lock.
- Attach impact absorber (2) at the bottom and then press it upwards.

25 – Installing the bottom automatic air flap control

Check

- Check the guides (1) on the bottom air flap control (2)for damage.

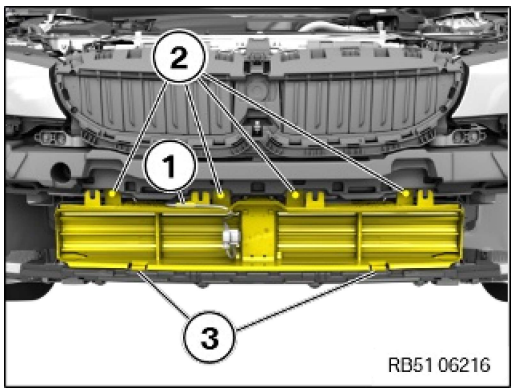


Result

» Guide is damaged.

Measure

- Renew the bottom air flap control.



- Connect and lock corresponding connectors.
- Fit the bottom air flap control and feed in with the guides (3).
- Tighten down screws (2).

Bottom air flap control on top bumper panel support

Oval-head screw		Tightening torque	4,6 Nm

- If applicable, clip in the vehicle wiring harness with the holder (1).

26 – Disconnecting all battery earth leads

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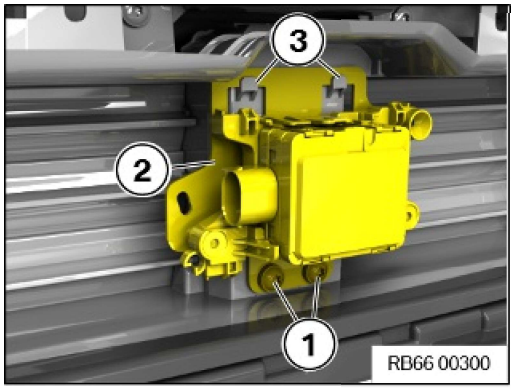


- See additional information.

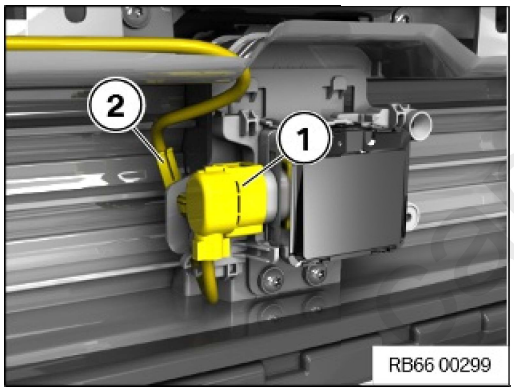
27 – If installed: Installing the front radar sensor (FRS)

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

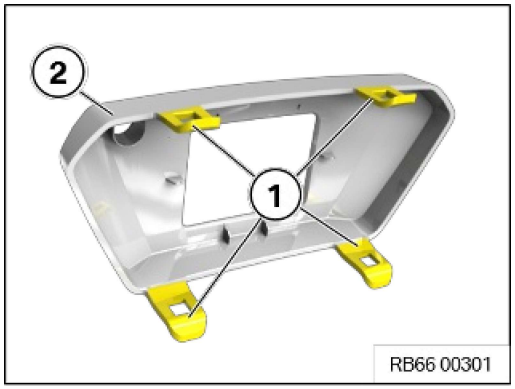


- Fit the front radar sensor (FRS) with the holder (2) in the tabs(3) .
- Tighten the screws (1).



- Clip in the vehicle wiring harness including bracket. (2)
- Connect connectors (1) and lock.

Check



- Check tabs (1) on cover(2) for damage.

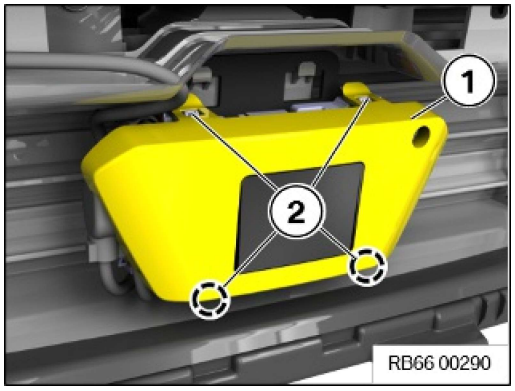
Result

» The tab is damaged.

Measure

- Renew the cover.

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- Position cover (1) and clip it into latch mechanisms .

▶ **Adjusting front radar sensor (FRS)**

TECHNICAL INFORMATION

Notes on adjusting the ACC sensor are a fundamental requirement for these repair instructions and must be complied with at all times.

For additional information see: 66 31 ... Notes on adjusting the ACC sensor

TECHNICAL INFORMATION

If there is a "Sensor misaligned" fault memory entry and the sensor cannot be aligned correctly using the adjusting screw, a front impact damage may be suspected.

In this case, the vehicle must be inspected thoroughly for damage. Damaged parts must be renewed if necessary. Then adjust the ACC sensor again.

A damaged/bent holder indicates mechanical misuse of the vehicle and must not be charged as a warranty case.

▷ **Checking vehicle and components for damage**

Check

- In the visible areas, visually check for:
  - damage
  - Deformation

Result

» Damage or deformation.

Measure

- Identify and renew damaged, deformed vehicle parts.

Result

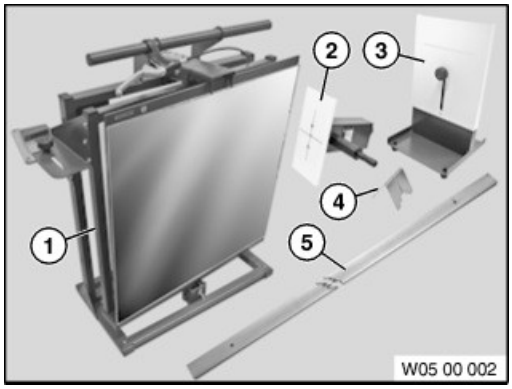
» No damage or deformation

Measure

- Adjust the front radar sensor (FRS).

◁

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- Stage special tools 0 442 898 and 2 338 466.
- Set up special tool as per enclosed operating instructions.



- Connect diagnosis system.
  - Service functions
  - Driver assistance
  - Front radar sensor (FRS)
  - Front radar sensor start-up (FRS)

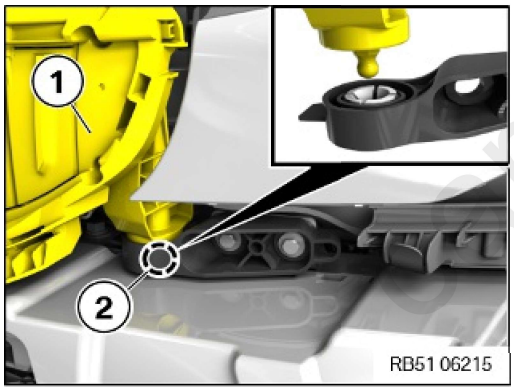


NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- To adjust the front radar sensor (FRS), twist screw (1) with special tool .

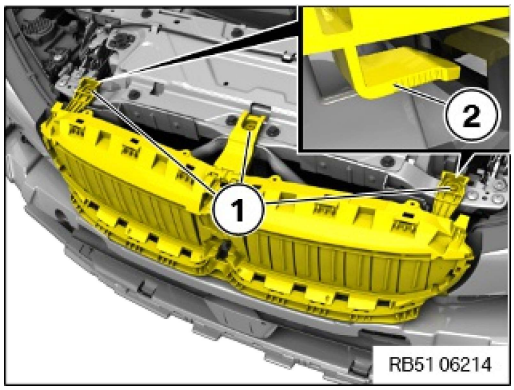
28 – Insert top automatic air flap control



NOTICE

The operations shown only for one side must be carried out on both sides.

- Position top air flap control (1).
- Connect and lock the relevant connectors.
- Feed in the top air flap control (1) and clip in with the ball head(2) .

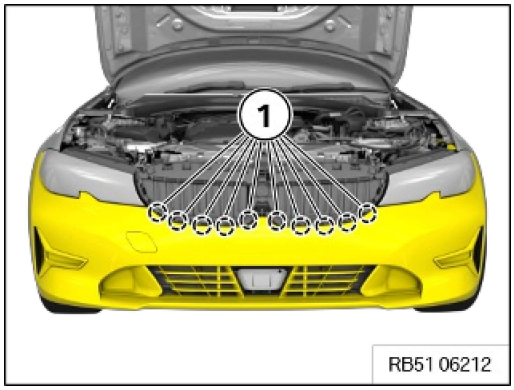


- Clip the top air flap control in the latch mechanisms(2) .
- Tighten the screws (1).

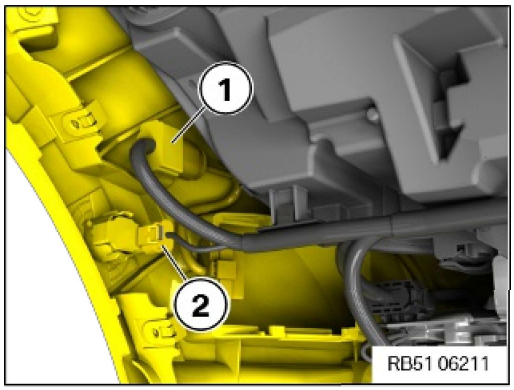
Air flap control to front end

Oval-head screw with spring washer		Tightening torque	4,6 Nm

29 – Install bumper panel, front



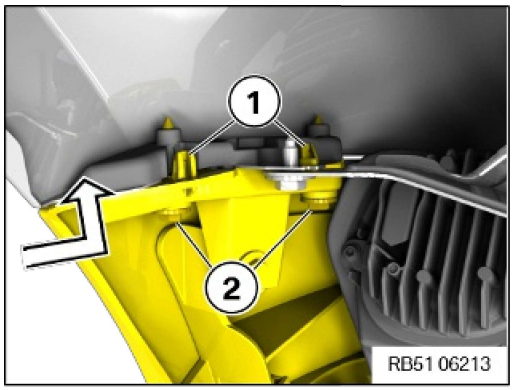
- Position the front bumper panel.
- Clip the front bumper panel into latch mechanisms (1).



NOTICE

Perform the operations on the left and right side.

- Connect connectors (1) and lock.
- If necessary, connect the connector (2) and lock it.



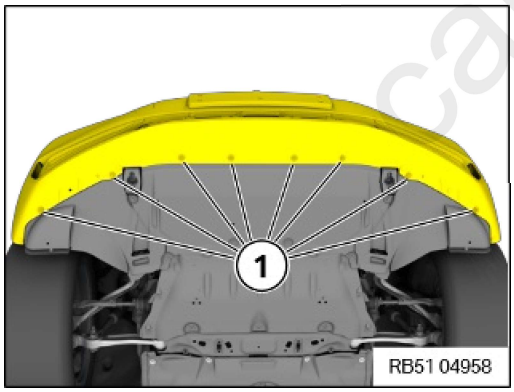
NOTICE

Perform the operations on the left and right side.

- Feed the bumper panel in arrow direction into the guide and clip in with the latch mechanism(1).
- Tighten down screws (2).

Front bumper panel to front side panel

Torx screw 5x35		Tightening torque	3 Nm



NOTICE

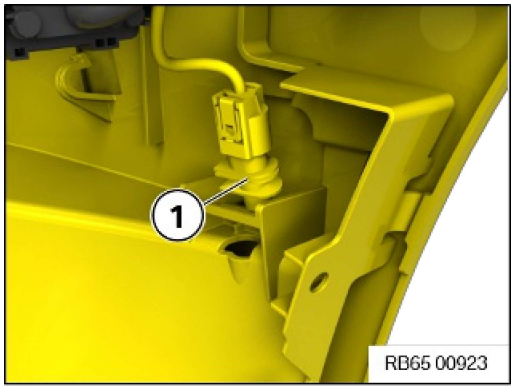
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Tighten the screws (1).

Front bumper panel to underbody protection

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

30 – Partially installing the temperature sensor



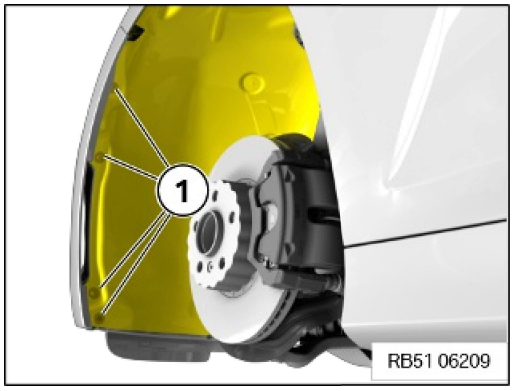
- Clip the temperature sensor (1) downwards into the front bumper panel.

31 – Partially installing both front wheel arch trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially installing front wheel arch trim panel**



NOTICE

To provide a better overview: Schematic diagram without front wheel.

- Fold back the front wheel arch trim panel.
- Tighten the screws (1).

Wheel arch trim panel, front

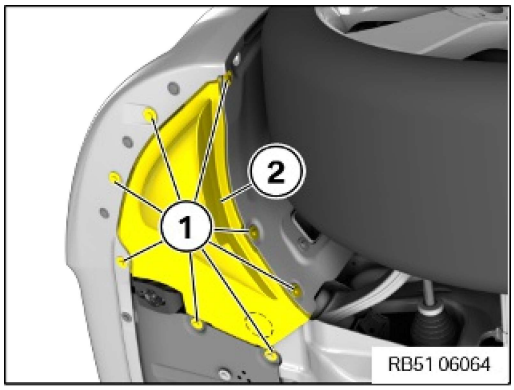
Thermoplastic hexagon screw		Tightening torque	2,6 Nm

32 – Install both lower front covers at the side

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install the lower front cover at the side**



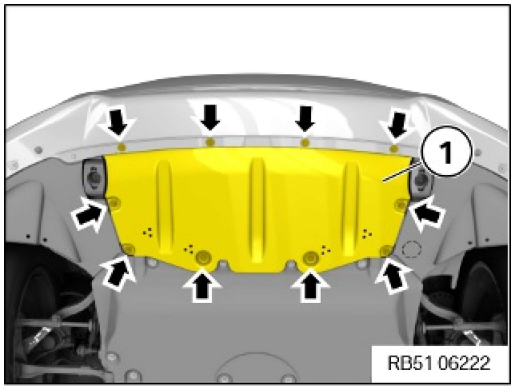
- Install front bottom side cover(2).
- Tighten the screws (1).

Cover, front bottom on side

Hexagon screw for thermoplastic		Tightening torque	3 Nm

33 – Installing the front underbody protection

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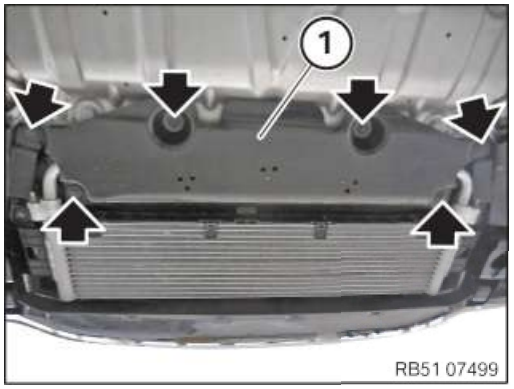
- **Version 1:**

  Feed in the front underbody protection (1) towards the front under the bumper panel and position.

  Tighten screws (arrows).

Underbody protection front

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm
Hexagon screw M6x20		Tightening torque	8 Nm



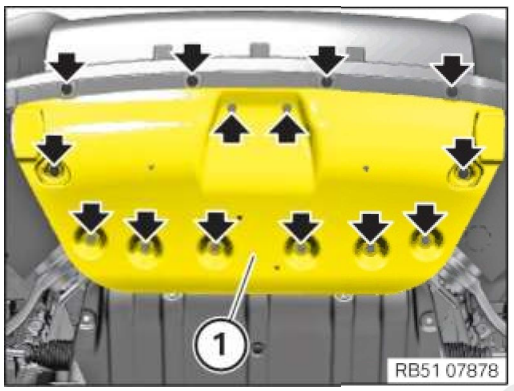
- **Version 2:**

  Feed in and position the front underbody protection (1).

  Tighten screws (arrows).

Underbody protection front

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm
Hexagon screw M6x20		Tightening torque	8 Nm



- **Version 3:**

  Feed in and install front underbody protection (1).

  Tighten screws (arrows).

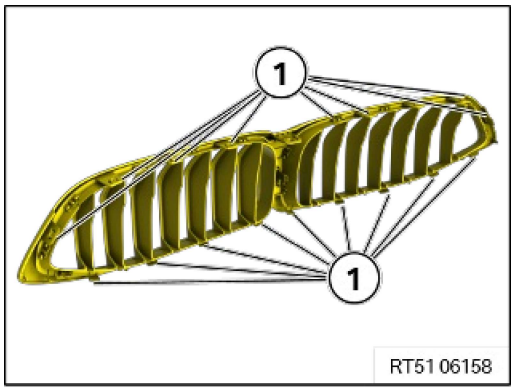
Underbody protection front

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm
Hexagon screw M6x20		Tightening torque	8 Nm

34 – Install centre radiator grille

NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.



Check

- Check latch mechanisms (1) for damage.

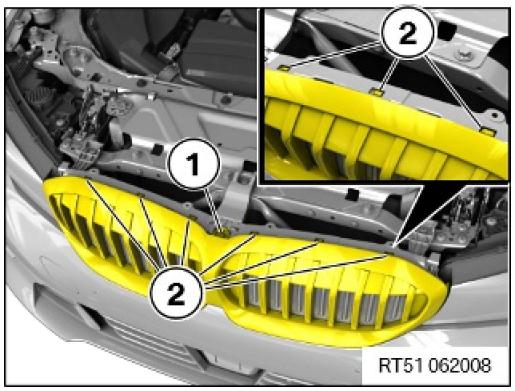
Result

» The latch mechanism (1) is damaged.

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Measure

- Renew the front ornamental grille, centre.

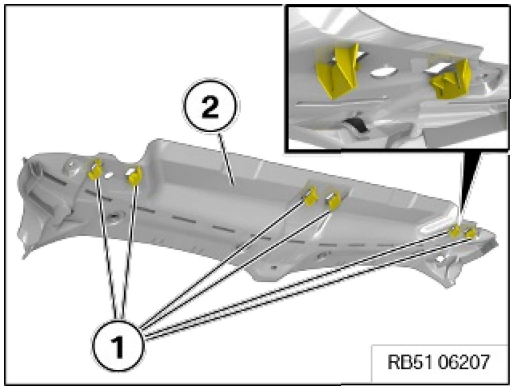


- Depending on the equipment, connect and lock connectors.
- Position the front ornamental grille, centre and clip in all latch mechanisms (2) from the front.
- Tighten down screw (1).

Centre of front ornamental grille to top air flap control

Oval-head screwM6		Tightening torque	4,6 Nm

35 – Installing cover for engine compartment centre



Check

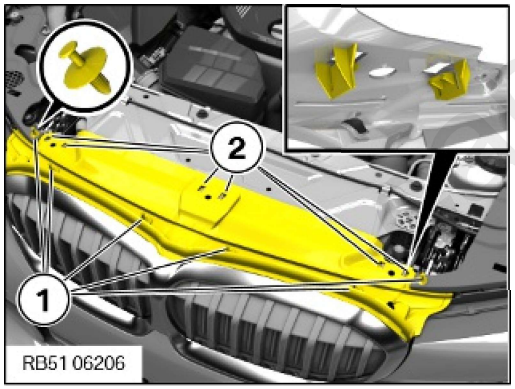
- Check latch mechanisms (1) of cover for engine compartment centre (2) for damage.

Result

» The latch mechanism (1) is damaged.

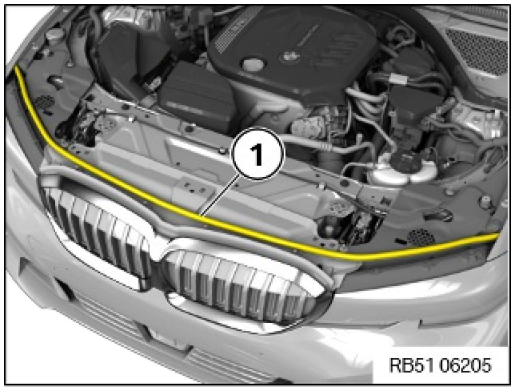
Measure

- Renew cover for engine compartment centre (2).



- Guide in the cover for the engine compartment centre from the rear and position it.
- Clip in the cover for the engine compartment centre with latch mechanisms (2).
- Mount all expanding rivets (1).

36 – Install the seal for the front bonnet



- Position the bonnet seal(1) and connect it on the mounting on the bumper and on the headlights.

37 – Adjusting headlights

TECHNICAL INFORMATION

Notes on headlight adjustment are a fundamental requirement for these repair instructions and must be complied with at all times.

For additional information see: 6310 ... Test prerequisite for adjusting headlights

NOTICE

Description is for left component only. Procedure on the right side is identical.



- If necessary, remove the cover over the adjusting screws for headlight adjustment.
- Adjust the height at the adjusting screw (1).
- **US version:** Set the lateral adjustment only if the plug on the adjusting screw for lateral adjustment is missing or damaged.

  Remove damaged plug if necessary (refer to additional information).
- Turn adjusting screw (2) for a correct lateral adjustment.
- **US version:** If the lateral adjustment has been checked or corrected: Renew plugs and push into the adjusting screw for the lateral adjustment **without damaging it** (see additional information).
- If necessary, fit a cover over the adjusting screws for headlight adjustment.

Additional Information

Overview of Tightening Torques

Brake air duct to front wheel arch cover of front section — Used in step 21

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

Vertical connection to deformation element — Used in step 21

Flat-head screw M6x20		Tightening torque	11,8 Nm

Bracing strut on support for top bumper panel — Used in step 22

Hexagon screw		Tightening torque	28 Nm

Strut on front end — Used in step 22

Hexagon screw		Tightening torque	28 Nm

Fanfare to support for bumper panel — Used in step 23

M6x20 screw		Tightening torque	8,8 Nm

Bottom air flap control on top bumper panel support — Used in step 25

Oval-head screw		Tightening torque	4,6 Nm

Air flap control to front end — Used in step 28

Oval-head screw with spring washer		Tightening torque	4,6 Nm

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Front bumper panel to front side panel — Used in step 29

Torx screw 5x35		Tightening torque	3 Nm

Front bumper panel to underbody protection — Used in step 29

Hexagon screw for thermoplastic		Tightening torque	2,6 Nm

Wheel arch trim panel, front — Used in step 31

Thermoplastic hexagon screw		Tightening torque	2,6 Nm

Cover, front bottom on side — Used in step 32

Hexagon screw for thermoplastic		Tightening torque	3 Nm

Underbody protection front — Used in step 33

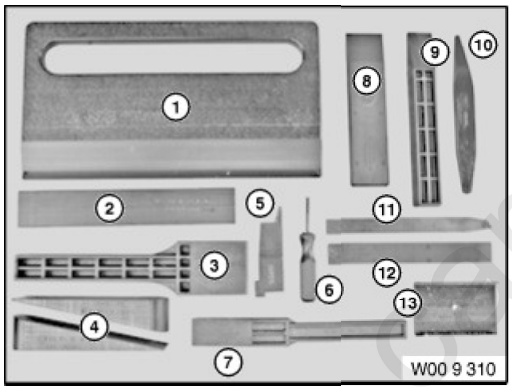
Hexagon screw for thermoplastic		Tightening torque	2,6 Nm
Hexagon screw M6x20		Tightening torque	8 Nm

Centre of front ornamental grille to top air flap control — Used in step 34

Oval-head screwM6		Tightening torque	4,6 Nm

Overview of Special Tools

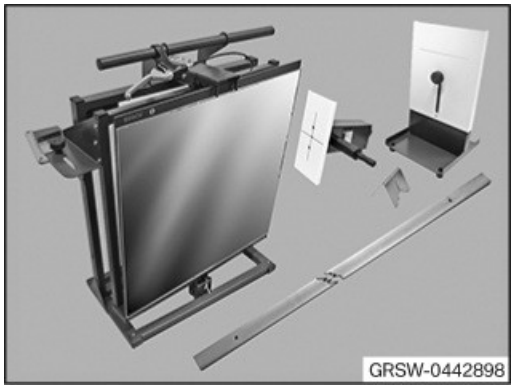
0 493 752 (00 9 329) Case



Common — Used in step 10

Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

0 442 898 Measuring device

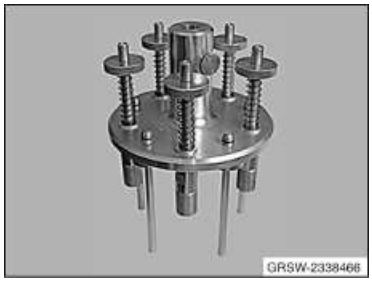


Common — Used in step 27

Usage	ACC adjusting device. Using this adjusting device, an ACC sensor built into the vehicle can be adjusted in the workshop. Prerequisite is a suitable measuring station.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	02 04 05 (208)

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2 338 466 Holder



Common	Used in step 27
Usage	Replacement for holder 36 1 100 (0493771). Holder has longer guide pins and lengthened magnetic guides.
Included in the tool or work	
Storage location	Individual
Replaced by	
In connection with	
SI-Number	

Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	126
61 20 900 Disconnecting and connecting battery earth lead	126
61 20 900 Disconnecting and connecting battery earth lead	126
61 20 900 Disconnecting and connecting battery earth lead	126
61 20 900 Disconnecting and connecting battery earth lead	126
61 20 900 Disconnecting and connecting battery earth lead	126
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	126
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	126
61 20 900 Disconnecting and connecting battery earth lead	126
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	126
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	126
61 20 900 Disconnecting and connecting battery earth lead	126
61 20 900 Disconnecting and connecting battery earth lead	126
61 20 900 Disconnecting and connecting battery earth lead	126
61 20 900 Disconnecting and connecting battery earth lead	126
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61 20 900 Disconnecting and connecting battery earth lead	126
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	126
61 20 900 Disconnecting and connecting battery earth lead	126
61 20 900 Disconnecting and connecting battery earth lead	126
61 20 900 Disconnecting and connecting battery earth lead	126
61 20 900 Disconnecting and connecting battery earth lead	126
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61 20 900 Disconnecting and connecting battery earth lead	126

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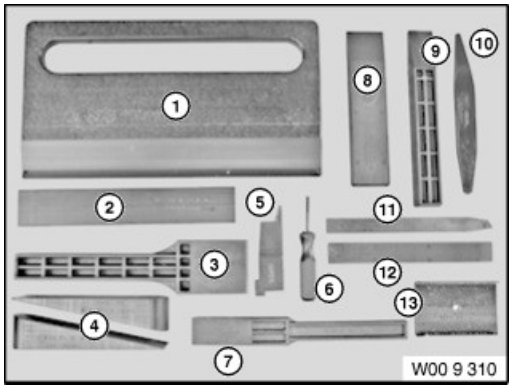
66 31 010 Instructions for ACC adjusting device 27
63 10 ... Test requirements for headlights vertical aim adjustment 37

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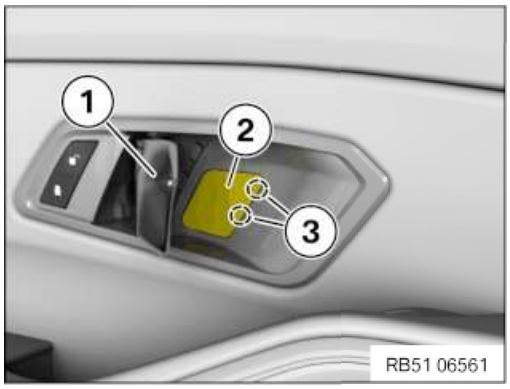
51 71 115 Replacing sealing on front left or right door

PRELIMINARY WORK

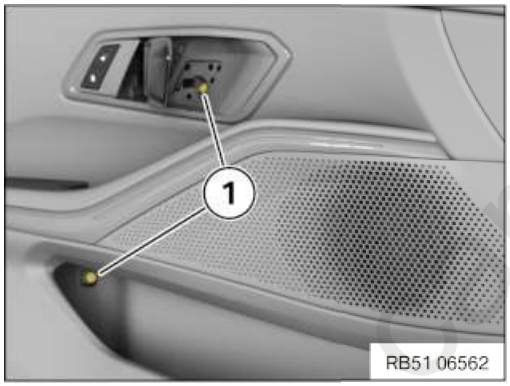
1 – Remove door trim panel



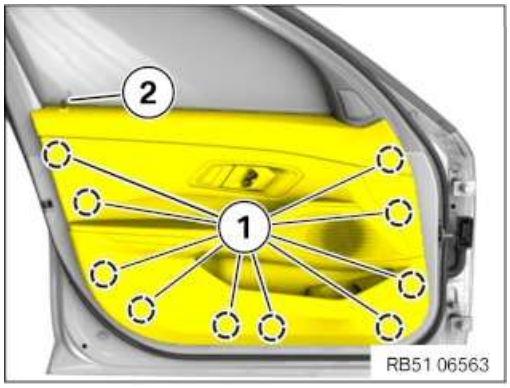
- Have the set of special tools 0 493 752 (00 9 329) ready.



- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

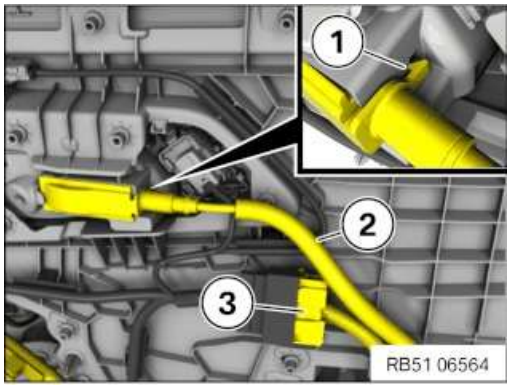


- Loosen screws (1).



- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).

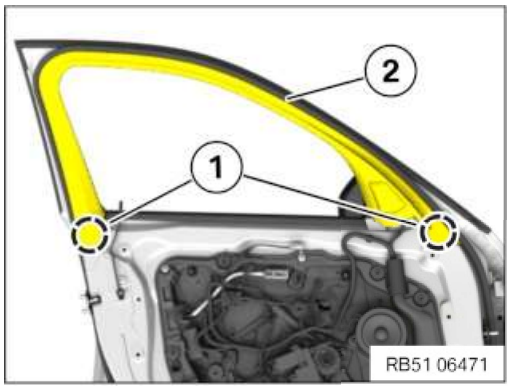
carsdiagn.com



- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

2 – Removing the cover on the window frame



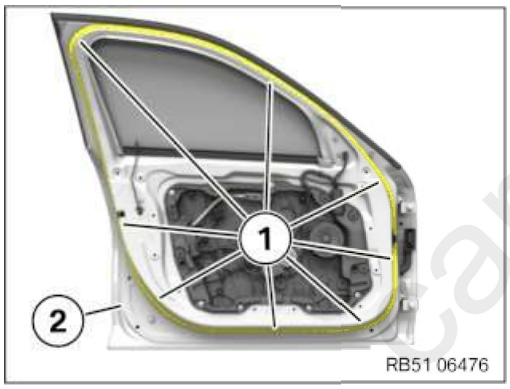
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Unclip clips (1).
- Release and remove the cover all around inner window frame (2), starting from the rear.
- If necessary, unlock and disconnect the plug connection on the speaker.

MAIN WORK

3 – Removing the sealing



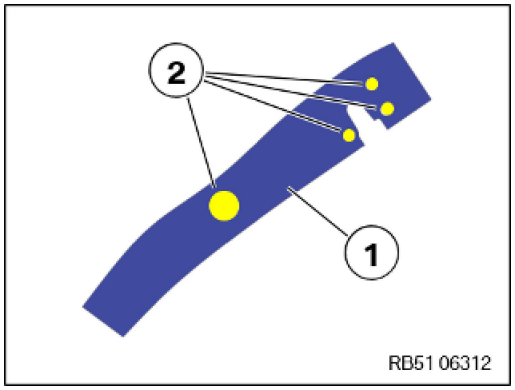
- Pull off the sealing (1) on the front door (2).

4 – Installing the seal

TECHNICAL INFORMATION

The repair instructions of bonded seals form the basis for these repair instructions and must be observed without fail.
For more information see: 54 10 ... Repair instructions for bonded seals

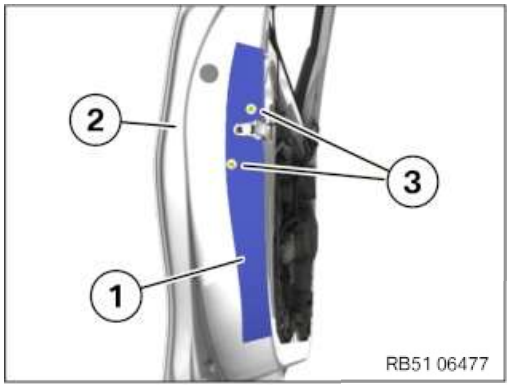
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NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

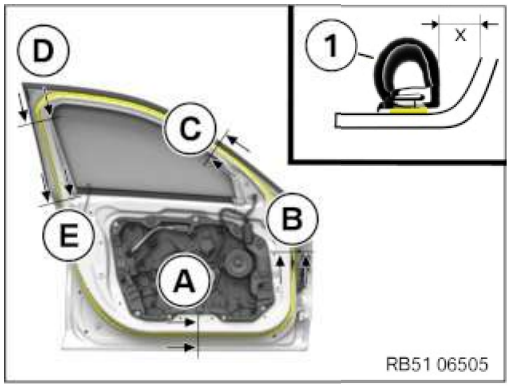
- Clean the bonding surfaces on the inner door panel with adhesive remover (sourcing reference: BMW Group Parts).
- If necessary, separate the pre-punched apertures (2) for the screws and the openings from the template (1).



- Prior to bonding, align the template (1) on the inner door panel (2).

  The edge of template (1) and the bending radius of inner door panel(2) must be in parallel.

  The marks or cut-outs (3) of template (1) must align with the respective bore hole on inner door panel (2).



- Hang the seal (1) over the door with the open lip facing inwards.
- Sealing joint in area (A) position.
- Glue seal as follows:
  - Gradually pull off protective film
  - Align sealing (1) to match the specified dimensions (X) or the template and press on it lightly
  - Check the position of the sealing (1) and correct if necessary
  - Do not overstretch or compress the sealing (1) when positioning it
  - Maximum permissible sag of the seal (1) during the positioning process is 30 mm
  - Always apply pressure perpendicular to the bonding surface to affix the sealing (1)
  - Affix sealing (1) with firm thumb pressure

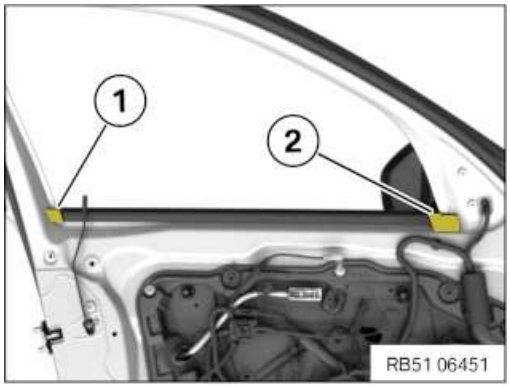
Area	Dimension X
A	16 mm
B	15 mm
C	5 mm
D	6 mm
E	41 mm

- Create a sealing joint in area (A), and shorten the seal (1) accordingly as needed.

POSTPROCESSES

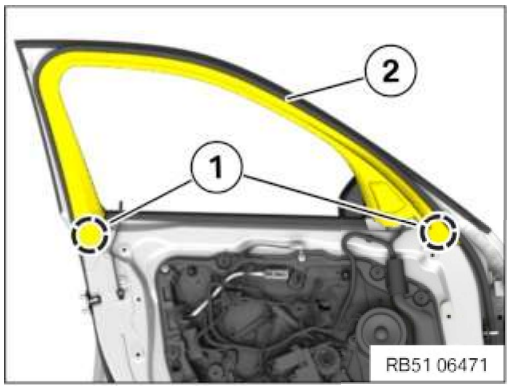
5 – Checking sealings for the inner weather strip

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- Check the sealings for inner weather strip (1) and (2) for damage and, if necessary, renew them.

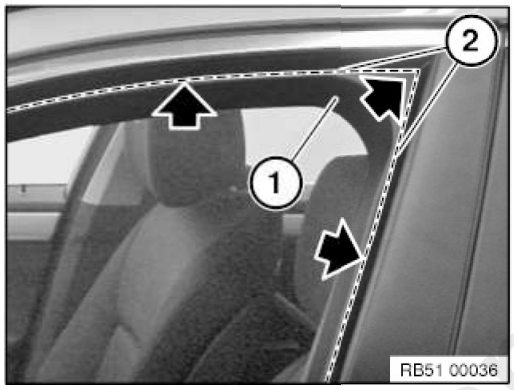
6 – Installing the cover on the inside of the window frame



NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

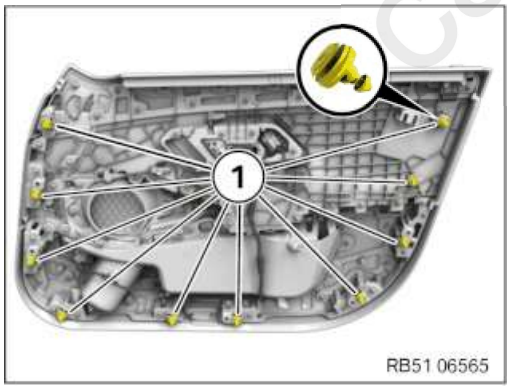
- If necessary, connect and lock the connector of the speaker.
- Guide in the cover all around the inner window frame (2) starting from the rear and position it correctly.
- Clip in clips (1).



- Insert the cover on the inner window frame (1) into the gap of the rubber window seal(2) .

  While doing so, pay attention to the correct position of the cover on the inner window frame (1) on the door seal.

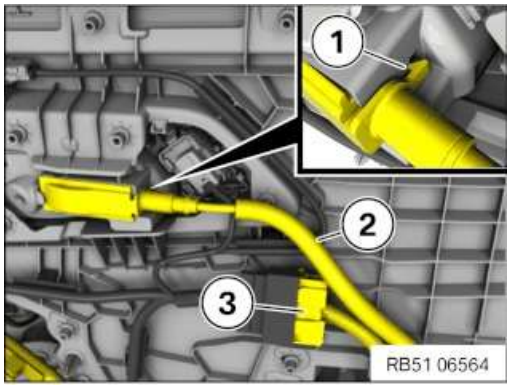
7 – Install door trim panel



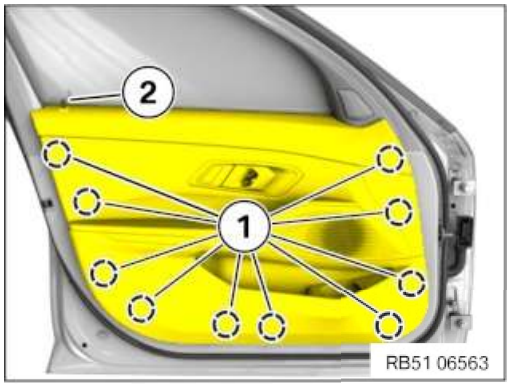
- Renew the clips (1).

  Parts: Clips

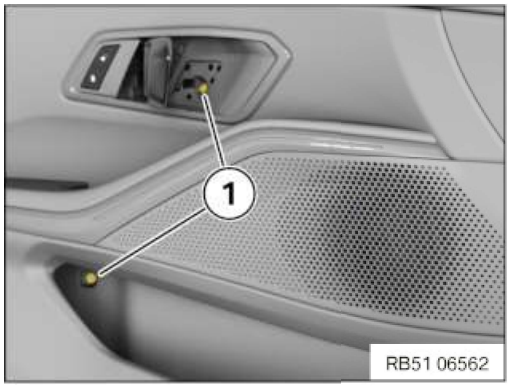
carcdiag.com



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



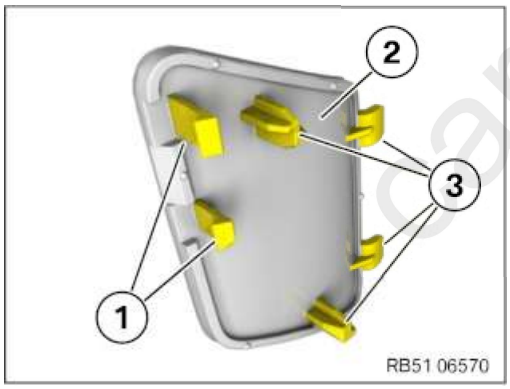
- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).



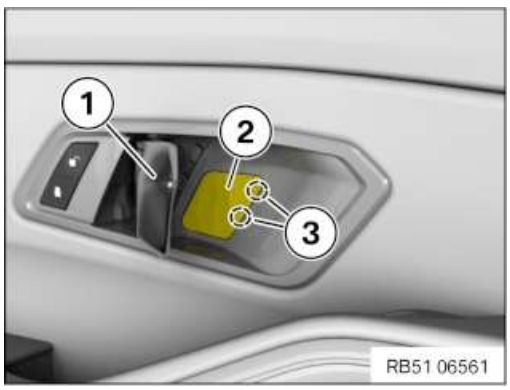
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

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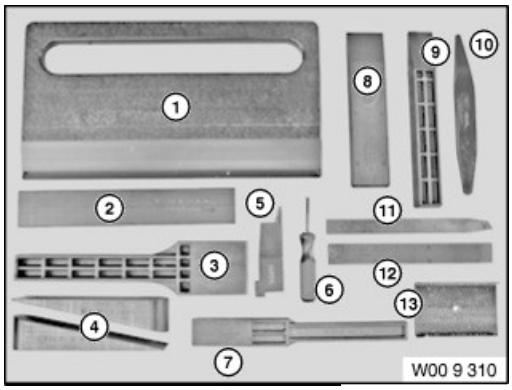
Overview of Tightening Torques

Door trim panel to door — Used in step 7

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

0 493 752 (00 9 329) Case



Common — Used in step 1

Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

Links

General repair instructions	Used in step
54 10 ... Repair notes for bonded seals	

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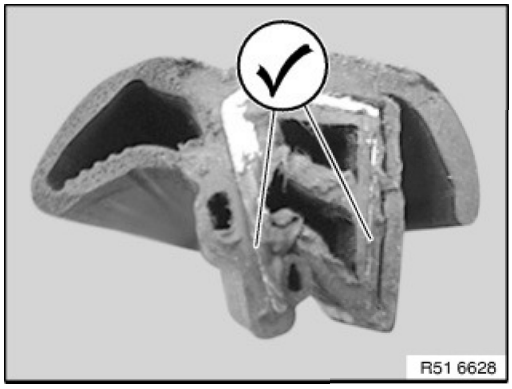
51 72 ... Sealing installation

Note:
The utmost care must be taken when removing all sealings on the vehicle. Incorrect fitting can lead to wind noise and water ingress among other things and can affect the ease of closing and opening.

The following instructions only apply to sealing without sealant.

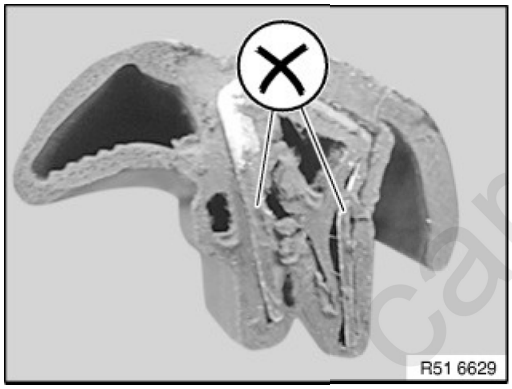
Sealings with sealant must be replaced each time they are disassembled.

Sealing surfaces must be cleaned.

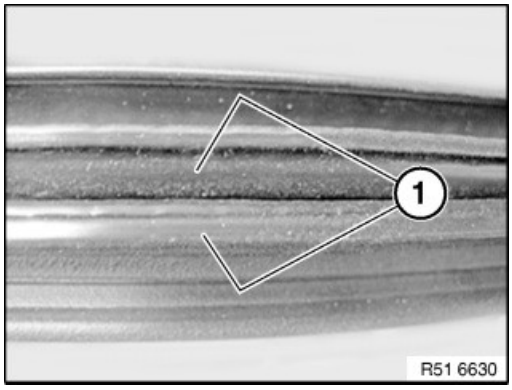


- <u>In general, the following applies:</u>

  Sealings on the side frame can be fitted and removed any number of times.
- Sealings must not be damaged or torn.
- The clamping surface must be compressed by hand far enough to ensure that a tight connection on the side flange is still possible. The sealing shanks may touch each other slightly. A completely compressed sealing is not permitted.

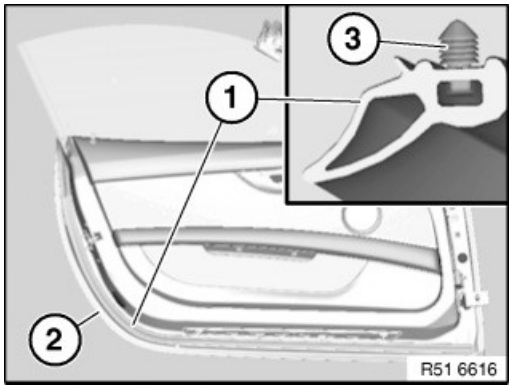


- It is not necessary to use special tools to compress the clamping surface. This can be done carefully by hand.
- The sealings must always be fitted except in the case of blockages. There is no defined contact pressure.
- A new gasket must be fitted if sealings in the tailgate area are repeatedly fitted and removed (water ingress due to cracked sheet metal).
- Sealings must be checked for correct fit after installation. If necessary, sealings should be lifted over the adjacent components using the appropriate tool. Neighbouring components must not be damaged.
- Sealings must be replaced if the metal inlay of the sealing is visible (corrosion).



- Ensure the clamping surface is even all round.

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- Sealings that are installed with plastic clips fit tightly against the body. If this is not the case, replace the clips or sealings.

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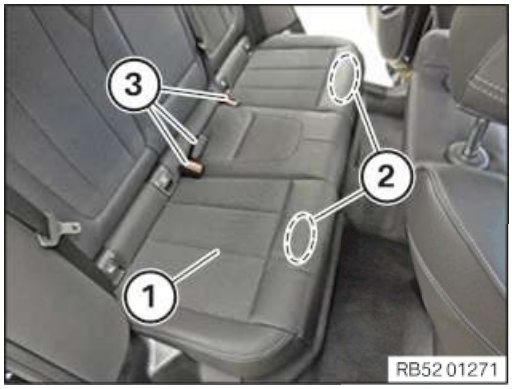
51 72 010 Replace edge protection for left or right rear door

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

1 – Removing seat bench



- Disengage the seat bench (1) in area (2) in an upward direction.
- Feed out the seat belt buckle (3) from the seat bench.

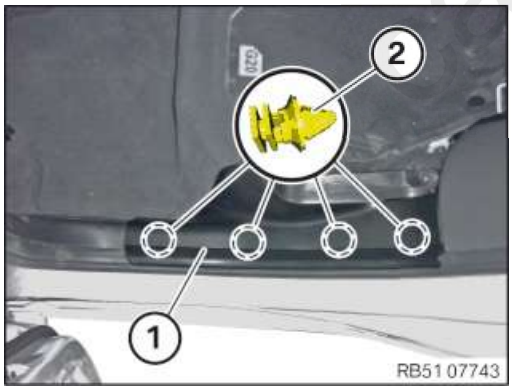


- Pull the seat bench (1) further forward.
- Release screw (2) on the end fitting and guide out belt (3).

Note: If there is a belt lock on the belt, the screw on the end fitting must not be released.

- If necessary, disconnect the present plug connections.
- Lift the seat bench (1) out of the vehicle.

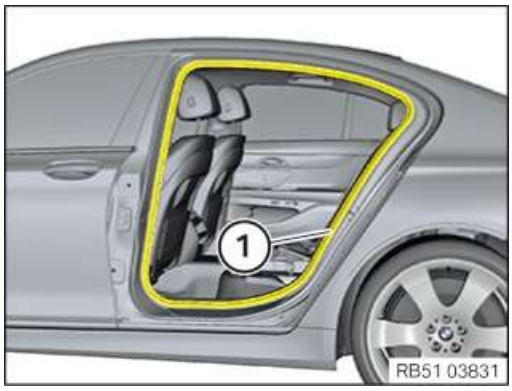
2 – Removing rear entrance cover strip



- Release the door sill cover strip (1) using the special tool 0 490 534 (00 9 317) from the clips (2) in the floor panel.
- If required, remove the clips (2) remaining in the body and mount them on the door sill cover strip.

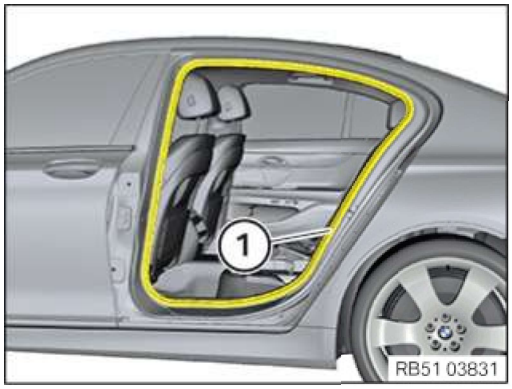
MAIN WORK

3 – Removing edge protection of rear door



- Pull off edge protection (1) along the perimeter.

4 – Install edge protection of the rear door

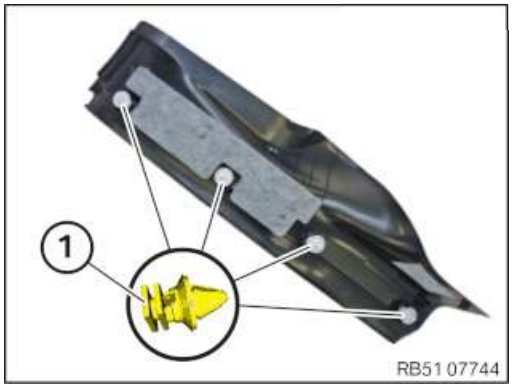


- Connect edge protection (1) along the perimeter.
- Make sure that the edge protection is positioned correctly at all adjacent parts.

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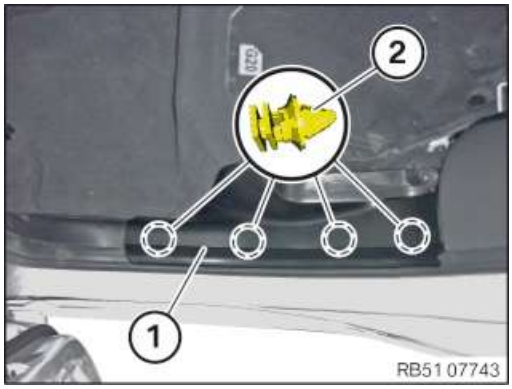
POSTPROCESSES

5 – Installing the rear door sill cover strip



- Check the clips (1) for damage.

  Replace broken for missing clips (1).



- Position the door sill cover strip (1) correctly and clip in at the clips (2).

6 – Installing rear seat bench



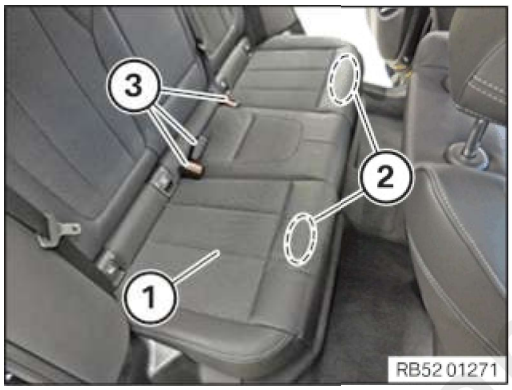
- Lift the seat bench (1) into the vehicle.
- Insert the seat belt (3).
- Renew the screw (2).

  Parts: Screw
- Tighten down screw (2).

Rear upper seat belt to bottom body

Screw	Renew screw.	Tightening torque	42 Nm

- Connect available connectors.



- Insert seat bench (1).
- Thread seat belt buckles (3) into the seat bench.
- Engage the seat bench (1) in the area (2).

Additional Information

Overview of Tightening Torques

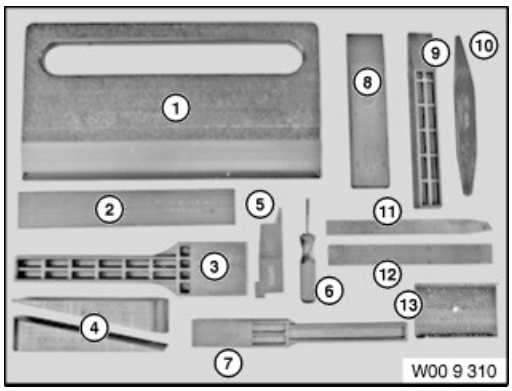
Rear upper seat belt to bottom body Used in step 6

Screw	Renew screw.	Tightening torque	42 Nm

Overview of Special Tools

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0 490 534 (00 9 317) Wedge



Common	Used in step 2
Usage	(Trim wedge) Replaced by special tool 00 9 325 from 11/2008 (quality improvement due to new material) Replaced by 00 9 325 (0 496 569)
Included in the tool or work	0 490 527
Storage location	
Replaced by	
In connection with	
SI-Number	

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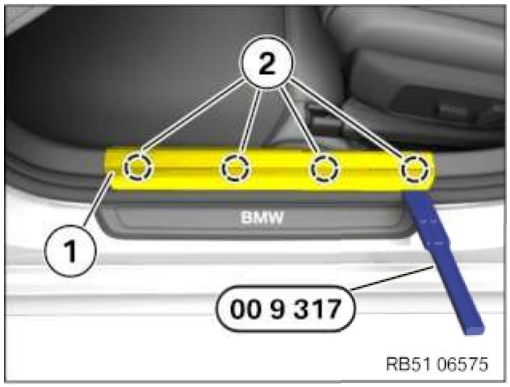
51 72 000 Replacing edge protection for left or right front door

NOTICE

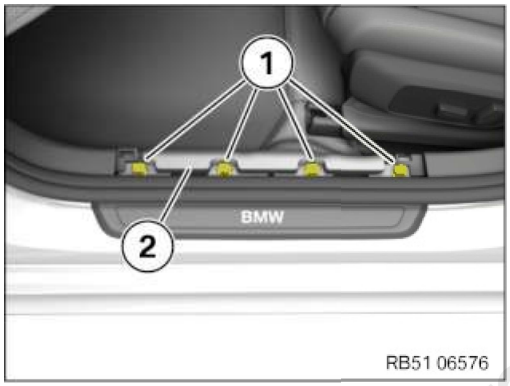
Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

1 – Remove door sill cover strip



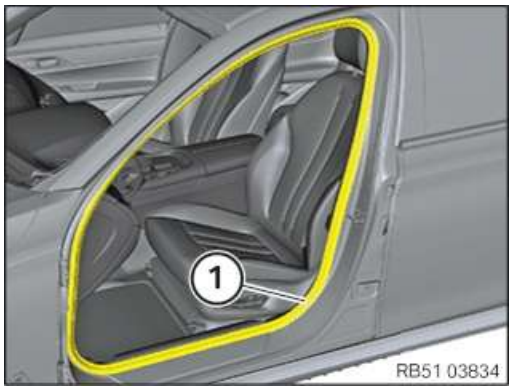
- Detach the door sill cover strip(1) using the special tool 0 490 534 (00 9 317) from the clips (2) in the floor panel.



- If necessary, remove the clips (1) from the floor panel (2) and attach to the door sill cover strip.

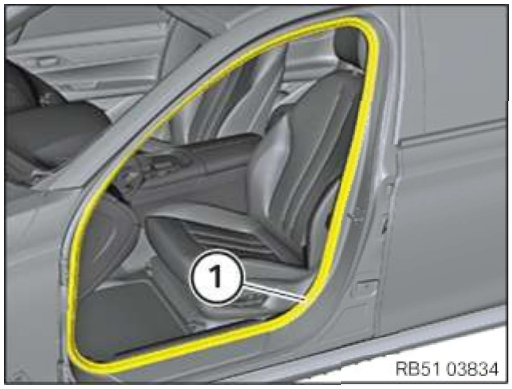
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2 – Remove edge protection of the front door



- Pull off edge protection (1) along the perimeter.

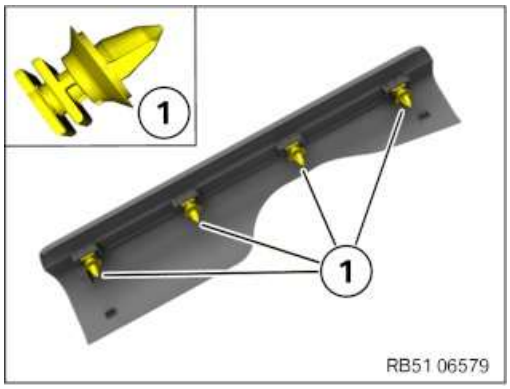
3 – Install edge protection of front door



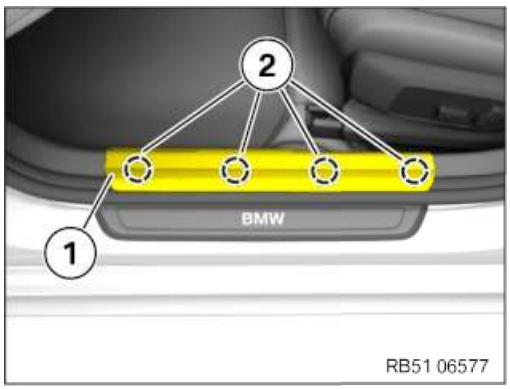
- Connect the edge protection (1) along the perimeter, starting at the bottom centre.

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4 – Install the door sill cover strip



- Check the clips (1) for damage and renew if necessary.



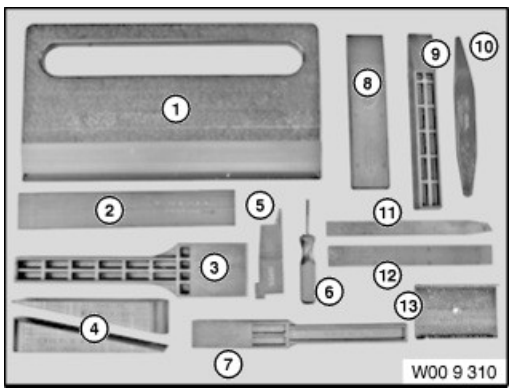
- Clip the door sill cover strip (1) into the floor panel with the clips (2).

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Additional Information

Overview of Special Tools

0 490 534 (00 9 317) Wedge



Common	Used in step 1
Usage	(Trim wedge) Replaced by special tool 00 9 325 from 11/2008 (quality improvement due to new material) Replaced by 00 9 325 (0 496 569)
Included in the tool or work	0 490 527
Storage location	
Replaced by	
In connection with	
SI-Number	

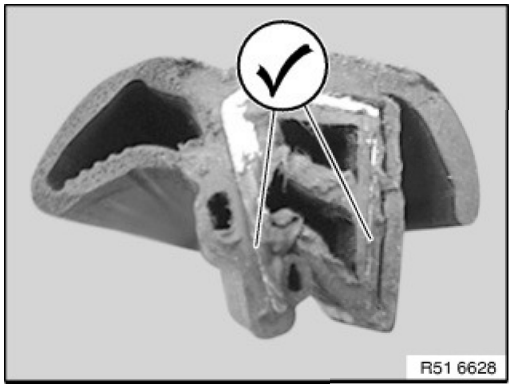
51 72 ... Sealing installation

Note:
The utmost care must be taken when removing all sealings on the vehicle. Incorrect fitting can lead to wind noise and water ingress among other things and can affect the ease of closing and opening.

The following instructions only apply to sealing without sealant.

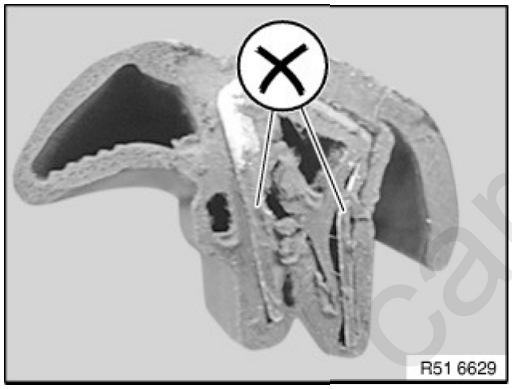
Sealings with sealant must be replaced each time they are disassembled.

Sealing surfaces must be cleaned.

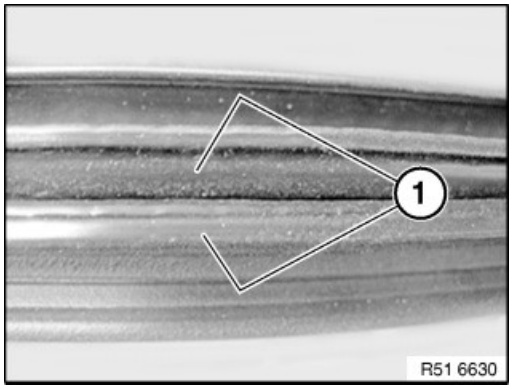


- <u>In general, the following applies:</u>

  Sealings on the side frame can be fitted and removed any number of times.
- Sealings must not be damaged or torn.
- The clamping surface must be compressed by hand far enough to ensure that a tight connection on the side flange is still possible. The sealing shanks may touch each other slightly. A completely compressed sealing is not permitted.

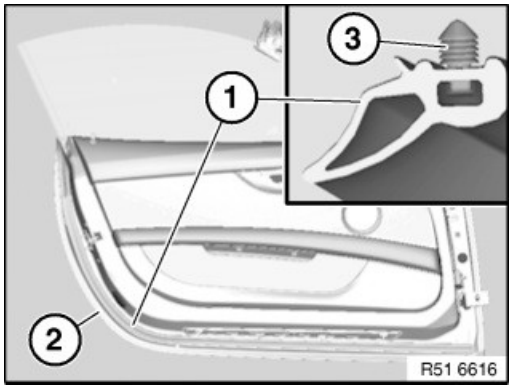


- It is not necessary to use special tools to compress the clamping surface. This can be done carefully by hand.
- The sealings must always be fitted except in the case of blockages. There is no defined contact pressure.
- A new gasket must be fitted if sealings in the tailgate area are repeatedly fitted and removed (water ingress due to cracked sheet metal).
- Sealings must be checked for correct fit after installation. If necessary, sealings should be lifted over the adjacent components using the appropriate tool. Neighbouring components must not be damaged.
- Sealings must be replaced if the metal inlay of the sealing is visible (corrosion).



- Ensure the clamping surface is even all round.

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- Sealings that are installed with plastic clips fit tightly against the body. If this is not the case, replace the clips or sealings.

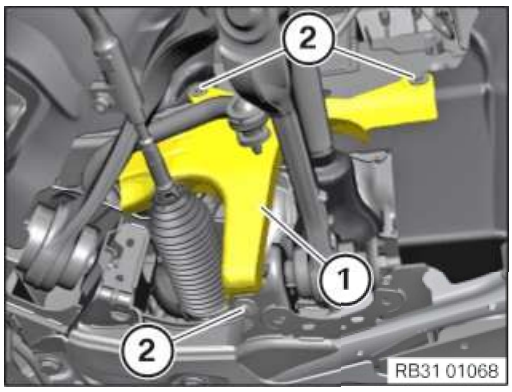
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51 75 010 Removing and installing/replacing left or right steering assembly cover

NOTICE

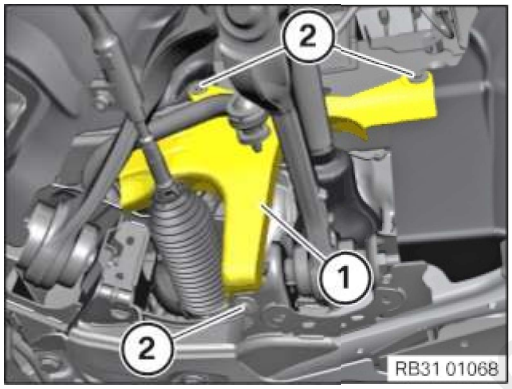
Description is for left component only. Procedure on the right side is identical.

1 – Remove the cover of the steering assembly



- Loosen screws (2).
- Remove the cover (1).

2 – Install the cover of the steering assembly



- Position the cover (1).
- Tighten the screws (2).

Cover, steering unit

Screw	Tightening torque	3 Nm

Additional Information

Overview of Tightening Torques

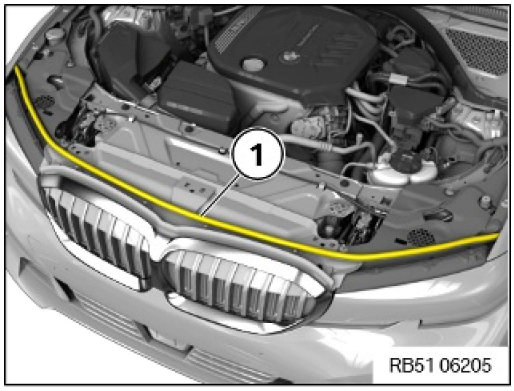
Cover, steering unit Used in step 2

Screw		Tightening torque	3 Nm

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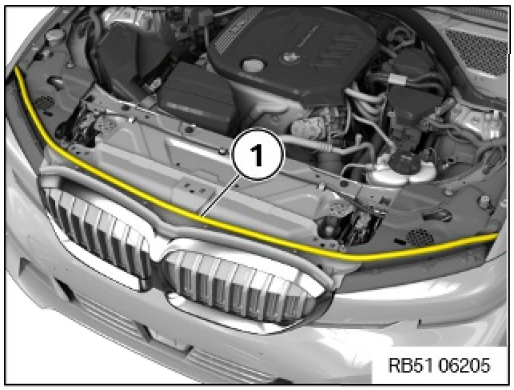
51 76 031 Removing and installing/replacing the bonnet sealing at the front

1 – Remove the seal for the bonnet in front



- Pull off front bonnet seal (1) upwards.

2 – Install the seal for the front bonnet



- Position the bonnet seal(1) and connect it on the mounting on the bumper and on the headlights.

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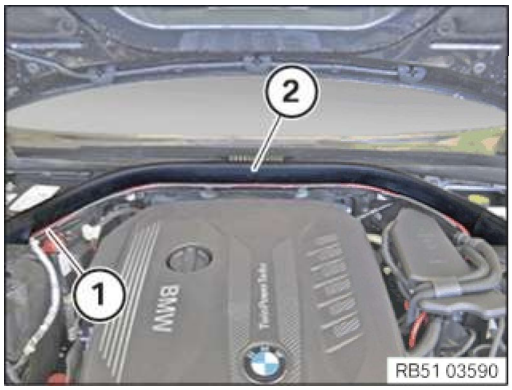
51 76 030 Removing and installing/replacing the bonnet sealing at the rear

1 – Remove the seal for the rear bonnet



- Feed the cable (1) out of the brackets toward the front.
- Remove the rear bonnet seal (2) from the guide toward the inside.

2 – Install the seal for the bonnet



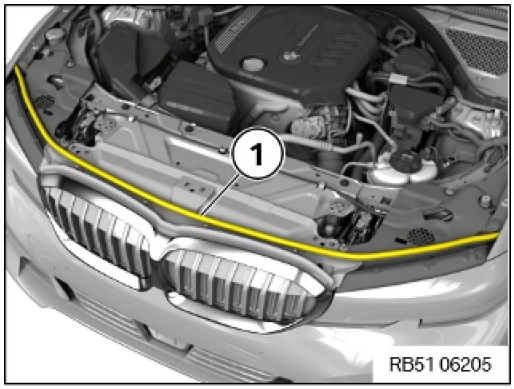
- Press the rear bonnet seal (2) into the guide.
- Feed in cable (1) into the brackets.
- Check that the rear bonnet seal (2) and the cable (1) are seated correctly.

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51 76 070 Replace centre engine compartment cover

PRELIMINARY WORK

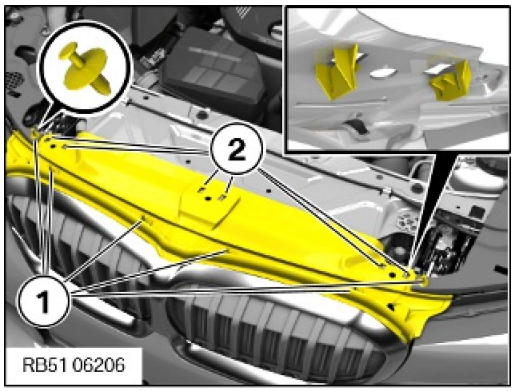
1 – Remove the seal for the bonnet in front



- Pull off front bonnet seal (1) upwards.

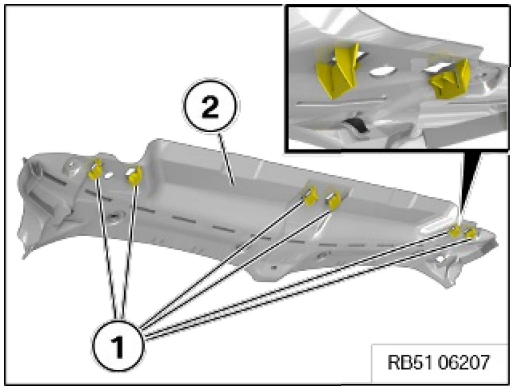
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2 – Removing the centre engine compartment cover



- Detach all expanding rivets (1).
- Release the cover of the centre engine compartment with the latch mechanisms (2) .
- Feed the cover for the centre engine compartment out to the rear.

3 – Installing cover for engine compartment centre



Check

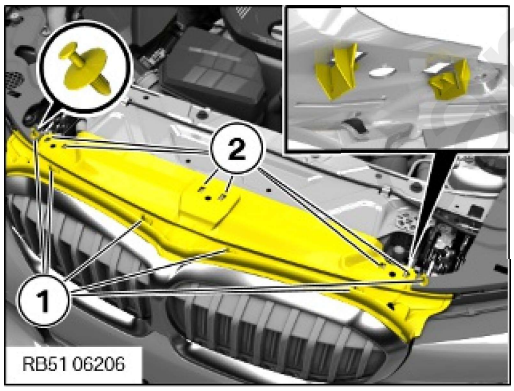
- Check latch mechanisms (1) of cover for engine compartment centre (2) for damage.

Result

» The latch mechanism (1) is damaged.

Measure

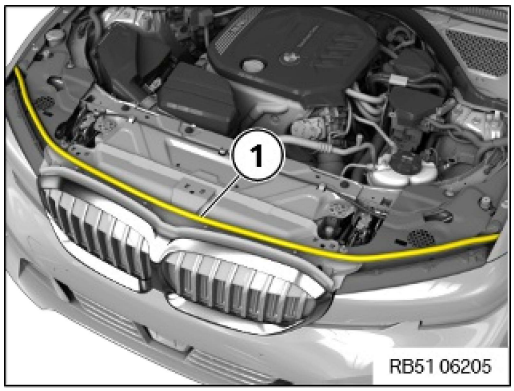
- Renew cover for engine compartment centre (2).



- Guide in the cover for the engine compartment centre from the rear and position it.
- Clip in the cover for the engine compartment centre with latch mechanisms (2).
- Mount all expanding rivets (1).

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4 – Install the seal for the front bonnet



- Position the bonnet seal(1) and connect it on the mounting on the bumper and on the headlights.

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51 76 046 Replacing the tailgate seal

PRELIMINARY WORK

1 – Removing the trim panel for the rear left and right water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Unclip the trim panel for the water channel (1) with the special tool 0 496 569 (00 9 325).

MAIN WORK

2 – Removing the seal for the tailgate



- Pull gasket (1) off beginning from the sealing joint (2) to the back.

3 – Installing the seal for the tailgate



- Remove remnants of the sealant from the sheet metal flange.
- Clean the sheet metal flange.
- Renew the seal for the tailgate (1).

  Parts: Seal for the tailgate
- Mount the seal for the tailgate (1) beginning from the top centre.

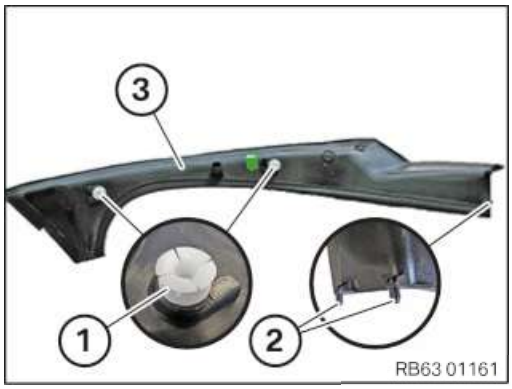
  Make sure that sealing joint (2) is at indicated position.
- Ensure that the seal for the tailgate (1) is positioned correctly against all the adjacent trim panel components.

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4 – Installing the trim panel for the rear left and right water channel

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Check the clips (1) and guides (2) on the trim panel for the water channel (3) for damage.



- Clip in the trim panel for the water channel (1).

Additional Information

Overview of Special Tools

0 496 569 (00 9 325) Wedge

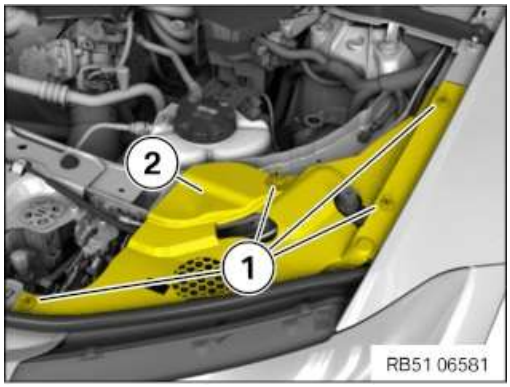


Common	Used in step 1
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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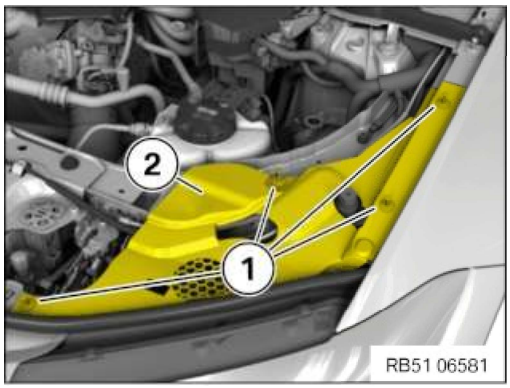
51 76 071 Replacing the top left engine compartment cover

1 – Remove the cover in the engine compartment on top



- Loosen the expanding rivet (1).
- Remove the cover in the engine compartment on top (2) partially.

2 – Install the cover in the engine compartment on top



- Install the cover in the engine compartment on top (2).
- Secure expanding rivet (1).

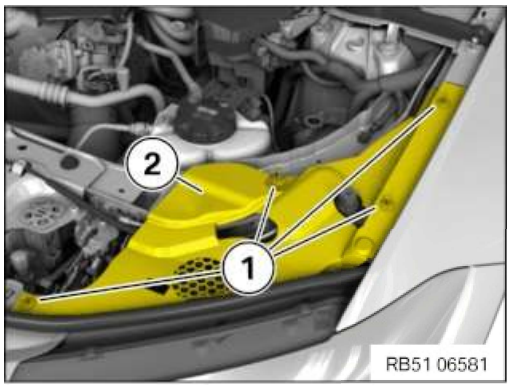
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51 76 072 Replacing the top right engine compartment cover

1 – Remove the cover in the engine compartment on top

NOTICE

Description is for left component only. Procedure on the right side is identical.



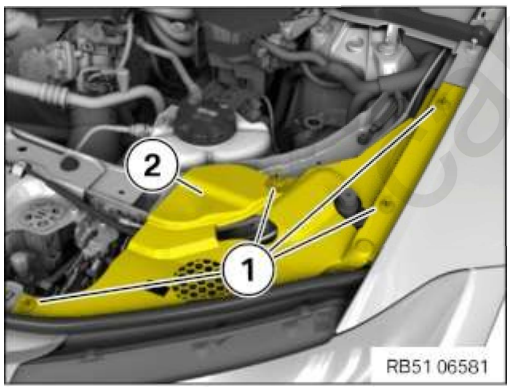
▸ **Remove the cover in the engine compartment on top**

- Loosen the expanding rivet (1).
- Remove the cover in the engine compartment on top (2) partially.

2 – Install the cover in the engine compartment on top

NOTICE

Description is for left component only. Procedure on the right side is identical.



▸ **Install the cover in the engine compartment on top**

- Install the cover in the engine compartment on top (2).
- Secure expanding rivet (1).

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61 00 ... Parking-residing-driving

Vehicles of the G series feature a new type of terminal control:

Functional description of the parking-residing-driving terminal control

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