41 00 ... 0 Contents of Body, General

Before beginning repair work
- Checking the body for damage (e.g. following an accident)

General notes
- Quality standard
- Workshop equipment

Safety regulations
- Safety at work
- Information on hazards
- Information on vehicle protection

Material/new part
- Materials science
- Expendable materials

Handling components
- Electrical system, electronics and optical fibre
- Vehicles with hybrid/electric drive
- Flood damage
- Passive safety
- Seats/seat belts
- Chassis and suspension and steering
- Wheel rim repairs
- Retractable hardtop
- Headlight repairs

Cavity sealing
- Installation of shaped parts
- Position of shaped parts

Vehicle identification number
- General notes

Repair method
- Repair stage 1a

  BMW/MINI/BMW i
  - Replacement of screwed-on components
- Repair stage 1b

  BMW/MINI/BMW i
  - Repairs to outer skin
- Repair stage 2

  BMW/MINI
  - Bonding and riveting
  - Welding using a MAG welder
  - **without** straightening bench

  BMW i
  - Repairs to life module
  - Repairs to drive module
  - **without** straightening bench
- Repair stage 3

  BMW/MINI
  - Bonding and riveting
  - Welding using a spot welding system
  - **with** a straightening bench

  BMW i
  - Repairs to life module
  - Repairs to drive module
  - **with** a straightening bench

Corrosion protection
- General notes

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Paint

- General notes
- Information / warning labels

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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 ... 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.

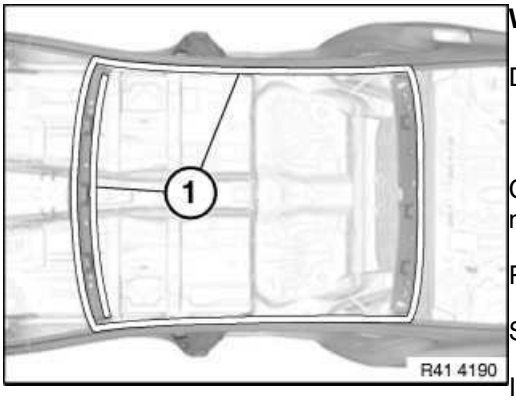
Bonding surfaces must be completely dry.

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.

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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 4.2Â mm and insert screws.
- Seal EMC screws with PU sealing material (risk of corrosion).

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41 00 ... Enter vehicle identification number

Special tools required:

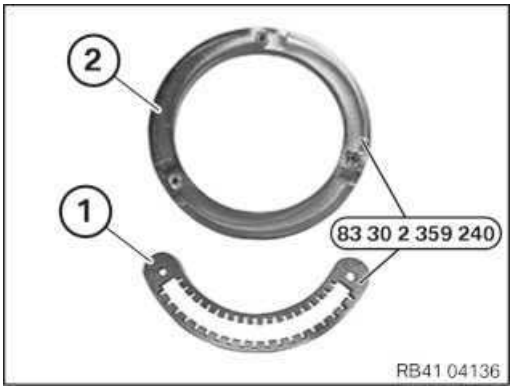
- 83 30 2 359 240

Note:
If the stamped vehicle identification number is removed during a repair, it must be stamped in again.

Read and comply with General Notes.

Necessary preliminary tasks:

- Remove front right spring strut.

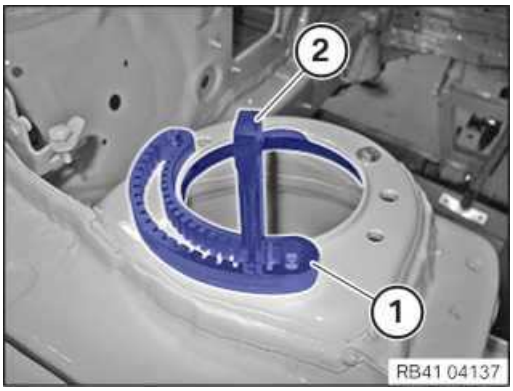


Set of special tools 83 30 2 359 240 for stamping vehicle identification number consists of:

Guide plate (1)

Counter-support plate (2)

Bolts



Position counter-support plate on spring strut from bottom.

Position guide plate (1) on spring strut support plate from top and screw to counter-support plate.

Insert punch numbers (2) individually into guide plate and stamp vehicle identification number.

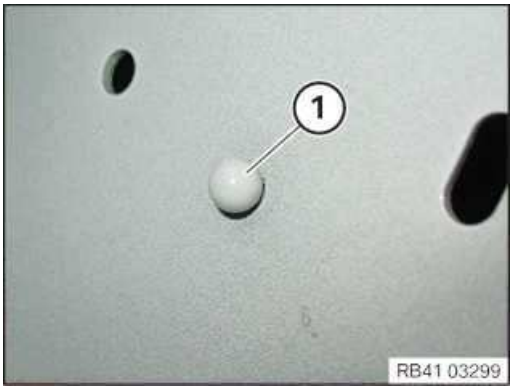
Note:
In the event of component or body replacement by the workshops/garages, clearly delimit the vehicle identification number at front and rear by stamping a "+" in place of the BMW symbol.

Note national regulations.

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41 00 513 Fix bolts on the new part

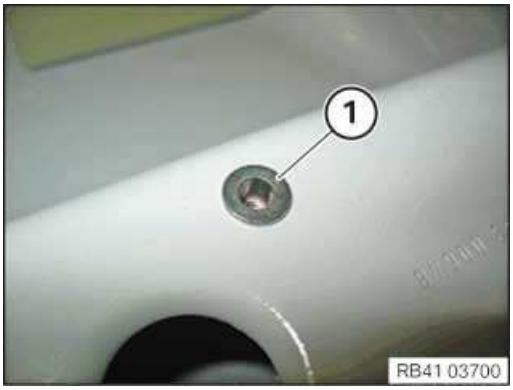
Note: On BMW and MINI bodies, various welded and pushed in bolts are being used.



Single ball/double ball (version 1):

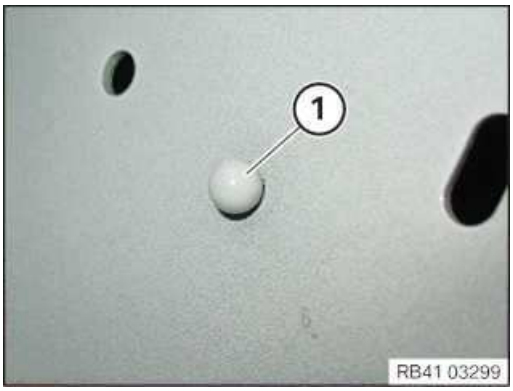
Grind off any residues of the single ball (1), if applicable.

Drill hole with diameter 7 mm.



Set blind rivet nut (1).

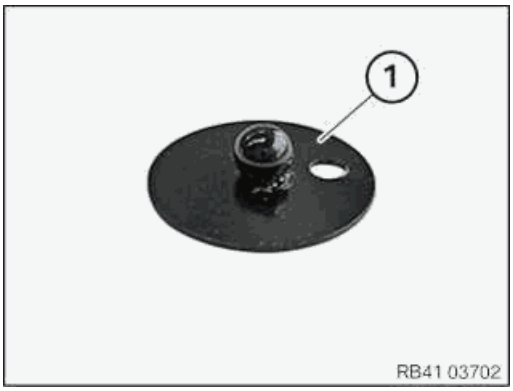
Screw in single ball with thread until a height of 5 mm (double ball 10 mm) is reached.



Single ball/double ball (version 2):

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

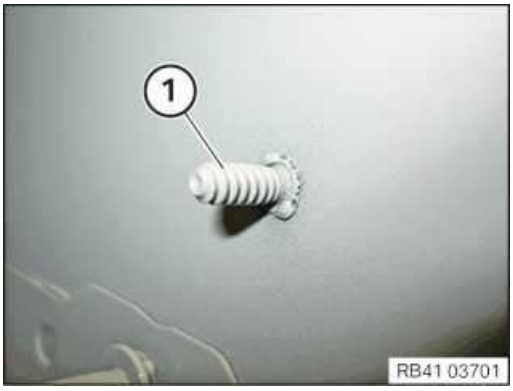
Clean area with solvent cleaner R1.



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

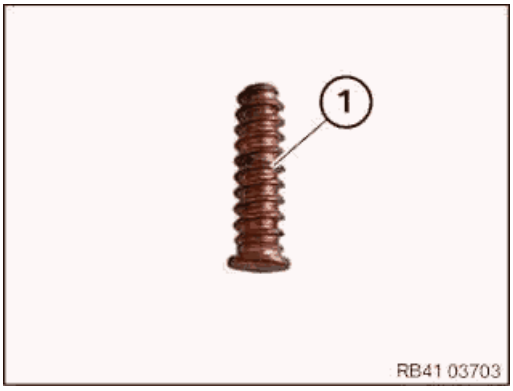
Bond repair element optionally with adhesive K1, K5 or window pane adhesive at the same position.

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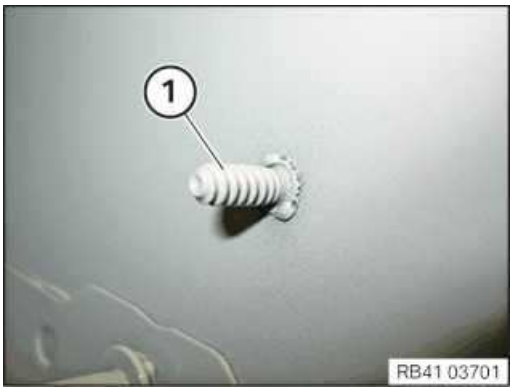


Coarse threaded bolt (version 1):

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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41 00 ... Frame reference dimension, body

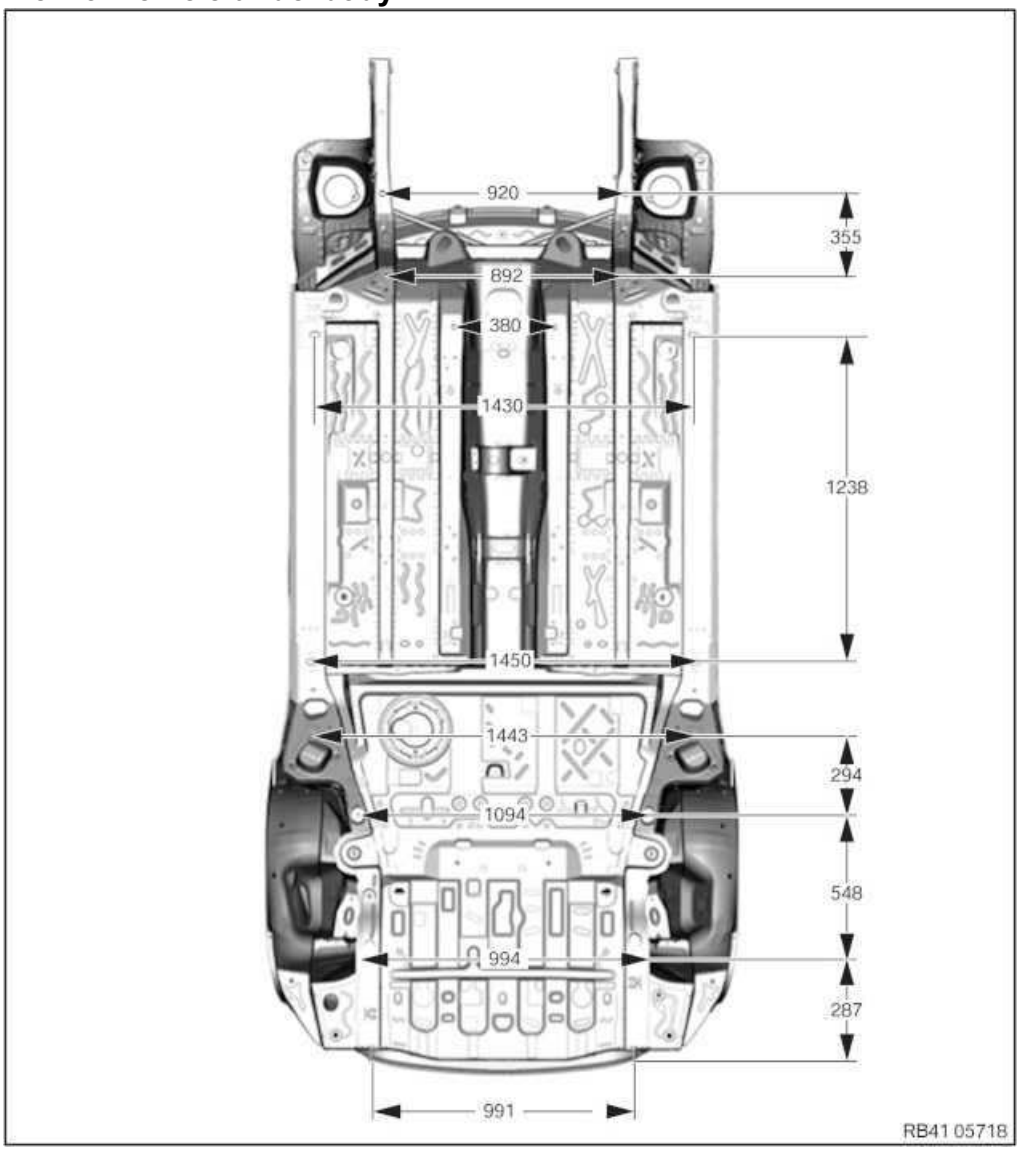
Dimensions in mm.

Dimension tolerances:

- ≤ 1000 mm ± 1.5 mm
- ≥ 1000 mm ± 2.5 mm

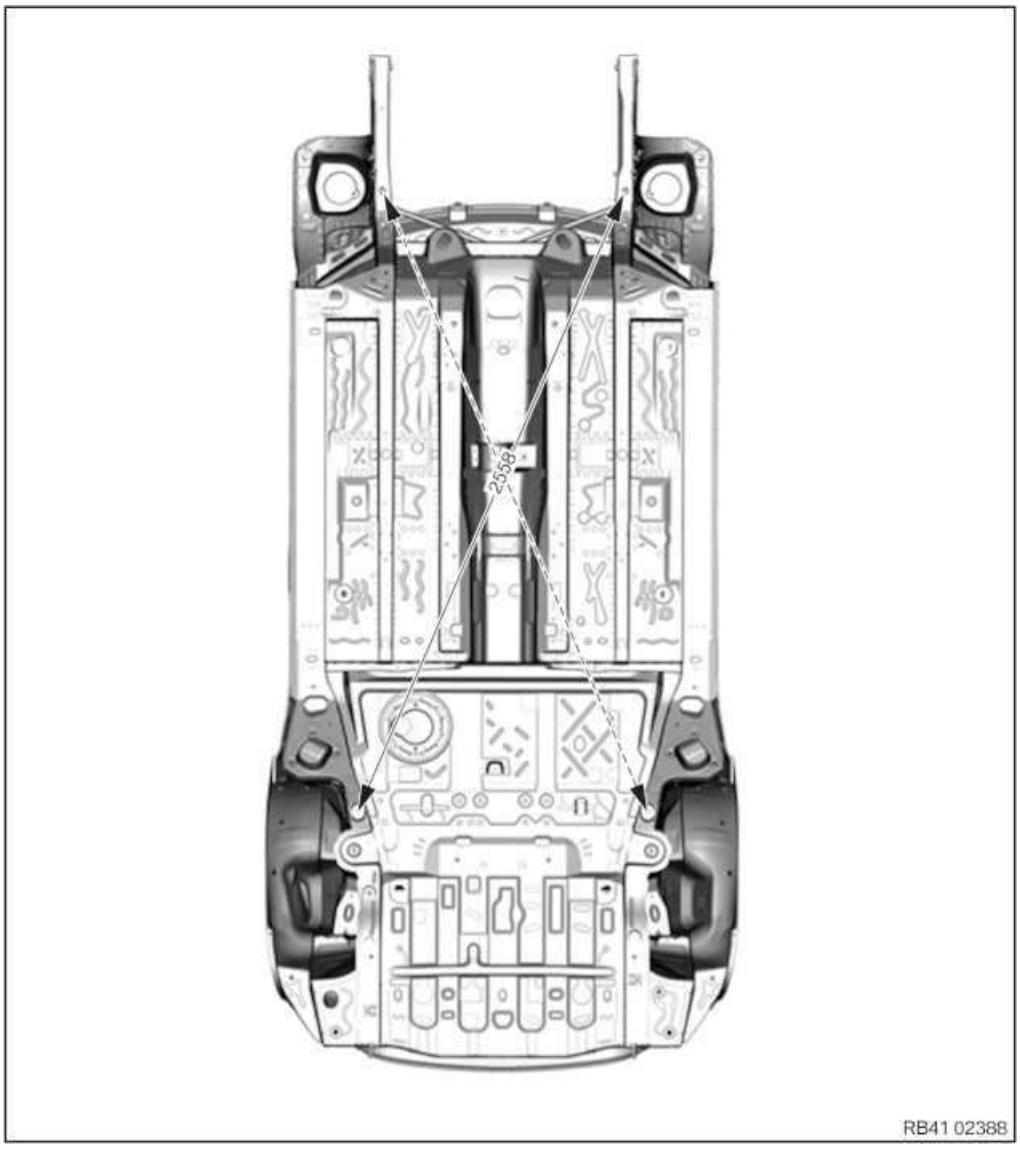
The checkpoints shown serve to check the body and the set of attachments.

View of vehicle underbody 1

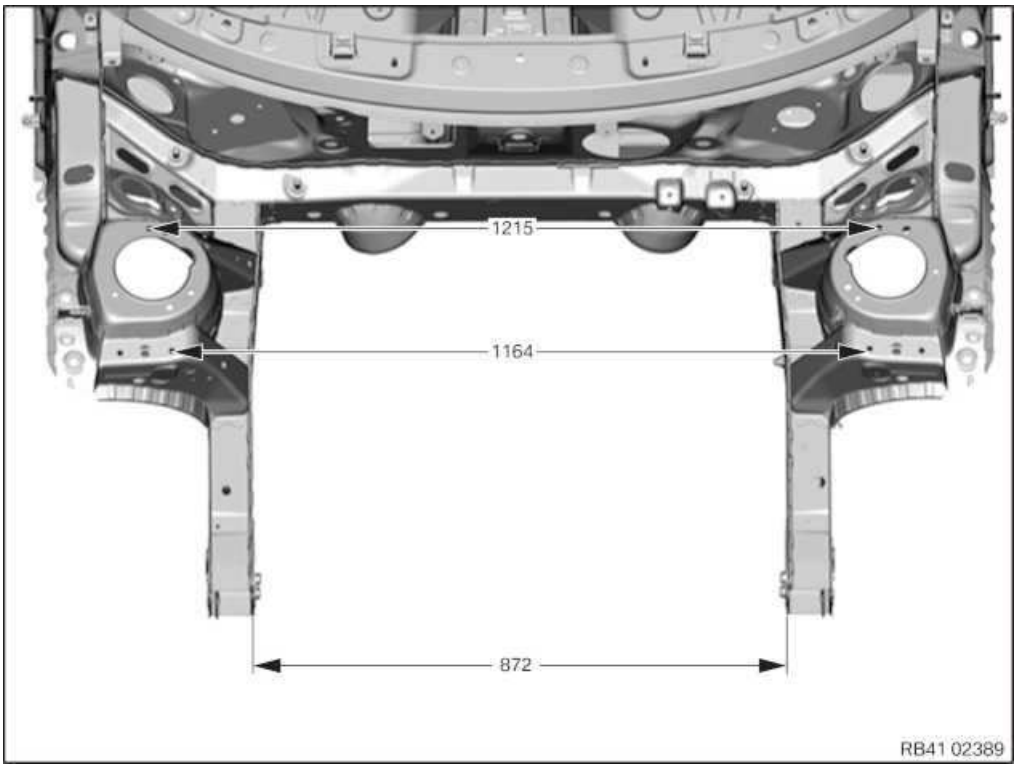


View of vehicle underbody 2

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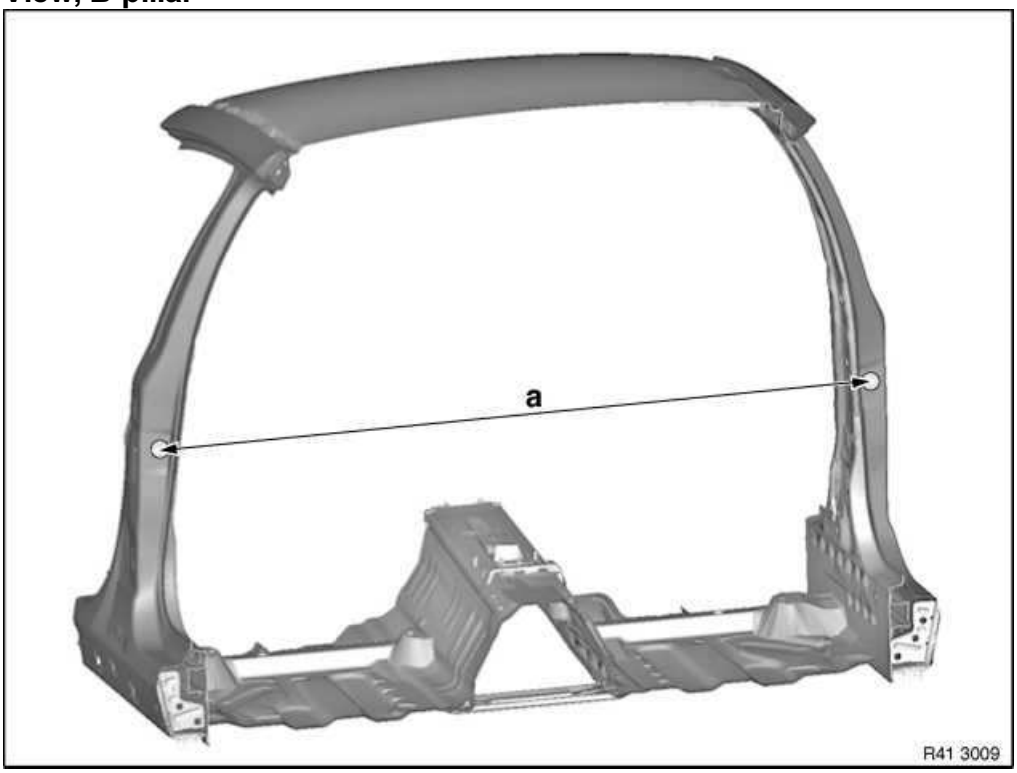


Front end view



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View, B-pillar



Measurement a=1542 mm between screw-on points of door brakes.

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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.

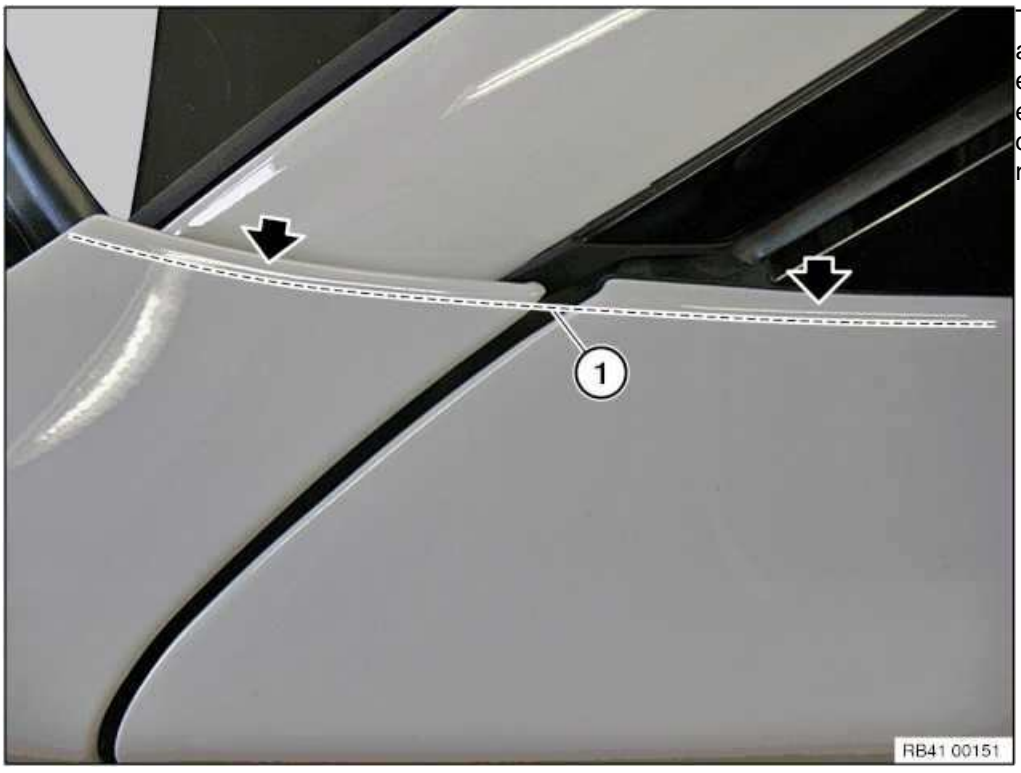
2. Procedure for applying labels:

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.

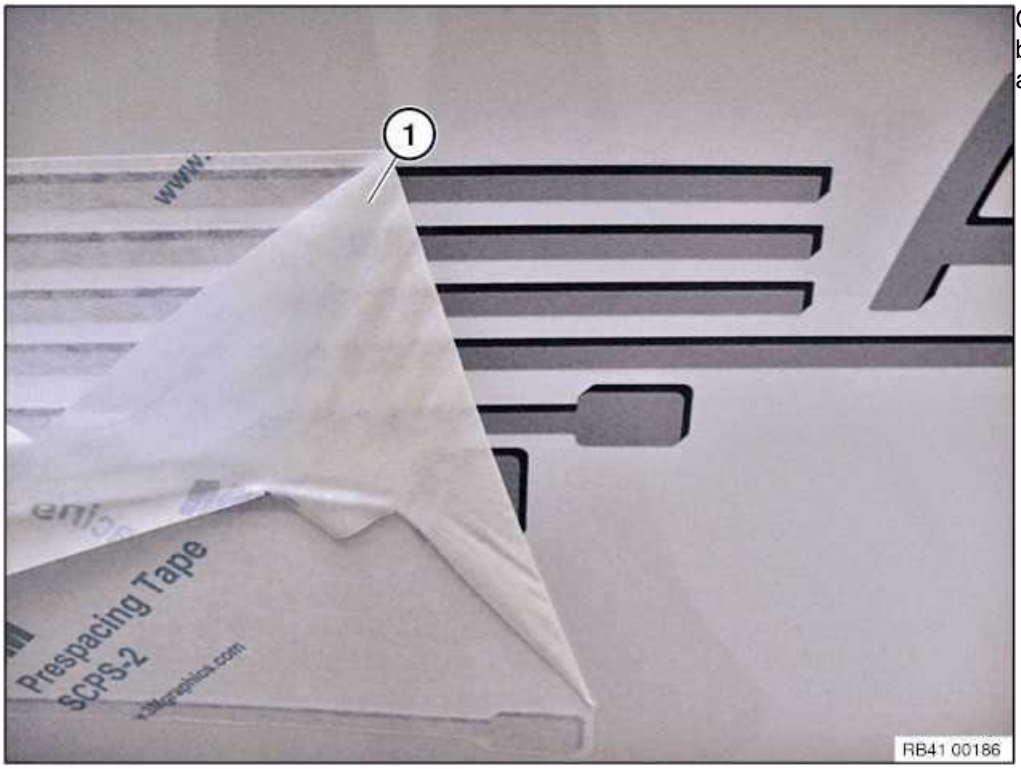
Pull off the remaining protective film and press down the adhesive film from front to rear and from inside to outside.

If faults are made in applying the adhesive film, it can be pulled off and repositioned several times. When no

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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 (StartÂ 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 ServiceÂ 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.Â g. tyre pressure) must be replaced.

--> overview via the installation location

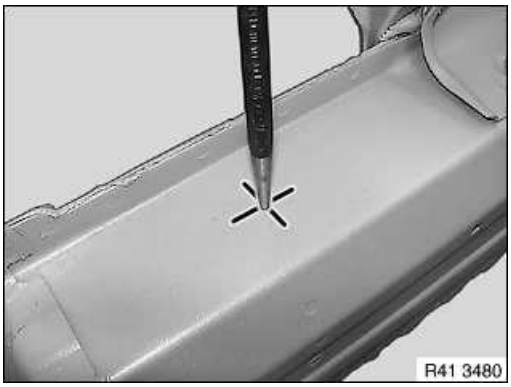
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41 00 ... Installation solution for straight shank/hexagon rivet nut



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

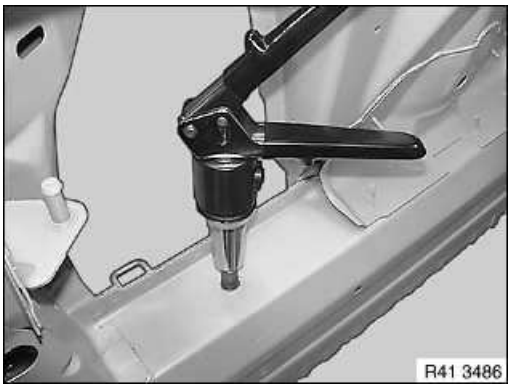


Important!

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

Follow instructions on corrosion protection .

4. Preserving cavity

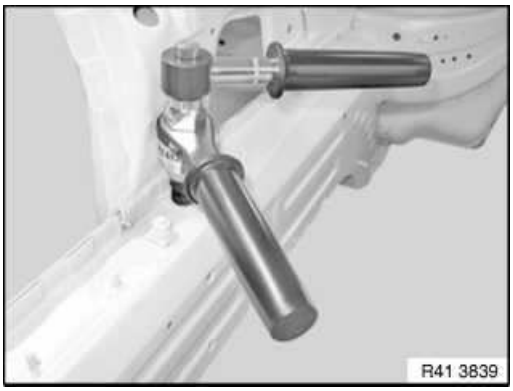


Important!

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
- Cavity preservation of the repair area possible after an air drying time of 1 hour.

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- 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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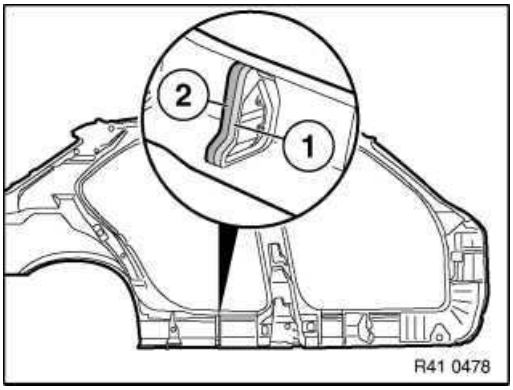
41 00 ... Installing cavity sealing (expanded)

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.

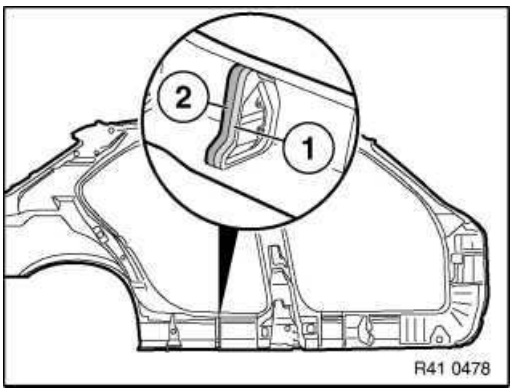
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41 00 ... Installing cavity sealing (not expanded)

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:

48 hours at an object temperature of 15°C.

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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.

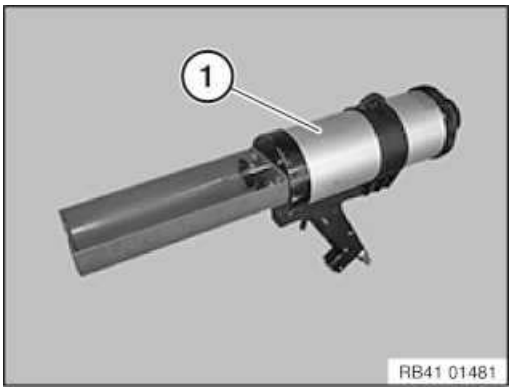
Do not use the adhesive after this date.

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.

Hardened adhesive can only be removed mechanically.

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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.

1 hour at an object temperature of 60°C.

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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 60Â 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 repairing threads

Attention!

Install Helicoil thread inserts so that they are flush with the original thread.

Note:

Damaged threads may be repaired with Helicoil thread inserts. Observe the procedure described in the example.

Screw connection	Vehicle	Screw/bolt fastening point(s)	Helicoil thread insert
Front axle support to engine support	F45 / F46 / F48 / F49 / F52	Front	M12x1.5x18
		Rear	M14x1.5x21
Bracket, wishbone, to engine support	F45 / F46 / F48 / F49 / F52	All	M10x1.5x15
Bracket, wishbone, to front axle support	F45 / F46 / F48 / F49 / F52	All	M12x1.5x18
Rear axle support to side member / cross-member	F45 / F46 / F48 / F49 / F52	All	M12x1.5x18
Bearing support, trailing arm to side member	F45 / F46 / F48 / F49 / F52	All	M12x1.5x18

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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.

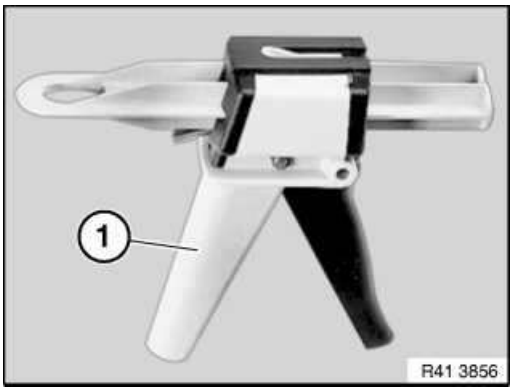
2. Components made of aluminium:

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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41 00 ... Overview of adhesive cartridge guns



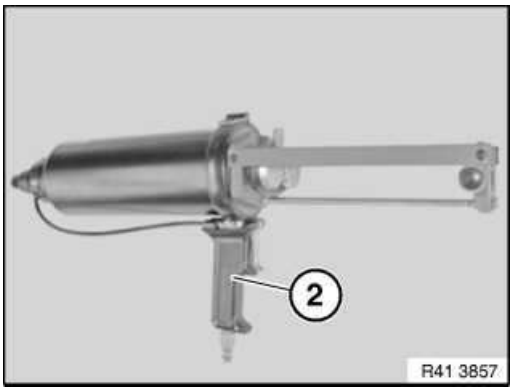
Adhesive gun 83 19 2 149 522

Obtainable via Electronic Parts Catalogue.

Usable for adhesives K4, K5a.

Usable for BMW 2K polyurethane foam.

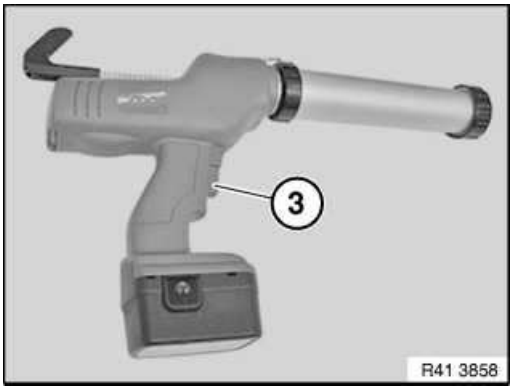
Including insert 1:1 and 2:1.



Adhesive gun 81 49 0 443 166

Orderable via BMW Workshop Equipment Catalogue.

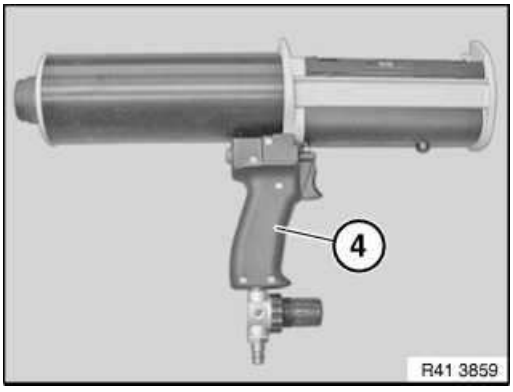
Usable for adhesive K3.



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.



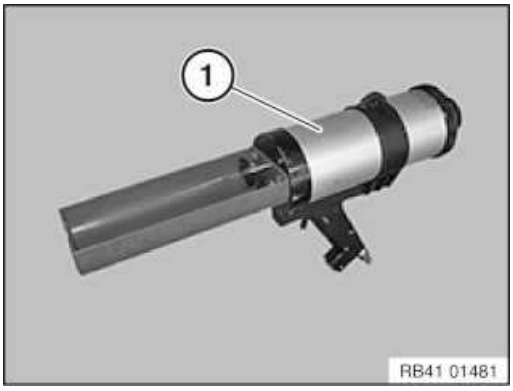
Adhesive cartridge gun 83 30 0 494 836

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
Punch rivetN5	Punch rivetN5	83 19 2 158 079	dia. 5 mm; length 5 mm

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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
Cavity sealant	Cavity sealant spray	83 42 2 457 337	400 ml

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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 ... Procedure for vehicles with active pedestrian protection after an accident

The active pedestrian protection system consists of the following components:

- *Satellites (control unit + sensor)*
  - Sensors, inside, bumper panel, left/centre/right
  - ACSM control unit (Crash Safety Module)
- *Cables and connectors*
- *Engine compartment lid hinges*
  - Actuator
  - Engine compartment lid hinge

In case of a frontal crash or side collision in the area of the bonnet and/or the A-pillars, check the following components:

Satellites (control unit + sensor)

- Procedure
  - Read fault memory.
  - Disconnect the vehicle battery and observe the waiting period.
  - Rectify fault.
  - Reconnect the vehicle battery and observe the waiting period.
  - Delete the fault memory.
  - Switch off ignition and wait at least 2 minutes (no consumers, such as such as e.g. interior light, radio, etc., may be switched on during this period).
  - Switch the ignition on.
  - Read fault memory and rectify faults if necessary.

Cables and connectors

- Procedure
  - Check cables and connectors for damage, replace if necessary.

Procedure with activation of active pedestrian protection:

Engine compartment lid hinges

- Replace actuators.
- Check both bonnet hinges . Replace damaged hinges.
  If necessary, repair hinges with repair kit.
  If no repair kit is available, the hinge must be replaced.

Model	Repair kit available
F15, F16	No
F20, F21, F22, F23, F32, F33, F34, F36, F80, F82, F83, F87	Yes
F55, F56, F57, F60	No
F45, F46, F48, F49, F39	No

Procedure without activation of active pedestrian protection:

Engine compartment lid hinges

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- Check both bonnet hinges and replace if necessary.
- If the hinge is damaged, the actuator must also be replaced.

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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.

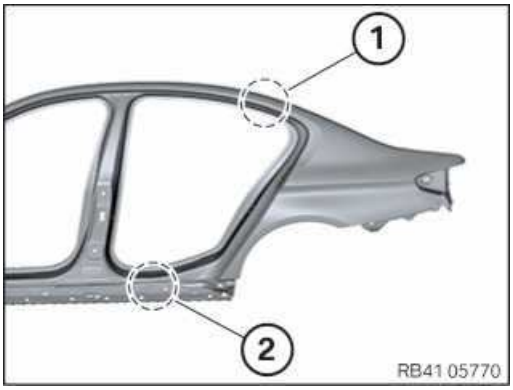
- For repair work, only use original BMW/MINI parts, or parts that are of an equivalent quality, and approved auxiliary materials and operating fluid.

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

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

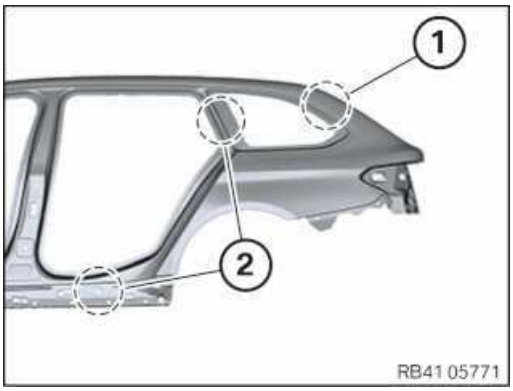
When replacing the rear side panel, reinforcement plates are bonded or welded on the separation points.



Applicable to Saloon, hatchback, Coupé.

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

Bonding is done in area (2).

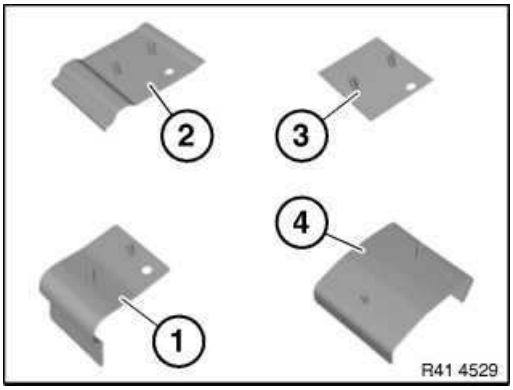


Applicable to Touring, X models, Gran Coupé, Gran Turismo.

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

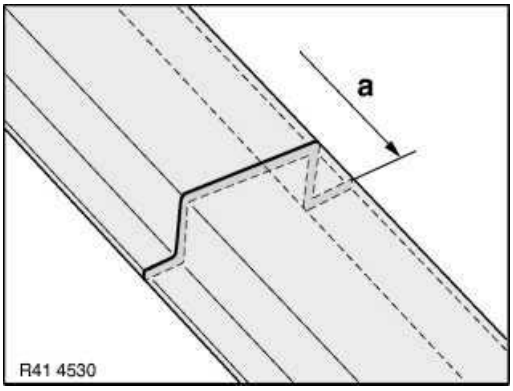
(3) Reinforcement plate, universal

(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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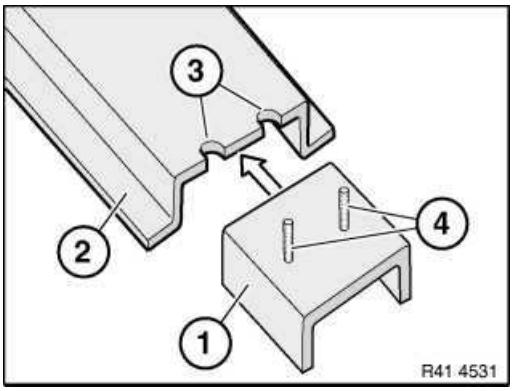


Mark side panel according to dimension a and detach it.

Preparation of the reinforcement plate (bonded or welded)

Some reinforcement plates are oversized.

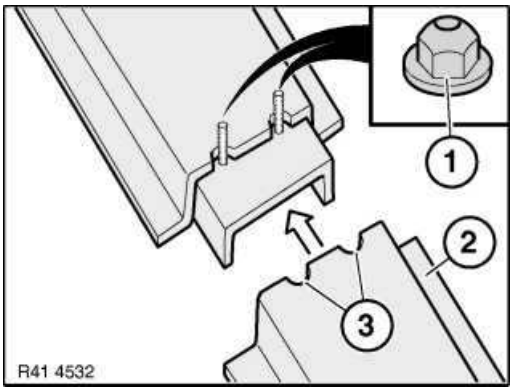
It may be necessary to rework the reinforcement plates at the edges or cut them to size until they rest against the outer skin free of tension.



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:

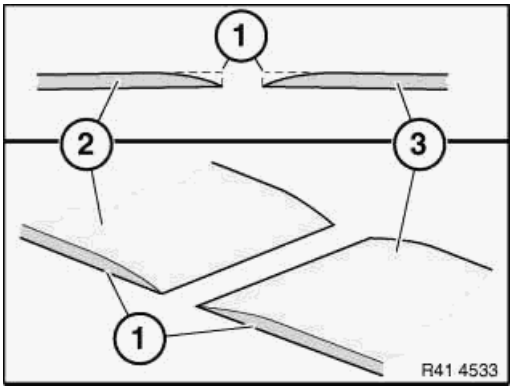
Width of joint between new part and component on vehicle approx. 5 - 8 mm (at least 30 mm flange width per side).

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.

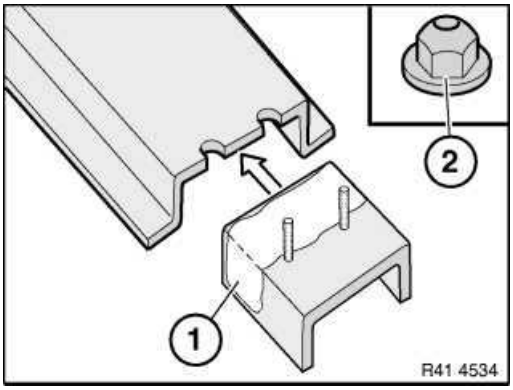
Chamfer cutting edges (1) on joint by grinding.

(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.

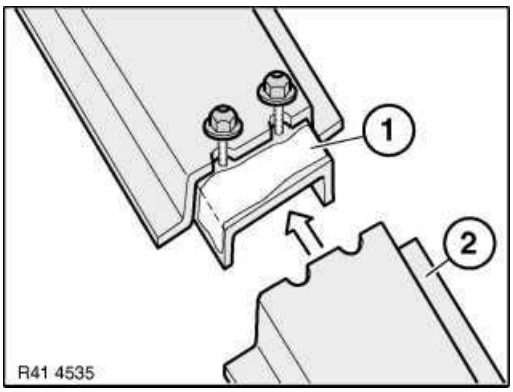
Apply additional adhesive to the outer skin around radii.

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.

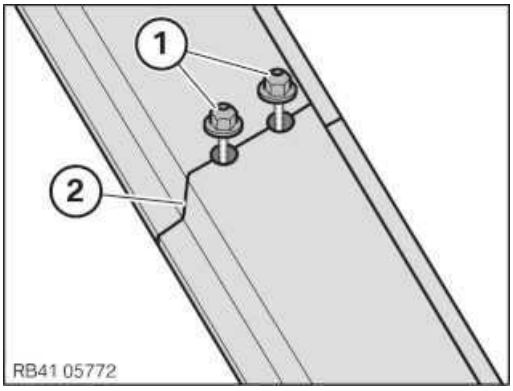
<u>After adhesive has hardened:</u>

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.

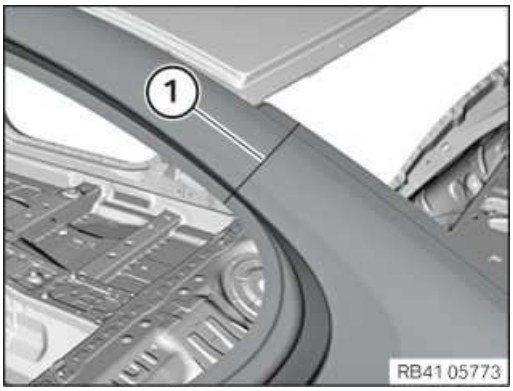
Tightening torque 41 14 1AZ.

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

Release plastic nuts (1).

Grind down stud bolt until flush.

Weld joint (2) in the remaining areas.



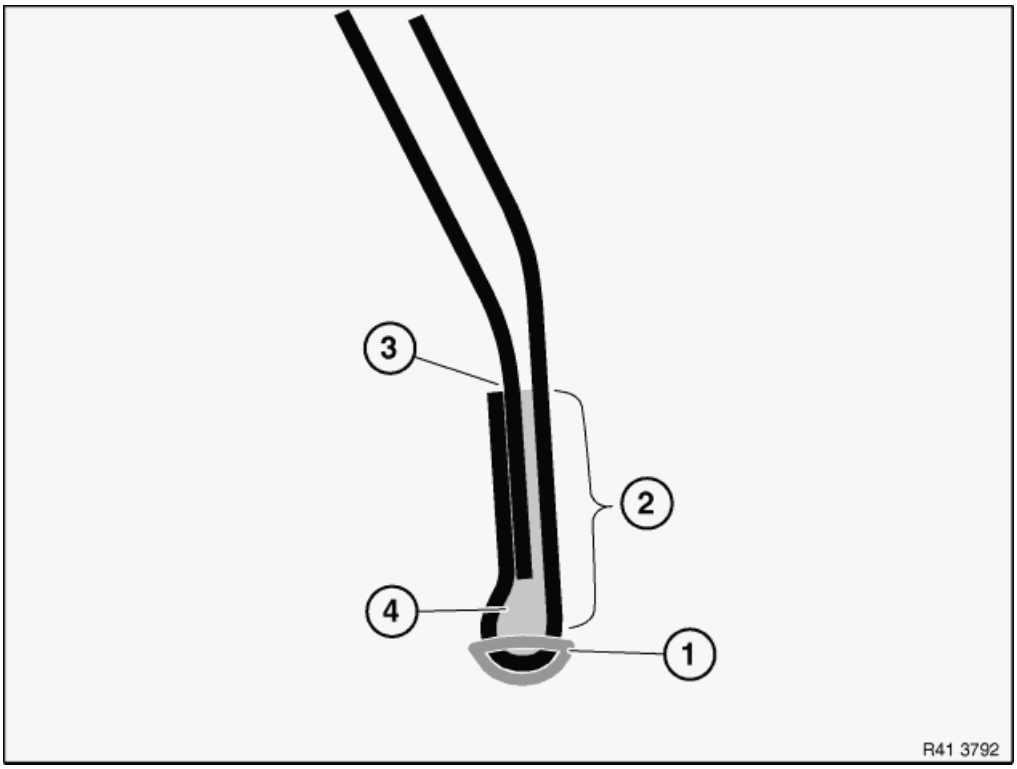
Grind weld seam (1) until flush.

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 rivetÂ

-> 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

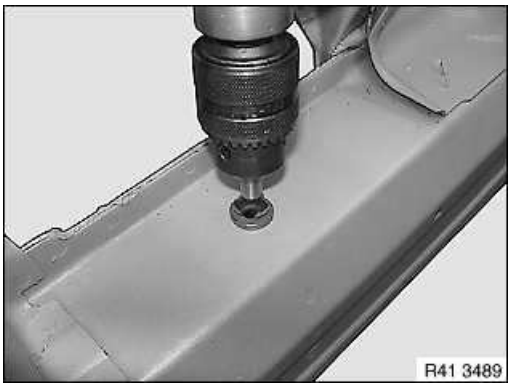
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41 00 ... Repair solution for straight shank/hexagon rivet nut



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.

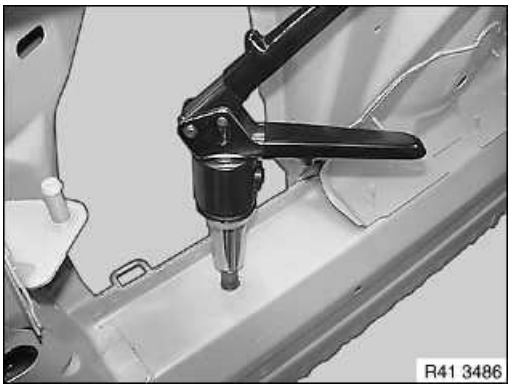
Important!

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 ... Replacing blind rivets

Special tools required:

- 2 348 128
- 72 1 210

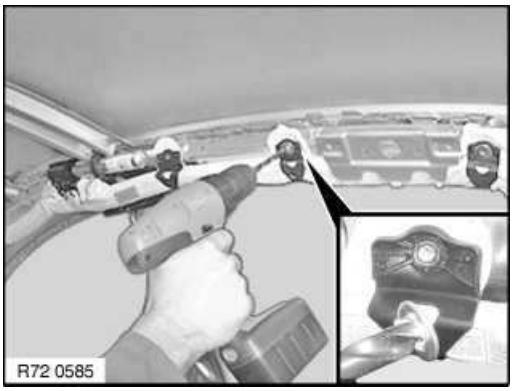


Important!

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

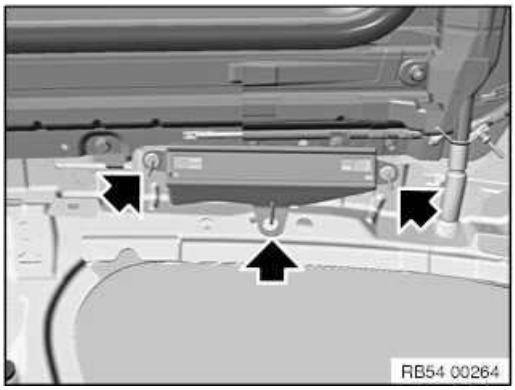
Lay out protective mats in the relevant working area:

- 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.

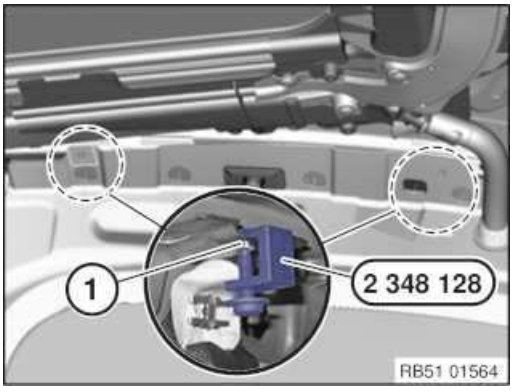
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Drill out all blind rivet protusions (1) up to the body.

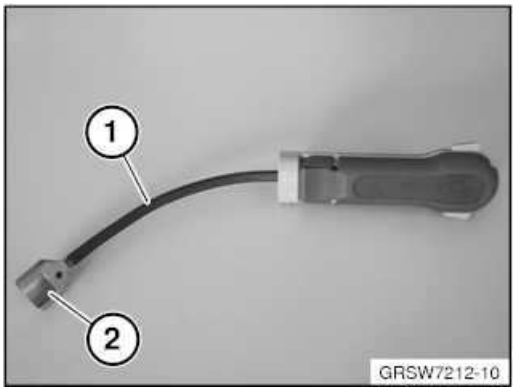
Installation note:
Apply primer to paintwork damages on side frame.
Note:
Depending on accessibility, the rivet heads will have to be removed using special tool 2 348 128 or 72 1 210 .

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.

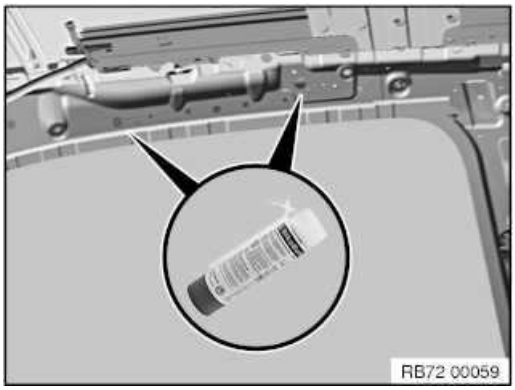
Carefully feed special tool out of body so that rivet head does not fall out of collecting tray.

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.

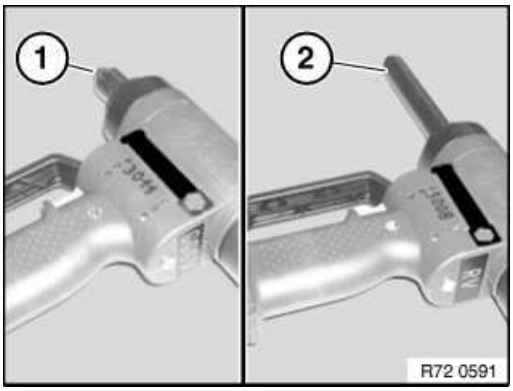
Push the hose in through the pillar holes.

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).
- Store bonding products in a secure cabinet only.

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- 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!

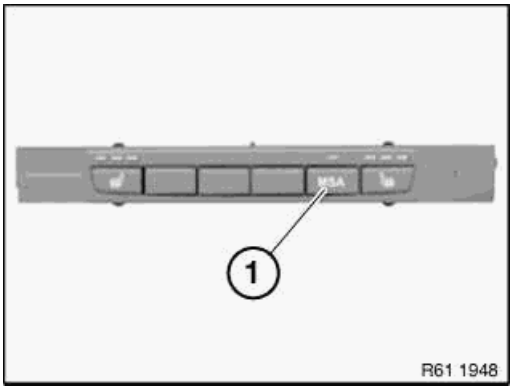
If the engine hood/bonnet contact is pulled upwards (workshop mode), the information "switch closed" is output. The automatic engine start-stop function is active.

An automatic engine start is possible.

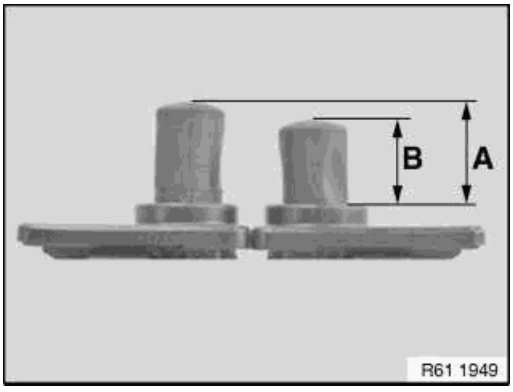
Observe safety precautions when working on MSA vehicles.

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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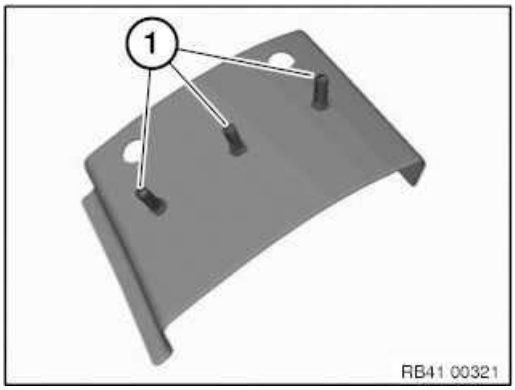
41 00 ... Separating cut determination with a template

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.

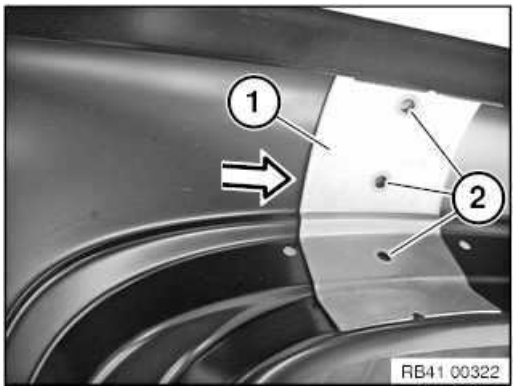
Carry over schematic diagram at the separation cut C-pillar to the relevant vehicle type.



Remove stud bolts (1).

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

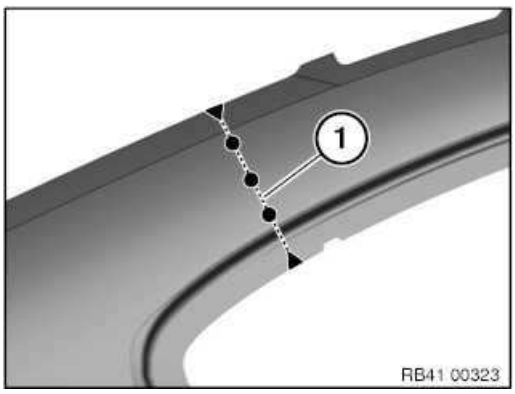
If applicable, place additional bore holes in the area of the edges.



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!

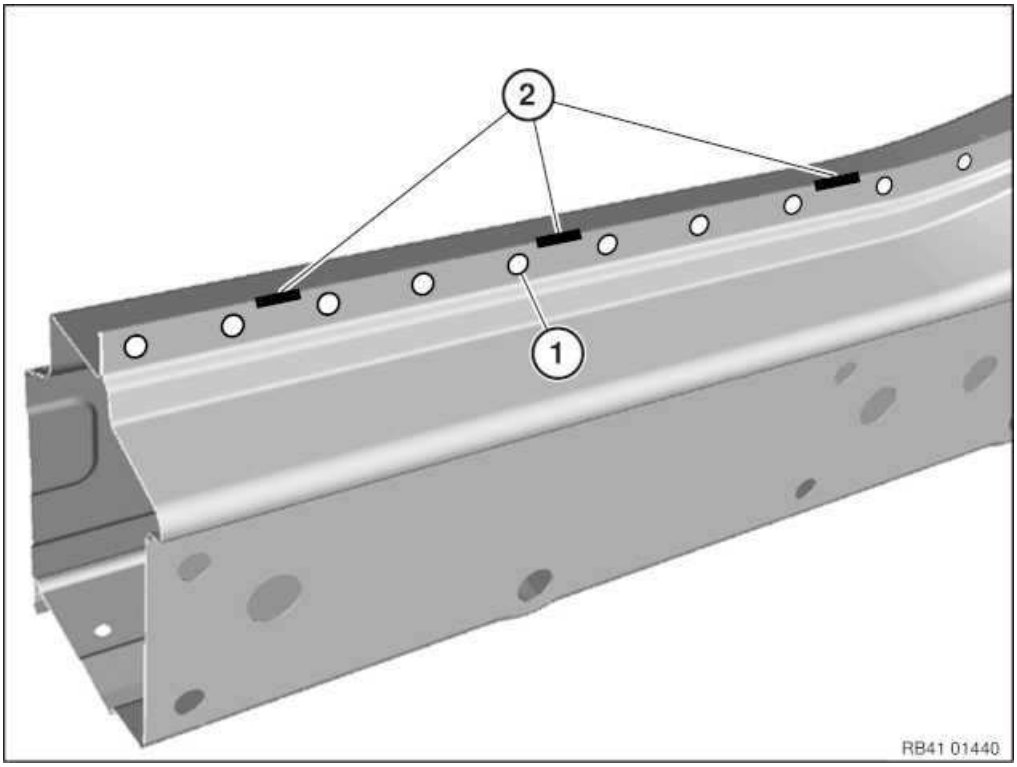
Comply with the following topics from "Body, General":

Safety regulations .

Handling electrical system, electronics, airbags and restraint systems.

Welding steel components.

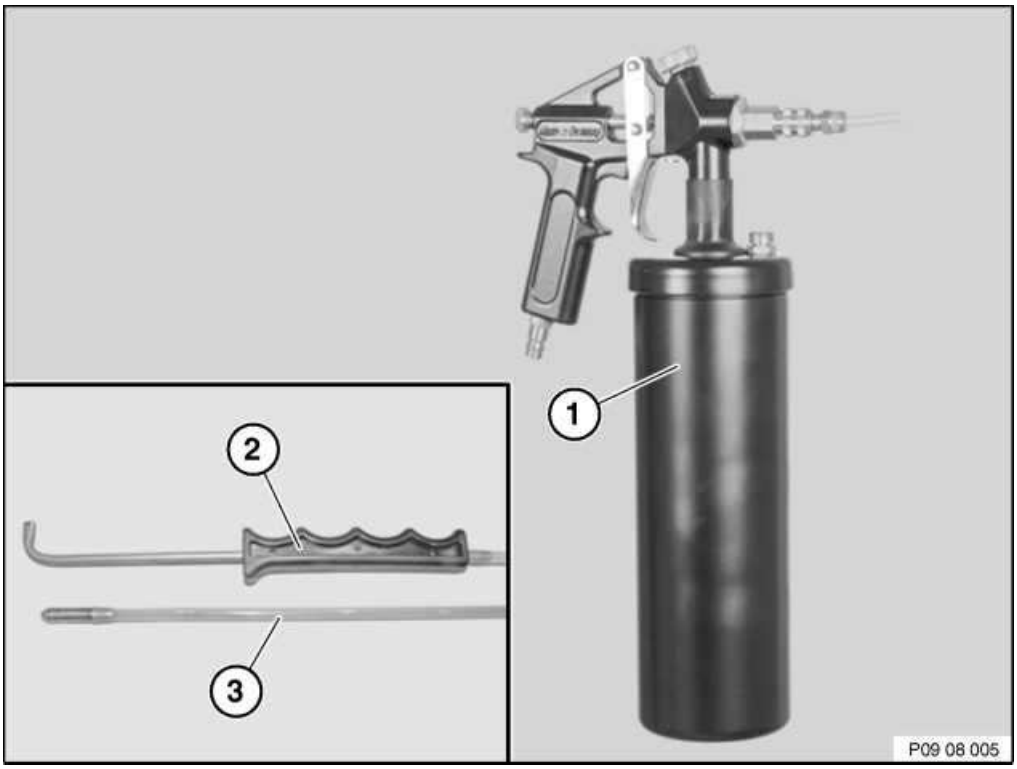
- Beginning with E65 the spot-weld bonding process is used to increase vehicle rigidity. In partial body areas, a 1-component adhesive is applied to the spot flanges and this is followed by resistance pressure spot welding. The adhesive is hardened only after the paint drying process (at approx. 180 °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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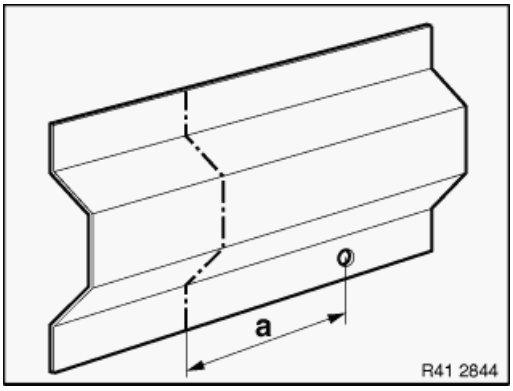
41 00 ... Welding in reinforcement plate (sheet steel)

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

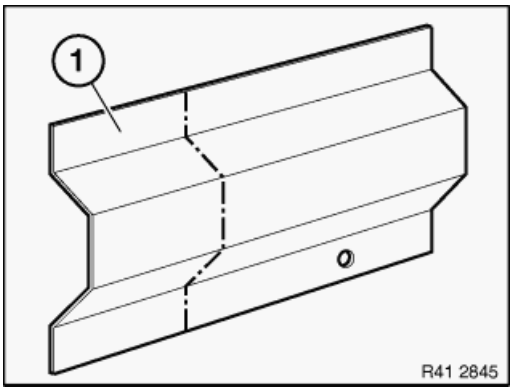
A reinforcement plate is welded in to ensure sufficient strength.

Follow notes for welding steel components.

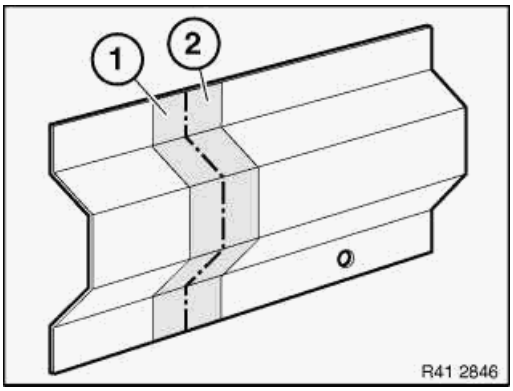
Note:
The following graphics serve as general illustrations of reinforcement plate repair work. They are applicable to all sectional repairs.



Mark component in accordance with dimension A and cut.



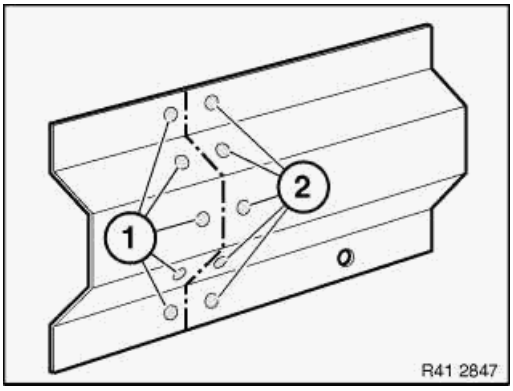
Cut new part (1) in accordance with cut and if necessary adjust to fit with alignment bracket or universal mount.*Installation note:*
Maintain a distance of approximately one to no more than two material thicknesses at the severance cut to ensure welding with the reinforcement metal and enable more tolerant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



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

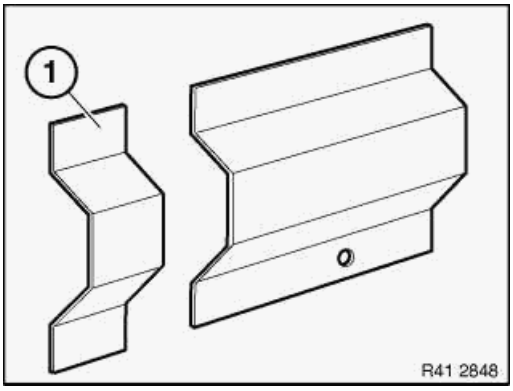
Coat insides with welding primer.

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

Hole diameter approx. 8 mm.

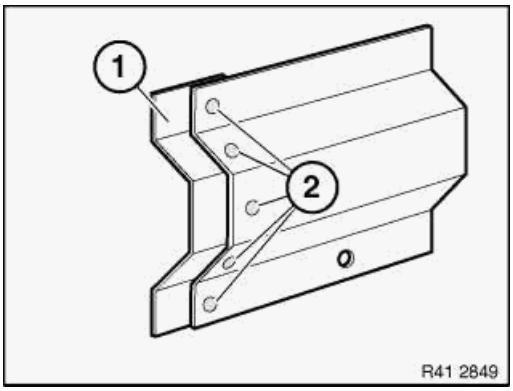


Make reinforcement plate (1) from trim of new part.

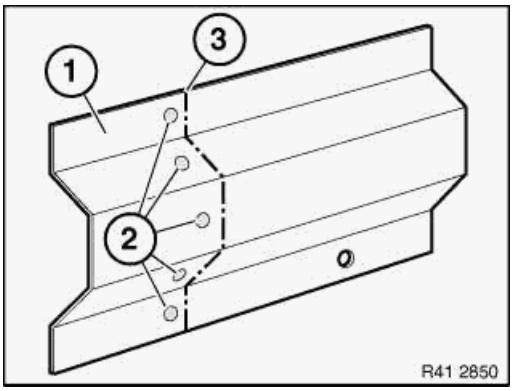
If applicable, produce more reinforcement plates.

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		
Punch riveting tool	8132158708	x	x	x	

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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
	CR600 QSM	CAR-O-LINER

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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 carrier support, left (FRU specification without straightening bench) (FRU specification without wheel alignment)

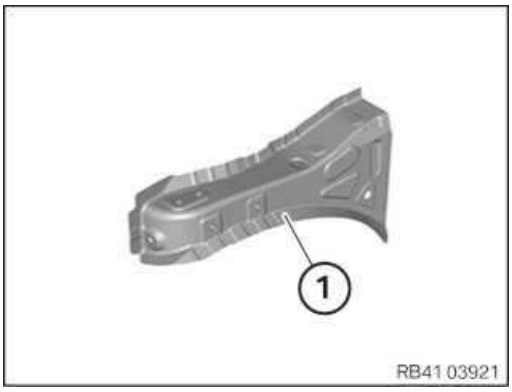
TECHNICAL INFORMATION

- Observe the procedure for repair stage 3.

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

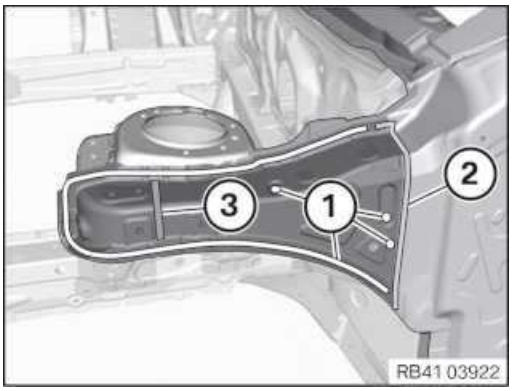
- For information about stripping and rebuilding operations, refer to the surrounding text of the KSD. See the flat rate unit number.

1 – Supplying the new parts required



- Supply the following new parts (see Electronic Parts Catalogue EPC):
- Outer wheel arch section carrier support (1)

2 – Remove carrier support



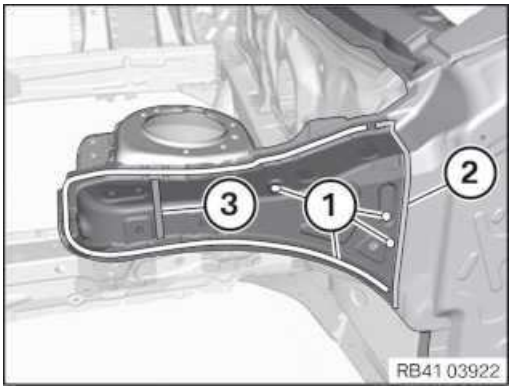
- Release welded connections in areas (1).

TECHNICAL INFORMATION

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

- Release the spot-welded adhesive joints in area (2).
- Release and remove the carrier support from the cavity sealing (3).

3 – Prepare new part



- Remove adhesive residue in area (2).
- Adjust new part and prepare for joining by welding in areas (1) and (2).

TECHNICAL INFORMATION

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

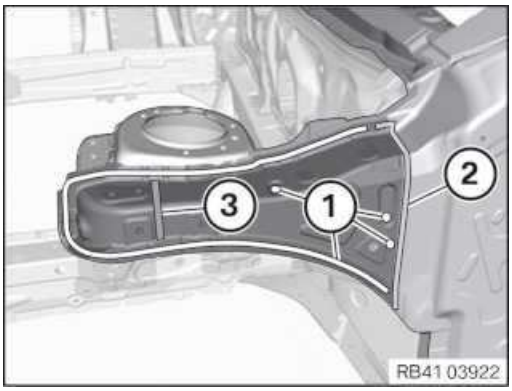
- In area (2), observe the procedure for the replacement of spot-welded adhesive joints for standard production.
- Observe the installation position of the cavity sealing (3).

4 – Install carrier support

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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 to cavity sealing (3).
- Weld the new part in the areas (1) and (2) according to the new part preparation process.

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 ... 0 Contents of Body, General	
41 0 Repair techniques, repair stage 3	

Repair instructions	Used in step
41 00 ... Installing cavity sealing (expanded)	4

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41 11 092 Replacing engine support in front of bulkhead on right

Prerequisite

- Vehicle is secured on the straightening bench.

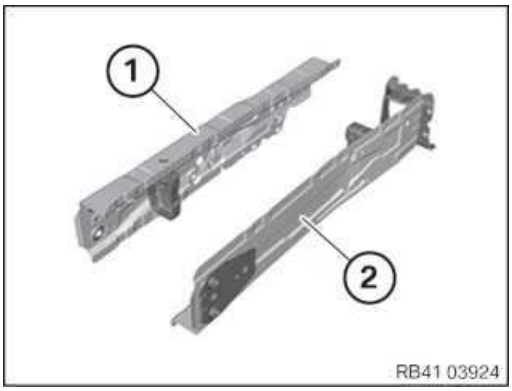
TECHNICAL INFORMATION

- 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):

  Outer engine support (1)

  Inner engine support (2)

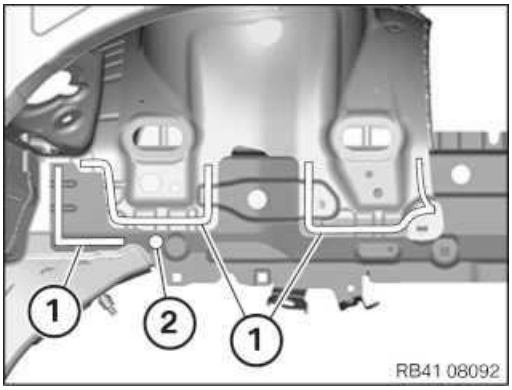
TECHNICAL INFORMATION

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

- Supply the following consumables:

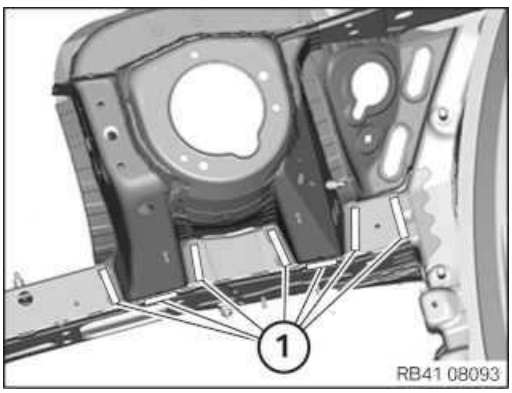
Material	Quantity
Coarse thread bolt	5
Threaded weld bolt	5
Sealing compound D1	
Cavity sealing wax remover	

2 – Remove engine support.



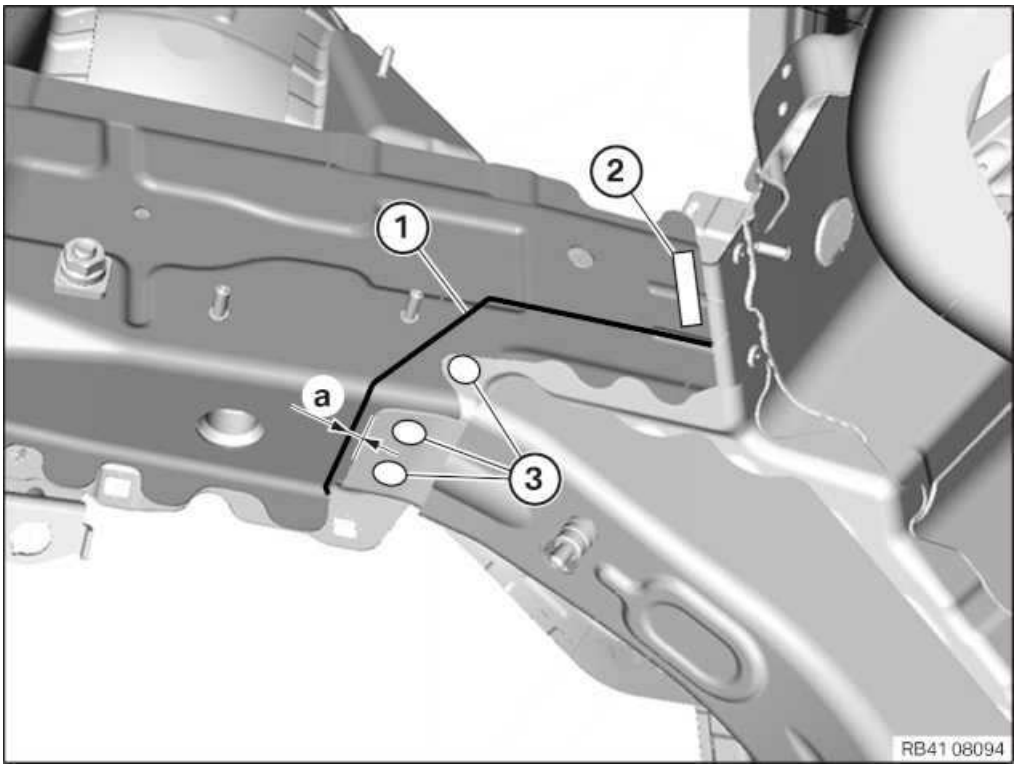
- Open welded connections in areas (1) and (2).
- Ensure that 3 panels are welded in the area (2).

  Open welded connections in area (2) for both outer panels.



- Release welded connections in areas (1).

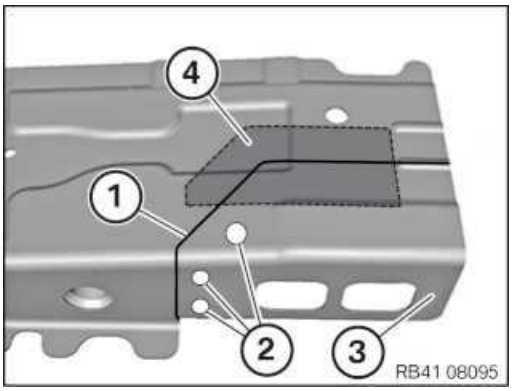
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- Mark a separating cut (1) as shown and according to the specified dimension and execute it.

  Dimension a = 5 mm.
- Open the welded connections in areas (2) and (3) and remove the engine support.

3 – Prepare new part

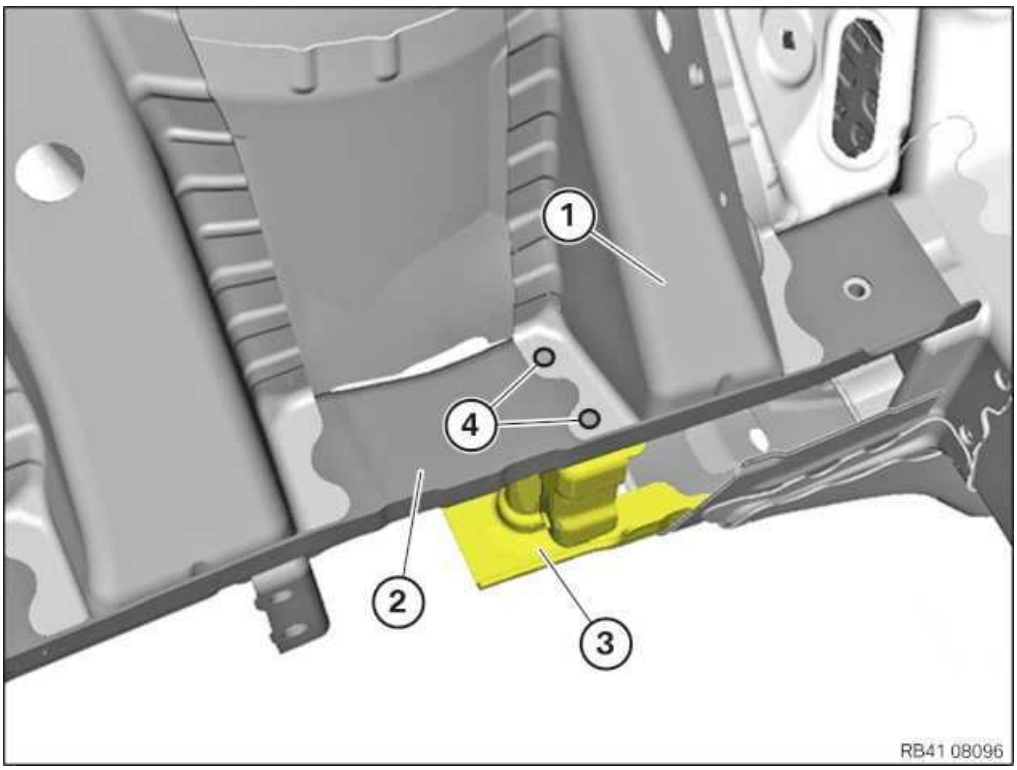


- Mark and make the separating cut (1) according to the separating cut on the vehicle. Thereby disconnect only the outer panel.
- Open the welded connections in the areas (2) and remove section (3).

TECHNICAL INFORMATION

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

- Prepare a reinforcement plate (1) for the separating cut (4).
- Adjust new parts to fit with alignment bracket or universal mounting.

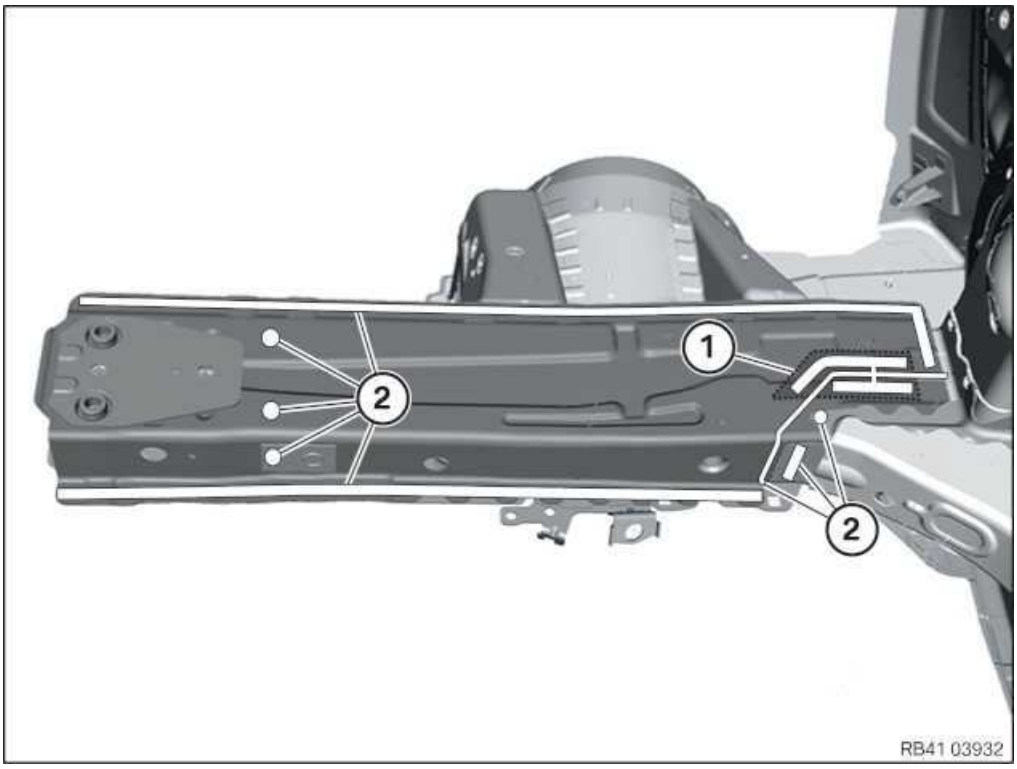


TECHNICAL INFORMATION

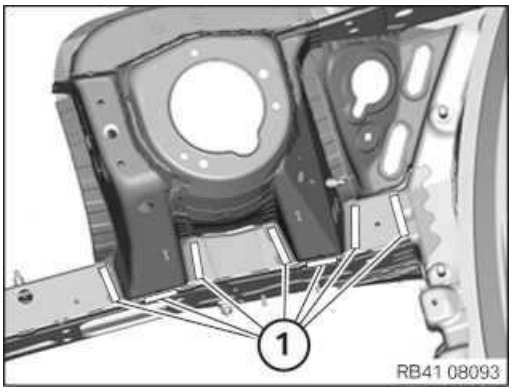
For additional information see: 41 00 ... Welding steel components

- Note: Inner section of engine support is hidden for better overview!
- Note: The support of the wheel arch (1), outer section of the engine support (2) and the mounting (3) of the front axle support must be welded to each other in areas (4) by means of a plug welding process.
- Transfer and drill holes (4) (open welded connections) on new part engine support outer section (2). Do not drill through the mounting (3) while doing so.

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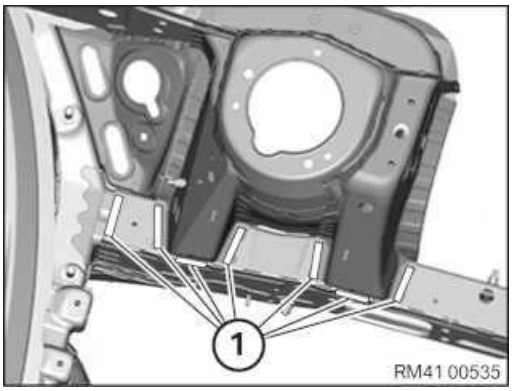


- Prepare the new part and the reinforcement plate (1) in areas (2) for joining by welding.



- Note: The "front axle support mounting" component is in areas (1) and (2). (see also Figure RB41-080-96)

  The "front axle support mounting" component must be welded in the areas (1) and (2) using plug-welding.
- Transfer and drill holes (3) (open welded connections) on new part engine support outer section.
- In areas (2), set one Ø 6.8 mm bore hole each. The positions of the bore holes (2) can be found from the removed part and transferred to the new part. Do not drill through the mounting of the front axle support while doing so.
- Prepare for joining by welding in areas (4).



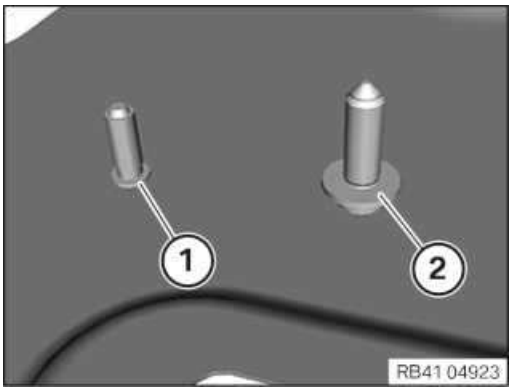
- Prepare the new parts in the areas (1) for joining by welding.

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

NOTICE

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

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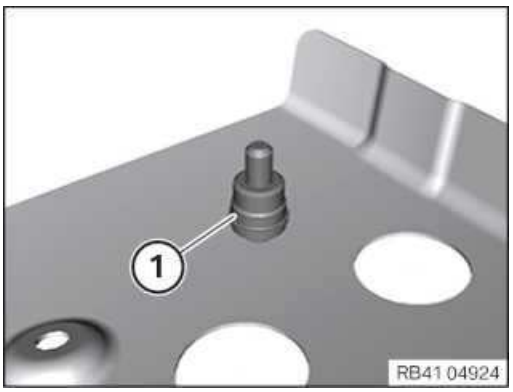


- Take the quantity and position from the component to be replaced.
- Weld the coarse thread bolt (1) and the threaded weld bolt (2) onto the new part.

▸ **Earth pin**

NOTICE

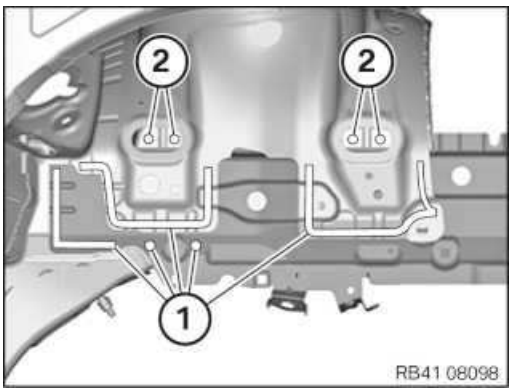
Schematic diagram is for example purposes. Some parts may differ in certain details.



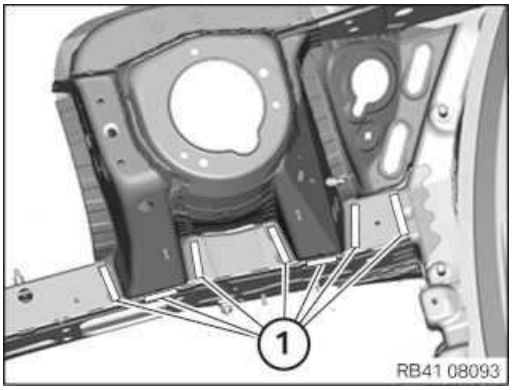
- Check the ground pins (1) for stability and renew where required.

4 – Insert engine support

- Install new parts and reinforcement plate to fit with alignment bracket or universal fixture.

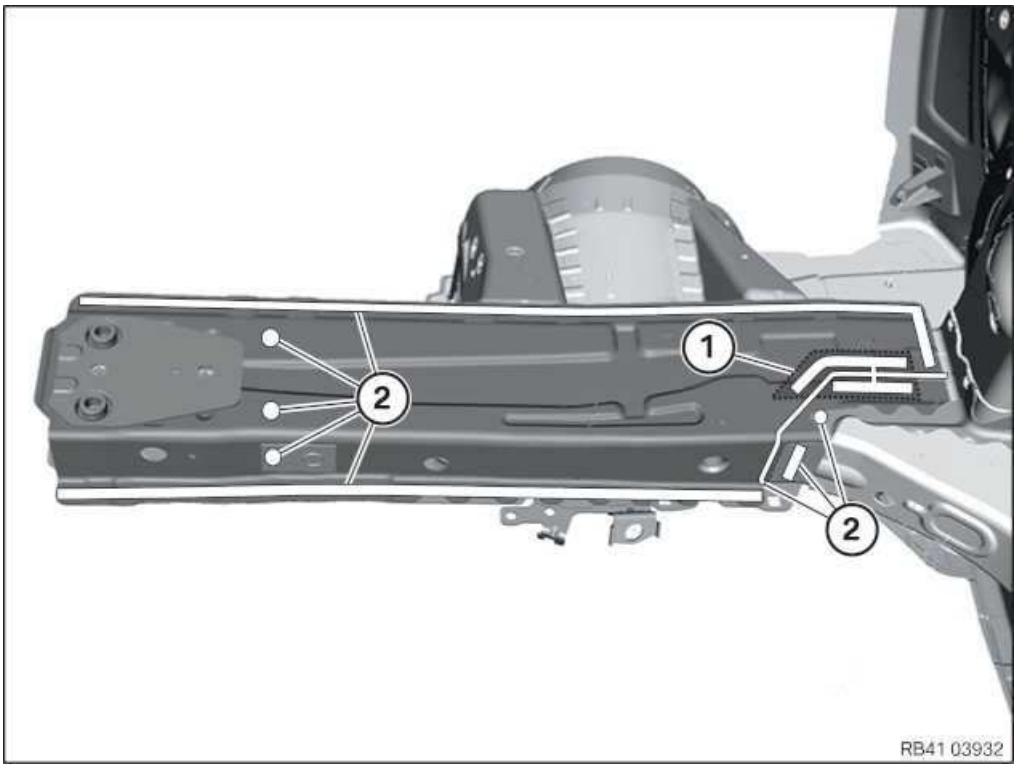


- Weld the new parts in areas (1) and (2).



- Weld new part in the area (1).

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

Additional Information

Links

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... Welding steel components	3 4
41 00 ... 0 Contents of Body, General	
41 0 Repair techniques, repair stage 3	

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

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41 11 071 Replacing engine support in front of bulkhead with left wheel arch (AW specification without straightening bench) (AW specification without wheel alignment)

Prerequisite

› Vehicle is fixed on the straightening bench.

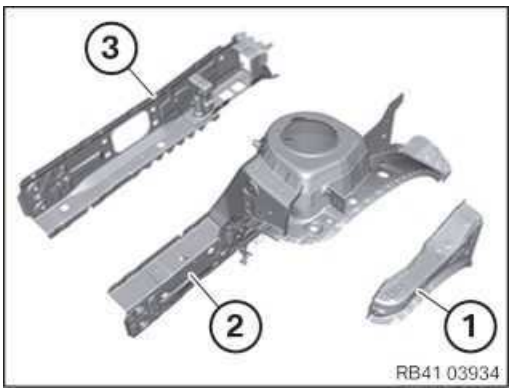
TECHNICAL INFORMATION

- 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 – Supply the new parts required



- Supply the following new parts:

  Outer wheel arch section carrier support (1)

  Front spring support(2)

  Inner engine support (3)

  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
Coarse thread bolt	10
Threaded weld bolt	5
Sealant D1	1

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

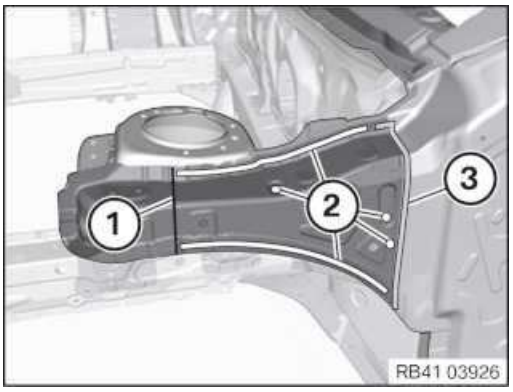
TECHNICAL INFORMATION

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

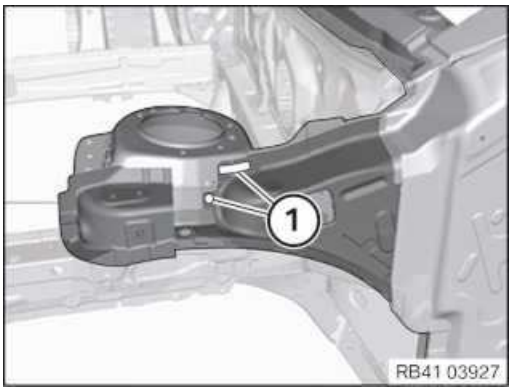
TECHNICAL INFORMATION

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

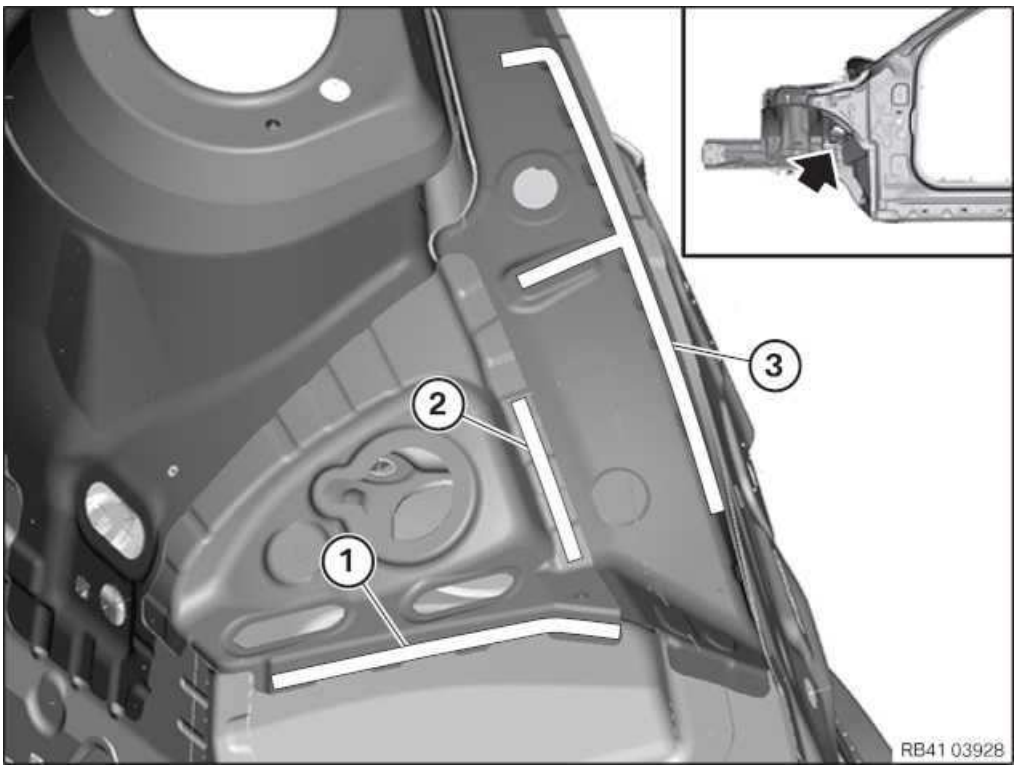
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- Mark and carry out the separating cut (1) roughly, in accordance with the diagram.
- Release welded connections in areas (2).
- Open the spot-welded adhesive joints in the area (3) and remove the carrier support section.
- Remove adhesive residue in area (3).

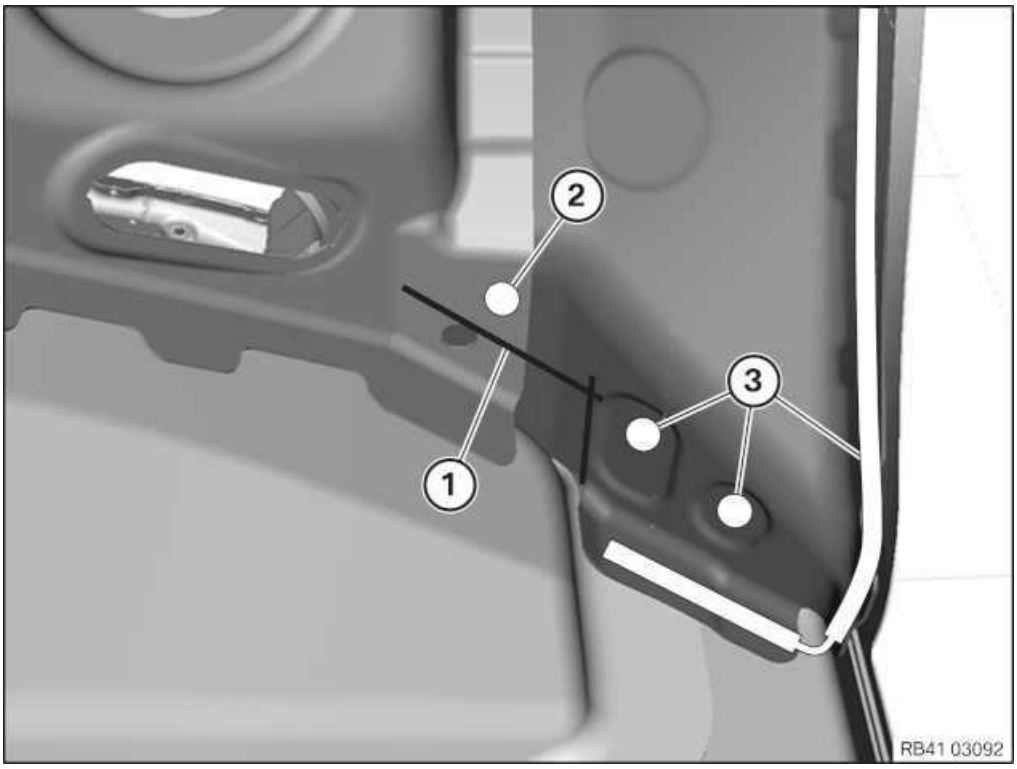


- Release welded connections in areas (1).

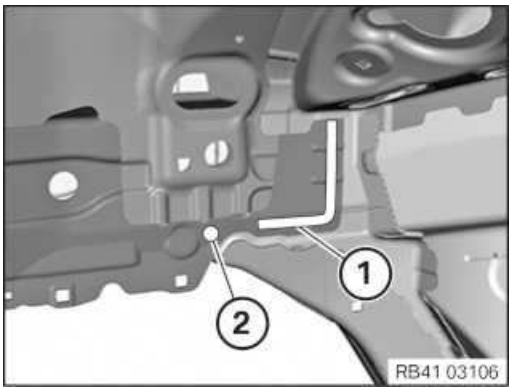


- Release the welded connections in the areas (1) to (3).
- Open welded connections in area (2) for both outer panels.

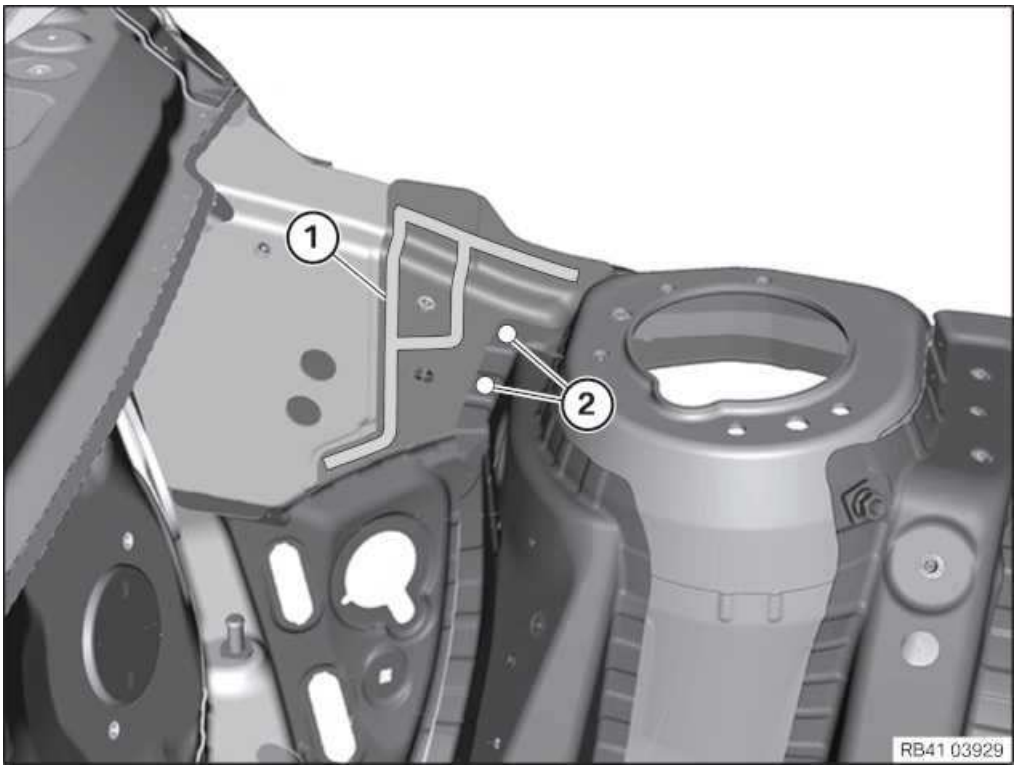
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- Mark and perform the separating cut (1) in accordance with the schematic diagram. While doing so, carry out the separating cut only on both outer panels.
- Open welded connections in area (2). While doing so, open the welded connections for both outer panels.
- Loosen welded connections in areas (3).

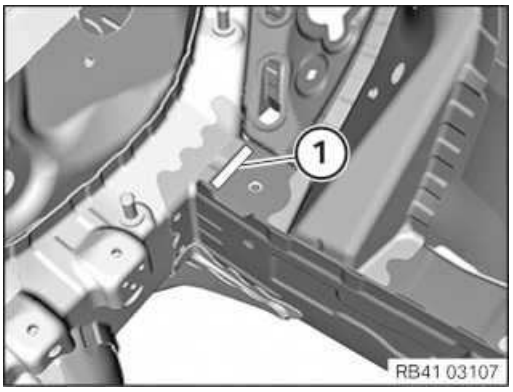


- Open welded connections in areas (1) and (2).
- Open welded connections in area (2) for both outer panels.

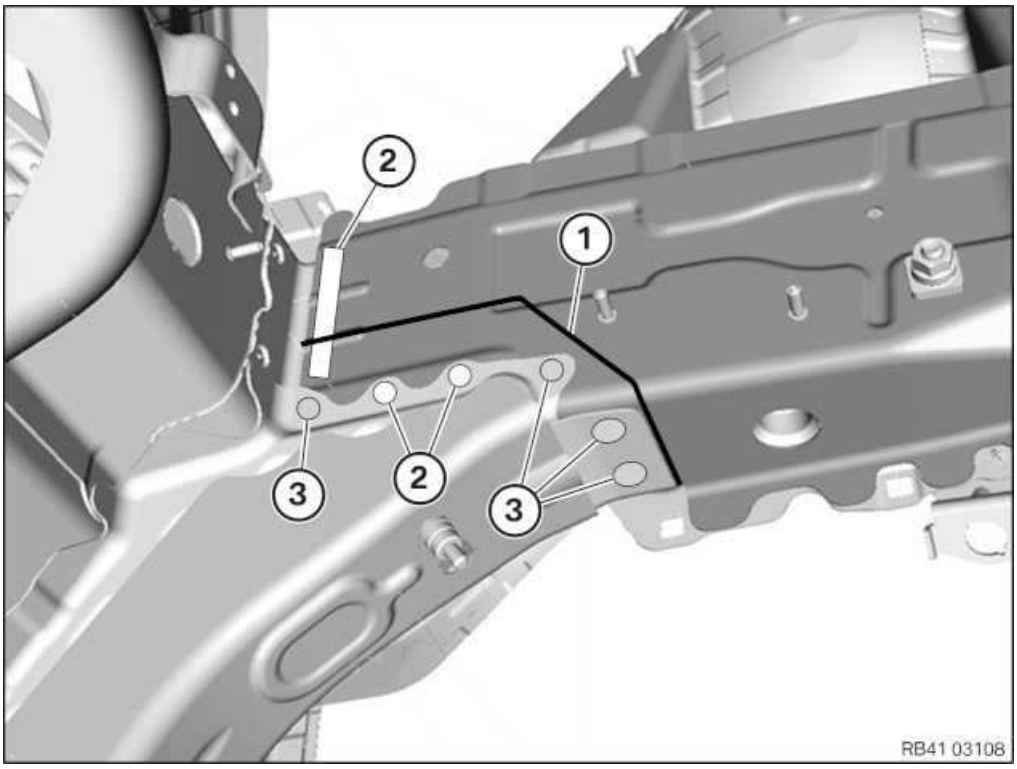


- Release the spot-welded adhesive joints in area (1).
- In areas (2), open the welded connections for both outer panels.

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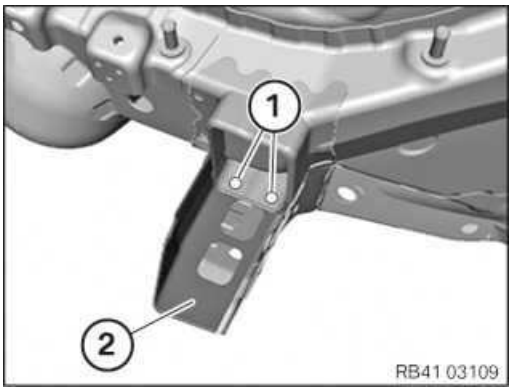


- Open welded connections in area (1).



- Mark and make the separating cut (1) as shown in the diagram.
- Open welded connections in areas (2) and (3).

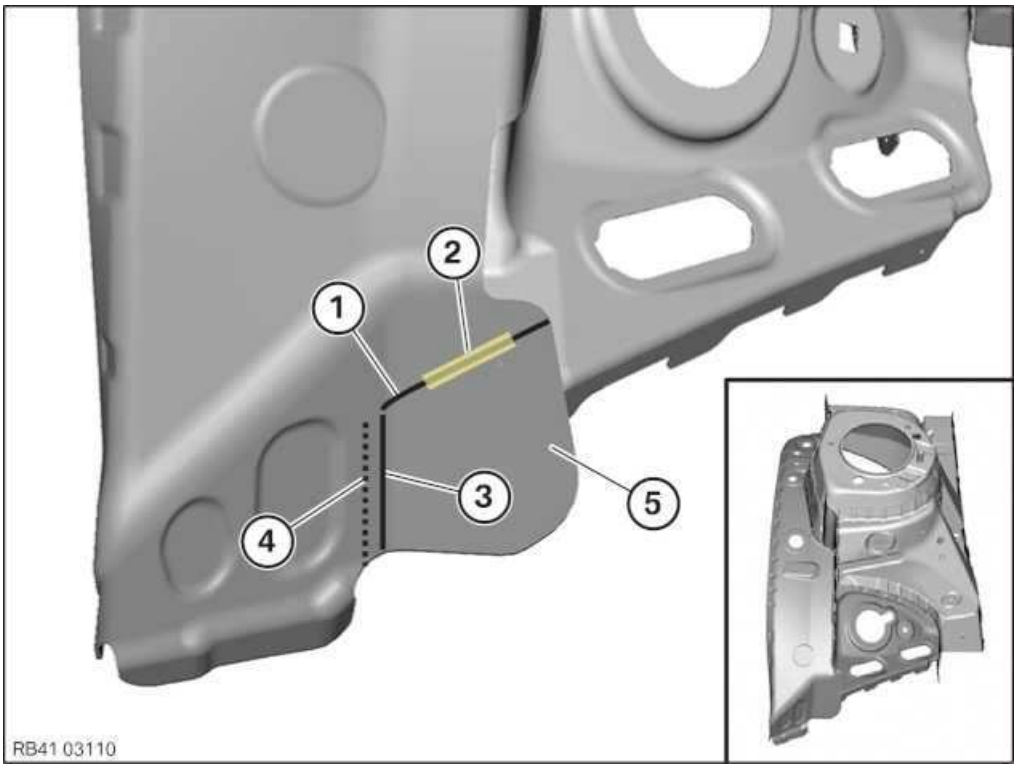
  In areas (3), open the welded connections for both outer panels.
- Remove engine support with wheel arch.



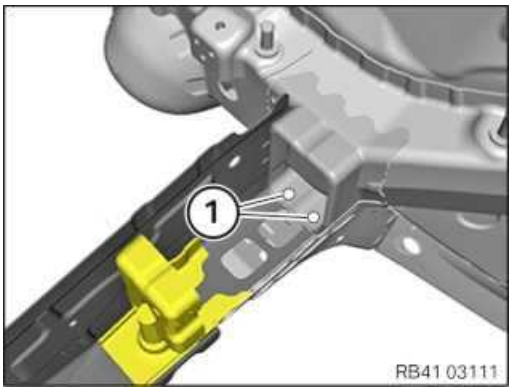
- Open welded connections in areas (1) and remove the residual part (2) of the engine support.

3 – Prepare new parts

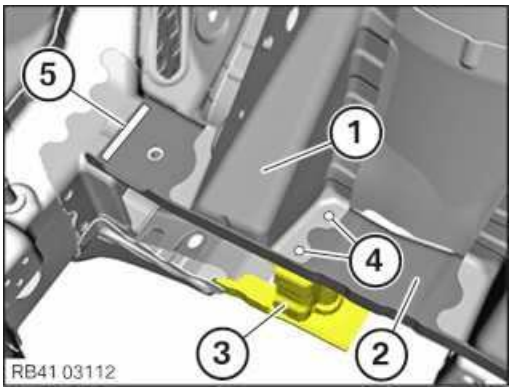
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- Mark and make the separating cut (1) according to the separating cut on the vehicle.
- Cut through both panels in area (2). In the area (2) the width of the separating cut must be approximately 5 mm, so that both panels can be welded to the body.
- Mark and carry out separating cut (3) according to the separating cut on the vehicle + approx. 5 mm material allowance. (4) = Separating cut on the vehicle.
- Remove the cut panel section (5).



- Adjust new part for engine support internal part using alignment bracket or universal fixture.
- Prepare new part in the areas (1) for joining through weld.

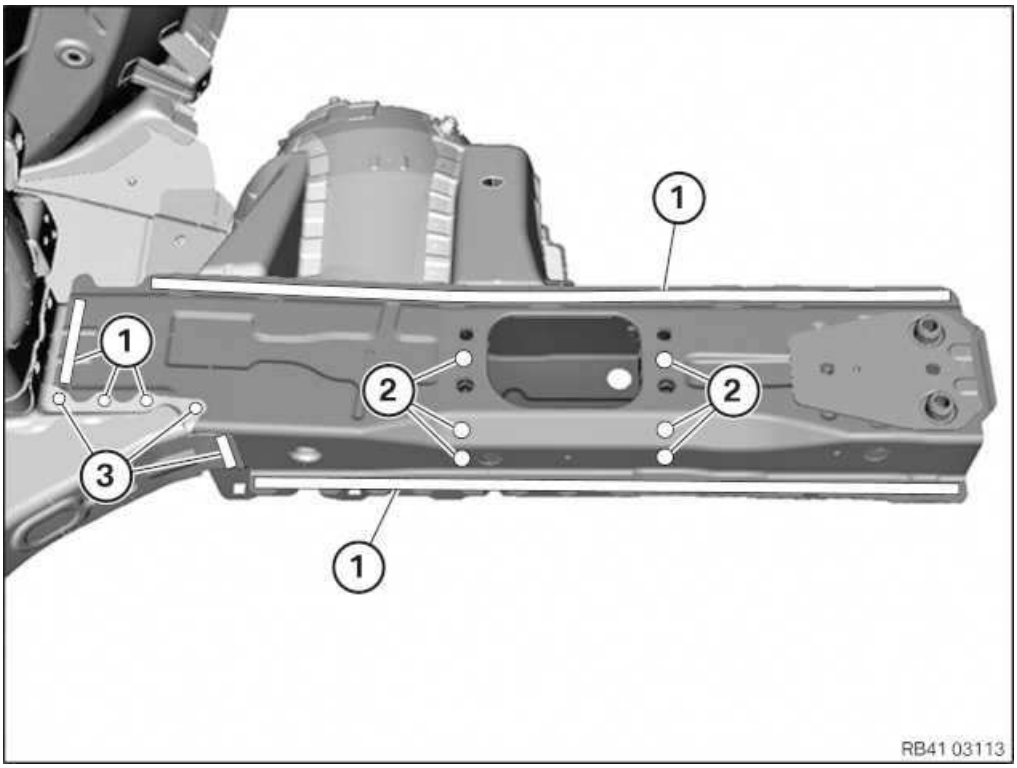


- Adapt new part for spring support using alignment bracket or universal fixture.

  Inner section of engine support is hidden for better overview.
- In the areas (4), drill 2 x Ø 10 mm holes for plug-welds. Do not drill through the fixture (3) of the front axle support!

  Wheel arch support (1), engine support outer section (2) and the fixture (3) of the front axle support must be welded in the areas (4).
- Prepare the new part in area (5) for joining by welding.

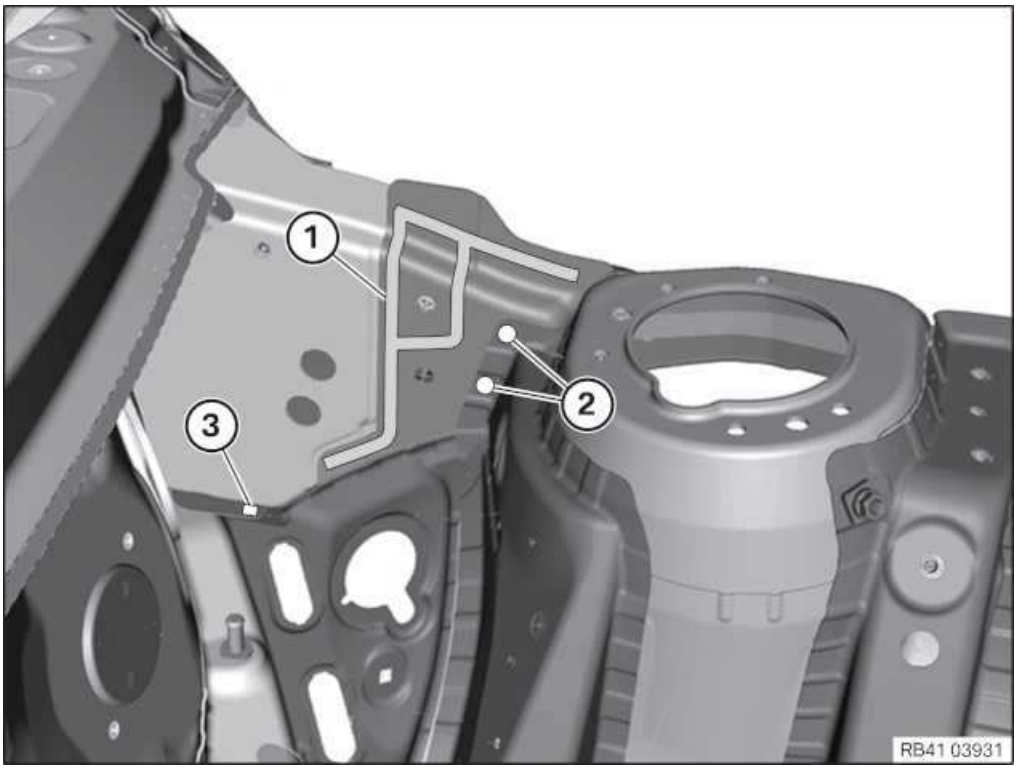
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- Prepare the new parts in the areas (1) to (3) for joining by welding.
- Increase size of holes in areas (3) (open welded connections) to Ø 10 mm.

  Transfer holes to new engine support internal part and drill.

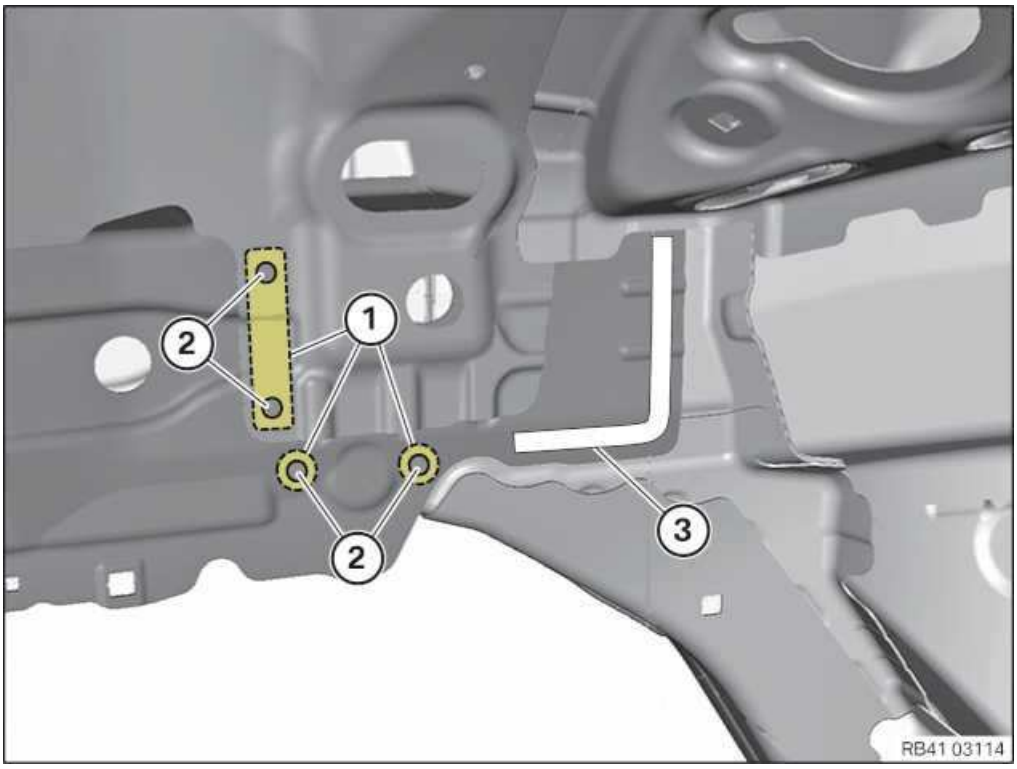
  All 3 panels must be welded to each other in areas (3)



- Prepare areas (1) to (3) for joining by welding.

  All 3 panels must be welded to each other in areas (2)

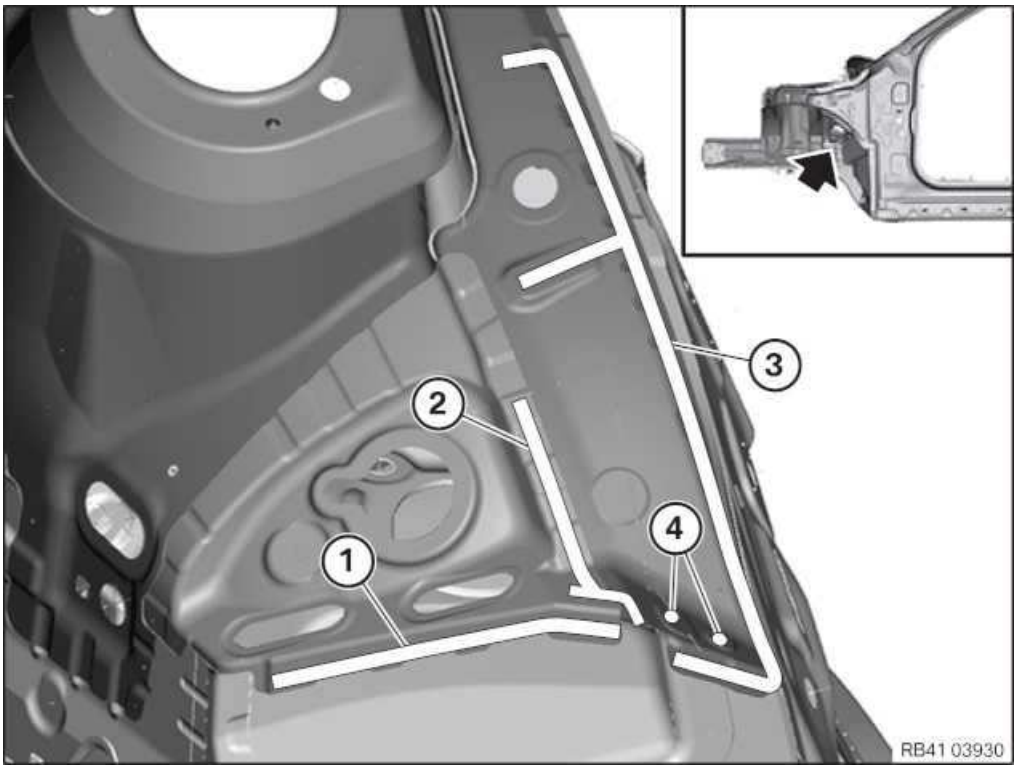
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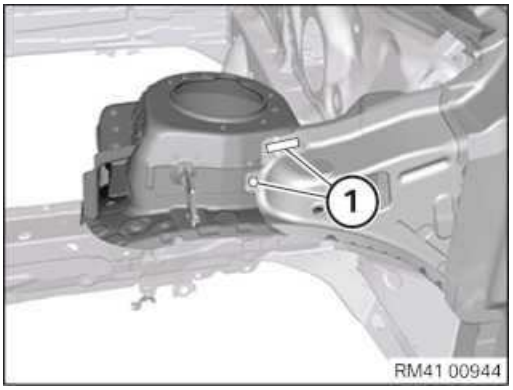
- Adopt the position of the bore holes (2) from the removed part and transfer to the new part.
- In areas (2), drill 4 bore holes Ø 10 mm for plug-welds. Do not drill through the "front axle support fixture" component behind it.

  The "front axle support fixture" component is located in the areas (1). (See figures RB41 03111 and RB41 03112)

  The "front axle support fixture" component must be welded in the areas (1).
- Prepare area (3) for joining by welding

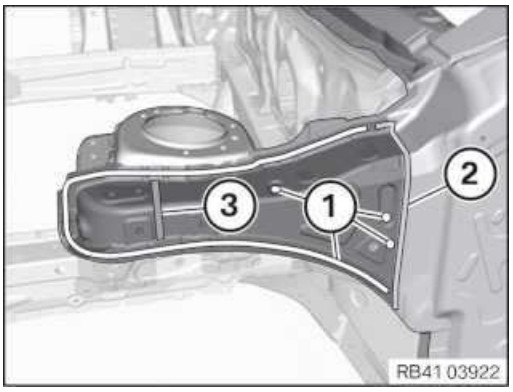


- Prepare for joining by welding in the areas (1) to (4).



- Prepare the new parts in the areas (1) for joining by welding.

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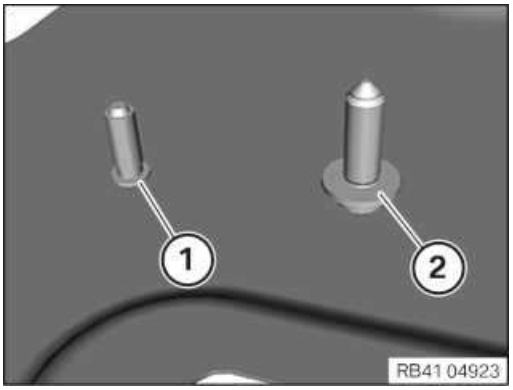


- Install new part and prepare for joining by welding in areas (1) and (2).
  (3) = position of the cavity sealing.

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

NOTICE

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

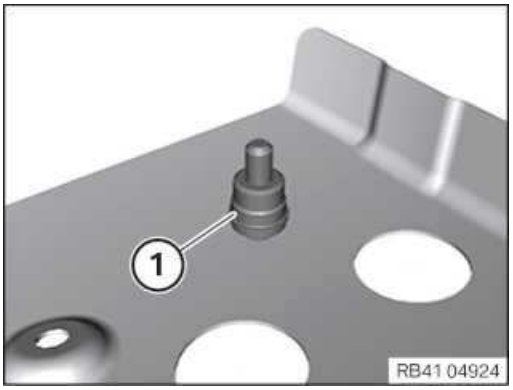


- Take the quantity and position from the component to be replaced.
- Weld the coarse thread bolt (1) and the threaded weld bolt (2) onto the new part.

▸ **Earth pin**

NOTICE

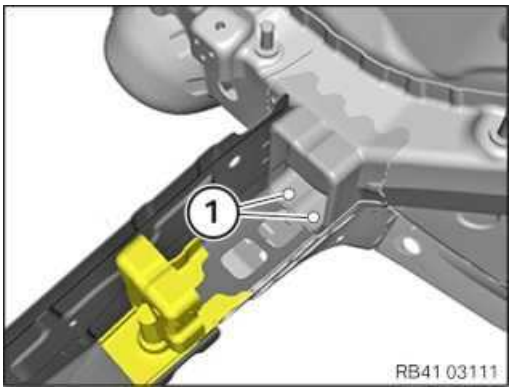
Schematic diagram is for example purposes. Some parts may differ in certain details.



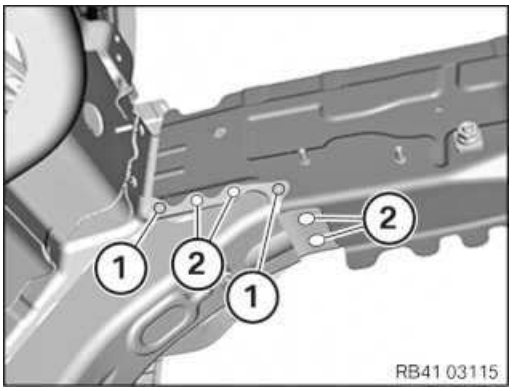
- Check the ground pins (1) for stability and renew where required.

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

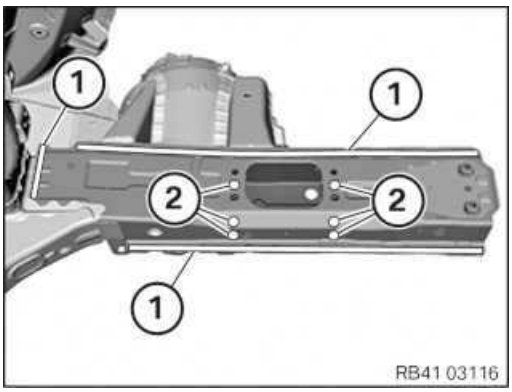
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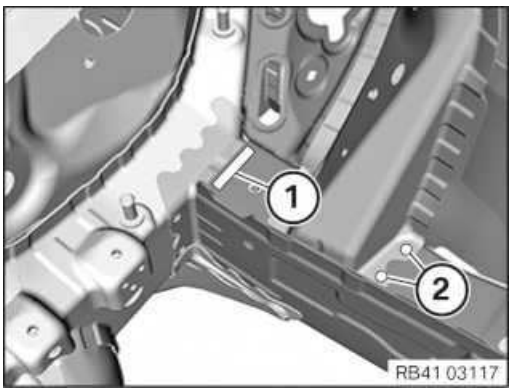
- Install new part engine support inner section with alignment bracket or universal fixture and weld in areas (1).



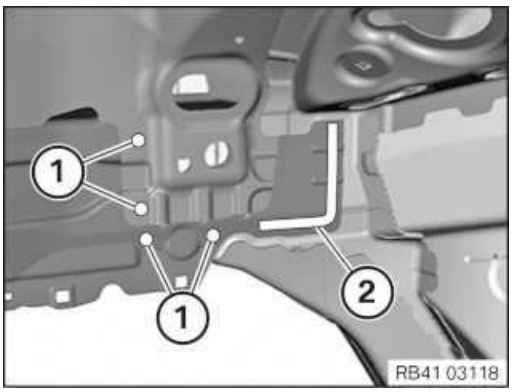
- Weld the new part engine support inner section in the areas (1)and (2).



- Install new part spring support with alignment bracket or universal fixture and weld in areas (1) and (2).

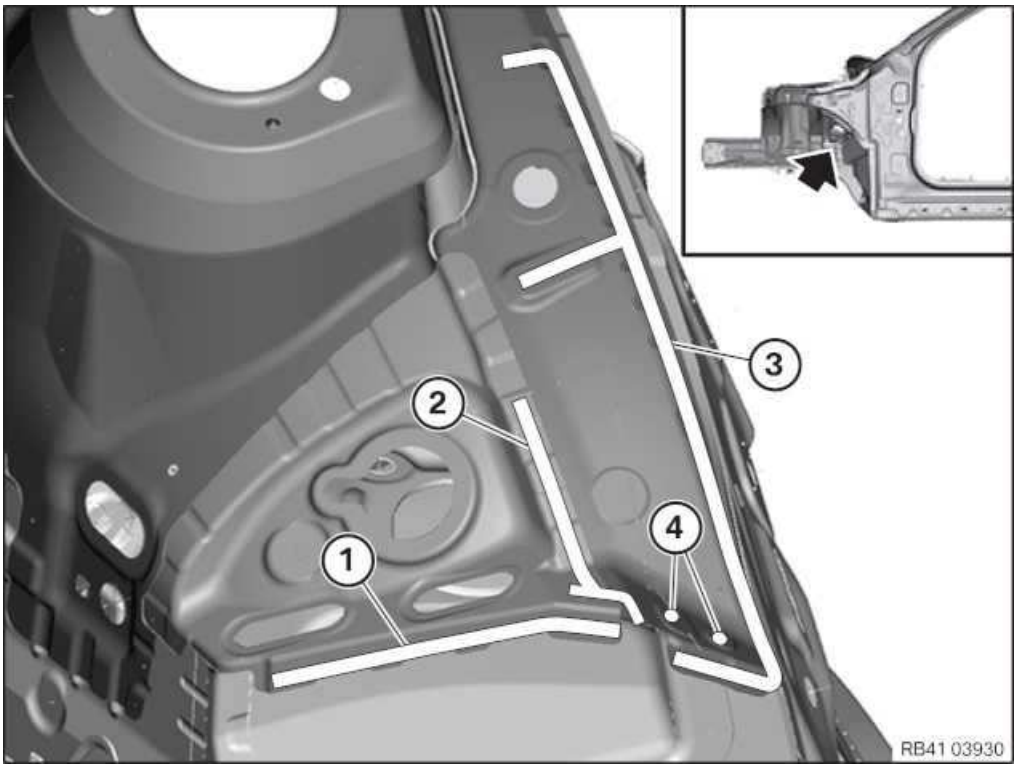


- Weld the new parts in areas (1) and (2).

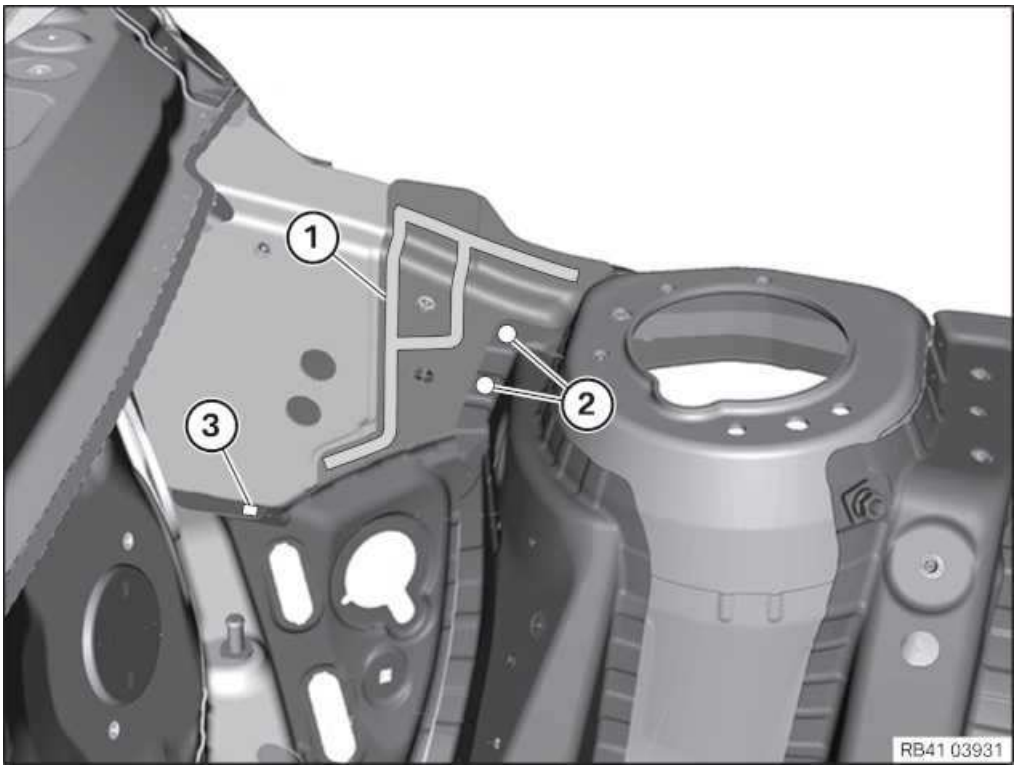


- Weld the new parts in areas (1) and (2).

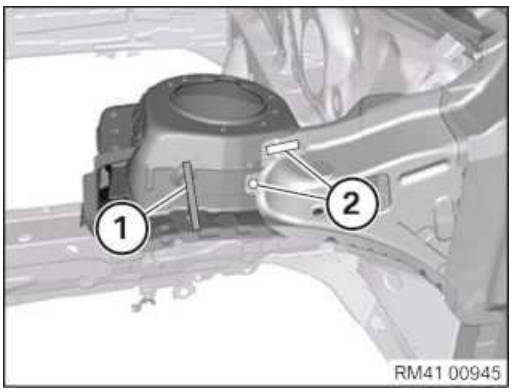
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- Weld new part in the areas (1) to (4).



- Weld new part in the areas (1) to (3).
- Weld all 3 panels together in areas (2).



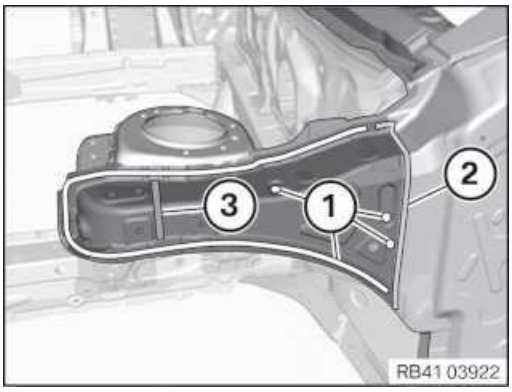
- Weld new part in the area(2).

TECHNICAL INFORMATION

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

- Apply sealant to cavity sealing (1). Install cavity sealing.

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- Apply sealant to cavity sealing(3).
- Install new part and weld in the areas (1) and (2).

Additional Information

Links

Repair instructions (PRE)	Used in step
Transferring hole pattern	3

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	2 3
41 00 ... 0 Contents of Body, General	
41 0 Repair techniques, repair stage 3	

Repair instructions	Used in step
41 00 ... Installing cavity sealing (not expanded)	4

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41 11 095 Replacing engine support in front of wheel arch, left

Prerequisite

- Vehicle is fixed on the straightening bench.

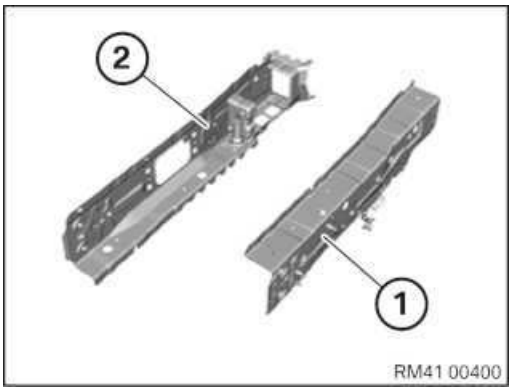
TECHNICAL INFORMATION

- 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 – New parts required



- Supply the following new parts:

  Outer engine support (1)

  Inner engine support (2)

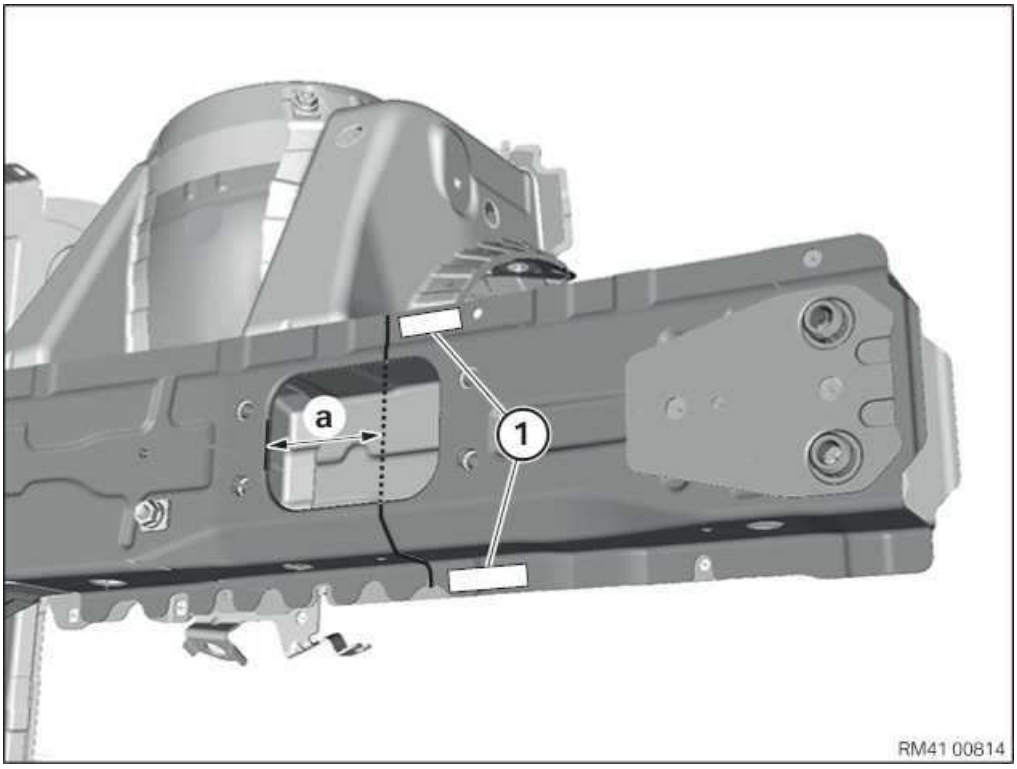
TECHNICAL INFORMATION

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

- Supply the following consumables:

Material	Quantity
Coarse thread bolt	5
Threaded weld bolt	5
Sealant D1	
Cavity sealing wax remover	

2 – Removing engine support.

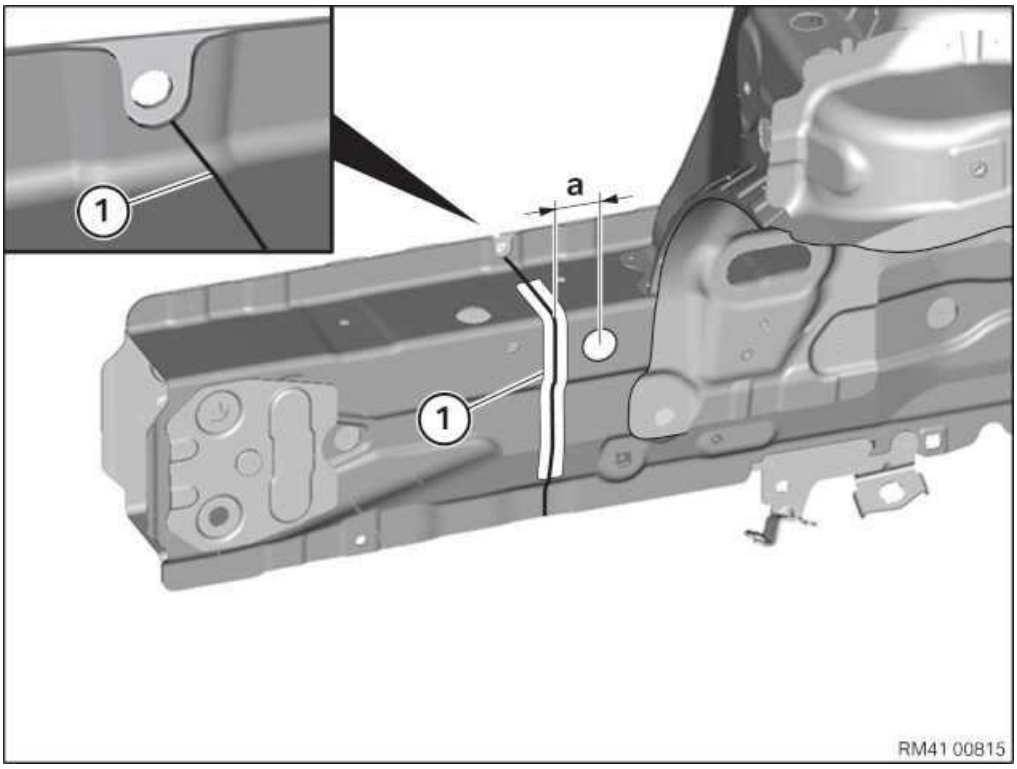


- Mark and carry out the separating cut as per dimension a. When doing this, only cut the engine support inner panel.

  Dimension a = 75 mm from the edge of the recess.

- Release welded connections in areas (1).

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- Open welded connections in area (1) of the separating cut.
- Mark and make the separating cut (1) according to dimension a.

  Dimension a = 25 mm from the centre of the hole Ø 20 mm.

Note: There is a bulkhead beneath the separating cut. The bulkhead will also be renewed. The bulkhead on the new part will be used as reinforcement plate.

- Remove section of engine support.

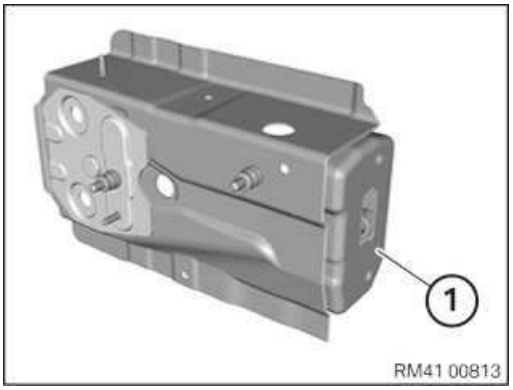
3 – Prepare new part

- Mark and carry out the separating cuts on new parts in accordance with the separating cuts on the vehicle.

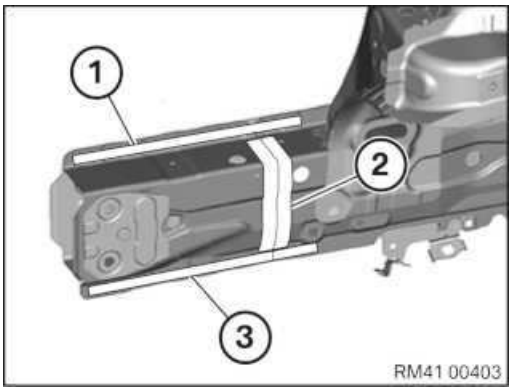
TECHNICAL INFORMATION

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

- Prepare a reinforcement plate for the separating cut on the engine support inner section.



- Use the bulkhead (1) on the engine support outer section as a reinforcement plate.



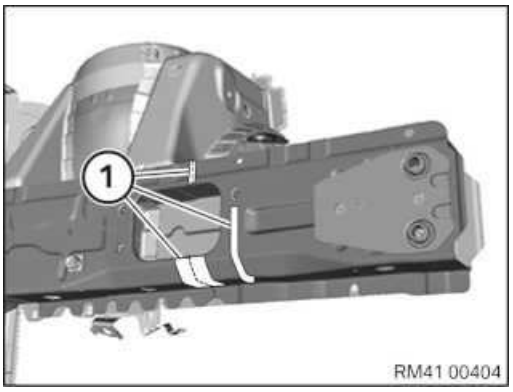
- Adjust new parts to fit with alignment bracket or universal mounting.

TECHNICAL INFORMATION

For additional information see: 41 00 ... Welding steel components

- Prepare the new parts in the areas (1) to (3) for joining by welding.

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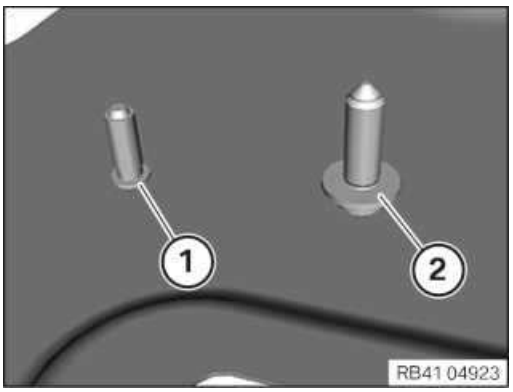


- Prepare the new parts in the areas (1) for joining by welding.

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

NOTICE

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

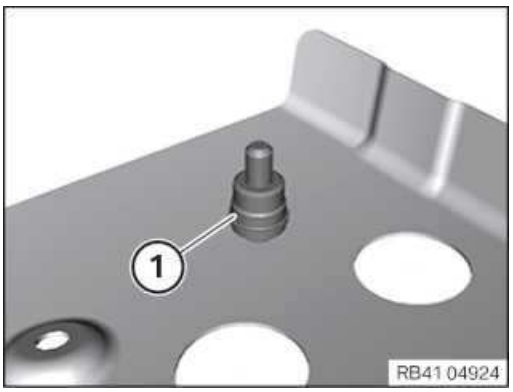


- Take the quantity and position from the component to be replaced.
- Weld the coarse thread bolt (1) and the threaded weld bolt (2) onto the new part.

▸ **Earth pin**

NOTICE

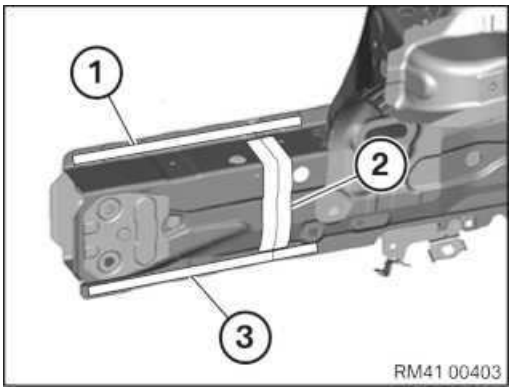
Schematic diagram is for example purposes. Some parts may differ in certain details.



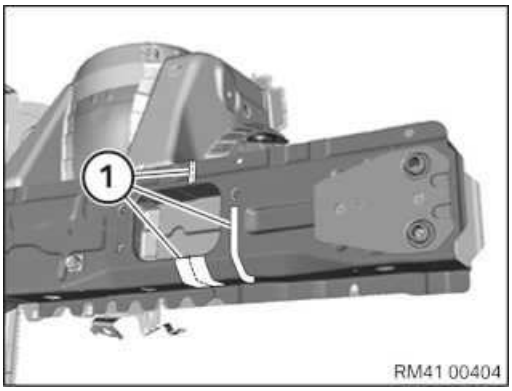
- Check the ground pins (1) for stability and renew where required.

4 – Insert engine support

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- Adjust new parts to fit with alignment bracket or universal mounting.
- Weld the new parts and the reinforcement plate in the areas (1) to (3).



- Weld 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 ... Welding steel components	3 4
41 00 ... 0 Contents of Body, General	
41 0 Repair techniques, repair stage 3	

Repair instructions	Used in step
41 00 ... Welding in reinforcement plate (sheet steel)	3

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41 11 096 Replacing engine support in front of wheel arch, right

Prerequisite

- Vehicle is secured on the straightening bench.

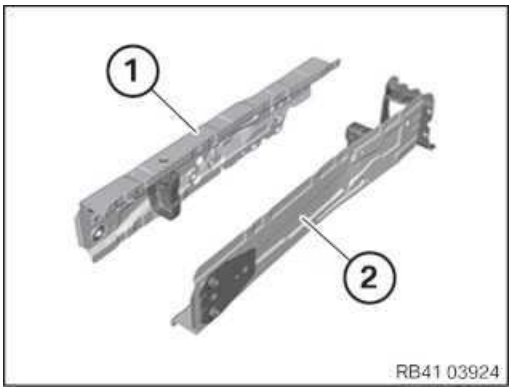
TECHNICAL INFORMATION

- 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):

  Outer engine support (1)

  Inner engine support (2)

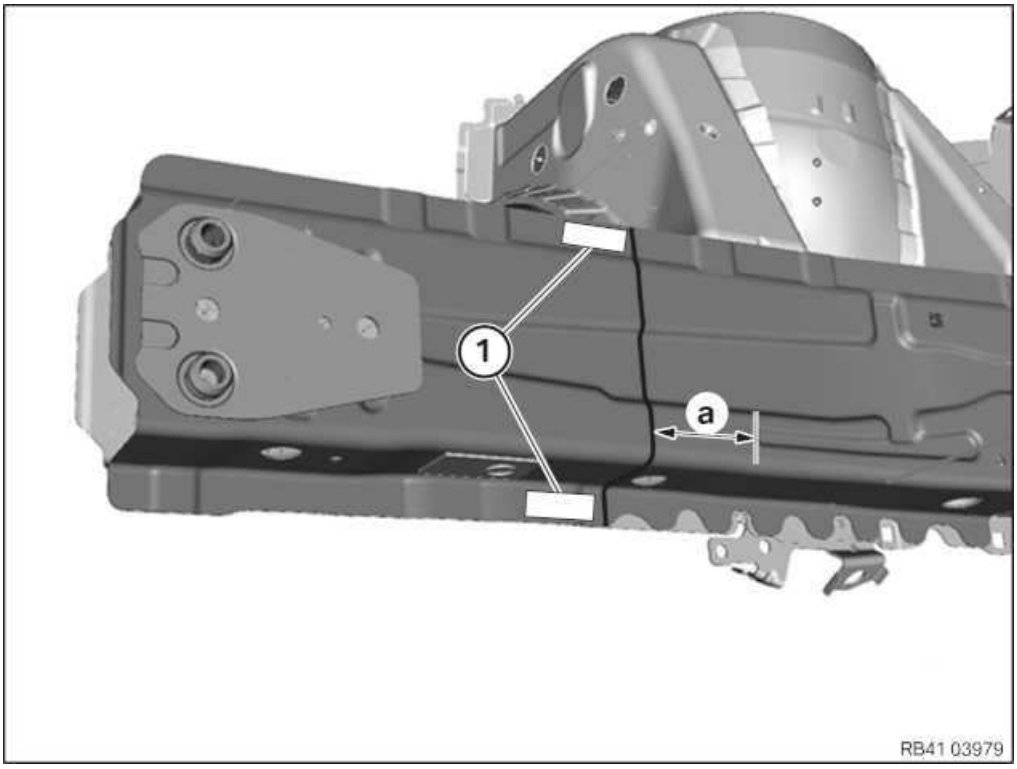
TECHNICAL INFORMATION

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

- Supply the following consumables:

Material	Quantity
Coarse thread bolt	5
Threaded weld bolt	5
Sealing compound D1	
Cavity sealing wax remover	

2 – Remove engine support.



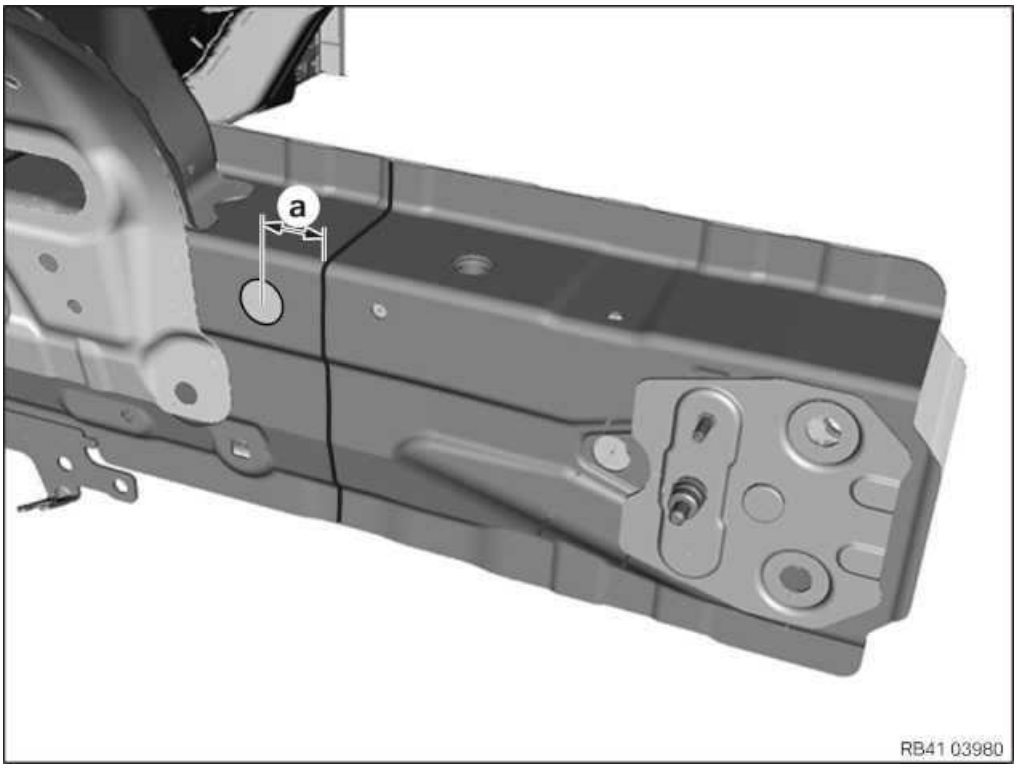
- Mark and make a separating cut according to the dimension a.

  Pay attention to offset of separating cuts. Only disconnect the inner panel of engine support.

  Dimension a = 65 mm from the start of the markings.

- Release welded connections in areas (1).

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- Mark and make a separating cut (1) according to dimension a.

  Dimension a = 28 mm from the centre hole Ø 20 mm.
- Remove section of engine support.

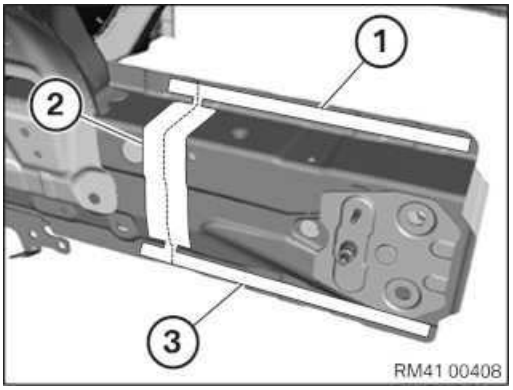
3 – Prepare new part

- Mark and carry out the separating cuts on new parts in accordance with the separating cuts on the vehicle.

TECHNICAL INFORMATION

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

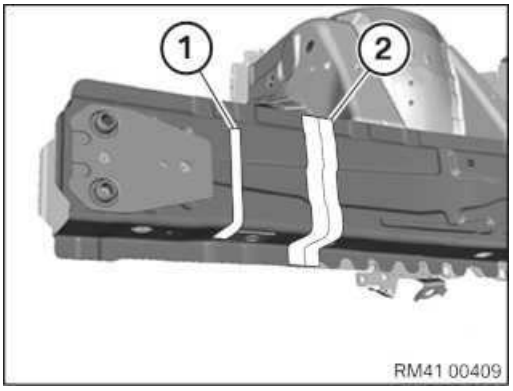
- Prepare reinforcement plates for the separating cuts.
- Adjust the new parts with an alignment bracket or a universal fixture.



TECHNICAL INFORMATION

For additional information see: 41 00 ... Welding steel components

- Prepare the new parts in the areas (1) to (3) for joining by welding.



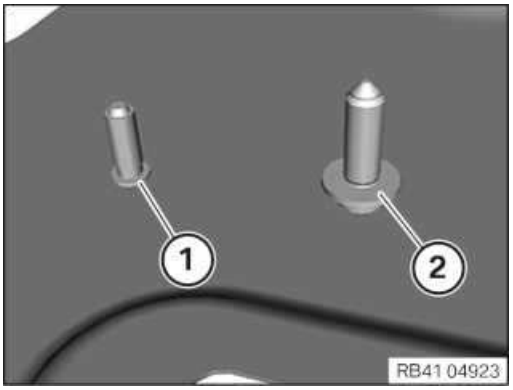
- Prepare the new parts in the areas (1) and (2) to weld them together.

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

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NOTICE

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

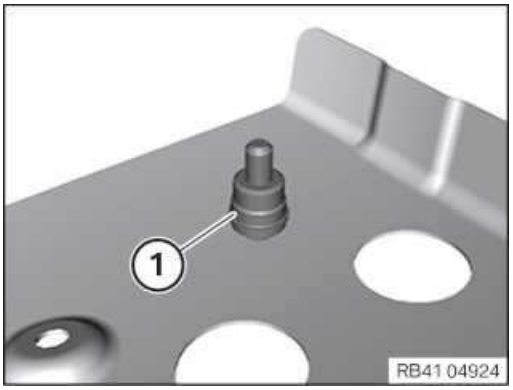


- Take the quantity and position from the component to be replaced.
- Weld the coarse thread bolt (1) and the threaded weld bolt (2) onto the new part.

▸ **Earth pin**

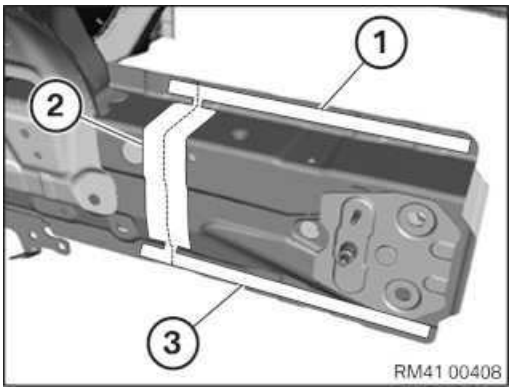
NOTICE

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



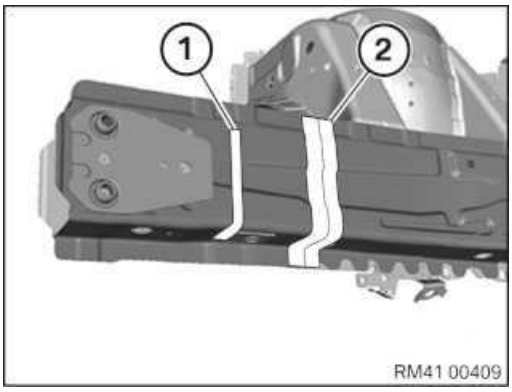
- Check the ground pins (1) for stability and renew where required.

4 – Insert engine support



- Install the new parts with an alignment bracket or a universal mount.
- Weld the new parts and the reinforcement plate in the areas (1) to (3).

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

Additional Information

Links

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... Welding steel components	3 4
41 00 ... 0 Contents of Body, General	
41 0 Repair techniques, repair stage 3	

Repair instructions	Used in step
41 00 ... Welding in reinforcement plate (sheet steel)	3

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41 11 072 Replacing engine support with front right wheel arch in front of bulkhead

Prerequisite

- Vehicle is secured on the straightening bench.

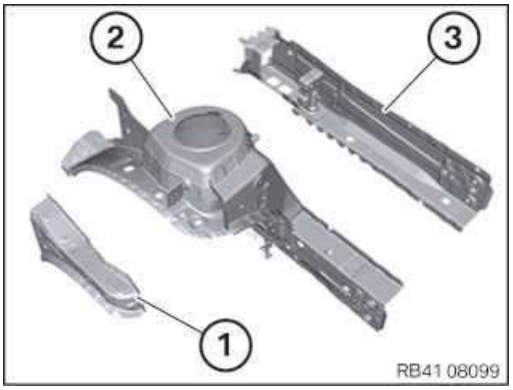
TECHNICAL INFORMATION

- 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):

  Outer wheel arch section carrier support (1)

  Front spring support(2)

  Inner engine support (3)

  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
Coarse thread bolt	10
Threaded weld bolt	5
Sealing compound D1	1

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

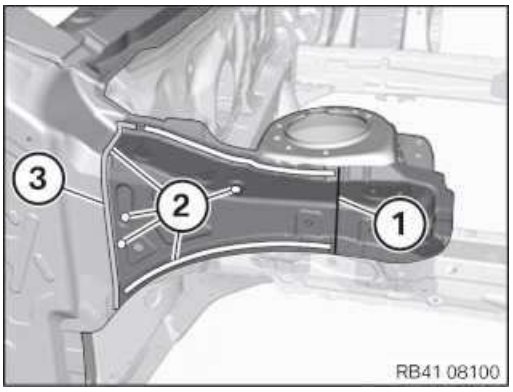
TECHNICAL INFORMATION

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

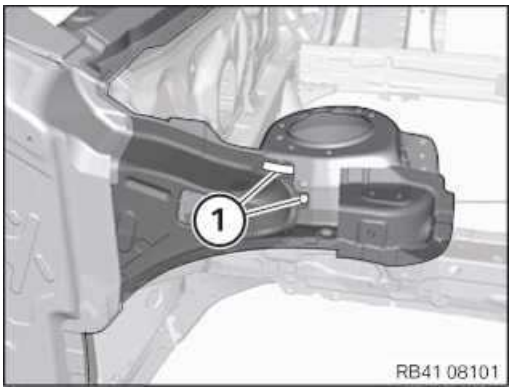
TECHNICAL INFORMATION

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

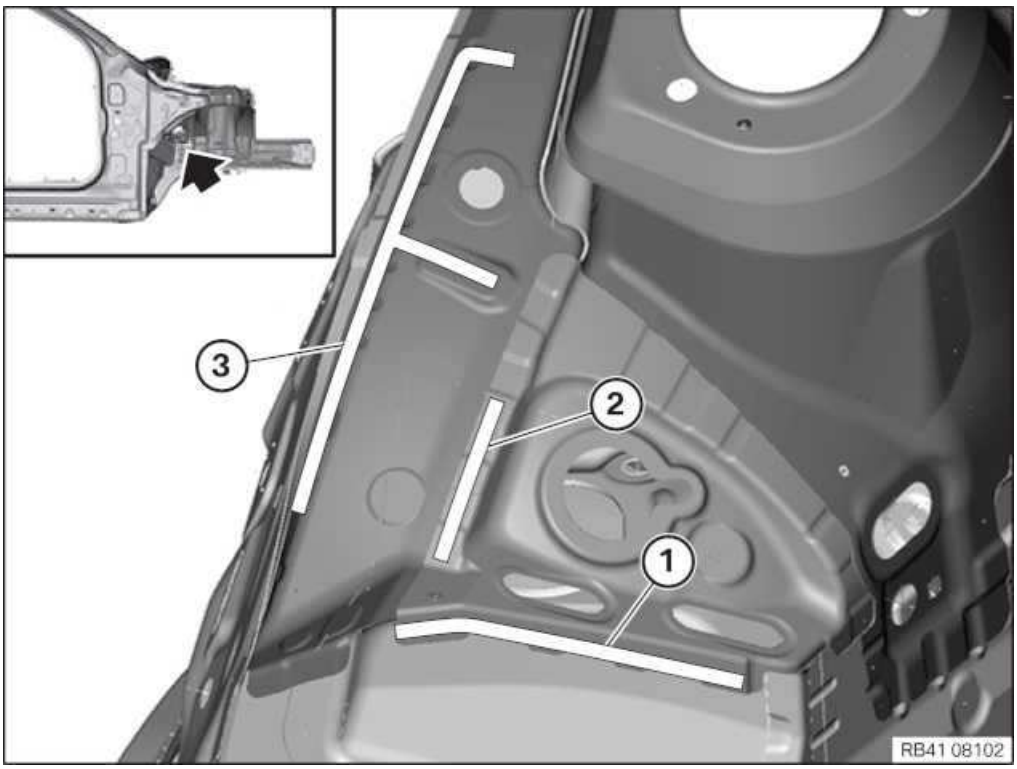
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- Mark and make a rough separating cut (1) as displayed.
- Release welded connections in areas (2).
- Open the spot-welded adhesive joints in the area (3) and remove the carrier support section.
- Remove adhesive residue in area (3).

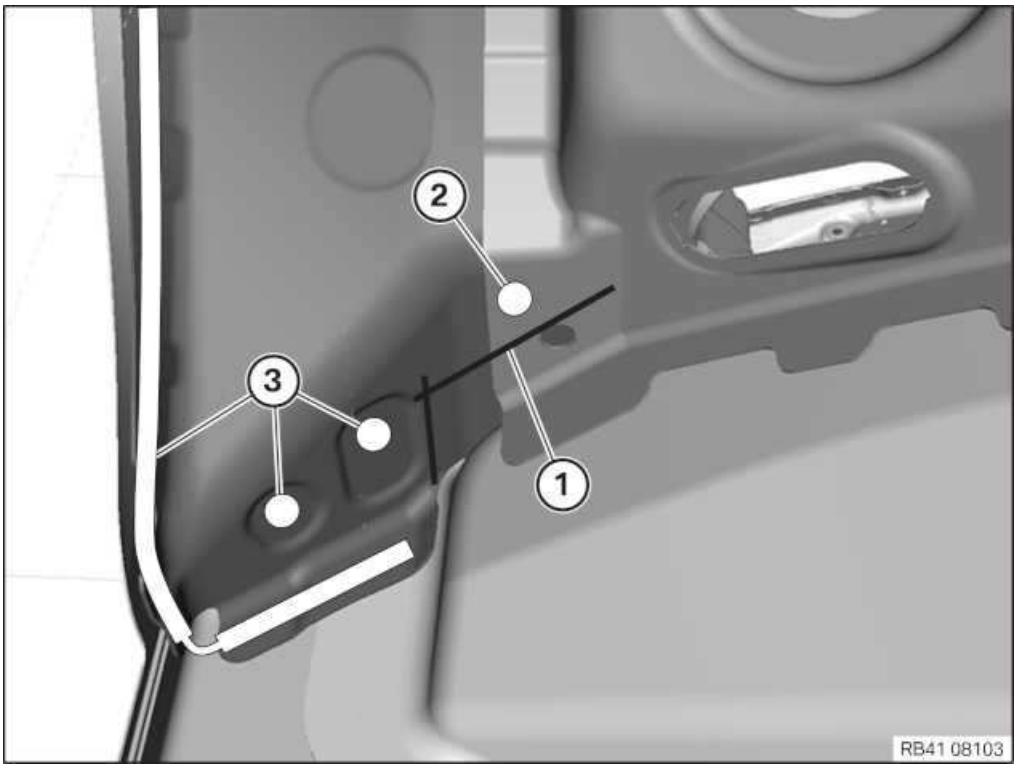


- Release welded connections in areas (1).

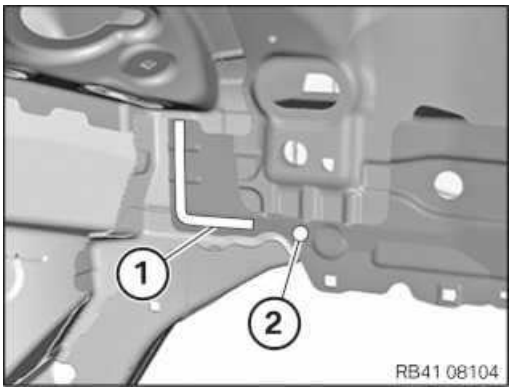


- Release the welded connections in the areas (1) to (3).
- Open welded connections in area (2) for both outer panels.

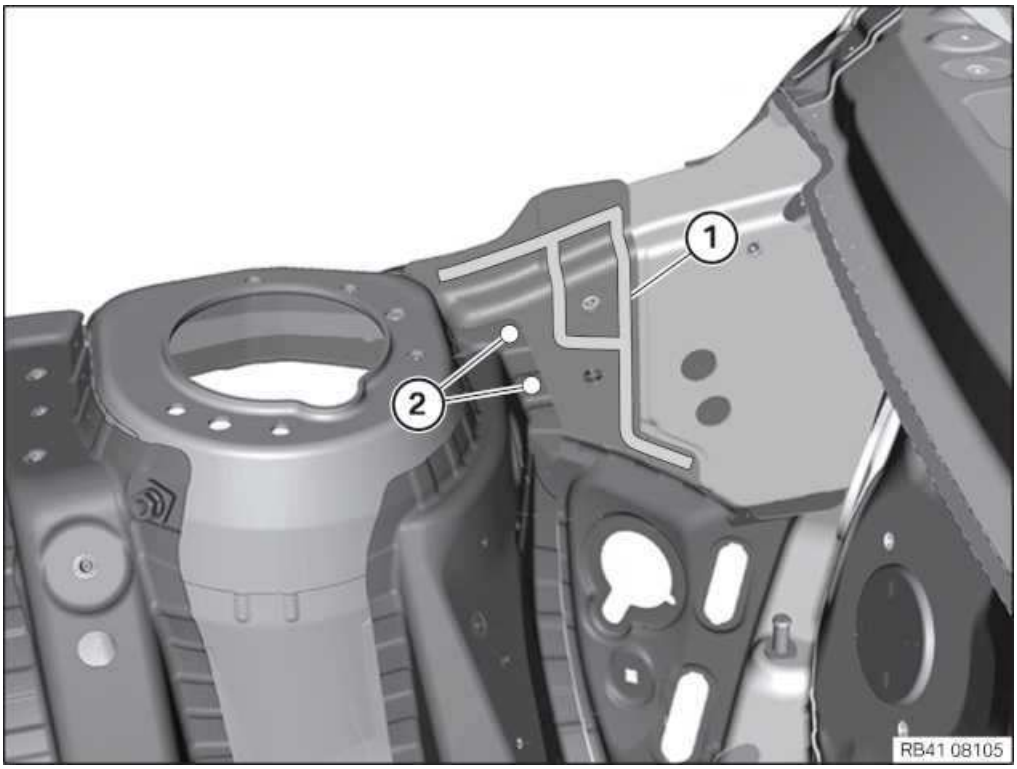
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- Mark and perform the separating cut (1) in accordance with the schematic diagram. While doing so, carry out the separating cut only on both outer panels.
- Open welded connections in area (2). While doing so, open the welded connections for both outer panels.
- Release welded connections in areas (3).

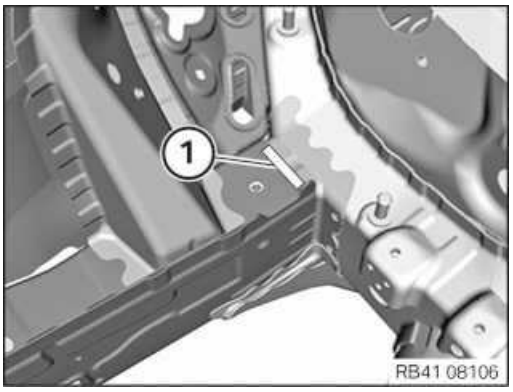


- Open welded connections in areas (1) and (2).
- Open welded connections in area (2) for both outer panels.

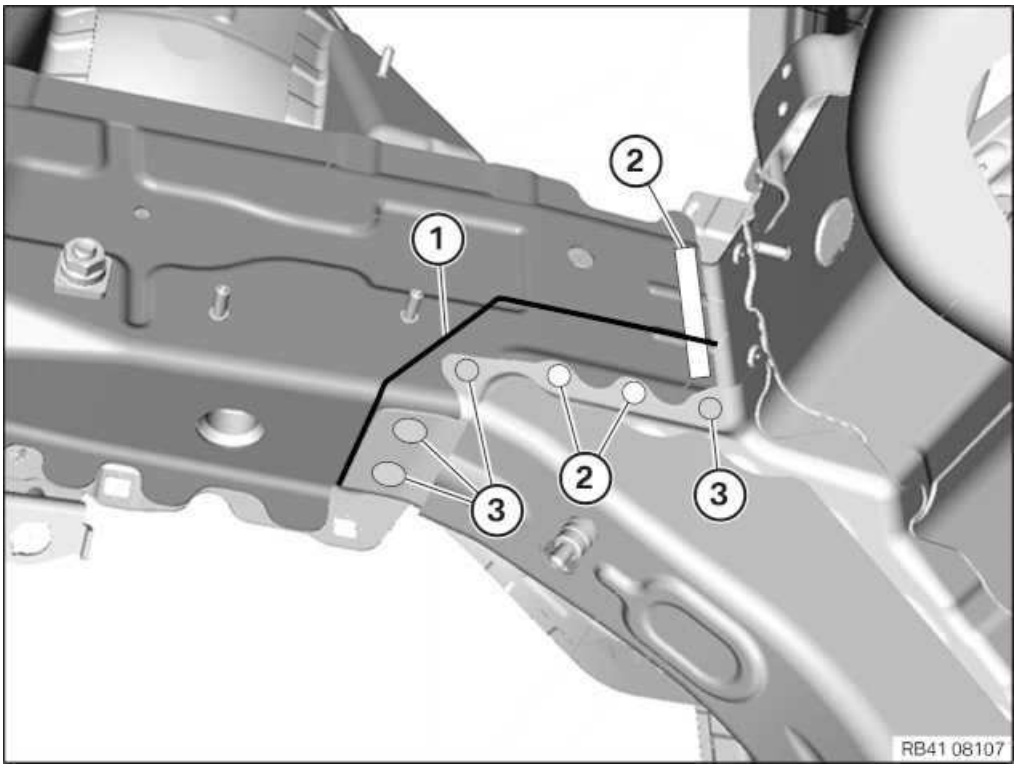


- Release the spot-welded adhesive joints in area (1).
- In areas (2), open the welded connections for both outer panels.

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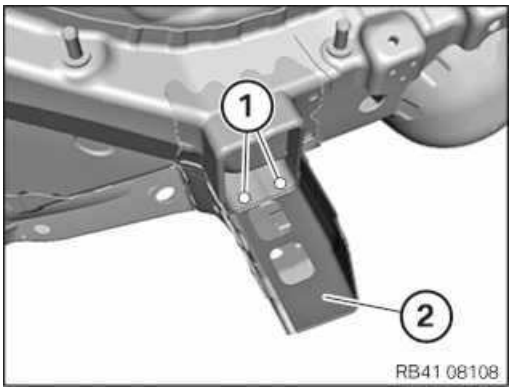


- Open welded connections in area (1).



- Mark and make the separating cut (1) as shown in the diagram.
- Open welded connections in areas (2) and (3).

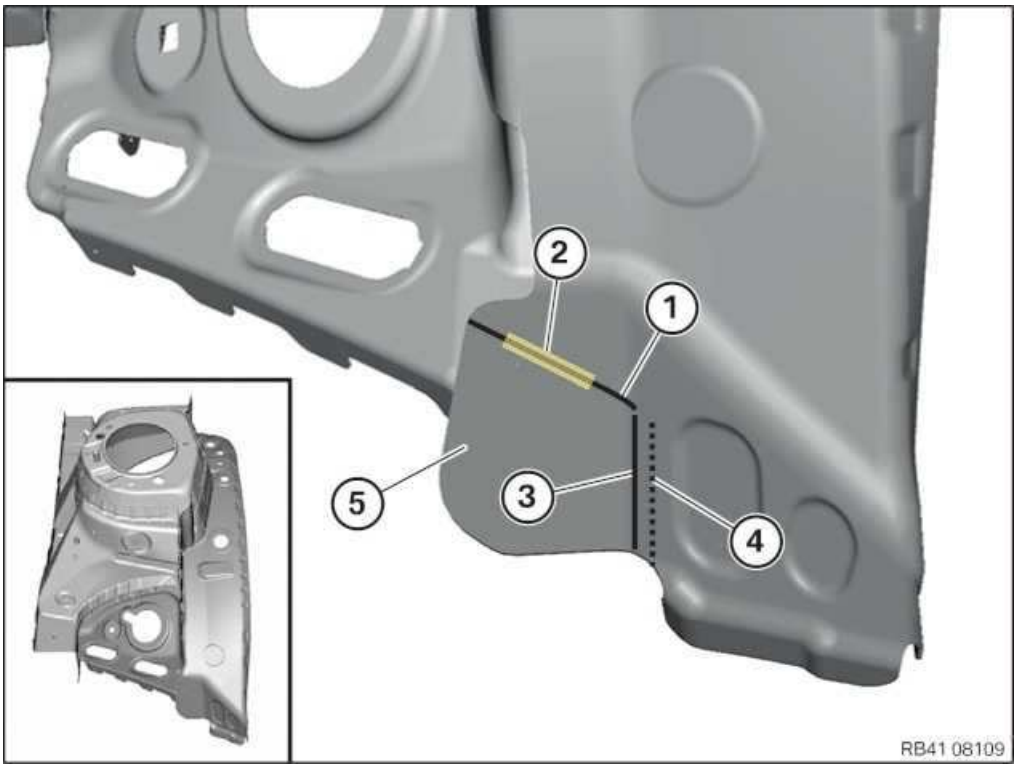
  In areas (3), open the welded connections for both outer panels.
- Remove engine support with wheel arch.



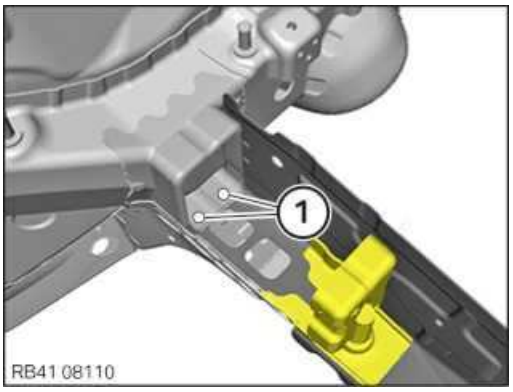
- Open welded connections in areas (1) and remove the residual part (2) of the engine support.

3 – Preparing new parts

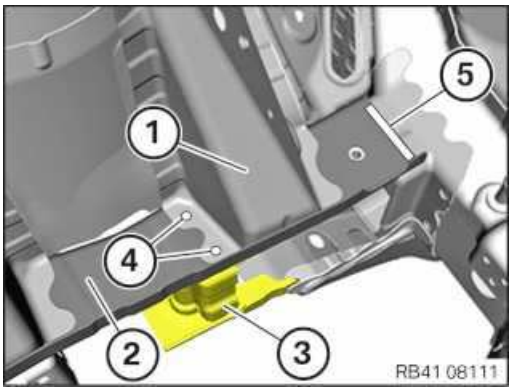
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- Mark and make the separating cut (1) according to the separating cut on the vehicle.
- Cut through both panels in area (2). In the area (2), the width of the separating cut must be about 5 mm, so that both panels can be welded to the body.
- Mark and carry out separating cut (3) according to the separating cut on the vehicle + approx. 5 mm material allowance. (4) = Separating cut on the vehicle.
- Remove the cut panel section (5).



- Adjust new part for engine support internal part using alignment bracket or universal fixture.
- Prepare new part in the areas (1) for joining through weld.

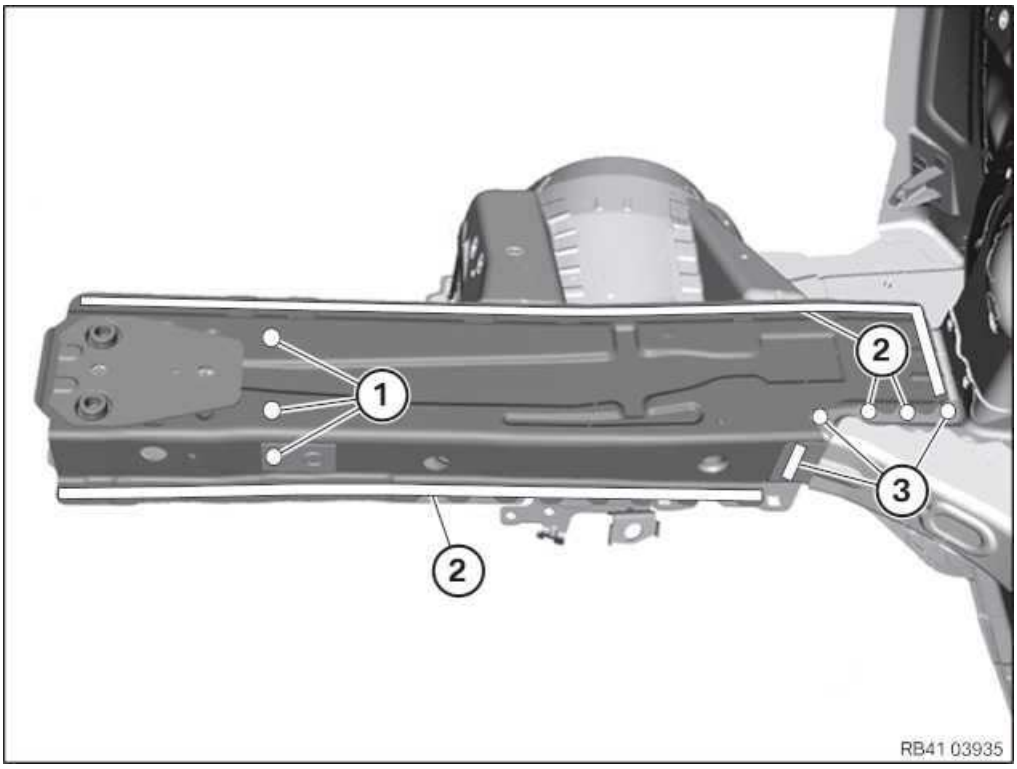


- Adapt new part for spring support using alignment bracket or universal fixture.

  Note: Inner section of engine support is hidden for better overview.
- In the areas (4) drill 2 x Ø 10 mm holes for plug-welds. Do not drill through the fixture (3) of the front axle support!

  Wheel arch support (1), engine support outer section (2) and the fixture (3) of the front axle support must be welded in the areas (4).
- Prepare the new part in area (5) for joining by welding.

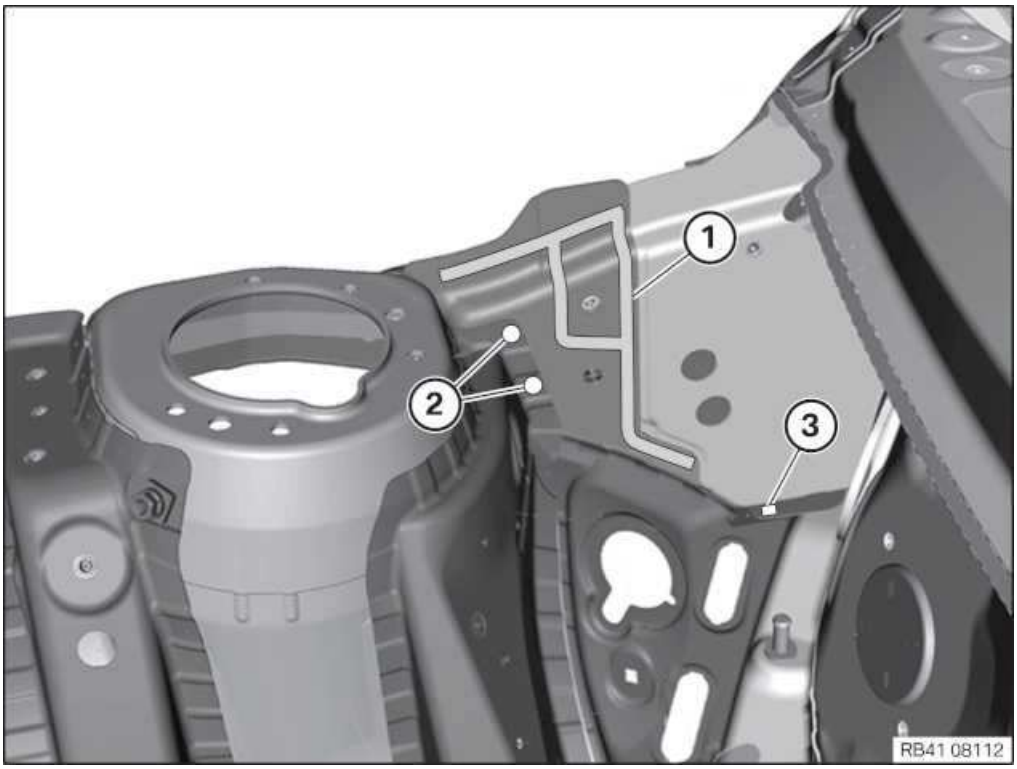
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- Prepare the new parts in the areas (1) to (3) for joining by welding.
- Increase size of holes in areas (3) (open welded connections) to Ø 10 mm.

  Transfer holes to new engine support internal part and drill.

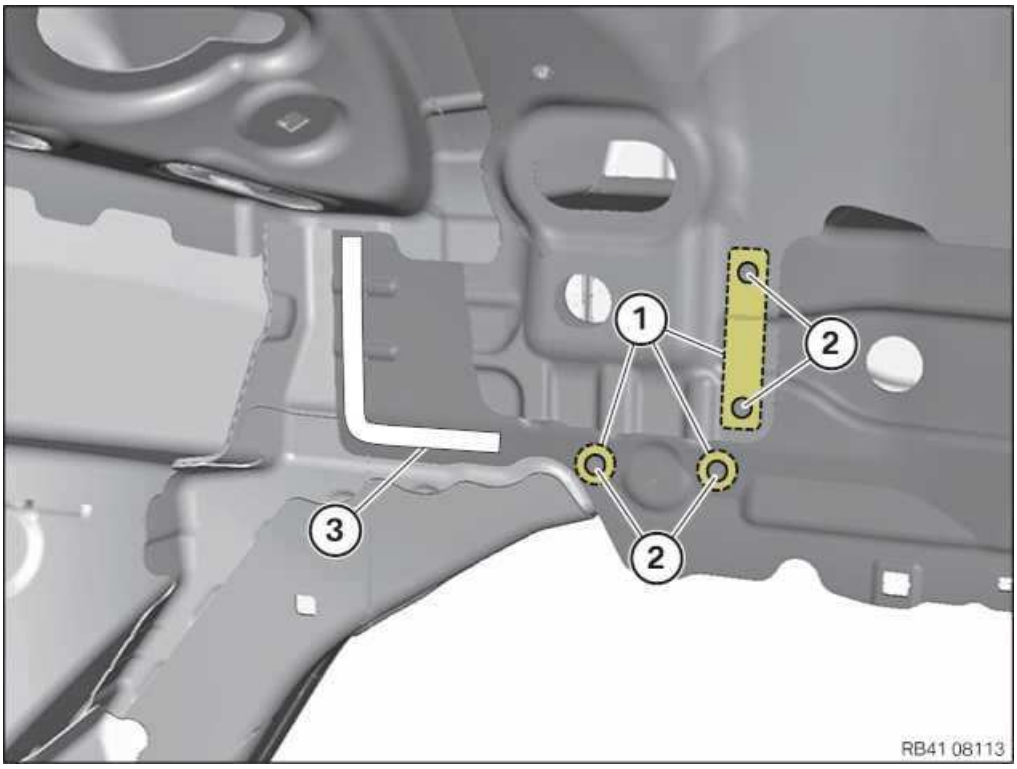
  All 3 panels must be welded to each other in areas (3).



- Prepare areas (1) to (3) for joining by welding.

  All 3 panels must be welded to each other in areas (2).

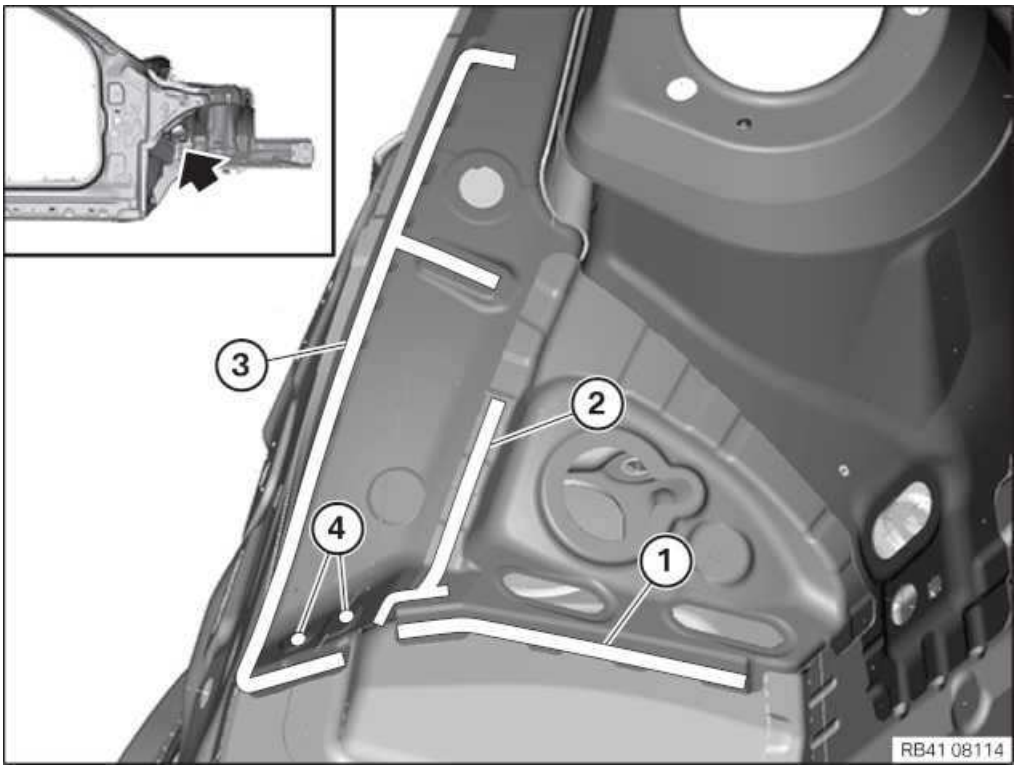
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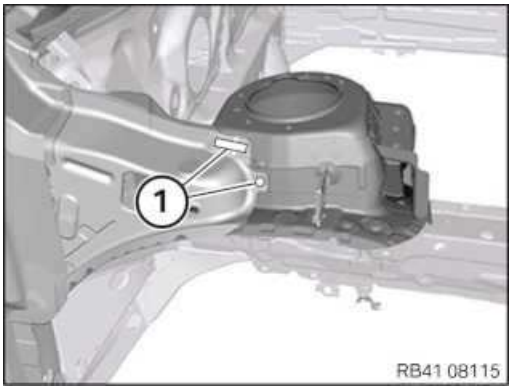
- Adopt the position of the bore holes (2) from the removed part and transfer to the new part.
- In areas (2), drill 4 bore holes Ø 10 mm for plug-welds. Do not drill through the "front axle support fixture" component behind it.

  The "front axle support fixture" component is located in the areas (1). (See figures RB41 03111 and RB41 03112)

  The "front axle support fixture" component must be welded in the areas (1).
- Prepare area (3) for joining by welding

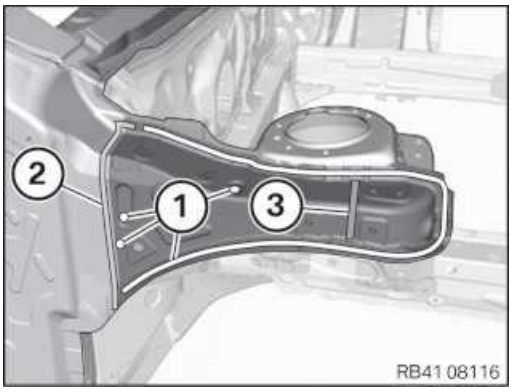


- Prepare for joining by welding in the areas (1) to (4).



- Prepare the new parts in the areas (1) for joining by welding.

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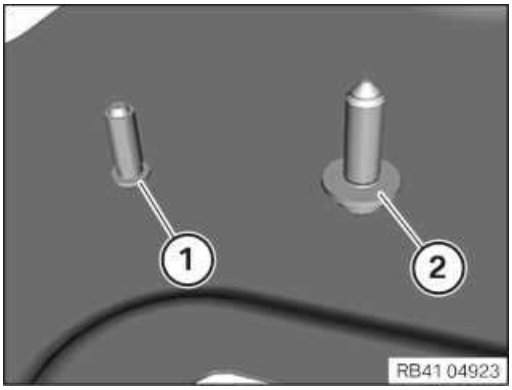
- Install new part and prepare for joining by welding in areas (1) and (2).

  Note the position of the cavity sealing (3).

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

NOTICE

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

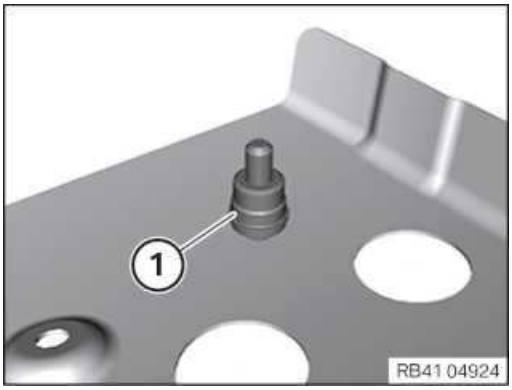


- Take the quantity and position from the component to be replaced.
- Weld the coarse thread bolt (1) and the threaded weld bolt (2) onto the new part.

▸ **Earth pin**

NOTICE

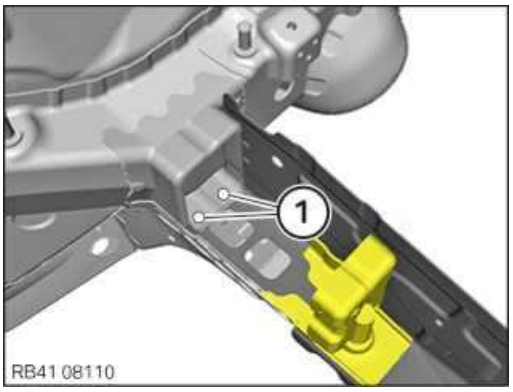
Schematic diagram is for example purposes. Some parts may differ in certain details.



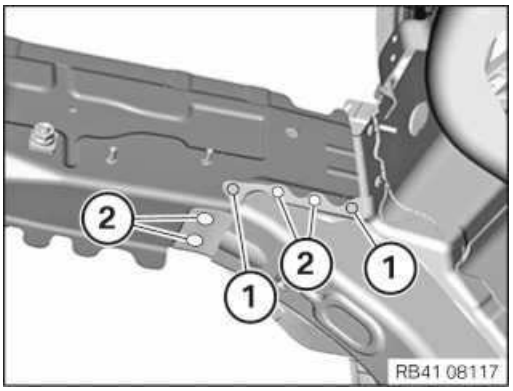
- Check the ground pins (1) for stability and renew where required.

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

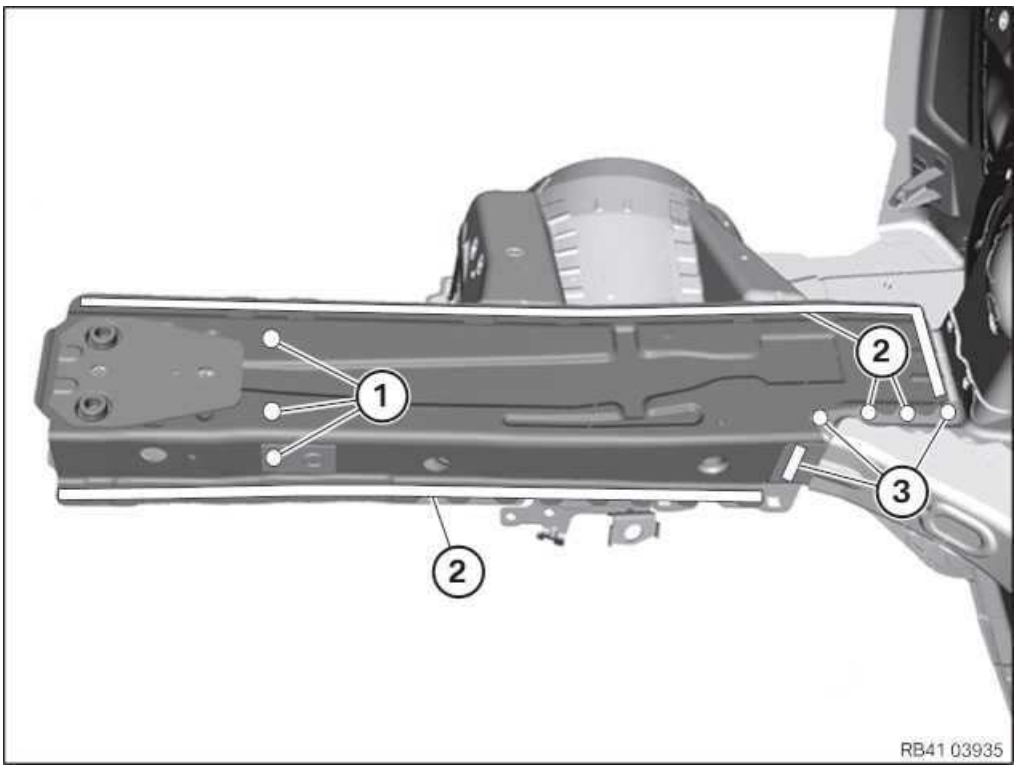
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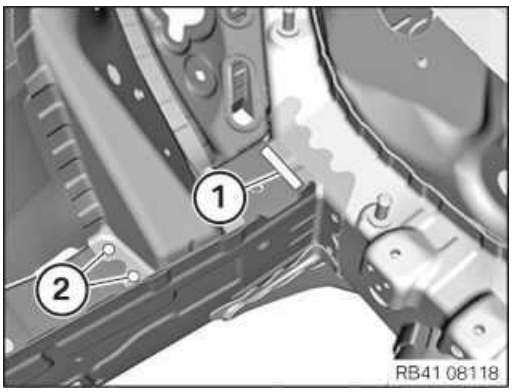
- Install new part engine support inner section with alignment bracket or universal fixture and weld in areas (1).



- Weld the new part engine support inner section in the areas (1)and (2).

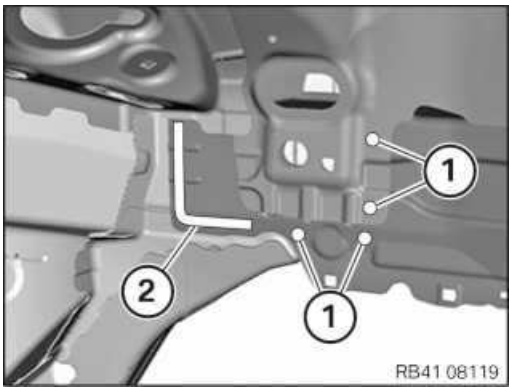


- Install new part spring support with alignment bracket or universal fixture and weld in areas (1) and (2).

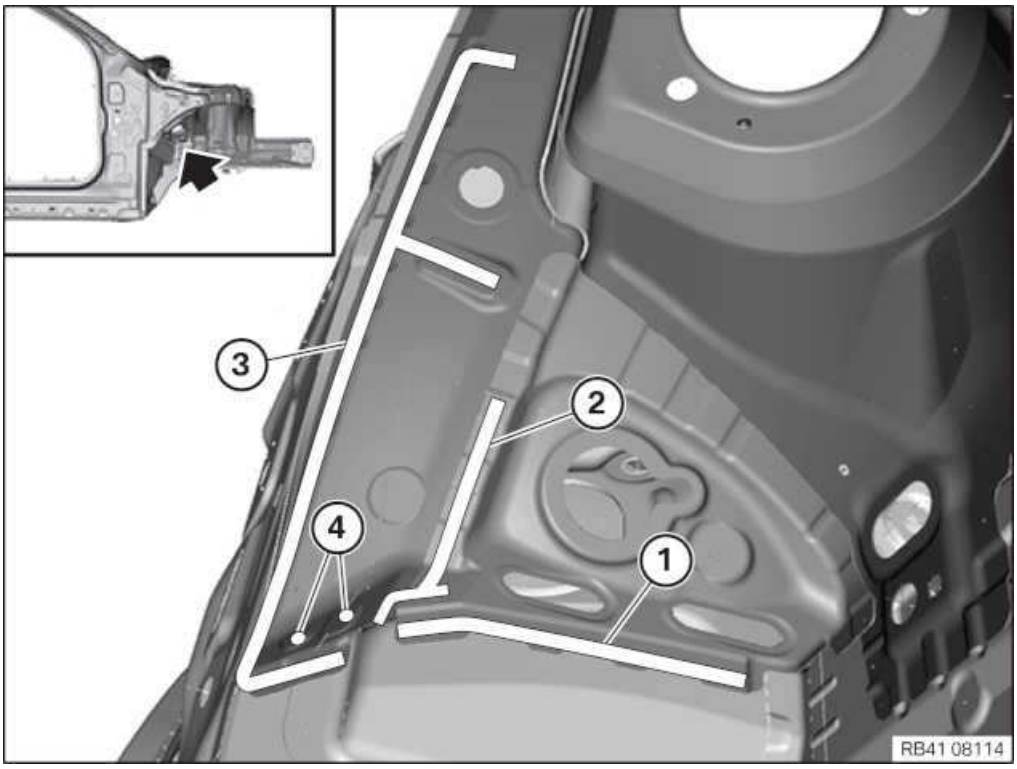


- Weld the new parts in areas (1) and (2).

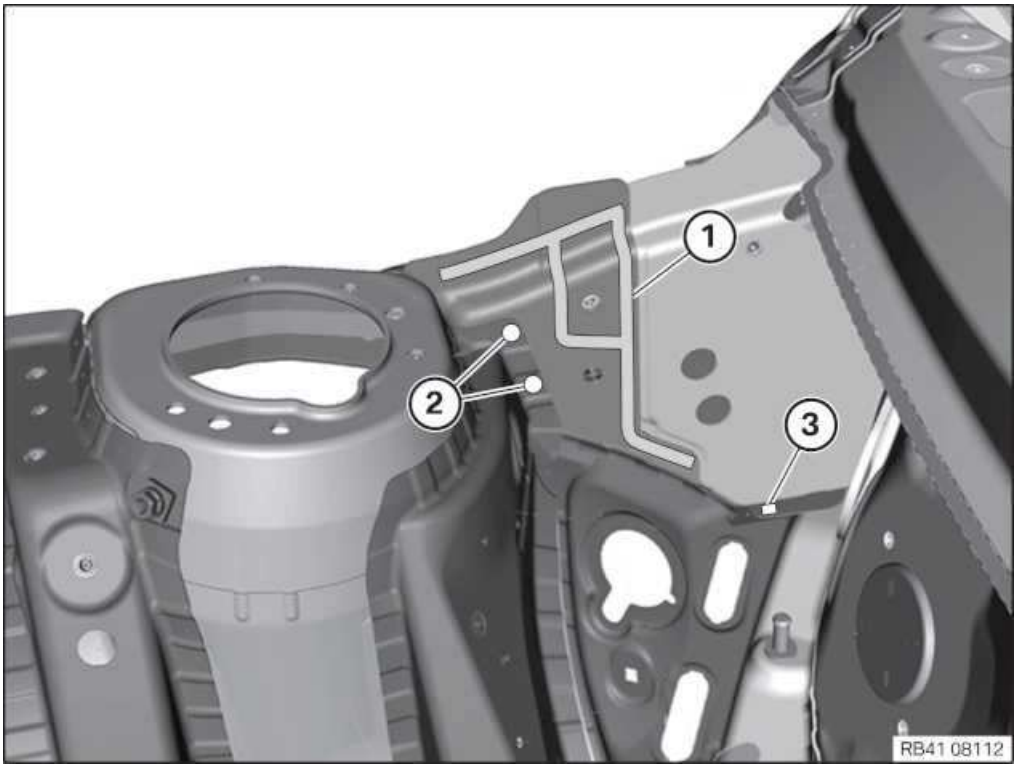
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- Weld the new parts in areas (1) and (2).

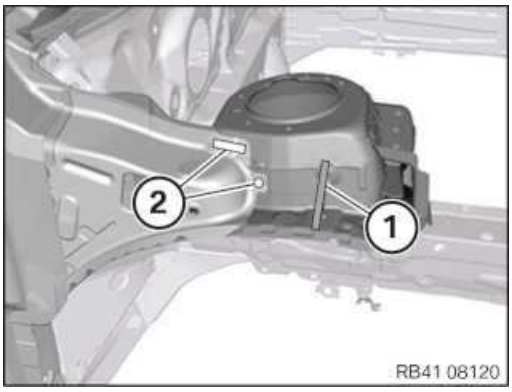


- Weld new part in the areas (1) to (4).



- Weld new part in the areas (1) to (3).
- Weld all 3 panels together in areas (2).

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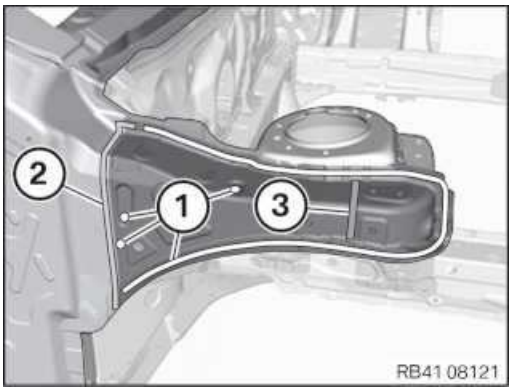


- Weld new part in the area (2).

TECHNICAL INFORMATION

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

- Apply sealant to cavity sealing (1). Install cavity sealing.



- Apply sealant to cavity sealing(3).
- Install new part and weld in the areas (1) and (2).

Additional Information

Links

Repair instructions (PRE)	Used in step
Transferring hole pattern	3

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	2 3
41 00 ... 0 Contents of Body, General	
41 0 Repair techniques, repair stage 3	

Repair instructions	Used in step
41 00 ... Installing cavity sealing (not expanded)	4

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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.

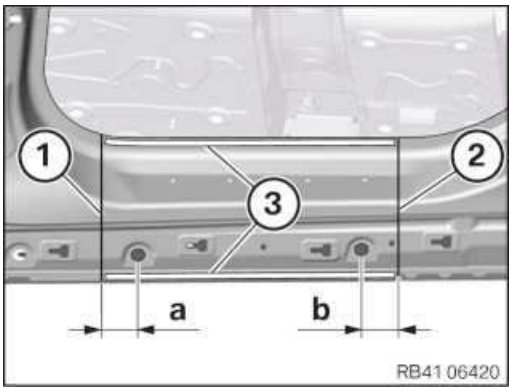
1 – Supply the new parts required



- Supply the following new parts:

  A-pillar, outer part(1)

2 – Remove the door sill at the front door



- Mark and carry out the separating cuts (1) and (2) according to the specified dimensions. Thereby disconnect only the outer panel.

  Dimension a = 50 mm from the centre of the Ø 20 mm hole.

  Dimension b = 55 mm from the centre of the Ø 20 mm hole.
- Loosen welded connections in areas (3).
- Remove the section of the side sill.

3 – Prepare new part

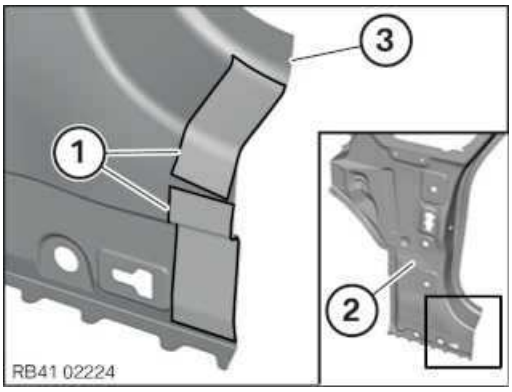
- Carry out the separating cuts on the new part according to the separating cuts on the vehicle.

TECHNICAL INFORMATION

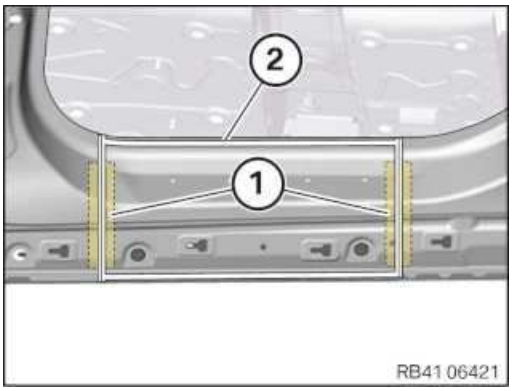
For additional information see: 41 00 ... Weld in the reinforcement plates (sheet steel)

- 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).

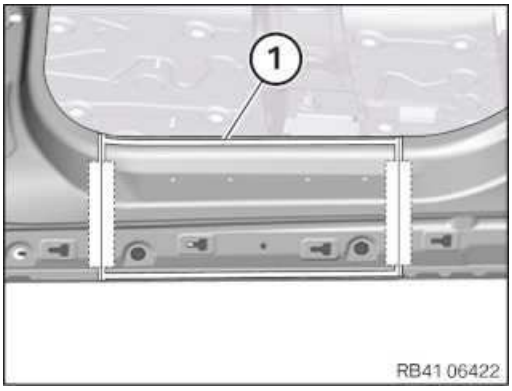


- Adjust the new part and the reinforcement plates (1) to fit.
- Prepare area (2) for joining by welding.

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 the reinforcement plates and weld them 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 ... 0 Contents of Body, General	
41 00 ... Repair techniques, repair stage 3	

Repair instructions	Used in step
41 00 ... Welding in reinforcement plate (sheet steel)	3

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41 11 091 Replacing left engine support in front of bulkhead (FRU specification without straightening bench) (FRU specification without wheel alignment)

Prerequisite

› Vehicle is fixed on the straightening bench.

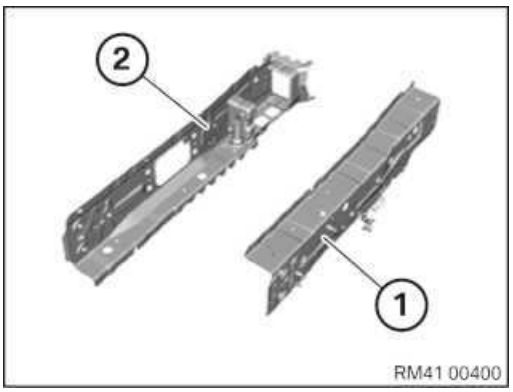
TECHNICAL INFORMATION

- 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 – New parts required



- Supply the following new parts:

  Outer engine support (1)

  Inner engine support (2)

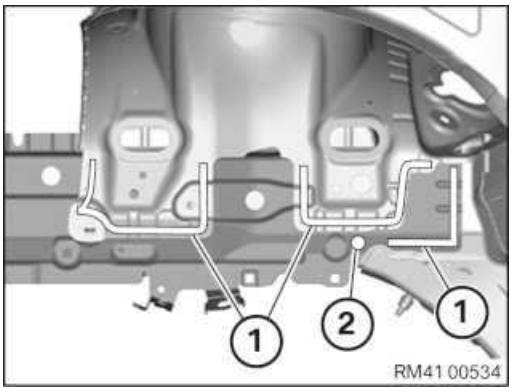
TECHNICAL INFORMATION

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

- Supply the following consumables:

Material	Quantity
Coarse thread bolt	5
Threaded weld bolt	5
Sealant D1	
Cavity sealing wax remover	

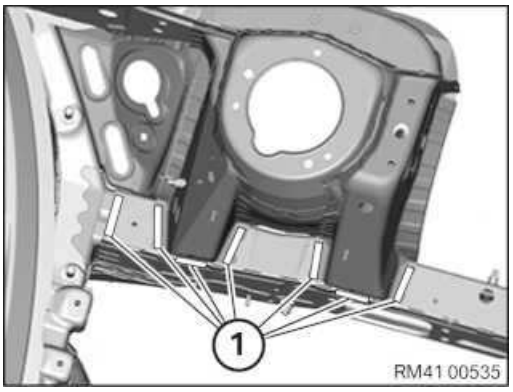
2 – Remove engine support.



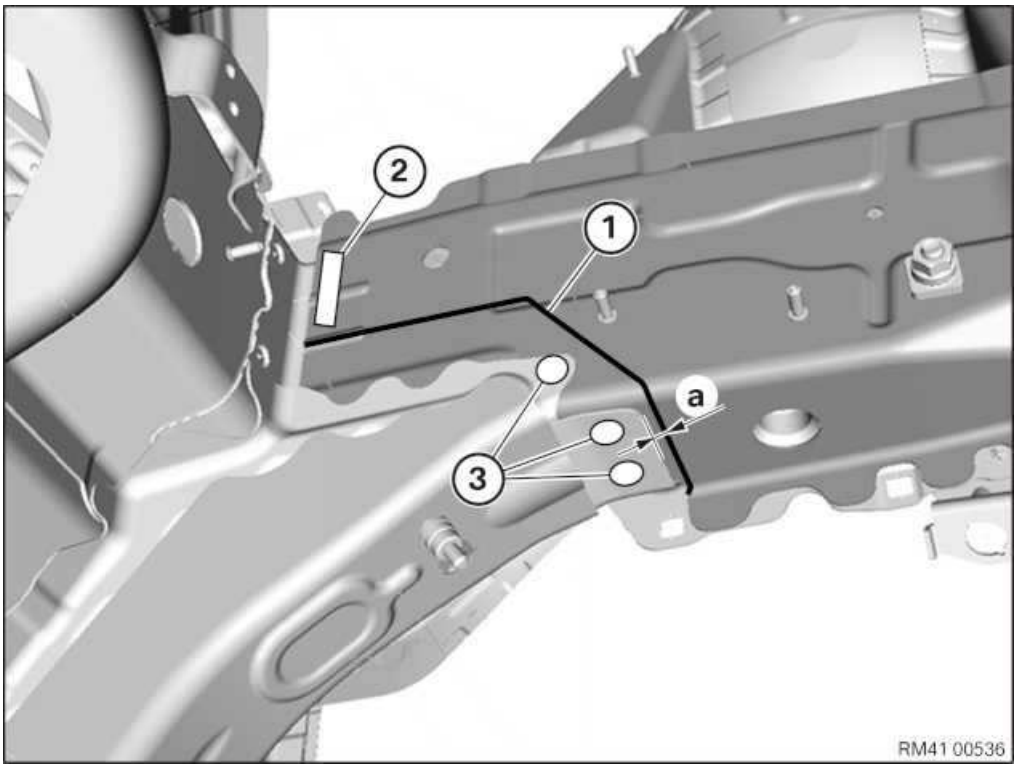
- Open welded connections in areas (1) and (2).

  3 panels are welded in area (2). Open welded connections in area (2) for both outer panels.

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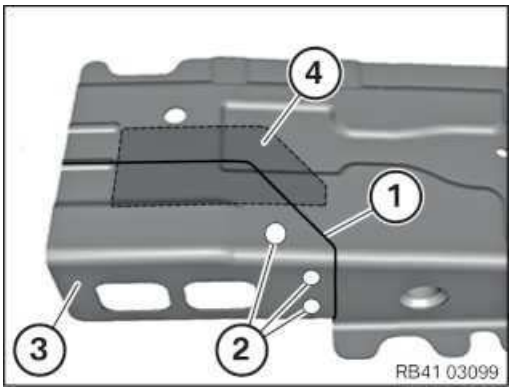
- Release welded connections in areas (1).



- Mark a separating cut (1) as shown and according to the specified dimension and execute it.

  Dimension a = 5 mm.
- Open the welded connections in areas (2) and (3) and remove the engine support.

3 – Prepare new part



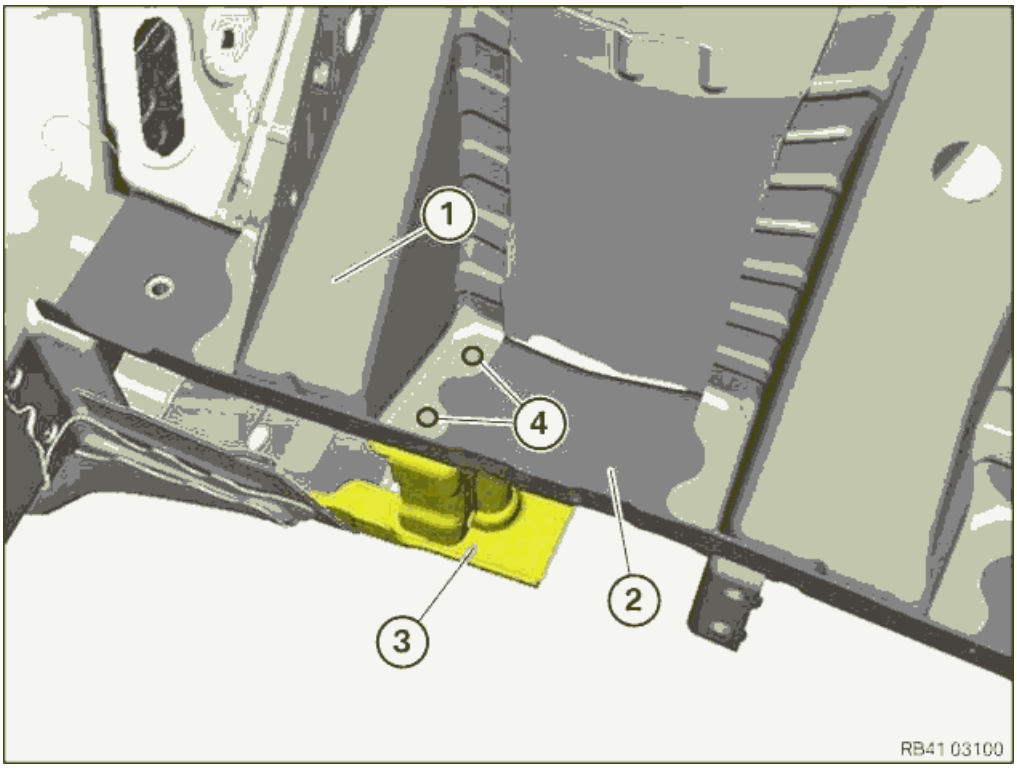
- Mark and make the separating cut (1) according to the separating cut on the vehicle. Thereby disconnect only the outer panel.
- Open the welded connections in the areas (2) and remove section (3).

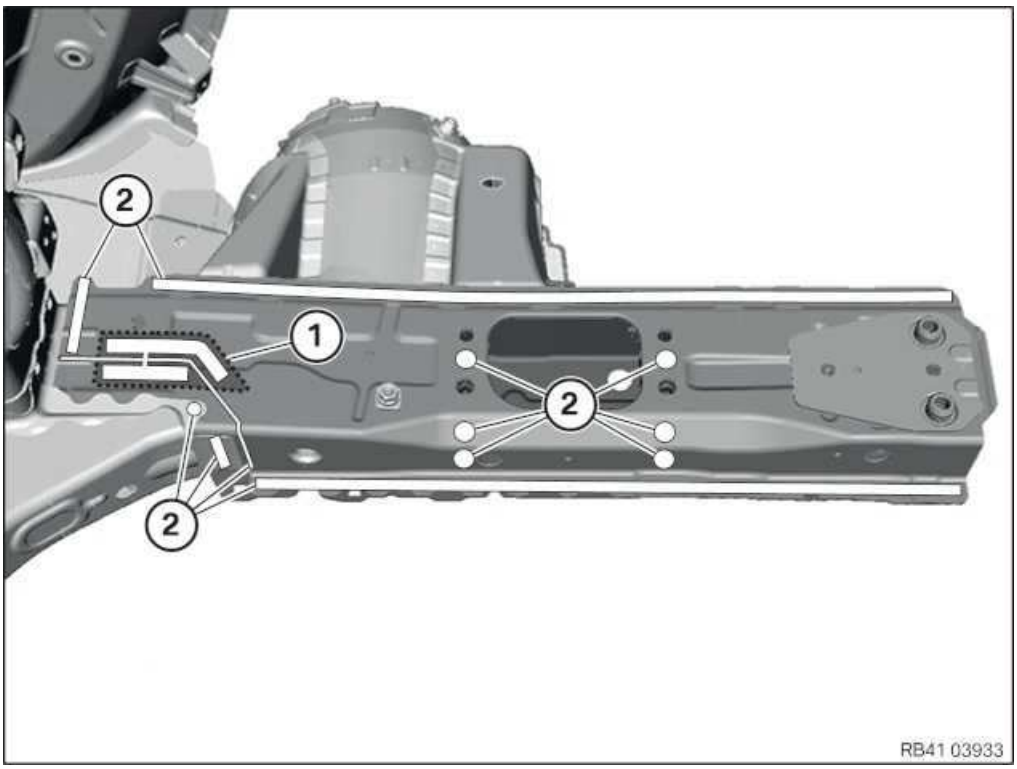
TECHNICAL INFORMATION

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

- Prepare a reinforcement plate (1) for the separating cut (4).
- Adjust new parts with an alignment bracket or a universal fixture.

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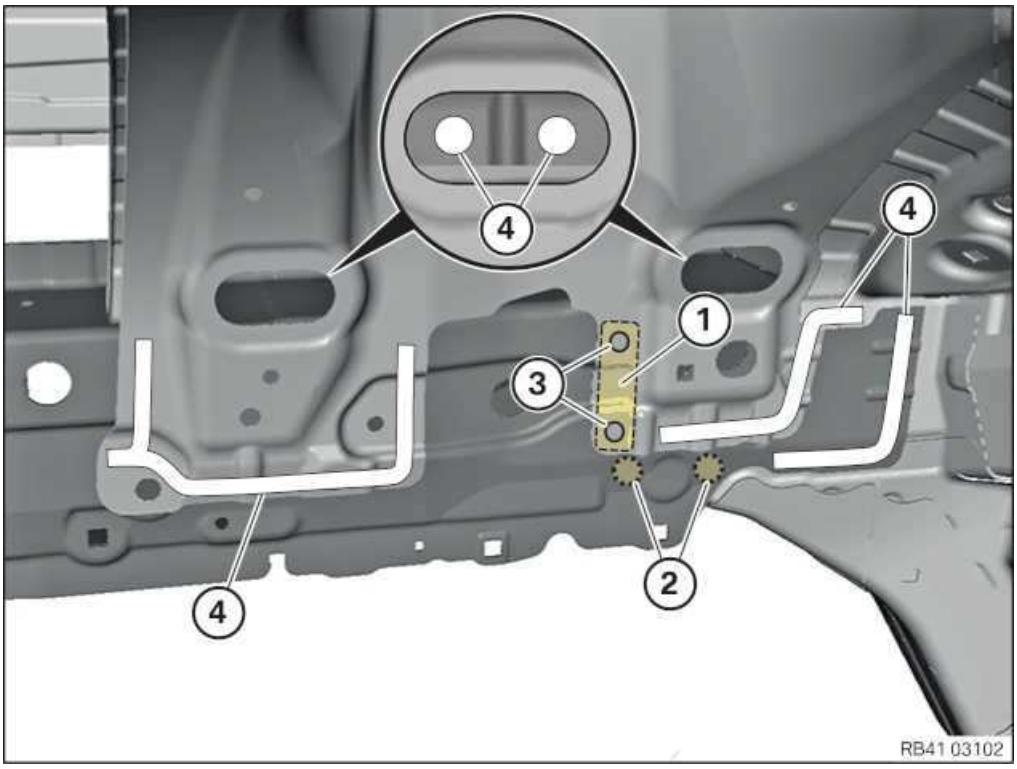


TECHNICAL INFORMATION

For additional information see: 41 00 ... Welding steel components

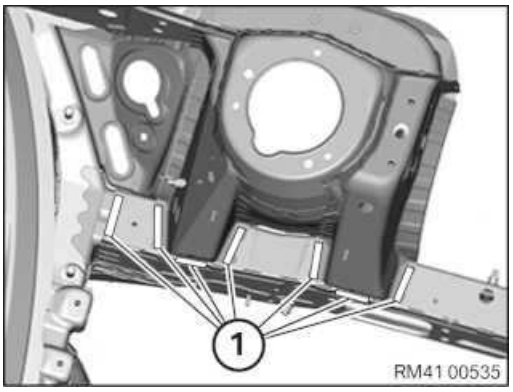
- Note: Inner section of engine support is hidden for better overview!
- Note: Support of the wheel arch (1), outer section of the engine support (2) and the mounting (3) of the front axle support must be welded together in the areas (4) using the plug-weld procedure.
- Transfer and drill holes (4) (open welded connections) on new part engine support outer section (2). Do not drill through the mounting (3) while doing so.
- Prepare the new part and the reinforcement plate (1) in areas (2) for joining by welding.

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- Note: The component “front axle support fixture” is in the areas (1) and (2). (see also Figure RB41-031-00)

  The component "front axle support fixture" must be welded in the areas (1) and (2) using plug-welding.
- Transfer and drill holes (3) (open welded connections) on new part engine support outer section.
- In areas (2), set one Ø 6.8 mm bore hole each. The positions of the bore holes (2) can be found from the removed part and transferred to the new part. Do not drill through the mounting of the front axle support while doing so.
- Prepare for joining by welding in the areas (4).

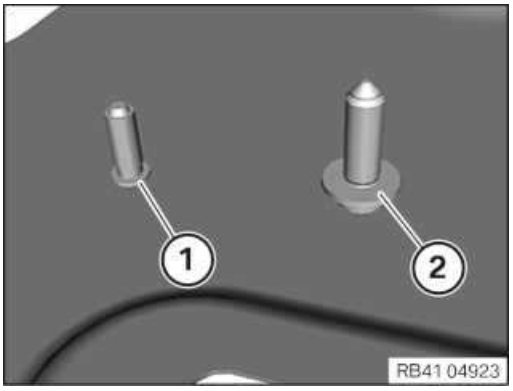


- Prepare the new parts in the areas (1) for joining by welding.

▸ Renewing the coarse thread bolt and threaded weld bolt

NOTICE

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



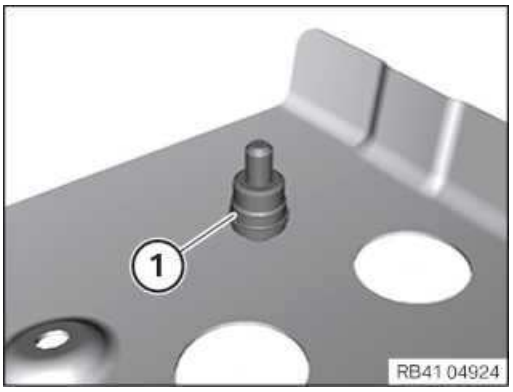
- Take the quantity and position from the component to be replaced.
- Weld the coarse thread bolt (1) and the threaded weld bolt (2) onto the new part.

▸ Earth pin

NOTICE

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

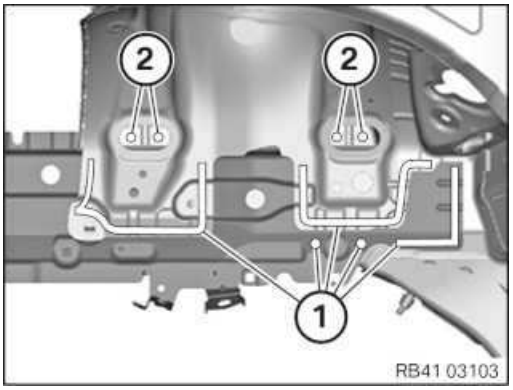
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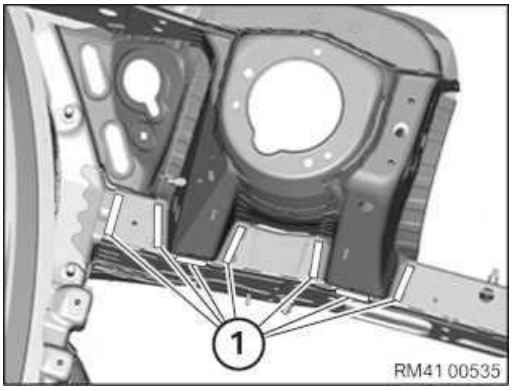
- Check the ground pins (1) for stability and renew where required.

4 – Insert engine support

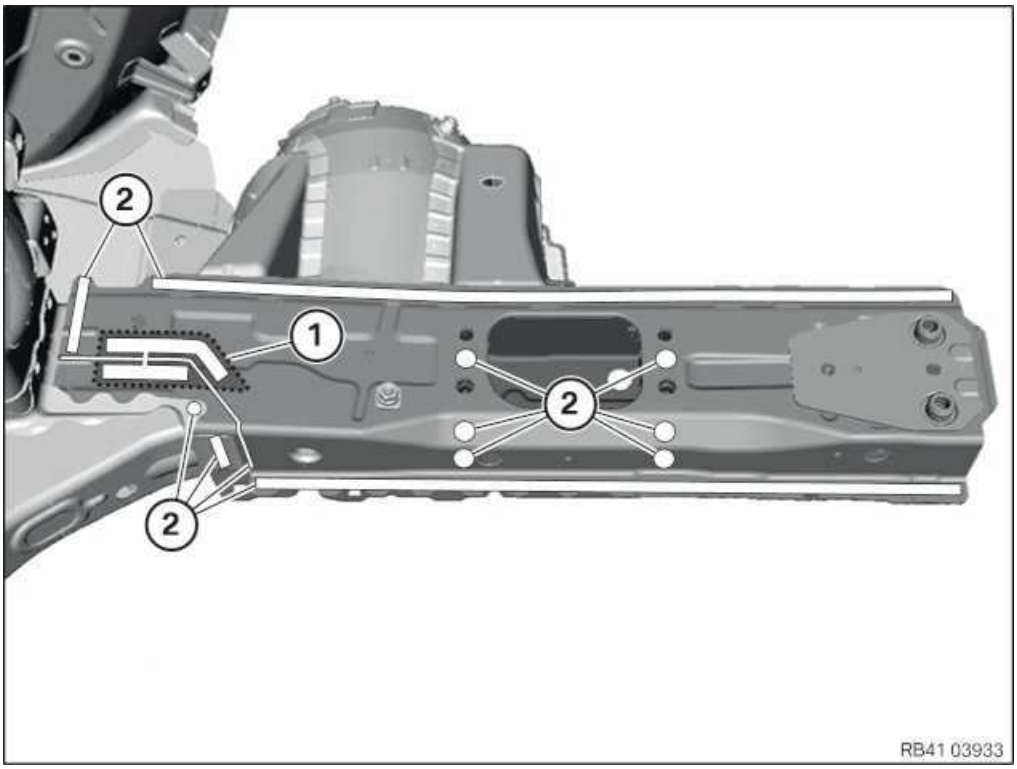
- Install new parts and reinforcement plate to fit with alignment bracket or universal fixture.



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



- Weld new part in the area(1).



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

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Additional Information

Links

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	1
41 00 ... Welding steel components	3 4
41 00 ... 0 Contents of Body, General	
41 0 Repair techniques, repair stage 3	

Repair instructions	Used in step
41 00 ... Welding in reinforcement plate (sheet steel)	3 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 12 700 Replace the luggage compartment floor and left side member (left side panel and tail panel removed) (FRU specification without straightening bench) (FRU specification without wheel alignment)

Prerequisite

- Vehicle is fixed on straightening bench.

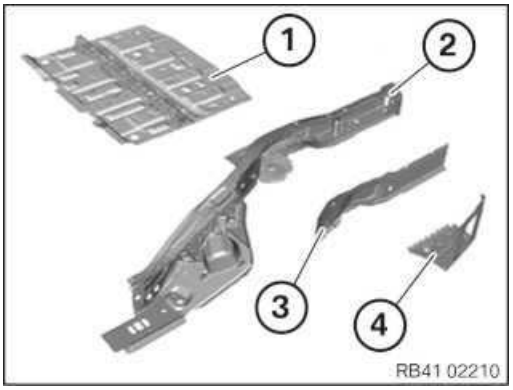
TECHNICAL INFORMATION

- 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 – Supply the new parts required



- Supply the following new parts:

  Luggage compartment floor(1)

  Rear side member(2)

  Side member (3) end plate

  Luggage compartment floor(4)

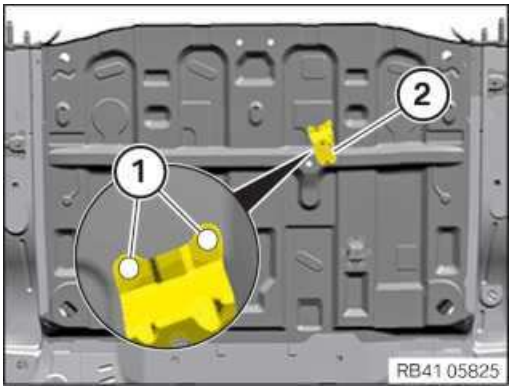
TECHNICAL INFORMATION

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

- Supply the following consumables:

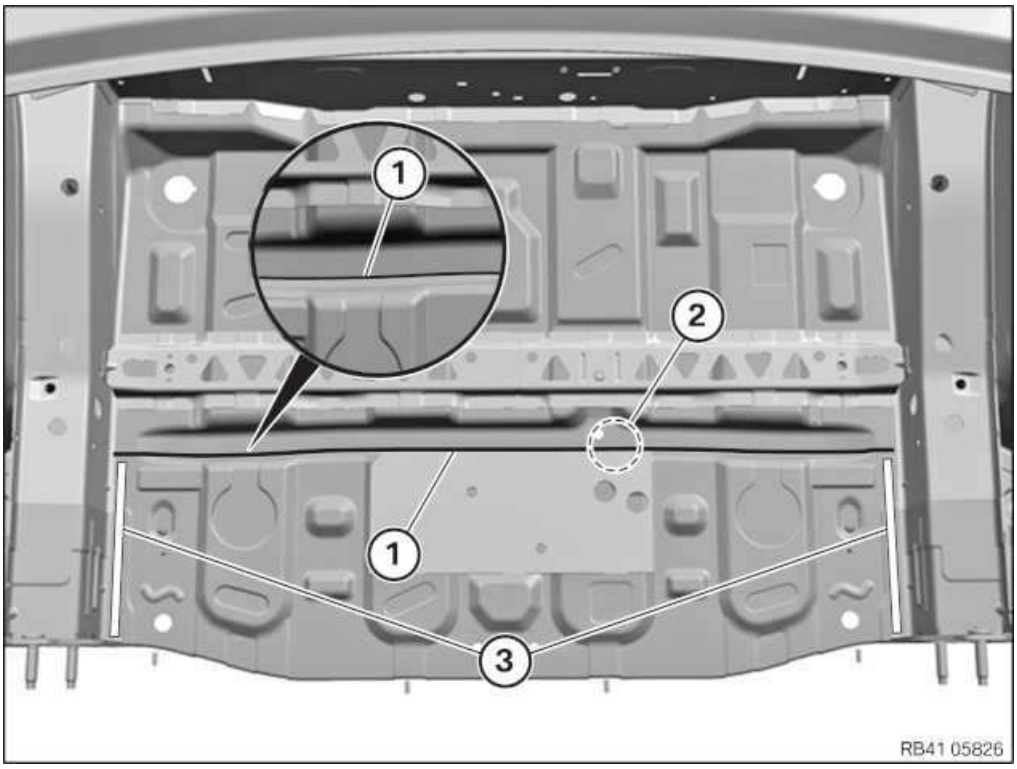
Material	Quantity
Adhesive K5a	2
Blind rivet N3	30
Coarse thread bolt	15
EMC screw	6
Cleaning agentR1	1
Sealant D1	1
Cavity sealing wax remover	1

2 – Remove luggage space tray and left side rail

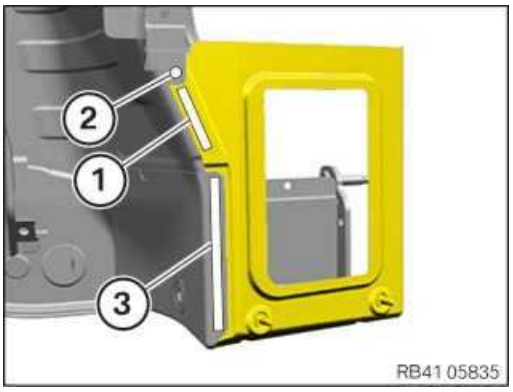


- Release the welded connections (1) of the holder (2).

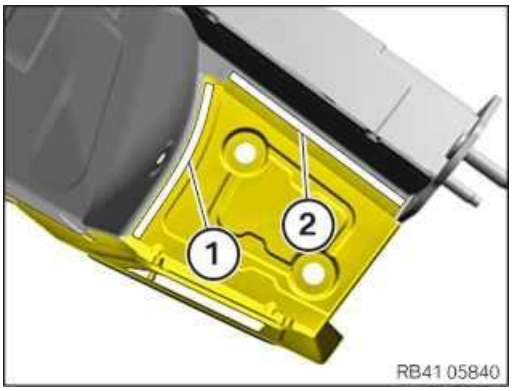
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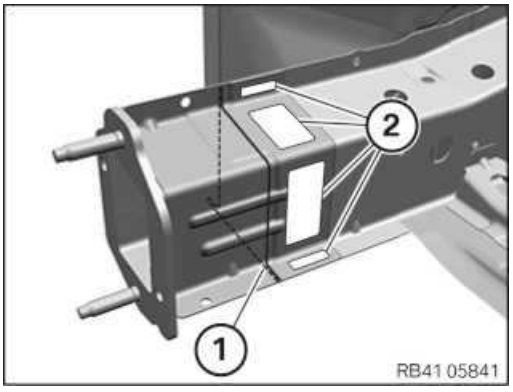
- Mark and make the separating cut (1) as shown. Do not cut through the holder (2) on the bottom when doing so.
- Open the welded connections in areas (3) and remove the luggage compartment floor.



- Release the welded connections in the areas (1) to (3).
- Release the welded connections from the inside in areas (2) and (3).

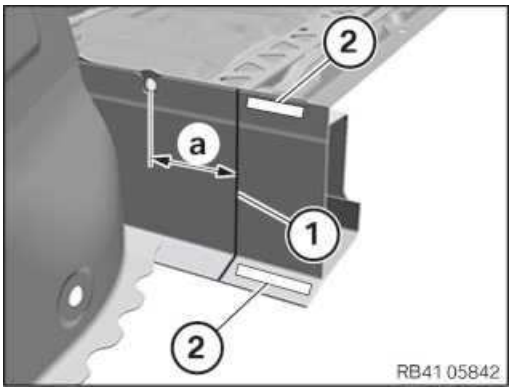


- Release the welded connections in areas (1) and (2) and remove the luggage compartment floor.



- Make the separating cut (1) according to the schematic diagram. Completely cut through the side member and remove.
- Release welded connections in areas (2).

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- Mark and carry out the separating cut (1) as per dimension a. Thereby disconnect only the outer panel.

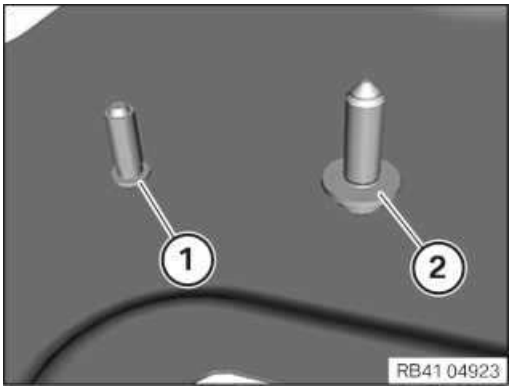
  Dimension a = 60 mm
- Release the welded connections in areas (2) and remove the side member section.

3 – Prepare new parts

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

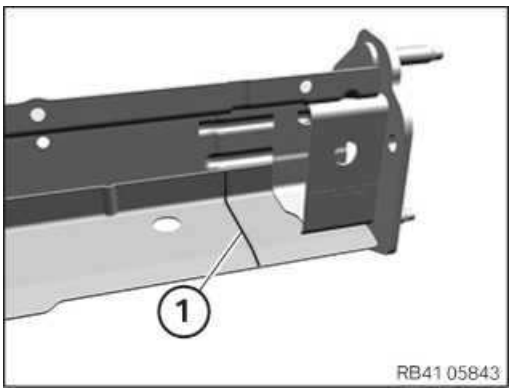
NOTICE

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.

▸ **Prepare new parts, left side rail**

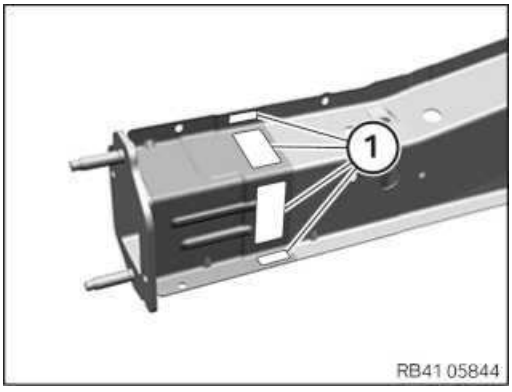


- Mark and make the separating cut (1) on the new part according to the separating cut on the vehicle.

TECHNICAL INFORMATION

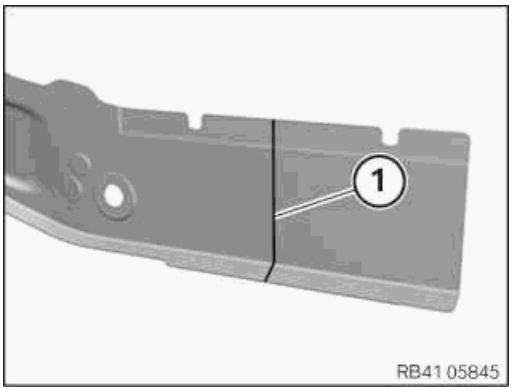
For additional information see: 41 00 ... Weld in the reinforcement plates (sheet steel)

- Prepare a reinforcement plate for the separating cut.

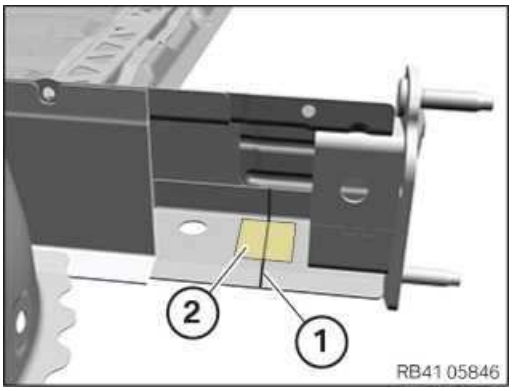


- Release the welded connections on the new part in the areas (1) from the inside in the areas.

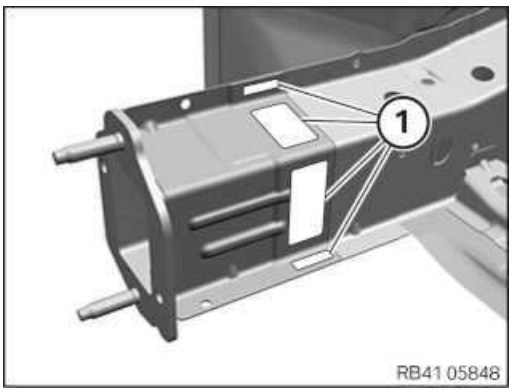
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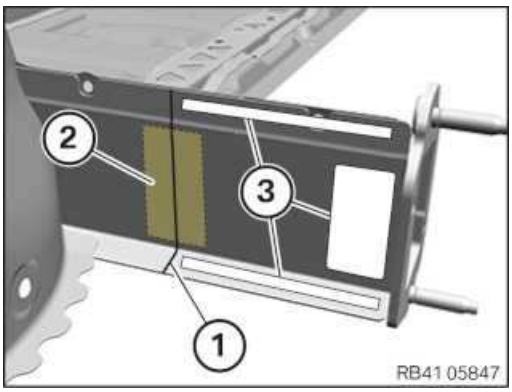
- Mark and make the separating cut (1) on the new part according to the separating cut on the vehicle.
- Prepare a reinforcement plate for the separating cut.



- Adjust new parts to fit with alignment bracket or universal mount and secure.
- Prepare the separating cut (1) and the reinforcement plate (2) for joining by welding.



- Prepare for joining by welding in areas (1).



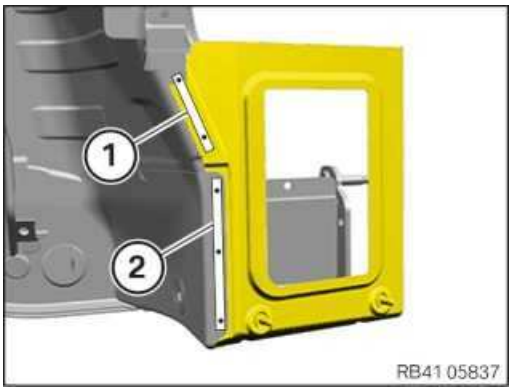
- Prepare the separating cut (1) and the reinforcement plate (2) for joining by welding.
- Prepare areas (3) for joining by welding.

▸ **Prepare new parts, left side rail**

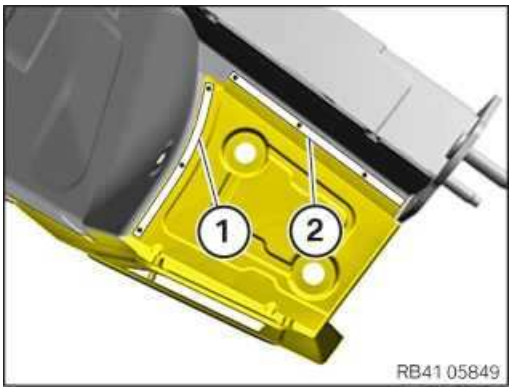
TECHNICAL INFORMATION

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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- Adjust the luggage compartment floor in combination with side panel and tail panel to fit and secure.
- Prepare the joints in areas (1) and (2) using the bond-and-rivet method.
- In areas (1) and (2), drill 5 bore holes Ø 4.2 mm for blind rivets.



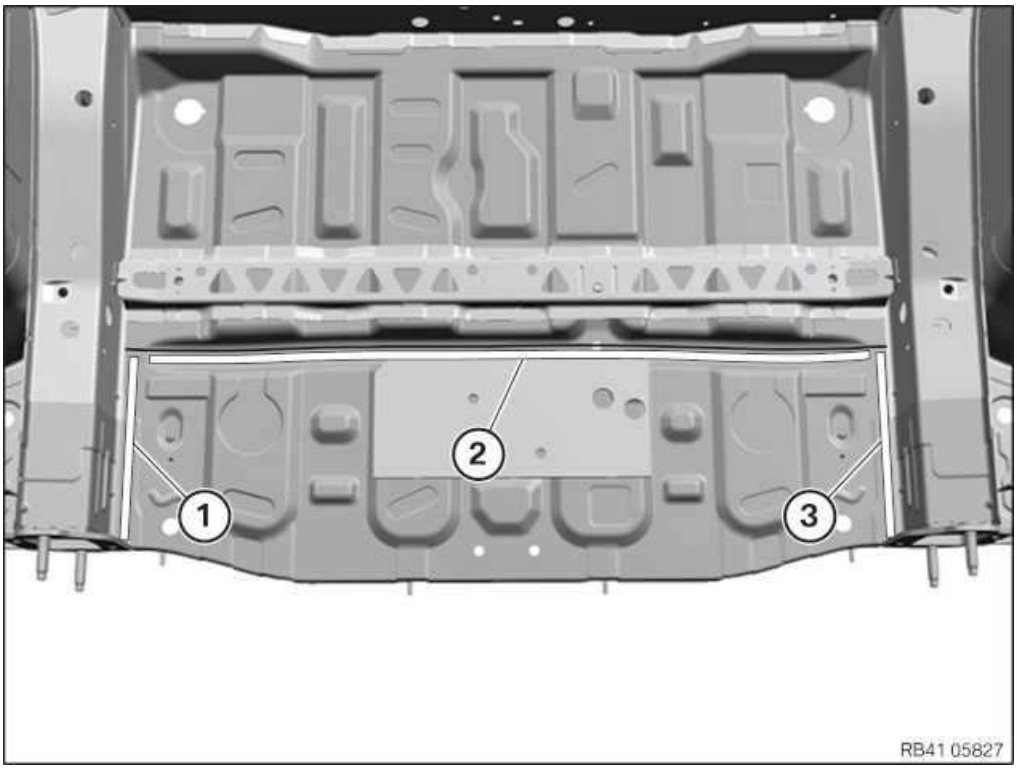
- Prepare the joints in areas (1) and (2) using the bond-and-rivet method.
- In the areas (1) and (2), drill out 6 bore holes to Ø 4.2 mm for blind rivets.
- Remove new component. Deburr bore holes.

▸ **Preparing the new part, rear luggage compartment floor**

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

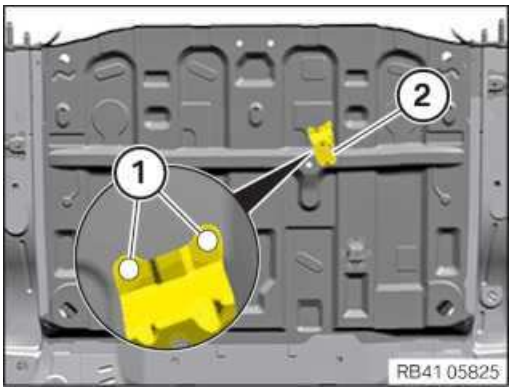
- Mark separating cut on new part as per separating cut on vehicle + 20 mm material allowance and carry out.



- Adjust the new part in conjunction with tail panel and secure.
- In areas (1) to (3), drill bore holes Ø 4.2 mm for blind rivets.

Area	Number
1	4
2	9
3	4

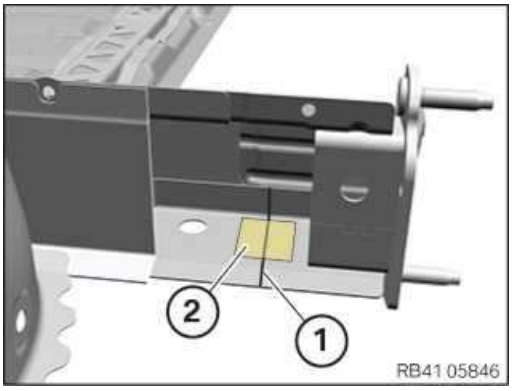
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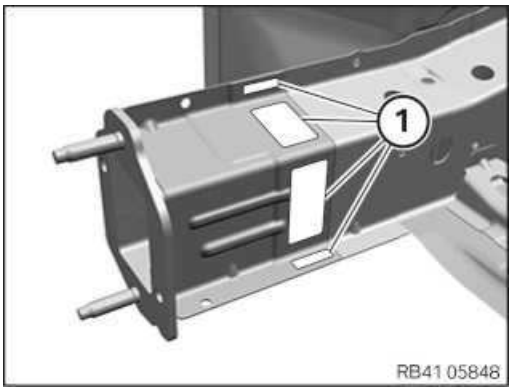
- Prepare bracket (2) in areas (1) for joining by welding.
- Remove new part and deburr holes.

4 – Install new parts

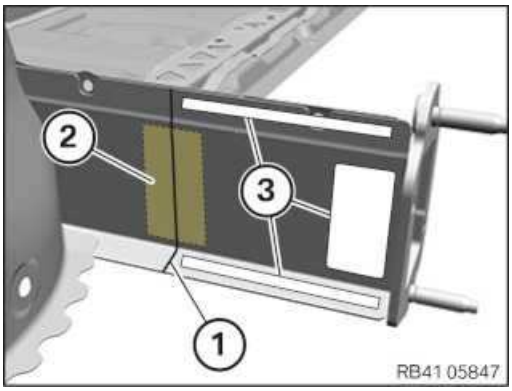
▸ **Installing left side member**



- Install and secure the new parts with an alignment bracket or a universal fixture.
- Weld the separating cut (1) and the reinforcement plate (2).



- Weld new part in the area(1).



- Weld the separating cut (1) and the reinforcement plate (2).
- Weld new part in the area(3).

▸ **Installing the left luggage compartment floor**

TECHNICAL INFORMATION

When installing the new part, make sure that all bonding surfaces have sufficient adhesive.

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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

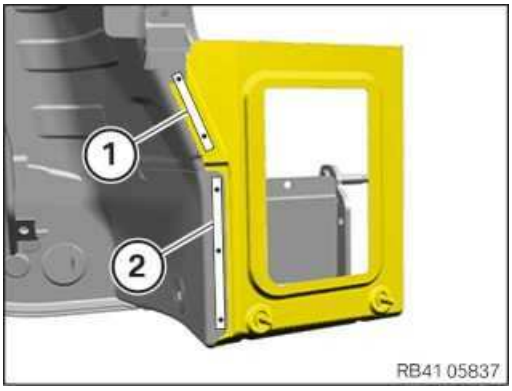
Cleaning agent R1	100 ml, Bottle	83192211217

- Apply K5a adhesive to the bonding surfaces.

Adhesive

Body adhesive K5	50 ml	83192158654

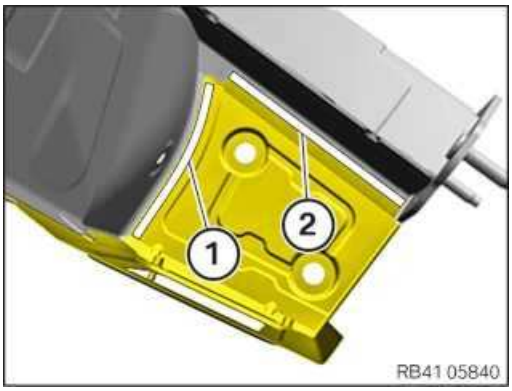
- Install new part.



- 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



- 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

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

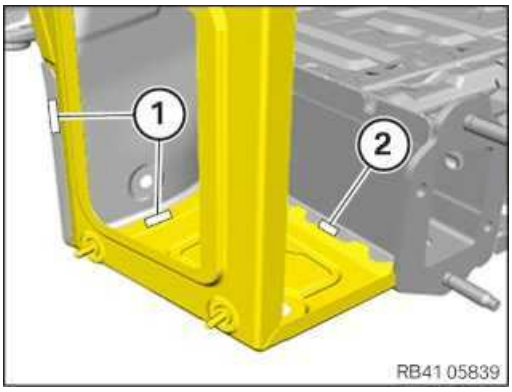
- After adhesive has fully hardened: Drill a hole with a diameter of 4.2 mm.
- Screw in the EMC screw.
- Seal the EMC screw with the sealant D1 .

Expendable materials

Sealant D1 (seam sealing)	310 ml	83422409985

◁

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- After hardening of adhesive, install 3 EMC screws in areas (1) and (2).

Expendable materials

Screw EMC screw, SF Plus, M5x15		83190301639

▶ **Installing the rear luggage compartment floor**

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

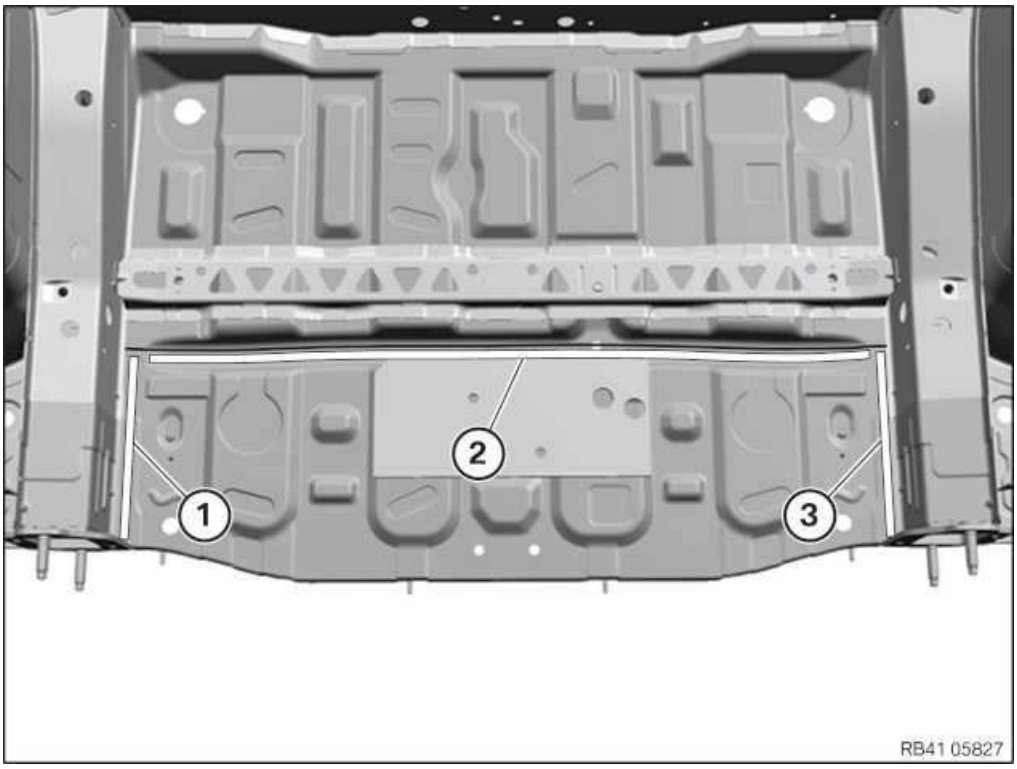
- Apply K5a adhesive to the bonding surfaces.

Adhesive

Body adhesive K5	50 ml	83192158654

- Install new part.

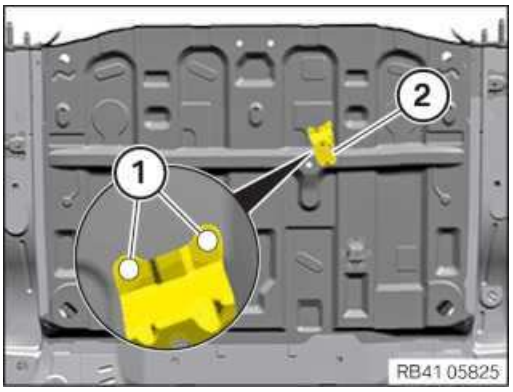
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- Rivet the new part in areas (1) to (3) with blind rivets N3.

Expendable materials

Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm	83190301421



- Weld the holder (2) in areas (1).

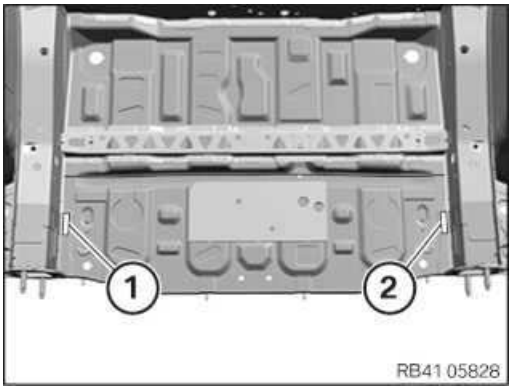
▷ **Install the EMC screw (EMC = electromagnetic compatibility)**

- 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 in areas (1) and (2), install one EMC screw in each case.

Expendable materials

Screw EMC screw, SF Plus, M5x15		83190301639

Additional Information

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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 ... Welding steel components	3
41 00 ... BMW/MINI bonding instructions	3
41 00 ... 0 Contents of Body, General	
41 00 ... Repair techniques, repair stage 3	

Repair instructions	Used in step
41 00 ... Welding in reinforcement plate (sheet steel)	3

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41 12 190 Replacing left luggage compartment base

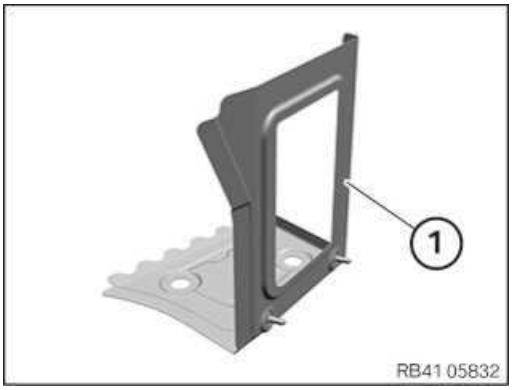
TECHNICAL INFORMATION

- 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 – Supply the new parts required



- Supply the following new parts:

  Luggage compartment floor, left(1)

TECHNICAL INFORMATION

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

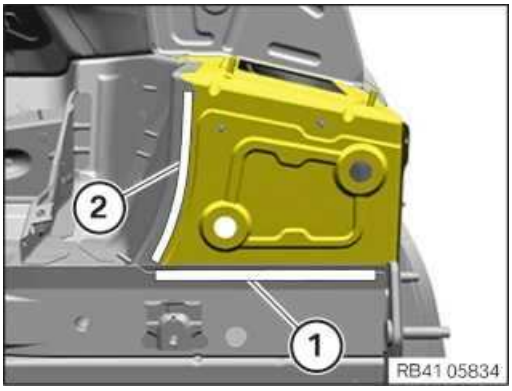
- Supply the following consumables:

Material	Quantity
Coarse thread bolt	5
Sealant D1	
Cavity sealing wax remover	

2 – Removing the left luggage compartment floor



- Release the welded connections in the areas (1) to (3).
- Release welded connections in area (3) from inside.



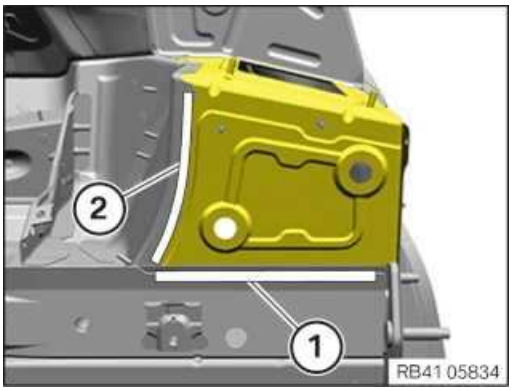
- Release welded connections in areas (1) and (2) from inside.

3 – Prepare new part

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- Adjust new part to fit and secure.
- Adapt joining area (3) on new part and vehicle so that new part can be attached from outside in area (3).
- Prepare areas (1) to (3) for joining by means of welding.

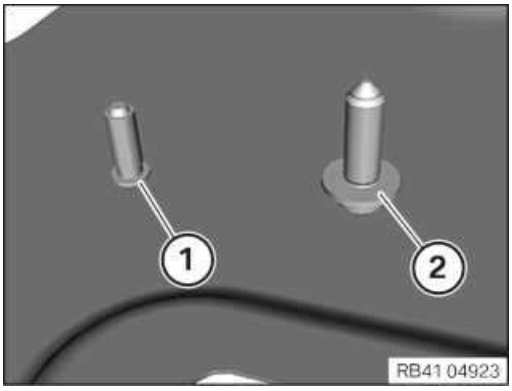


- Adapt joining area (2) on new part and vehicle so that new part can be attached from outside in area (3).
- Prepare areas (1) and (2) for joining by welding.

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

NOTICE

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



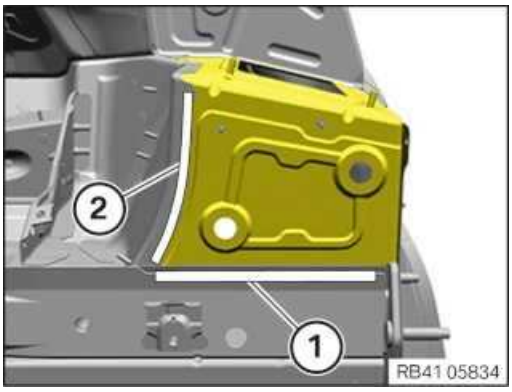
- Take the quantity and position from the component to be replaced.
- Weld the coarse thread bolt (1) and the threaded weld bolt (2) onto the new part.

4 – Installing the left luggage compartment floor



- Install new parts as per new part preparation process and weld in areas (1) to (3).

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- Weld new parts in areas (1) and (2) as per new part preparation process.

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 ... 0 Contents of Body, General	
41 00 ... Repair techniques, repair stage 2	

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41 12 557 Replacing middle luggage compartment floor (tail panel has been removed)

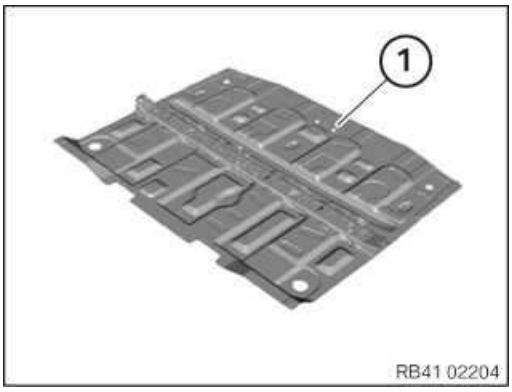
TECHNICAL INFORMATION

- 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 – Supplying the new parts required



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

  Luggage compartment floor(1)

TECHNICAL INFORMATION

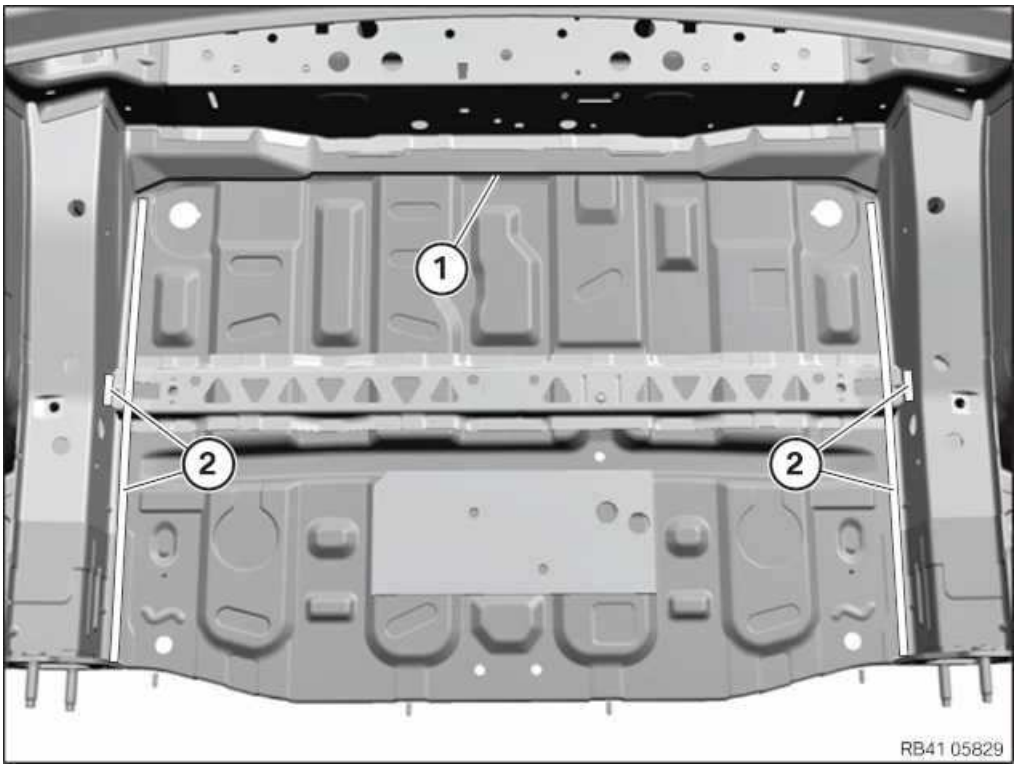
For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

- Supply the following consumables:

Material	Quantity
Adhesive K5a	2
Blind rivet N3	30
Coarse thread bolt	30
EMC screw	3
Cleaning agentR1	1
Cleaning agentR2	1
Sealant D1	
Cavity sealing wax remover	

2 – Removing the centre luggage compartment floor

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- Make the separating cut (1) according to the schematic diagram.

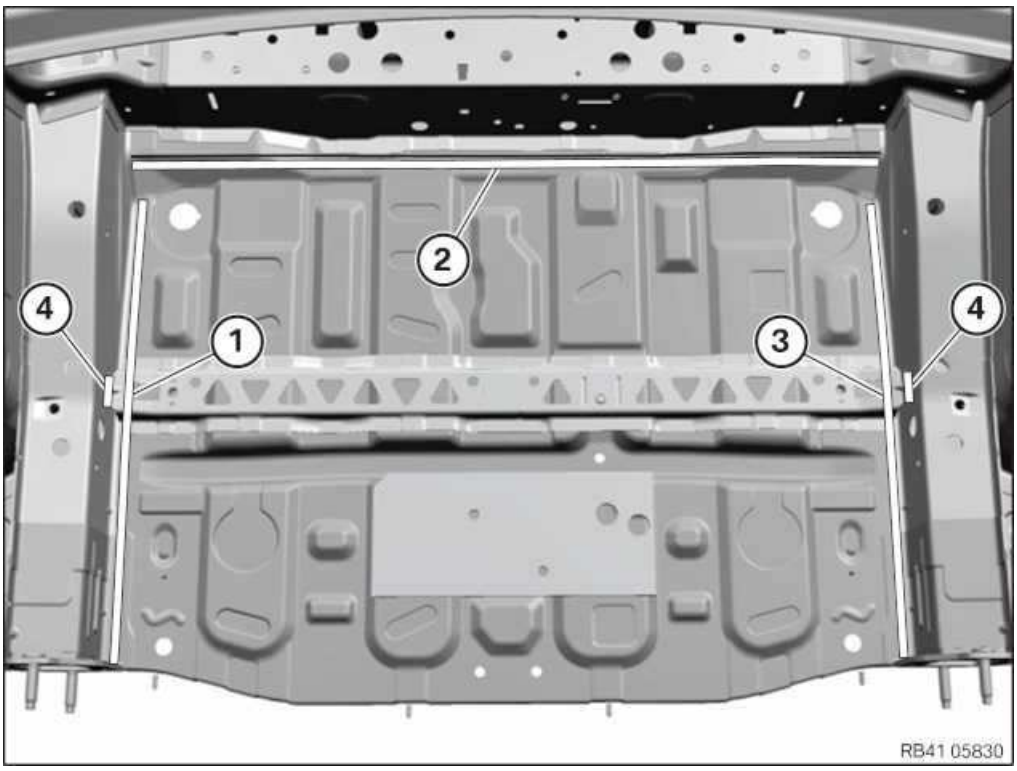
  Make separating cut so that sufficient material remains on luggage compartment floor to enable overlapping joining using the bonded rivet method.
- Release welded connections in areas (2).

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

- Mark separating cut on new part as per separating cut on vehicle +20 mm material allowance and carry out.



- Adjust the new part in conjunction with tail panel and secure.
- In areas (1) to (3), drill bore holes Ø 4.2 mm for blind rivets.

Area	Number
1	7
2	12
3	7

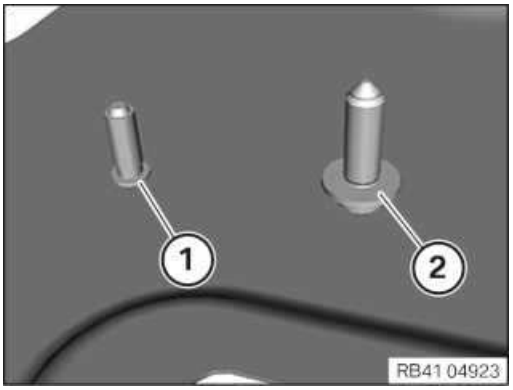
- In areas (4), prepare the new part for joining by welding.
- Remove new part and deburr holes.

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

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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 centre luggage compartment floor

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

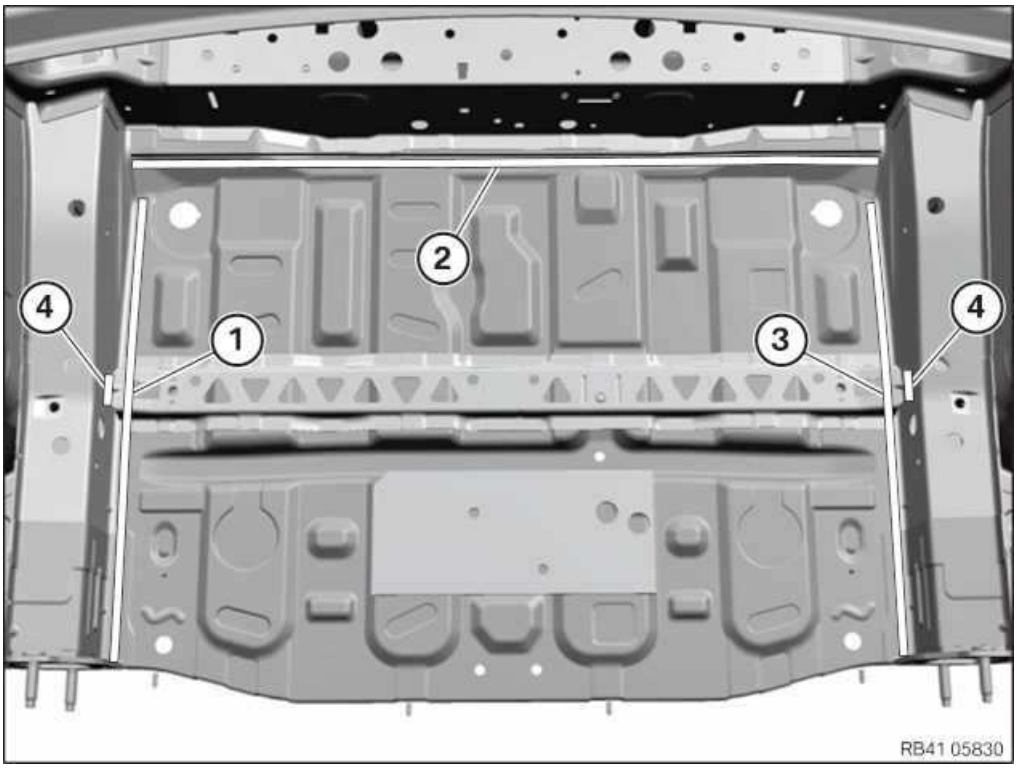
- Apply K5a adhesive to the bonding surfaces.

Adhesive

Body adhesive K5	50 ml	83192158654

- Install new part.

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- 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

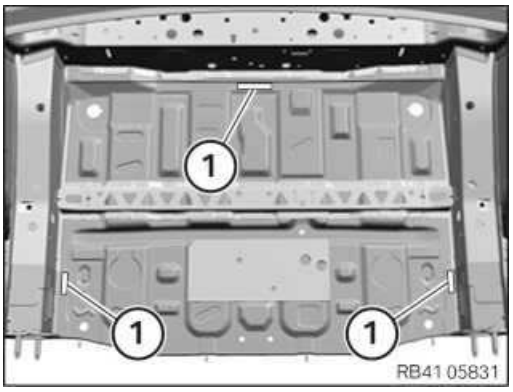
- Weld the new part in areas (4).

▸ **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 hardening of adhesive, install one EMC screw in each of 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 ... BMW/MINI bonding instructions	3
41 00 ... 0 Contents of Body, General	

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41 00 ... Repair techniques, repair stage 2

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41 12 660 Replacing rear luggage compartment floor (tail panel removed)

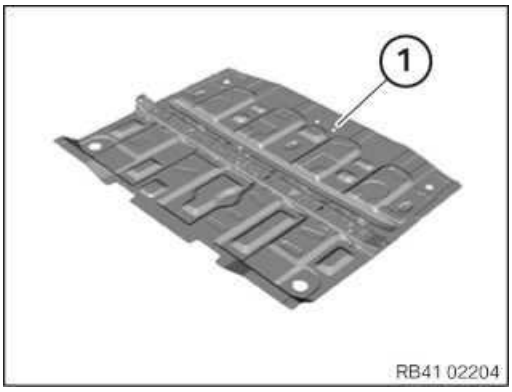
TECHNICAL INFORMATION

- 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 – Supplying the new parts required



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

  Luggage compartment floor(1)

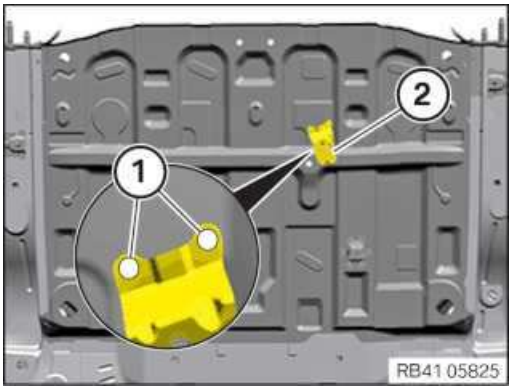
TECHNICAL INFORMATION

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

- Supply the following consumables:

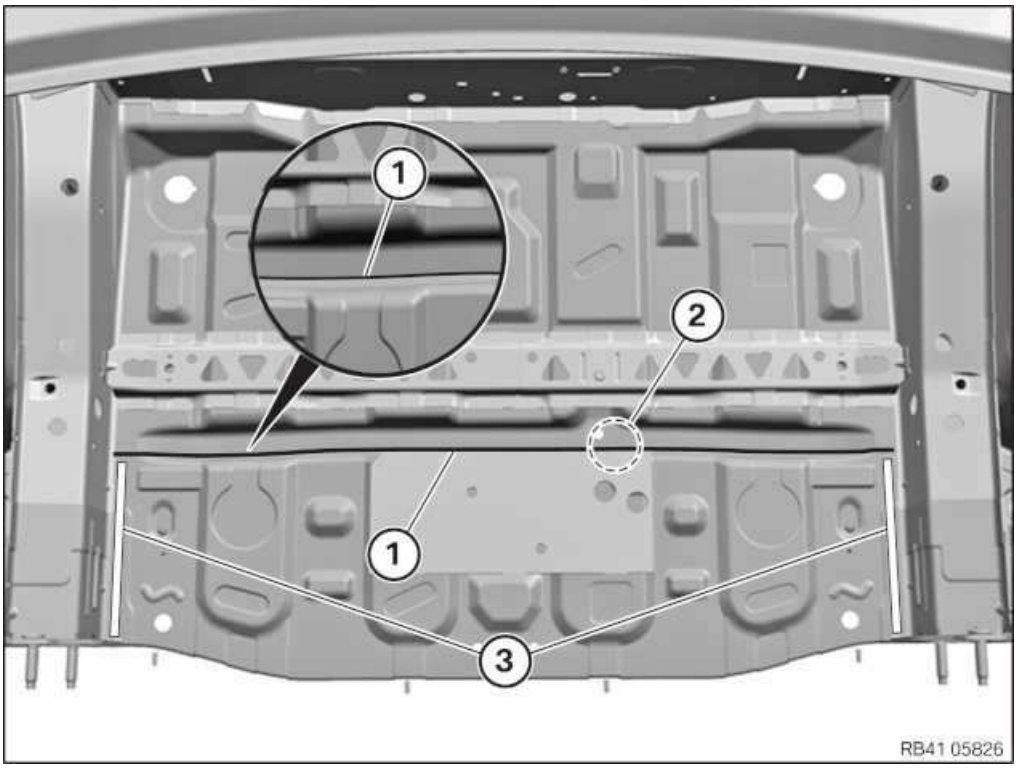
Material	Quantity
Adhesive K5a	1
Blind rivet N3	20
Coarse thread bolt	10
EMC screw	2
Cleaning agentR1	1
Cleaning agentR2	1
Sealant D1	
Cavity sealing wax remover	

2 – Remove rear luggage compartment floor



- Release the welded connections (1) of the holder (2).

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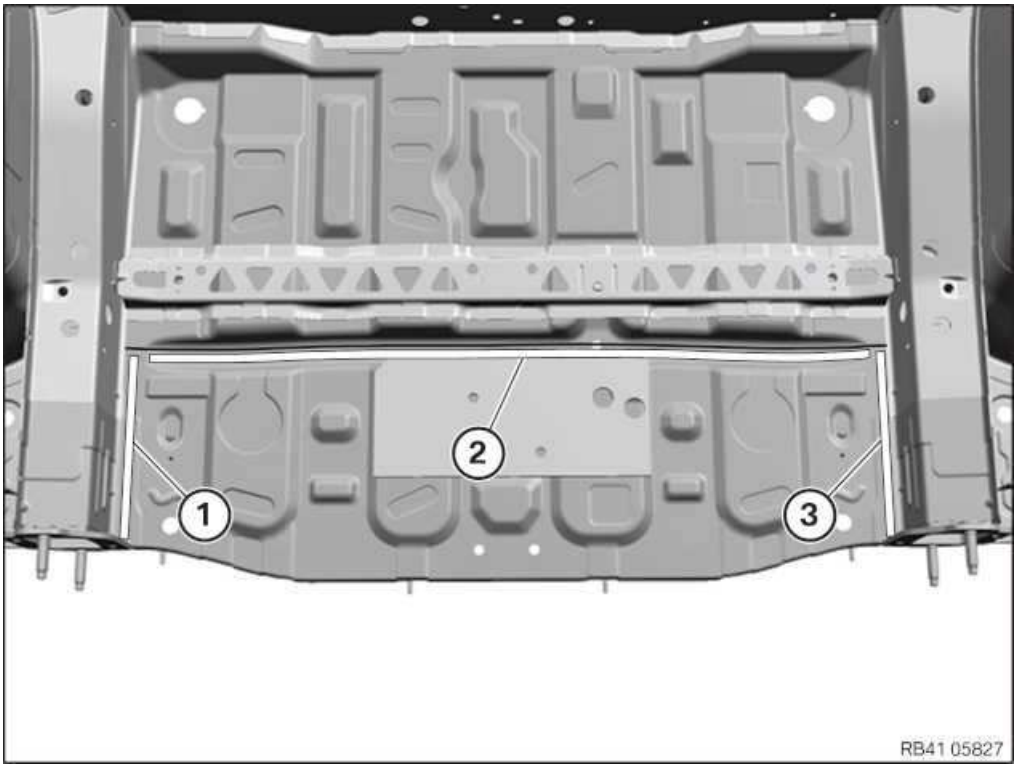
- Mark and make the separating cut (1) as shown. Do not cut through the holder (2) on the bottom when doing so.
- Open the welded connections in areas (2) and remove the luggage compartment floor.

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

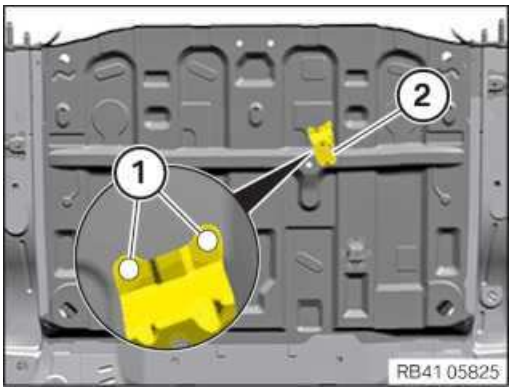
- Mark the separating cut on the new part according to the separating cut on the vehicle with +20 mm material allowance and cut.



- Adjust the new part in conjunction with tail panel and secure.
- In areas (1) to (3), set bore holes with Ø 4.2 mm for blind rivets.

Area	Number
1	4
2	9
3	4

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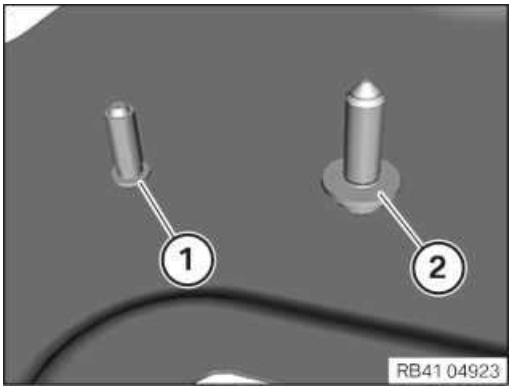


- Prepare the holder (2) in the areas (1) for joining by welding.
- Remove new part and deburr holes.

▸ **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

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

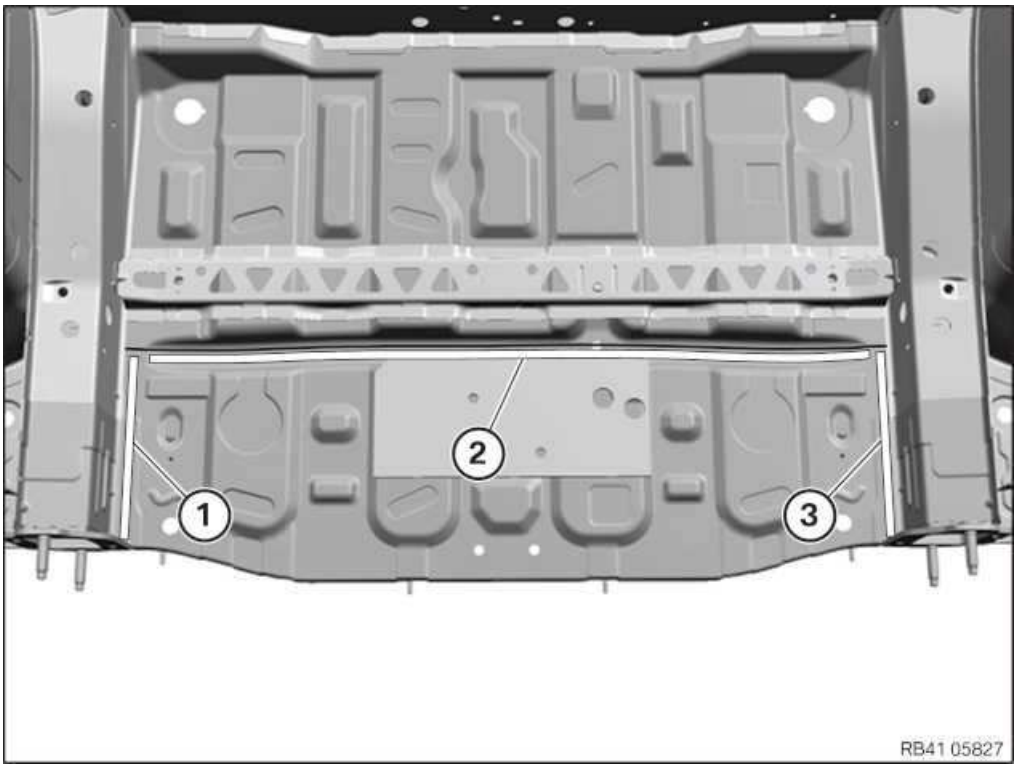
- Apply K5a adhesive to the bonding surfaces.

Adhesive

Body adhesive K5	50 ml	83192158654

- Install new part.

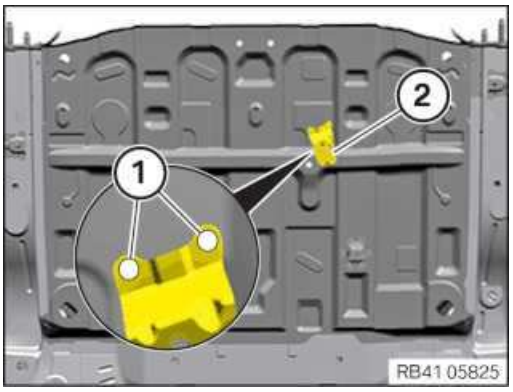
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- Rivet the new part in areas (1) to (3) with blind rivets N3.

Expendable materials

Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm	83190301421



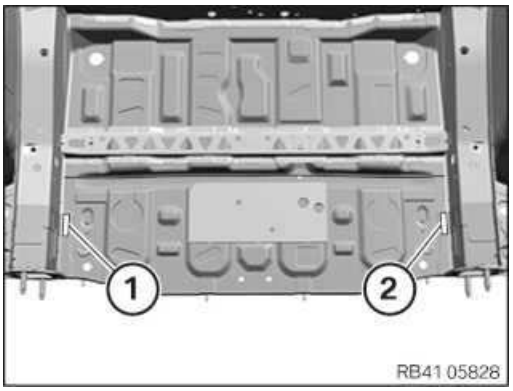
- Weld the holder (2) in areas (1).

▸ **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 in areas (1) and (2), install one EMC screw in each case.

Expendable materials

Screw EMC screw, SF Plus, M5x15		83190301639

Additional Information

Links

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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 ... 0 Contents of Body, General	
41 00 ... Repair techniques, repair stage 2	

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41 12 654 Replacing right luggage compartment floor (rear side panel and tail panel removed)

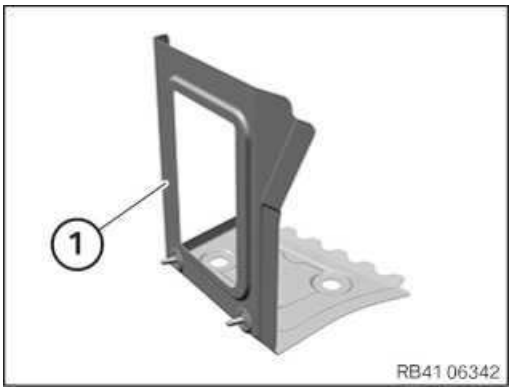
TECHNICAL INFORMATION

- 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 – Supplying the new parts required



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

  Luggage compartment floor, right(1)

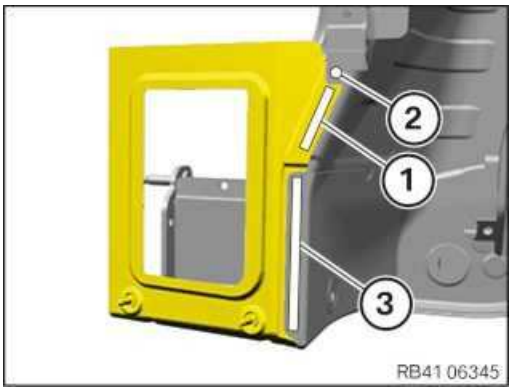
TECHNICAL INFORMATION

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

- Supply the following consumables:

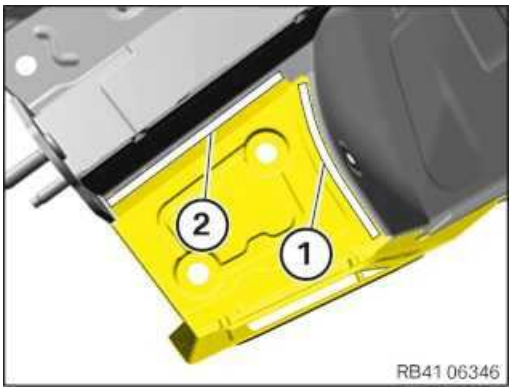
Material	Quantity
Adhesive K5a	1
Blind rivet N3	15
Coarse thread bolt	5
EMC screw	3
Cleaning agentR1	1
Cleaning agentR2	1
Sealant D1	
Cavity sealing wax remover	

2 – Remove the luggage compartment floor, right



- Release the welded connections in the areas (1) to (3).
- Release the welded connections in the areas (2) and (3) from the inside.

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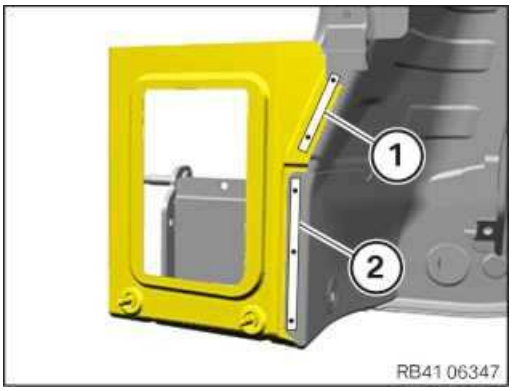


- Release the welded connections in areas (1) and (2) and remove the luggage compartment floor.

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



- Adjust the luggage compartment floor in combination with side panel and tail panel to fit and secure.
- Prepare the joints in areas (1) and (2) using the bond-and-rivet method.
- In areas (1) and (2), drill 5 bore holes Ø 4.2 mm for blind rivets.



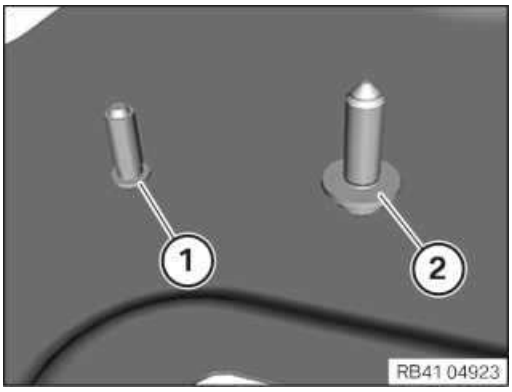
- Prepare the joints in areas (1) and (2) using the bond-and-rivet method.
- In the areas (1) and (2), drill out 6 bore holes to Ø 4.2 mm for blind rivets.
- Remove new part and deburr holes.

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

NOTICE

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

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- 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 luggage compartment floor on the right

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

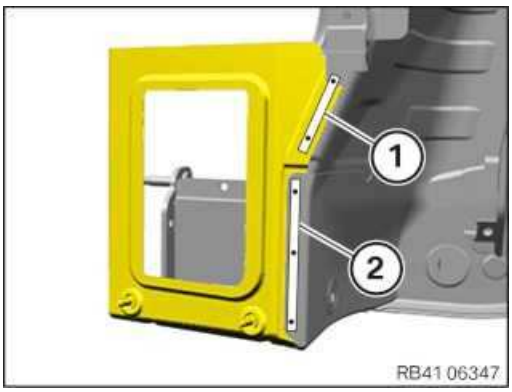
Cleaning agent R1	100 ml, Bottle	83192211217

- Apply K5a adhesive to the bonding surfaces.

Adhesive

Body adhesive K5	50 ml	83192158654

- Install new part.

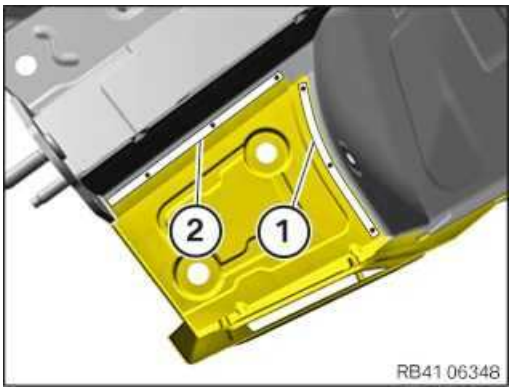


- Rivet new parts in the areas (1) and (2) with blind rivets N3.

Expendable materials

Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421

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- Rivet new parts in the areas (1) and (2) with blind rivets N3.

Expendable materials

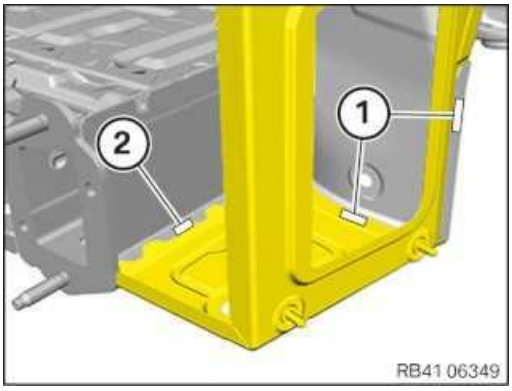
Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421

▶ **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 hardening of adhesive, install 3 EMC screws in areas (1) and (2).

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 ... 0 Contents of Body, General	
41 00 ... Repair techniques, repair stage 2	

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41 12 653 Replacing the left luggage compartment floor (rear side panel and tail panel removed)

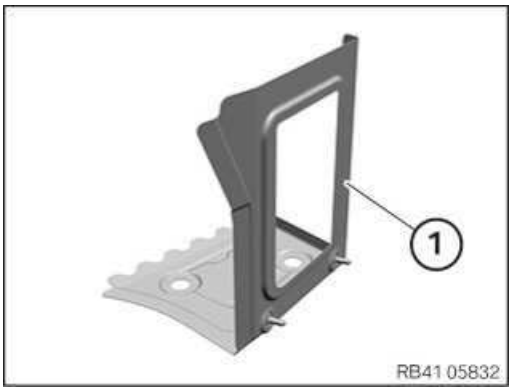
TECHNICAL INFORMATION

- 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 – Supplying the new parts required



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

  Luggage compartment floor, left(1)

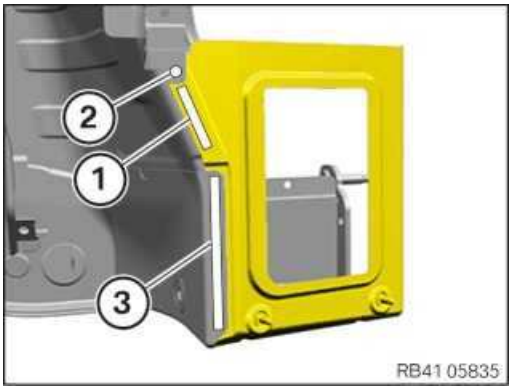
TECHNICAL INFORMATION

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

- Supply the following consumables:

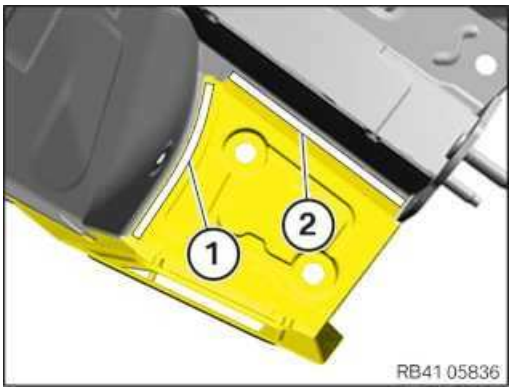
Material	Quantity
Adhesive K5a	1
Blind rivet N3	15
Coarse thread bolt	5
EMC screw	3
Cleaning agentR1	1
Cleaning agentR2	1
Sealant D1	
Cavity sealing wax remover	

2 – Removing the left luggage compartment floor



- Release the welded connections in the areas (1) to (3).
- Release the welded connections in the areas (2) and (3) from the inside.

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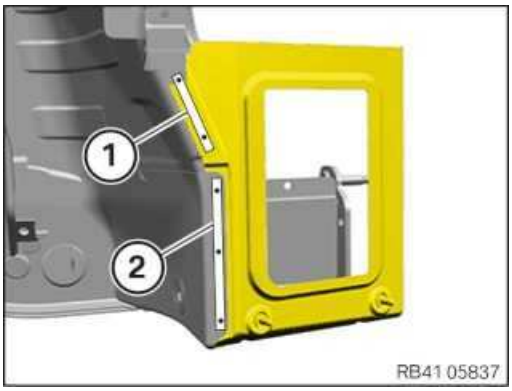


- Release the welded connections in areas (1) and (2) and remove the luggage compartment floor.

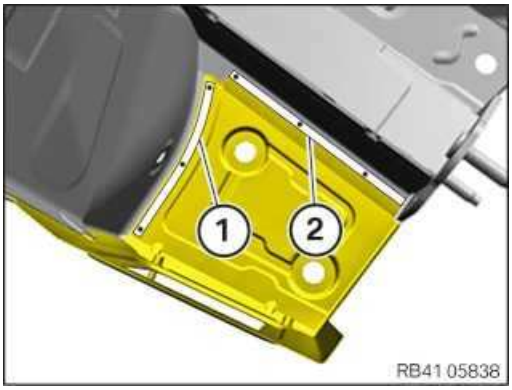
3 – Prepare new part

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



- Adjust the luggage compartment floor in combination with side panel and tail panel to fit and secure.
- Prepare the joints in areas (1) and (2) using the bond-and-rivet method.
- In the areas (1) and (2), drill out 5 bore holes to Ø 4.2 mm for blind rivets.



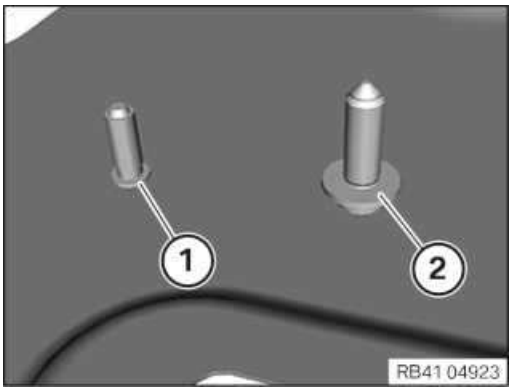
- Prepare the joints in areas (1) and (2) using the bond-and-rivet method.
- In the areas (1) and (2), drill out 6 bore holes to Ø 4.2 mm for blind rivets.
- Remove new component. Deburr bore holes.

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

NOTICE

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

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- 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 left luggage compartment floor

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

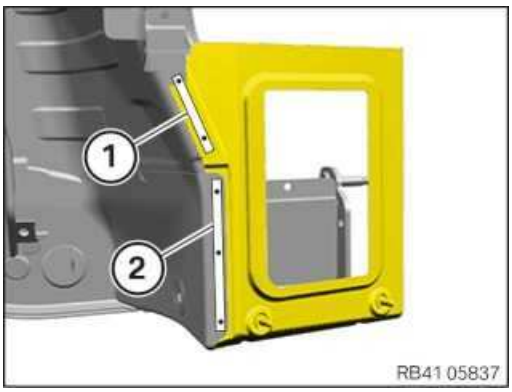
Cleaning agent R1	100 ml, Bottle	83192211217

- Apply K5a adhesive to the bonding surfaces.

Adhesive

Body adhesive K5	50 ml	83192158654

- Install new part.

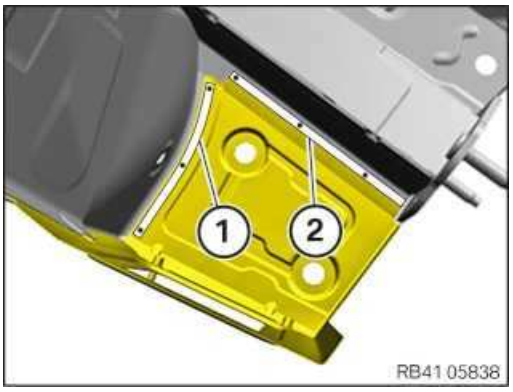


- Rivet new parts in the areas (1) and (2) with blind rivets N3.

Expendable materials

Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421

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- Rivet new parts in the areas (1) and (2) with blind rivets N3.

Expendable materials

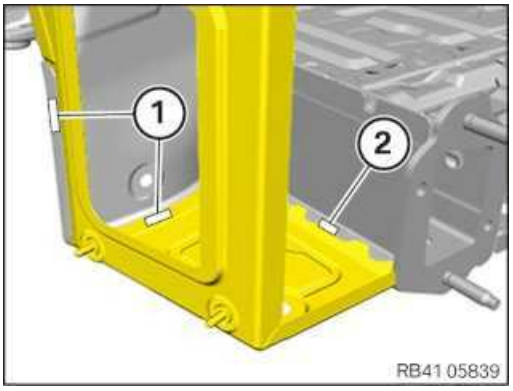
Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421

▸ **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 hardening of adhesive, install 3 EMC screws in areas (1) and (2).

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 ... 0 Contents of Body, General	
41 00 ... Repair techniques, repair stage 2	

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41 12 701 Replacing the luggage compartment floor and right side member (left side panel and tail panel removed) (FRU specification without straightening bench) (FRU specification without wheel alignment)

Prerequisite

- Vehicle is fixed on straightening bench.

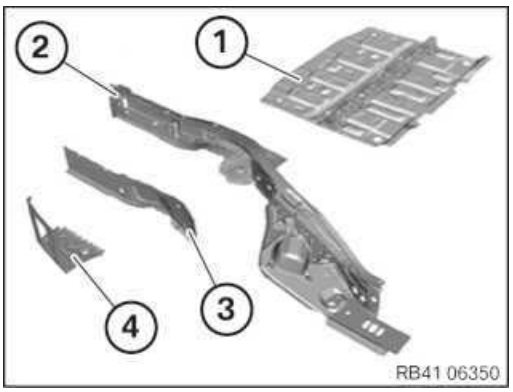
TECHNICAL INFORMATION

- 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



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

  Luggage compartment floor(1)

  Rear side member(2)

  Side member (3) end plate

  Luggage compartment floor(4)

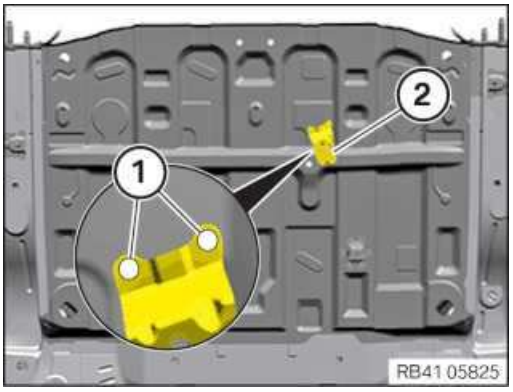
TECHNICAL INFORMATION

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

- Supply the following consumables:

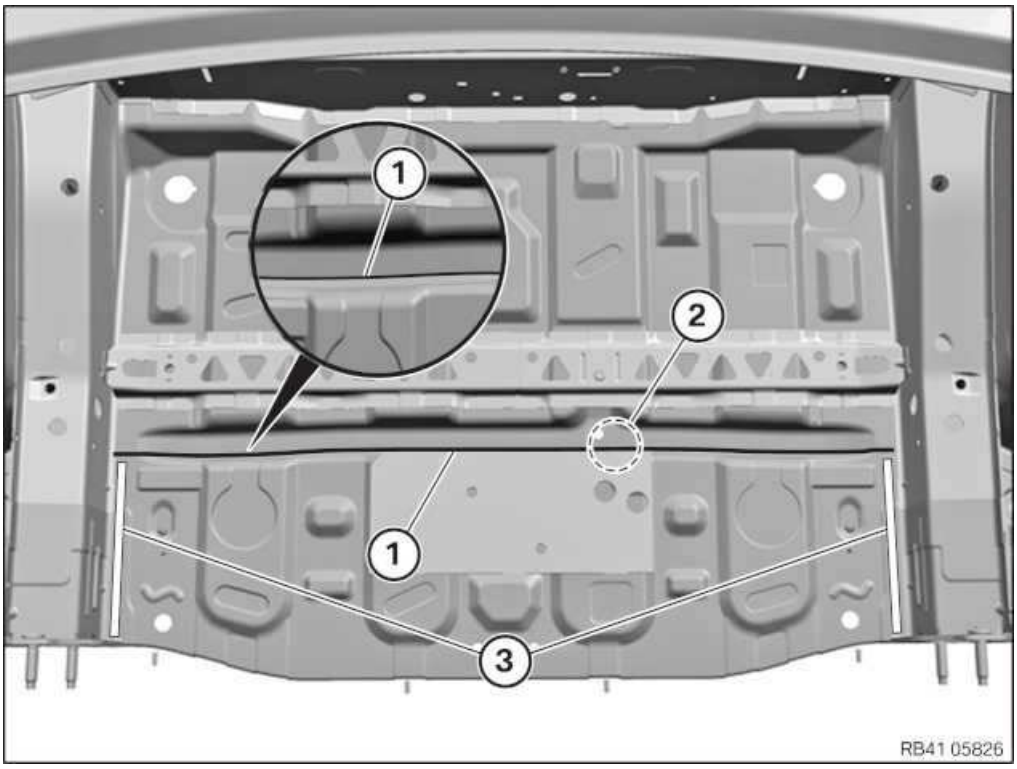
Material	Quantity
Adhesive K5a	2
Blind rivet N3	30
Coarse thread bolt	15
EMC screw	6
Cleaning agentR1	1
Cleaning agentR2	1
Sealant D1	1
Cavity sealing wax remover	1

2 – Removing the luggage compartment floor and right side member

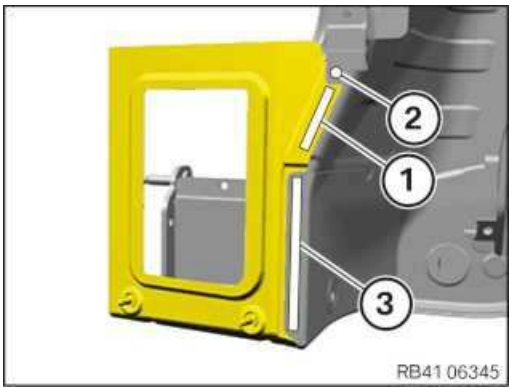


- Release the welded connections (1) of the holder (2).

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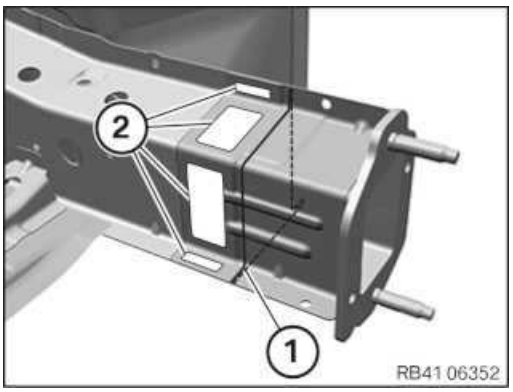
- Mark and make the separating cut (1) as shown. Do not cut through the holder (2) on the bottom when doing so.
- Loosen the welded connections in the areas (3) and remove the luggage compartment floor.



- Release the welded connections in the areas (1) to (3).
- Release the welded connections in the areas (2) and (3) from the inside.

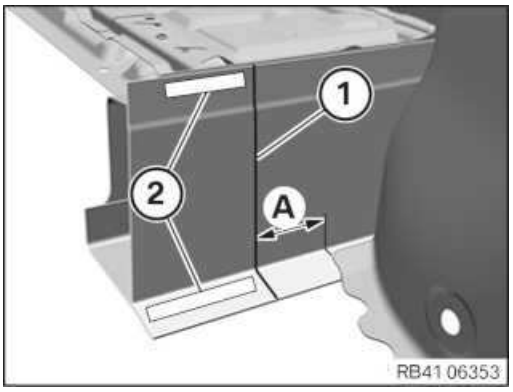


- Release the welded connections in the areas (1) and (2) remove the luggage compartment floor.



- Make the separating cut (1) according to the schematic diagram. Completely cut through the side member and remove.
- Release welded connections in areas (2).

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- Mark and carry out a separating cut (1) according to dimension (A). While doing so, cut through outer panel only.

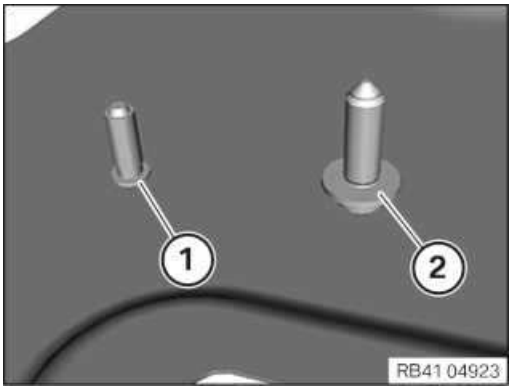
  Dimension (A)= 55 mm from the component edge of the roof frame.
- Release the welded connections in areas (2) and remove the side member section.

3 – Prepare new parts

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

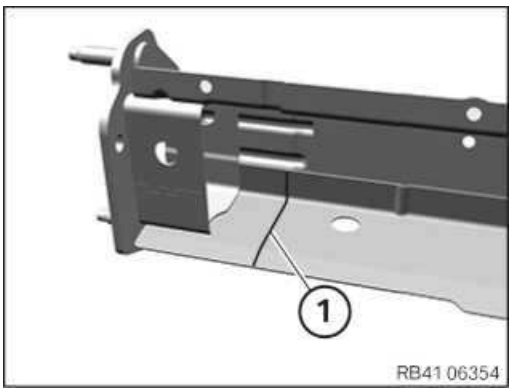
NOTICE

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.

▸ **Preparing the new part, right side member**

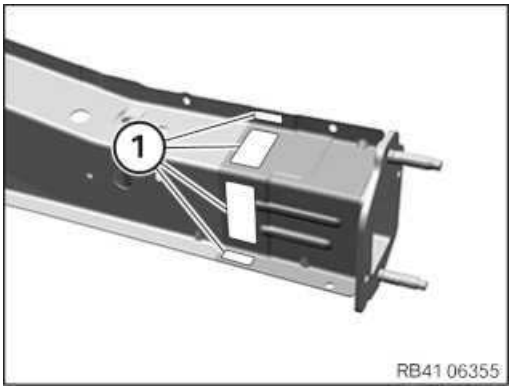


- Mark and make the separating cut (1) on the new part according to the separating cut on the vehicle.

TECHNICAL INFORMATION

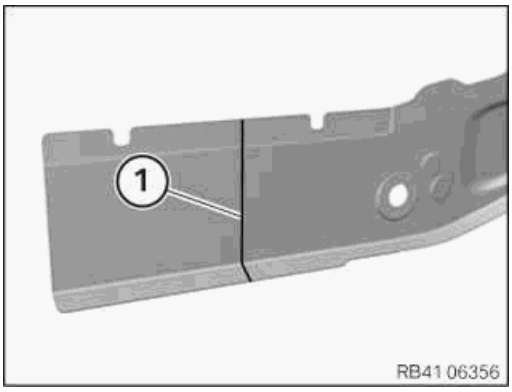
For additional information see: 41 00 ... Weld in the reinforcement plates (sheet steel)

- Prepare a reinforcement plate for the separating cut.

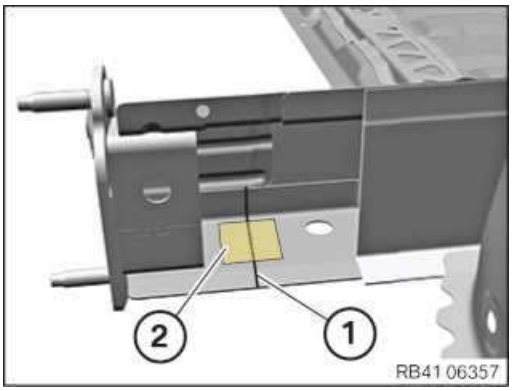


- Release the welded connections on the new part in the areas (1) from the inside in the areas.

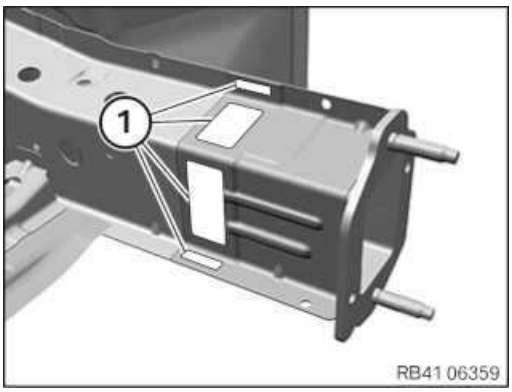
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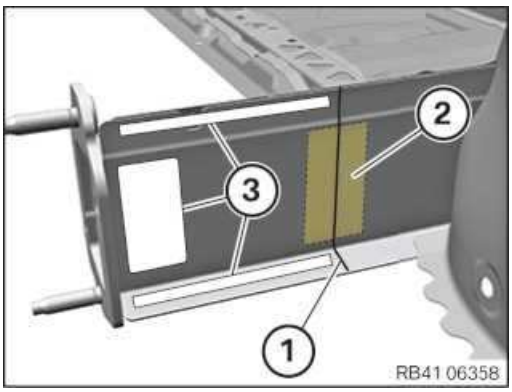
- Mark and make the separating cut (1) on the new part according to the separating cut on the vehicle.
- Prepare a reinforcement plate for the separating cut.



- Adjust new parts to fit with alignment bracket or universal mount and secure.
- Prepare the separating cut (1) and the reinforcement plate (2) for joining by welding.



- Prepare for joining by welding in areas (1).



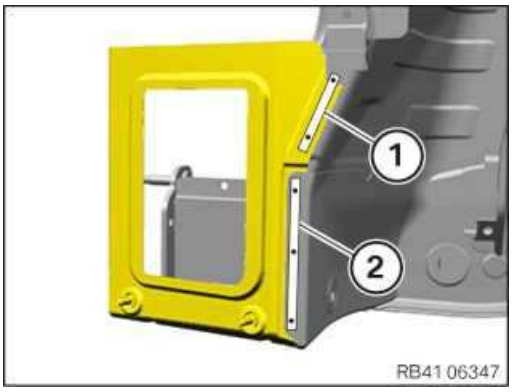
- Prepare the separating cut (1) and the reinforcement plate (2) for joining by welding.
- Prepare areas (3) for joining by welding.

▸ **Preparing the new part, right luggage compartment floor**

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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- Adjust the luggage compartment floor in combination with side panel and tail panel to fit and secure.
- Prepare the joints in areas (1) and (2) using the bond-and-rivet method.
- In areas (1) and (2), drill 5 bore holes Ø 4.2 mm for blind rivets.



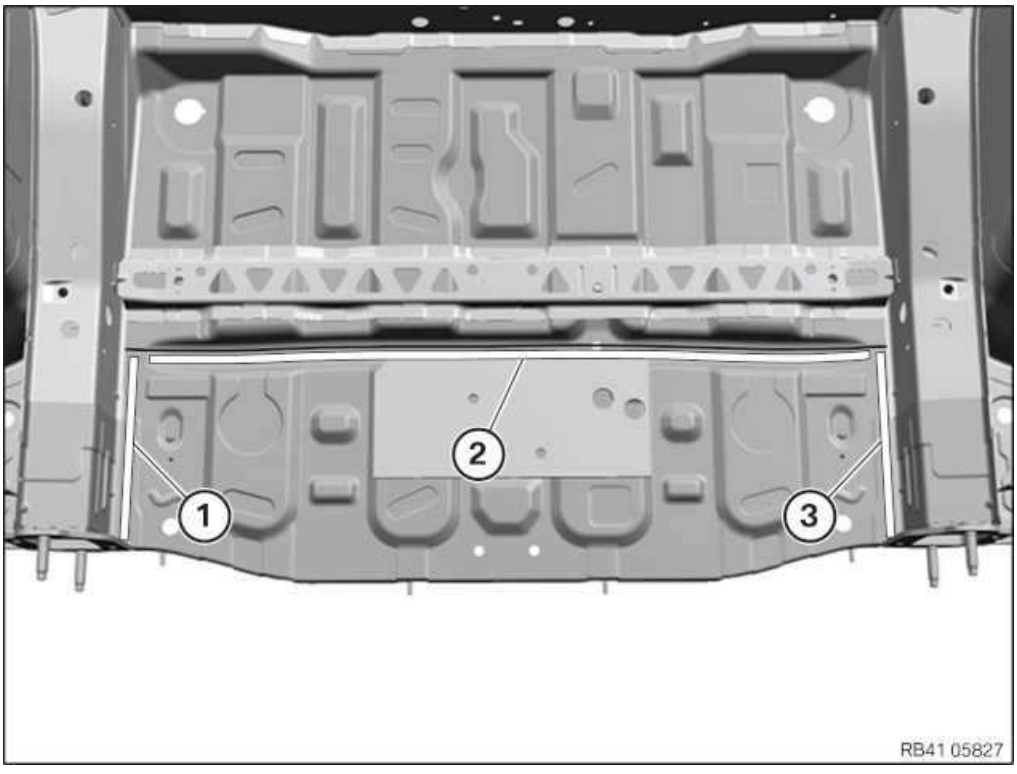
- Prepare the joints in areas (1) and (2) using the bond-and-rivet method.
- In the areas (1) and (2), drill out 6 bore holes to Ø 4.2 mm for blind rivets.
- Remove new component. Deburr bore holes.

▸ **Preparing the new part, rear luggage compartment floor**

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

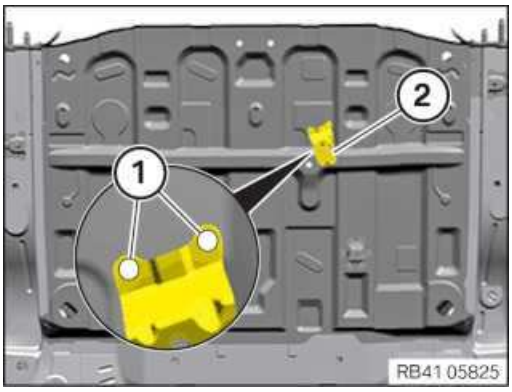
- Mark separating cut on new part as per separating cut on vehicle +20 mm material allowance and carry out.



- Adjust the new part in conjunction with tail panel and secure.
- In areas (1) to (3), drill bore holes Ø 4.2 mm for blind rivets.

Area	Number
1	4
2	9
3	4

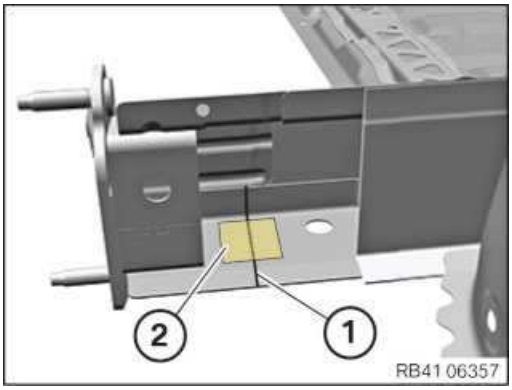
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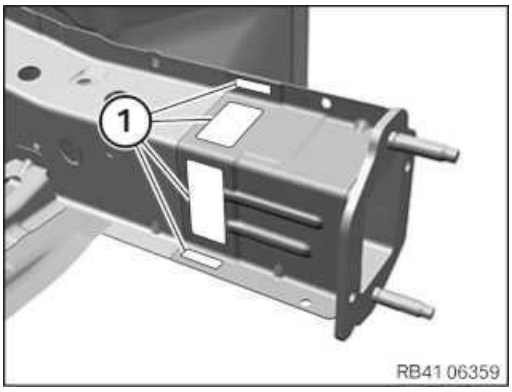
- Prepare bracket (2) in areas (1) for joining by welding.
- Remove new part and deburr holes.

4 – Install new parts

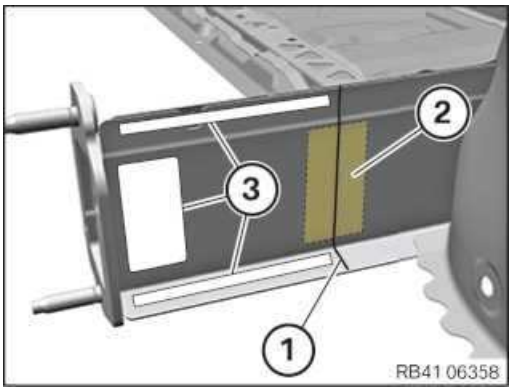
▸ **Installing the right side member**



- Install and secure the new parts with an alignment bracket or a universal fixture.
- Weld the separating cut (1) and the reinforcement plate (2).



- Weld new part in the area(1).



- Install the end plate of the side member and the reinforcement plate.
- Weld the separating cut (1) and the reinforcement plate (2).
- Weld new part in the area(3).

▸ **Install the luggage compartment floor on the right**

TECHNICAL INFORMATION

When installing the new part, make sure that all bonding surfaces have sufficient adhesive.

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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

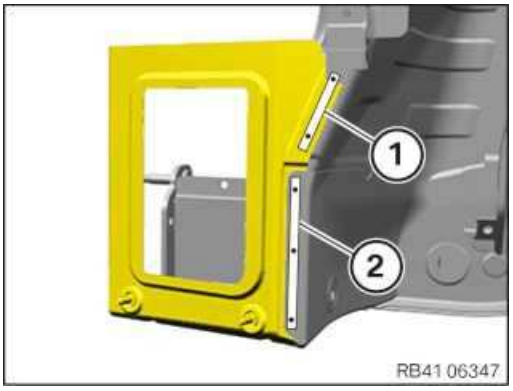
Cleaning agent R1	100 ml, Bottle	83192211217

- Apply K5a adhesive to the bonding surfaces.

Adhesive

Body adhesive K5	50 ml	83192158654

- Install new part.



- 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



- 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

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

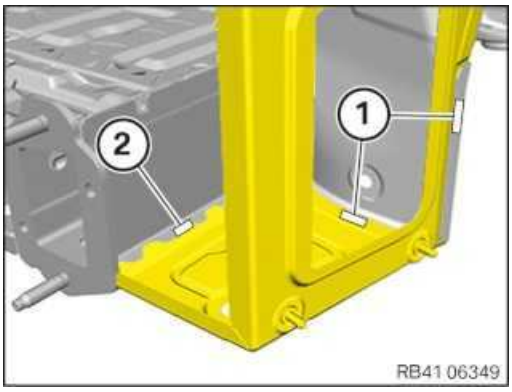
- After adhesive has fully hardened: Drill a hole with a diameter of 4.2 mm.
- Screw in the EMC screw.
- Seal the EMC screw with the sealant D1 .

Expendable materials

Sealant D1 (seam sealing)	310 ml	83422409985

◁

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- After hardening of adhesive, install 3 EMC screws in areas (1) and (2).

Expendable materials

Screw EMC screw, SF Plus, M5x15		83190301639

▶ **Installing the rear luggage compartment floor**

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

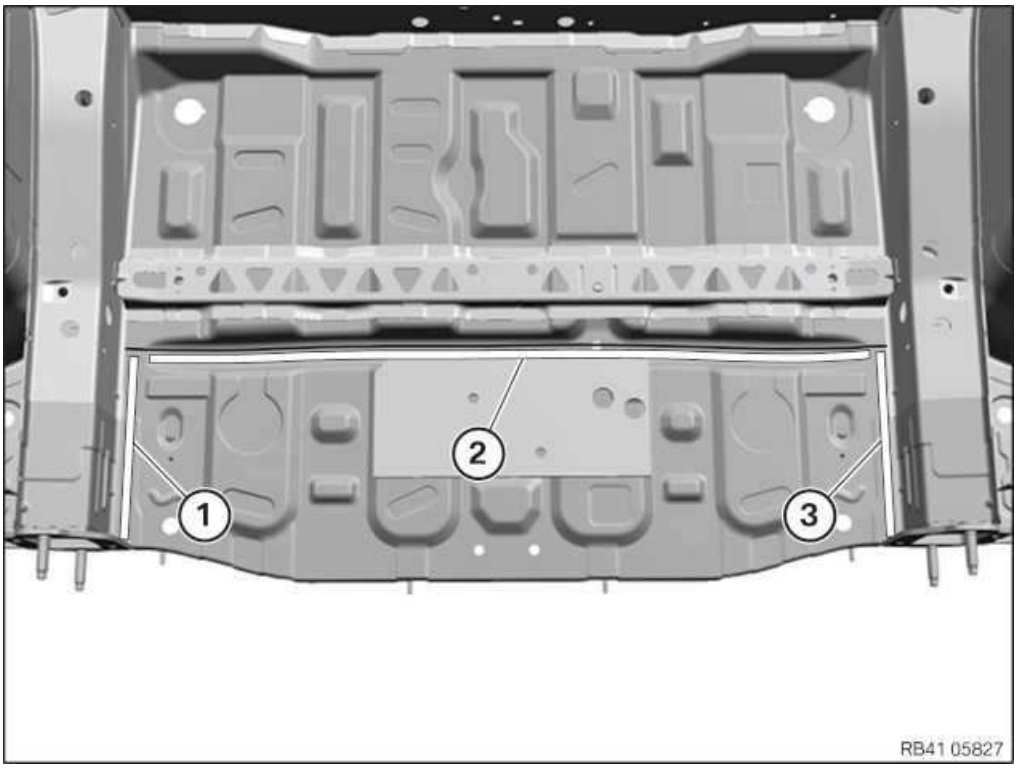
- Apply K5a adhesive to the bonding surfaces.

Adhesive

Body adhesive K5	50 ml	83192158654

- Install new part.

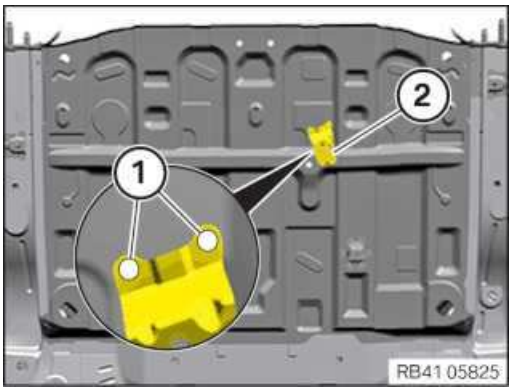
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- Rivet the new part in areas (1) to (3) with blind rivets N3.

Expendable materials

Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm	83190301421



- Weld the holder (2) in areas (1).

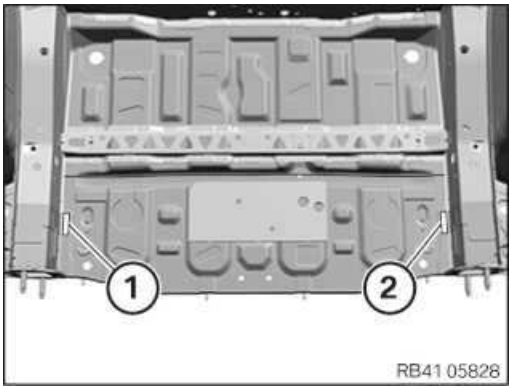
▷ **Install the EMC screw (EMC = electromagnetic compatibility)**

- 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 in areas (1) and (2), install one EMC screw in each case.

Expendable materials

Screw EMC screw, SF Plus, M5x15		83190301639

Additional Information

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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 ... Welding steel components	3
41 00 ... BMW/MINI bonding instructions	3
41 00 ... 0 Contents of Body, General	
41 00 ... Repair techniques, repair stage 3	

Repair instructions	Used in step
41 00 ... Welding in reinforcement plate (sheet steel)	3

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41 12 191 Replacing the right luggage compartment floor

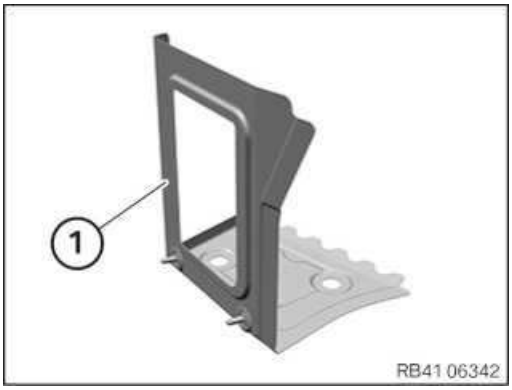
TECHNICAL INFORMATION

- 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 – Supply the new parts required



- Supply the following new parts:

  Luggage compartment floor, right(1)

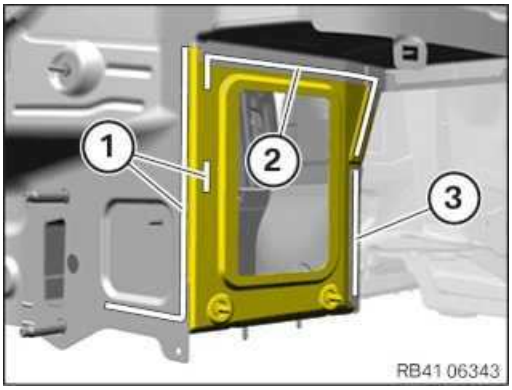
TECHNICAL INFORMATION

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

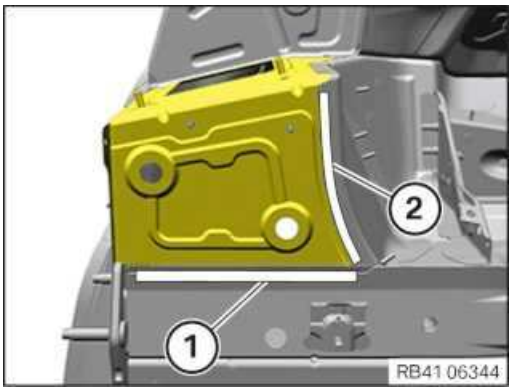
- Supply the following consumables:

Material	Quantity
Coarse thread bolt	5
Sealant D1	
Cavity sealing wax remover	

2 – Remove the luggage compartment floor, right



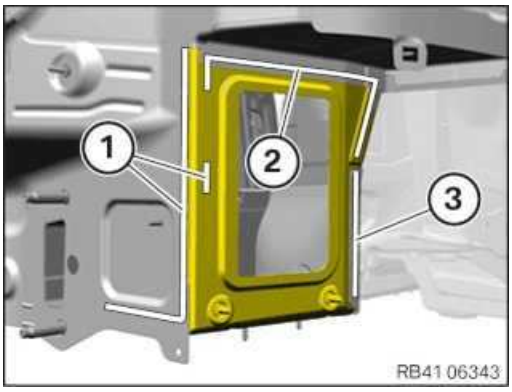
- Release the welded connections in the areas (1) to (3).
- Release welded connections in area (3) from inside.



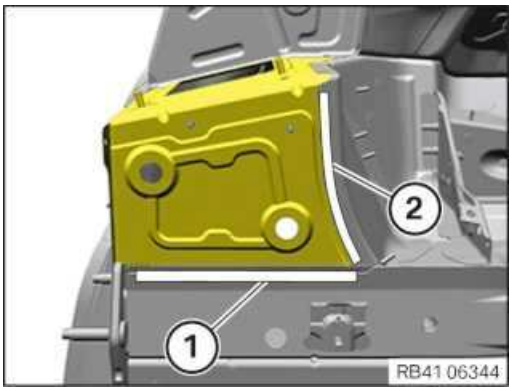
- Release welded connections in areas (1) and (2) from inside.

3 – Prepare new part

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- Adjust new part to fit and secure.
- Adapt joining area (3) on new part and vehicle so that new part can be attached from outside in area (3).
- Prepare areas (1) to (3) for joining by means of welding.

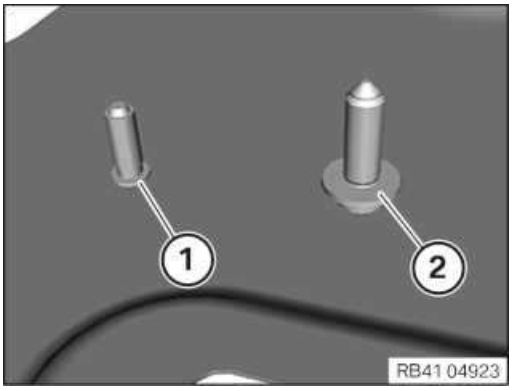


- Adapt joining area (2) on new part and vehicle so that new part can be attached from outside in area (3).
- Prepare areas (1) and (2) for joining by welding.

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

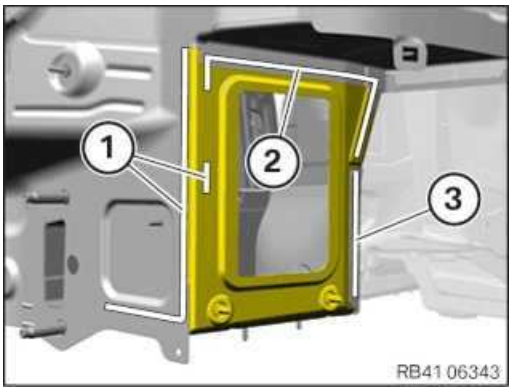
NOTICE

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



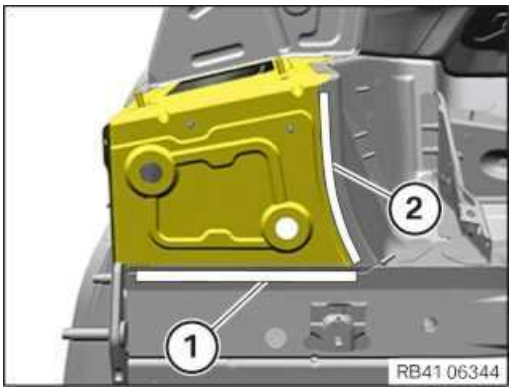
- Take the quantity and position from the component to be replaced.
- Weld the coarse thread bolt (1) and the threaded weld bolt (2) onto the new part.

4 – Install the luggage compartment floor on the right



- Install new parts as per new part preparation process and weld in areas (1) to (3).

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- Weld new parts in areas (1) and (2) as per new part preparation process.

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 ... 0 Contents of Body, General	
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 ... Enter vehicle identification number

Special tools required:

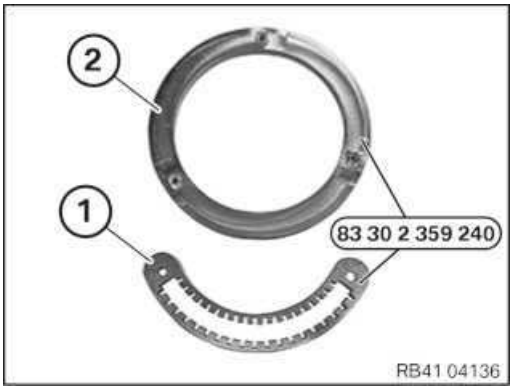
- 83 30 2 359 240

Note:
If the stamped vehicle identification number is removed during a repair, it must be stamped in again.

Read and comply with General Notes.

Necessary preliminary tasks:

- Remove front right spring strut.

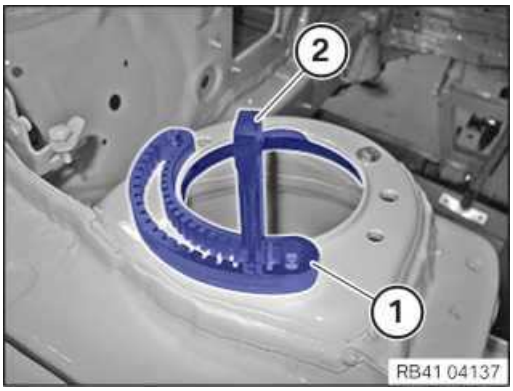


Set of special tools 83 30 2 359 240 for stamping vehicle identification number consists of:

Guide plate (1)

Counter-support plate (2)

Bolts



Position counter-support plate on spring strut from bottom.

Position guide plate (1) on spring strut support plate from top and screw to counter-support plate.

Insert punch numbers (2) individually into guide plate and stamp vehicle identification number.

Note:
In the event of component or body replacement by the workshops/garages, clearly delimit the vehicle identification number at front and rear by stamping a "+" in place of the BMW symbol.

Note national regulations.

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41 14 531 Replacing engine support/front left side frame connection

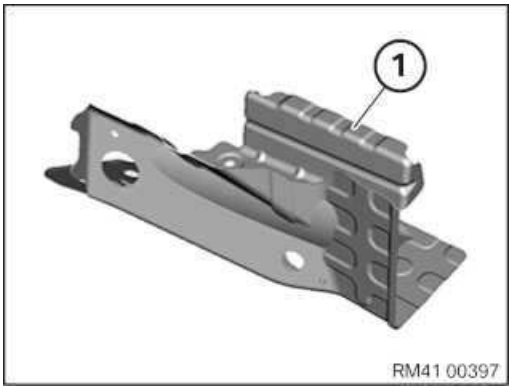
TECHNICAL INFORMATION

- 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.

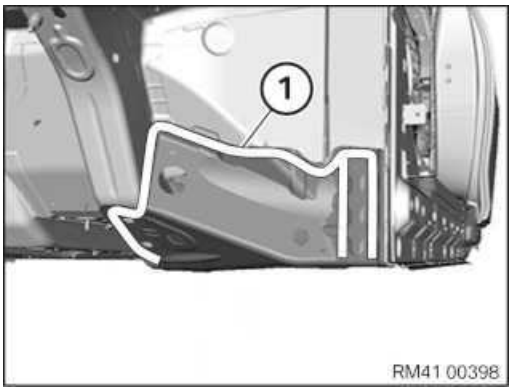
1 – New parts required



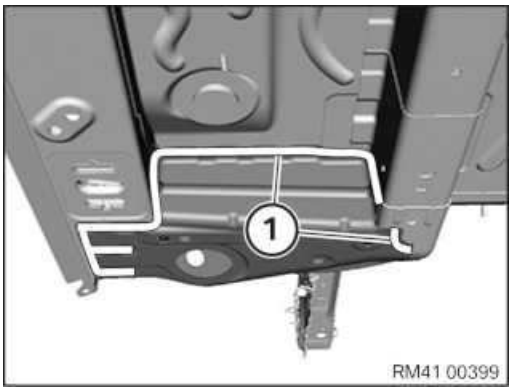
- The following new parts are required (see Electronic Parts Catalogue):

  (1) Wheel arch/Door sill connection

2 – Removing the connection between the wheel arch and the door sill



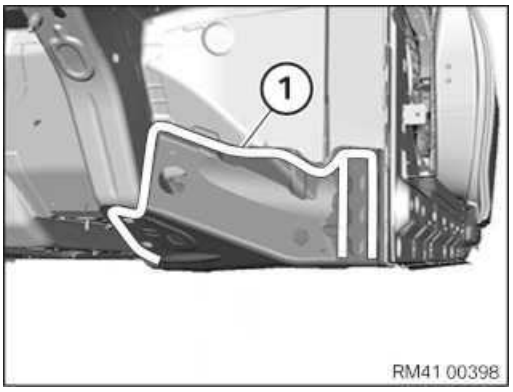
- Open welded connections in area (1).



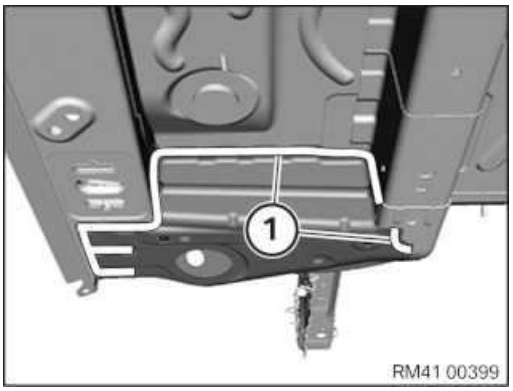
- Open the welded connections in areas (1) and remove the connection.

3 – Prepare new part

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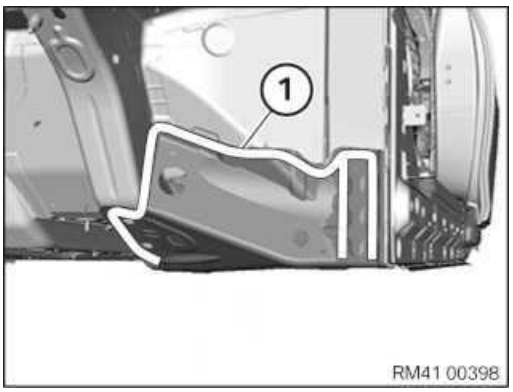


- Adjust the new part and prepare for joining by welding in the area (1).

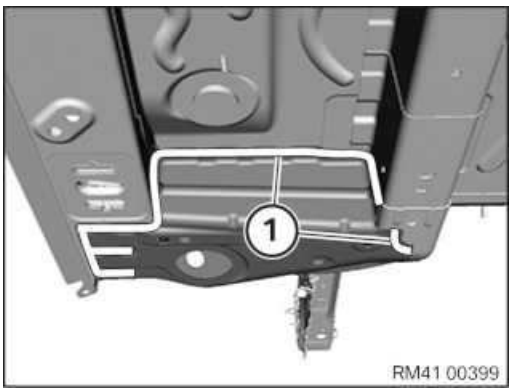


- Prepare new part in the areas (1) for joining through weld.

4 – Installing the connection between the wheel arch and the door sill



- Install new part and weld in the area (1).



- Weld new part in the areas (1).

Additional Information

Links

General repair instructions	Used in step
41 00 ... 0 Contents of Body, General	
41 00 ... Repair techniques, repair stage 3	

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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.

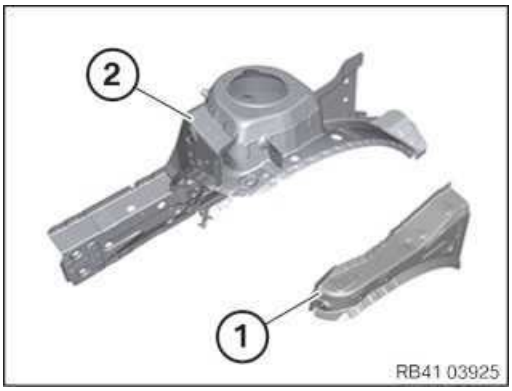
TECHNICAL INFORMATION

- 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 – Supply the new parts required



- Supply the following new parts:

  Outer wheel arch section carrier support (1)

  Front spring support(2)

  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
Coarse thread bolt	5
Sealant D1	
Cavity sealing wax remover	

2 – Remove wheel arch

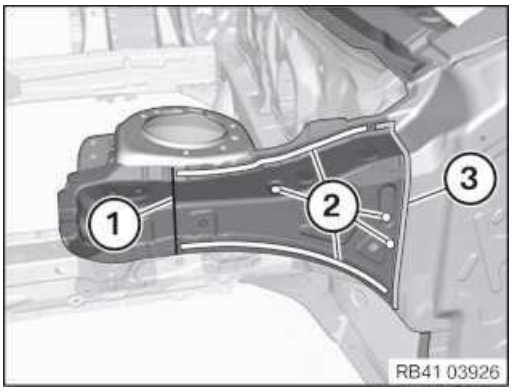
TECHNICAL INFORMATION

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

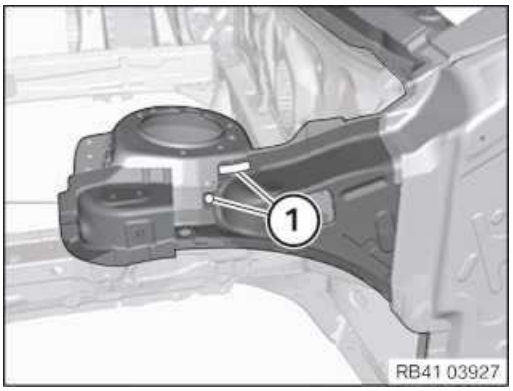
TECHNICAL INFORMATION

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

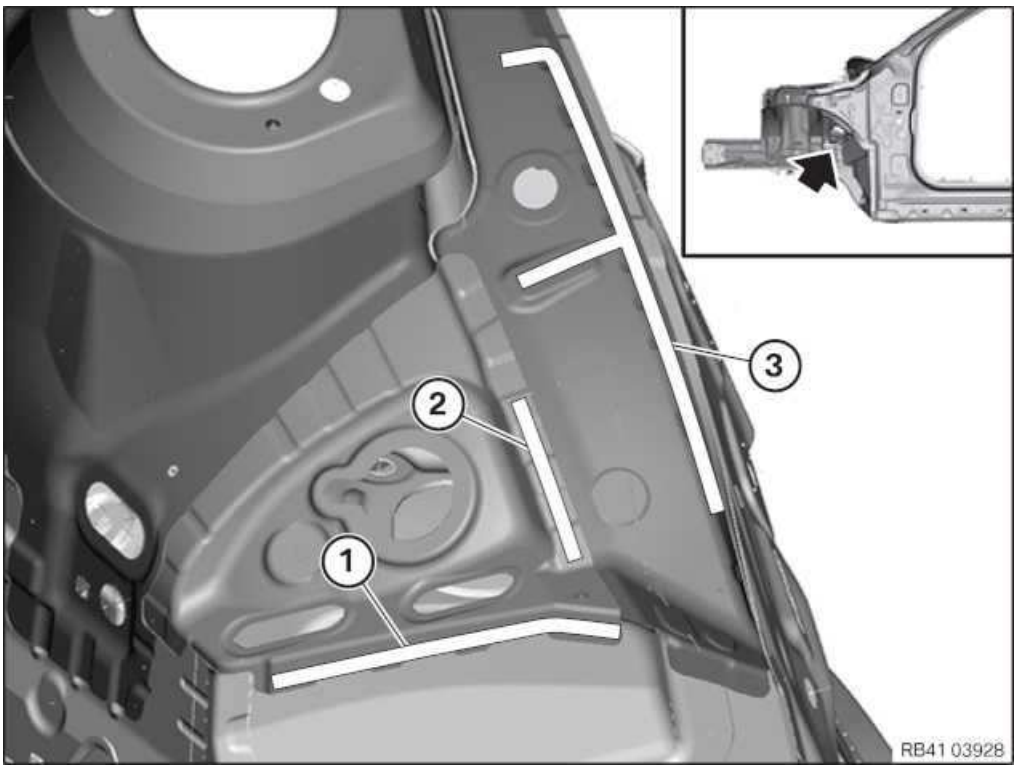
cardiagn.com



- Mark and carry out the separating cut (1) roughly in accordance with the diagram.
- Release welded connections in areas (2).
- Open the spot-welded adhesive joints in the area (3) and remove the carrier support section.
- Remove adhesive residue in area (3).

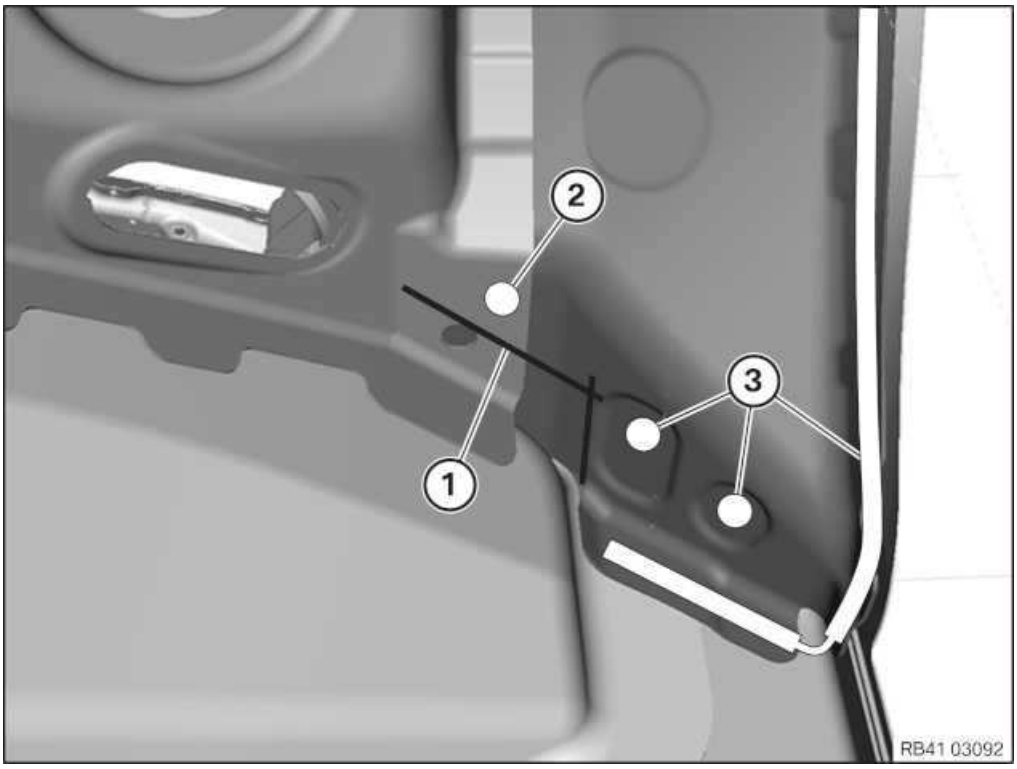


- Release welded connections in areas (1).

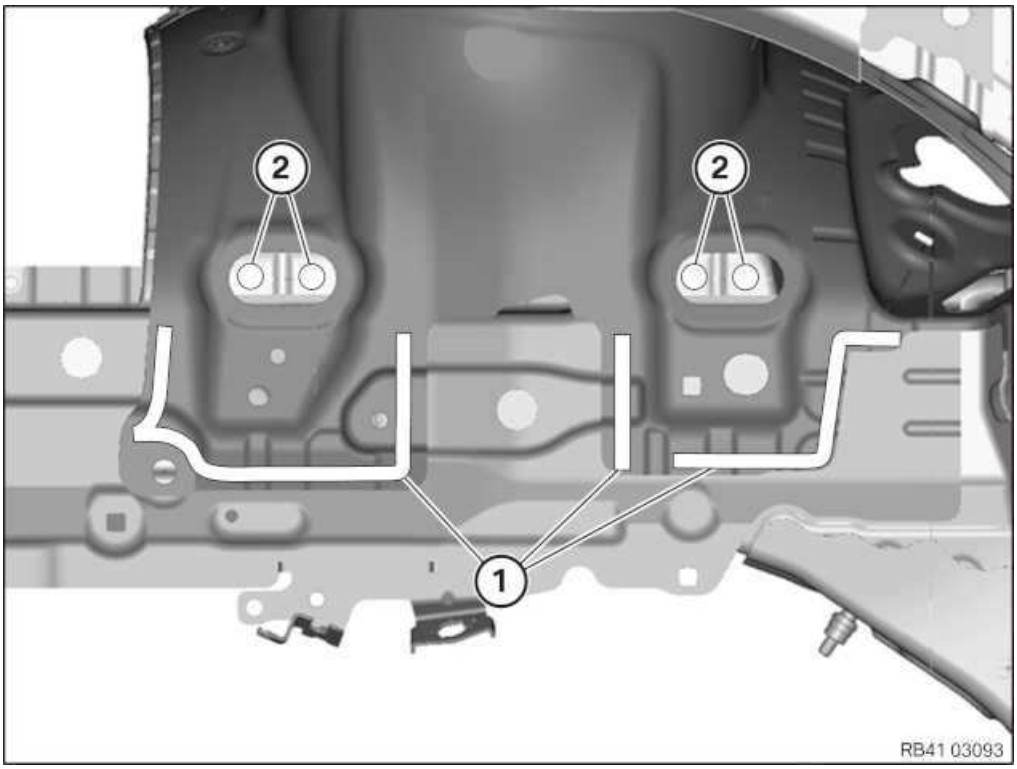


- Release the welded connections in the areas (1) to (3).
- Open welded connections in area (2) for both outer panels.

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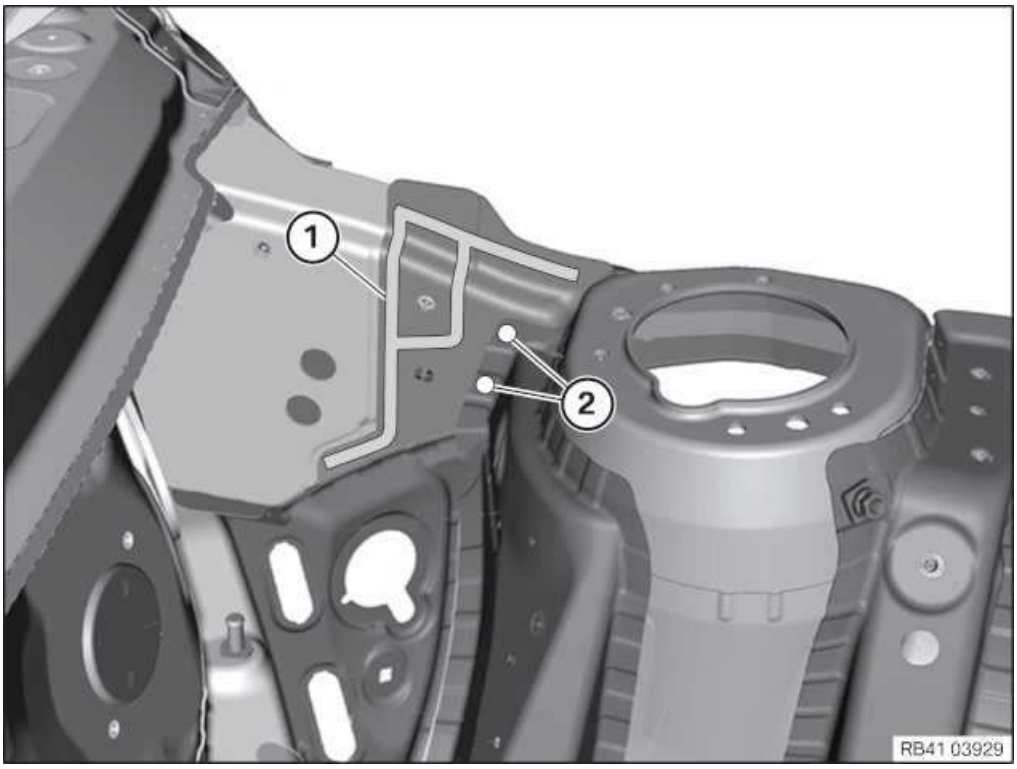


- Mark and perform the separating cut (1) in accordance with the schematic diagram. While doing so, carry out the separating cut only on both outer panels.
- Open welded connections in area (2). While doing so, open the welded connections for both outer panels.
- Loosen welded connections in areas (3).

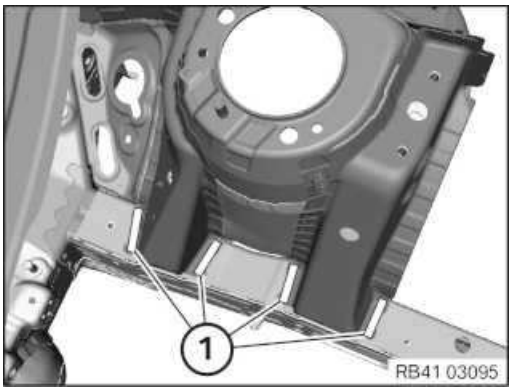


- Open welded connections in areas (1) and (2). While doing so, do not drill or drill through the engine support.

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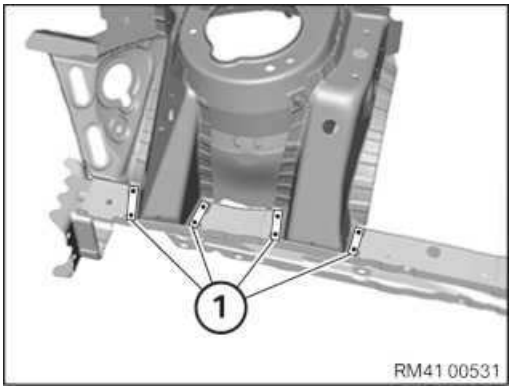
- Release the spot-welded adhesive joints in area (1).
- In areas (2), open the welded connections for both outer panels.



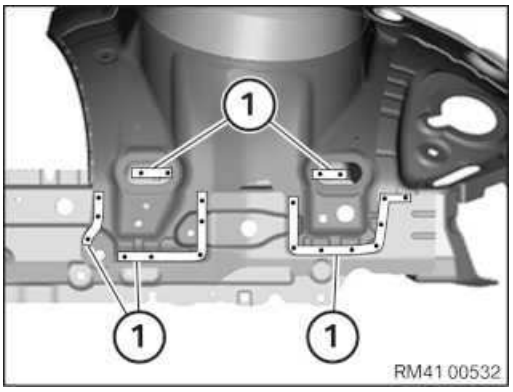
- Release welded connections in areas (1). While doing so, do not drill or drill through the engine support.

  Remove the wheel arch.

3 – Prepare new parts

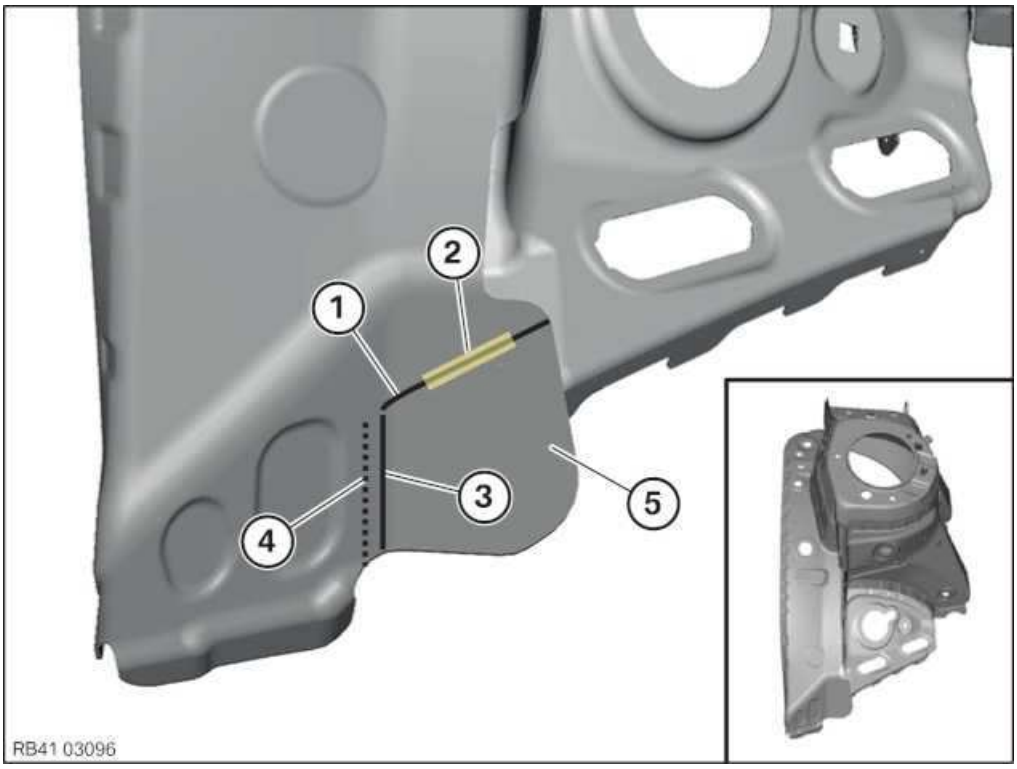


- Release welded connections in areas (1).

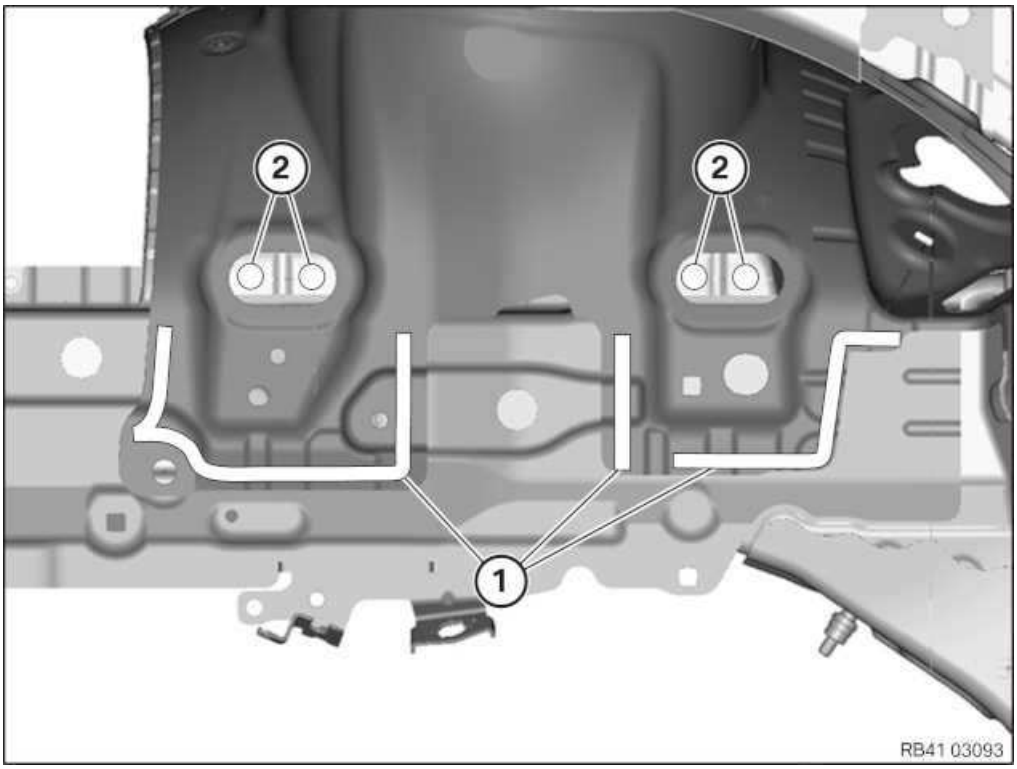


- Release welded connections in areas (1).

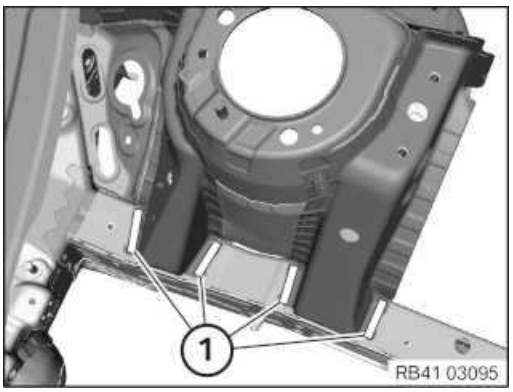
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- Mark and make the separating cut (1) according to the separating cut on the vehicle.
- Cut through both panels in area (2). In the area (2) the width of the separating cut must be approximately 5 mm, so that both panels can be welded to the body.
- Mark and carry out separating cut (3) according to the separating cut on the vehicle + approx. 5 mm material allowance. (4) = Separating cut on the vehicle.
- Remove the cut panel section (5).

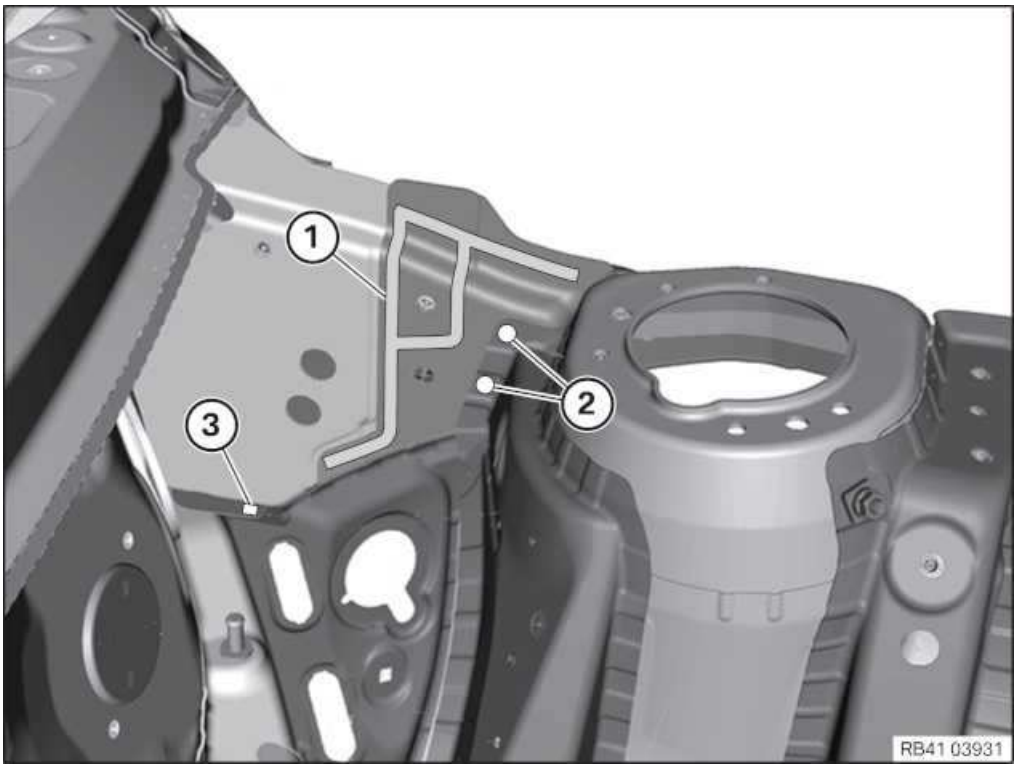


- Adjust new parts to fit with alignment bracket or universal mounting.
- Prepare for joining by welding in areas (1) and (2).

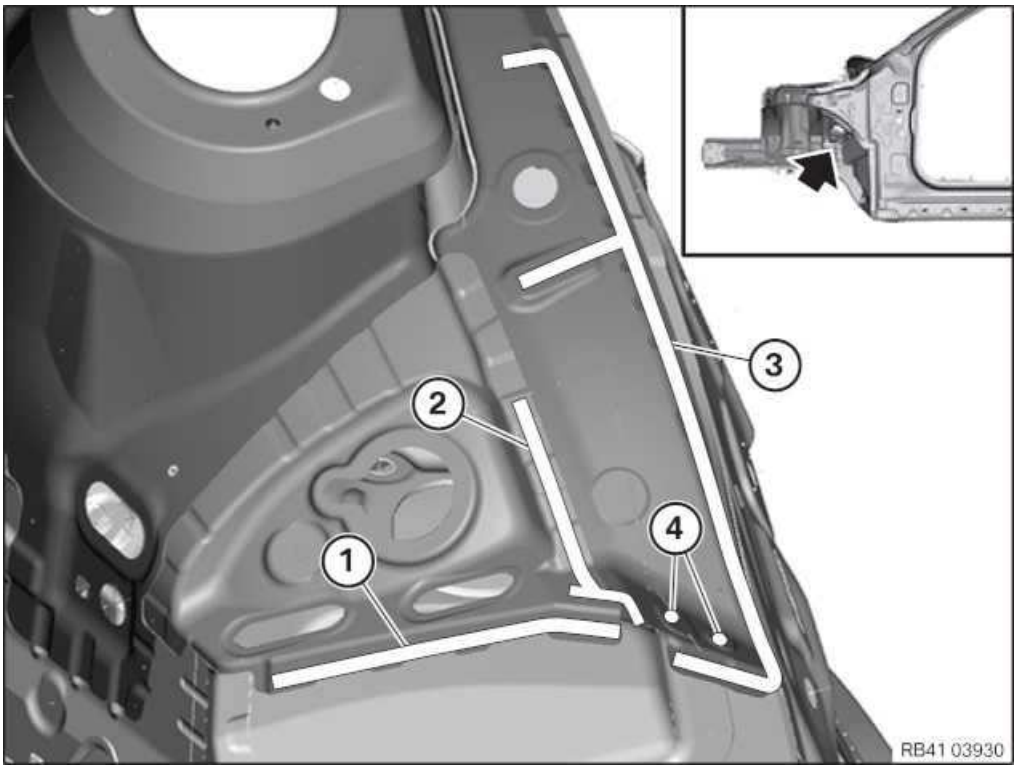


- Prepare for joining by welding in areas (1).

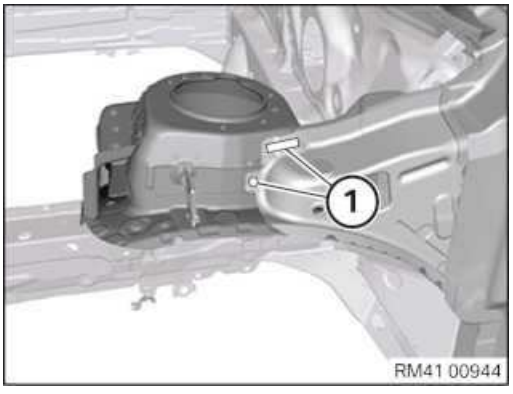
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- Prepare areas (1) to (3) for joining by welding. Prepare areas (2) and 3 so that all three panels can be welded to each other.

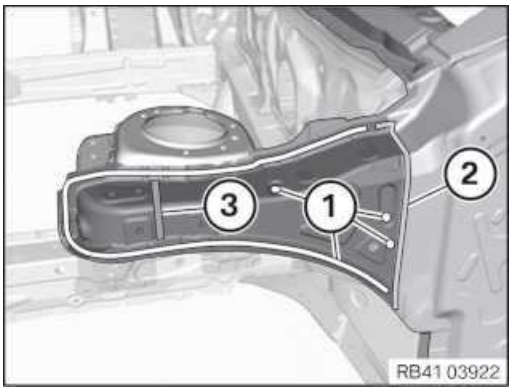


- Prepare for joining by welding in the areas (1) to (4).



- Prepare the new parts in the areas (1) for joining by welding.

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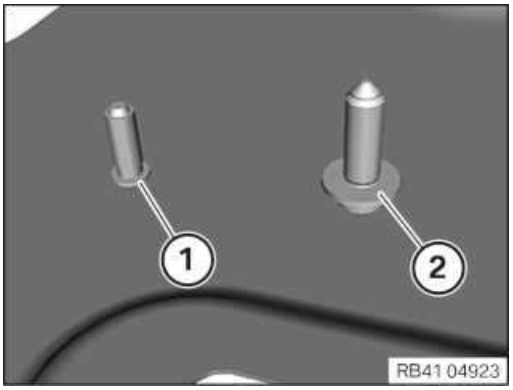
- Install new part and prepare for joining by welding in areas (1) and (2).

  (3) = position of the cavity sealing.

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

NOTICE

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

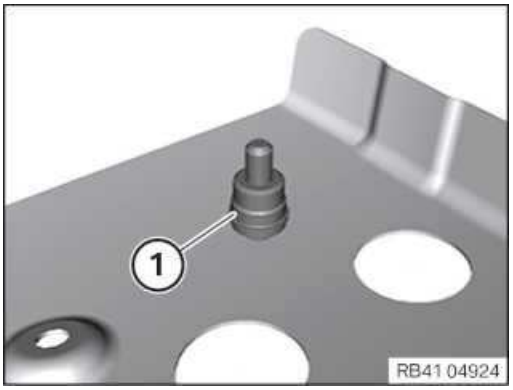


- Take the quantity and position from the component to be replaced.
- Weld the coarse thread bolt (1) and the threaded weld bolt (2) onto the new part.

▸ **Earth pin**

NOTICE

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

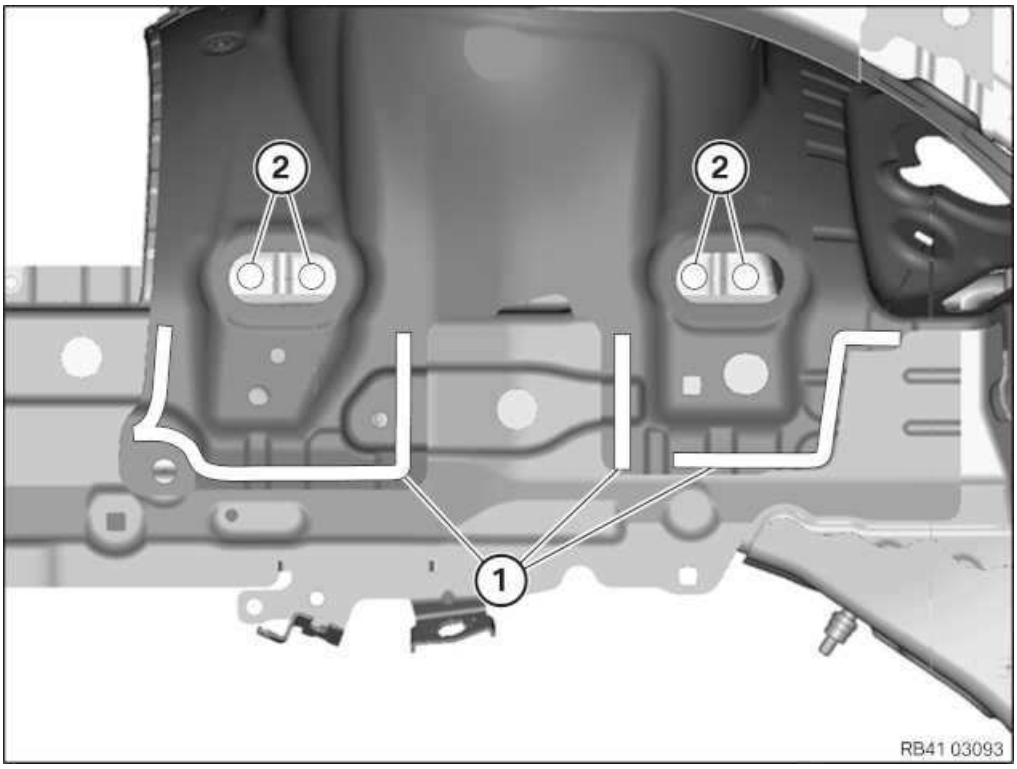


- Check the ground pins (1) for stability and renew where required.

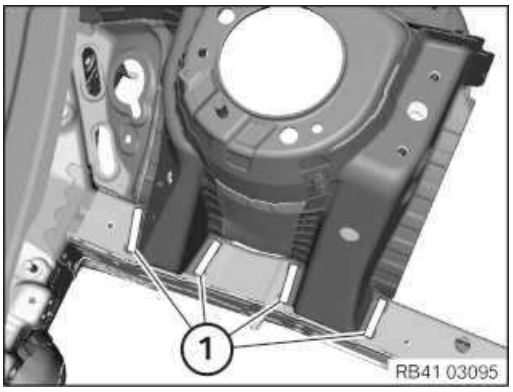
4 – Install wheel arch

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

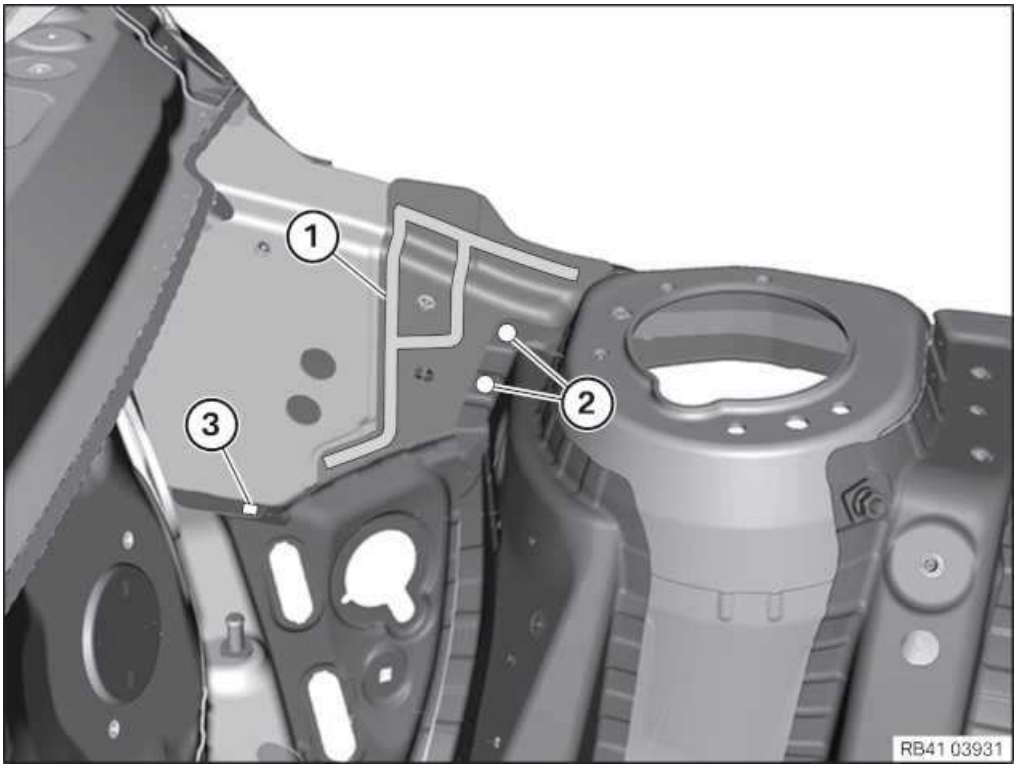
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- Weld the new part in the areas (1)and (2).

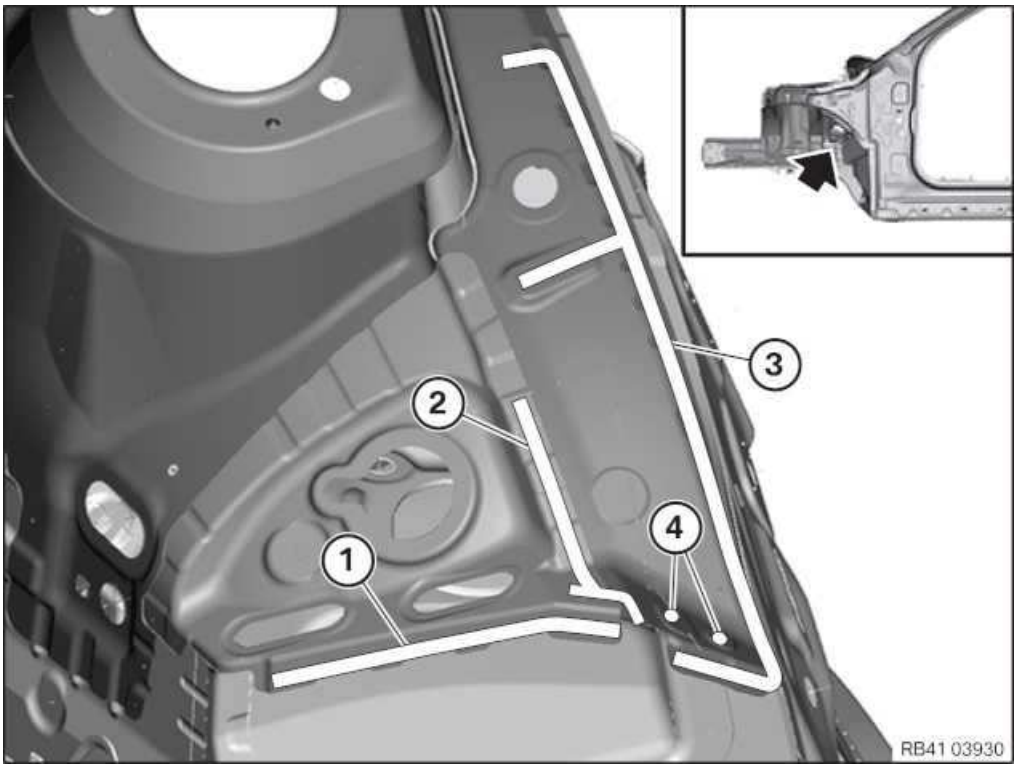


- Weld new part in the areas (1).

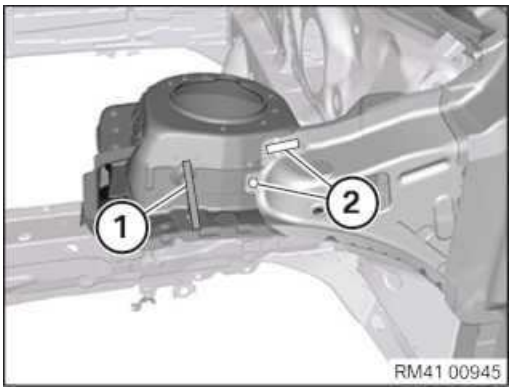


- Weld new part in the areas (1) to (3).
- Weld all 3 panels together in areas (2).

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- Weld new part in the areas (1) to (4).

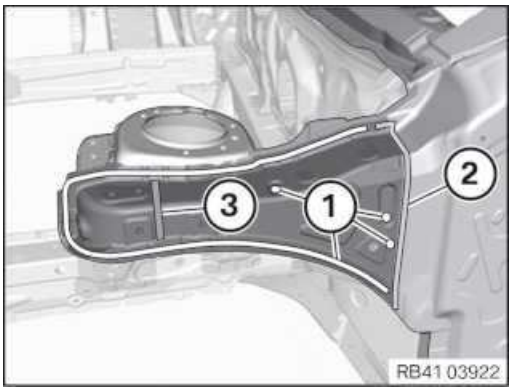


- Weld new part in the area(2).

TECHNICAL INFORMATION

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

- Apply sealant to cavity sealing (1). Install cavity sealing.



- Apply sealant to cavity sealing(3).
- Install new part and weld in the areas (1) and (2).

Additional Information

Links

Repair instructions (PRE)	Used in step
Transferring hole pattern	3

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	2 3

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41 00 ... 0 Contents of Body, General
41 0 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 Replacing rear left outer wheel arch section (rear side 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):

  End plate, outer wheel arch section (1)

  Wheel arch extension (2)

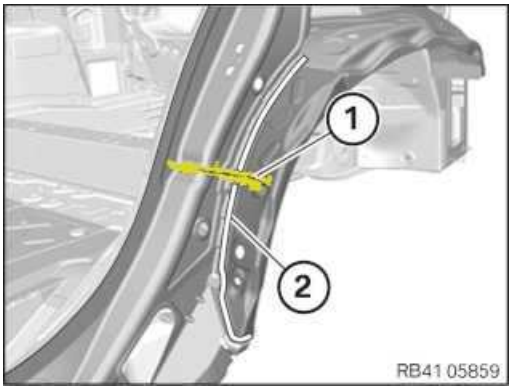
TECHNICAL INFORMATION

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

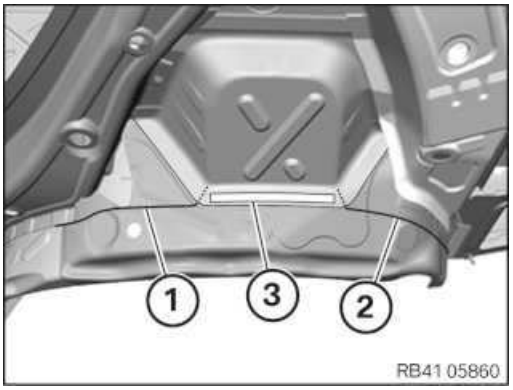
- Supply the following consumables:

Material	Quantity
Coarse thread bolt	5
Sealant D1	
Cavity sealing wax remover	

2 – Removing the rear outer wheel arch section



- Remove cavity sealing (1).
- Open welded connections in area (2).



- Mark and make the separating cuts (1) and (2) as shown.
- Release welded connections in area (3) and remove section of outer wheel arch section.

3 – Prepare new part

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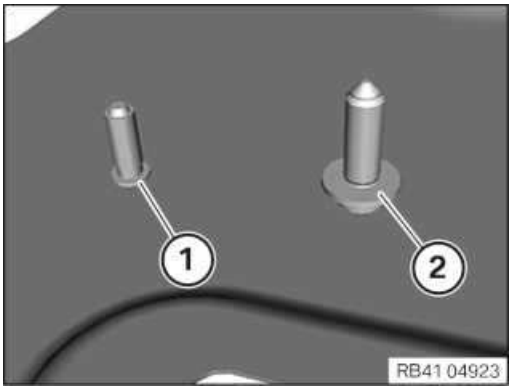
TECHNICAL INFORMATION

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

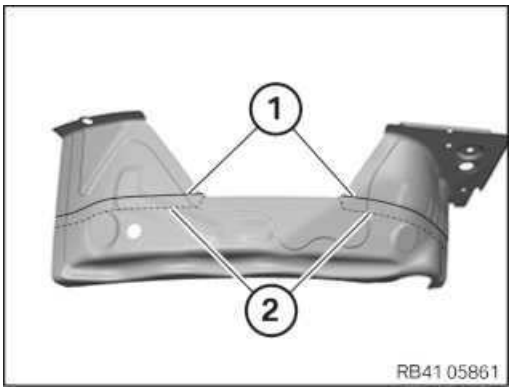
▸ Renewing the coarse thread bolt and threaded weld bolt

NOTICE

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

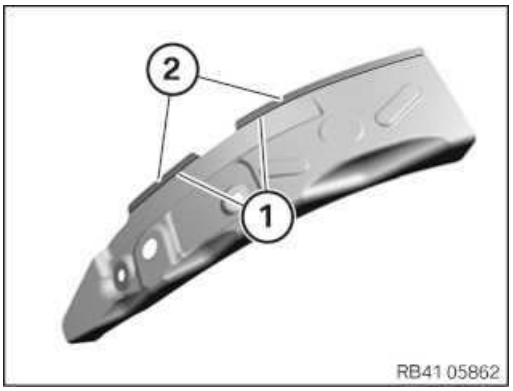


- Take the quantity and position from the component to be replaced.
- Weld the coarse thread bolt (1) and the threaded weld bolt (2) onto the new part.



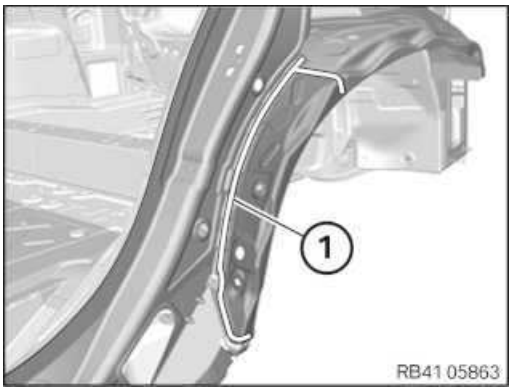
- Mark and make separating cuts (1) on the new part in accordance with the separating cuts on the vehicle + 15 mm material allowance.

  (2) = parting cut route on vehicle



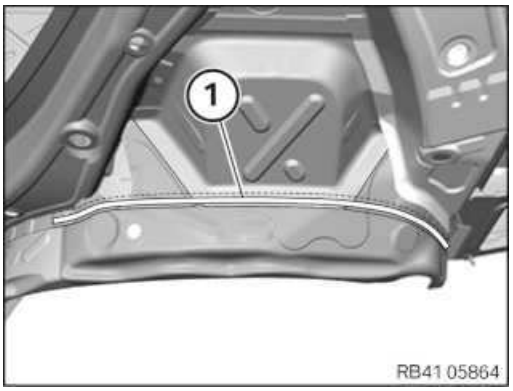
- Make the separating cuts (1) on the new part as shown.
- Remove the sheet metal strips (2).

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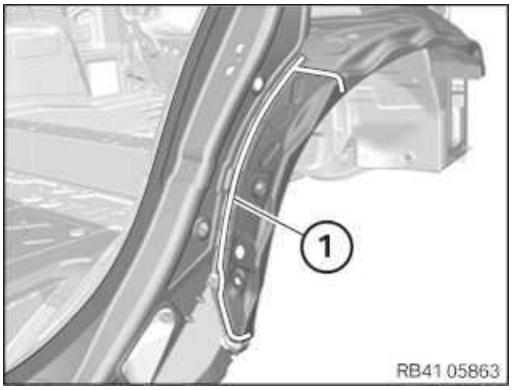
- Adjust the new part in combination with the side panel to fit and secure.
- Prepare area (1) for joining by welding.

  Prepare the area (1) so that all three panels can be welded to each other.

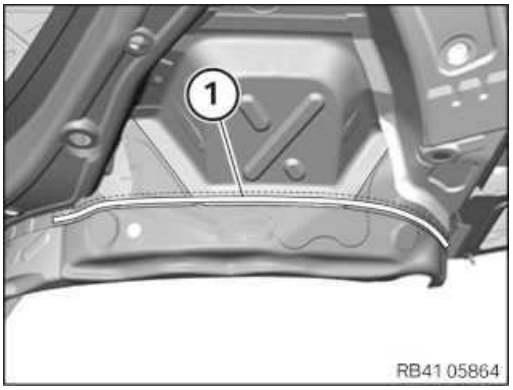


- Prepare area (1) for joining by welding.

4 – Installing the rear outer wheel arch section

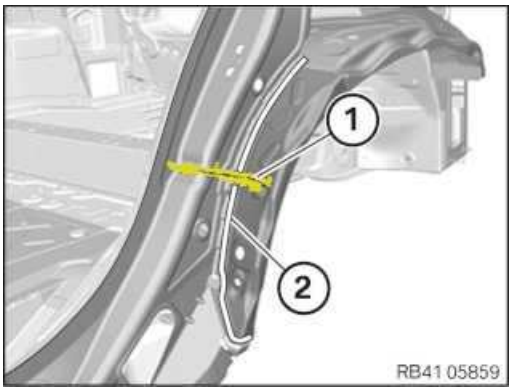


- Install the new parts and weld them in this area (1) as per the new part preparation process.



- Weld new parts in the area (1) as per the new part preparation process.

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TECHNICAL INFORMATION

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

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

Expendable materials

Sealant D1 (seam sealing)	310 ml	83422409985

- After drying of the sealant in the area of the three-panel joint (2) with the primer and the cavity protection wax, carry out corrosion protection measures.
- Take corrosion protection measures in the remaining joining area as well.
- Take corrosion protection measures before installing the side panel..

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 ... 0 Contents of Body, General	
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 14 502 Replacing rear left outer wheel arch section with reinforcement (rear side panel removed)

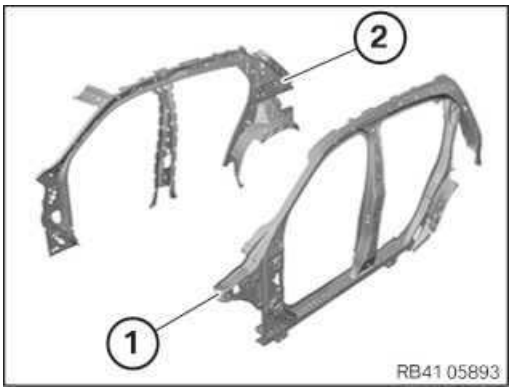
TECHNICAL INFORMATION

- 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.

1 – Supply the new parts required



- Supply the following new parts:

  Side frame centre (1)

  Inner side frame(2)

  Shaped part, C-pillar, outer

  Shaped part, C-pillar inner

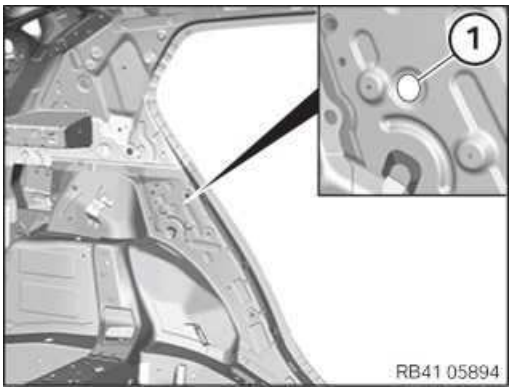
TECHNICAL INFORMATION

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

- Supply the following consumables:

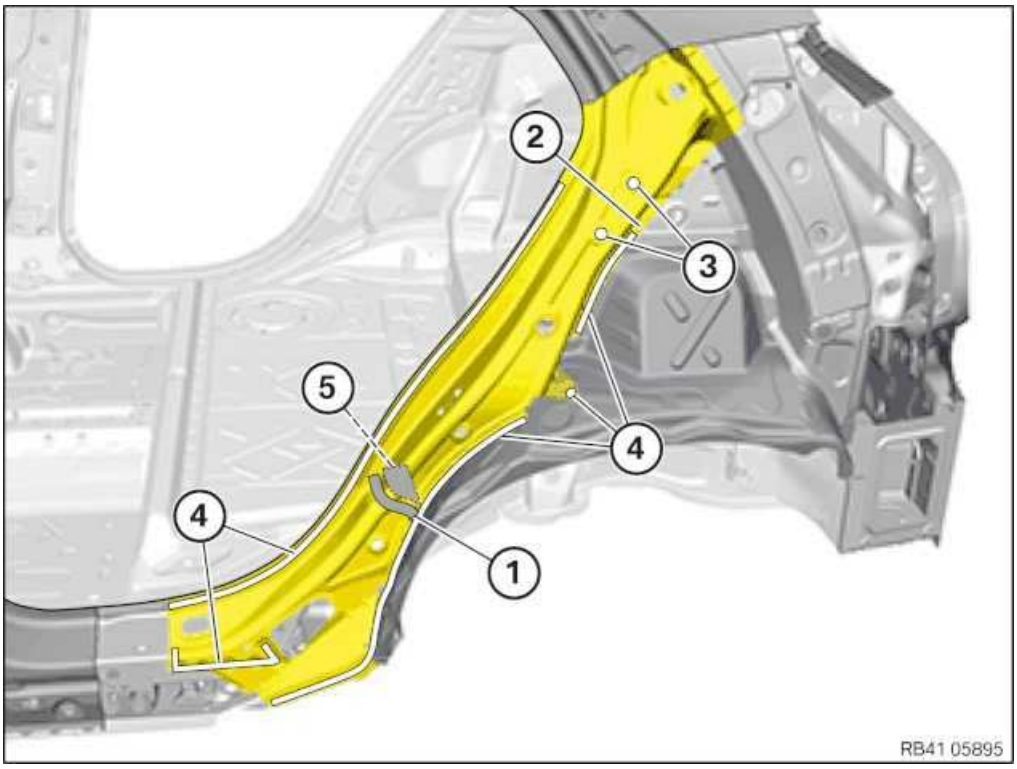
Material	Quantity
Coarse thread bolt	5
Sealant D1	
Cavity sealing wax remover	

2 – Remove the outer wheel arch section with the reinforcement

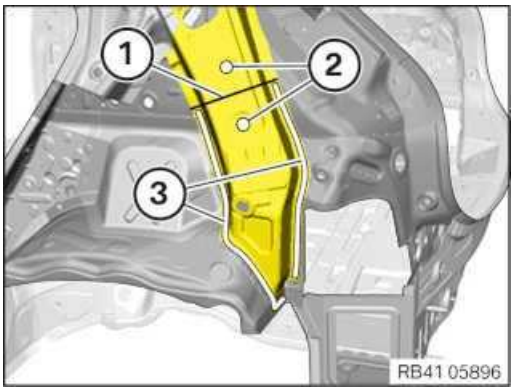


- Open welded connection (1).

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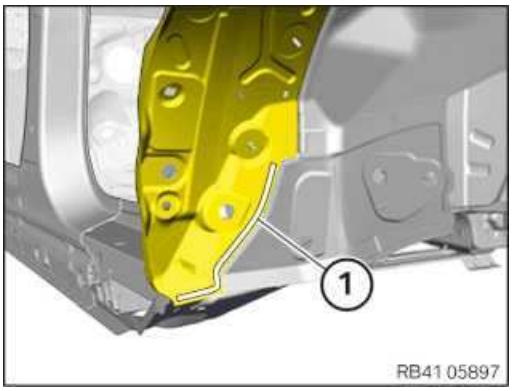


- Remove the outer cavity sealing (1).
- Make separating cut (2) in the centre between the holes (3).
- Release welded connections in areas (4).
- Release the C-pillar support from the cavity sealing (5) and remove.

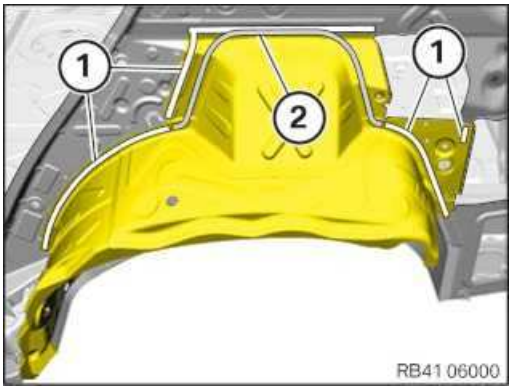


- Make separating cut (1) in the centre between the holes (2).
- Loosen welded connections in areas (3).

  Remove reinforcement on C-pillar.



- Open welded connections in area (1).



- Release welded connections in areas (1).

TECHNICAL INFORMATION

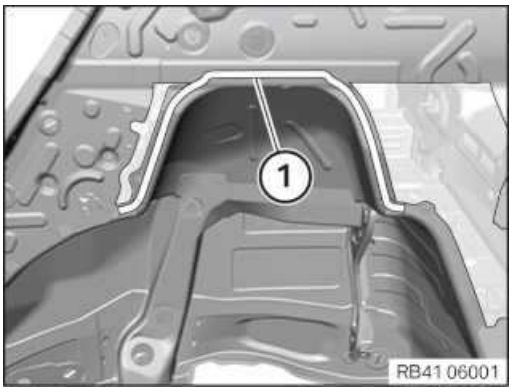
For more information see: 41 00 ... Releasing bonded connections

- Release the spot-welded adhesive joints in area (2).
- Remove outer section of wheel arch.

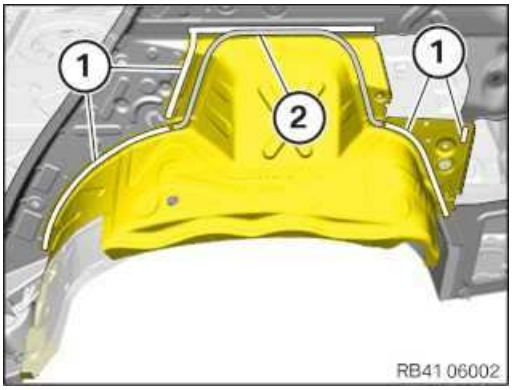
3 – Prepare new part

- Remove unnecessary components from new part.

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- Remove adhesive residue in area (1).

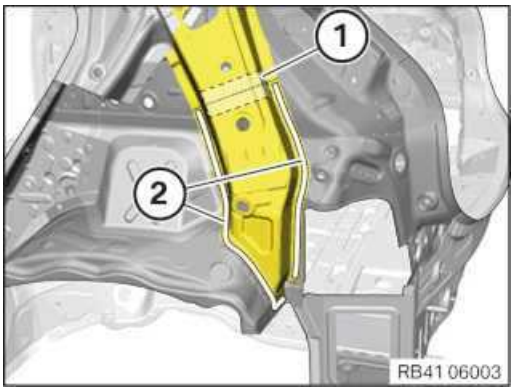


- Adjust the new outer wheel arch section together with the side panel.
- Prepare the new part in areas (1) and (2) for joining by welding.

TECHNICAL INFORMATION

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

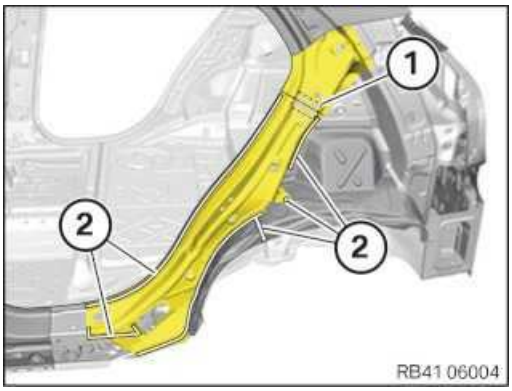
- In area (2), observe the procedure for the replacement of spot-welded adhesive joints for the series.



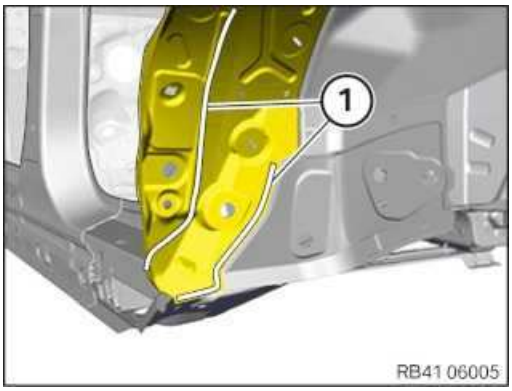
TECHNICAL INFORMATION

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

- Prepare a reinforcement plate (1) in the area of the separating cut.
- Fit new reinforcement of the C-pillar support and prepare the areas (1) and (2) for joining by welding.

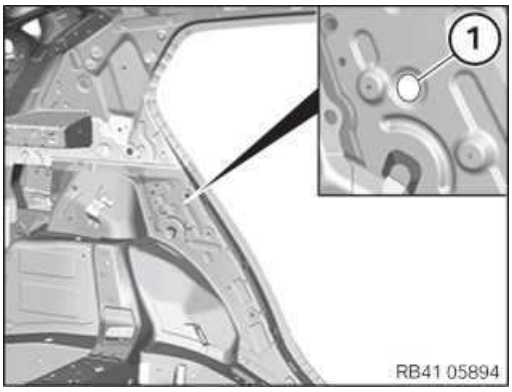


- Prepare a reinforcement plate (1) in the area of the separating cut.
- Fit new reinforcement of the C-pillar support and prepare the areas (2) for joining by welding.



- Prepare the new parts for joining by welding in the areas (1).

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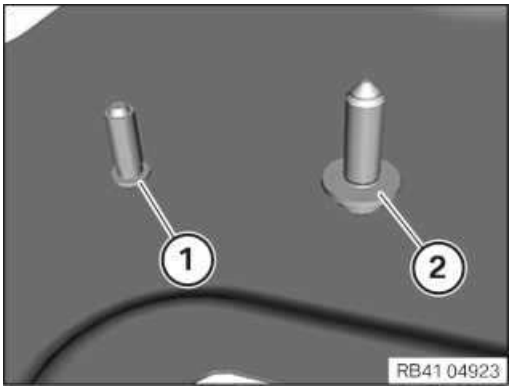


- Prepare area (1) for joining by welding.

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

NOTICE

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

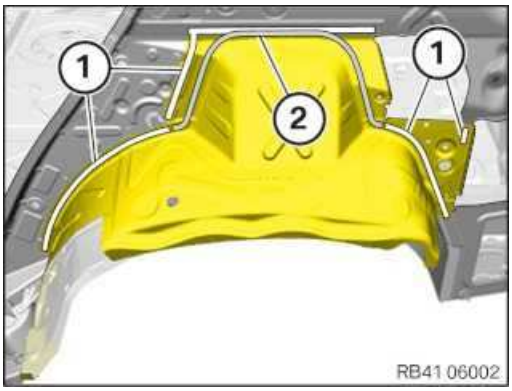


- Take the quantity and position from the component to be replaced.
- Weld the coarse thread bolt (1) and the threaded weld bolt (2) onto the new part.

4 – Install the outer wheel arch section with the reinforcement

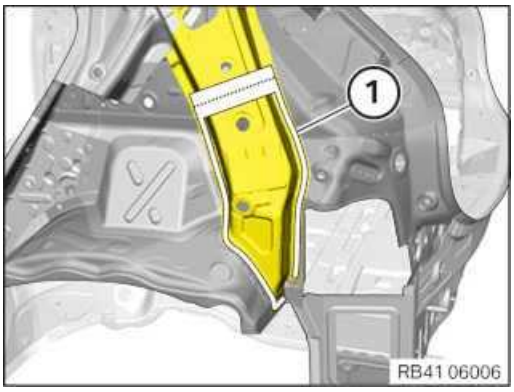
TECHNICAL INFORMATION

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

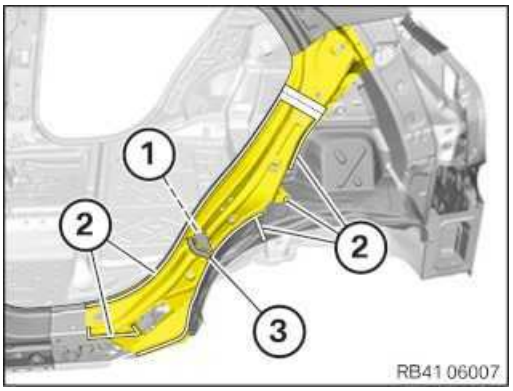


- Install the new outer wheel arch section part in areas (1) and (2) and weld it according to the new part preparation process.

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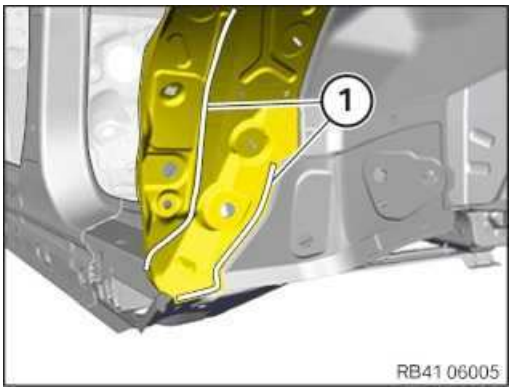
- Install the new reinforcement of the C-pillar and the reinforcement plate and weld in area (1).



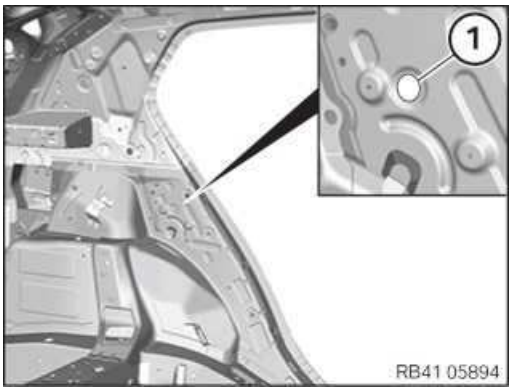
TECHNICAL INFORMATION

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

- Apply sealant to the inner cavity sealing (1). Install cavity sealing.
- Install the new reinforcement of the C-pillar and the reinforcement plate and weld in the areas (2).
- Apply sealant to the outer cavity sealing (3). install outer cavity sealing.



- Weld new part in the area(1).



- 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 ... Spot-weld bonding steel components	3
41 00 ... Workshop equipment (BMW and MINI vehicles)	4
41 00 ... 0 Contents of Body, General	

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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 (not expanded)	4

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41 14 504 Replacing rear right outer wheel arch section (rear side panel removed) (without drawing off and filling fuel)

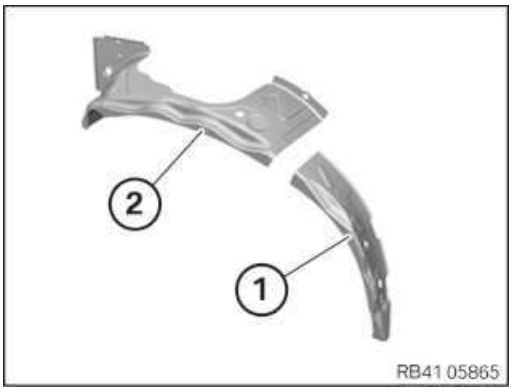
TECHNICAL INFORMATION

- 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):

  End plate, outer wheel arch section (1)

  Wheel arch extension (2)

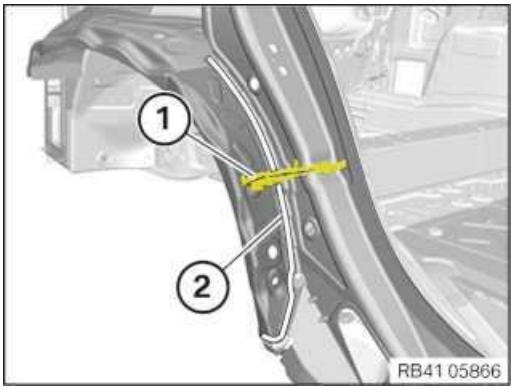
TECHNICAL INFORMATION

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

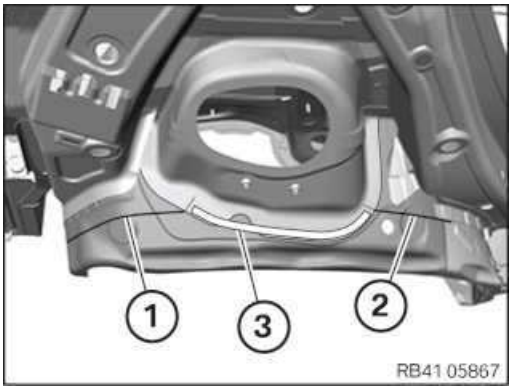
- Supply the following consumables:

Material	Quantity
Coarse thread bolt	5
Sealant D1	
Cavity sealing wax remover	

2 – Removing the rear outer wheel arch section



- Remove cavity sealing (1).
- Open welded connections in area (2).



- Mark and make the separating cuts (1) and (2) as shown.
- Release the welded connections in area (3) and remove the section of the outer wheel arch section.

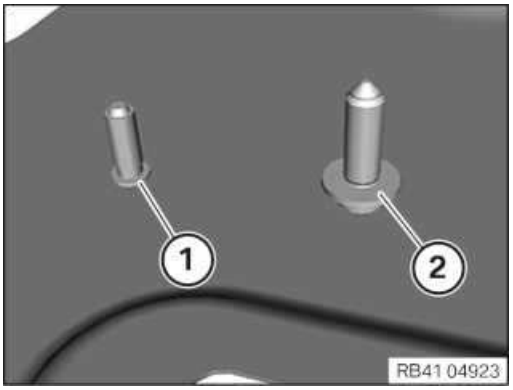
3 – Prepare new part

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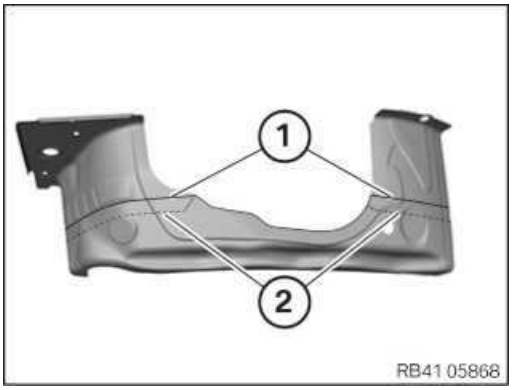
▶ Renewing the coarse thread bolt and threaded weld bolt

NOTICE

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

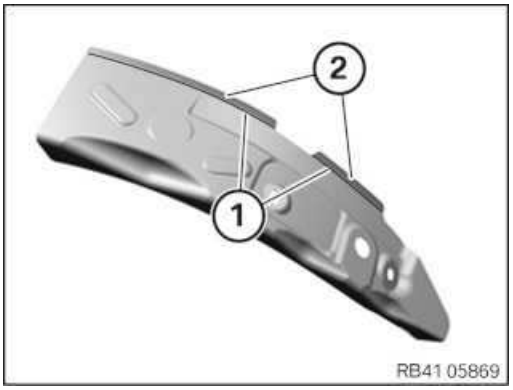


- Take the quantity and position from the component to be replaced.
- Weld the coarse thread bolt (1) and the threaded weld bolt (2) onto the new part.

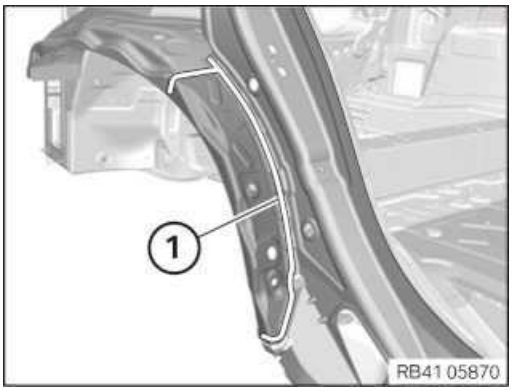


- Mark separating cuts (1) on new part as per separating cuts on vehicle + 15 mm material allowance and cut.

  (2) = separating cut route on vehicle



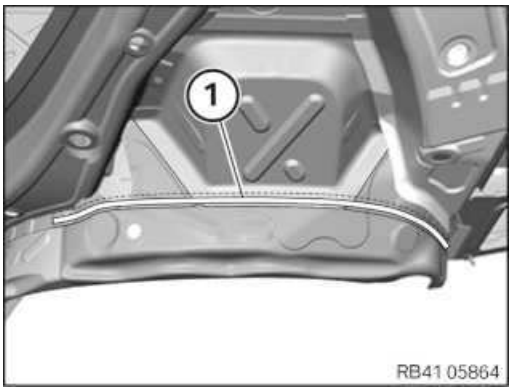
- Perform separating cuts (1) on new part as shown.
- Remove panel strips (2).



- Adjust the new part in combination with the side panel to fit and secure.
- Prepare area (1) for joining by welding.

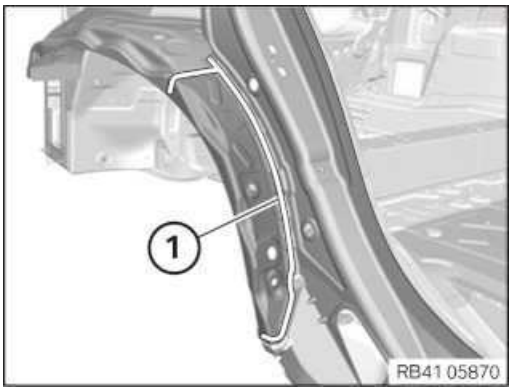
  Prepare area (1) so that all three panels can be welded together.

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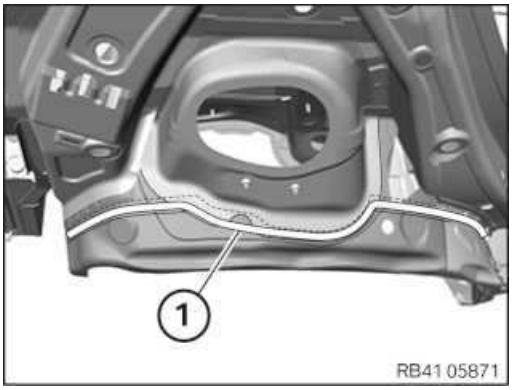


- Prepare area (1) for joining by welding.

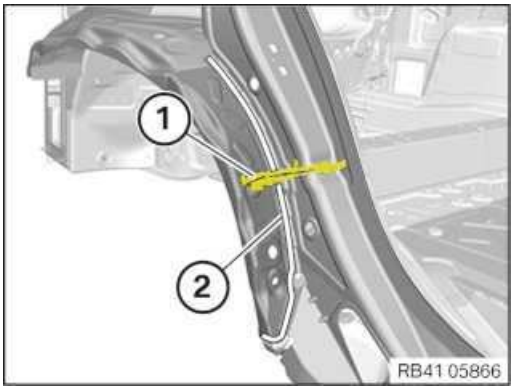
4 – Installing the rear outer wheel arch section



- Install the new parts and weld them in this area (1) as per the new part preparation process.



- Weld new parts in the area (1) as per the new part preparation process.



TECHNICAL INFORMATION

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

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

Expendable materials

Sealant D1 (seam sealing)	310 ml	83422409985

- After drying of the sealant in the area of the three-panel joint (2) with the primer and the cavity protection wax, carry out corrosion protection measures.
- Take corrosion protection measures in the remaining joining area as well.
- Take corrosion protection measures before installing the side panel..

Additional Information

Links

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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 ... 0 Contents of Body, General	
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 14 503 Replacing rear right outer wheel arch section with reinforcement (rear side panel removed) (without drawing off and filling fuel)

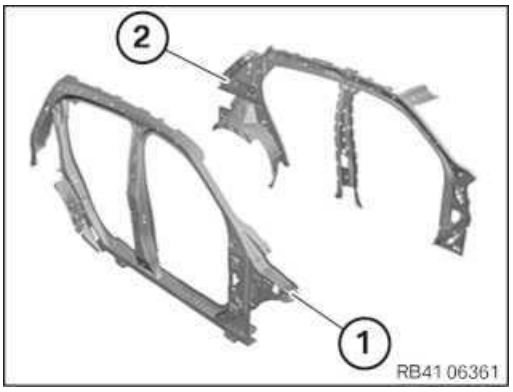
TECHNICAL INFORMATION

- 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 – Supply the new parts required



- Supply the following new parts:

  Side frame centre (1)

  Inner side frame(2)

  Shaped part, C-pillar, outer

  Shaped part, C-pillar inner

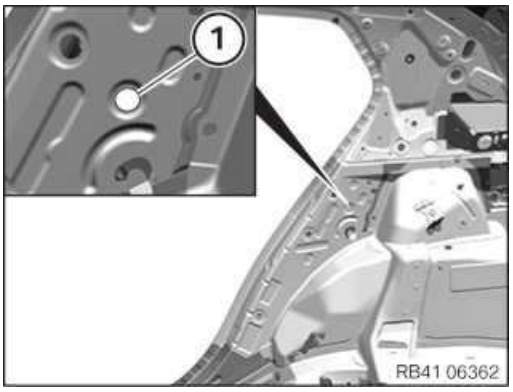
TECHNICAL INFORMATION

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

- Supply the following consumables:

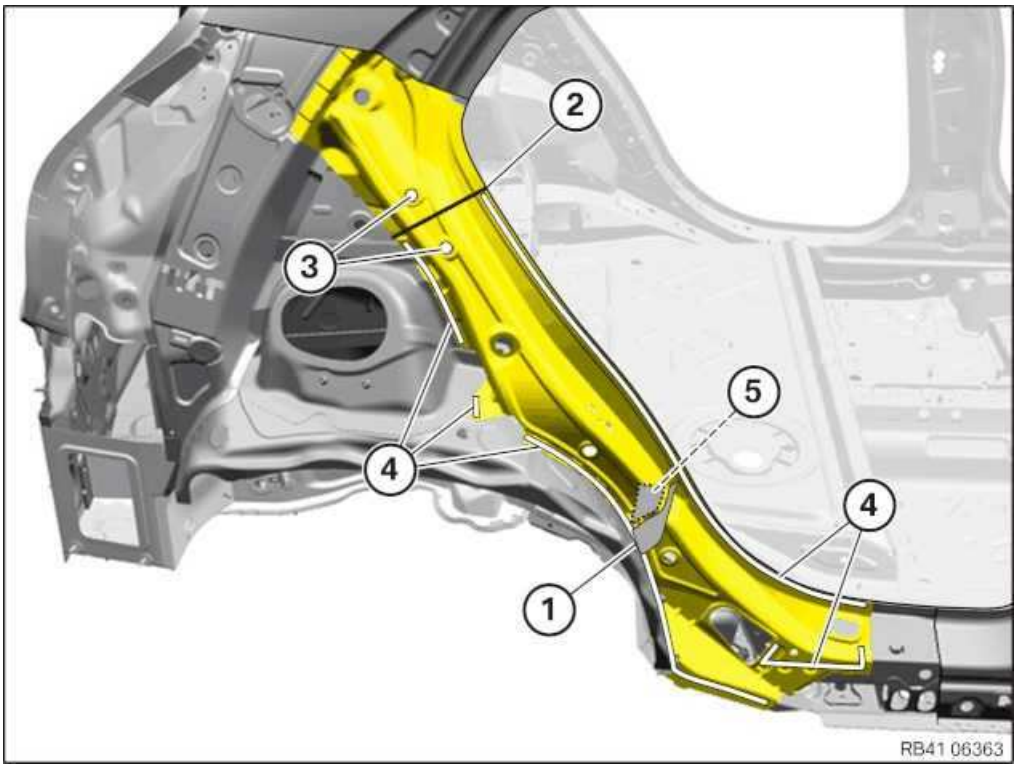
Material	Quantity
Coarse thread bolt	5
Sealant D1	
Cavity sealing wax remover	

2 – Remove the outer wheel arch section with the reinforcement

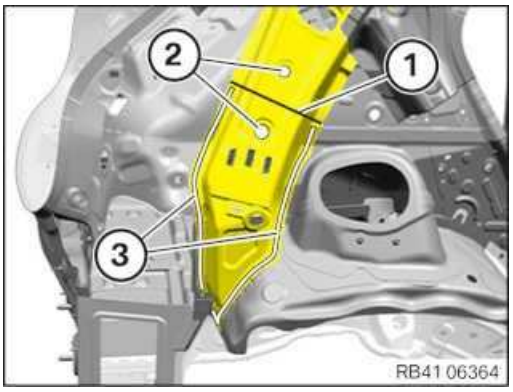


- Open welded connection (1).

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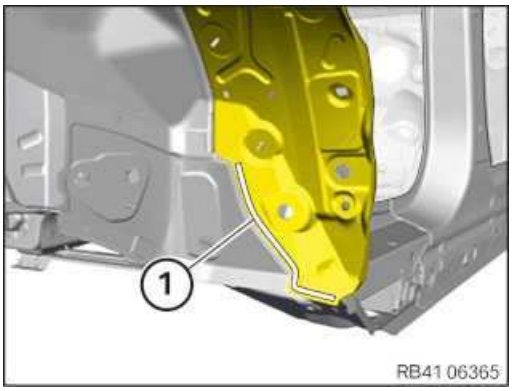


- Remove the outer cavity sealing (1).
- Make separating cut (2) in the centre between the holes (3).
- Release welded connections in areas (4).
- Release the C-pillar support from the cavity sealing (5) and remove.

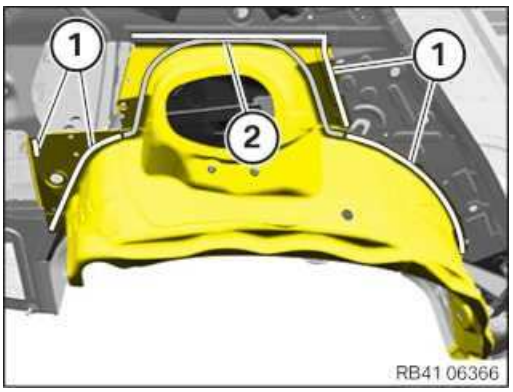


- Make separating cut (1) in the centre between the holes (2).
- Loosen welded connections in areas (3).

  Remove reinforcement on C-pillar.



- Open welded connections in area (1).



- Release welded connections in areas (1).

TECHNICAL INFORMATION

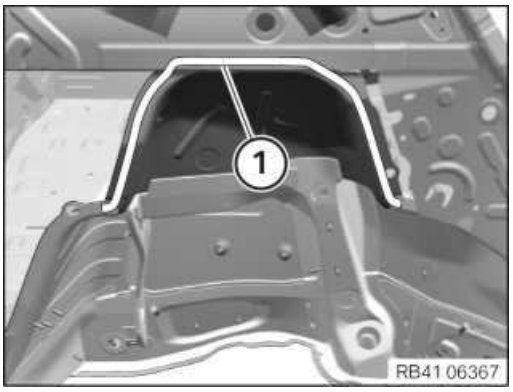
For more information see: 41 00 ... Releasing bonded connections

- Release the spot-welded adhesive joints in area (2).
- Remove outer section of wheel arch.

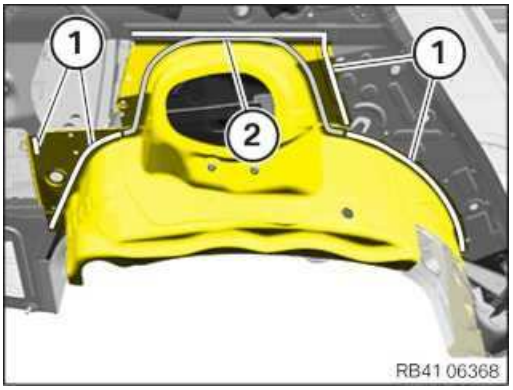
3 – Prepare new part

- Remove unnecessary components from new part.

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- Remove adhesive residue in area (1).

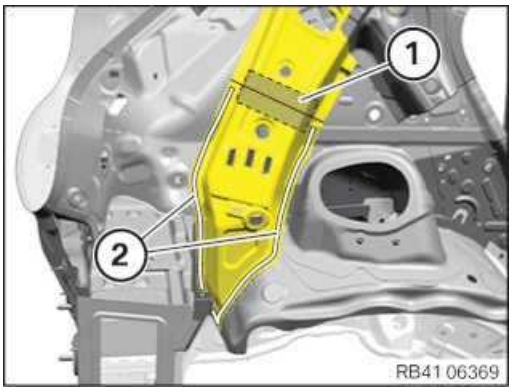


- Adjust the new outer wheel arch section together with the side panel.
- Prepare the new part in areas (1) and (2) for joining by welding.

TECHNICAL INFORMATION

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

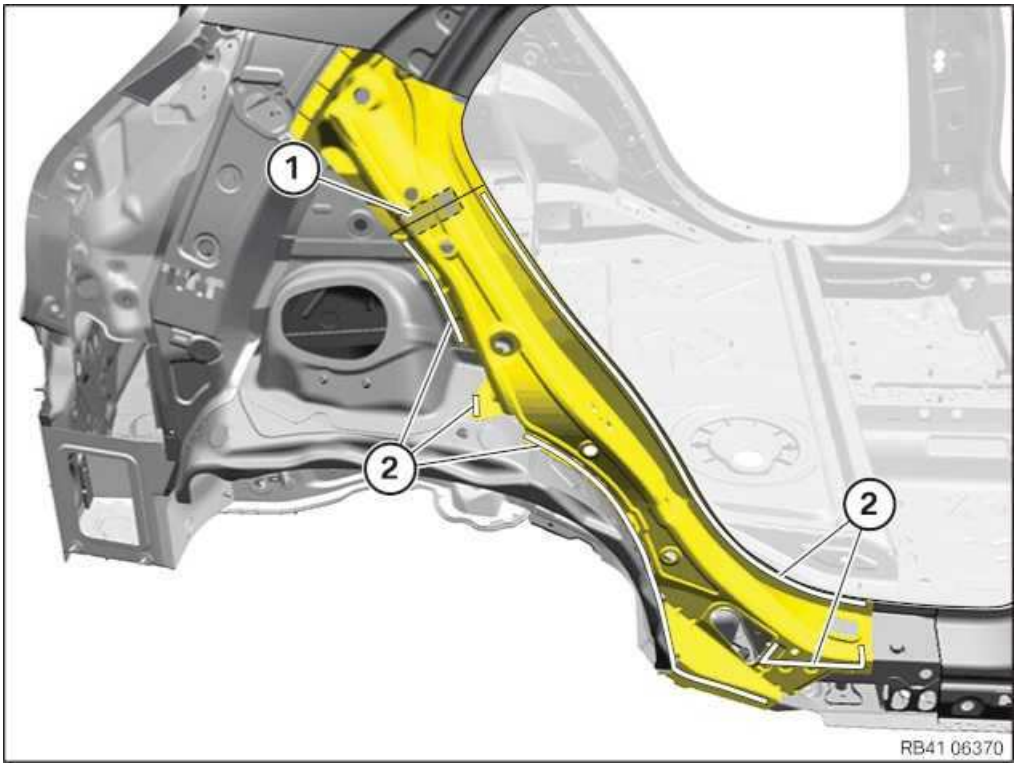
- In area (2), observe the procedure for the replacement of spot-welded adhesive joints for the series.



TECHNICAL INFORMATION

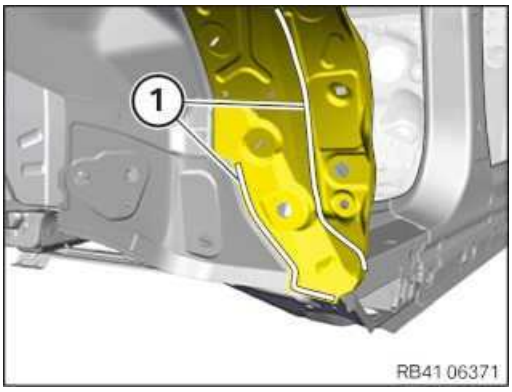
For additional information see: 41 00 ... Weld in the reinforcement plates (sheet steel)

- Prepare a reinforcement plate (1) in the area of the separating cut.
- Adjust new part C-pillar reinforcement.
- Prepare the reinforcement plate (1), the separating cut and areas (2) for joining by welding.

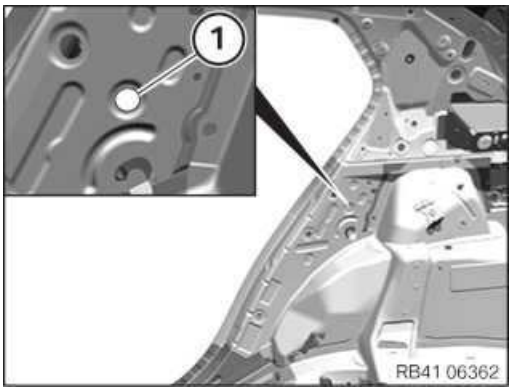


- Prepare a reinforcement plate (1) in the area of the separating cut.
- Adjust new part C-pillar reinforcement.
- Prepare the reinforcement plate (1), the separating cut and areas (2) for joining by welding.

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- Prepare the new parts for joining by welding in the areas (1).

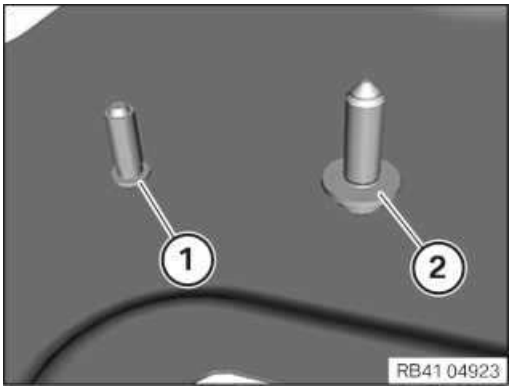


- Prepare area (1) for joining by welding.

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

NOTICE

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



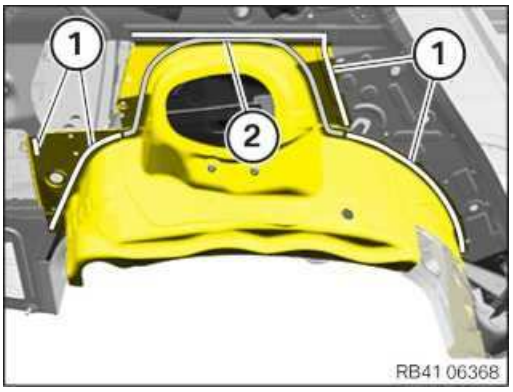
- Take the quantity and position from the component to be replaced.
- Weld the coarse thread bolt (1) and the threaded weld bolt (2) onto the new part.

4 – Install the outer wheel arch section with the reinforcement

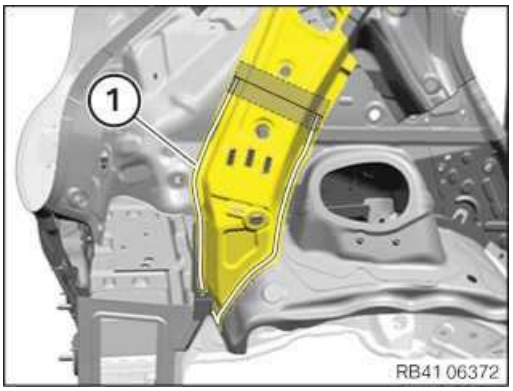
TECHNICAL INFORMATION

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

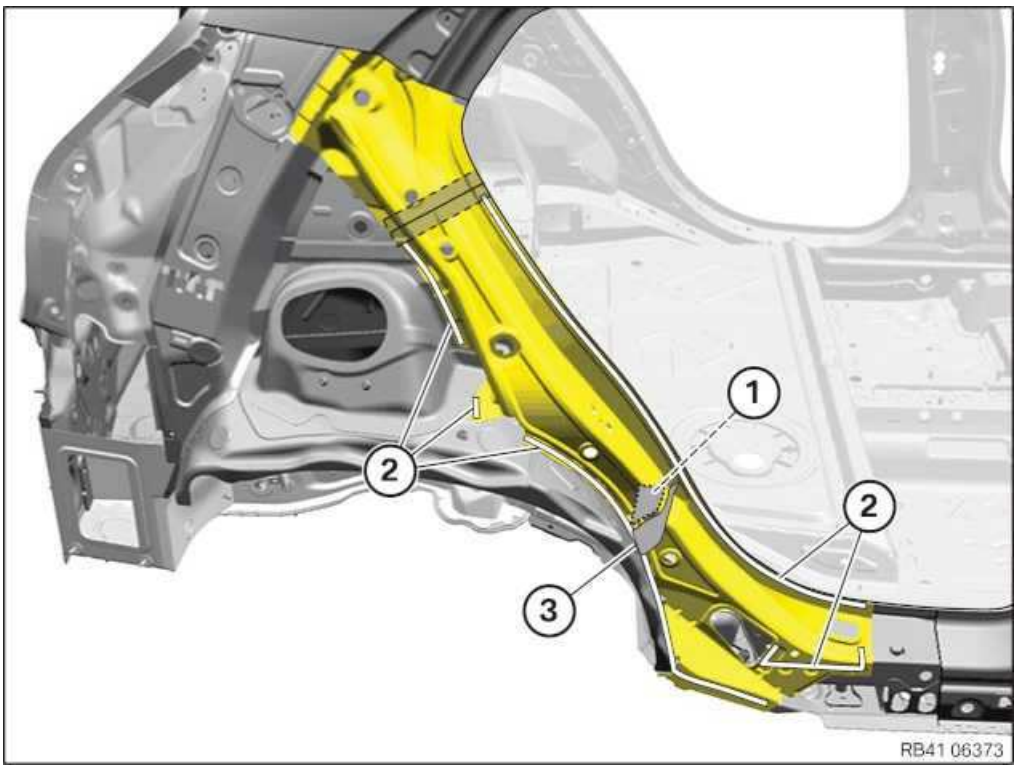
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- Install the new outer wheel arch section part in areas (1) and (2) and weld it according to the new part preparation process.



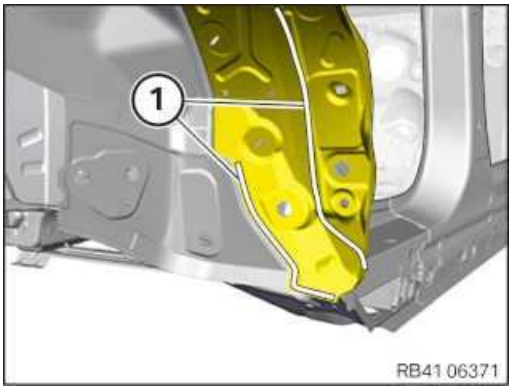
- Install the reinforcement new part of the C-pillar and the reinforcement plate.
- Weld the new part in area (1) to the reinforcement plate.



TECHNICAL INFORMATION

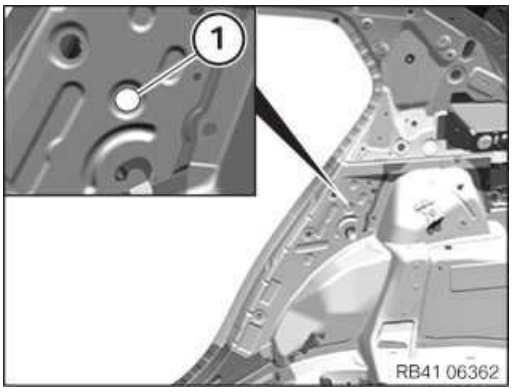
For more information see: 41 00 ... Installation of a cavity sealing (not expanding)

- Apply sealant to the inner cavity sealing (1). Install cavity sealing.
- Install the reinforcement new part of the C-pillar and the reinforcement plate.
- Weld new part in areas (2) to the reinforcement plate.
- Apply sealant to the outer cavity sealing (3). install outer cavity sealing.



- Weld new part in the area(1).

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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 ... Opening bonded connections	2
41 00 ... Spot-weld bonding steel components	3
41 00 ... Workshop equipment (BMW and MINI vehicles)	4
41 00 ... 0 Contents of Body, General	
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 (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 21 960 Additional work - replace the D-pillar on the left (side panel and tail panel removed)

TECHNICAL INFORMATION

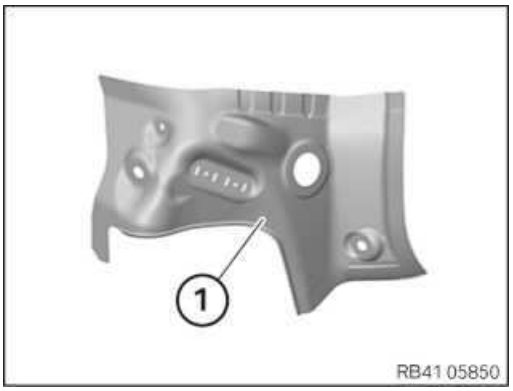
- Observe the procedure for repair stage 3.

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.

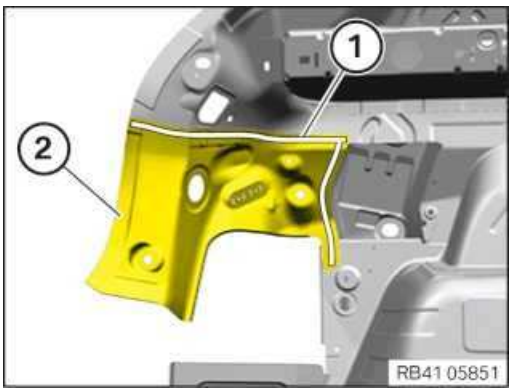
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1 – Supply the new parts required



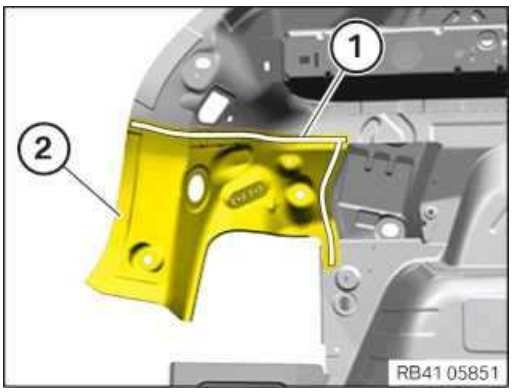
- Supply the following new parts:
  Rear light housing reinforcement (1)

2 – Removing the D-pillar



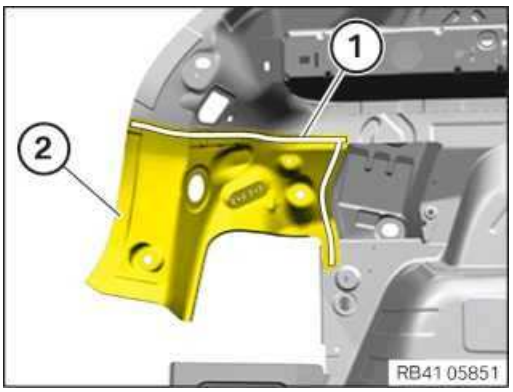
- Release the welded connections in the area (1) and remove the D-pillar (2).

3 – Prepare new part



- Adjust the new part (2) together with the tail panel and side panel.
- Prepare area (1) for joining by welding.

4 – Installing D-pillar



- Install new part (2) and weld in the area (1).

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Additional Information

Links

General repair instructions	Used in step
41 00 ... 0 Contents of Body, General	
41 00 ... Repair techniques, repair stage 3	

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41 21 013 Replace A-pillar, outer 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 – Supply the new parts required



- Supply the following new parts:

  A-pillar, outer part(1)

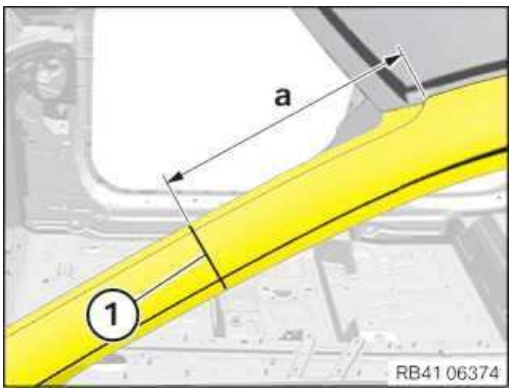
TECHNICAL INFORMATION

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

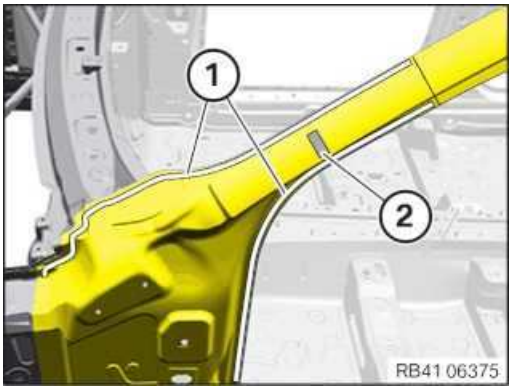
- Following consumables are required:

Material	Quantity
T-bolt	5
Sealant D1	1

2 – Removing the outer section of the A-pillar

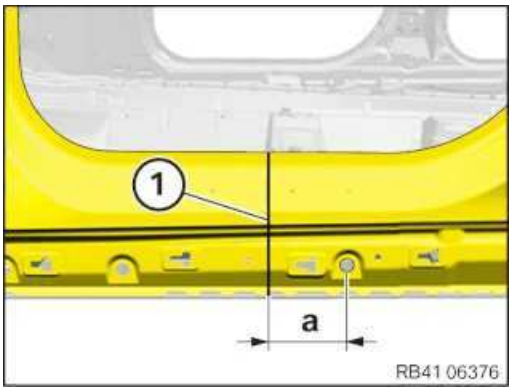


- Mark and carry out the separating cut (1) as per dimension a. Thereby disconnect only the outer panel. Dimension a = 260 mm from the corner of the roof frame.

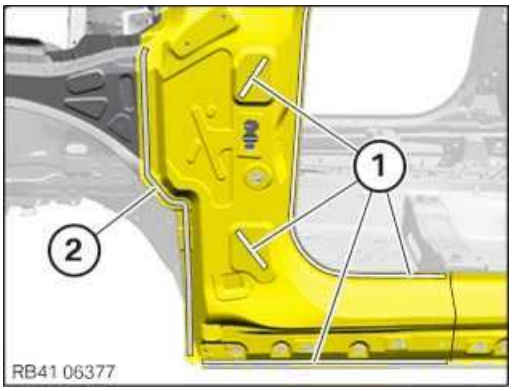


- Release welded connections in areas (1).
- Release the outer section of the A-pillar from the cavity sealing (2).

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- Mark and carry out the separating cut (1) as per dimension a. Thereby disconnect only the outer panel. Dimension a = 115 mm from hole Ø 20 mm.



- Release welded connections in areas (1).

TECHNICAL INFORMATION

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

- Release spot-welded adhesive joints in area (2) and remove A-pillar.

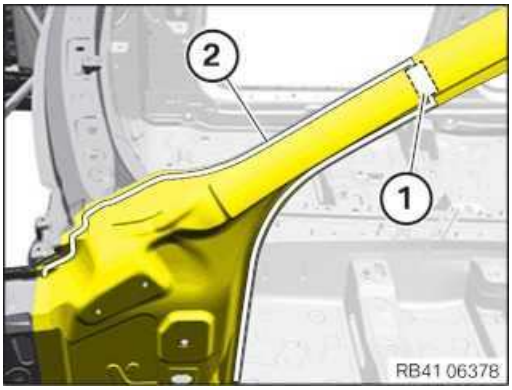
3 – Prepare new part

- Mark severance cuts on new part in accordance with severance cuts on vehicle and cut.
- Remove unneeded components from the new part.

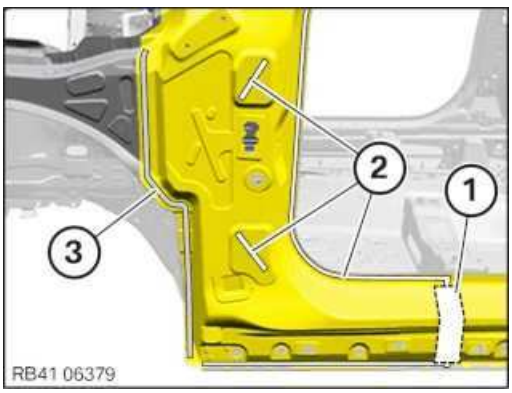
TECHNICAL INFORMATION

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

- Prepare reinforcement plates at severance cuts.
- Adjust reinforcement plates and new part to fit.



- Prepare the new part and reinforcement plate (1) in area (2) for joining through welding.



- Prepare the new part and the reinforcement plate (1) in areas (2) for joining by welding.

TECHNICAL INFORMATION

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

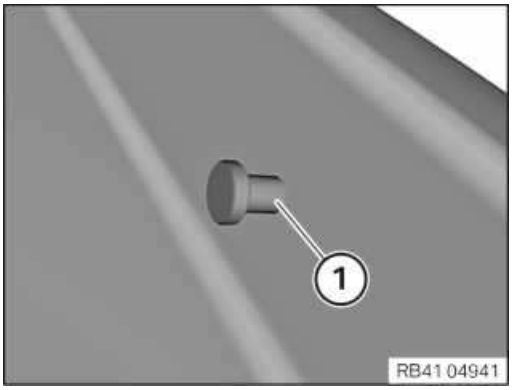
- Prepare area (3) for joining by welding. In area (3), observe the procedure for the replacement of spot-welded adhesive joints for the series.

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▶ **Replace T bolts**

NOTICE

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

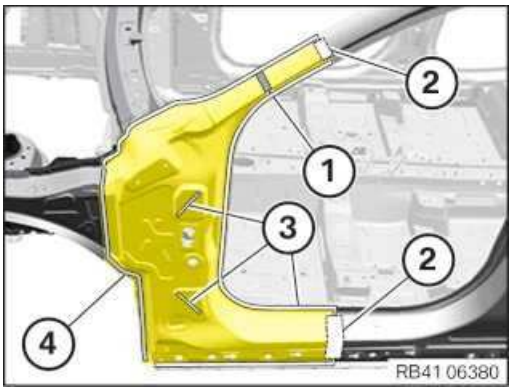


- Take the quantity and position from the component to be replaced.
- Weld the T-bolt (1) to the new part.

4 – Install the outer section of the A-pillar

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 to cavity sealing (1).
- Install the new part and the reinforcement plates (2).
- Weld the new part and reinforcement plates in areas (3) and (4) 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 ... 0 Contents of Body, General	
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 Replace the A-pillar with reinforcement on the left (flat rate specification without straightening bench)

Prerequisite

- Vehicle is fixed on straightening bench.

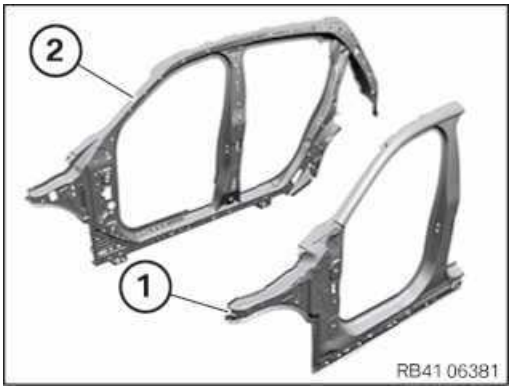
TECHNICAL INFORMATION

- 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 – Supply the new parts required



- The following new parts are required (see Electronic Parts Catalogue):

  (1) A-pillar, outer part

  (2)Side frame, centre

  Shaped part A-pillar, top, outer

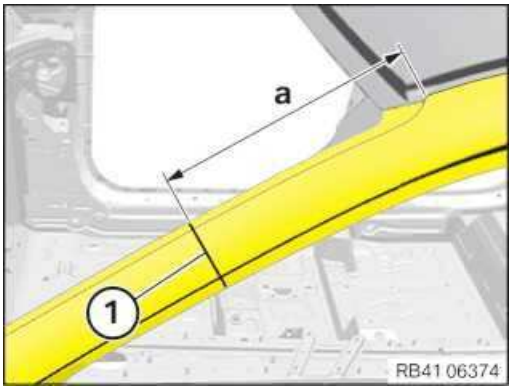
TECHNICAL INFORMATION

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

- Following consumables are required:

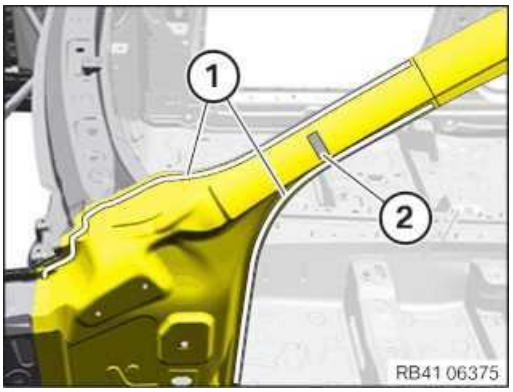
Material	Quantity
T-bolt	5
Sealant D1	1

2 – Remove A-pillar reinforcement



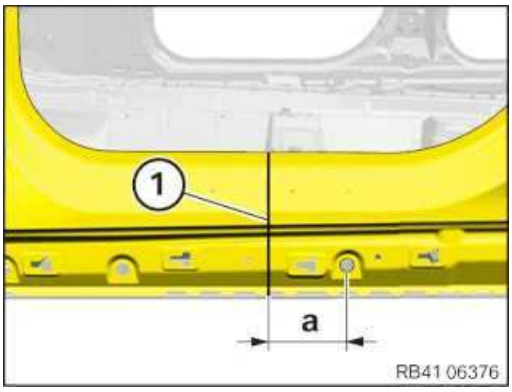
- Mark and carry out the separating cut (1) as per dimension a. Thereby disconnect only the outer panel.

  Dimension a = 260 mm from the corner of the roof frame.



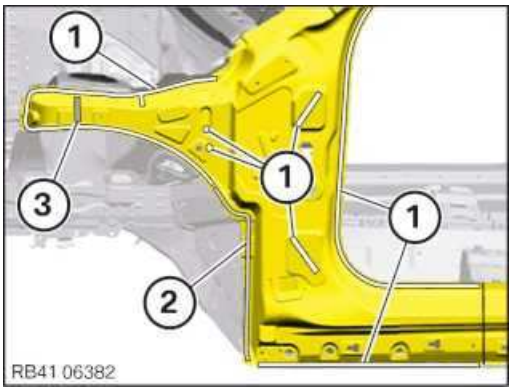
- Release welded connections in areas (1).
- Release the outer section of the A-pillar from the cavity sealing (2).

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- Mark and carry out the separating cut (1) as per dimension a. Thereby disconnect only the outer panel.

  Dimension a = 115 mm from hole Ø 20 mm.

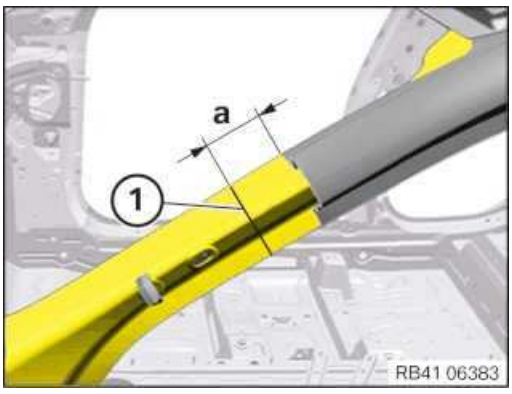


- Release welded connections in areas (1).

TECHNICAL INFORMATION

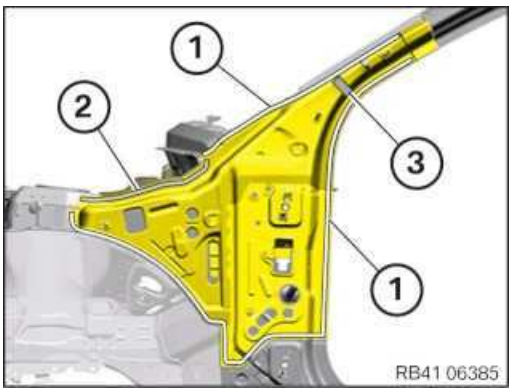
For more information see: 41 00 ... Releasing bonded connections

- Release the spot-welded adhesive joints in area (2).
- Release the A-pillar outer skin from the cavity sealing (3) and remove.

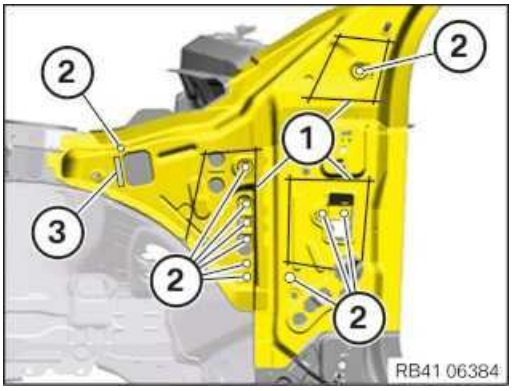


- Mark and carry out the separating cut (1) as per dimension a. While doing so, do not damage the water drain hose of the slide/tilt sunroof. Disconnect only the outer panel.

  Dimension a = 50 mm from the separating cut on the A-pillar outer skin.

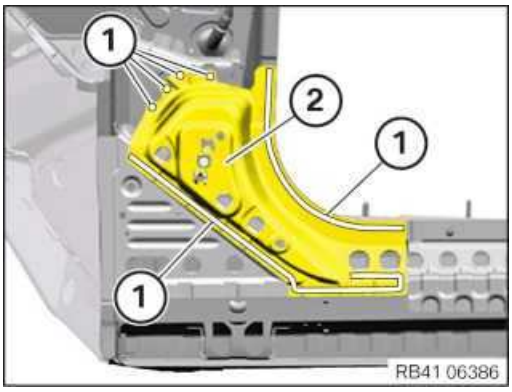


- Release welded connections in areas (1).
- Release the spot-welded adhesive joints in area (2).
- Release the A-pillar from the cavity sealing (3).



- Mark rough separating cuts (1) as shown and carry out. Thereby disconnect only the outer panel. Remove sheet sections.
- Release welded connections in areas (2).
- Open spot-welded adhesive joints in area (3) and remove A-pillar reinforcement.

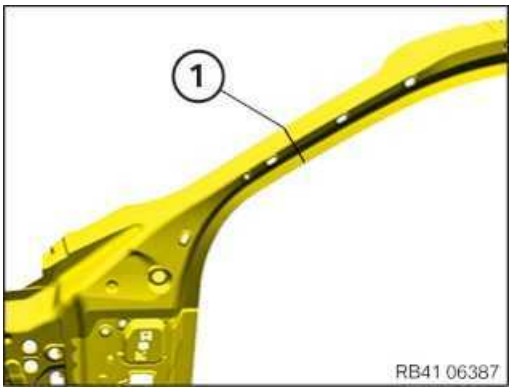
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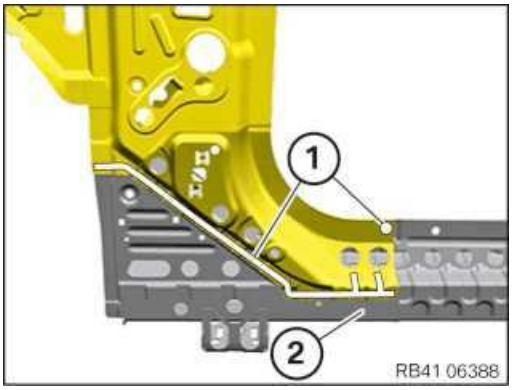
- Open welded connections in areas (1) and remove the hinge reinforcement (2).

3 – Prepare new part

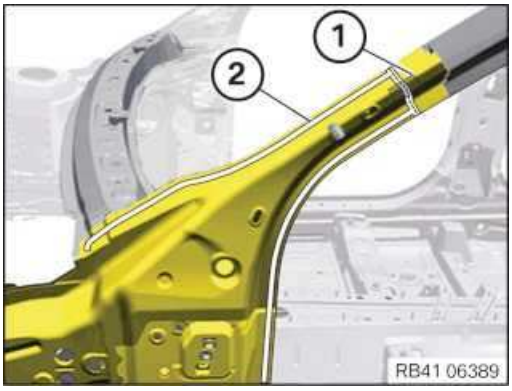
- Remove adhesive residue from joining surfaces of the vehicle.



- Mark and cut the separating cut (1) on the new part as per the separating cut on the vehicle.



- Open the welded connections in the areas (1) and remove the side sill reinforcement panel (2).

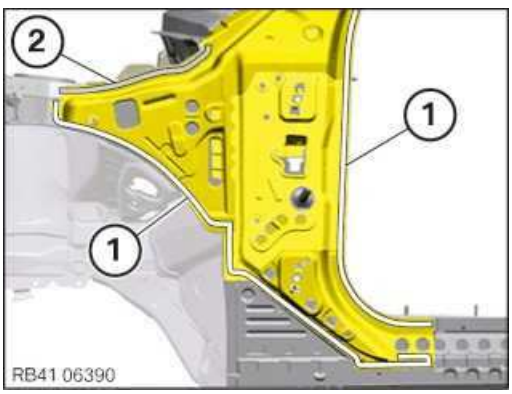


- Adjust the new part using an alignment bracket or a universal fixture and secure it.

TECHNICAL INFORMATION

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

- Make a reinforcement plate (1) for the separating cut.
- Prepare areas (2) for joining by welding.



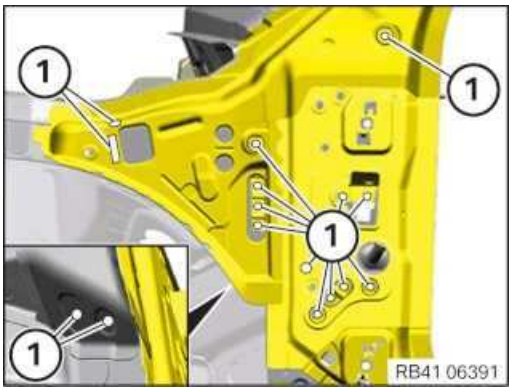
- Prepare the areas (1) and (2) for joining by welding.

TECHNICAL INFORMATION

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

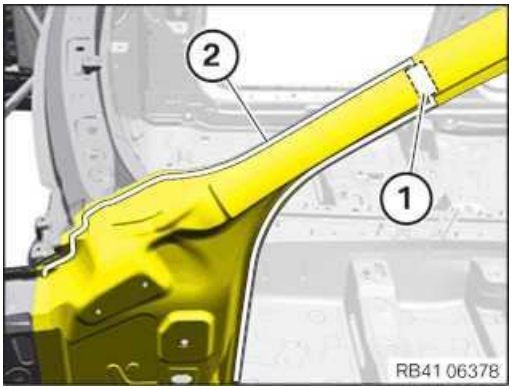
- In area (2), observe the procedure for the replacement of spot-welded adhesive joints for the series.

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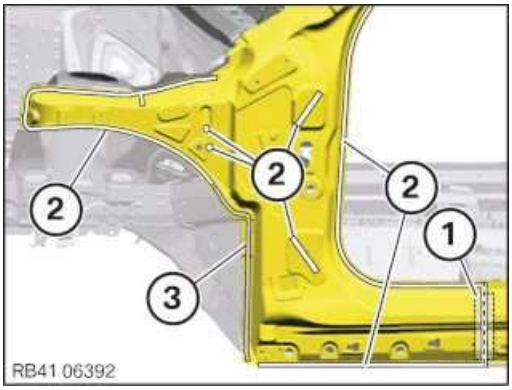


- Prepare for joining by welding in areas (1).

- Mark and make the separating cuts on the new part A-pillar outer skin in accordance with the separating cuts on the vehicle.
- Adjust the new part outer skin of the A-pillar and reinforcement plates.



- Prepare the new part A-pillar outer skin and reinforcement plate (1) in area (2) for joining through welding.



- Prepare the new part and the reinforcement plate (1) for joining by welding in the areas (2) and (3).

TECHNICAL INFORMATION

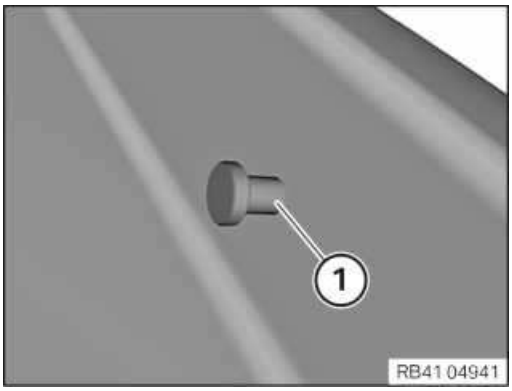
For more information see: 41 00... Spot-weld bonding steel components

- In area (3), observe the procedure for the replacement of spot-welded adhesive joints for the series.

▸ **Replace T bolts**

NOTICE

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



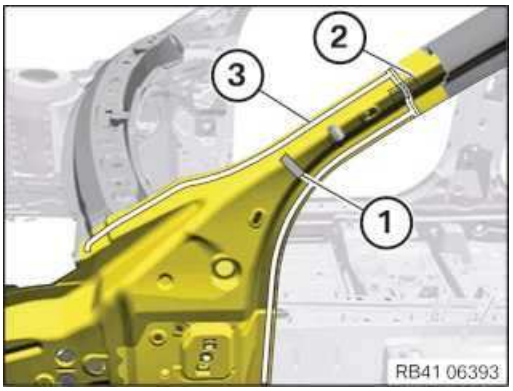
- Take the quantity and position from the component to be replaced.
- Weld the T-bolt (1) to the new part.

4 – Install A-pillar reinforcement

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TECHNICAL INFORMATION

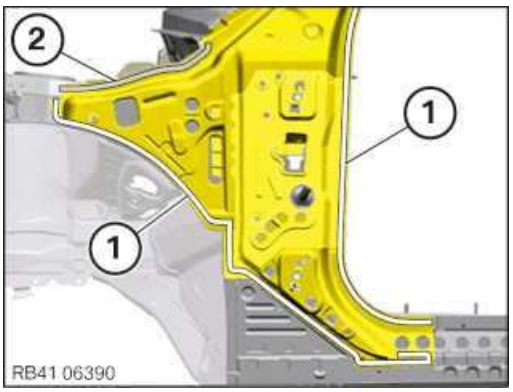
Use only approved spot-welding apparatus for repair.
For additional information see: 41 00 ... Workshop equipment



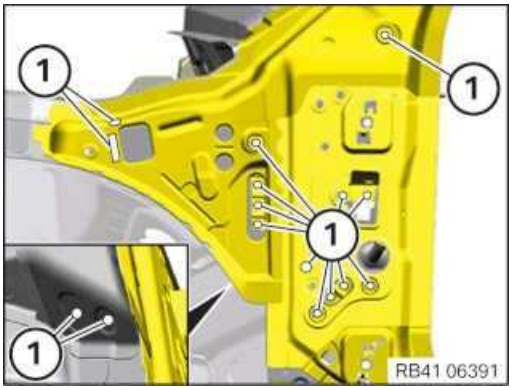
TECHNICAL INFORMATION

For more information see: 41 00 ... Installation of cavity sealing (expanded)

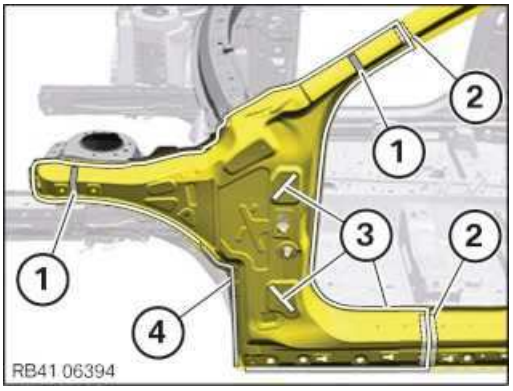
- Apply sealant to cavity sealing (1).
- Install the new part and reinforcement plate (2) with an alignment bracket or a universal fixture.
- Weld the new part, the separating cut and the reinforcement plate (2) in the areas (3) as per the new part preparation process.



- Weld new part in areas (1) and (2) as per new part preparation processes.



- Weld the new part in areas (1) according to the new part preparation process.



TECHNICAL INFORMATION

For more information see: 41 00 ... Installation of cavity sealing (expanded)

- Apply sealant to the cavity sealings (1).
- Install the new part outer skin of the A-pillar and reinforcement plates (2).
- Weld the new part and reinforcement plates in areas (3) and (4) as per new part preparation processes.

Additional Information

Links

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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 ... 0 Contents of Body, General	
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 (expanded)	4

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41 21 201 Replacing B-pillar with reinforcement on left

Prerequisite

- Vehicle is fixed on straightening bench.

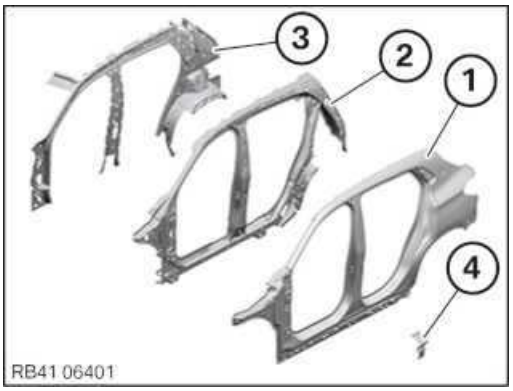
TECHNICAL INFORMATION

- 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 – Supply the new parts required



- Supply the following new parts:

  Side frame, outer part(1)

  Side frame, centre(2)

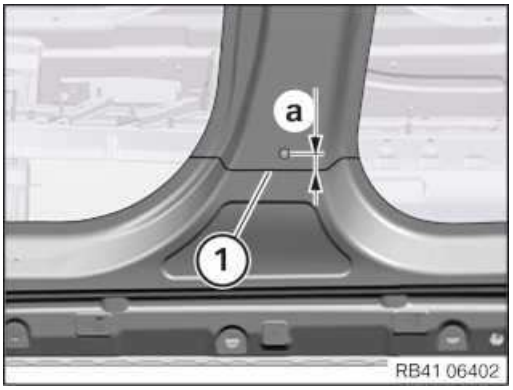
  Side frame, inner(3)

  Reinforcement plate, side sill(4)

  Shaped part B-pillar, outer

  Shaped part B-pillar, outer rear

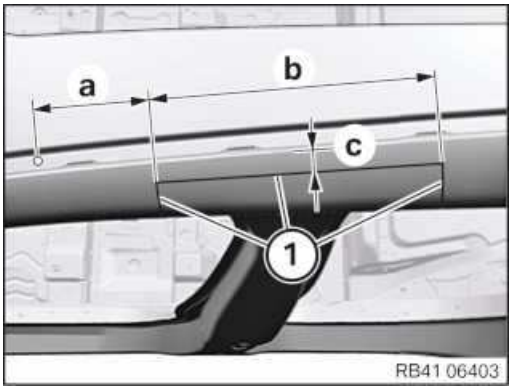
2 – Remove B-pillar with reinforcement



- Make the separating cut (1) to dimension.

  Dimension (a) = 25 mm from the centre of the hinge mount.

- Cut through B-pillar completely. Do not damage the inner side member in doing so.



- Mark and carry out the separating cuts (1) in accordance with the specified dimensions.

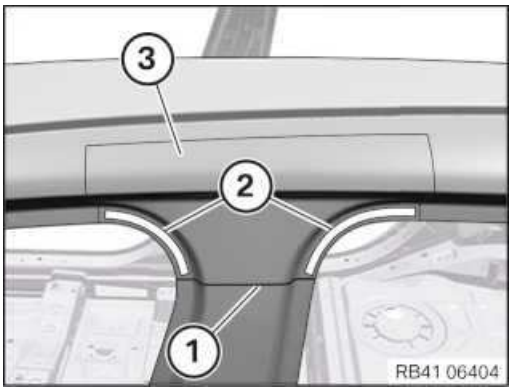
  Thereby disconnect only the outer panel.

  Dimension (a) = 160 mm from the centre point of the mounting bore.

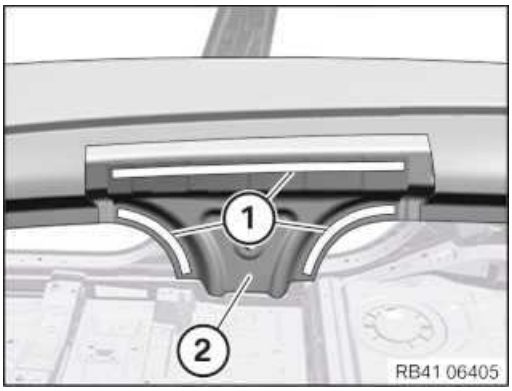
  Dimension (b) = 360 mm from dimension a.

  Dimension (c) = 25 mm from the component edge of the roof frame.

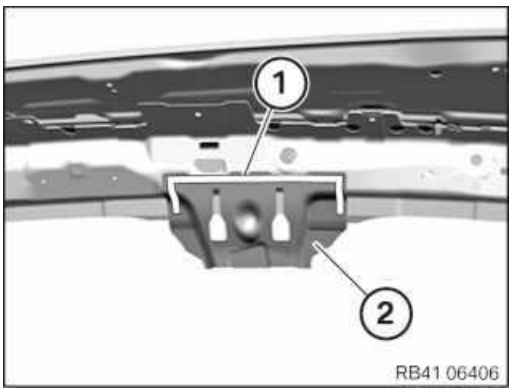
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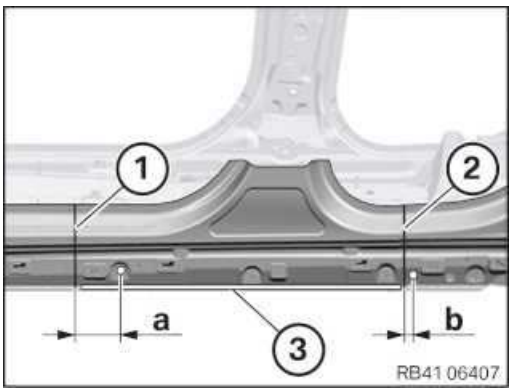
- Start the separating cut (1) as shown and completely cut through the B-pillar.
- Open the welded connections in the areas (2) and remove the section (3).



- Release welded connections in areas (1).
- Detach the section of the B-pillar reinforcement (2).



- Release the welded connections in the area (1) and remove the B-pillar section (2).

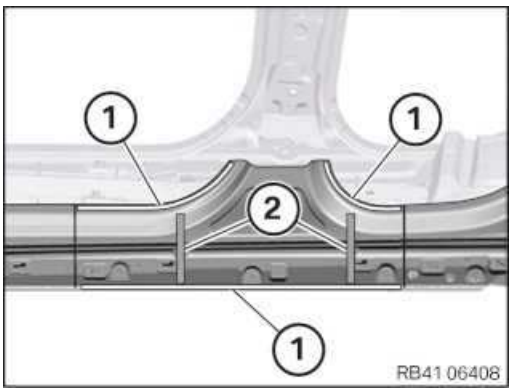


- Mark and cut the separating cuts (1) and (2) according to the specified dimensions.

  Thereby disconnect only the outer panel.

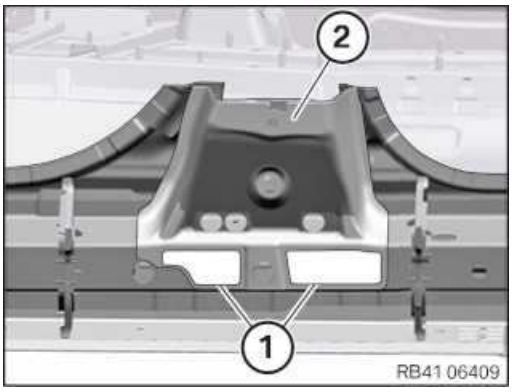
  Dimension (a) = 110 mm from centre of hole Ø 20 mm.

  Dimension (b) = 20 mm from centre of hole Ø 20 mm.
- Open welded connections in area (3).

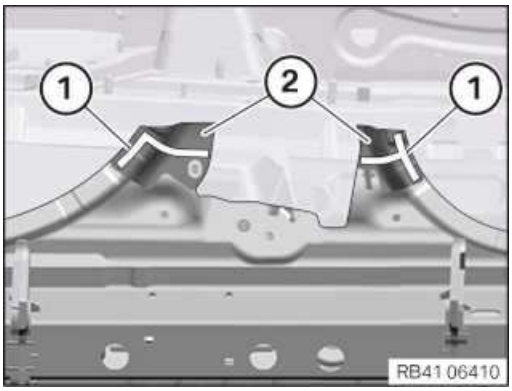


- Release welded connections in areas (1).
- Detach and remove the side sill section from the cavity sealings (2).

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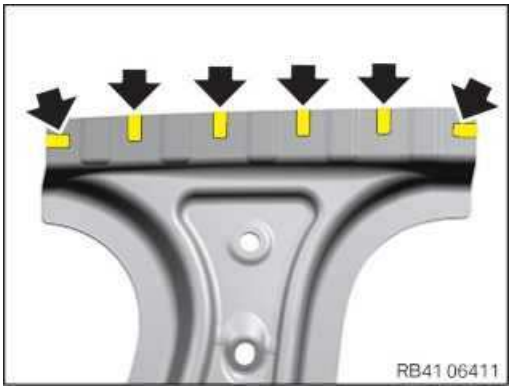
- Release welded connections in areas (1).
- Remove B-pillar reinforcement section (2).



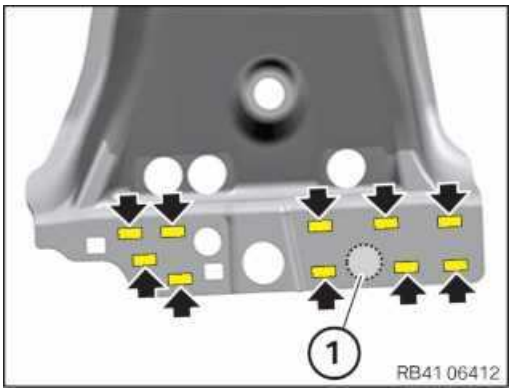
- Release welded connections in areas (1).
- Remove sections (2).

3 – Prepare new part

- Release the unnecessary components of new parts of the centre side frame and the inner side frame.

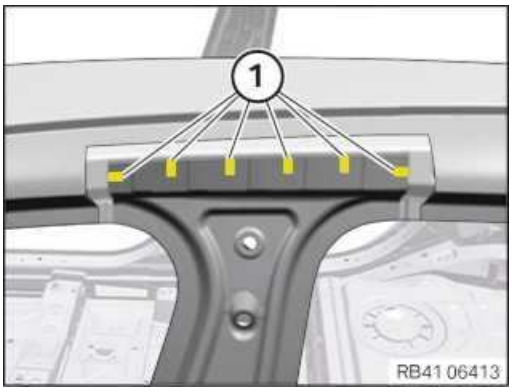


- Prepare the upper area of the new B-pillar reinforcement for joining by plug-welding. Make 6 x 15 mm elongated holes (arrows).

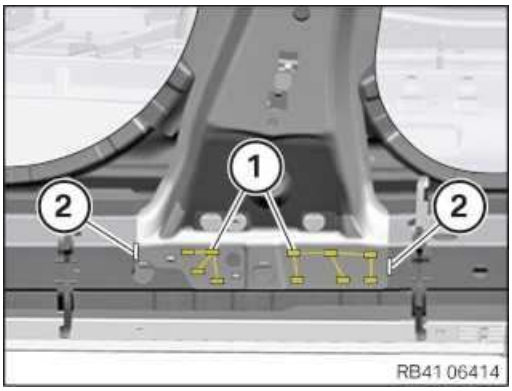


- Prepare the lower area of the new B-pillar reinforcement for joining by plug-welding. Make 6 x 15 mm elongated holes (arrows).
- When creating the elongated holes, note the recess (1) in the side member below it.

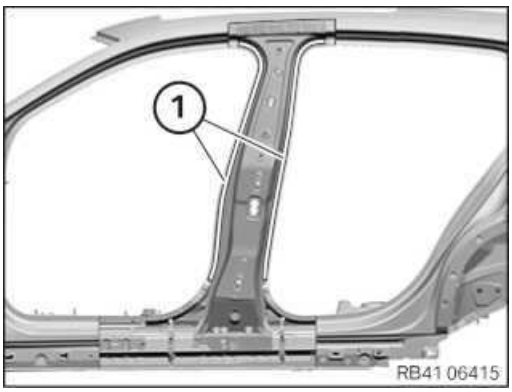
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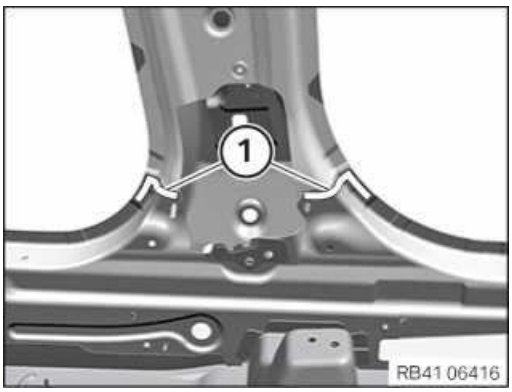
- Adjust the new B-pillar inner section and B-pillar reinforcement using an alignment bracket or universal fixture and secure in place.
- Prepare the body in the areas (1) for MAG weld.



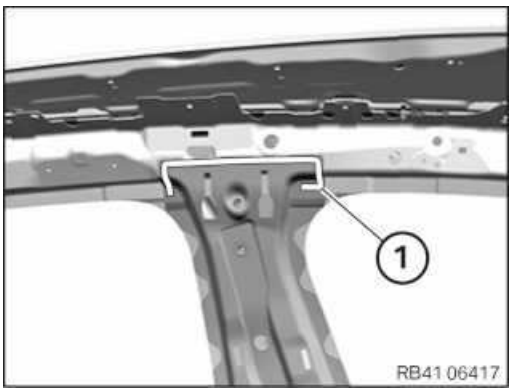
- Prepare the body for MAG weld in the lower area of the B-pillar reinforcement (1).
- Also prepare a 15 mm -long metal active gas welded connection in the areas (2).



- Prepare the new parts in the areas (1) for joining by welding.



- Prepare the new parts in the areas (1) for joining by welding.



- Prepare the new parts for joining by welding in the area (1).

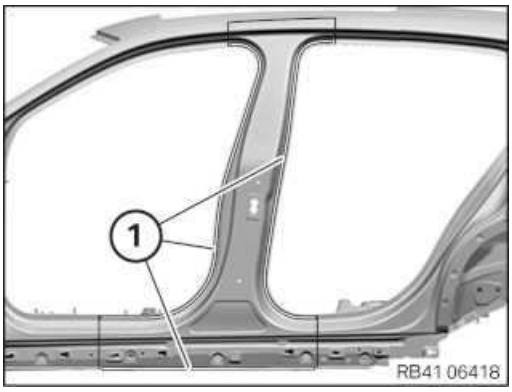
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- Mark out and make separating cuts on the new B-pillar outer skin in accordance with the separating cuts on the vehicle.

TECHNICAL INFORMATION

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

- Create reinforcement plates for the separating cuts.



- Adjust the reinforcement plates and prepare for joining by welding.
- Adjust the new part B-pillar outer skin and prepare for joining by welding in the areas (1).

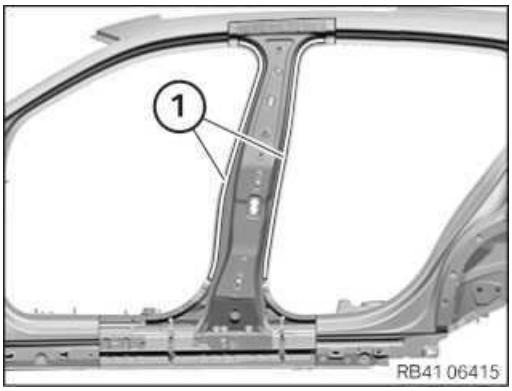
4 – Install B-pillar with reinforcement

TECHNICAL INFORMATION

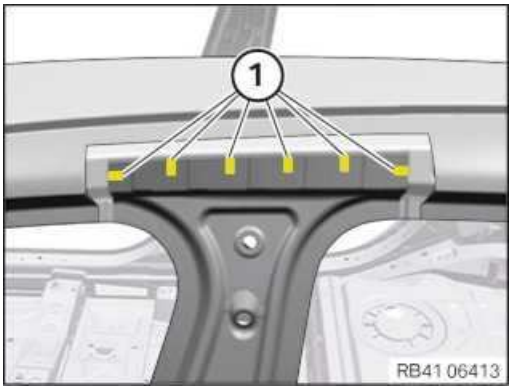
Use only approved spot-welding apparatus for repair.

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.

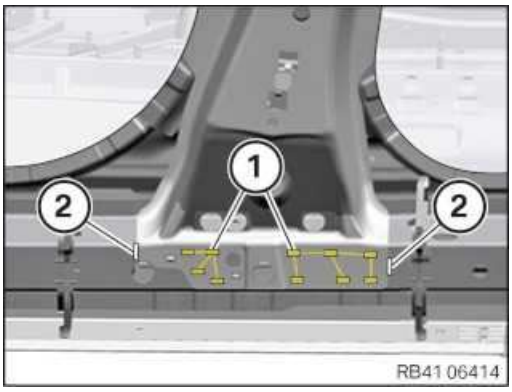


- Weld the new parts in areas (1) according to the new part preparation process.

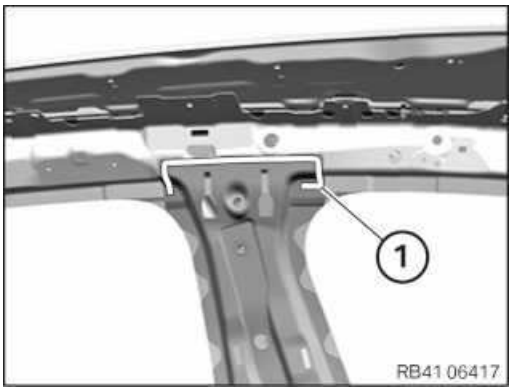


- Weld the new parts in areas (1) according to the new part preparation process.

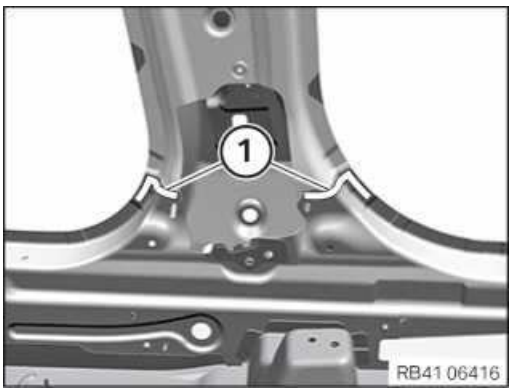
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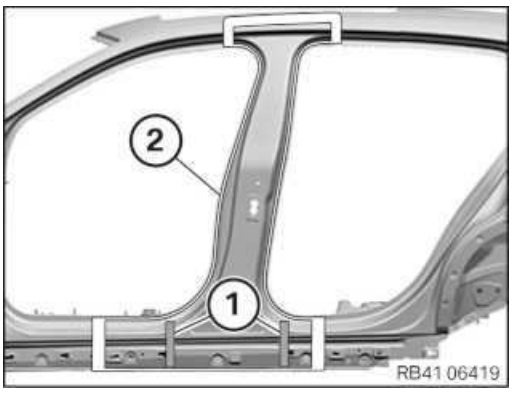
- Weld new part in areas (1) and (2) as per new part preparation processes.



- Weld the new part in the area (1) according to the new part preparation process.



- Weld the new parts in areas (1) according to the new part preparation process.



TECHNICAL INFORMATION

For more information see: 41 00 ... Installation of cavity sealing (expanded)

- Coat sealant on cavity sealing (1).
- Install new part B-pillar outer skin and reinforcement plates and weld in area (2) according to the new part preparation process.

Additional Information

Links

General repair instructions	Used in step
41 00 ... Workshop equipment (BMW and MINI vehicles)	4
41 00 ... 0 Contents of Body, General	
41 0 Repair techniques, repair stage 3	

Repair instructions	Used in step
41 00 ... Welding in reinforcement plate (sheet steel)	3

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41 21 203 Replacing B-pillar, outer left

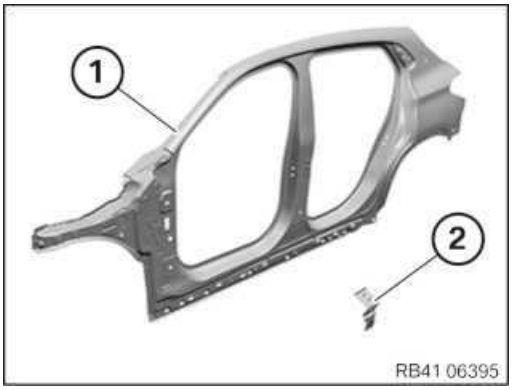
TECHNICAL INFORMATION

- 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 – Supply the new parts required

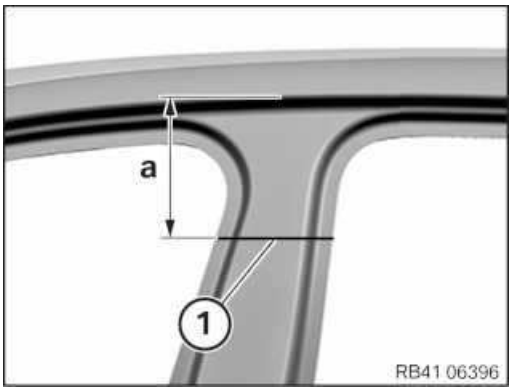


- The following new parts are required (see Electronic Parts Catalogue):

  (1)Side frame, outer

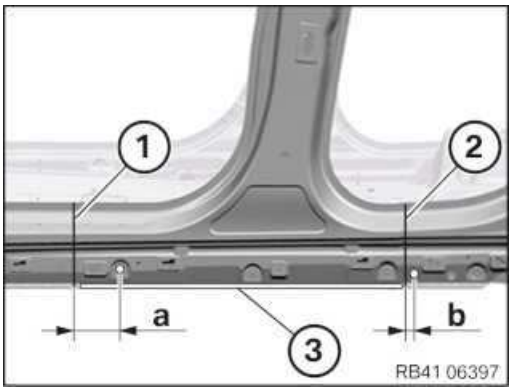
  (2)Reinforcement plate, side sill

2 – Remove the outer section of the B-pillar



- Mark and cut the separating cut (1) to dimension (a). Thereby disconnect only the outer panel.

  Dimension (a) = 200 mm from the edge of the roof frame.



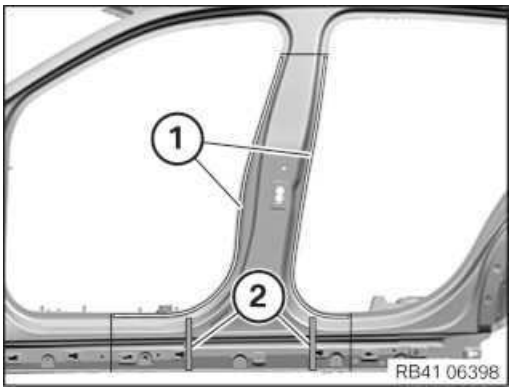
- Mark and cut the separating cuts (1) and (2) according to the specified dimensions and carry out the cuts.

  Thereby disconnect only the outer panel.

  Dimension (a) = 110 mm from centre of hole Ø 20 mm.

  Dimension (b) = 20 mm from centre of hole Ø 20 mm.

- Open welded connections in area (3).



- Release welded connections in areas (1).
- Release the outer section of the B-pillar from the cavity sealing (2) and remove.

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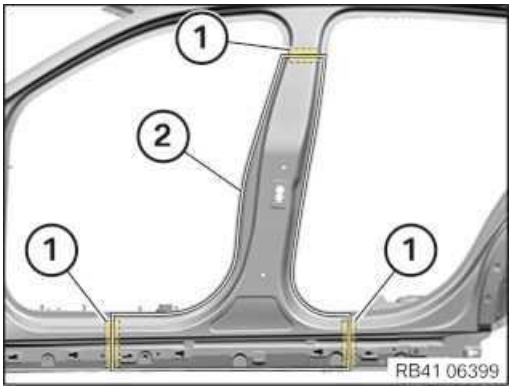
3 – Prepare new part

- 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.

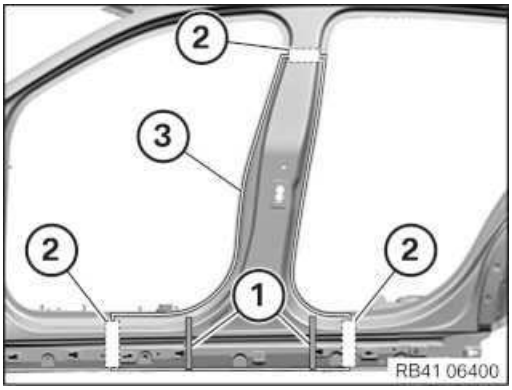


- Adjust the new part and the reinforcement plates (1) and prepare them for joining by welding in area (2).

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



TECHNICAL INFORMATION

For more information see: 41 00 ... Installation of cavity sealing (expanded)

- Apply sealant to the cavity sealings (1).
- Install the new part and the reinforcement plates (2) and weld in the area (3) according to the new part preparation process.

Additional Information

Links

General repair instructions	Used in step
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 ... 0 Contents of Body, General	
41 00 ... Repair techniques, repair stage 3	

Repair instructions	Used in step

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

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41 31 100 Replace roof outer skin with slide/tilt sunroof

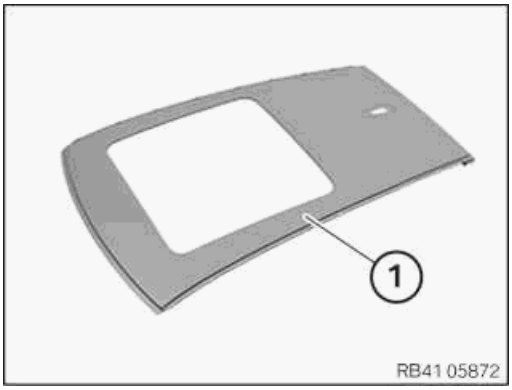
TECHNICAL INFORMATION

- 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 – Supply the new parts required



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

  Roof outer skin (1)

TECHNICAL INFORMATION

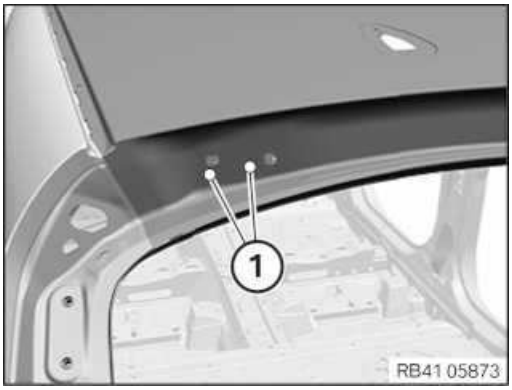
For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

- Supply the following consumables:

Material	Quantity
Adhesive K5b	2
Punch rivet N4	10
Punch rivet N5	10
Cleaning agentR1	1
Cleaning agentR2	1
EMC screw	2
Sealant D1	1
Sealant D2	1

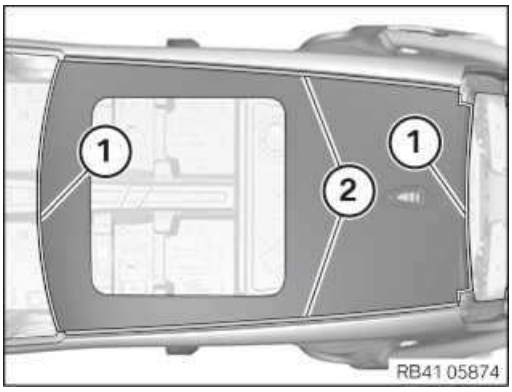
- Additionally required materials from workshop resources: 6 x Screw connection: M6 x 20, Nut, 2 washers.

2 – Remove roof outer skin



- Open the welded connections in areas (1) on the left and right sides.

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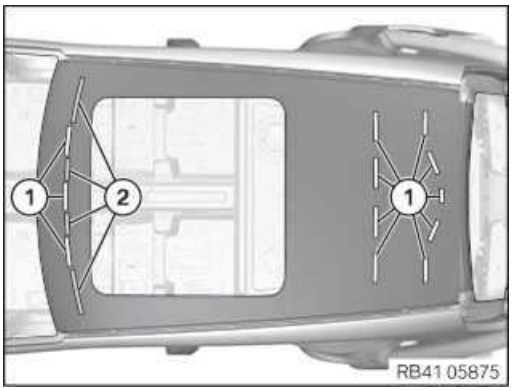


- Release welded connections in areas (1).

TECHNICAL INFORMATION

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

- Open spot-welded adhesive joints in areas (2).



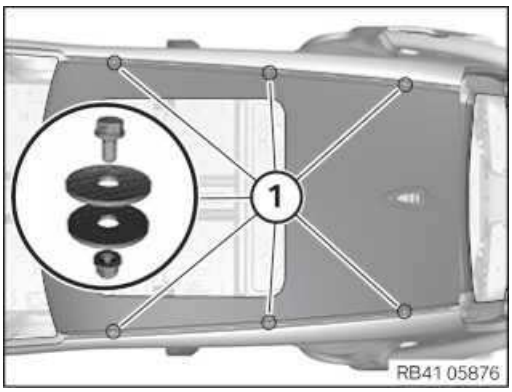
- Open the bonded connections in areas (1) (sealant).
- Open the bonded connections in areas (2) (adhesive).
- Take off roof outer skin.

3 – Prepare new part

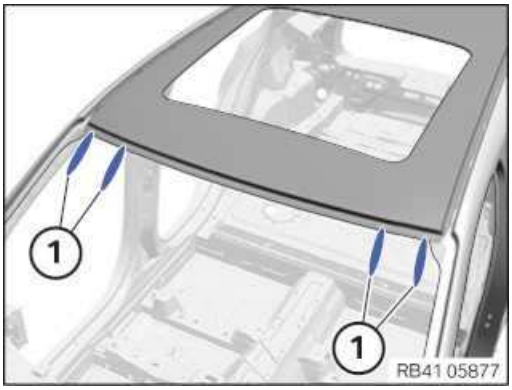
TECHNICAL INFORMATION

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.
- In order to adhere to the short processing time from the application of the adhesive, get the following mounting materials ready before installation.



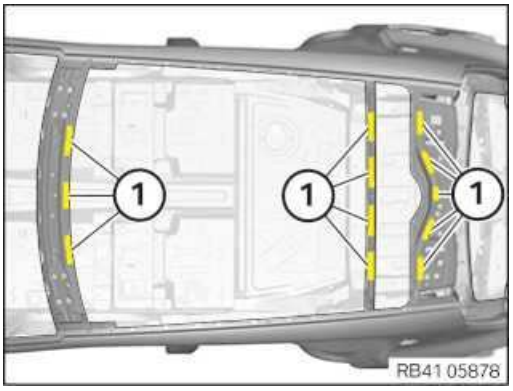
- To secure the roof outer skin, at the mounting holes (1) get M6 screws, nuts and washers ready.



- Have locking pliers (1) ready for fixing the roof outer skin.
- Take off roof outer skin.

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4 – Installing the roof outer skin



- Pre-clean bonding surfaces (1) on the vehicle and new part with the cleaning solvent R2.

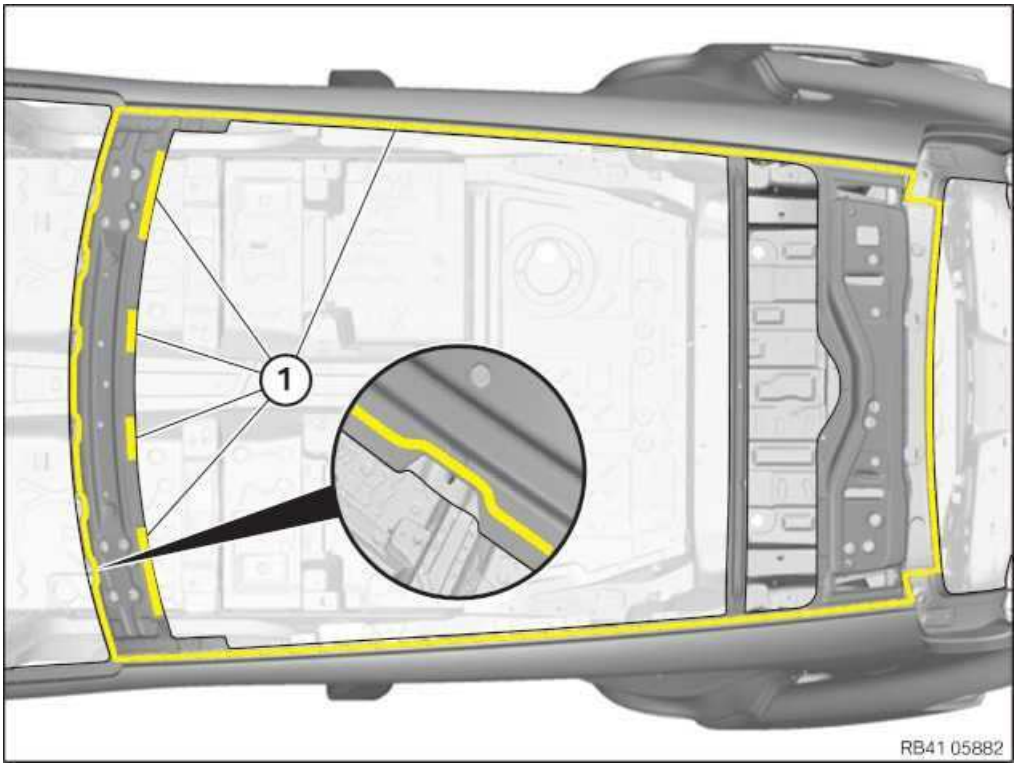
Expendable materials

Cleaning agent R2	500 ml	83190417324

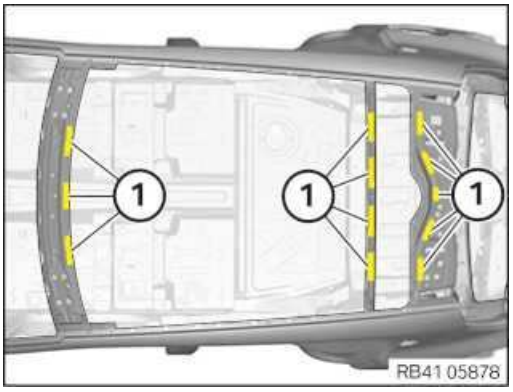
- Clean the bonding surfaces (1) on the vehicle and the new part with the solvent cleaner R1.

Expendable materials

Cleaning agent R1	100 ml, Bottle	83192211217



- Pre-clean bonding surfaces (1) on the vehicle and new part with the cleaning solvent R2.
- Clean the bonding surfaces (1) on the vehicle and the new part with the solvent cleaner R1.

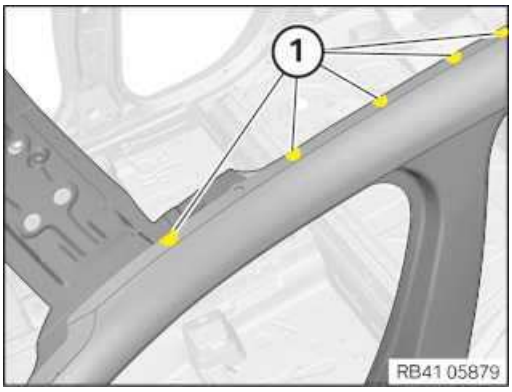


- In areas (1), apply sealant D2 similar to the standard production.

Expendable materials

Sealant D2 (seam sealing, spreadable)	310 ml	83422409986

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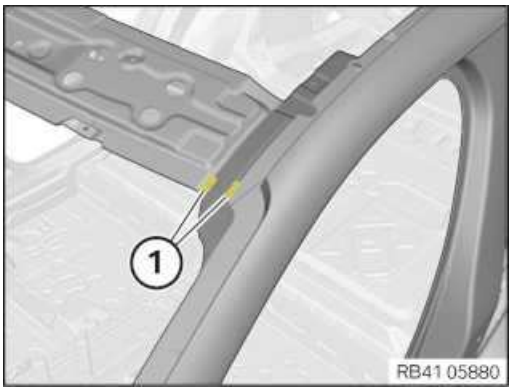
- On the left and right roof frame, top up all flange recesses (1) with adhesive K5 and smooth out. (levelling)
- Apply adhesive in such a way that all flange recesses are level to the rest of the bonding surface.

Adhesive

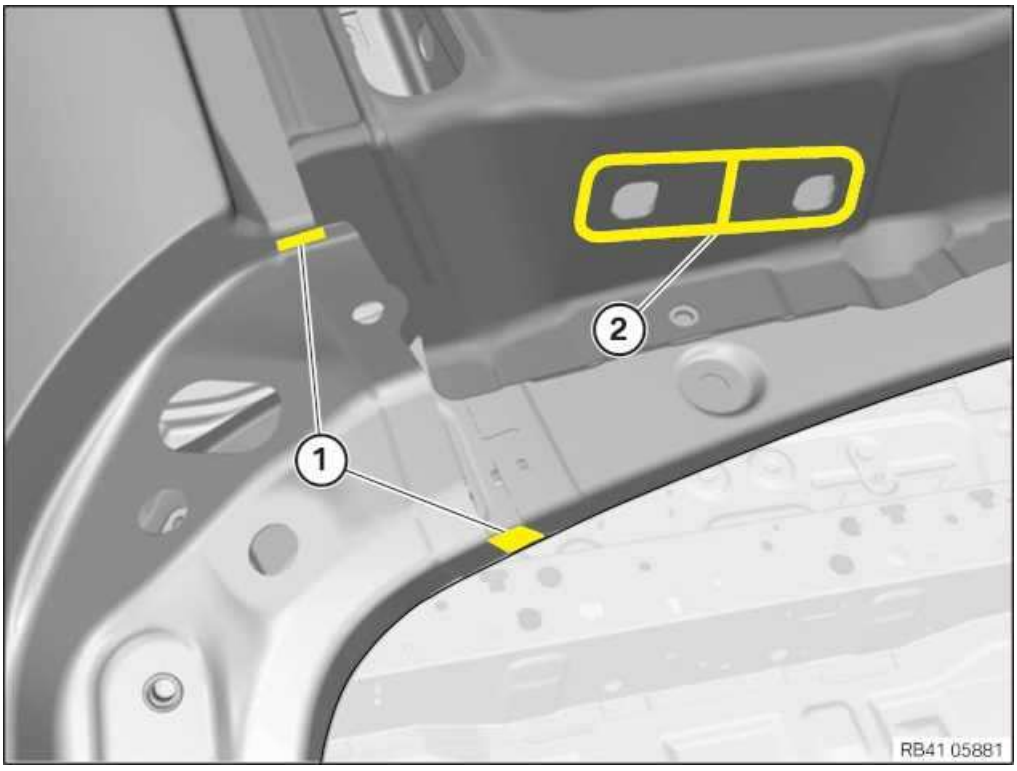
Body adhesive K5	50 ml	83192158654

Adhesive

Body adhesive K5	195 ml	83192157298

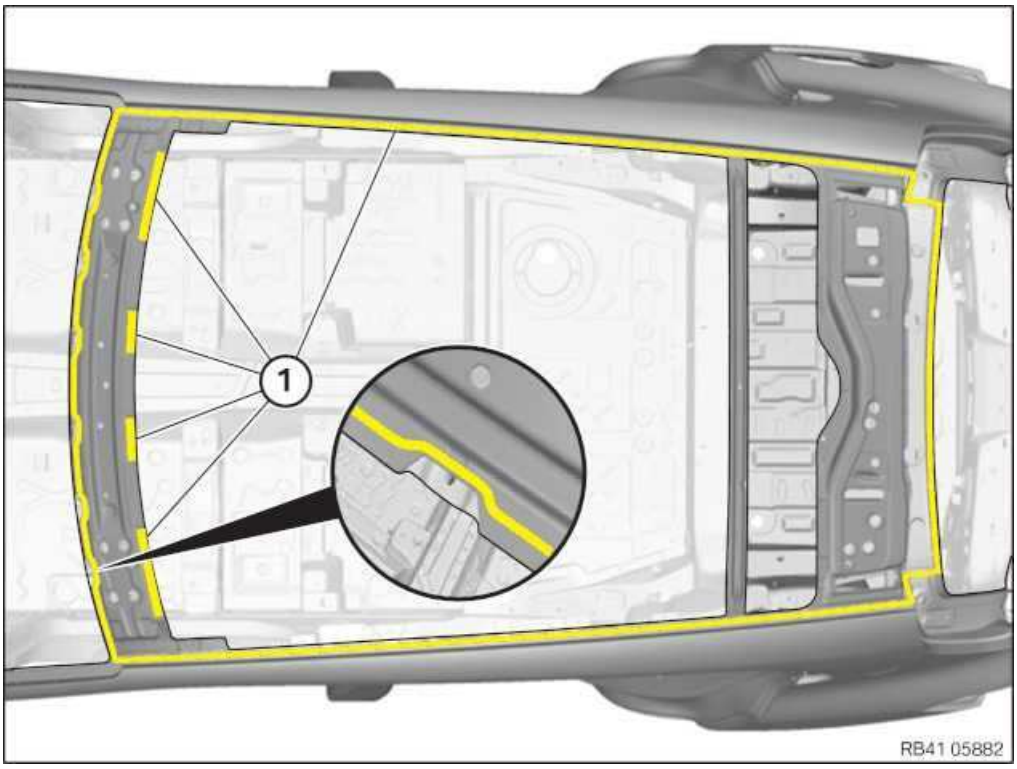


- Top up the increments (1) on the front left and right convertible top bow with adhesive K5 and smooth out.(levelling)
- Apply adhesive in such a way that the increments are level to the rest of the bonding surface.

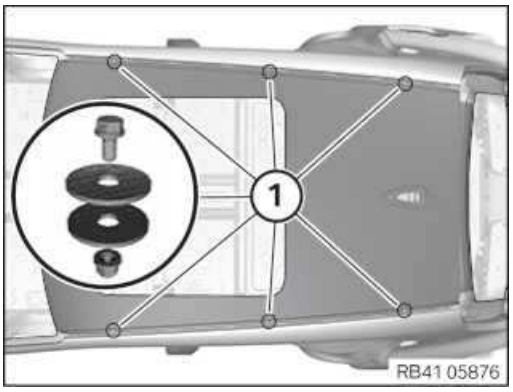


- Top up the increments (1) on the rear left and right convertible top bow with adhesive K5 and smooth out. (levelling)
- Apply adhesive in such a way that all flange recesses and increments are level to the rest of the bonding surface.
- In area (2) of the hinge mount, apply adhesive K5 on the left and right.

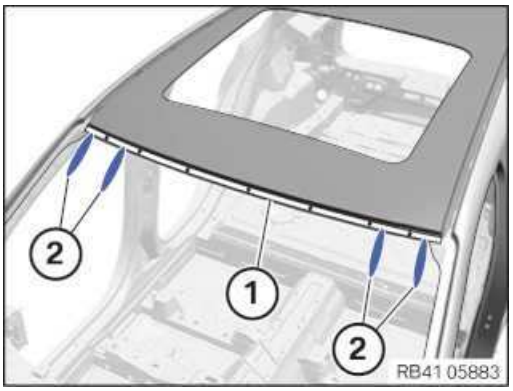
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- In areas (1), apply adhesive K5.



- Place the roof outer skin with the help of auxiliary persons evenly and centrally on vehicle and adjust to fit.
- Position the screws M6, the nuts and the washers on mounting holes (1) of the roof rails. Tighten the screw connections until hand-tight.
- Make sure that no adhesive touches the screw connections.
- Only remove the screw connections once the adhesive has hardened.

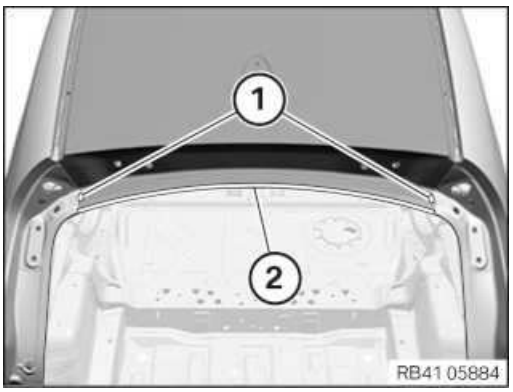


- In area (1), rivet the roof outer skin with 7 punch rivets N5.

Expendable materials

Punch rivet N5 Ø 5 mm ; 5 mm long		83192158079

- In addition, fix the roof outer skin with locking pliers (2).

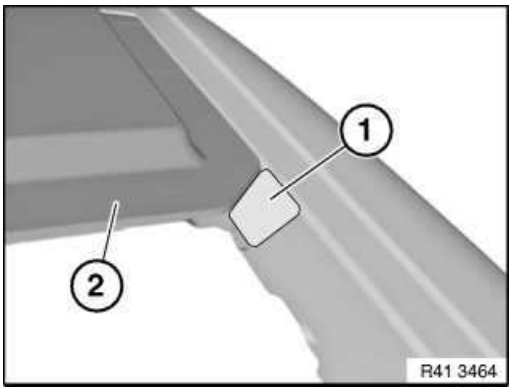


- In areas (1), rivet the roof outer skin with two punch rivets N4.
- In area (2), rivet the roof outer skin with 8 punch rivets N4.

Expendable materials

Punch rivet N4 Ø 3 mm ; 4 mm long		83192457307

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- 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 since this could cause leaks when subsequently bonding the windscreen and the rear window.
- Spread excess adhesive in roof trim strip channel.

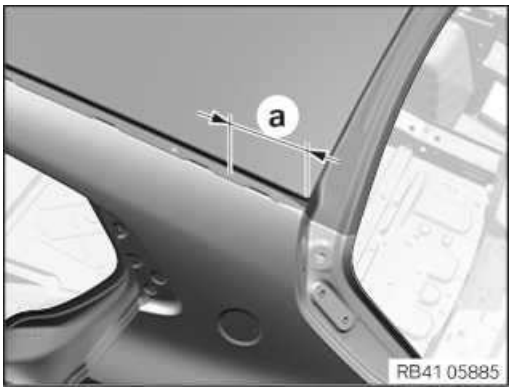
  While doing so, the mounting surfaces of roof trim strip mounting elements may not be coated with adhesive.
- Remove excess adhesive. For that do not use any cleaning agent or solvent!

▸ **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



NOTICE

Perform the operations on the left and right side.

- After the adhesive has hardened, install an EMC screw.

  Dimension (a) = approximately 140 mm in front of the corner of the roof outer skin

Expendable materials

Screw EMC screw, SF Plus, M5x15		83190301639

- Adjust the roof rail and roof trim strip in the area of the EMC screw.

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 ... 0 Contents of Body, General	
41 00 ... Repair techniques, repair stage 2	

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41 31 000 Replacing roof outer skin (for equipment specification without slide/tilt sunroof)

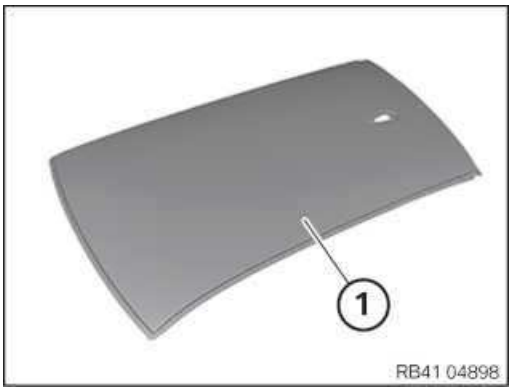
TECHNICAL INFORMATION

- 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

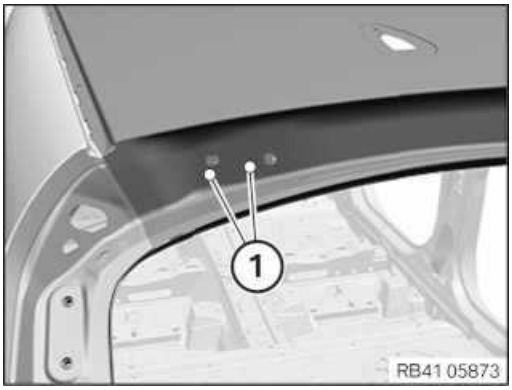
For more information see: 41 00 ... Overview of consumables in Electronic Parts Catalogue

- Supply the following consumables:

Material	Quantity
Adhesive K5b	2
Punch rivet N4	10
Punch rivet N5	10
Cleaning agentR1	1
Cleaning agentR2	1
EMC screw	2
Sealant D1	1
Sealant D2	1

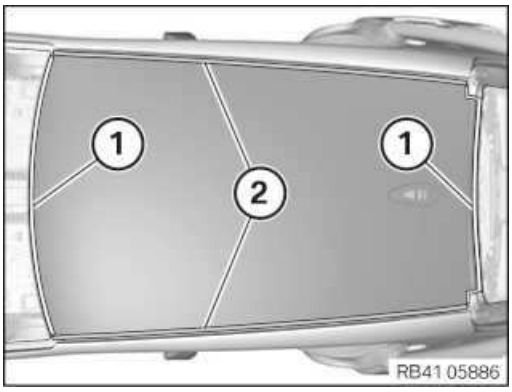
- Additionally required materials from workshop resources: 6 x Screw connection: M6 x 20, Nut, 2 washers.

2 – Remove roof outer skin



- Open the welded connections in areas (1) on the left and right sides.

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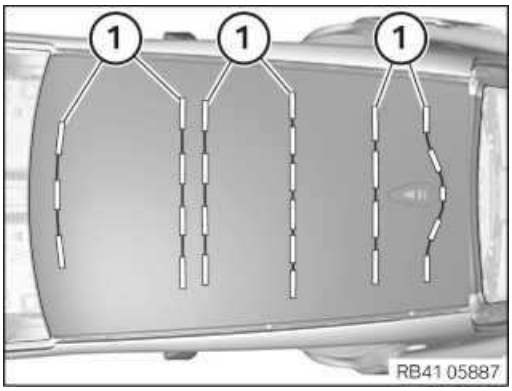


- Release welded connections in areas (1).

TECHNICAL INFORMATION

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

- Open spot-welded adhesive joints in areas (2).



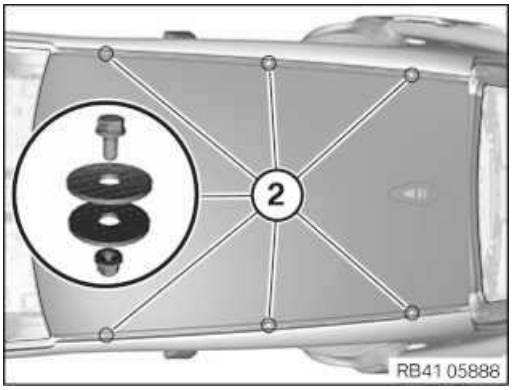
- Open the bonded connections in areas (1).
- Take off roof outer skin.

3 – Prepare new part

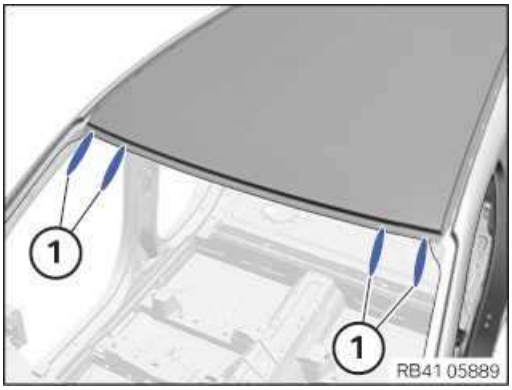
TECHNICAL INFORMATION

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.
- In order to adhere to the short processing time from the application of the adhesive, get the mounting materials ready before installation.



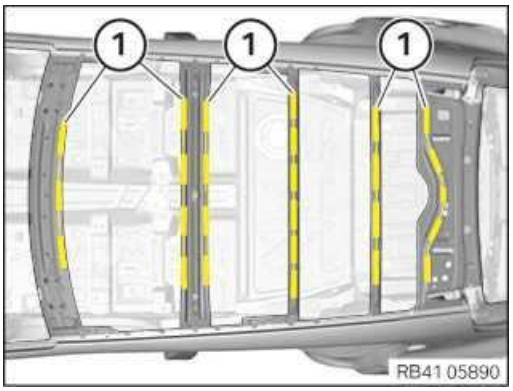
- To secure the roof outer skin, at the mounting holes (1) get M6 screws, nuts and washers ready.



- For fixing the roof outer skin, have four locking pliers (1) ready.
- Take off roof outer skin.

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4 – Installing the roof outer skin



- Pre-clean bonding surfaces (1) on the vehicle and new part with the cleaning solvent R2.

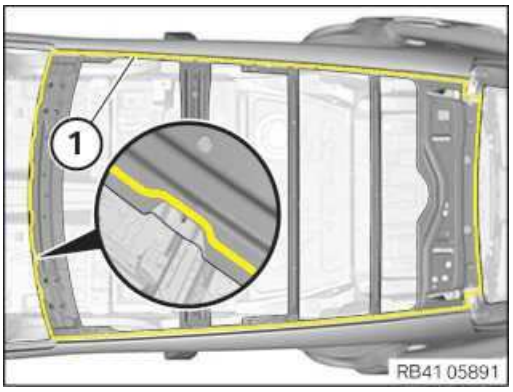
Expendable materials

Cleaning agent R2	500 ml	83190417324

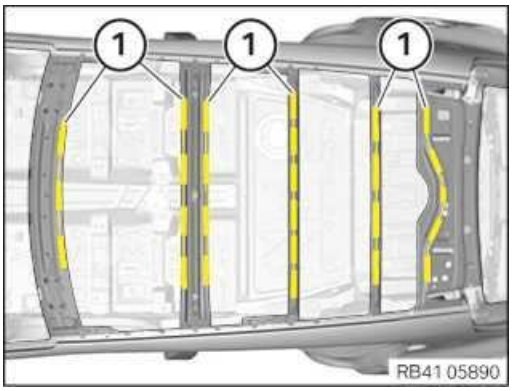
- Clean the bonding surfaces (1) on the vehicle and the new part with the solvent cleaner R1.

Expendable materials

Cleaning agent R1	100 ml, Bottle	83192211217



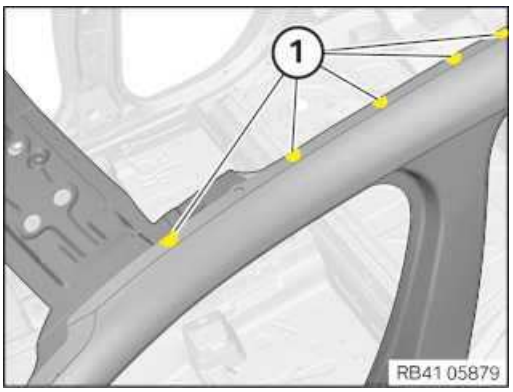
- Pre-clean bonding surfaces (1) on the vehicle and new part with the cleaning solvent R2.
- Clean the bonding surfaces (1) on the vehicle and the new part with the solvent cleaner R1.



- In areas (1), apply sealant D2 similar to the series.

Expendable materials

Sealant D2 (seam sealing, spreadable)	310 ml	83422409986



- On the left and right roof frame, top up all flange recesses (1) with adhesive K5 and smooth out. (levelling)
- Apply adhesive in such a way that all flange recesses are level to the rest of the bonding surface.

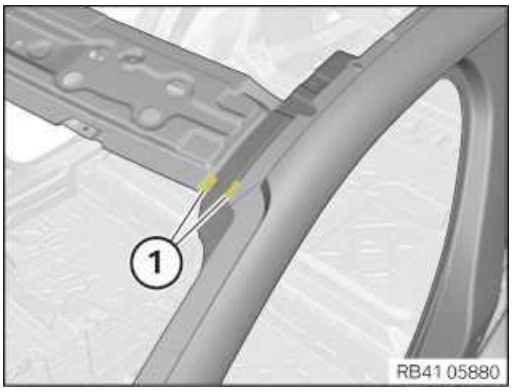
Adhesive

Body adhesive K5	50 ml	83192158654

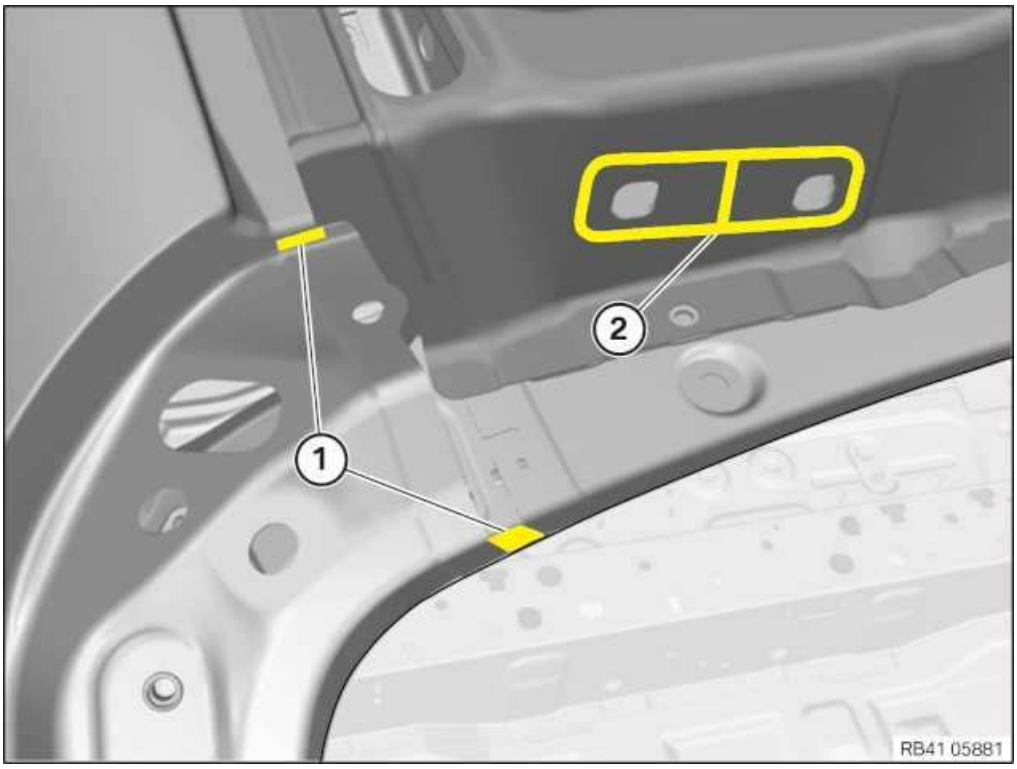
Adhesive

Body adhesive K5	195 ml	83192157298

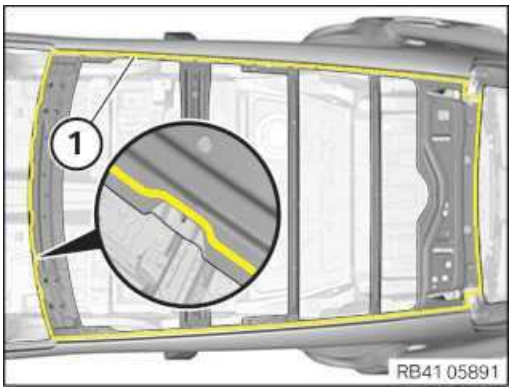
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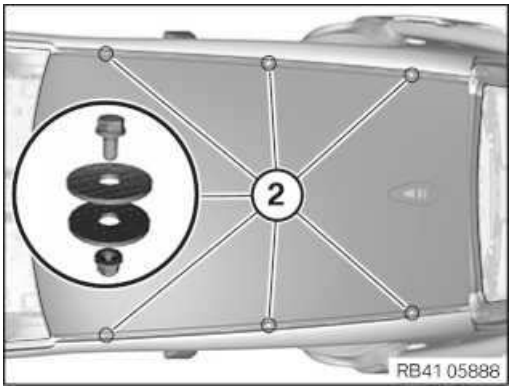
- Top up the increments (1) on the front left and right convertible top bow with adhesive K5 and smooth out. (levelling)
- Apply adhesive in such a way that the increments are level to the rest of the bonding surface.



- Top up the increments on the rear left and right convertible top bow (1)with adhesive K5 and smooth out. (levelling)
- Apply adhesive in such a way that all flange recesses and increments are level to the rest of the bonding surface.
- In area (2) of the hinge mount, apply adhesive K5 on the left and right.

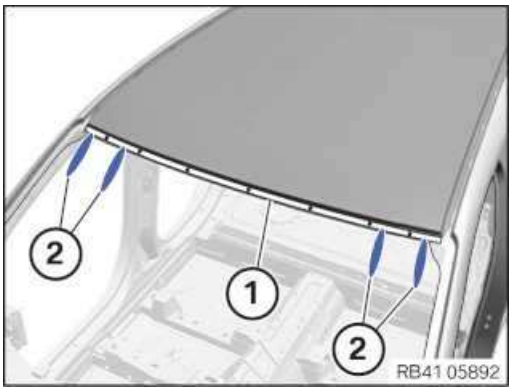


- In areas (1), apply adhesive K5.



- Place roof outer skin on the vehicle evenly in the centre with the help of an auxiliary person and adjust it.
- Position the screws M6, the nuts and the washers on mounting holes (1) of the roof rails. Tighten the screw connections until hand-tight.
- Make sure that no adhesive touches the screw connections.
- Remove the screw connections after the adhesive has hardened.

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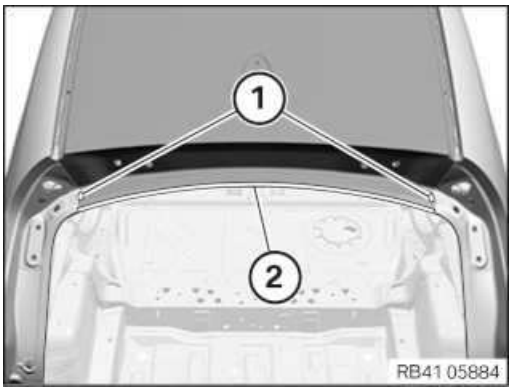


- In area (1), rivet the roof outer skin with 7 punch rivets N5.

Expendable materials

Punch rivet N5 Ø 5 mm ; 5 mm long		83192158079

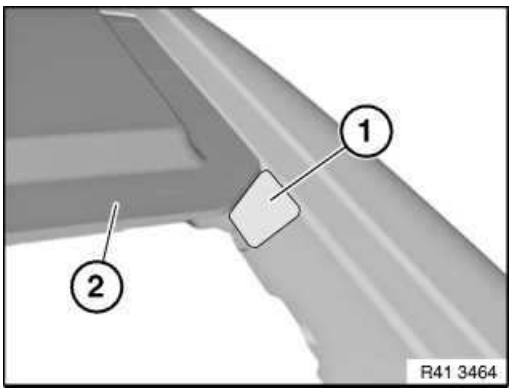
- In addition, fix the roof outer skin with locking pliers (2).



- In areas (1), rivet the roof outer skin with two punch rivets N4.
- In area (2), rivet the roof outer skin with 8 punch rivets N4.

Expendable materials

Punch rivet N4 Ø 3 mm ; 4 mm long		83192457307



- 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 since this could cause leaks when subsequently bonding the windscreen and the rear window.
- Spread excess adhesive in roof trim strip channel.

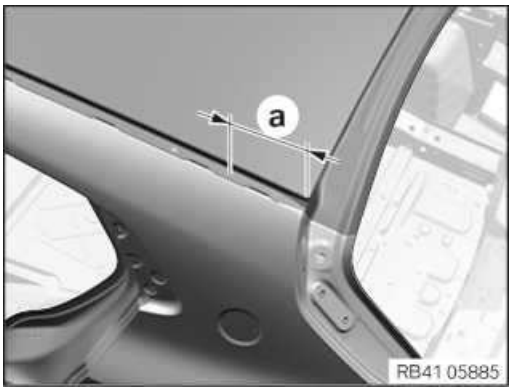
  While doing so, the mounting surfaces of roof trim strip mounting elements may not be coated with adhesive.
- Remove excess adhesive. Do not use any cleaning agent or solvent!

▸ **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



NOTICE

Perform the operations on the left and right side.

- After the adhesive has hardened, install an EMC screw.

  Dimension (a) = approximately 140 mm in front of the corner of the roof outer skin

Expendable materials

Screw EMC screw, SF Plus, M5x15		83190301639

- Adjust the roof rail and roof trim strip in the area of the EMC screw.

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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 ... 0 Contents of Body, General	
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 32 031 Replace the A-pillar on the outside left in the area of the windscreen

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

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.

PRELIMINARY WORK

1 – Disconnecting all battery earth leads



- See additional information.

MAIN WORK

2 – Supply the new parts required

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- Supply the following new parts:

  A-pillar, outer part(1)

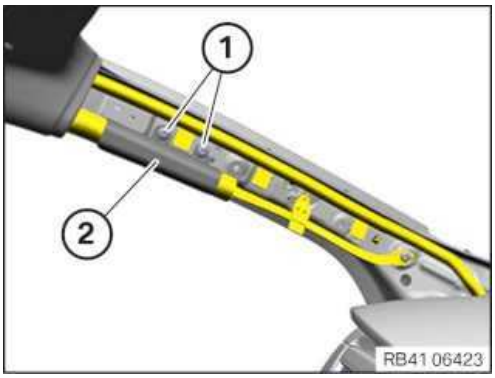
TECHNICAL INFORMATION

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

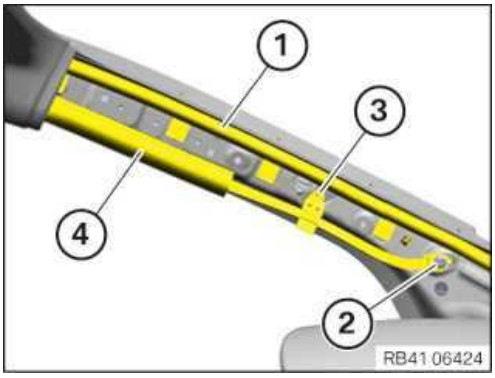
- Following consumables are required:

Material	Quantity
T-bolt	5
Sealant D1	1

3 – Removing outer A-pillar in area of windscreen



- Unscrew screws (1) and remove deformation element (2).



- Detach wiring harness (1) at attachment points.

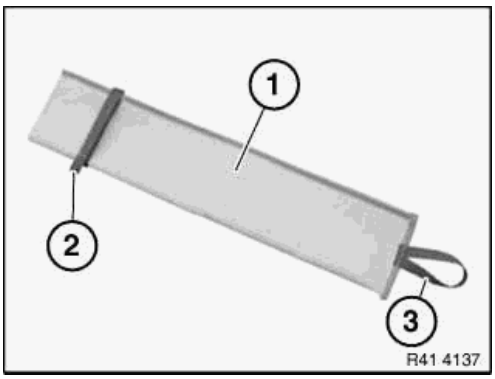
RISK OF DAMAGE

Damage of the airbag

Bending or kinking the airbag may damage the airbag and result in a malfunction of the airbag.

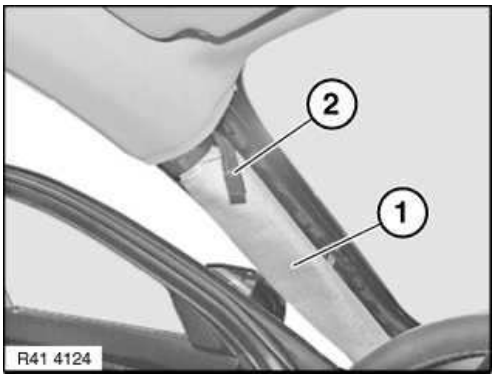
- Handle the airbag carefully and move it very little by hand.
- Do not kink or bend the airbag.

- Loosen the screw (2) and clamp (3) for the airbag (4).

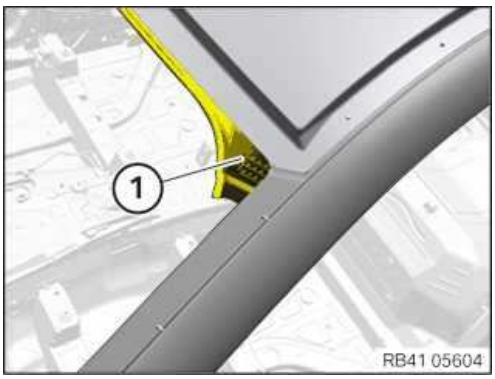


- Use protective sleeve (1) to protect the airbag.
- Check protective sleeve for damage prior to use.
- Do not use protective sleeves which are damaged.
- Use Velcro fastener (2) and loop (3) to fasten the airbag and protective sleeve.

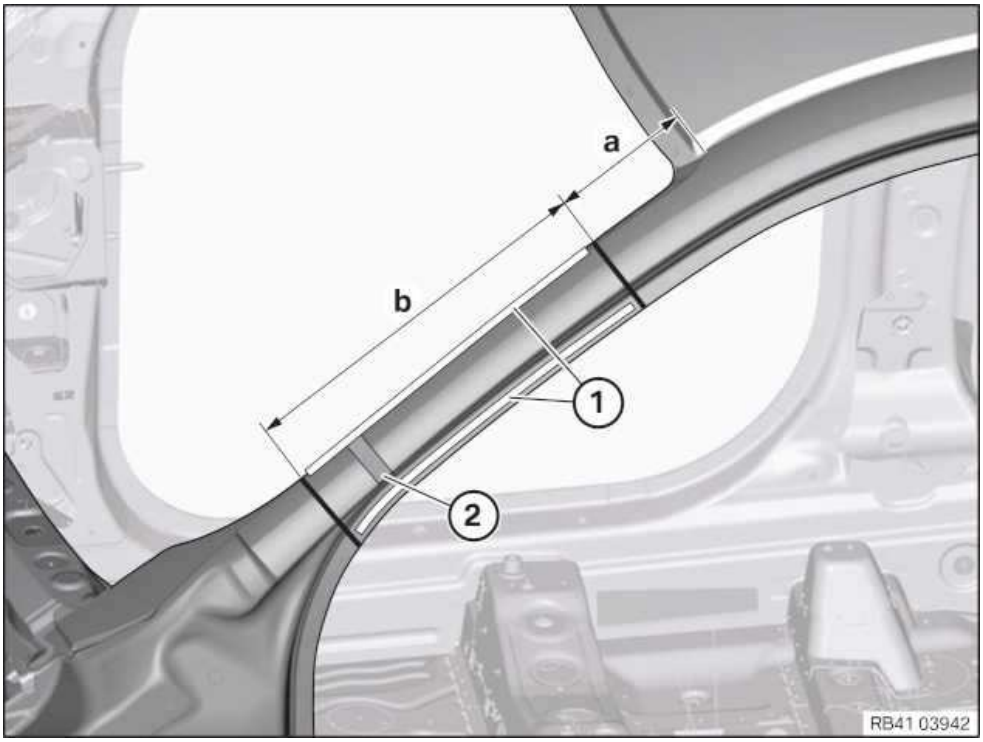
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- Slide protective sleeve (1) onto airbag under headliner so that the airbag is covered.
- Fasten protective sleeve with Velcro fastener (2).
- Secure protective sleeve and airbag against kinking.



- Cover opening (1) between body and headliner to protect against welding beads and flying sparks.



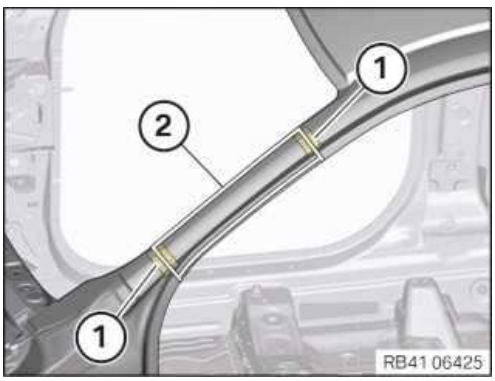
- Mark and perform the separating cuts to match the specified dimensions. Thereby disconnect only the outer panel.

  Dimension a = 150 mm from the corner of the roof frame.

  Dimension b = 380 mm below separating cut a.
- Release welded connections in areas (1).
- Release and remove the section of the A-pillar from the cavity sealing (2).

4 – 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)

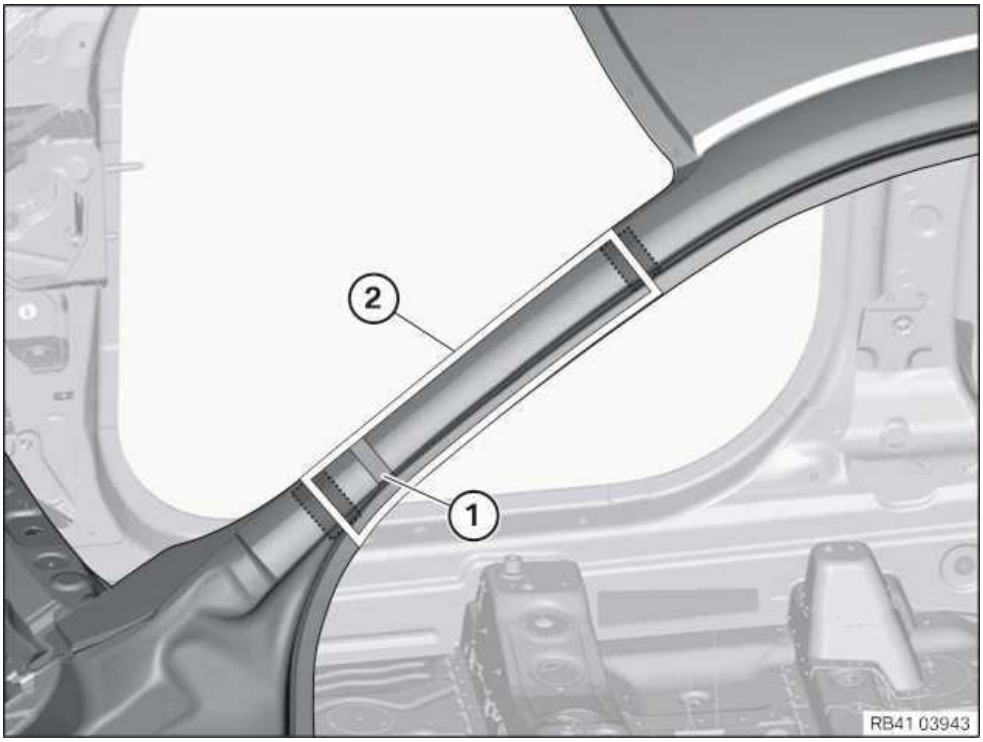
- Prepare reinforcement plates (1) at separating cuts.
- Prepare area (2) for joining by welding.

5 – Install the A-pillar outside in the area of the windscreen

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TECHNICAL INFORMATION

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

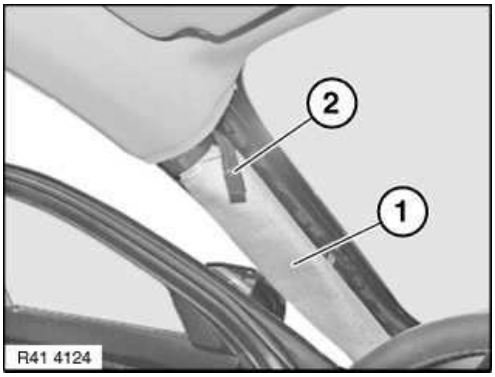


- Apply sealant D1 to cavity sealing (1).

Expendable materials

Sealant D1 (seam sealing)	310 ml	8342240998

- Install the new part and the reinforcement plates and weld them in the area (2).



RISK OF DAMAGE

Damage of the airbag

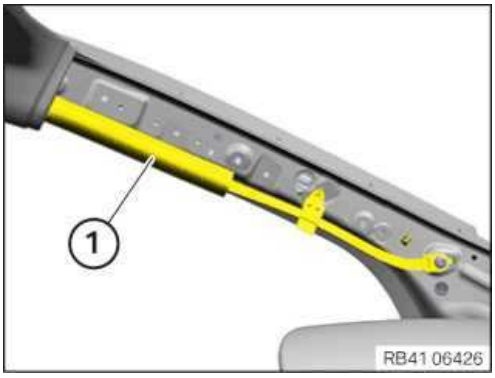
Bending or kinking the airbag may damage the airbag and result in a malfunction of the airbag.

- Handle the airbag carefully and move it very little by hand.
- Do not kink or bend the airbag.

- Open the hook and loop fastener (2) and remove the protective sleeve (1).

Check

- Check the airbag (1) in the area of the protective sleeve for damage.



Result

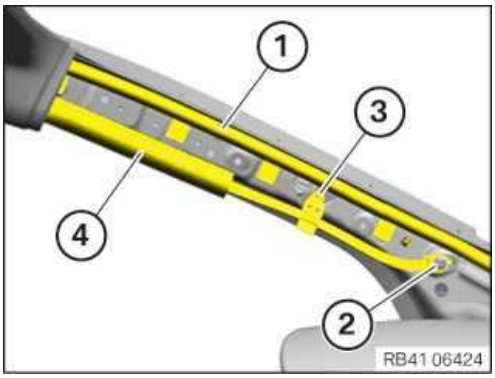
» The airbag is damaged.

Measure

- Renew the airbag.

  Parts: Airbag

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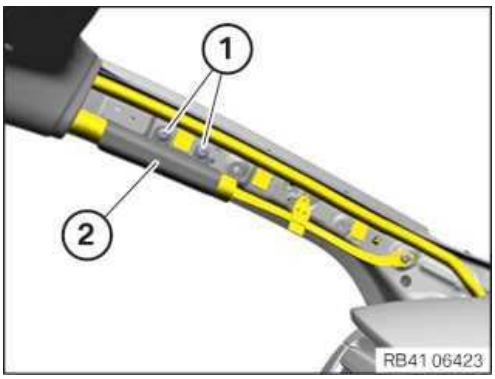


- Position airbag (4).
- Clip in clamp (3).
- Tighten down screw (2).

Head airbag

	8 Nm

- Install the wiring harness (1).



- Position the deformation element (2) and tighten the bolts (1).

Deformation element

Screw M6		8 Nm

POSTPROCESSES

6 – Disconnecting all battery earth leads



- See additional information.

Additional Information

Overview of Tightening Torques

Head airbag Used in step 5

	8 Nm

Deformation element Used in step 5

Screw M6		8 Nm

Links

General repair instructions	Used in step
41 00 ... Overview of consumables (Electronic Parts Catalogue)	2
41 00 ... Spot-weld bonding steel components	4
41 00 ... Workshop equipment (BMW and MINI vehicles)	5
72 00 ... Safety regulations for handling components with gas generators	
41 00 ... 0 Contents of Body, General	

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41 00 ... Repair techniques, repair stage 3

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1 6
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1 6
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6
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61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1 6
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61 20 900 Disconnecting and connecting battery earth lead	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6
41 00 ... Welding in reinforcement plate (sheet steel)	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.

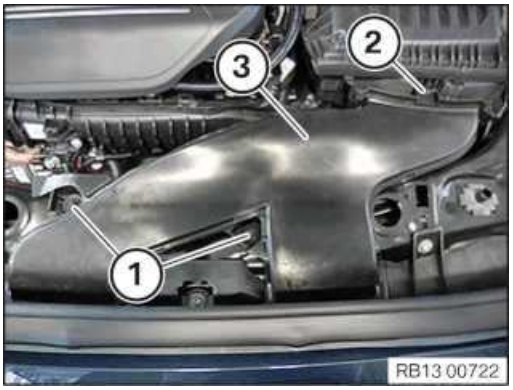
Quality standards must be met.

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41 33 210 Removing and installing cross connection

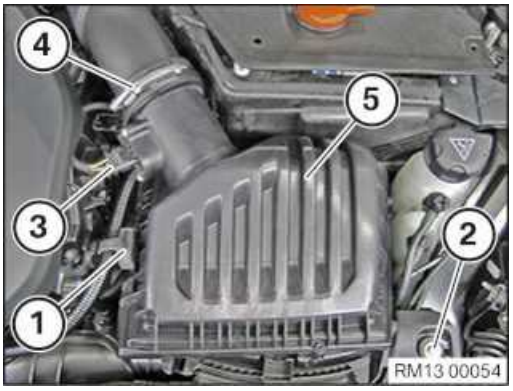
PRELIMINARY WORK

1 – Remove the intake neck for intake silencer housing



- Loosen nuts (1).
- Loosen the lock (2).
- Guide the intake neck (3) out and remove it.

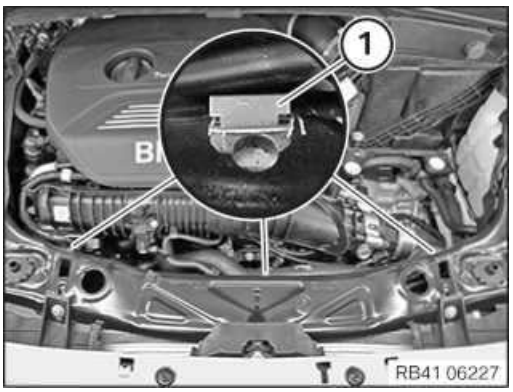
2 – Removing intake silencer housing



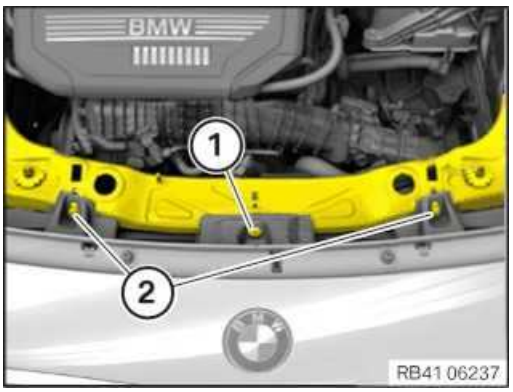
- Loosen the holder (1).
- Loosen screw (2).
- Unlock and loosen connector (3).
- Unfasten clamp (4).
- Pull out and remove the intake silencer housing (5) from the rubber mounts towards the top.

MAIN WORK

3 – Remove front cross connection

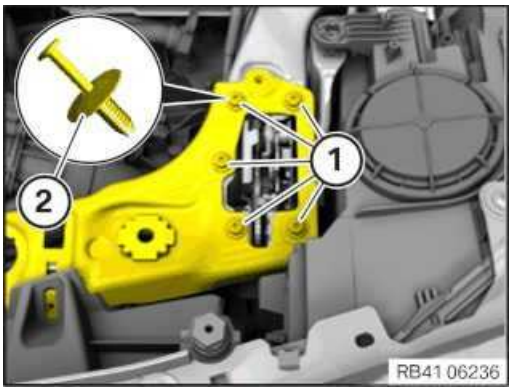


- Detach the clamps (1) for the Bowden cable of the bonnet locks from the cross connection.

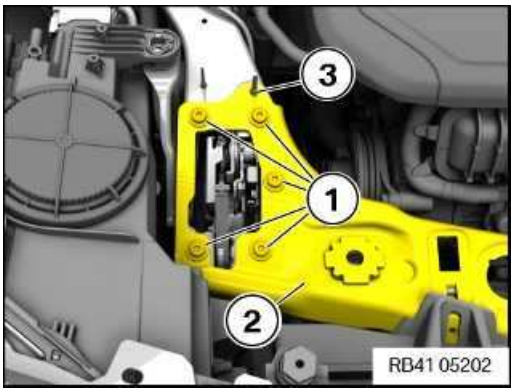


- Loosen screw (1).
- Loosen screws (2).

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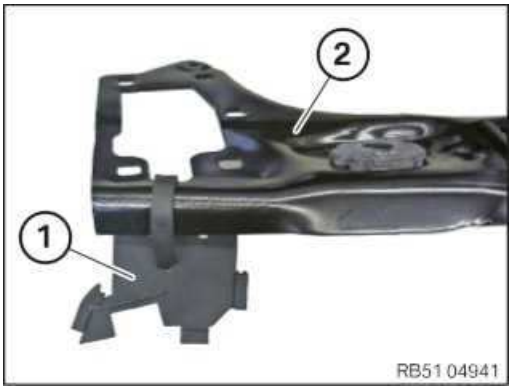


- Loosen screws (1).
- Lever out expanding rivet (2).

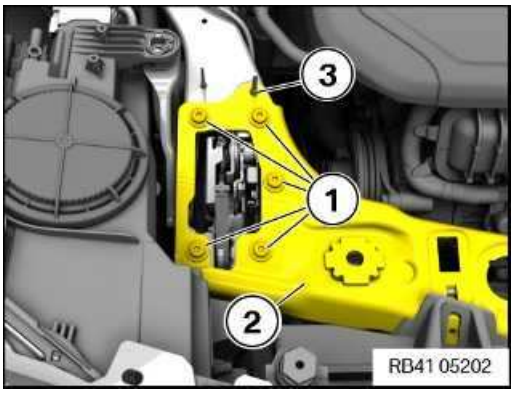


- Loosen screws (1).
- Unclip the front cross connection (2) from the rubber retainer (3) and remove it upward.

4 – Install front cross connection



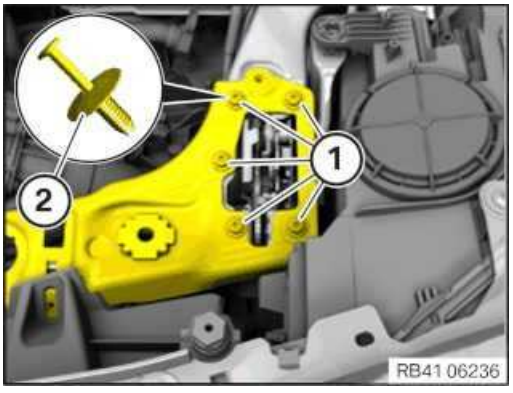
- Right side of vehicle only: Secure spray guard (1) on the cross connection (2) as pictured.



- Position front cross connection (2) and clip front cross connection (2) into the rubber retainer (3) at the same time.
- Tighten the screws (1).

Cross connection to carrier support

Screws M6x20		Tightening torque	11,8 Nm

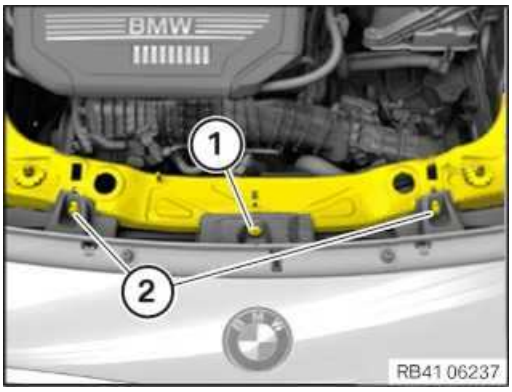


- Tighten the screws (1).

Cross connection to carrier support

Screws M6x20		Tightening torque	11,8 Nm

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- Position screws (3) on the rubber mounts for the radiator and tighten.

Screw connection for rubber mount of coolant radiator to coolant radiator

Bolt to rubber mount		Tightening torque	8 Nm

- Tighten down screws (2).

Air duct to upper connection

M6x20 screw		Tightening torque	11,8 Nm

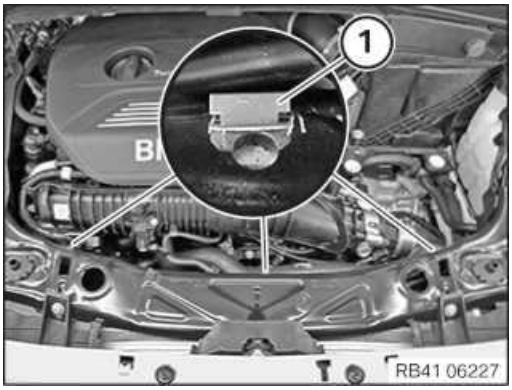
- Tighten down screw (1).

Bracing strut to upper connection

M8x20 screw		Tightening torque	28 Nm



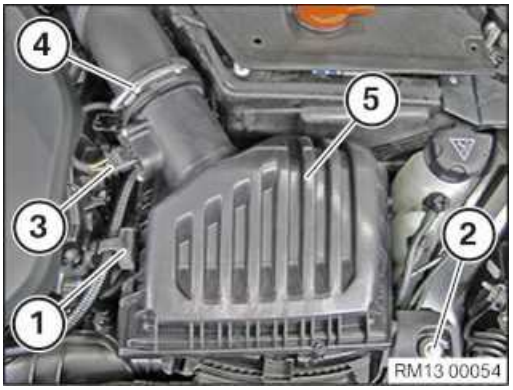
- Right side of vehicle only: Properly mount spray guard (1) to prevent corrosion.
- Secure spray guard (1) to the bridge with retaining tabs (2).



- Fasten the clamps (1) from the Bowden cable of the bonnet lock on the cross connection.

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5 – Installing intake silencer housing



- Insert the intake silencer housing (5) into the rubber mounts and install it.
  Intake filter housing (5) must engage audibly.
- Tighten down screw (2).

Intake silencer housing to lock bridge

M6X30		Tightening torque	8 Nm

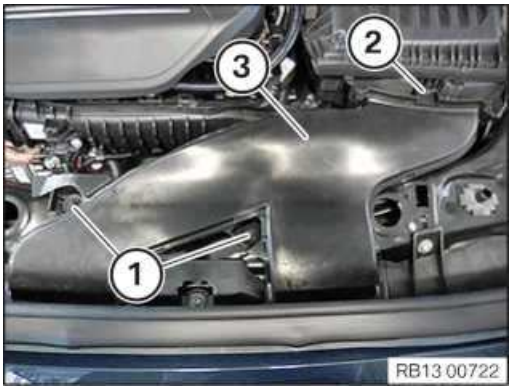
- Tighten clamp (4).

Clean air pipe to intake silencer housing

Clamp		Tightening torque	3 Nm

- Connect and lock the connector (3).
  The connector (3) must engage audibly.
- Insert and install the holder (1).

6 – Install the intake neck for the intake filter housing



- Insert and install the intake neck (3).
  The lock (2) must audibly engage.
- Tighten nuts (1).

Intake neck to cross connection

M6		Tightening torque	8 Nm

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Additional Information

Overview of Tightening Torques

Cross connection to carrier support

Used in step 4

Screws M6x20		Tightening torque	11,8 Nm

Screw connection for rubber mount of coolant radiator to coolant radiator

Used in step 4

Bolt to rubber mount		Tightening torque	8 Nm

Air duct to upper connection

Used in step 4

M6x20 screw		Tightening torque	11,8 Nm

Bracing strut to upper connection

Used in step 4

M8x20 screw		Tightening torque	28 Nm

Intake silencer housing to lock bridge

Used in step 5

M6X30		Tightening torque	8 Nm

Clean air pipe to intake silencer housing

Used in step 5

Clamp		Tightening torque	3 Nm

Intake neck to cross connection

Used in step 6

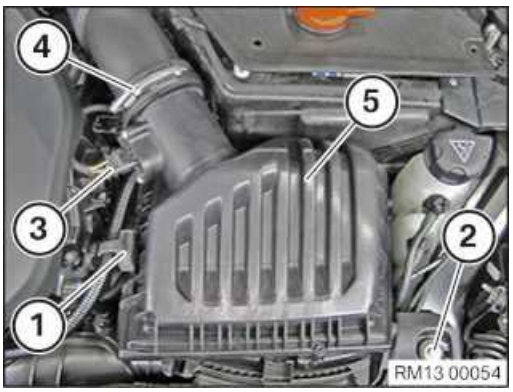
M6		Tightening torque	8 Nm

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41 33 730 Replace girder for left cross connection

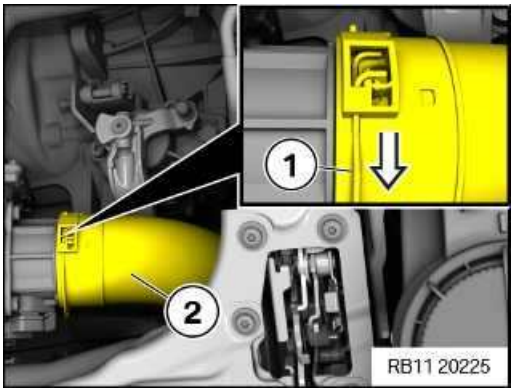
PRELIMINARY WORK

1 – Removing intake silencer housing



- Loosen the holder (1).
- Loosen screw (2).
- Unlock and loosen connector (3).
- Unfasten clamp (4).
- Pull out and remove the intake silencer housing (5) from the rubber mounts towards the top.

2 – Detaching charge air line from intake system

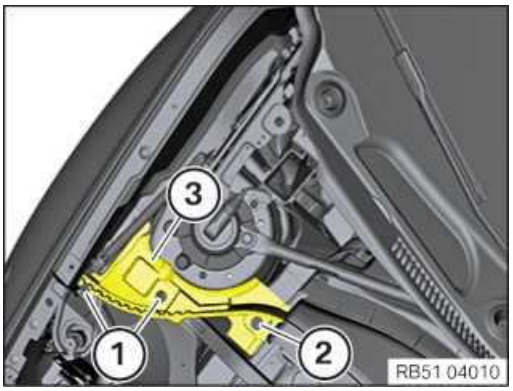


- Move lock (1) on charge air line (2) in direction of arrow until lock (1) engages in bracket.
- Pull off charge air line (2) from intake system.

3 – Remove suspension cross-brace

TECHNICAL INFORMATION

Driving without the strut brace/front end or tension strut is not permitted.

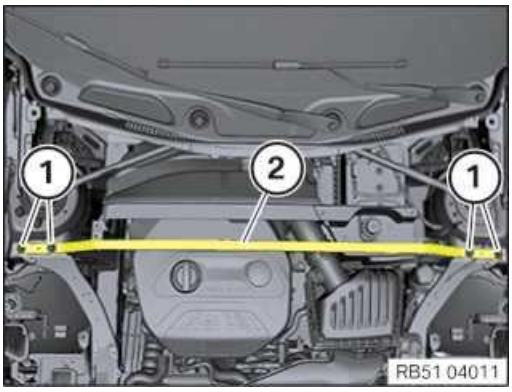


NOTICE

Description is for right component only. The procedure on the left side is identical.

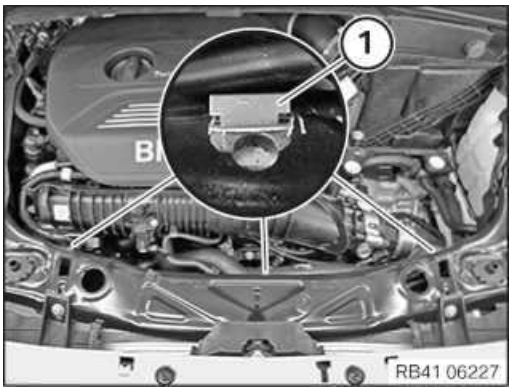
- Loosen expanding rivet (1).
- Loosen screw (2).
- Remove the cover (3).

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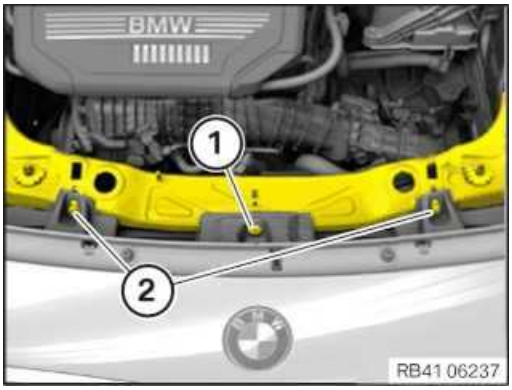


- Loosen screws (1).
- Remove strut brace (2).

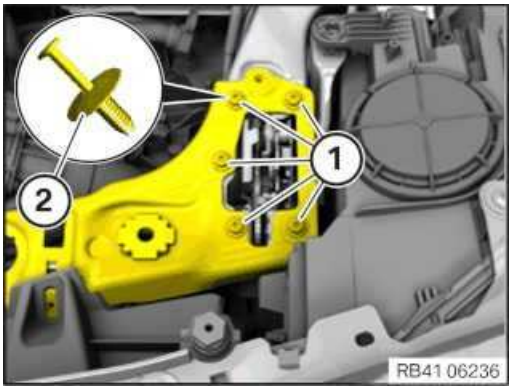
4 – Remove front cross connection



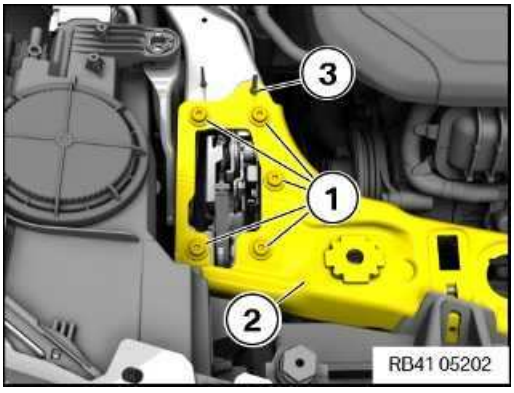
- Detach the clamps (1) for the Bowden cable of the bonnet locks from the cross connection.



- Loosen screw (1).
- Loosen screws (2).



- Loosen screws (1).
- Lever out expanding rivet (2).



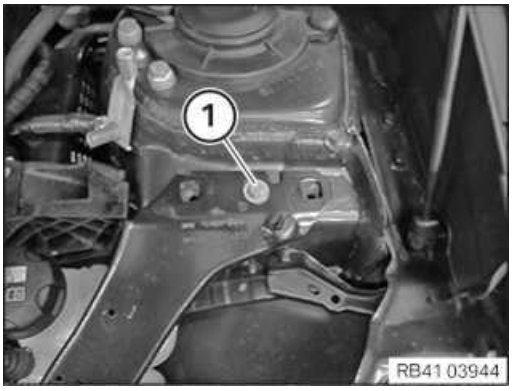
- Loosen screws (1).
- Unclip the front cross connection (2) from the rubber retainer (3) and remove it upward.

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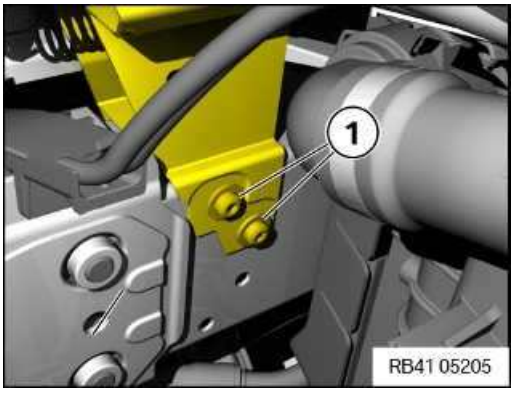
5 – Removing support for left cross connection



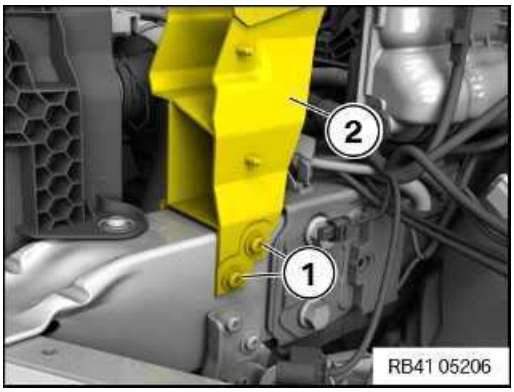
- Unclip housing for coupling of Bowden cable (1).



- Loosen screw (1).



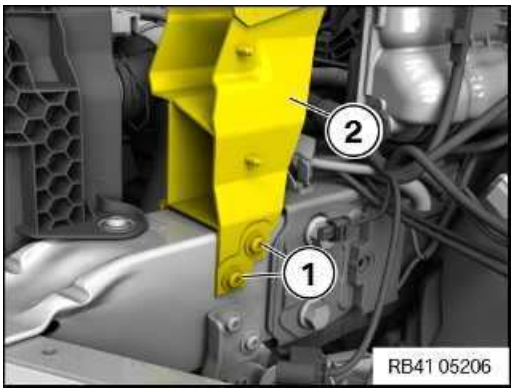
- Loosen screws (1).



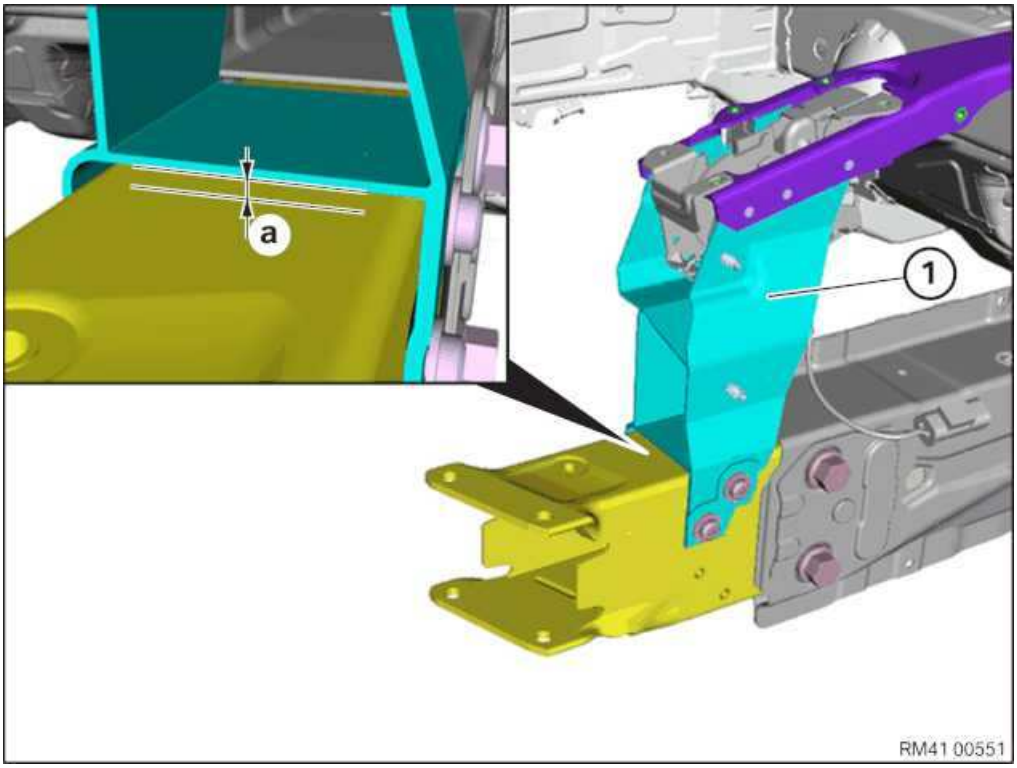
- Loosen screws (1).
- Feed out and remove support for left cross connection (2).

6 – Install the support for the left cross connection

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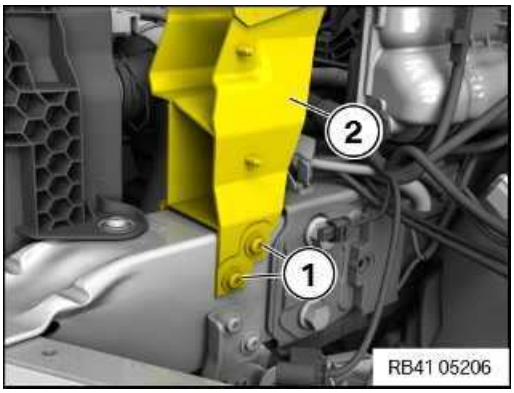


- Insert the support for the left cross connection (2) and position it.
- Join the bolts (1) and screw them in a few turns.



- Adjust the support for the cross connection (1) to the specified dimension.

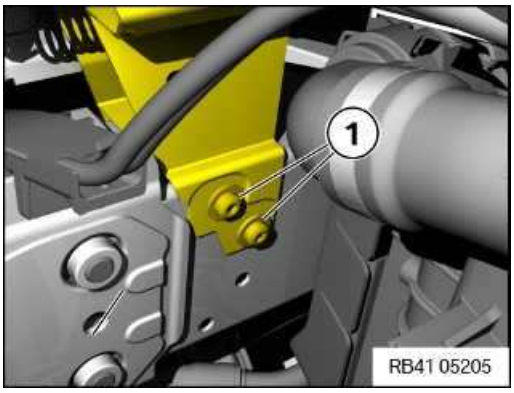
  Dimension (a) = approximately 4 mm
- If the support for the cross connection (1) was removed on only one side of the vehicle, the dimension (a) of the side that was not removed must be used as the setting dimension.



- Tighten the screws (1).

Support for cross connection to deformation element

M6x20 screw		Tightening torque	11,8 Nm

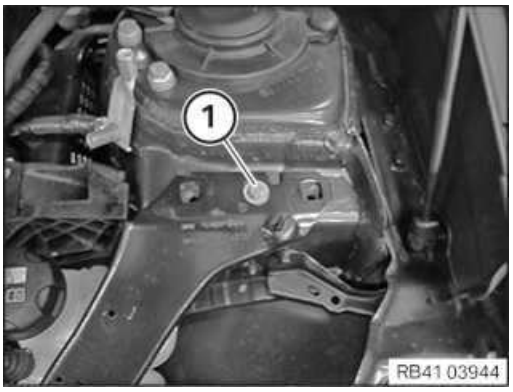


- Tighten the screws (1).

Support for cross connection to deformation element

M6x20 screw		Tightening torque	11,8 Nm

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- Tighten down screw (1).

Support for cross connection to wheel arch

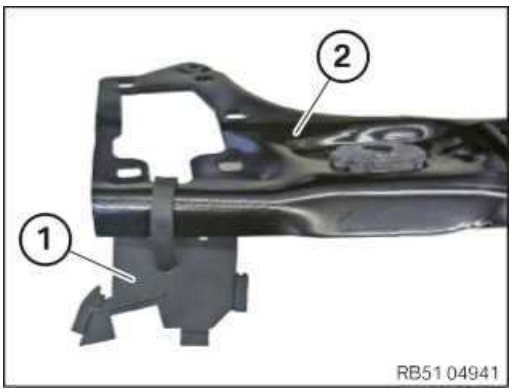
M6x20 screw		Tightening torque	12 Nm



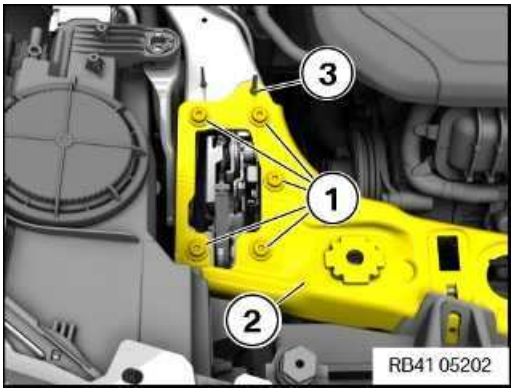
- Clip in the housing for the coupling of the Bowden cables (1).

POSTPROCESSES

7 – Install front cross connection



- Right side of vehicle only: Secure spray guard (1) on the cross connection (2) as pictured.

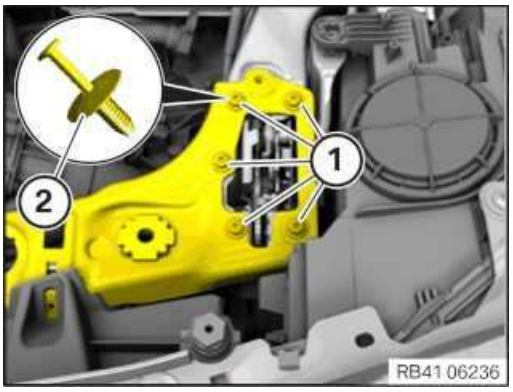


- Position front cross connection (2) and clip front cross connection (2) into the rubber retainer (3) at the same time.
- Tighten the screws (1).

Cross connection to carrier support

Screws M6x20		Tightening torque	11,8 Nm

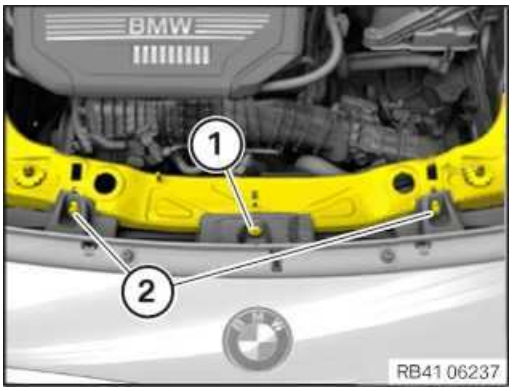
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- Tighten the screws (1).

Cross connection to carrier support

Screws M6x20		Tightening torque	11,8 Nm



- Position screws (3) on the rubber mounts for the radiator and tighten.

Screw connection for rubber mount of coolant radiator to coolant radiator

Bolt to rubber mount		Tightening torque	8 Nm

- Tighten down screws (2).

Air duct to upper connection

M6x20 screw		Tightening torque	11,8 Nm

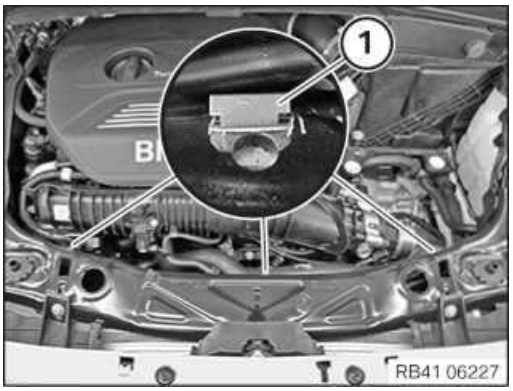
- Tighten down screw (1).

Bracing strut to upper connection

M8x20 screw		Tightening torque	28 Nm



- Right side of vehicle only: Properly mount spray guard (1) to prevent corrosion.
- Secure spray guard (1) to the bridge with retaining tabs (2).



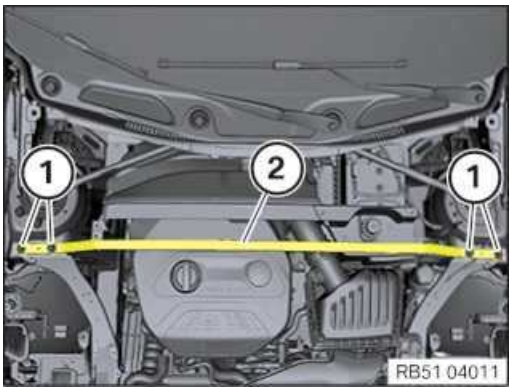
- Fasten the clamps (1) from the Bowden cable of the bonnet lock on the cross connection.

8 – Install strut brace

TECHNICAL INFORMATION

Driving without the strut brace/front end or tension strut is not permitted.

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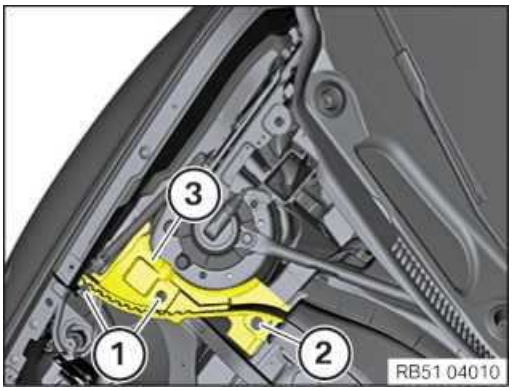


- Install the strut brace (2).
- Renew screws (1).

  Parts: Bolts
- Tighten the screws (1).

Cross-brace to spring strut dome

	Renew screw.	Jointing torque	28 Nm
		Angle of rotation	180 °



NOTICE

Description is for right component only. The procedure on the left side is identical.

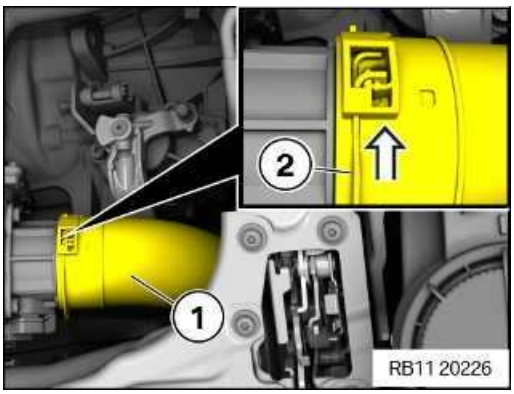
- Install the cover (3).
- Tighten down screw (2).

Cover on body

Hexagon screw		Tightening torque	3 Nm

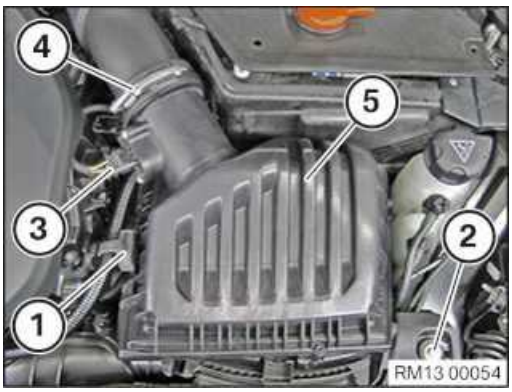
- Install the expanding rivet (1).

9 – Fasten the charge air line on the intake system



- Slide the charge air line (1) onto the intake system.
- Detach the lock (2) from the bracket and move it in the direction of the arrow until the lock (2) engages.

10 – Installing intake silencer housing



- Insert the intake silencer housing (5) into the rubber mounts and install it.

  Intake filter housing (5) must engage audibly.
- Tighten down screw (2).

Intake silencer housing to lock bridge

M6X30		Tightening torque	8 Nm

- Tighten clamp (4).

Clean air pipe to intake silencer housing

Clamp		Tightening torque	3 Nm

- Connect and lock the connector (3).

  The connector (3) must engage audibly.
- Insert and install the holder (1).

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Additional Information

Overview of Tightening Torques

Support for cross connection to deformation element

Used in step 6

M6x20 screw		Tightening torque	11,8 Nm

Support for cross connection to wheel arch

Used in step 6

M6x20 screw		Tightening torque	12 Nm

Cross connection to carrier support

Used in step 7

Screws M6x20		Tightening torque	11,8 Nm

Screw connection for rubber mount of coolant radiator to coolant radiator

Used in step 7

Bolt to rubber mount		Tightening torque	8 Nm

Air duct to upper connection

Used in step 7

M6x20 screw		Tightening torque	11,8 Nm

Bracing strut to upper connection

Used in step 7

M8x20 screw		Tightening torque	28 Nm

Cross-brace to spring strut dome

Used in step 8

	Renew screw.	Jointing torque	28 Nm
		Angle of rotation	180 °

Cover on body

Used in step 8

Hexagon screw		Tightening torque	3 Nm

Intake silencer housing to lock bridge

Used in step 10

M6X30		Tightening torque	8 Nm

Clean air pipe to intake silencer housing

Used in step 10

Clamp		Tightening torque	3 Nm

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41 33 720 Replace the left headlight fixture

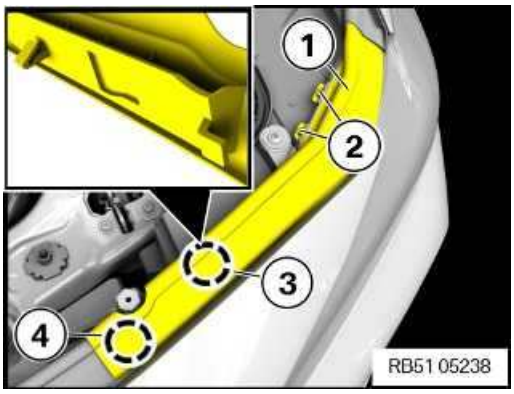
PRELIMINARY WORK

1 – Remove both bonnet seals on the side

NOTICE

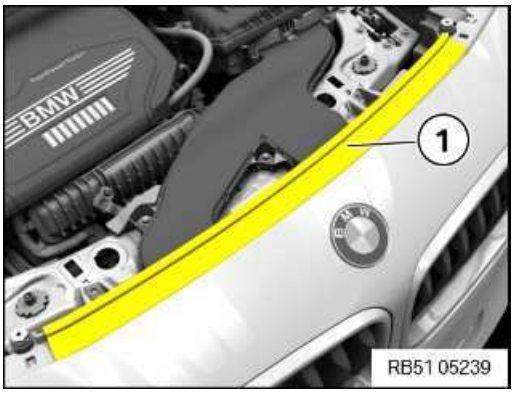
Description is for left component only. Procedure on the right side is identical.

▸ **Remove the bonnet seal on the side**



- Unclip the side bonnet seal (1) from the outer latch mechanisms (2) and the inner latch mechanism (3).
- Feed out the side bonnet seal (1) from the guide (4) and remove.

2 – Removing the seal for the front centre bonnet



- Remove the seal for the front centre bonnet (1) towards the top.

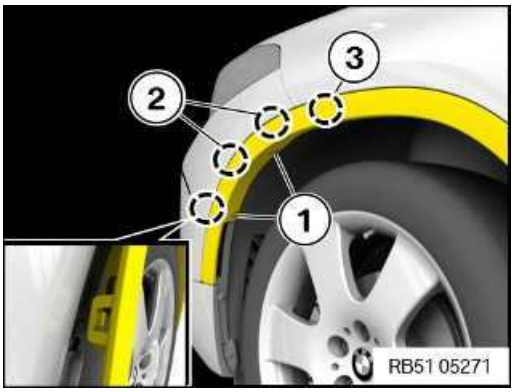
3 – Partially remove both front wheel arch trims

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially removing the front wheel arch trim**

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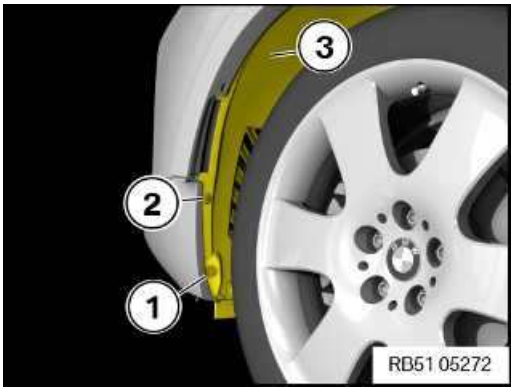
- Loosen blind rivet(1).
- Release front wheel arch trim in the area of the bumper panel from the latch mechanisms (2) and from the clip (3).

4 – Partially remove both front wheel arch covers

NOTICE

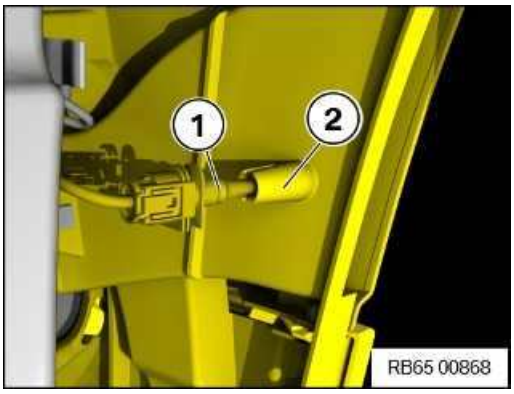
Description is for left component only. Procedure on the right side is identical.

▶ **Partially remove the front wheel arch cover**



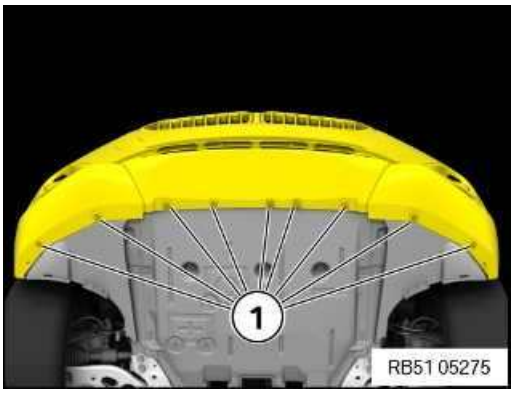
- Loosen screw (1).
- Release the blind rivet (2).
- Fold back the front wheel arch cover (3).

5 – Remove temperature sensor



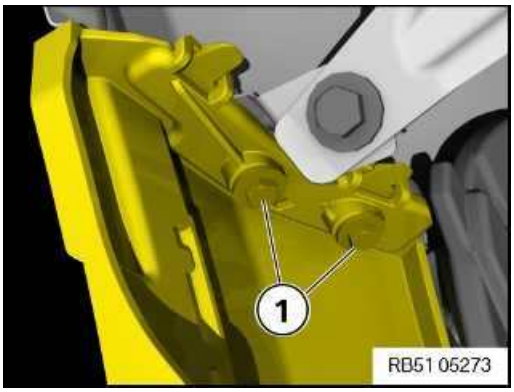
- Unclip temperature sensor (1) from front bumper panel (2).

6 – Remove front bumper panel



- Loosen screws (1).

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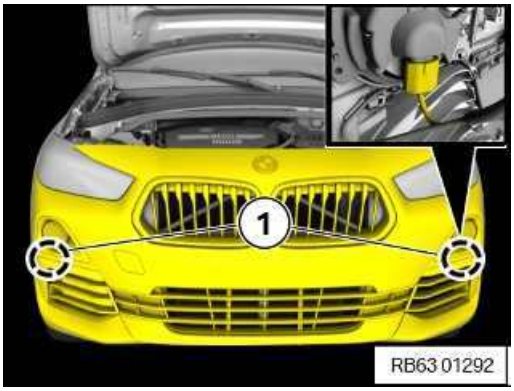
NOTICE

Description is for left component only. Procedure on the right side is identical.

- Loosen screws (1).

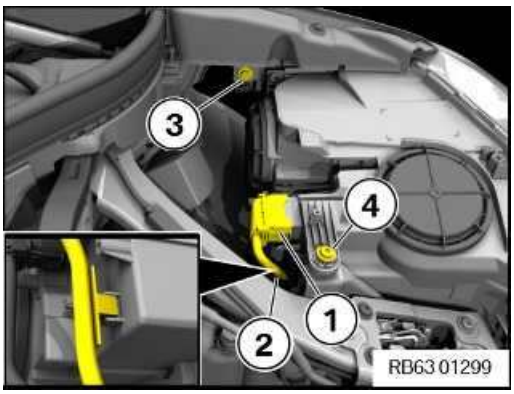


- Loosen screws (1).
- Loosen screws (2).

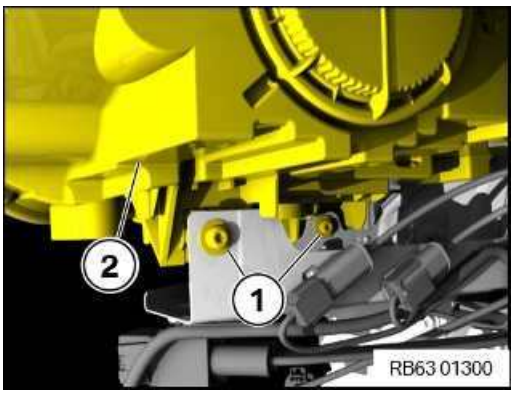


- Pull the front bumper panel slightly forward with the help of another person.
- Unlock and disconnect the plug connections (1) on the fog lights.
- Remove the front bumper panel.

7 – Remove headlight



- Unlock plug connection (1) and disconnect.
- Release the cable (2) from the latch mechanism.
- Loosen screw (3).
- Loosen screw (4).

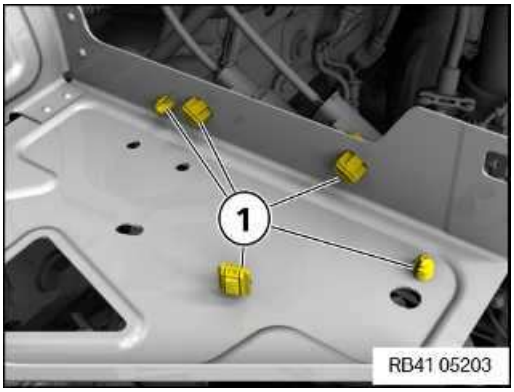


- Loosen screws (1).
- Remove the headlight (2) toward the front.

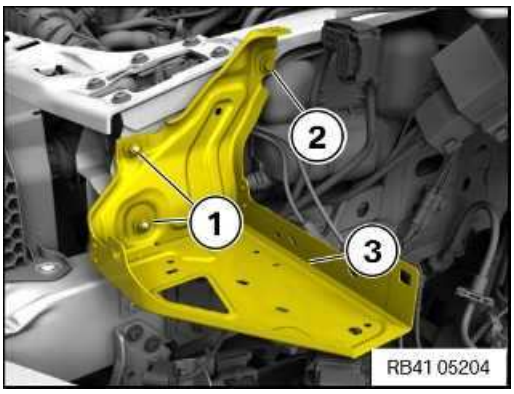
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MAIN WORK

8 – Remove the left headlight fixture

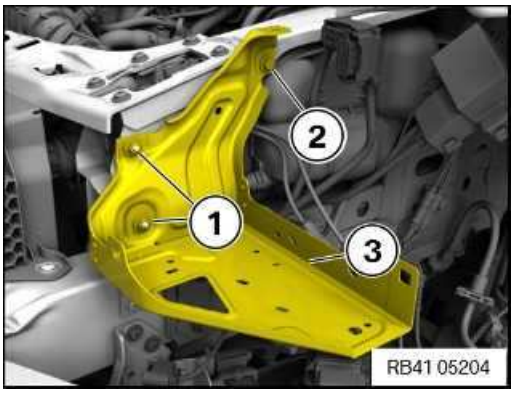


- Release the cable clips (1) from the latch mechanisms.



- Loosen nuts (1).
- Unscrew the bolt (2) and remove the headlight support bracket (3).

9 – Install the left headlight fixture



- Position headlight fixture (3).
- Tighten down screw (2).

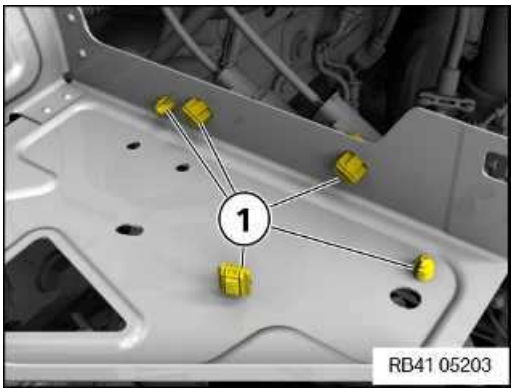
Headlight support bracket to bonnet lock support

Hexagon screw M6x20		Tightening torque	8 Nm

- Tighten nuts (1).

Headlight support bracket to bonnet lock support

NutsM6		Tightening torque	8 Nm

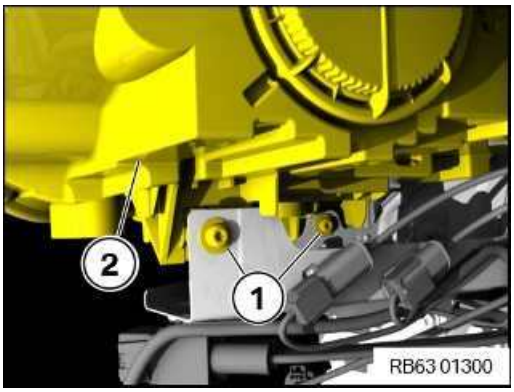


- Clip cable clip (1) into latch mechanisms.

POSTPROCESSES

10 – Install headlight

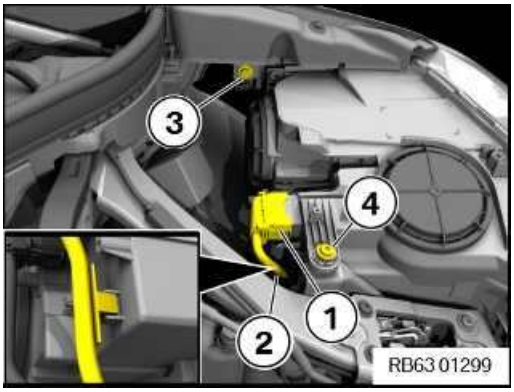
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- Insert the headlights (2).
- Tighten the screws (1).

Headlight to headlight support bracket

M6x35 screw		Tightening torque	5 Nm



- Tighten down screw (4).

Headlight to headlight support bracket

M6x35 screw		Tightening torque	5 Nm

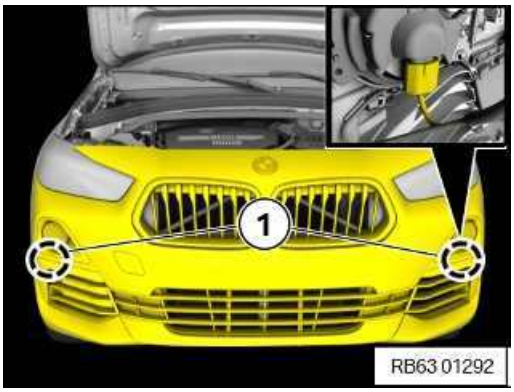
- Tighten down screw (3).

Headlight to carrier support extension

Multi-purpose hexagon screw with washer		Tightening torque	5 Nm

- Attach the cable (2) in the latch mechanism.
- Connect connectors (1) and lock.

11 – Install bumper panel, front



- Connect the connectors (1) on the fog lights and lock.
- Join the front bumper panel and position.



- Tighten the screws (1).

Bumper panel to headlight

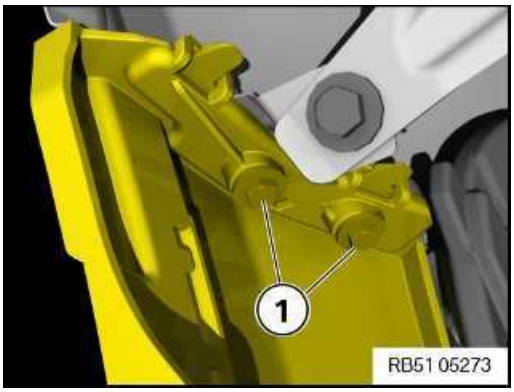
Thermoplastic multi-purpose bolt		Tightening torque	2,5 Nm

- Tighten down screws (2).

Bumper panel to air duct

Screw M6		Tightening torque	4,6 Nm

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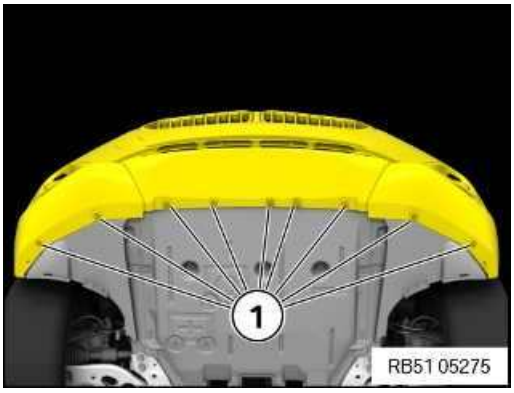
NOTICE

Description is for left component only. Procedure on the right side is identical.

- Tighten the screws (1).

Front bumper panel to front side panel

Screw TS5X35		Tightening torque	3 Nm

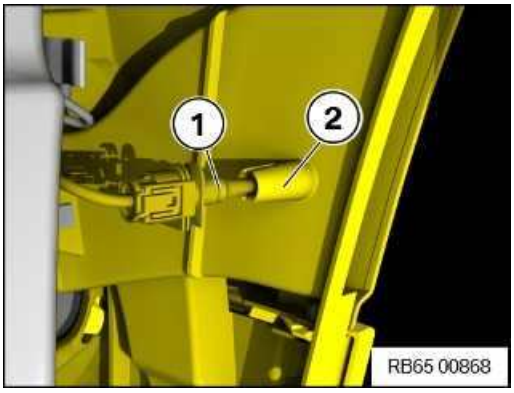


- Tighten the screws (1).

Front bumper panel to underbody panelling

Thermoplastic hexagon screw		Tightening torque	2,5 Nm

12 – Install temperature sensor



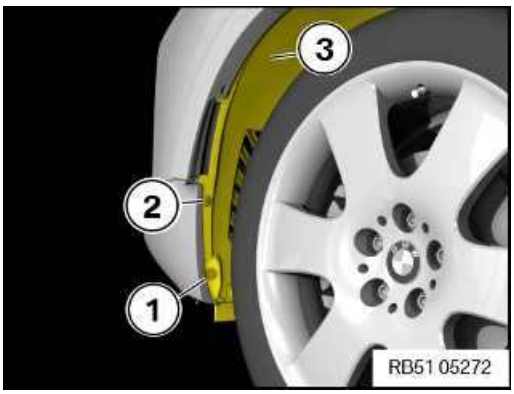
- Clip temperature sensor (1) into the front bumper panel (2).

13 – Partially install both front wheel arch covers

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially install the front wheel arch cover**



- Fold the front wheel arch cover (3) forward.
- Mount the blind rivet (2) with the special tool **0 496 521 (00 2 230)**.
- Tighten down screw (1).

Front wheel arch cover to front bumper panel

Hexagon screw for thermoplastic plastic		Tightening torque	2,6 Nm

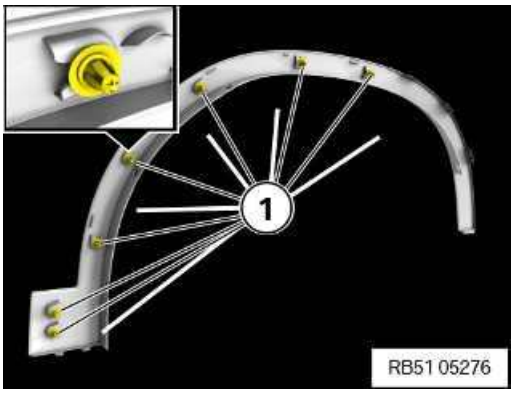
14 – Partially install both front wheel arch trims

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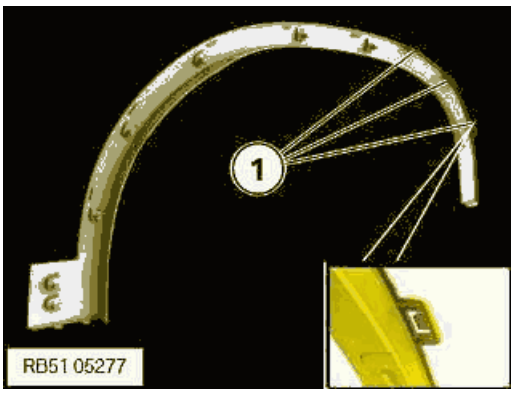
NOTICE

Description is for left component only. Procedure on the right side is identical.

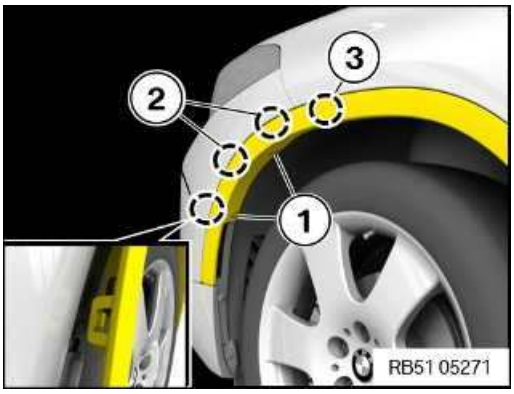
▶ **Partly install the front wheel arch trim**



- Check clips (1) for damage, and replace if necessary.

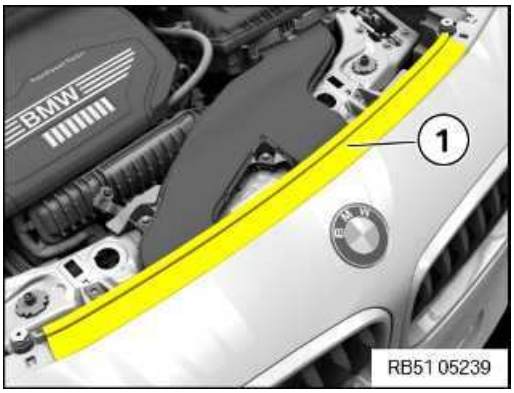


- Check the retaining lugs (1) for damage and replace the front wheel arch trim where required.



- Clip the front wheel arch trim into the clip (3) in the area of the bumper panel and into the latch mechanisms (2).
- Mount blind rivet (1) using the special tool **0 496 521 (00 2 230)**.

15 – Install the center front bonnet seal



- Press the centre front bonnet seal (1) down into the guide.
- Make sure the centre front bonnet seal (1) is fitted correctly.

16 – Install both bonnet seals on the side

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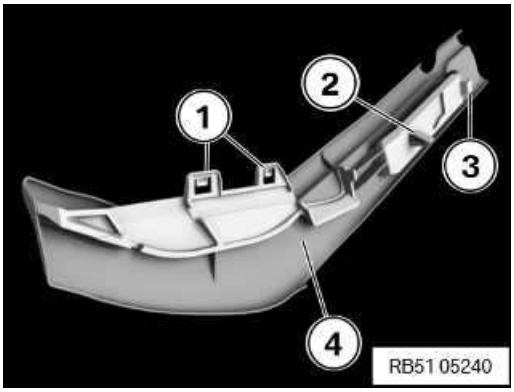
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Installing seal for side bonnet**

Check

- Check latch mechanisms (1) and (2) and also the guide (3) on the bonnet seal on the side (4) for damage.

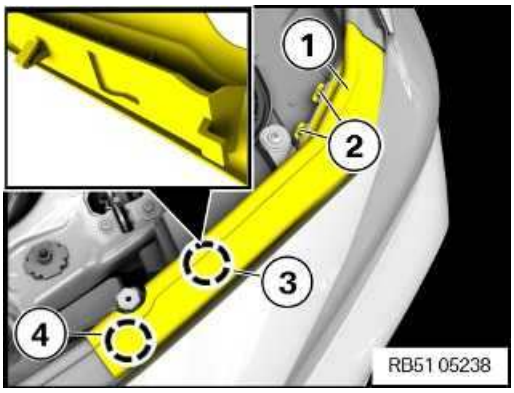


Result

» Latch mechanisms (1), (2) or the guide (3) are damaged.

Measure

- Renew the bonnet seal on the side (4).
- Insert the bonnet seal on the side (1) in the guide (4).
- Clip in the bonnet seal on the side (1) in the inner latch mechanism (3) and the outer latch mechanisms (2).



Additional Information

Overview of Tightening Torques

Headlight support bracket to bonnet lock support — Used in step 9

Hexagon screw M6x20		Tightening torque	8 Nm

Headlight support bracket to bonnet lock support — Used in step 9

NutsM6		Tightening torque	8 Nm

Headlight to headlight support bracket — Used in step 10

M6x35 screw		Tightening torque	5 Nm

Headlight to carrier support extension — Used in step 10

Multi-purpose hexagon screw with washer		Tightening torque	5 Nm

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Bumper panel to headlight — Used in step 11

Thermoplastic multi-purpose bolt		Tightening torque	2,5 Nm

Bumper panel to air duct — Used in step 11

Screw M6		Tightening torque	4,6 Nm

Front bumper panel to front side panel — Used in step 11

Screw TS5X35		Tightening torque	3 Nm

Front bumper panel to underbody panelling — Used in step 11

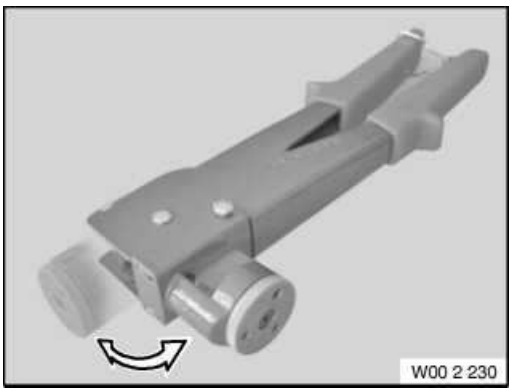
Thermoplastic hexagon screw		Tightening torque	2,5 Nm

Front wheel arch cover to front bumper panel — Used in step 13

Hexagon screw for thermoplastic plastic		Tightening torque	2,6 Nm

Overview of Special Tools

0 496 521 (00 2 230) Pliers



Common — Used in step 13 14

Usage	(Blind rivet pliers for plastic rivets) For shaft diameters of 3.5 mm, 3.9 mm and 4.5 mm
Included in the tool or work	
Storage location	C25
Replaced by	
In connection with	
SI-Number	01 17 08 (478)

Links

General repair instructions	Used in step
63 12 ... US version: Check/set the horizon lock for headlight replacement.	10

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41 33 721 Replace the right headlight fixture

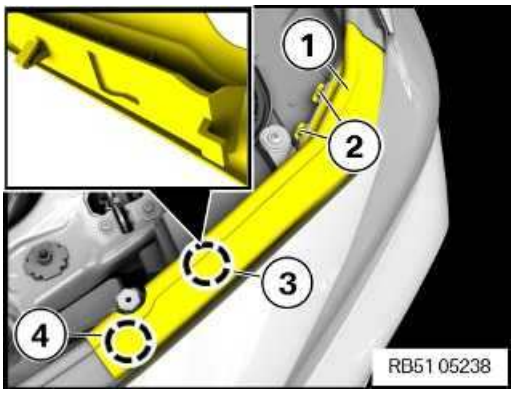
PRELIMINARY WORK

1 – Remove both bonnet seals on the side

NOTICE

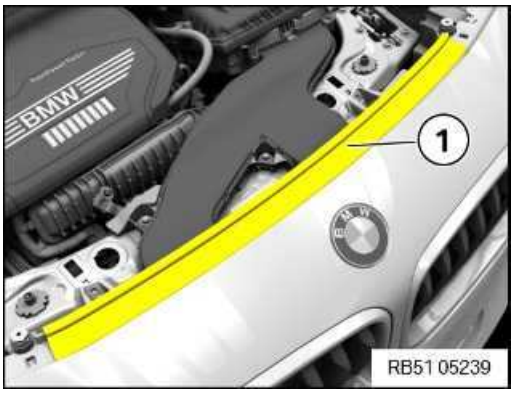
Description is for left component only. Procedure on the right side is identical.

▸ **Remove the bonnet seal on the side**



- Unclip the side bonnet seal (1) from the outer latch mechanisms (2) and the inner latch mechanism (3).
- Feed out the side bonnet seal (1) from the guide (4) and remove.

2 – Removing the seal for the front centre bonnet



- Remove the seal for the front centre bonnet (1) towards the top.

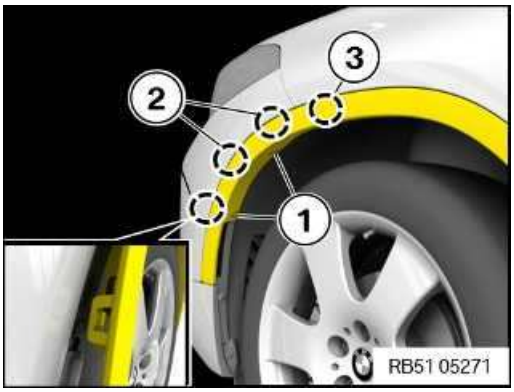
3 – Partially remove both front wheel arch trims

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially removing the front wheel arch trim**

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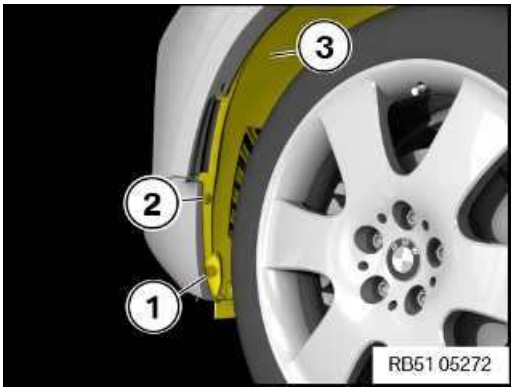
- Loosen blind rivet(1).
- Release front wheel arch trim in the area of the bumper panel from the latch mechanisms (2) and from the clip (3).

4 – Partially remove both front wheel arch covers

NOTICE

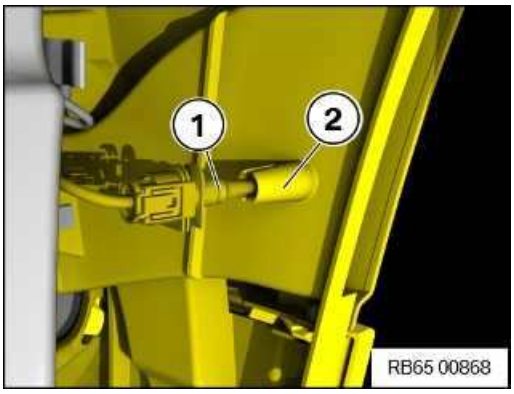
Description is for left component only. Procedure on the right side is identical.

▶ **Partially remove the front wheel arch cover**



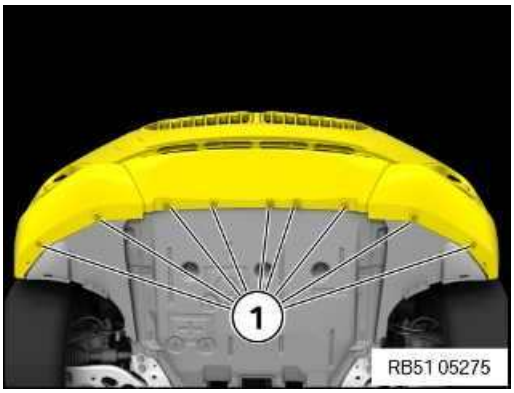
- Loosen screw (1).
- Release the blind rivet (2).
- Fold back the front wheel arch cover (3).

5 – Remove temperature sensor



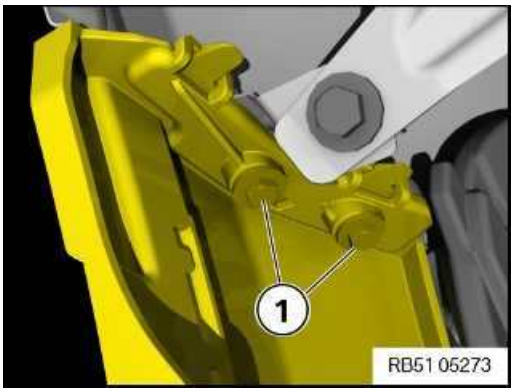
- Unclip temperature sensor (1) from front bumper panel (2).

6 – Remove front bumper panel



- Loosen screws (1).

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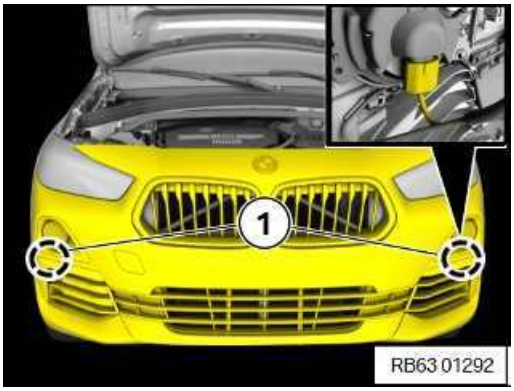
NOTICE

Description is for left component only. Procedure on the right side is identical.

- Loosen screws (1).



- Loosen screws (1).
- Loosen screws (2).



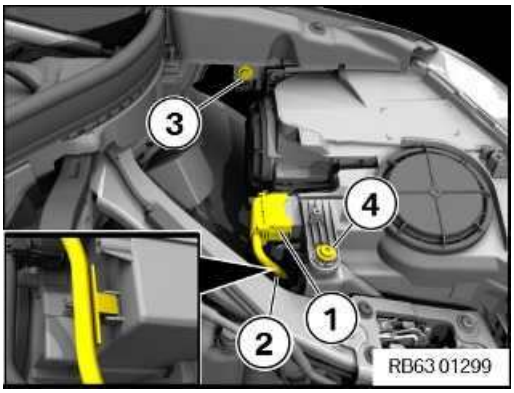
- Pull the front bumper panel slightly forward with the help of another person.
- Unlock and disconnect the plug connections (1) on the fog lights.
- Remove the front bumper panel.

7 – Remove right headlight

NOTICE

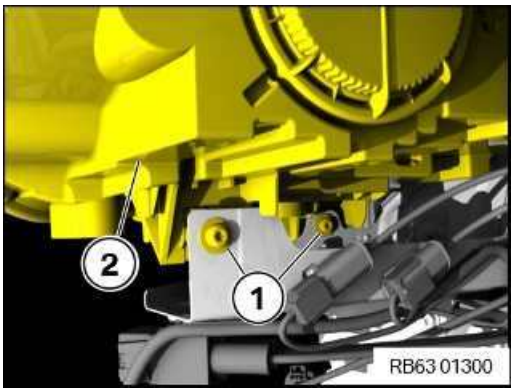
Description is for left component only. Procedure on the right side is identical.

▸ **Remove headlight**



- Unlock plug connection (1) and disconnect.
- Release the cable (2) from the latch mechanism.
- Loosen screw (3).
- Loosen screw (4).

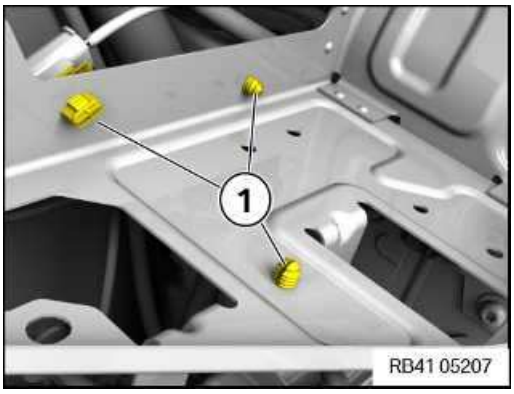
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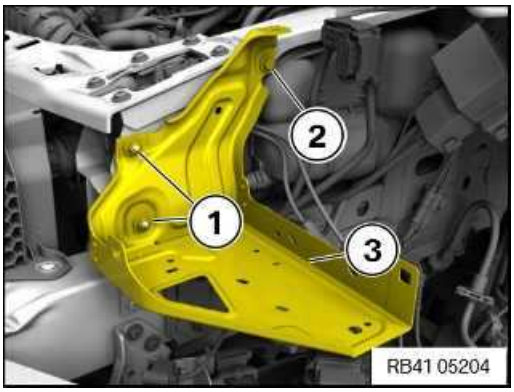
- Loosen screws (1).
- Remove the headlight (2) toward the front.

MAIN WORK

8 – Removing right headlight mount



- Release cable clip (1) from the latch mechanisms.

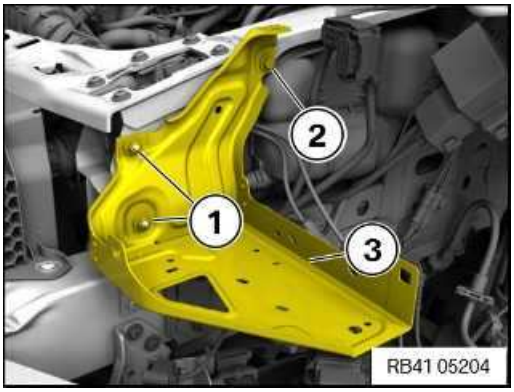


NOTICE

Description is for left component only. Procedure on the right side is identical.

- Loosen nuts (1).
- Release screw (2) and remove the headlight mount (3).

9 – Install the right headlight support bracket



NOTICE

Description is for left component only. Procedure on the right side is identical.

- Position headlight fixture (3).
- Tighten down screw (2).

Headlight support bracket to bonnet lock support

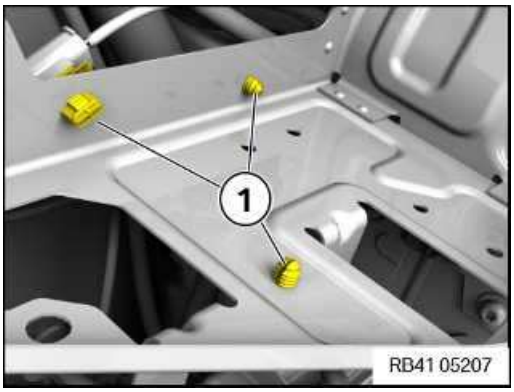
Hexagon screw M6x20		Tightening torque	8 Nm

- Tighten nuts (1).

Headlight support bracket to bonnet lock support

NutsM6		Tightening torque	8 Nm

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- Clip cable clip (1) into latch mechanisms.

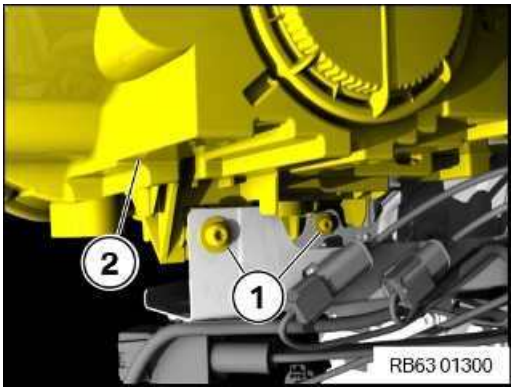
POSTPROCESSES

10 – Install right headlight

NOTICE

Description is for left component only. Procedure on the right side is identical.

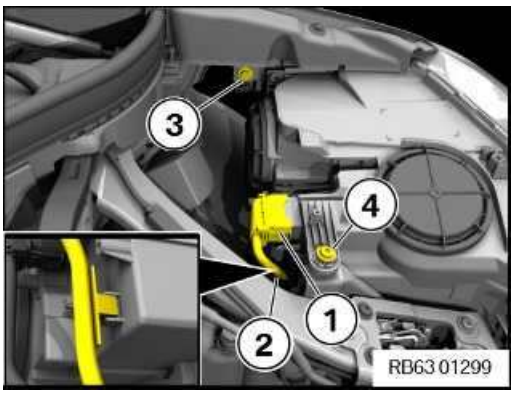
▶ **Install headlight**



- Insert the headlights (2).
- Tighten the screws (1).

Headlight to headlight support bracket

M6x35 screw		Tightening torque	5 Nm



- Tighten down screw (4).

Headlight to headlight support bracket

M6x35 screw		Tightening torque	5 Nm

- Tighten down screw (3).

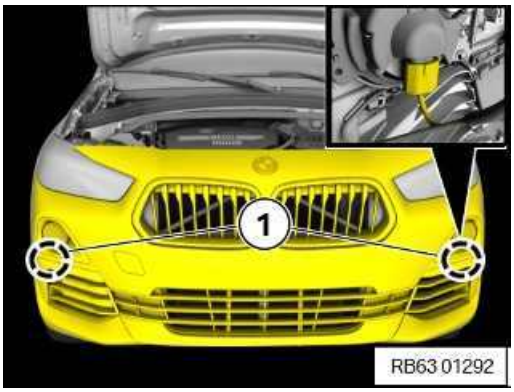
Headlight to carrier support extension

Multi-purpose hexagon screw with washer		Tightening torque	5 Nm

- Attach the cable (2) in the latch mechanism.
- Connect connectors (1) and lock.

11 – Install bumper panel, front

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- Connect the connectors (1) on the fog lights and lock.
- Join the front bumper panel and position.



- Tighten the screws (1).

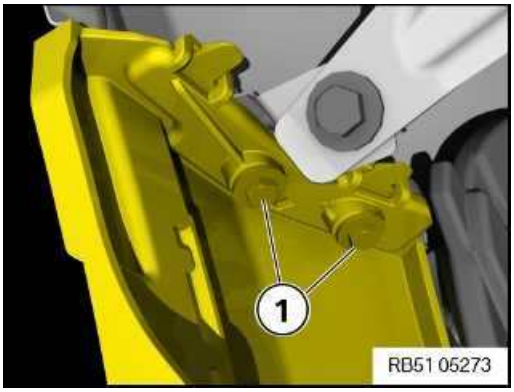
Bumper panel to headlight

Thermoplastic multi-purpose bolt		Tightening torque	2,5 Nm

- Tighten down screws (2).

Bumper panel to air duct

Screw M6		Tightening torque	4,6 Nm



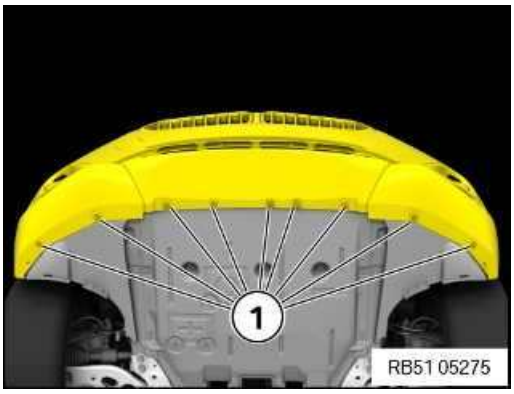
NOTICE

Description is for left component only. Procedure on the right side is identical.

- Tighten the screws (1).

Front bumper panel to front side panel

Screw TS5X35		Tightening torque	3 Nm

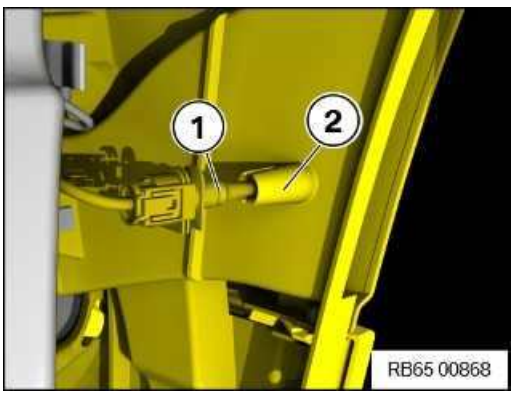


- Tighten the screws (1).

Front bumper panel to underbody panelling

Thermoplastic hexagon screw		Tightening torque	2,5 Nm

12 – Install temperature sensor



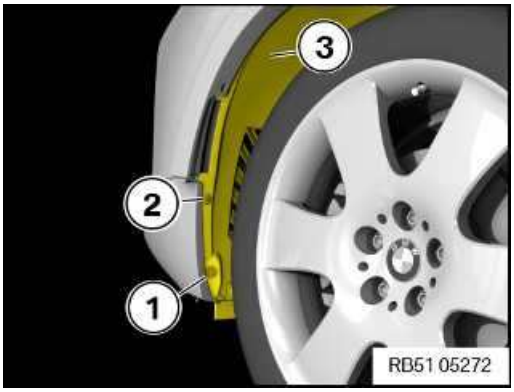
- Clip temperature sensor (1) into the front bumper panel (2).

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13 – Partially install both front wheel arch covers

NOTICE

Description is for left component only. Procedure on the right side is identical.



▸ **Partially install the front wheel arch cover**

- Fold the front wheel arch cover (3) forward.
- Mount the blind rivet (2) with the special tool **0 496 521 (00 2 230)**.
- Tighten down screw (1).

Front wheel arch cover to front bumper panel

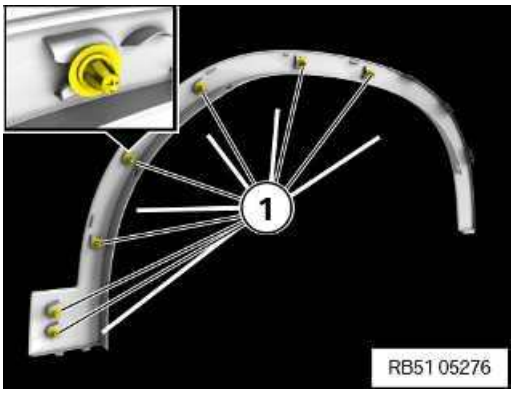
Hexagon screw for thermoplastic plastic		Tightening torque	2,6 Nm

14 – Partially install both front wheel arch trims

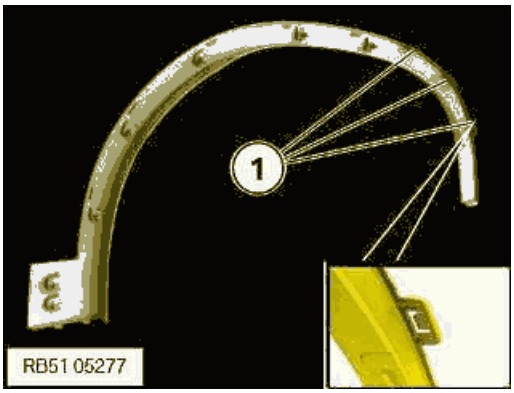
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partly install the front wheel arch trim**

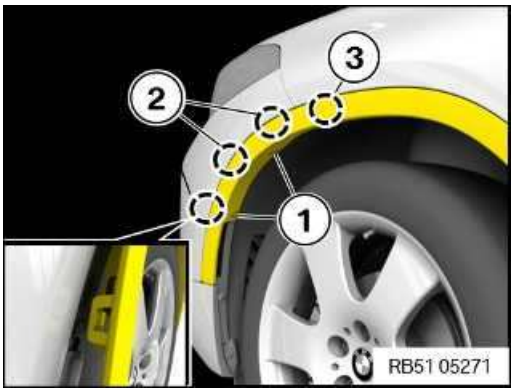


- Check clips (1) for damage, and replace if necessary.



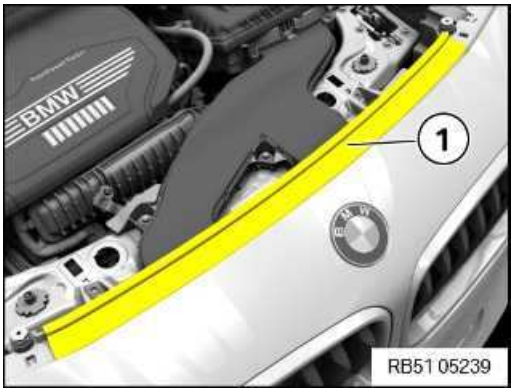
- Check the retaining lugs (1) for damage and replace the front wheel arch trim where required.

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- Clip the front wheel arch trim into the clip (3) in the area of the bumper panel and into the latch mechanisms (2).
- Mount blind rivet (1) using the special tool **0 496 521 (00 2 230)**.

15 – Install the center front bonnet seal



- Press the centre front bonnet seal (1) down into the guide.
- Make sure the centre front bonnet seal (1) is fitted correctly.

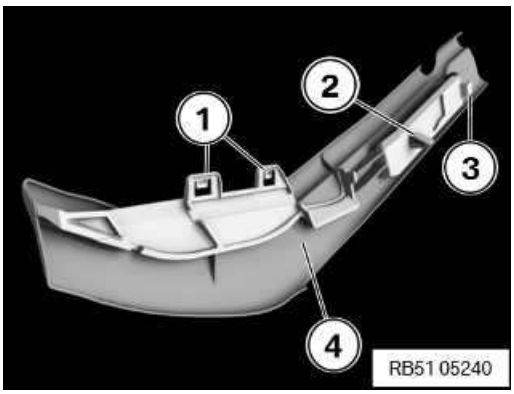
16 – Install both bonnet seals on the side

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Installing seal for side bonnet**

Check



- Check latch mechanisms (1) and (2) and also the guide (3) on the bonnet seal on the side (4) for damage.

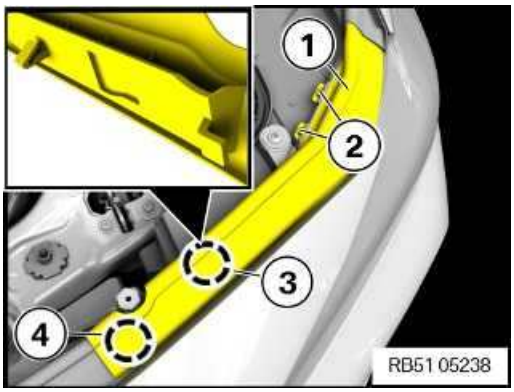
Result

» Latch mechanisms (1), (2) or the guide (3) are damaged.

Measure

- Renew the bonnet seal on the side (4).

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- Insert the bonnet seal on the side (1) in the guide (4).
- Clip in the bonnet seal on the side (1) in the inner latch mechanism (3) and the outer latch mechanisms (2).

Additional Information

Overview of Tightening Torques

Headlight support bracket to bonnet lock support			Used in step 9
Hexagon screw M6x20		Tightening torque	8 Nm

Headlight support bracket to bonnet lock support			Used in step 9
NutsM6		Tightening torque	8 Nm

Headlight to headlight support bracket			Used in step 10
M6x35 screw		Tightening torque	5 Nm

Headlight to carrier support extension			Used in step 10
Multi-purpose hexagon screw with washer		Tightening torque	5 Nm

Bumper panel to headlight			Used in step 11
Thermoplastic multi-purpose bolt		Tightening torque	2,5 Nm

Bumper panel to air duct			Used in step 11
Screw M6		Tightening torque	4,6 Nm

Front bumper panel to front side panel			Used in step 11
Screw TS5X35		Tightening torque	3 Nm

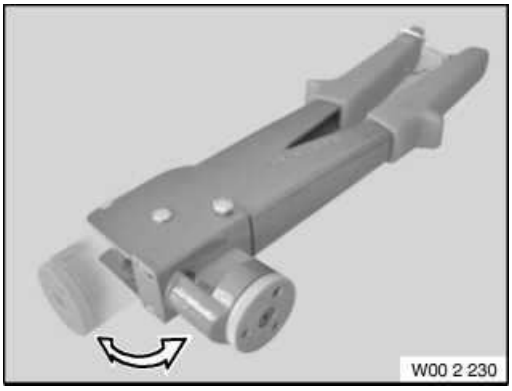
Front bumper panel to underbody panelling			Used in step 11
Thermoplastic hexagon screw		Tightening torque	2,5 Nm

Front wheel arch cover to front bumper panel			Used in step 13
Hexagon screw for thermoplastic plastic		Tightening torque	2,6 Nm

Overview of Special Tools

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0 496 521 (00 2 230) Pliers



Common	Used in step 13 14
Usage	(Blind rivet pliers for plastic rivets) For shaft diameters of 3.5 mm, 3.9 mm and 4.5 mm
Included in the tool or work	
Storage location	C25
Replaced by	
In connection with	
SI-Number	01 17 08 (478)

Links

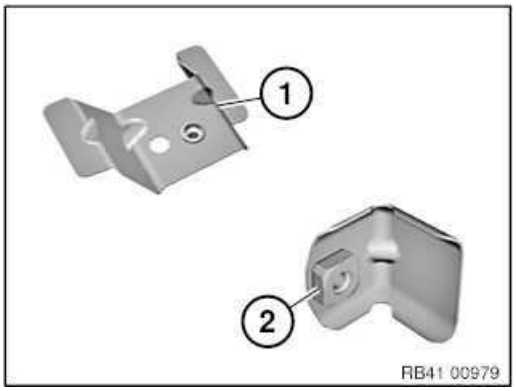
General repair instructions	Used in step
63 12 ... US version: Check/set the horizon lock for headlight replacement.	10

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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!



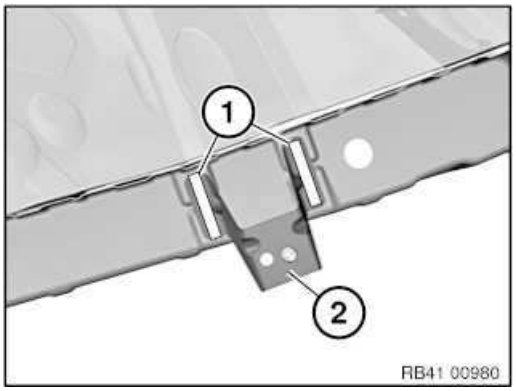
Following new body parts are required (refer to Electronic Parts Catalogue):

- (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

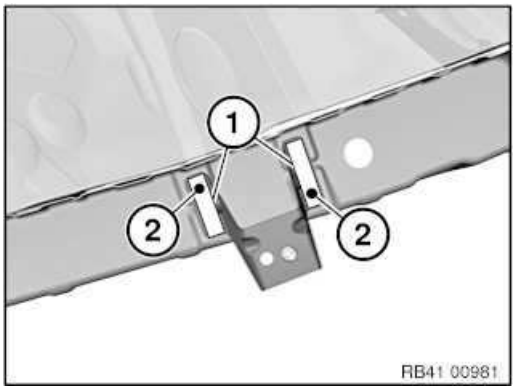
Removal of side wall holder (variant 1):



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.

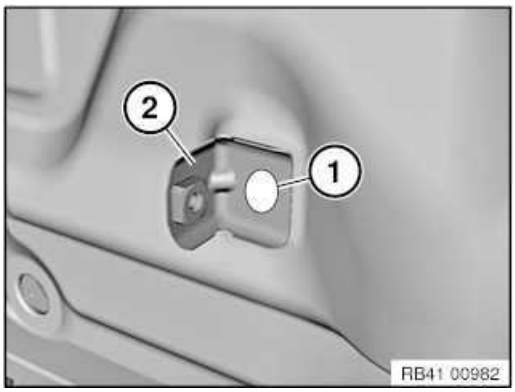
Installation of side wall holder:

Clean all bonding surfaces with cleaning agent R1.

Apply adhesive to bonding surfaces.

Install new part and rivet with blind rivets.

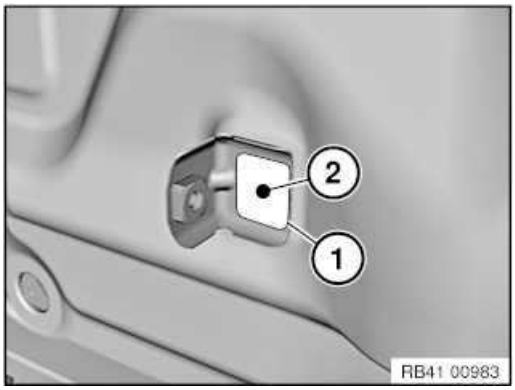
Removal of side wall holder (variant 2):



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 34 060 Replace tail panel outer section and inner section

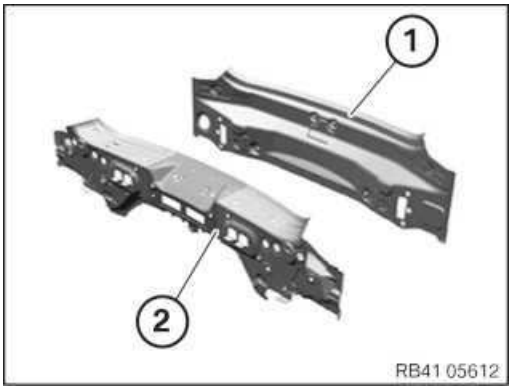
TECHNICAL INFORMATION

- 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 – Supplying the new parts required



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

  Rear trim panel(1)

  Rear inner trim panel(2)

TECHNICAL INFORMATION

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

- Supply the following consumables:

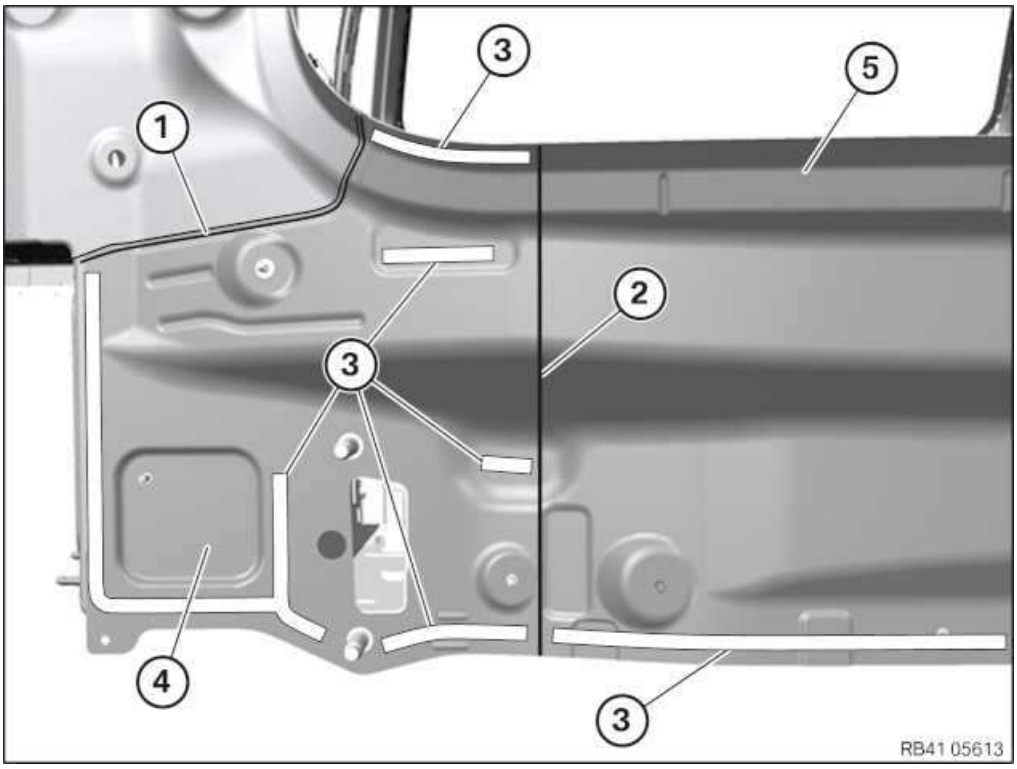
Material	Quantity
Adhesive K5b	1
Adhesive K5a	1
Blind rivet N3	55
Punch rivet N4	30
Cleaning agentR1	1
Cleaning agentR2	1
EMC screw	6
Sealant D1	
Cavity sealing wax remover	

2 – Removing the tail panel

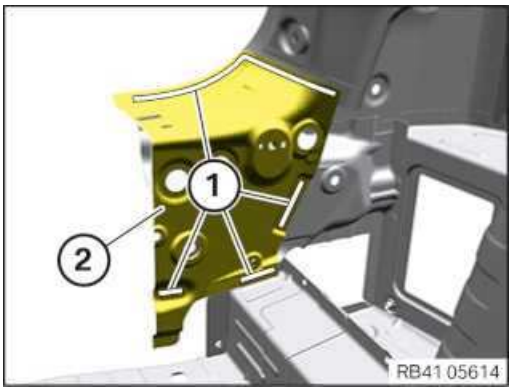
NOTICE

Perform the operations on the left and right side.

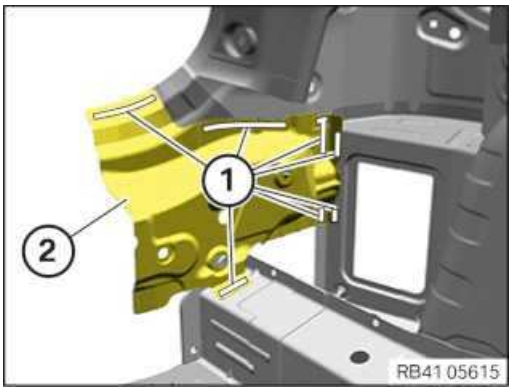
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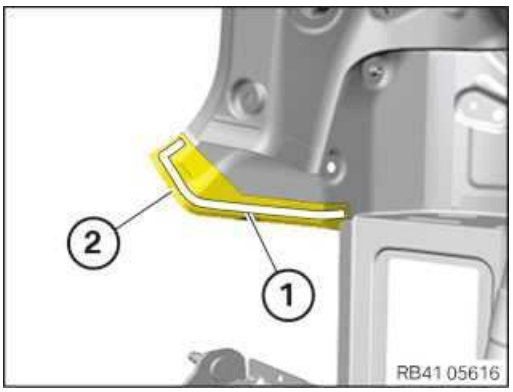
- Make the separating cut (1) according to the schematic diagram. Thereby disconnect only the outer panel.
- Make the separating cut (2) according to the schematic diagram. Completely cut through the tail panel at the same time.
- Loosen welded connections in areas (3).
- Remove sections (4) and (5).



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



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



- Remove welded connections in areas (1) and remove metal section (2).

3 – Prepare new part

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RISK OF DAMAGE

Damage to the spindle drive.

Moving the tailgate manually can damage the spindle drive.

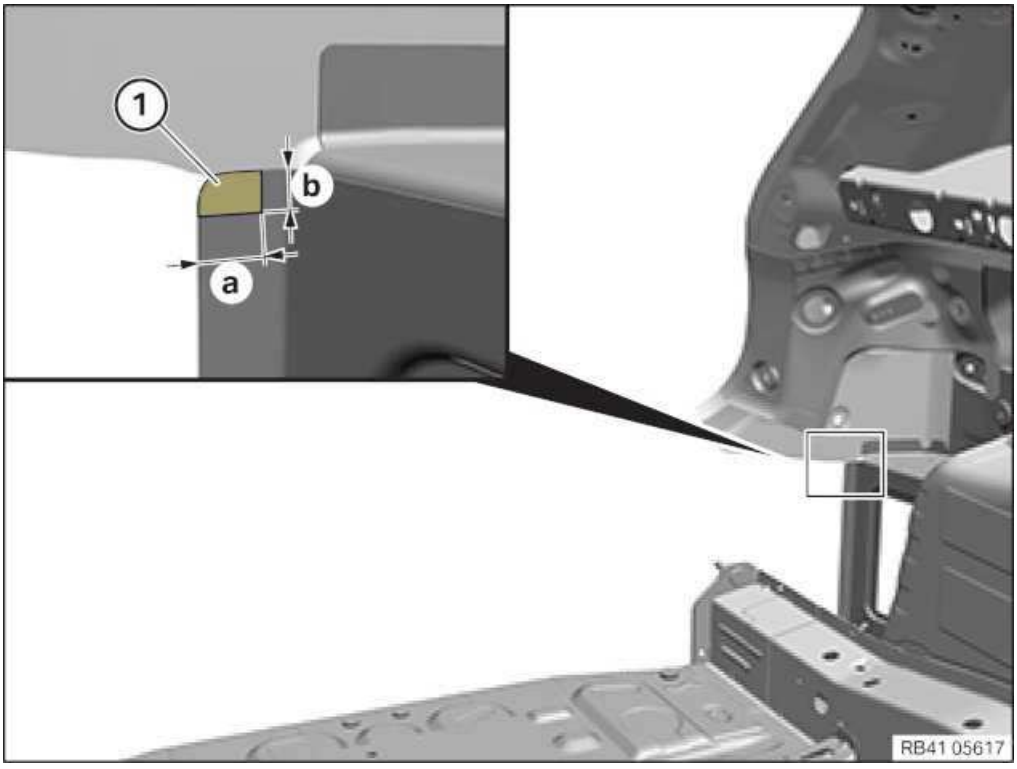
- only move rear lid slowly by hand.

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

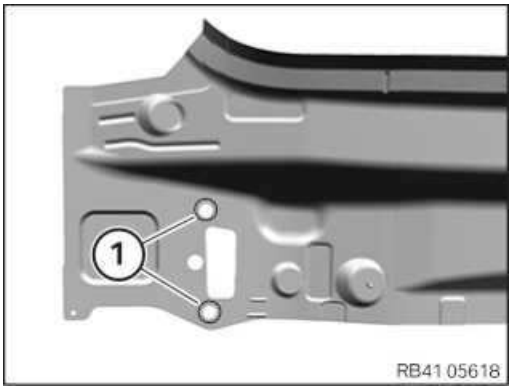
Perform the operations on the left and right side.



- Separate metal section (1) in accordance with the specified dimensions.

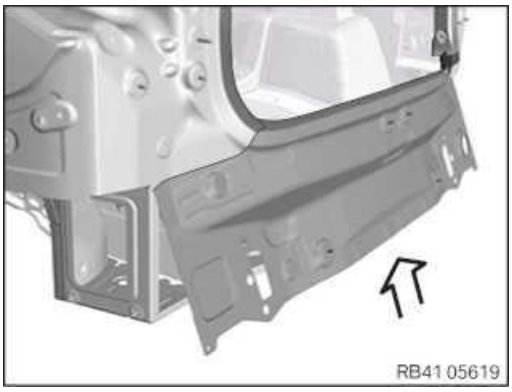
  Dimension a = 15 mm

  Dimension b = 10 mm

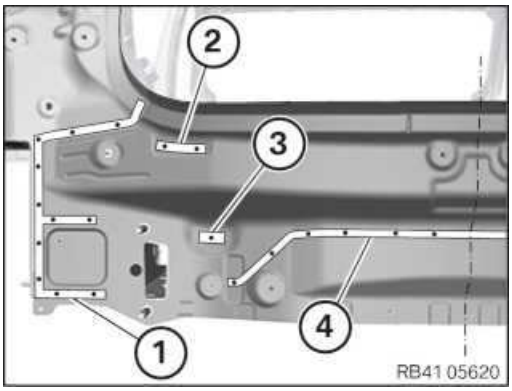


- If necessary, increase size of bore holes (1) by a maximum of 10 mm in diameter.

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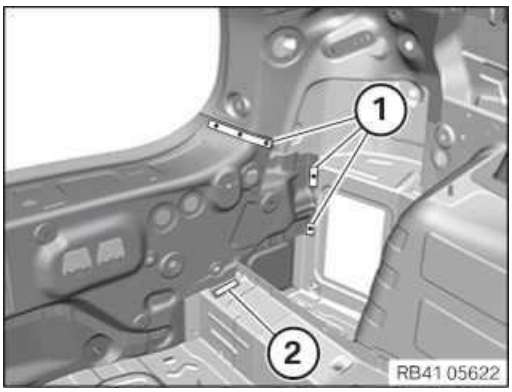


- Adjust and secure the outer section of the rear trim panel in combination with the tailgate and rear lights.



- Adjust and secure the inner section of the rear trim panel in combination with the tailgate and rear lights.
- Areas (1) to (4): Drill bore holes with ⌀ 4.2 mm for blind rivets.

Area	Number
1	11
2	2
3	1
4	6



- In areas (1), set 5 bore holes with diameter 4.2 mm for the blind rivets.
- Prepare areas (2) for joining by MAG welding.

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

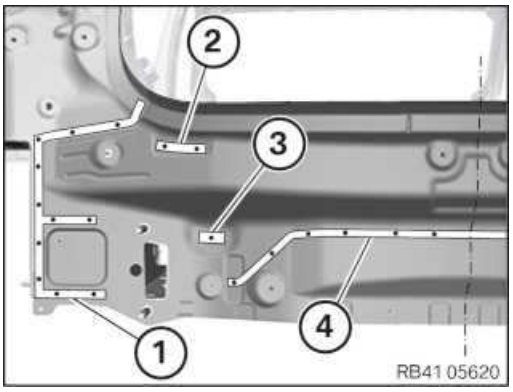
- Apply adhesive K5 to bonding surfaces .

Adhesive

Body adhesive K5	195 ml	83192157298

Adhesive

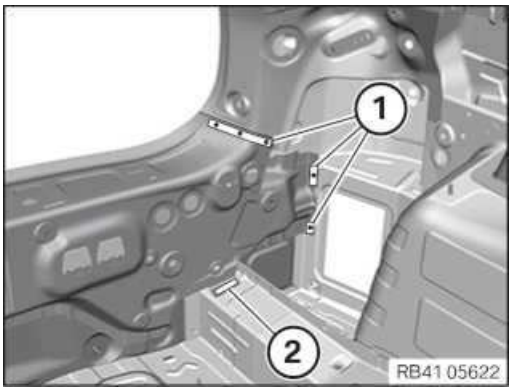
Body adhesive K5	50 ml	83192158654



- Install the new parts and rivet in the areas (1) to (4) with blind rivets N3.

Expendable materials

Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421

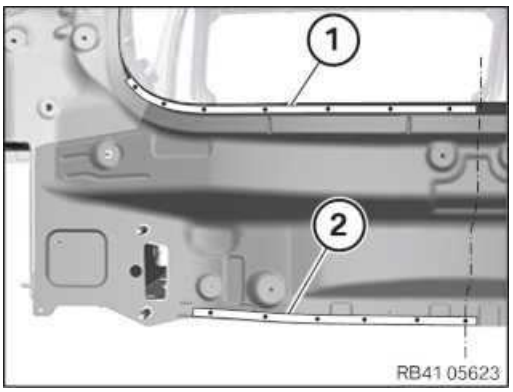


- In the areas (1), rivet the new part with blind rivets N3.

Expendable materials

Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421

- Weld the new part in area (2).



- In the areas (1) and (2), rivet the new parts with punch rivets N4.

Area	Number
1	7
2	6

Expendable materials

Punch rivet N4 Ø 3 mm ; 4 mm long		83192457307

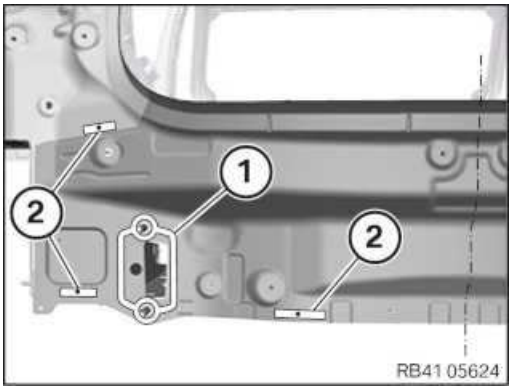
▸ **Install the EMC screw (EMC = electromagnetic compatibility)**

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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



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 ... 0 Contents of Body, General	
41 00 ... Repair techniques, repair stage 2	

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41 34 038 Replacing outer tail panel section

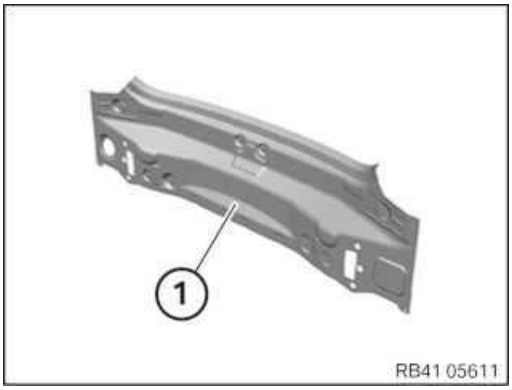
TECHNICAL INFORMATION

- 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 – Supplying the 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

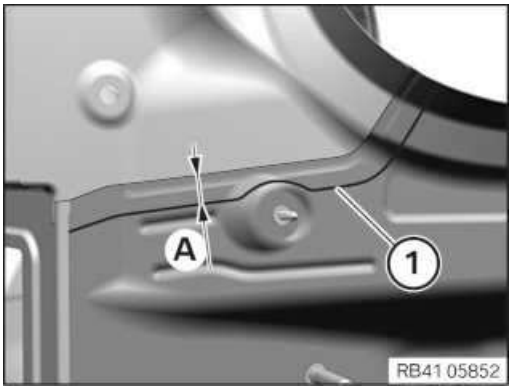
- Supply the following consumables:

Material	Quantity
Adhesive K5b	1
Blind rivet N3	25
Punch rivet N4	45
Cleaning agentR1	1
Cleaning agentR2	1
EMC screw	6
Sealant D1	
Cavity sealing wax remover	

2 – Remove tail panel outer section.

NOTICE

Perform the operations on the left and right side.

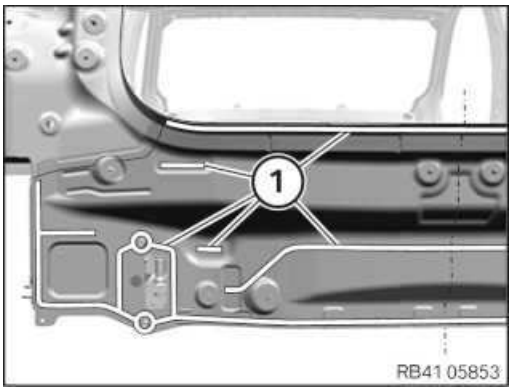


- Mark severance cut (1) in accordance with dimension and disconnect. Disconnect only the outer panel.

  Dimension a = approx. 20 mm below the component edge of the rear light fixture.

Note: Install the new part overlapping in area of the separating cut.

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- Open the welded connections in the areas (1) to and remove the tail panel.

3 – Prepare new part

RISK OF DAMAGE

Damage to the spindle drive.

Moving the tailgate manually can damage the spindle drive.

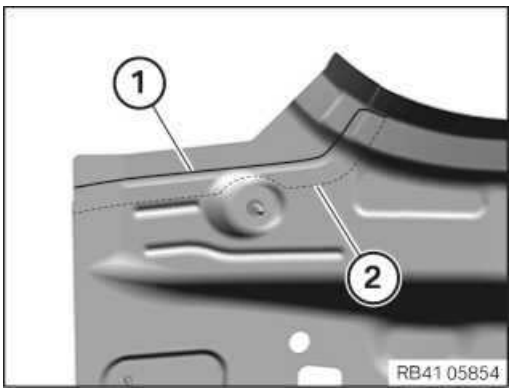
- only move rear lid slowly by hand.

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

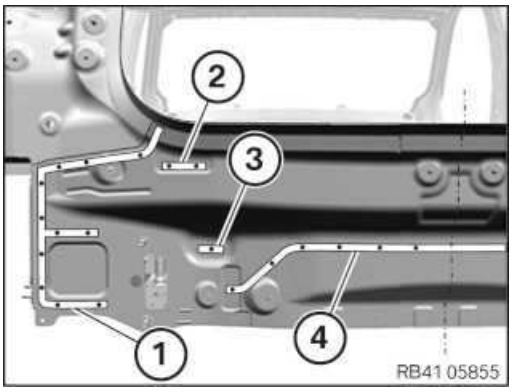
Perform the operations on the left and right side.



- Mark the separating cut (1) on the new part to reflect the separating cut on the vehicle + approx. 15 - 20 mm material allowance and carry out the cut.

  (2) = Separating cut on the vehicle

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- Adjust and secure the tail panel in combination with the tailgate and rear lights.
- In areas (1) to (4), drill bore holes with Ø 4.2 mm for blind rivets.

Area	Number
1	11
2	2
3	1
4	6

- Remove new part and deburr bore holes.

4 – Install tail panel outer section

NOTICE

Perform the operations on the left and right side.

- 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.

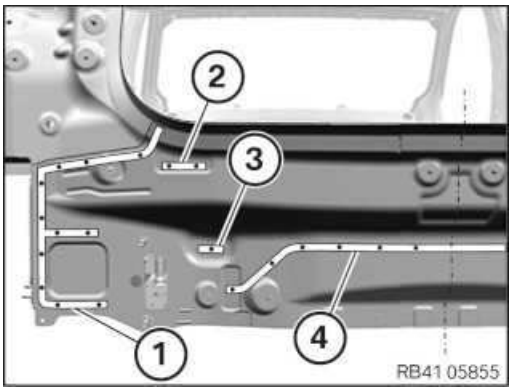
Expendable materials

Cleaning agent R1	100 ml, Bottle	83192211217

- Apply adhesive K5b to bonding surfaces.

Adhesive

Body adhesive K5	195 ml	83192157298

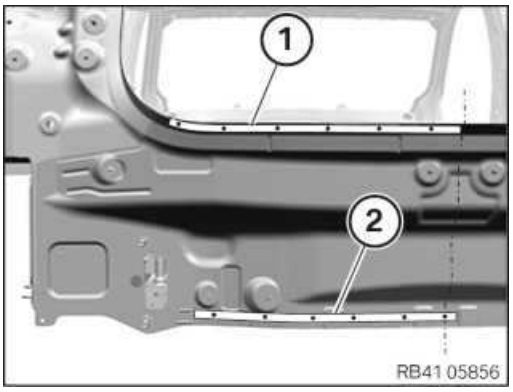


- Install the new part and rivet in areas (1) to (4) with blind rivets N3.

Expendable materials

Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421

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- Rivet the rear trim panel in the areas (1) and (2) with punch rivets N4.

Area	Number
1	6
2	6

Expendable materials

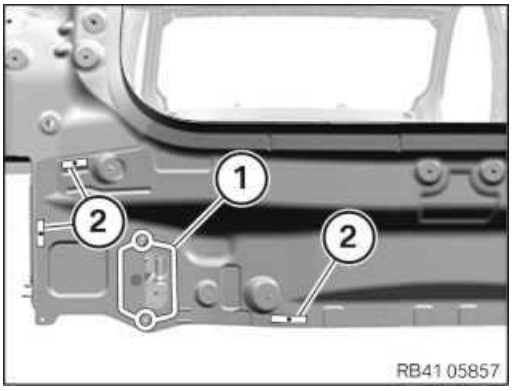
Punch rivet N4 Ø 3 mm ; 4 mm long		83192457307

▸ **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.
- 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
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41 00 ... BMW/MINI bonding instructions	3
41 00 ... 0 Contents of Body, General	
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.

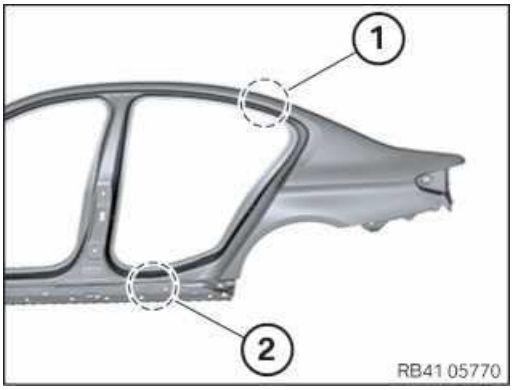
The bonding/riveting repair technique is **always** described in detail in the repair instructions.

Quality standards must be met.

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

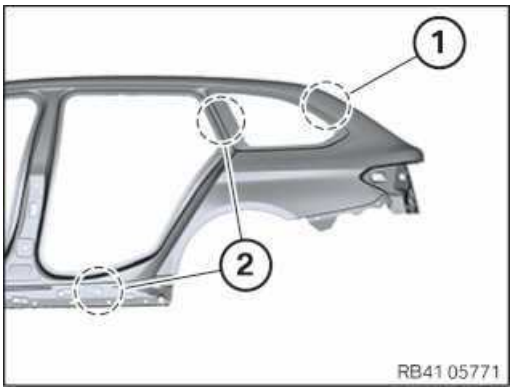
When replacing the rear side panel, reinforcement plates are bonded or welded on the separation points.



Applicable to Saloon, hatchback, Coupé.

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

Bonding is done in area (2).

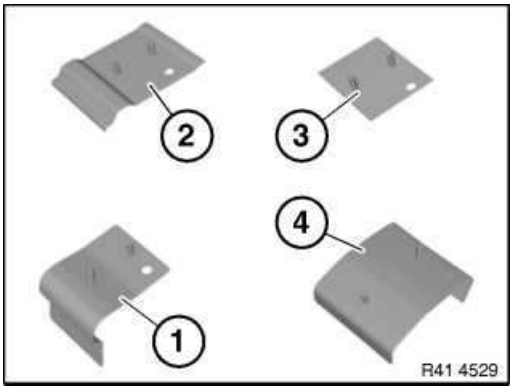


Applicable to Touring, X models, Gran Coupé, Gran Turismo.

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

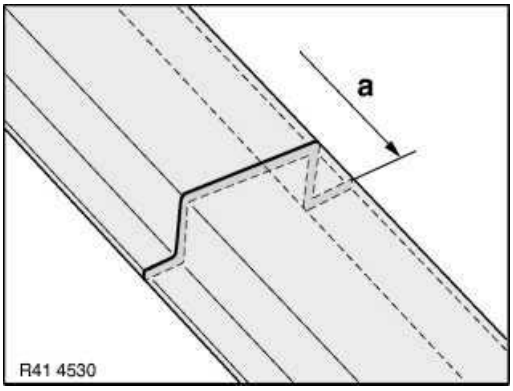
(3) Reinforcement plate, universal

(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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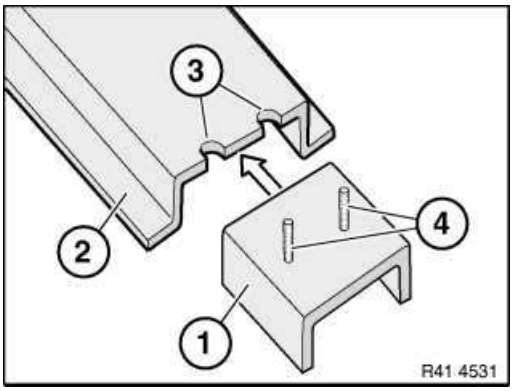


Mark side panel according to dimension a and detach it.

Preparation of the reinforcement plate (bonded or welded)

Some reinforcement plates are oversized.

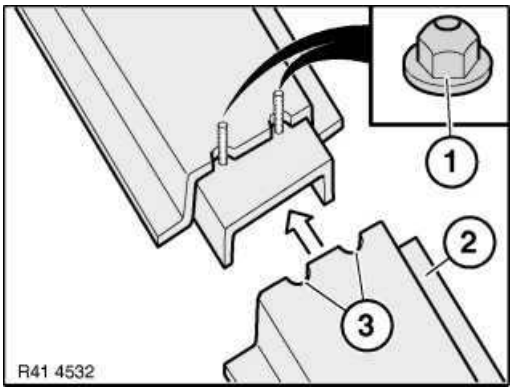
It may be necessary to rework the reinforcement plates at the edges or cut them to size until they rest against the outer skin free of tension.



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:

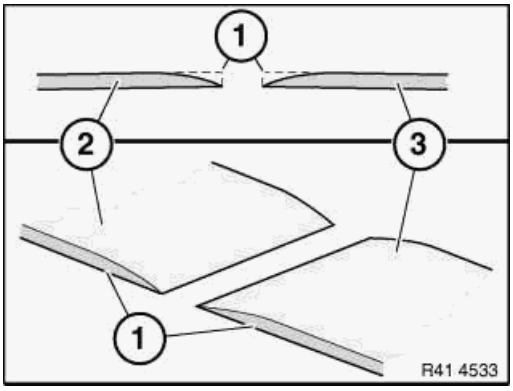
Width of joint between new part and component on vehicle approx. 5 - 8 mm (at least 30 mm flange width per side).

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.

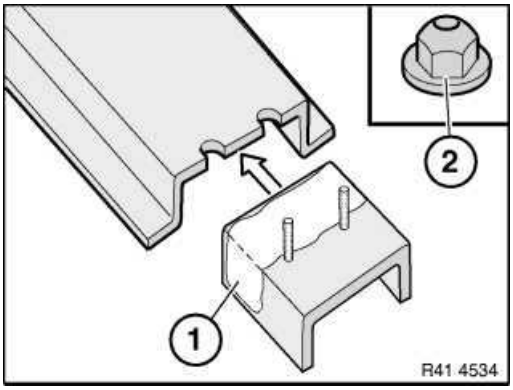
Chamfer cutting edges (1) on joint by grinding.

(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.

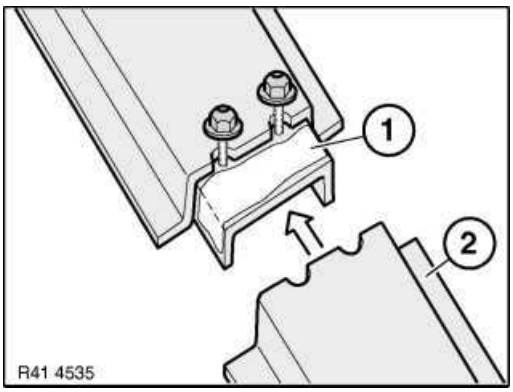
Apply additional adhesive to the outer skin around radii.

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.

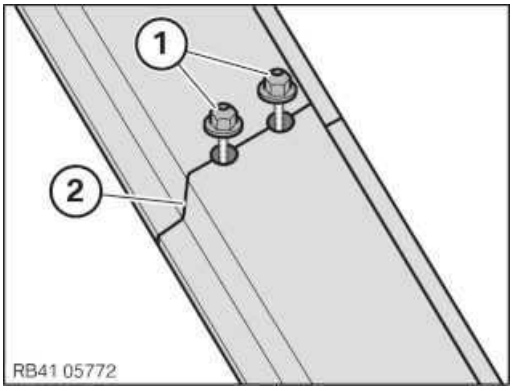
<u>After adhesive has hardened:</u>

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.

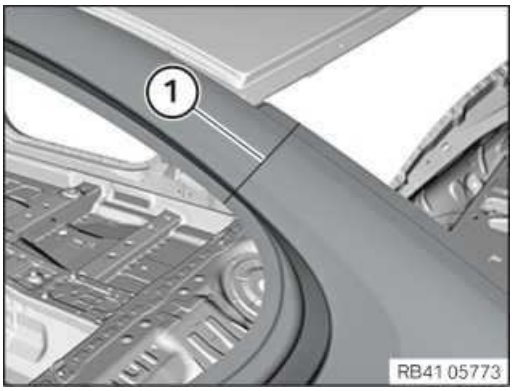
Tightening torque 41 14 1AZ.

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

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

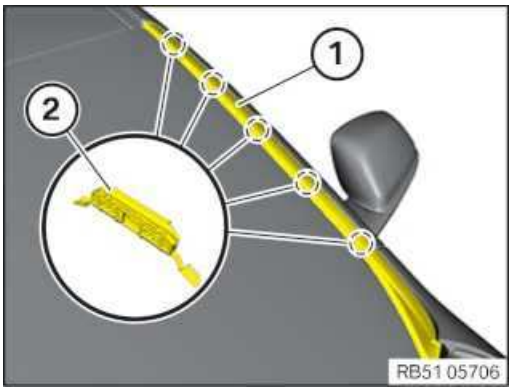
1 – Remove the gutter strip on the windscreen

RISK OF DAMAGE

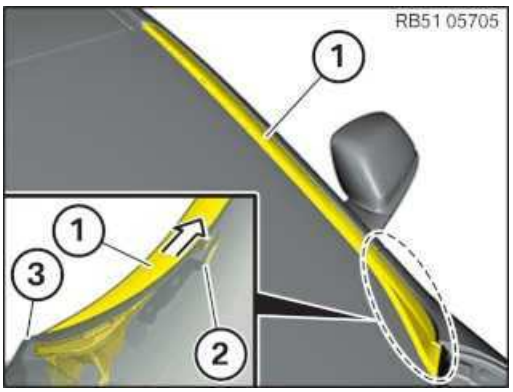
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



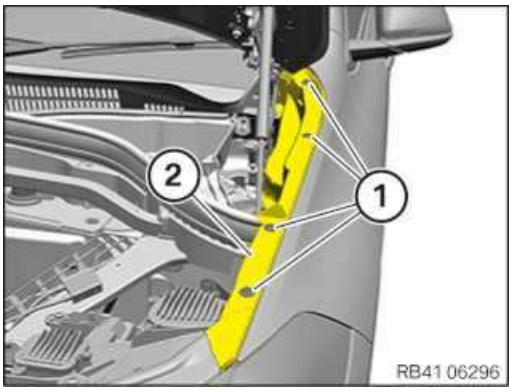
- Unclip the gutter strip (1) from the clamps (2) beginning at the roof to the top.



- Pull out the gutter strip (1) from the guide (2) in direction of arrow and carefully feed out at the side panel (3).

2 – Removing sealing side panel

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- Loosen the expanding rivet (1).
- Remove sealing (2) of the side panel.

3 – Removing the wheel



- 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.
- Unscrew the wheel bolts (arrows) and remove the wheel.

  Use the matching adapter from tool set (wheel bolt adapter set) to loosen and tighten down the wheel bolt with security code.

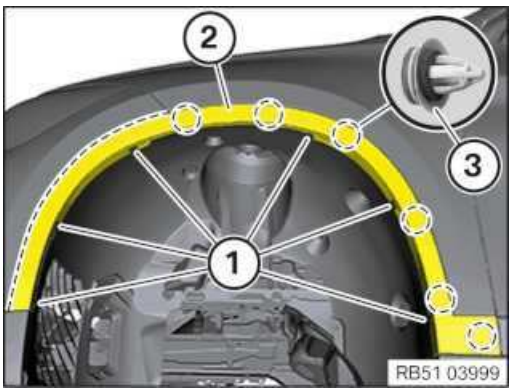
4 – Remove the front wheel arch trim

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

NOTICE

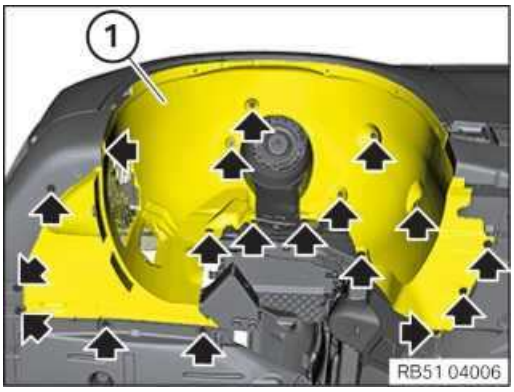
Description is for left component only. Procedure on the right side is identical.



- Remove the blind rivets (1).
- Release the wheel arch trim (2) in the area of the side panel from the clips (3).
- Release the wheel arch trim (2) from the latch mechanisms on the bumper and remove.

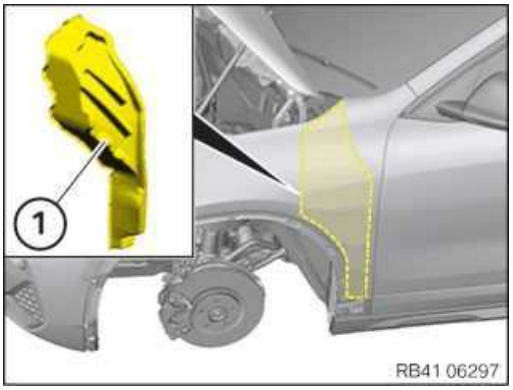
5 – Remove front wheel arch cover

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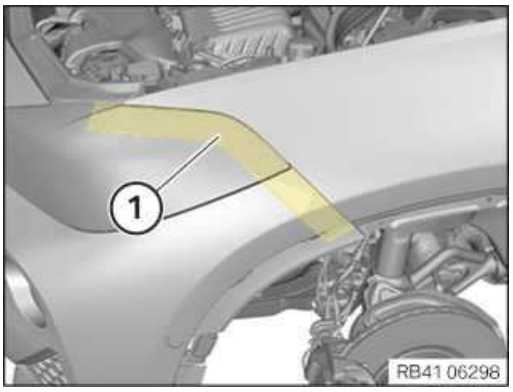


- Unscrew all bolts and nuts (arrows).
- Guide the wheel arch cover (1) out.

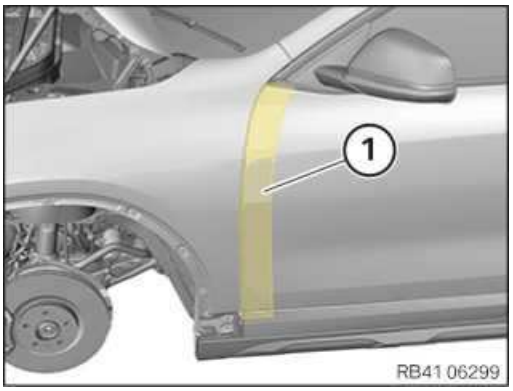
6 – Removing the front left side panel



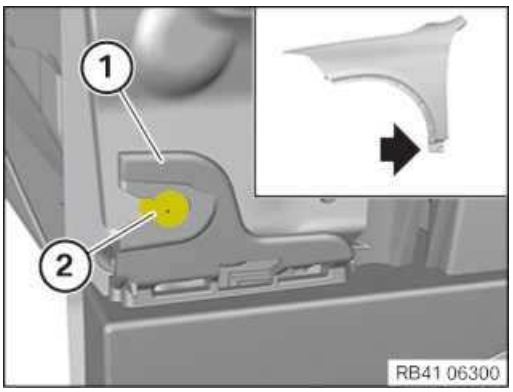
- Remove the sound insulation (1).



- Mask the area (1) around the headlights and at the bumper panel using plastic adhesive tape.

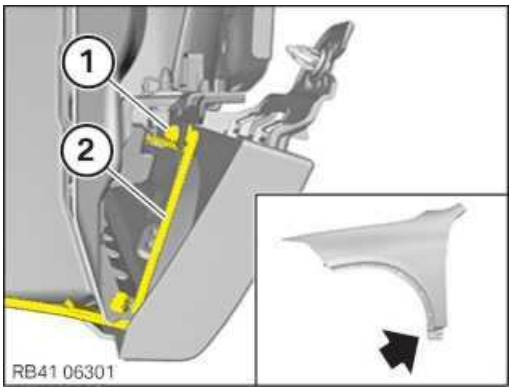


- Mask the area (1) of the door with plastic adhesive tape.

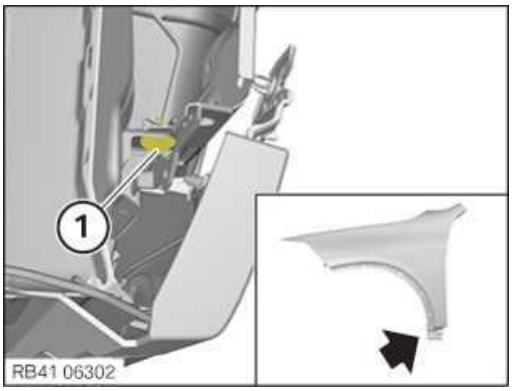


- Release the clip (1) and release the side sill trim panel (2) on the side panel.

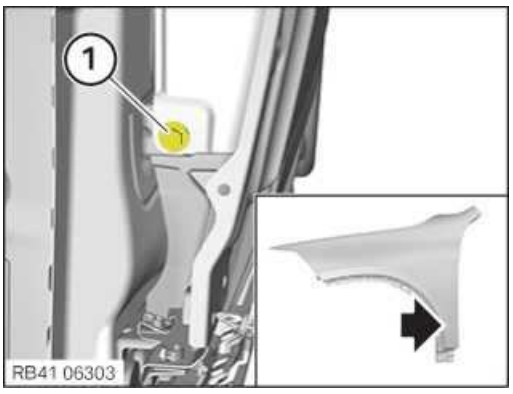
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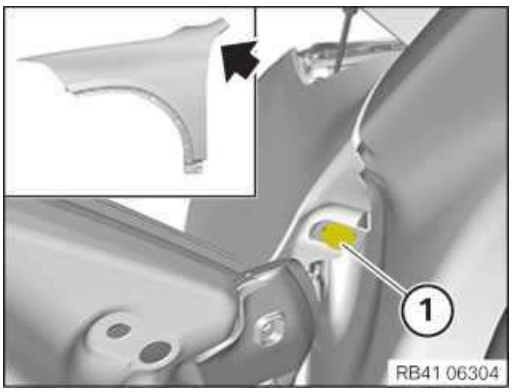
- Release the clip (1) and release the wiring harness (2) from the side panel.



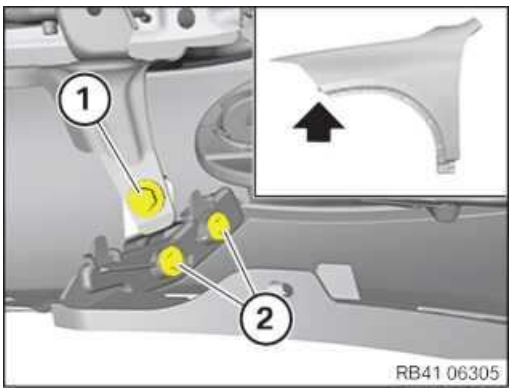
- Loosen screw (1).



- Loosen screw (1).

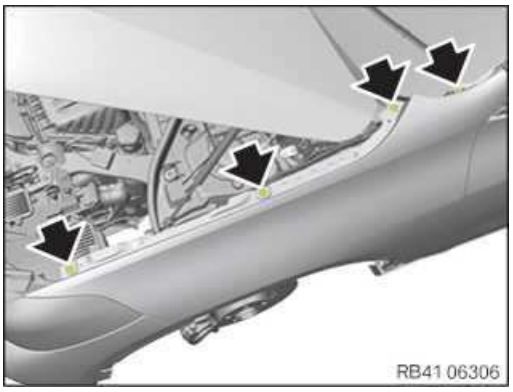


- Open the front door.
- Loosen screw (1).
- Close front door.



- Loosen screws (1) and (2).

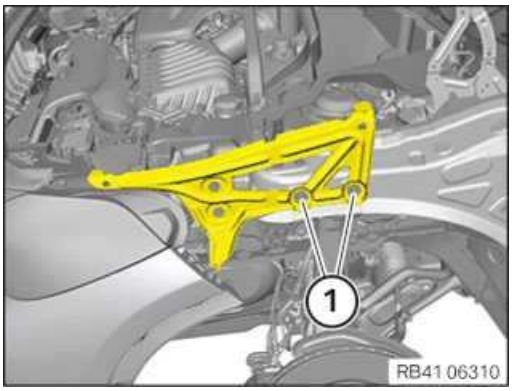
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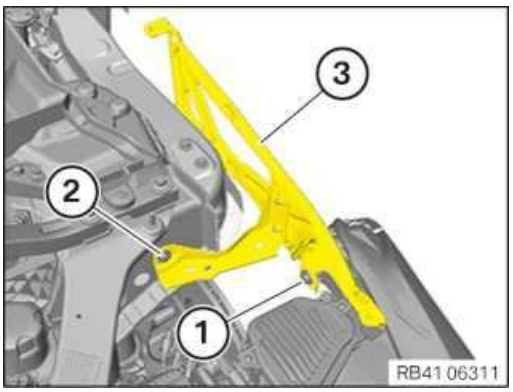
- Release the screws (arrows) and remove the side panel.

MAIN WORK

7 – Removing the front holder

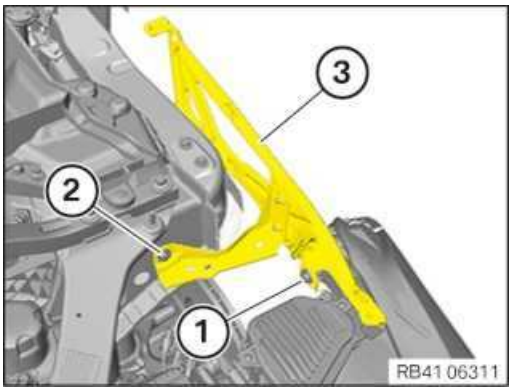


- Loosen screws (1).



- Loosen screw (1).
- Loosen the screw (2) and remove the holder (3).

8 – Installing a new front holder



- Position holder (3).
- Tighten down screw (2).

Cross support to wheel arch

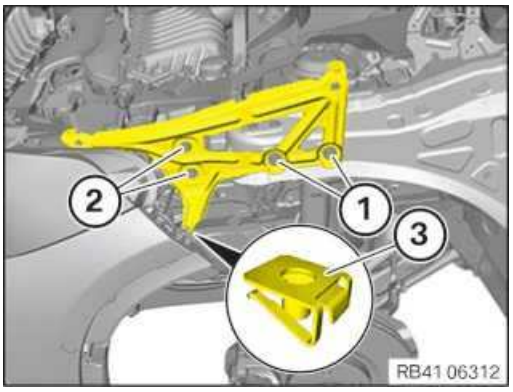
M8 screw		Tightening torque	8 Nm

- Tighten down screw (1).

Headlight to carrier support extension

Multi-purpose hexagon screw with washer		Tightening torque	5 Nm

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- Tighten the screws (1).

Carrier support extension to carrier support

M8 screw		Tightening torque	19 Nm

- Tighten down screws (2).

Carrier support extension to cross support

Screw M6		Tightening torque	8 Nm

- Remount the sheet metal nut (3) on the new bracket.

POSTPROCESSES

9 – Installing the left front side panel

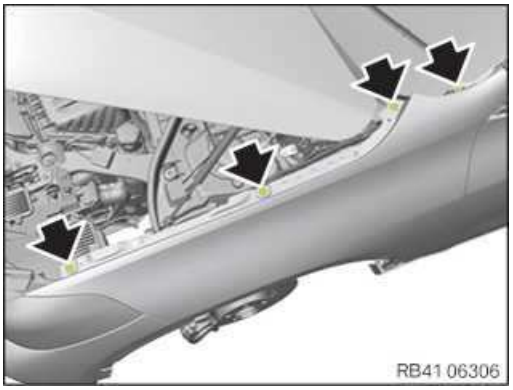
- Install side panel with a second person helping.
- Screw in all screws on the side panel until it is just about still possible to move the side panel.

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

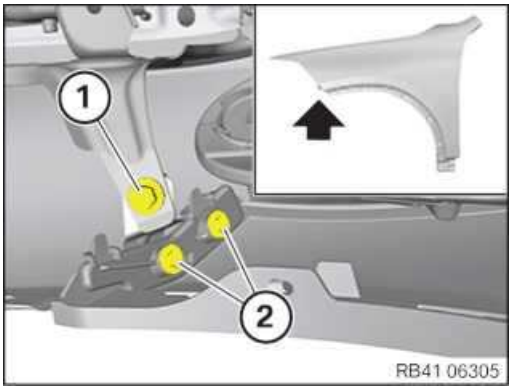
- Adjust gap dimensions.



- Tighten the screws (1).

Front side panel to holder for front side panel

Screw M6		Tightening torque	8 Nm



- Tighten down screw (1).

Front side panel to holder for front side panel

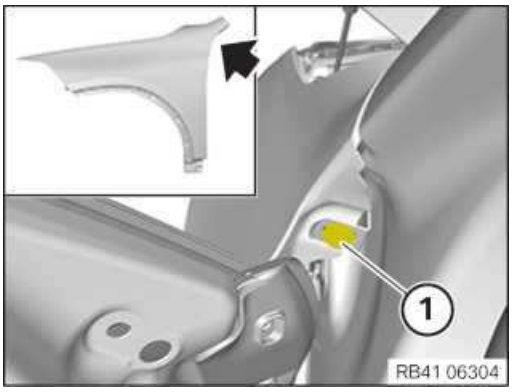
Screw M6		Tightening torque	8 Nm

- Tighten down screws (2).

Front bumper panel to front side panel

Screw TS5X35		Tightening torque	3 Nm

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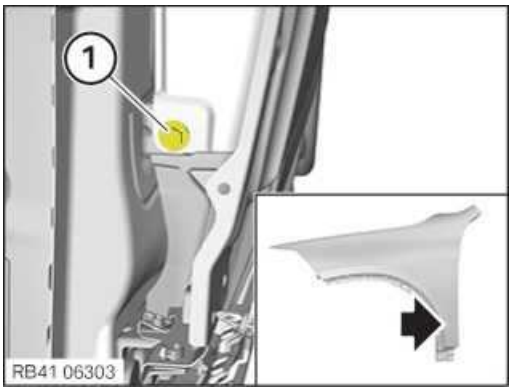


- Open the front door.
- Tighten down screw (1).

Front side panel to holder for front side panel

Screw M6		Tightening torque	8 Nm

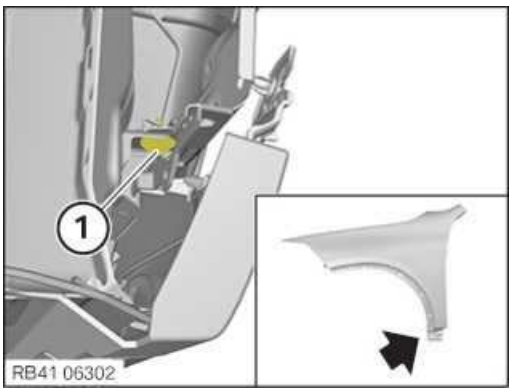
- Close front door.



- Tighten down screw (1).

Front side panel to holder for front side panel

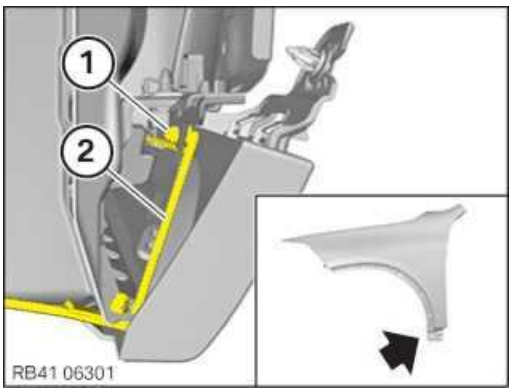
Screw M6		Tightening torque	8 Nm



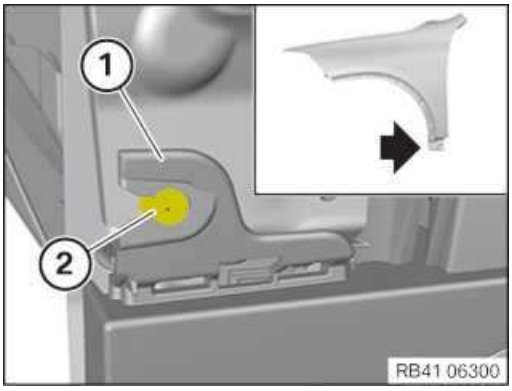
- Tighten down screw (1).

Front side panel to holder for front side panel

Screw M6		Tightening torque	8 Nm

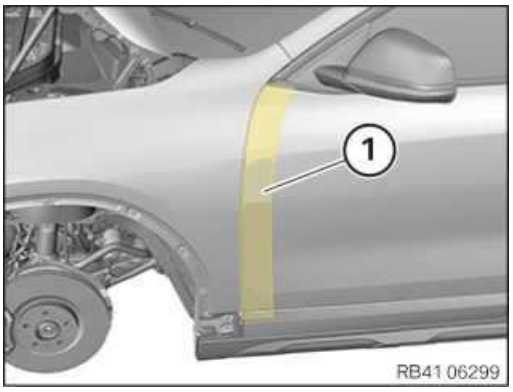


- Secure the wiring harness (2) including clip (1) at the side panel.

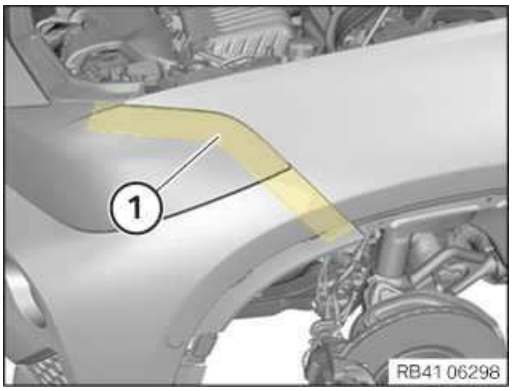


- Secure the side sill trim panel (2) including clip (1) on the side panel.

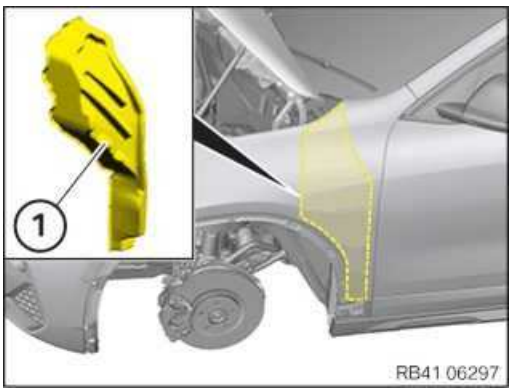
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- Remove protective film (1).

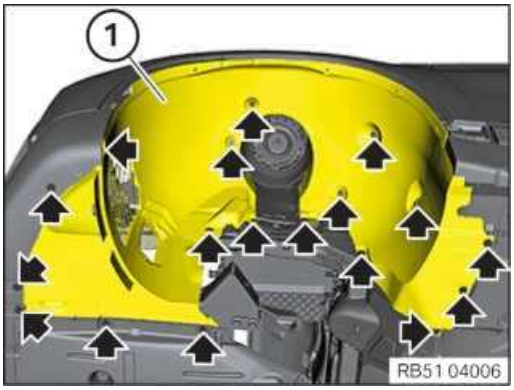


- Remove protective film (1).



- Install the sound insulation (1).

10 – Installing the front wheel arch cover



- Guide the wheel arch cover (1) in.
- Tighten all bolts and nuts (arrows).

Wheel arch cover to body

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

Wheel arch cover to body

Screw		Tightening torque	2,5 Nm

Wheel arch cover to body

Plastic nut		Tightening torque	3 Nm

11 – Installing front wheel arch trim

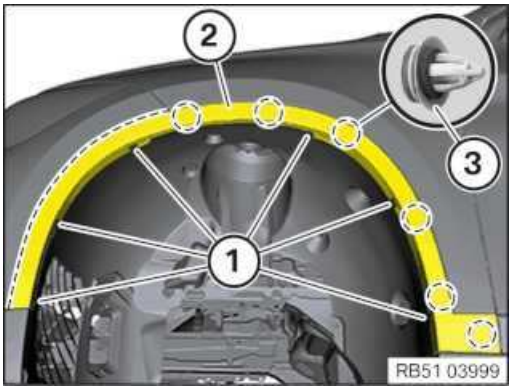
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NOTICE

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.



- Check the clips (3) for damage and renew where required.

  The clips (3) must not be damaged or missing.
- Feed in wheel arch trim (2) and engage on the clips (3).
- Engage wheel arch trim (2) into the latch mechanisms on the bumper panel.
- Mount blind rivet (1) using the special tool **0 496 521 (00 2 230)**.

12 – 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**.

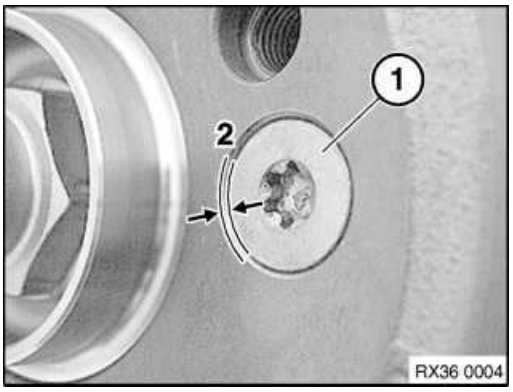
  Do not operate special tool **2 344 011** with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).
- In the event of grease residue in the area of the wheel bolt holes, remove and clean the brake disc.



- 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).

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- Renew mounting bolt (1).

  Parts: Mounting bolt

- Check that the mounting bolt (1) for the brake disc is securely seated.

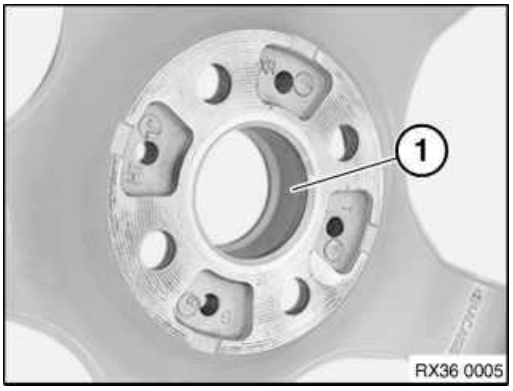
  The mounting bolt (1) for the brake disc may not protrude under any circumstances on the contact surface (2) between the brake disc and the wheel rim.

Brake disc to rear wheel hub

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub

M8	Renew screw.	Tightening torque	16 Nm



- Lightly grease the wheel centring (1) in the wheel rim; refer to additional information for grease for the wheel centring (1).

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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 the wheel bolts and threads for damage, renew the wheel bolts if necessary.
- Join and tighten the wheel bolts (arrows).

Wheel bolts

M 14/AF 17	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

13 – 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.

14 – Install the gutter strip on the windscreen

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RISK OF DAMAGE

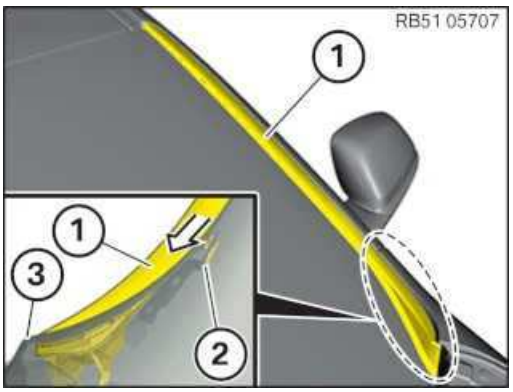
Scratches.

Tools and sharp-edged components can cause scratches.

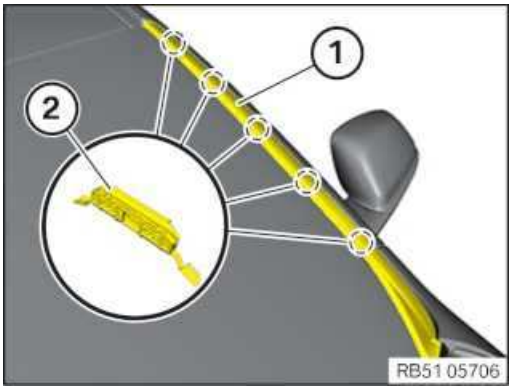
- Protect working area.
- Handle tools and components carefully.

TECHNICAL INFORMATION

Latch mechanisms, guides and mounting elements must not be damaged or missing.

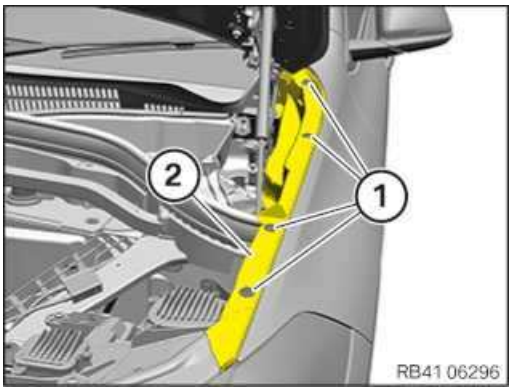


- Carefully feed in the gutter strip (1) at the side panel (3) and simultaneously feed into the guide (2) in direction of arrow.



- Clip in the gutter strip (1) at the bottom starting at the clamps (2).

15 – Installing side panel sealing



- Position seal (2) of the side panel.
- Mount the expanding rivets (1).

Additional Information

Overview of Tightening Torques

Cross support to wheel arch Used in step 8

M8 screw		Tightening torque	8 Nm

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Headlight to carrier support extension

Used in step 8

Multi-purpose hexagon screw with washer		Tightening torque	5 Nm

Carrier support extension to carrier support

Used in step 8

M8 screw		Tightening torque	19 Nm

Carrier support extension to cross support

Used in step 8

Screw M6		Tightening torque	8 Nm

Front side panel to holder for front side panel

Used in step 9

Screw M6		Tightening torque	8 Nm

Front bumper panel to front side panel

Used in step 9

Screw TS5X35		Tightening torque	3 Nm

Wheel arch cover to body

Used in step 10

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

Wheel arch cover to body

Used in step 10

Screw		Tightening torque	2,5 Nm

Wheel arch cover to body

Used in step 10

Plastic nut		Tightening torque	3 Nm

Brake disc to rear wheel hub

Used in step 12

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub

Used in step 12

M8	Renew screw.	Tightening torque	16 Nm

Wheel bolts

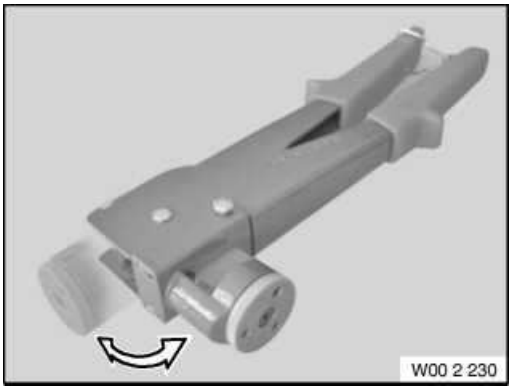
Used in step 12

M 14/AF 17	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

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0 496 521 (00 2 230) Pliers



Common	Used in step 11
Usage	(Blind rivet pliers for plastic rivets) For shaft diameters of 3.5 mm, 3.9 mm and 4.5 mm
Included in the tool or work	
Storage location	C25
Replaced by	
In connection with	
SI-Number	01 17 08 (478)

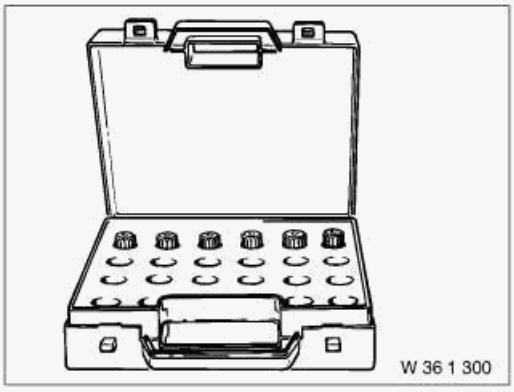
2 344 011 Tool



Common	Used in step 12
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:

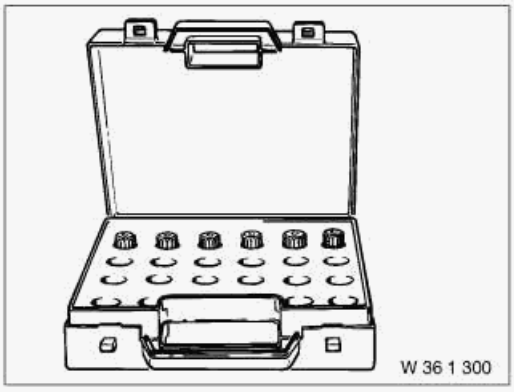
0 495 221 (36 1 323) Wheel stud



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	

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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	

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	

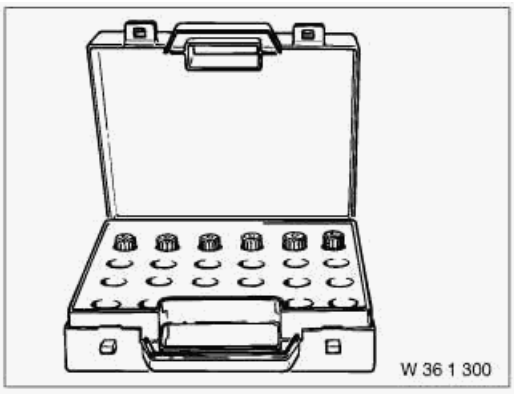
0 495 227 (36 1 329) Wheel stud



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	

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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	

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

Operating materials	Used in step
2.0 Grease for wheel centring	12

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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 – Removing the gutter strip on the right of the windscreen

NOTICE

Description is for left component only. Procedure on the right side is identical.

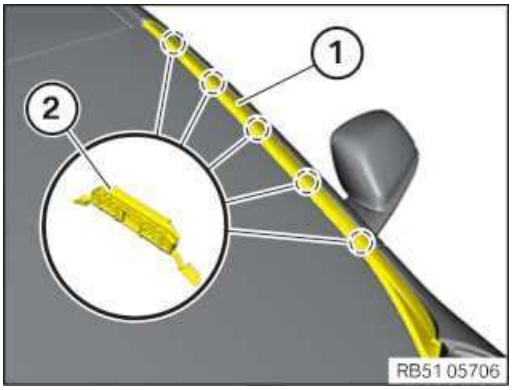
▸ **Remove the gutter strip on the windscreen**

RISK OF DAMAGE

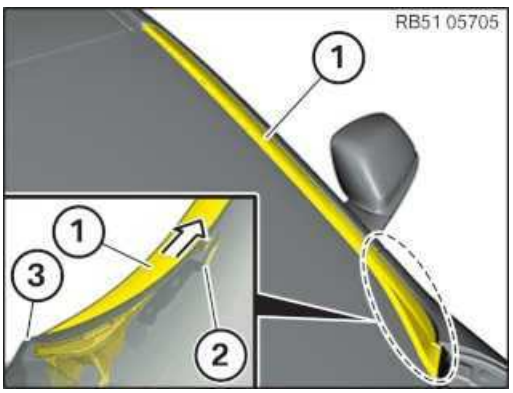
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Unclip the gutter strip (1) from the clamps (2) beginning at the roof to the top.



- Pull out the gutter strip (1) from the guide (2) in direction of arrow and carefully feed out at the side panel (3).

2 – Removing the wheel

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- 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.
- Unscrew the wheel bolts (arrows) and remove the wheel.

  Use the matching adapter from tool set (wheel bolt adapter set) to loosen and tighten down the wheel bolt with security code.

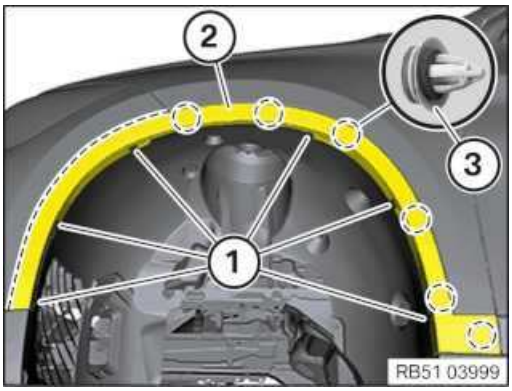
3 – Remove the front wheel arch trim

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.



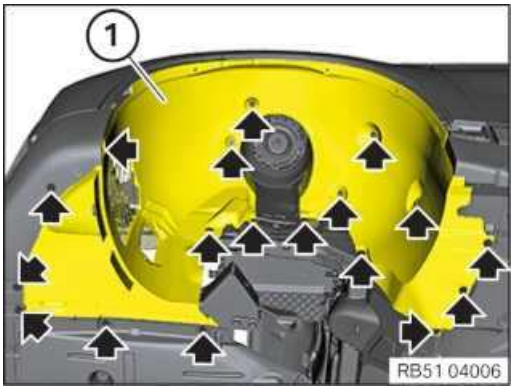
- Remove the blind rivets (1).
- Release the wheel arch trim (2) in the area of the side panel from the clips (3).
- Release the wheel arch trim (2) from the latch mechanisms on the bumper and remove.

4 – Removing the front right wheel arch cover

NOTICE

Description is for left component only. Procedure on the right side is identical.

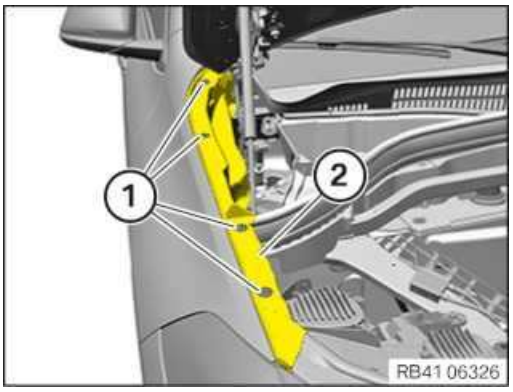
▸ **Remove front wheel arch cover**



- Unscrew all bolts and nuts (arrows).
- Guide the wheel arch cover (1) out.

5 – Removing side panel sealing

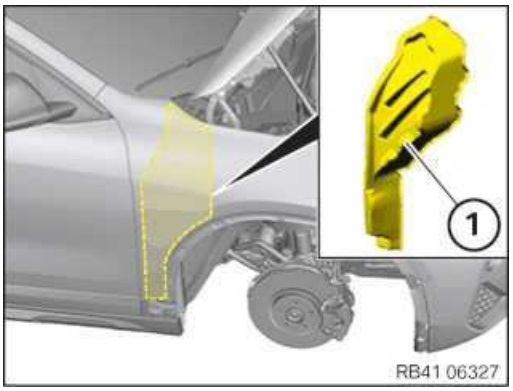
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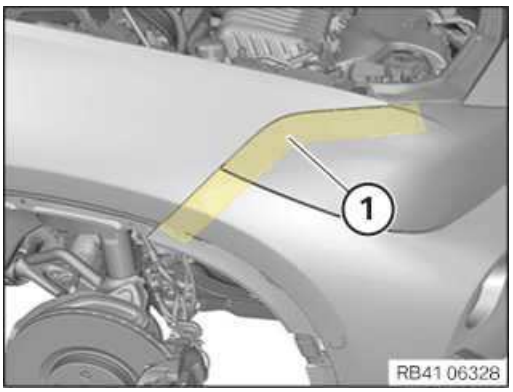
- Loosen the expanding rivet (1).
- Remove sealing (2) of the side panel.

MAIN WORK

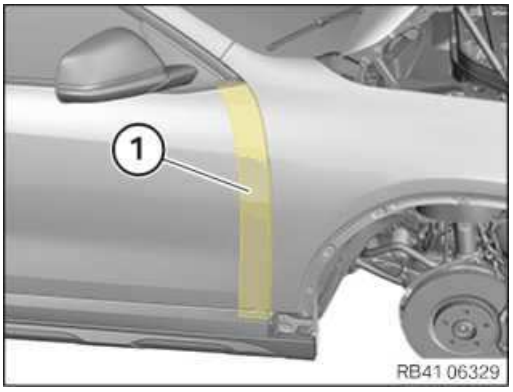
6 – Removing the front side panel on the right



- Remove the sound insulation (1).

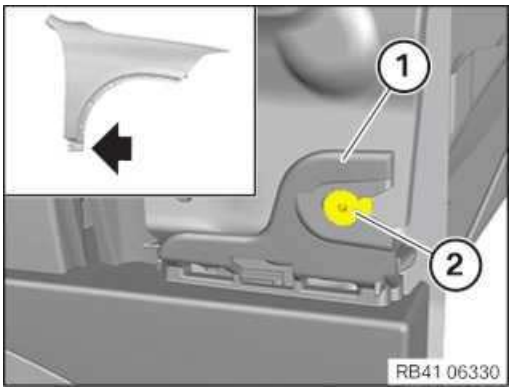


- Mask the area (1) around the headlights and at the bumper panel using plastic adhesive tape.

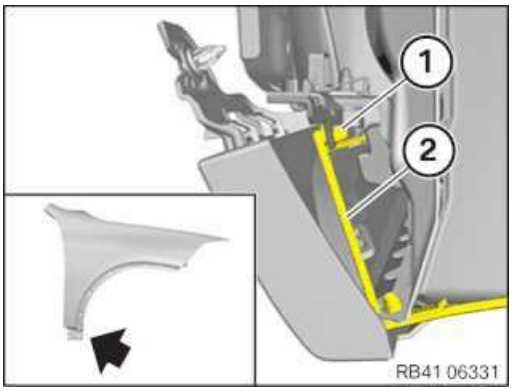


- Mask the area (1) of the door with plastic adhesive tape.

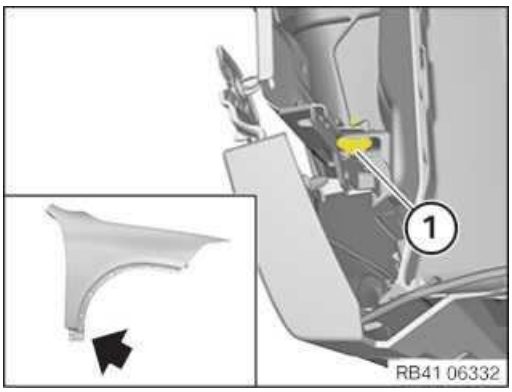
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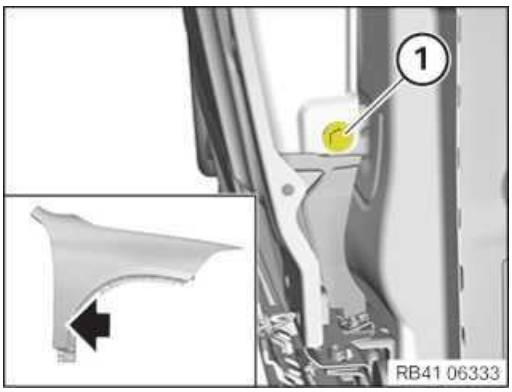
- Release the clip (1) and release the side sill trim panel (2) on the side panel.



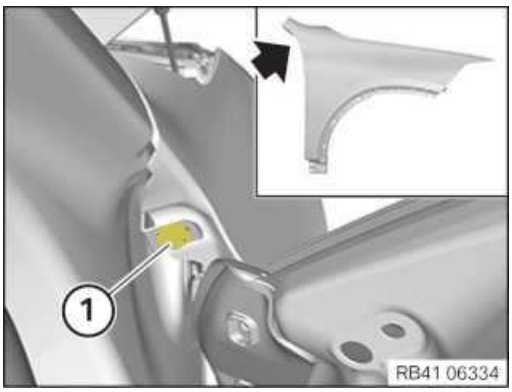
- Release the clip (1) and release the wiring harness (2) from the side panel.



- Loosen screw (1).

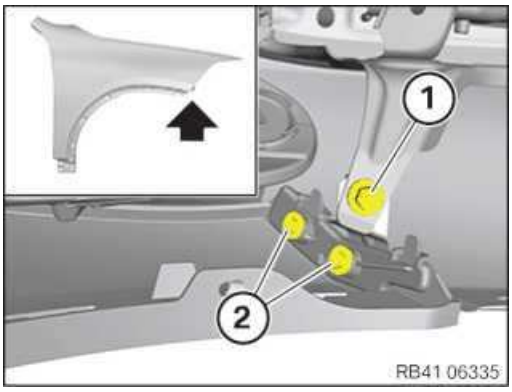


- Loosen screw (1).

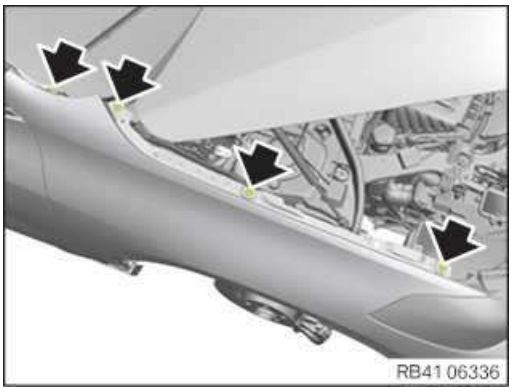


- Open the front door.
- Loosen screw (1).
- Close front door.

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- Loosen screws (1) and (2).



- Release the screws (arrows) and remove the side panel.

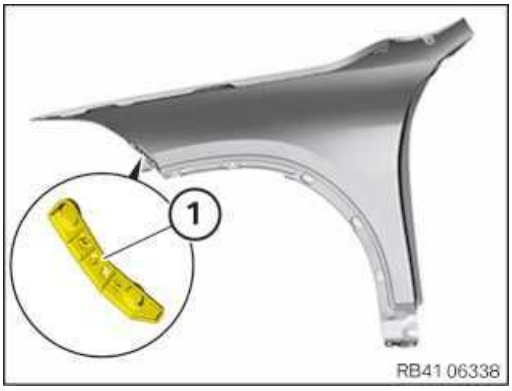
7 – Prepare new part

Prerequisite

New part is painted.

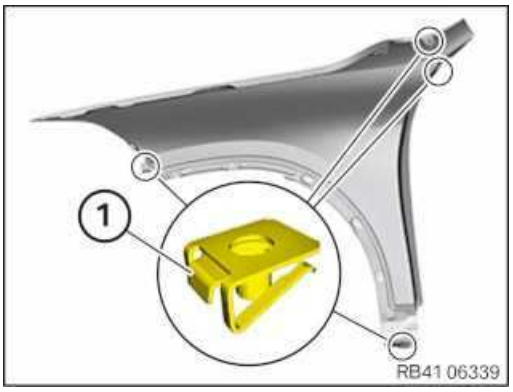


- Remount mounting (1) on the new side panel.



- Remount guide (1) on the new side panel.

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- Remount sheet metal nuts (1) on the new side panel.

8 – Installing the front side panel on the right

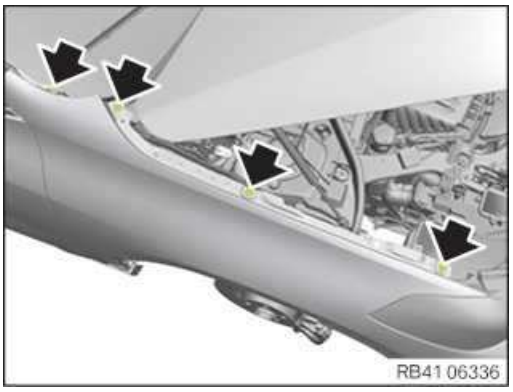
- Install side panel with a second person helping.
- Screw in all screws on the side panel until it is just about still possible to move the side panel.

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

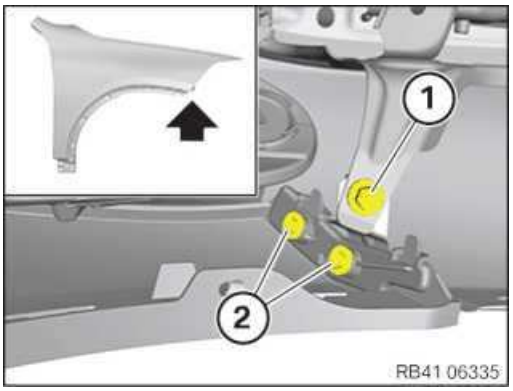
- Adjust gap dimensions.



- Tighten the screws (1).

Front side panel to holder for front side panel

Screw M6		Tightening torque	8 Nm



- Tighten down screw (1).

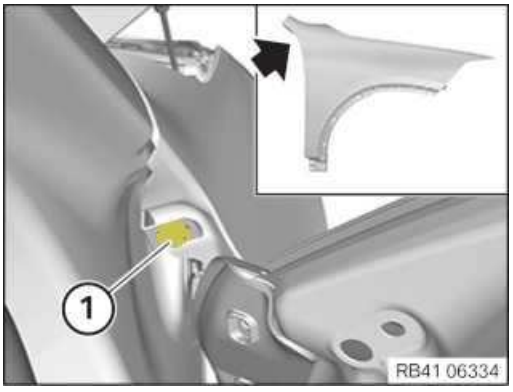
Front side panel to holder for front side panel

Screw M6		Tightening torque	8 Nm

- Tighten down screws (2).

Front bumper panel to front side panel

Screw TS5X35		Tightening torque	3 Nm



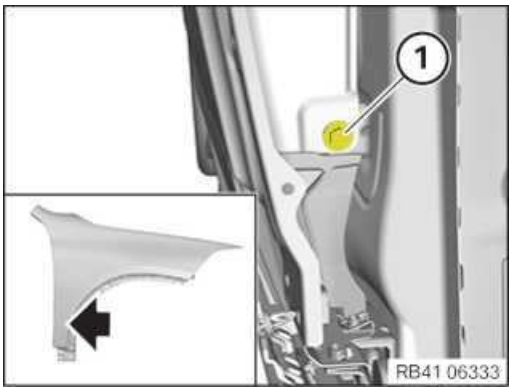
- Open the front door.
- Tighten down screw (1).

Front side panel to holder for front side panel

Screw M6		Tightening torque	8 Nm

- Close front door.

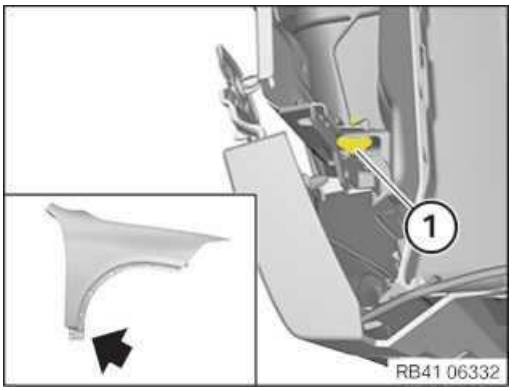
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- Tighten down screw (1).

Front side panel to holder for front side panel

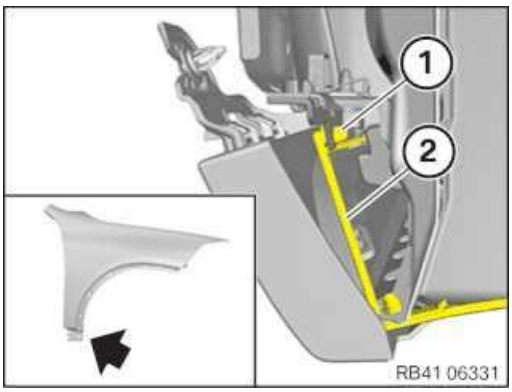
Screw M6		Tightening torque	8 Nm



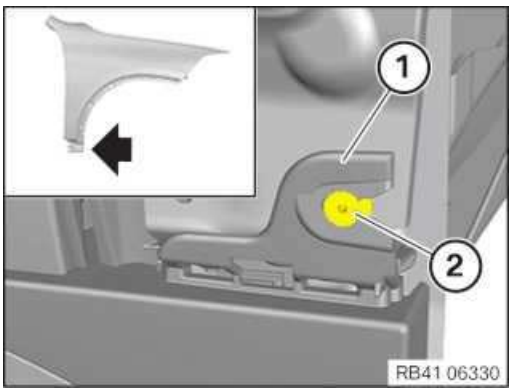
- Tighten down screw (1).

Front side panel to holder for front side panel

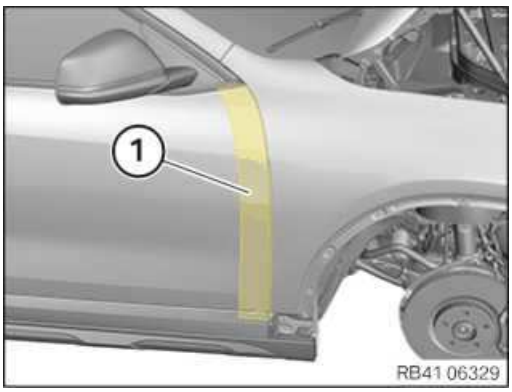
Screw M6		Tightening torque	8 Nm



- Secure the wiring harness (2) including clip (1) at the side panel.

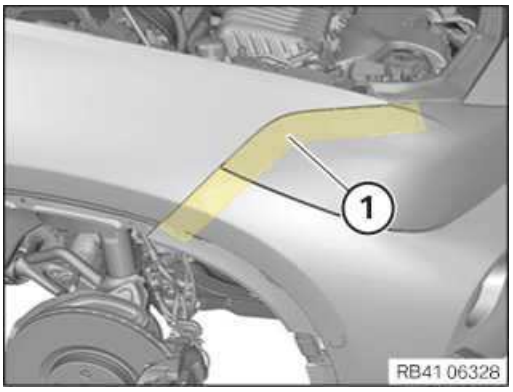


- Secure the side sill trim panel (2) including clip (1) on the side panel.

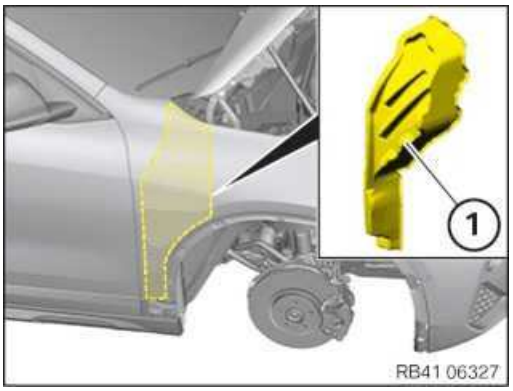


- Remove protective film (1).

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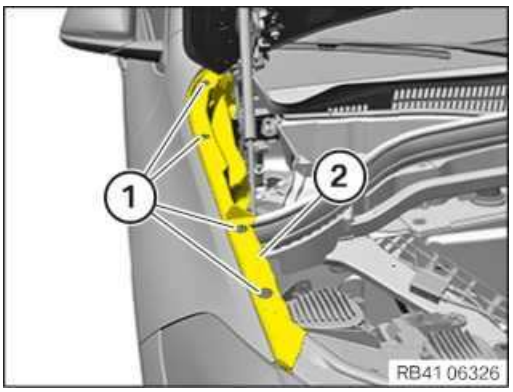
- Remove protective film (1).



- Install the sound insulation (1).

POSTPROCESSES

9 – Installing side panel sealing



- Position seal (2) of the side panel.
- Mount the expanding rivets (1).

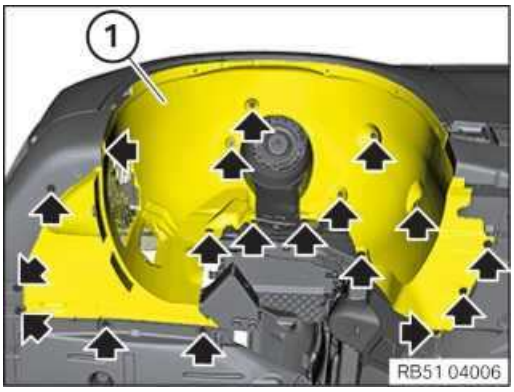
10 – Installing the front right wheel arch cover

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Installing the front wheel arch cover**

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- Guide the wheel arch cover (1) in.
- Tighten all bolts and nuts (arrows).

Wheel arch cover to body

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

Wheel arch cover to body

Screw		Tightening torque	2,5 Nm

Wheel arch cover to body

Plastic nut		Tightening torque	3 Nm

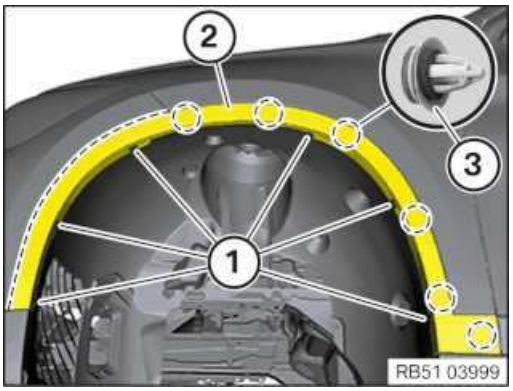
11 – Installing front wheel arch trim

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.



- Check the clips (3) for damage and renew where required.

  The clips (3) must not be damaged or missing.
- Feed in wheel arch trim (2) and engage on the clips (3).
- Engage wheel arch trim (2) into the latch mechanisms on the bumper panel.
- Mount blind rivet (1) using the special tool **0 496 521 (00 2 230)**.

12 – Mounting the wheel

▸ **Clean the contact surfaces between the brake disc and the wheel rim**

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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.

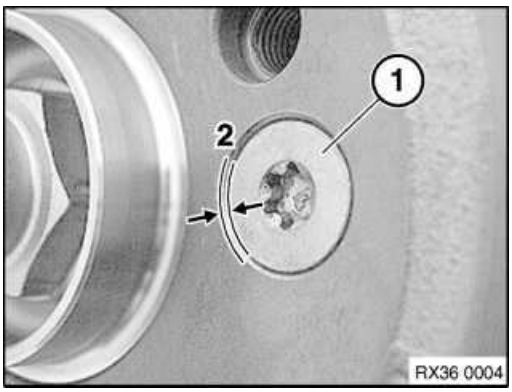
- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.

  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).



- Renew mounting bolt (1).

  Parts: Mounting bolt
- Check that the mounting bolt (1) for the brake disc is securely seated.

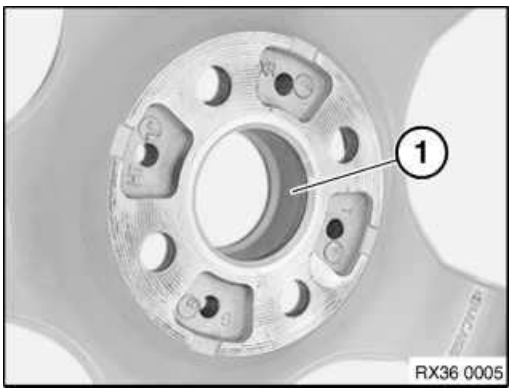
  The mounting bolt (1) for the brake disc may not protrude under any circumstances on the contact surface (2) between the brake disc and the wheel rim.

Brake disc to rear wheel hub

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub

M8	Renew screw.	Tightening torque	16 Nm



- Lightly grease the wheel centring (1) in the wheel rim; refer to additional information for grease for the wheel centring (1).

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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 the wheel bolts and threads for damage, renew the wheel bolts if necessary.
- Join and tighten the wheel bolts (arrows).

Wheel bolts

M 14/AF 17	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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13 – 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.

14 – Installing the gutter strip, right on the windscreen

NOTICE

Description is for left component only. Procedure on the right side is identical.

▶ **Install the gutter strip on the windscreen**

RISK OF DAMAGE

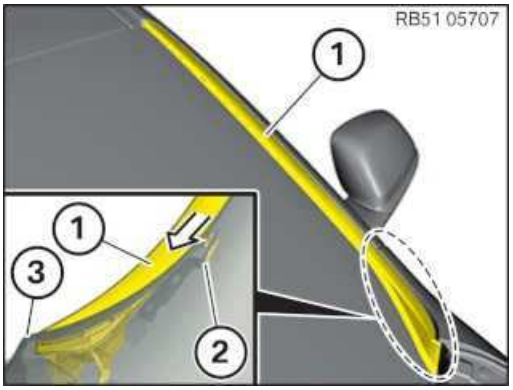
Scratches.

Tools and sharp-edged components can cause scratches.

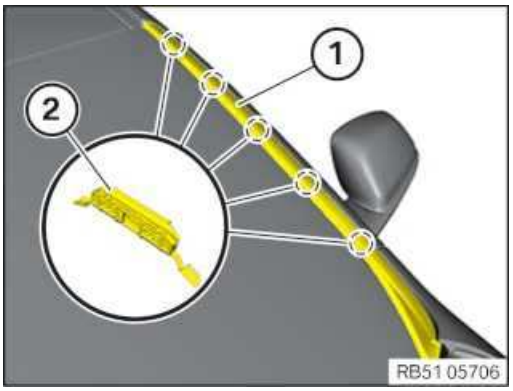
- Protect working area.
- Handle tools and components carefully.

TECHNICAL INFORMATION

Latch mechanisms, guides and mounting elements must not be damaged or missing.



- Carefully feed in the gutter strip (1) at the side panel (3) and simultaneously feed into the guide (2) in direction of arrow.



- Clip in the gutter strip (1) at the bottom starting at the clamps (2).

Additional Information

Overview of Tightening Torques

Front side panel to holder for front side panel Used in step 8

Screw M6		Tightening torque	8 Nm

Front bumper panel to front side panel Used in step 8

Screw TS5X35		Tightening torque	3 Nm

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Wheel arch cover to body — Used in step 10

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

Wheel arch cover to body — Used in step 10

Screw		Tightening torque	2,5 Nm

Wheel arch cover to body — Used in step 10

Plastic nut		Tightening torque	3 Nm

Brake disc to rear wheel hub — Used in step 12

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub — Used in step 12

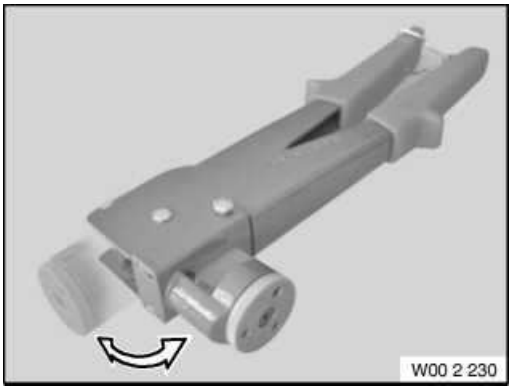
M8	Renew screw.	Tightening torque	16 Nm

Wheel bolts — Used in step 12

M 14/AF 17	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

0 496 521 (00 2 230) Pliers



Common — Used in step 11

Usage	(Blind rivet pliers for plastic rivets) For shaft diameters of 3.5 mm, 3.9 mm and 4.5 mm
Included in the tool or work	
Storage location	C25
Replaced by	
In connection with	
SI-Number	01 17 08 (478)

2 344 011 Tool



Common — Used in step 12

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)

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Replacement tools:

0 495 221 (36 1 323) Wheel stud



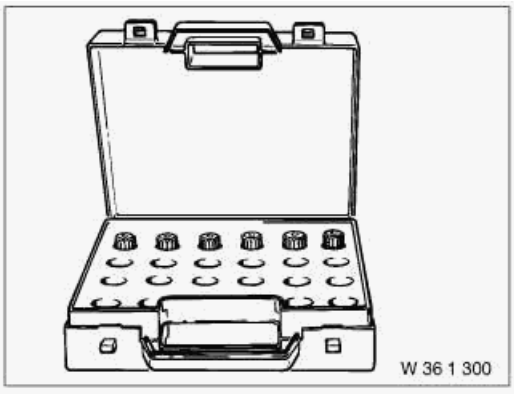
Common	Used in step 2
Usage	(Code 30) Code 39 available separately, (see EPC) under 36 13 1 181 259
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 224 (36 1 326) Wheel stud



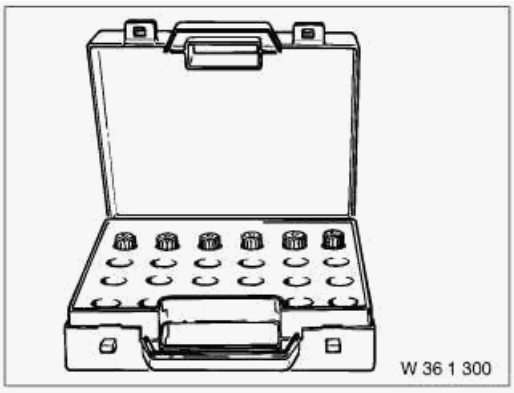
Common	Used in step 2
Usage	(Code 33) With centring bore available separately, (see EPC) under 36 13 6 765 546
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 225 (36 1 327) Wheel stud



Common	Used in step 2
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	

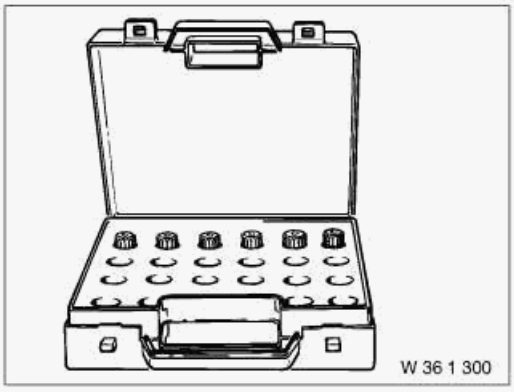
0 495 226 (36 1 328) Wheel stud



Common	Used in step 2
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	

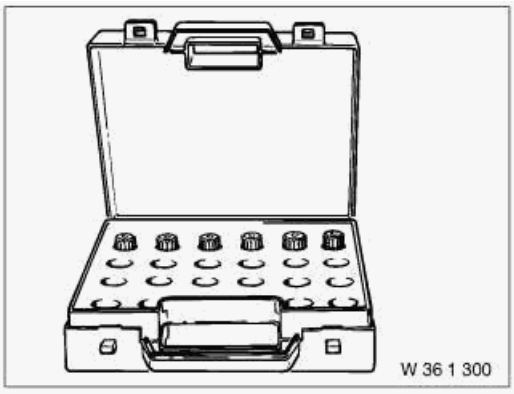
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0 495 227 (36 1 329) Wheel stud



Common	Used in step 2
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 2
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 2
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 2
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

Operating materials	Used in step
2.0 Grease for wheel centring	12

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41 35 610 Replace three holders for the 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

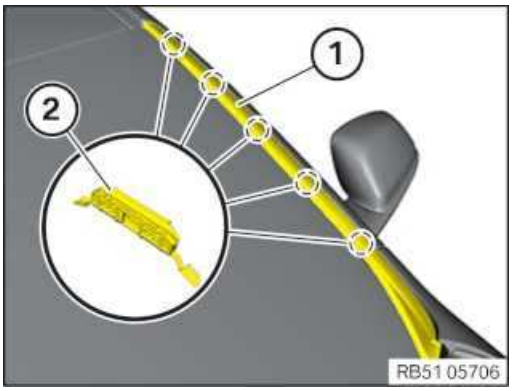
1 – Remove the gutter strip on the windscreen

RISK OF DAMAGE

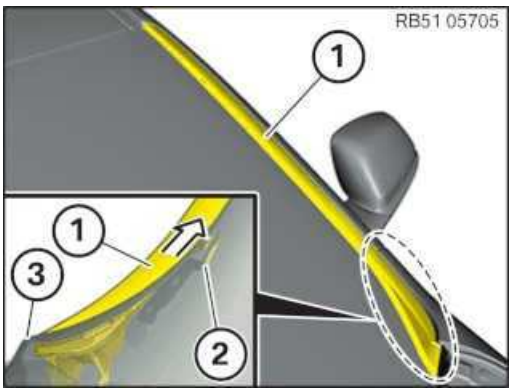
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



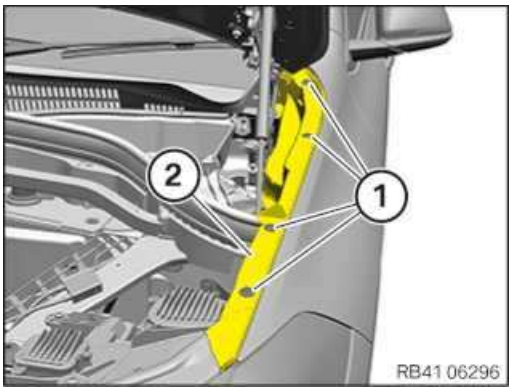
- Unclip the gutter strip (1) from the clamps (2) beginning at the roof to the top.



- Pull out the gutter strip (1) from the guide (2) in direction of arrow and carefully feed out at the side panel (3).

2 – Removing sealing side panel

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- Loosen the expanding rivet (1).
- Remove sealing (2) of the side panel.

3 – Removing the wheel



- 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.
- Unscrew the wheel bolts (arrows) and remove the wheel.

  Use the matching adapter from tool set (wheel bolt adapter set) to loosen and tighten down the wheel bolt with security code.

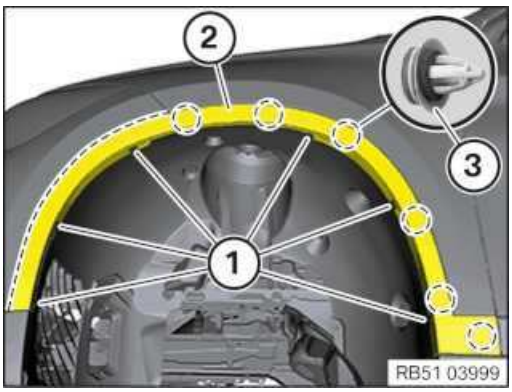
4 – Remove the front wheel arch trim

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

NOTICE

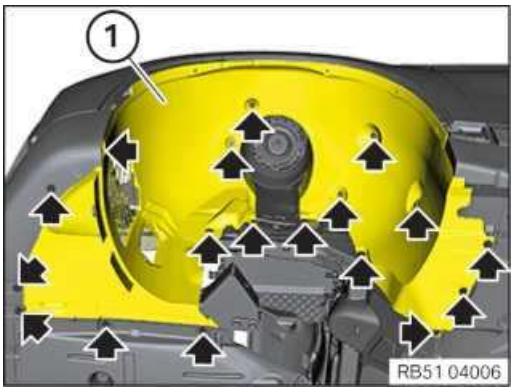
Description is for left component only. Procedure on the right side is identical.



- Remove the blind rivets (1).
- Release the wheel arch trim (2) in the area of the side panel from the clips (3).
- Release the wheel arch trim (2) from the latch mechanisms on the bumper and remove.

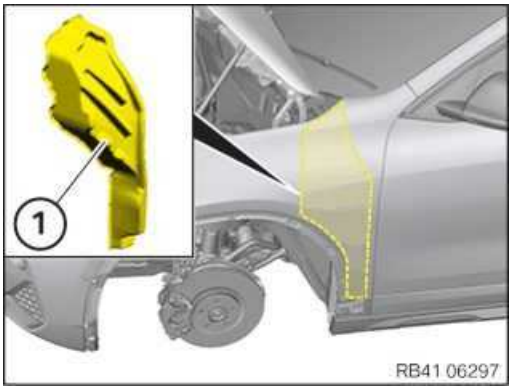
5 – Remove front wheel arch cover

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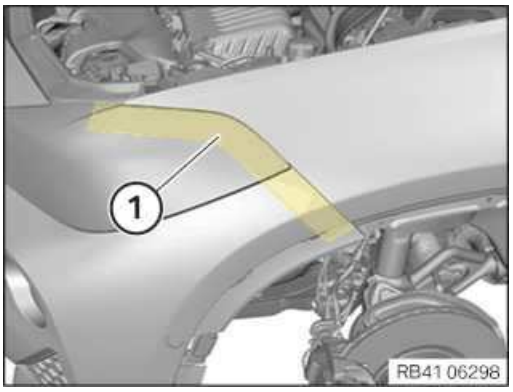


- Unscrew all bolts and nuts (arrows).
- Guide the wheel arch cover (1) out.

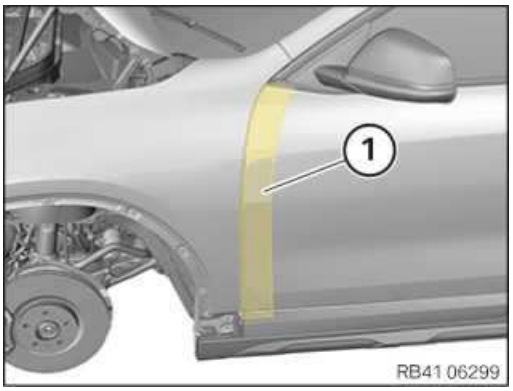
6 – Removing the front left side panel



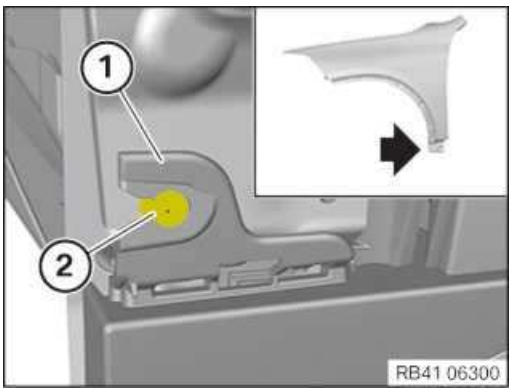
- Remove the sound insulation (1).



- Mask the area (1) around the headlights and at the bumper panel using plastic adhesive tape.

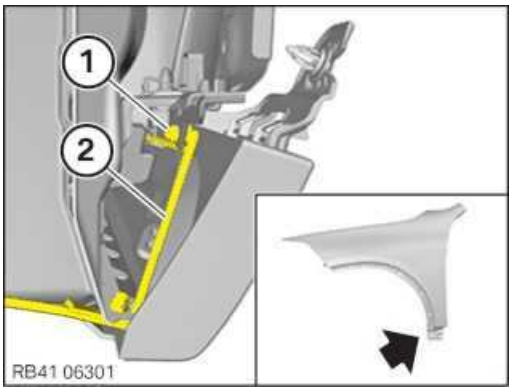


- Mask the area (1) of the door with plastic adhesive tape.

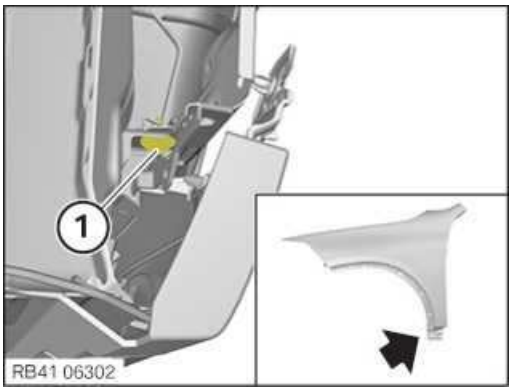


- Release the clip (1) and release the side sill trim panel (2) on the side panel.

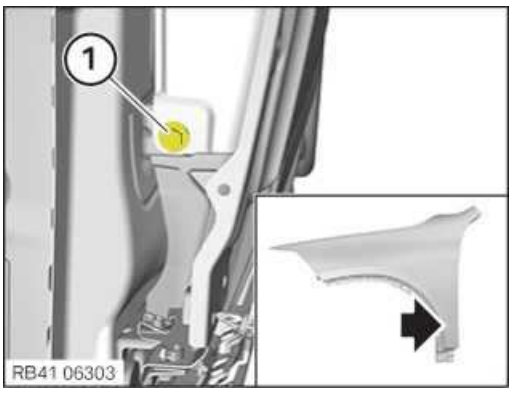
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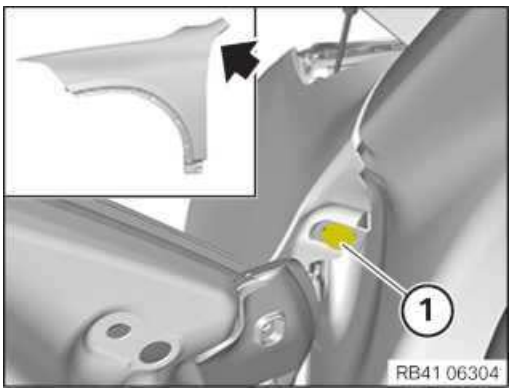
- Release the clip (1) and release the wiring harness (2) from the side panel.



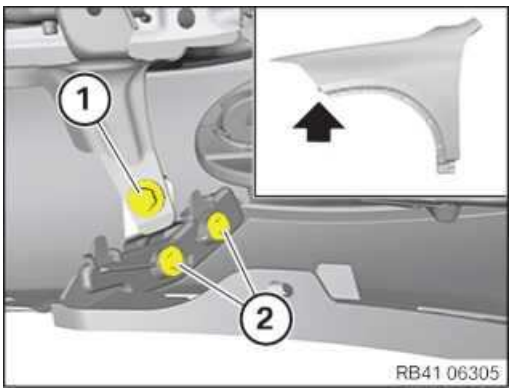
- Loosen screw (1).



- Loosen screw (1).

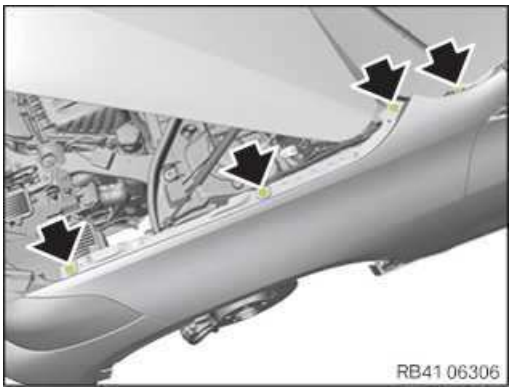


- Open the front door.
- Loosen screw (1).
- Close front door.



- Loosen screws (1) and (2).

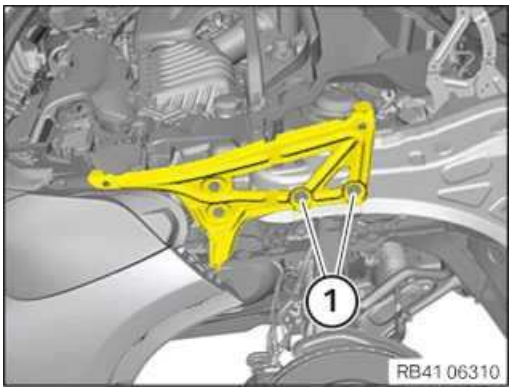
cardiagn.com



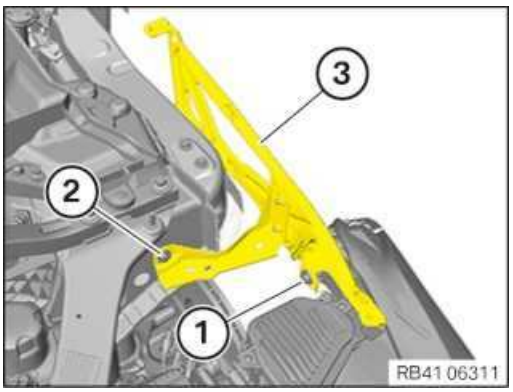
- Release the screws (arrows) and remove the side panel.

MAIN WORK

7 – Removing the front holder

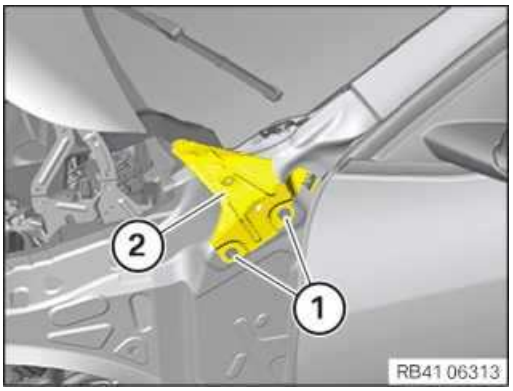


- Loosen screws (1).



- Loosen screw (1).
- Loosen the screw (2) and remove the holder (3).

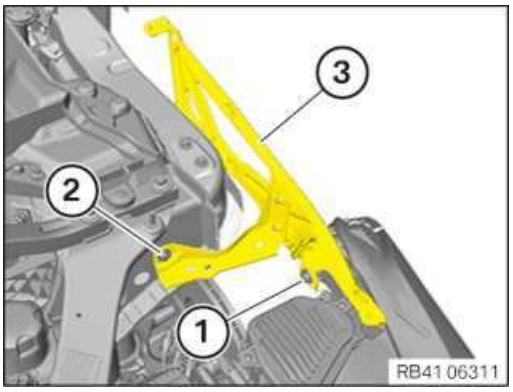
8 – Removing the rear holder



- Loosen screws (1) and remove holder (2).

9 – Installing a new front holder

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- Position holder (3).
- Tighten down screw (2).

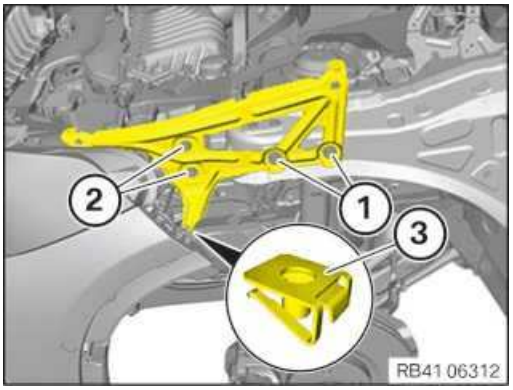
Cross support to wheel arch

M8 screw		Tightening torque	8 Nm

- Tighten down screw (1).

Headlight to carrier support extension

Multi-purpose hexagon screw with washer		Tightening torque	5 Nm



- Tighten the screws (1).

Carrier support extension to carrier support

M8 screw		Tightening torque	19 Nm

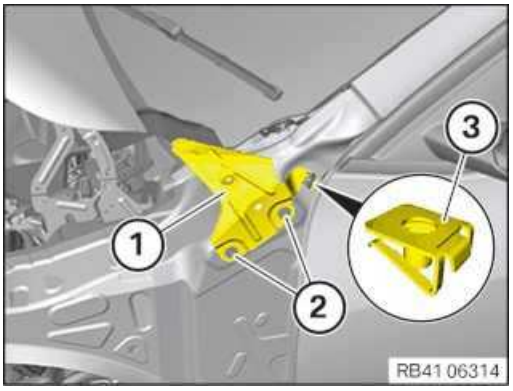
- Tighten down screws (2).

Carrier support extension to cross support

Screw M6		Tightening torque	8 Nm

- Remount the sheet metal nut (3) on the new bracket.

10 – Installing the new bracket, rear



- Position holder (1).
- Tighten down screws (2).

Holder to A-pillar

M8 screw		Tightening torque	8 Nm

- Remount the sheet metal nut (3) on the new bracket.

POSTPROCESSES

11 – Installing the left front side panel

- Install side panel with a second person helping.
- Screw in all screws on the side panel until it is just about still possible to move the side panel.

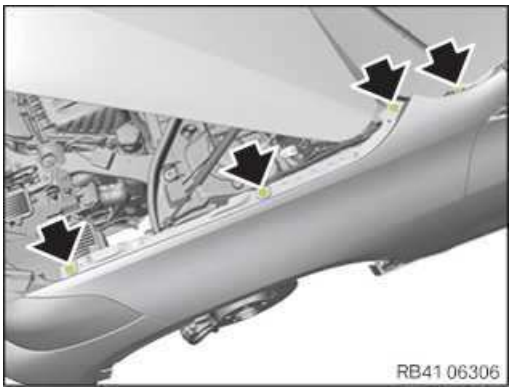
TECHNICAL INFORMATION

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.

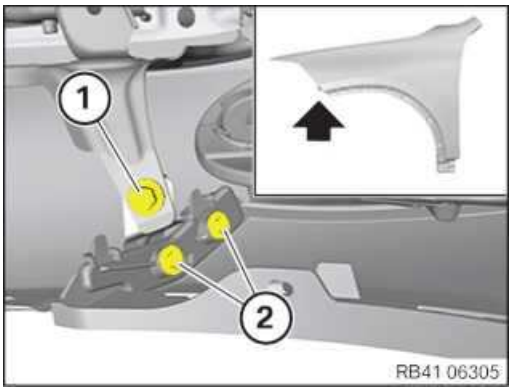
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- Tighten the screws (1).

Front side panel to holder for front side panel

Screw M6		Tightening torque	8 Nm



- Tighten down screw (1).

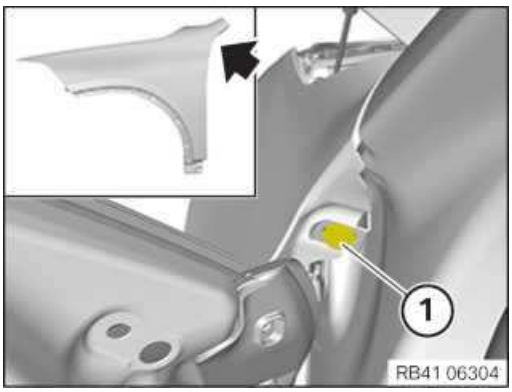
Front side panel to holder for front side panel

Screw M6		Tightening torque	8 Nm

- Tighten down screws (2).

Front bumper panel to front side panel

Screw TS5X35		Tightening torque	3 Nm

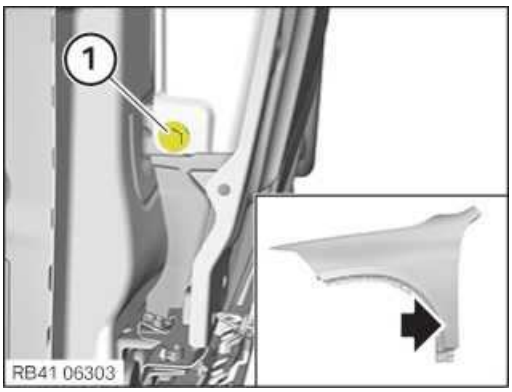


- Open the front door.
- Tighten down screw (1).

Front side panel to holder for front side panel

Screw M6		Tightening torque	8 Nm

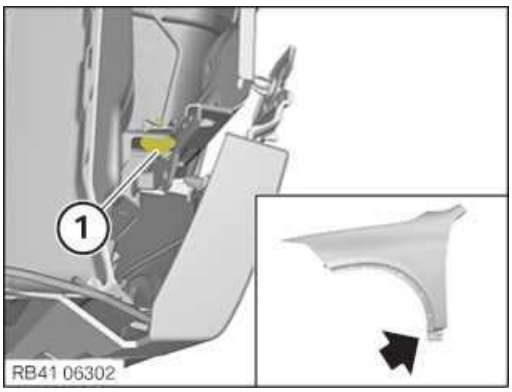
- Close front door.



- Tighten down screw (1).

Front side panel to holder for front side panel

Screw M6		Tightening torque	8 Nm

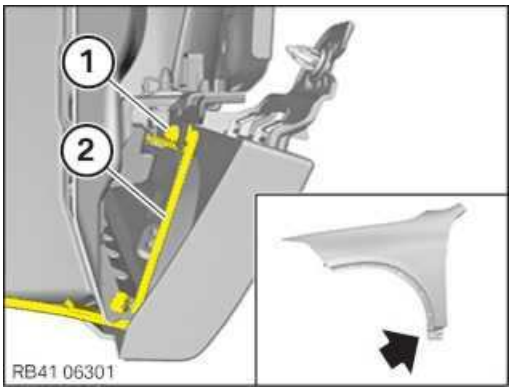


- Tighten down screw (1).

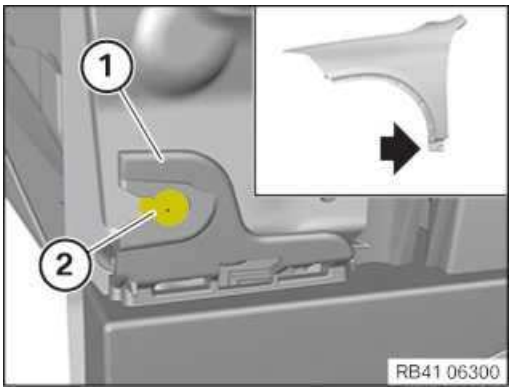
Front side panel to holder for front side panel

Screw M6		Tightening torque	8 Nm

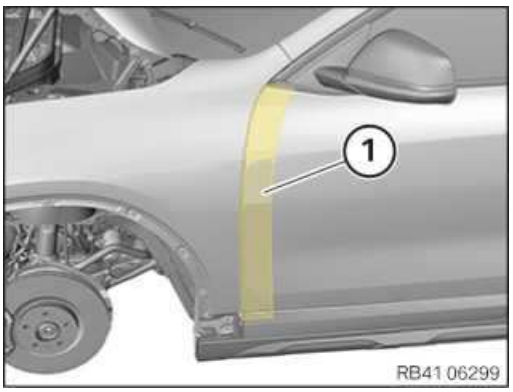
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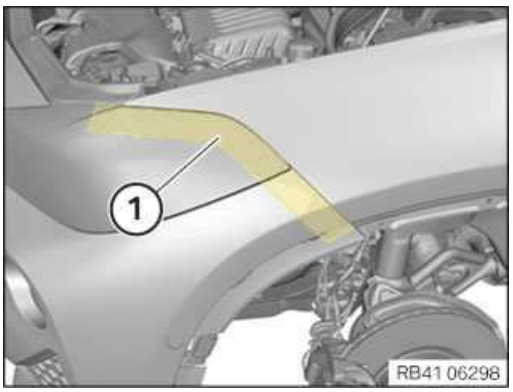
- Secure the wiring harness (2) including clip (1) at the side panel.



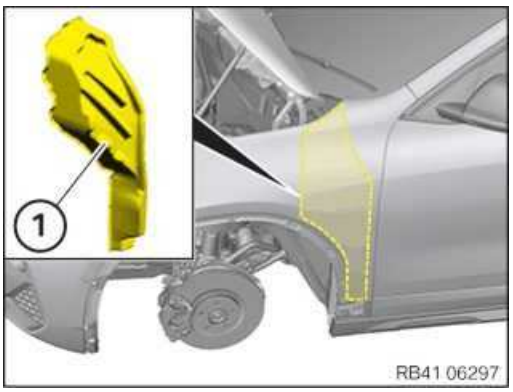
- Secure the side sill trim panel (2) including clip (1) on the side panel.



- Remove protective film (1).



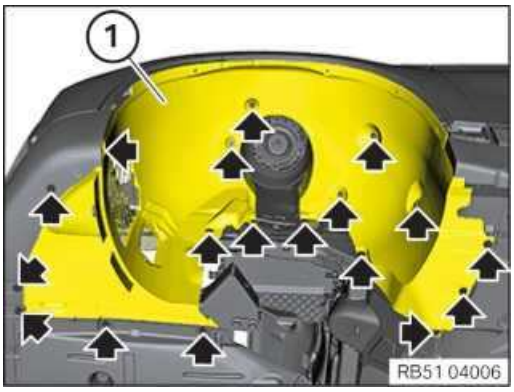
- Remove protective film (1).



- Install the sound insulation (1).

12 – Installing the front wheel arch cover

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- Guide the wheel arch cover (1) in.
- Tighten all bolts and nuts (arrows).

Wheel arch cover to body

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

Wheel arch cover to body

Screw		Tightening torque	2,5 Nm

Wheel arch cover to body

Plastic nut		Tightening torque	3 Nm

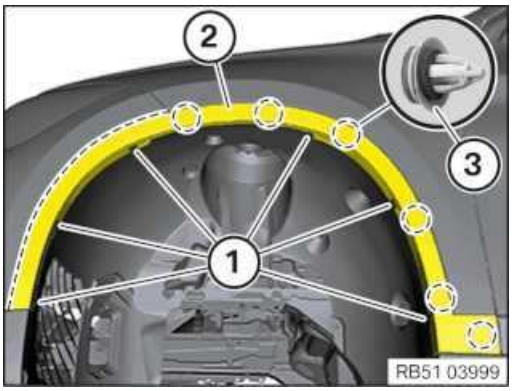
13 – Installing front wheel arch trim

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.



- Check the clips (3) for damage and renew where required.

  The clips (3) must not be damaged or missing.
- Feed in wheel arch trim (2) and engage on the clips (3).
- Engage wheel arch trim (2) into the latch mechanisms on the bumper panel.
- Mount blind rivet (1) using the special tool **0 496 521 (00 2 230)**.

14 – Mounting the wheel

▸ **Clean the contact surfaces between the brake disc and the wheel rim**

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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.

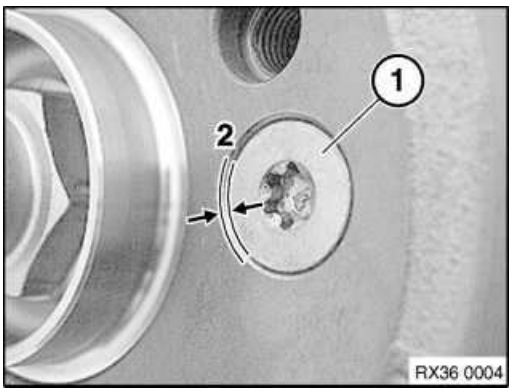
- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.

  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).



- Renew mounting bolt (1).

  Parts: Mounting bolt
- Check that the mounting bolt (1) for the brake disc is securely seated.

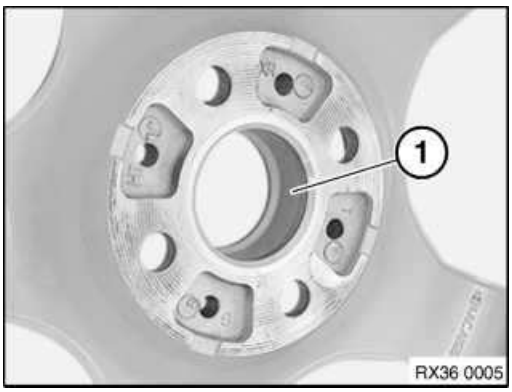
  The mounting bolt (1) for the brake disc may not protrude under any circumstances on the contact surface (2) between the brake disc and the wheel rim.

Brake disc to rear wheel hub

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub

M8	Renew screw.	Tightening torque	16 Nm



- Lightly grease the wheel centring (1) in the wheel rim; refer to additional information for grease for the wheel centring (1).

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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 the wheel bolts and threads for damage, renew the wheel bolts if necessary.
- Join and tighten the wheel bolts (arrows).

Wheel bolts

M 14/AF 17	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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15 – 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.

16 – Install the gutter strip on the windscreen

RISK OF DAMAGE

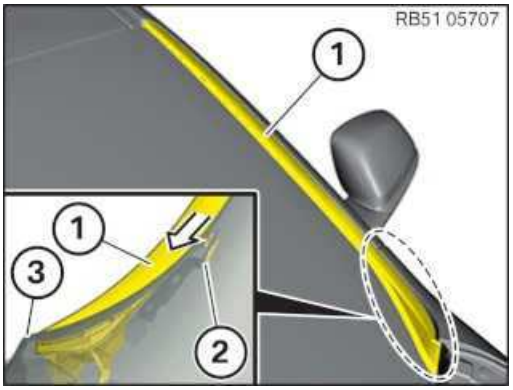
Scratches.

Tools and sharp-edged components can cause scratches.

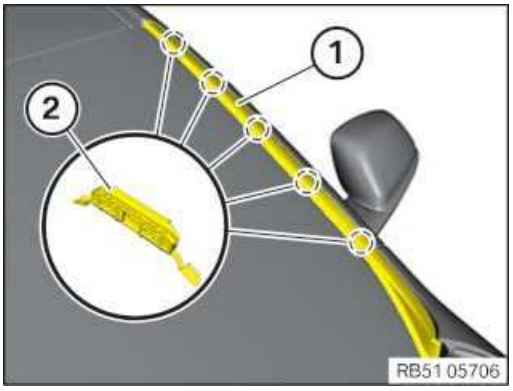
- Protect working area.
- Handle tools and components carefully.

TECHNICAL INFORMATION

Latch mechanisms, guides and mounting elements must not be damaged or missing.

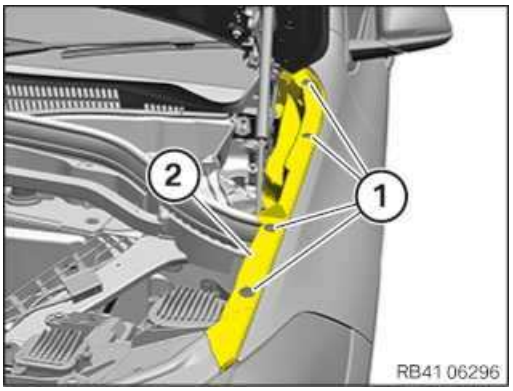


- Carefully feed in the gutter strip (1) at the side panel (3) and simultaneously feed into the guide (2) in direction of arrow.



- Clip in the gutter strip (1) at the bottom starting at the clamps (2).

17 – Installing side panel sealing



- Position seal (2) of the side panel.
- Mount the expanding rivets (1).

Additional Information

Overview of Tightening Torques

Cross support to wheel arch Used in step 9

M8 screw		Tightening torque	8 Nm

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Headlight to carrier support extension

Used in step 9

Multi-purpose hexagon screw with washer		Tightening torque	5 Nm

Carrier support extension to carrier support

Used in step 9

M8 screw		Tightening torque	19 Nm

Carrier support extension to cross support

Used in step 9

Screw M6		Tightening torque	8 Nm

Holder to A-pillar

Used in step 10

M8 screw		Tightening torque	8 Nm

Front side panel to holder for front side panel

Used in step 11

Screw M6		Tightening torque	8 Nm

Front bumper panel to front side panel

Used in step 11

Screw TS5X35		Tightening torque	3 Nm

Wheel arch cover to body

Used in step 12

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

Wheel arch cover to body

Used in step 12

Screw		Tightening torque	2,5 Nm

Wheel arch cover to body

Used in step 12

Plastic nut		Tightening torque	3 Nm

Brake disc to rear wheel hub

Used in step 14

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub

Used in step 14

M8	Renew screw.	Tightening torque	16 Nm

Wheel bolts

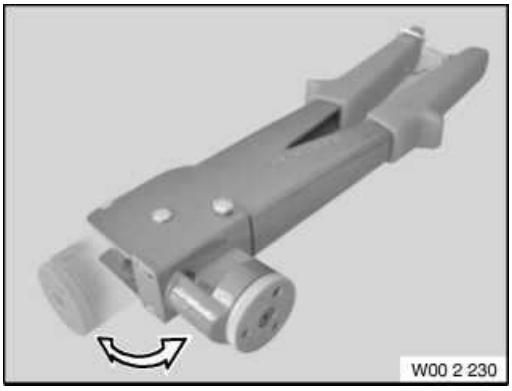
Used in step 14

M 14/AF 17	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

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0 496 521 (00 2 230) Pliers



Common	Used in step 13
Usage	(Blind rivet pliers for plastic rivets) For shaft diameters of 3.5 mm, 3.9 mm and 4.5 mm
Included in the tool or work	
Storage location	C25
Replaced by	
In connection with	
SI-Number	01 17 08 (478)

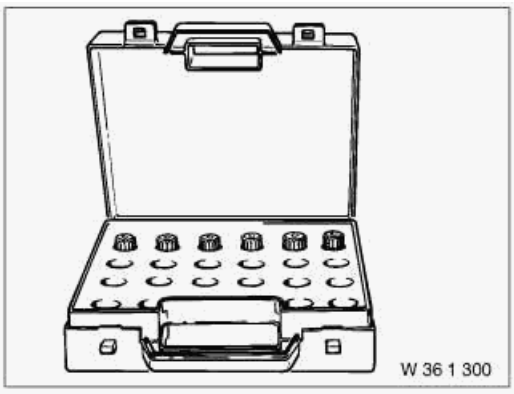
2 344 011 Tool



Common	Used in step 14
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	

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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	

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	

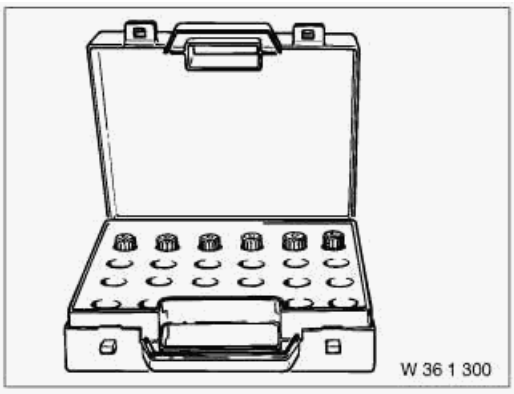
0 495 226 (36 1 328) Wheel stud



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	

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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	

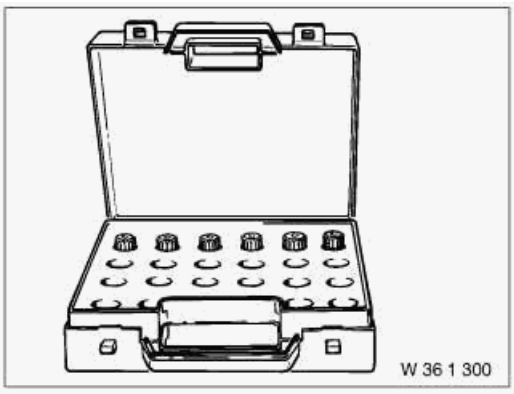
0 495 229 (36 1 332) Wheel stud



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	

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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

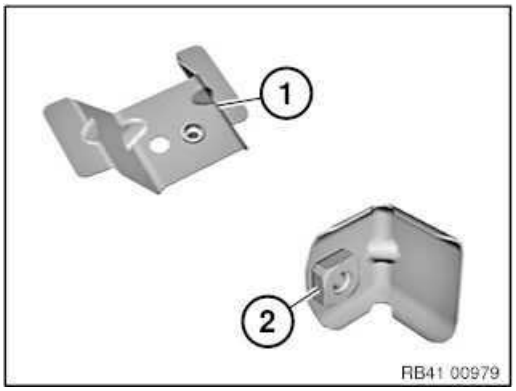
Operating materials	Used in step
2.0 Grease for wheel centring	14

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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!



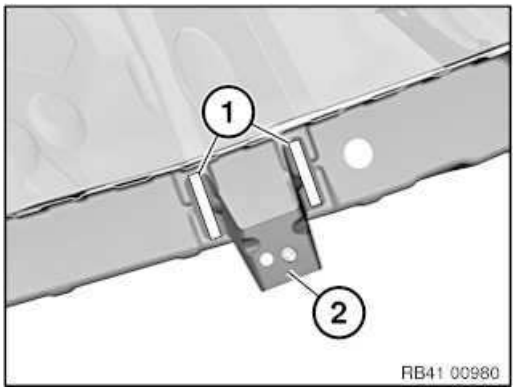
Following new body parts are required (refer to Electronic Parts Catalogue):

- (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

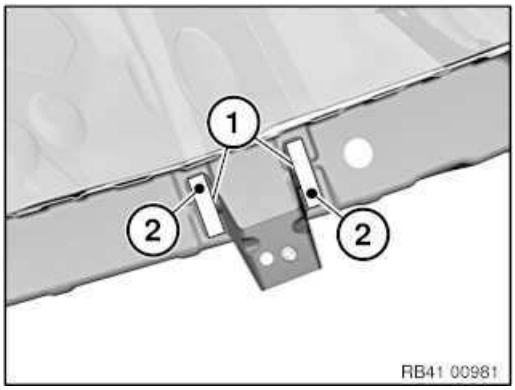
Removal of side wall holder (variant 1):



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.

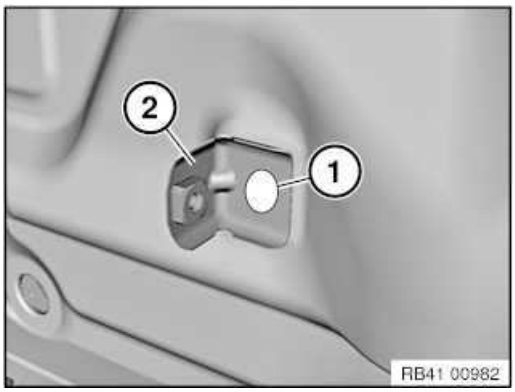
Installation of side wall holder:

Clean all bonding surfaces with cleaning agent R1.

Apply adhesive to bonding surfaces.

Install new part and rivet with blind rivets.

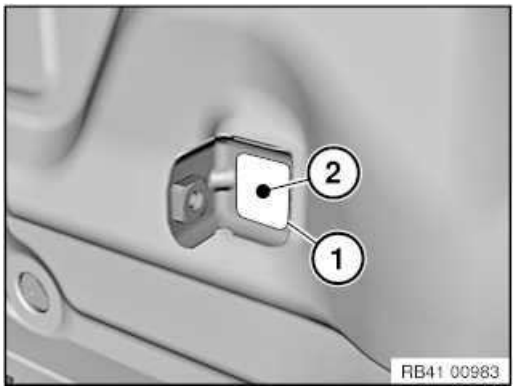
Removal of side wall holder (variant 2):



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

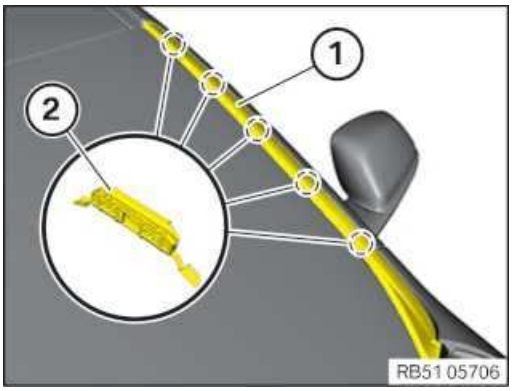
1 – Remove the gutter strip on the windscreen

RISK OF DAMAGE

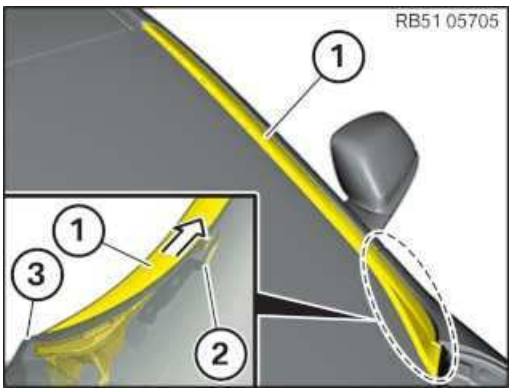
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Unclip the gutter strip (1) from the clamps (2) beginning at the roof to the top.



- Pull out the gutter strip (1) from the guide (2) in direction of arrow and carefully feed out at the side panel (3).

2 – Removing the wheel

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- 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.
- Unscrew the wheel bolts (arrows) and remove the wheel.

  Use the matching adapter from tool set (wheel bolt adapter set) to loosen and tighten down the wheel bolt with security code.

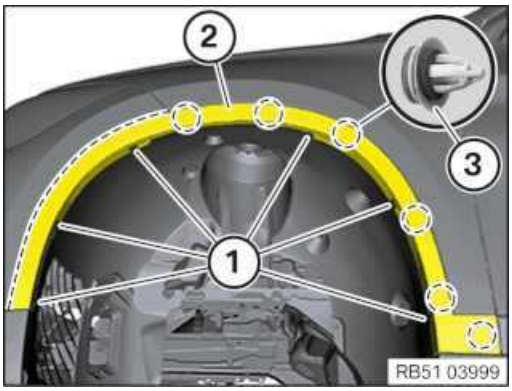
3 – Remove the front wheel arch trim

NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

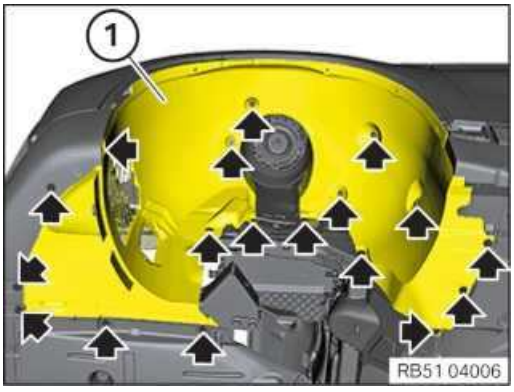
NOTICE

Description is for left component only. Procedure on the right side is identical.



- Remove the blind rivets (1).
- Release the wheel arch trim (2) in the area of the side panel from the clips (3).
- Release the wheel arch trim (2) from the latch mechanisms on the bumper and remove.

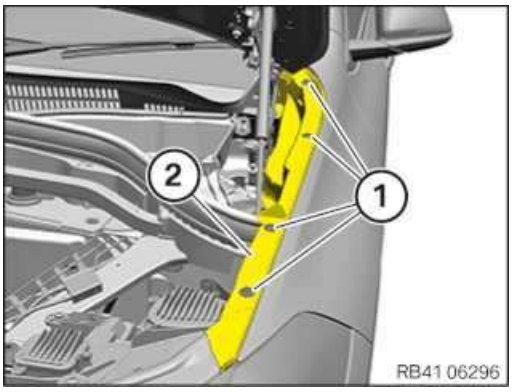
4 – Remove front wheel arch cover



- Unscrew all bolts and nuts (arrows).
- Guide the wheel arch cover (1) out.

5 – Removing sealing side panel

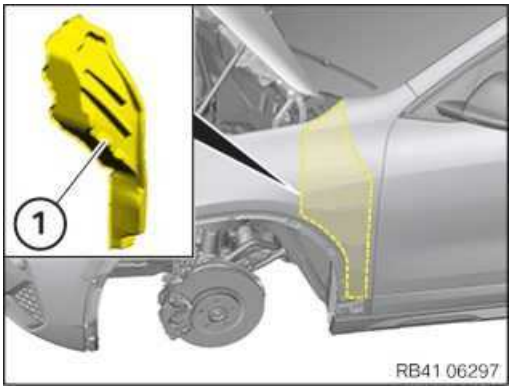
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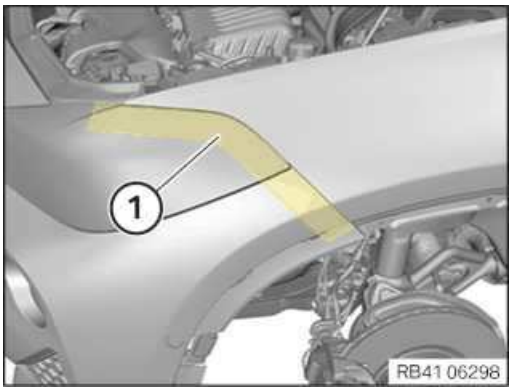
- Loosen the expanding rivet (1).
- Remove sealing (2) of the side panel.

MAIN WORK

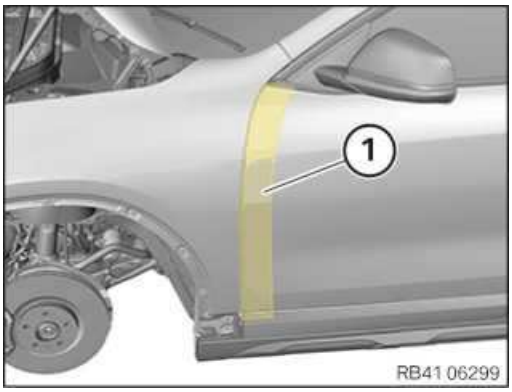
6 – Removing the front left side panel



- Remove the sound insulation (1).

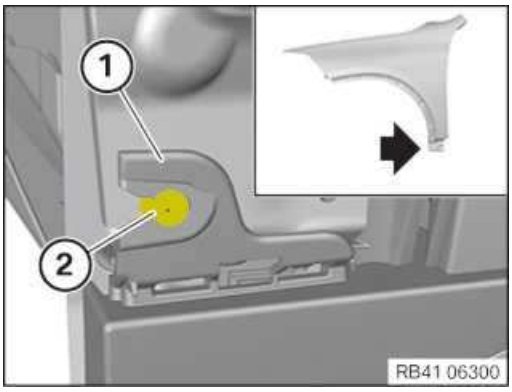


- Mask the area (1) around the headlights and at the bumper panel using plastic adhesive tape.

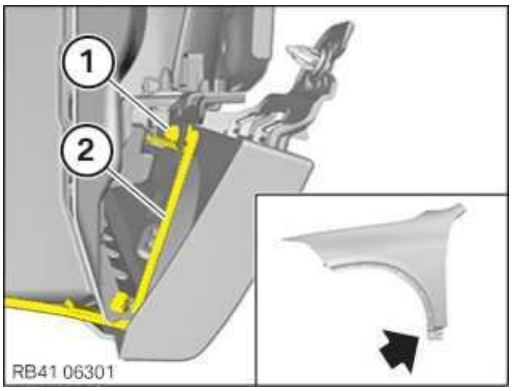


- Mask the area (1) of the door with plastic adhesive tape.

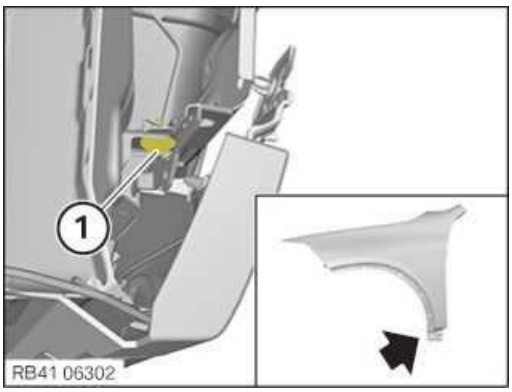
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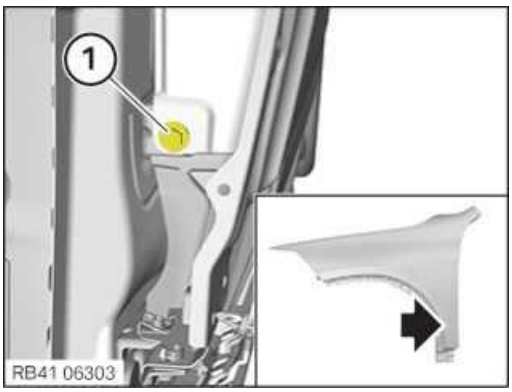
- Release the clip (1) and release the side sill trim panel (2) on the side panel.



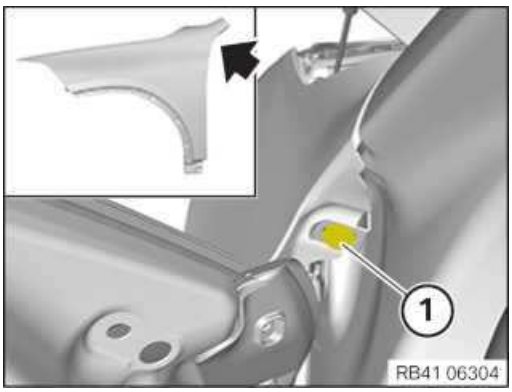
- Release the clip (1) and release the wiring harness (2) from the side panel.



- Loosen screw (1).

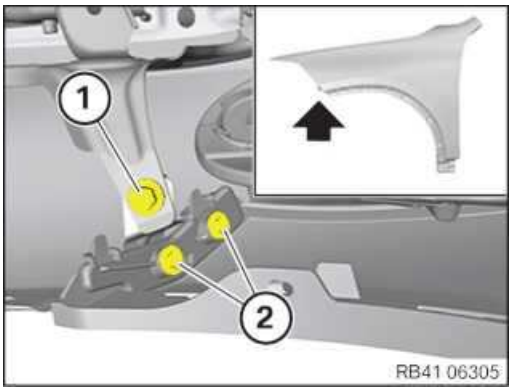


- Loosen screw (1).

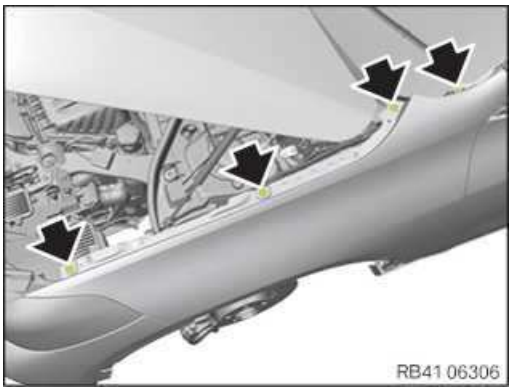


- Open the front door.
- Loosen screw (1).
- Close front door.

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- Loosen screws (1) and (2).



- Release the screws (arrows) and remove the side panel.

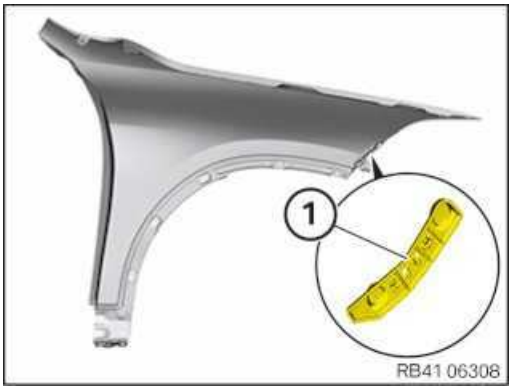
7 – Prepare new part

Prerequisite

New part is painted.

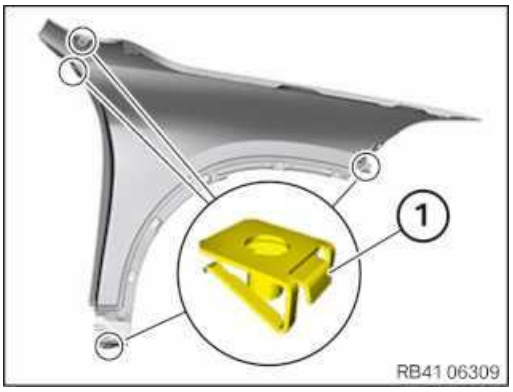


- Remount mounting (1) on the new side panel.



- Remount guide (1) on the new side panel.

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- Remount sheet metal nuts (1) on the new side panel.

8 – Installing the left front side panel

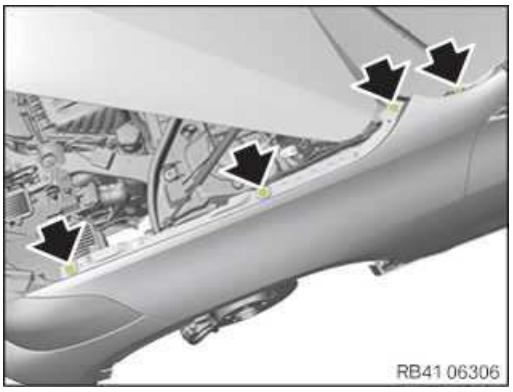
- Install side panel with a second person helping.
- Screw in all screws on the side panel until it is just about still possible to move the side panel.

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

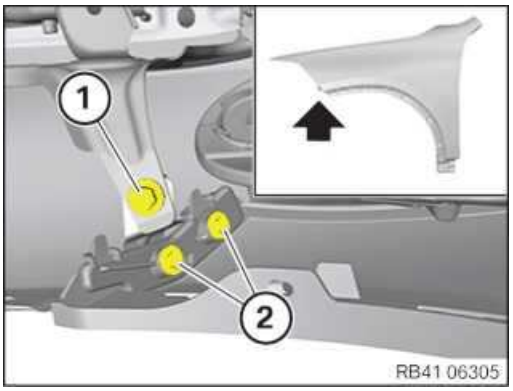
- Adjust gap dimensions.



- Tighten the screws (1).

Front side panel to holder for front side panel

Screw M6		Tightening torque	8 Nm



- Tighten down screw (1).

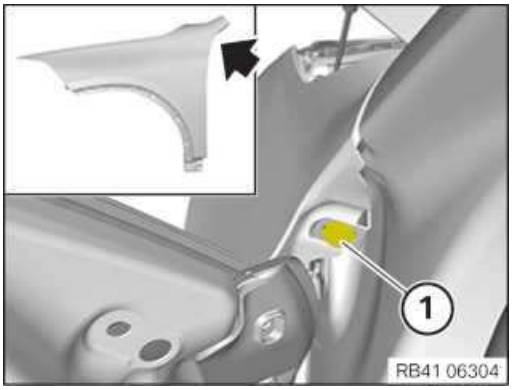
Front side panel to holder for front side panel

Screw M6		Tightening torque	8 Nm

- Tighten down screws (2).

Front bumper panel to front side panel

Screw TS5X35		Tightening torque	3 Nm



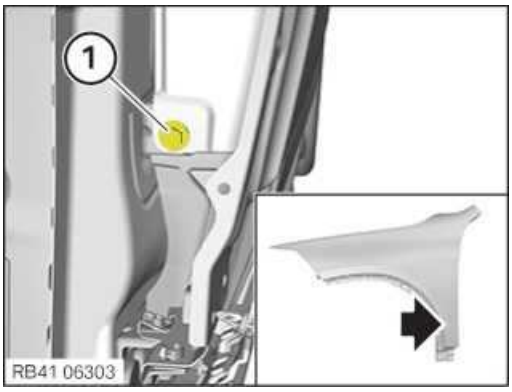
- Open the front door.
- Tighten down screw (1).

Front side panel to holder for front side panel

Screw M6		Tightening torque	8 Nm

- Close front door.

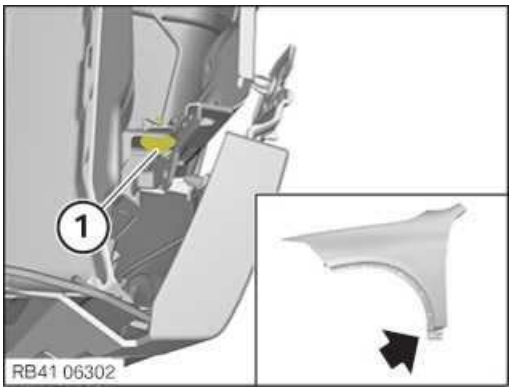
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- Tighten down screw (1).

Front side panel to holder for front side panel

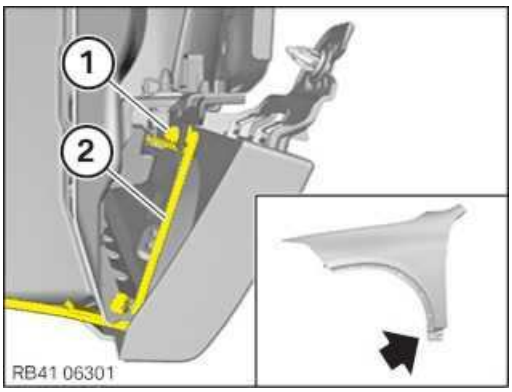
Screw M6		Tightening torque	8 Nm



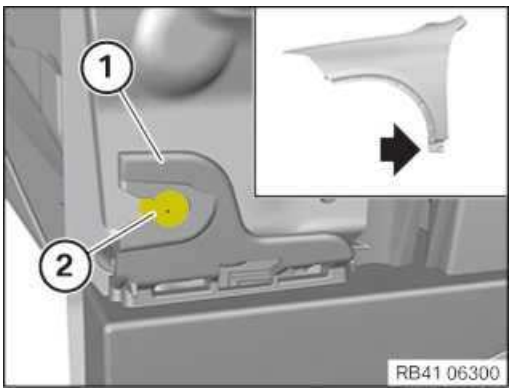
- Tighten down screw (1).

Front side panel to holder for front side panel

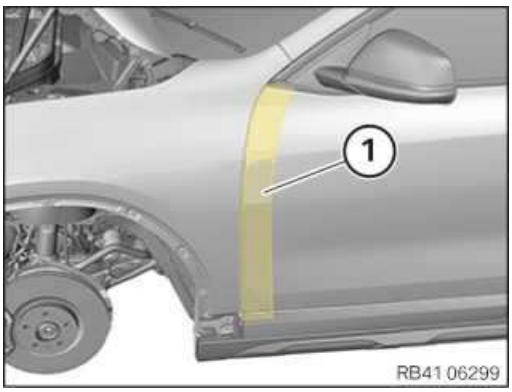
Screw M6		Tightening torque	8 Nm



- Secure the wiring harness (2) including clip (1) at the side panel.

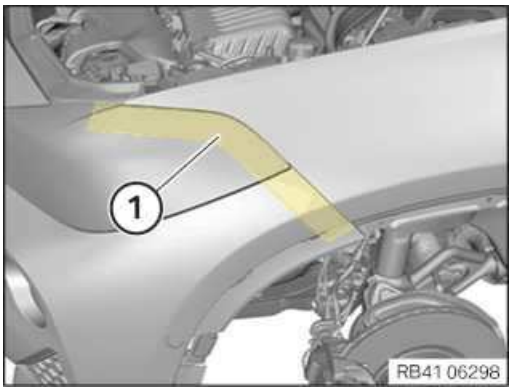


- Secure the side sill trim panel (2) including clip (1) on the side panel.

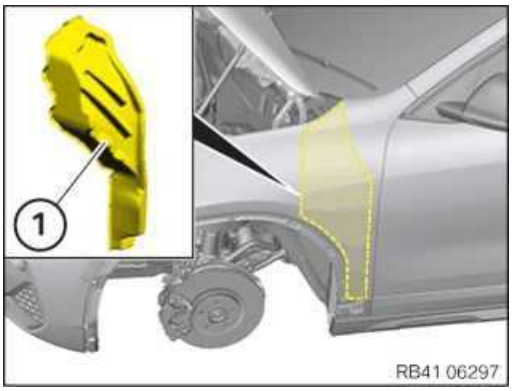


- Remove protective film (1).

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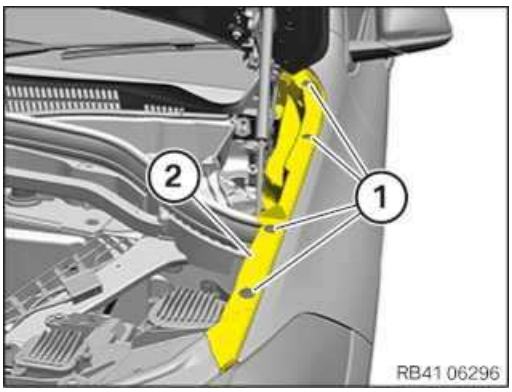
- Remove protective film (1).



- Install the sound insulation (1).

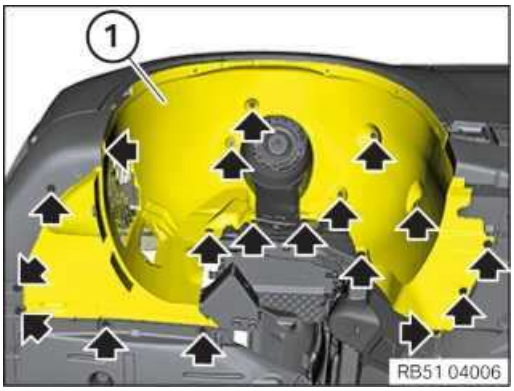
POSTPROCESSES

9 – Installing side panel sealing



- Position seal (2) of the side panel.
- Mount the expanding rivets (1).

10 – Installing the front wheel arch cover



- Guide the wheel arch cover (1) in.
- Tighten all bolts and nuts (arrows).

Wheel arch cover to body

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

Wheel arch cover to body

Screw		Tightening torque	2,5 Nm

Wheel arch cover to body

Plastic nut		Tightening torque	3 Nm

11 – Installing front wheel arch trim

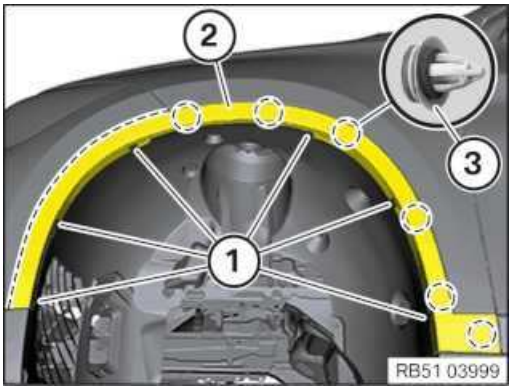
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NOTICE

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.



- Check the clips (3) for damage and renew where required.

  The clips (3) must not be damaged or missing.
- Feed in wheel arch trim (2) and engage on the clips (3).
- Engage wheel arch trim (2) into the latch mechanisms on the bumper panel.
- Mount blind rivet (1) using the special tool **0 496 521 (00 2 230)**.

12 – 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**.

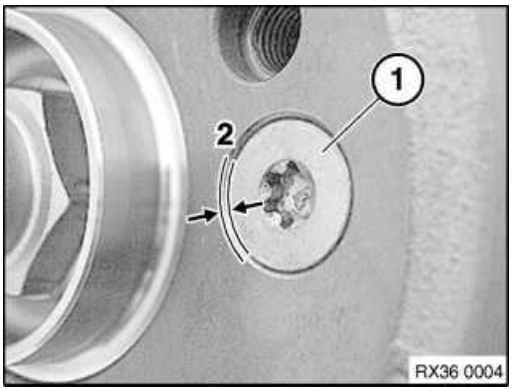
  Do not operate special tool **2 344 011** with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).
- In the event of grease residue in the area of the wheel bolt holes, remove and clean the brake disc.



- 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).

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- Renew mounting bolt (1).

  Parts: Mounting bolt

- Check that the mounting bolt (1) for the brake disc is securely seated.

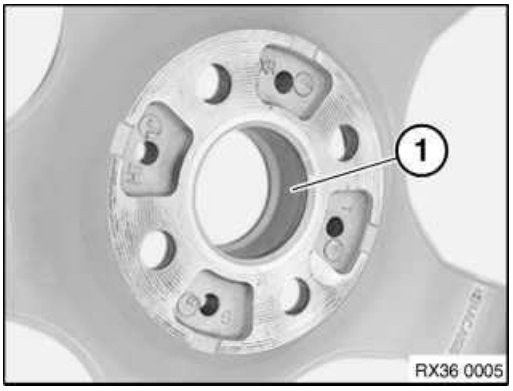
  The mounting bolt (1) for the brake disc may not protrude under any circumstances on the contact surface (2) between the brake disc and the wheel rim.

Brake disc to rear wheel hub

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub

M8	Renew screw.	Tightening torque	16 Nm



- Lightly grease the wheel centring (1) in the wheel rim; refer to additional information for grease for the wheel centring (1).

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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 the wheel bolts and threads for damage, renew the wheel bolts if necessary.
- Join and tighten the wheel bolts (arrows).

Wheel bolts

M 14/AF 17	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

13 – 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.

14 – Install the gutter strip on the windscreen

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RISK OF DAMAGE

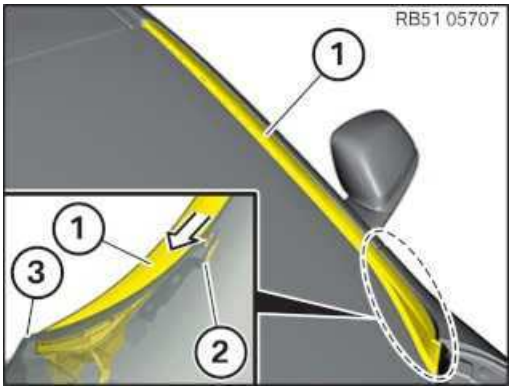
Scratches.

Tools and sharp-edged components can cause scratches.

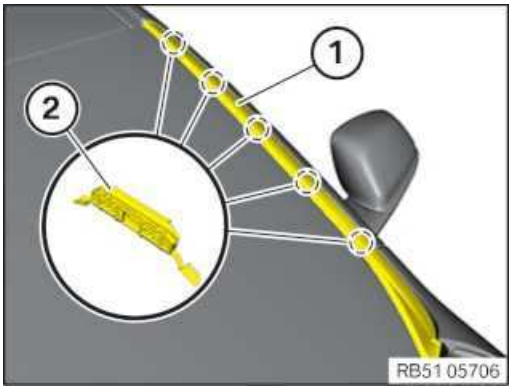
- Protect working area.
- Handle tools and components carefully.

TECHNICAL INFORMATION

Latch mechanisms, guides and mounting elements must not be damaged or missing.



- Carefully feed in the gutter strip (1) at the side panel (3) and simultaneously feed into the guide (2) in direction of arrow.



- Clip in the gutter strip (1) at the bottom starting at the clamps (2).

Additional Information

Overview of Tightening Torques

Front side panel to holder for front side panel — Used in step 8

Screw M6		Tightening torque	8 Nm

Front bumper panel to front side panel — Used in step 8

Screw TS5X35		Tightening torque	3 Nm

Wheel arch cover to body — Used in step 10

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

Wheel arch cover to body — Used in step 10

Screw		Tightening torque	2,5 Nm

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Wheel arch cover to body — Used in step 10

Plastic nut		Tightening torque	3 Nm

Brake disc to rear wheel hub — Used in step 12

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub — Used in step 12

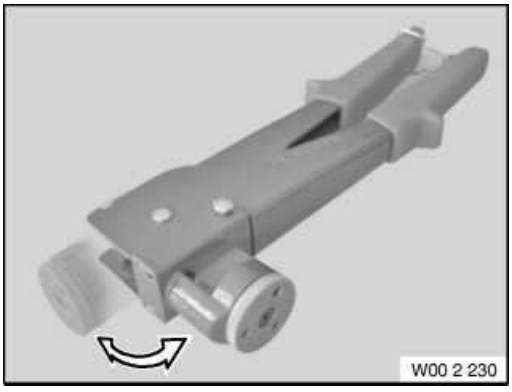
M8	Renew screw.	Tightening torque	16 Nm

Wheel bolts — Used in step 12

M 14/AF 17	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

0 496 521 (00 2 230) Pliers



Common — Used in step 11

Usage	(Blind rivet pliers for plastic rivets) For shaft diameters of 3.5 mm, 3.9 mm and 4.5 mm
Included in the tool or work	
Storage location	C25
Replaced by	
In connection with	
SI-Number	01 17 08 (478)

2 344 011 Tool



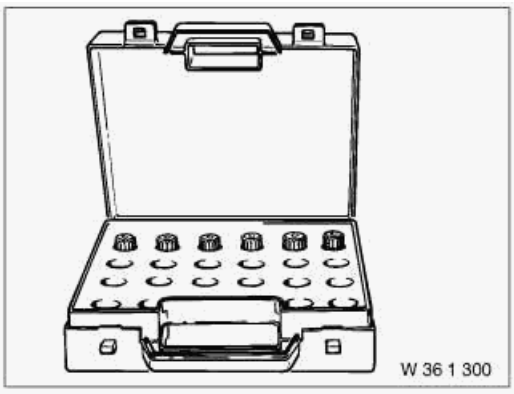
Common — Used in step 12

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:

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0 495 221 (36 1 323) Wheel stud



Common	Used in step 2
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 2
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	

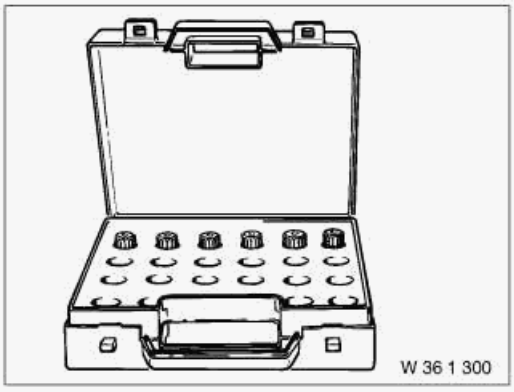
0 495 225 (36 1 327) Wheel stud



Common	Used in step 2
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	

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0 495 226 (36 1 328) Wheel stud



Common	Used in step 2
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 2
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	

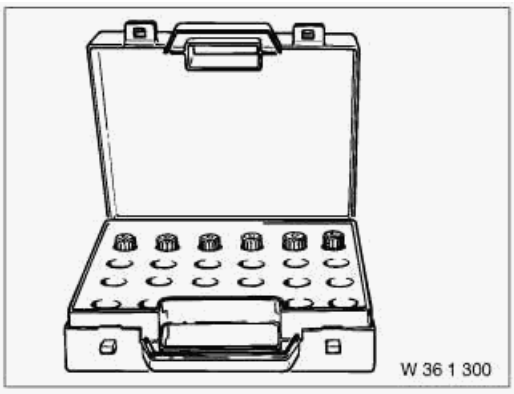
0 495 228 (36 1 331) Wheel stud



Common	Used in step 2
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	

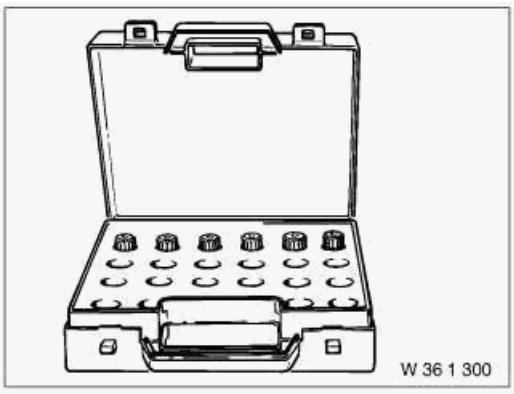
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0 495 229 (36 1 332) Wheel stud



Common	Used in step 2
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 2
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

Operating materials	Used in step
2.0 Grease for wheel centring	12

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41 35 101 Replacing rear left side panel

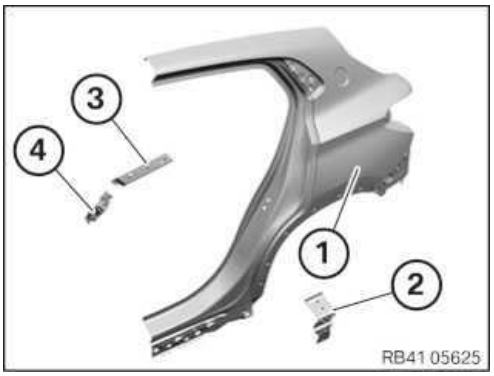
TECHNICAL INFORMATION

- 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 – Supply the new parts required



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

  Rear side wall(1)

  Reinforcement plate, side sill(2)

  Reinforcement plate, C-pillar(3)

  Reinforcement plate, C-pillar(4)

  Plastic nut

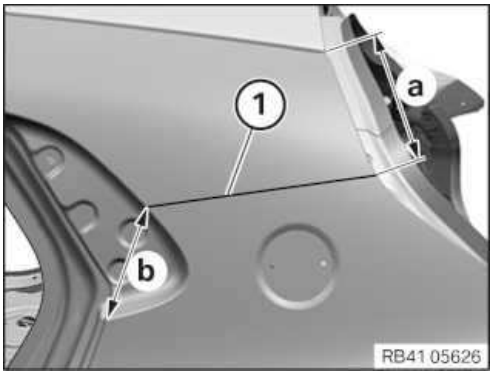
TECHNICAL INFORMATION

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

- Supply the following consumables:

Material	Quantity
Adhesive K5b	1
Adhesive K5a	1
Blind rivet N3	10
Punch rivet N4	40
Punch rivet N5	10
EMC screw	4
Cleaning agentR1	1
Cleaning agentR2	1
Cavity sealing wax remover	
Sealant D1	

2 – Removing the rear left side panel

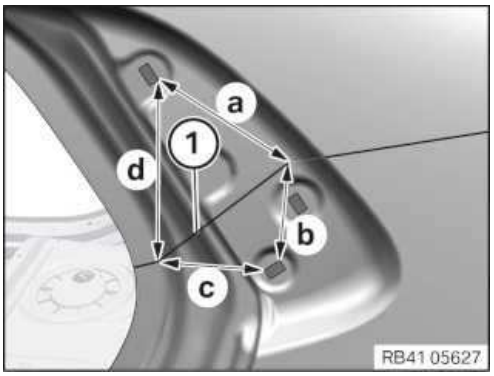


- Mark the separating cut (1) to the specified dimensions.

  Dimension a = 190 mm from the corner of the roof outer skin.

  Dimension b = 125 mm from the corner of the side panel.
- Compare position of severance cut with reinforcement plate.

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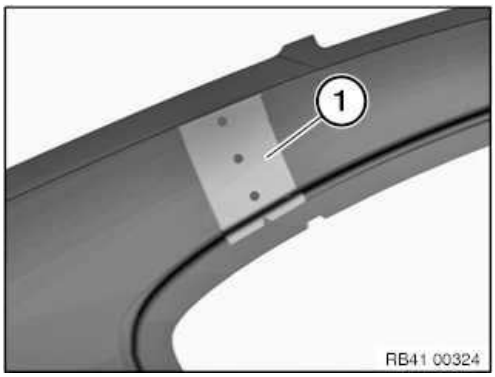
- Mark the separating cut (1) to the specified dimensions.

  Dimension a = 90 mm.

  Dimension b = 60 mm.

  Dimension c = 88 mm.

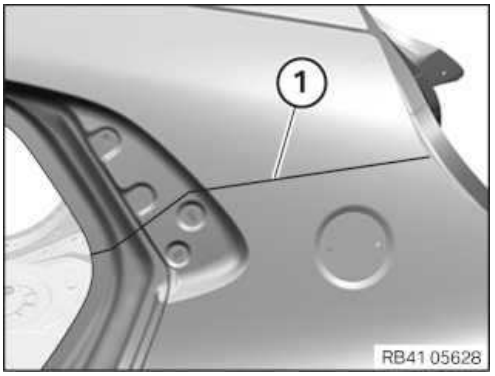
  Dimension d = 128 mm.
- Compare position of severance cut with reinforcement plate.



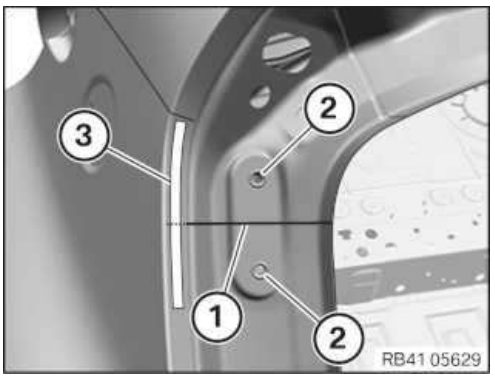
TECHNICAL INFORMATION

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).



- Cut the separating cut (1) on the C-pillar as marked. Disconnect only the outer panel.

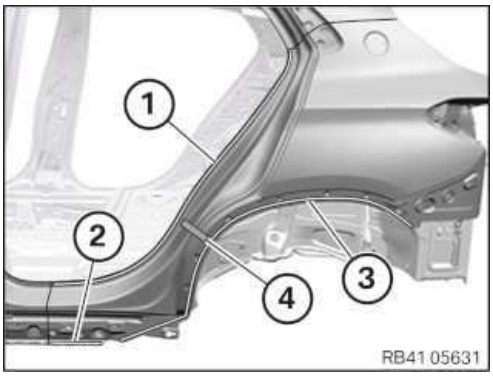


- Cut the separating cut (1) in the water channel centred between the bolting points (2). Disconnect only the outer panel.
- Open welded connections in area (3).



- Mark and cut the separating cut (1) on the side sill next to hole (2). Disconnect only the outer panel.
- Compare position of severance cut with reinforcement plate.

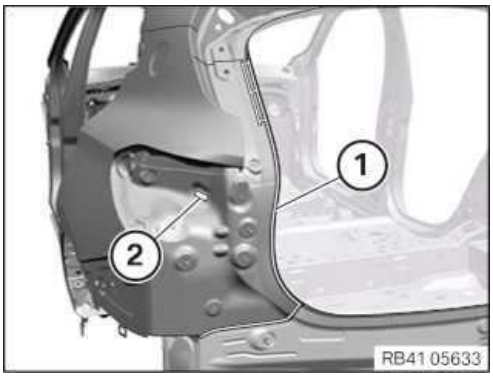
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- Release the welded connections in the areas (1) to (3).
- Detach the side panel from the cavity sealing (4).



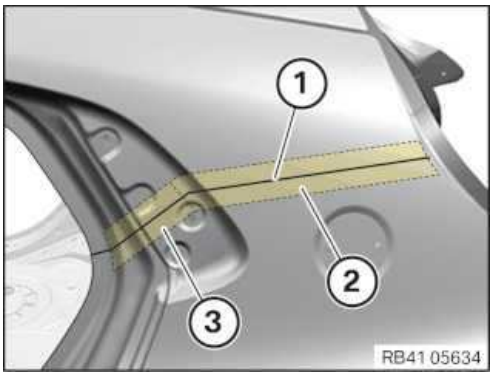
- Open welded connections in area (1).



- Open the welded connections in the areas (1) and (2) and remove the side panel.

3 – Prepare new part

- Mark and make the separating cuts on the new part in accordance with the separating cuts on the vehicle.
- Prepare the reinforcement plates at the separating cuts for the welded connection and the bonded connection.

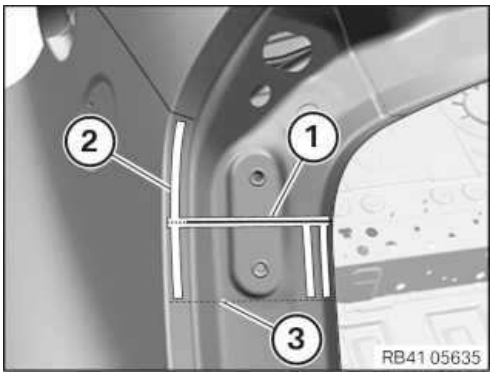


TECHNICAL INFORMATION

For additional information see: 41 00 ... Reinforcement plate with stud bolt (welded)

- At the separating cut (1) of the C-pillar, fit the reinforcement plates (2) and (3) together with the new part.
- Prepare the separating cut and the reinforcement plates (1) and (2) for joining by welding.

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- In the area of the water channel, prepare the separating cut (1) and the area (2) up to the reference line (3) for joining by welding.

TECHNICAL INFORMATION

For additional information see: 41 00 ... Reinforcement plate with stud bolt (bonded or welded)

- Prepare all other reinforcement plates for joining by bonded connection.

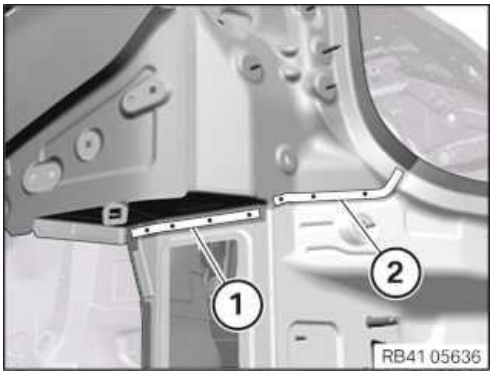
TECHNICAL INFORMATION

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.

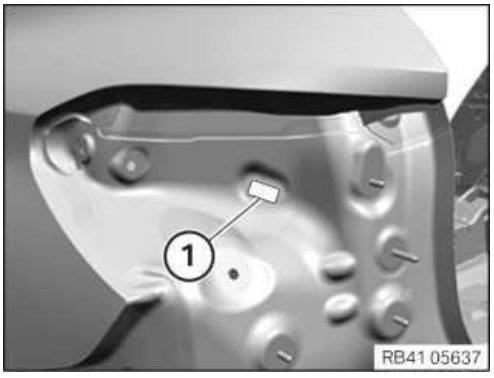
For additional information see: 41 00 ... BMW bonding instructions

- Prepare all other joint areas for joining by bonded connection.



- In the areas (1) and (2), drill out bore holes to ⌀ 4.2 mm for blind rivets.

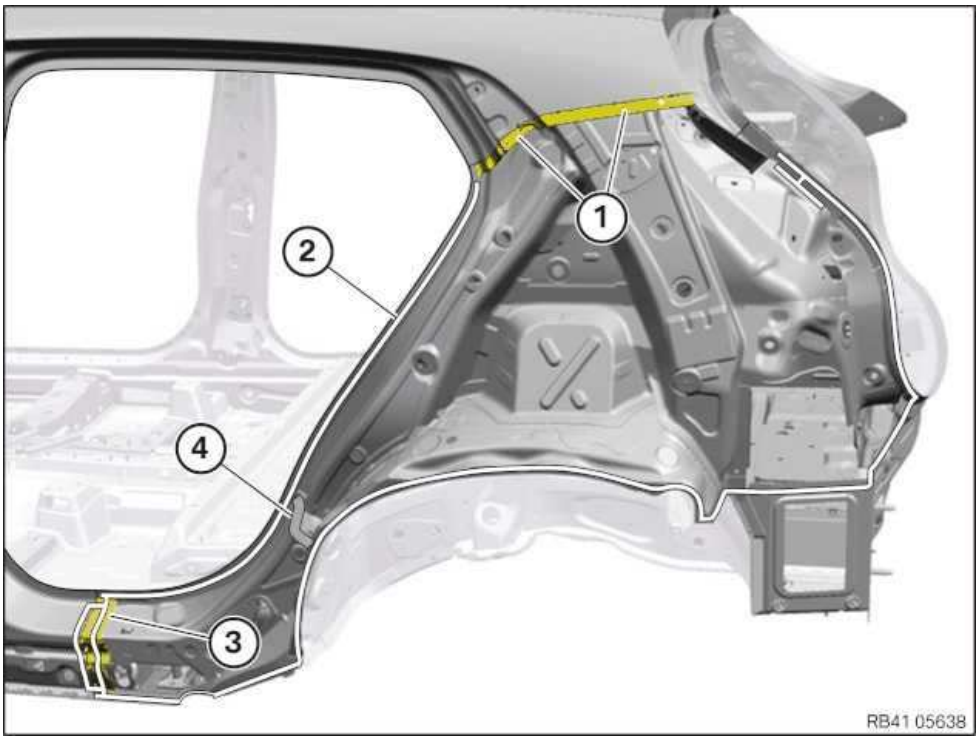
Area	Number
1	4
2	3



- In area (1), drill out a bore hole to ⌀ 4.2 mm for the blind rivet.
- Remove new part and deburr holes.

4 – Installing the rear left side panel

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- Install reinforcement plates (1) to C-pillar and attach by welding.
- Pre-clean all bonding surfaces (2) on the vehicle and on new part with cleaning agent R2.

Expendable materials

Cleaning agent R2	500 ml	8319041732

- Clean all bonding surfaces (2) on the vehicle and on new part with cleaning agent R1.

Expendable materials

Cleaning agent R1	100 ml, Bottle	8319221121

- Apply adhesive K5 to the reinforcement plate (3) for the side sill and install the reinforcement plate (3).
- Apply adhesive K5 to the bonding surfaces (2).

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 D1 to cavity sealing (4).

Expendable materials

Sealant D1 (seam sealing)	310 ml	8342240998

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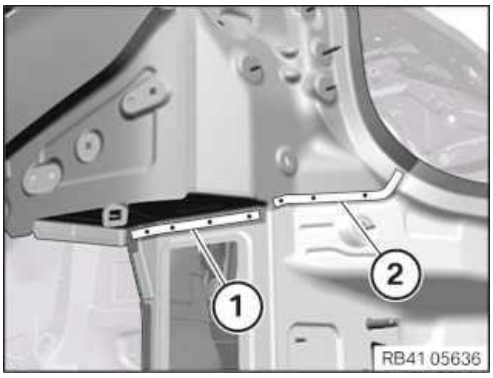
- Install the side panel with the help of a second person.
- During installation, ensure that sufficient adhesive has been applied to all bonding surfaces.
- Align the side wall in the areas of the separating cuts and secure it with locking pliers.
- Tighten the nuts on the reinforcement plate .

Expendable materials

Plastic nut	⌀18 mm	51161943122

Expendable materials

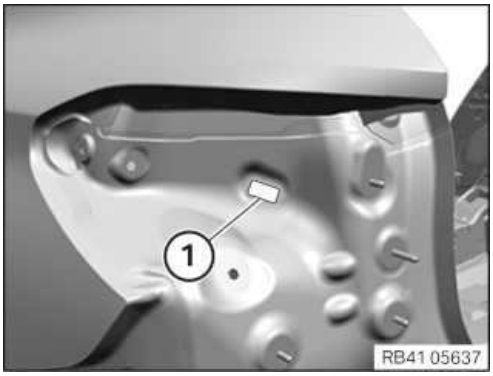
Plastic nut	⌀22 mm	07147169847



- Rivet the side panel in the areas (1) and (2) with blind rivets N3.

Expendable materials

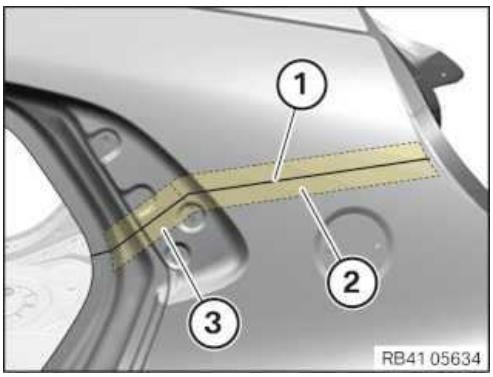
Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421



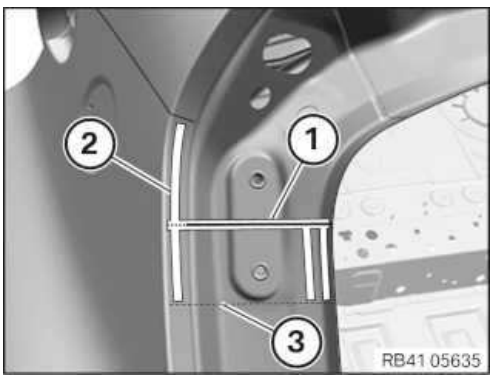
- Rivet side panel in area (1) with blind rivet N3.

Expendable materials

Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421

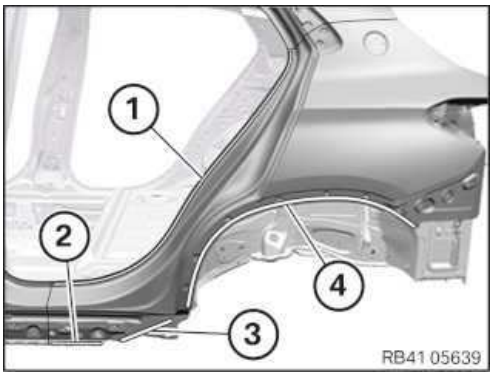


- Tack separating cut (1) and reinforcement plates (2) and (3) by welding. Only complete welding of separating cut and reinforcement plates after the punch rivet is installed.



- In the area of the water channel, tack separating cut (1) and in area (2) up to the auxiliary line (3) by welding. Only complete welding of separating cut (1) and in area (2) after the punch rivet is installed.

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- Rivet the side panel in the areas (1) to (4) with punch rivets N4 and N5.

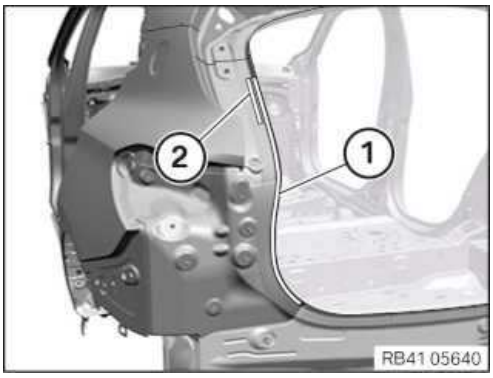
Area	Description	Number
1	N4	17
2	N5	4
3	N5	4
4	N4	8

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.

Area	Number
1	11
2	3

Expendable materials

Punch rivet N4 Ø 3 mm ; 4 mm long		83192457307

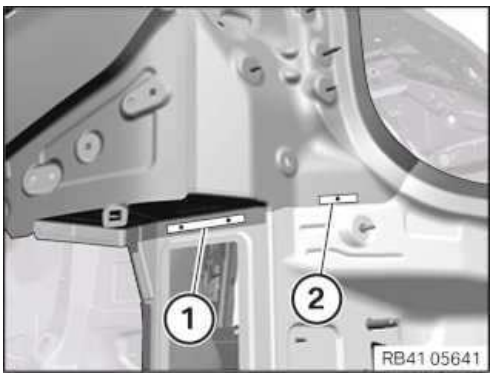
- Carry out the complete weldings on the C-pillar and on the water channel. Avoid excessive heat input at the adjacent adhesive areas.

▸ **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 areas (1) and (2) has hardened.
- Install an additional EMC screw in the area of the side sill.

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 ... Opening bonded connections	2
41 05 800 Releasing bonded folded seam connections	2
41 00 ... BMW/MINI bonding instructions	3
41 00 ... 0 Contents of Body, General	
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

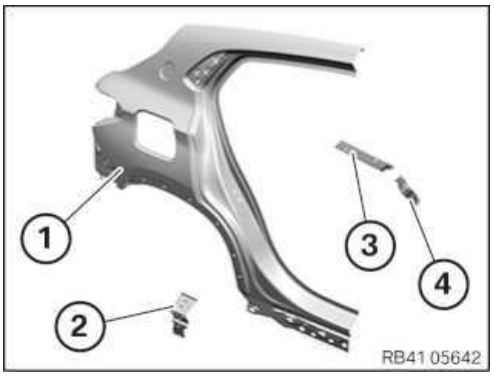
TECHNICAL INFORMATION

- 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 – Supply the new parts required



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

  Rear side wall(1)

  Reinforcement plate, side sill(2)

  Reinforcement plate, C-pillar(3)

  Reinforcement plate, C-pillar(4)

  Plastic nut

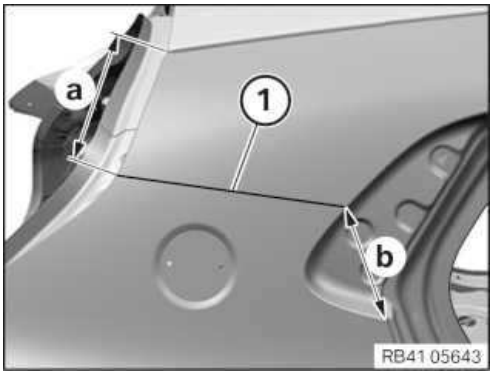
TECHNICAL INFORMATION

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

- Supply the following consumables:

Material	Quantity
Adhesive K5b	1
Adhesive K5a	1
Blind rivet N3	10
Punch rivet N4	40
Punch rivet N5	10
EMC screw	4
Cleaning agentR1	1
Cleaning agentR2	1
Cavity sealing wax remover	
Sealant D1	

2 – Remove the right rear side panel

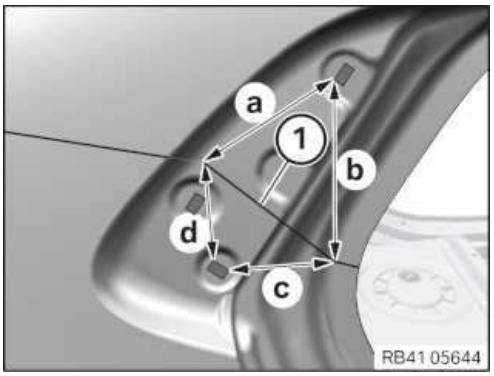


- Mark the separating cut (1) to the specified dimensions.

  Dimension a = 190 mm from the corner of the roof outer skin.

  Dimension b = 125 mm from the corner of the side panel.
- Compare position of severance cut with reinforcement plate.

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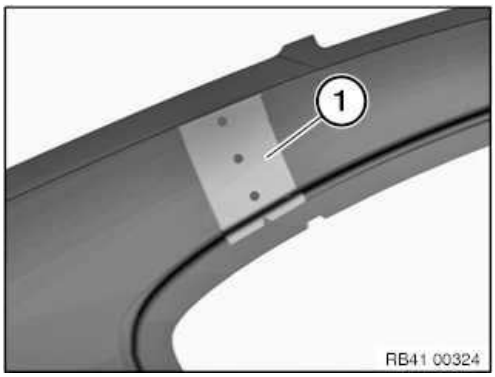
- Mark the separating cut (1) to the specified dimensions.

  Dimension a = 90 mm.

  Dimension b = 128 mm.

  Dimension c = 88 mm.

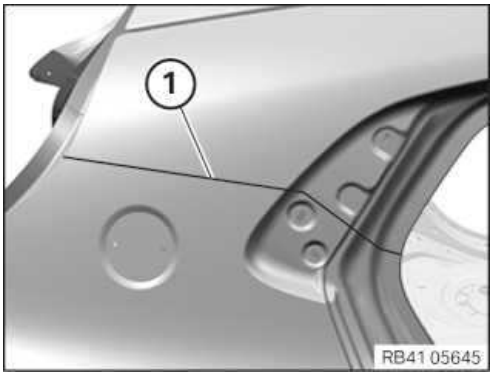
  Dimension d = 60 mm.
- Compare position of severance cut with reinforcement plate.



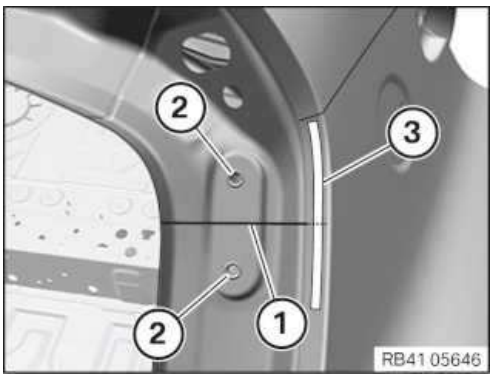
TECHNICAL INFORMATION

For more information see: 41 00 ... Determination of separating cut using a template

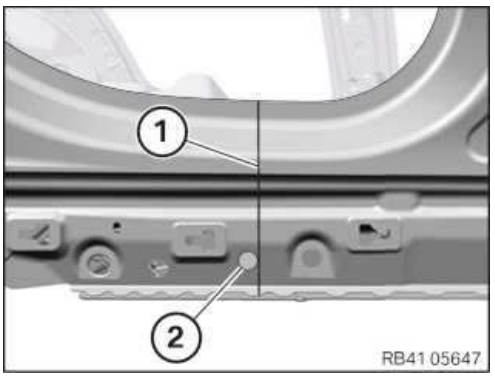
- Determine position of the severance cut in addition to the dimensions with the aid of a template (1).



- Cut the separating cut (1) on the C-pillar as marked. Disconnect only the outer panel.

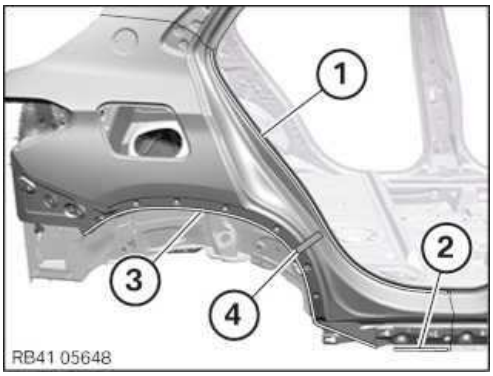


- Cut the separating cut (1) in the water channel centred between the bolting points (2). Disconnect only the outer panel.
- Open welded connections in area (3).



- Compare position of severance cut with reinforcement plate.
- Mark and cut the separating cut (1) on the side sill next to hole (2). Disconnect only the outer panel.

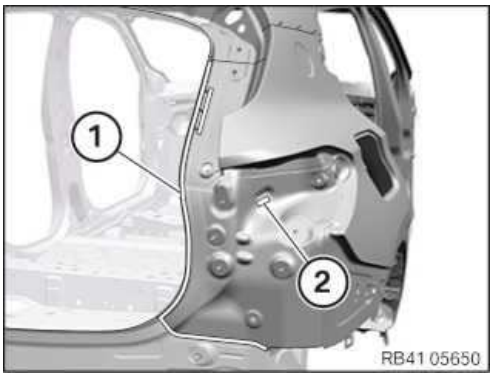
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- Release the welded connections in the areas (1) to (3).
- Detach the side panel from the cavity sealing (4).



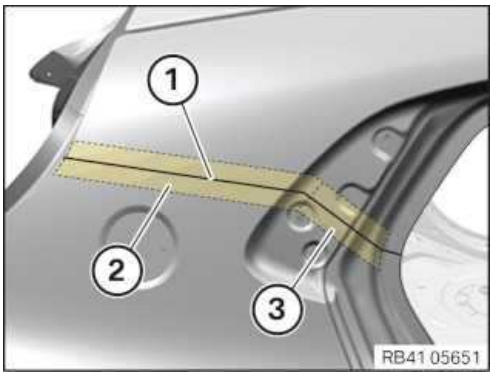
- Open welded connections in area (1).



- Open the welded connections in the areas (1) and (2) and remove the side panel.

3 – Prepare new part

- Mark and make the separating cuts on the new part in accordance with the separating cuts on the vehicle.
- Prepare the reinforcement plates at the separating cuts for the welded connection and the bonded connection.

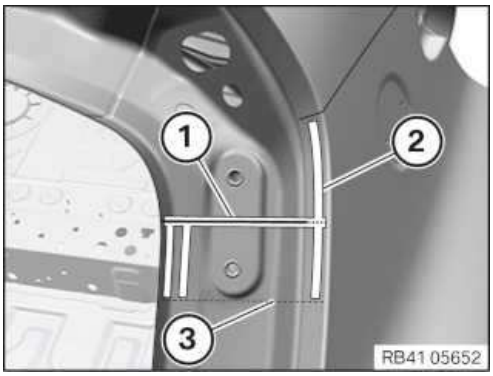


TECHNICAL INFORMATION

For additional information see: 41 00 ... Reinforcement plate with stud bolt (welded)

- At the separating cut (1) of the C-pillar, fit the reinforcement plates (2) and (3) together with the new part.
- Prepare the separating cut and the reinforcement plates (1) and (2) for joining by welding.

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- In the area of the water channel, prepare the separating cut (1) and the area (2) up to the reference line (3) for joining by welding.

TECHNICAL INFORMATION

For additional information see: 41 00 ... Reinforcement plate with stud bolt (bonded or welded)

- Prepare all other reinforcement plates for joining by bonded connection.

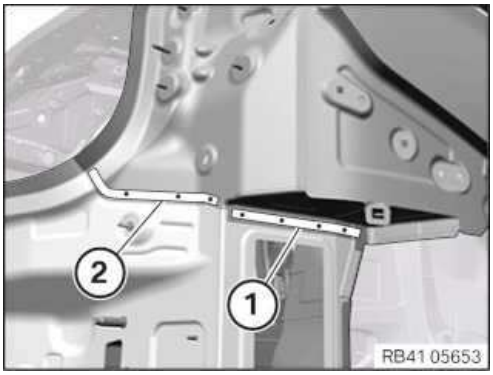
TECHNICAL INFORMATION

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.

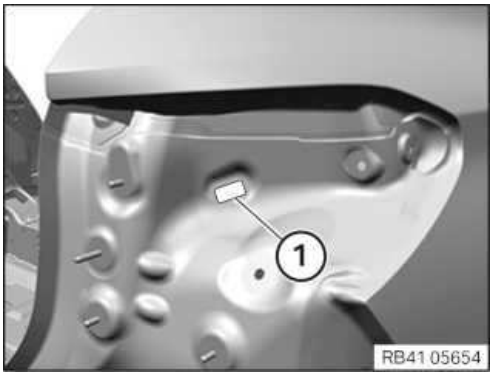
For additional information see: 41 00 ... BMW bonding instructions

- Prepare all other joint areas for joining by bonded connection.



- In the areas (1) and (2), drill out bore holes to ⌀ 4.2 mm for blind rivets.

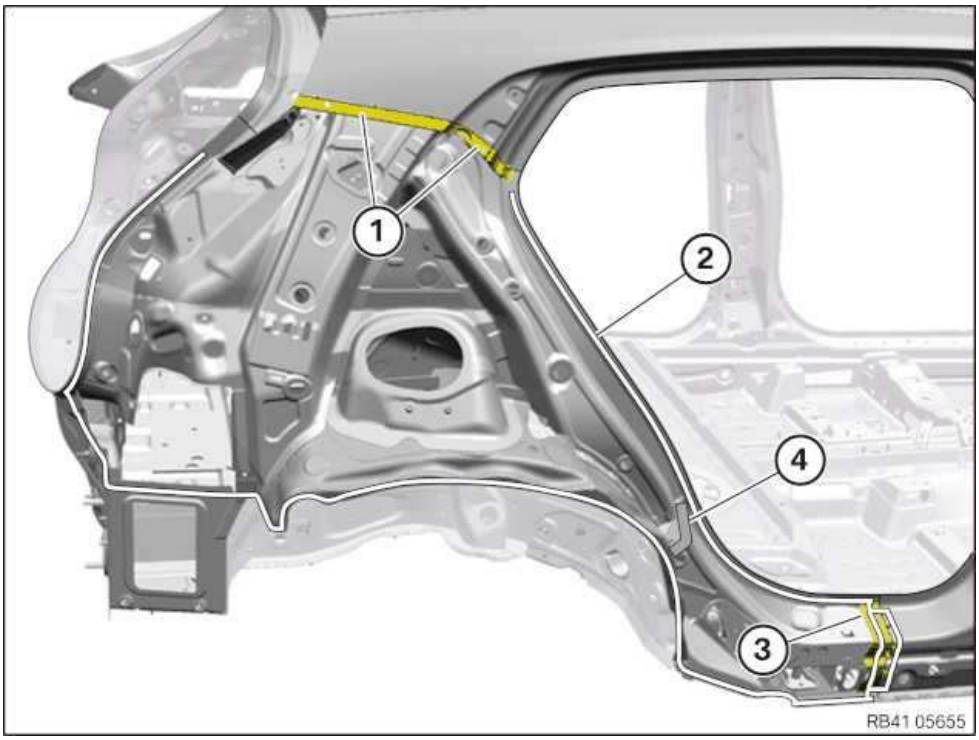
Area	Number
1	4
2	3



- In area (1), drill out a bore hole to ⌀ 4.2 mm for the blind rivet.
- Remove new part and deburr holes.

4 – Install the rear side panel on the right

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- Install reinforcement plate (1) to C-pillar.
- Pre-clean all bonding surfaces (2) on the vehicle and on new part with cleaning agent R2.

Expendable materials

Cleaning agent R2	500 ml	8319041732

- Clean all bonding surfaces (2) on the vehicle and on new part with cleaning agent R1.

Expendable materials

Cleaning agent R1	100 ml, Bottle	8319221121

- Apply adhesive K5 to the side sill reinforcement plate (3). Install reinforcement plate.
- Apply adhesive K5 to the bonding surfaces (2).

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 D1 to cavity sealing (4).

Expendable materials

Sealant D1 (seam sealing)	310 ml	8342240998

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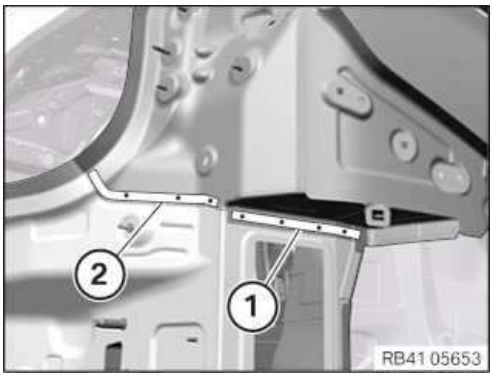
- Install the side panel with the help of a second person.
- During installation, ensure that sufficient adhesive has been applied to all bonding surfaces.
- Align the side wall in the areas of the separating cuts and secure it with locking pliers.
- Tighten the nuts on the reinforcement plate .

Expendable materials

Plastic nut	⌀18 mm	51161943122

Expendable materials

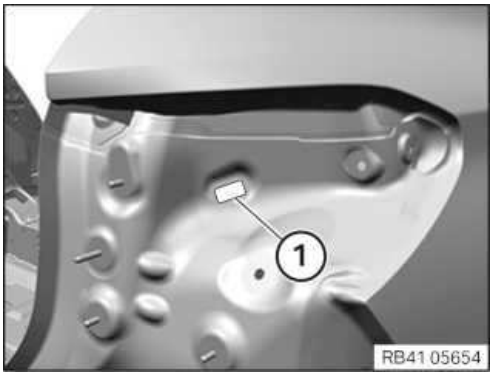
Plastic nut	⌀22 mm	07147169847



- Rivet the side panel in areas (1) with blind rivets N3.

Expendable materials

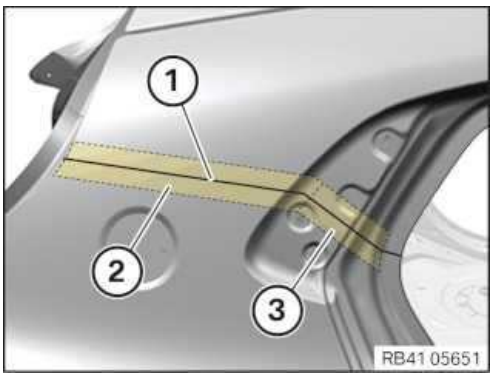
Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421



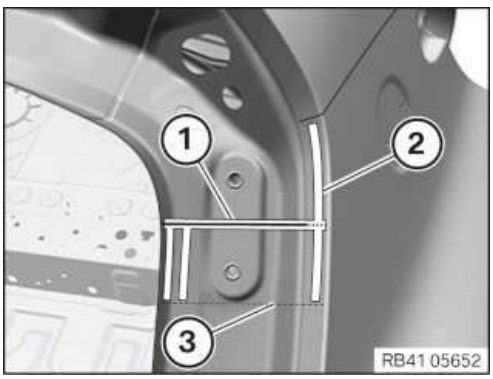
- Rivet side panel in area (1) with blind rivet N3.

Expendable materials

Blind rivet N3 Dia. 4 mm; clamping area 1-3 mm		83190301421

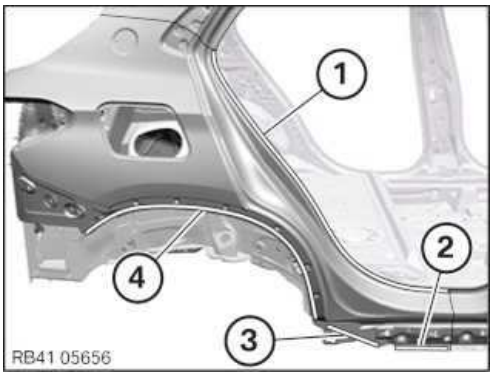


- Tack separating cut (1) and reinforcement plates (2) and (3) by welding. Do not complete welding of separating cut and reinforcement plates until the punch rivet is installed.



- Tack separating cut (1) and area (2) up to the auxiliary line (3) in the area of the water channel by welding. Do not complete welding of separating cut (1) and area (2) until the punch rivet is installed.

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- Rivet the side panel in the areas (1) to (4) with punch rivets N4 and N5.

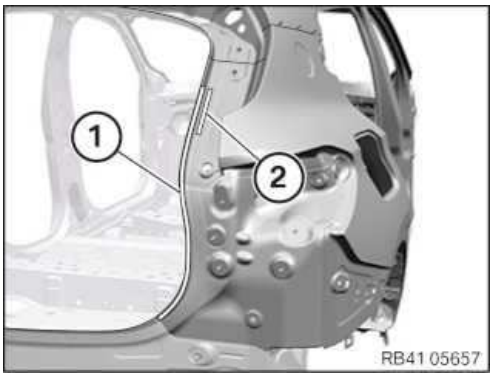
Area	Description	Number
1	N4	17
2	N5	4
3	N5	4
4	N4	8

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.

Area	Number
1	11
2	3

Expendable materials

Punch rivet N4 Ø 3 mm ; 4 mm long		83192457307

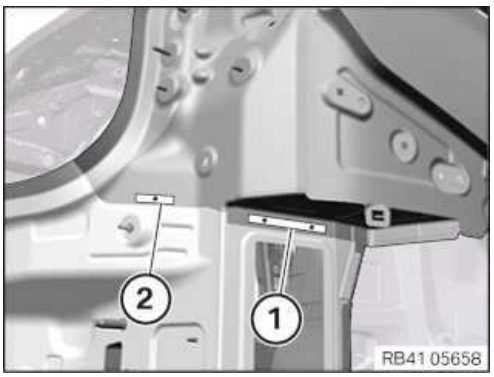
- Carry out the complete weldings on the C-pillar and on the water channel. Avoid excessive application of heat to adhesive areas .

▸ **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 areas (1) and (2) has hardened.
- Install an additional EMC screw in the area of the side sill.

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 ... Opening bonded connections	2
41 05 800 Releasing bonded folded seam connections	2
41 00 ... BMW/MINI bonding instructions	3
41 00 ... 0 Contents of Body, General	
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

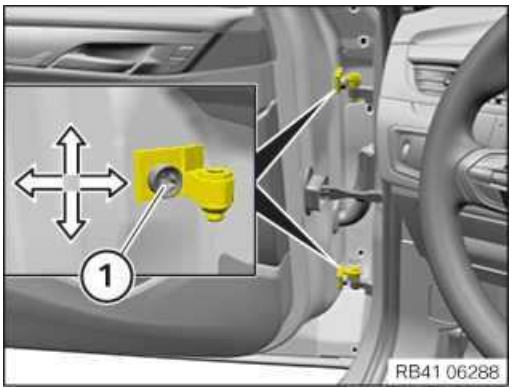
1 – Adjusting left front door

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

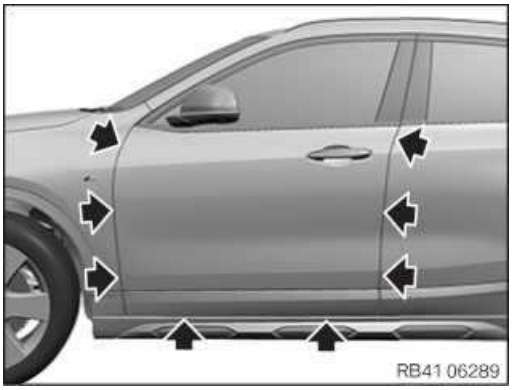
NOTICE

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



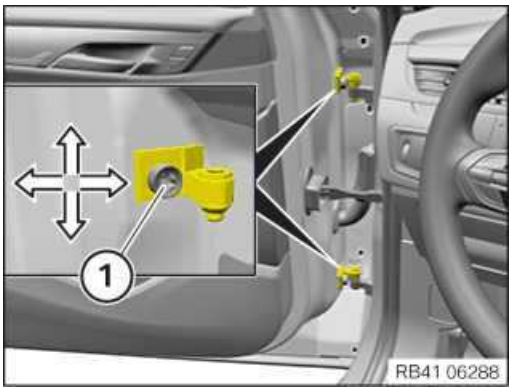
- Check gap dimension between door and the adjacent body components.

Result

» Gap dimensions do not correspond to the specifications.

Measure

- Adjust door.



- Tighten the screws (1).

Front door to door hinge

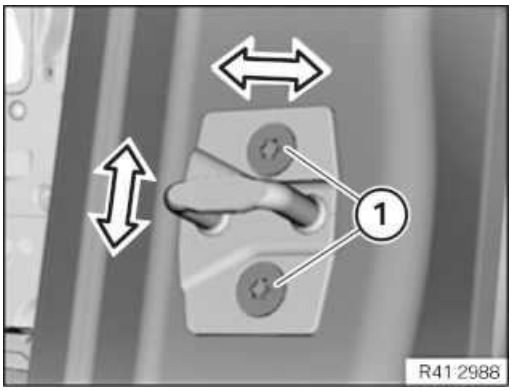
Screw		Tightening torque	40 Nm

▸ **Adjust lock striker**

Prerequisite

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The screws on lock striker are loosened so far that the lock striker can still be moved.



TECHNICAL INFORMATION

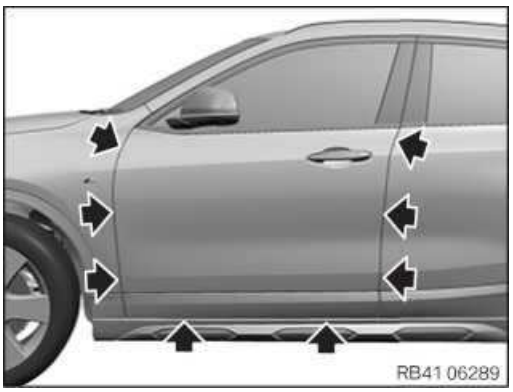
The gap dimensions form the basis for these repair instructions and must be observed without fail.

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.

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

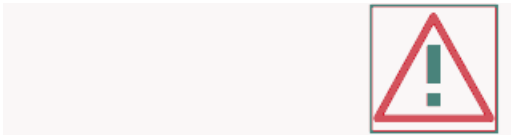
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Gap dimensions, body	1
Gap dimensions, body	1
Gap dimensions, body	1
Gap dimensions, body	1

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

PRELIMINARY WORK

1 – Disconnecting all battery earth leads



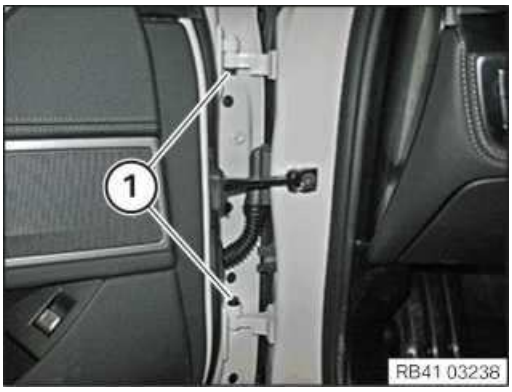
- See additional information.

MAIN WORK

2 – Removing the left front door

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Open door.
- Loosen screws (1) between both hinge elements at top and bottom.



- Pull lock (1) in upward direction and disconnect plug connection.

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.

- Secure door against closing.
- Loosen screw (2) at door stop.
- Detach door in upward direction and set down on a suitable surface.

3 – Installing left front door

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NOTICE

Description is for left component only. Procedure on the right side is identical.



RISK OF DAMAGE

Paint damage.

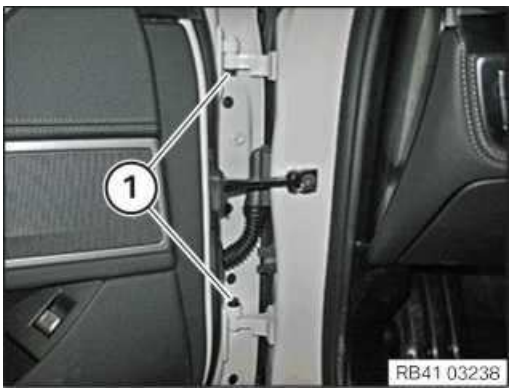
Mechanical action can lead to paint damage.

- 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 door from above.
- Secure door against closing.
- Connect plug connection and push lock (1) down.
- Tighten screw (2) at door stop.

Door stop to pillar

Screw		Tightening torque	28 Nm



- Tighten screws (1) between both hinge elements at top and bottom.

Screw connection, hinge parts

Screw		Tightening torque	27 Nm

POSTPROCESSES

4 – Disconnecting all battery earth leads



- See additional information.

Additional Information

Overview of Tightening Torques

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Door stop to pillar Used in step 3

Screw		Tightening torque	28 Nm

Screw connection, hinge parts Used in step 3

Screw		Tightening torque	27 Nm

Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1 4
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1 4
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
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61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4

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41 51 101 Replace front left or right door

NOTICE

Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

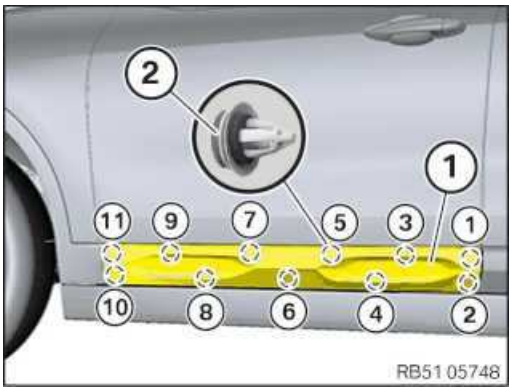
1 – Removing protective strip on the front door

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Release the protective strip (1) with the special tool **0 496 569 (00 9 325)** in the sequence (1) to (11) on the clips (2).

  The clips must be individually released one after the other in the specified sequence.

2 – Remove cover on door handle

RISK OF DAMAGE

Scratches.

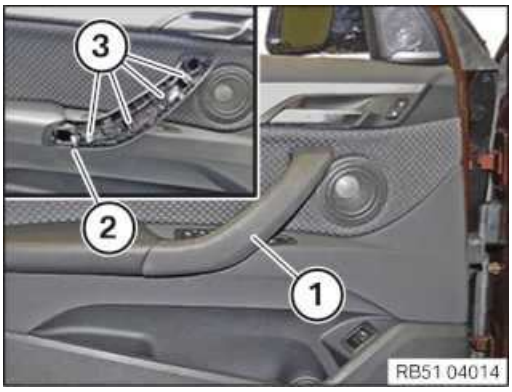
Tools and sharp-edged components can cause scratches.

- 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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- Lever out the cover (1) with a small screwdriver through the recess (2) toward the inside from the clamps (3) and remove.

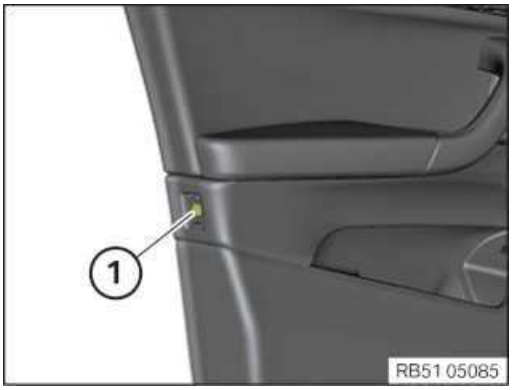
3 – Remove front door trim panel

RISK OF DAMAGE

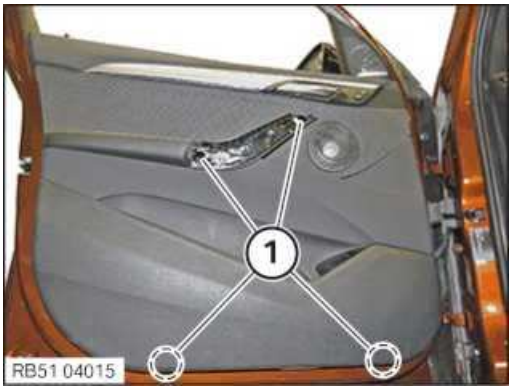
Scratches.

Tools and sharp-edged components can cause scratches.

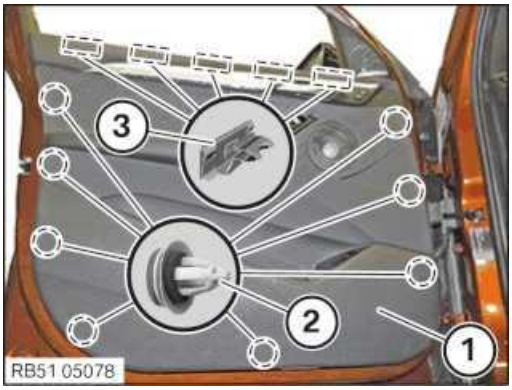
- Protect working area.
- Handle tools and components carefully.



- If fitted: Remove the cover and unscrew the bolt (1).

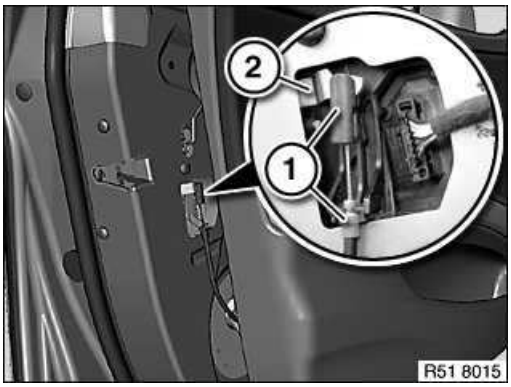


- Loosen screws (1).



- Unclip the door trim panel (1) from the clips (2) with a suitable plastic wedge.
- Pull the door trim panel (1) from the clamps (3) at the top.

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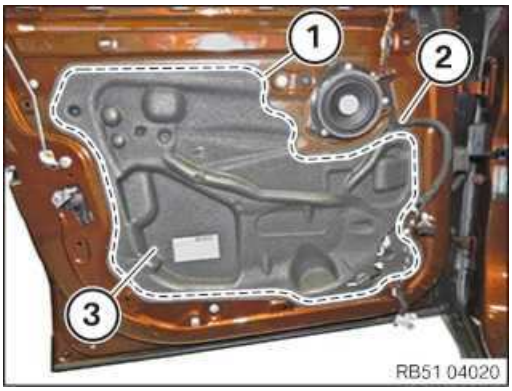


- Detach Bowden cable (1) from door lock (2).
- Disconnect all plug connections and remove door trim panel.

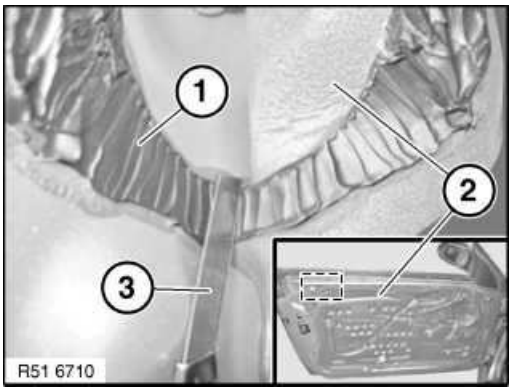
4 – Removing sound insulation on front door

TECHNICAL INFORMATION

Notes on the sound insulation must be strictly observed for these repair instructions.
For more information see: 51 48 ... Notes on bonding the sound insulation (SI) in doors

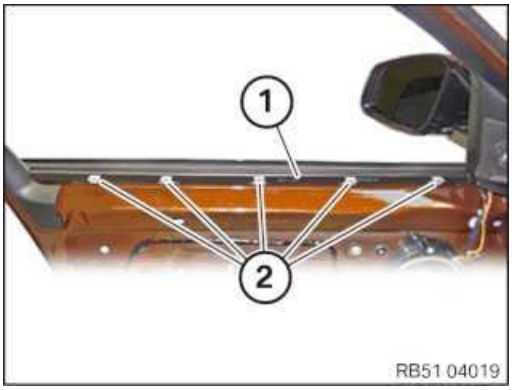


- Position of sealing bead (1)
- Pay attention to the cable (2) when removing the sound insulation (3).



- When cutting through the sealing bead (1) make sure not to damage the sound insulation (2) and any potentially routed cables.
- Use a suitable, sharp cutting tool (3) to cut through the sealing bead (1) of the sound insulation (2) in the corresponding area.

5 – Remove the inside front weather strip

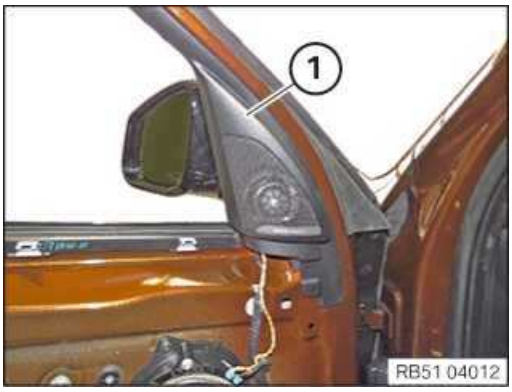


- Release the weather strip (1) from the clamps (2) and pull it off to the top.

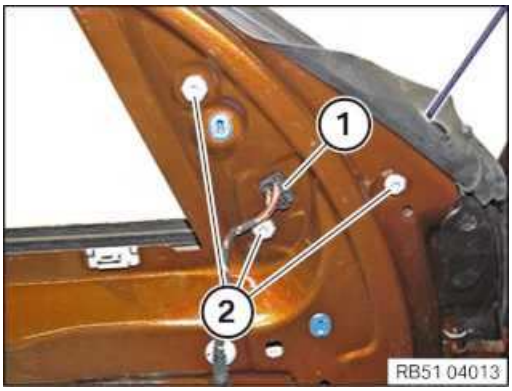
  If weather strip (1) is reused, make sure it is not bent.

6 – Removing the exterior mirror

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- Release the window frame cover (1) in the area of the mirror.
- If necessary, disconnect related plug connections.

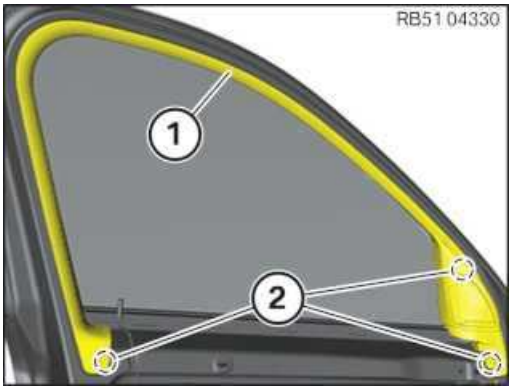


- Secure exterior mirror against falling out.
- Unlock plug connection (1) and disconnect.
- Release the screws (2) and remove the exterior rearview mirror.

7 – Remove the cover on the window frame

Prerequisite

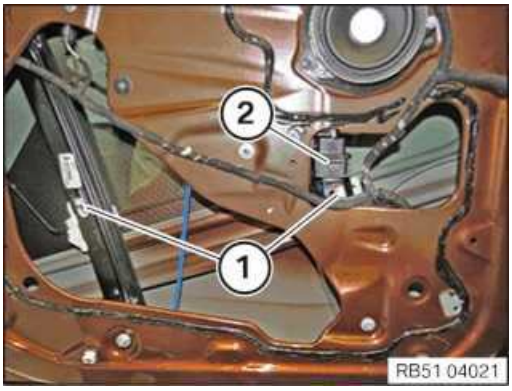
Door window glass open



- Lever out the cover (1) at the clamps (2).
- Carefully thread out the cover (1) to the bottom.

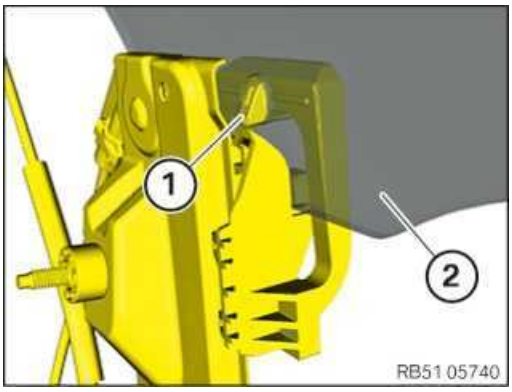
  Do not kink the cover (1).
- Remove the cover (1) and disconnect the plug connection where required.

8 – Remove front door window glass



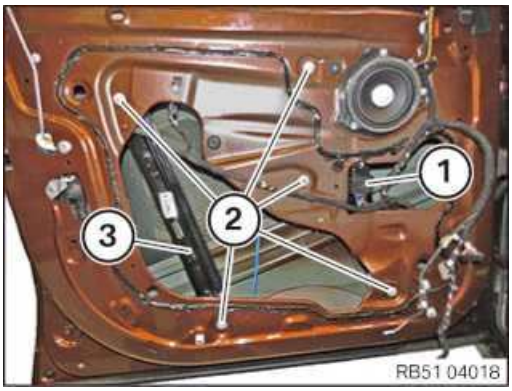
- Move the door window glass until the stop of the mounting (1) is accessible.
- Unlock the plug connection (2) to the power window motor and disconnect it (pinch hazard).

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- Operate the stops of the front and rear mounting (1) using a suitable tool.
- Twist the door window glass (2) in the door frame and feed out upwards out of the door.

9 – Removing power window regulator



- Unlock plug connection (1) and disconnect.
- Loosen nuts (2).
- Carefully thread the power windows (3) out of the door and detach the Bowden cable from the holder at the same time.

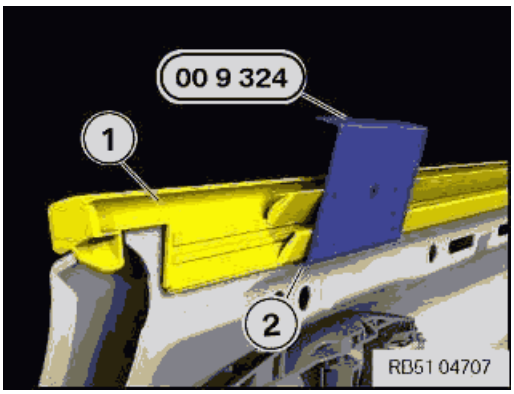
10 – Removing the weather strip on the outside of the front door

Prerequisite

The door window glass is open.

NOTICE

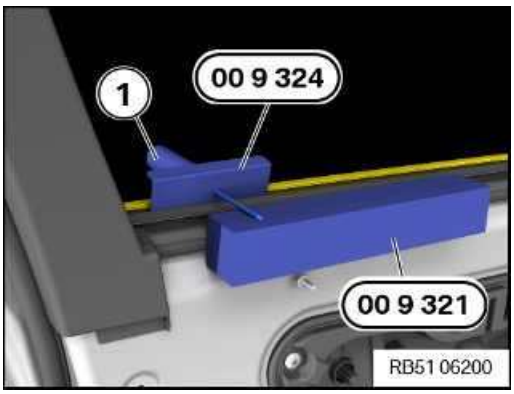
Description is for left component only. Procedure on the right side is identical.



NOTICE

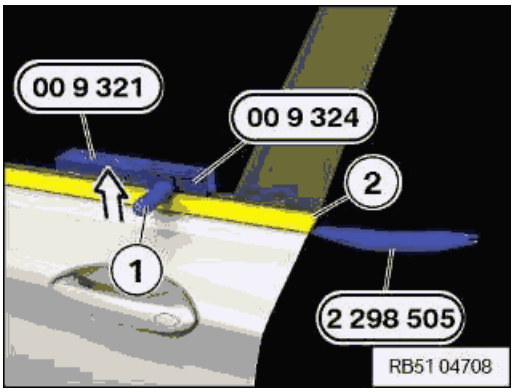
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Insert the special tool **0 495 484 (00 9 324)** at the front (on the A-pillar) into the window recess and slide it to the rear.
- Position the special tool **0 495 484 (00 9 324)** as shown at the lower edge of the 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 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.

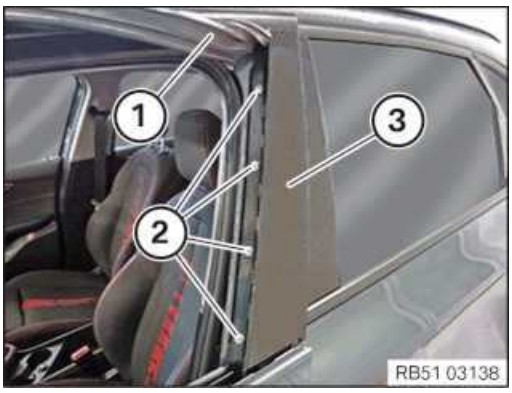
  The special tool **0 495 484 (00 9 324)** lifts the window recess finisher strip (2) upwards.
- Repeat this process step by step towards the front until the window recess finisher strip (2) is removed completely.

Your browser doesn't support HTML5 video.

11 – Remove the front window frame trim

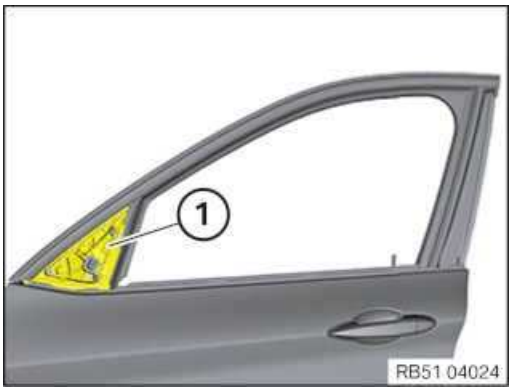
Prerequisite

Door window glass open



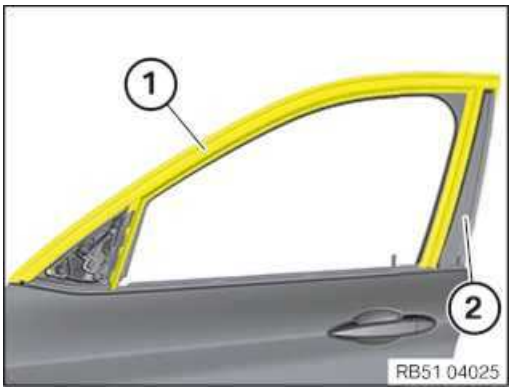
- Pull the rubber window seal (1) out of the rear window guide.
- Loosen screws (2).
- Feed out the trim (3) towards the top.

12 – Remove the front rubber window seal



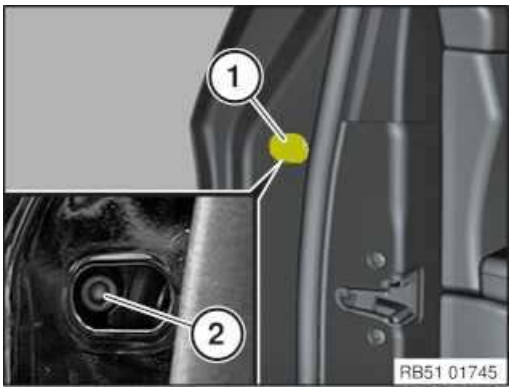
- Remove the sound insulation (1).

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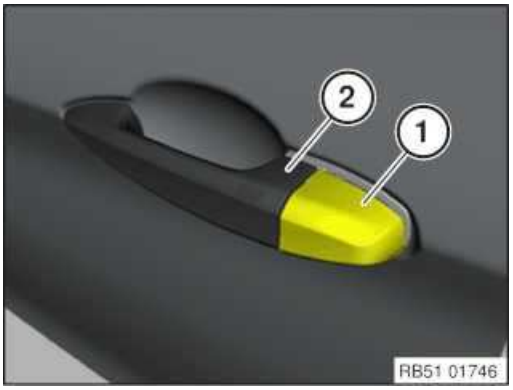


- Pull off the entire rubber window seal (1) from the door frame (2).
- Pull out rubber window seal (1) from window guide rail and remove.

13 – Remove cover on the outside door handle

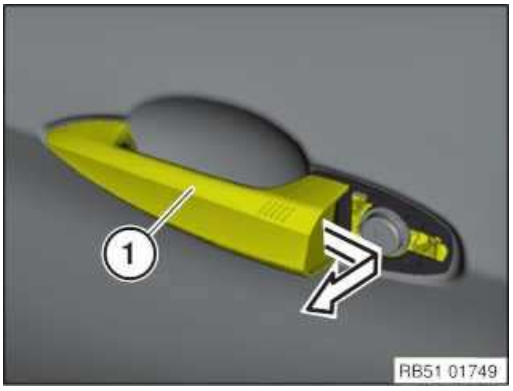


- Lever out the cover (1).
- Release screw (2) below it.



- Pull off the cover (1) with the outside door handle (2) slightly open.

14 – Remove the outside door handle

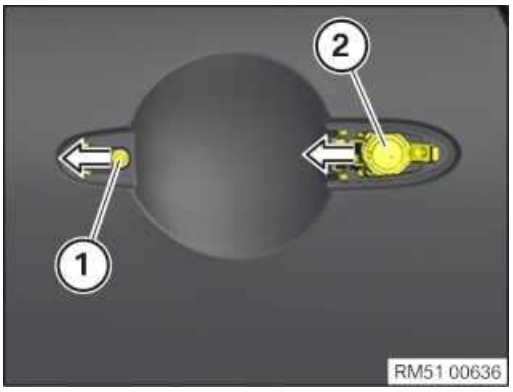


- Pull out the outside door handle (1) and feed out in direction of arrow.
- **Equipment specification with Comfort Access/light package**:

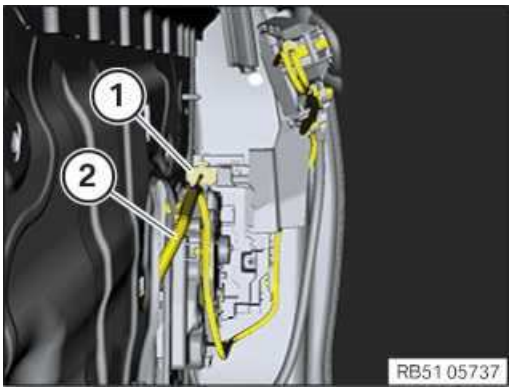
  Carefully feed out the outside door handle (1) and disconnect the associated plug connections.

15 – Remove door lock

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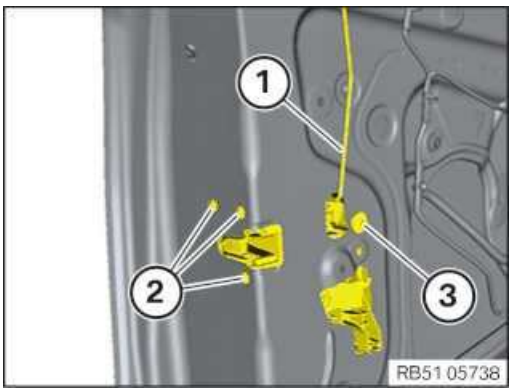


- Loosen screw (1).
- Slide the outside door handle support (2) forward and thread out to the inside.

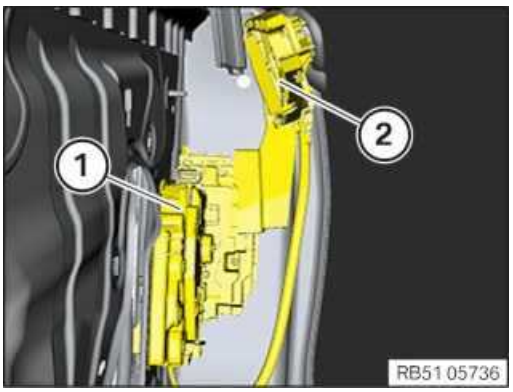


- Unlock and disconnect the plug connection (1) on the door lock.

  Disconnect the wiring harness (2) from the door lock and the outside door handle support.



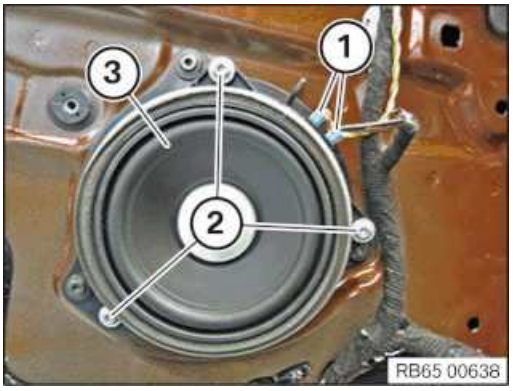
- Unclip locking rod (1).
- Loosen screws (2) and (3).



- Thread out the door lock (1) together with the outside door handle support (2) from the door.

  Make sure that the seal of the door lock is not damaged during removal.

16 – Removing the mid-range speaker from the front door



- Disconnect the connector (1) .
- Loosen screws (2).
- Remove the mid-range speaker (3).

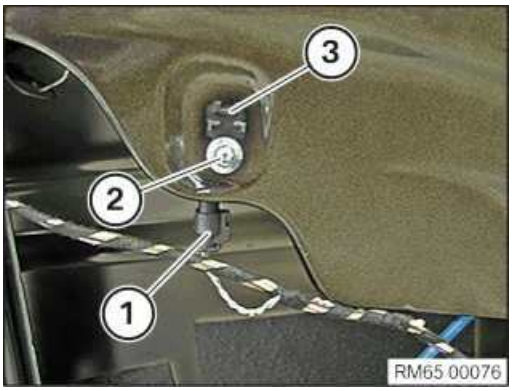
17 – Disconnecting all battery earth leads

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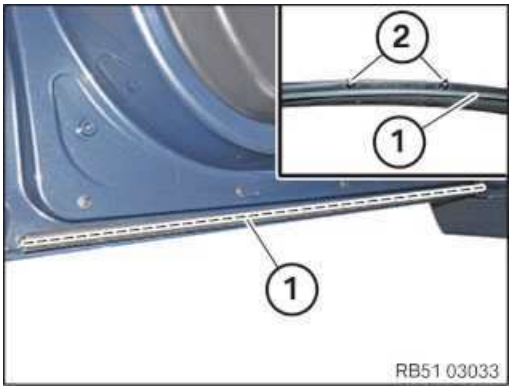
- See additional information.

18 – Removing the airbag sensor on the front door



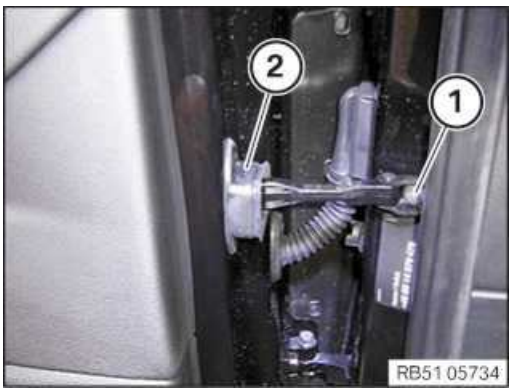
- Unlock and disconnect connector (1).
- Loosen nut (2).
- Remove airbag sensor (3).

19 – Removing the cover on the front door at the bottom



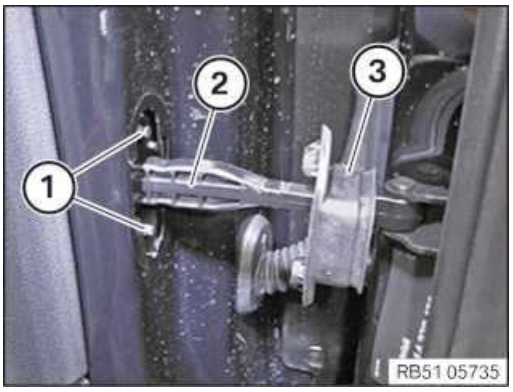
- Unclip the clips (2) along the dotted line using the special tool **2 298 505**.
- Remove the cover (1).

20 – Remove door stop



- Loosen screw (1).
- Pull off the cover (2) from the door outer skin.

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- Loosen nuts (1).
- Feed the door brake (2) out of the door and remove the cover (3).

MAIN WORK

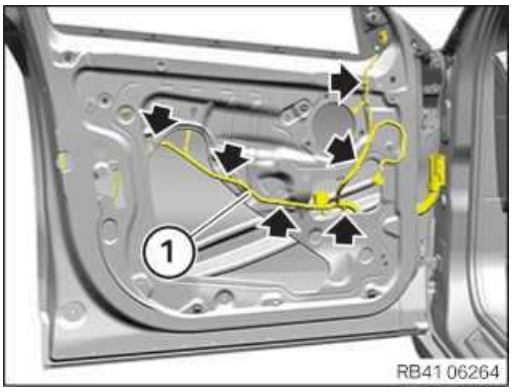
21 – Replacing left front door

Prerequisite

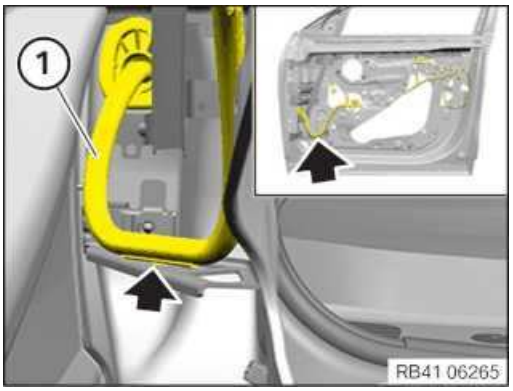
New part is painted.



- Pull the lock (1) to the top and disconnect the plug connection (2).



- Unclip the wiring harness (1) at the marked positions (arrows).

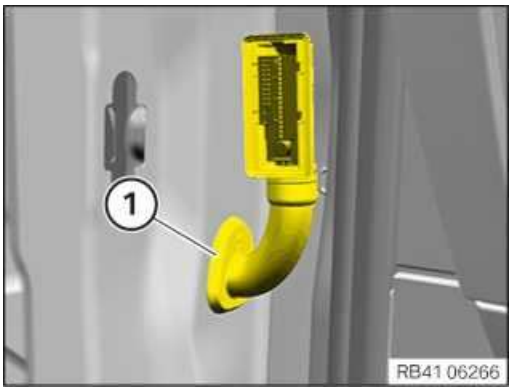


NOTICE

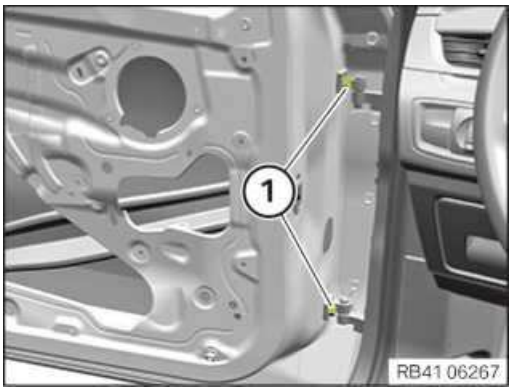
To provide a better overview: Shown without door outer skin.

- Unclip the vehicle wiring harness (1) in the highlighted position (arrow).

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- Release the grommet (1) and remove the vehicle wiring harness from the door.



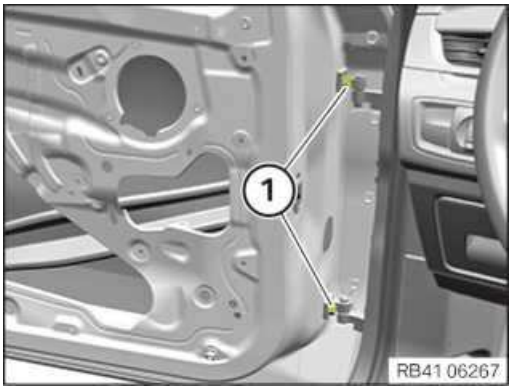
RISK OF DAMAGE

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.

- Secure front door against falling.
- Loosen screws (1) and remove front door.



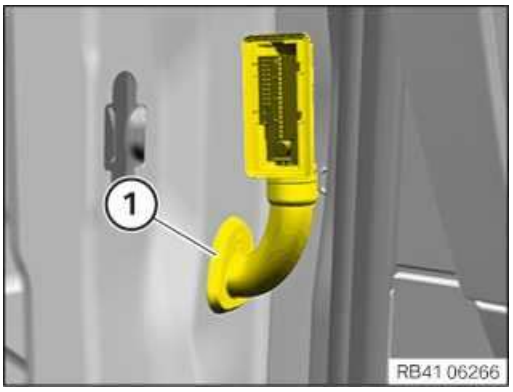
- Protect the new door from falling.
- Position the new door at the door hinges.

  Tighten the screws (1).

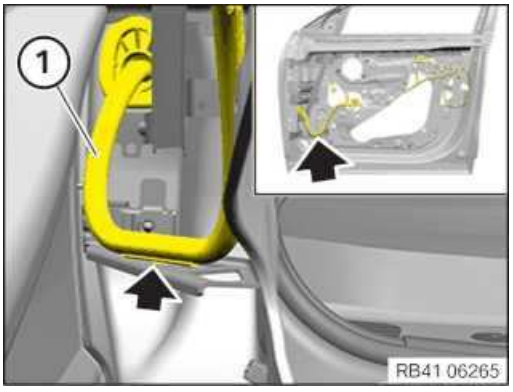
Front door to door hinge

Screw		Tightening torque	40 Nm

- Carefully close front door and check for bodywork contact, reposition door if necessary.



- Insert the vehicle wiring harness in the door.
- Mount grommet (1) and check for correct fit. (watertightness).

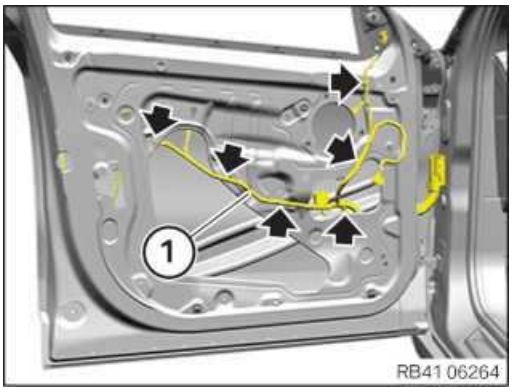


NOTICE

To provide a better overview: Shown without door outer skin.

- Clip in the vehicle wiring harness (1) in the highlighted position (arrow).

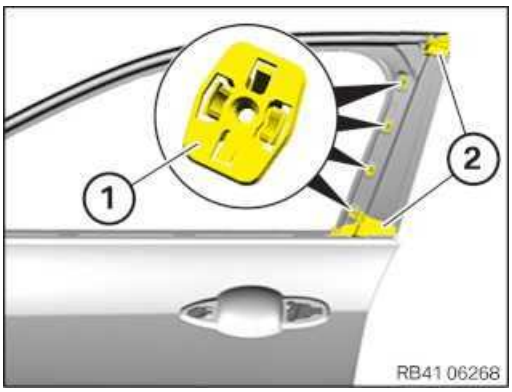
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- Clip in the wiring harness (1) at the marked positions (arrows).



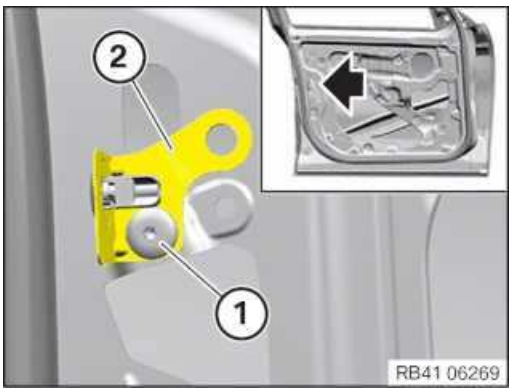
- Connect the plug connection (1) and push the lock (2) down.



- Remount the clips (1).
- Remount the sealings (2).

  Check the sealings (2) for damage and that they have been positioned correctly.

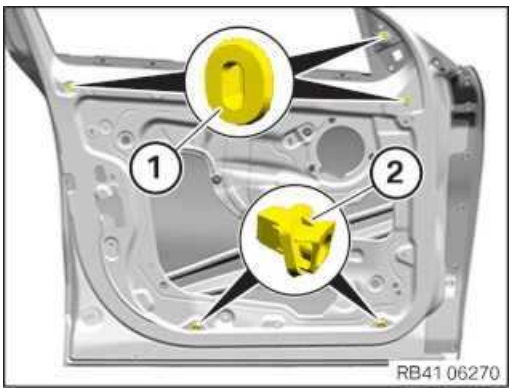
  If necessary, install new sealing.



- Release the screw (1) and remount the retaining bracket (2).
- Tighten down screw (1).

Retaining bracket to door

Screw	Tightening torque	8,8 Nm

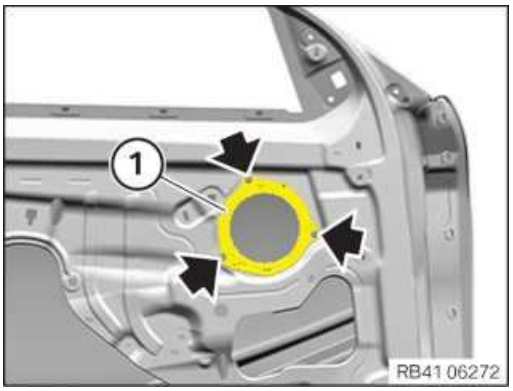


- Remount the plug-in clamp (1).
- Remount the expansion nuts (2).

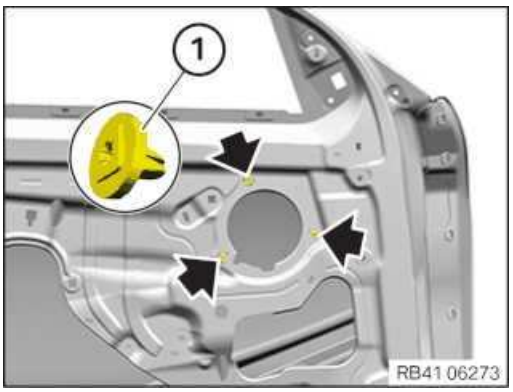
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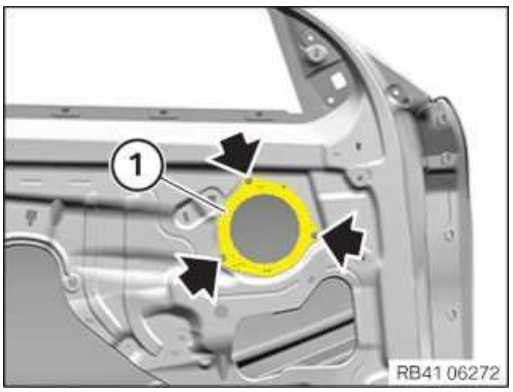
- Remount the seal plug (1).
- Remount the expansion nuts (2).



- Release the screws (arrows) and remove the adapter (1).



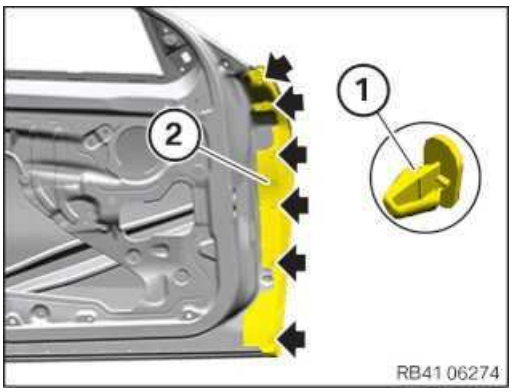
- Remount the expansion nuts (1).



- Install the adapter (1) and tighten the screws (arrows).

Adapter to door

Oval-head screw	Tightening torque	2,0 Nm

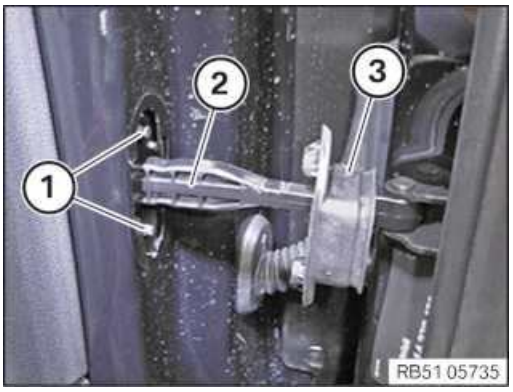


- Release the clips (1) and remount the caulking (2).

POSTPROCESSES

22 – Installing the door stop

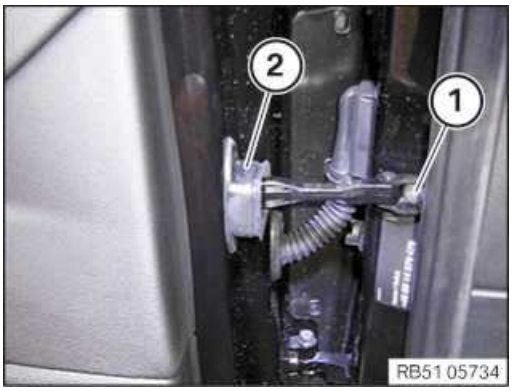
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- Guide door brake (2) into the door.
- Check the retaining lugs of the cover (3), they must not be missing or damaged.
- Attach the cover (3) to the door brake (2).
- Tighten nuts (1).

Door retainer to door

Nut M6		Tightening torque	8 Nm



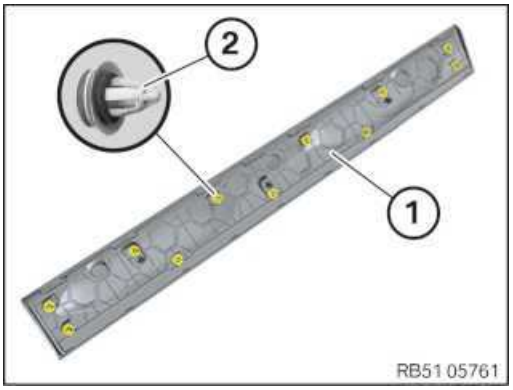
- Tighten down screw (1).

Door stop to pillar

Screw		Tightening torque	28 Nm

- Mount the cover (1) on the door outer skin and lock.

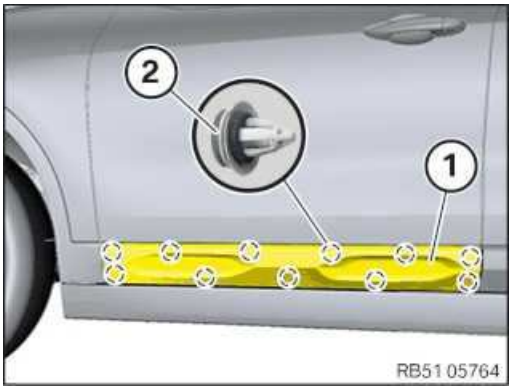
23 – Installing the protective strip on the front door



- Lever out stuck clips (2) from the door outer skin with the special tool **2 298 505** and fasten on the protective strip (2).
- Check the clips (2) and their brackets.

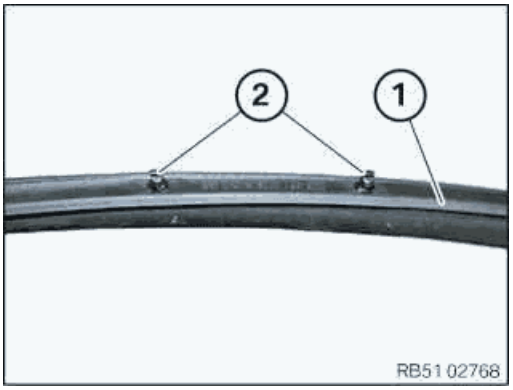
  Renew faulty clips (2) or clips without a sealing ring.

  Renew the protective strip on damaged brackets or damaged centering pins.



- Correctly position the protective strip (1) with the centering pin and clip in on the clips (2) starting from the centre to the outer.

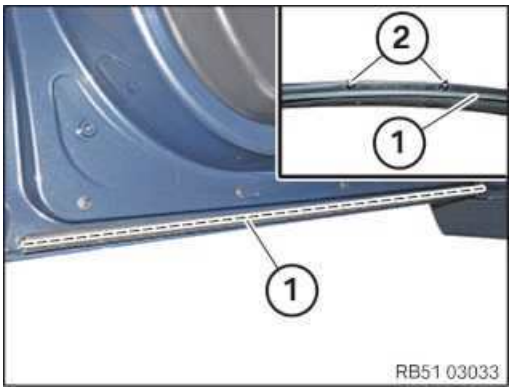
24 – Install the cover on the front door at bottom



- Check the clips of the (2) cover (1) for damage, renew if necessary.

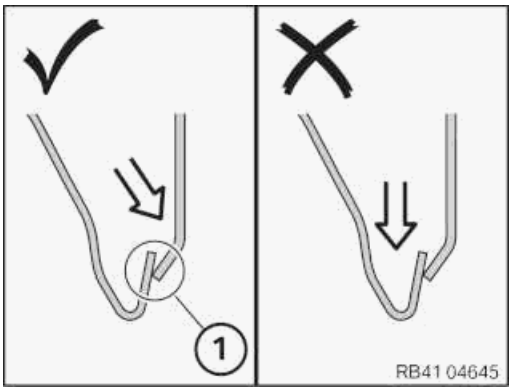
  The clips (2) must not be damaged or missing.

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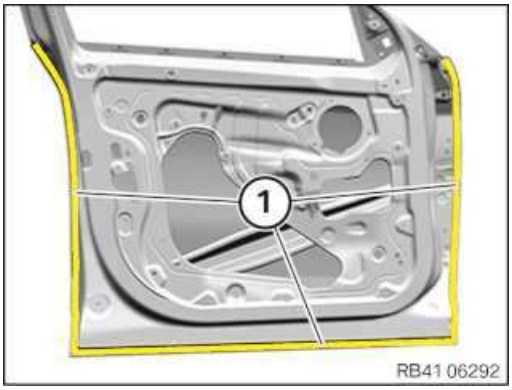
- Install the cover (1).
- Clip in the clips (2) along the dotted line.

25 – Preserving the front door

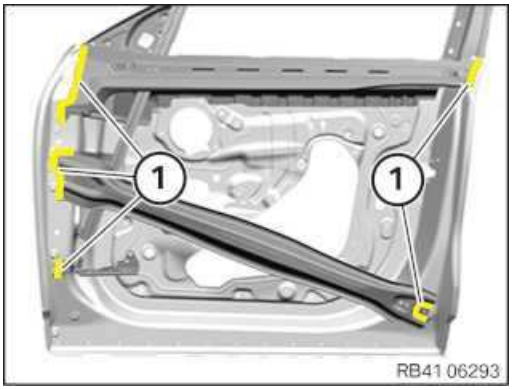


- The inner door panel is welded with the door outer skin in the area (1).

  The weld seam must be protected against corrosion by cavity preservation.



- Preserve the inner door panel in the area of the weld seam (1).
- Remove any cavity preservation which emerges.

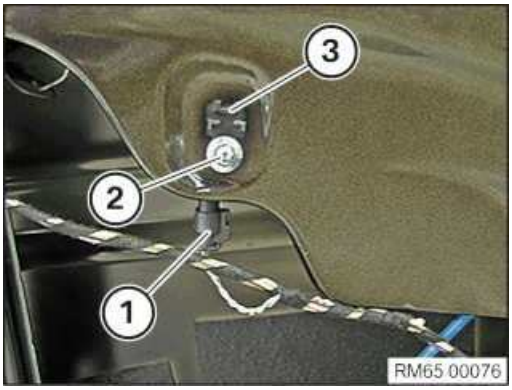


NOTICE

To provide a better overview: Shown without door outer skin.

- Preserve weld seams (1) between the reinforcements and the inner door panel.

26 – Installing the airbag sensor on the front door



- Correctly position airbag sensor (3).
- Tighten nut (2).

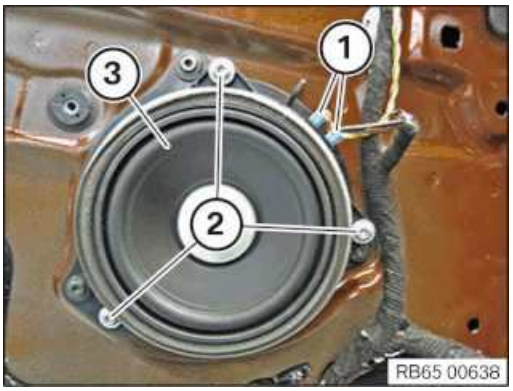
Front airbag sensor

	8,8 Nm

- Connect connectors (1) and lock.

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27 – Installing the mid-range speaker in the front door



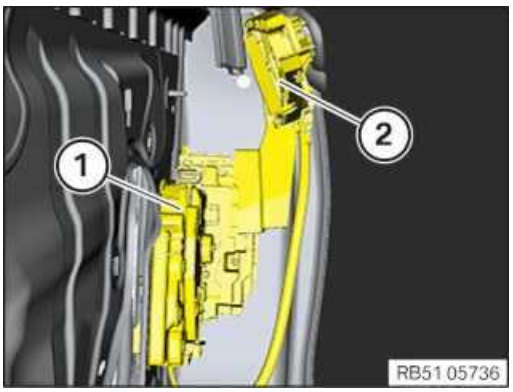
- Fit the mid-range speaker (3) and position it correctly.
- Tighten down screws (2).

Loudspeakers on the door / trim panel

Screw		Tightening torque	2 Nm

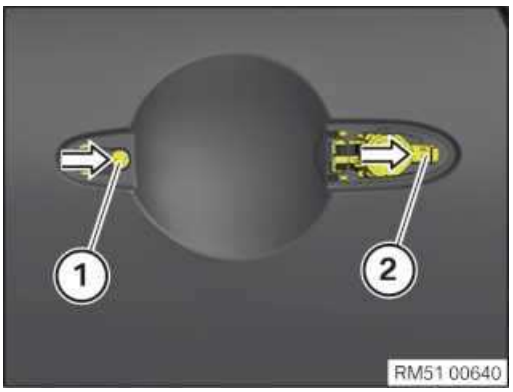
- Connect connector (1).

28 – Install door lock



- Guide the door lock (1) together with the outside door handle support (2) into the door.

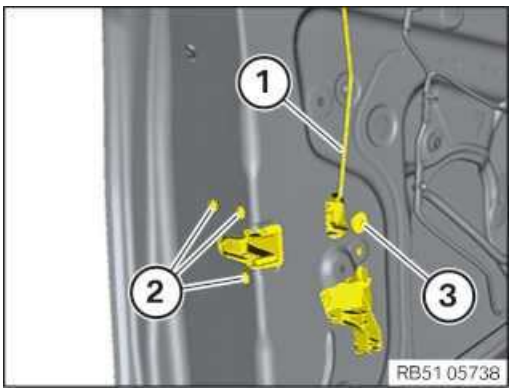
  Make sure the seal of the door lock is not damaged during installation.



- Feed support (2) into the mounting toward the rear.
- Tighten down screw (1).

Outside door handle support to door

Screw		Tightening torque	2,6 Nm



- Screw in bolts (2) and (3) a few turns.
- Initially tighten the bolts (2).

Door lock to door

Screw		Tightening torque	8,8 Nm

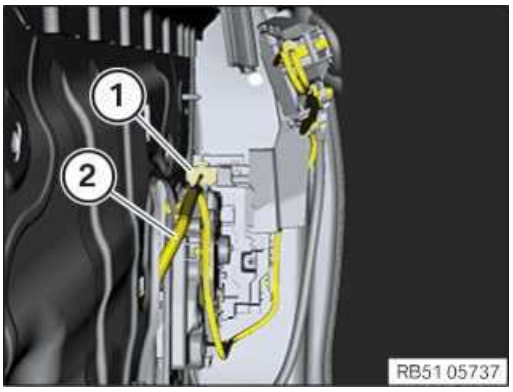
- Then tighten bolt (3).

Door lock to door

Screw		Tightening torque	8,8 Nm

- Clip in locking rod (1).

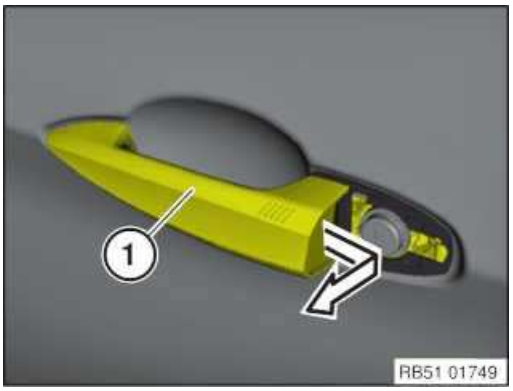
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- Connect and lock the connector (1) on the door lock.

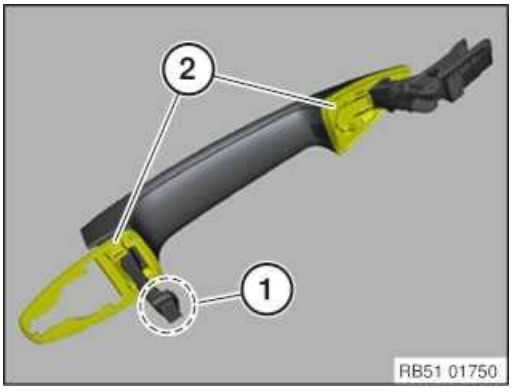
  Fasten the wiring harness (2) on the door lock and the outside door handle support.

29 – Install the outside door handle



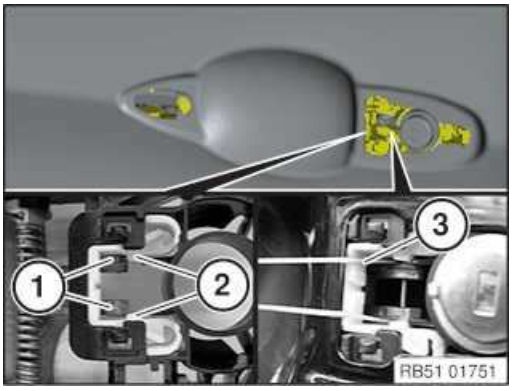
- Pull out the outside door handle (1) and feed out in direction of arrow.
- **Equipment specification with Comfort Access/light package**:

  Carefully feed out the outside door handle (1) and disconnect the associated plug connections.



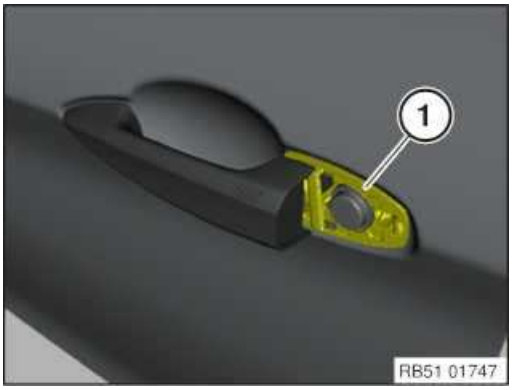
- Check the fixture (1) for damage.

  Renew the damaged outside door handle if applicable.
- Check the seals (2); they must not be damaged of missing.



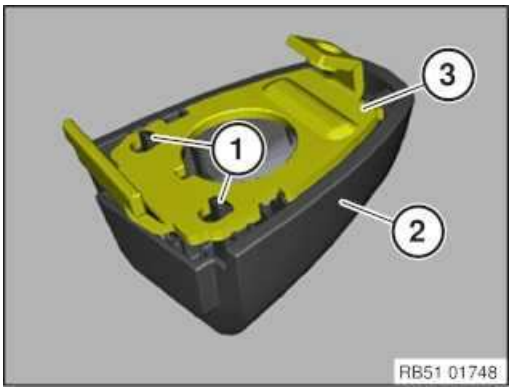
- During the disassembly of the outside door handle, the lock actuation (1) is held in the installation position by the retaining clamps (2).
- If the lock actuation (1) is not in the installation position, pull it outwards with a string (3) and hold it.
- Insert the outside door handle and feed it into the lock actuation (1) correctly.
- Remove the string (3).
- Carry out functional check with door open.

30 – Install the cover on the outside door handle



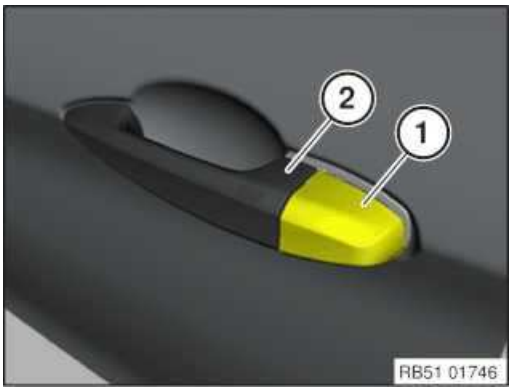
- Make sure the gasket (1) is fitted correctly.

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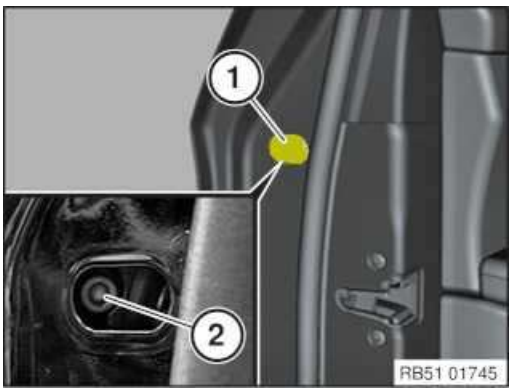


- Check the latch mechanisms (1) of the cover (2) for damage and renew the cover (2) as needed.

  The latch mechanisms (1) must not be damaged or missing.
- **When replacing the cover** (2)**:** Remount retaining plate (3).



- Install the cover (1) with the outside door handle (2) slightly open.



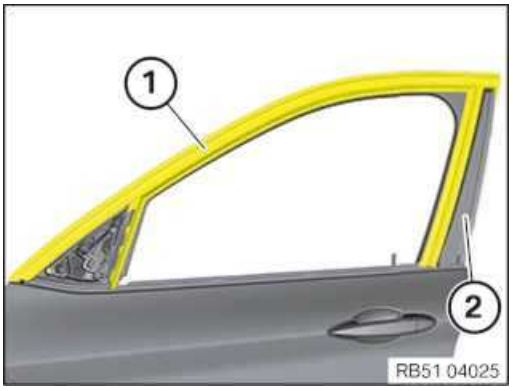
- Tighten down screw (2).

Attachment bell to outside door handle support

Screw		Tightening torque	3 Nm

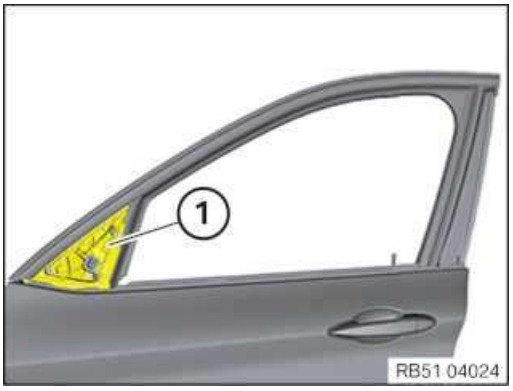
- Mount the cover (1).

31 – Install the front rubber window seal



- Coat the rubber window seal (1) with water prior to installation.
- Insert the rubber window seal (1) in the window guide rail.
- Connect the entire rubber window seal (1) to the door frame (2).

  Make sure the rubber window seal (1) is correctly seated.



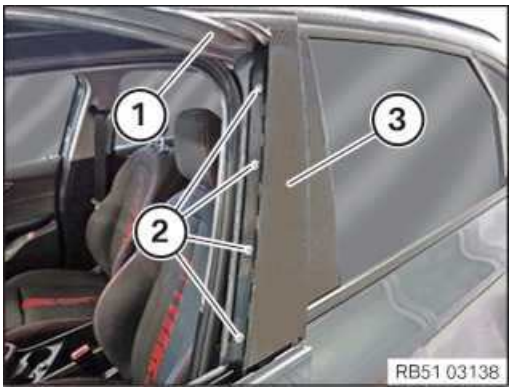
- Install the sound insulation (1).

32 – Install the front window frame trim

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Prerequisite

Door window glass open



- Feed in the trim (3).
- Tighten down screws (2).

Window frame trim to window frame

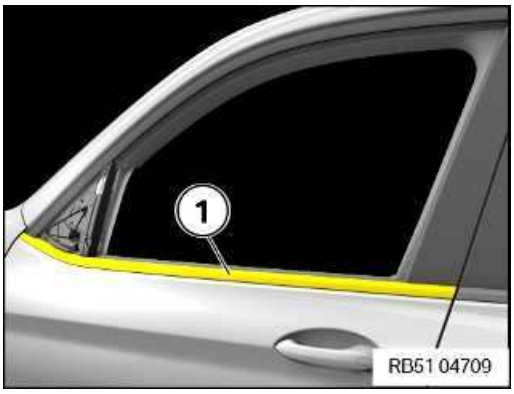
Screw		Tightening torque	2,4 Nm

- Coat the rubber window seal (1) with water prior to installation and mount on the rear window guide.

33 – Installing the weather strip on the front door on the outside

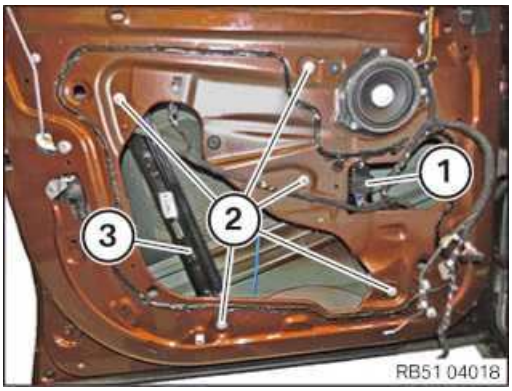
NOTICE

Description is for left component only. Procedure on the right side is identical.



- Check the weather strip (1) for damage, renew if necessary.
- Coat the weather strip (1) with a suitable lubricant prior to installation.
- Position the weather strip (1) in front at the door.
- Press down the weather strip (1) across its entire length.

34 – Installing the power windows



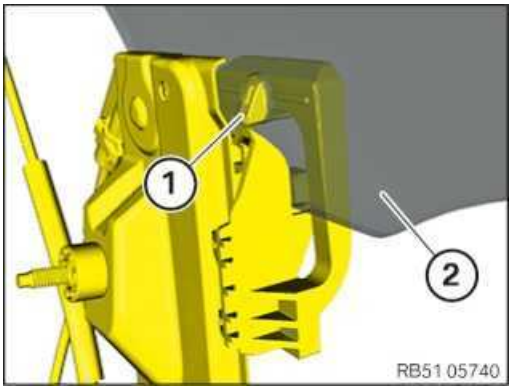
- Carefully feed the power windows (3) into the door and attach the Bowden cable in the holder.
- Tighten nuts (2).

Window regulator to door

Nut M6, self-locking		Tightening torque	9,5 Nm

- Connect connectors (1) and lock.

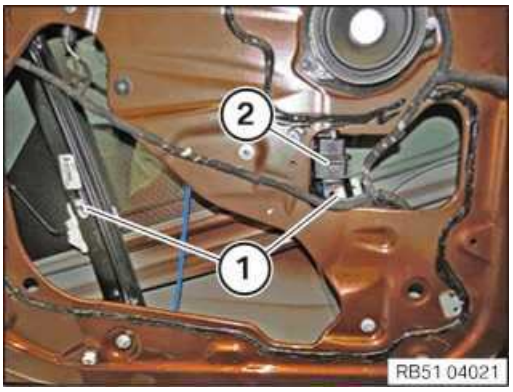
35 – Installing front door window glass



- Thread door window glass (2) from above into door.
- Check stops of the mounting (1) for damage.

  The stops of the mounting (1) may not be missing or damaged.

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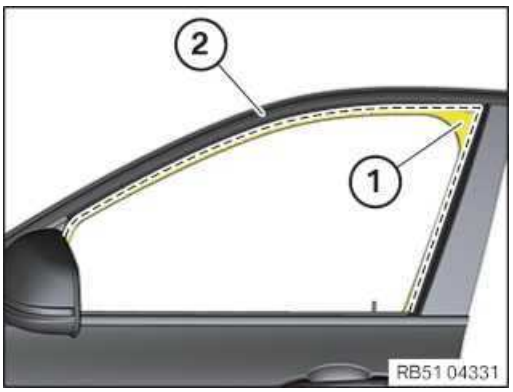


- Feed the door window glass into the window guide and slide downward.
- Thread the door window glass into the mountings (1) and lock.
- Connect and lock the connector (2) on the power window motor.

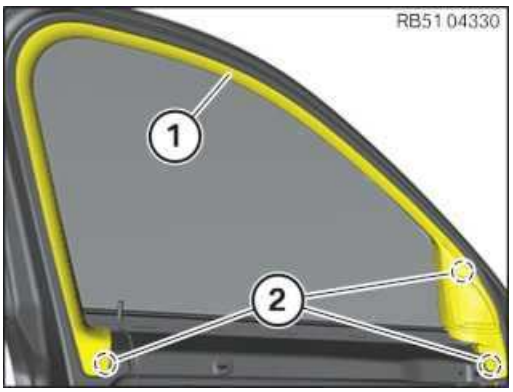
36 – Install the cover on the window frame

Prerequisite

Door window glass open



- Make sure the cover (1) is correctly fitted in the joint of the rubber window seal (2).
- Make sure that the cover (1) is correctly fitted on the door seal.



- Feed in the cover (1) at the top on the door frame.
- Connect the plug connection .
- Clip in the cover (1) at the clamps (2).

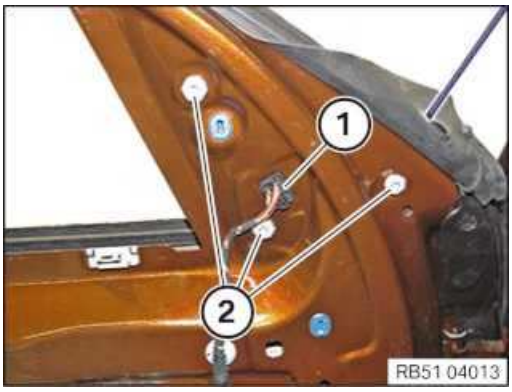
37 – Disconnecting all battery earth leads



- See additional information.

38 – Installing the exterior mirror

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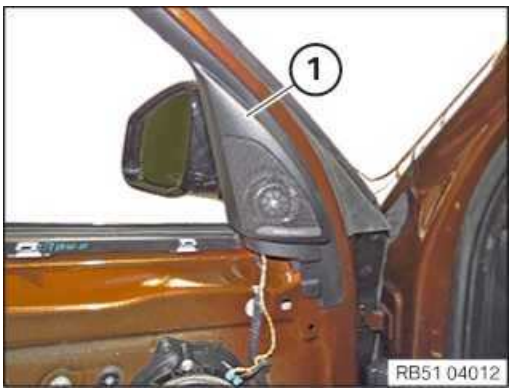
- Check sound insulation on the mirror base. It must not be damaged or missing.
- Mount exterior rearview mirror and tighten the bolts (2).

  Due to self-tapping screws, the tightening torque in the new condition of exterior mirror increases by 2 Nm.

Exterior mirror to door

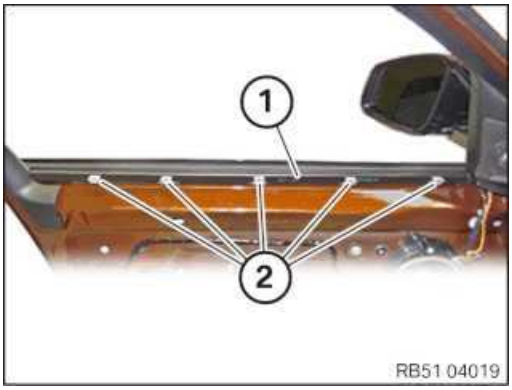
Self-tapping screw		Tightening torque	6 Nm
	With a new exterior rearview mirror (initial screw connection)	Tightening torque	8 Nm

- Connect the plug connection (1).
- Carry out functional check.



- Mount the window frame cover (1) in the area of the mirror.
- If necessary, connect related plug connections.

39 – Installing front inner weather strip



- Coat weather strip (1) prior to installation with approved lubricant.
- If necessary, remove clamps (2) from weather strip (1) and attach to door.

  Replace defective clamps.
- Position weather strip (1) on the door and engage into the clamps (2).

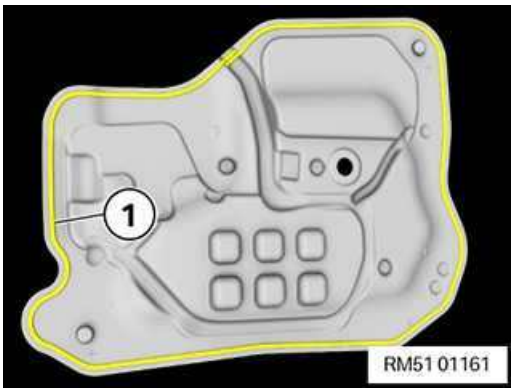
40 – Installing sound insulation on front door

TECHNICAL INFORMATION

Notes on the sound insulation must be strictly observed for these repair instructions.
For more information see: 51 48 ... Notes on bonding the sound insulation (SI) in doors

Check

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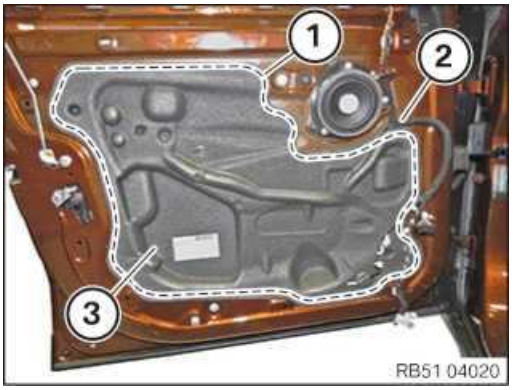
- Check sound insulation for damage.

Result

» The sound insulation is damaged.

Measure

- Replace the sound insulation.
- Route the butyl rope with 4 mm (sourcing reference BMW Group Parts) along the current layout of the butyl rope (1).
- Heat the butyl rope (1) with a hot air blower.



- Slide the cable (2) slightly to the side.
- Press the sound insulation (3) hard along the mark (1) on the inner door panel.

41 – Install front door trim panel

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

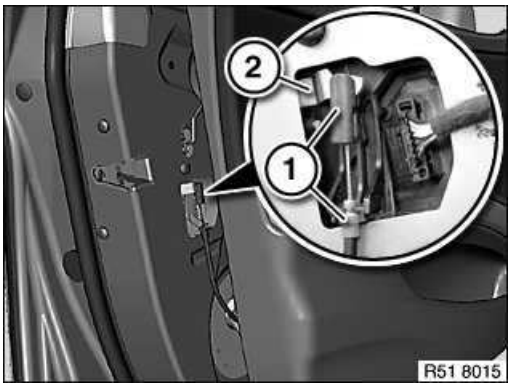
- Protect working area.
- Handle tools and components carefully.



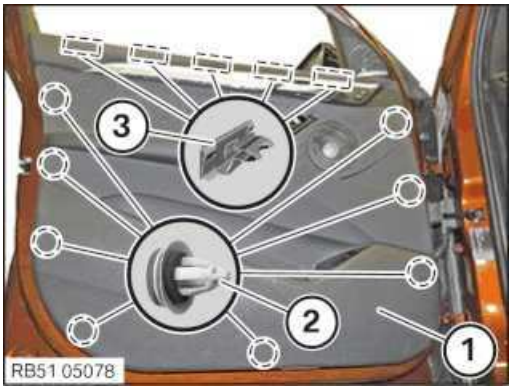
- Check the clips (1) and the stop pad (2) for damages, and replace if necessary.

  The clips (1) and the stop pads (2) must not be damaged or missing.

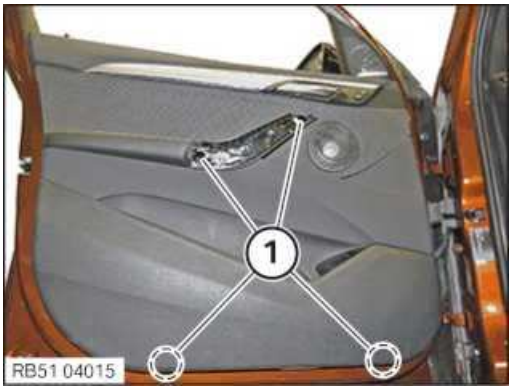
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- Install door trim panel and connect all the connectors.
- Attach the Bowden cable (1) on the door lock (2).



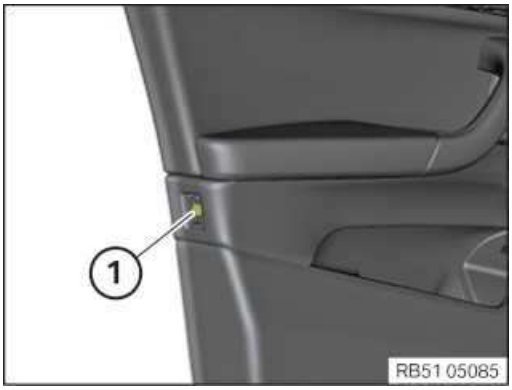
- Engage the door trim panel (1) in the clamps (3) at the top.
- Position the door trim panel (1) correctly and clip it into the clips (2).



- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,5 Nm



- If fitted: Tighten down screw (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,5 Nm

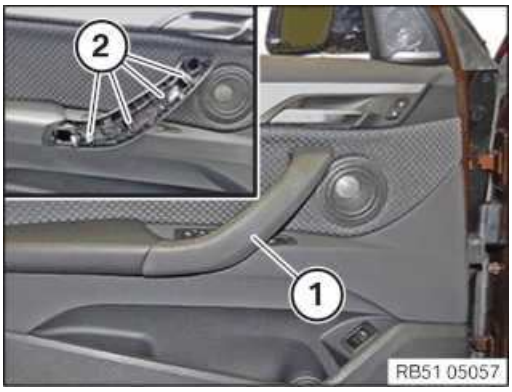
- Mount cover .

42 – Install the cover on the door handle

NOTICE

Description is for left component only. Procedure on the right side is identical.

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- Check clamps (2) for damage; renew if necessary.
  The clamps (2) must not be damaged or missing.
- Position the cover (1) and engage it in the clamps (2).

43 – Initialising the power windows

TECHNICAL INFORMATION

Notes on power window initialisation must be strictly observed for these repair instructions.
Additional information, see 67 62 ... Information on power window initialisation.

- Initialise power window.

Additional Information

Overview of Tightening Torques

Front door to door hinge			Used in step 21
Screw		Tightening torque	40 Nm

Retaining bracket to door			Used in step 21
Screw	Tightening torque		8,8 Nm

Adapter to door			Used in step 21
Oval-head screw	Tightening torque		2,0 Nm

Door retainer to door			Used in step 22
Nut M6		Tightening torque	8 Nm

Door stop to pillar			Used in step 22
Screw		Tightening torque	28 Nm

Front airbag sensor			Used in step 26
			8,8 Nm

Loudspeakers on the door / trim panel			Used in step 27
Screw		Tightening torque	2 Nm

Outside door handle support to door			Used in step 28
Screw		Tightening torque	2,6 Nm

Door lock to door			Used in step 28
Screw		Tightening torque	8,8 Nm

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Attachment bell to outside door handle support

Used in step 30

Screw		Tightening torque	3 Nm

Window frame trim to window frame

Used in step 32

Screw		Tightening torque	2,4 Nm

Window regulator to door

Used in step 34

Nut M6, self-locking		Tightening torque	9,5 Nm

Exterior mirror to door

Used in step 38

Self-tapping screw		Tightening torque	6 Nm
	With a new exterior rearview mirror (initial screw connection)	Tightening torque	8 Nm

Door trim panel to door

Used in step 41

Screw TS5x20		Tightening torque	2,5 Nm

Overview of Special Tools

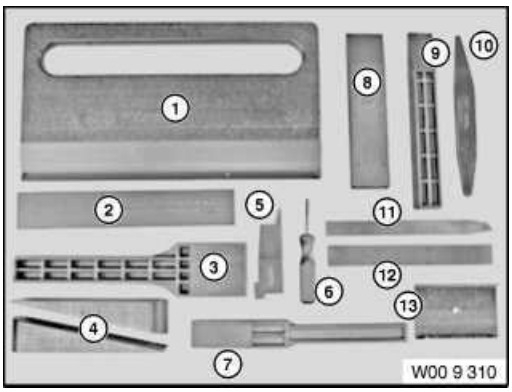
0 496 569 (00 9 325) Wedge



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)

0 495 484 (00 9 324) Panel wedge

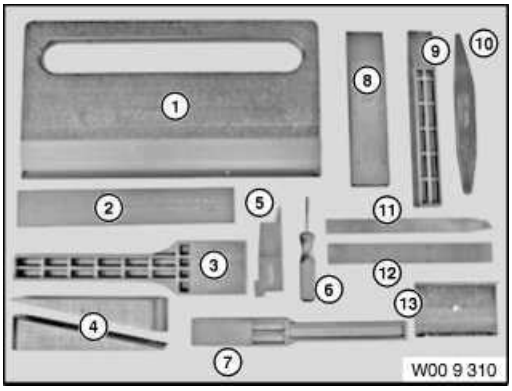


Common Used in step 10

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)

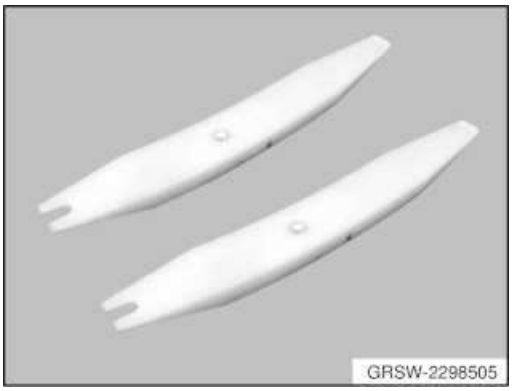
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0 490 538 (00 9 321) Folding stick



Common	Used in step 10
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 10 19 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

General repair instructions	Used in step
51 48 ... Notes for bonding sound insulation (SI), doors	4 40

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	17 37
61 20 900 Disconnecting and connecting battery earth lead	17 37
61 20 900 Disconnecting and connecting battery earth lead	17 37
61 20 900 Disconnecting and connecting battery earth lead	17 37

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61 20 900 Disconnecting and connecting battery earth lead 17 37
61 20 900 Disconnecting and connecting battery earth lead 17 37
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads) 17 37
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads) 17 37
61 20 900 Disconnecting and connecting battery earth lead 17 37
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads) 17 37
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle) 17 37
61 20 900 Disconnecting and connecting battery earth lead 17 37
61 20 900 Disconnecting and connecting battery earth lead 17 37
61 20 900 Disconnecting and connecting battery earth lead 17 37
61 20 900 Disconnecting and connecting battery earth lead 17 37
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61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads) 17 37
61 20 900 Disconnecting and connecting battery earth lead 17 37
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61 20 900 Disconnecting and connecting battery earth lead 17 37
61 20 900 Disconnecting and connecting battery earth lead 17 37
61 20 900 Disconnecting and connecting battery earth lead 17 37
61 20 900 Disconnecting and connecting battery earth lead 17 37
67 62 ... Notes on initializing power windows 43
67 62 ... Notes on initializing power windows 43

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41 52 004 Adjusting rear left or right door.

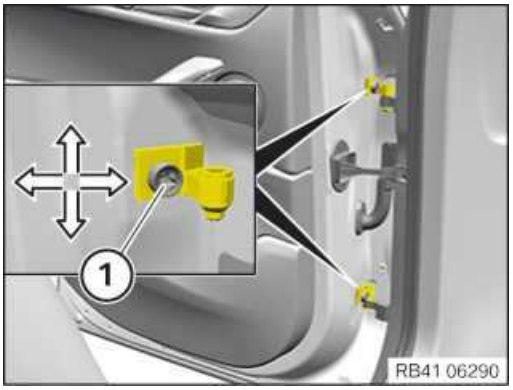
1 – Adjusting the rear door on the left

TECHNICAL INFORMATION

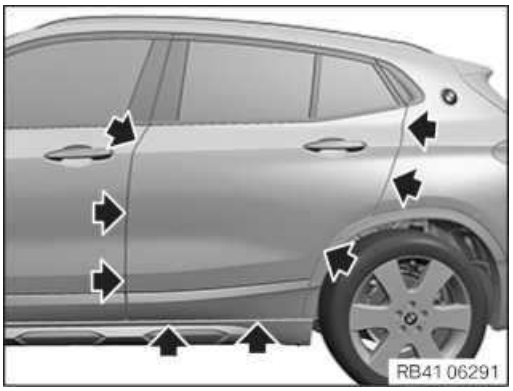
The gap dimensions form the basis for these repair instructions and must be observed without fail.
For more information see: 41 00 ... Gap dimensions for body

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Open the rear door.
- Slacken screws (1) until the door can be moved.
- Adjust height of door (Z).
- Adjust door width (Y).



Check

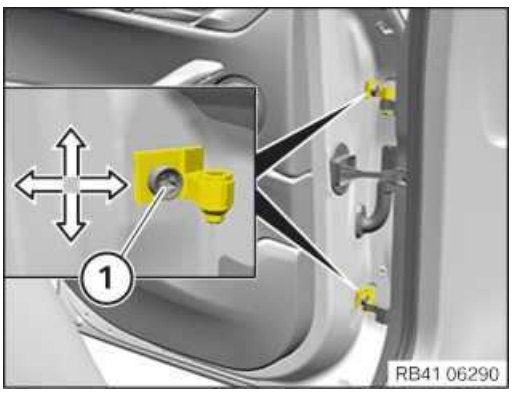
- Check the gap dimensions between the rear door and adjacent body components.

Result

» Gap dimensions do not correspond to the specifications.

Measure

- Adjust door



- Tighten the screws (1).

Rear door to door hinge

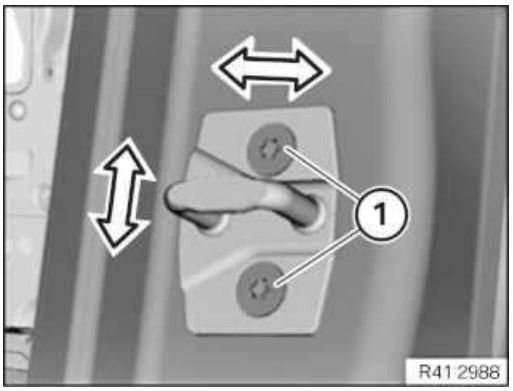
Screw		Tightening torque	40 Nm

▸ **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

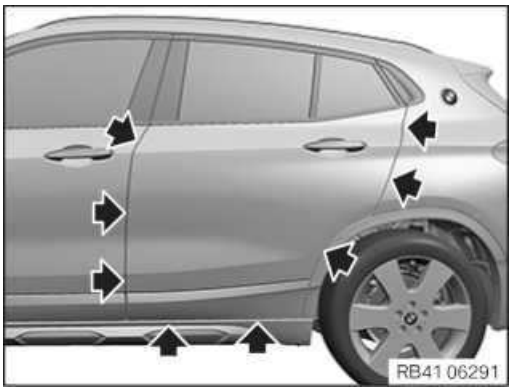
The gap dimensions form the basis for these repair instructions and must be observed without fail.

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

Additional Information

Overview of Tightening Torques

Rear 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

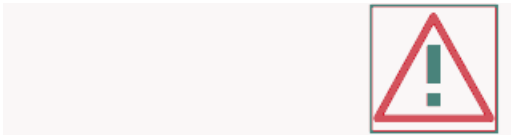
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Gap dimensions, body	1
Gap dimensions, body	1
Gap dimensions, body	1
Gap dimensions, body	1
Gap dimensions, body	1

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 52 080 Removing and installing rear left or right door

1 – Remove rear door

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Open door.
- Loosen screws (1) between both hinge elements at top and bottom.



- Pull lock (1) in upward direction and disconnect plug connection.

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.

- Secure door against closing.
- Loosen screw (2) at door stop.
- Detach door in upward direction and set down on a suitable surface.

2 – Install rear door

NOTICE

Description is for left component only. Procedure on the right side is identical.

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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.

- Attach door from above.
- Secure door against closing.
- Connect plug connection and push lock (1) down.
- Tighten screw (2) at door stop.

Door stop to pillar

Screw		Tightening torque	28 Nm



- Tighten screws (1) between both hinge elements at top and bottom.

Screw connection, hinge parts

Screw		Tightening torque	27 Nm

Additional Information

Overview of Tightening Torques

Door stop to pillar Used in step 2

Screw		Tightening torque	28 Nm

Screw connection, hinge parts Used in step 2

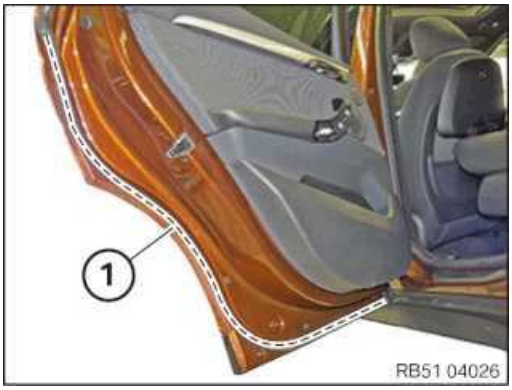
Screw		Tightening torque	27 Nm

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41 52 101 Replacing rear left or right door

PRELIMINARY WORK

1 – Remove seal on the rear door at the bottom



- Unclip the seal (1) from the clips along the dotted line with the special tool **2 298 505**.
- Remove the seal (1).

2 – Remove cover on door handle

RISK OF DAMAGE

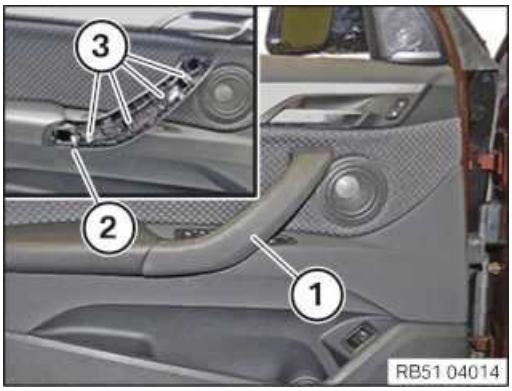
Scratches.

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.



- Lever out the cover (1) with a small screwdriver through the recess (2) toward the inside from the clamps (3) and remove.

3 – Remove rear door trim

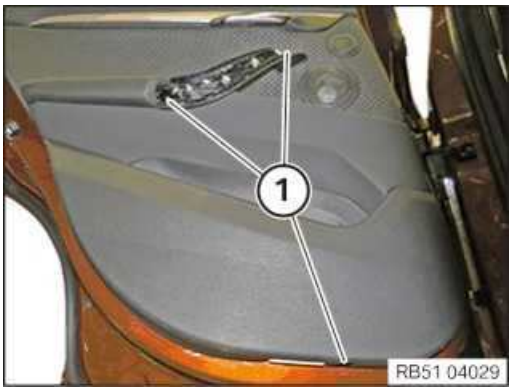
RISK OF DAMAGE

Scratches.

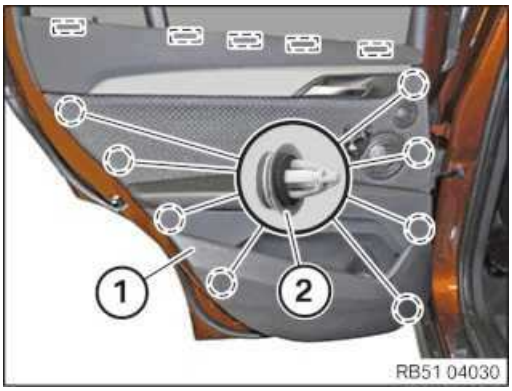
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

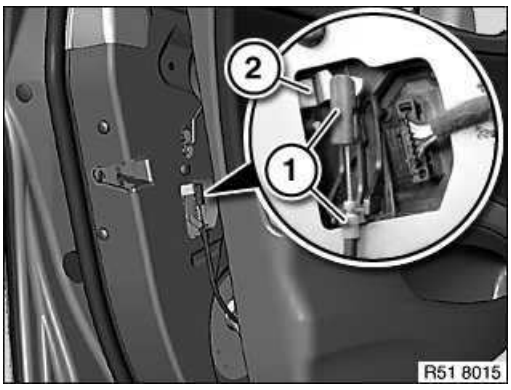
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- Loosen screws (1).



- Unclip the door trim panel (1) from the clips (2) with a suitable plastic wedge.
- Pull the door trim panel (1) from the clamps on top.



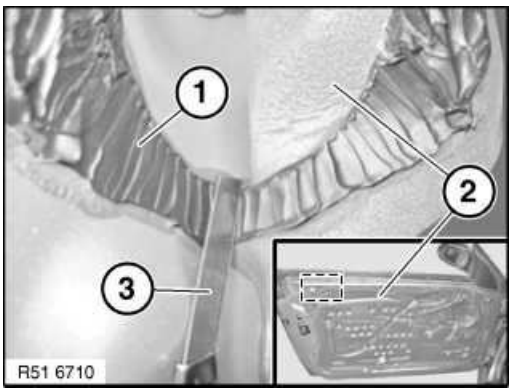
- Detach Bowden cable (1) from door lock (2).

  Disconnect all plug connections and remove door trim panel.

4 – Remove sound insulation on the rear door

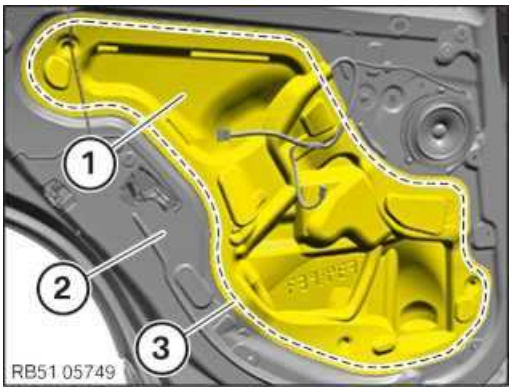
TECHNICAL INFORMATION

Notes on the sound insulation must be strictly observed for these repair instructions.
For more information see: 51 48 ... Notes on bonding the sound insulation (SI) in doors



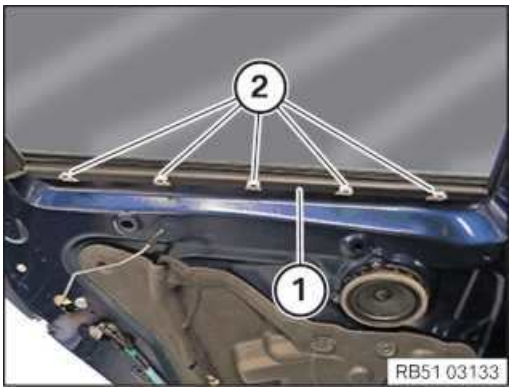
- When cutting through the sealing bead (1) make sure not to damage the sound insulation (2) and any potentially routed cables.
- Use a suitable, sharp cutting tool (3) to cut through the sealing bead (1) of the sound insulation (2) in the corresponding area.

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- Observe the position of the sealing bead (3) for the sound insulation (1).
- Remove the sound insulation (1) from the inner door panel.

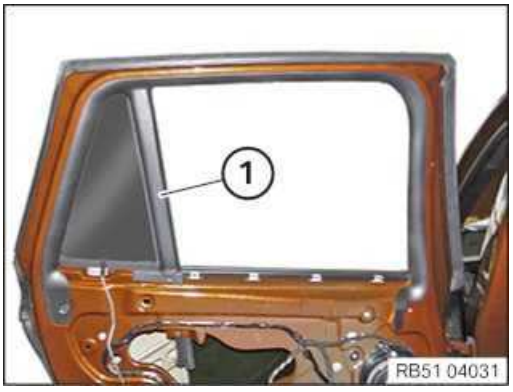
5 – Remove the weather strip from the rear inner door



- Release the weather strip (1) from the brackets (2) and pull it off to the top.
- Make sure the weather strip (1) is not deformed.

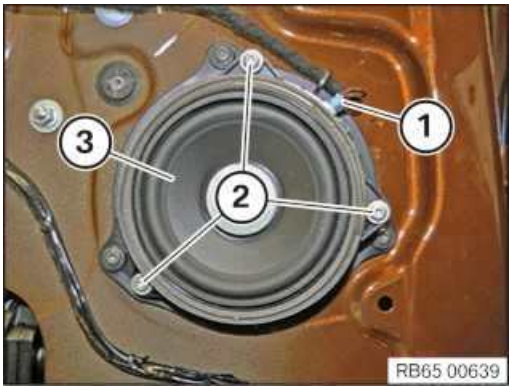
  It is exclusively possible to re-use a weather strip that has not been deformed.

6 – Remove the window frame cover of the rear door



- Pull off the cover (1) in an inwards direction out of the latch mechanisms.

7 – Removing the mid-range speaker in the rear door



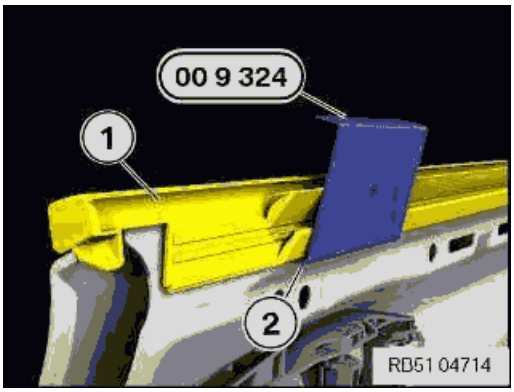
- Disconnect the connector (1) .
- Loosen screws (2).
- Remove the mid-range speaker (3).

8 – Removing the outer weather strip at the rear door

Prerequisite

The door window glass is open.

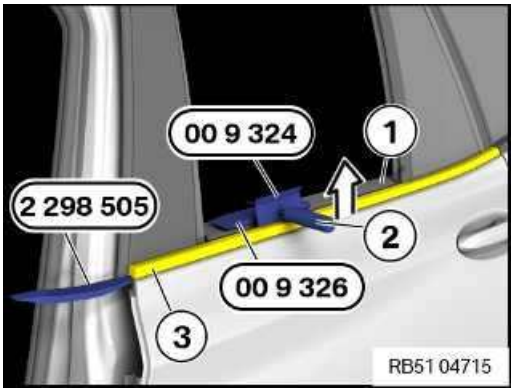
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NOTICE

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

- Insert special tool **0 495 484 (00 9 324)** into window cavity.
- Position the special tool **0 495 484 (00 9 324)** as shown at the lower edge of the weather strip (1) with the short shank (2).



RISK OF DAMAGE

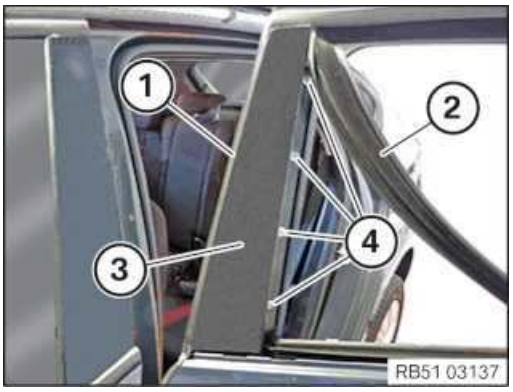
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

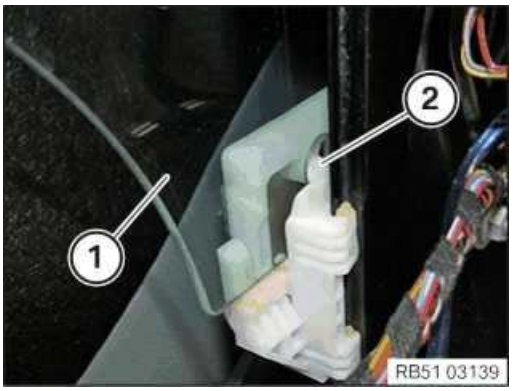
- Lift weather strip (3) using the special tool **2 298 505** by a maximum of 5 mm as illustrated.
- Position the special tool **0 496 570 (00 9 326)** on the door trim panel (1).
- Thread a suitable tool (2) through the opening of the special tool **0 495 484 (00 9 324)**.
- Gradually move special tool **2 298 505** and **0 495 484 (00 9 324)** backwards until the weather strip (3) has been completely disassembled.

9 – Remove the outer window frame cover of the rear door



- Pull off the rubber seal (1) and the rubber window seal (2) from the cover (3).
- Loosen screws (4).
- Remove the cover (3).

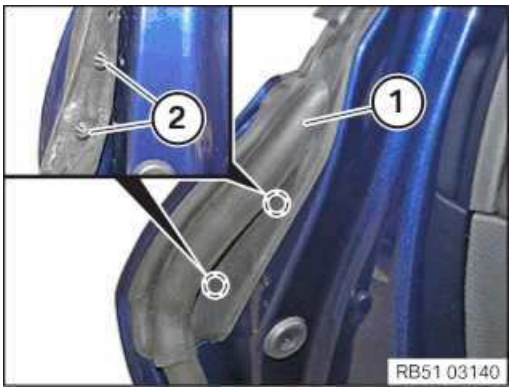
10 – Removing rear door window glass



- Move door window glass (1) until you can operate the stop of the mounting (2).
- Press the stop of the mounting (2) towards the outside using a screwdriver.
- Guide the door window glass (1) out to the top.

11 – Removing rubber window seal of rear door window glass

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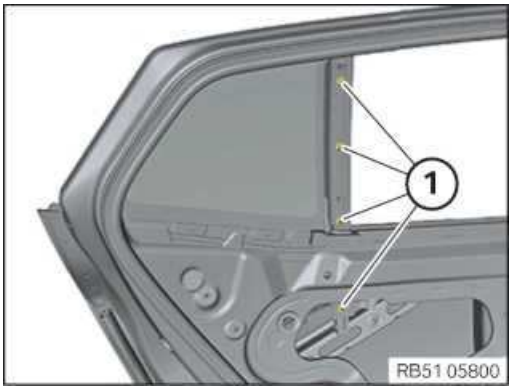


- Detach the rubber window seal (1) from the mounting (2).

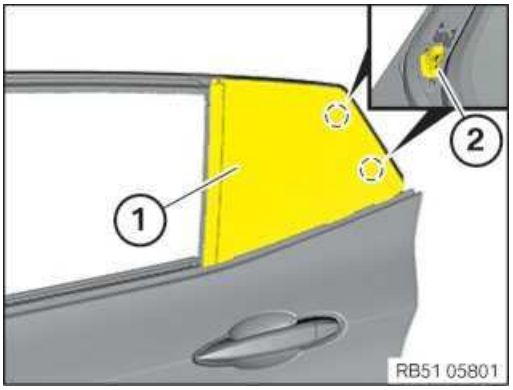


- Remove rubber window seal (1) sideways from the door frame.
- Pull out rubber window seal (1) from the window guide rails and remove.

12 – Remove rear door side window glass

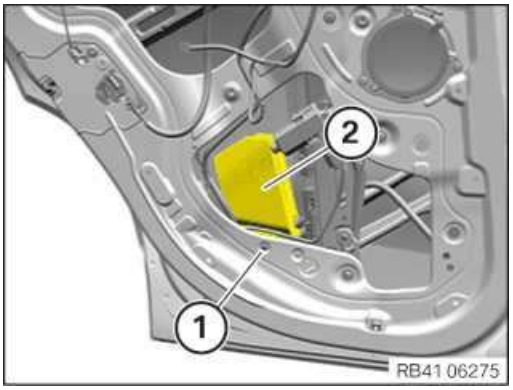


- Loosen screws (1).



- Slide the side window glass (1) slightly forward and guide out of the latch mechanisms (2).
- Slide the side window glass (1) further forward and guide it out of the door.

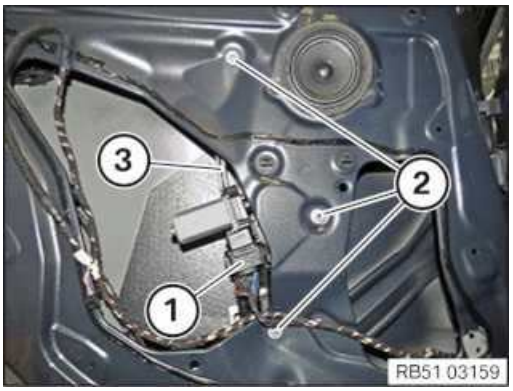
13 – Removing the crash pad



- Release the screw (1) and remove the crash pad (2).

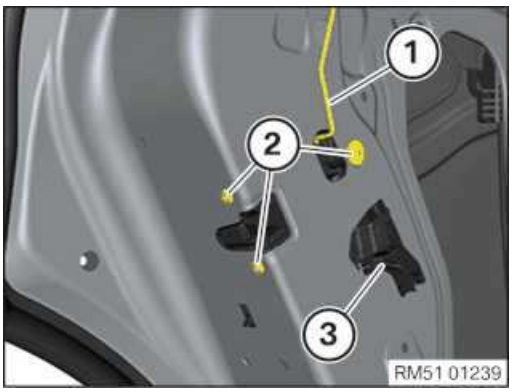
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14 – Remove rear power window regulator

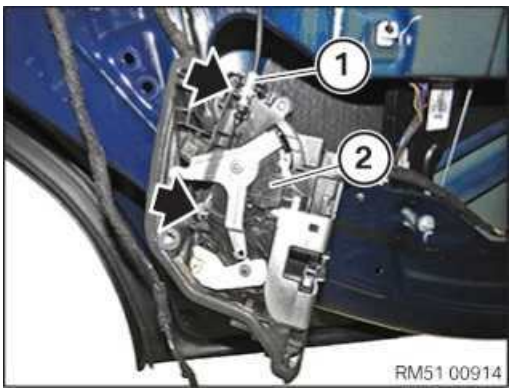


- Unlock plug connection (1) and disconnect.
- Unscrew nuts (2) and thread out power windows (3) from the door.

15 – Removing the door lock in the rear door

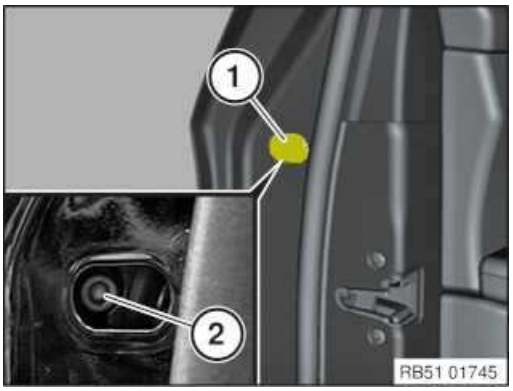


- Unclip locking rod (1).
- Disconnect the plug connection and cable clip at the door lock (3).
- Loosen screws (2).
- Feed the door lock (3) out of the door.



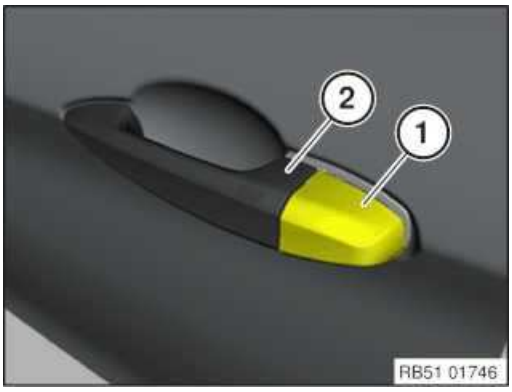
- Detach Bowden cable (1) from door lock (2).

16 – Remove cover on the outside door handle



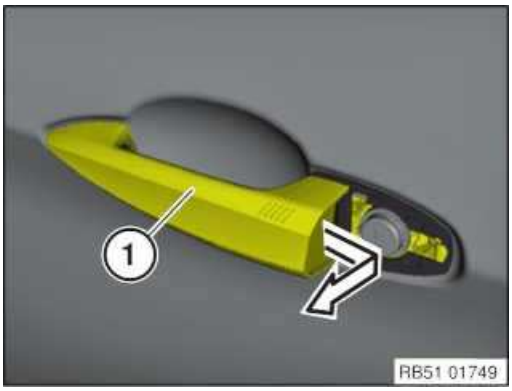
- Lever out the cover (1).
- Release screw (2) below it.

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- Pull off the cover (1) with the outside door handle (2) slightly open.

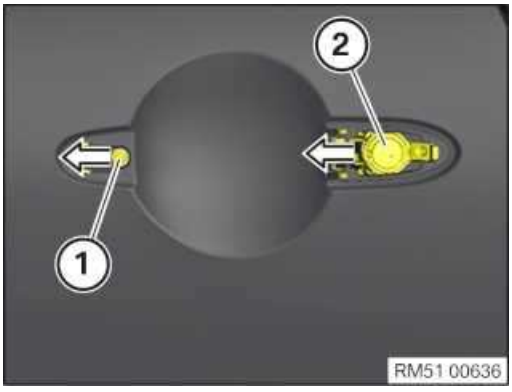
17 – Remove the outside door handle



- Pull out the outside door handle (1) and feed out in direction of arrow.
- **Equipment specification with Comfort Access/light package**:

  Carefully feed out the outside door handle (1) and disconnect the associated plug connections.

18 – Remove the rear outer door handle support



- Loosen screw (1).
- Slide the outside door handle support (2) forward and thread out to the inside.
- Detach the wiring harness from the outside door handle support (2).
- Feed the outside door handle support (1) out of the door.

19 – Removing the protective strip on the rear door

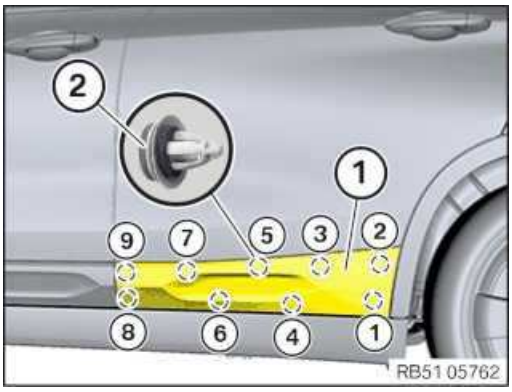
RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

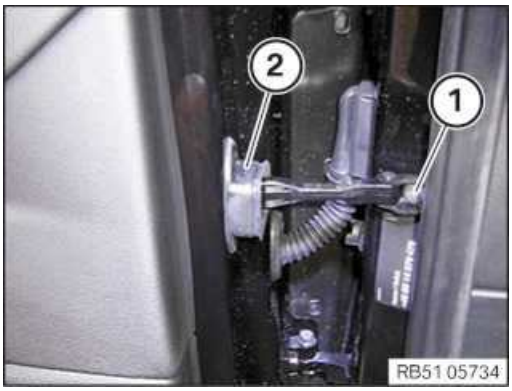
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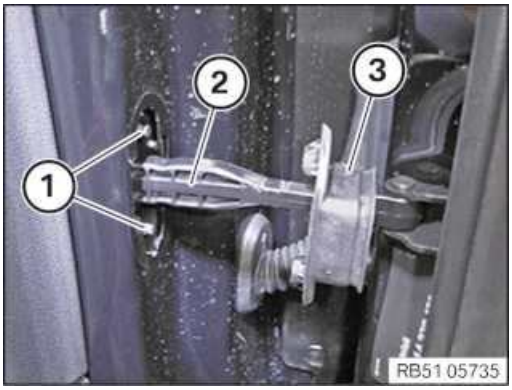
- Detach protective strip (1) with the special tool **0 496 569 (00 9 325)** in sequence (1) to (9) from the clips (2).

  The clips must be released in the specified sequence separately in consecutive order.

20 – Remove door stop



- Loosen screw (1).
- Pull off the cover (2) from the door outer skin.



- Loosen nuts (1).
- Feed the door brake (2) out of the door and remove the cover (3).

MAIN WORK

21 – Replacing the rear door on the left

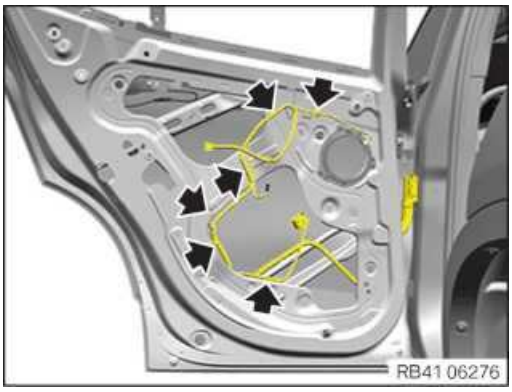
Prerequisite

New part is painted.

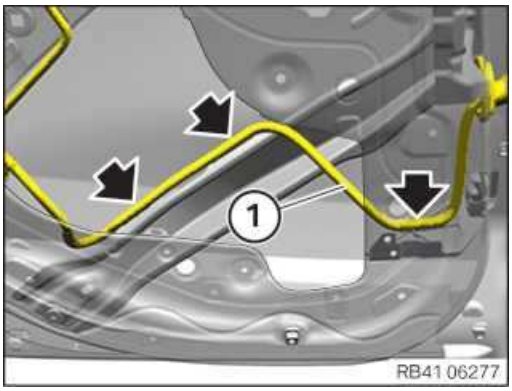


- Pull the lock (1) to the top and disconnect the plug connection (2).

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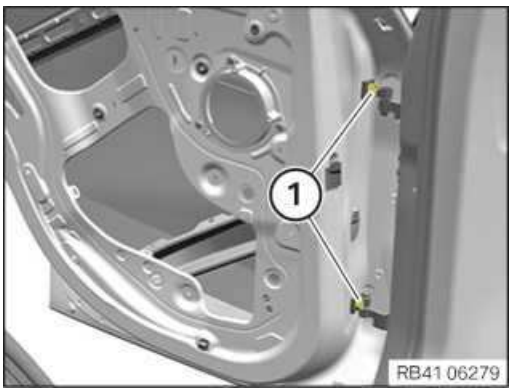
- Unclip the wiring harness (1) at the marked positions (arrows).



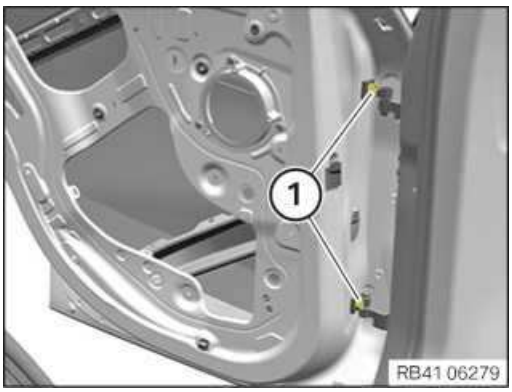
- Unclip the wiring harness (1) at the marked positions (arrows).



- Release the grommet (1) and remove the vehicle wiring harness from the door.



- Unscrew the bolts (1) and remove the door.



- Protect the new door from falling.
- Position the new door at the door hinges.

  Tighten the screws (1).

Rear door to door hinge

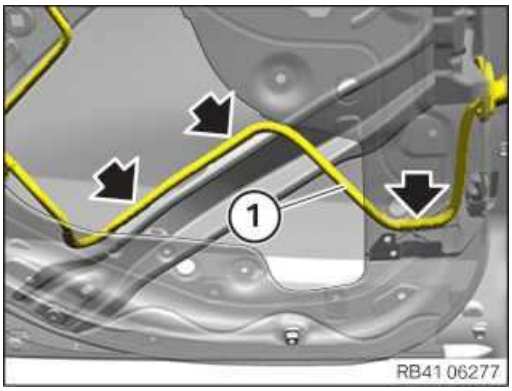
Screw		Tightening torque	40 Nm

- Carefully close the door and check for bodywork contact, reposition door if necessary.

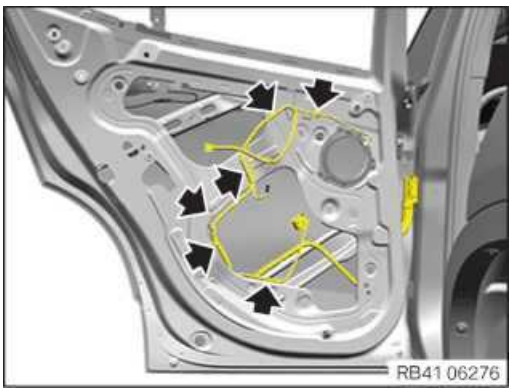
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- Insert the vehicle wiring harness in the door.
- Mount grommet (1) and check for correct fit. (watertightness).



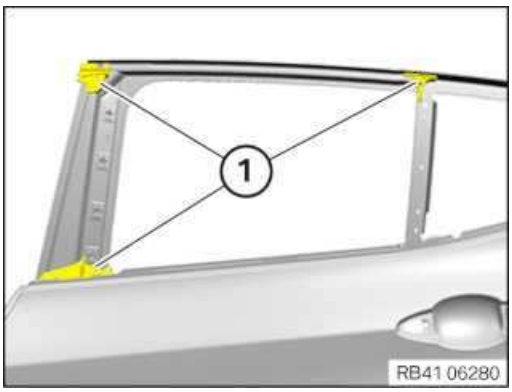
- Clip in the wiring harness (1) at the marked positions (arrows).



- Clip in the wiring harness (1) at the marked positions (arrows).

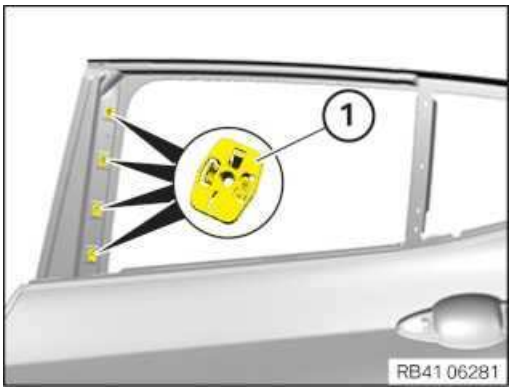


- Connect the plug connection (1) and push the lock (2) down.

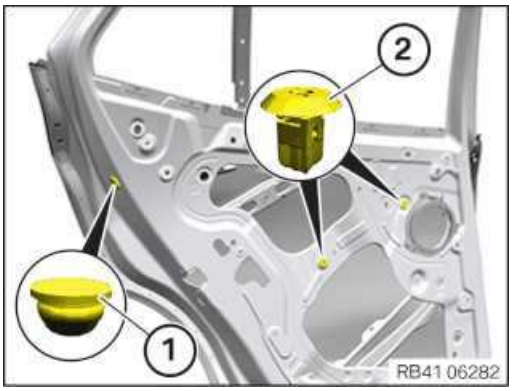


- Remount the sealings (1).

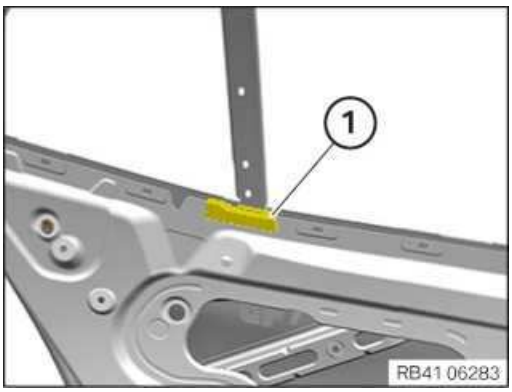
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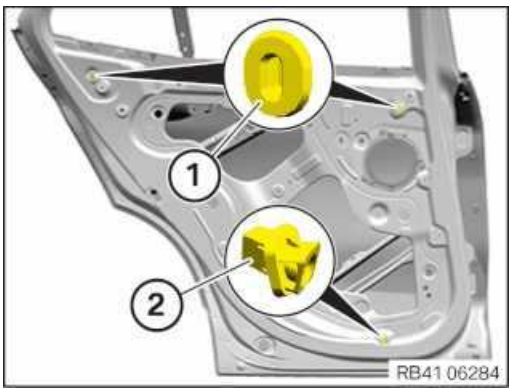
- Remount the clips (1).



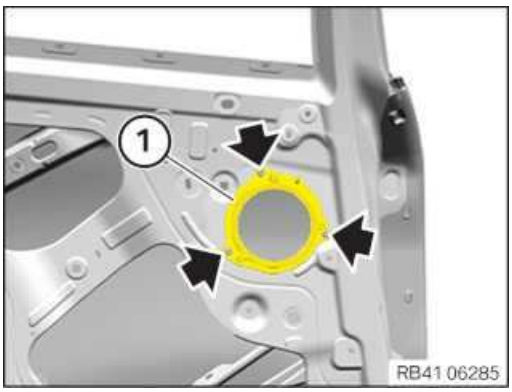
- Remount the seal plug (1).
- Remount the expansion nuts (2).



- Remount the sealing (1).

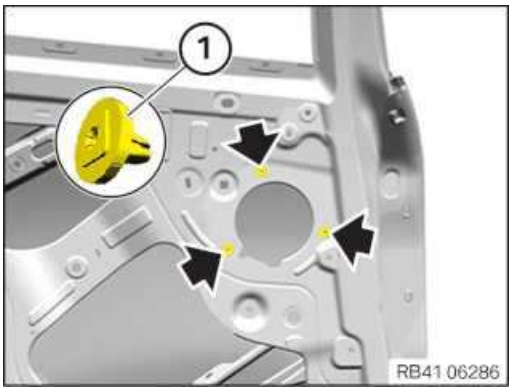


- Remount the plug-in clamp (1).
- Remount the expansion nut (2).

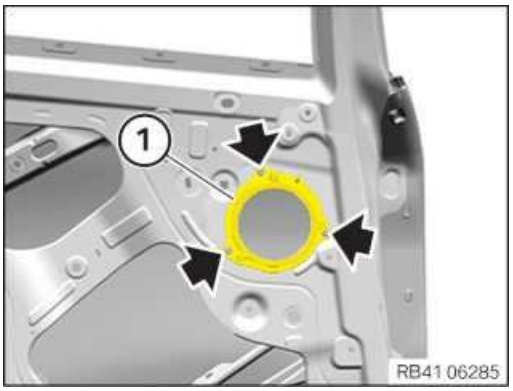


- Release the screws (arrows) and remove the adapter (1).

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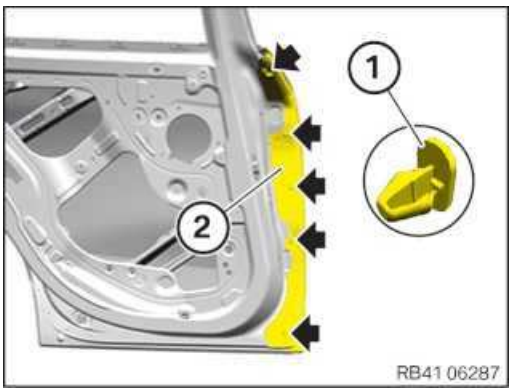
- Remount the expansion nuts (1).



- Install the adapter (1) and tighten the screws (arrows).

Adapter to door

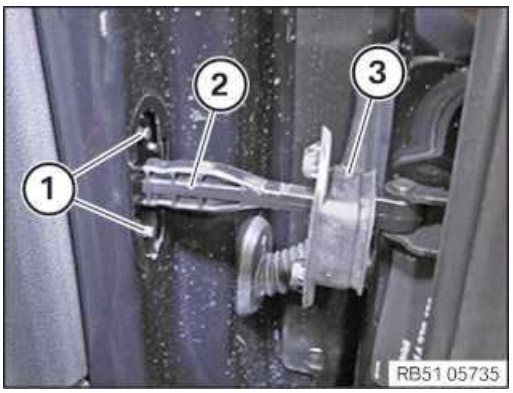
Oval-head screw	Tightening torque	2,0 Nm



- Release the clips (1) and remount the caulking (2).

POSTPROCESSES

22 – Installing the door stop

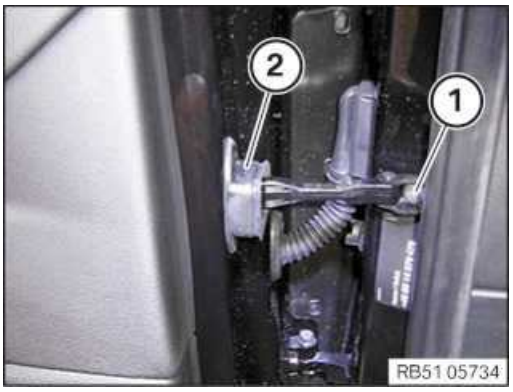


- Guide door brake (2) into the door.
- Check the retaining lugs of the cover (3), they must not be missing or damaged.
- Attach the cover (3) to the door brake (2).
- Tighten nuts (1).

Door retainer to door

Nut M6		Tightening torque	8 Nm

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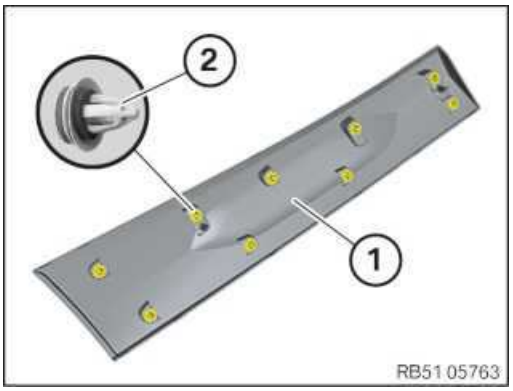
- Tighten down screw (1).

Door stop to pillar

Screw		Tightening torque	28 Nm

- Mount the cover (1) on the door outer skin and lock.

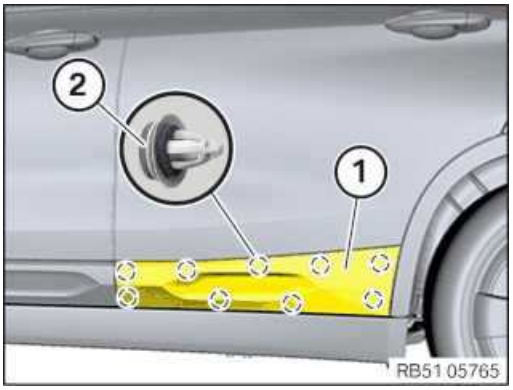
23 – Installing protective strip on the rear door



- Lever out stuck clips (2) from the door outer skin with the special tool **2 298 505** and fasten on the protective strip (2).
- Check the clips (2) and their brackets.

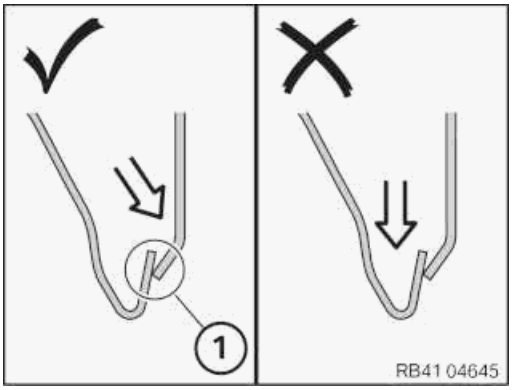
  Renew faulty clips (2) or clips without a sealing ring.

  Renew the protective strip on damaged brackets or a damaged centering pin.



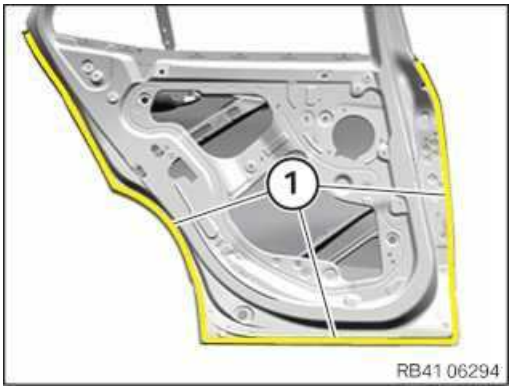
- Correctly position the protective strip (1) and clip in on the clips (2) starting at the front on the centering pin to the rear.

24 – Preserving the rear door



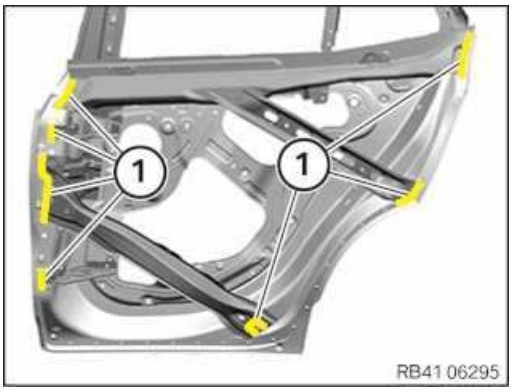
- The inner door panel is welded with the door outer skin in the area (1).

  The weld seam must be protected against corrosion by cavity preservation.



- Preserve the inner door panel in the area of the weld seam (1).
- Remove any cavity preservation which emerges.

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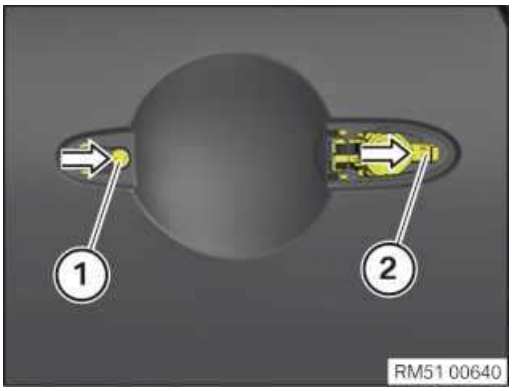


NOTICE

To provide a better overview: Shown without door outer skin.

- Preserve weld seams (1) between the reinforcements and the inner door panel.

25 – Installing the rear outside door handle

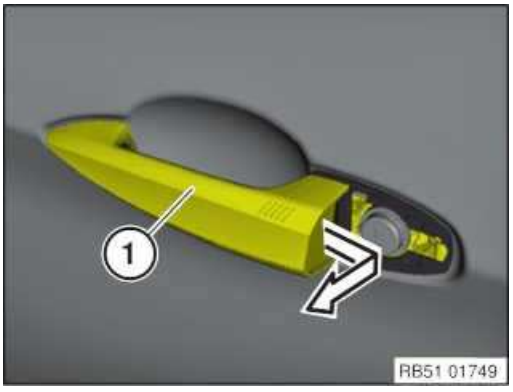


- Feed in the outside door handle support (2) into the door.
- Insert the outside door handle support (2) into the fixture toward the rear.
- Attach vehicle wiring harness to the outside door handle support (2).
- Tighten down screw (1).

Outside door handle support to door

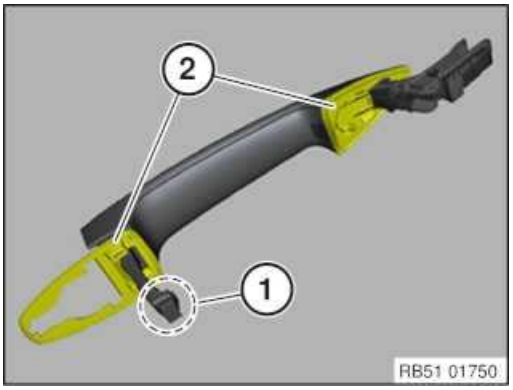
Screw		Tightening torque	2,6 Nm

26 – Install the outside door handle



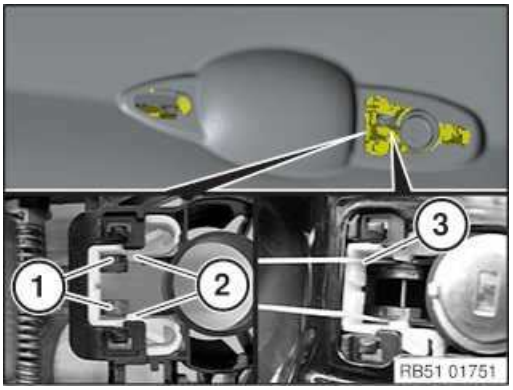
- Pull out the outside door handle (1) and feed out in direction of arrow.
- **Equipment specification with Comfort Access/light package**:

  Carefully feed out the outside door handle (1) and disconnect the associated plug connections.



- Check the fixture (1) for damage.

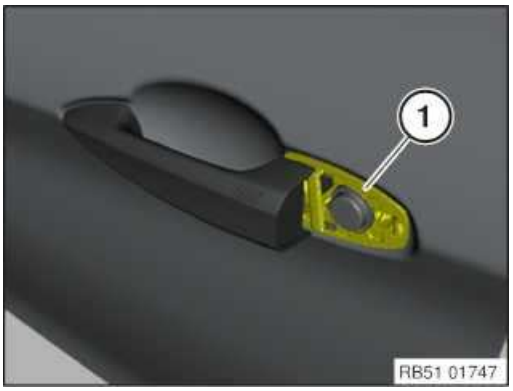
  Renew the damaged outside door handle if applicable.
- Check the seals (2); they must not be damaged of missing.



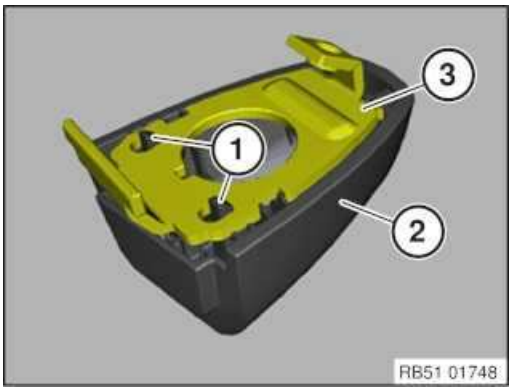
- During the disassembly of the outside door handle, the lock actuation (1) is held in the installation position by the retaining clamps (2).
- If the lock actuation (1) is not in the installation position, pull it outwards with a string (3) and hold it.
- Insert the outside door handle and feed it into the lock actuation (1) correctly.
- Remove the string (3).
- Carry out functional check with door open.

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27 – Install the cover on the outside door handle

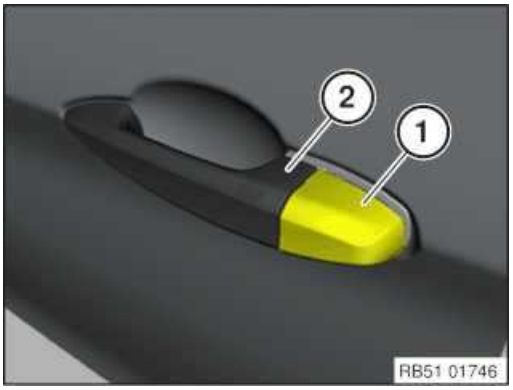


- Make sure the gasket (1) is fitted correctly.

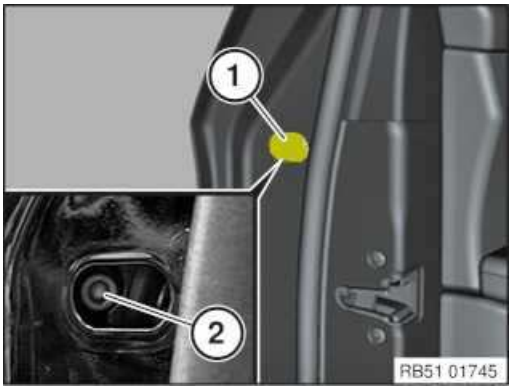


- Check the latch mechanisms (1) of the cover (2) for damage and renew the cover (2) as needed.

  The latch mechanisms (1) must not be damaged or missing.
- **When replacing the cover** (2)**:** Remount retaining plate (3).



- Install the cover (1) with the outside door handle (2) slightly open.



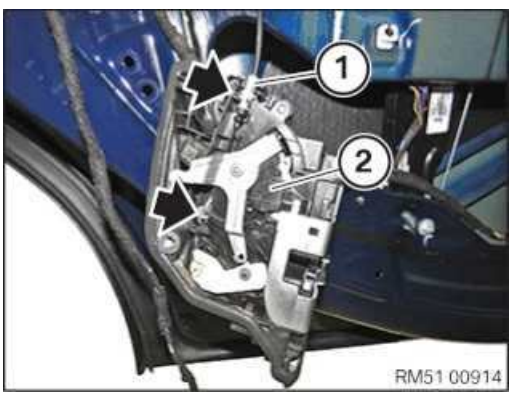
- Tighten down screw (2).

Attachment bell to outside door handle support

Screw		Tightening torque	3 Nm

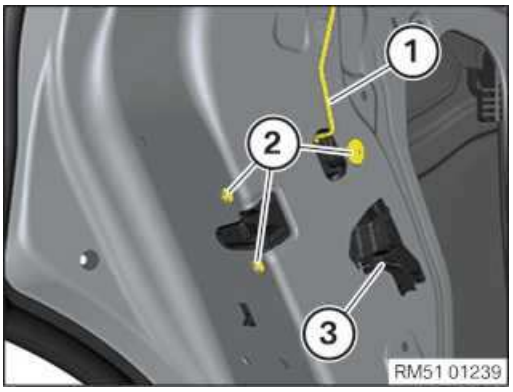
- Mount the cover (1).

28 – Install door lock in the rear door



- Attach the Bowden cable (1) to the door lock (2).

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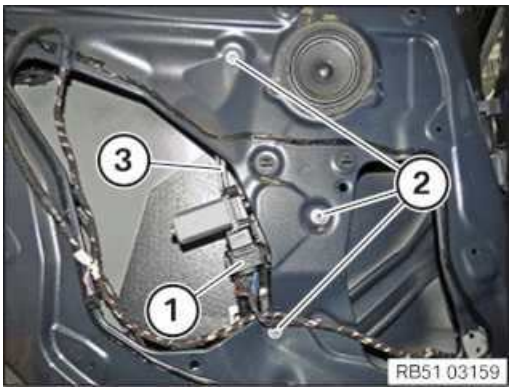
- Guide the door lock (3) into the door.
- Tighten down screws (2).

Door lock to door

Screw		Tightening torque	8,8 Nm

- Connect the plug connection and cable clip at the door lock (3).
- Clip in locking rod (1).

29 – Installing rear power window regulator



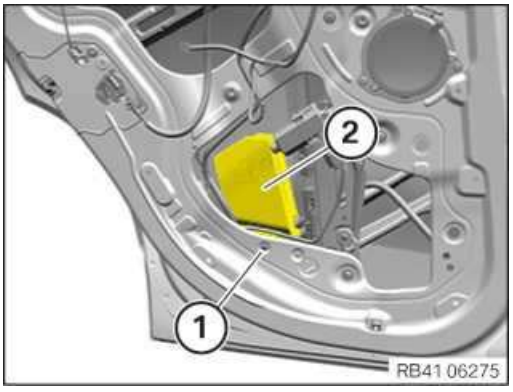
- Thread power window (3) into the door and position it.
- Tighten nuts (2).

Window regulator to door

Nut M6, self-locking		Tightening torque	9,5 Nm

- Connect plug connection (1) and lock.

30 – Installing the crash pad

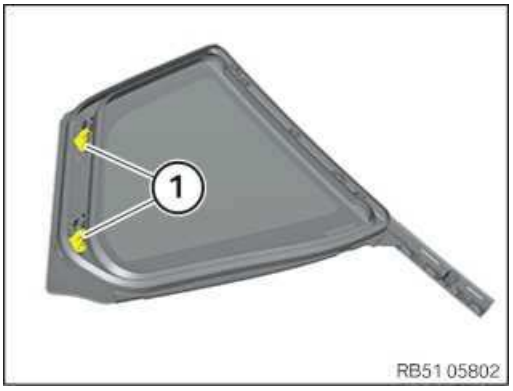


- Install the crash pad (2) and tighten the screw (1).

Crash pad to door

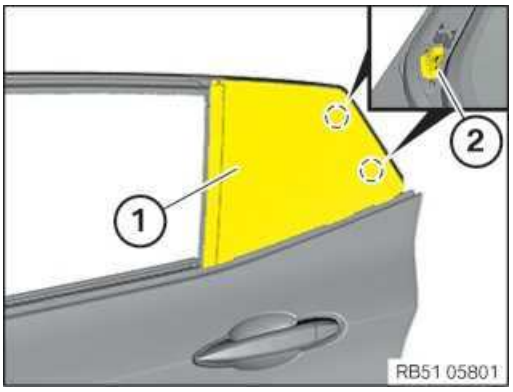
Oval-head screw		Tightening torque	3 Nm

31 – Install the fixed side window glass for rear door

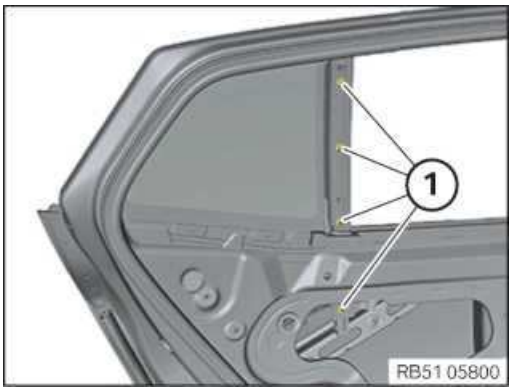


- Check the retaining lugs (1) for damage and replace if necessary.

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- Feed the fixed side window glass (1) into the door from the front.
- Slide the fixed side window glass (1) further toward the rear and feed in on the retaining lugs (2).



- Tighten the screws (1).

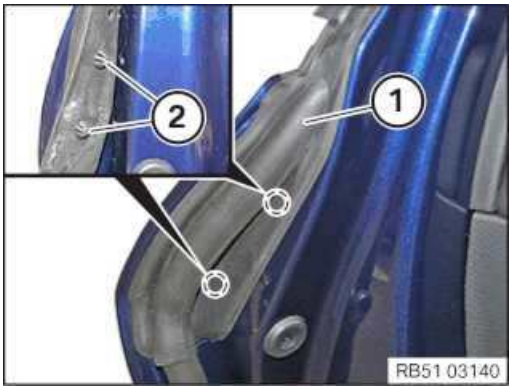
Fixed side window glass to door

Oval-head screw	Tightening torque		2,3 Nm

32 – Install rubber window seal of rear door window glass

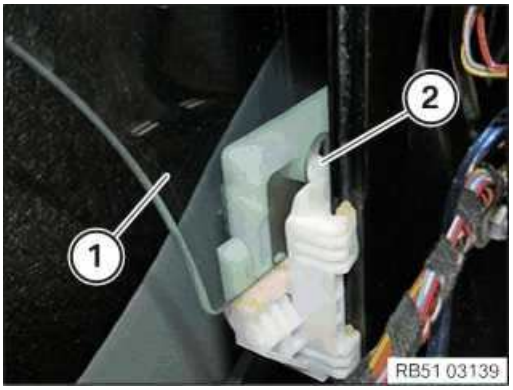


- Insert rubber window seal (1) into the guide rails.
- Attach the rubber window seal (1) to the door frame.



- Engage rubber window seal (1) in mounting (2).
- Make sure that the rubber window seal (1) rests correctly against the door frame.

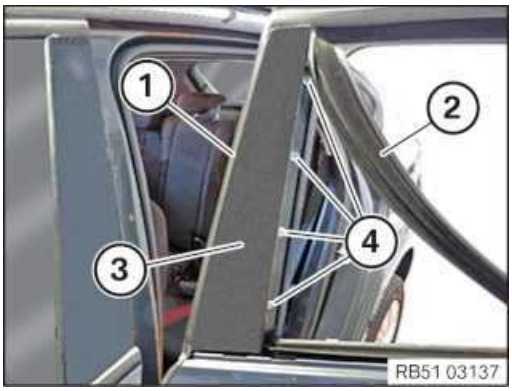
33 – Installing rear door window glass



- Feed in the door window glass (1).
- Engage the door window glass (1) into the stop of the fixture (2).
- Make sure that the door window glass (1) correctly engages into fixture (2).

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34 – Install the outer window frame cover of the rear door



- Insert the cover (3).
- Tighten down screws (4).

Window frame cover to door shell

Oval-head screw	Tightening torque		2,3 Nm

- Connect the rubber seal (1) and the rubber window seal (2) on the cover (3).
- Make sure that the rubber window seal (2) touches the cover (3) correctly.

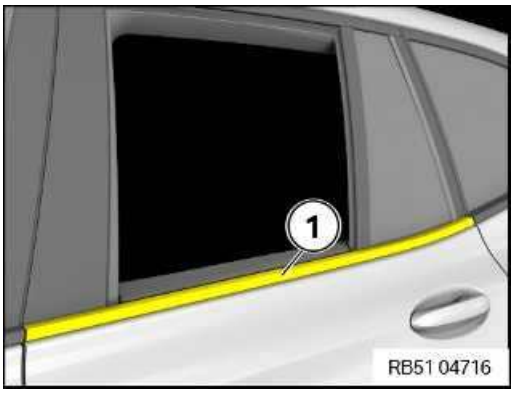
35 – Initialising the power windows

TECHNICAL INFORMATION

Notes on power window initialisation must be strictly observed for these repair instructions.
Additional information, see 67 62 ... Information on power window initialisation.

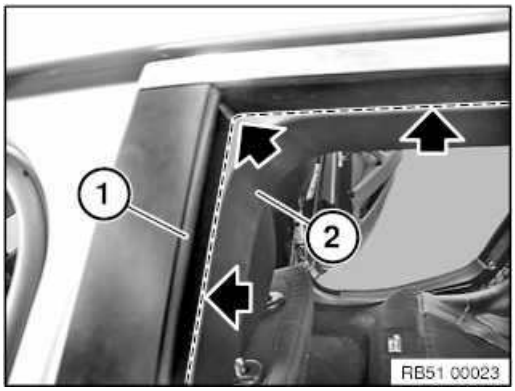
- Initialise power window.

36 – Installing the outer weather strip on the rear door



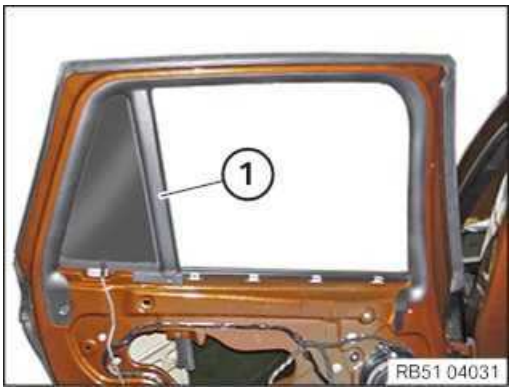
- Check the weather strip (1) for damage, renew if necessary.
- Coat the weather strip (1) with a suitable lubricant prior to installation.
- Position the weather strip (1) in front at the door.
- Press down the weather strip (1) across its entire length.

37 – Install the window frame cover for the rear door



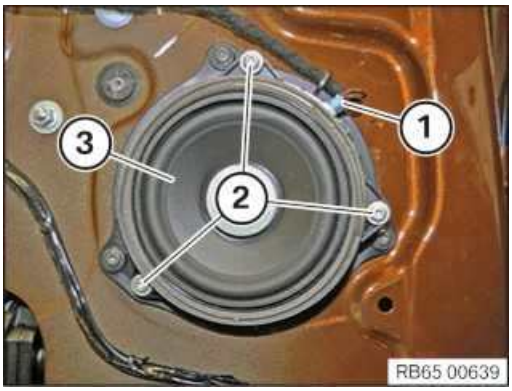
- Install the cover (2).
- Make sure that the cover (2) is threaded correctly into the groove of the rubber window seal (1).

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- Engage the cover (1) in the latch mechanisms .

38 – Installing the mid-range speaker in the rear door



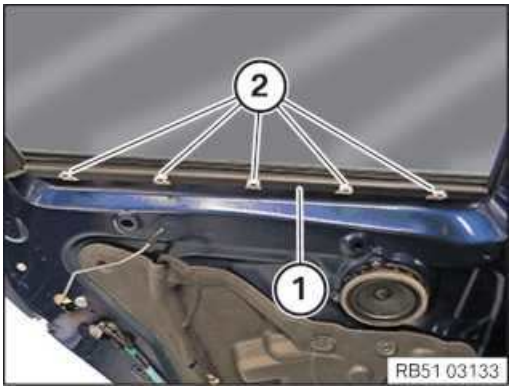
- Fit the mid-range speaker (3) and position it correctly.
- Tighten down screws (2).

Loudspeakers on the door / trim panel

Screw		Tightening torque	2 Nm

- Connect connector (1).

39 – Installing weather strip on inner rear door



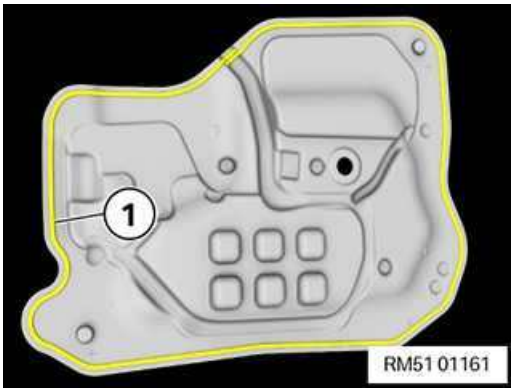
- Coat the weather strip (1) prior to installation with an approved lubricant.
- If necessary, remove clamps (2) from weather strip (1) and attach to door.
- Renew defective clamps (2).
- Position weather strip (1) on the door and engage into the clamps (2).

40 – Installing the sound insulation on the rear door

TECHNICAL INFORMATION

Notes on the sound insulation must be strictly observed for these repair instructions.
For more information see: 51 48 ... Notes on bonding the sound insulation (SI) in doors

Check



- Check sound insulation for damage.

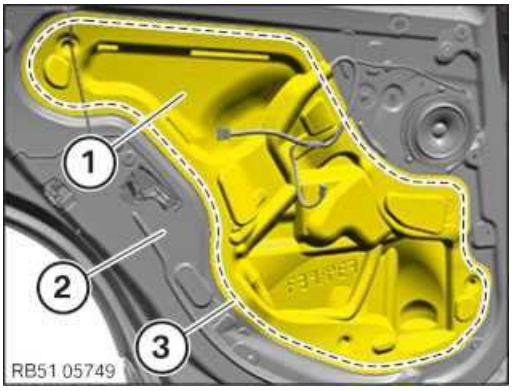
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Result

» The sound insulation is damaged.

Measure

- Renew the sound insulation.
- Route the butyl rope with 4 mm (sourcing reference BMW Group Parts) along the current layout of the butyl rope (1).
- Heat the butyl rope (1) with a hot air blower.



- Press on the sound insulation (1) along the mark (3) with force onto the inner door panel (2).

41 – Installing rear door trim panel

RISK OF DAMAGE

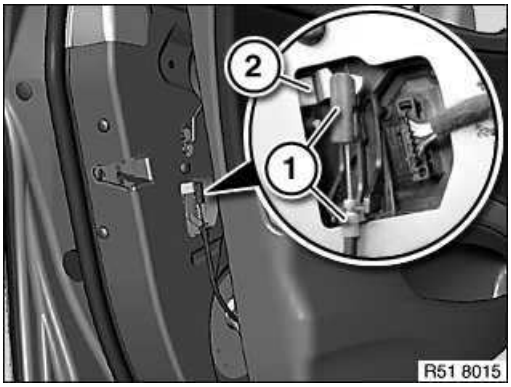
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

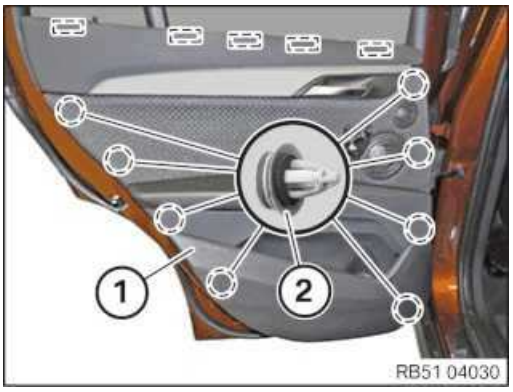


- Check the clips (1) and the stop pad (2), they must not be damaged or missing, renew if necessary.

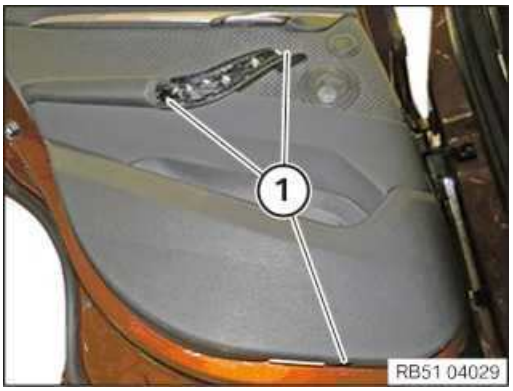


- Install the door trim panel and connect all plug connections.
- Attach the Bowden cable (1) on the door lock (2).

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- Engage the door trim panel (1) in the clamps at the top.
- Position the door trim panel (1) correctly and clip it into the clips (2).



- Tighten the screws (1).

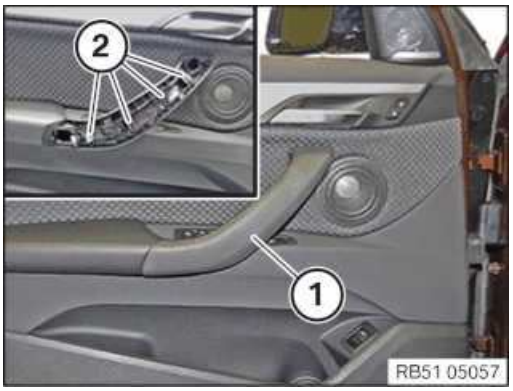
Door trim panel to door

Screw TS5x20		Tightening torque	2,5 Nm

42 – Install the cover on the door handle

NOTICE

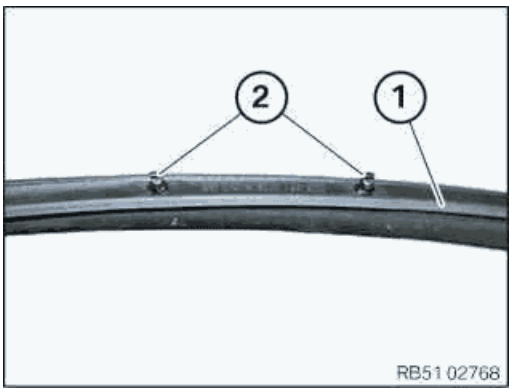
Description is for left component only. Procedure on the right side is identical.



- Check clamps (2) for damage; renew if necessary.

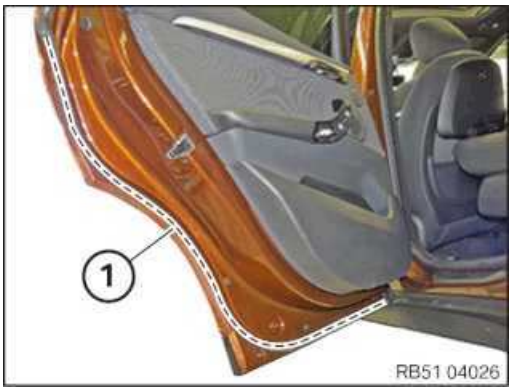
  The clamps (2) must not be damaged or missing.
- Position the cover (1) and engage it in the clamps (2).

43 – Install the seal on the rear door at bottom



- Check the clips (2) of the seal (1) and replace if necessary.

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- Position the seal (1).
- Clip in the seal (1) along the dotted line.

Additional Information

Overview of Tightening Torques

Rear door to door hinge — Used in step 21

Screw		Tightening torque	40 Nm

Adapter to door — Used in step 21

Oval-head screw	Tightening torque		2,0 Nm

Door retainer to door — Used in step 22

Nut M6		Tightening torque	8 Nm

Door stop to pillar — Used in step 22

Screw		Tightening torque	28 Nm

Outside door handle support to door — Used in step 25

Screw		Tightening torque	2,6 Nm

Attachment bell to outside door handle support — Used in step 27

Screw		Tightening torque	3 Nm

Door lock to door — Used in step 28

Screw		Tightening torque	8,8 Nm

Window regulator to door — Used in step 29

Nut M6, self-locking		Tightening torque	9,5 Nm

Crash pad to door — Used in step 30

Oval-head screw		Tightening torque	3 Nm

Fixed side window glass to door — Used in step 31

Oval-head screw	Tightening torque		2,3 Nm

Window frame cover to door shell — Used in step 34

Oval-head screw	Tightening torque		2,3 Nm

Loudspeakers on the door / trim panel — Used in step 38

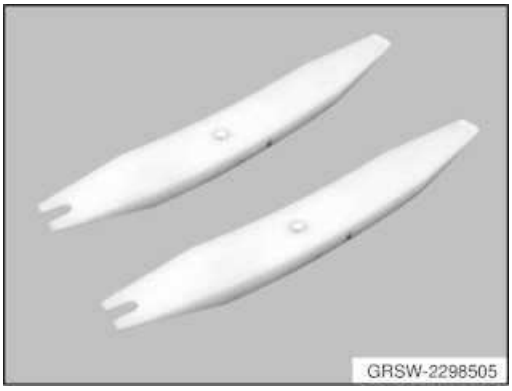
Screw		Tightening torque	2 Nm

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Door trim panel to door			Used in step 41
Screw TS5x20		Tightening torque	2,5 Nm

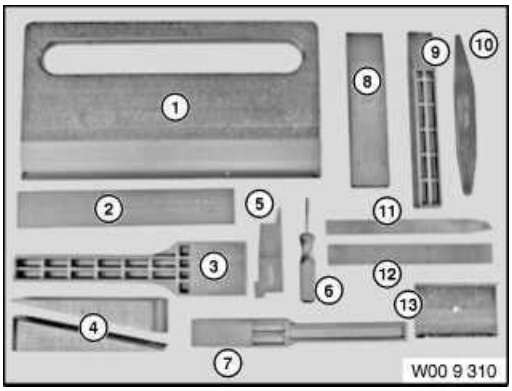
Overview of Special Tools

2 298 505 Wedge



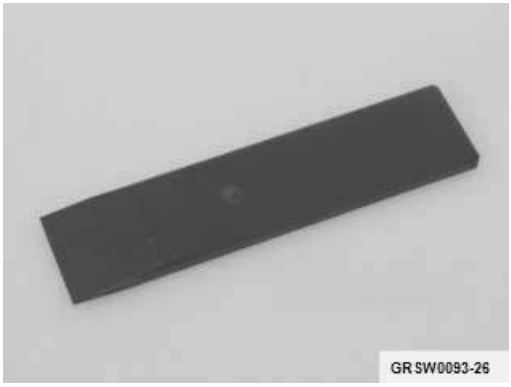
Common	Used in step 1 8 23
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

0 495 484 (00 9 324) Panel wedge



Common	Used in step 8
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)

0 496 570 (00 9 326) Wedge



Common	Used in step 8
Usage	(Universal wedge) From 11/2008 this special tool replaces panel wedge 00 9 318 (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 19
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
51 48 ... Notes for bonding sound insulation (SI), doors	4 40

Repair instructions	Used in step
67 62 ... Notes on initializing power windows	35
67 62 ... Notes on initializing power windows	35

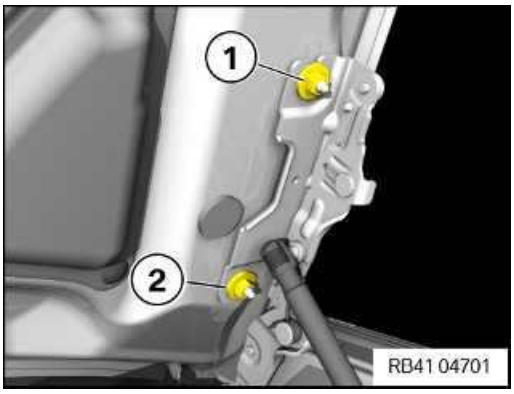
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41 61 014 Adjusting bonnet

1 – Adjusting 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



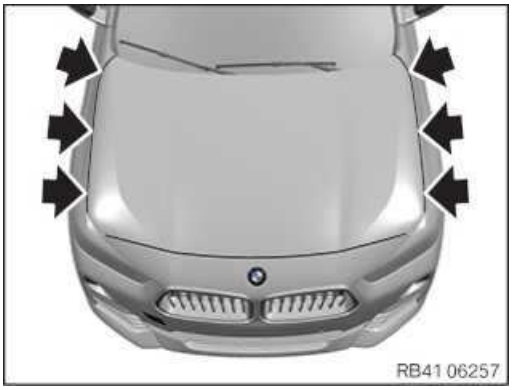
NOTICE

Perform the operations on the left and right side.

- Loosen nuts (1) and (2) until the bonnet can be pushed.
- Move the bonnet in longitudinal and sidewise direction until the bonnet reaches the predefined gap dimension.
- Tighten nuts (1) and (2).

Engine compartment lid

Nut M8		Tightening torque	19 Nm



Check

- Check gap dimensions.

Result

» Gap dimensions do not correspond to the specifications.

Measure

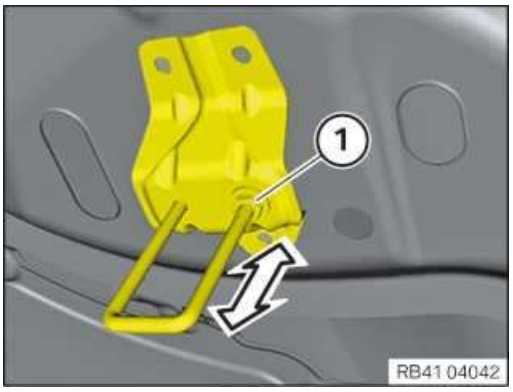
- Adjust bonnet.

▸ **Adjusting engine compartment lid catch**

TECHNICAL INFORMATION

Notes on the body gap dimensions are the basis of these repair instructions and must be observed without fail.
For additional information see: 41 00 ... Gap dimensions for body

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NOTICE

Perform the operations on the left and right side.

- Adjust striker by turning nut (1).

Check

- Check gap dimensions between the bonnet and the headlights.

  Check gap dimensions between the bonnet and the front ornamental grill.



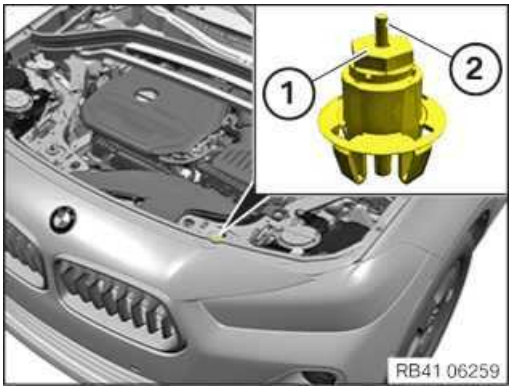
Result

» Gap dimensions do not correspond to the specifications.

Measure

- Adjust bonnet catch.

▸ **Adjusting the stop pads of the bonnet**



NOTICE

Perform the operations on the left and right side.

- Screw in stop pads (1) fully until the pin (2) can be pulled out.

  Pull out the pin (2) by approximately 5 mm.
- Slowly close bonnet. Pin (2) will be pressed into stop pad (1) while doing so.
- Raise bonnet.
- Unscrew stop pad (1) until the stop pad is flush with the upper edge of pin (2).

Additional Information

Overview of Tightening Torques

Engine compartment lid			Used in step 1
Nut M8		Tightening torque	19 Nm

Links

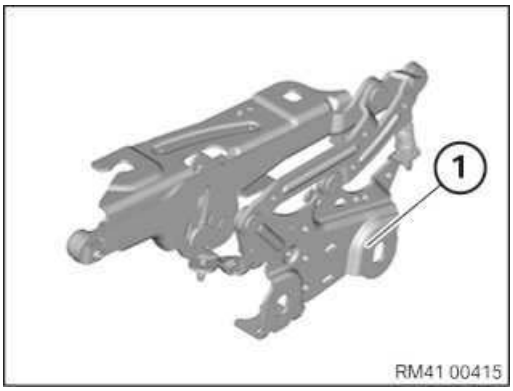
Repair instructions (PRE)	**Used in step**
Gap dimensions, body	1

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41 61 ... Check the bonnet hinge

Necessary preliminary work

- Remove the bonnet hinge



Open and close hinge (1).

Visual inspection for damage.

Test result	Solution
Hinge is stiff	Replace hinge
Visible damage	Replace hinge

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41 00 ... Procedure for vehicles with active pedestrian protection after an accident

The active pedestrian protection system consists of the following components:

- *Satellites (control unit + sensor)*
  - Sensors, inside, bumper panel, left/centre/right
  - ACSM control unit (Crash Safety Module)
- *Cables and connectors*
- *Engine compartment lid hinges*
  - Actuator
  - Engine compartment lid hinge

In case of a frontal crash or side collision in the area of the bonnet and/or the A-pillars, check the following components:

Satellites (control unit + sensor)

- Procedure
  - Read fault memory.
  - Disconnect the vehicle battery and observe the waiting period.
  - Rectify fault.
  - Reconnect the vehicle battery and observe the waiting period.
  - Delete the fault memory.
  - Switch off ignition and wait at least 2 minutes (no consumers, such as such as e.g. interior light, radio, etc., may be switched on during this period).
  - Switch the ignition on.
  - Read fault memory and rectify faults if necessary.

Cables and connectors

- Procedure
  - Check cables and connectors for damage, replace if necessary.

Procedure with activation of active pedestrian protection:

Engine compartment lid hinges

- Replace actuators.
- Check both bonnet hinges . Replace damaged hinges.
  If necessary, repair hinges with repair kit.
  If no repair kit is available, the hinge must be replaced.

Model	Repair kit available
F15, F16	No
F20, F21, F22, F23, F32, F33, F34, F36, F80, F82, F83, F87	Yes
F55, F56, F57, F60	No
F45, F46, F48, F49, F39	No

Procedure without activation of active pedestrian protection:

Engine compartment lid hinges

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- Check both bonnet hinges and replace if necessary.
- If the hinge is damaged, the actuator must also be replaced.

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41 61 072 Remove and install/replace the right bonnet hinge (active pedestrian protection)

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.

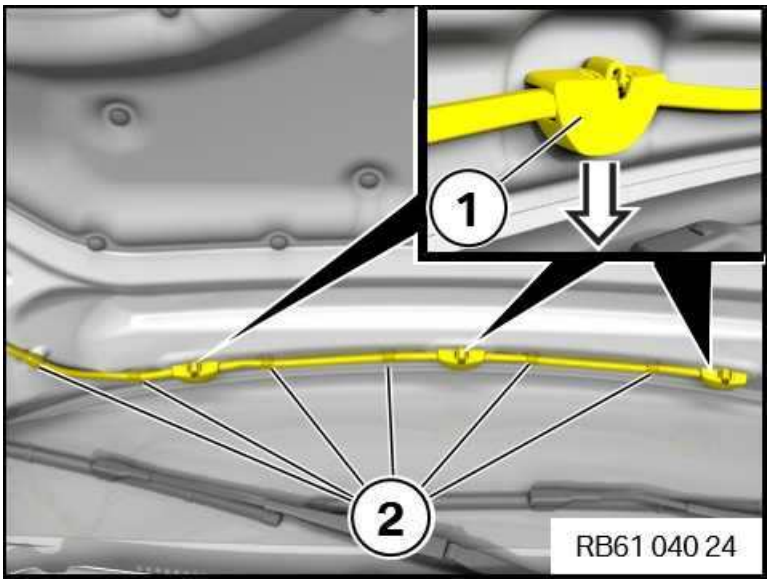
PRELIMINARY WORK

1 – Disconnecting all battery earth leads



- See additional information.

2 – Removing the jet chain partially



- Unclip the washer jets (1) in the direction of the arrow.
- Unclip the jet chain from all brackets (2) on the bonnet, and lay to one side.

3 – Remove bonnet

RISK OF DAMAGE

Paint damage.

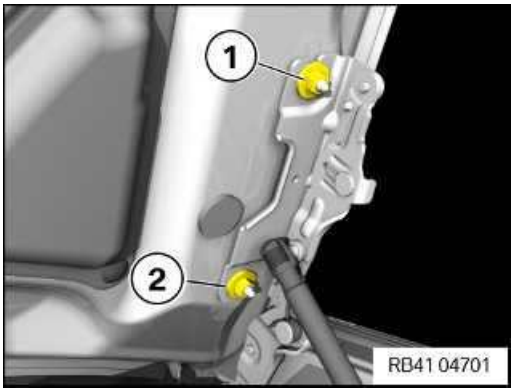
Mechanical action can lead to paint damage.

- 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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NOTICE

The operations shown only for one side must be carried out on both sides.



- Support the bonnet.
- Unfasten nut (1).
- Release nut (2) and remove bonnet.

4 – Remove the gas pressure spring for the bonnet

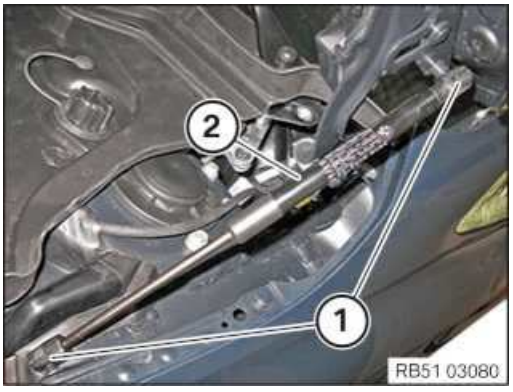
TECHNICAL INFORMATION

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

NOTICE

Description is for left component only. Procedure on the right side is identical.



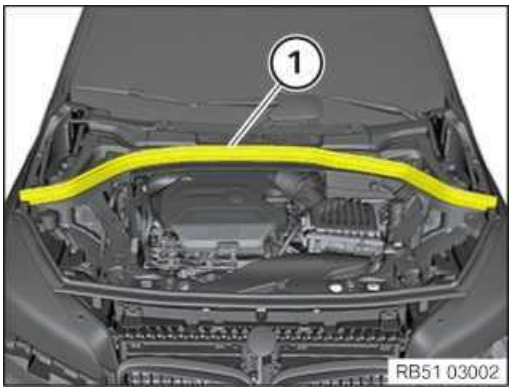
- Slide the locking spring (1) to the end of the gas pressure spring (2) and remove the gas pressure spring (2) from the ball head.

5 – Remove the seal for the rear bonnet

NOTICE

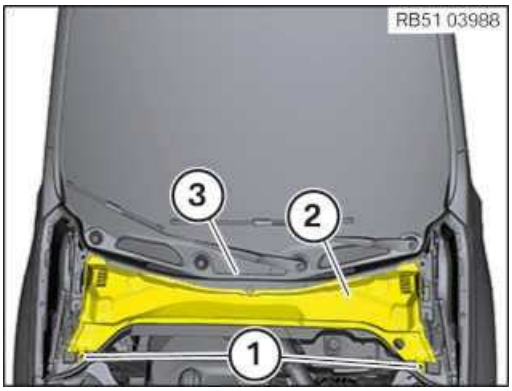
Schematic diagram is for example purposes. Some parts may differ in certain details.

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- Pull off rear bonnet seal (1) towards the top and remove.

6 – Removing front cowl panel cover



- Loosen the expanding rivet (1).
- Feed out and remove front cowl panel cover (2) from the rear cowl panel cover(3).

7 – Remove the actuator on the bonnet hinge

WARNING

Pyrotechnic components.

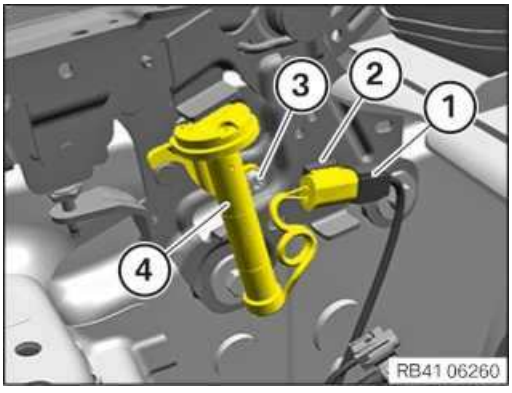
Danger! Life-threatening injuries!

- 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.

TECHNICAL INFORMATION

Notes on active pedestrian protection are a fundamental requirement for these repair instructions and must be complied with at all times.

For additional information see: 41 00 ... Procedure for vehicles with active pedestrian protection after an accident

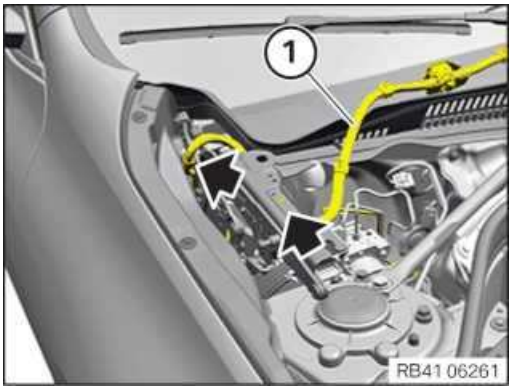


- Unlock plug connection (1) and disconnect.
- Release the cable clip (2) from the hinge.
- Release the bolt (3) and remove the actuator (4).

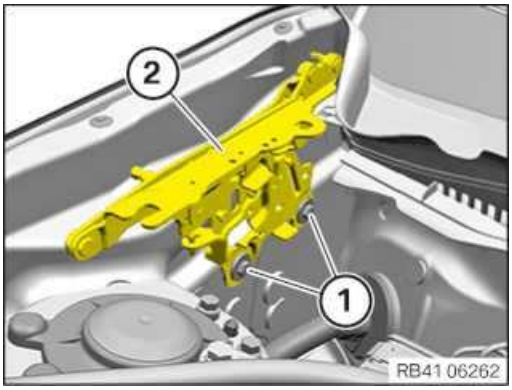
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MAIN WORK

8 – Remove the bonnet hinge

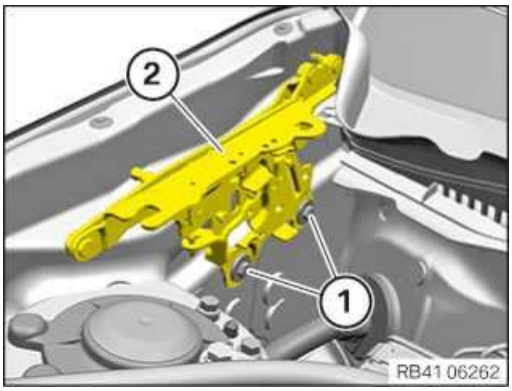


- Release the jet chain (1) and bracket (arrow) on the hinge.



- Release screws (1) and remove bonnet hinge (2).

9 – Installing bonnet hinge



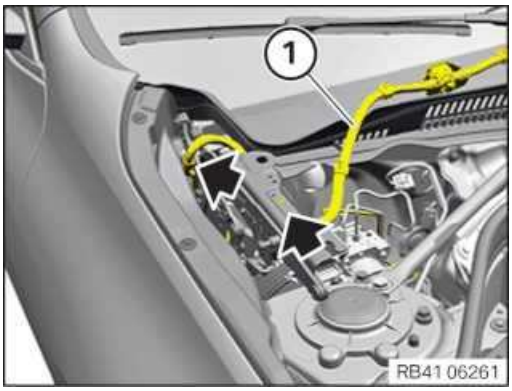
- Position the bonnet hinge (2).
- Renew screws (1).

  Parts: Bolts

  Tighten the screws (1).

Engine compartment lid hinge to body

Hexagon screw M8	Renew screw.	Tightening torque	19 Nm



- Secure the brackets (arrows) and jet chain (1) at the hinge.

POSTPROCESSES

10 – Install the actuator on the bonnet hinge

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WARNING

Pyrotechnic components.

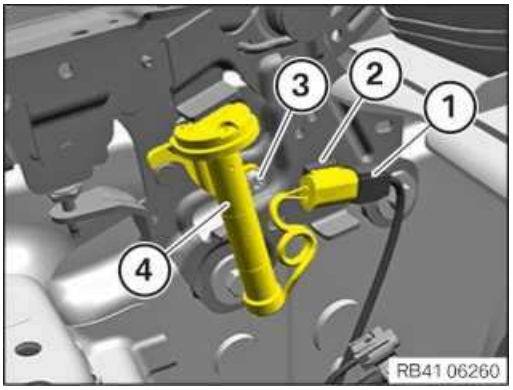
Danger! Life-threatening injuries!

- 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.

TECHNICAL INFORMATION

Notes on active pedestrian protection are a fundamental requirement for these repair instructions and must be complied with at all times.

For additional information see: 41 00 ... Procedure for vehicles with active pedestrian protection after an accident



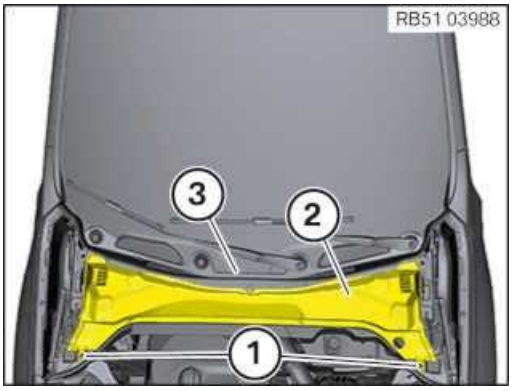
- Position the actuator (4) and tighten the screw (3).

Actuator to engine compartment lid hinge

M6x12 screw		Tightening torque	6,8 Nm

- Attach cable clip (2) to hinge.
- Connect connectors (1) and lock.

11 – Installing front cowl panel cover



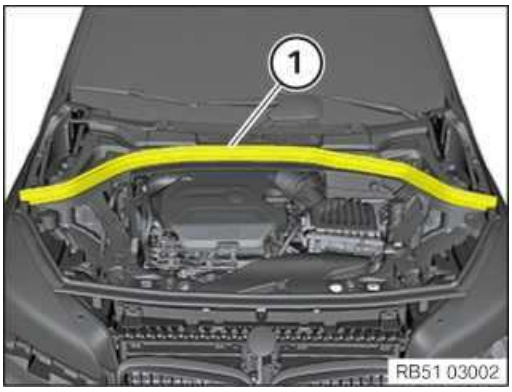
- Insert and install cowl panel cover at front (2) into cowl panel cover at rear (3).
- Check cowl panel cover at front is correctly seated (2).
- Secure expanding rivet (1).

12 – Install the seal for the bonnet

NOTICE

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

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- Install bonnet seal at rear (1).
- Ensure that the rear bonnet seal (1) is fitted correctly.

13 – Install the gas pressure spring for the bonnet

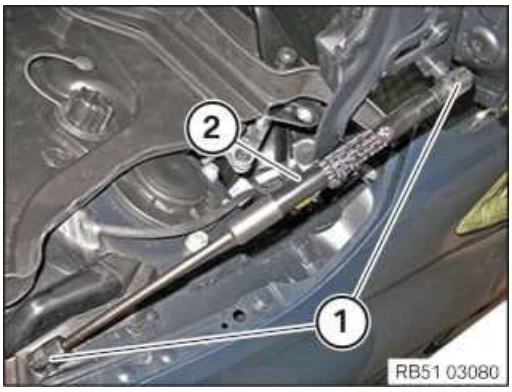
TECHNICAL INFORMATION

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

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Position gas pressure spring (2).
- Set the gas pressure spring (2) on the ball head and engage on the locking springs (1).

14 – Install bonnet

RISK OF DAMAGE

Paint damage.

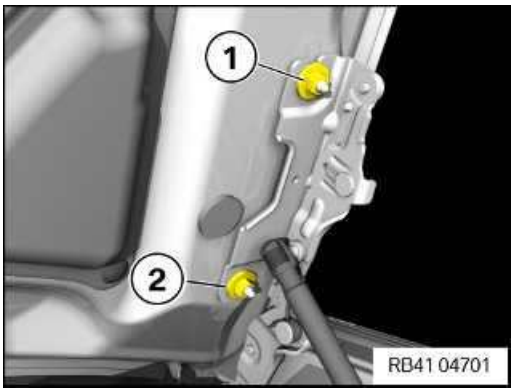
Mechanical action can lead to paint damage.

- 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.

NOTICE

The operations shown only for one side must be carried out on both sides.

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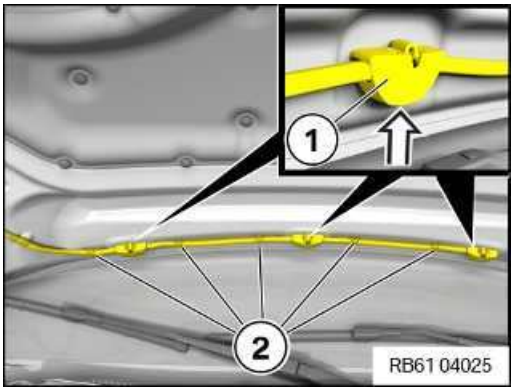
- Position the bonnet on the bonnet hinge. Observe the existing impressions of nuts (1) and (2).
- Support the bonnet.
- Tighten the nuts (1) and (2) .

Engine compartment lid

Nut M8		Tightening torque	19 Nm

- Carefully close the bonnet and check for contact between vehicle bodies, reposition bonnet if necessary.

15 – Installing jet chain partially



- Clip in the washer jets (1) in the direction of the arrow.
- Clip jet chain into the brackets (2) on the bonnet.

16 – Disconnecting all battery earth leads



- See additional information.

Additional Information

Overview of Tightening Torques

Engine compartment lid hinge to body — Used in step 9

Hexagon screw M8	Renew screw.	Tightening torque	19 Nm

Actuator to engine compartment lid hinge — Used in step 10

M6x12 screw		Tightening torque	6,8 Nm

Engine compartment lid — Used in step 14

Nut M8		Tightening torque	19 Nm

Links

General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	7 10

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41 00 ... Procedure for vehicles with active pedestrian protection after an accident	7 10

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1 16
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1 16
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
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61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
51 23 ... Removing/installing ball sockets with clip	4 13

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41 61 071 Removing and installing (replacing) left bonnet hinge (active pedestrian protection)

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.

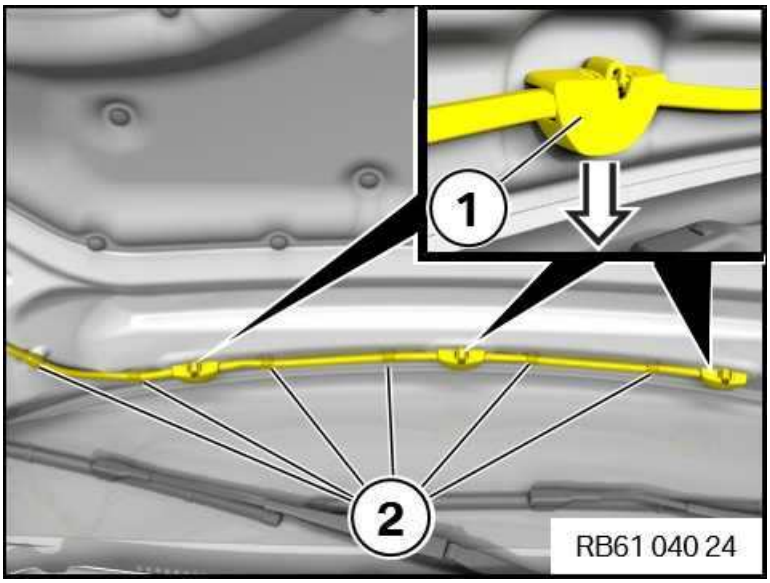
PRELIMINARY WORK

1 – Disconnecting all battery earth leads



- See additional information.

2 – Removing the jet chain partially



- Unclip the washer jets (1) in the direction of the arrow.
- Unclip the jet chain from all brackets (2) on the bonnet, and lay to one side.

3 – Remove bonnet

RISK OF DAMAGE

Paint damage.

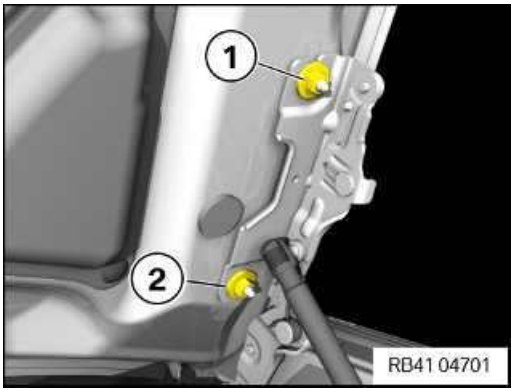
Mechanical action can lead to paint damage.

- 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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NOTICE

The operations shown only for one side must be carried out on both sides.



- Support the bonnet.
- Unfasten nut (1).
- Release nut (2) and remove bonnet.

4 – Remove the gas pressure spring for the bonnet

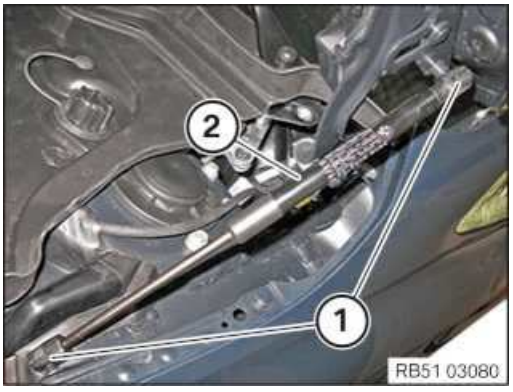
TECHNICAL INFORMATION

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

NOTICE

Description is for left component only. Procedure on the right side is identical.



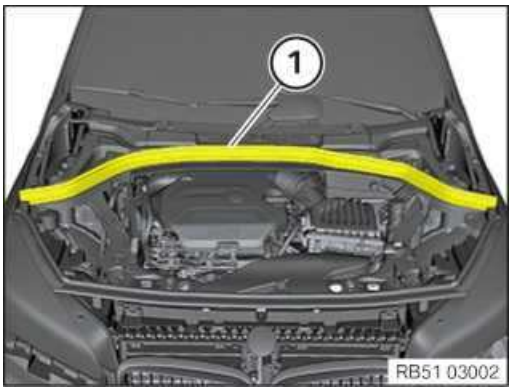
- Slide the locking spring (1) to the end of the gas pressure spring (2) and remove the gas pressure spring (2) from the ball head.

5 – Remove the seal for the rear bonnet

NOTICE

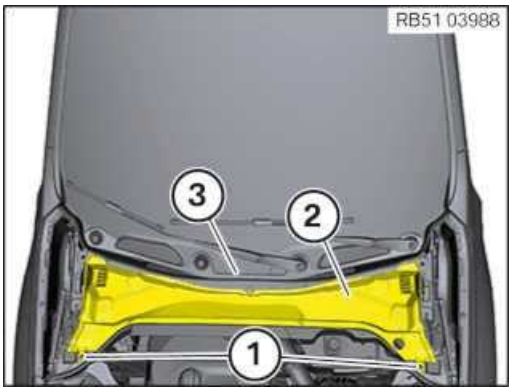
Schematic diagram is for example purposes. Some parts may differ in certain details.

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- Pull off rear bonnet seal (1) towards the top and remove.

6 – Removing front cowl panel cover



- Loosen the expanding rivet (1).
- Feed out and remove front cowl panel cover (2) from the rear cowl panel cover(3).

7 – Remove the actuator on the bonnet hinge

WARNING

Pyrotechnic components.

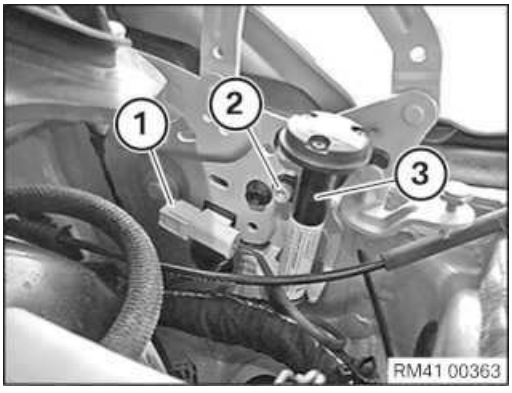
Danger! Life-threatening injuries!

- 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.

TECHNICAL INFORMATION

Notes on active pedestrian protection are a fundamental requirement for these repair instructions and must be complied with at all times.

For additional information see: 41 00 ... Procedure for vehicles with active pedestrian protection after an accident

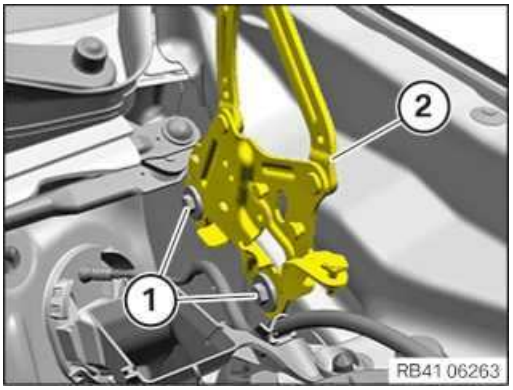


- Unlock plug connection (1) and disconnect. Release the cable clip for the plug connection from the hinge.
- Release the bolt (2) and remove the actuator (3).

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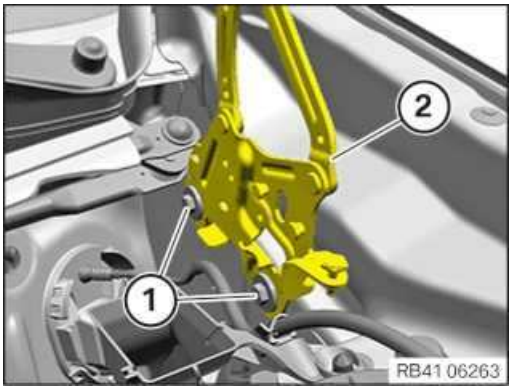
MAIN WORK

8 – Remove the bonnet hinge



- Release screws (1) and remove bonnet hinge (2).

9 – Installing bonnet hinge



- Position the bonnet hinge (2).
- Renew screws (1).

  Parts: Bolts

  Tighten the screws (1).

Engine compartment lid hinge to body

Hexagon screw M8	Renew screw.	Tightening torque	19 Nm

POSTPROCESSES

10 – Install the actuator on the bonnet hinge

WARNING

Pyrotechnic components.

Danger! Life-threatening injuries!

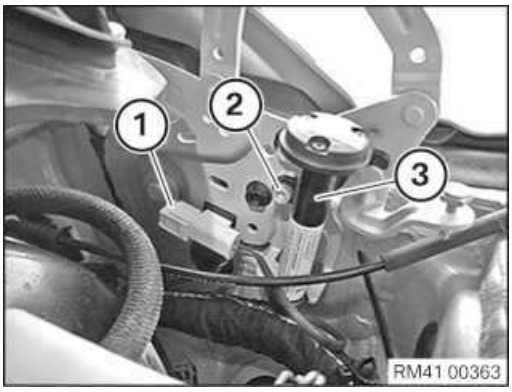
- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.

TECHNICAL INFORMATION

Notes on active pedestrian protection are a fundamental requirement for these repair instructions and must be complied with at all times.

For additional information see: 41 00 ... Procedure for vehicles with active pedestrian protection after an accident

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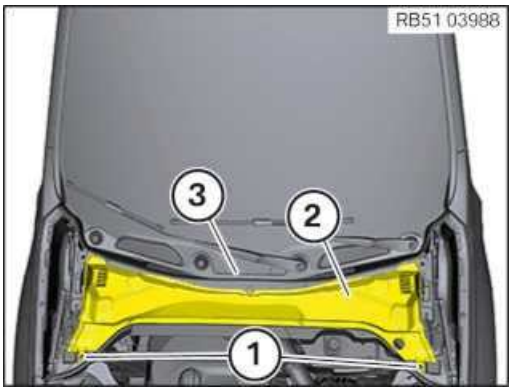
- Position the actuator (3) and tighten the screw (2).

Actuator to engine compartment lid hinge

M6x12 screw		Tightening torque	6,8 Nm

- Connect connectors (1) and lock. Secure the cable clip for the connector (1) at the hinge.

11 – Installing front cowl panel cover

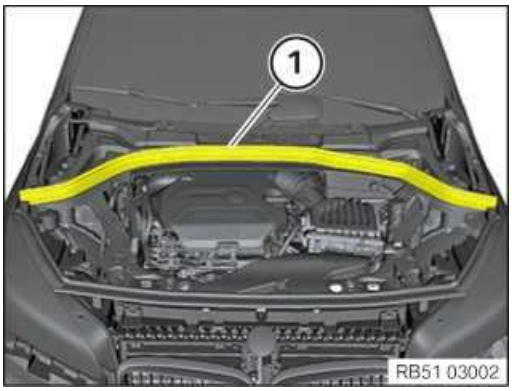


- Insert and install cowl panel cover at front (2) into cowl panel cover at rear (3).
- Check cowl panel cover at front is correctly seated (2).
- Secure expanding rivet (1).

12 – Install the seal for the bonnet

NOTICE

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



- Install bonnet seal at rear (1).
- Ensure that the rear bonnet seal (1) is fitted correctly.

13 – Install the gas pressure spring for the bonnet

TECHNICAL INFORMATION

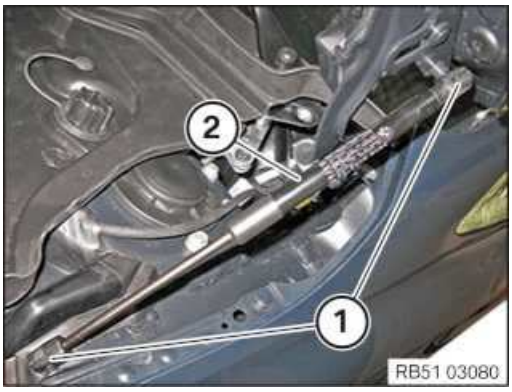
The notes on the disassembly and installation of ball sockets with clamps are the basis for these repair instructions and must be observed without fail.

For additional information see: 51 23 ... Note information on disassembly/installation of ball sockets with clamp

NOTICE

Description is for left component only. Procedure on the right side is identical.

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- Position gas pressure spring (2).
- Set the gas pressure spring (2) on the ball head and engage on the locking springs (1).

14 – Install bonnet

RISK OF DAMAGE

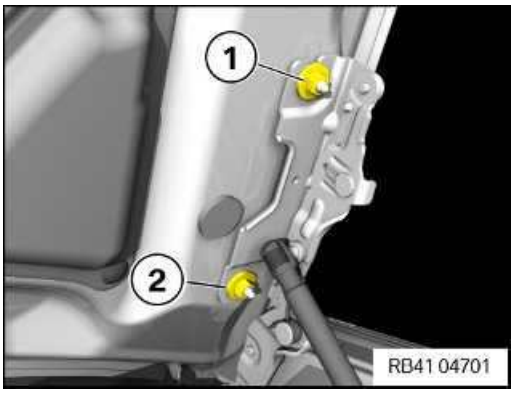
Paint damage.

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.

NOTICE

The operations shown only for one side must be carried out on both sides.



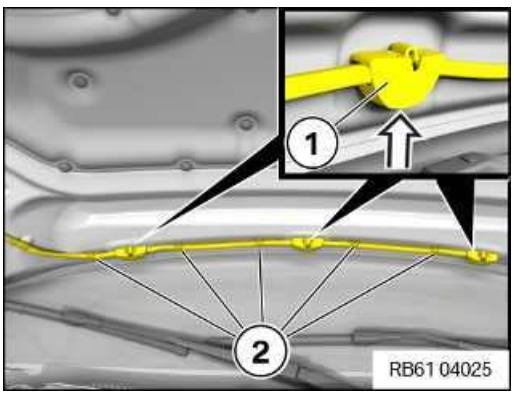
- Position the bonnet on the bonnet hinge. Observe the existing impressions of nuts (1) and (2).
- Support the bonnet.
- Tighten the nuts (1) and (2) .

Engine compartment lid

Nut M8		Tightening torque	19 Nm

- Carefully close the bonnet and check for contact between vehicle bodies, reposition bonnet if necessary.

15 – Installing jet chain partially



- Clip in the washer jets (1) in the direction of the arrow.
- Clip jet chain into the brackets (2) on the bonnet.

16 – Disconnecting all battery earth leads

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- See additional information.

Additional Information

Overview of Tightening Torques

Engine compartment lid hinge to body — Used in step 9

Hexagon screw M8	Renew screw.	Tightening torque	19 Nm

Actuator to engine compartment lid hinge — Used in step 10

M6x12 screw		Tightening torque	6,8 Nm

Engine compartment lid — Used in step 14

Nut M8		Tightening torque	19 Nm

Links

General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	7 10
41 00 ... Procedure for vehicles with active pedestrian protection after an accident	7 10

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1 16
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1 16
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16
61 20 900 Disconnecting and connecting battery earth lead	1 16

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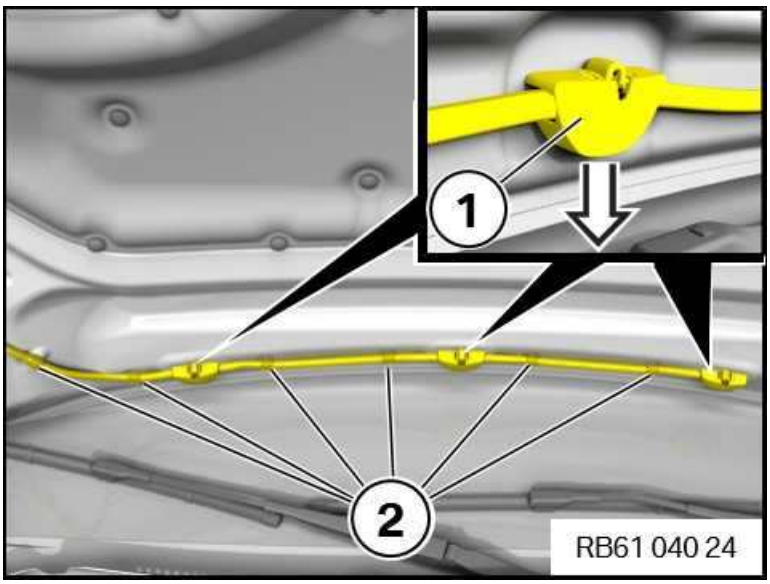
61 20 900 Disconnecting and connecting battery earth lead	1	16
61 20 900 Disconnecting and connecting battery earth lead	1	16
61 20 900 Disconnecting and connecting battery earth lead	1	16
61 20 900 Disconnecting and connecting battery earth lead	1	16
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1	16
61 20 900 Disconnecting and connecting battery earth lead	1	16
61 20 900 Disconnecting and connecting battery earth lead	1	16
61 20 900 Disconnecting and connecting battery earth lead	1	16
61 20 900 Disconnecting and connecting battery earth lead	1	16
61 20 900 Disconnecting and connecting battery earth lead	1	16
61 20 900 Disconnecting and connecting battery earth lead	1	16
61 20 900 Disconnecting and connecting battery earth lead	1	16
51 23 ... Removing/installing ball sockets with clip	4	13

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41 61 000 Removing and installing engine compartment lid

PRELIMINARY WORK

1 – Removing the jet chain partially



- Unclip the washer jets (1) in the direction of the arrow.
- Unclip the jet chain from all brackets (2) on the bonnet, and lay to one side.

MAIN WORK

2 – Remove bonnet

RISK OF DAMAGE

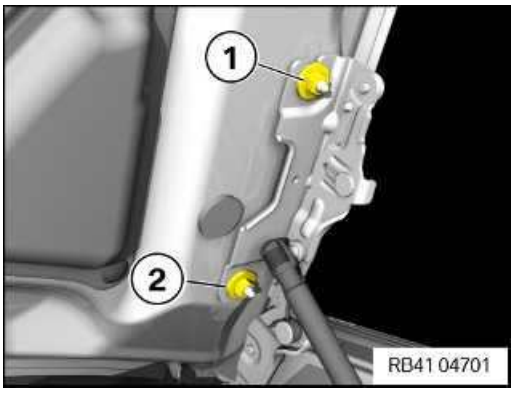
Paint damage.

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.

NOTICE

The operations shown only for one side must be carried out on both sides.



- Support the bonnet.
- Unfasten nut (1).
- Release nut (2) and remove bonnet.

3 – Install bonnet

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RISK OF DAMAGE

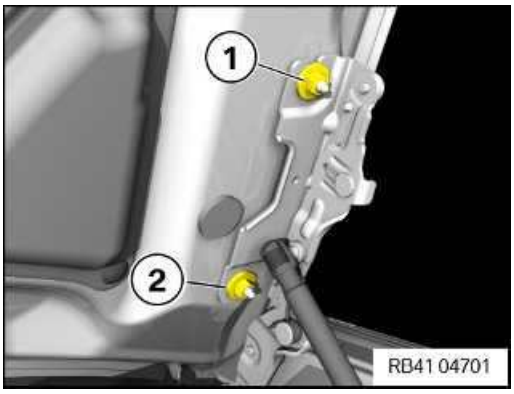
Paint damage.

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.

NOTICE

The operations shown only for one side must be carried out on both sides.



- Position the bonnet on the bonnet hinge. Observe the existing impressions of nuts (1) and (2).
- Support the bonnet.
- Tighten the nuts (1) and (2) .

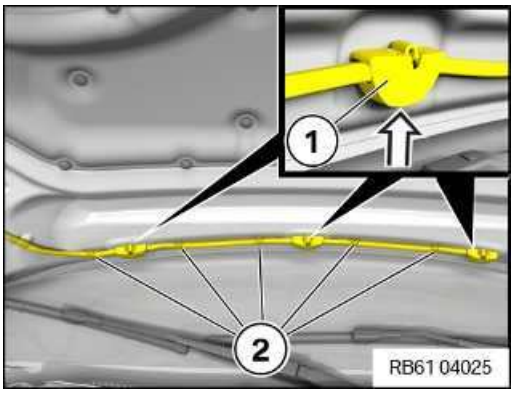
Engine compartment lid

Nut M8		Tightening torque	19 Nm

- Carefully close the bonnet and check for contact between vehicle bodies, reposition bonnet if necessary.

POSTPROCESSES

4 – Installing jet chain partially



- Clip in the washer jets (1) in the direction of the arrow.
- Clip jet chain into the brackets (2) on the bonnet.

Additional Information

Overview of Tightening Torques

Engine compartment lid Used in step 3

Nut M8		Tightening torque	19 Nm

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41 61 010 Removing and installing the bonnet (active pedestrian protection)

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

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

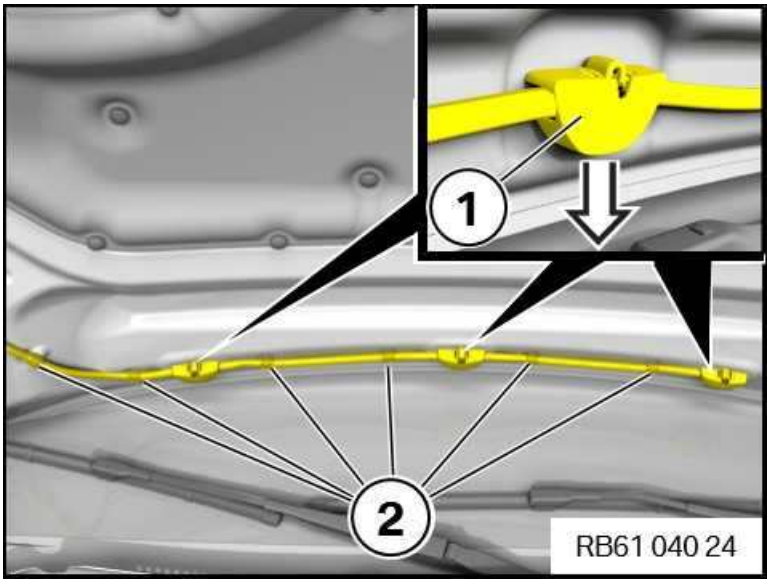
PRELIMINARY WORK

1 – Disconnecting all battery earth leads



- See additional information.

2 – Removing the jet chain partially



- Unclip the washer jets (1) in the direction of the arrow.
- Unclip the jet chain from all brackets (2) on the bonnet, and lay to one side.

MAIN WORK

3 – Remove bonnet

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RISK OF DAMAGE

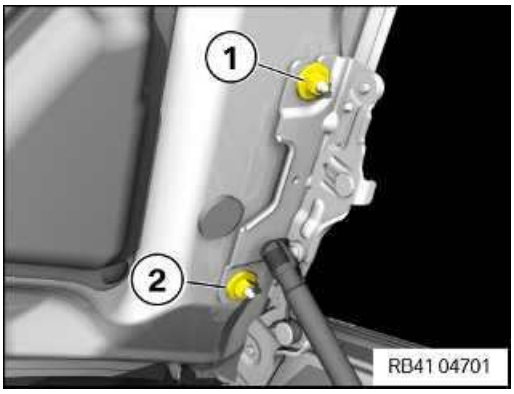
Paint damage.

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.

NOTICE

The operations shown only for one side must be carried out on both sides.



- Support the bonnet.
- Unfasten nut (1).
- Release nut (2) and remove bonnet.

4 – Install bonnet

RISK OF DAMAGE

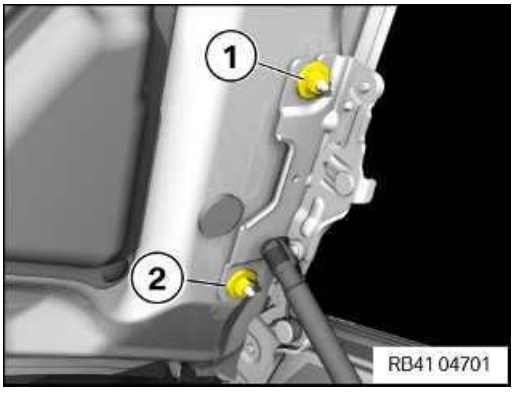
Paint damage.

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.

NOTICE

The operations shown only for one side must be carried out on both sides.



- Position the bonnet on the bonnet hinge. Observe the existing impressions of nuts (1) and (2).
- Support the bonnet.
- Tighten the nuts (1) and (2) .

Engine compartment lid

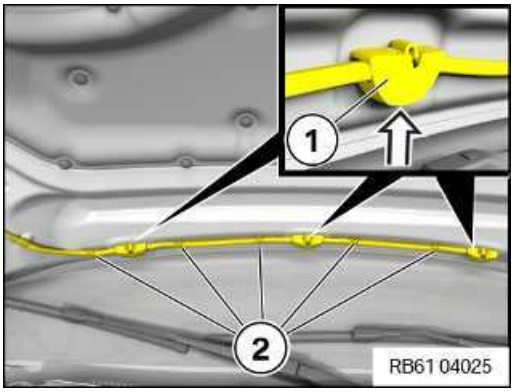
Nut M8		Tightening torque	19 Nm

- Carefully close the bonnet and check for contact between vehicle bodies, reposition bonnet if necessary.

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POSTPROCESSES

5 – Installing jet chain partially



- Clip in the washer jets (1) in the direction of the arrow.
- Clip jet chain into the brackets (2) on the bonnet.

6 – Disconnecting all battery earth leads



- See additional information.

Additional Information

Overview of Tightening Torques

Engine compartment lid			Used in step 4
Nut M8		Tightening torque	19 Nm

Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6
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61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1 6
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6

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61 20 900 Disconnecting and connecting battery earth lead	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6
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61 20 900 Disconnecting and connecting battery earth lead	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6
61 20 900 Disconnecting and connecting battery earth lead	1 6

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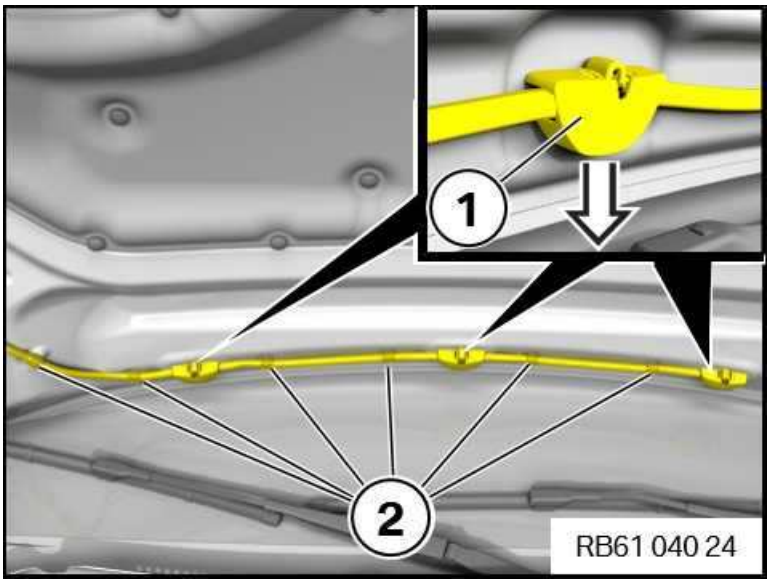
41 61 060 Removing and installing/replacing the bonnet hinge, left

Prerequisite

› Engine compartment lid is open.

PRELIMINARY WORK

1 – Removing the jet chain partially



- Unclip the washer jets (1) in the direction of the arrow.
- Unclip the jet chain from all brackets (2) on the bonnet, and lay to one side.

2 – Remove bonnet

RISK OF DAMAGE

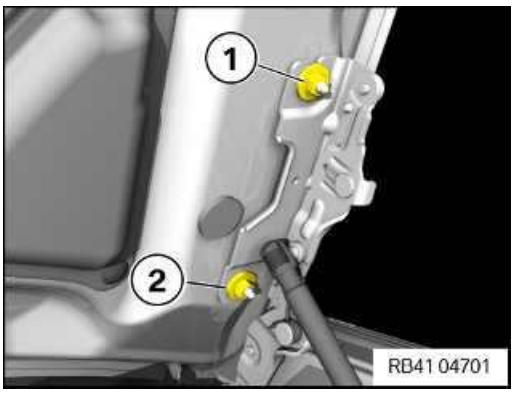
Paint damage.

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.

NOTICE

The operations shown only for one side must be carried out on both sides.



- Support the bonnet.
- Unfasten nut (1).
- Release nut (2) and remove bonnet.

3 – Remove the gas pressure spring for the bonnet

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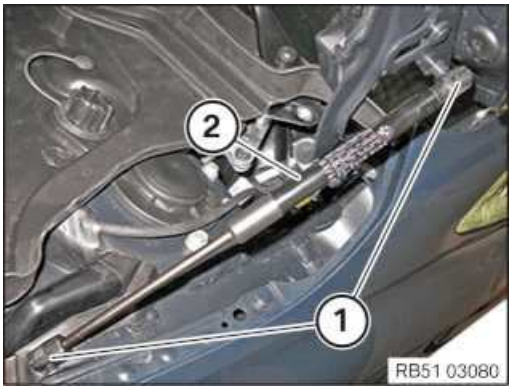
TECHNICAL INFORMATION

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

NOTICE

Description is for left component only. Procedure on the right side is identical.

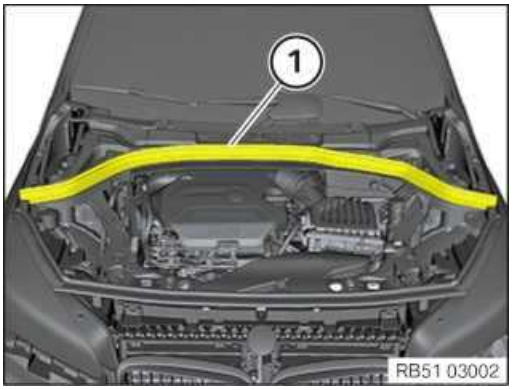


- Slide the locking spring (1) to the end of the gas pressure spring (2) and remove the gas pressure spring (2) from the ball head.

4 – Remove the seal for the rear bonnet

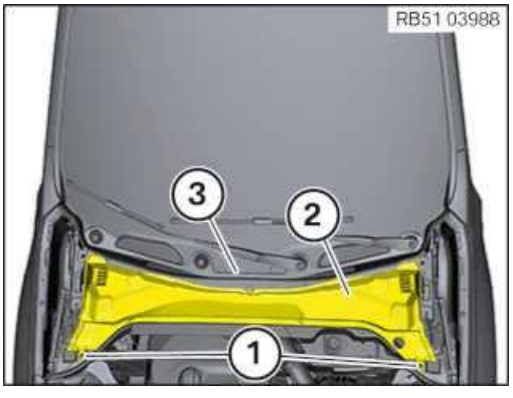
NOTICE

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



- Pull off rear bonnet seal (1) towards the top and remove.

5 – Removing front cowl panel cover

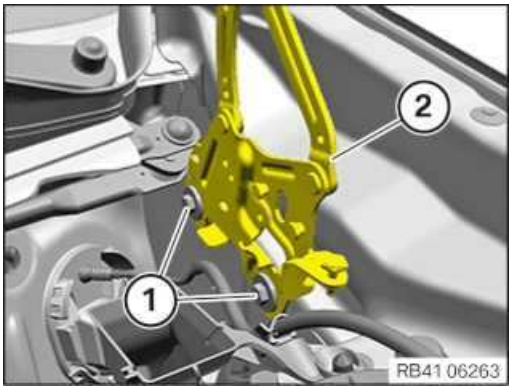


- Loosen the expanding rivet (1).
- Feed out and remove front cowl panel cover (2) from the rear cowl panel cover(3).

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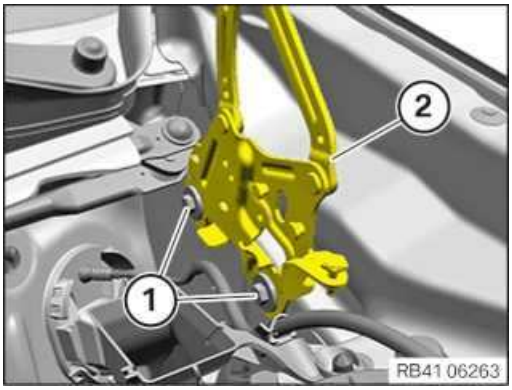
MAIN WORK

6 – Remove the bonnet hinge



- Release screws (1) and remove bonnet hinge (2).

7 – Installing bonnet hinge



- Position the bonnet hinge (2).
- Renew screws (1).

  Parts: Bolts

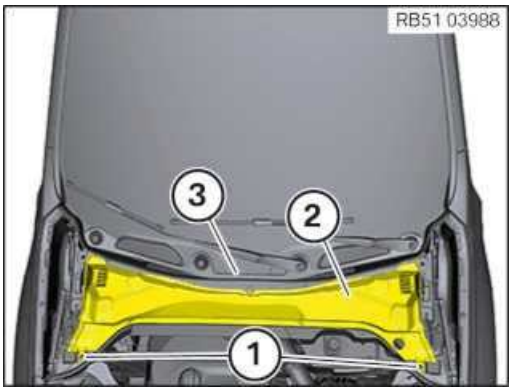
  Tighten the screws (1).

Engine compartment lid hinge to body

Hexagon screw M8	Renew screw.	Tightening torque	19 Nm

POSTPROCESSES

8 – Installing front cowl panel cover



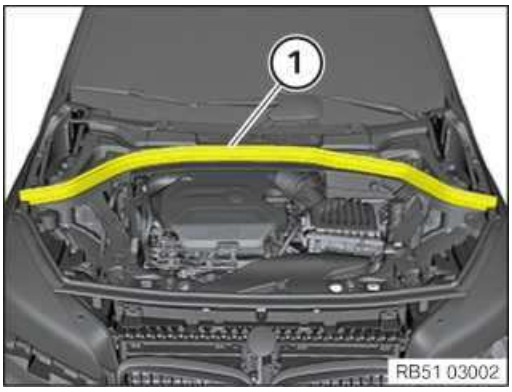
- Insert and install cowl panel cover at front (2) into cowl panel cover at rear (3).
- Check cowl panel cover at front is correctly seated (2).
- Secure expanding rivet (1).

9 – Install the seal for the bonnet

NOTICE

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

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- Install bonnet seal at rear (1).
- Ensure that the rear bonnet seal (1) is fitted correctly.

10 – Install the gas pressure spring for the bonnet

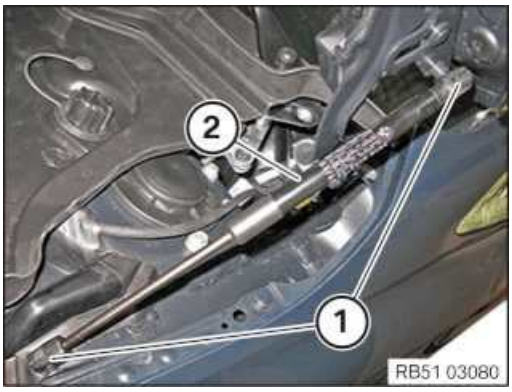
TECHNICAL INFORMATION

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

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Position gas pressure spring (2).
- Set the gas pressure spring (2) on the ball head and engage on the locking springs (1).

11 – Install bonnet

RISK OF DAMAGE

Paint damage.

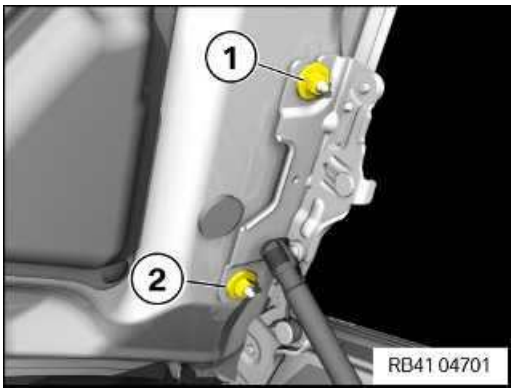
Mechanical action can lead to paint damage.

- 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.

NOTICE

The operations shown only for one side must be carried out on both sides.

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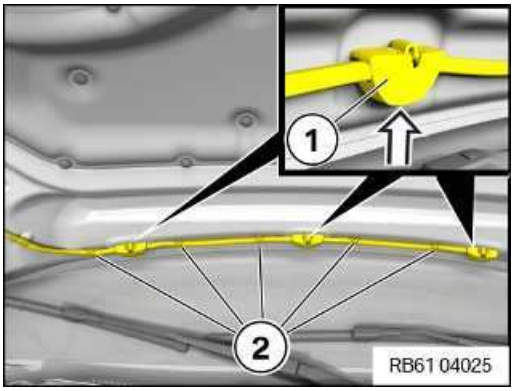
- Position the bonnet on the bonnet hinge. Observe the existing impressions of nuts (1) and (2).
- Support the bonnet.
- Tighten the nuts (1) and (2) .

Engine compartment lid

Nut M8		Tightening torque	19 Nm

- Carefully close the bonnet and check for contact between vehicle bodies, reposition bonnet if necessary.

12 – Installing jet chain partially



- Clip in the washer jets (1) in the direction of the arrow.
- Clip jet chain into the brackets (2) on the bonnet.

Additional Information

Overview of Tightening Torques

Engine compartment lid hinge to body — Used in step 7

Hexagon screw M8	Renew screw.	Tightening torque	19 Nm

Engine compartment lid — Used in step 11

Nut M8		Tightening torque	19 Nm

Links

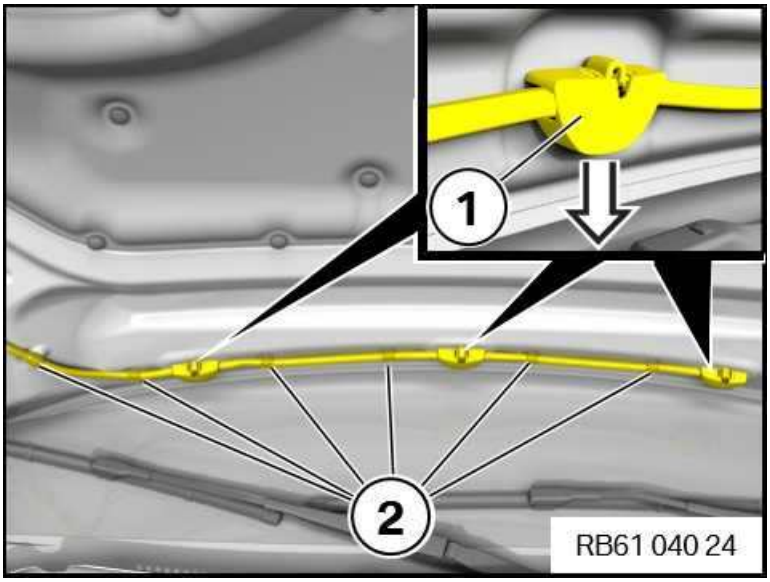
Repair instructions	Used in step
51 23 ... Removing/installing ball sockets with clip	3 10

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41 61 062 Removing and installing/replacing the bonnet hinge, right

PRELIMINARY WORK

1 – Removing the jet chain partially



- Unclip the washer jets (1) in the direction of the arrow.
- Unclip the jet chain from all brackets (2) on the bonnet, and lay to one side.

2 – Remove bonnet

RISK OF DAMAGE

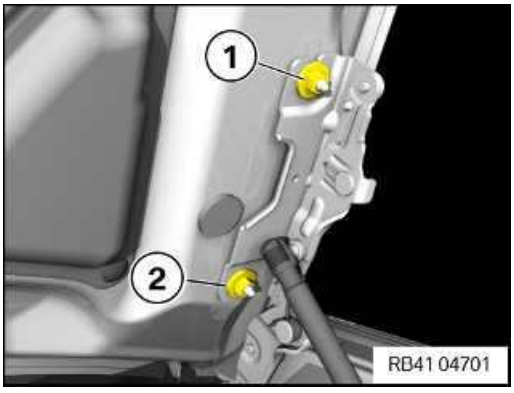
Paint damage.

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.

NOTICE

The operations shown only for one side must be carried out on both sides.



- Support the bonnet.
- Unfasten nut (1).
- Release nut (2) and remove bonnet.

3 – Remove the gas pressure spring for the bonnet

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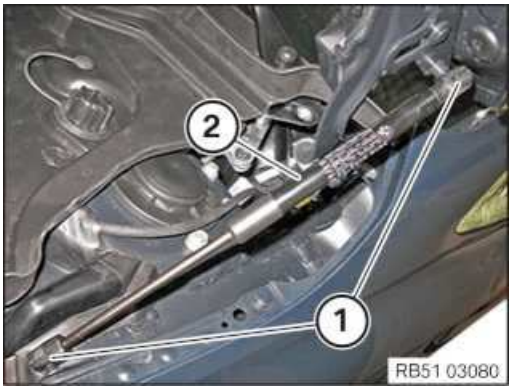
TECHNICAL INFORMATION

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

NOTICE

Description is for left component only. Procedure on the right side is identical.

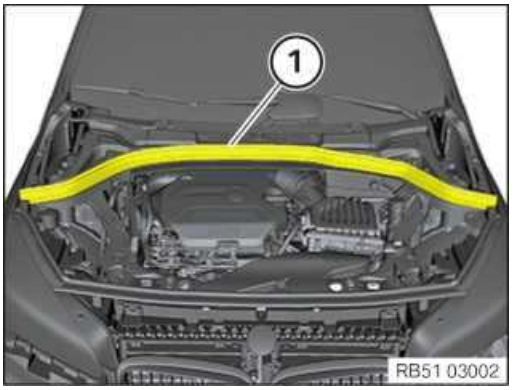


- Slide the locking spring (1) to the end of the gas pressure spring (2) and remove the gas pressure spring (2) from the ball head.

4 – Remove the seal for the rear bonnet

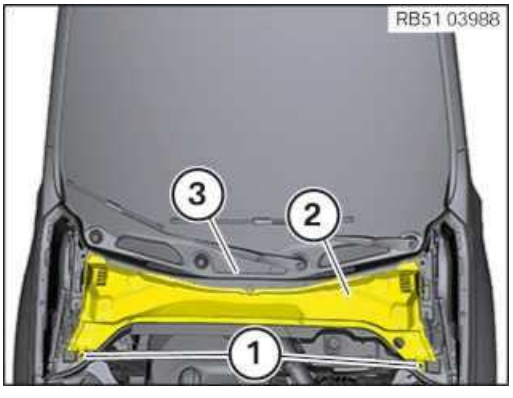
NOTICE

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



- Pull off rear bonnet seal (1) towards the top and remove.

5 – Removing front cowl panel cover

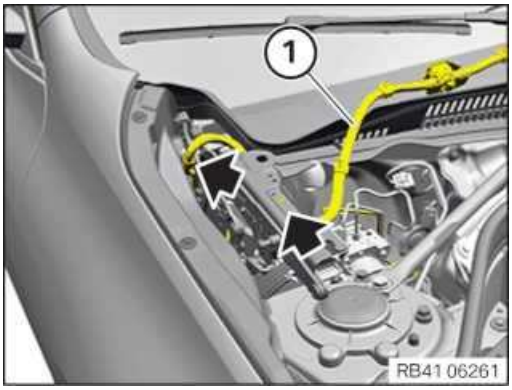


- Loosen the expanding rivet (1).
- Feed out and remove front cowl panel cover (2) from the rear cowl panel cover(3).

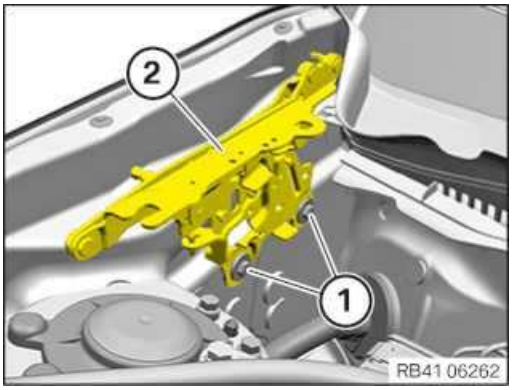
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MAIN WORK

6 – Remove the bonnet hinge

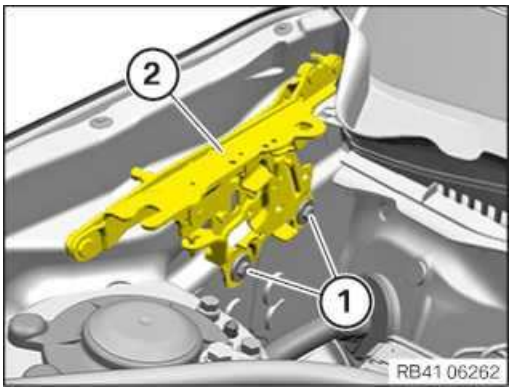


- Release the jet chain (1) and bracket (arrow) on the hinge.



- Release screws (1) and remove bonnet hinge (2).

7 – Installing bonnet hinge



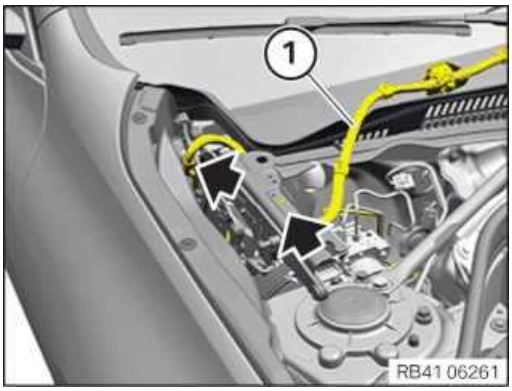
- Position the bonnet hinge (2).
- Renew screws (1).

  Parts: Bolts

  Tighten the screws (1).

Engine compartment lid hinge to body

Hexagon screw M8	Renew screw.	Tightening torque	19 Nm

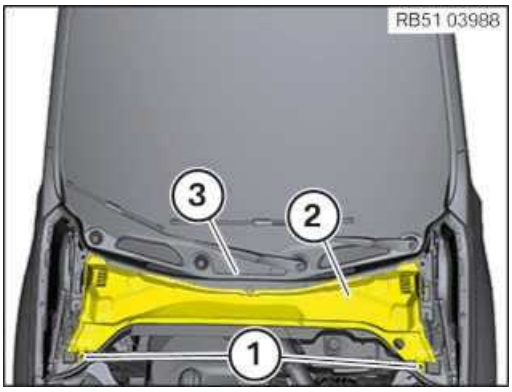


- Secure the brackets (arrows) and jet chain (1) at the hinge.

POSTPROCESSES

8 – Installing front cowl panel cover

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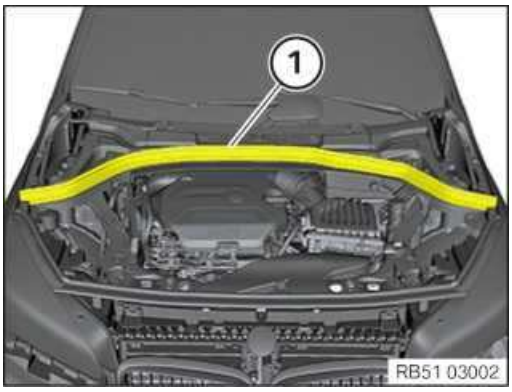


- Insert and install cowl panel cover at front (2) into cowl panel cover at rear (3).
- Check cowl panel cover at front is correctly seated (2).
- Secure expanding rivet (1).

9 – Install the seal for the bonnet

NOTICE

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



- Install bonnet seal at rear (1).
- Ensure that the rear bonnet seal (1) is fitted correctly.

10 – Install the gas pressure spring for the bonnet

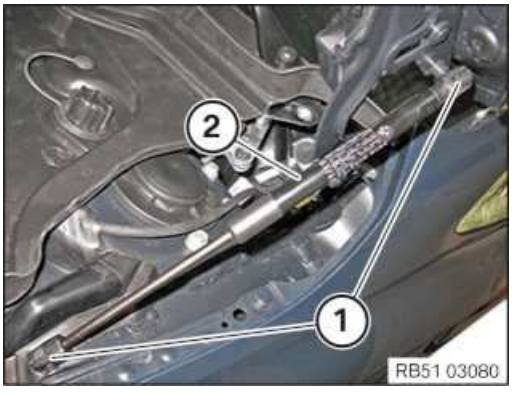
TECHNICAL INFORMATION

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

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Position gas pressure spring (2).
- Set the gas pressure spring (2) on the ball head and engage on the locking springs (1).

11 – Install bonnet

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RISK OF DAMAGE

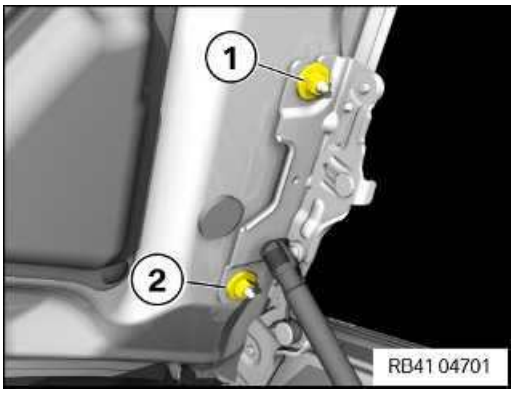
Paint damage.

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.

NOTICE

The operations shown only for one side must be carried out on both sides.



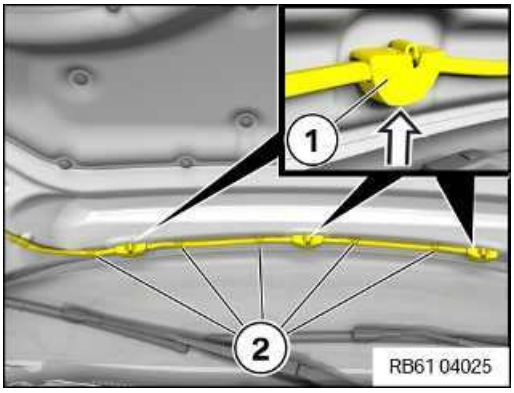
- Position the bonnet on the bonnet hinge. Observe the existing impressions of nuts (1) and (2).
- Support the bonnet.
- Tighten the nuts (1) and (2) .

Engine compartment lid

Nut M8		Tightening torque	19 Nm

- Carefully close the bonnet and check for contact between vehicle bodies, reposition bonnet if necessary.

12 – Installing jet chain partially



- Clip in the washer jets (1) in the direction of the arrow.
- Clip jet chain into the brackets (2) on the bonnet.

Additional Information

Overview of Tightening Torques

Engine compartment lid hinge to body — Used in step 7

Hexagon screw M8	Renew screw.	Tightening torque	19 Nm

Engine compartment lid — Used in step 11

Nut M8		Tightening torque	19 Nm

Links

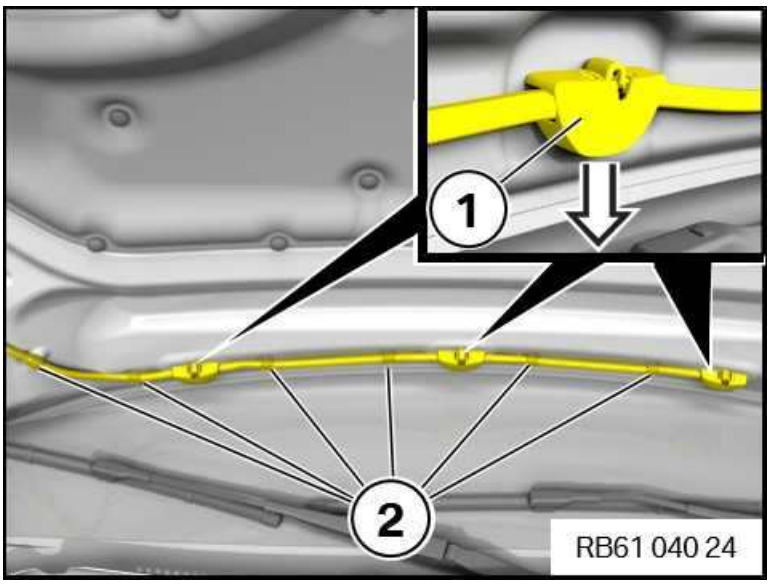
Repair instructions	Used in step
51 23 ... Removing/installing ball sockets with clip	3 10

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41 61 001 Replacing bonnet

PRELIMINARY WORK

1 – Removing the jet chain partially



- Unclip the washer jets (1) in the direction of the arrow.
- Unclip the jet chain from all brackets (2) on the bonnet, and lay to one side.

2 – Remove bonnet

RISK OF DAMAGE

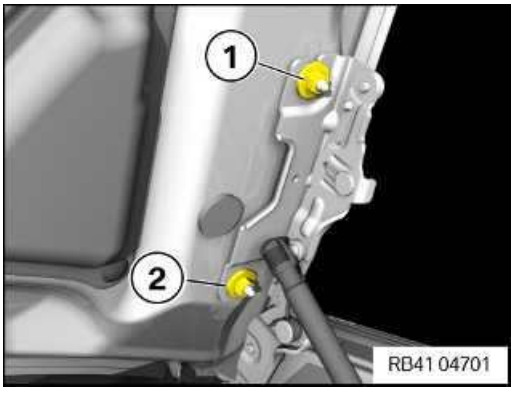
Paint damage.

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.

NOTICE

The operations shown only for one side must be carried out on both sides.



- Support the bonnet.
- Unfasten nut (1).
- Release nut (2) and remove bonnet.

MAIN WORK

3 – Replacing bonnet

Prerequisite

New part is painted.

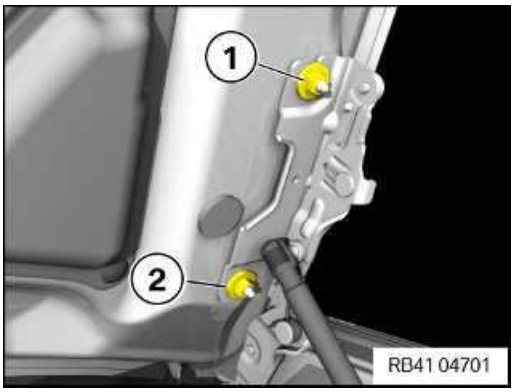
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RISK OF DAMAGE

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.



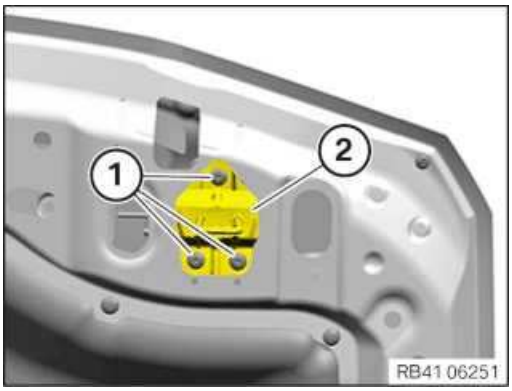
NOTICE

The operations shown only for one side must be carried out on both sides.

- Position the new bonnet at the bonnet hinge. Observe the existing impressions of nuts (1) and (2).
- Support the bonnet.
- Install the nuts (1) and (2) and tighten.

Engine compartment lid

Nut M8		Tightening torque	19 Nm



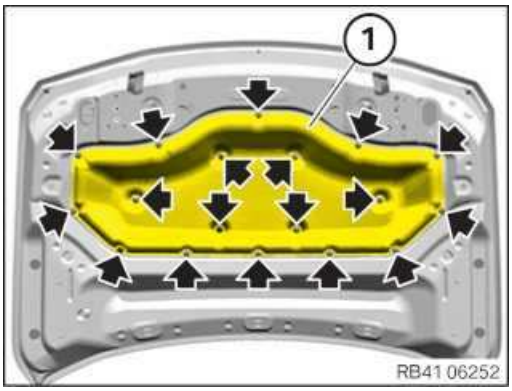
NOTICE

Perform the operations on the left and right side.

- Loosen screws (1).
- Remove striker (2) and install on the new bonnet.
- Tighten the screws (1).

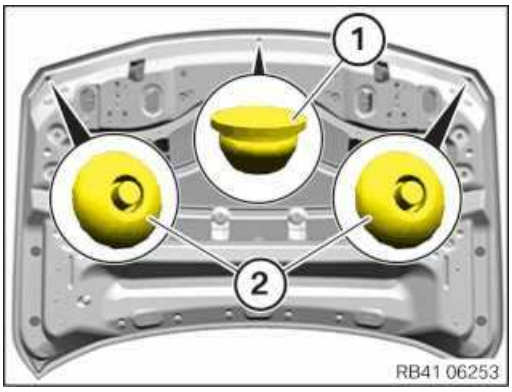
Striker console to bonnet

Screw		Tightening torque	8 Nm

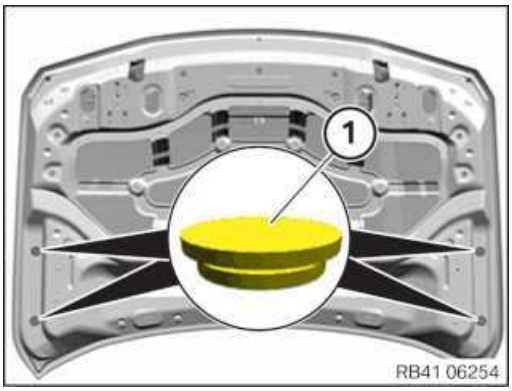


- Release all clips (arrows) with the special tool **2 298 505**.
- Remove damping material (1) and install on the new bonnet.
- Fit all clips.

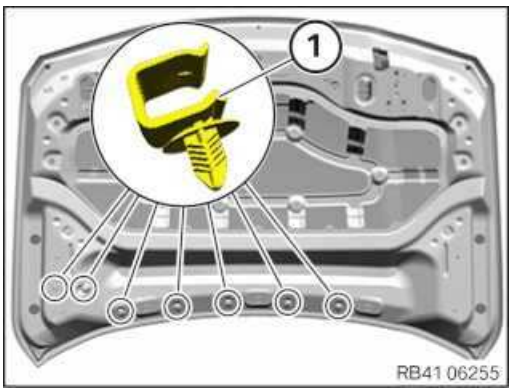
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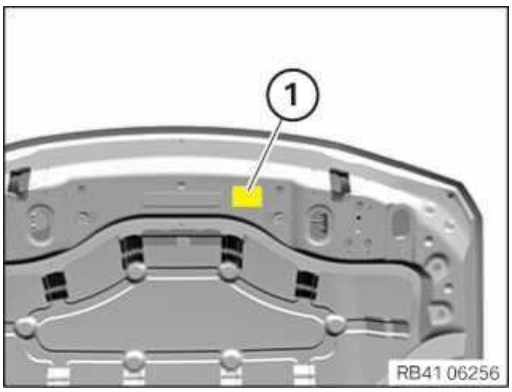
- Remove seal plugs (1) and (2) and install on the new bonnet.



- Remove seal plugs (1) and (2) and install on the new bonnet.



- Remove clip (1) and install on the new bonnet.
- Replace faulty clips (1).



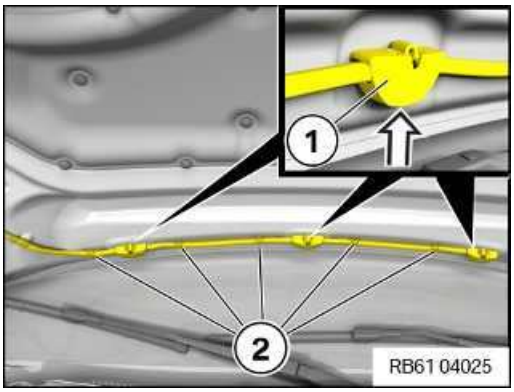
- Renew the sign (1).

  Part: Label
- Stick the sign (1) onto the new bonnet.

POSTPROCESSES

4 – Installing jet chain partially

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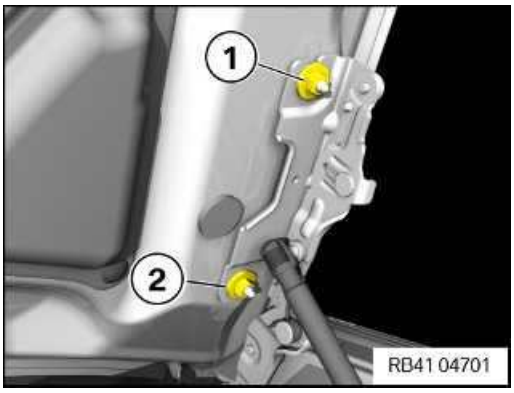


- Clip in the washer jets (1) in the direction of the arrow.
- Clip jet chain into the brackets (2) on the bonnet.

5 – Adjusting 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



NOTICE

Perform the operations on the left and right side.

- Loosen nuts (1) and (2) until the bonnet can be pushed.
- Move the bonnet in longitudinal and sidewise direction until the bonnet reaches the predefined gap dimension.
- Tighten nuts (1) and (2).

Engine compartment lid

Nut M8		Tightening torque	19 Nm

Check

- Check gap dimensions.



Result

» Gap dimensions do not correspond to the specifications.

Measure

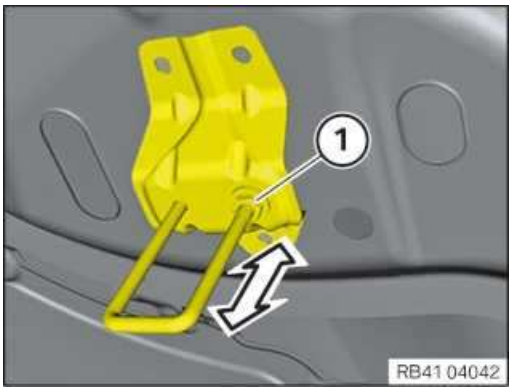
- Adjust bonnet.

▸ **Adjusting engine compartment lid catch**

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TECHNICAL INFORMATION

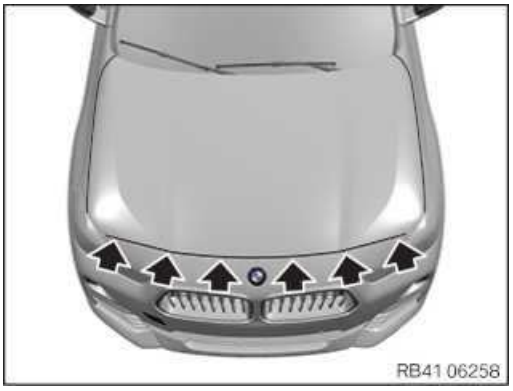
Notes on the body gap dimensions are the basis of these repair instructions and must be observed without fail.
For additional information see: 41 00 ... Gap dimensions for body



NOTICE

Perform the operations on the left and right side.

- Adjust striker by turning nut (1).



Check

- Check gap dimensions between the bonnet and the headlights.

  Check gap dimensions between the bonnet and the front ornamental grill.

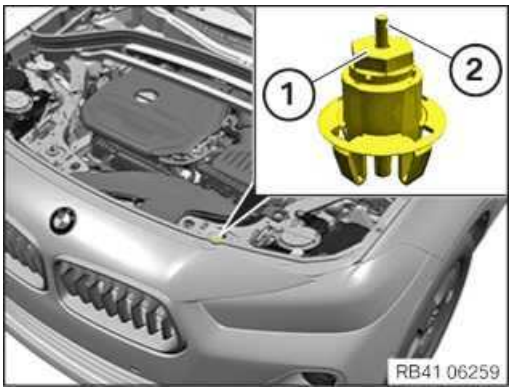
Result

» Gap dimensions do not correspond to the specifications.

Measure

- Adjust bonnet catch.

▸ **Adjusting the stop pads of the bonnet**



NOTICE

Perform the operations on the left and right side.

- Screw in stop pads (1) fully until the pin (2) can be pulled out.

  Pull out the pin (2) by approximately 5 mm.
- Slowly close bonnet. Pin (2) will be pressed into stop pad (1) while doing so.
- Raise bonnet.
- Unscrew stop pad (1) until the stop pad is flush with the upper edge of pin (2).

Additional Information

Overview of Tightening Torques

Engine compartment lid Used in step 3 5

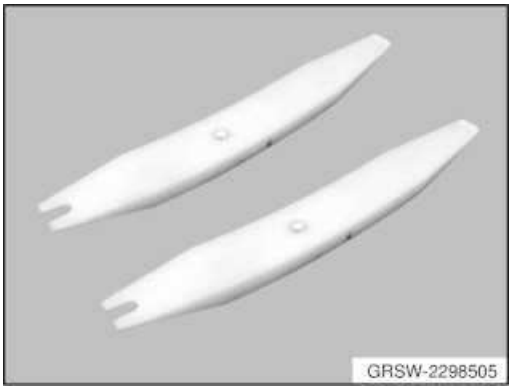
Nut M8		Tightening torque	19 Nm

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Striker console to bonnet			Used in step 3
Screw		Tightening torque	8 Nm

Overview of Special Tools

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)

Links

Repair instructions (PRE)	Used in step
Gap dimensions, body	5

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41 61 002 Replacing the bonnet (Active pedestrian protection)

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.

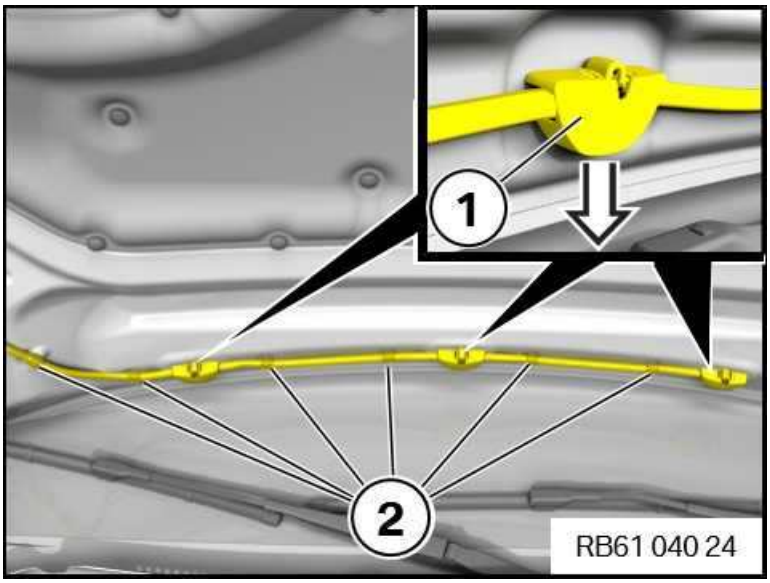
PRELIMINARY WORK

1 – Disconnecting all battery earth leads



- See additional information.

2 – Removing the jet chain partially



- Unclip the washer jets (1) in the direction of the arrow.
- Unclip the jet chain from all brackets (2) on the bonnet, and lay to one side.

3 – Remove bonnet

RISK OF DAMAGE

Paint damage.

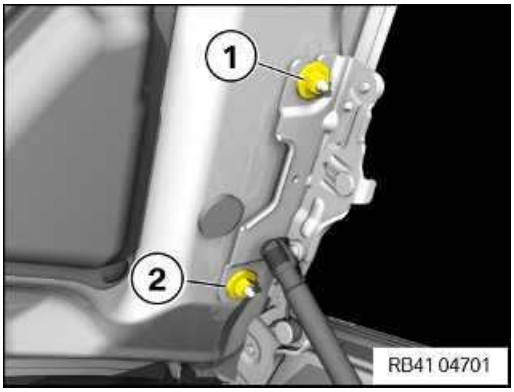
Mechanical action can lead to paint damage.

- 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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NOTICE

The operations shown only for one side must be carried out on both sides.



- Support the bonnet.
- Unfasten nut (1).
- Release nut (2) and remove bonnet.

MAIN WORK

4 – Replacing bonnet

Prerequisite

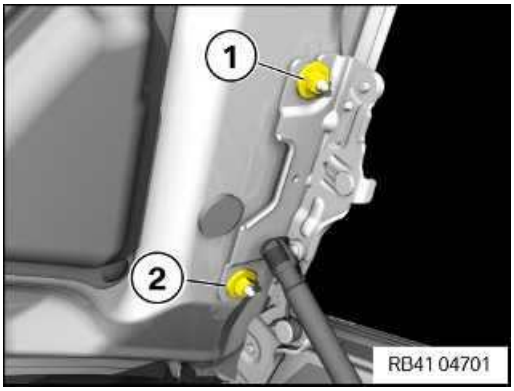
New part is painted.

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.



NOTICE

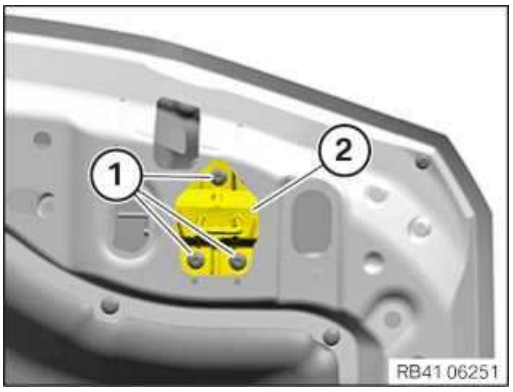
The operations shown only for one side must be carried out on both sides.

- Position the new bonnet at the bonnet hinge. Observe the existing impressions of nuts (1) and (2).
- Support the bonnet.
- Install the nuts (1) and (2) and tighten.

Engine compartment lid

Nut M8		Tightening torque	19 Nm

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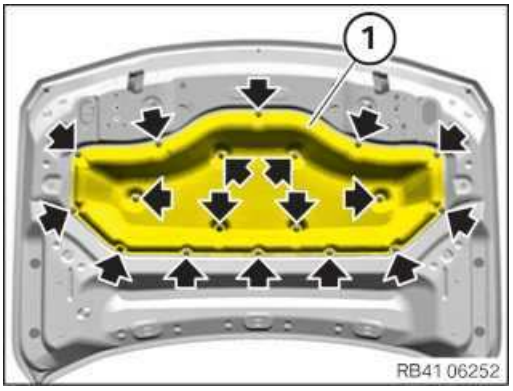
NOTICE

Perform the operations on the left and right side.

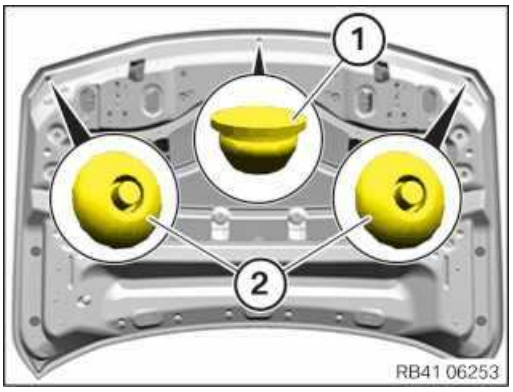
- Loosen screws (1).
- Remove striker (2) and install on the new bonnet.
- Tighten the screws (1).

Striker console to bonnet

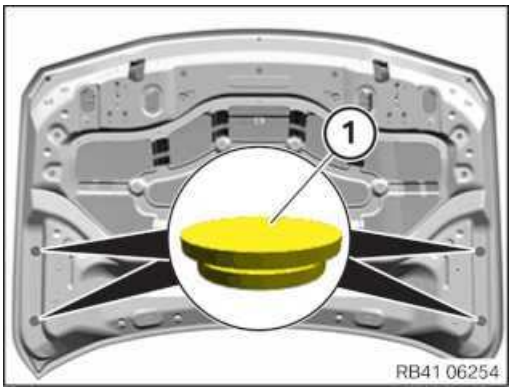
Screw		Tightening torque	8 Nm



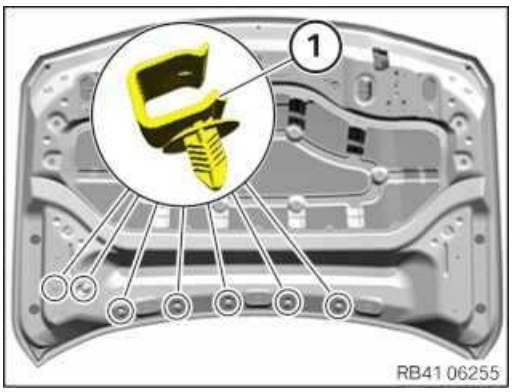
- Release all clips (arrows) with the special tool **2 298 505**.
- Remove damping material (1) and install on the new bonnet.
- Fit all clips.



- Remove seal plugs (1) and (2) and install on the new bonnet.

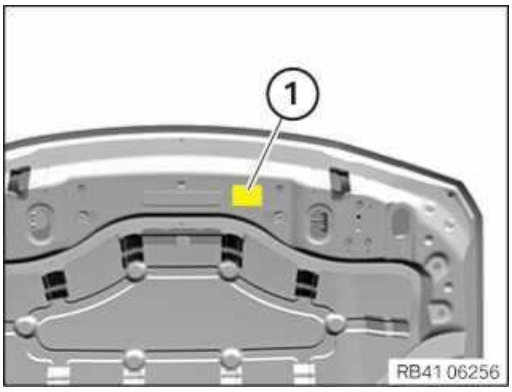


- Remove seal plugs (1) and (2) and install on the new bonnet.



- Remove clip (1) and install on the new bonnet.
- Replace faulty clips (1).

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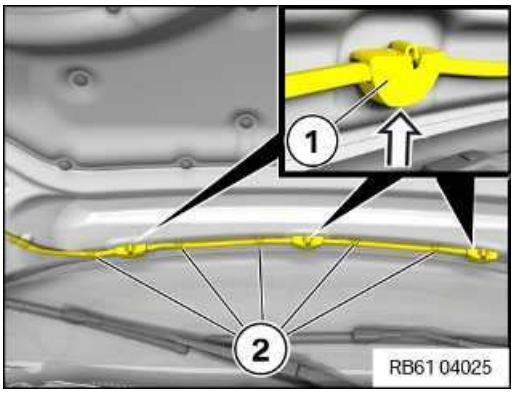


- Renew the sign (1).

  Part: Label
- Stick the sign (1) onto the new bonnet.

POSTPROCESSES

5 – Installing jet chain partially

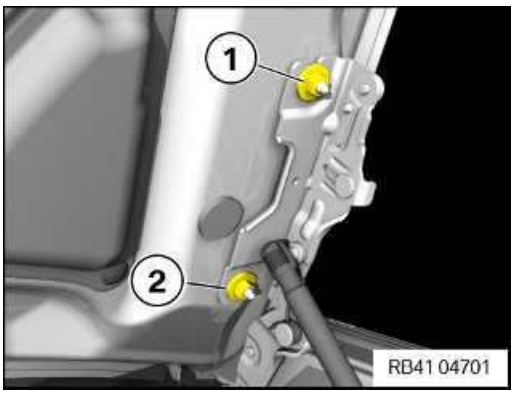


- Clip in the washer jets (1) in the direction of the arrow.
- Clip jet chain into the brackets (2) on the bonnet.

6 – Adjusting 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



NOTICE

Perform the operations on the left and right side.

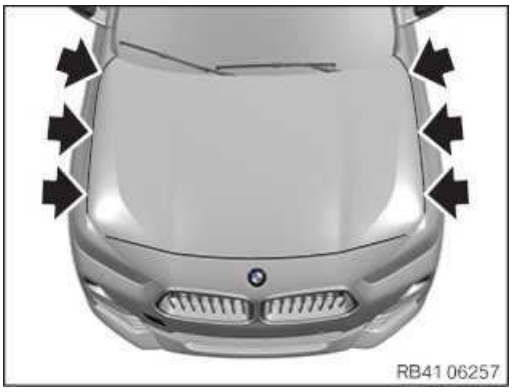
- Loosen nuts (1) and (2) until the bonnet can be pushed.
- Move the bonnet in longitudinal and sidewise direction until the bonnet reaches the predefined gap dimension.
- Tighten nuts (1) and (2).

Engine compartment lid

Nut M8		Tightening torque	19 Nm

Check

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- Check gap dimensions.

Result

» Gap dimensions do not correspond to the specifications.

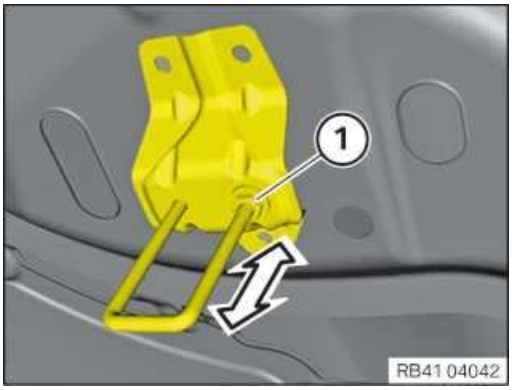
Measure

- Adjust bonnet.

▸ **Adjusting engine compartment lid catch**

TECHNICAL INFORMATION

Notes on the body gap dimensions are the basis of these repair instructions and must be observed without fail.
For additional information see: 41 00 ... Gap dimensions for body



NOTICE

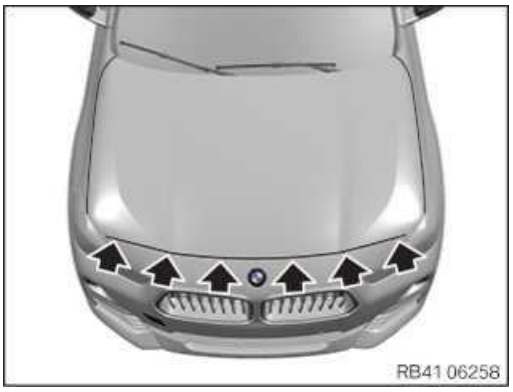
Perform the operations on the left and right side.

- Adjust striker by turning nut (1).

Check

- Check gap dimensions between the bonnet and the headlights.

  Check gap dimensions between the bonnet and the front ornamental grill.



Result

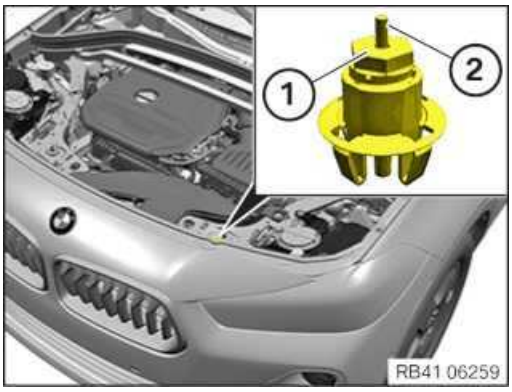
» Gap dimensions do not correspond to the specifications.

Measure

- Adjust bonnet catch.

▸ **Adjusting the stop pads of the bonnet**

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NOTICE

Perform the operations on the left and right side.

- Screw in stop pads (1) fully until the pin (2) can be pulled out.

  Pull out the pin (2) by approximately 5 mm.
- Slowly close bonnet. Pin (2) will be pressed into stop pad (1) while doing so.
- Raise bonnet.
- Unscrew stop pad (1) until the stop pad is flush with the upper edge of pin (2).

7 – Disconnecting all battery earth leads



- See additional information.

Additional Information

Overview of Tightening Torques

Engine compartment lid — Used in step 4 6

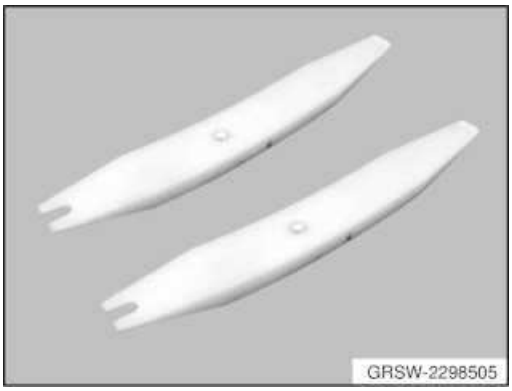
Nut M8		Tightening torque	19 Nm

Striker console to bonnet — Used in step 4

Screw		Tightening torque	8 Nm

Overview of Special Tools

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)

Links

Repair instructions (PRE)	Used in step

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Gap dimensions, body	6

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	1 7
61 20 900 Disconnecting and connecting battery earth lead	1 7
61 20 900 Disconnecting and connecting battery earth lead	1 7
61 20 900 Disconnecting and connecting battery earth lead	1 7
61 20 900 Disconnecting and connecting battery earth lead	1 7
61 20 900 Disconnecting and connecting battery earth lead	1 7
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1 7
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1 7
61 20 900 Disconnecting and connecting battery earth lead	1 7
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1 7
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	1 7
61 20 900 Disconnecting and connecting battery earth lead	1 7
61 20 900 Disconnecting and connecting battery earth lead	1 7
61 20 900 Disconnecting and connecting battery earth lead	1 7
61 20 900 Disconnecting and connecting battery earth lead	1 7
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61 20 900 Disconnecting and connecting battery earth lead	1 7
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61 20 900 Disconnecting and connecting battery earth lead	1 7
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1 7
61 20 900 Disconnecting and connecting battery earth lead	1 7
61 20 900 Disconnecting and connecting battery earth lead	1 7
61 20 900 Disconnecting and connecting battery earth lead	1 7
61 20 900 Disconnecting and connecting battery earth lead	1 7
61 20 900 Disconnecting and connecting battery earth lead	1 7
61 20 900 Disconnecting and connecting battery earth lead	1 7
61 20 900 Disconnecting and connecting battery earth lead	1 7

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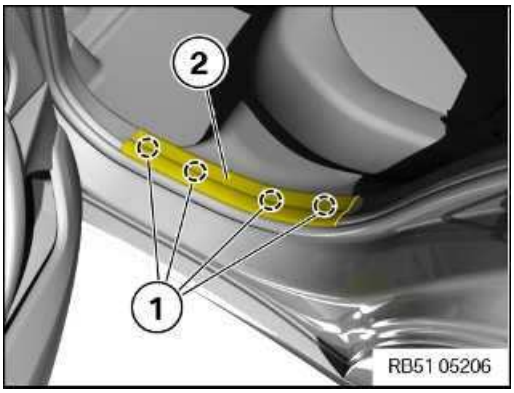
41 62 740 Adjusting both tailgate hinges

PRELIMINARY WORK

1 – 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.



▸ **Remove rear entrance cover strip**

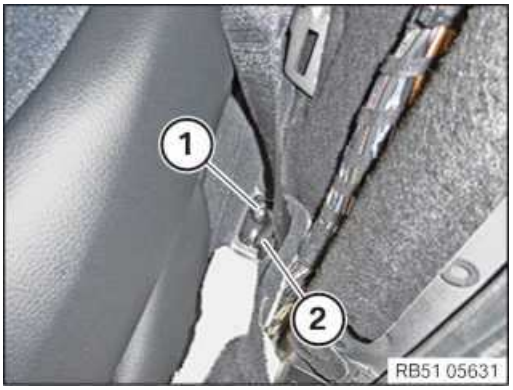
- Unclip the clips (1) of the door sill cover strip (2).
- Remove the door sill cover strip (2).

2 – Removing the bottom left and right C-pillar trim panels

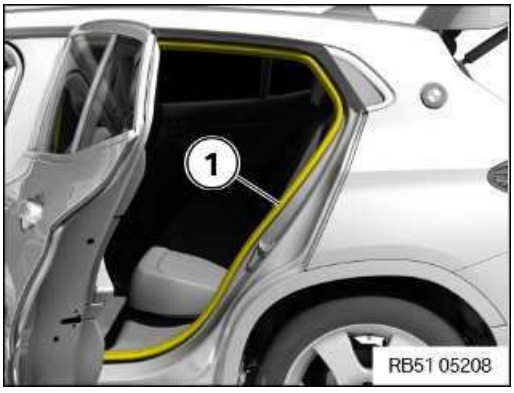
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the bottom C-pillar trim panel**

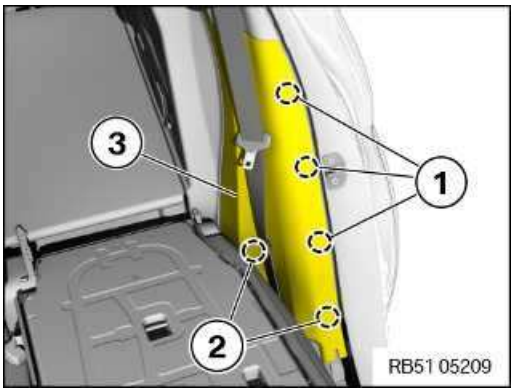


- Fold up the carpet as shown.
- Loosen screw (1).
- Remove end fitting (2).



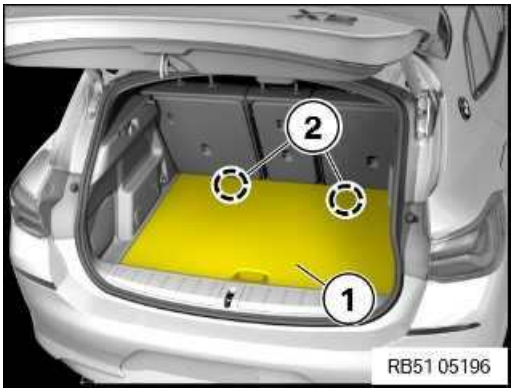
- Release the edge protection (1) in area of the bottom C-pillar trim panel.

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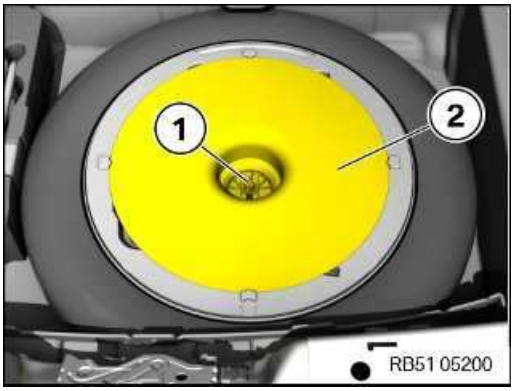
- Clip in the C-pillar trim panel (3) on the bottom with the clamps (1) and the clips (2).
- Detach end fitting and remove the bottom C-pillar trim panel (3).

3 – Removing the luggage compartment removable panel

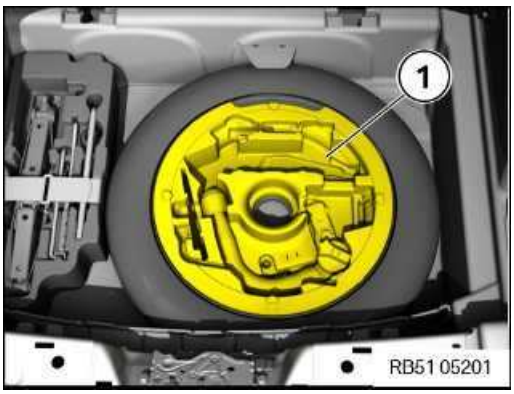


- Raise the luggage compartment removable panel (1) slightly at the handle, detach it from the latch mechanisms (2) and remove it toward the back.

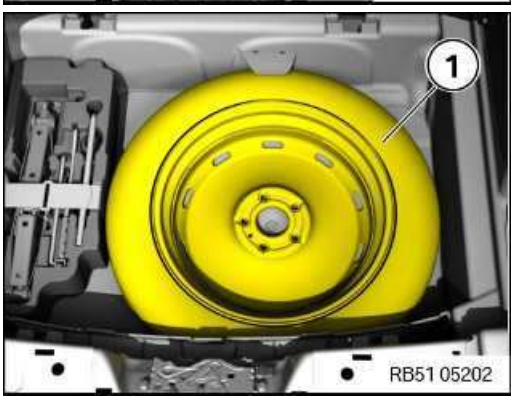
4 – Removing the compact spare wheel



- Loosen screw (1).
- Remove the cover (2).



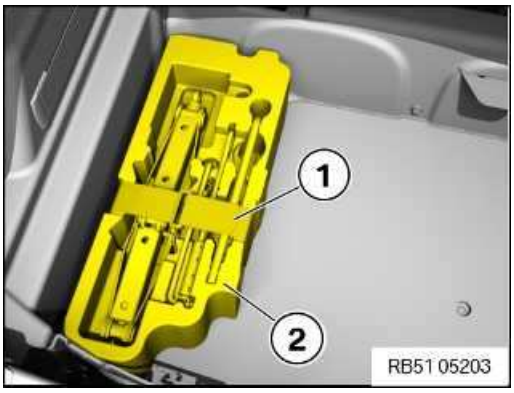
- Remove the oddments tray from the emergency wheel (1).



- Remove the emergency wheel (1).

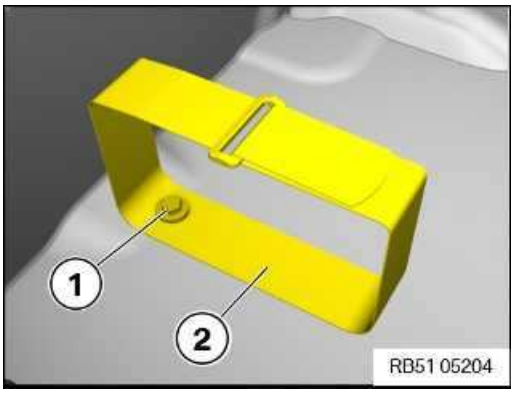
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5 – Remove the tool kit



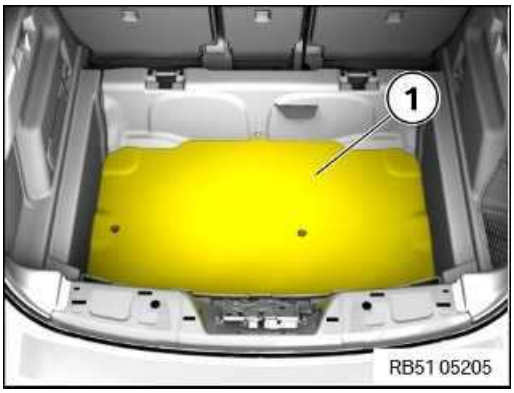
- Open the hook and loop tape (1).
- Remove the tool kit (2).

6 – Remove the hook and loop tape for the tool kit



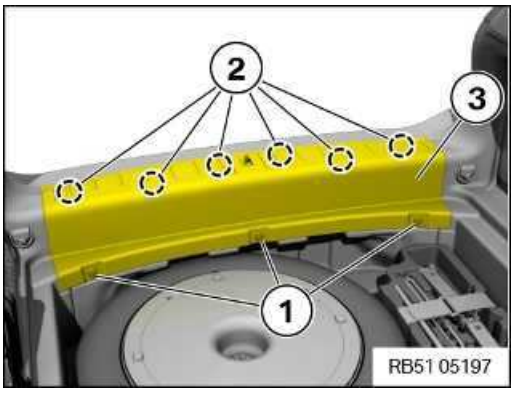
- Loosen screw (1).
- Remove the hook and loop tape (2).

7 – Removing the luggage compartment floor trim panel



- Remove the luggage compartment floor trim panel (1) upwards.

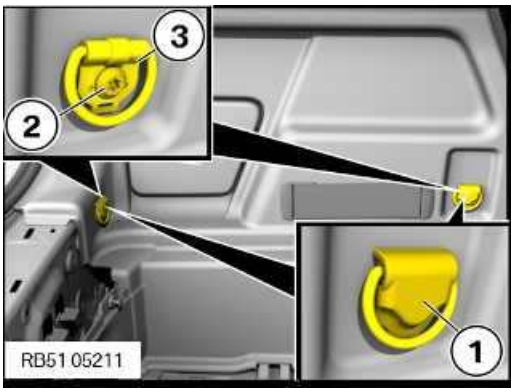
8 – Removing the loading edge trim



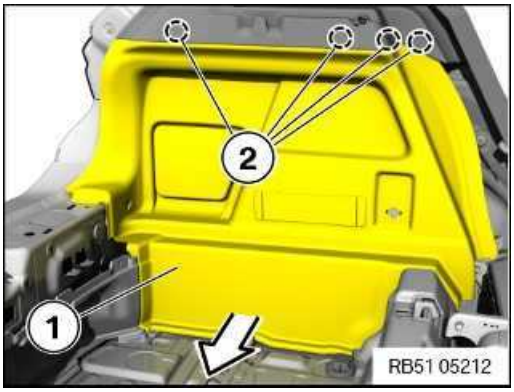
- Loosen the expanding rivet (1).
- Unclip the loading edge trim (3) from the clamps (2) toward the top and remove.

9 – Remove luggage compartment wheel arch trim panel on left.

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- Unclip covers (1).
- Unscrew the bolts (2) and remove the lashing points (3).

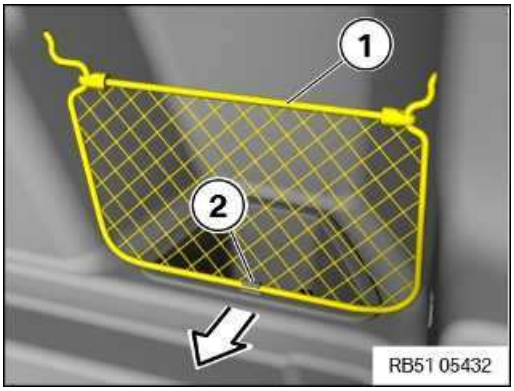


NOTICE

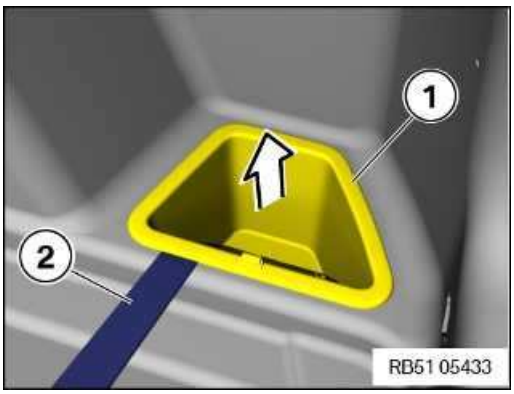
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Pull the luggage compartment wheel arch trim panel (1) on the bottom in the direction of the arrow and guide it out of the guides (2) and the C-pillar trim panel and remove.

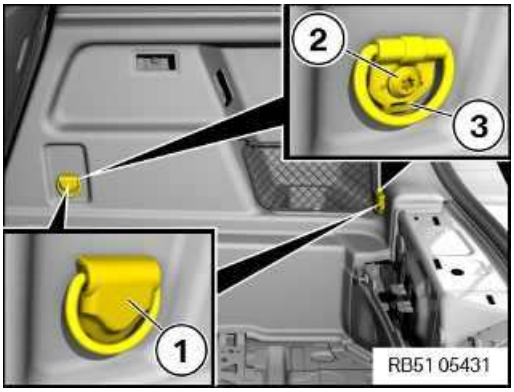
10 – Removing right luggage compartment wheel arch trim panel



- Release the storage net (1) from the latch mechanism (2) in the direction of arrow and fold up.

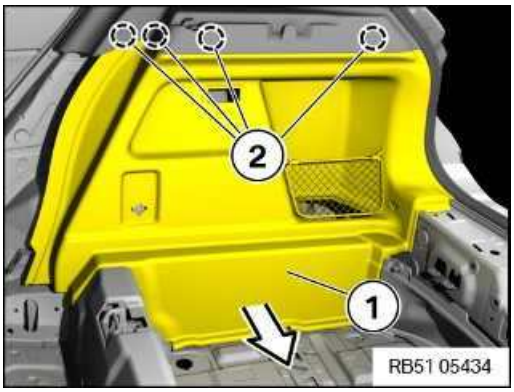


- Remove storage compartment (1) out of the luggage compartment wheel arch trim panel in the direction of arrow using a suitable tool (2).



- Unclip covers (1).
- Unscrew the bolts (2) and remove the lashing points (3).

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NOTICE

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

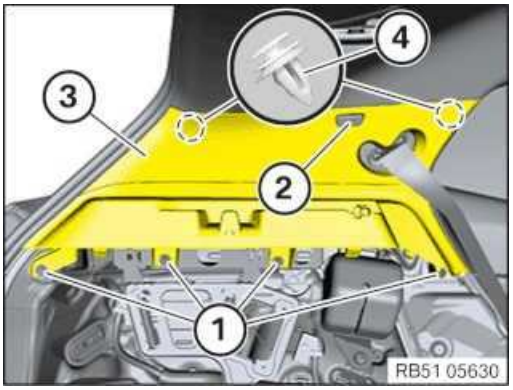
- Pull the luggage compartment wheel arch trim panel (1) on the bottom in the direction of the arrow and guide it out of the guides (2) and the C-pillar trim panel and remove.

11 – Remove the trim panel of the luggage compartment capping on the left and right

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the trim panel of the luggage compartment capping**



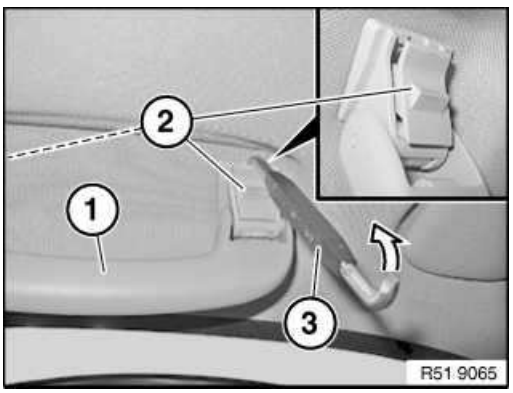
- Loosen screws (1).
- Remove the cover (2) with a suitable plastic wedge and unscrew the screw below it.
- Detach the trim panel of the luggage compartment capping (3) from the clips (4).
- Feed out the end fitting and remove the trim panel of the luggage compartment capping (3).

12 – Removing all grab handles

NOTICE

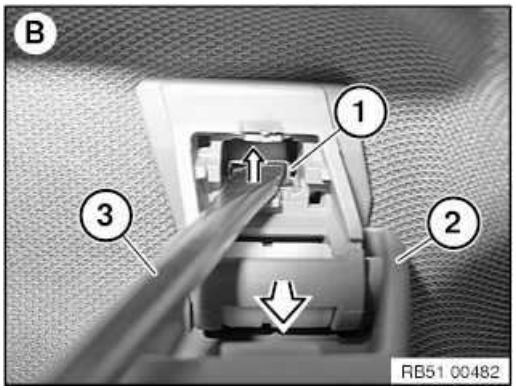
The description is for one component only. The procedure is identical for all further components.

▸ **Removing the grab handle**



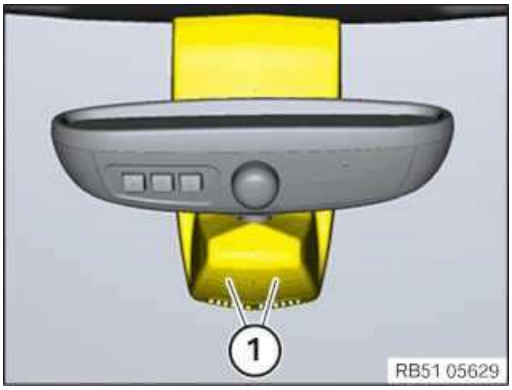
- Expand the grab handle (1) towards the bottom.
- Disengage and remove the locking insert (2) with an angle screwdriver (3) as shown.

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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).

13 – Remove the cover on the inside mirror



- Unclip the covers on the interior mirror (1) outward with a suitable plastic wedge in the center and remove.

14 – 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.

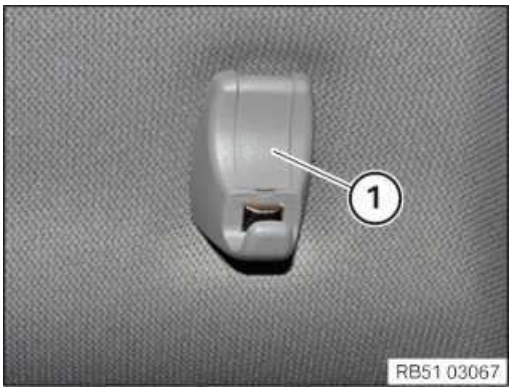
15 – Removing counter supports for sun visor on left and right

NOTICE

Description is for left component only. Procedure on the right side is identical.

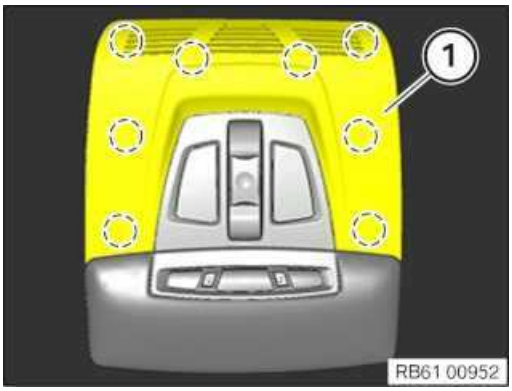
▸ **Remove the counter support for the sun visor**

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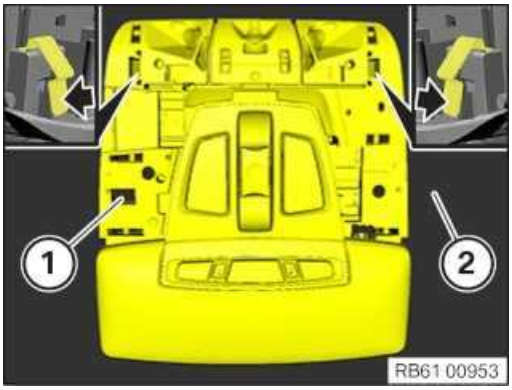


- Open the cover (1) and release the screw underneath.
- Remove the counter support downward.

16 – Remove the roof function centre



- Carefully unclip and remove the trim (1) with the special tool **0 496 569 (00 9 325)**.



- Unlock the left/right retaining lugs using a screwdriver in direction of the arrow.
- Remove the roof function centre (1) from the headlining (2).
- Unlock and disconnect associated connector.

17 – Removing the left and right 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

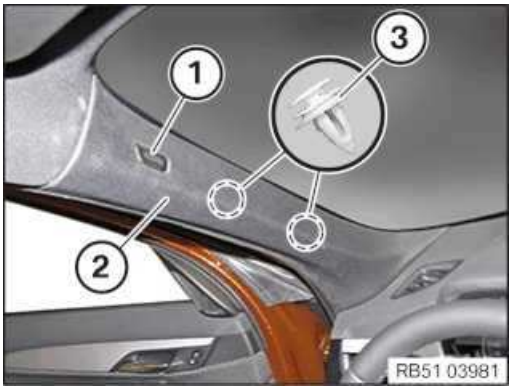
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WARNING

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.



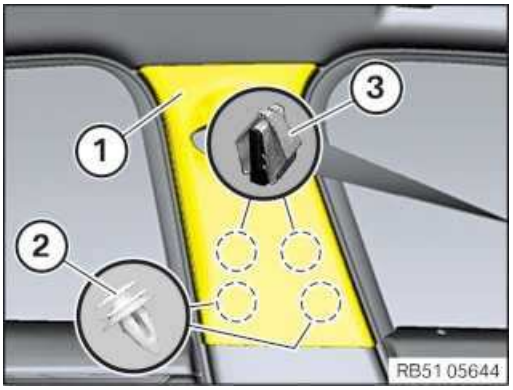
- Unclip cover (1) and unscrew the screw below it.
- Release the A-pillar trim panel (2) from the clips (3) and guide out upwards.

18 – Removing the B-pillar trim panels at top left and right

NOTICE

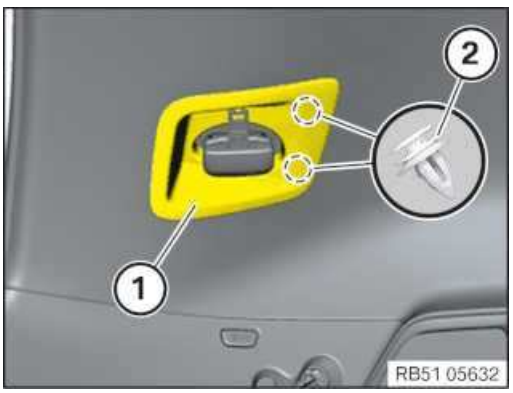
Description is for left component only. Procedure on the right side is identical.

▸ **Partially removing upper B-pillar trim panel**



- Carefully release the B-pillar trim panel (1) from the clips (2) and the clamps (3) with the special tool **0 496 569 (00 9 325)** and guide it out of the headlining in a downwards direction.

19 – Remove the belt feed trim



- Unclip the belt feed trim (1) at the clips (2) and slide it forward and out of the headliner.
- Slide out the seat belt and remove the belt feed trim (1).

20 – Lower roofliner

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Prerequisite

The front seats have been fully adjusted towards the bottom.

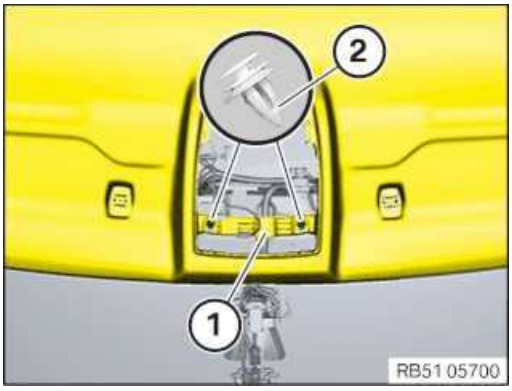
The front seat backrests have been fully adjusted towards the rear.

RISK OF DAMAGE

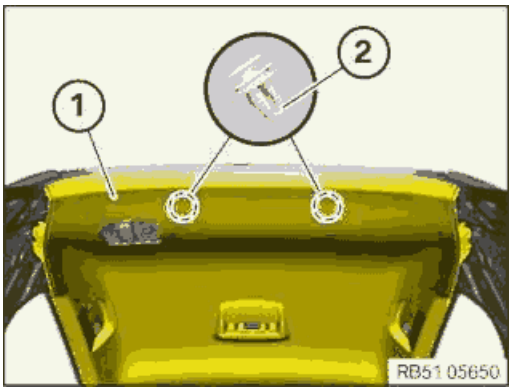
Fold the headlining.

If the headlining is folded, it may have to be replaced.

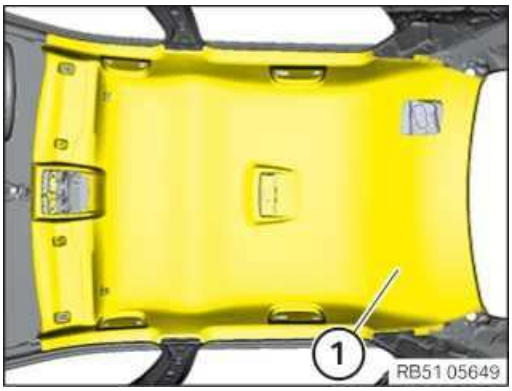
- Carry out tasks with a second person to assist.
- Support the headlining at the front and back.



- Loosen the frame (1) at the clips (2).
- If necessary, loosen the cable clip from the frame (1).



- Carefully release the headlining (1) at the clips (2).



- Carefully guide out the headlining (1) at the respective edge protection and place it onto the seats in the vehicle.

21 – Lowering the headlining (with panorama glass roof)

Prerequisite

The front seats have been fully adjusted towards the bottom.

The front seat backrests have been fully adjusted towards the rear.

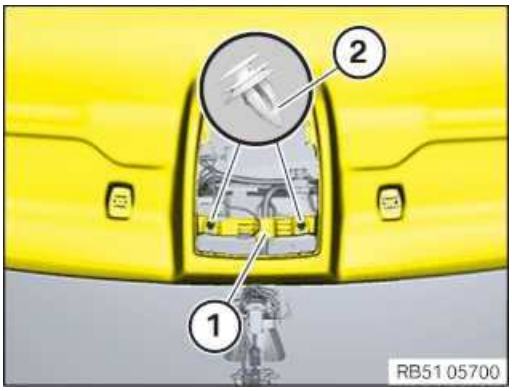
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RISK OF DAMAGE

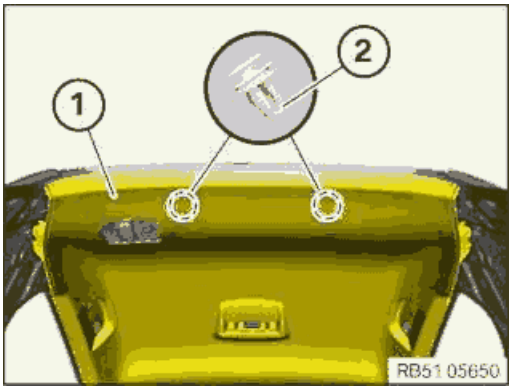
Fold the headlining.

If the headlining is folded, it may have to be replaced.

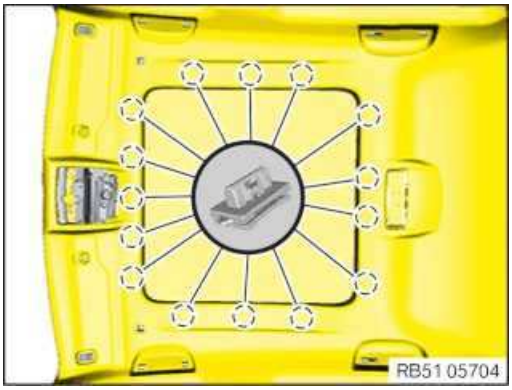
- Carry out tasks with a second person to assist.
- Support the headlining at the front and back.



- Loosen the frame (1) at the clips (2).
- If necessary, loosen the cable clip from the frame (1).



- Carefully release the headlining (1) at the clips (2).



- Carefully release the headlining with a suitable plastic wedge from the clamps (1) in a downwards direction.



- Carefully guide out the headlining (1) at the respective edge protection and place it onto the seats in the vehicle.

22 – Remove rear lid gas pressure spring

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CAUTION

Shutting bonnet or tailgate.

Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.

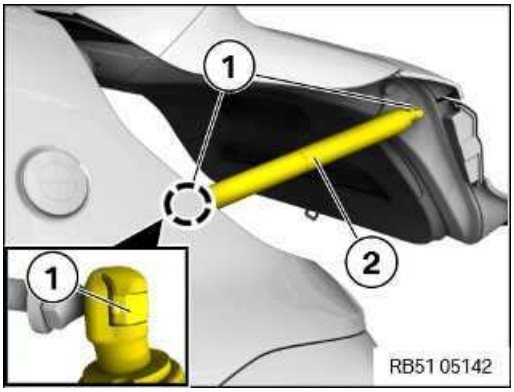
TECHNICAL INFORMATION

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

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Slide the locking spring (1) to the end of the gas pressure spring (2) and remove the gas pressure spring (2) from the ball head.

23 – Removing spindle drive of the tailgate

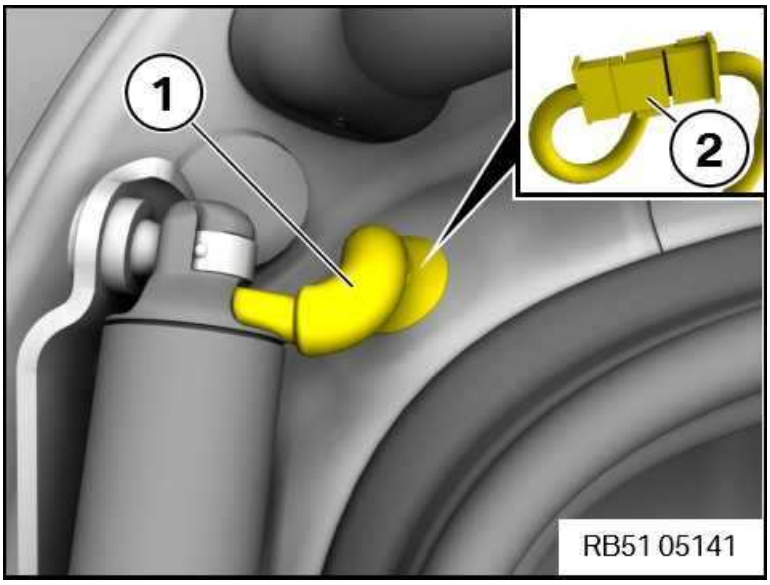
CAUTION

Shutting bonnet or tailgate.

Danger of injury!

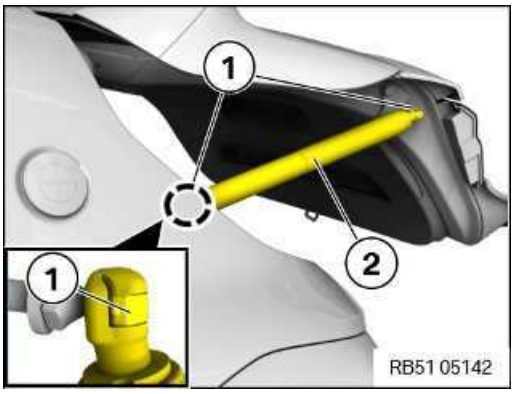
- Support bonnet/tailgate in fully open position with the aid of a suitable device.

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- Remove grommet (1) from the body panel.
- Unlock and disconnect the two plug connections (2).

  The plug connections (2) must be outside the body.



- Open locks (1) at the top and bottom on the spindle drive (2) and remove the spindle drive (2).

MAIN WORK

24 – Adjusting left or right tailgate hinge

CAUTION

Shutting bonnet or tailgate.

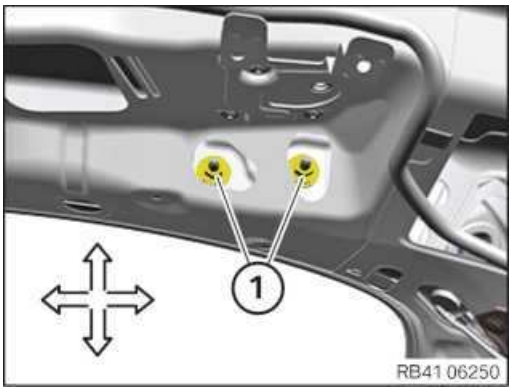
Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.

TECHNICAL INFORMATION

Notes on the body gap dimensions are the basis of these repair instructions and must be observed without fail.
For additional information see: 41 00 ... Gap dimensions for body

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NOTICE

Perform the operations on the left and right side.

- Loosen nuts (1) until the tailgate hinge (2) can be moved.
- Move tailgate hinge (2), until the tailgate has the specified gap dimension to the body.
- Tighten nuts (1).

Tailgate hinge to body

Nut		Tightening torque	56 Nm



Check

- Check the gap dimensions (arrows) between tailgate and side panels.

Result

» Gap dimensions do not correspond to the specifications.

Measure

- Adjust tailgate hinge.

POSTPROCESSES

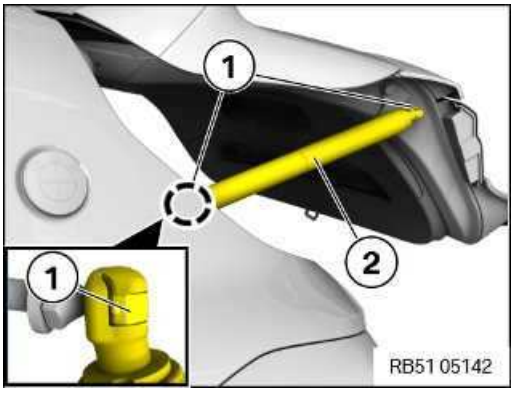
25 – Install the spindle drive of the tailgate

CAUTION

Shutting bonnet or tailgate.

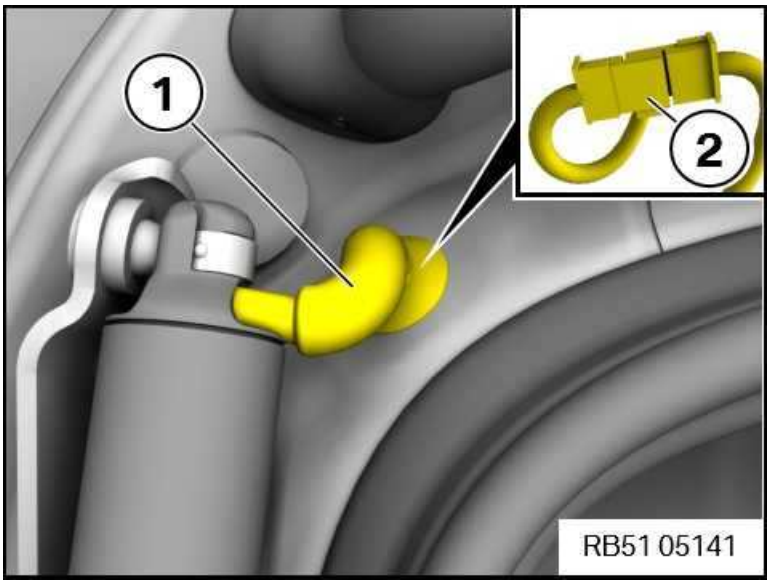
Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.



- Mount the spindle drive (2) at the top and bottom on the associated ball head and lock with the locking mechanism (1).

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- Connect and lock both connectors (2).
- Install the grommet (1) in the body panel.

  The arrow on the grommet (1) must point up.

26 – Install the gas pressure spring of the tailgate

CAUTION

Shutting bonnet or tailgate.

Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.

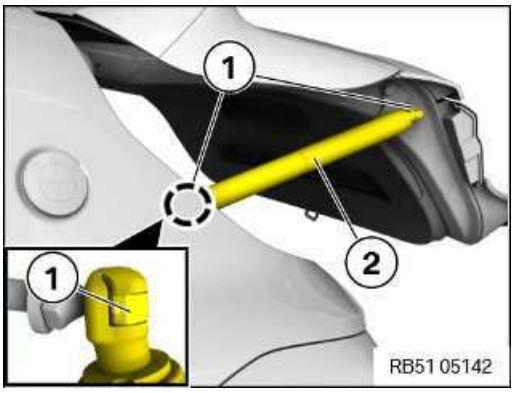
TECHNICAL INFORMATION

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

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Mount the gas pressure spring (2) at the top and bottom on the associated ball head and lock with the locking spring (1).

27 – Install the headlining (lowered with panorama roof)

Prerequisite

The front seats have been fully adjusted towards the bottom.

The front seat backrests have been fully adjusted towards the rear.

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RISK OF DAMAGE

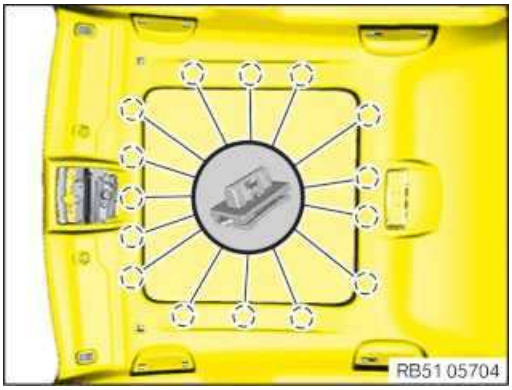
Fold the headlining.

If the headlining is folded, it may have to be replaced.

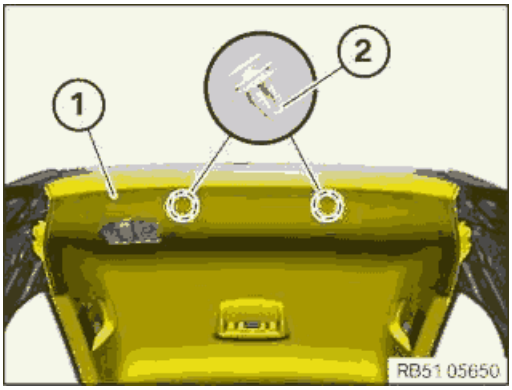
- Carry out tasks with a second person to assist.
- Support the headlining at the front and back.



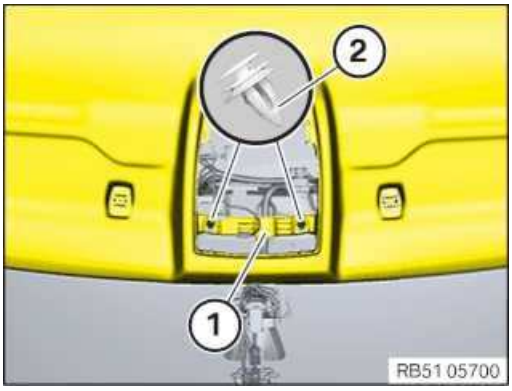
- Install the headlining (1) and carefully insert it at the respective edge protection.



- Carefully engage the headlining on the clamps (1).



- Clip in the headlining (1) using the clips (2).



- Clip in the frame (1) with the clips (2).
- If necessary, attach the cable clip onto the frame (1).

28 – Install the headlining (lowered)

Prerequisite

The front seats have been fully adjusted towards the bottom.

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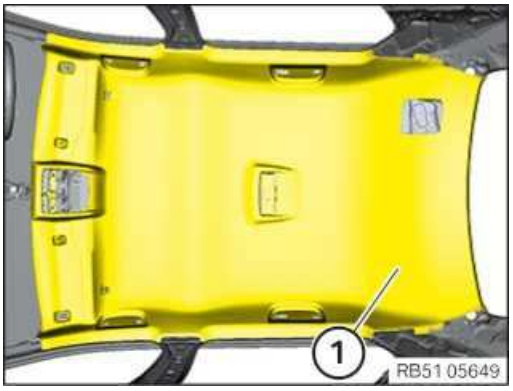
The front seat backrests have been fully adjusted towards the rear.

RISK OF DAMAGE

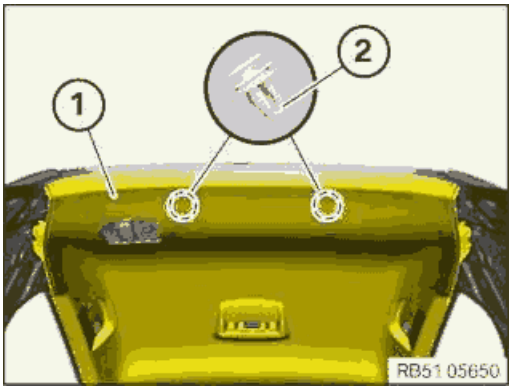
Fold the headlining.

If the headlining is folded, it may have to be replaced.

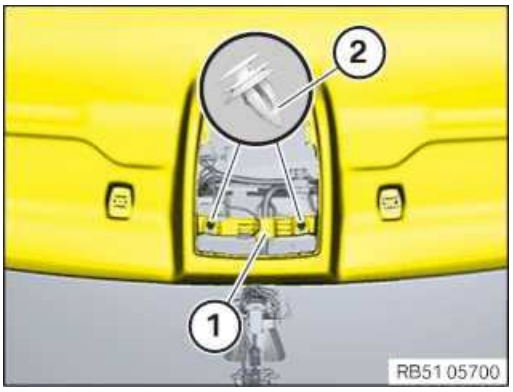
- Carry out tasks with a second person to assist.
- Support the headlining at the front and back.



- Install the headlining (1) and carefully insert it at the respective edge protection.

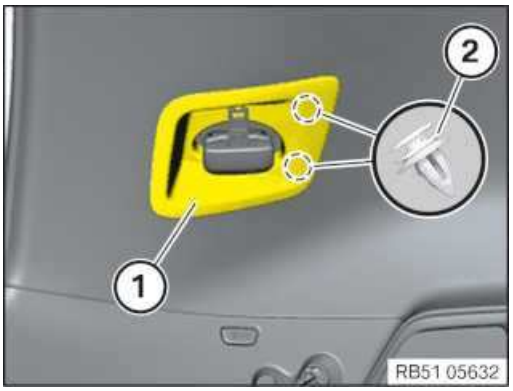


- Clip in the headlining (1) using the clips (2).



- Clip in the frame (1) with the clips (2).
- If necessary, attach the cable clip onto the frame (1).

29 – Install the belt feed trim



- Feed in the seat belt on the belt feed trim (1).
- Feed in the belt feed trim (1) toward the rear on the headliner and clip in at the clips (2).

30 – Installing the top left and right B-pillar trim panels

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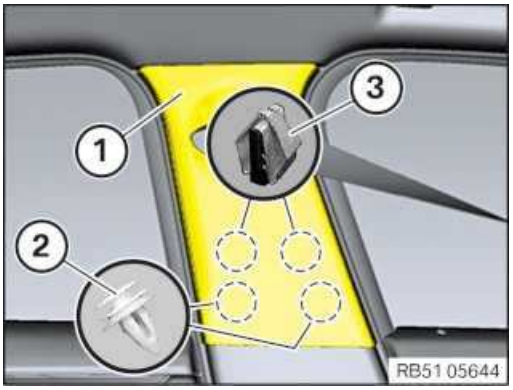
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially installing upper B-pillar trim panel**

TECHNICAL INFORMATION

Latch mechanisms, guides and mounting elements must not be damaged or missing.



- Insert the B-pillar trim panel (1) into the headlining and lock it at the clips (2) and the clamps (3).
- Make sure that the B-pillar trim panel (1) is correctly positioned at the respective edge protection.

31 – Installing the left and right A-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Install 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.

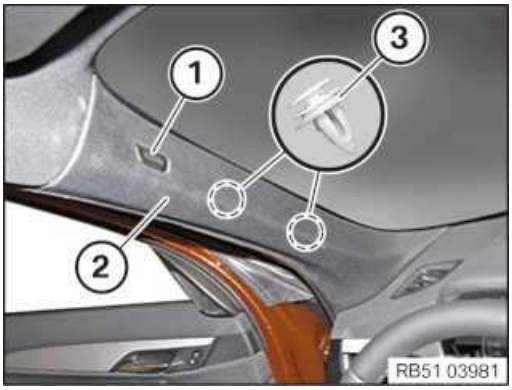
Danger! Life-threatening injuries!

- 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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TECHNICAL INFORMATION

Latch mechanisms, guides and mounting elements must not be damaged or missing.



- Thread in the A-pillar trim panel (2) and clip it in at the clips (3).
- Renew screw.

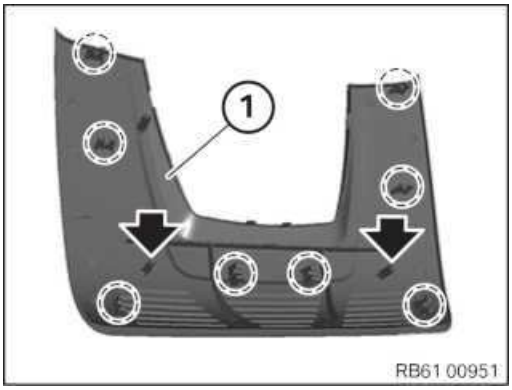
  Parts: Screw
- Tighten down screw.

A-pillar trim panel to body

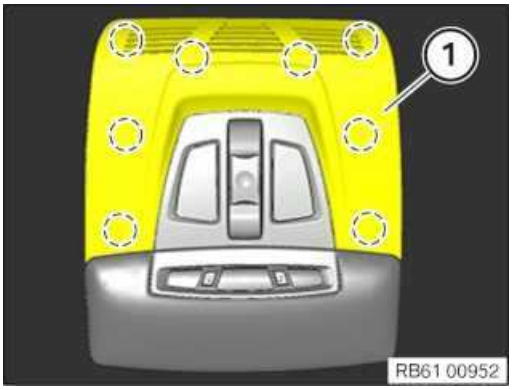
M5x42 screw	Renew screw	Tightening torque	2,2 Nm

- Clip in the cover (1).

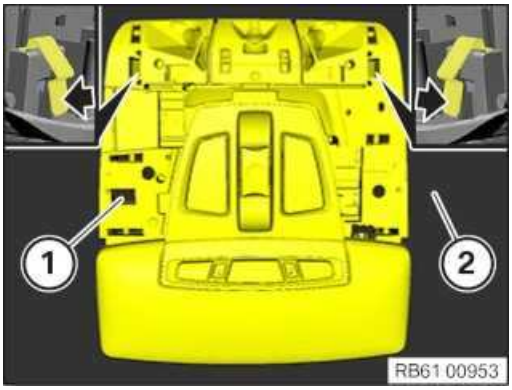
32 – Install the roof function centre



- The retaining lugs and guides on the trim (1) must not be damaged or missing.



- Carefully engage the trim (1) in the roof function centre.



NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

- Connect associated connector.
- Join the roof function centre (1) to the headlining (2).

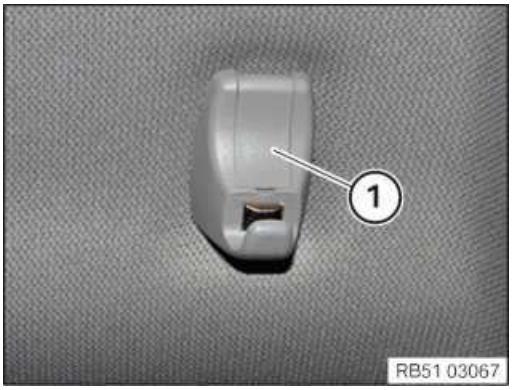
33 – Install the counter supports for the sun visor on left and right

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**



- Install the counter support.
- Tighten screw and close the cover (1).

Counter support on body

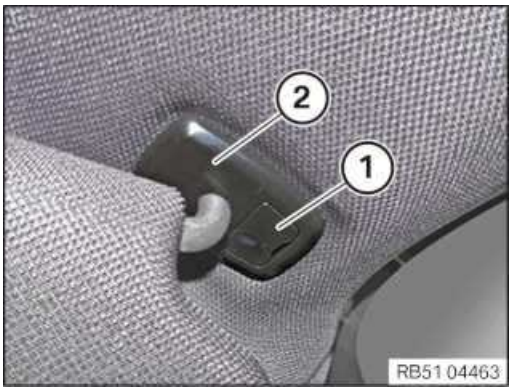
Screw		Tightening torque	2,5 Nm

34 – Install both sun visors

NOTICE

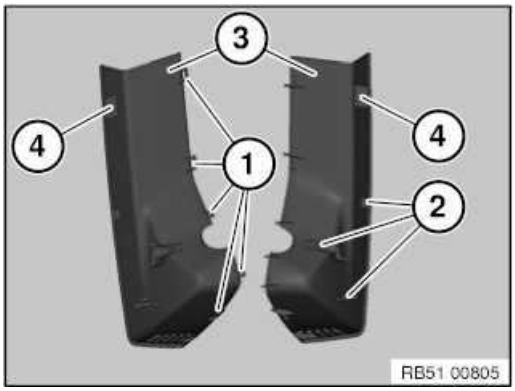
Description is for left component only. Procedure on the right side is identical.

▸ **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.

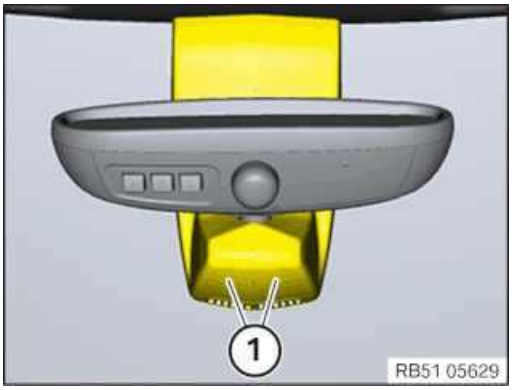
35 – Install the cover on the inside mirror



- Check the latch mechanisms (1) and guides (2) on the two covers (3) for damage, renew if necessary.

  The latch mechanisms (1) and guides (2) must not be damaged.
- Check the spacers (4).

  The spacers (4) must not be damaged or missing.



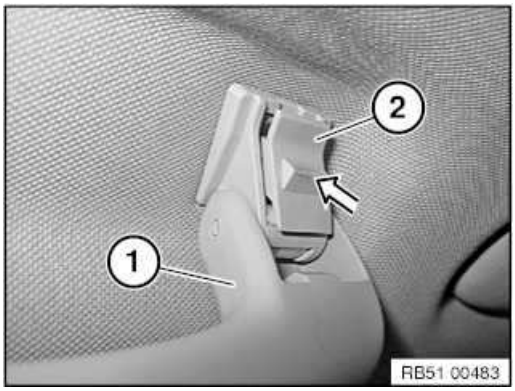
- Install covers on the interior mirror (1) clip together.

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36 – Installing all grab handles

NOTICE

The description is for one component only. The procedure is identical for all further components.



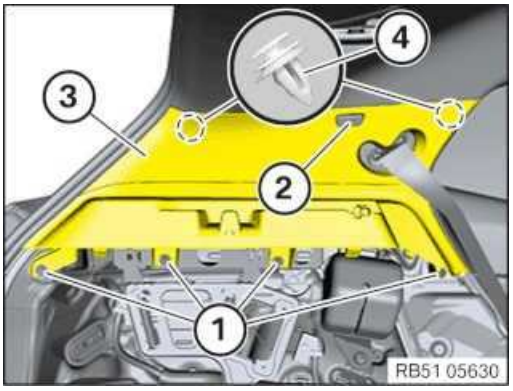
▸ **Installing the grab handle**

- 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).

37 – Install the trim panel for left and right the luggage compartment capping

NOTICE

Description is for left component only. Procedure on the right side is identical.



▸ **Install the trim panel for the luggage compartment capping**

- Install trim panel of the luggage compartment capping (3) and thread in the end fitting.
- Clip in the trim panel of the luggage compartment capping (3) at the clips (4).
- Tighten screw and mount cover (2).

Trim panel of luggage compartment capping

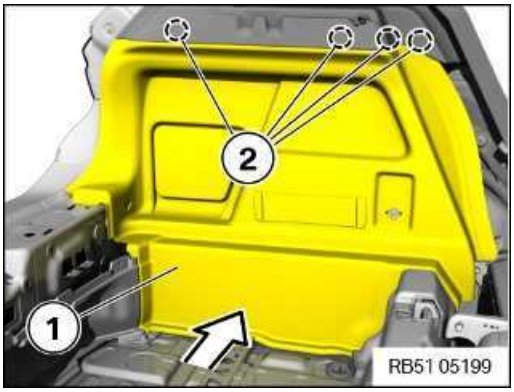
Self-tapping screw		Tightening torque	4 Nm

- Tighten the screws (1).

Trim panel of luggage compartment capping to body

Hexagon screw		Tightening torque	1,8 Nm

38 – Install luggage compartment wheel arch trim panel at left

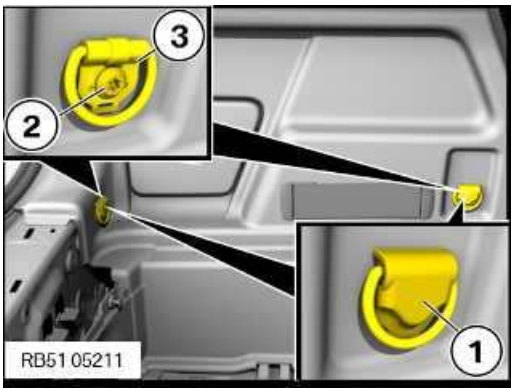


NOTICE

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

- Push the luggage compartment wheel arch trim panel (1) down in the direction of the arrow and feed it into the guides (2) and under the C-pillar trim bottom.

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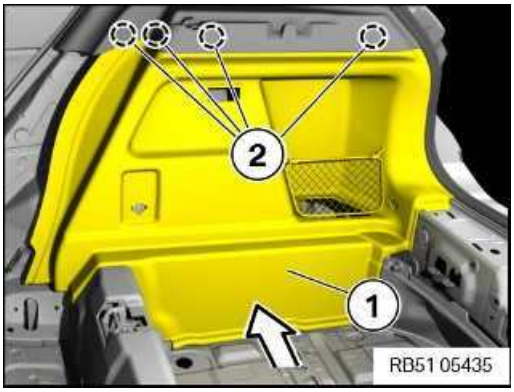
- Position the lashing eyes (3) and tighten the screws (2).

Lashing eye in luggage compartment

Bolt M8 x 22		Tightening torque	21 Nm

- Clip in the covers (1).

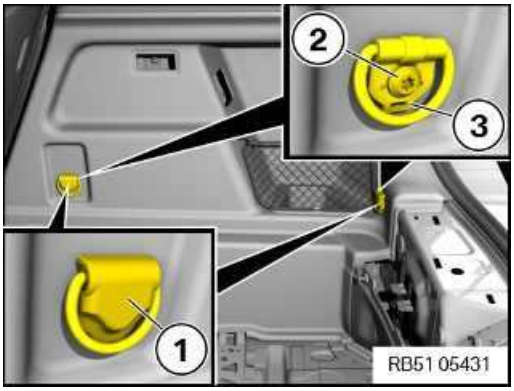
39 – Installing the luggage compartment wheel arch trim panel on the right



NOTICE

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

- Press luggage compartment wheel arch trim panel (1) down in direction of arrow and feed into the guides (2) and under the bottom C-pillar trim panel.

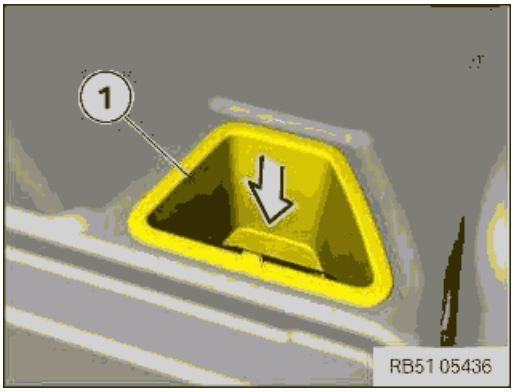


- Position the lashing eyes (3) and tighten the screws (2).

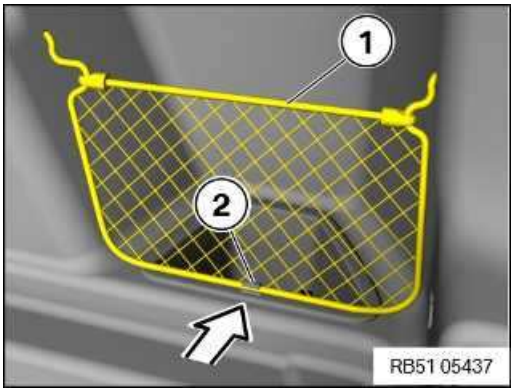
Lashing eye in luggage compartment

Bolt M8 x 22		Tightening torque	21 Nm

- Clip in the covers (1).



- Install the storage compartment (1) in the luggage compartment wheel arch trim panel in direction of arrow.



- Clip storage net (1) into latch mechanisms (2) in direction of arrow.

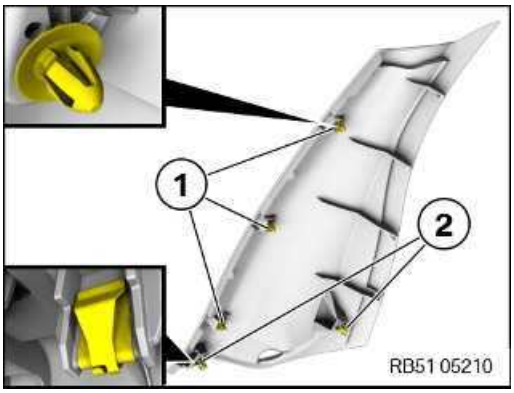
40 – Install C-pillar trim panel at bottom left and right

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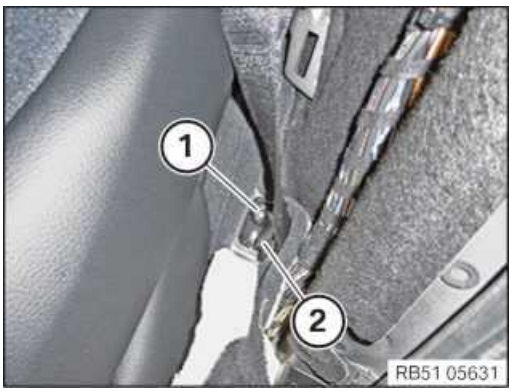
NOTICE

Description is for left component only. Procedure on the right side is identical.

▶ **Install the bottom C-pillar trim panel**



- Check clips (1) for damage, and replace if necessary.
- Check the clamps (2) for damage, and replace if necessary.

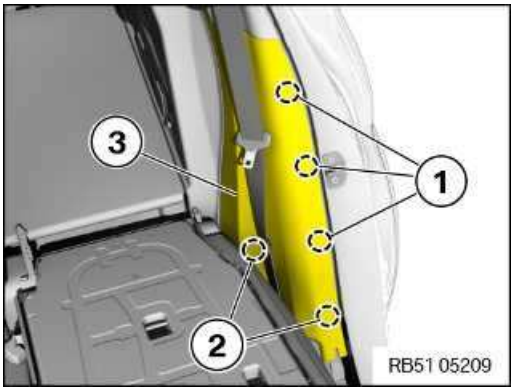


- Insert the end fitting (2) through the C-pillar trim panel.
- Mount the end fitting (2) and tighten the screw (1).

End fitting to body

Screw	Renew screw.	Tightening torque	42 Nm

- Install the carpet correctly.



- Clip in the C-pillar trim panel on the bottom (3) with the clamps (2) and the clips (1).



- Position the edge protection (1) correctly in the area of the bottom C-pillar trim.

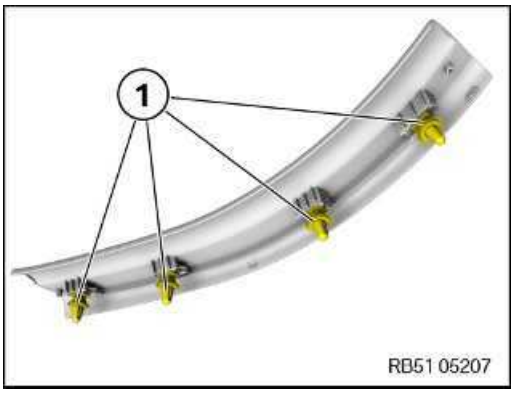
41 – Install the door sill cover strip on the rear left and right

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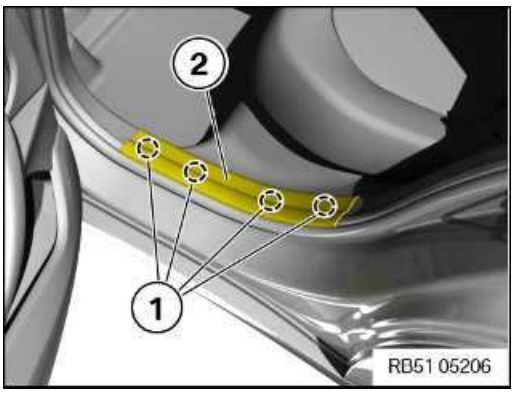
NOTICE

Description is for left component only. Procedure on the right side is identical.

▶ **Installing the rear door sill cover strip**

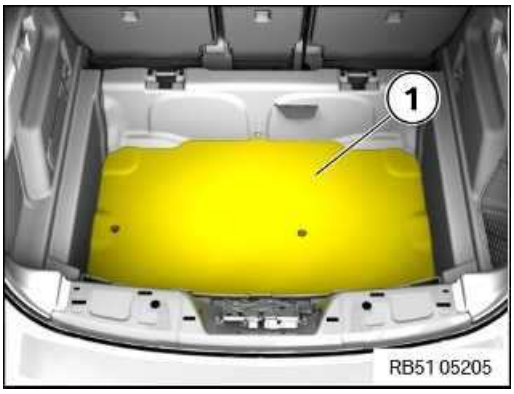


- Check the clips (1) for damage and renew where required.



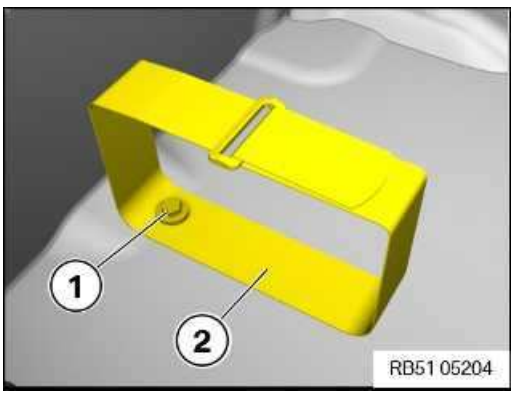
- Clip in the door sill cover strip (2) with the clips (1).

42 – Installing the luggage compartment floor trim panel



- Position the luggage compartment floor trim panel (1).

43 – Inserting the Velcro fastener for the toolkit



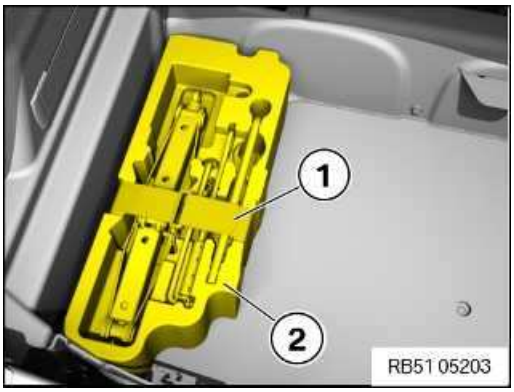
- Insert Velcro fastener (2).
- Tighten down screw (1).

Toolkit hook and loop tape to body

Bolt M6 x 20		Tightening torque	4 Nm

44 – Install the tool kit

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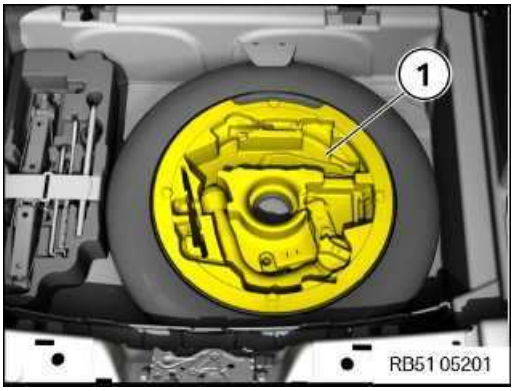


- Install the tool kit (2).
- Close the hook and loop tape (1).

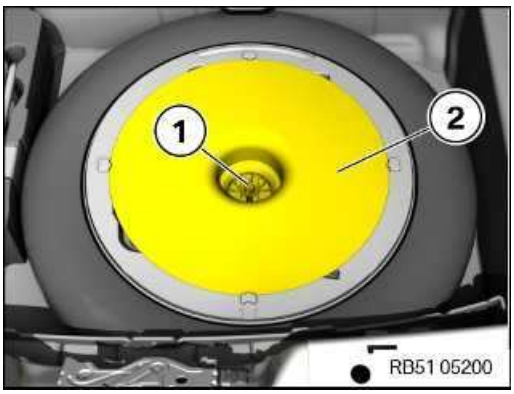
45 – Install the emergency wheel



- Insert compact spare wheel(1).

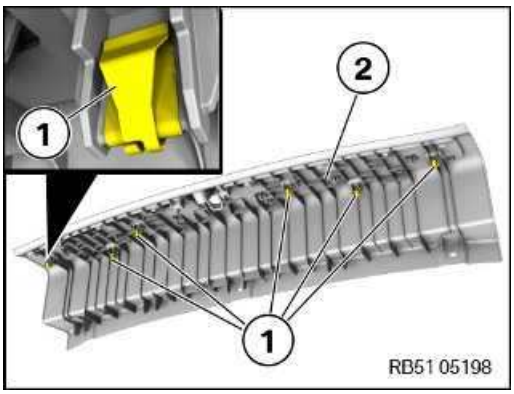


- Insert oddments tray into the compact spare wheel (1).



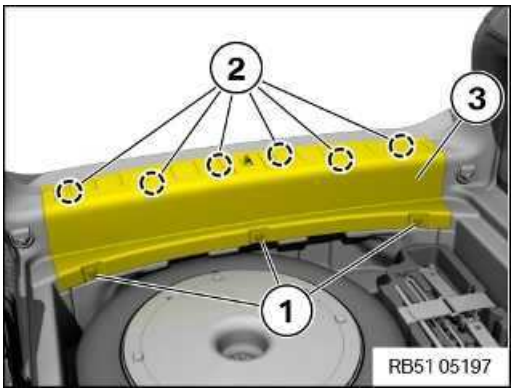
- Insert the lid (2).
- Hand-tighten the bolt (1).

46 – Installing loading edge trim



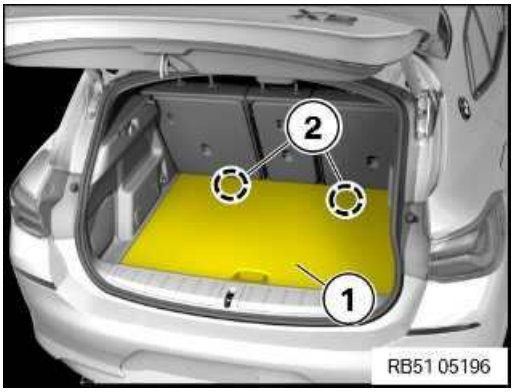
- Check the clamps (1) at the loading edge trim (2) for damage and renew if necessary.

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- Insert the loading edge trim (3) in the area of the expanding rivets (1) into the underlying rear luggage compartment trim panel.
- Guide in the loading edge trim (3) under the sealing lip of the seal for the tailgate and clip it in with the clamps (2).
- Secure expanding rivet (1).

47 – Installing the luggage compartment removable panel



- Clip luggage compartment removable panel (1) into latch mechanisms (2) and set down.

Additional Information

Overview of Tightening Torques

Tailgate hinge to body — Used in step 24

Nut		Tightening torque	56 Nm

A-pillar trim panel to body — Used in step 31

M5x42 screw	Renew screw	Tightening torque	2,2 Nm

Counter support on body — Used in step 33

Screw		Tightening torque	2,5 Nm

Trim panel of luggage compartment capping — Used in step 37

Self-tapping screw		Tightening torque	4 Nm

Trim panel of luggage compartment capping to body — Used in step 37

Hexagon screw		Tightening torque	1,8 Nm

Lashing eye in luggage compartment — Used in step 38 39

Bolt M8 x 22		Tightening torque	21 Nm

End fitting to body — Used in step 40

Screw	Renew screw.	Tightening torque	42 Nm

Toolkit hook and loop tape to body — Used in step 43

Bolt M6 x 20		Tightening torque	4 Nm

Overview of Special Tools

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0 496 569 (00 9 325) Wedge



Common	Used in step 16 18
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 (PRE)	Used in step
Gap dimensions, body	24

General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	17 31

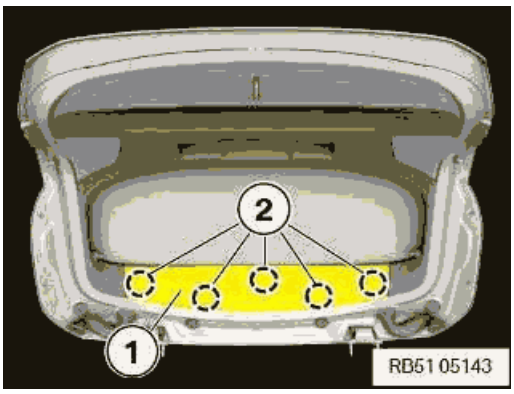
Repair instructions	Used in step
51 23 ... Removing/installing ball sockets with clip	22 26

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41 62 014 Adjusting tailgate

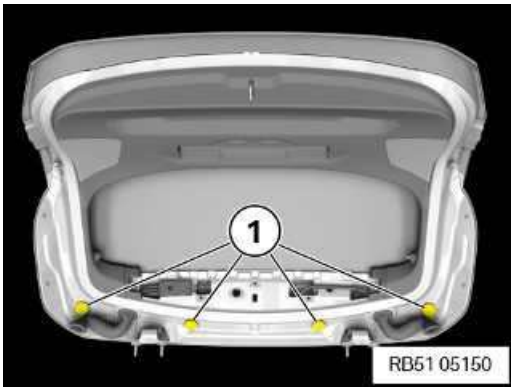
PRELIMINARY WORK

1 – Remove the trim for the top rear window frame

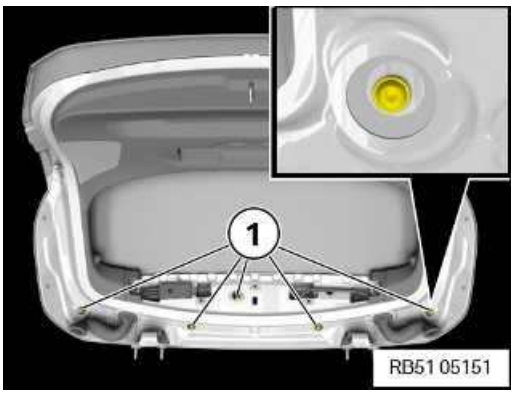


- Unclip the trim for the top rear window frame (1) at the latch mechanisms (2) and remove.

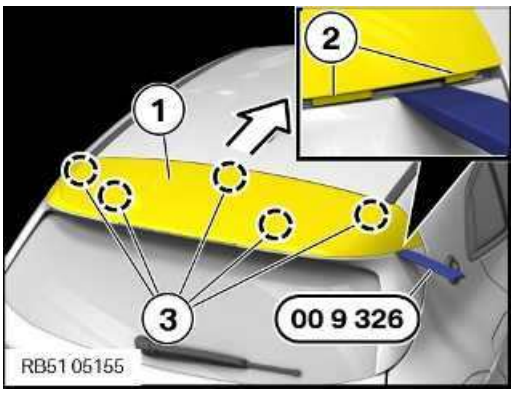
2 – Remove rear spoiler



- Unclip the covers (1) with a suitable tool and remove.



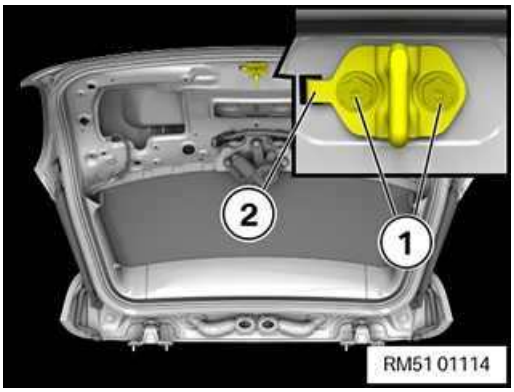
- Loosen screws (1).



- Release rear spoilers (1) on both outer sides with the special tool **0 496 570 (00 9 326)** out of the latch mechanisms (2).
- Unclip rear spoiler (1) from the clips (3).
- Slightly lift rear spoiler (1) in the front area and remove in direction of arrow.

3 – Remove striker for tailgate catch

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- Unscrew the bolts (1) and remove the striker for the tailgate catch (2).

4 – Remove rear lid gas pressure spring

CAUTION

Shutting bonnet or tailgate.

Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.

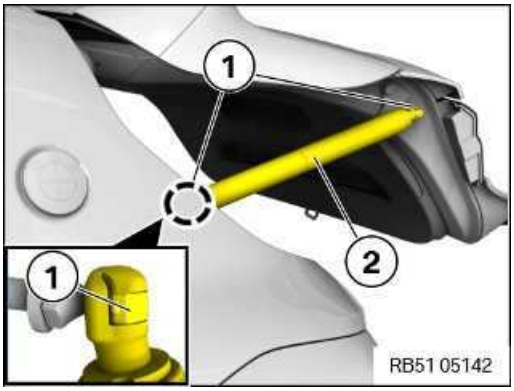
TECHNICAL INFORMATION

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

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Slide the locking spring (1) to the end of the gas pressure spring (2) and remove the gas pressure spring (2) from the ball head.

5 – Removing spindle drive of the tailgate

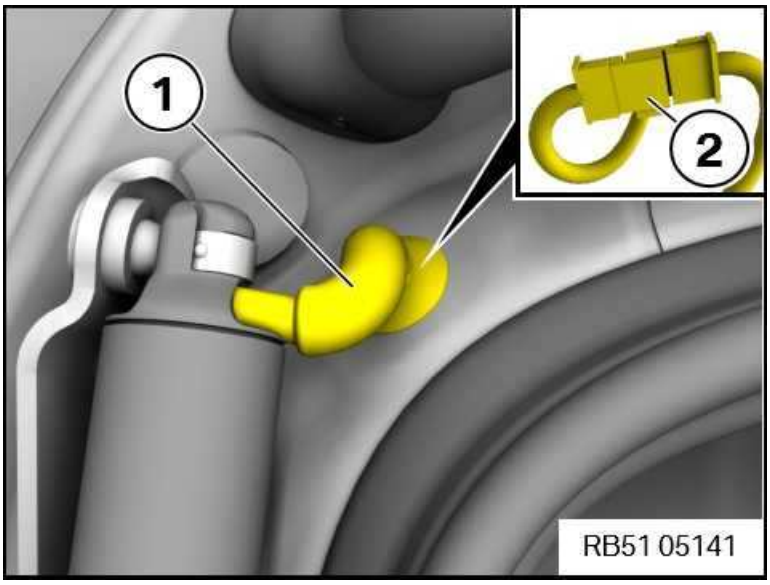
CAUTION

Shutting bonnet or tailgate.

Danger of injury!

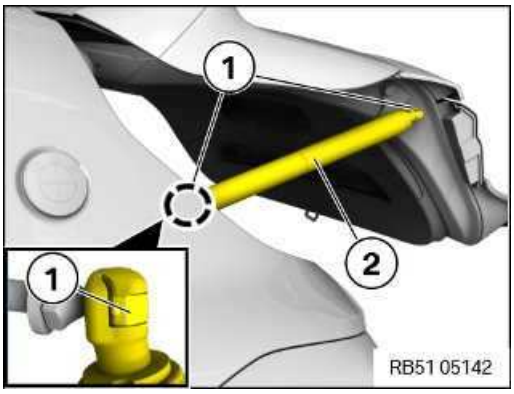
- Support bonnet/tailgate in fully open position with the aid of a suitable device.

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- Remove grommet (1) from the body panel.
- Unlock and disconnect the two plug connections (2).

  The plug connections (2) must be outside the body.



- Open locks (1) at the top and bottom on the spindle drive (2) and remove the spindle drive (2).

MAIN WORK

6 – Adjusting tailgate

CAUTION

Shutting bonnet or tailgate.

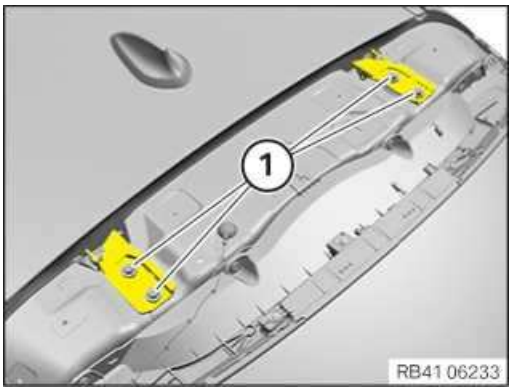
Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.

TECHNICAL INFORMATION

Notes on the body gap dimensions are the basis of these repair instructions and must be observed without fail.
For additional information see: 41 00 ... Gap dimensions for body

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NOTICE

Perform the operations on the left and right side.

- Undo screws (1) 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 the screws (1).

Tailgate to hinge

Hexagon screw M8	Tightening torque		28 Nm

Check



- Check the gap dimensions (arrows) between tailgate and side panels.

Result

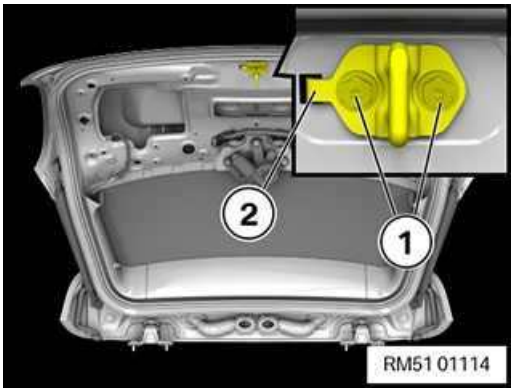
» Gap dimensions do not correspond to the specifications.

Measure

- Adjust tailgate.

POSTPROCESSES

7 – Install striker for tailgate catch



- Mount the striker for the tailgate catch (2) with the bolts (1).
- Tighten the screws (1).

Striker for tailgate catch

Screw		Tightening torque	19 Nm

8 – Adjusting rear lid lock

CAUTION

Shutting bonnet or tailgate.

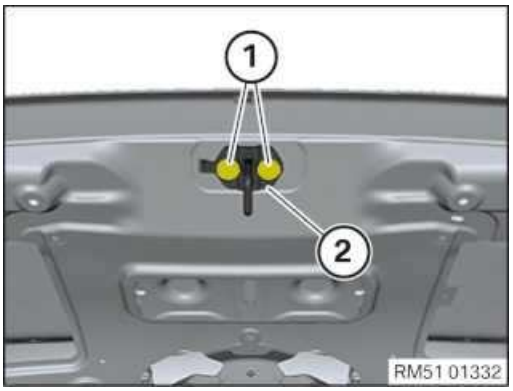
Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.

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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

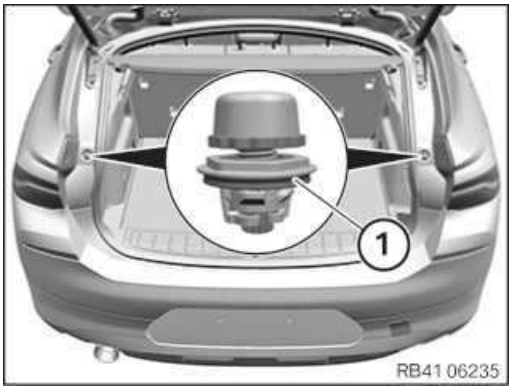


- Slacken the bolts (1) until the striker (2) is barely adjustable and self-centres itself.
- Close tailgate.
- Open tailgate.
- Tighten the screws (1).

Note: When the tailgate is closed, the striker must not touch or scrape against the tailgate lock. Watch out for scratches!

Striker to body

Screw		Tightening torque	19 Nm



- Adjust the stop pad (1) by turning.

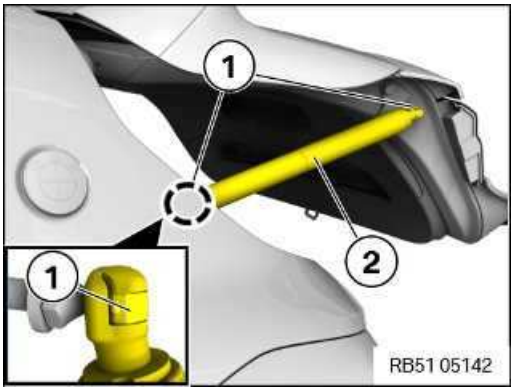
9 – Install the spindle drive of the tailgate

CAUTION

Shutting bonnet or tailgate.

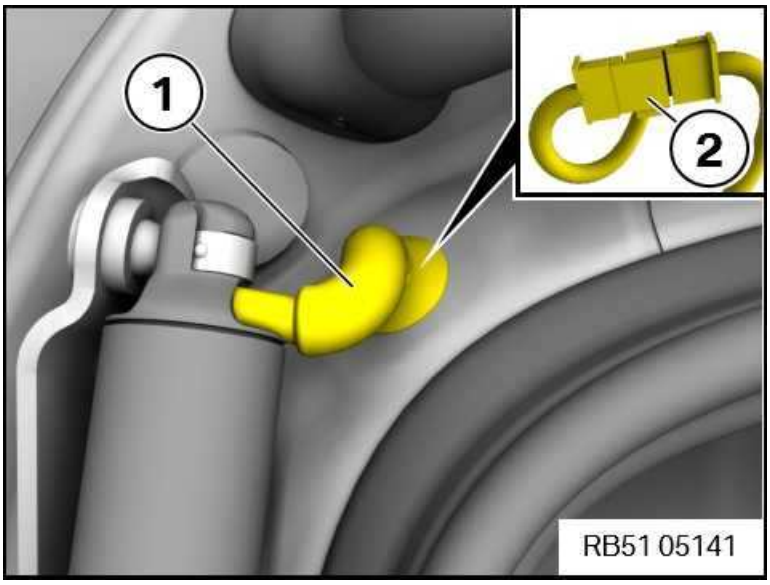
Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.



- Mount the spindle drive (2) at the top and bottom on the associated ball head and lock with the locking mechanism (1).

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- Connect and lock both connectors (2).
- Install the grommet (1) in the body panel.

  The arrow on the grommet (1) must point up.

10 – Install the gas pressure spring of the tailgate

CAUTION

Shutting bonnet or tailgate.

Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.

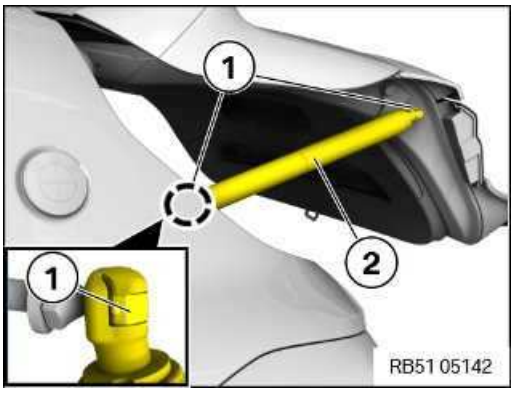
TECHNICAL INFORMATION

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

NOTICE

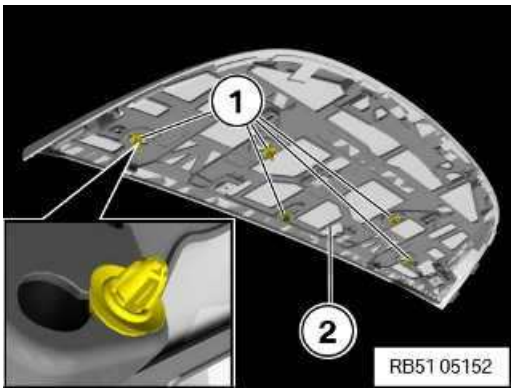
Description is for left component only. Procedure on the right side is identical.



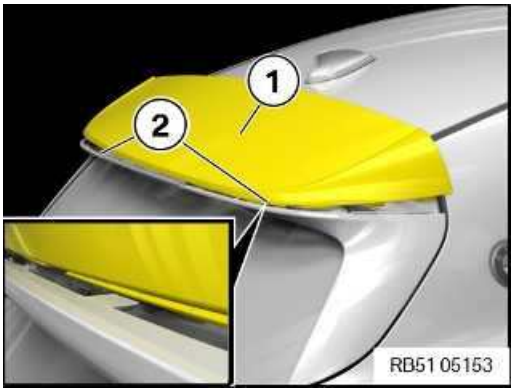
- Mount the gas pressure spring (2) at the top and bottom on the associated ball head and lock with the locking spring (1).

11 – Attach rear spoiler

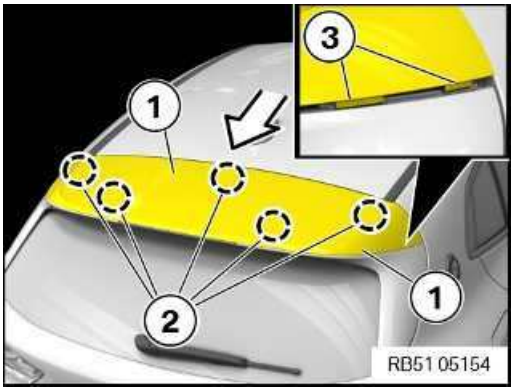
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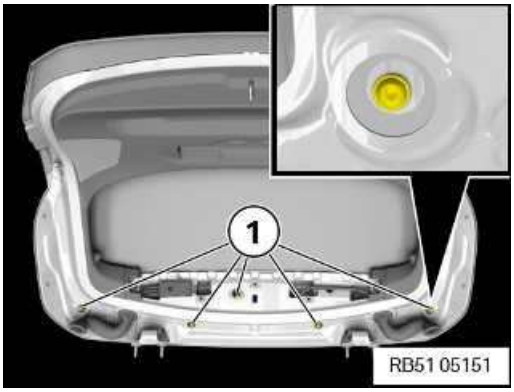
- Check clips (1) on the rear spoiler (2) for damage, renew if required.



- Position the rear spoiler (1) on the guides (2) .



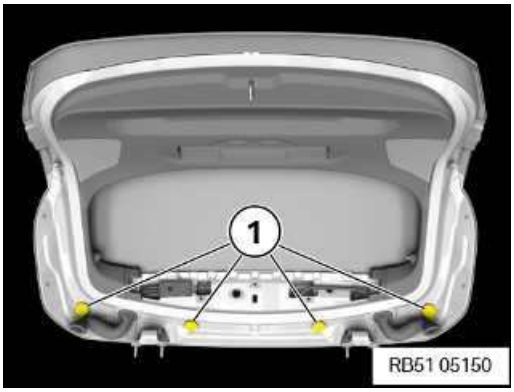
- Slide the rear spoiler (1) onto the lower section of the rear spoiler in the direction of the arrow.
- Clip in the rear spoiler (1) with the clips (2) and clip on the latch mechanisms (3) on both sides.



- Tighten the screws (1).

Rear spoiler to tailgate

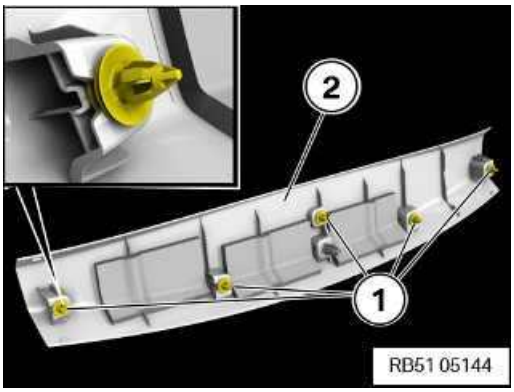
Oval-head screw		Tightening torque	3,1 Nm



- Insert the covers (1).

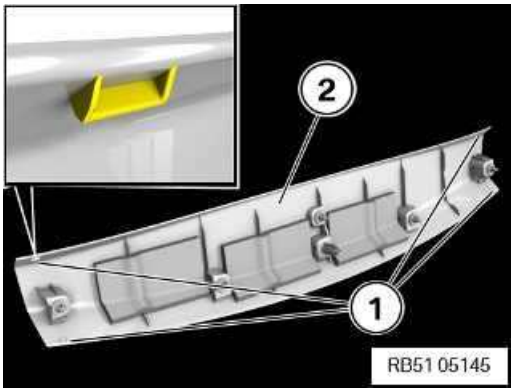
12 – Install the trim for the top rear window frame

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- Check the clips (1) on the trim for the top rear window frame (2) for damage and replace where required.

Check



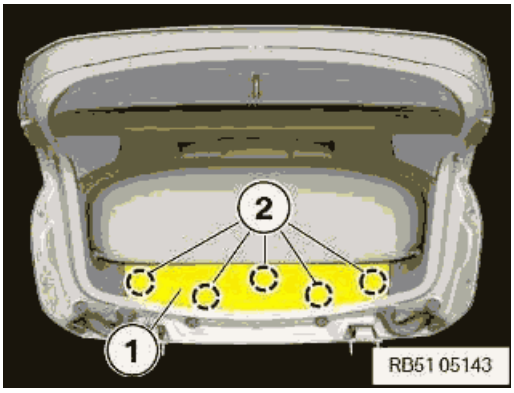
- Check the latch mechanisms (1) on the trim for the top rear window frame (2) for damage.

Result

» The latch mechanisms (1) on the trim for the top rear window frame (2) are damaged.

Measure

- Renew the trim for the top rear window frame (2).



- Clip in the trim for the top rear window frame (1) with the clips (2).

Additional Information

Overview of Tightening Torques

Tailgate to hinge — Used in step 6

Hexagon screw M8	Tightening torque		28 Nm

Striker for tailgate catch — Used in step 7

Screw		Tightening torque	19 Nm

Striker to body — Used in step 8

Screw		Tightening torque	19 Nm

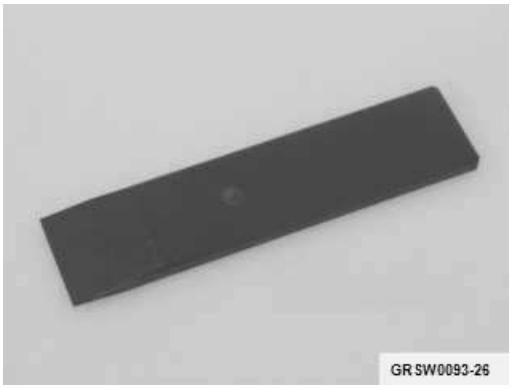
Rear spoiler to tailgate — Used in step 11

Oval-head screw		Tightening torque	3,1 Nm

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Overview of Special Tools

0 496 570 (00 9 326) Wedge



Common	Used in step 2
Usage	(Universal wedge) From 11/2008 this special tool replaces panel wedge 00 9 318 (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)

Links

Repair instructions (PRE)	Used in step
Gap dimensions, body	6

Repair instructions	Used in step
51 23 ... Removing/installing ball sockets with clip	4 10
41 00 ... Gap dimensions, body	8

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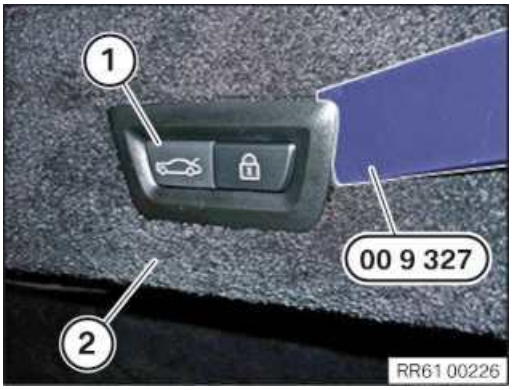
41 62 000 Removing and installing rear lid

PRELIMINARY WORK

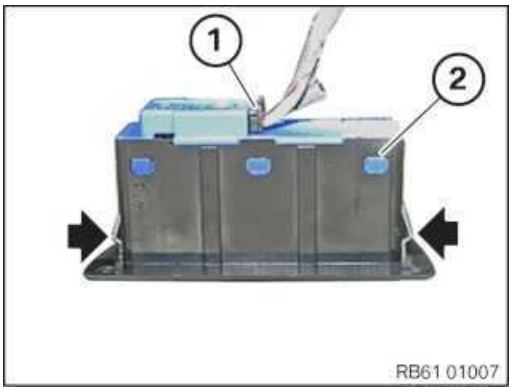
1 – Remove the tailgate lift switch

Prerequisite

Tailgate is open.

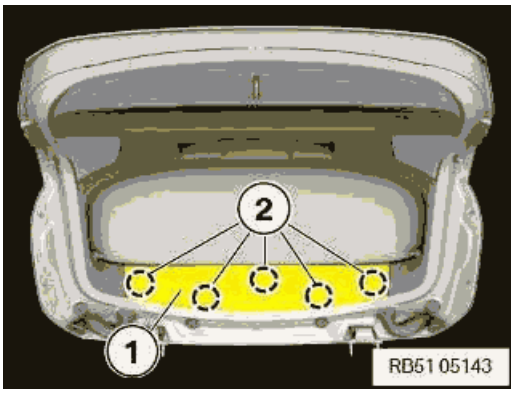


- Lever the switch for the tailgate lift (1) out of the tailgate trim panel (2) with the special tool **0 496 571 (00 9 327)**.



- Connect the connector (1) with the switch (2).

2 – Remove the trim for the top rear window frame



- Unclip the trim for the top rear window frame (1) at the latch mechanisms (2) and remove.

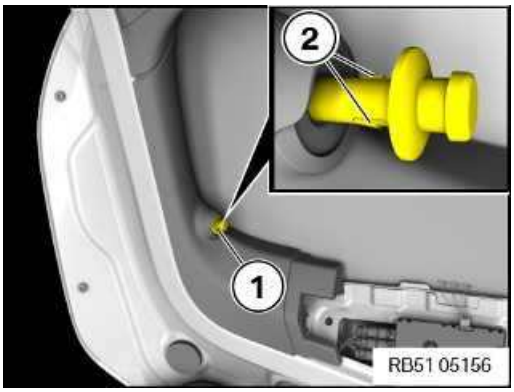
3 – Remove both trims for the rear window frame on the side

NOTICE

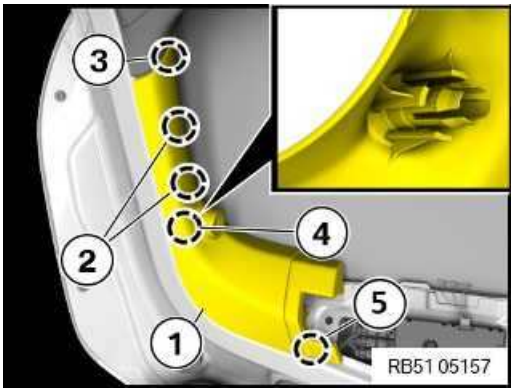
Description is for left component only. Procedure on the right side is identical.

▸ **Remove the trim for the rear window frame on the side**

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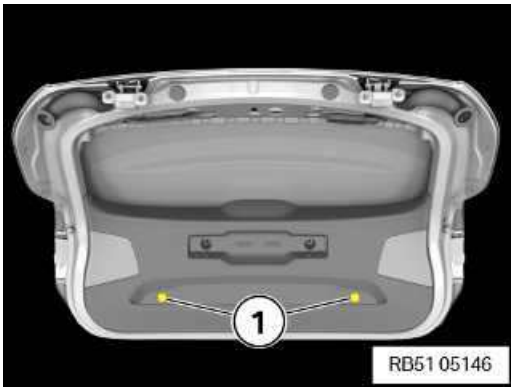


- Detach the mounting button (1) on the latch mechanisms (2) and remove it.

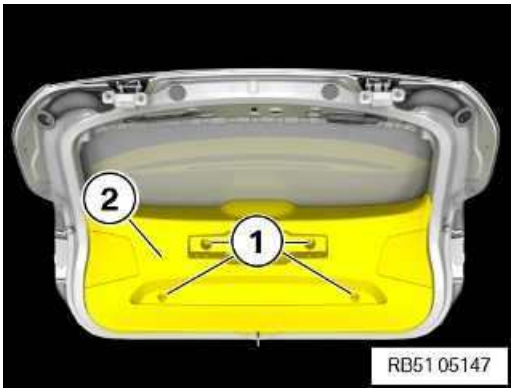


- Unclip the trim for the rear window frame on the side (1) with the clips (2) from the latch mechanisms (3), (4) and (5).

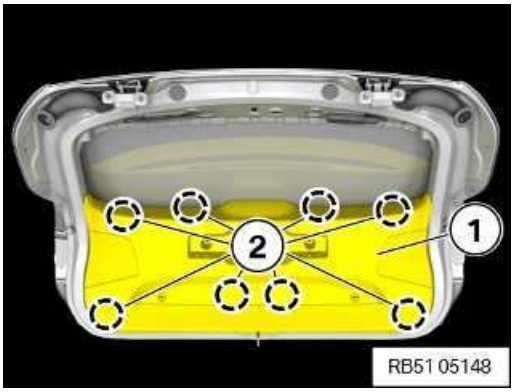
4 – Remove tailgate trim panel



- Lever out the covers of the screw points (1) with a suitable tool.



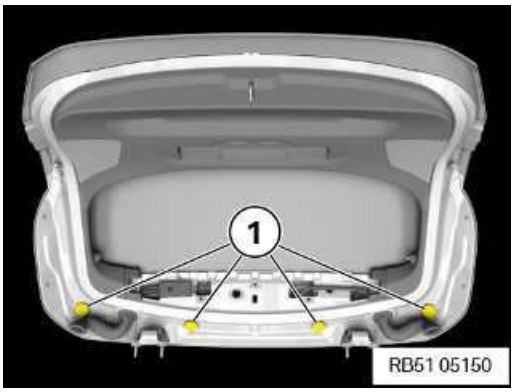
- If applicable, remove the warning triangle from the tailgate trim panel (2).
- Unscrew the bolts (1) at the tailgate trim panel (2).



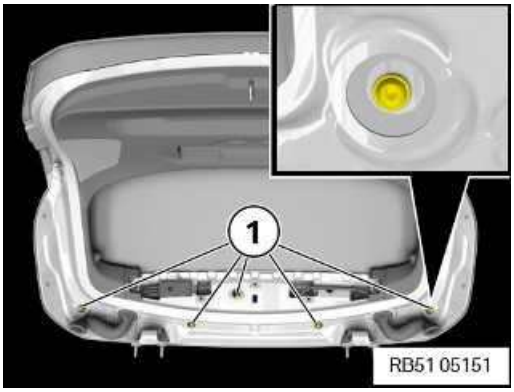
- Unclip the tailgate trim panel (1) at the latch mechanisms (2) and remove.

5 – Remove rear spoiler

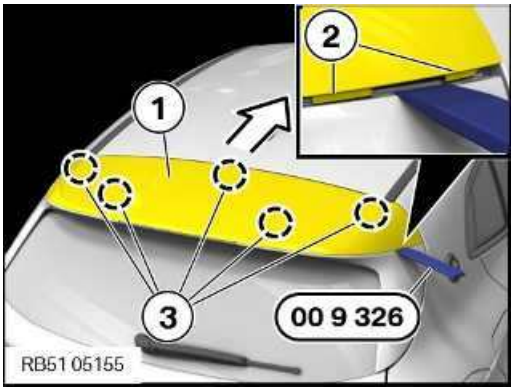
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- Unclip the covers (1) with a suitable tool and remove.



- Loosen screws (1).



- Release rear spoilers (1) on both outer sides with the special tool **0 496 570 (00 9 326)** out of the latch mechanisms (2).
- Unclip rear spoiler (1) from the clips (3).
- Slightly lift rear spoiler (1) in the front area and remove in direction of arrow.

6 – Remove rear lid gas pressure spring

CAUTION

Shutting bonnet or tailgate.

Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.

TECHNICAL INFORMATION

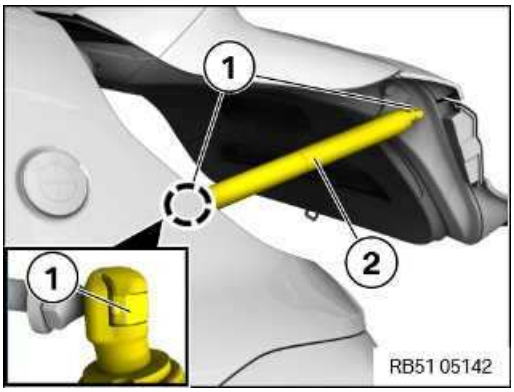
The notes on the disassembly and installation of ball sockets with clamps are the basis for these repair instructions and must be observed without fail.

For additional information see: 51 23 ... Note information on disassembly/installation of ball sockets with clamp

NOTICE

Description is for left component only. Procedure on the right side is identical.

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- Slide the locking spring (1) to the end of the gas pressure spring (2) and remove the gas pressure spring (2) from the ball head.

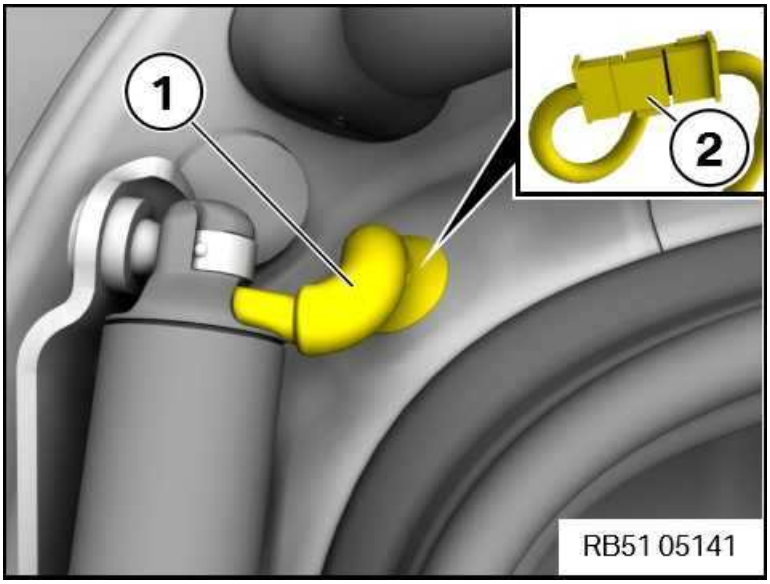
7 – Removing spindle drive of the tailgate

CAUTION

Shutting bonnet or tailgate.

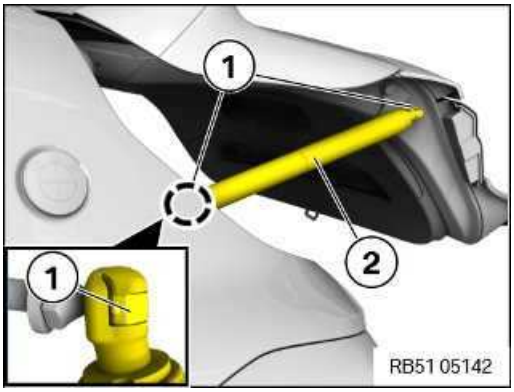
Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.



- Remove grommet (1) from the body panel.
- Unlock and disconnect the two plug connections (2).

  The plug connections (2) must be outside the body.



- Open locks (1) at the top and bottom on the spindle drive (2) and remove the spindle drive (2).

MAIN WORK

8 – Remove tailgate

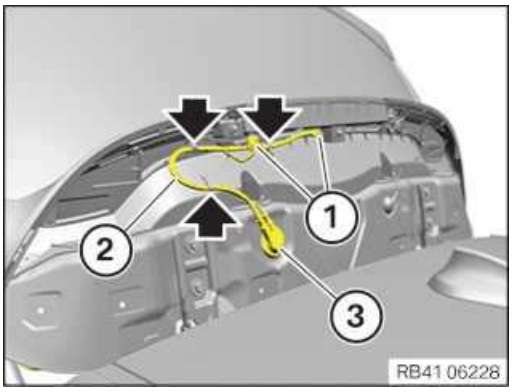
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CAUTION

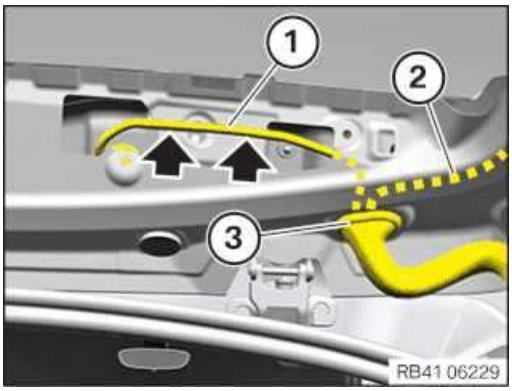
Shutting bonnet or tailgate.

Danger of injury!

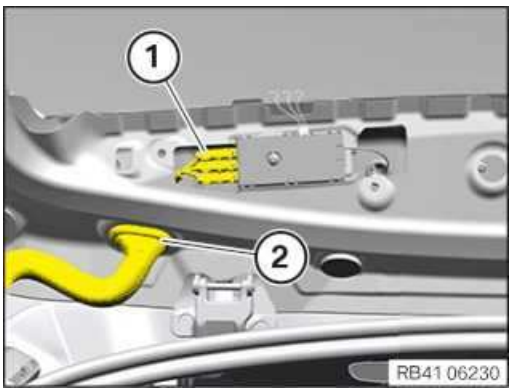
- Support bonnet/tailgate in fully open position with the aid of a suitable device.



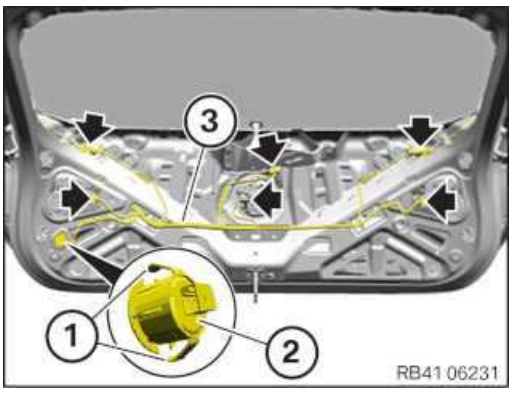
- Unlock and disconnect plug connections (1).
- Detach the wiring harness (2) at the marked points (arrows) from the brackets.
- Detach rubber grommet (3) and feed it through to the inside together with the wiring harness (2).



- Release the wiring harness (1) at the marked points (arrows).
- Release rubber grommet (3).
- Thread out the wiring harness (1) and wiring harness (2) from the tailgate.



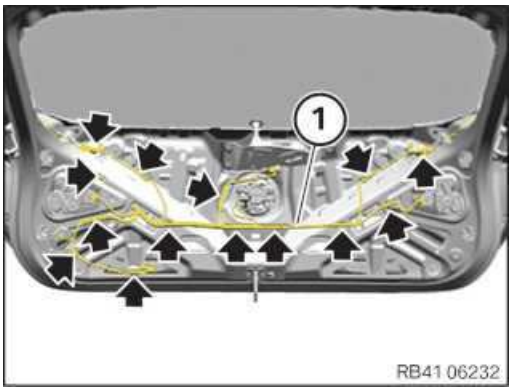
- Unlock and disconnect plug connections (1).
- Release rubber grommet (2).
- Thread out the connector (1) from the tailgate.



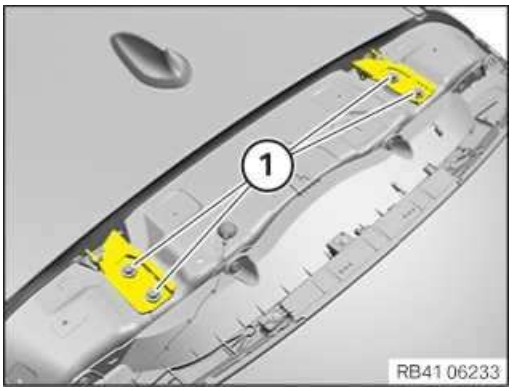
- Unlock tabs (1).

  Remove acoustic sensor (2) and unlock and disconnect the associated plug connection.
- Unlock and disconnect all plug connections (arrows) of the wiring harness (3).

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- Detach wiring harness (1) at the marked positions (arrows) and set it aside.



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.

- Close tailgate. Make sure the striker does not engage in the tailgate lock. If necessary, cover the tailgate lock.
- Unscrew the screws (1) and remove the tailgate.

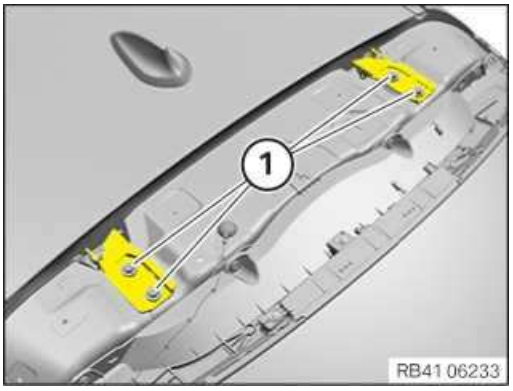
9 – Installing tailgate

CAUTION

Shutting bonnet or tailgate.

Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.



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.

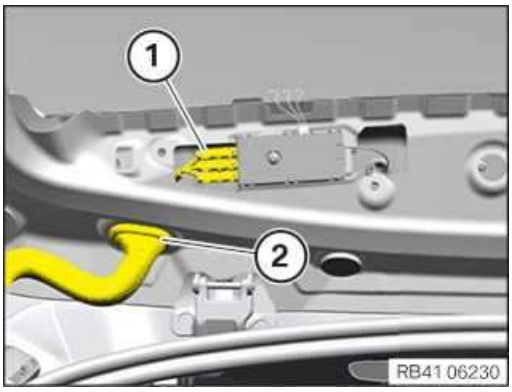
- Position the tailgate on the vehicle. During this, make sure that the striker does not engage in the tailgate lock. If applicable, cover the tailgate lock.
- Tighten the screws (1).

Tailgate to hinge

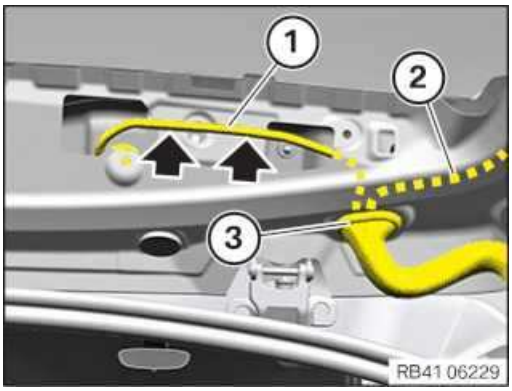
Hexagon screw M8	Tightening torque		28 Nm

- Carefully close the tailgate and check for bodywork contact, reposition tailgate if necessary.

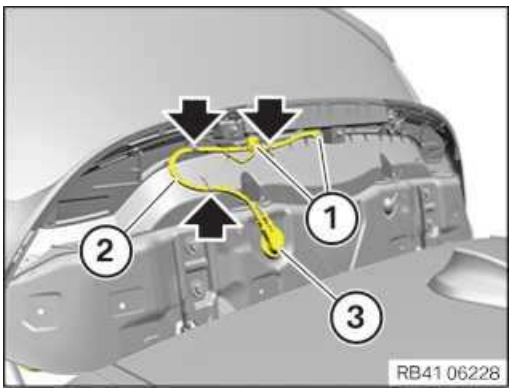
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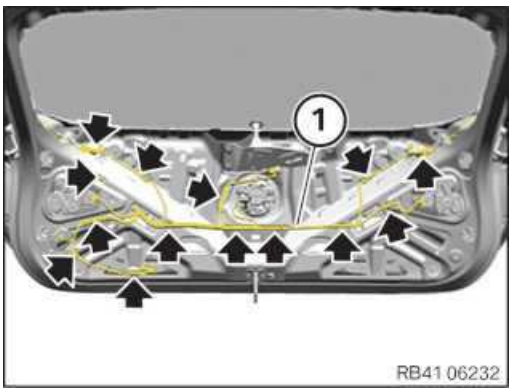
- Open tailgate.
- Feed the connector (1) into the tailgate and connect.
- Install the rubber grommet (2). Ensure correct installation. (watertightness).



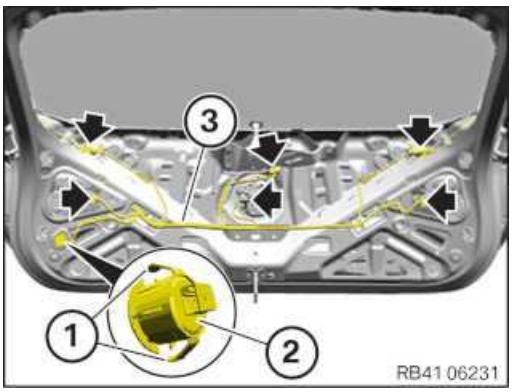
- Feed the wiring harness (1) and vehicle wiring harness (2) into the tailgate.
- Install the rubber grommet (3). Ensure correct installation. (watertightness).
- Secure the wiring harness (1) at the marked points (arrows).



- Feed the rubber grommet (3) together with the wiring harness (2) through in an outward direction.
- Secure the wiring harness (2) at the marked points (arrows).
- Connect and lock the plug connections (1).



- Secure the wiring harness (1) at the marked points (arrows).



- Connect the connectors for the acoustic sensor (2) and lock.
- Install the acoustic sensor (2). Clip in tabs (1).
- Connect all the plug connections (arrows) of the vehicle wiring harness (3) and lock.

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CAUTION

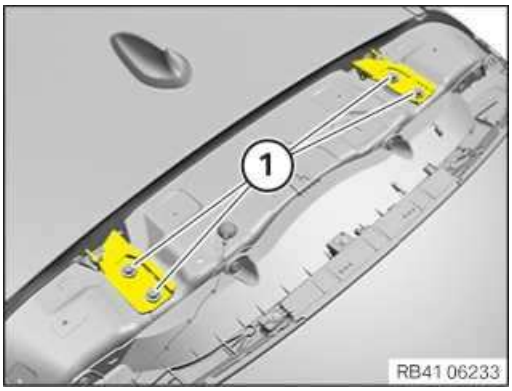
Shutting bonnet or tailgate.

Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.

TECHNICAL INFORMATION

Notes on the body gap dimensions are the basis of these repair instructions and must be observed without fail.
For additional information see: 41 00 ... Gap dimensions for body



NOTICE

Perform the operations on the left and right side.

- Undo screws (1) 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 the screws (1).

Tailgate to hinge

Hexagon screw M8	Tightening torque		28 Nm

Check

- Check the gap dimensions (arrows) between tailgate and side panels.



Result

» Gap dimensions do not correspond to the specifications.

Measure

- Adjust tailgate.

11 – Adjusting rear lid lock

CAUTION

Shutting bonnet or tailgate.

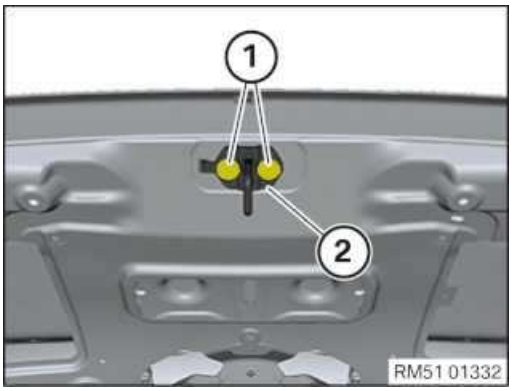
Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.

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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

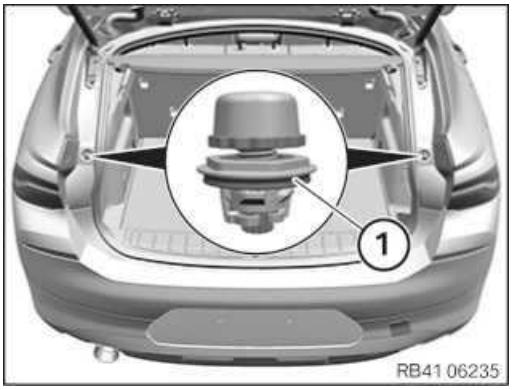


- Slacken the bolts (1) until the striker (2) is barely adjustable and self-centres itself.
- Close tailgate.
- Open tailgate.
- Tighten the screws (1).

Note: When the tailgate is closed, the striker must not touch or scrape against the tailgate lock. Watch out for scratches!

Striker to body

Screw		Tightening torque	19 Nm



- Adjust the stop pad (1) by turning.

POSTPROCESSES

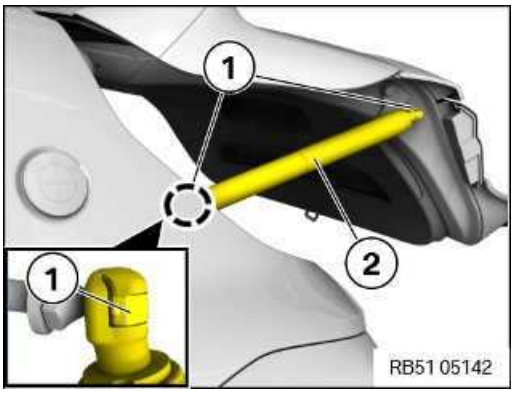
12 – Install the spindle drive of the tailgate

CAUTION

Shutting bonnet or tailgate.

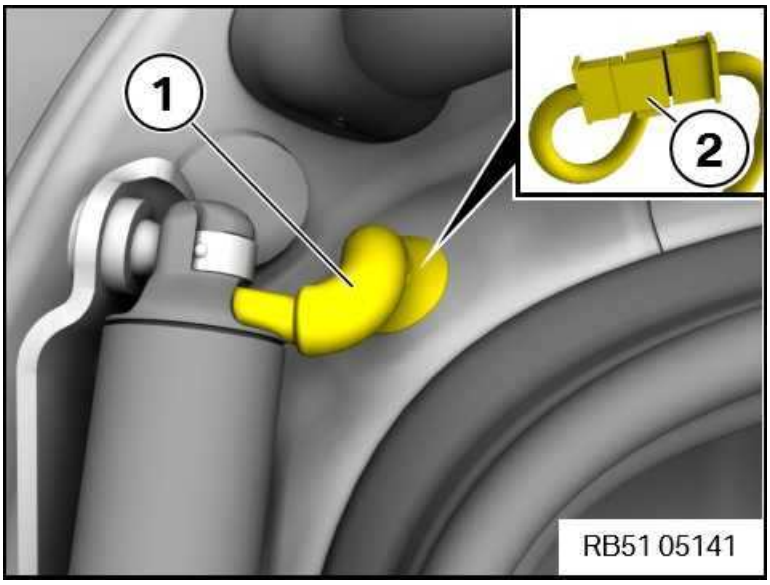
Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.



- Mount the spindle drive (2) at the top and bottom on the associated ball head and lock with the locking mechanism (1).

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- Connect and lock both connectors (2).
- Install the grommet (1) in the body panel.

  The arrow on the grommet (1) must point up.

13 – Install the gas pressure spring of the tailgate

CAUTION

Shutting bonnet or tailgate.

Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.

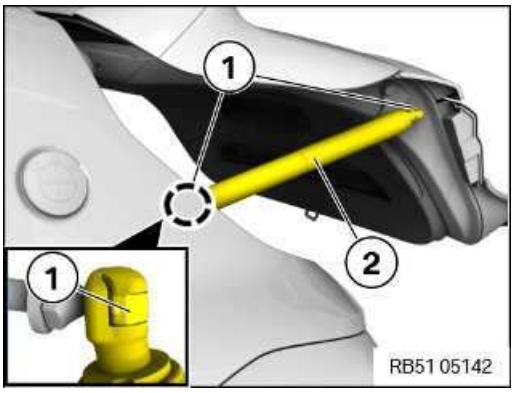
TECHNICAL INFORMATION

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

NOTICE

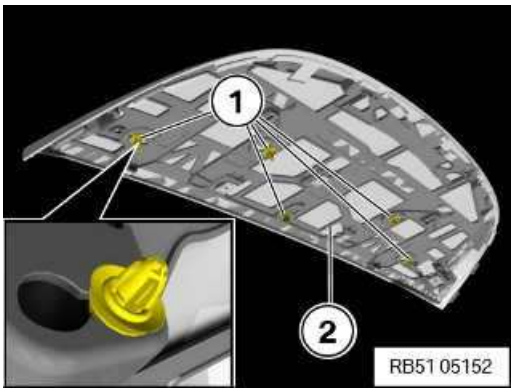
Description is for left component only. Procedure on the right side is identical.



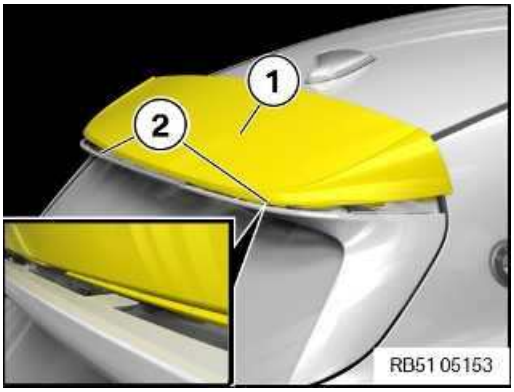
- Mount the gas pressure spring (2) at the top and bottom on the associated ball head and lock with the locking spring (1).

14 – Attach rear spoiler

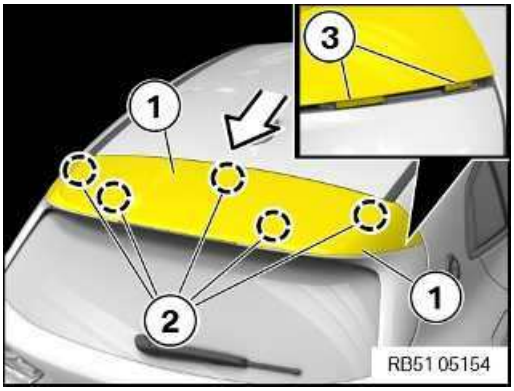
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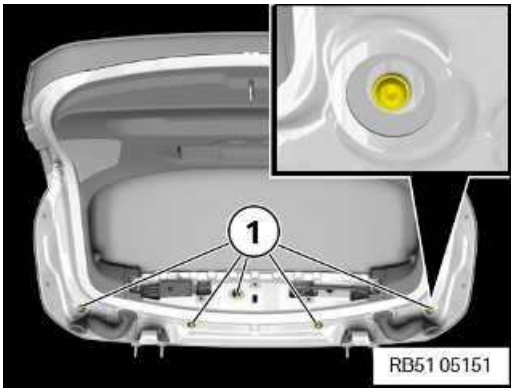
- Check clips (1) on the rear spoiler (2) for damage, renew if required.



- Position the rear spoiler (1) on the guides (2) .



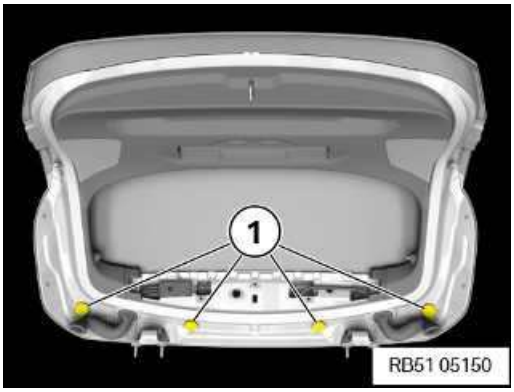
- Slide the rear spoiler (1) onto the lower section of the rear spoiler in the direction of the arrow.
- Clip in the rear spoiler (1) with the clips (2) and clip on the latch mechanisms (3) on both sides.



- Tighten the screws (1).

Rear spoiler to tailgate

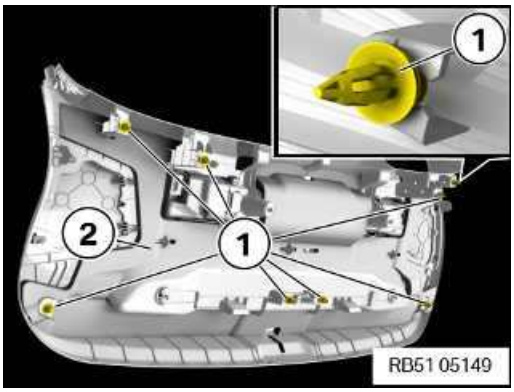
Oval-head screw		Tightening torque	3,1 Nm



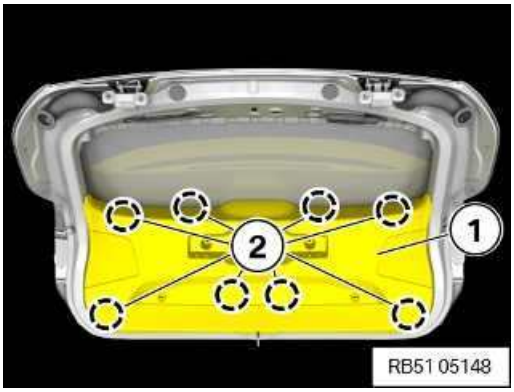
- Insert the covers (1).

15 – Installing the tailgate trim panel

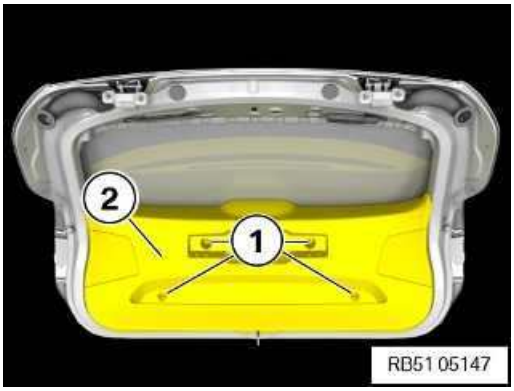
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- Check the clips (1) on the tailgate trim panel (2) for damage and replace where required.



- Clip in the tailgate trim panel (1) with the clips (2).

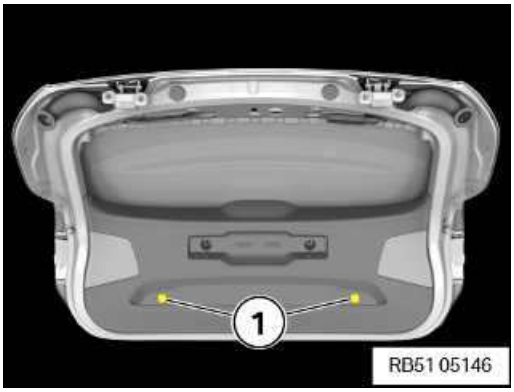


- Tighten the bolts (1) at the tailgate trim panel (2).

Tailgate trim panel

Screw		Tightening torque	1,8 Nm

- If necessary, insert and fasten the warning triangle in the tailgate trim panel (2).



- Insert the covers of the screw points (1).

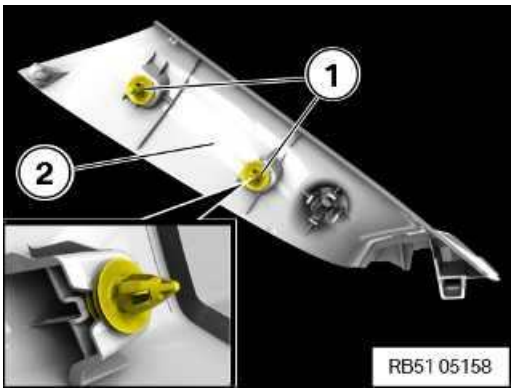
16 – Mount both trim pieces for the rear window frame on the side

NOTICE

Description is for left component only. Procedure on the right side is identical.

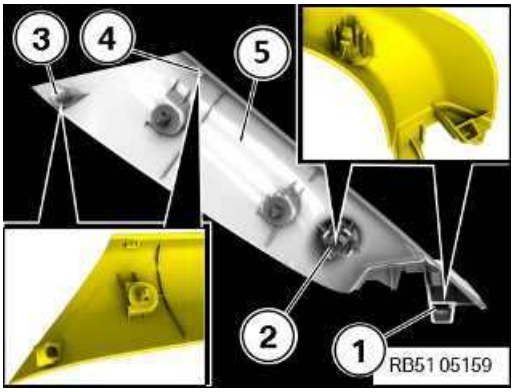
▸ **Install the trim for the rear window frame on the side**

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- Check the clips (1) on the trim for the side rear window frame (2) for damage and replace where required.

Check



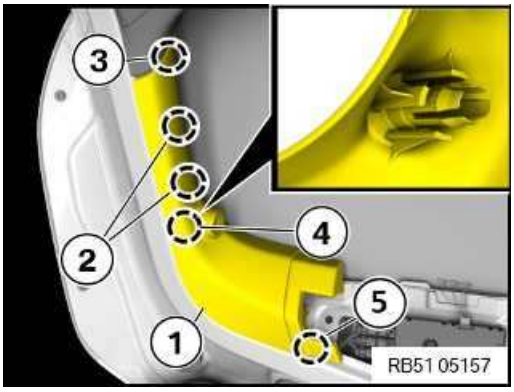
- Check the latch mechanisms (1), (2), (3) and (4) at the trim for the side rear window frame (5) for damage.

Result

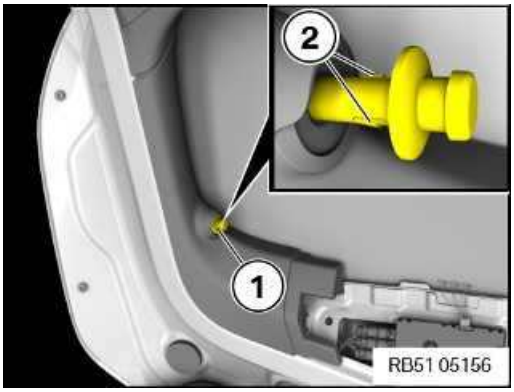
» The latch mechanisms (1), (2), (3) or (4) are damaged.

Measure

- Renew the trim for the side rear window frame (5).



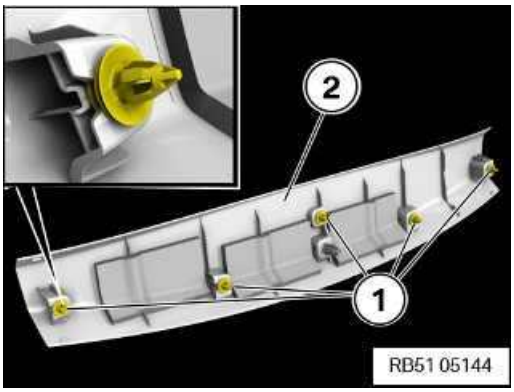
- Clip in the trim for the side rear window frame (1) with the clips (2) and in the latch mechanisms (3), (4) and (5).



- Clip in the mounting button (1) with the latch mechanisms (2).

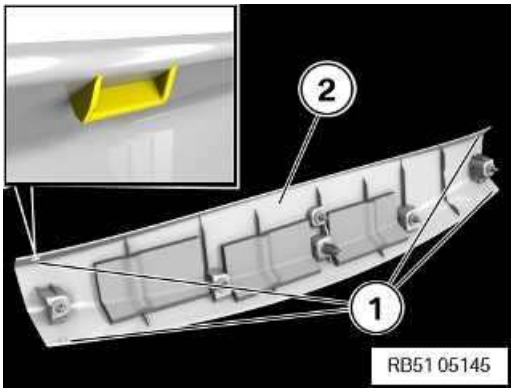
17 – Install the trim for the top rear window frame

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- Check the clips (1) on the trim for the top rear window frame (2) for damage and replace where required.

Check



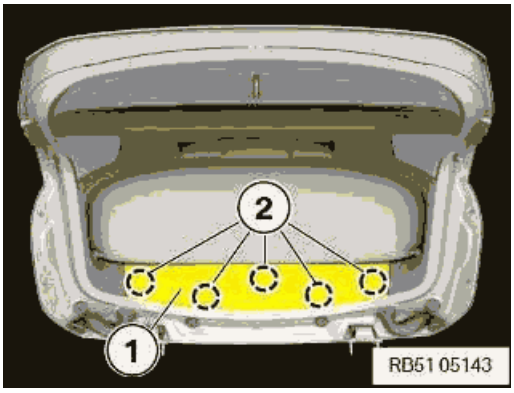
- Check the latch mechanisms (1) on the trim for the top rear window frame (2) for damage.

Result

» The latch mechanisms (1) on the trim for the top rear window frame (2) are damaged.

Measure

- Renew the trim for the top rear window frame (2).

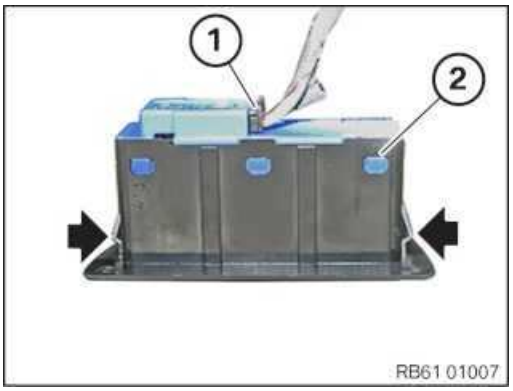


- Clip in the trim for the top rear window frame (1) with the clips (2).

18 – Install the tailgate lift switch

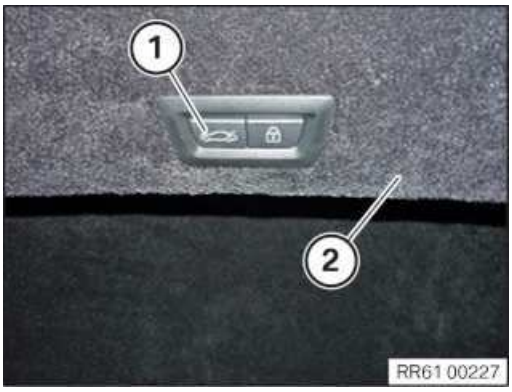
Prerequisite

Tailgate is open.



- Connect the connector (1) with the switch (2).

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- Install the automatic tailgate operation switch (1) in the tailgate trim panel (2).

Additional Information

Overview of Tightening Torques

Tailgate to hinge — Used in step 9 10

Hexagon screw M8	Tightening torque		28 Nm

Striker to body — Used in step 11

Screw		Tightening torque	19 Nm

Rear spoiler to tailgate — Used in step 14

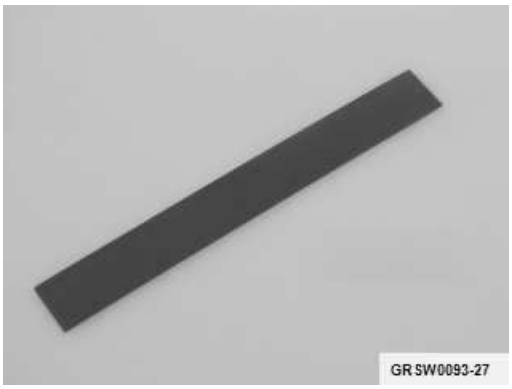
Oval-head screw		Tightening torque	3,1 Nm

Tailgate trim panel — Used in step 15

Screw		Tightening torque	1,8 Nm

Overview of Special Tools

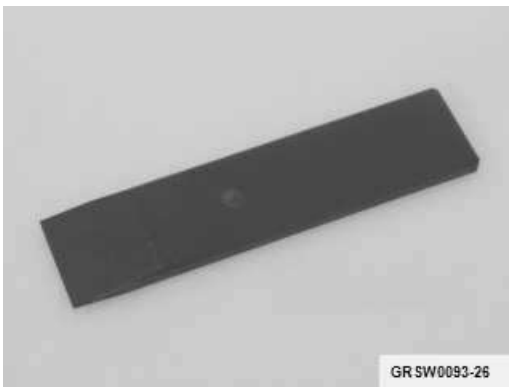
0 496 571 (00 9 327) Wedge



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)

0 496 570 (00 9 326) Wedge



Common — Used in step 5

Usage	(Universal wedge) From 11/2008 this special tool replaces panel wedge 00 9 318 (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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Links

Repair instructions (PRE)	Used in step
Gap dimensions, body	10

Repair instructions	Used in step
51 23 ... Removing/installing ball sockets with clip	6 13
41 00 ... Gap dimensions, body	11

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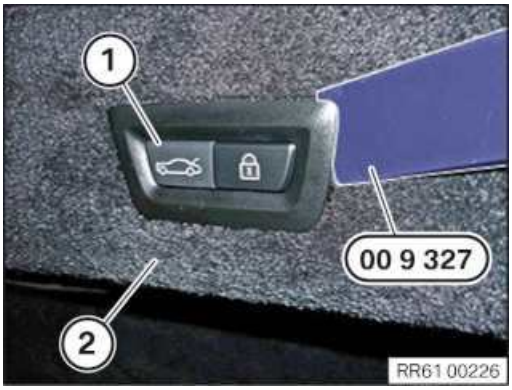
41 62 540 Removing and installing/replacing both tailgate hinges

PRELIMINARY WORK

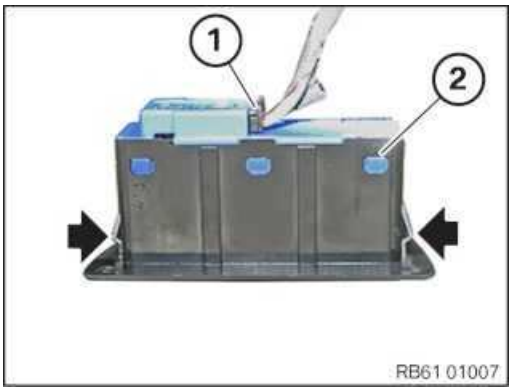
1 – Remove the tailgate lift switch

Prerequisite

Tailgate is open.

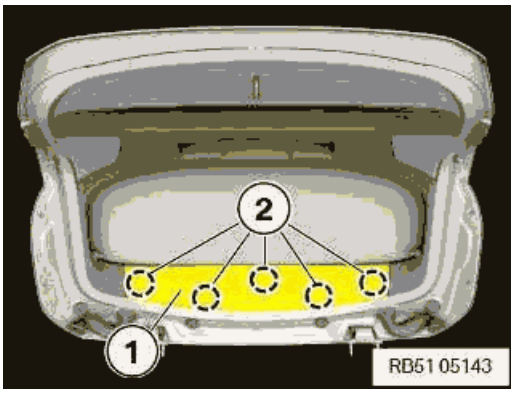


- Lever the switch for the tailgate lift (1) out of the tailgate trim panel (2) with the special tool **0 496 571 (00 9 327)**.



- Connect the connector (1) with the switch (2).

2 – Remove the trim for the top rear window frame



- Unclip the trim for the top rear window frame (1) at the latch mechanisms (2) and remove.

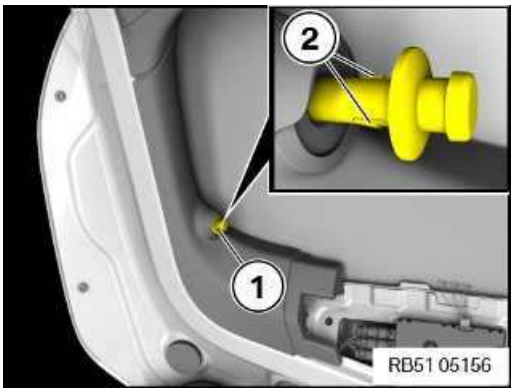
3 – Remove both trims for the rear window frame on the side

NOTICE

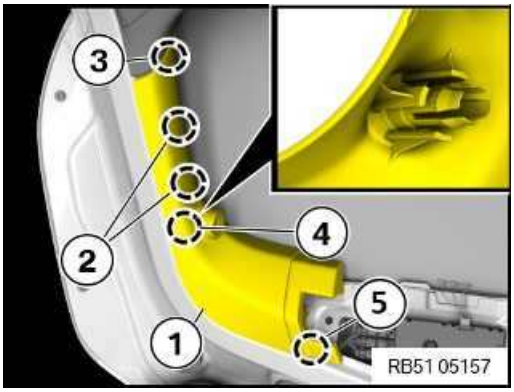
Description is for left component only. Procedure on the right side is identical.

▸ **Remove the trim for the rear window frame on the side**

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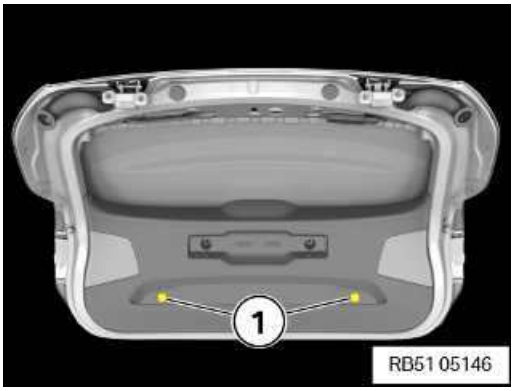


- Detach the mounting button (1) on the latch mechanisms (2) and remove it.

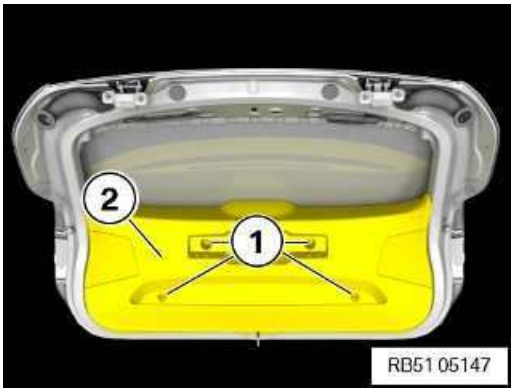


- Unclip the trim for the rear window frame on the side (1) with the clips (2) from the latch mechanisms (3), (4) and (5).

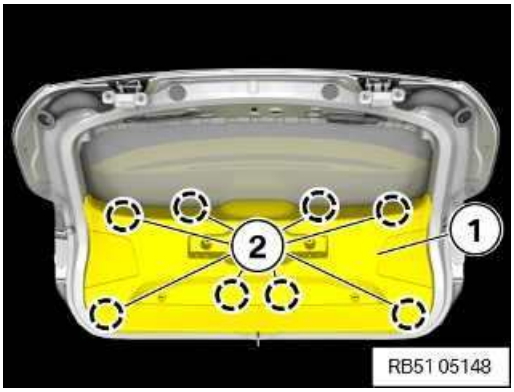
4 – Remove tailgate trim panel



- Lever out the covers of the screw points (1) with a suitable tool.



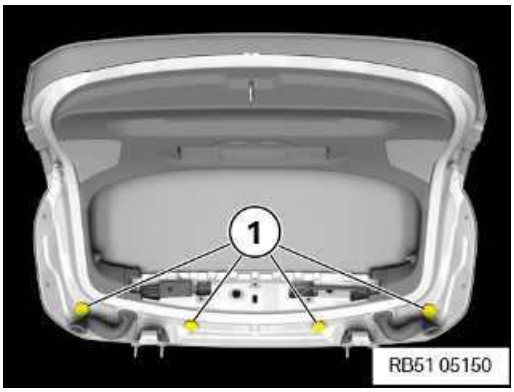
- If applicable, remove the warning triangle from the tailgate trim panel (2).
- Unscrew the bolts (1) at the tailgate trim panel (2).



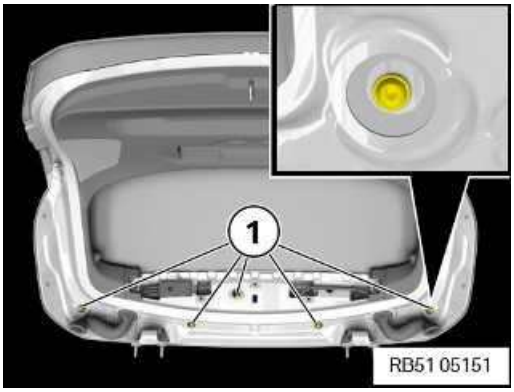
- Unclip the tailgate trim panel (1) at the latch mechanisms (2) and remove.

5 – Remove rear spoiler

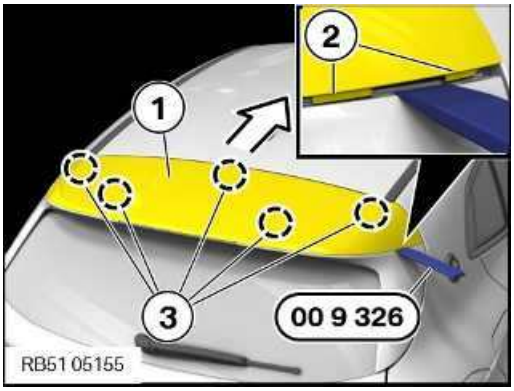
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- Unclip the covers (1) with a suitable tool and remove.



- Loosen screws (1).



- Release rear spoilers (1) on both outer sides with the special tool **0 496 570 (00 9 326)** out of the latch mechanisms (2).
- Unclip rear spoiler (1) from the clips (3).
- Slightly lift rear spoiler (1) in the front area and remove in direction of arrow.

6 – Remove rear lid gas pressure spring

CAUTION

Shutting bonnet or tailgate.

Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.

TECHNICAL INFORMATION

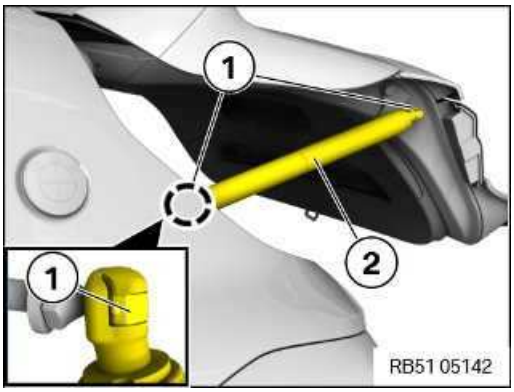
The notes on the disassembly and installation of ball sockets with clamps are the basis for these repair instructions and must be observed without fail.

For additional information see: 51 23 ... Note information on disassembly/installation of ball sockets with clamp

NOTICE

Description is for left component only. Procedure on the right side is identical.

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- Slide the locking spring (1) to the end of the gas pressure spring (2) and remove the gas pressure spring (2) from the ball head.

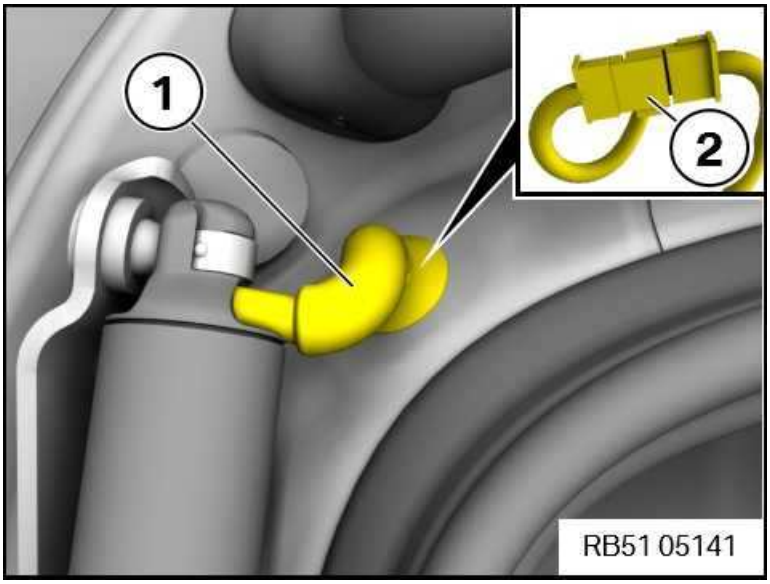
7 – Removing spindle drive of the tailgate

CAUTION

Shutting bonnet or tailgate.

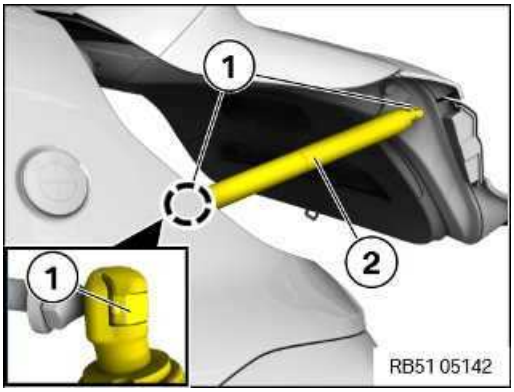
Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.



- Remove grommet (1) from the body panel.
- Unlock and disconnect the two plug connections (2).

  The plug connections (2) must be outside the body.



- Open locks (1) at the top and bottom on the spindle drive (2) and remove the spindle drive (2).

8 – Remove tailgate

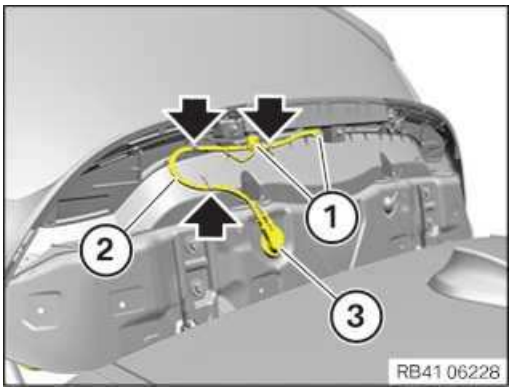
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CAUTION

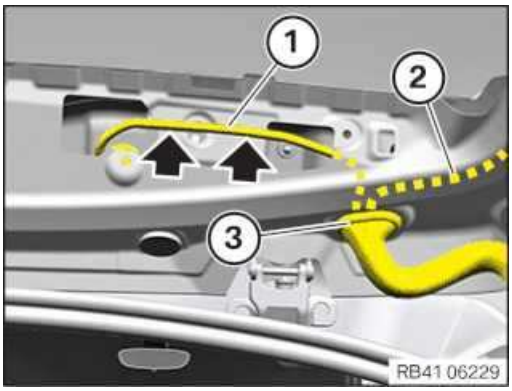
Shutting bonnet or tailgate.

Danger of injury!

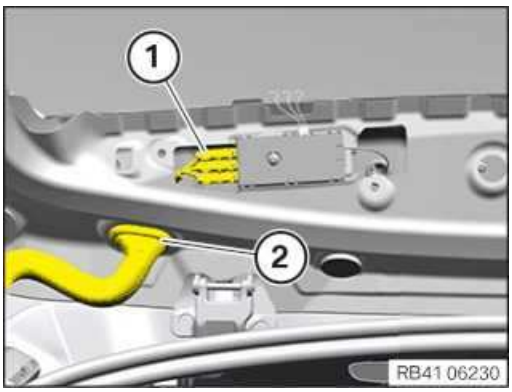
- Support bonnet/tailgate in fully open position with the aid of a suitable device.



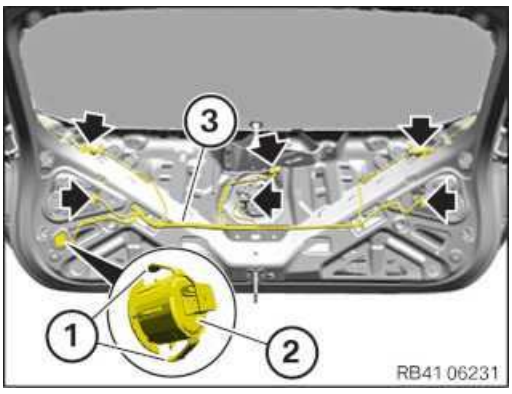
- Unlock and disconnect plug connections (1).
- Detach the wiring harness (2) at the marked points (arrows) from the brackets.
- Detach rubber grommet (3) and feed it through to the inside together with the wiring harness (2).



- Release the wiring harness (1) at the marked points (arrows).
- Release rubber grommet (3).
- Thread out the wiring harness (1) and wiring harness (2) from the tailgate.



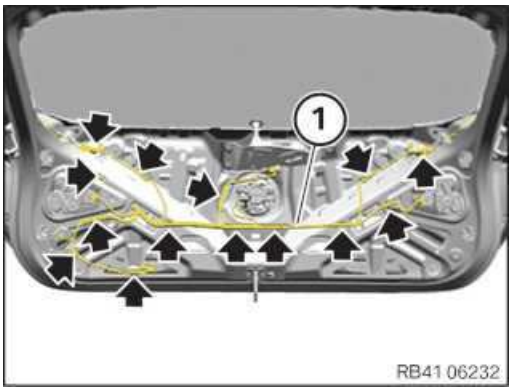
- Unlock and disconnect plug connections (1).
- Release rubber grommet (2).
- Thread out the connector (1) from the tailgate.



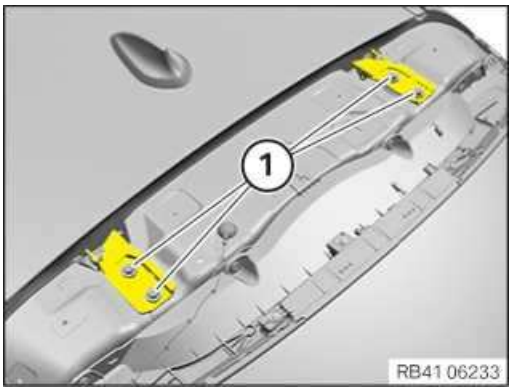
- Unlock tabs (1).

  Remove acoustic sensor (2) and unlock and disconnect the associated plug connection.
- Unlock and disconnect all plug connections (arrows) of the wiring harness (3).

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- Detach wiring harness (1) at the marked positions (arrows) and set it aside.



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.

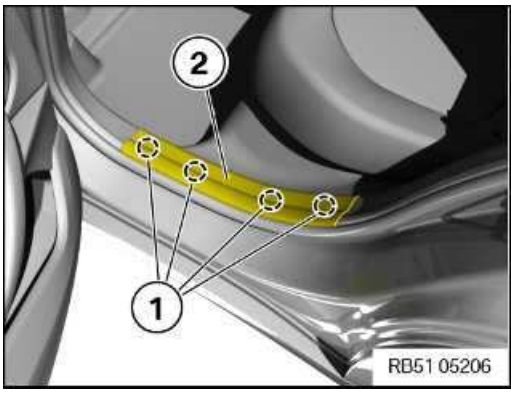
- Close tailgate. Make sure the striker does not engage in the tailgate lock. If necessary, cover the tailgate lock.
- Unscrew the screws (1) and remove the tailgate.

9 – 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.

▸ **Remove rear entrance cover strip**



- Unclip the clips (1) of the door sill cover strip (2).
- Remove the door sill cover strip (2).

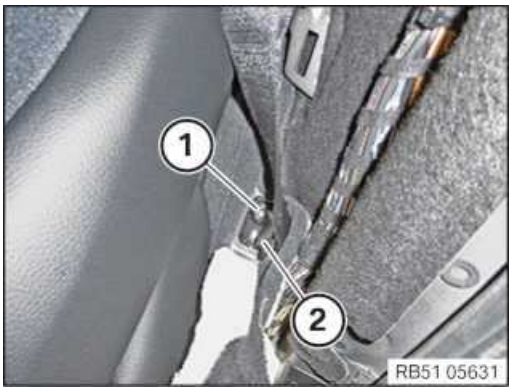
10 – Removing the bottom left and right C-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the bottom C-pillar trim panel**

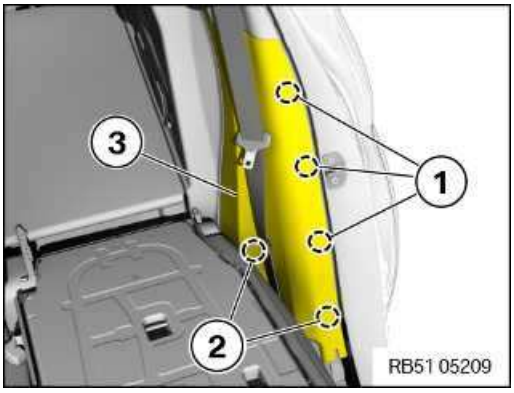
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- Fold up the carpet as shown.
- Loosen screw (1).
- Remove end fitting (2).

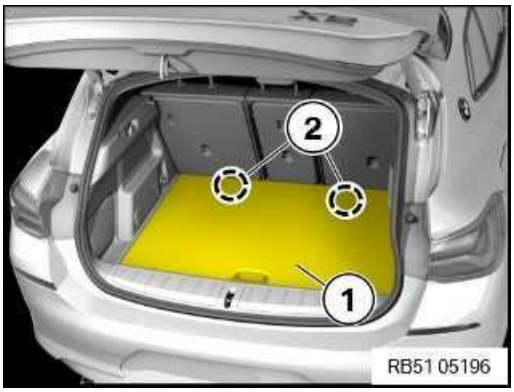


- Release the edge protection (1) in area of the bottom C-pillar trim panel.



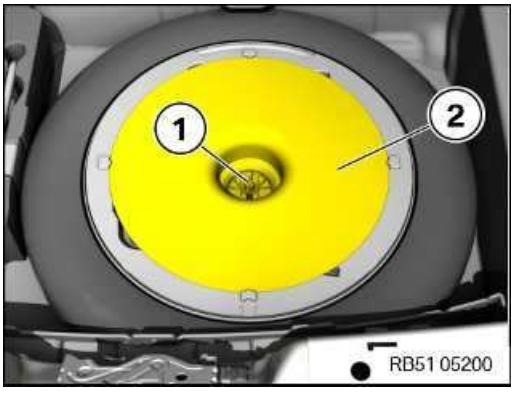
- Clip in the C-pillar trim panel (3) on the bottom with the clamps (1) and the clips (2).
- Detach end fitting and remove the bottom C-pillar trim panel (3).

11 – Removing the luggage compartment removable panel



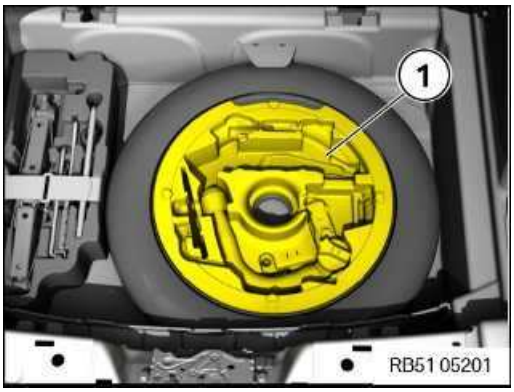
- Raise the luggage compartment removable panel (1) slightly at the handle, detach it from the latch mechanisms (2) and remove it toward the back.

12 – Removing the compact spare wheel



- Loosen screw (1).
- Remove the cover (2).

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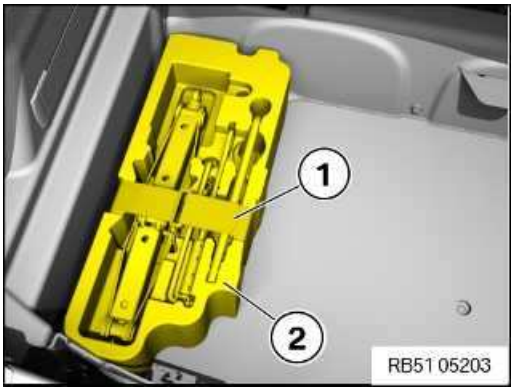


- Remove the oddments tray from the emergency wheel (1).



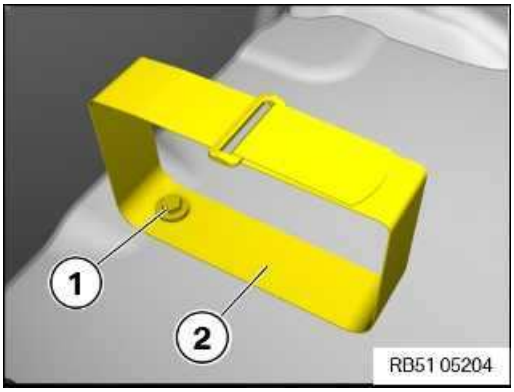
- Remove the emergency wheel (1).

13 – Remove the tool kit



- Open the hook and loop tape (1).
- Remove the tool kit (2).

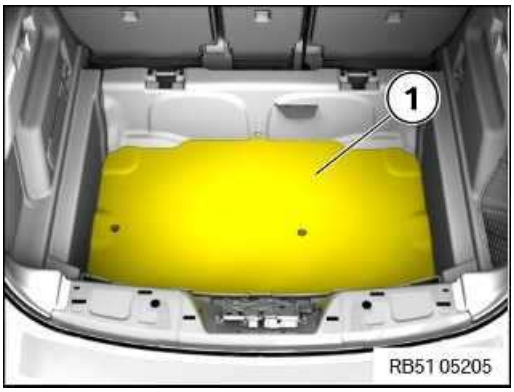
14 – Remove the hook and loop tape for the tool kit



- Loosen screw (1).
- Remove the hook and loop tape (2).

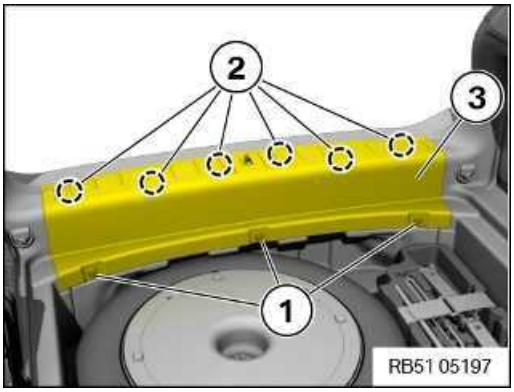
15 – Removing the luggage compartment floor trim panel

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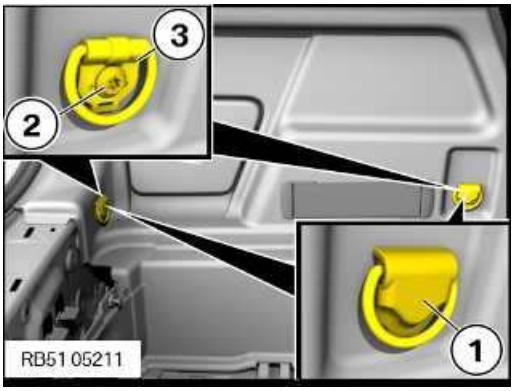
- Remove the luggage compartment floor trim panel (1) upwards.

16 – Removing the loading edge trim

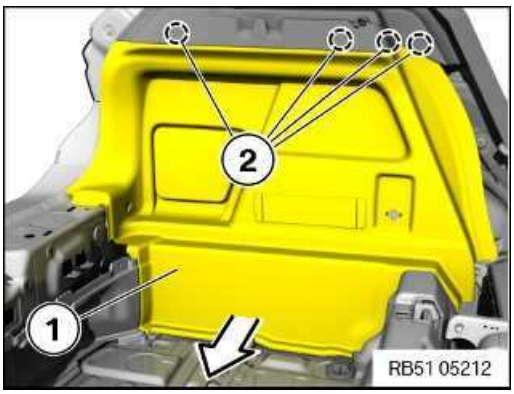


- Loosen the expanding rivet (1).
- Unclip the loading edge trim (3) from the clamps (2) toward the top and remove.

17 – Remove luggage compartment wheel arch trim panel on left.



- Unclip covers (1).
- Unscrew the bolts (2) and remove the lashing points (3).



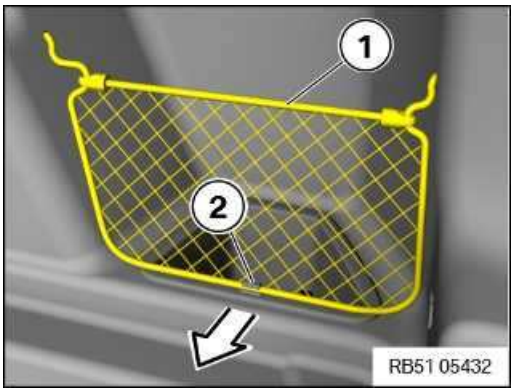
NOTICE

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

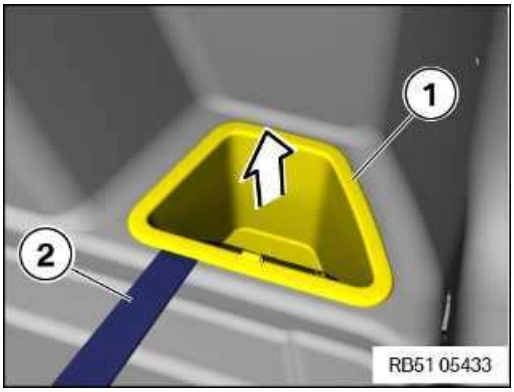
- Pull the luggage compartment wheel arch trim panel (1) on the bottom in the direction of the arrow and guide it out of the guides (2) and the C-pillar trim panel and remove.

18 – Removing right luggage compartment wheel arch trim panel

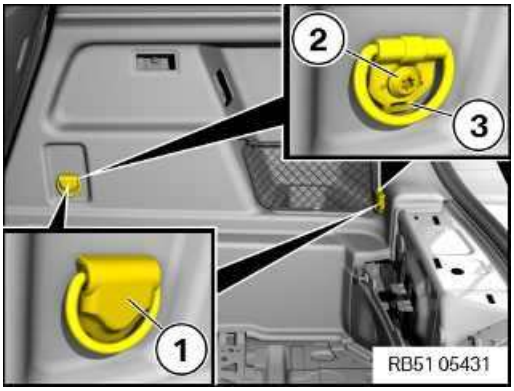
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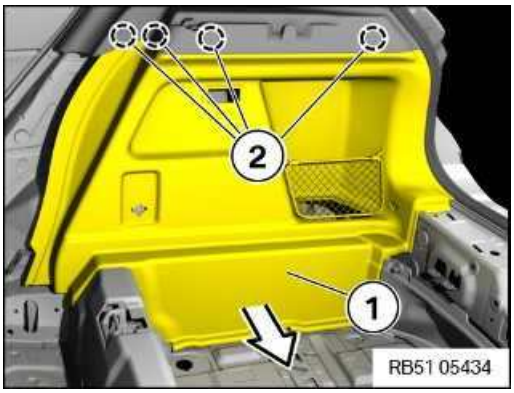
- Release the storage net (1) from the latch mechanism (2) in the direction of arrow and fold up.



- Remove storage compartment (1) out of the luggage compartment wheel arch trim panel in the direction of arrow using a suitable tool (2).



- Unclip covers (1).
- Unscrew the bolts (2) and remove the lashing points (3).



NOTICE

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

- Pull the luggage compartment wheel arch trim panel (1) on the bottom in the direction of the arrow and guide it out of the guides (2) and the C-pillar trim panel and remove.

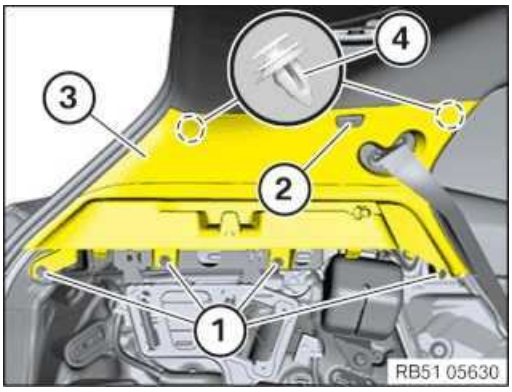
19 – Remove the trim panel of the luggage compartment capping on the left and right

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Remove the trim panel of the luggage compartment capping**

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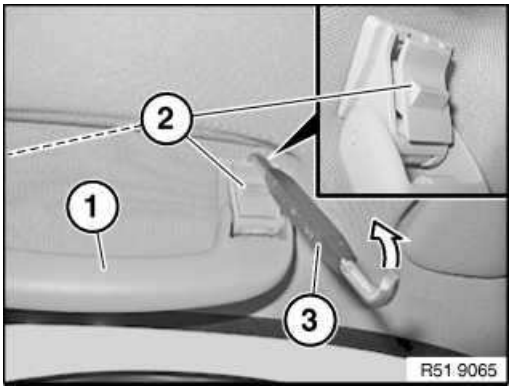
- Loosen screws (1).
- Remove the cover (2) with a suitable plastic wedge and unscrew the screw below it.
- Detach the trim panel of the luggage compartment capping (3) from the clips (4).
- Feed out the end fitting and remove the trim panel of the luggage compartment capping (3).

20 – Removing all grab handles

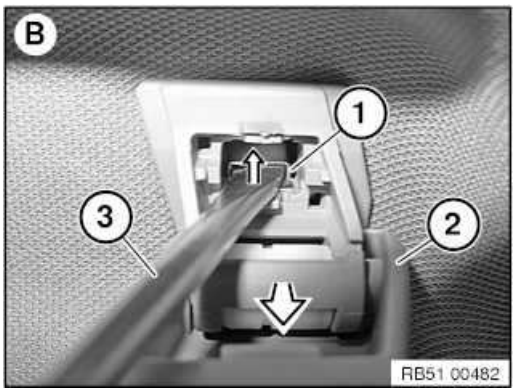
NOTICE

The description is for one component only. The procedure is identical for all further components.

▸ **Removing the grab handle**

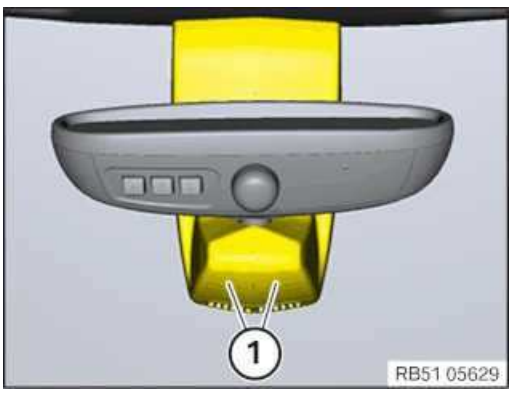


- Expand the grab handle (1) towards the bottom.
- Disengage and remove the locking insert (2) with an angle screwdriver (3) as shown.



- 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).

21 – Remove the cover on the inside mirror



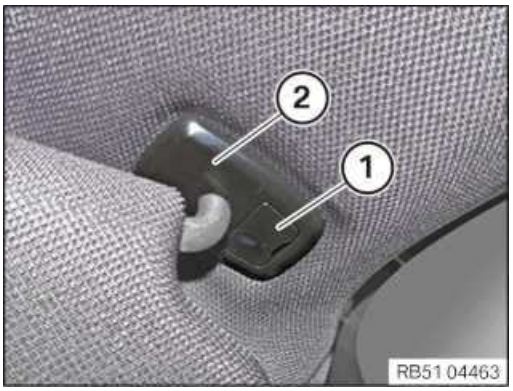
- Unclip the covers on the interior mirror (1) outward with a suitable plastic wedge in the center and remove.

22 – Remove both sun visors

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NOTICE

Description is for left component only. Procedure on the right side is identical.



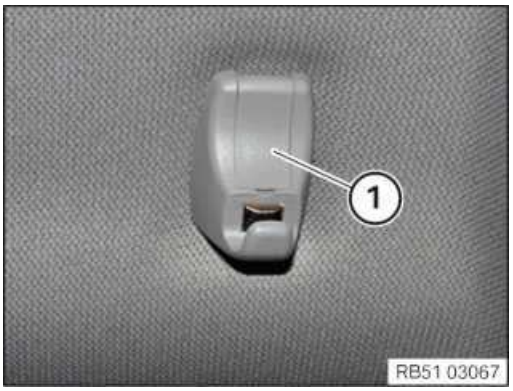
▸ **Remove sun visor**

- 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.

23 – Removing counter supports for sun visor on left and right

NOTICE

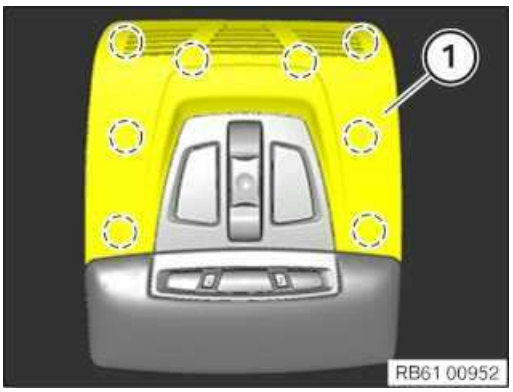
Description is for left component only. Procedure on the right side is identical.



▸ **Remove the counter support for the sun visor**

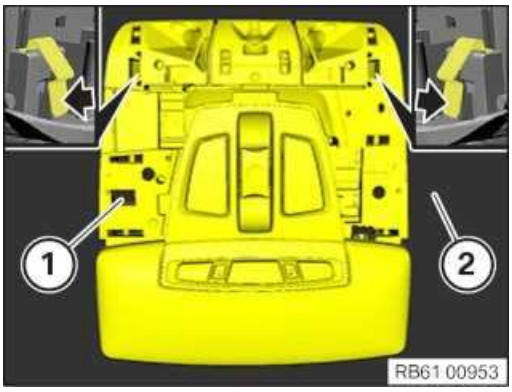
- Open the cover (1) and release the screw underneath.
- Remove the counter support downward.

24 – Remove the roof function centre



- Carefully unclip and remove the trim (1) with the special tool **0 496 569 (00 9 325)**.

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- Unlock the left/right retaining lugs using a screwdriver in direction of the arrow.
- Remove the roof function centre (1) from the headlining (2).
- Unlock and disconnect associated connector.

25 – Removing the left and right 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!

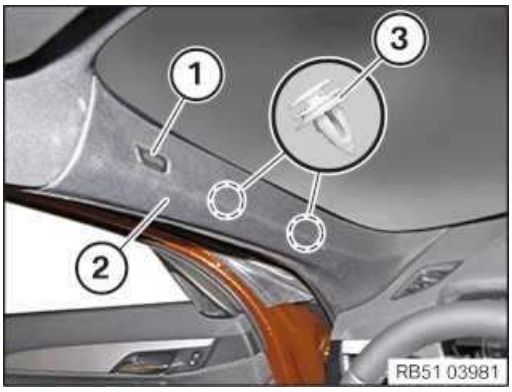
- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

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.



- Unclip cover (1) and unscrew the screw below it.
- Release the A-pillar trim panel (2) from the clips (3) and guide out upwards.

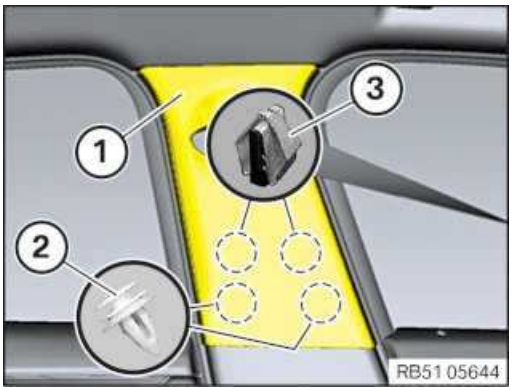
26 – Removing the B-pillar trim panels at top left and right

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NOTICE

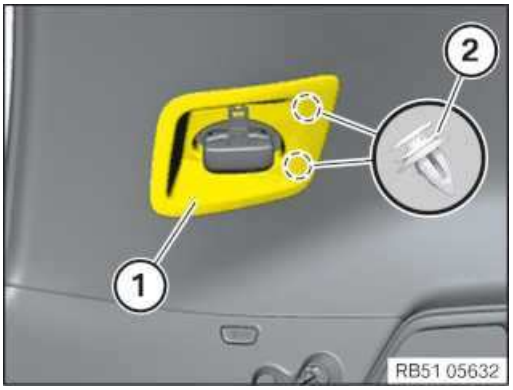
Description is for left component only. Procedure on the right side is identical.

▶ **Partially removing upper B-pillar trim panel**



- Carefully release the B-pillar trim panel (1) from the clips (2) and the clamps (3) with the special tool **0 496 569 (00 9 325)** and guide it out of the headlining in a downwards direction.

27 – Remove the belt feed trim



- Unclip the belt feed trim (1) at the clips (2) and slide it forward and out of the headliner.
- Slide out the seat belt and remove the belt feed trim (1).

28 – Lower roofliner

Prerequisite

The front seats have been fully adjusted towards the bottom.

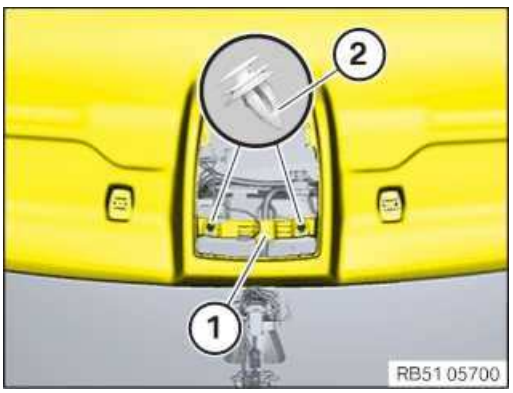
The front seat backrests have been fully adjusted towards the rear.

RISK OF DAMAGE

Fold the headlining.

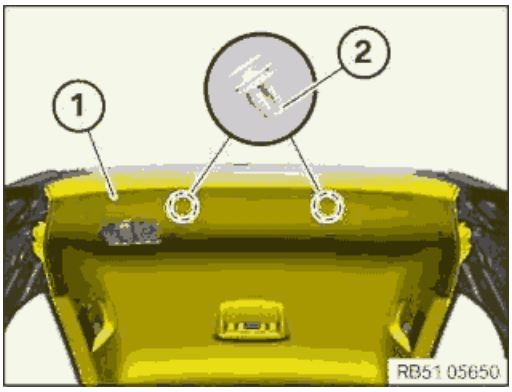
If the headlining is folded, it may have to be replaced.

- Carry out tasks with a second person to assist.
- Support the headlining at the front and back.

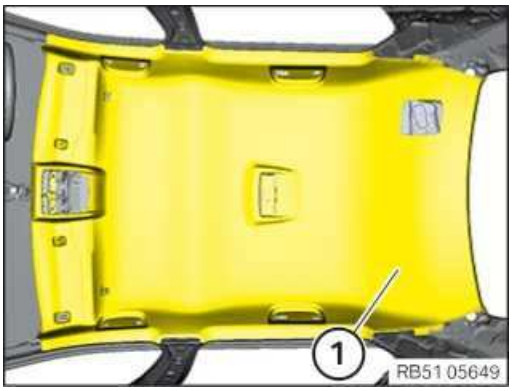


- Loosen the frame (1) at the clips (2).
- If necessary, loosen the cable clip from the frame (1).

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- Carefully release the headlining (1) at the clips (2).



- Carefully guide out the headlining (1) at the respective edge protection and place it onto the seats in the vehicle.

29 – Lowering the headlining (with panorama glass roof)

Prerequisite

The front seats have been fully adjusted towards the bottom.

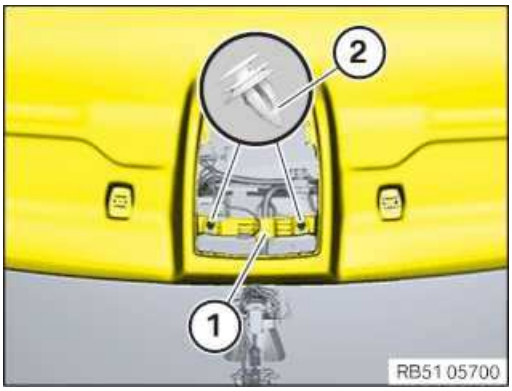
The front seat backrests have been fully adjusted towards the rear.

RISK OF DAMAGE

Fold the headlining.

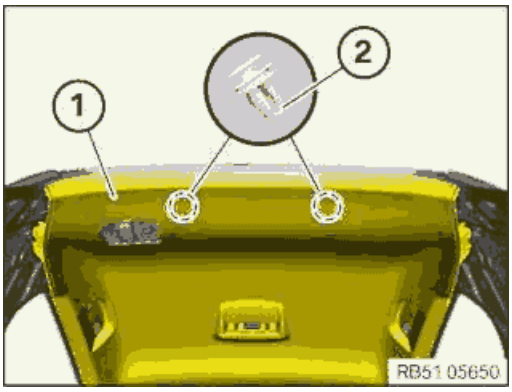
If the headlining is folded, it may have to be replaced.

- Carry out tasks with a second person to assist.
- Support the headlining at the front and back.

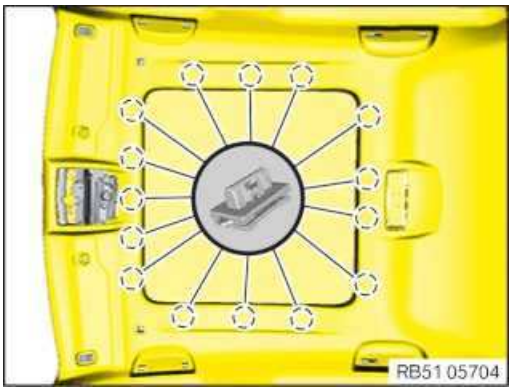


- Loosen the frame (1) at the clips (2).
- If necessary, loosen the cable clip from the frame (1).

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- Carefully release the headlining (1) at the clips (2).



- Carefully release the headlining with a suitable plastic wedge from the clamps (1) in a downwards direction.



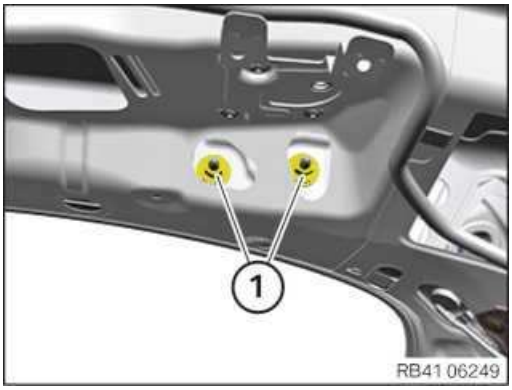
- Carefully guide out the headlining (1) at the respective edge protection and place it onto the seats in the vehicle.

MAIN WORK

30 – Remove both tailgate hinges

NOTICE

Perform the operations on the left and right side.



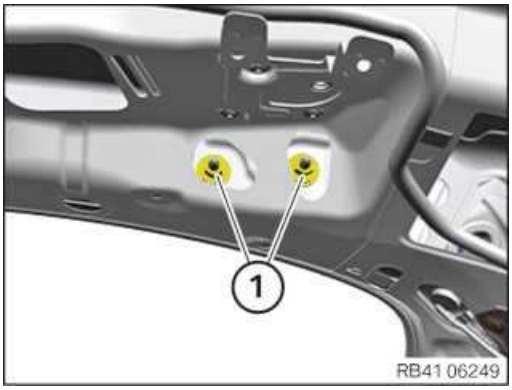
- Unscrew the nuts (1) and remove the tailgate hinge.

31 – Install both tailgate hinges

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NOTICE

Perform the operations on the left and right side.



- Place tailgate hinge .

  Tighten nuts (1).

Tailgate hinge to body

Nut		Tightening torque	56 Nm

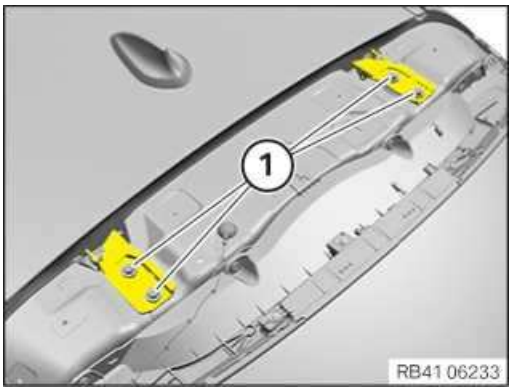
32 – Installing tailgate

CAUTION

Shutting bonnet or tailgate.

Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.



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.

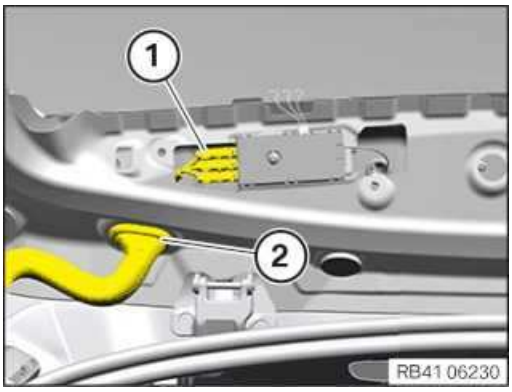
- Position the tailgate on the vehicle. During this, make sure that the striker does not engage in the tailgate lock. If applicable, cover the tailgate lock.
- Tighten the screws (1).

Tailgate to hinge

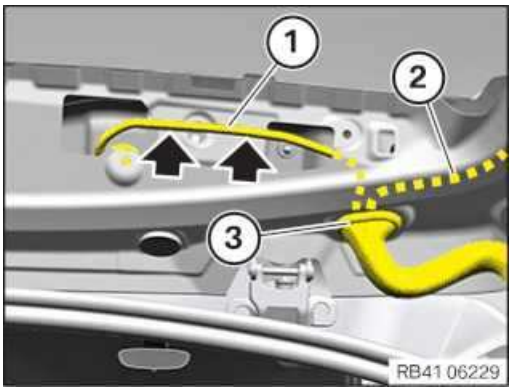
Hexagon screw M8	Tightening torque		28 Nm

- Carefully close the tailgate and check for bodywork contact, reposition tailgate if necessary.

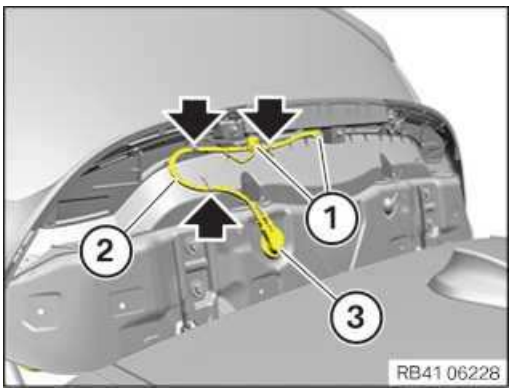
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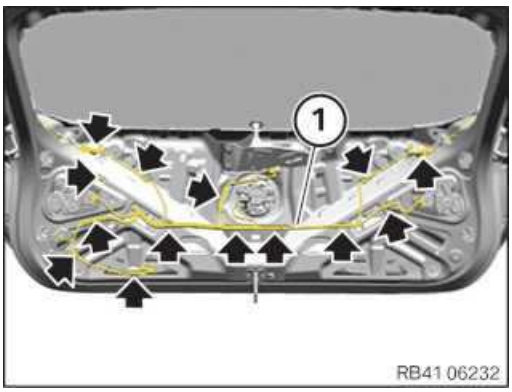
- Open tailgate.
- Feed the connector (1) into the tailgate and connect.
- Install the rubber grommet (2). Ensure correct installation. (watertightness).



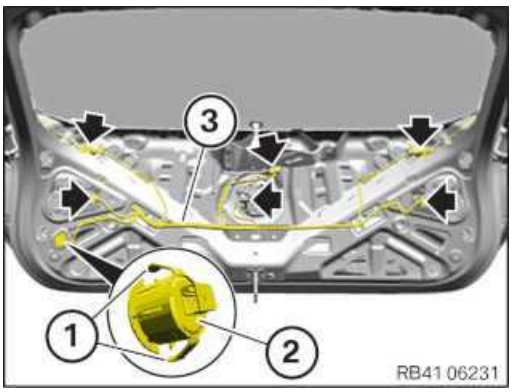
- Feed the wiring harness (1) and vehicle wiring harness (2) into the tailgate.
- Install the rubber grommet (3). Ensure correct installation. (watertightness).
- Secure the wiring harness (1) at the marked points (arrows).



- Feed the rubber grommet (3) together with the wiring harness (2) through in an outward direction.
- Secure the wiring harness (2) at the marked points (arrows).
- Connect and lock the plug connections (1).



- Secure the wiring harness (1) at the marked points (arrows).



- Connect the connectors for the acoustic sensor (2) and lock.
- Install the acoustic sensor (2). Clip in tabs (1).
- Connect all the plug connections (arrows) of the vehicle wiring harness (3) and lock.

33 – Adjusting left or right tailgate hinge

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CAUTION

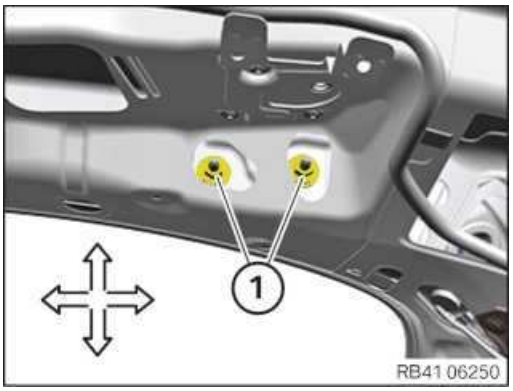
Shutting bonnet or tailgate.

Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.

TECHNICAL INFORMATION

Notes on the body gap dimensions are the basis of these repair instructions and must be observed without fail.
For additional information see: 41 00 ... Gap dimensions for body



NOTICE

Perform the operations on the left and right side.

- Loosen nuts (1) until the tailgate hinge (2) can be moved.
- Move tailgate hinge (2), until the tailgate has the specified gap dimension to the body.
- Tighten nuts (1).

Tailgate hinge to body

Nut		Tightening torque	56 Nm



Check

- Check the gap dimensions (arrows) between tailgate and side panels.

Result

» Gap dimensions do not correspond to the specifications.

Measure

- Adjust tailgate hinge.

POSTPROCESSES

34 – Install the headlining (lowered with panorama roof)

Prerequisite

The front seats have been fully adjusted towards the bottom.

The front seat backrests have been fully adjusted towards the rear.

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RISK OF DAMAGE

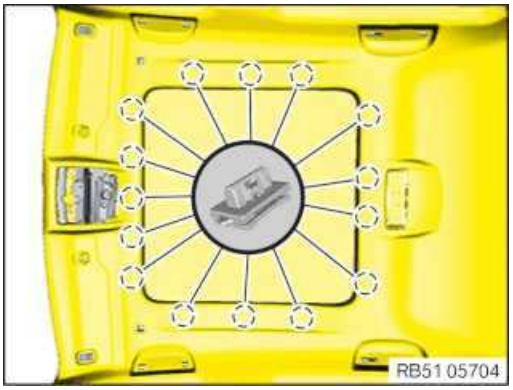
Fold the headlining.

If the headlining is folded, it may have to be replaced.

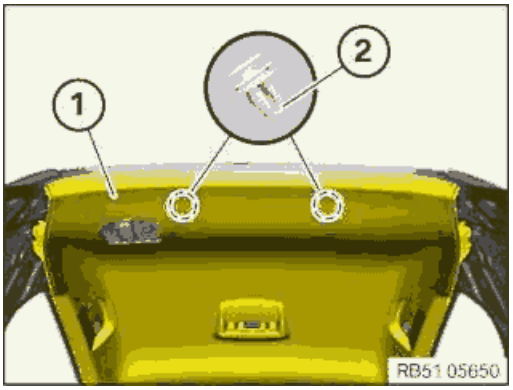
- Carry out tasks with a second person to assist.
- Support the headlining at the front and back.



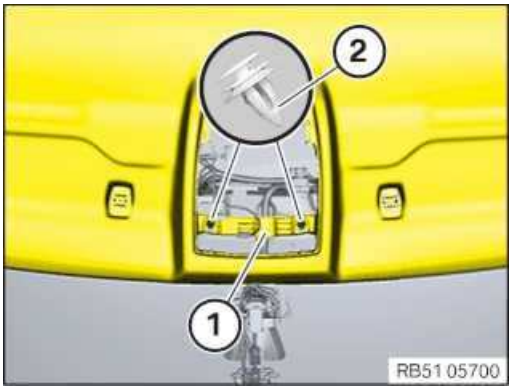
- Install the headlining (1) and carefully insert it at the respective edge protection.



- Carefully engage the headlining on the clamps (1).



- Clip in the headlining (1) using the clips (2).



- Clip in the frame (1) with the clips (2).
- If necessary, attach the cable clip onto the frame (1).

35 – Install the spindle drive of the tailgate

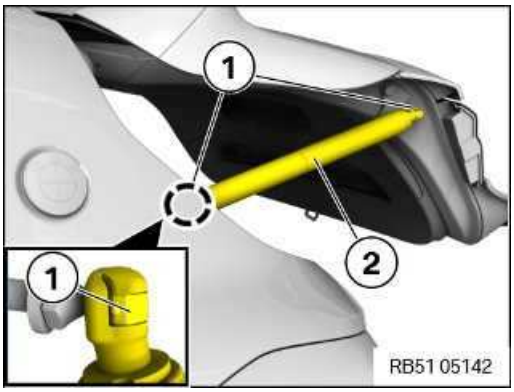
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CAUTION

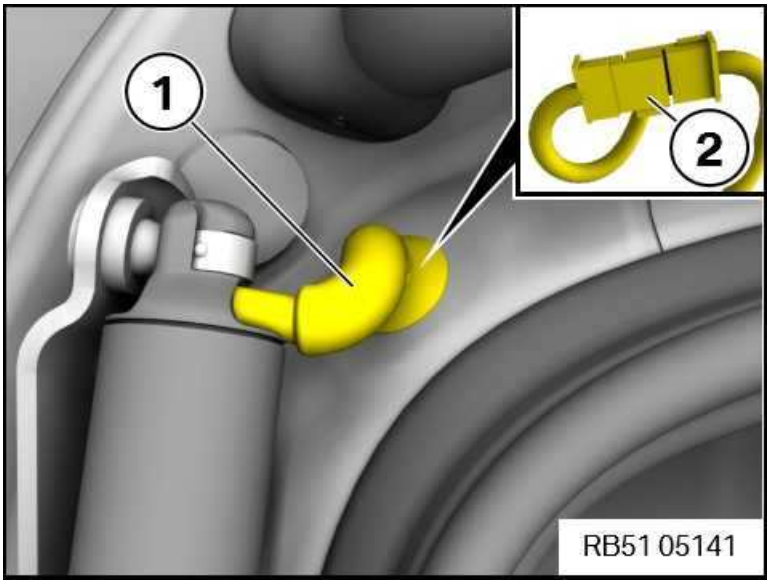
Shutting bonnet or tailgate.

Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.



- Mount the spindle drive (2) at the top and bottom on the associated ball head and lock with the locking mechanism (1).



- Connect and lock both connectors (2).
- Install the grommet (1) in the body panel.

  The arrow on the grommet (1) must point up.

36 – Install the gas pressure spring of the tailgate

CAUTION

Shutting bonnet or tailgate.

Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.

TECHNICAL INFORMATION

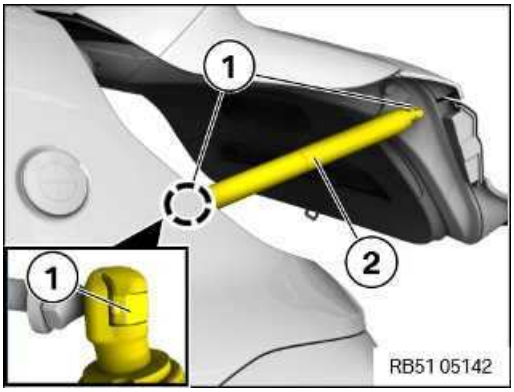
The notes on the disassembly and installation of ball sockets with clamps are the basis for these repair instructions and must be observed without fail.

For additional information see: 51 23 ... Note information on disassembly/installation of ball sockets with clamp

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NOTICE

Description is for left component only. Procedure on the right side is identical.



- Mount the gas pressure spring (2) at the top and bottom on the associated ball head and lock with the locking spring (1).

37 – Install the headlining (lowered)

Prerequisite

The front seats have been fully adjusted towards the bottom.

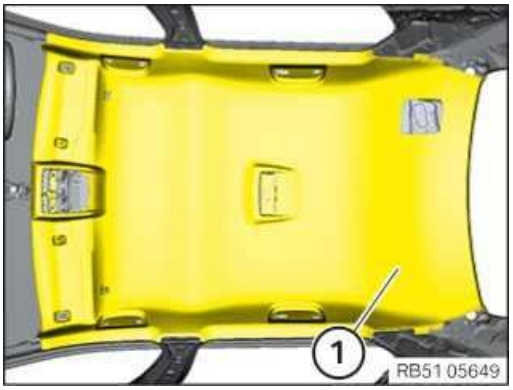
The front seat backrests have been fully adjusted towards the rear.

RISK OF DAMAGE

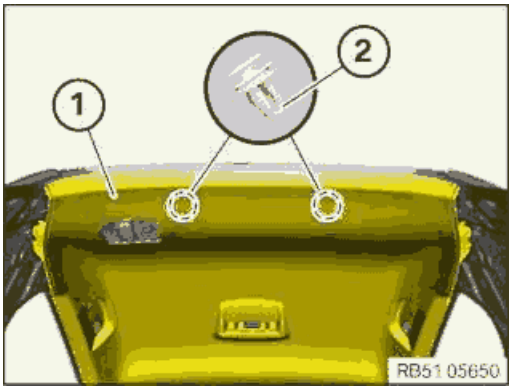
Fold the headlining.

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.

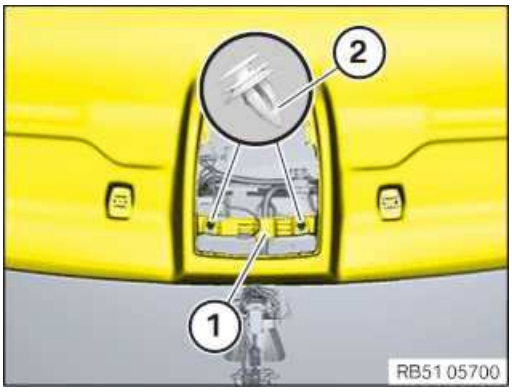


- Install the headlining (1) and carefully insert it at the respective edge protection.



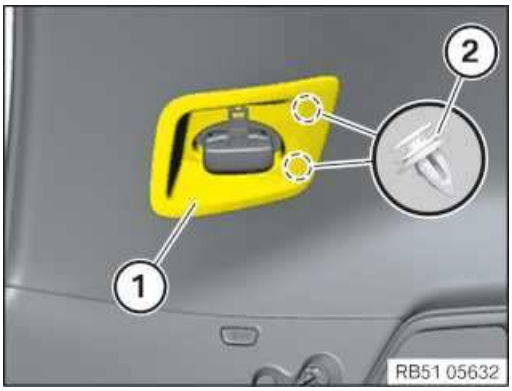
- Clip in the headlining (1) using the clips (2).

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- Clip in the frame (1) with the clips (2).
- If necessary, attach the cable clip onto the frame (1).

38 – Install the belt feed trim



- Feed in the seat belt on the belt feed trim (1).
- Feed in the belt feed trim (1) toward the rear on the headliner and clip in at the clips (2).

39 – Installing the top left and right B-pillar trim panels

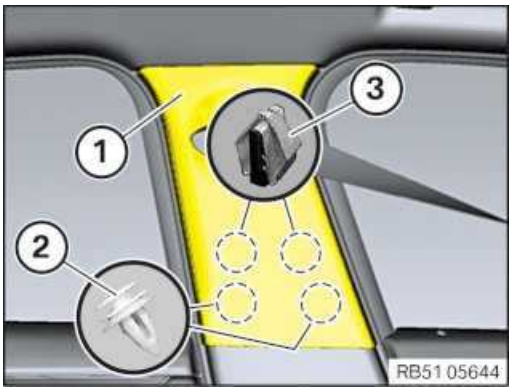
NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Partially installing upper B-pillar trim panel**

TECHNICAL INFORMATION

Latch mechanisms, guides and mounting elements must not be damaged or missing.



- Insert the B-pillar trim panel (1) into the headlining and lock it at the clips (2) and the clamps (3).
- Make sure that the B-pillar trim panel (1) is correctly positioned at the respective edge protection.

40 – Installing the left and right A-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

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▸ **Install 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

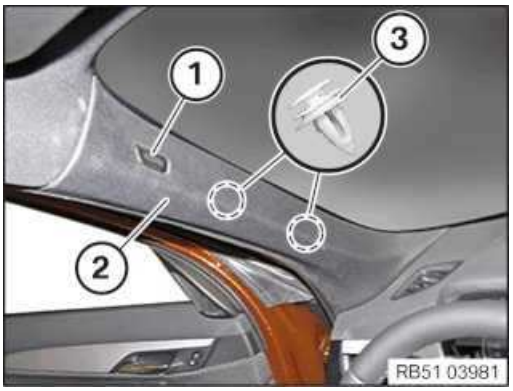
Pyrotechnic components.

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.

TECHNICAL INFORMATION

Latch mechanisms, guides and mounting elements must not be damaged or missing.



- Thread in the A-pillar trim panel (2) and clip it in at the clips (3).
- Renew screw.

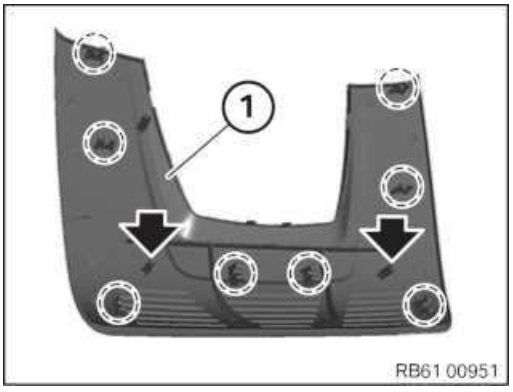
  Parts: Screw
- Tighten down screw.

A-pillar trim panel to body

M5x42 screw	Renew screw	Tightening torque	2,2 Nm

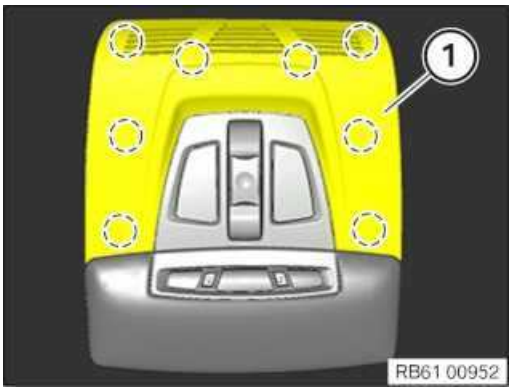
- Clip in the cover (1).

41 – Install the roof function centre

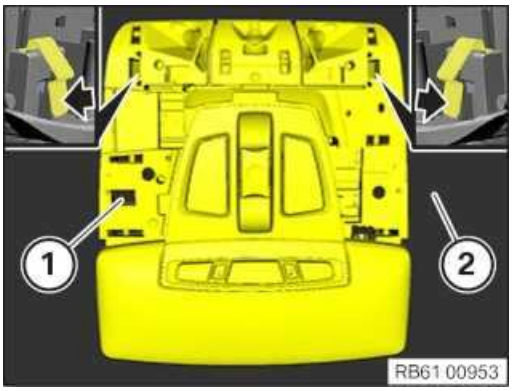


- The retaining lugs and guides on the trim (1) must not be damaged or missing.

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- Carefully engage the trim (1) in the roof function centre.



NOTICE

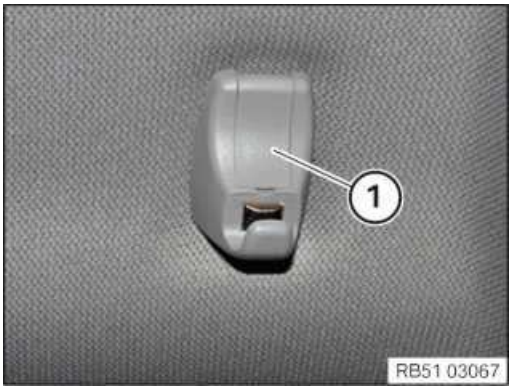
To provide a better overview: Schematic diagram with partially hidden components.

- Connect associated connector.
- Join the roof function centre (1) to the headlining (2).

42 – Install the counter supports for the sun visor on left and right

NOTICE

Description is for left component only. Procedure on the right side is identical.



▸ **Install the counter support for the sun visor**

- Install the counter support.
- Tighten screw and close the cover (1).

Counter support on body

Screw		Tightening torque	2,5 Nm

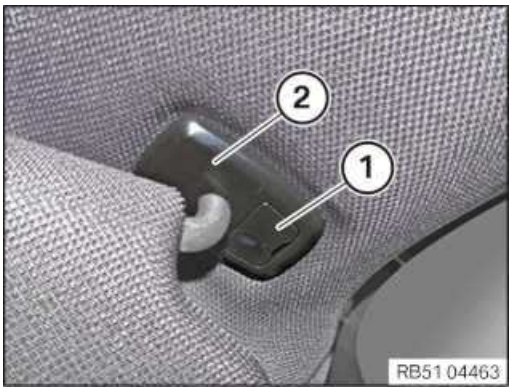
43 – Install both sun visors

NOTICE

Description is for left component only. Procedure on the right side is identical.

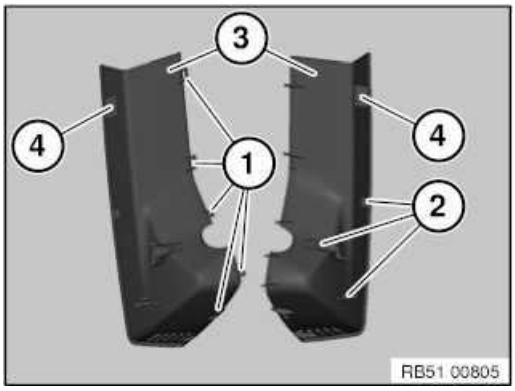
▸ **Install the sun visor**

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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.

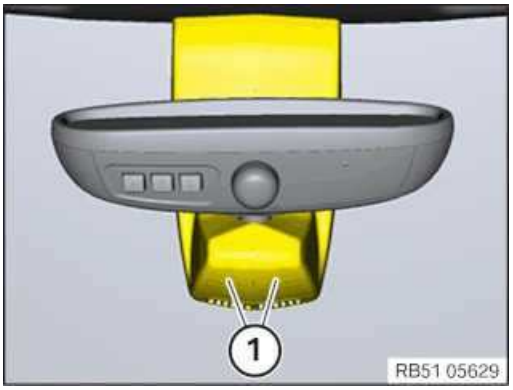
44 – Install the cover on the inside mirror



- Check the latch mechanisms (1) and guides (2) on the two covers (3) for damage, renew if necessary.

  The latch mechanisms (1) and guides (2) must not be damaged.
- Check the spacers (4).

  The spacers (4) must not be damaged or missing.



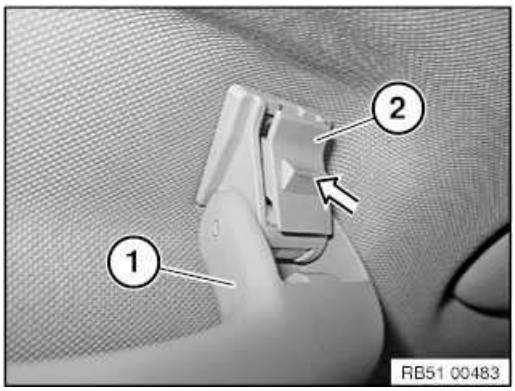
- Install covers on the interior mirror (1) clip together.

45 – Installing all grab handles

NOTICE

The description is for one component only. The procedure is identical for all further components.

▸ **Installing the grab handle**



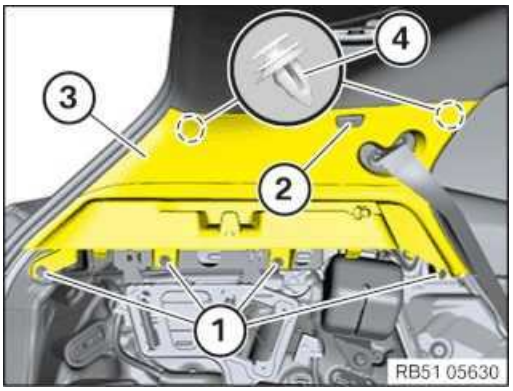
- Insert the grab handle (1) into body.
- Correctly clamp in the grab handle (1), as otherwise the locking inserts (2) on the grab handle (1) cannot correctly engage.
- Engage the locking inserts (2) on both sides of the grab handle (1).

46 – Install the trim panel for left and right the luggage compartment capping

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NOTICE

Description is for left component only. Procedure on the right side is identical.



▸ **Install the trim panel for the luggage compartment capping**

- Install trim panel of the luggage compartment capping (3) and thread in the end fitting.
- Clip in the trim panel of the luggage compartment capping (3) at the clips (4).
- Tighten screw and mount cover (2).

Trim panel of luggage compartment capping

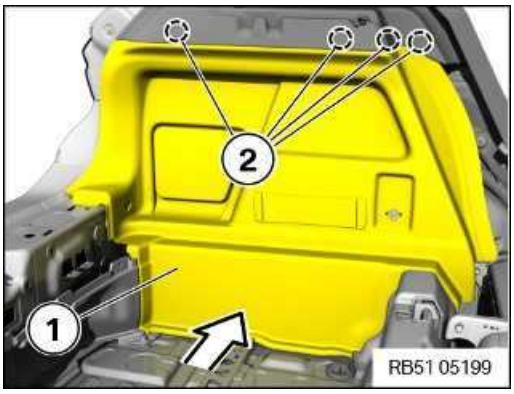
Self-tapping screw		Tightening torque	4 Nm

- Tighten the screws (1).

Trim panel of luggage compartment capping to body

Hexagon screw		Tightening torque	1,8 Nm

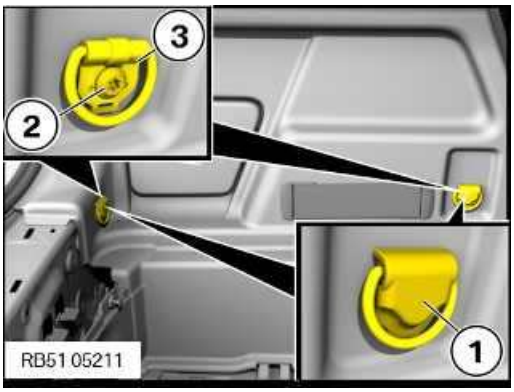
47 – Install luggage compartment wheel arch trim panel at left



NOTICE

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

- Push the luggage compartment wheel arch trim panel (1) down in the direction of the arrow and feed it into the guides (2) and under the C-pillar trim bottom.



- Position the lashing eyes (3) and tighten the screws (2).

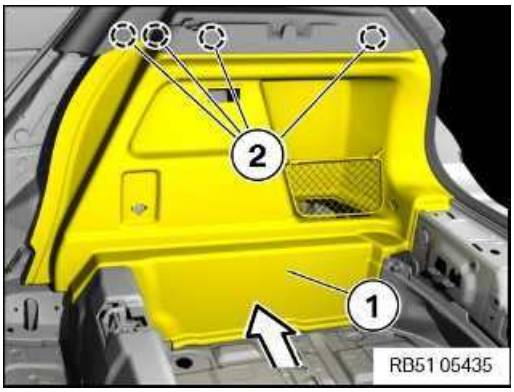
Lashing eye in luggage compartment

Bolt M8 x 22		Tightening torque	21 Nm

- Clip in the covers (1).

48 – Installing the luggage compartment wheel arch trim panel on the right

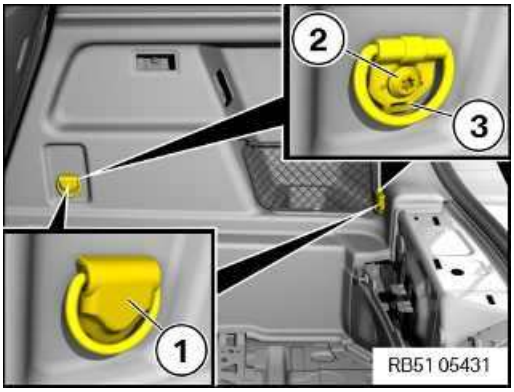
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NOTICE

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

- Press luggage compartment wheel arch trim panel (1) down in direction of arrow and feed into the guides (2) and under the bottom C-pillar trim panel.

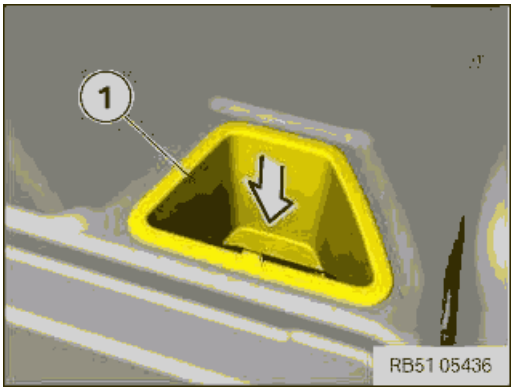


- Position the lashing eyes (3) and tighten the screws (2).

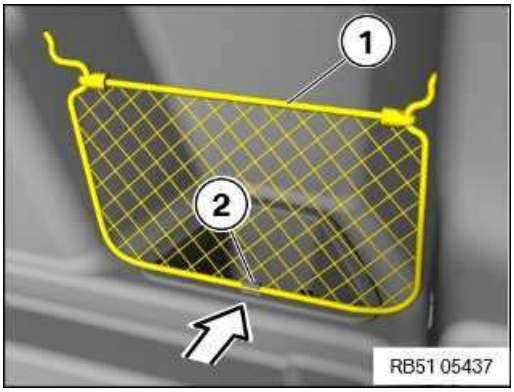
Lashing eye in luggage compartment

Bolt M8 x 22		Tightening torque	21 Nm

- Clip in the covers (1).



- Install the storage compartment (1) in the luggage compartment wheel arch trim panel in direction of arrow.



- Clip storage net (1) into latch mechanisms (2) in direction of arrow.

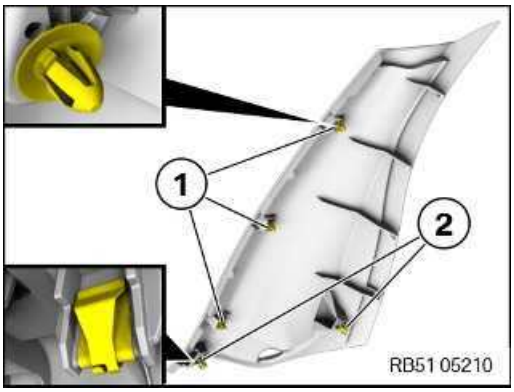
49 – Install C-pillar trim panel at bottom left and right

NOTICE

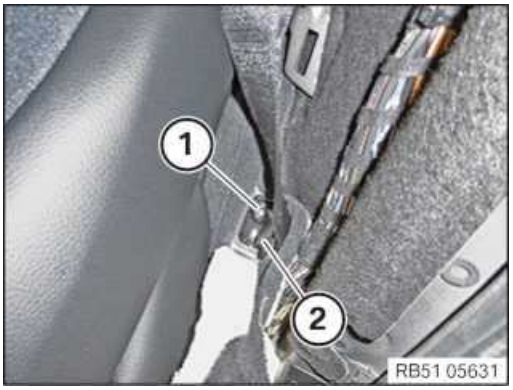
Description is for left component only. Procedure on the right side is identical.

▸ **Install the bottom C-pillar trim panel**

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- Check clips (1) for damage, and replace if necessary.
- Check the clamps (2) for damage, and replace if necessary.

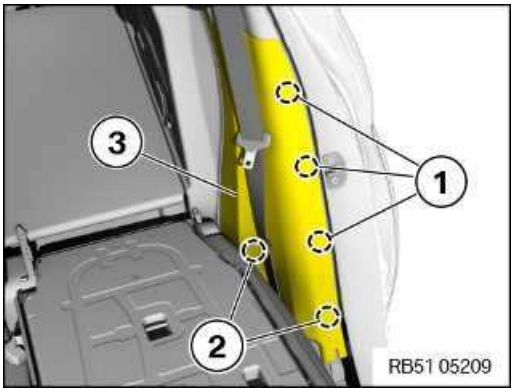


- Insert the end fitting (2) through the C-pillar trim panel.
- Mount the end fitting (2) and tighten the screw (1).

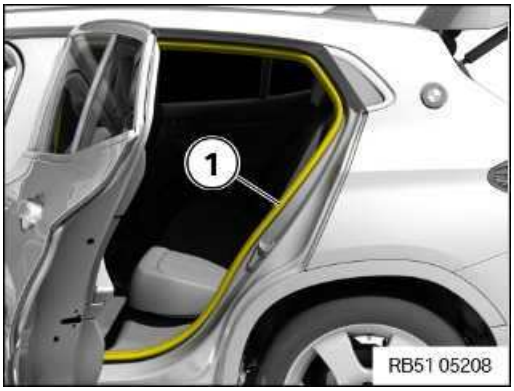
End fitting to body

Screw	Renew screw.	Tightening torque	42 Nm

- Install the carpet correctly.



- Clip in the C-pillar trim panel on the bottom (3) with the clamps (2) and the clips (1).



- Position the edge protection (1) correctly in the area of the bottom C-pillar trim.

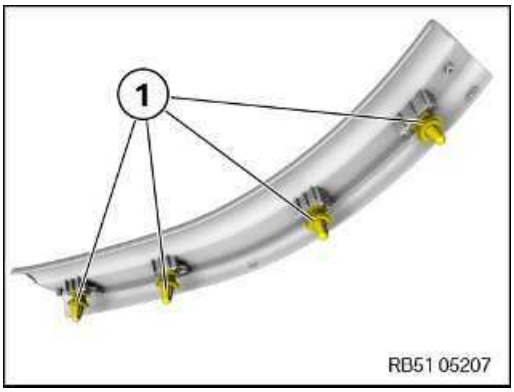
50 – Install the door sill cover strip on the rear left and right

NOTICE

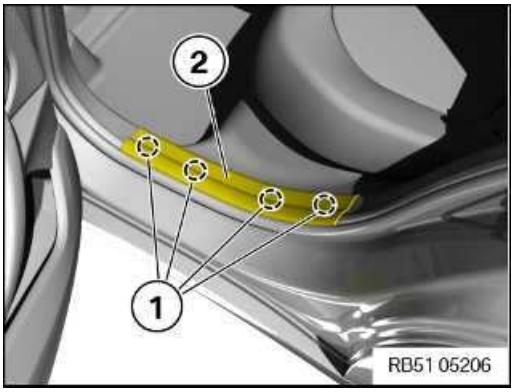
Description is for left component only. Procedure on the right side is identical.

▸ **Installing the rear door sill cover strip**

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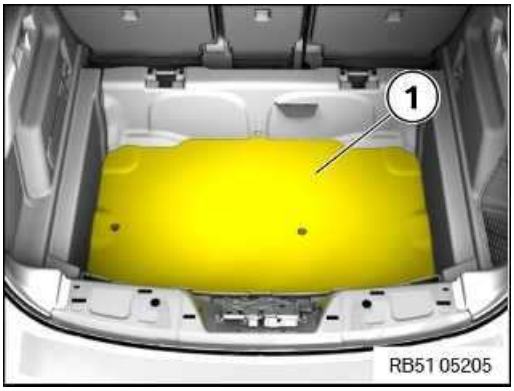


- Check the clips (1) for damage and renew where required.



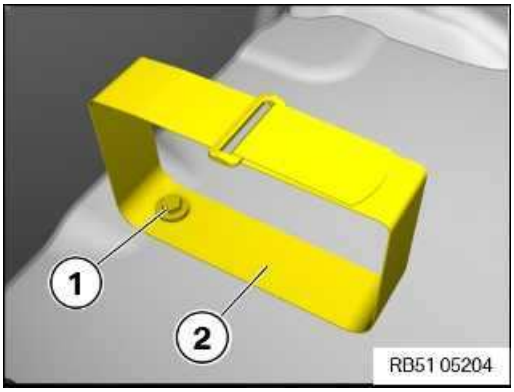
- Clip in the door sill cover strip (2) with the clips (1).

51 – Installing the luggage compartment floor trim panel



- Position the luggage compartment floor trim panel (1).

52 – Inserting the Velcro fastener for the toolkit



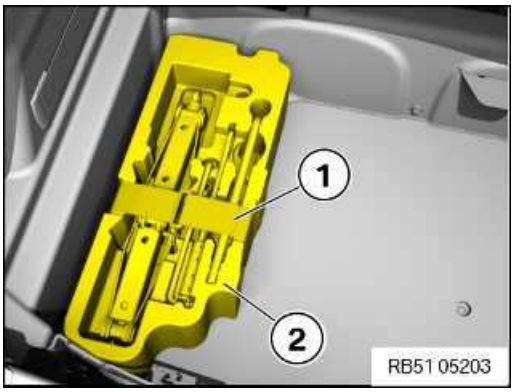
- Insert Velcro fastener (2).
- Tighten down screw (1).

Toolkit hook and loop tape to body

Bolt M6 x 20		Tightening torque	4 Nm

53 – Install the tool kit

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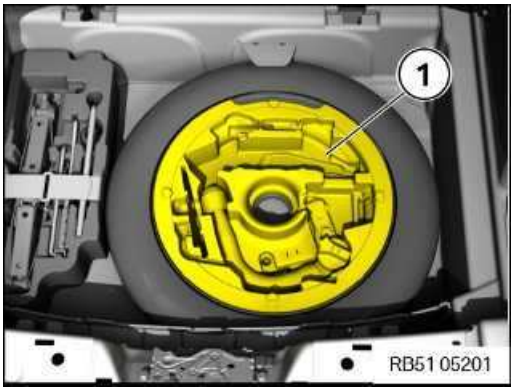


- Install the tool kit (2).
- Close the hook and loop tape (1).

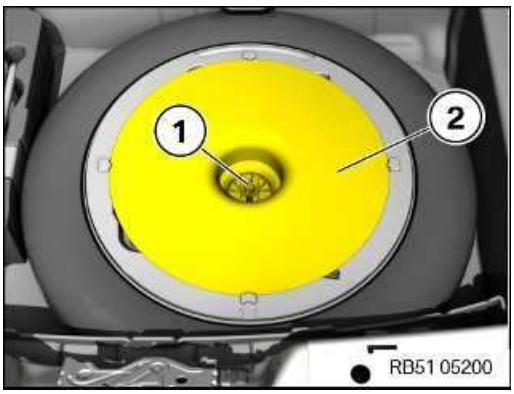
54 – Install the emergency wheel



- Insert compact spare wheel(1).

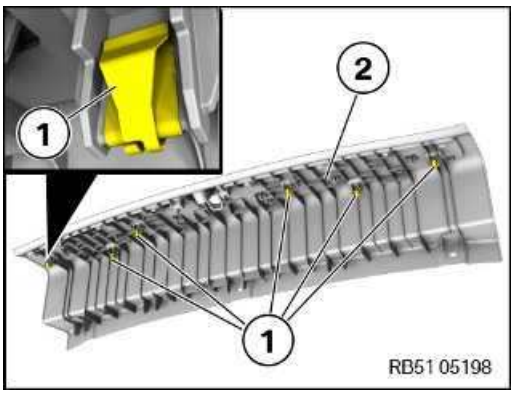


- Insert oddments tray into the compact spare wheel (1).



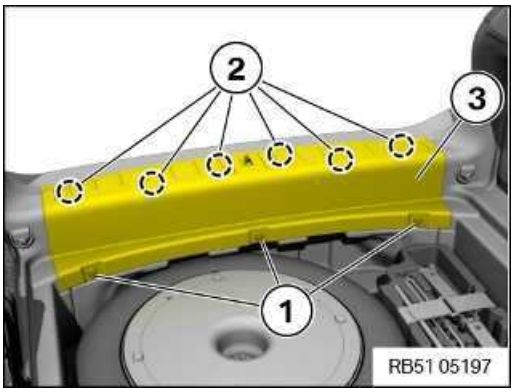
- Insert the lid (2).
- Hand-tighten the bolt (1).

55 – Installing loading edge trim



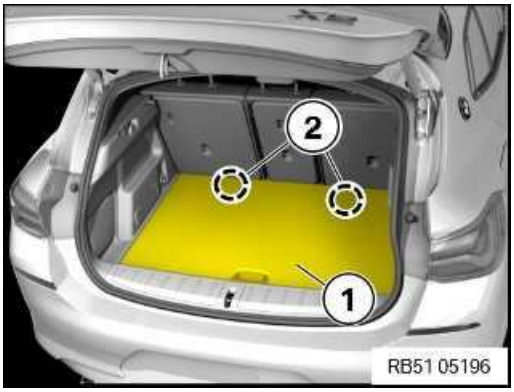
- Check the clamps (1) at the loading edge trim (2) for damage and renew if necessary.

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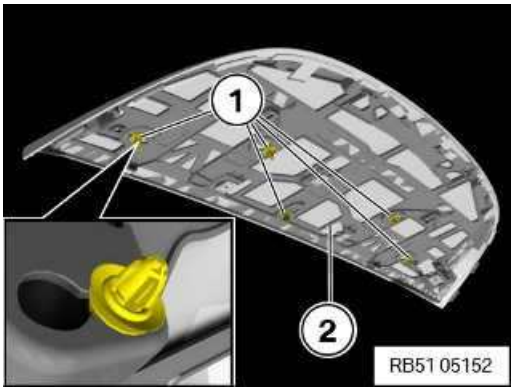
- Insert the loading edge trim (3) in the area of the expanding rivets (1) into the underlying rear luggage compartment trim panel.
- Guide in the loading edge trim (3) under the sealing lip of the seal for the tailgate and clip it in with the clamps (2).
- Secure expanding rivet (1).

56 – Installing the luggage compartment removable panel

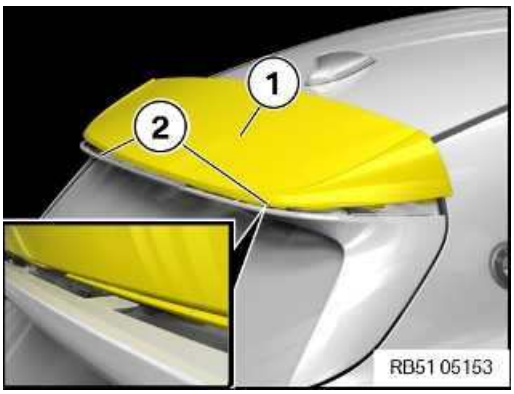


- Clip luggage compartment removable panel (1) into latch mechanisms (2) and set down.

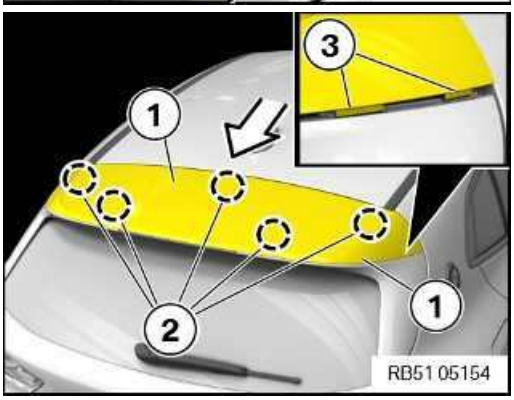
57 – Attach rear spoiler



- Check clips (1) on the rear spoiler (2) for damage, renew if required.

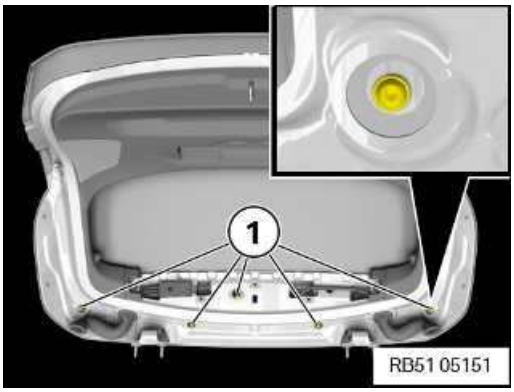


- Position the rear spoiler (1) on the guides (2) .



- Slide the rear spoiler (1) onto the lower section of the rear spoiler in the direction of the arrow.
- Clip in the rear spoiler (1) with the clips (2) and clip on the latch mechanisms (3) on both sides.

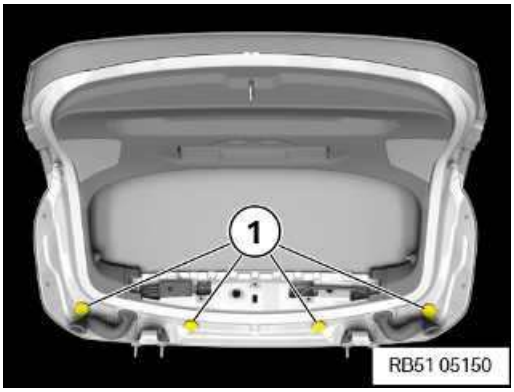
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- Tighten the screws (1).

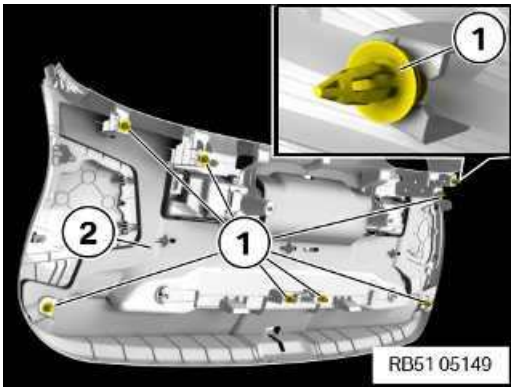
Rear spoiler to tailgate

Oval-head screw		Tightening torque	3,1 Nm

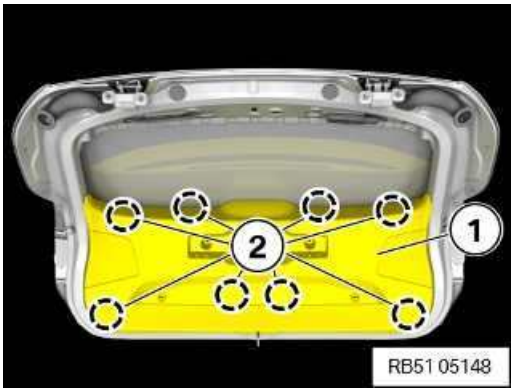


- Insert the covers (1).

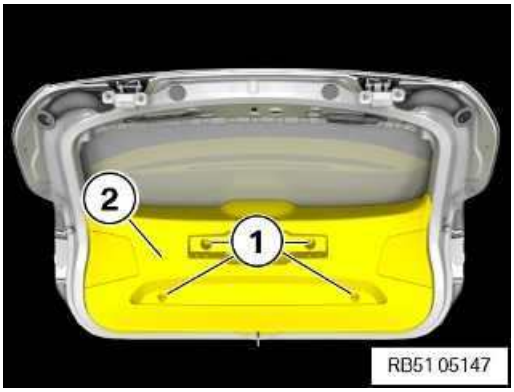
58 – Installing the tailgate trim panel



- Check the clips (1) on the tailgate trim panel (2) for damage and replace where required.



- Clip in the tailgate trim panel (1) with the clips (2).



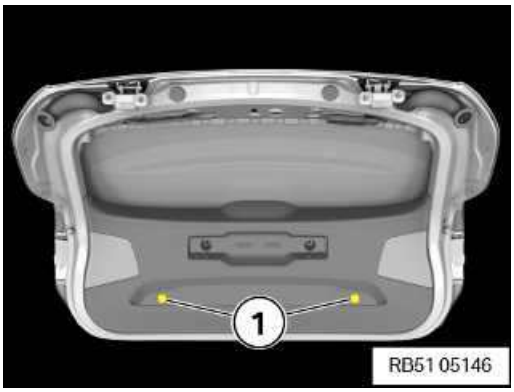
- Tighten the bolts (1) at the tailgate trim panel (2).

Tailgate trim panel

Screw		Tightening torque	1,8 Nm

- If necessary, insert and fasten the warning triangle in the tailgate trim panel (2).

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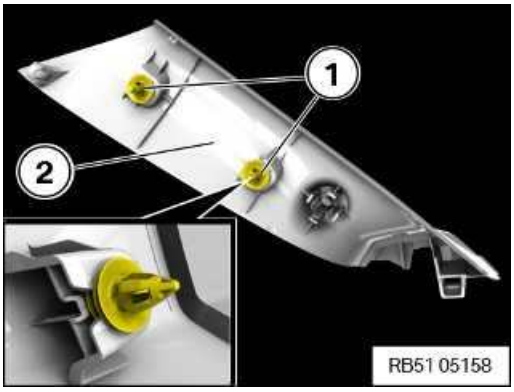
- Insert the covers of the screw points (1).

59 – Mount both trim pieces for the rear window frame on the side

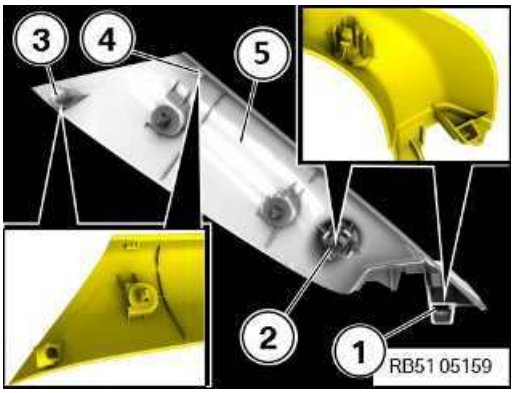
NOTICE

Description is for left component only. Procedure on the right side is identical.

▶ **Install the trim for the rear window frame on the side**



- Check the clips (1) on the trim for the side rear window frame (2) for damage and replace where required.



Check

- Check the latch mechanisms (1), (2), (3) and (4) at the trim for the side rear window frame (5) for damage.

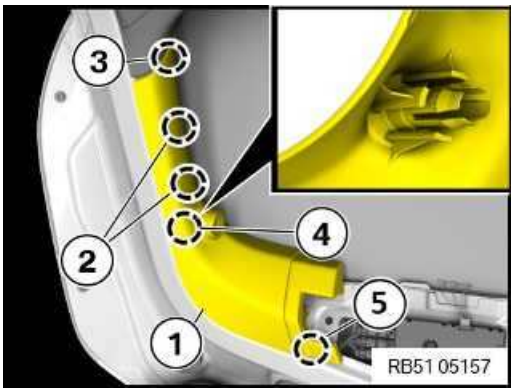
Result

» The latch mechanisms (1), (2), (3) or (4) are damaged.

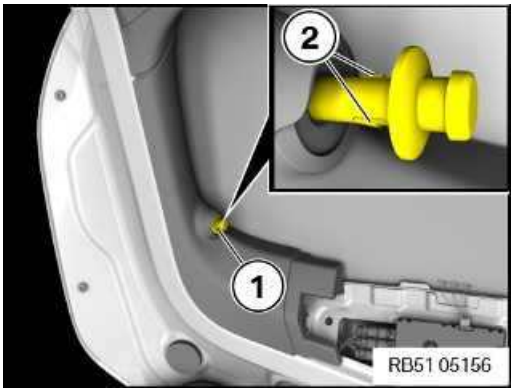
Measure

- Renew the trim for the side rear window frame (5).

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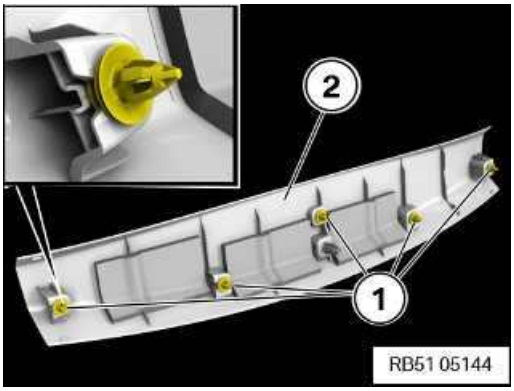


- Clip in the trim for the side rear window frame (1) with the clips (2) and in the latch mechanisms (3), (4) and (5).



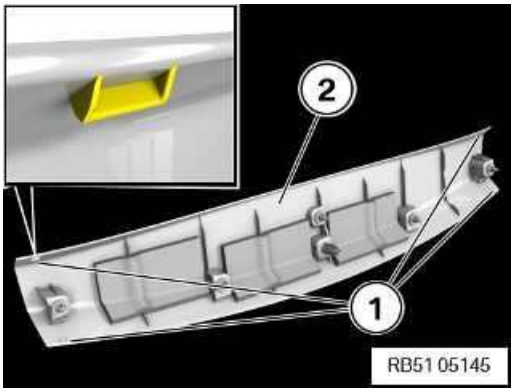
- Clip in the mounting button (1) with the latch mechanisms (2).

60 – Install the trim for the top rear window frame



- Check the clips (1) on the trim for the top rear window frame (2) for damage and replace where required.

Check



- Check the latch mechanisms (1) on the trim for the top rear window frame (2) for damage.

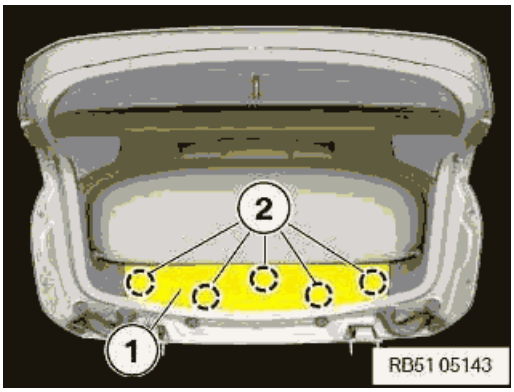
Result

» The latch mechanisms (1) on the trim for the top rear window frame (2) are damaged.

Measure

- Renew the trim for the top rear window frame (2).

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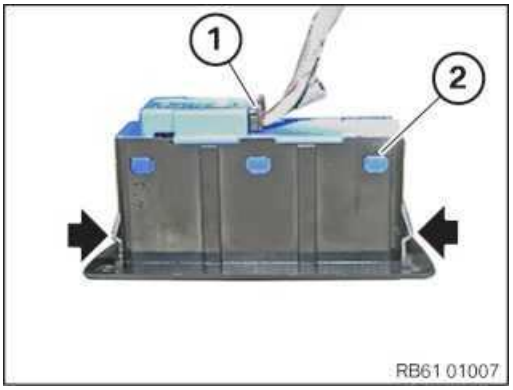


- Clip in the trim for the top rear window frame (1) with the clips (2).

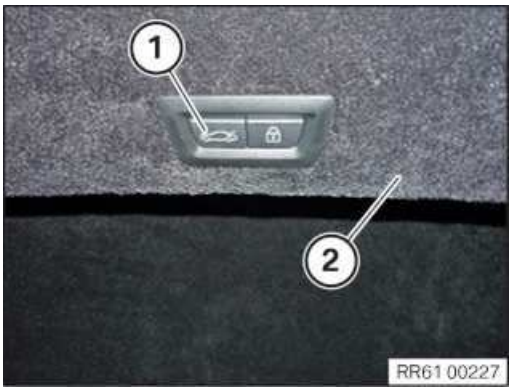
61 – Install the tailgate lift switch

Prerequisite

Tailgate is open.



- Connect the connector (1) with the switch (2).



- Install the automatic tailgate operation switch (1) in the tailgate trim panel (2).

Additional Information

Overview of Tightening Torques

Tailgate hinge to body — Used in step 31 33

Nut		Tightening torque	56 Nm

Tailgate to hinge — Used in step 32

Hexagon screw M8	Tightening torque		28 Nm

A-pillar trim panel to body — Used in step 40

M5x42 screw	Renew screw	Tightening torque	2,2 Nm

Counter support on body — Used in step 42

Screw		Tightening torque	2,5 Nm

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Trim panel of luggage compartment capping

Used in step 46

Self-tapping screw		Tightening torque	4 Nm

Trim panel of luggage compartment capping to body

Used in step 46

Hexagon screw		Tightening torque	1,8 Nm

Lashing eye in luggage compartment

Used in step 47 48

Bolt M8 x 22		Tightening torque	21 Nm

End fitting to body

Used in step 49

Screw	Renew screw.	Tightening torque	42 Nm

Toolkit hook and loop tape to body

Used in step 52

Bolt M6 x 20		Tightening torque	4 Nm

Rear spoiler to tailgate

Used in step 57

Oval-head screw		Tightening torque	3,1 Nm

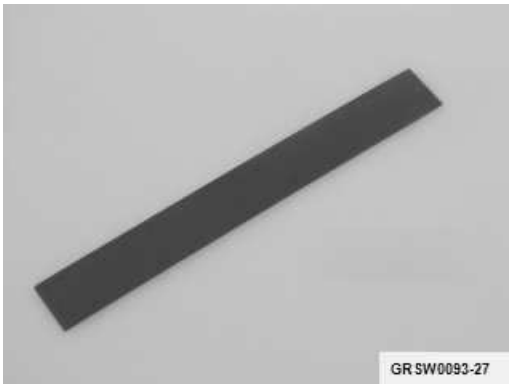
Tailgate trim panel

Used in step 58

Screw		Tightening torque	1,8 Nm

Overview of Special Tools

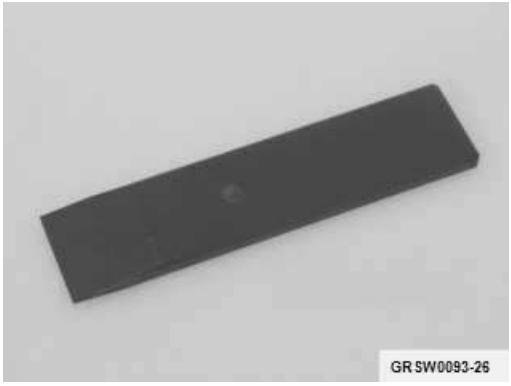
0 496 571 (00 9 327) Wedge



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)

0 496 570 (00 9 326) Wedge



Common Used in step 5

Usage	(Universal wedge) From 11/2008 this special tool replaces panel wedge 00 9 318 (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 24 26
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 (PRE)	Used in step
Gap dimensions, body	33

General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	25 40

Repair instructions	Used in step
51 23 ... Removing/installing ball sockets with clip	6 36

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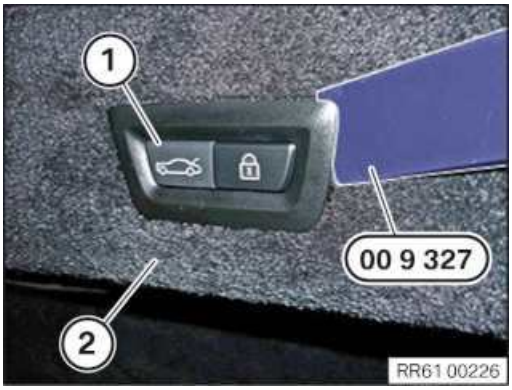
41 62 001 Replacing tailgate

PRELIMINARY WORK

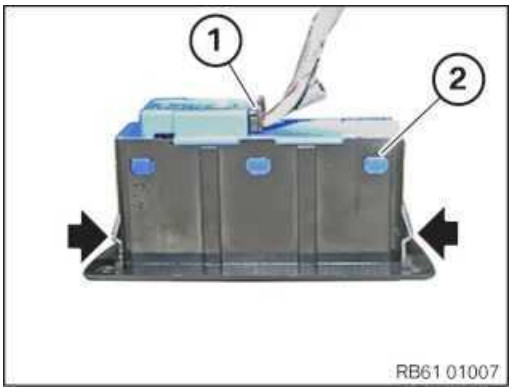
1 – Remove the tailgate lift switch

Prerequisite

Tailgate is open.

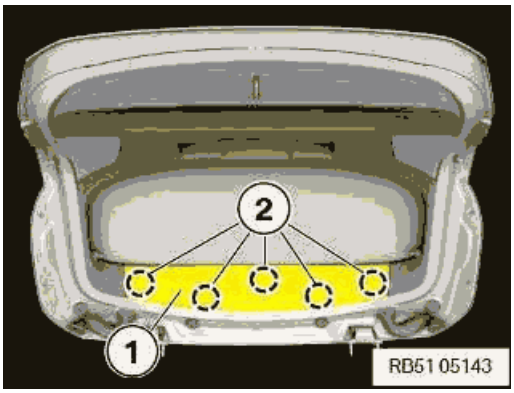


- Lever the switch for the tailgate lift (1) out of the tailgate trim panel (2) with the special tool **0 496 571 (00 9 327)**.



- Connect the connector (1) with the switch (2).

2 – Remove the trim for the top rear window frame



- Unclip the trim for the top rear window frame (1) at the latch mechanisms (2) and remove.

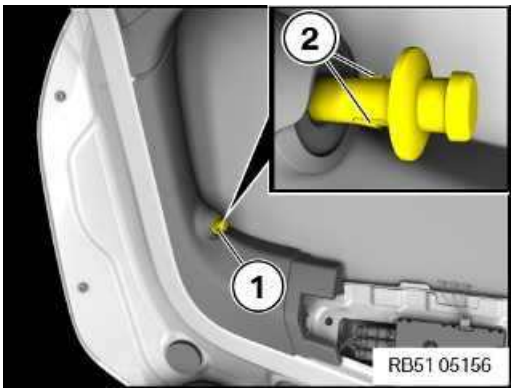
3 – Remove both trims for the rear window frame on the side

NOTICE

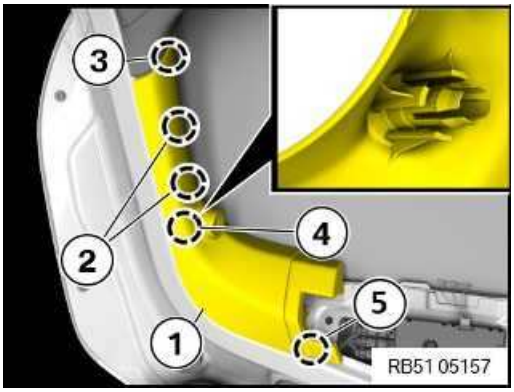
Description is for left component only. Procedure on the right side is identical.

▸ **Remove the trim for the rear window frame on the side**

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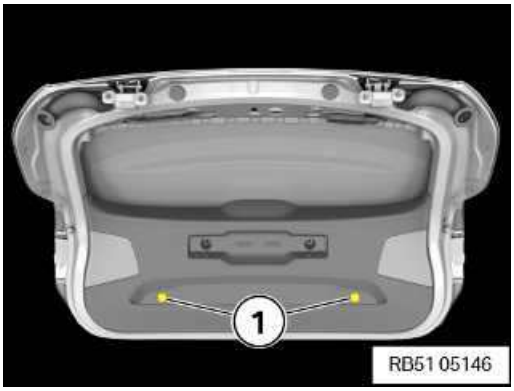


- Detach the mounting button (1) on the latch mechanisms (2) and remove it.

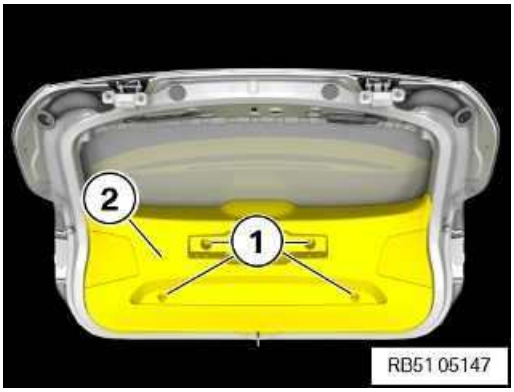


- Unclip the trim for the rear window frame on the side (1) with the clips (2) from the latch mechanisms (3), (4) and (5).

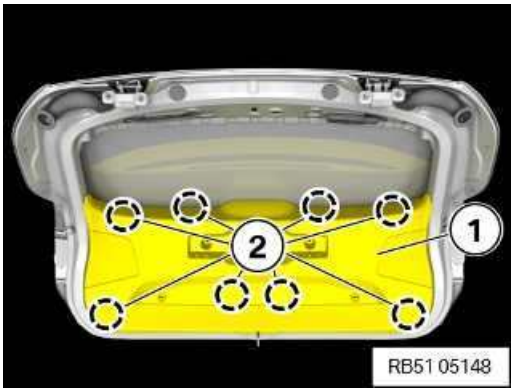
4 – Remove tailgate trim panel



- Lever out the covers of the screw points (1) with a suitable tool.



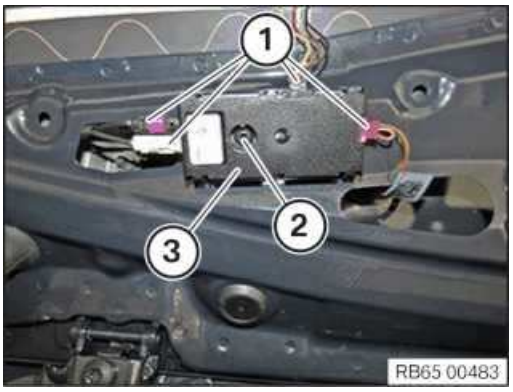
- If applicable, remove the warning triangle from the tailgate trim panel (2).
- Unscrew the bolts (1) at the tailgate trim panel (2).



- Unclip the tailgate trim panel (1) at the latch mechanisms (2) and remove.

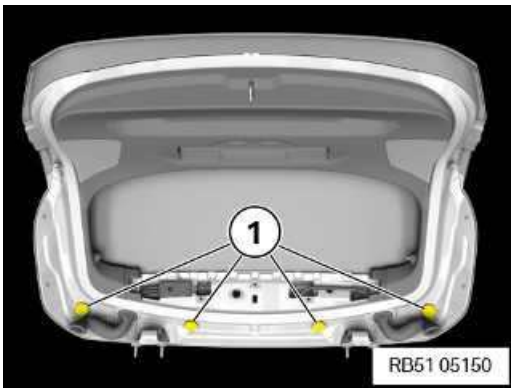
5 – Removing aerial amplifier

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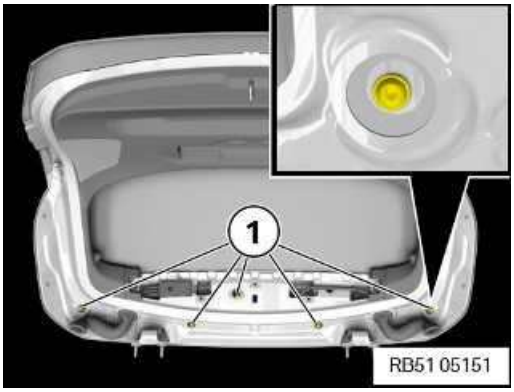


- Unlock and disconnect connector (1).
- Loosen screw (2).
- Remove the aerial amplifier (3).

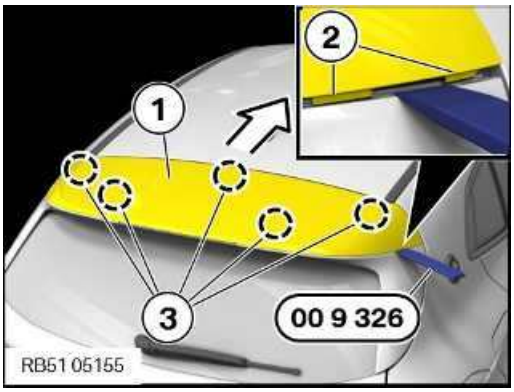
6 – Remove rear spoiler



- Unclip the covers (1) with a suitable tool and remove.

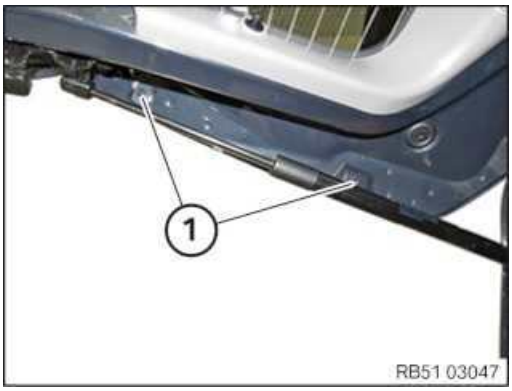


- Loosen screws (1).



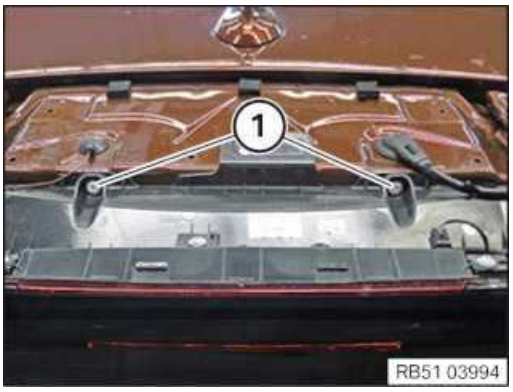
- Release rear spoilers (1) on both outer sides with the special tool **0 496 570 (00 9 326)** out of the latch mechanisms (2).
- Unclip rear spoiler (1) from the clips (3).
- Slightly lift rear spoiler (1) in the front area and remove in direction of arrow.

7 – Removing the lower section of the rear spoiler

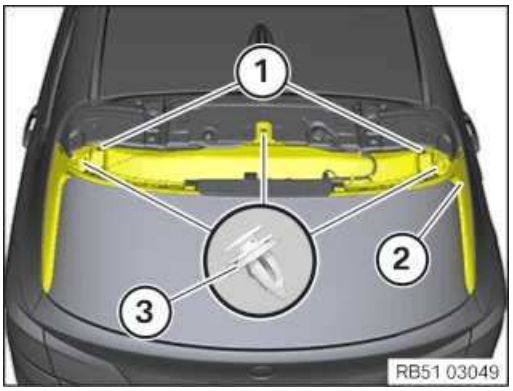


- Open tailgate.
- Loosen screws (1) on left and right.

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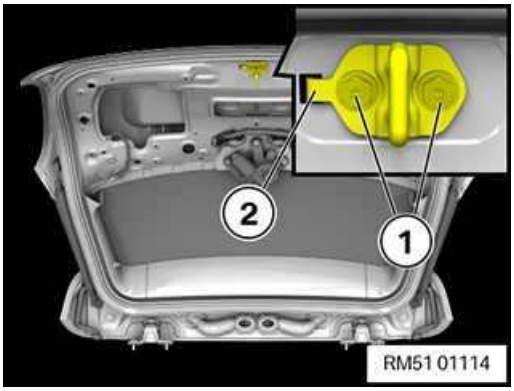


- Loosen screws (1).



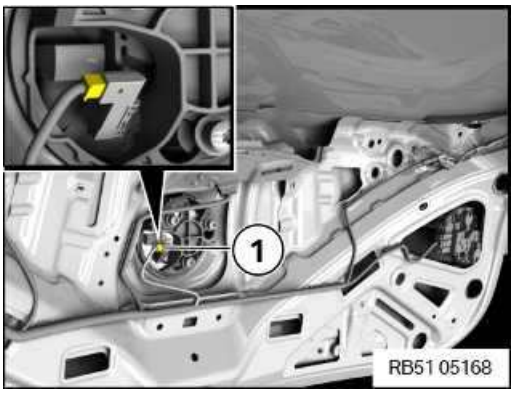
- Disconnect the plug connection of the additional brake light and guide out the cable.
- Disconnect the quick connector of the water pipe of the washer jet and guide out the water pipe.
- Loosen screws (1).
- Release the lower section of the rear spoiler (2) at the clips (3) and remove it.

8 – Remove striker for tailgate catch

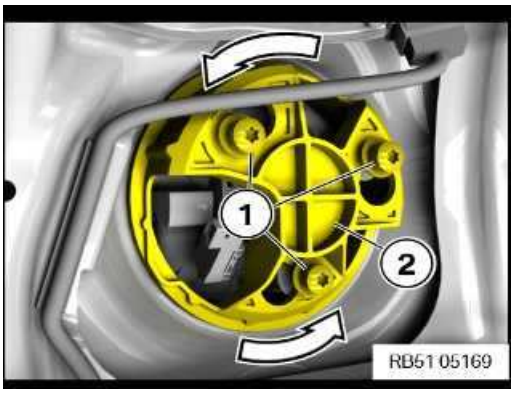


- Unscrew the bolts (1) and remove the striker for the tailgate catch (2).

9 – Remove tailgate pushbutton

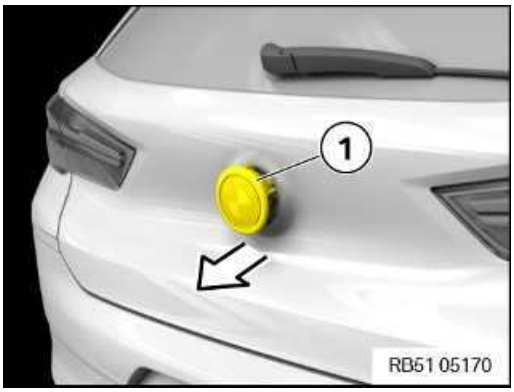


- Unlock plug connection (1) and disconnect.



- Unscrew the bolts (1) until you can turn the retaining ring (2).
- Turn the retaining ring (2) in the direction of the arrow and remove it.

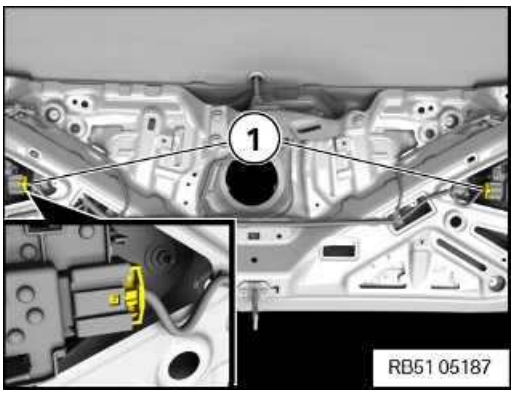
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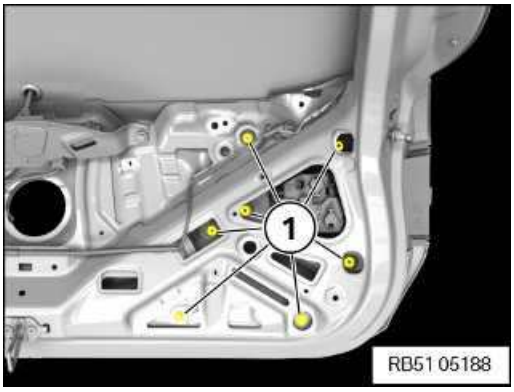
- Remove the tailgate button (1) in the direction of the arrow.

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10 – Removing the rear trim



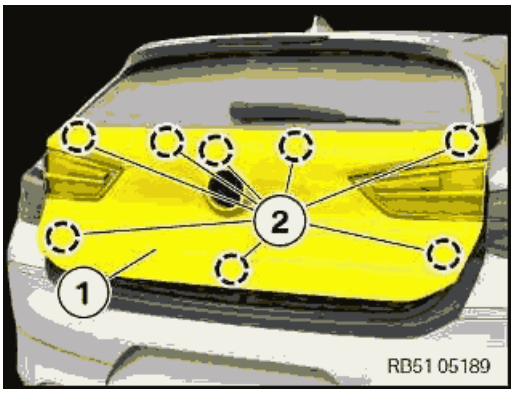
- Unlock and disconnect plug connections (1).



NOTICE

Perform the operations on the left and right side.

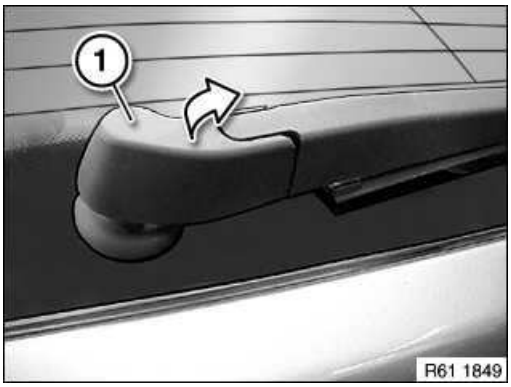
- Loosen nuts (1).



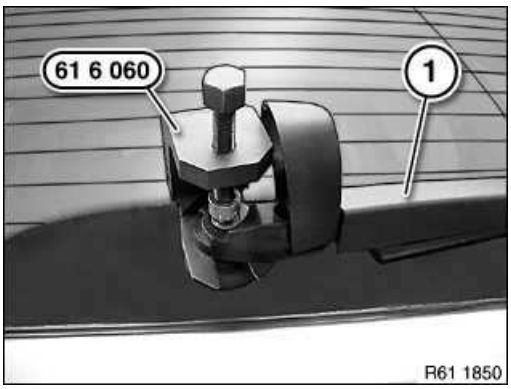
- Unclip the rear trim (1) at the clips (2) and remove toward the rear.

11 – Removing windscreen wiper arm of the rear wiper

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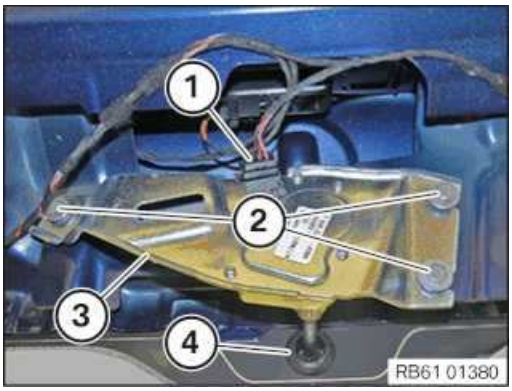


- Fold cover cap (1) in direction of arrow.
- Unscrew the nut below it.



- Pull off the wiper arm (1) using special tool .

12 – Remove rear window wiper motor



- Unlock and disconnect connector (1).
- Unscrew all bolts (2).
- Remove rear wiper motor (3).

13 – Remove rear window

TECHNICAL INFORMATION

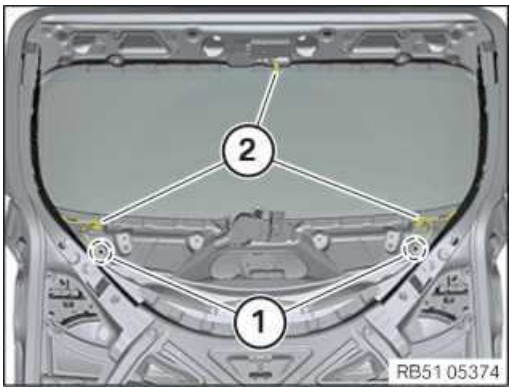
The following procedure forms the basis for these repair instructions and must be observed without fail.
For more information see: 51 31 ... General procedure for disassembly/installation of bonded window glass

TECHNICAL INFORMATION

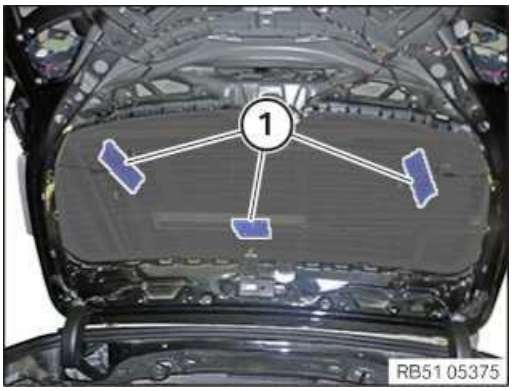
Perform window removal using the "spider".
For additional information see: 51 31 ... Window glass removal using "spider"

▸ **Remove rear window**

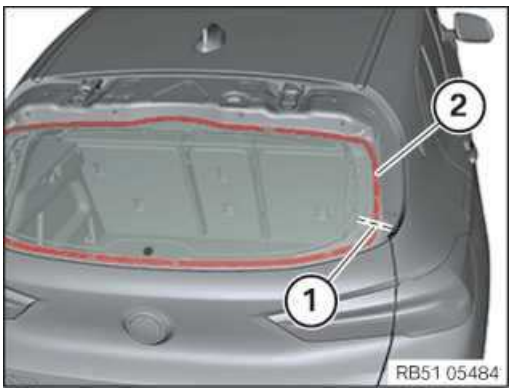
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- Loosen screws (1).
- Disconnect the plug connections (2) and unclip from the cable clips.



- Secure cable (1) 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 (2) along the line from the inside.
- Cut out the rear window with spider.

14 – Remove rear lid gas pressure spring

CAUTION

Shutting bonnet or tailgate.

Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.

TECHNICAL INFORMATION

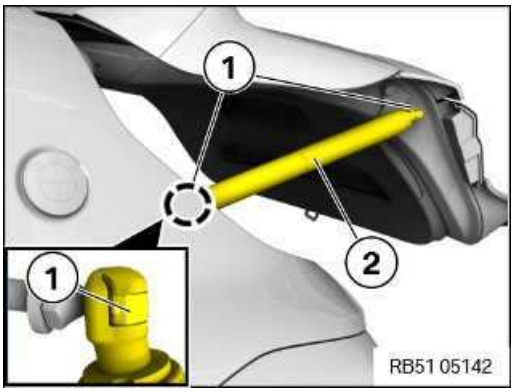
The notes on the disassembly and installation of ball sockets with clamps are the basis for these repair instructions and must be observed without fail.

For additional information see: 51 23 ... Note information on disassembly/installation of ball sockets with clamp

NOTICE

Description is for left component only. Procedure on the right side is identical.

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- Slide the locking spring (1) to the end of the gas pressure spring (2) and remove the gas pressure spring (2) from the ball head.

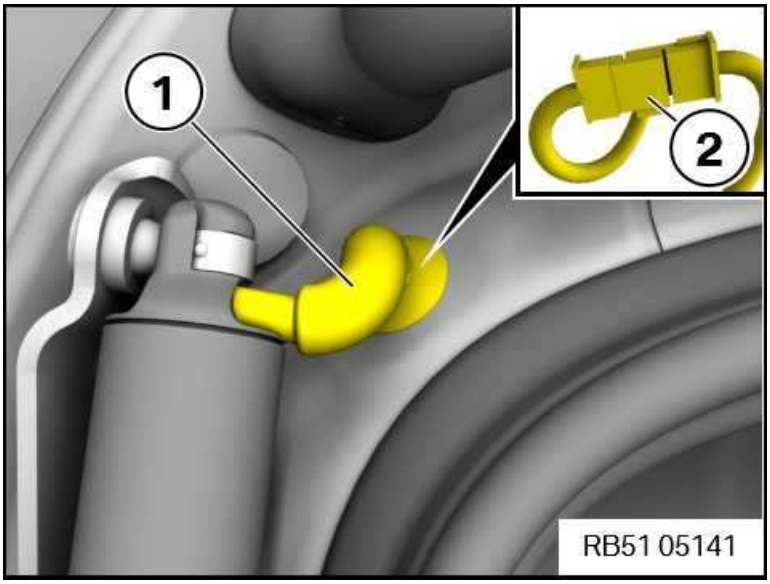
15 – Removing spindle drive of the tailgate

CAUTION

Shutting bonnet or tailgate.

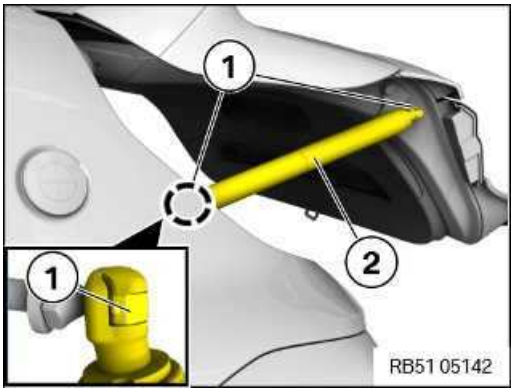
Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.



- Remove grommet (1) from the body panel.
- Unlock and disconnect the two plug connections (2).

  The plug connections (2) must be outside the body.



- Open locks (1) at the top and bottom on the spindle drive (2) and remove the spindle drive (2).

MAIN WORK

16 – Replacing tailgate

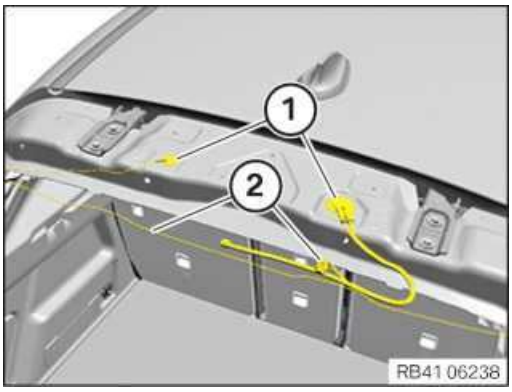
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CAUTION

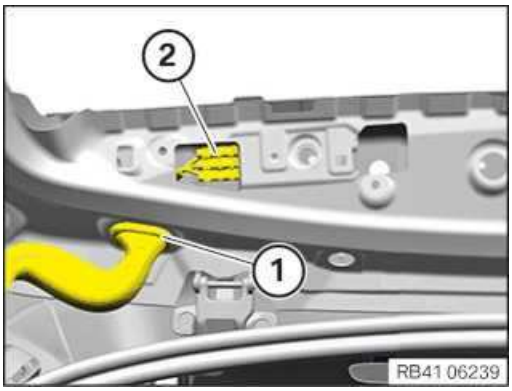
Shutting bonnet or tailgate.

Danger of injury!

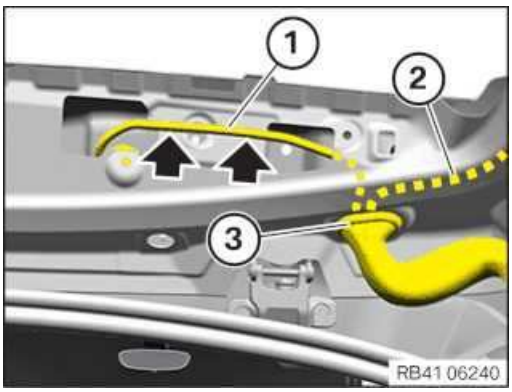
- Support bonnet/tailgate in fully open position with the aid of a suitable device.



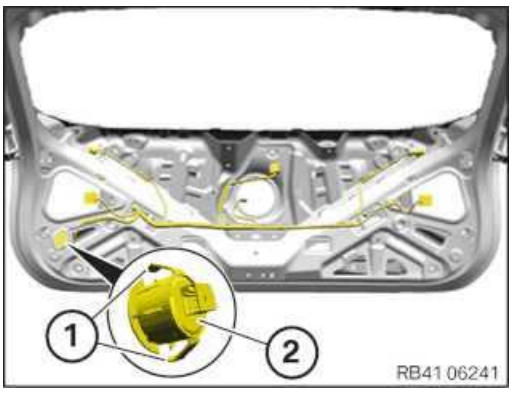
- Detach rubber grommets (1) and feed through to the inside together with the associated wiring harnesses (2).



- Detach rubber grommet (1).
- Thread out the connector (2) from the tailgate.



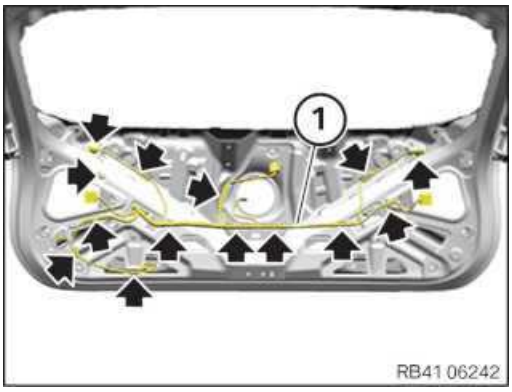
- Release the wiring harness (1) at the marked points (arrows).
- Release rubber grommet (2).
- Thread out the wiring harness (1) and wiring harness (2) from the tailgate.



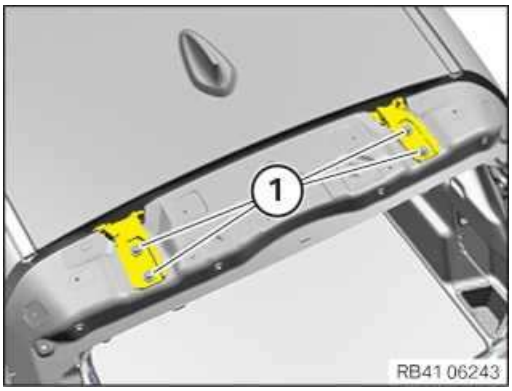
- Unlock tabs (1).

  Remove acoustic sensor (2) and unlock and disconnect the associated plug connection.

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- Detach wiring harness (1) at the marked positions (arrows) and set it aside.



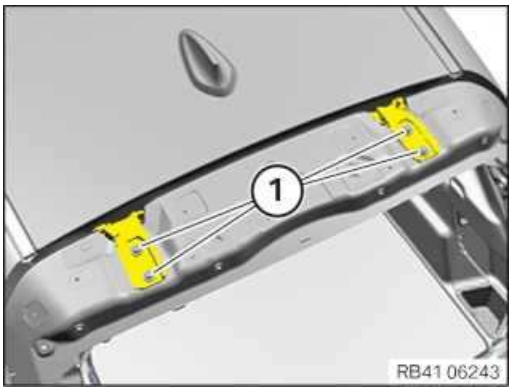
RISK OF DAMAGE

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.

- Unscrew the screws (1) and remove the tailgate.

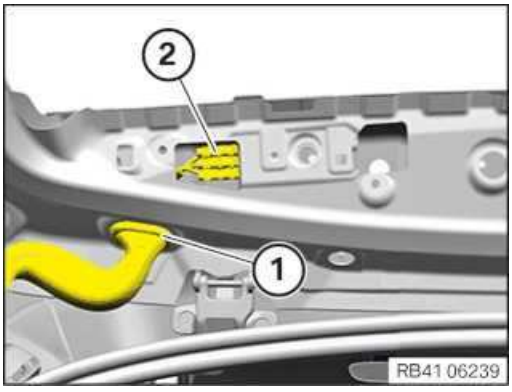


- Position new tailgate on the tailgate hinges.
- Tighten the screws (1).

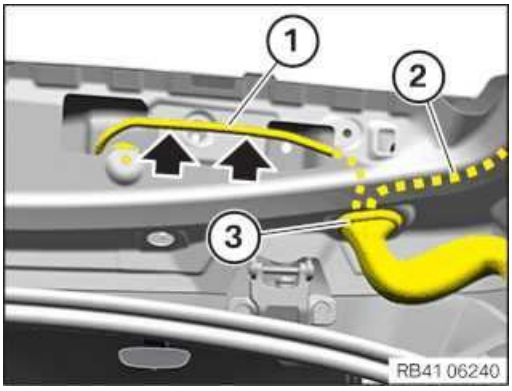
Tailgate to hinge

Hexagon screw M8	Tightening torque		28 Nm

- Carefully close the tailgate and check for bodywork contact, reposition tailgate if necessary.

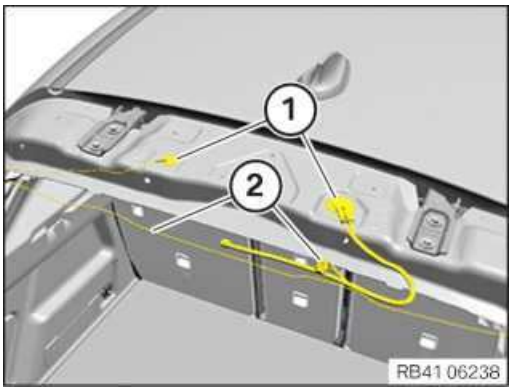


- Thread the connector (2) into the tailgate.
- Install rubber grommet (1). Ensure correct installation. (watertightness).

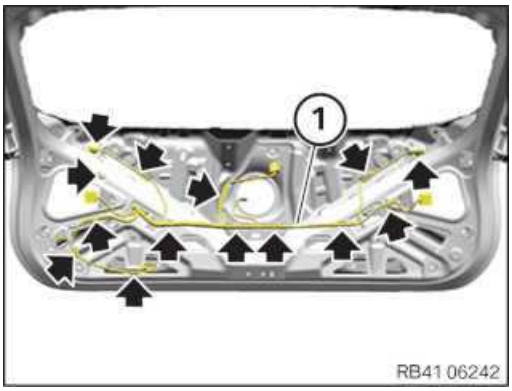


- Thread wiring harness (1) and wiring harness (2) into the tailgate.
- Fix the wiring harness (1) at the marked points (arrows).
- Install rubber grommet (3). Ensure correct installation. (watertightness).

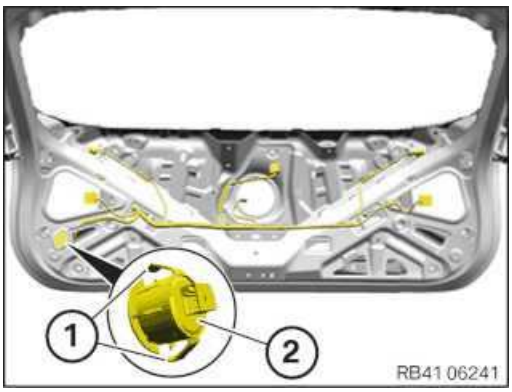
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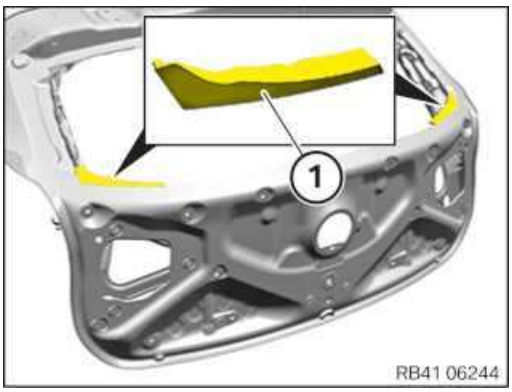
- Thread rubber grommets (1) through to the outside together with the associated wiring harnesses (2).
- Install rubber grommets (1). Ensure correct installation. (watertightness).



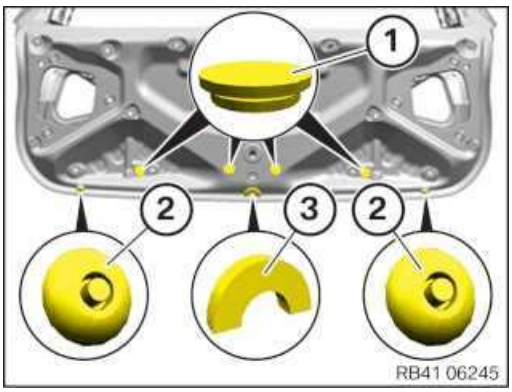
- Secure the wiring harness (1) at the marked points (arrows).



- Connect connectors for acoustic sensor (2) and lock.
- Install acoustic sensor (2). Clip in tabs (1).

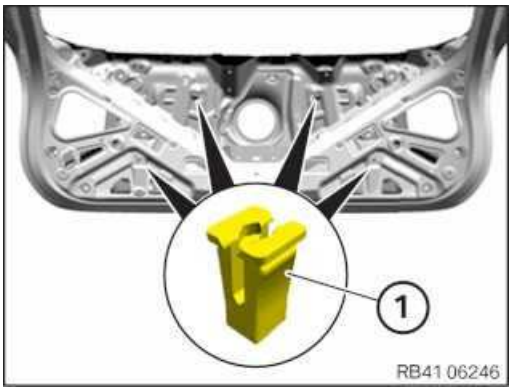


- Remount light bulkhead (1) on both sides.

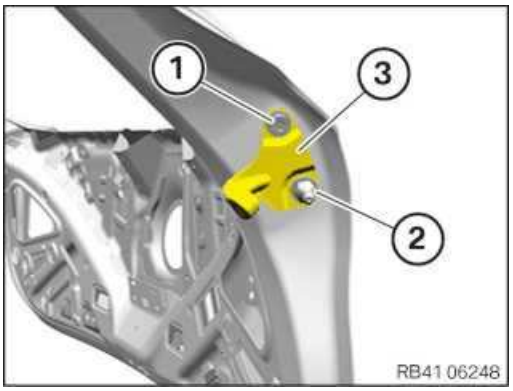


- Remount the seal plug (1) and (2).
- Remount cover (3).

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- Remount the expansion nuts (1).



NOTICE

Description is for left component only. Procedure on the right side is identical.

- Loosen screw (1).
- Unscrew ball pin (2) and remove the stop (3).
- Position stop (3) on the new part.

  Tighten bolts (1) and ball pin (2).

Limit position to tailgate

M8 screw	Tightening torque		28 Nm
Ball pinM8	Tightening torque		28 Nm

POSTPROCESSES

17 – Adjusting tailgate

CAUTION

Shutting bonnet or tailgate.

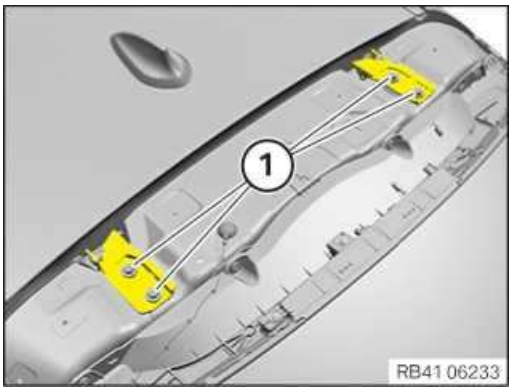
Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.

TECHNICAL INFORMATION

Notes on the body gap dimensions are the basis of these repair instructions and must be observed without fail.
For additional information see: 41 00 ... Gap dimensions for body

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NOTICE

Perform the operations on the left and right side.

- Undo screws (1) 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 the screws (1).

Tailgate to hinge

Hexagon screw M8	Tightening torque		28 Nm

Check

- Check the gap dimensions (arrows) between tailgate and side panels.



Result

» Gap dimensions do not correspond to the specifications.

Measure

- Adjust tailgate.

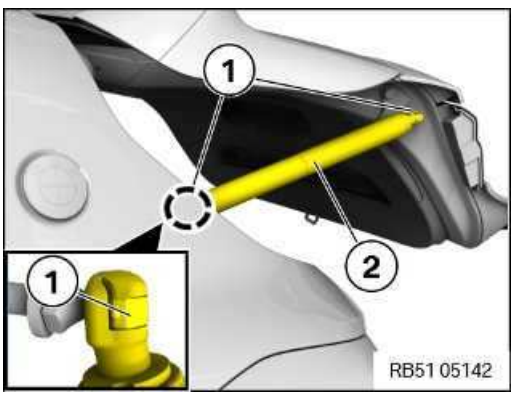
18 – Install the spindle drive of the tailgate

CAUTION

Shutting bonnet or tailgate.

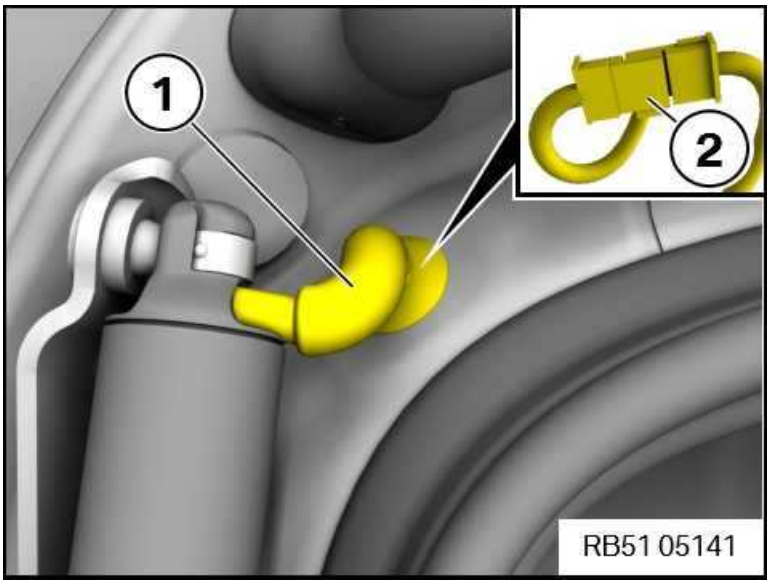
Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.



- Mount the spindle drive (2) at the top and bottom on the associated ball head and lock with the locking mechanism (1).

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- Connect and lock both connectors (2).
- Install the grommet (1) in the body panel.

  The arrow on the grommet (1) must point up.

19 – Install the gas pressure spring of the tailgate

CAUTION

Shutting bonnet or tailgate.

Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.

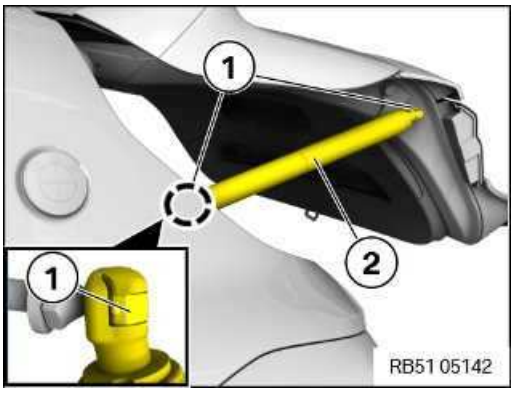
TECHNICAL INFORMATION

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

NOTICE

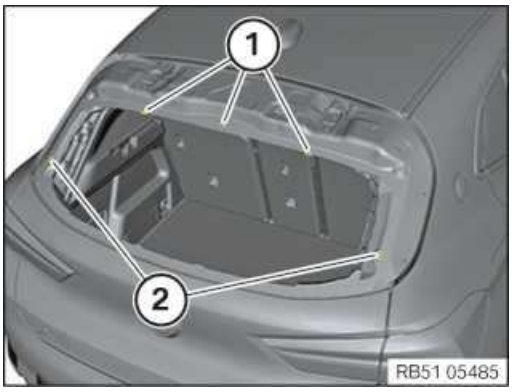
Description is for left component only. Procedure on the right side is identical.



- Mount the gas pressure spring (2) at the top and bottom on the associated ball head and lock with the locking spring (1).

20 – Replace the spacer

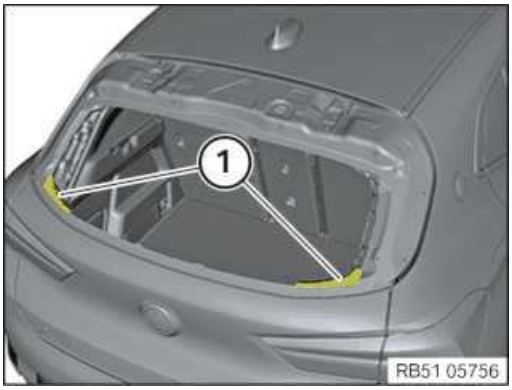
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- Remove the spacer (1) completely.
- Use spacer 5x5x20 mm.

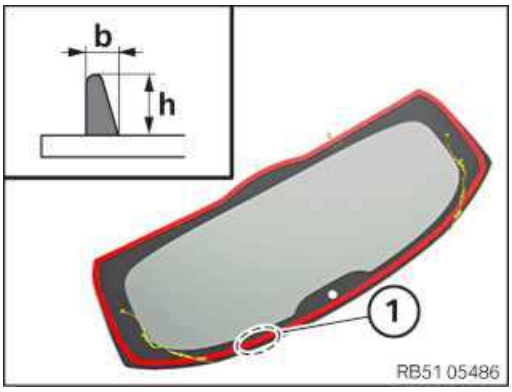
  Parts: Spacer 5x5x20 mm
- Bond the new spacer (1) centred on the embossed mark.
- Replace the damaged hook and loop tape (Dual Lock tape) (2) on the rear window and the body.

  Parts: Velcro fastener (Dual Lock tape)
- Bond the new hook and loop tape (Dual Lock tape) (2) centred on the embossed mark.



- Check the foam seals (1) for damage and replace if necessary.

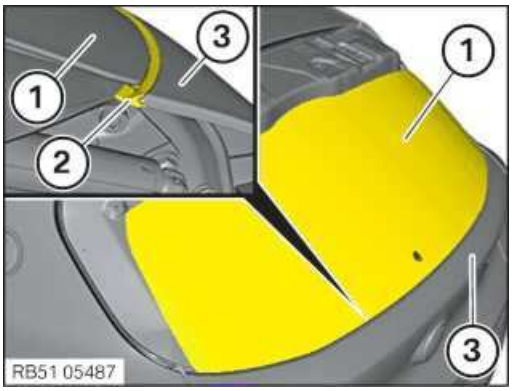
21 – Install the rear window



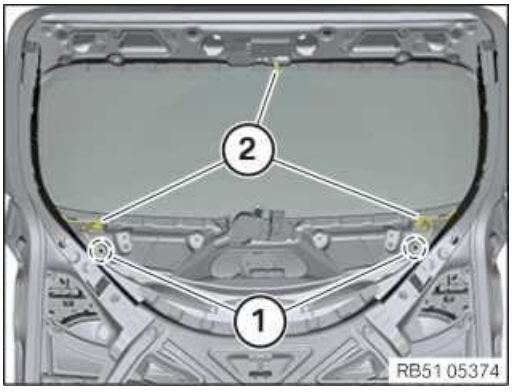
- Provide two glue cartridges.
- Prepare a glue cartridge with the standard jet nozzle C.
- Apply bead joint in area (1).
- Apply adhesive bead within the mark on the rear window.

Adhesive bead

b = Width	7 mm ... 9 mm
h = Height	11 mm ... 13 mm



- Carefully perform the following actions on rear window (1) with suction lifters
  - Fit at the bottom on the seal
  - Align sides evenly
  - press on evenly all the way around and engage at the hook and loop tape (Dual Lock tape)
- Make sure that the seal (2) rests evenly against the tailgate (3).
- Secure rear window (1) with adhesive tap on the roof.



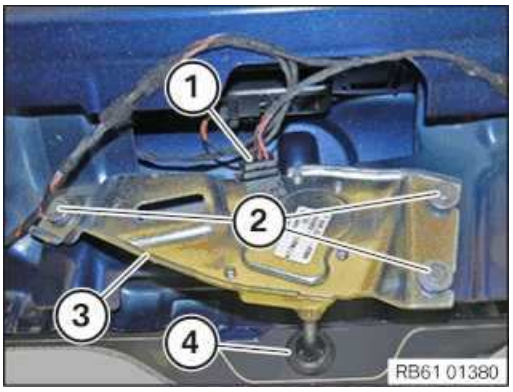
- Connect the connector (2) and attach the cable clips.
- Tighten the screws (1).

Ground strap to tailgate

Oval-head screw	Tightening torque		2,6 Nm

22 – Install rear window wiper motor

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- Check the rubber grommet (4) for damage.
- Join the rear wiper motor (3) in the grommet (4).
- Tighten down screws (2).

Wiper motor to tailgate

Screw		Tightening torque	7,6 Nm

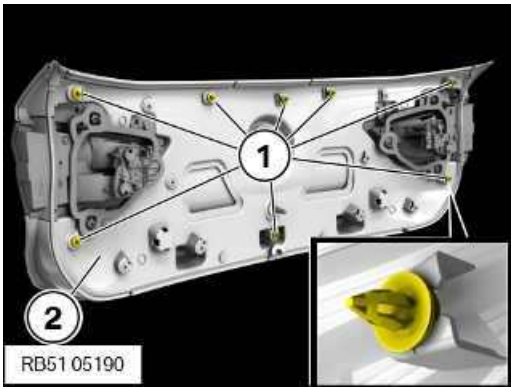
- Connect connector (1).

23 – Installing wiper arm of the rear wiper

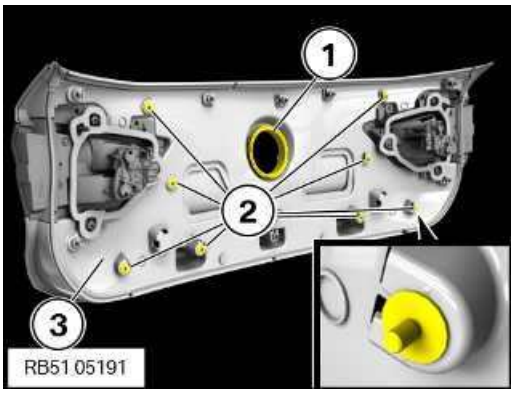


- Position the wiper arm and tighten with the nut.
- Position the protective cap (1).

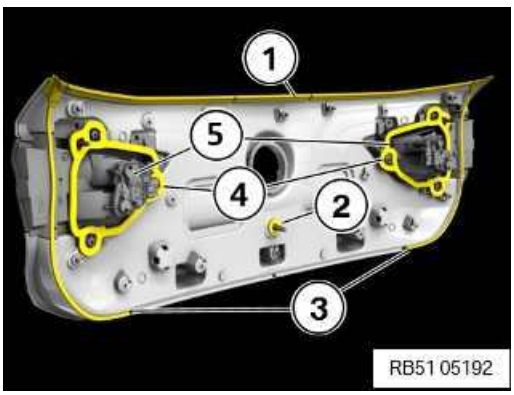
24 – Installing the rear trim



- Check clips (1) on rear trim (2) for damage and renew them if necessary.



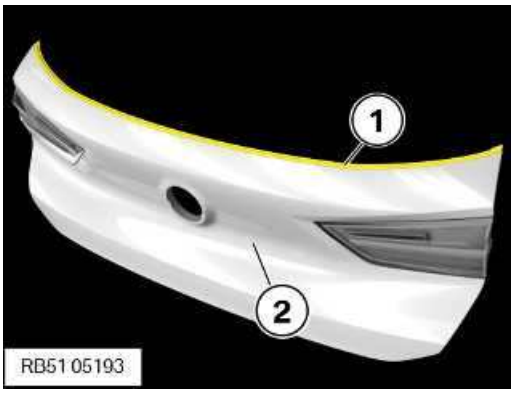
- Check spacer (1) for damage and renew it if necessary.
- Position and engage the spacer (1) correctly in the rear trim (3).
- If necessary, renew missing screws (2) on rear trim (3).



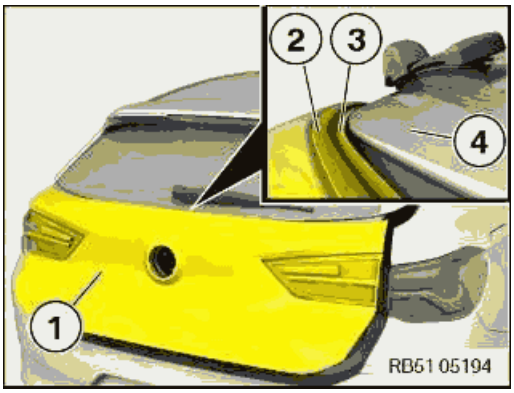
- Check the seals (1) and (2) for damage; renew if necessary.
- Check gutter strips (3) for damage and renew them if necessary.
- Check seals (4) on rear lights (5) on the tailgate for damage and renew them if necessary.

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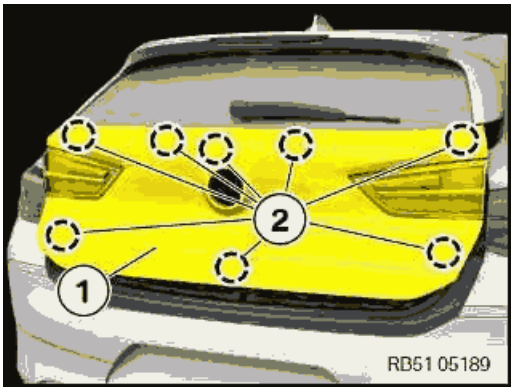
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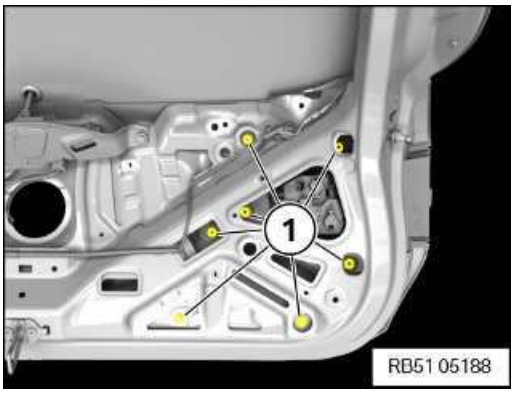
- Coat the seal (1) on the rear trim (2) with a suitable lubricant.



- Open the tailgate slightly.
- Position the rear trim (1) with the seal (2) on the rear window from the bottom.
- Thread the sealing lip (3) of the seal (2) completely under the rear window (4).
- Press on seal (2) with special tool **0 490 538 (00 9 321)**.



- Clip in the rear trim (1) with the clips (2).



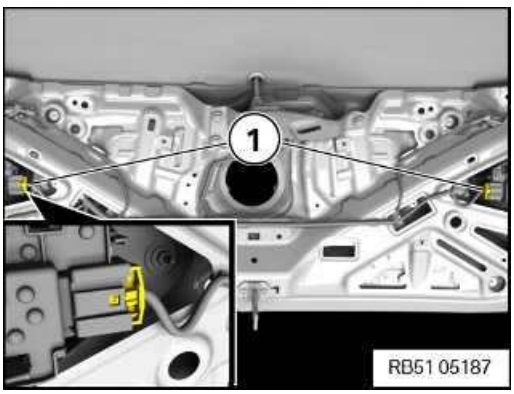
NOTICE

Perform the operations on the left and right side.

- Tighten nuts (1).

Rear trim to tailgate

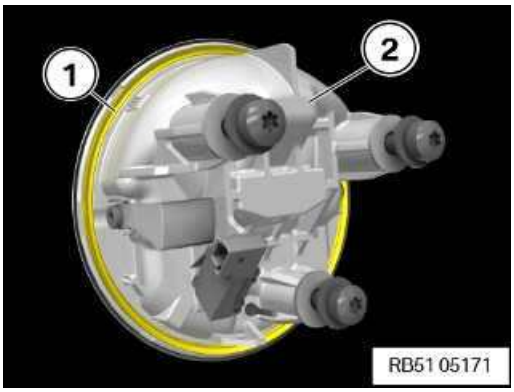
M5 nut		Tightening torque	4,5 Nm



- Connect connectors (1) and lock.

25 – Install the tailgate button

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Check

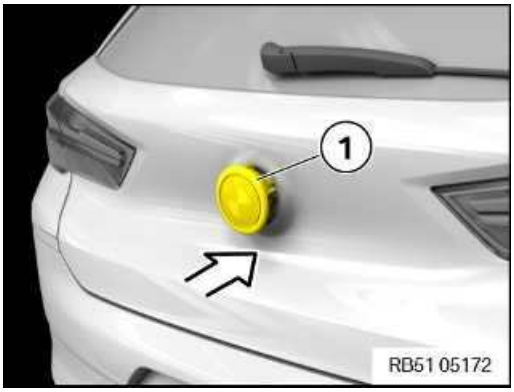
- Check the seal (1) on the tailgate button (2) for damage.

Result

» The seal (1) is damaged.

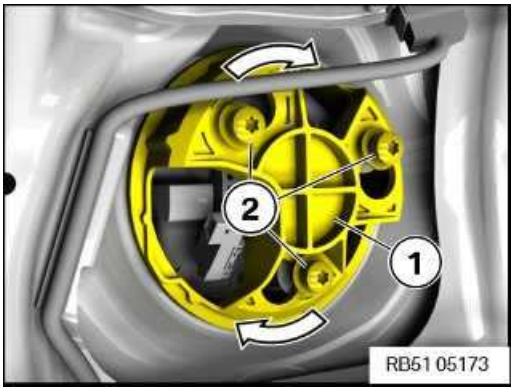
Measure

- Replace the tailgate button (2).



- Insert the tailgate button (1) in the rear trim from the outside in.

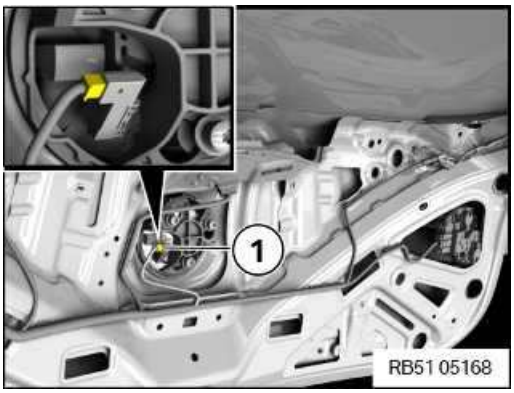
  The BMW badge must be aligned correctly.



- Attach the retaining ring (1) from the inside and turn it in the direction of the arrow to the stop.
- Tighten down screws (2).

Tailgate button

Screw with spring washer and washer M6x20		Tightening torque	8 Nm

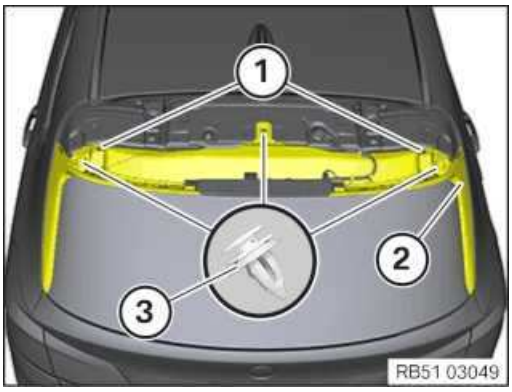


- Connect connectors (1) and lock.

Your browser doesn't support HTML5 video.

26 – Installing the lower section of the rear spoiler

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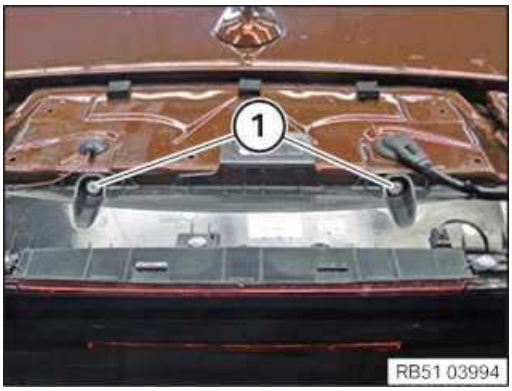


- Position the lower section of the rear spoiler (2) at the clips (3) and clip in.
- Tighten the screws (1).

Rear spoiler lower section to tailgate

Fillister head bolt		8 Nm

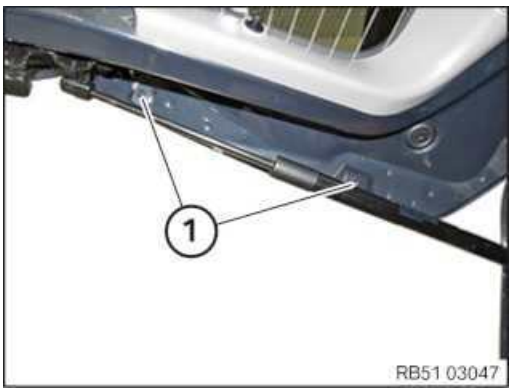
- Connect the quick connector of the water pipe to the washer jet.
- Connect the connector to the additional brake light.



- Tighten the screws (1).

Rear spoiler lower section to tailgate

Fillister head bolt		8 Nm

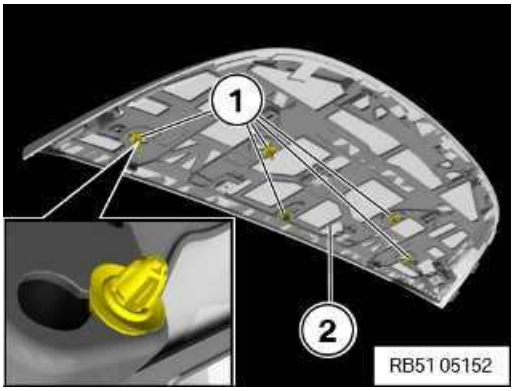


- Tighten screws (1) on left and right.

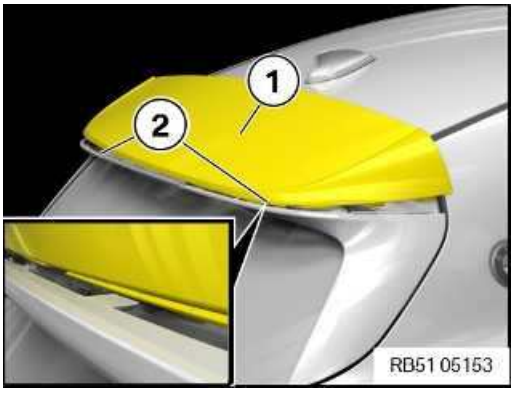
Rear spoiler lower section to tailgate, side

Oval-head screw		2,6 Nm

27 – Attach rear spoiler

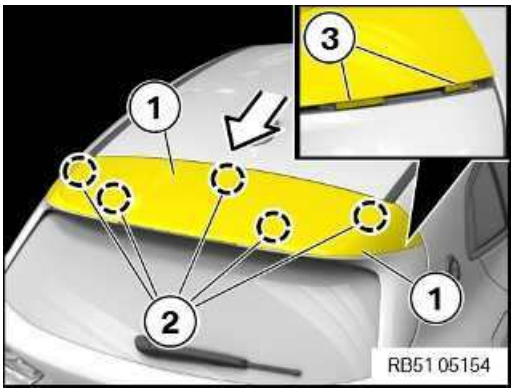


- Check clips (1) on the rear spoiler (2) for damage, renew if required.

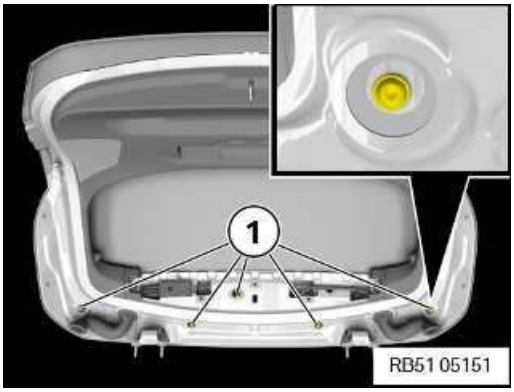


- Position the rear spoiler (1) on the guides (2) .

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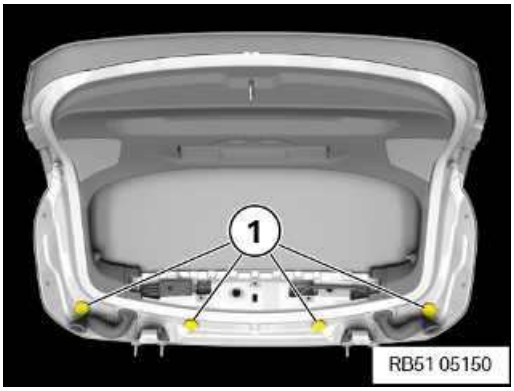
- Slide the rear spoiler (1) onto the lower section of the rear spoiler in the direction of the arrow.
- Clip in the rear spoiler (1) with the clips (2) and clip on the latch mechanisms (3) on both sides.



- Tighten the screws (1).

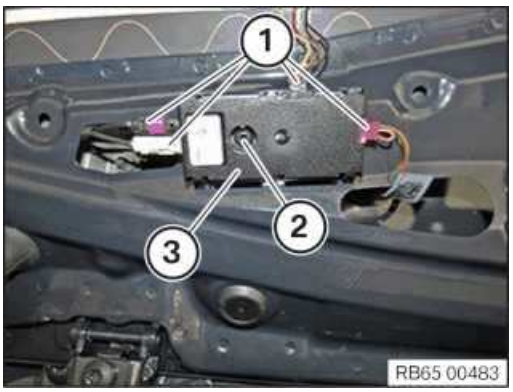
Rear spoiler to tailgate

Oval-head screw		Tightening torque	3,1 Nm



- Insert the covers (1).

28 – Installing the aerial amplifier



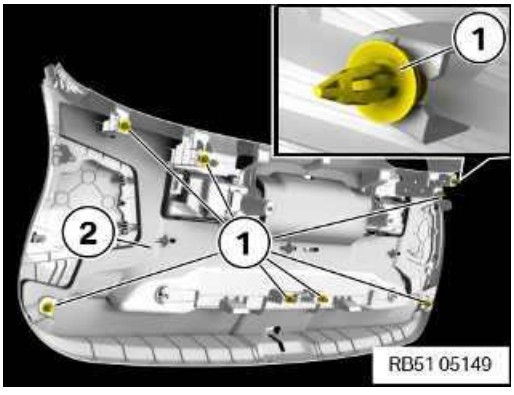
- Correctly position the aerial amplifier (3).
- Tighten down screw (2).

Aerial amplifier / interference suppression filter / wave trap to body

Screw		Tightening torque	3,3 Nm

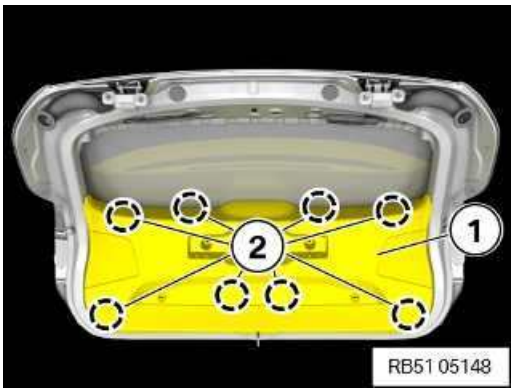
- Connect connectors (1) and lock.

29 – Installing the tailgate trim panel

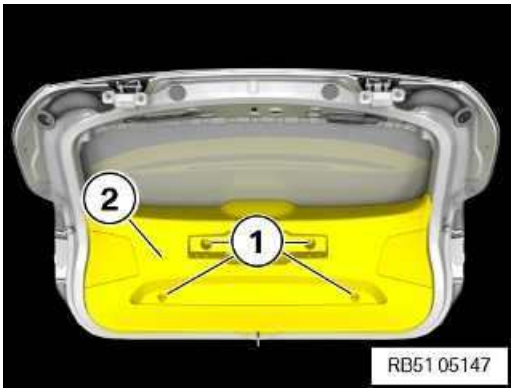


- Check the clips (1) on the tailgate trim panel (2) for damage and replace where required.

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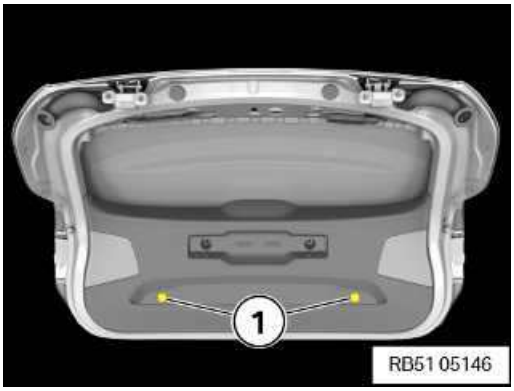
- Clip in the tailgate trim panel (1) with the clips (2).



- Tighten the bolts (1) at the tailgate trim panel (2).

Tailgate trim panel

Screw		Tightening torque	1,8 Nm



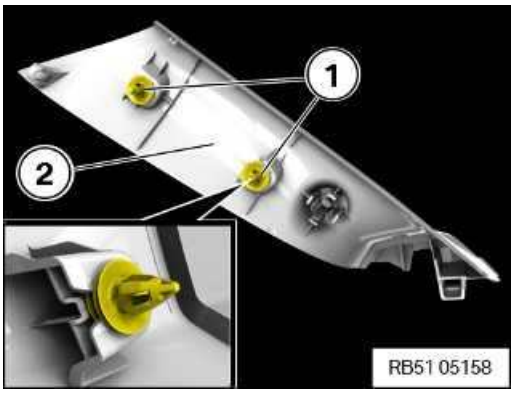
- If necessary, insert and fasten the warning triangle in the tailgate trim panel (2).
- Insert the covers of the screw points (1).

30 – Mount both trim pieces for the rear window frame on the side

NOTICE

Description is for left component only. Procedure on the right side is identical.

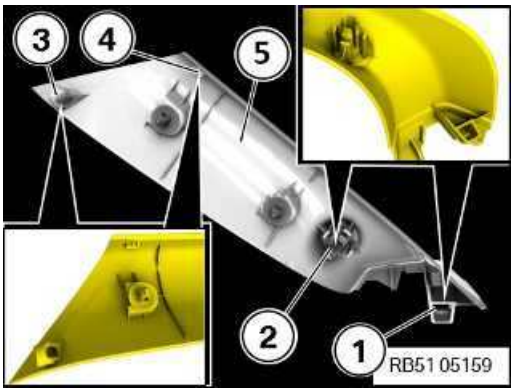
▸ **Install the trim for the rear window frame on the side**



- Check the clips (1) on the trim for the side rear window frame (2) for damage and replace where required.

Check

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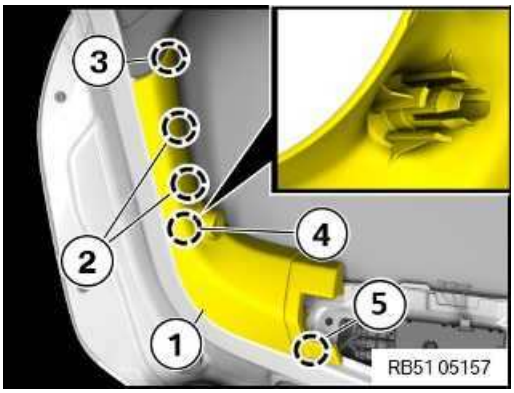
- Check the latch mechanisms (1), (2), (3) and (4) at the trim for the side rear window frame (5) for damage.

Result

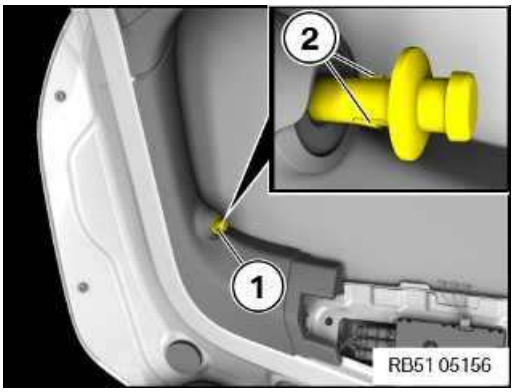
» The latch mechanisms (1), (2), (3) or (4) are damaged.

Measure

- Renew the trim for the side rear window frame (5).

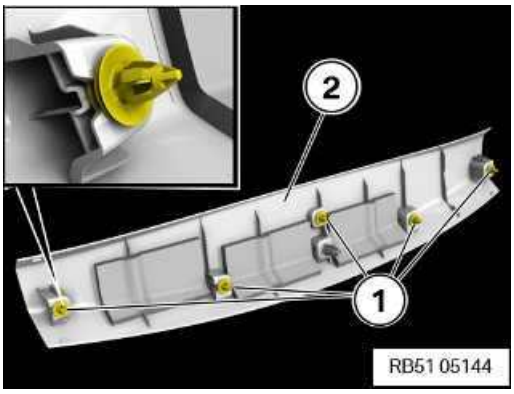


- Clip in the trim for the side rear window frame (1) with the clips (2) and in the latch mechanisms (3), (4) and (5).



- Clip in the mounting button (1) with the latch mechanisms (2).

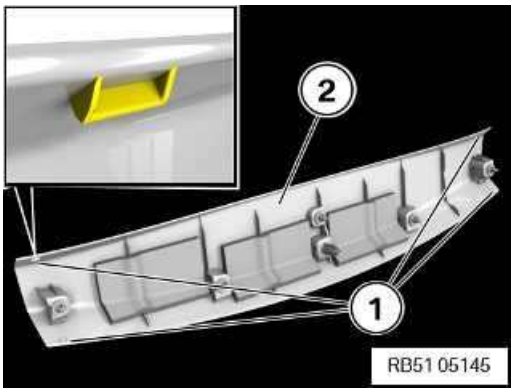
31 – Install the trim for the top rear window frame



- Check the clips (1) on the trim for the top rear window frame (2) for damage and replace where required.

Check

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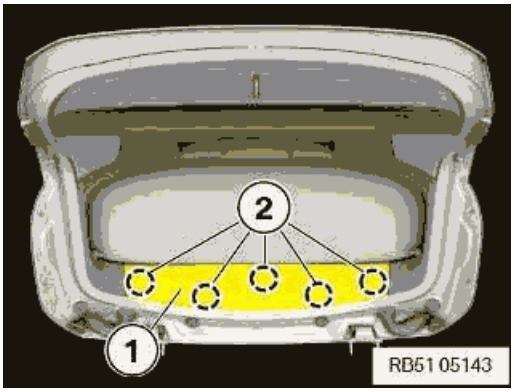
- Check the latch mechanisms (1) on the trim for the top rear window frame (2) for damage.

Result

» The latch mechanisms (1) on the trim for the top rear window frame (2) are damaged.

Measure

- Renew the trim for the top rear window frame (2).

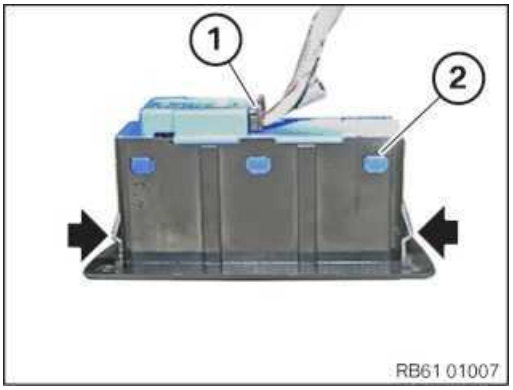


- Clip in the trim for the top rear window frame (1) with the clips (2).

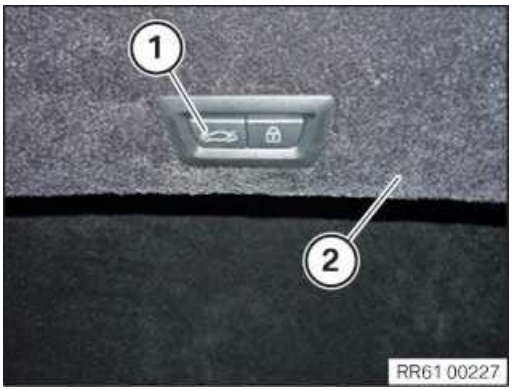
32 – Install the tailgate lift switch

Prerequisite

Tailgate is open.



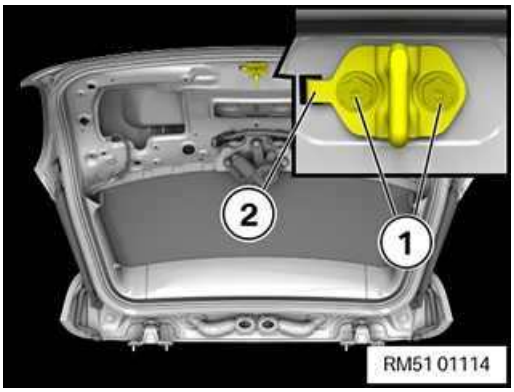
- Connect the connector (1) with the switch (2).



- Install the automatic tailgate operation switch (1) in the tailgate trim panel (2).

33 – Install striker for tailgate catch

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- Mount the striker for the tailgate catch (2) with the bolts (1).
- Tighten the screws (1).

Striker for tailgate catch

Screw		Tightening torque	19 Nm

34 – Adjusting rear lid lock

CAUTION

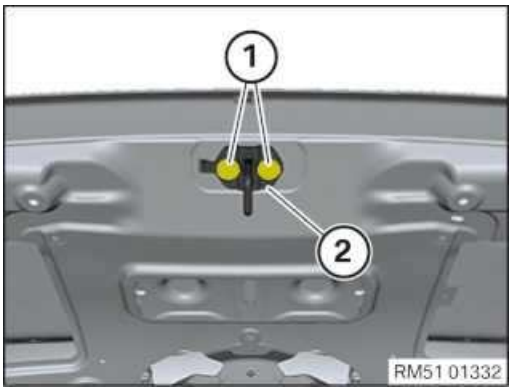
Shutting bonnet or tailgate.

Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.

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

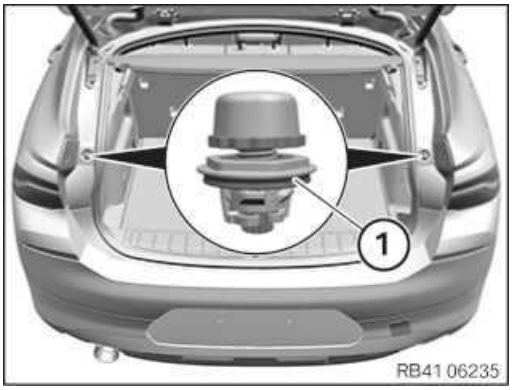


- Slacken the bolts (1) until the striker (2) is barely adjustable and self-centres itself.
- Close tailgate.
- Open tailgate.
- Tighten the screws (1).

Note: When the tailgate is closed, the striker must not touch or scrape against the tailgate lock. Watch out for scratches!

Striker to body

Screw		Tightening torque	19 Nm



- Adjust the stop pad (1) by turning.

35 – Incorporate the model designation

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TECHNICAL INFORMATION

Notes on component bonding using adhesive tape form the basis for these repair instructions and must be observed without fail.

For more information see: 51 00 ... Notes on component bonding with adhesive tape



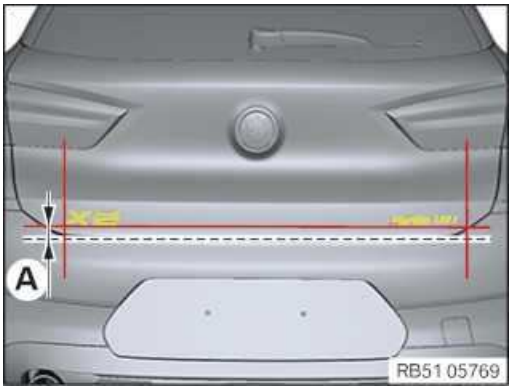
CAUTION

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.



- Position the tool behind the vehicle.

  Align the horizontal laser beam at the edge of the tailgate with dimension (A=2,5 cm).

  Align the vertical laser beam on the rear light as shown.
- Remove adhesive residue and clean the bonding surface with solvent cleaner R2.

Expendable materials

Cleaning agent R2	500 ml	83190417324

- Pull off the liner (protective film) from the adhesive tape of the model designation.
- Align the model designation on the laser beam and press onto the tailgate.

Additional Information

Overview of Tightening Torques

Tailgate to hinge — Used in step 16 17

Hexagon screw M8	Tightening torque		28 Nm

Limit position to tailgate — Used in step 16

M8 screw	Tightening torque		28 Nm
Ball pinM8	Tightening torque		28 Nm

Ground strap to tailgate — Used in step 21

Oval-head screw	Tightening torque		2,6 Nm

Wiper motor to tailgate — Used in step 22

Screw		Tightening torque	7,6 Nm

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Rear trim to tailgate

Used in step 24

M5 nut		Tightening torque	4,5 Nm

Tailgate button

Used in step 25

Screw with spring washer and washer M6x20		Tightening torque	8 Nm

Rear spoiler lower section to tailgate

Used in step 26

Fillister head bolt			8 Nm

Rear spoiler lower section to tailgate, side

Used in step 26

Oval-head screw			2,6 Nm

Rear spoiler to tailgate

Used in step 27

Oval-head screw		Tightening torque	3,1 Nm

Aerial amplifier / interference suppression filter / wave trap to body

Used in step 28

Screw		Tightening torque	3,3 Nm

Tailgate trim panel

Used in step 29

Screw		Tightening torque	1,8 Nm

Striker for tailgate catch

Used in step 33

Screw		Tightening torque	19 Nm

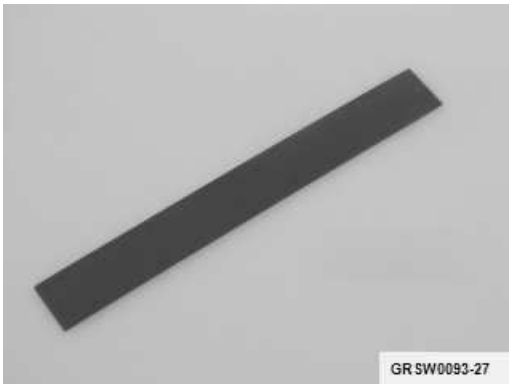
Striker to body

Used in step 34

Screw		Tightening torque	19 Nm

Overview of Special Tools

0 496 571 (00 9 327) Wedge

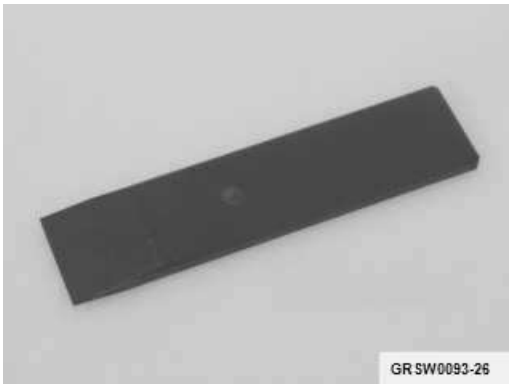


Common Used in step 1

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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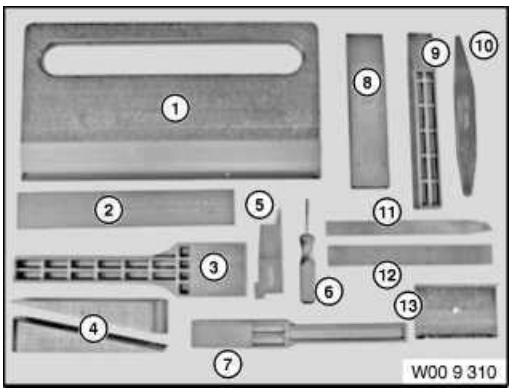
0 496 570 (00 9 326) Wedge



Common Used in step 6

Usage	(Universal wedge) From 11/2008 this special tool replaces panel wedge 00 9 318 (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)

0 490 538 (00 9 321) Folding stick



Common Used in step 24

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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2 407 566 Laser



Common	Used in step 35
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

Adhesive bead	Used in step 21
b = Width	7 mm ... 9 mm
h = Height	11 mm ... 13 mm

Links

Repair instructions (PRE)	Used in step
Gap dimensions, body	17

General repair instructions	Used in step
51 31 ... General procedure for the disassembly and installation of bonded window glass	13
51 00 ... Notes on component bonding with adhesive tape	35

Repair instructions	Used in step
51 31 ... Removing windows with a "Spider"	13
51 23 ... Removing/installing ball sockets with clip	14 19
41 00 ... Gap dimensions, body	34

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41 63 003 Replace cover bowl

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.

CAUTION

Materials harmful to health.

Contact with fluids harmful to health!

- Note and follow safety information on containers.
- Conduct all work in appropriate personal protective equipment only.

TECHNICAL INFORMATION

Use only lint-free cloths for cleaning the SCR system: WAYPALL cleaning cloths L20 - see BMW Group Parts.

TECHNICAL INFORMATION

After repair work, clean the working area thoroughly with water.
Clean special tools with water after every use.

PRELIMINARY WORK

1 – Remove the fuel filler flap



- Open flap for fuel filler neck.
- Remove lock (1) and pull off the flap (2) in direction of arrow.

2 – Removing the rear right wheel

▸ **Removing the wheel**

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- 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.
- Unscrew the wheel bolts (arrows) and remove the wheel.

  Use the matching adapter from tool set (wheel bolt adapter set) to loosen and tighten down the wheel bolt with security code.

3 – Remove right rear wheel arch cover

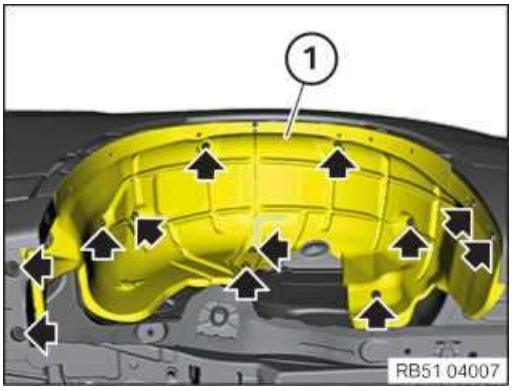
▶ **Removing rear wheel arch cover**

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.



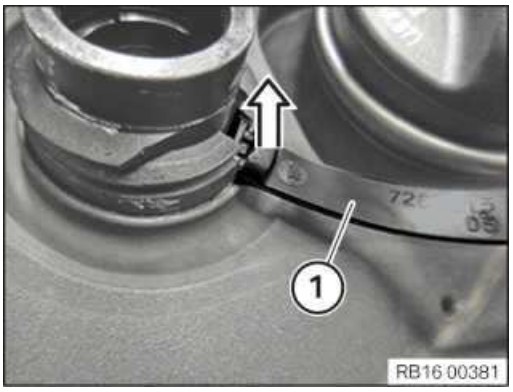
- Unscrew all bolts and nuts (arrows).
- Carefully feed out and remove the wheel arch cover (2).

4 – Remove the filler pipe at the active tank

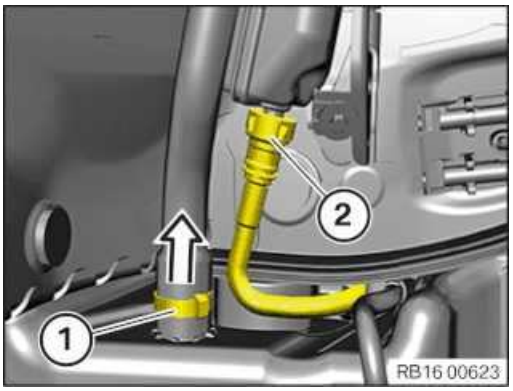


- Open sealing cap (1).

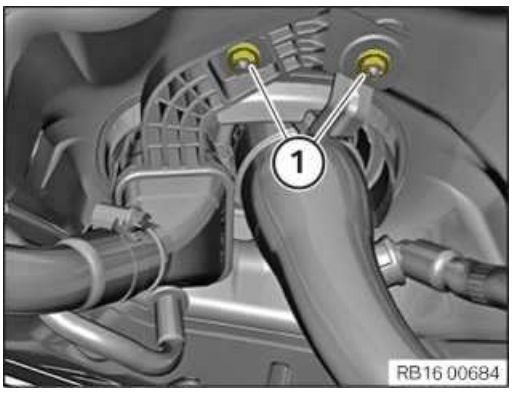
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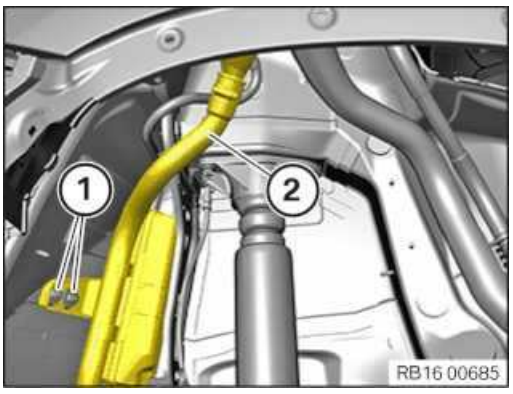
- Unclip retaining strap (1) in direction of arrow and remove the sealing cap.



- Loosen the hose clamp (1) and pull off the filling hose in the direction of the arrow.
- Unlock and disconnect snap fastener (2).



- Loosen nuts (1).

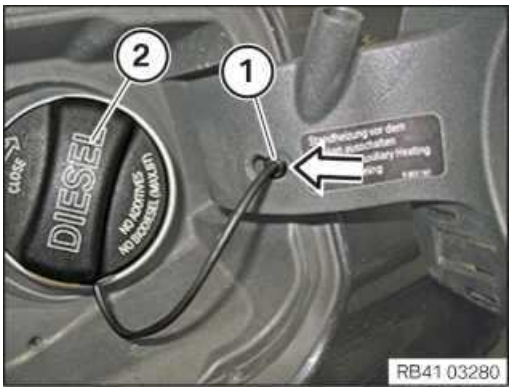


- Release plastic nuts (1) and remove filler pipe (2).

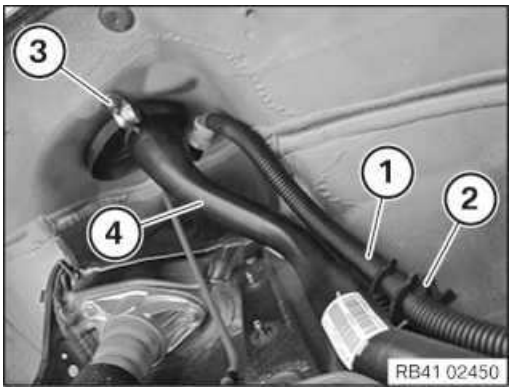
MAIN WORK

5 – Partially removing the fuel filler pipe

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- Detach the retaining strap (1) in the direction of the arrow.
- Open and remove sealing cap (2).

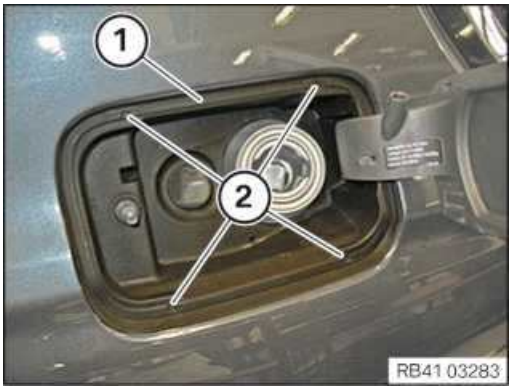


- Unclip the tank ventilation line (1).
- Loosen nuts (2) and (3).
- Detach fuel filler pipe (4) from threaded bolt.

6 – Remove cover housing

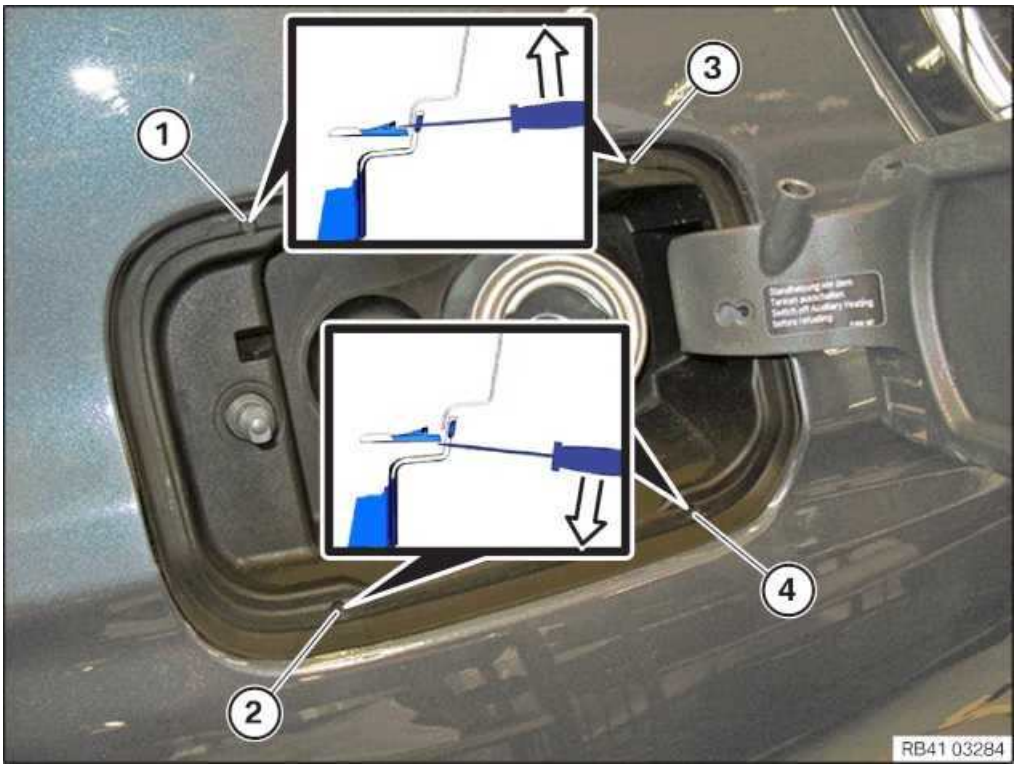


- Loosen the sealing lip (1) from the wheel arch.

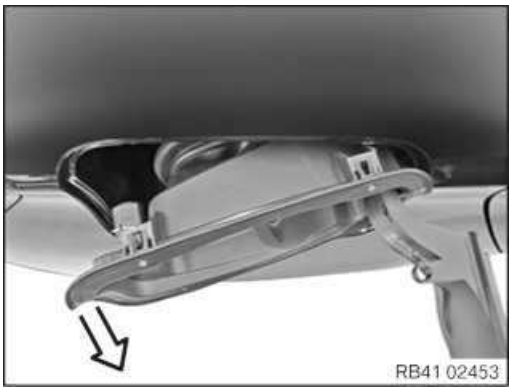


- Pierce the cover housing (1) in the highlighted areas (2) using a small screwdriver.

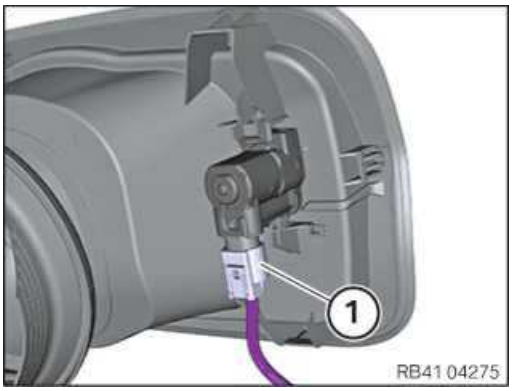
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- Hold cover bowl under tension.
- Insert the screwdriver no more than 10 mm deep.
- Unlock the latch mechanisms (6) in a sequence from (1) to (4) using a screwdriver (5).

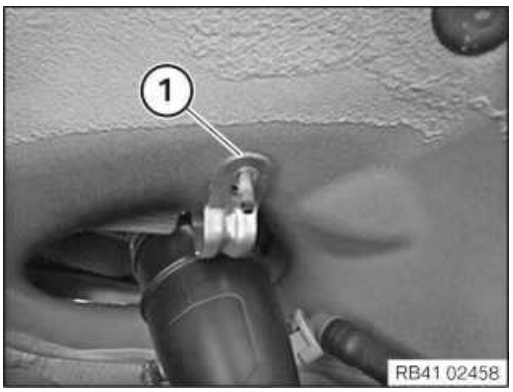


- Turn and remove the cover housing from the side panel.



- Unlock plug connection (1) and disconnect.
- Close fuel filler flap.
- Remove the cover housing .

7 – Install cover housing



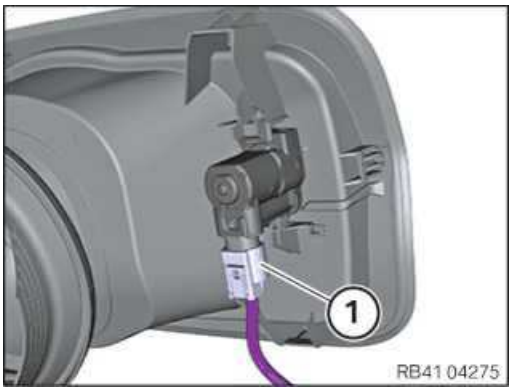
- Clean contact surface (1) on body and ground connection at fuel filler pipe.

  The ground connection must be guaranteed.

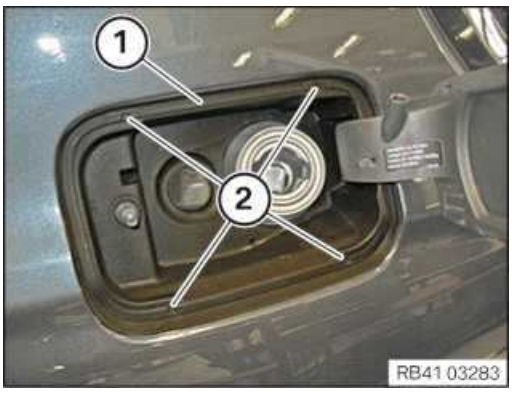
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- Push the cover housing towards the front at an angle into the side panel.
- Push sealing cup over fuel filler pipe.

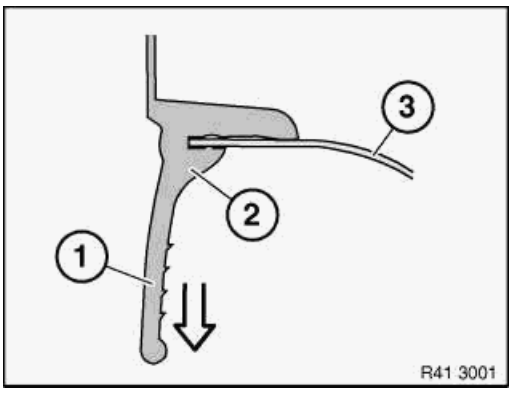


- Connect the plug connection (1).
- Open fuel filler flap.



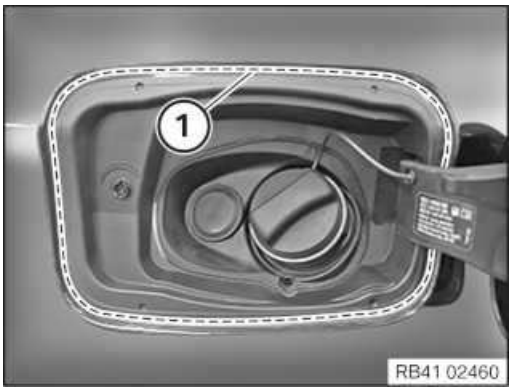
- Clip in the cover housing (1) into the side panel.

  The latch mechanisms (2) must engage audibly.



- Using the fitting aid (1), pull the sealing lip (2) over the sheet metal flange of the wheel arch (3).

Check



- Check the sealing lip (1) is positioned correctly.

Result

» Sealing lip (1) does not have uniform contact with the rear side panel.

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Measure

- Check flange (1) on rear side panel for damage.

  Straighten flange if necessary.

Check



- Check the sealing lip (1) is positioned correctly.

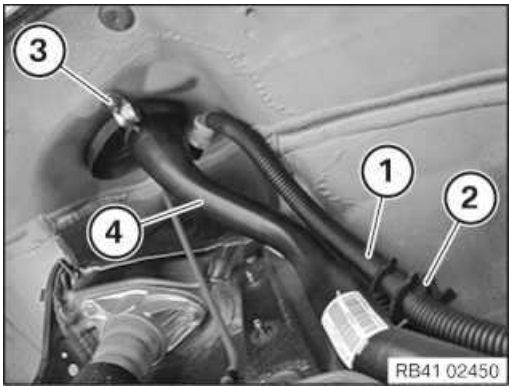
Result

» The sealing lip (1) is not evenly in contact with the wheel arch.

Measure

- Connect the sealing lip (1) to the wheel arch.

8 – Partially installing the fuel filler pipe



- Position the fuel filler pipe (4).
- Tighten nut (3).

  Parts: Nut.

Fuel filler pipe to outer wheel arch section

Nut M6			8 Nm

- Tighten nut (2).

  Parts: Nut.

Fuel filler pipe to body

Plastic nut	Renew plastic nut.	Tightening torque	4 Nm

- Clip tank ventilation line (1) in the holder.

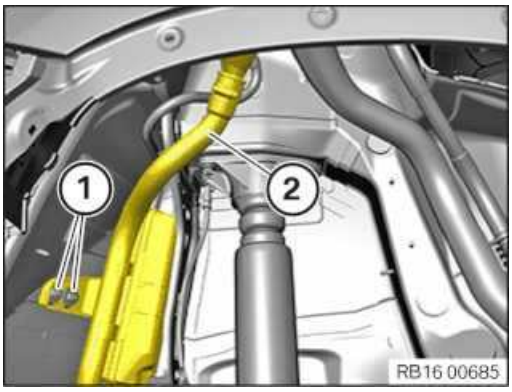


- Close sealing cap (1).
- Insert the retaining strap (2).

POSTPROCESSES

9 – Install the filler pipe on the active tank

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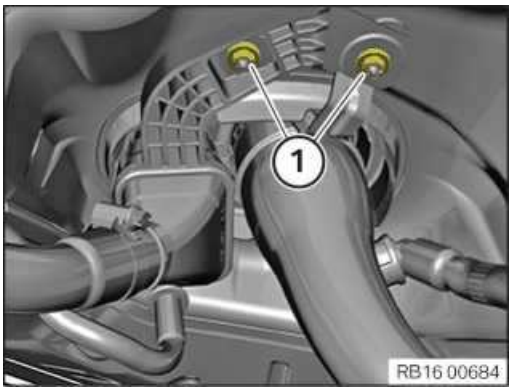


- Position the fuel filler pipe(2).
- Renew the plastic nuts (1).

  Parts: Plastic nuts
- Insert plastic nuts (1) and tighten.

SCR filler pipe on wheel arch

Plastic nut	Renew plastic nut.	Tightening torque	4 Nm

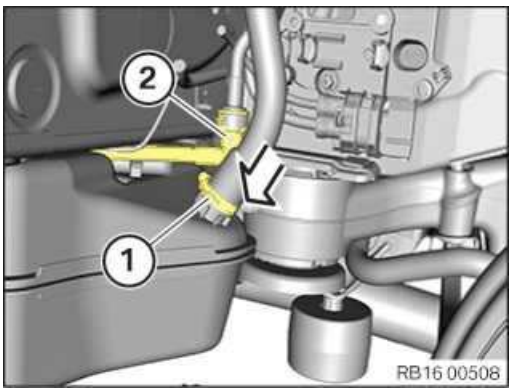


- Renew nuts (1).

  Parts: Nuts
- Install the nuts (1) and tighten.

SCR filler pipe to body

Nut M6	Replace nuts.	Tightening torque	8 Nm



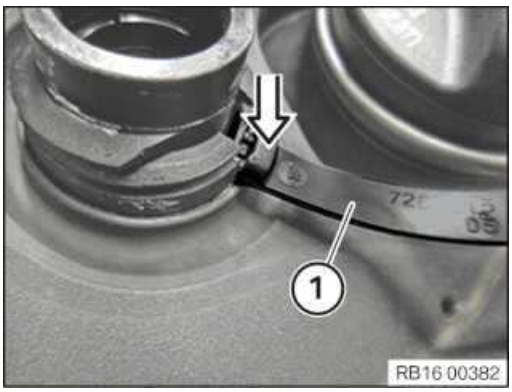
- Mount the filling hose in the direction of the arrow.
- Renew the hose clamp (1).

  Parts: Hose clamp
- Position hose clamp (1) and tighten.

Filling hose SCR reservoir

Hose clamp	Replace hose clamp.	Tightening torque	3 Nm

- Position snap fastener (2) and lock.



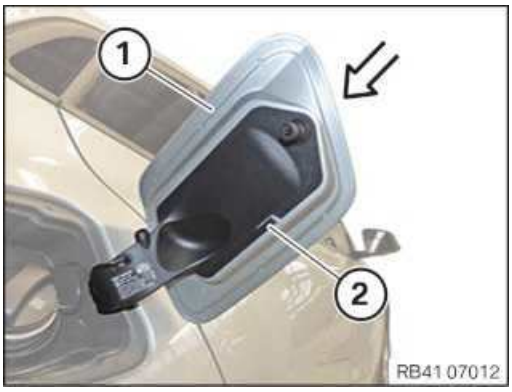
- Lock retaining strap (1) in direction of arrow.



- Close sealing cap (1).

10 – Install the fuel filler flap

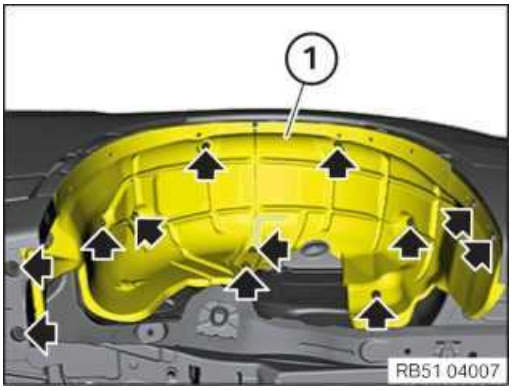
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- Slide fuel filler flap (1) onto the hinge in the direction of the arrow until lock (2) engages audibly.
- Close the fuel filler flap (1).

11 – Installing the rear wheel arch cover on the right

▸ **Removing the rear wheel arch cover**



- Feed in wheel arch cover (1) and correctly position it.
- Tighten all bolts and nuts (arrows).

Wheel arch cover to body

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

12 – Installing rear right wheel

▸ **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 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.

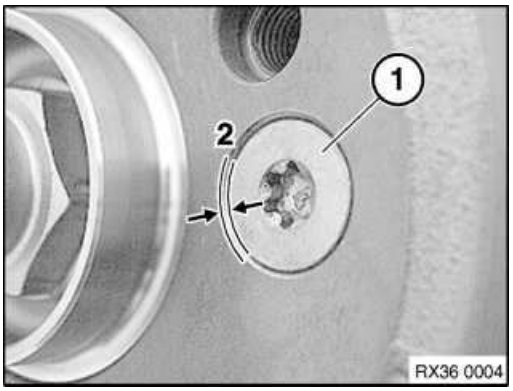
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- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.

  Do not operate special tool **2 344 011** with an impact screwdriver.

- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).



- Renew mounting bolt (1).

  Parts: Mounting bolt

- Check that the mounting bolt (1) for the brake disc is securely seated.

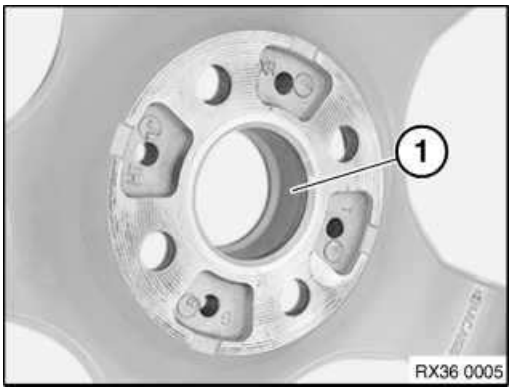
  The mounting bolt (1) for the brake disc may not protrude under any circumstances on the contact surface (2) between the brake disc and the wheel rim.

Brake disc to rear wheel hub

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub

M8	Renew screw.	Tightening torque	16 Nm



- Lightly grease the wheel centring (1) in the wheel rim; refer to additional information for grease for the wheel centring (1).

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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 the wheel bolts and threads for damage, renew the wheel bolts if necessary.
- Join and tighten the wheel bolts (arrows).

Wheel bolts

M 14/AF 17	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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13 – 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

Fuel filler pipe to outer wheel arch section — Used in step 8

Nut M6			8 Nm

Fuel filler pipe to body — Used in step 8

Plastic nut	Renew plastic nut.	Tightening torque	4 Nm

SCR filler pipe on wheel arch — Used in step 9

Plastic nut	Renew plastic nut.	Tightening torque	4 Nm

SCR filler pipe to body — Used in step 9

Nut M6	Replace nuts.	Tightening torque	8 Nm

Filling hose SCR reservoir — Used in step 9

Hose clamp	Replace hose clamp.	Tightening torque	3 Nm

Wheel arch cover to body — Used in step 11

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

Brake disc to rear wheel hub — Used in step 12

M8	Renew screw.	Tightening torque	16 Nm

Brake disc to front wheel hub — Used in step 12

M8	Renew screw.	Tightening torque	16 Nm

Wheel bolts — Used in step 12

M 14/AF 17	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

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2 344 011 Tool



Common	Used in step 12
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 2
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 2
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 2
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 2
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 2
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	

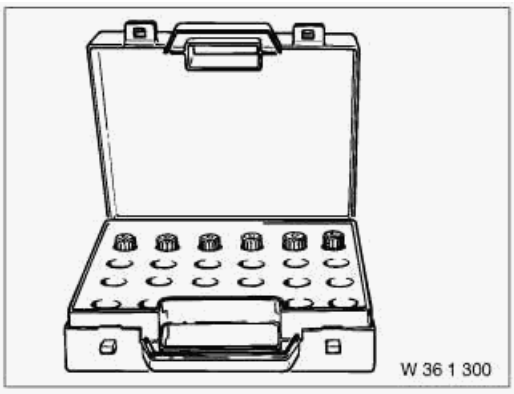
0 495 228 (36 1 331) Wheel stud



Common	Used in step 2
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 2
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 2
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	

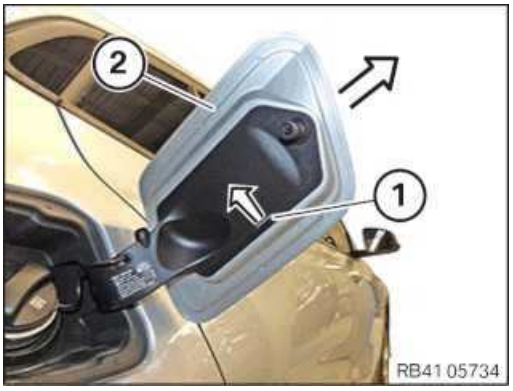
Links

Operating materials	Used in step
2.0 Grease for wheel centring	12

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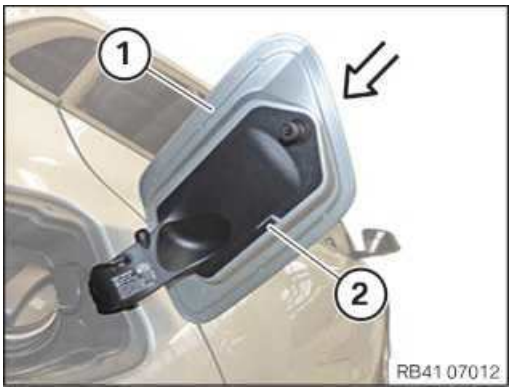
41 63 001 Replacing the fuel filler flap

1 – Remove the fuel filler flap



- Open flap for fuel filler neck.
- Remove lock (1) and pull off the flap (2) in direction of arrow.

2 – Install the fuel filler flap



- Slide fuel filler flap (1) onto the hinge in the direction of the arrow until lock (2) engages audibly.
- Close the fuel filler flap (1).

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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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