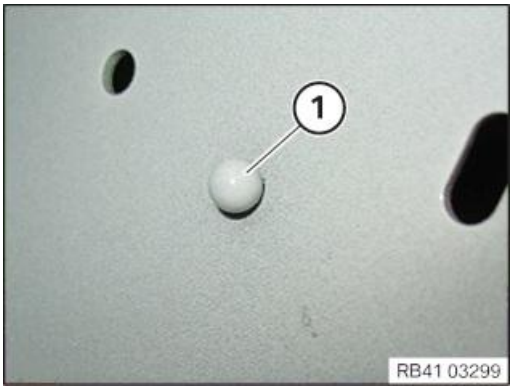
41 00 513 Fix bolts on the new part

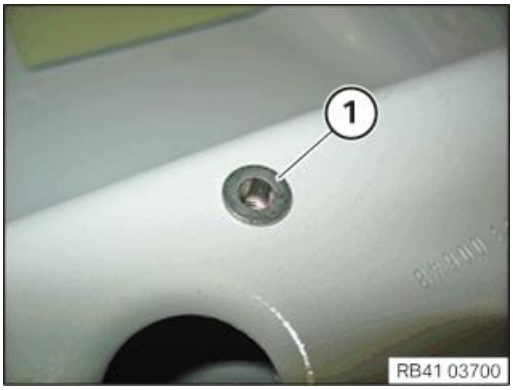
Note: On BMW and MINI bodies, various welded and pushed in bolts are being used.



Single ball/double ball (version 1):

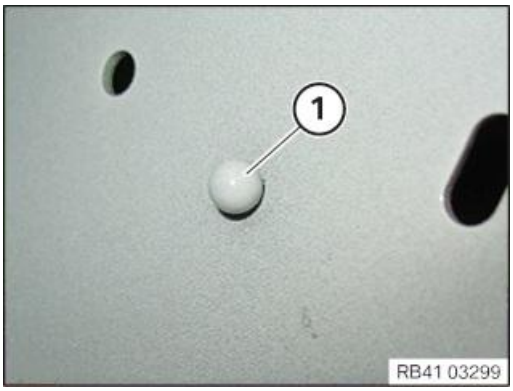
Grind off any residues of the single ball (1), if applicable.

Drill hole with diameter 7 mm.



Set blind rivet nut (1).

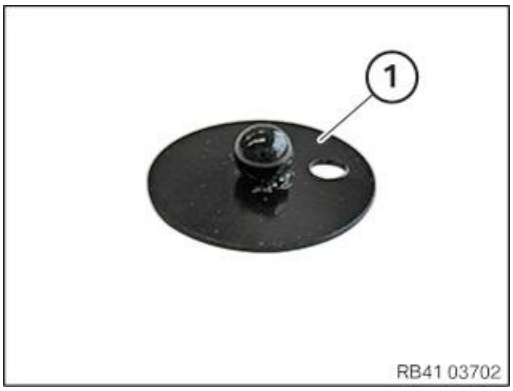
Screw in single ball with thread until a height of 5 mm (double ball 10 mm) is reached.



Single ball/double ball (version 2):

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

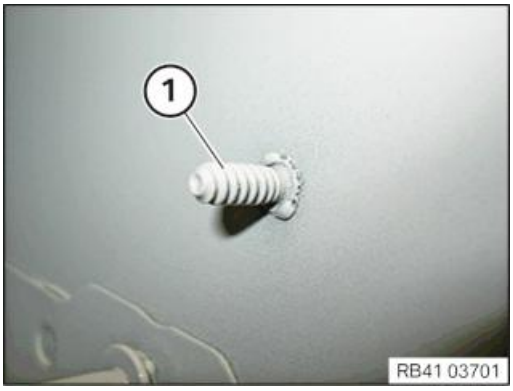
Clean area with solvent cleaner R1.



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

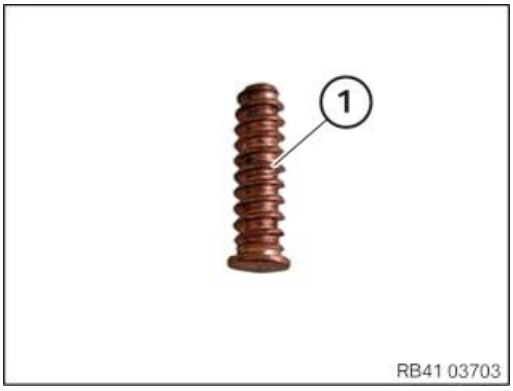
Bond repair element optionally with adhesive K1, K5 or window pane adhesive at the same position.

cardiagn.com

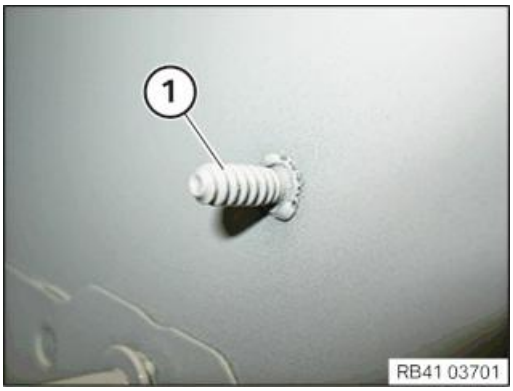


Coarse threaded bolt (version 1):

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.

cardiagn.com

51 00 ... Notes on component bonding with adhesive tape

Unless specified otherwise in vehicle-specific or component-specific instructions, the following notes apply.

Follow repair notes for bonded gaskets for rubber seals.

1. General notes

- Bonding at room and object temperature of >+18 °C.
- Newly painted parts may only be bonded after a drying time of at least 24 hours.
- Optimal bonding/attachment to the background surface is achieved after approx. 48 hours. Components must not be exposed to mechanical strain beforehand (car wash, strength test, etc.).
- Do not touch bonding area.
- It is not the length of time that pressure is applied but rather the force of pressure applied that is crucial.
- Detaching the adhesive tape after pressing destroys the adhesive layer.

2. Auxiliary materials and tools

- Cleaning agent R1 or cleaning agent R2
- Sika Activator 205
- Fluff-free cleaning cloths
- Pressure roller

3. Preparations

- Remove all adhesive residue or clean new part thoroughly
- Clean the areas to be bonded immediately before bonding to remove silicone and grease residues.
- Treat adhesive strips on glass or painted surfaces with Sika activator 205.

Note:

Sika activator 205 **apply extremely thinly. It must not be coated beyond the bonding surface**.

Note: air drying time: ≥ 1 minute

4. Bonding

4.1 Components without preassembled adhesive tape

- Pull off liner* from adhesive tape
- Position adhesive tape on component and stick on
- Press down adhesive tape over entire adhesive area
- Continue with Point 4.2

* Liner is the protective film on the adhesive tape.

4.2 Components with pre-fitted adhesive tape

- Pull off liner* from adhesive side (if adhesive area is large, do not pull off liner completely)
- Align component in correct position on vehicle
- Press down component over entire adhesive area
  Minimum contact pressure ≥ 15 N/cm² (firm thumb pressure reaches approx. 35 N/cm².)

* Liner is the protective film on the adhesive tape.

cardiagn.com

51 00 ... Notes on installing rubber window seals

1. Work safety when handling lubricant G14*

- Wear safety goggles, protective gloves and if necessary an apron.
- Do not eat, drink or smoke in the area of processing/application
- Ensure rooms are well ventilated.
- Keep away from heat and ignition sources
- In event of skin contact: Wash areas of skin affected with soap and water immediately, change work clothing which has been fouled with lubricant immediately (keep spare work clothing in reserve)
- In event of eye contact: Rinse eyes immediately with plenty of water and seek medical advice
- Observe safety data sheet (see Aftersales Assistance Portal (ASAP) - Service/Technology - Safety Data Sheet - 7-digit part number)

2. General notes

- Use only the BMW-approved lubricant for fitting
- Application only at room and object temperatures between 18 and 25 °C
- Lubricant dries at different rates depending on the quantity, temperature and ventilation and becomes sticky
- Lubricant can only be used for fitting and not for fault elimination (e.g. grating)
- Newly painted parts may only be brought into contact with the lubricant after cooling
- Optimal bonding to the surface is achieved after approx. 48 h. The rubber window seal must not be exposed to mechanical strain beforehand. (car wash, strength test, etc.).

Important!

To avoid groaning noises, do not use soapy water (low-surface-tension water with washing-up liquid) or lubricant containing silicone.

3. Auxiliary materials and tools

- Spirit, cleaning cloth, plastic squeegee, needle
- LubricantG14*
  (* sourcing reference BMW Group Parts Department)

4. Preparations

- Heat and remove anti-friction agent residues with a hot air blower or clean new part thoroughly
- Immediately prior to fitting, clean the work area with spirit in order to remove silicone and grease residues

Note:

Air drying time approx. 1 min:

5. Assembly

- Apply a thin coating of lubricant to the rear side of the rubber window seal only
- Perform fitting within 30 min of applying lubricant
- Lubricant dries after fitting and becomes sticky

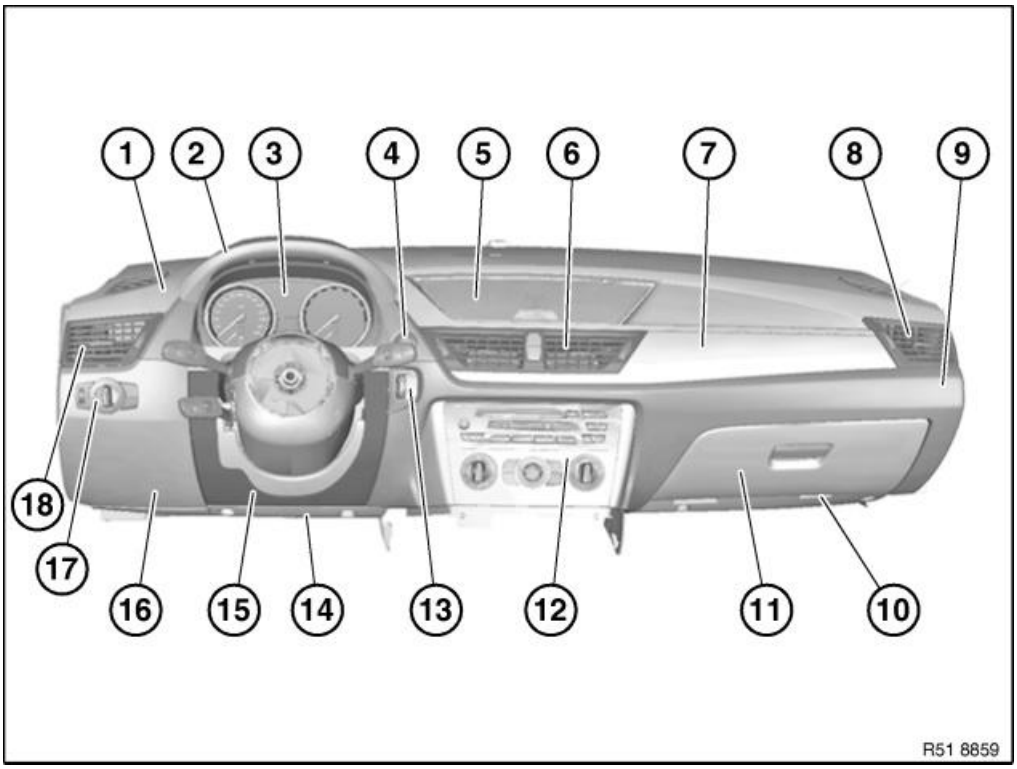
cardiagn.com

51 00 ... Overview of consumables (Electronic Parts Catalogue)

Designation, repair instructions	Designation, Electronic Parts Catalogue	Part number, Electronic Parts Catalogue	Remarks
Cleaning agent R2	Cleaning agent R2	83 19 0 417 324	500 ml
Lubricants G14	Lubricants G14	83 23 2 360 412	900 ml / Notes
Sika Activator 205	Aktivator 205	83 19 0 030 155	250 ml
Yellow plastic adhesive tape	Adhesive tape	83 19 9 410 979	A = 66 mm; B = 50 mm
Double-sided adhesive tape	Adhesive tape	54 11 2 290 978	L = 50 mm/W = 12 mm
Masking tape	Masking tape	81 22 9 400 181	L = 50 mm / W = 19 mm
Masking tape	Masking tape	81 22 9 400 388	L = 50 mm / W = 30 mm
Eraser disk	Scotch Brite eraser disk	51 91 0 402 946	with shaft
Cutting cord	Cutting cord	81 43 2 344 272	Notes
Adhesive set K6	Adhesive set K6	83 19 2 317 925	
Window glass adhesive	Window glass adhesive, cold, 1 hour	83 19 2 289 286	
Profile rubber adhesive		83 19 2 232 322	
Set of felt pads	Set of felt pads	51 45 2 353 024	

cardiagn.com

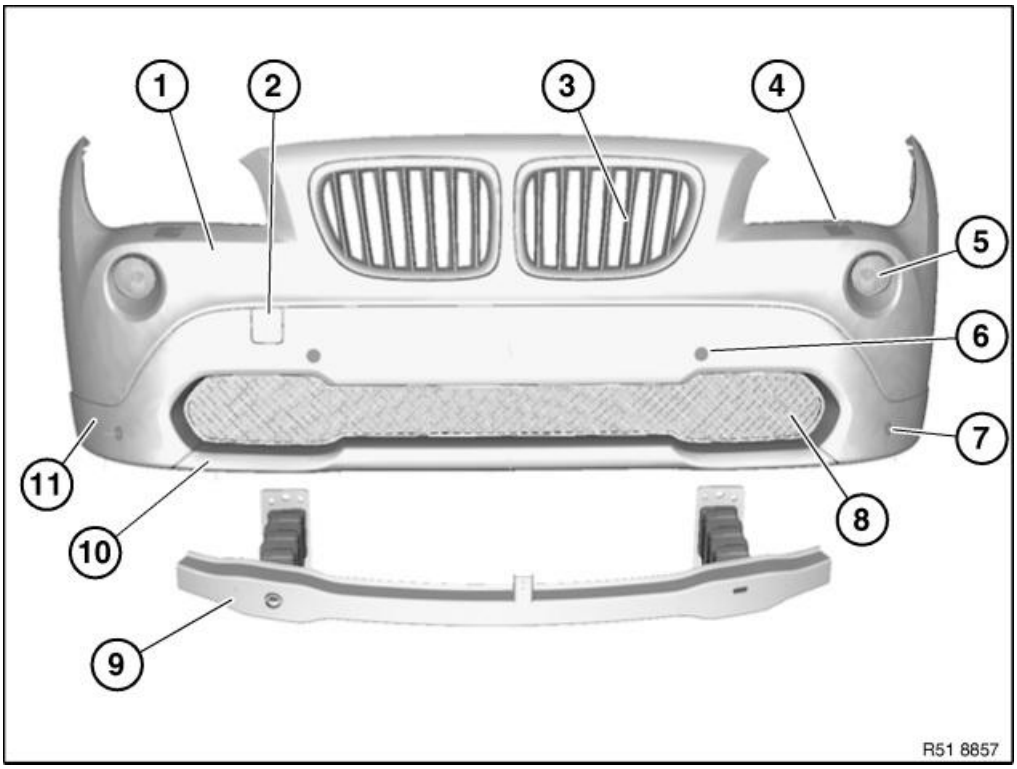
51 45 .. Overview of dashboard



1 Dashboard trim panel
2 Dashboard scoop
3 Instrument cluster
4 Start/Stop switch
5 Top storage compartment
6 Fresh-air grille, middle
7 Trim on instrument panel, right
8 Fresh-air grille, right
9 Trim on instrument panel, right (bottom)
10 Instrument panel trim, bottom right
11 Glove box, right
12 Control panel for heater/air conditioner
13 Insert for radio control key
14 Panel for pedals
15 Instrument panel trim, bottom left (steering-column shroud lower section)
16 Instrument panel trim, bottom left
17 Light operating unit
18 Fresh-air grille, left

cardiagn.com

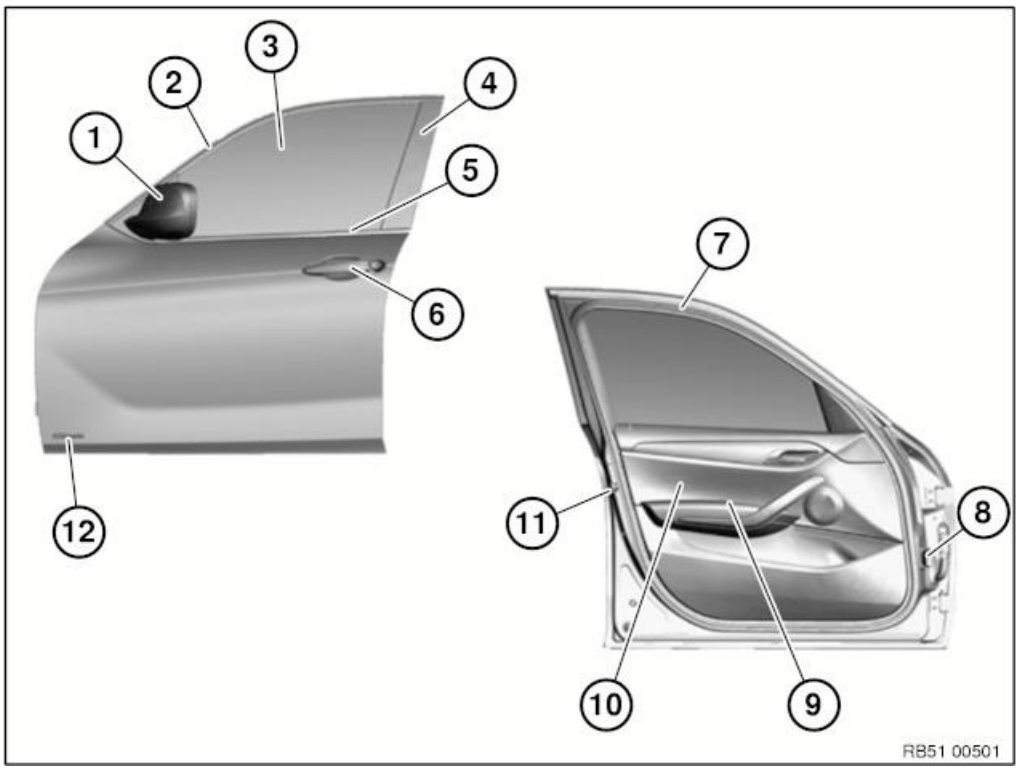
51 11 ... Overview of front bumper



1 Bumper panel
2 Cover on towing eye
3 Grille
4 Headlight cleaning system cover
5 Front fog light
6 Interior ultrasonic sensor
7 Exterior ultrasonic sensor
8 Ornamental grille, bottom
9 Bumper support
10 Front spoiler
11 Bumper lower section

cardiagn.com

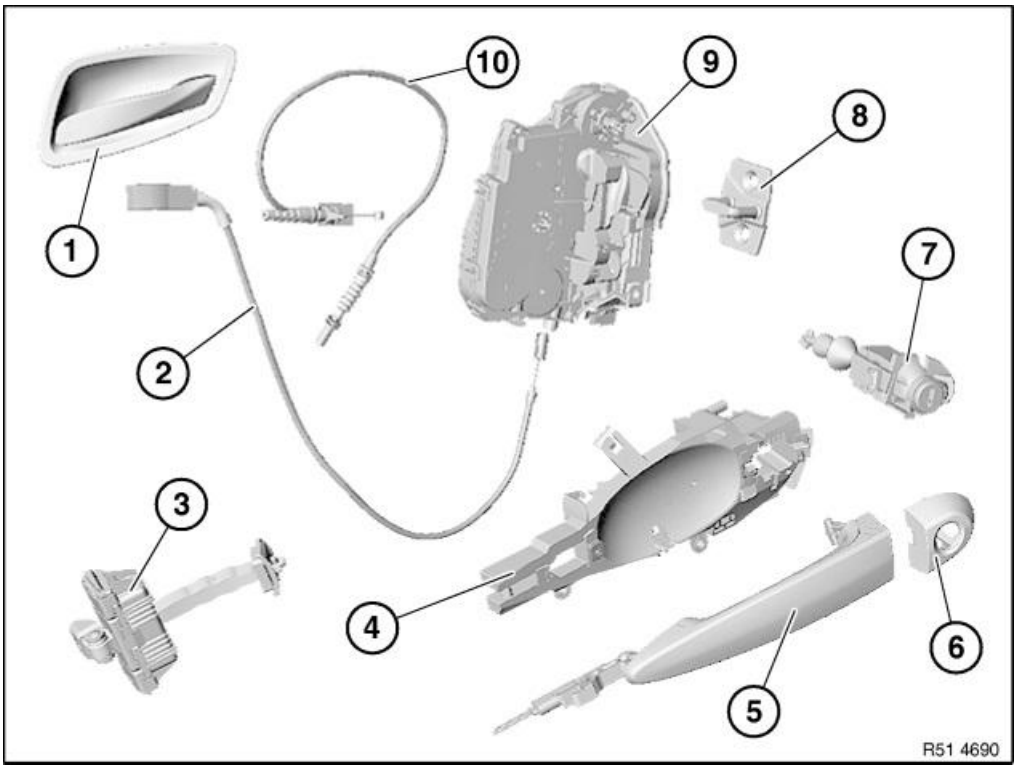
51 00 .. Overview of front door



1 Exterior mirror
2 Rubber guide for door window glass
3 Door window glass
4 Trim on window frame
5 Window cavity cover strip
6 Outer door handle
7 Cover on door window frame
8 Door brake
9 Rocker switch for window operation
10 Door trim panel
11 Door lock
12 Lettering

cardiagn.com

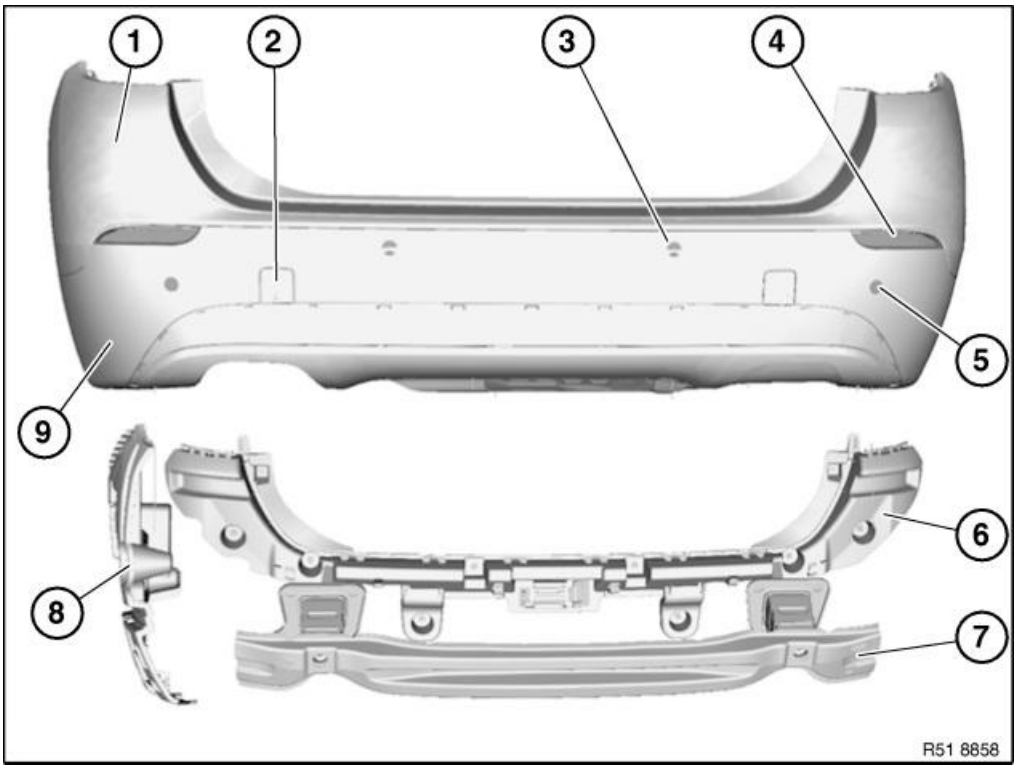
51 21 ... Overview of front door locks



1 Door opener, inside
2 Bowden cable for inside door opener
3 Door brake
4 Carrier for outside door handle
5 Outer handle on front door
6 Cover on outer handle
7 Lock barrel (on driver's door only)
8 Door lock striker
9 Door lock
10 Bowden cable for outside door handle

cardiagn.com

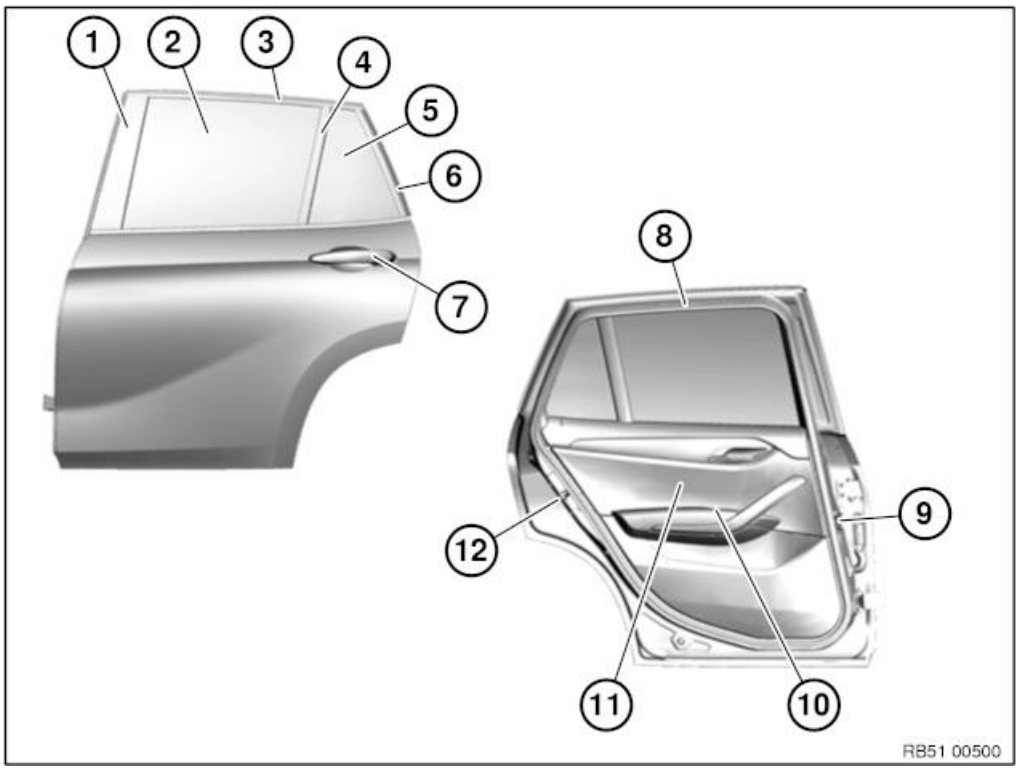
51 12 ... Overview of rear bumper



1 Bumper trim
2 Cover on towing eye
3 Inner ultrasonic transducer
4 Reflector, rear
5 Outer ultrasonic transducer
6 Guide, middle
7 Bumper carrier
8 Guide, side
9 Bumper panel

cardiagn.com

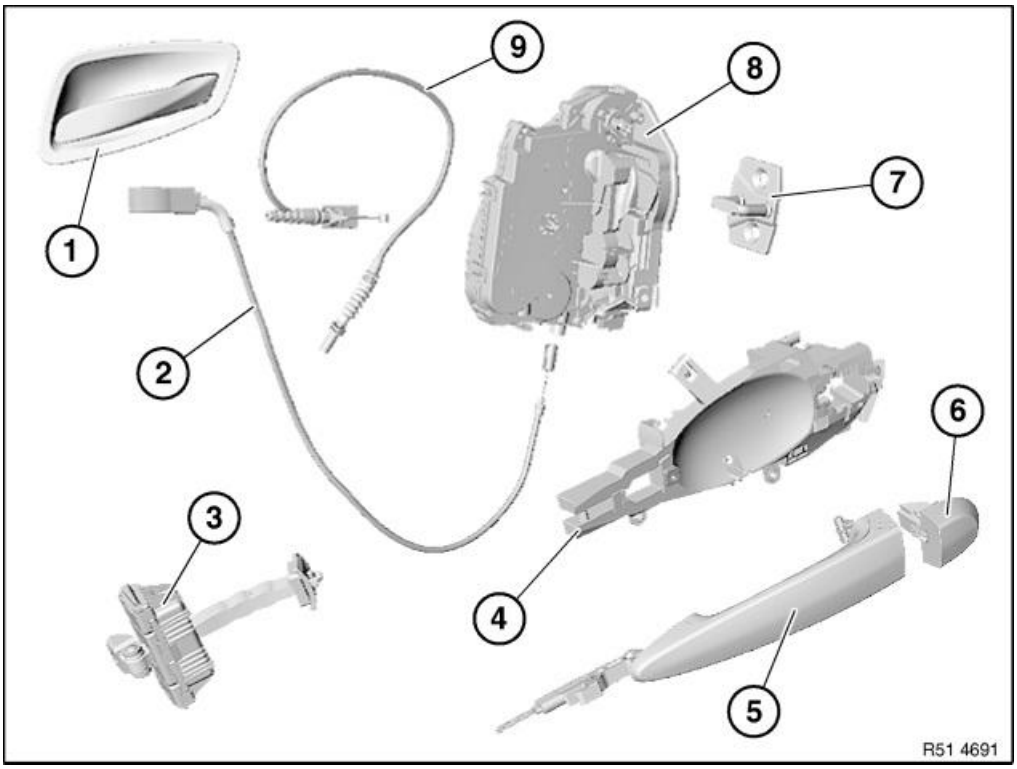
51 00 .. Overview of rear door



1 Cover (front) on window frame
2 Door window glass
3 Rubber guide for door window glass
4 Trim for window guide
5 Door window glass (stationary)
6 Cover on window frame (rear)
7 Outside handle
8 Cover on door window frame
9 Door brake
10 Rocker switch for side window operation
11 Door trim panel
12 Door lock

cardiagn.com

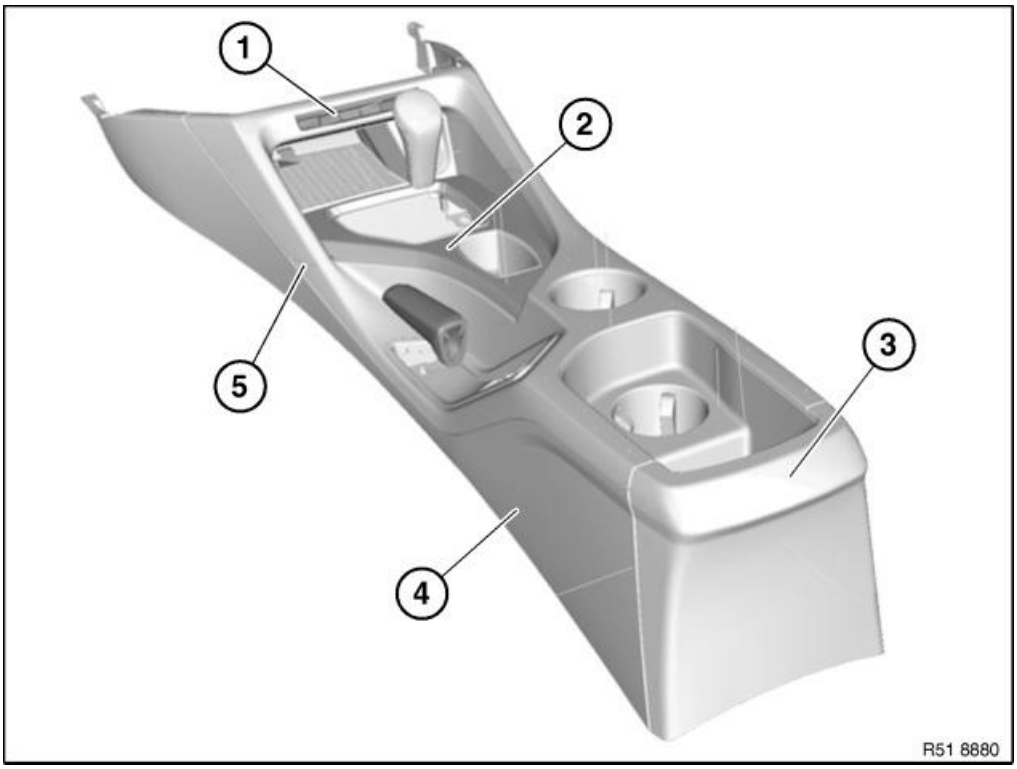
51 22 ... Overview of rear door locks



1 Door opener, inside
2 Bowden cable for inside door opener
3 Door stop
4 Support for outer door handle
5 Outer door handle on front door
6 Cover on outer door handle
7 Door lock striker
8 Door lock
9 Bowden cable for outer door handle

cardiagn.com

51 16 ... Overview of storage compartment (centre console)



1 Centre console control panel
2 Trim for storage compartment
3 Rear centre console trim
4 Centre console, complete
5 Trim, centre console

cardiagn.com

41 00 ... Replacing blind rivets

Special tools required:

- 2 348 128
- 72 1 210

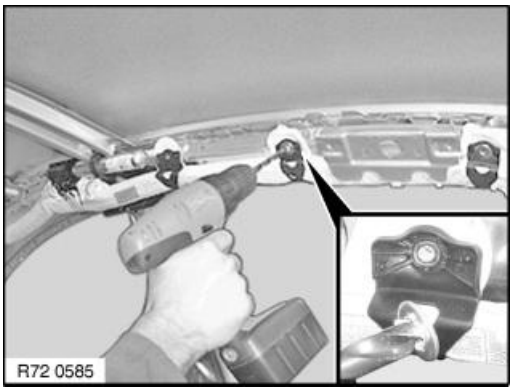


Important!

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

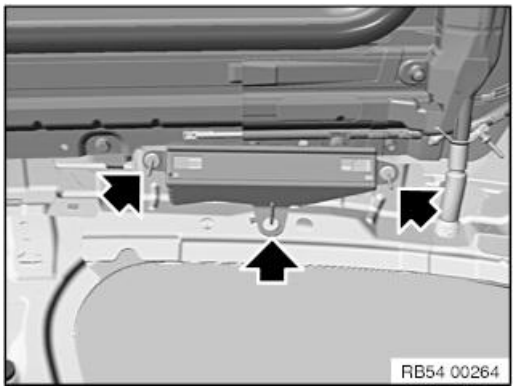
Lay out protective mats in the relevant working area:

- Instrument panel
- Entrance area
- Passenger compartment



Schematic diagram of folding pack holder for head airbag:

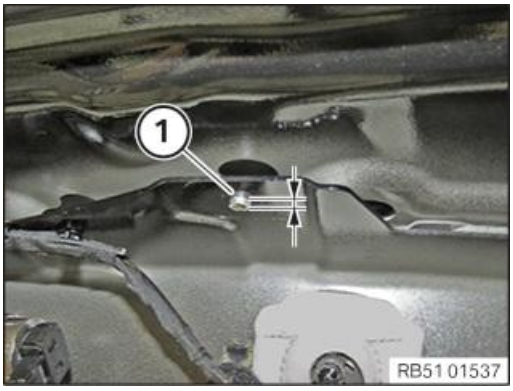
Drill off rivet plate down to rivet shank with a 10 mm twist drill bit.



Described for grab handle holder:

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

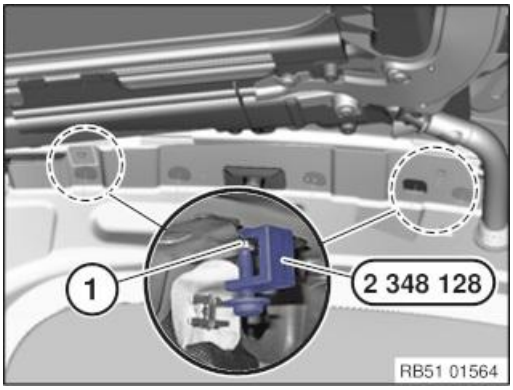
cardiagn.com



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

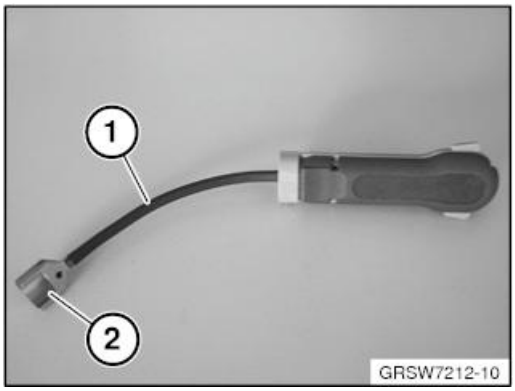
Installation note:
Apply primer to paintwork damages on side frame.
Note:
Depending on accessibility, the rivet heads will have to be removed using special tool 2 348 128 or 72 1 210 .

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.

cardiagn.com



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.

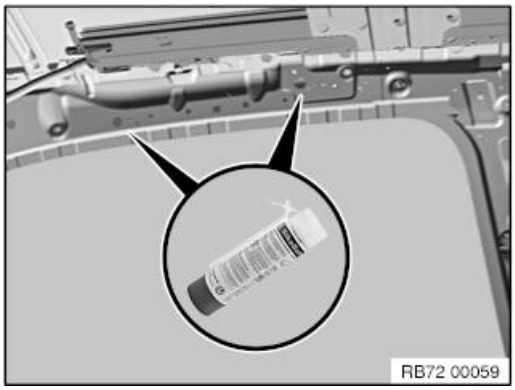
Carefully feed special tool out of body so that rivet head does not fall out of collecting tray.

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.

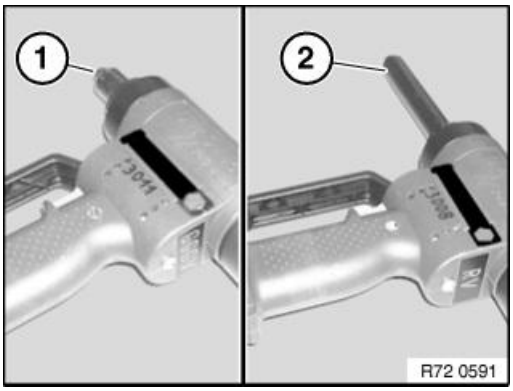
Push the hose in through the pillar holes.

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.



Overview of rivet gun:

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

cardiagn.com

51 00 ... Safety information for working on vehicles with airbag systems



Warning!

If work is carried out in area of airbag systems, e.g. on:

- Door trim panels
- Interior trims
- Dashboard etc.

the ignition must be turned off in each case.

- The ignition must always be off.
- The ignition key must be removed from the ignition lock.

This eliminates the danger of injury.

cardiagn.com

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



Warning!

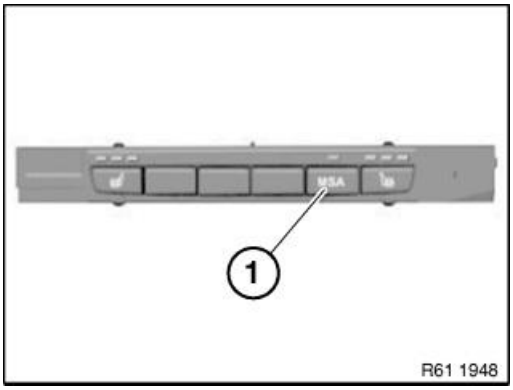
If the engine hood/bonnet contact is pulled upwards (workshop mode), the information "switch closed" is output. The automatic engine start-stop function is active.

An automatic engine start is possible.

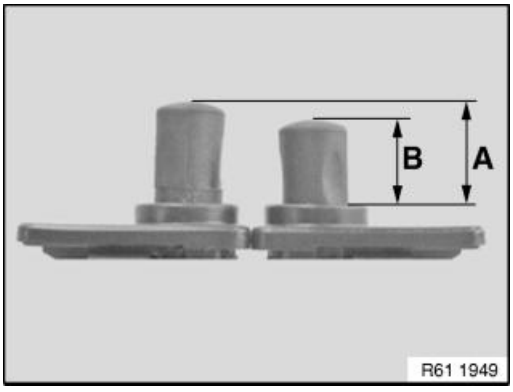
Observe safety precautions when working on MSA vehicles.

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

cardiagn.com

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

cardiagn.com

51 00 ... Service position of engine compartment lid

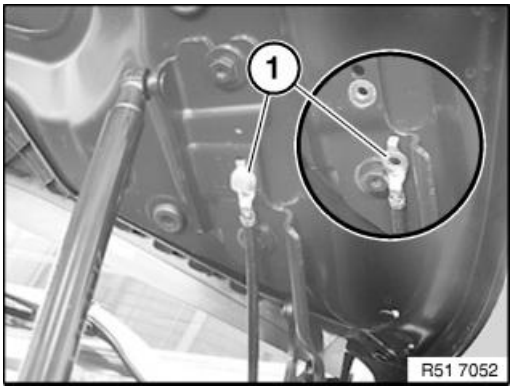
Special tools required:

- 51 2 240

Warning!

Danger of injury and damage!

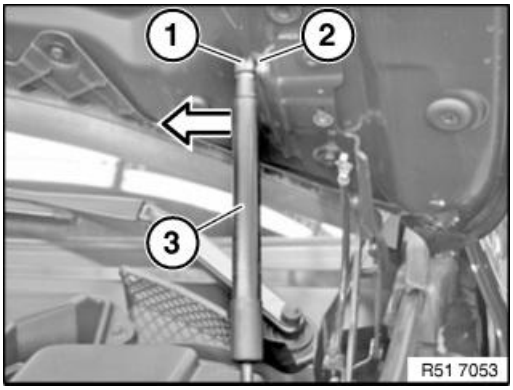
Engine compartment lid must be held by a second person helping.



If necessary, open engine compartment lid.

Left side only:

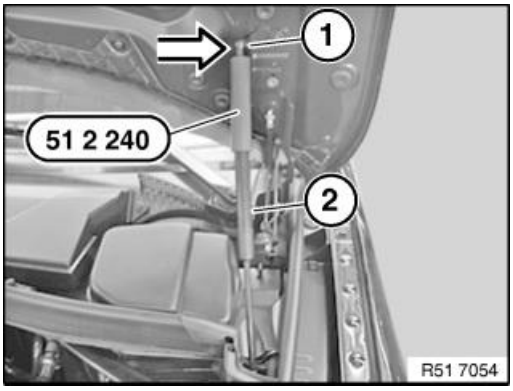
Release screw (1) on ground strap.



Remove ball socket (1).

Unclip gas pressure spring (3) in direction of arrow from ball stud (2).

Note:
Carry out work on the right side in the same way as for the left side illustrated here.

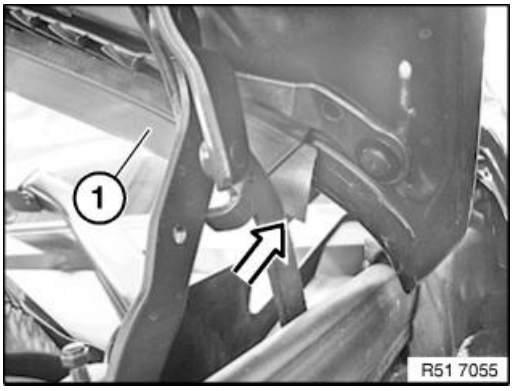


Push special tool 51 2 240 over gas pressure spring (2).

Clip ball socket of special tool 51 2 240 onto ball stud (1).

Note:
Carry out work on the right side in the same way as for the left side illustrated here.

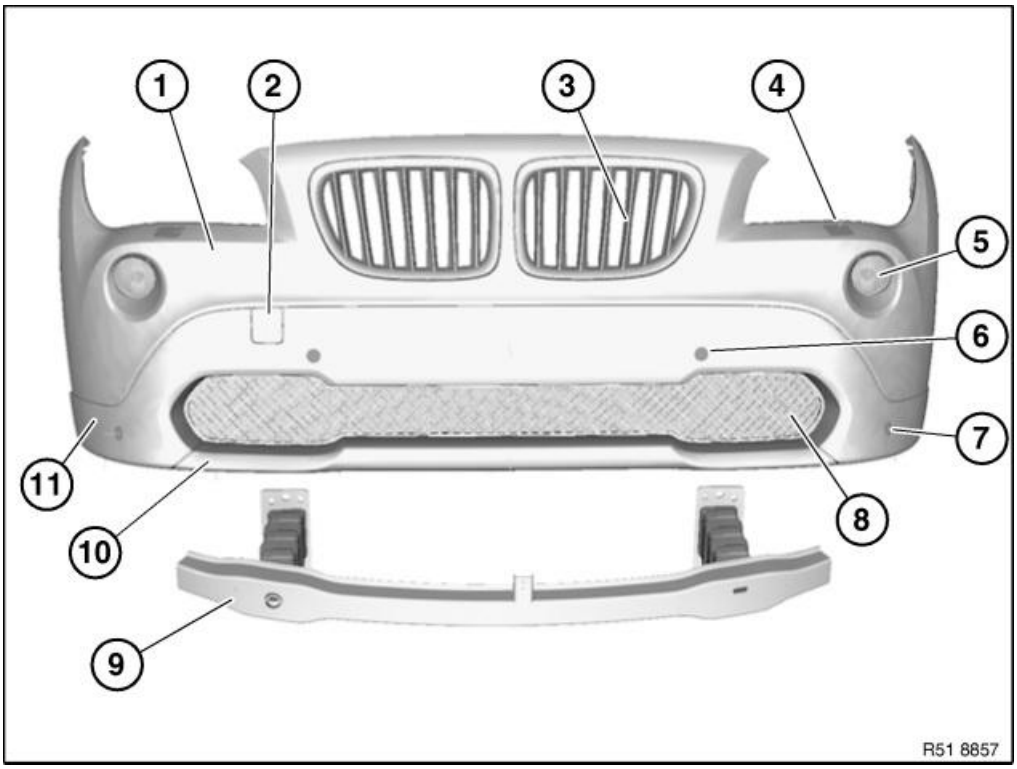
cardiagn.com



Note:
Engine compartment lid trim panel (1) collides with engine compartment lid hinge in service position. Trim panel (1) does not need to be removed.

cardiagn.com

51 11 ... Overview of front bumper



1 Bumper panel
2 Cover on towing eye
3 Grille
4 Headlight cleaning system cover
5 Front fog light
6 Interior ultrasonic sensor
7 Exterior ultrasonic sensor
8 Ornamental grille, bottom
9 Bumper support
10 Front spoiler
11 Bumper lower section

cardiagn.com

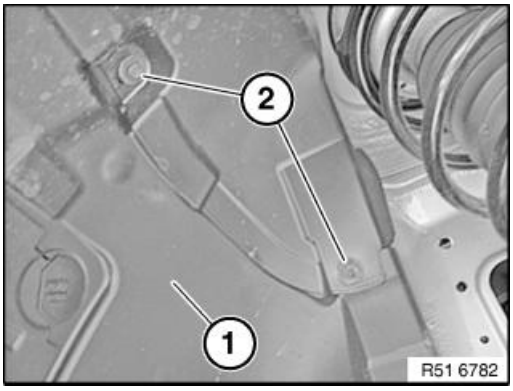
51 11 156 Removing and installing front bumper trim

Necessary preliminary tasks:

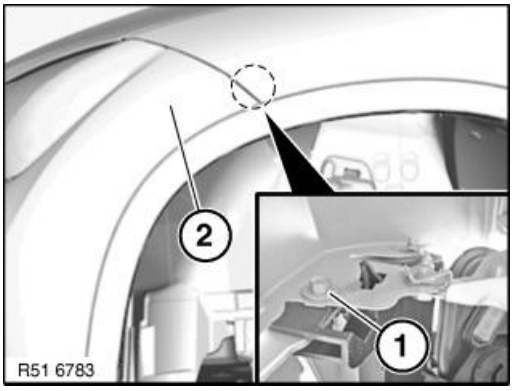
- Raise vehicle
- Remove wheel arch cover part of the way on left and right

Version with headlight cleaning system:

- Remove cover for headlight cleaning system left and right



Release screws (2) on wheel arch cover front (1).

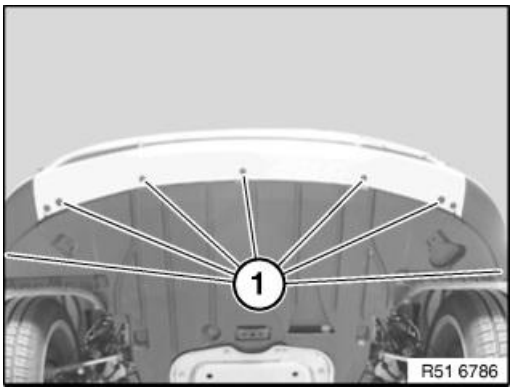


Turn wheel arch cover inwards.

Release screw (1).

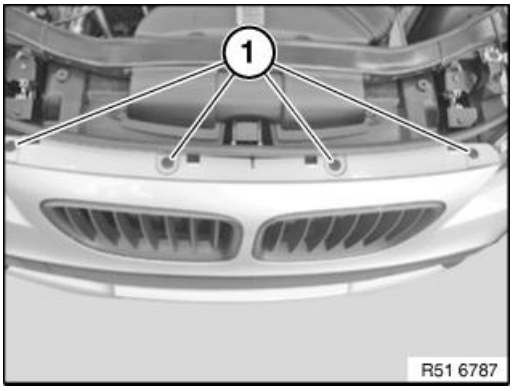
Unclip bumper (2) on bracket and pull away.

Installation note:
Install bumper (2) level with side section.



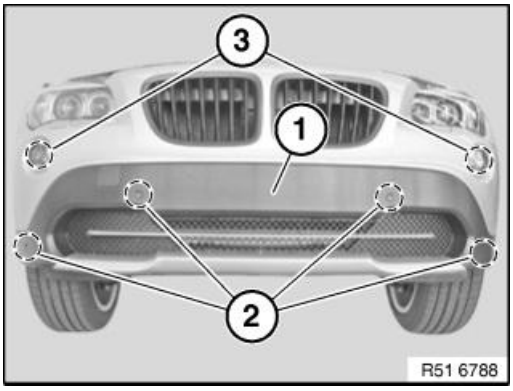
Release screws (1).

cardiagn.com



Release screws (1).

Tightening torque 51 11 1AZ.



Note:
The following tasks must be carried out with a second person assisting:

Pull bumper panel (1) forwards a little.

If necessary, disconnect plug connections on ultrasonic sensors (2) and/or on fog lights (3).

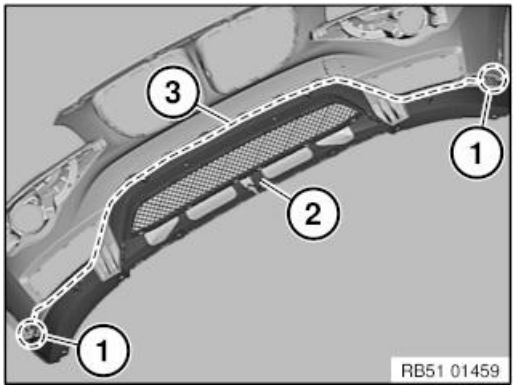
Remove bumper panel (1) towards front with aid of a 2nd person.

cardiagn.com

51 11 141 Removing and installing/replacing bumper panel lower section (from 07/12)

Necessary preliminary work:

- Remove bumper panel
- Remove number plate and associated support
- Remove ornamental grille at side left and right



Release left and right screws (1).

Release bumper panel lower section (2) at latch mechanisms (3) and remove.

Installation note:
Retaining tabs and securing eyes must not be damaged.

Replacement

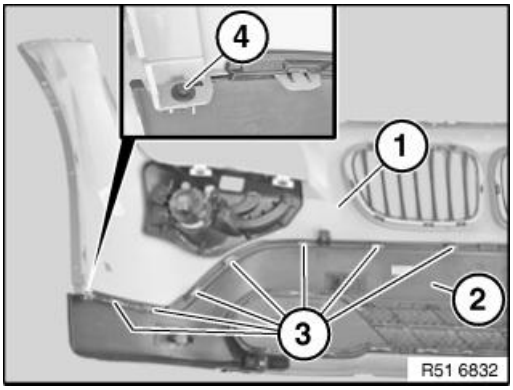
- Modify ornamental grille
- Modify all ultrasonic sensors
- Modify front spoiler

cardiagn.com

51 11 141 Removing and installing/replacing bumper panel lower section (up to 07/12)

Necessary preliminary work:

- Remove front bumper panel



Release left and right screws (4).

Unclamp bottom bumper trim panel (2) (3) and remove from bumper panel (1).

Installation note:
Bumper panel retaining tabs (1) and bottom bumper trim panel securing eyes (2) must not be damaged.

Replacement

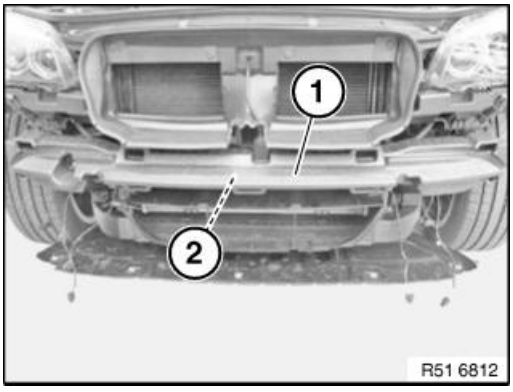
- Modify ornamental grille
- Modify all ultrasonic sensors
- Modify front spoiler

cardiagn.com

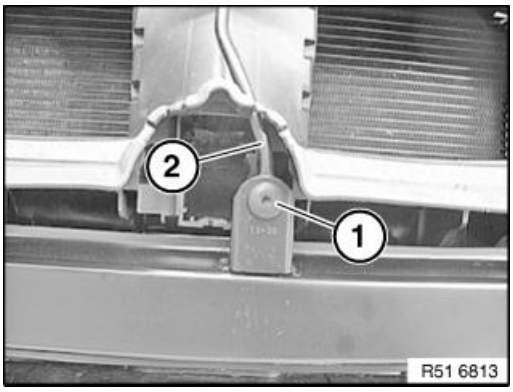
51 11 050 Removing and installing/replacing carrier for front bumper trim

Necessary preliminary tasks:

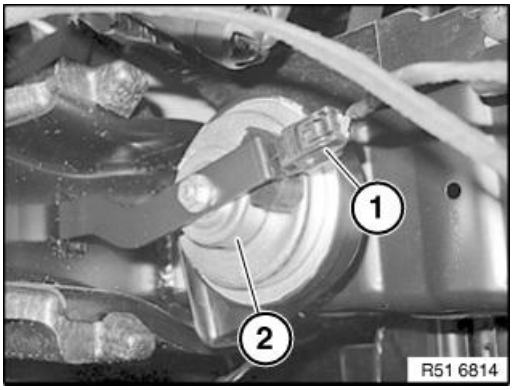
- Remove headlight on left and right



Release impact absorber (1) from support (2).



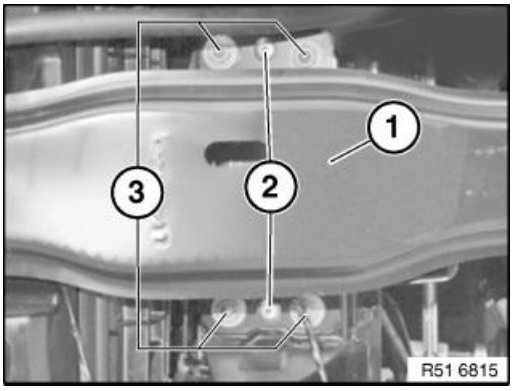
Release screw (1) on retaining hook bracket (2).



Note:
For right side operations, use mirror image of graphic.

Disconnect plug connection (1) on fanfare horn (2) on left/right. Unclip each wiring harness on support.

cardiagn.com



Note:
For right side operations, use mirror image of graphic.

Drill out blind rivets (2) and release nuts (3).

Tightening torque 51 11 2AZ .

Remove carrier (1).

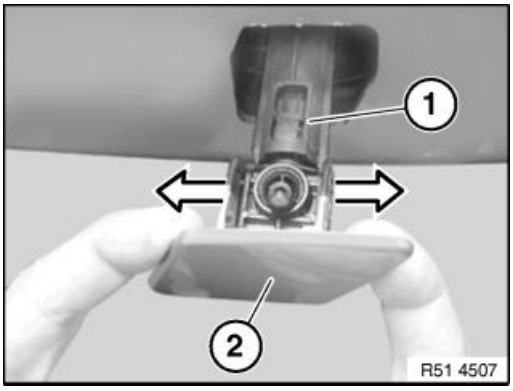
Installation:
Centre support (1) prior to riveting.

Replacement

Modify fanfare horns.

cardiagn.com

51 11 ... Removing and installing/replacing cover for headlight cleaning system on left

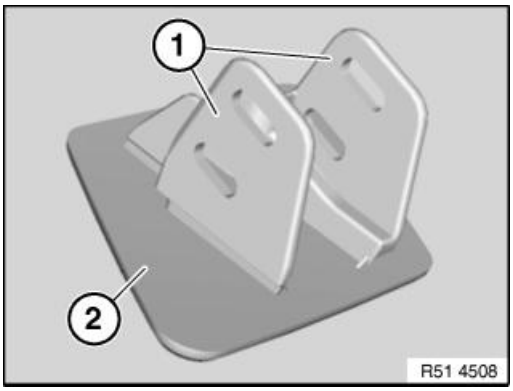


Pull out spray nozzle (1) by cover (2).

Important!

When releasing cover (2), grip spray nozzle (1) firmly and then allow to slide back slowly (risk of damage).

Release cover (2) sideways from spray nozzle (1).



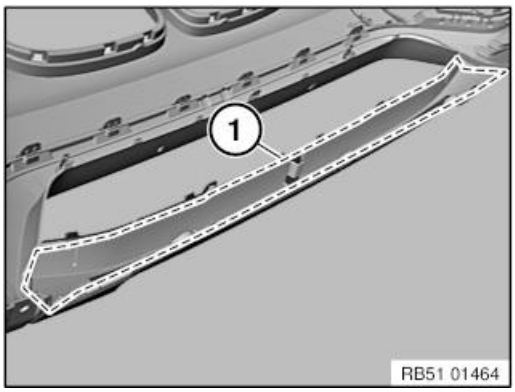
Installation:
Guides (1) on cover (2) must not be damaged.

cardiagn.com

51 11 ... Removing and installing/replacing front spoiler (bumper removed) (from 07/12)

Necessary preliminary work:

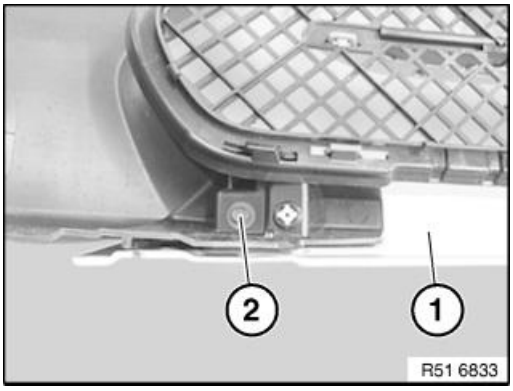
- Remove centre ornamental grille



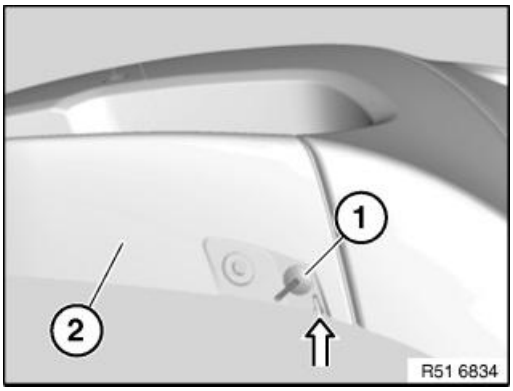
Release latch mechanisms along lineÂ (1) and remove front spoiler to the front.

cardiagn.com

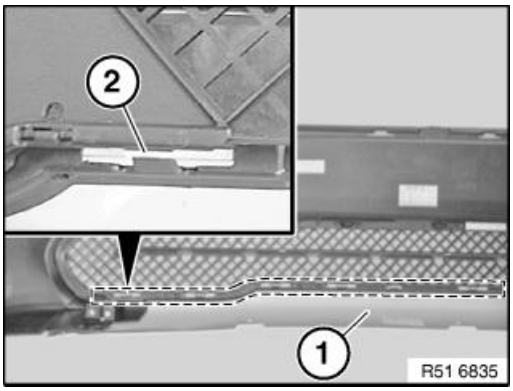
51 11 ... Removing and installing/replacing front spoiler (bumper removed) (up to 07/12)



Release screws (2) of front spoiler (1) on left and right.



Remove expanding rivet (1) on left and right of front spoiler (2).*Installation note:*
Accurately feed through front spoiler (2) left and right (arrow)



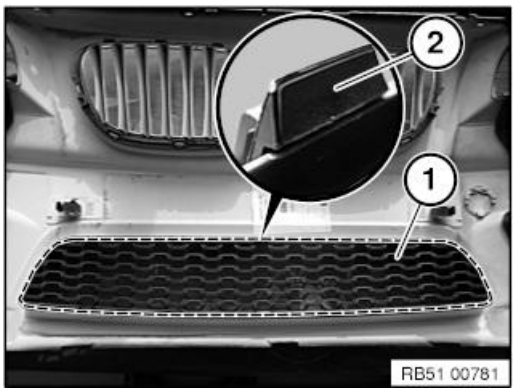
Unclip and remove front spoiler (1) at latch mechanisms (2).

cardiagn.com

51 11 ... Removing and installing/replacing ornamental grille for bumper trim (centre) (M Aerodynamics package)

Necessary preliminary tasks:

- Remove front bumper panel



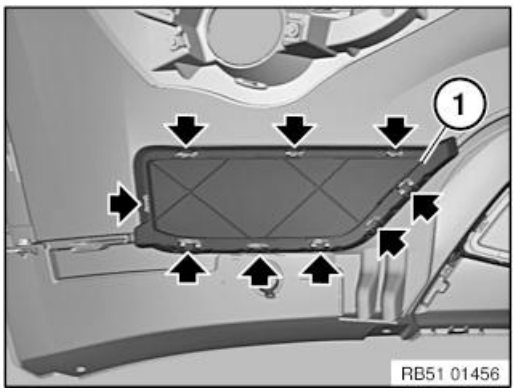
Release ornamental grille (1) from latch mechanisms (2) and remove.*Installation note:*
Latch mechanisms (2) and retaining tabs on ornamental grille (1) must not be damaged.

cardiagn.com

51 11 180 Removing and installing/replacing ornamental grille in bumper panel (from 07/12)

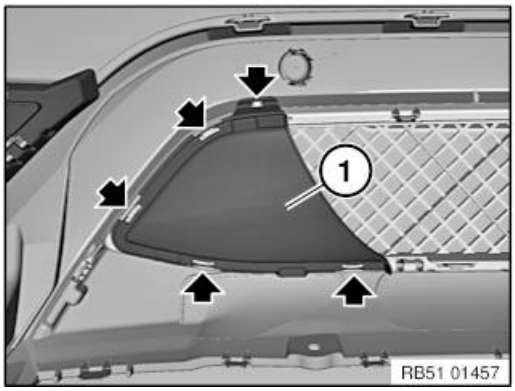
Necessary preliminary work:

- Remove bumper panel



Side ornamental grille:

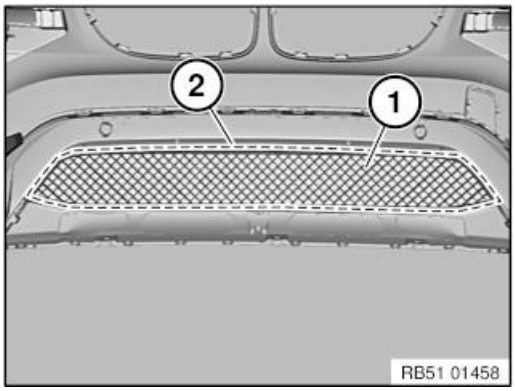
Release ornamental grille (1) from latch mechanisms and remove.



Centre ornamental grille:

Release cover (1) from latch mechanisms and remove.

Note:
Carry out work on the right side in the same way as for the left side illustrated here.



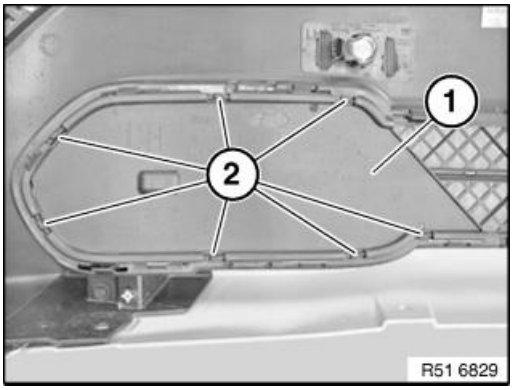
Release ornamental grille (1) from latch mechanisms (2) and remove.

cardiagn.com

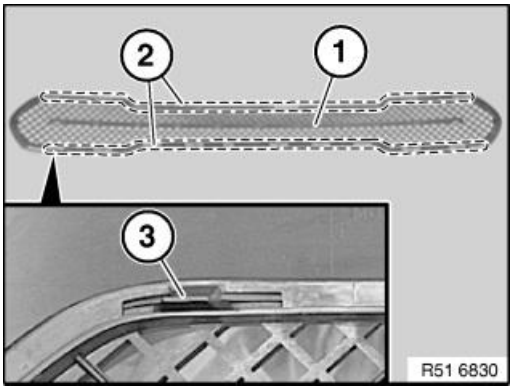
51 11 180 Removing and installing/replacing ornamental grille in bumper panel (up to 07/12)

Necessary preliminary work:

- Remove front bumper panel

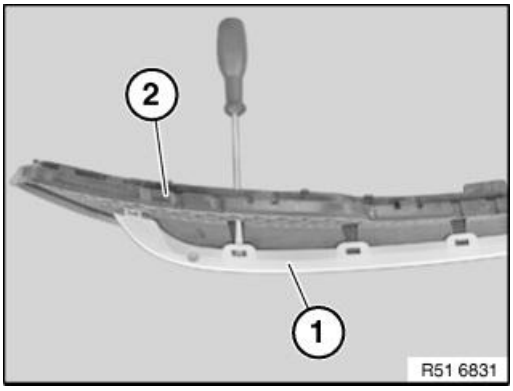


Release ornamental grill trim panels (1) on left and right at latch mechanisms (2) and remove.



Note:
For purposes of clarity, this operation is shown with the component removed.

Unclip (3) ornamental grille (1) in highlighted area (2) and remove.*Installation note:*
Bumper retaining tabs and ornamental grille securing eyes must not be damaged.



Replacement

Unclip ornamental trim (1) from ornamental grille (2).

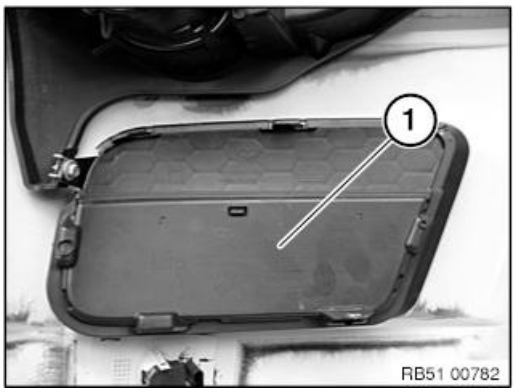
Installation note:
Ornamental grille retaining tabs (2) and ornamental grille securing eyes (2) must not be damaged.

cardiagn.com

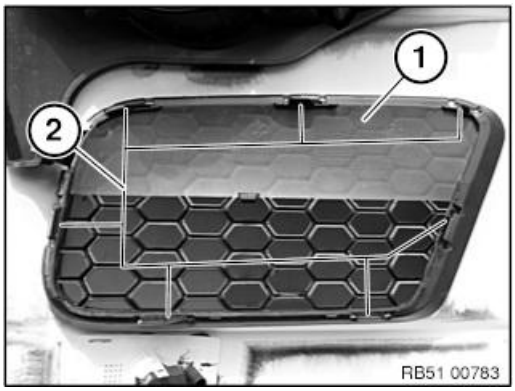
51 11 ... Removing and installing/replacing ornamental grille in bumper trim at side (M Aerodynamics package)

Installation note:

- Remove front bumper panel.



Unclamp cover (1) and remove.



Release latch mechanisms (2) and remove ornamental grille (1).*Installation note:*
Latch mechanisms (1) and retaining tabs must not be damaged.

cardiagn.com

51 11 157 Replace bumper panel, front

Necessary preliminary tasks:

- Unscrew and remove number plate
- Remove front bumper panel
- Swap over central front radiator grille on left and right
- Swap over bumper trim lower section
- Swap over left and right fog lights

  Adjust fog lights after fitting

Version with M Aerodynamics package:

- Swap over central ornamental grille
- Swap over side ornamental grille
- Remount ultrasonic sensors

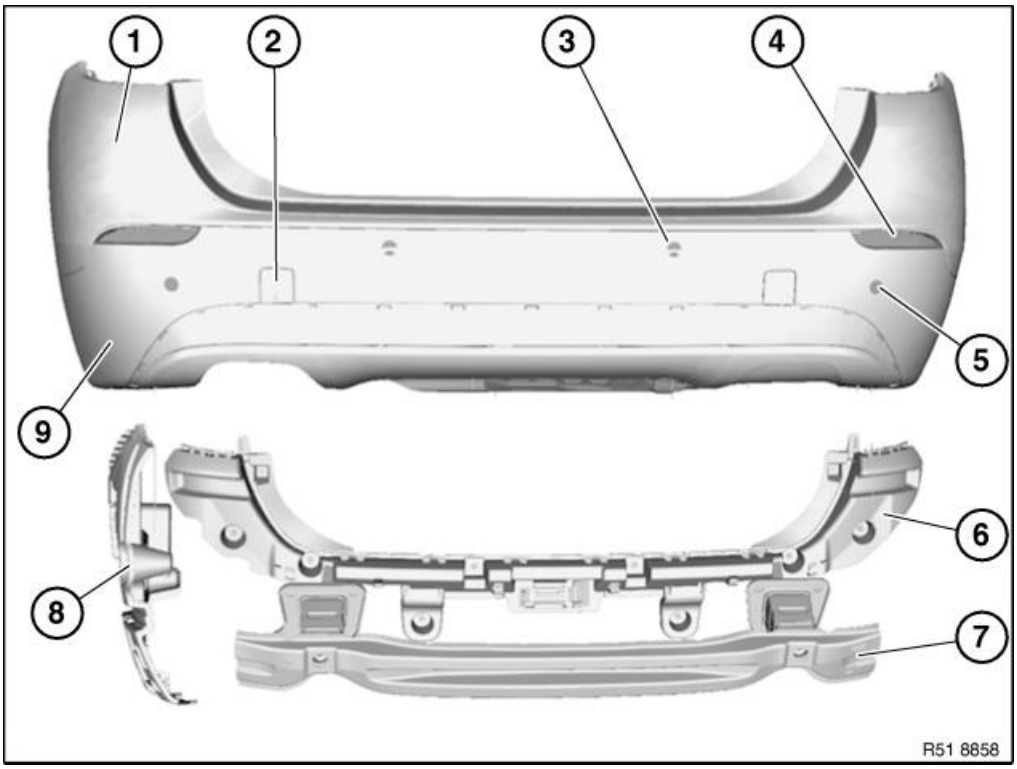
cardiagn.com

51 00 ... Overview of consumables (Electronic Parts Catalogue)

Designation, repair instructions	Designation, Electronic Parts Catalogue	Part number, Electronic Parts Catalogue	Remarks
Cleaning agent R2	Cleaning agent R2	83 19 0 417 324	500 ml
Lubricants G14	Lubricants G14	83 23 2 360 412	900 ml / Notes
Sika Activator 205	Aktivator 205	83 19 0 030 155	250 ml
Yellow plastic adhesive tape	Adhesive tape	83 19 9 410 979	A = 66 mm; B = 50 mm
Double-sided adhesive tape	Adhesive tape	54 11 2 290 978	L = 50 mm/W = 12 mm
Masking tape	Masking tape	81 22 9 400 181	L = 50 mm / W = 19 mm
Masking tape	Masking tape	81 22 9 400 388	L = 50 mm / W = 30 mm
Eraser disk	Scotch Brite eraser disk	51 91 0 402 946	with shaft
Cutting cord	Cutting cord	81 43 2 344 272	Notes
Adhesive set K6	Adhesive set K6	83 19 2 317 925	
Window glass adhesive	Window glass adhesive, cold, 1 hour	83 19 2 289 286	
Profile rubber adhesive		83 19 2 232 322	
Set of felt pads	Set of felt pads	51 45 2 353 024	

cardiagn.com

51 12 ... Overview of rear bumper



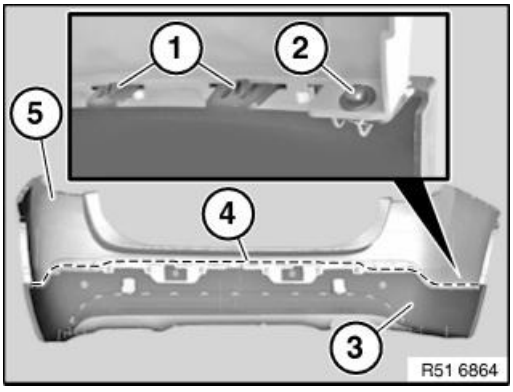
1 Bumper trim
2 Cover on towing eye
3 Inner ultrasonic transducer
4 Reflector, rear
5 Outer ultrasonic transducer
6 Guide, middle
7 Bumper carrier
8 Guide, side
9 Bumper panel

cardiagn.com

51 12 160 Remove and install/replaceing the rear bumper panel.

Necessary preliminary tasks:

- Remove rear bumper panel



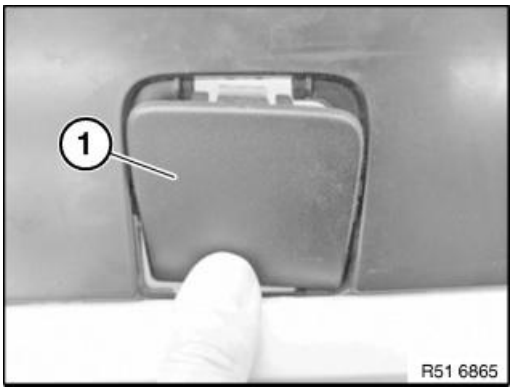
Release screws (2) on left/right.

In the highlighted area (4) release bumper panel (3) from latch mechanism (1) and remove from upper part (5).

Installation note:
Replace defective sheet metal nuts.

Retaining tabs and securing eyes of trim panels must not be damaged.

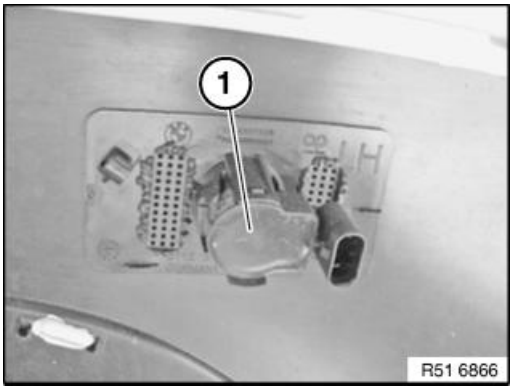
Check proper fit of upper and lower section.



Replacement

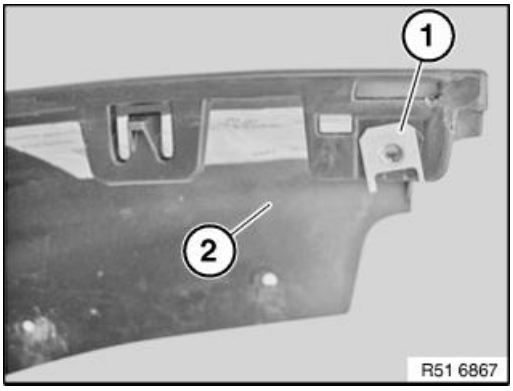
Remove protective caps (1) for towing eyes left/right.

Installation note:
Ensure to install catch tabs of protective cap correctly.



Modify all ultrasonic sensors (1).

cardiagn.com



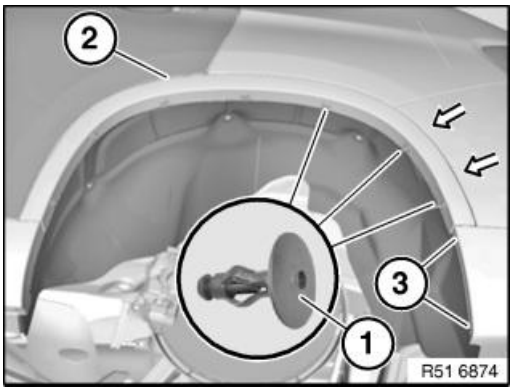
Modify sheet metal nuts (1) of bottom bumper trim (2) left/right.

Version with M Aerodynamic package:

- Modify cover on bumper panel

cardiagn.com

51 12 156 Removing and installing rear bumper panel



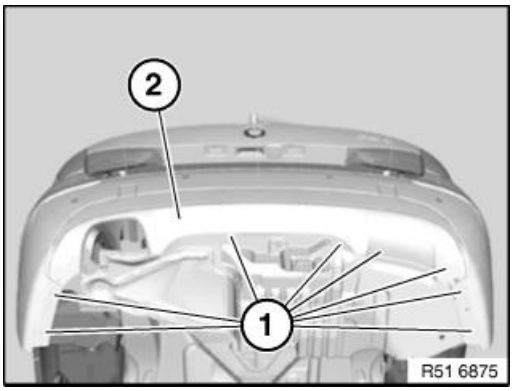
Partially release cover on wheel arch (2) left and right:

Remove expanding rivet (1).

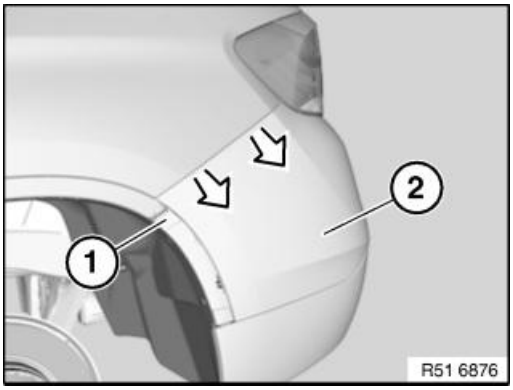
Unclip the cover (2) on the bumper, starting from the top (see arrows).

Installation note:
Replace expanding rivet (1).

Release left and right screws (3).

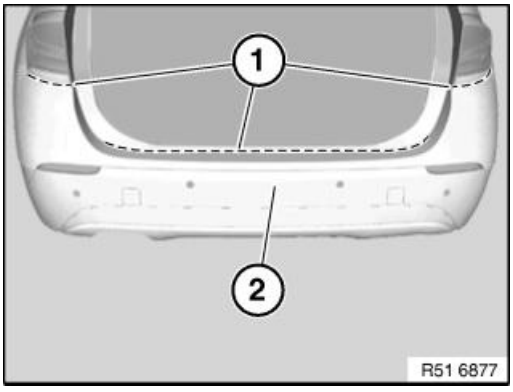


Undo screws (1) on bumper panel (2).



Release screws (1) on bumper panel (2) on the left and right.

Use a helper to unclip the bumper panel (2) left and right. Unclip up to rear light, moving outward (see arrows) from the guide (see next operation).



Use a helper to unclip the bumper trim panel (2) in the highlighted areas (1), pulling away from the guide.

Only with Park Distance Control (PDC):

Disconnect all plug connections from the ultrasonic sensors.

Remove the bumper panel (2).

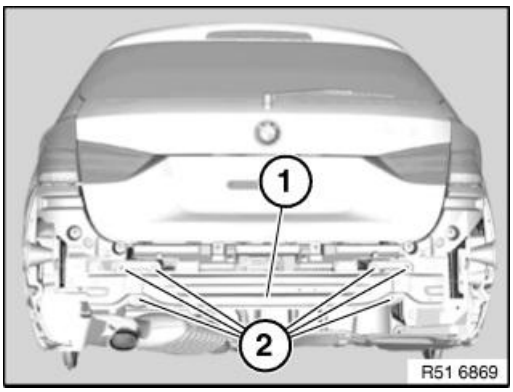
Installation note:
Retaining tabs on the bumper panel (2) must not be damaged.

cardiagn.com

51 12 050 Removing and installing/replacing carrier for rear bumper trim

Necessary preliminary tasks:

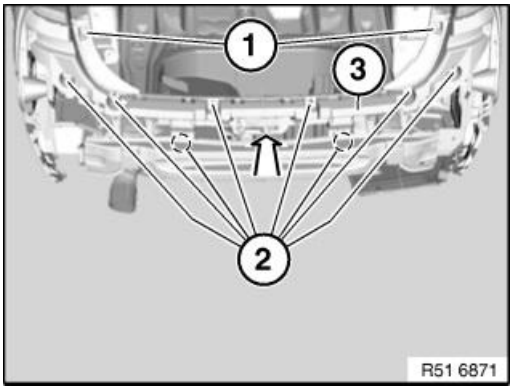
- Remove bumper trim



Release all nuts (2).
Tightening torque 51 12 1AZ .
Remove carrier (1).

cardiagn.com

51 12 825 Removing and installing/replacing centre guide for rear bumper (bumper panel removed)



Feed wire harness out of guide holders (3).

Only for comfort access:

Removing bumper antenna (see arrow).

Release screws (1) and nuts (2) and remove guide (3).

Installation:
Replace faulty nuts (1).

Replacement

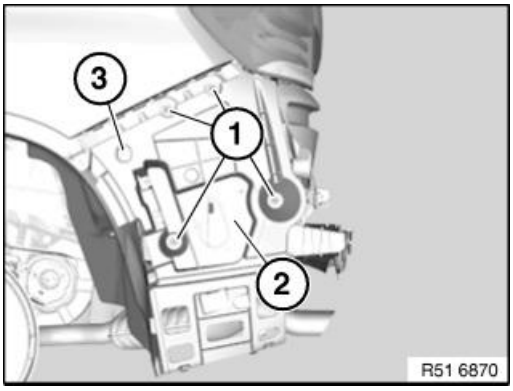
Modify sheet nuts on guide (3).

Only for comfort access:

Modify bumper antenna.

cardiagn.com

51 12 828 Removing and installing/replacing guide for bumper at rear left or right (bumper panel removed)



Release nuts (1)) and screws (3) and remove guide (2).

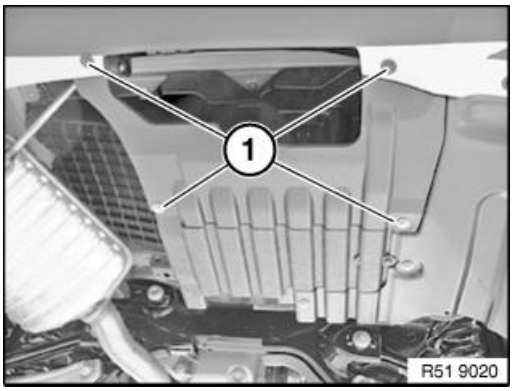
Installation note:
Replace faulty nuts (1).

Replacement

Remount sheet metal nuts on guide (2).

cardiagn.com

51 12 ... Removing and installing/replacing lower cover (middle)



Release screwsÂ (1).

Remove lower cover.

Replacement

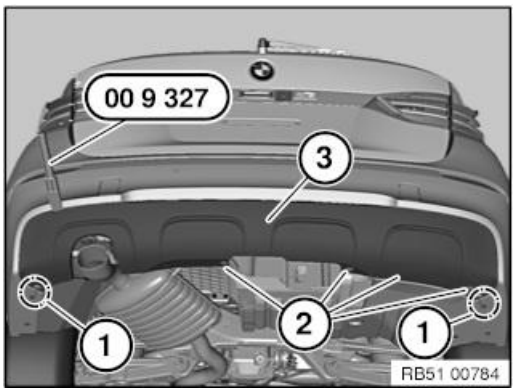
Modify sheet nuts

cardiagn.com

51 12 ... Removing and installing/replacing rear bumper panel cover (M Aerodynamics package)

Special tools required:

- 00 9 327



Remove expanding rivets (1).

Unfasten screws (2).

Unclip trim (3) with special tool00 9 327 and remove.

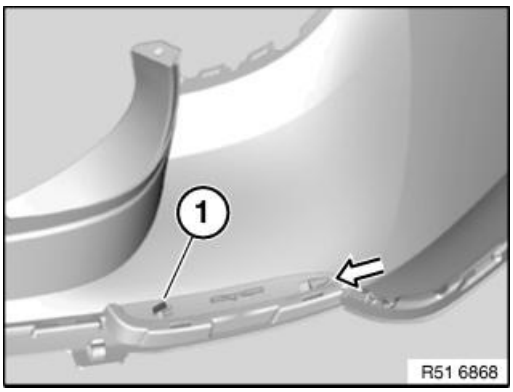
Installation note:
Catches on trim (3) must not be damaged.

cardiagn.com

51 12 157 Replacing rear bumper trim

Necessary preliminary tasks:

- Modify rear bumper lower trim



Unclip left and right rear reflectors (1) and feed out at a slight angle in direction of arrow.*Installation:*
Retaining clips and tabs must not be damaged.

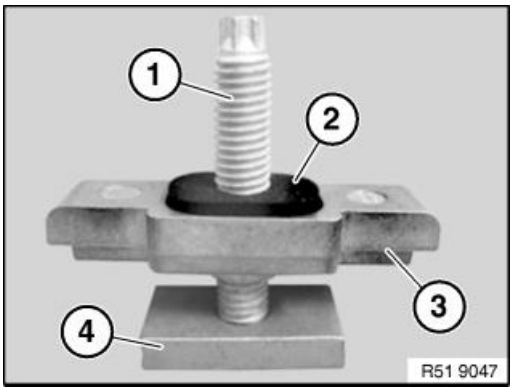
cardiagn.com

51 13 ... Installation of new threaded bolts on roof rails

Necessary preliminary tasks:

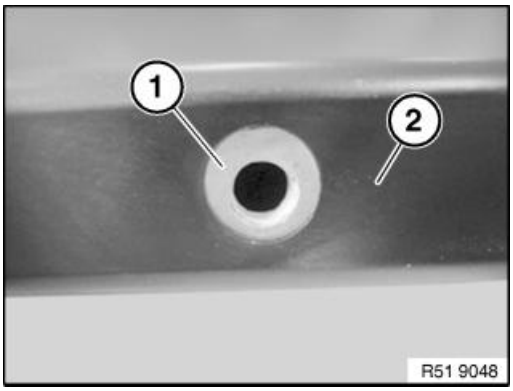
- Remove welt strip from roof rails.

Do not scratch or damage visible surfaces.

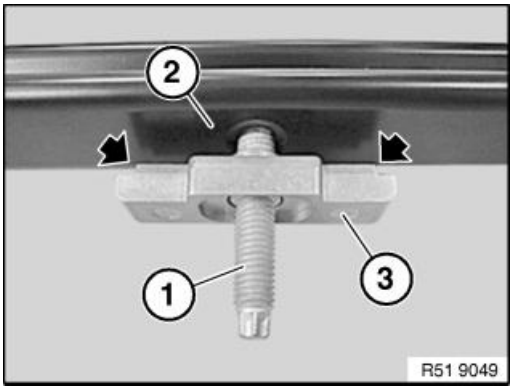


Component overview:

1 Threaded bolt
2 Seal
3 Spacer
4 Threaded stone



Insert threaded stone (1) in roof rails (2) and position using corresponding bolt hole.



Connect spacer (3) in correct position on threaded bolt (1).

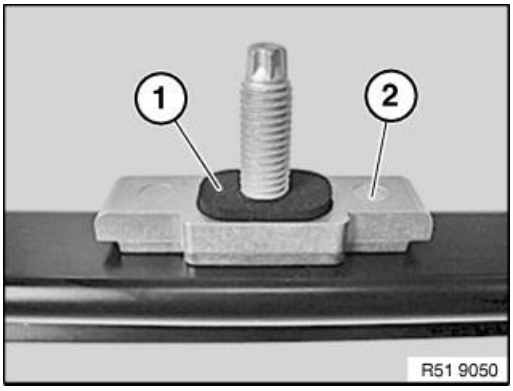
Note:
To aid installation, move roof rails (2) into installation position.

Screw in new threaded bolt (1) by hand, until spacer (3) makes contact with roof rails (2).

Secure spacer (3) with open-end spanner SW 13 against turning and tighten threaded bolts (1).

Tightening torque: 51 13 9AZ.

cardiagn.com



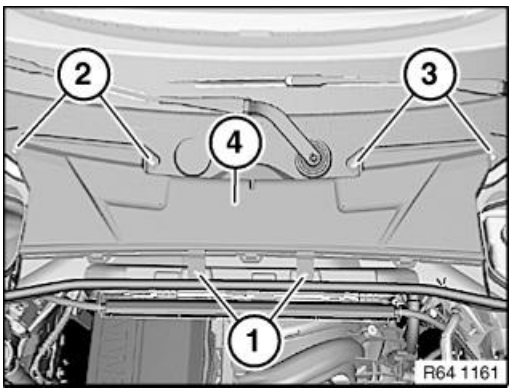
Installation:
Evenly glue in new seal (1) with adhesive side facing spacer (2) into recess of spacer (2).

cardiagn.com

51 13 115 Remove and install / replace the cowl panel cover \PREMIUM

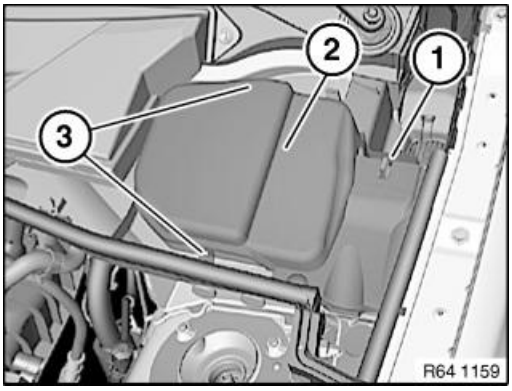
PRELIMINARY WORK

1 – Remove the top section of the microfilter housing

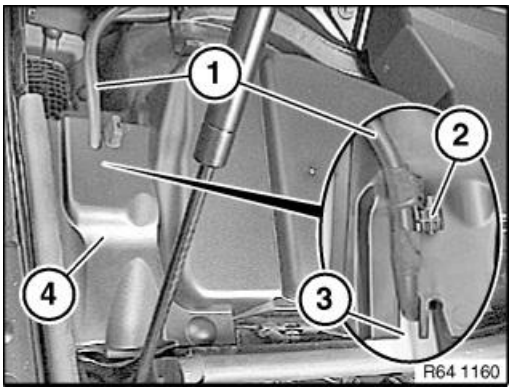


- Loosen screws (1), (2) and (3).
- Remove the upper section of the microfilter housing (4).

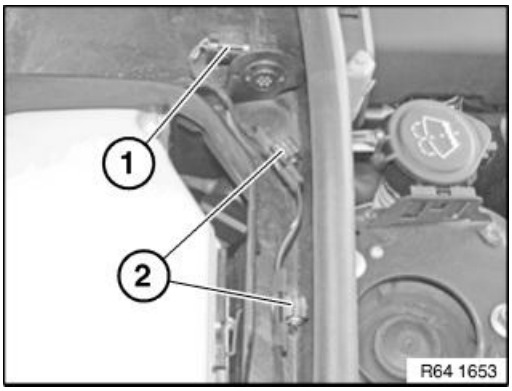
2 – Remove the lower section of the microfilter housing



- Release the retaining tab (1).
- Loosen the latch mechanisms (3).
- Remove the cover (2) on the left.

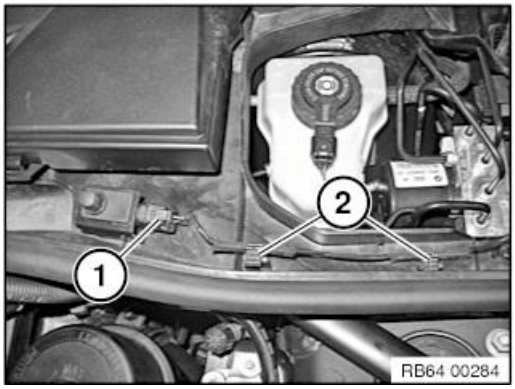


- The procedure for the removal of the right cover (4) is identical to the removal of the left cover.
- Loosen the hose support (2) and remove the hose (1) from the cover on the right (4).
- Detach the hose (1) from the recess (3).

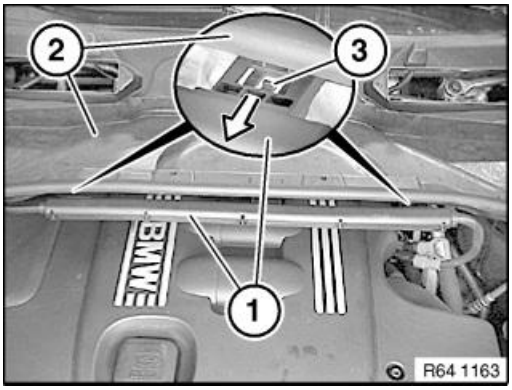


- Unlock plug connection (1) and disconnect.
- Unclip the cable from the guides (2).

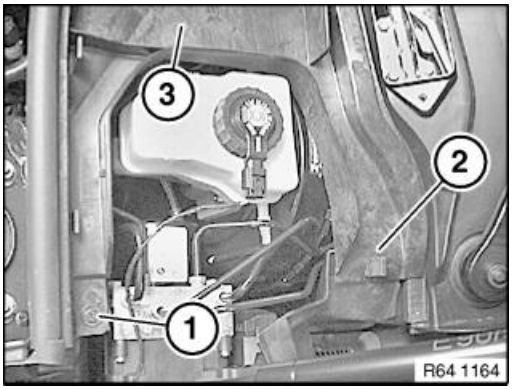
cardiagn.com



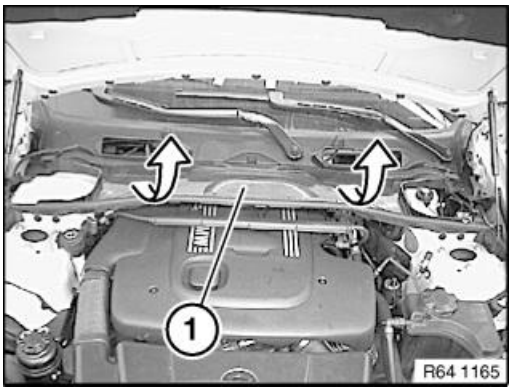
- Unlock plug connection (1) and disconnect.
- Unclip the cable from the guides (2).



- Press the retaining lugs (3).
- Detach the cable strip (1) from the lower section of the microfilter housing (2) in the direction of the arrow.



- Detach the retaining tab (2) on both sides.
- Unscrew the bolt (1) on the lower section of the microfilter housing (3) on both sides.



- Guide out the lower section of the microfilter housing (1) and remove it in the direction of the arrow.

3 – Remove both wiper arms.

NOTICE

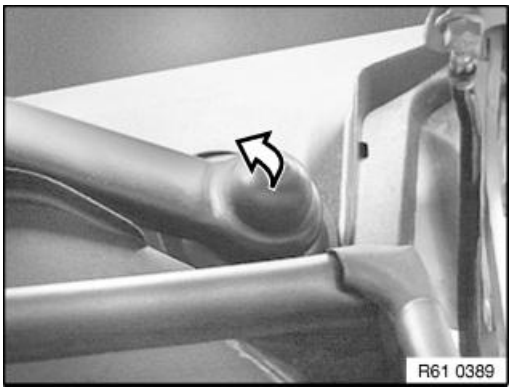
Description is for left component only. Procedure on the right side is identical.

▸ **Remove wiper arm**

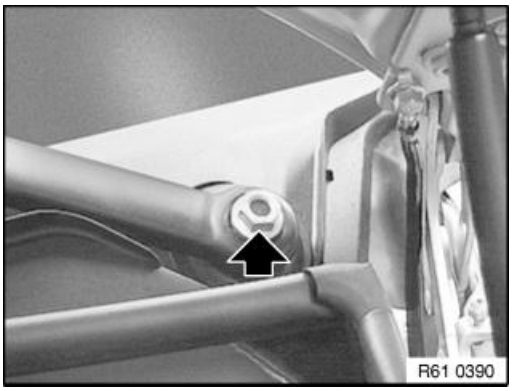
Prerequisite

Engine compartment lid is open.

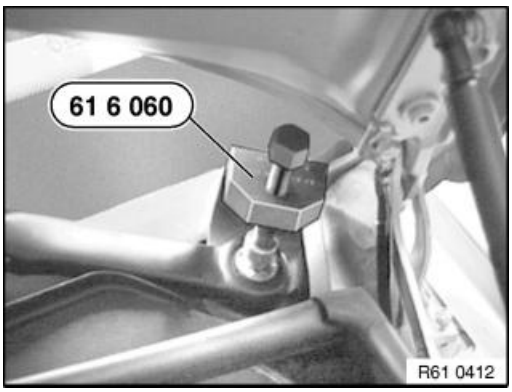
cardiagn.com



- Remove the protective cap in the direction of the arrow.



- Unscrew the nut (arrow).

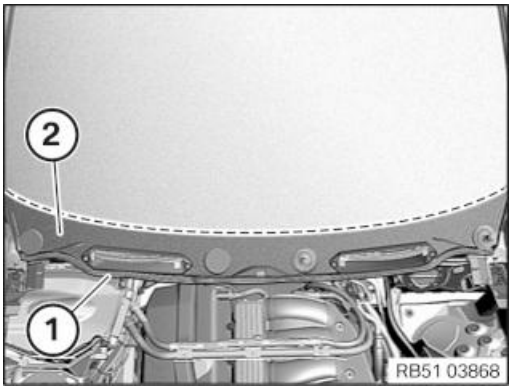


- Pull off and remove the wiper arm with the help of the special tool **0 493 441 (61 6 060)**.

cardiagn.com

MAIN WORK

4 – Remove cowl panel cover



- Loosen the edge protection (1).
- Remove the cowl panel cover (2).

5 – Attaching cowl panel cover

Check

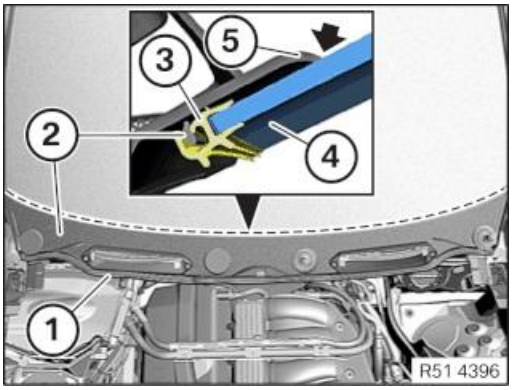
- Check the sealing lip of the cowl panel cover for damage.

Result

» Sealing lip faulty.

Measure

- Renew the complete cowl panel cover.



- Press on the supporting strip (3) onto the windscreen (4).
- Check whether the supporting strip (3) is sufficiently bonded to the windscreen (4). If necessary, replace the supporting strip (3).
- Install the cowl panel cover (2) and clip into the supporting strip (3).

RISK OF DAMAGE

Damage caused by water ingress into the vehicle.

Water ingress into the vehicle may result in damage to components, malfunctions and corrosion.

- Ensure correct installation of the components.
- Only use undamaged components.

- Make sure that the sealing lip (5) is contact with the windscreen (4) across its entire length.

POSTPROCESSES

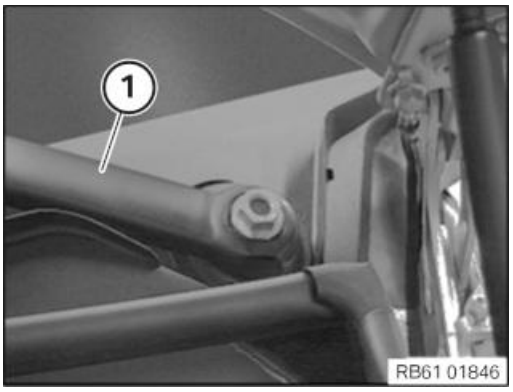
6 – Install both wiper arms

NOTICE

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

▸ **Installing the wiper arm**

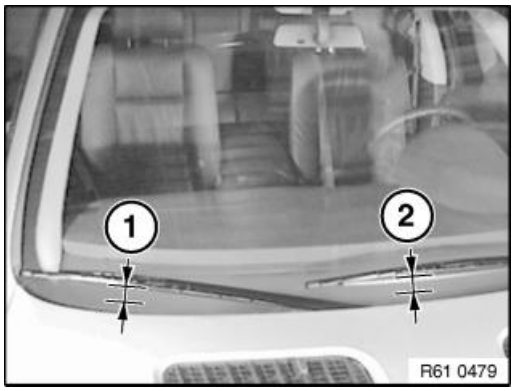
cardiagn.com

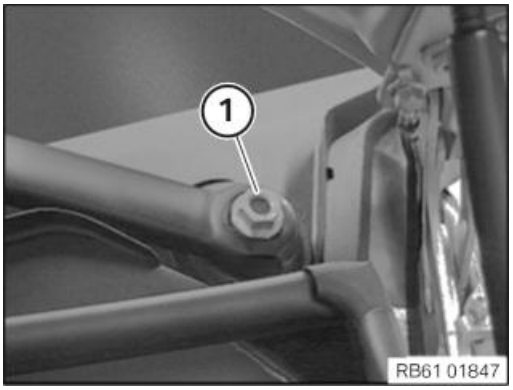


- Attach the wiper arm (1) and ensure that the wiper arm (1) is positioned correctly.

Windscreen wiper arm

Left wiper arm (2)	44 mm ... 50 mm
Right wiper arm (1)	51 mm ... 57 mm





- Tighten nut (1).

Windscreen wiper arm

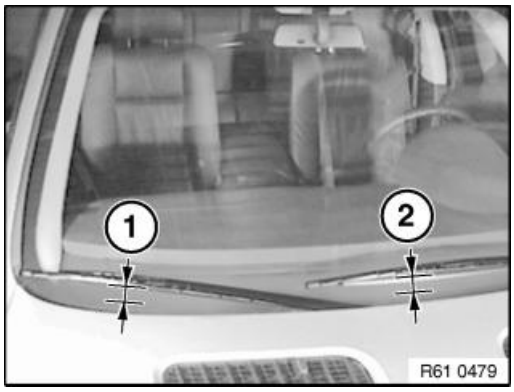
	35 Nm

Check

- Operate the wipers.
- Measure the distance between the wiper blade and cowl panel cover.

Windscreen wiper arm

Left wiper arm (2)	44 mm ... 50 mm
Right wiper arm (1)	51 mm ... 57 mm



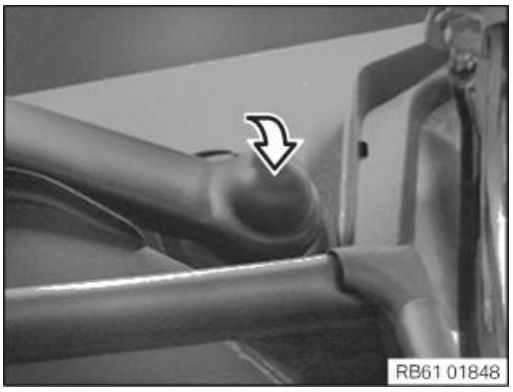
Result

» The distance between the wiper blade and cowl panel cover is incorrect: The wiper arm has not been positioned correctly.

Measure

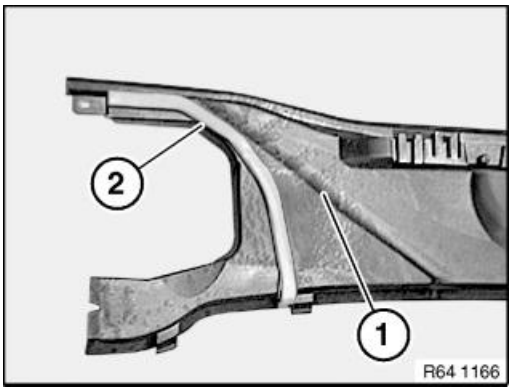
- Remove the wiper arm and install it correctly.

cardiagn.com

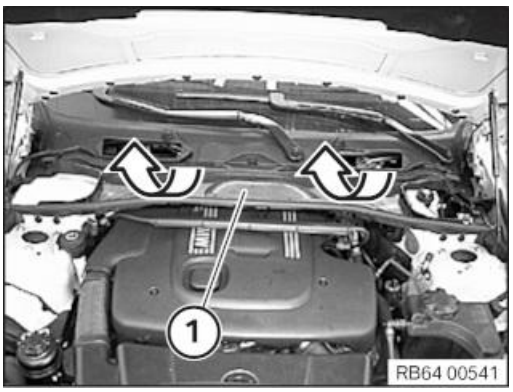


- Mount the protective cap (1).

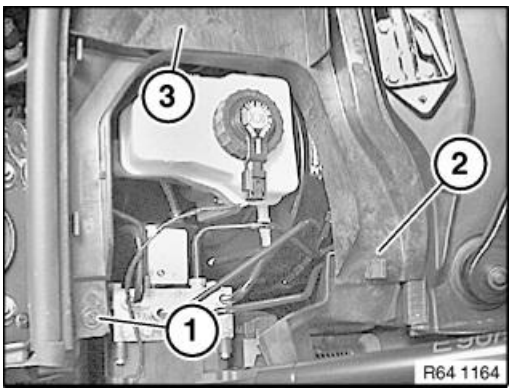
7 – Install the lower section of the microfilter housing



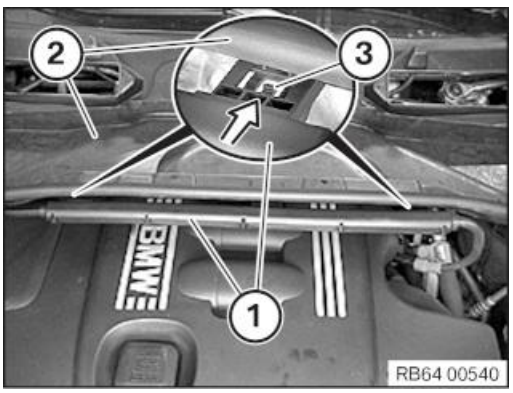
- Check the seal (2) on the lower section of the microfilter housing (1) for damage and replace missing or faulty seals as needed.



- Insert the lower section of the microfilter housing (1) in the direction of the arrow.
- Make sure the lower section of the microfilter housing (1) is fitted correctly.

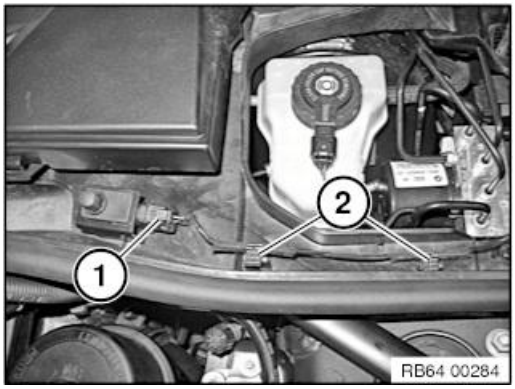


- Fasten the lower section of the microfilter housing (3) on both sides with the screw (1).
- Fasten the retaining tab (2) on both sides.

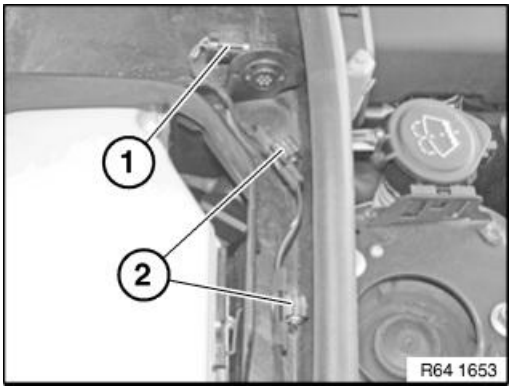


- Check all retaining lugs for damage; renew missing or faulty retaining lugs if necessary.
- Insert the cable strip (1) in the direction of the arrow into the lower section of the microfilter housing (2) until the retaining lugs (3) engage.
- Make sure cable strip is correctly seated.

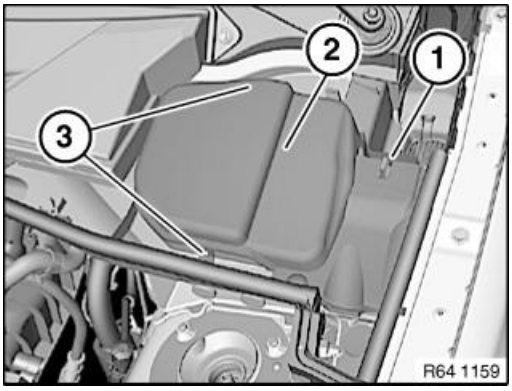
cardiagn.com



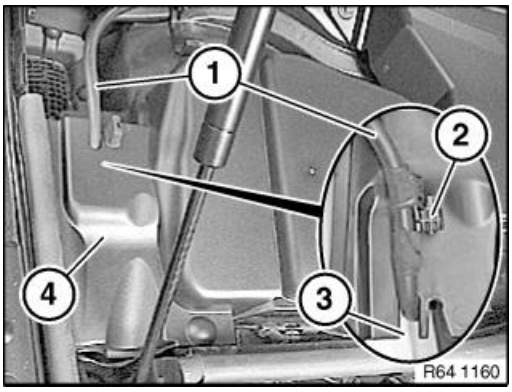
- Clip the cable into the guides (2).
- Close plug connection (1).



- Clip the cable into the guides (2).
- Close plug connection (1).

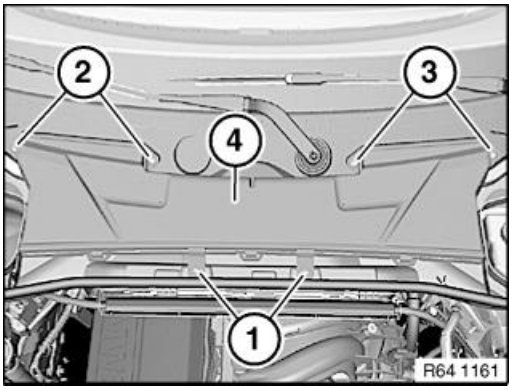


- Install the cover (2) on the left.
- Make sure left cover (2) is correctly seated.
- Engage the latch mechanisms (3).
- Secure the retaining tab (1).



- The procedure for the installation of the right cover (4) is identical to the installation of the left cover.
- Make sure the hose (1) is correctly fitted in the recess (3).
- Fasten the hose (1) with the hose support (2) on the right cover (4).

8 – Install the upper section of the microfilter housing



- Position the upper section of the microfilter housing (4).
- Make sure the upper section of the microfilter housing (4) is correctly positioned.
- Tighten the screws (1), (2) and (3).

Additional Information

cardiagn.com

Overview of Tightening Torques

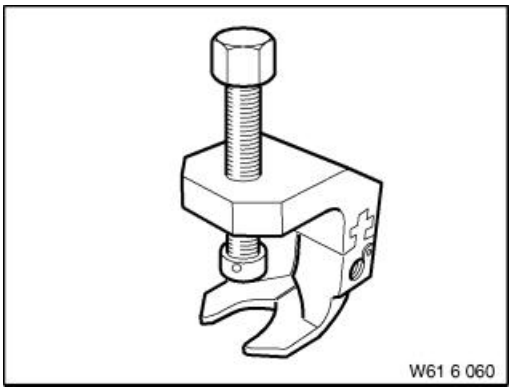
Windscreen wiper arm

Used in step 6

	35 Nm

Overview of Special Tools

0 493 441 (61 6 060) Extractor



Common

Used in step 3

Usage	(Wiper arm puller, universal) To pull off wiper arm from drive shaft
Included in the tool or work	
Storage location	C3
Replaced by	
In connection with	
SI-Number	01 10 99 (433)

Consisting of

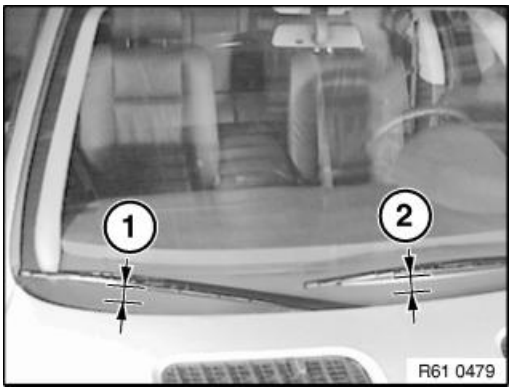
Pos	BMW Order number	Replaced by	Designation	In Connection with
1	0 494 704 (61 6 061)		**Basic body**	
2	0 494 705 (61 6 062)		**Claw** (Left / right claw)	
3	0 494 706 (61 6 063)		**Spindle**	
4	0 494 707 (61 6 064)		**Synchronising key**	

Overview Technical Data

Windscreen wiper arm

Used in step 6

Left wiper arm (2)	44 mm ... 50 mm
Right wiper arm (1)	51 mm ... 57 mm



cardiagn.com

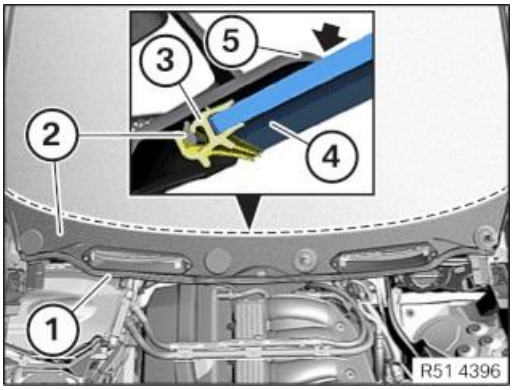
51 13 115 Removing and installing / replacing cowl panel cover

Necessary preliminary tasks:

- Remove windscreen wiper arm on left and right
- Remove microfilter housing

Important!

Danger of water ingress via fan housing into passenger compartment if cowl panel cover is not correctly fitted.



Release edge protection (1).

Remove cowl panel cover (2) in upwards direction.

Installation note:
Pay attention to the correct seating of the retaining strip (3) at the windscreen (4); if necessary, press the retaining strip (3) onto the windscreen (4).

If the retaining strip (3) no longer can be correctly seated, it must be replaced.

The cowl panel cover (2) must be clipped into the retaining strip (3) correctly.

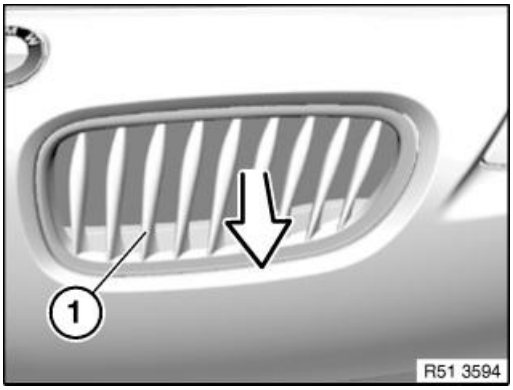
The sealing lip (5) must make contact with the windscreen (4) along its entire length.

If the sealing lip (5) is faulty, the cowl panel cover (2) must be replaced.

cardiagn.com

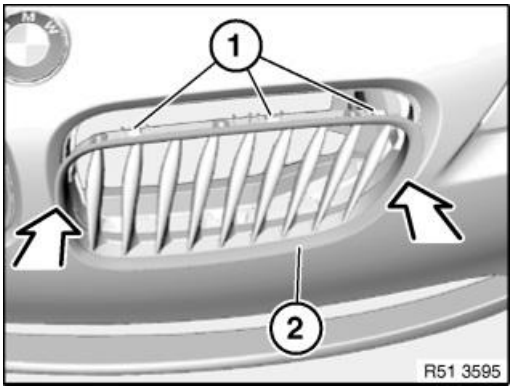
51 13 001 Removing and installing/replacing front radiator grille, middle left or right

Protect bumper trim in the area around the radiator grille, centre, from scratches by taping.



Note:
Similar to graphic.

Press centre radiator grille (1) upwards. In this position pull out towards the front.



Installation:
Slide in centre radiator grille (2) by pressing on the chrome ring in the bumper trim.

Fixtures (1) must engage correctly.

All catches and guides on middle front grille must not be damaged.

cardiagn.com

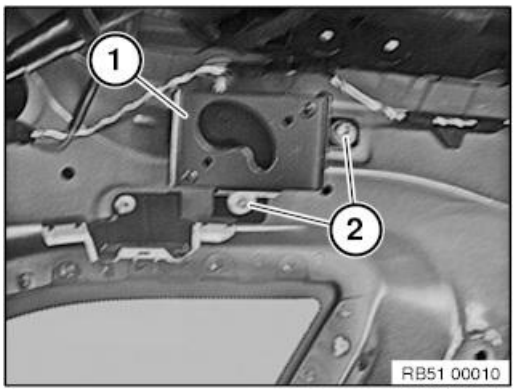
51 13 305 Removing and installing/replacing left or right rail

Warning!
Follow safety information for repair work on vehicles with airbag systems.

Important!
Risk of damage! Do not use sharp tools in the area of the head airbag.

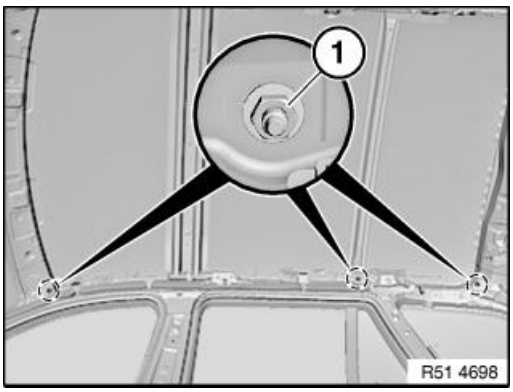
Necessary preliminary work:

- Remove grab handle brackets at front and rear

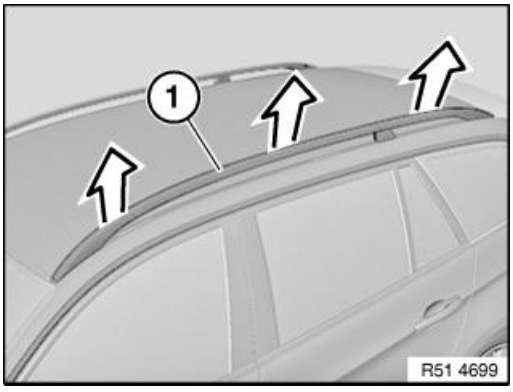


Only with optional equipment load area net

- Release screws (2) prior to installing the rear load area net (1).
  Tightening torque 51 47 3AZ.



If necessary, lever out cover caps and release nuts (1).
Tightening torque 51 13 3AZ .



Remove rail (1) in direction of arrow.*Installation note:*
Gasket on roof rails (1) must not be damaged.

Repair solution - threaded stud, rail:

Installing new threaded stud

cardiagn.com

51 13 280 Removing and installing/replacing trim strip on roof frame at left or right

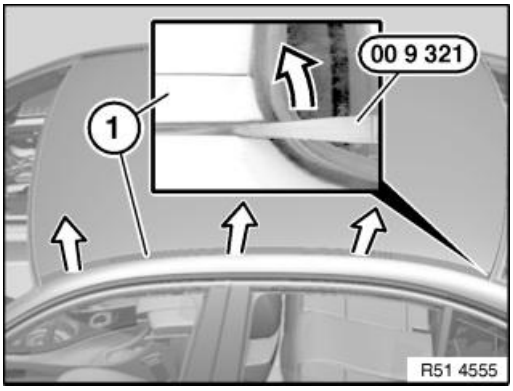
Special tools required:

- 00 9 321

Necessary preliminary work:

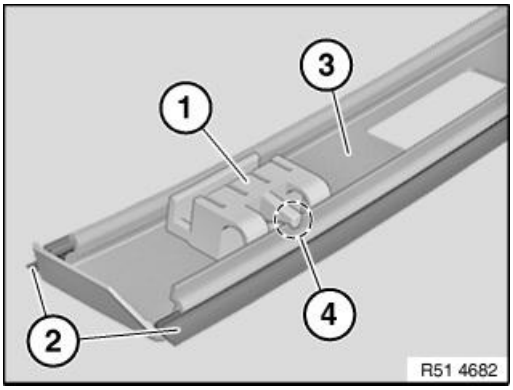
E84 and E91 only:

- If necessary, remove roof rails



Lever out trim strip (1) with special tool 00 9 321 starting at rear.

Unclip trim strip (1) in direction of arrow.

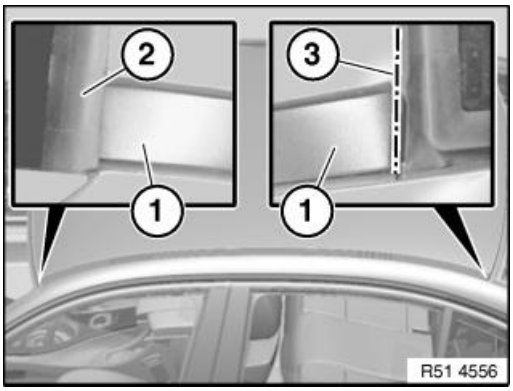


Installation note:

Clips (1) and seals (2) on trim strip (3) must not be damaged.

If necessary, replace faulty clips (1).

Position of clips (1) on trim strip (3) is determined by notch (4).



Installation note:

Push trim strip (1) at front into seal (2).

Trim strip (1) must be flush with edge (3) at rear.

cardiagn.com

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.

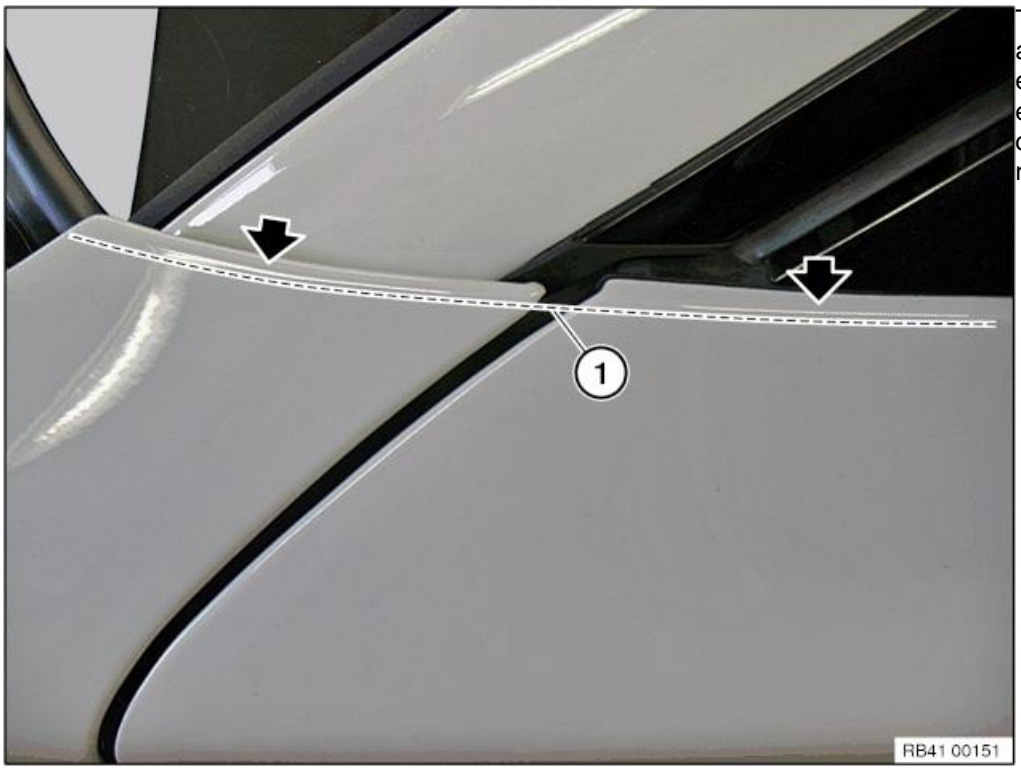
2. Procedure for applying labels:

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.

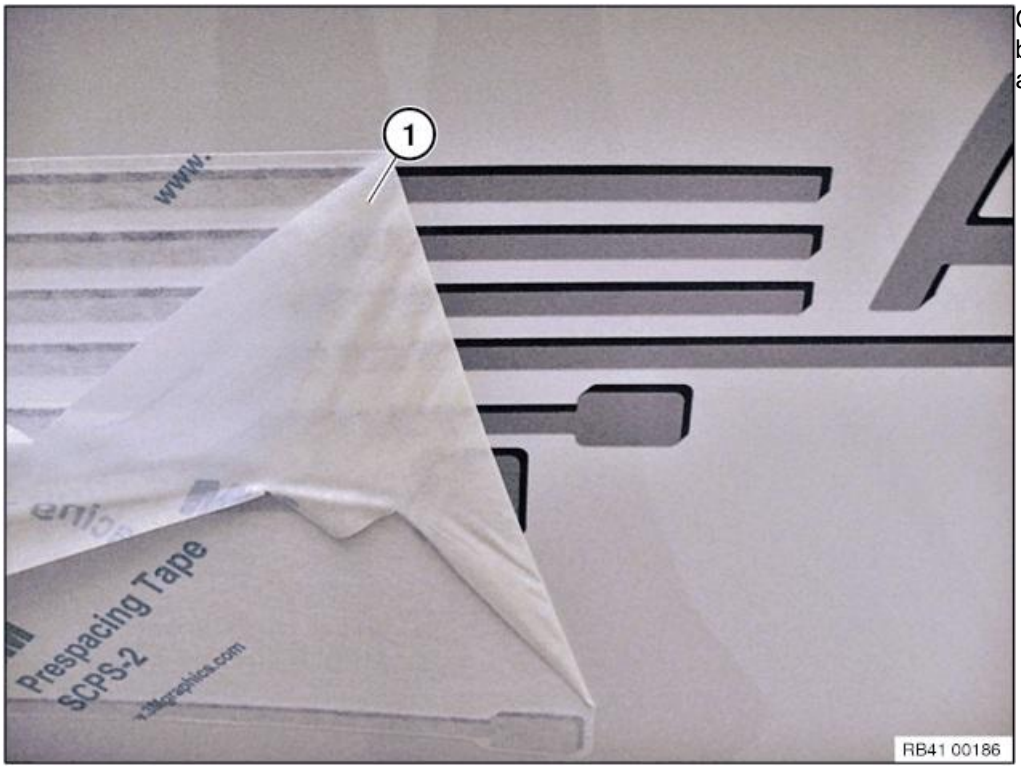
Pull off the remaining protective film and press down the adhesive film from front to rear and from inside to outside.

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

cardiagn.com

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.

cardiagn.com

51 14 ... Instructions for attaching number/letter designation combination

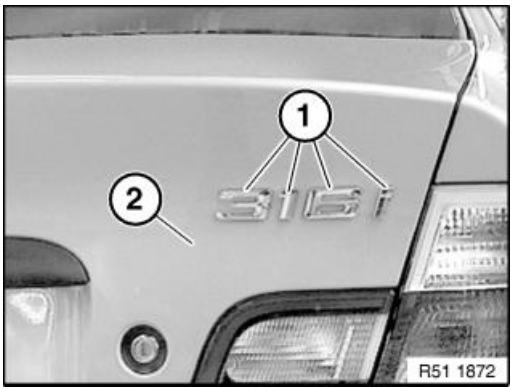
Note:

The model designation is attached with adhesive and can not be reused.

The model designation must be attached at room temperature >±18 °C.

The model designation must be removed at stove-enameling temperatures exceeding 80 °C.

Note:
The following work steps are described using the "316 i" as the example.

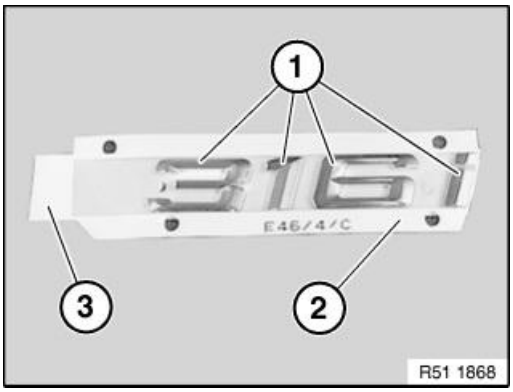


Removing:

Coat nylon string or strong yarn with tensides (e.g. washing-up liquid).

Cut through adhesive layer and remove model designation (1) from rear lid (2).

Remove remainder of adhesive layer with adhesive remover (sourcing reference: BMW Parts Service).



Assembly:

Number and letter combinations (1) of the model designation are not connected to each other and are supplied on a carrier film (2).

Important!

Adhesive areas must be dry and free of dust and grease.

Once it has been cleaned, do not touch the adhesive area with bare hands.

Remove liner (3) (protective strip for adhesive surface).

Firmly press down model designation.

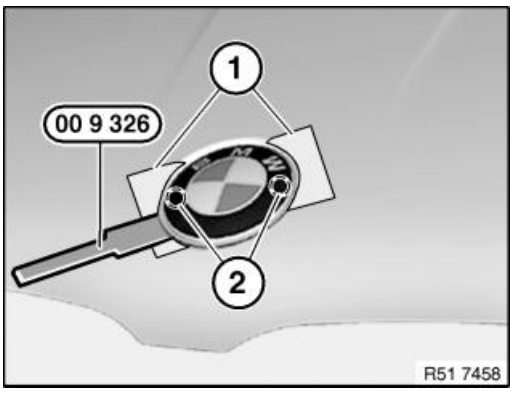
Remove carrier film (2).

cardiagn.com

51 14 000 Removing and installing/replacing front BMW badge

Special tools required:

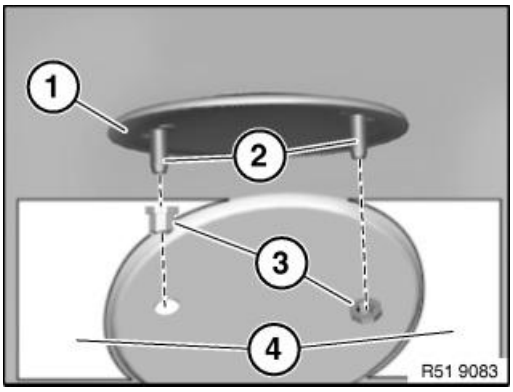
- 00 9 325



Important!
Risk of damage!

To avoid damaging the paintwork on the engine hood/bonnet, tape off edge areas (1) to sides of guide pins.

So as not to subject the BMW badge to excessive deformation, lever out the badge with special tool 00 9 325 at guide pins (2).



Installation:
The following parts must not be damaged or missing, replace if necessary:

1	Badge
2	Guide pins
3	Grommets

Adhesive tape (4)

cardiagn.com

51 14 010 Removing and installing/replacing rear BMW badge



Operation is identical to:

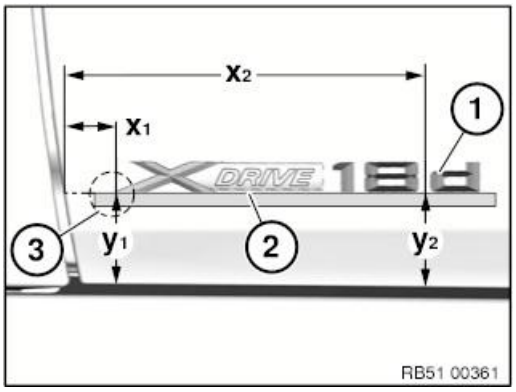
Removing and installing/replacing front BMW badge.

cardiagn.com

51 14 006 Replacing badge emblem on left or right

Important!

The Instructions for adhering badge emblem serve as the basis for these repair instructions and must be followed without fail.



Left door

1 = Model name plate

2 = Upper edge of adhesive tape

3 = Point of intersection of x_1 and y_1

Dimensions	x_1	x_2	y_1	y_2
in mm	25,5	191	46	48

Points of intersection "x_1 to y_1" and "x_2 to y_2" determine the distance between upper edge of adhesive tape (2) and lower edge of door.

Correspondingly affix adhesive tape (2) to outer door panel.

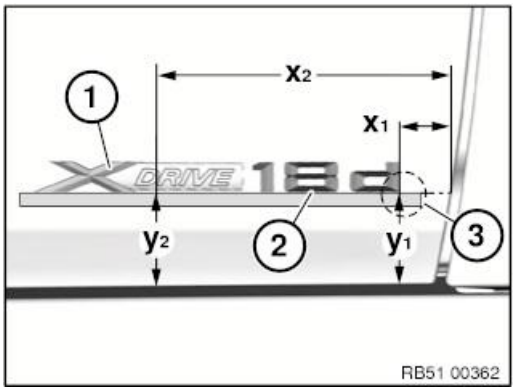
Mark dimension "x_1" on adhesive tape (2).

Modellbezeichnung (1) wie folgt fixieren:

- Lower edge of model name plate (1) with upper edge of adhesive tape (2)
- Outer lower corner point of model name plate (1) with point of intersection (3)

Affix model name plate (1).

Remove adhesive tape (2).



Right door

1 = Model name plate

2 = Upper edge of adhesive tape

3 = Point of intersection of x_1 and y_1

Dimensions	x_1	x_2	y_1	y_2
in mm	26	196	46	48

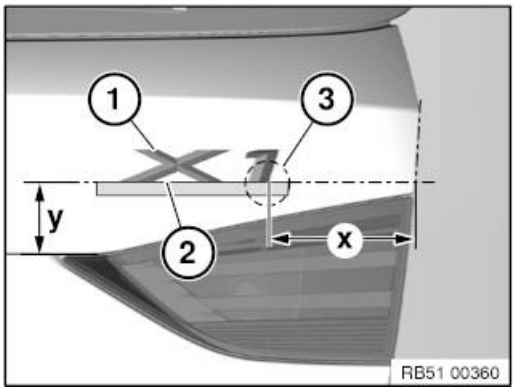
Procedure same as for left-hand door.

cardiagn.com

51 14 111 Replacing model name plate, rear

Important!

The Instructions for adhering badge emblem serve as the basis for these repair instructions and must be followed without fail.



1 = Model name plate

2 = Adhesive tape

3 = Point of intersection (of "x" and "y")

Dimension	x	y
in mm	131	65

Attach the upper edge of the adhesive tape (2) offset upward by dimension "y" horizontally to the tailgate edge.

Mark dimension "x" on adhesive tape (2).

Secure the model designation (1) as follows:

- Lower edge of model name plate (1) with upper edge of adhesive tape (2)
- Outer lower corner point of model name plate (1) with point of intersection (3)

Affix model name plate (1).

Remove adhesive tape (2).

cardiagn.com

51 16 165 Completely removing and installing the centre console \PREMIUM

PRELIMINARY WORK

1 – Remove the storage compartment trim

RISK OF DAMAGE

Scratches.

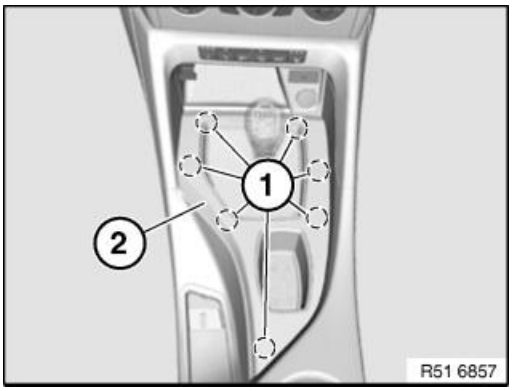
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Press frame of gaiter (1) together a little and detach it from the centre console upward.

  Begin removing it from the front left side or the frame could be damaged.



- Release storage compartment trim (2) from retaining clips (1) by pulling it in the upward direction.
- Lift storage compartment trim (2) slightly, turn the frame with the gaiter and guide it out through the opening of storage compartment trim (2).
- Remove storage compartment trim (2).

2 – Removing the rear centre console trim

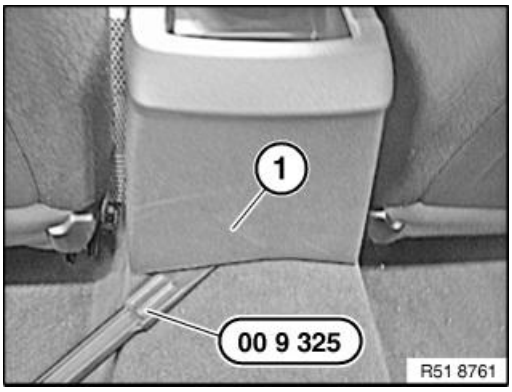
RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

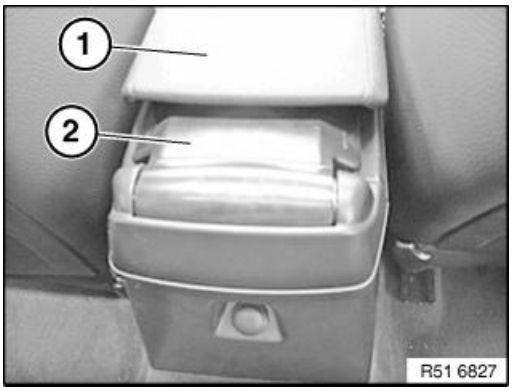
- Protect working area.
- Handle tools and components carefully.

cardiagn.com



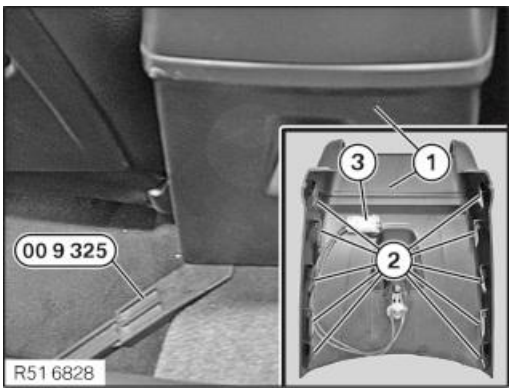
- **Variant without armrest:**

  Lever out rear centre console trim (1) with the special tool **0 496 569 (00 9 325)** upward.



- **Variant with armrest:**

  Push armrest (1) on the centre console (2) all the way to the front.



- Lever out rear centre console trim (1) with the special tool **0 496 569 (00 9 325)** out of the latch mechanisms (2) upward.
- If necessary unfasten plug connection (3).
- Remove rear centre console trim (1).

3 – Additional work for versions up to 07/2012

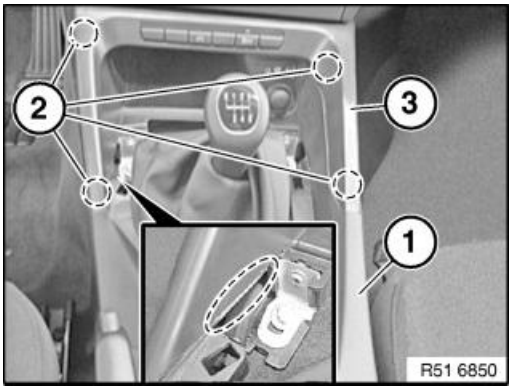
▸ **Remove the centre console trim**

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

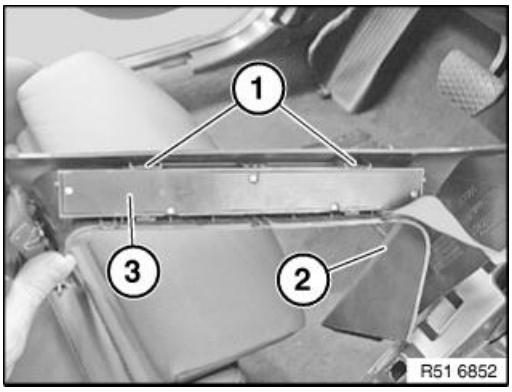
- Protect working area.
- Handle tools and components carefully.



- Protect centre console (1) from scratches.
- Pull left shank of centre console trim (3) in marked area with one hand upwards.

  At the same time, with your second hand, pulling in jerks directly toward the rear, unclip the centre console trim (3) from the clamps (2).
- Likewise unclamp right shank by pulling in jerks directly towards rear.

cardiagn.com



- Unclip centre console control panel (SZM) (3) from the retaining lugs (1) and remove the centre console trim (2).

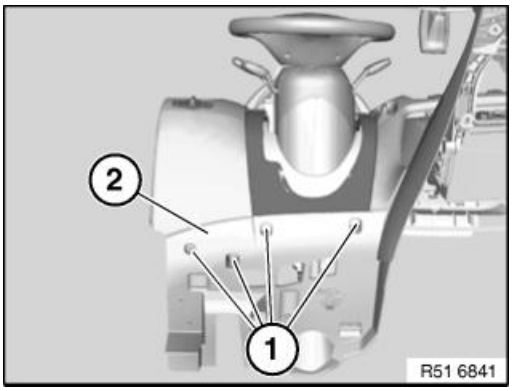
▸ **Removing the trim panel for pedal mechanism**

RISK OF DAMAGE

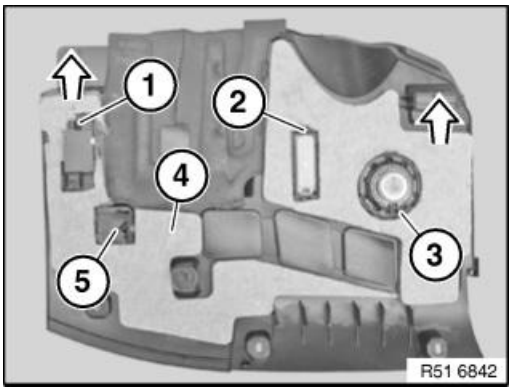
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Unscrew the screws (1) on the trim panel for the pedal mechanism (2).
- Slightly lower the trim panel for the pedal mechanism (2).



NOTICE

For a better overview the removed condition is shown here.

- Disconnect the plug connections of the footwell light (2) and the MOST diagnostic interface (5).
- If necessary, disconnect the plug connection of the Bluetooth aerial (1).
- If necessary, disconnect the plug connection on the acoustic sensor (3).
- Remove the trim panel for the pedal mechanism (4) from the brackets (arrows) to the rear.

▸ **Removing the instrument panel trim at bottom right**

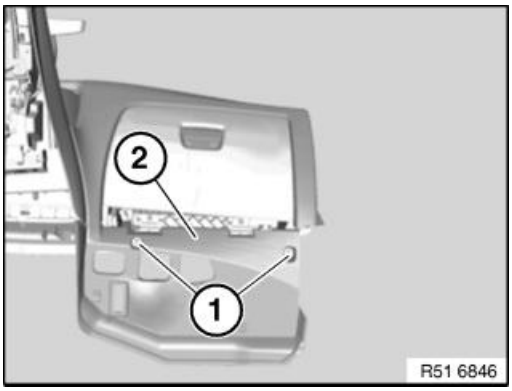
cardiagn.com

RISK OF DAMAGE

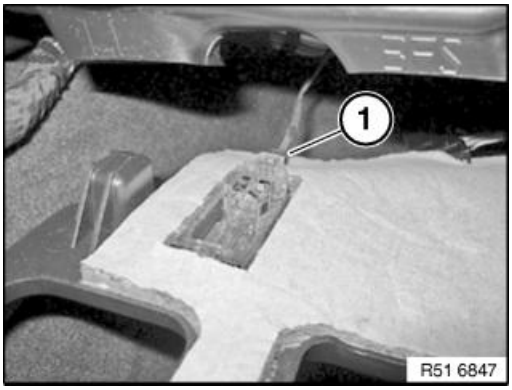
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



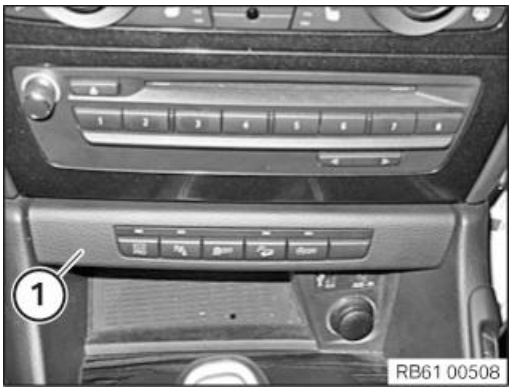
- Loosen screws (1) on the bottom right instrument panel trim (2).
- Slightly lower bottom right instrument panel trim (2).



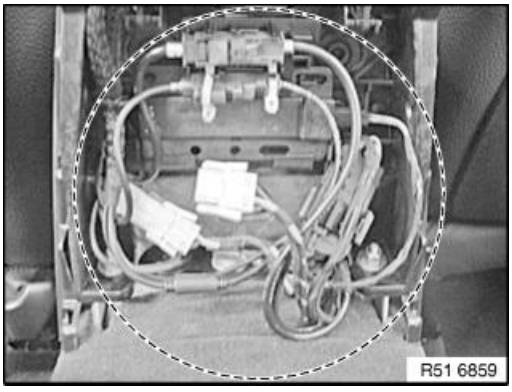
- Disconnect the plug connection (1) of the footwell light.
- Pull lower right instrument panel trim to the rear and remove.

MAIN WORK

4 – Remove complete centre console

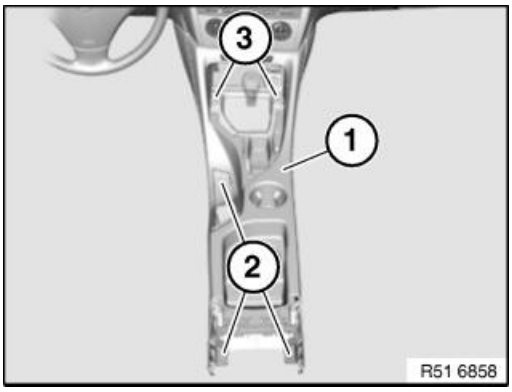


- **In a version starting from 07/2012:** Remove centre console control panel (SZM) (1).

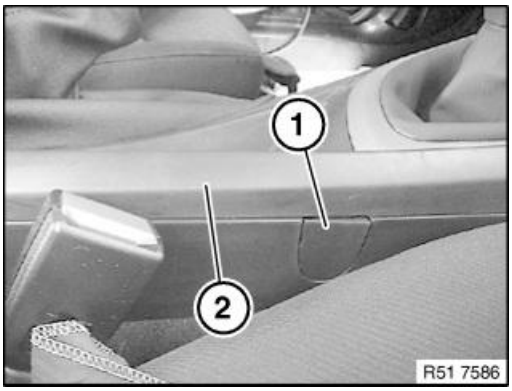


- Disconnect all existing plug connections in the marked area.

cardiagn.com



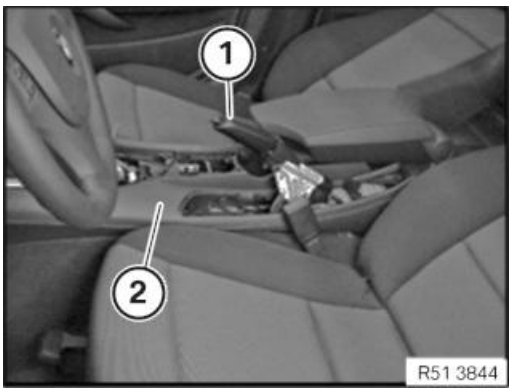
- Release nuts (2) and screws (3) on front centre console (1).



NOTICE

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

- Lever out side cover (1) on storage compartment (2).
- Release screw underneath.

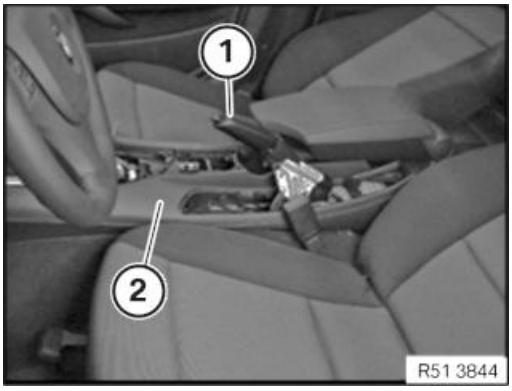


NOTICE

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

- Tighten parking brake lever (1) as far as possible.
- Lift centre console (2) at rear and guide out over the parking brake lever (1) and the gearshift lever or the selector lever upward.
- In so doing, disconnect remaining front plug connections.
- Carefully remove the centre console (2).

5 – Install centre console, complete

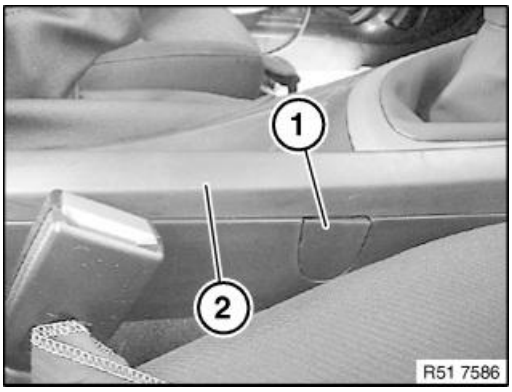


NOTICE

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

- Tighten parking brake lever (1) as far as possible.
- Guide in centre console (2) toward front over the parking brake lever (1) and the gearshift lever or the selector lever.
- Connect the remaining front connectors.
- Carefully position the centre console (2).

cardiagn.com



NOTICE

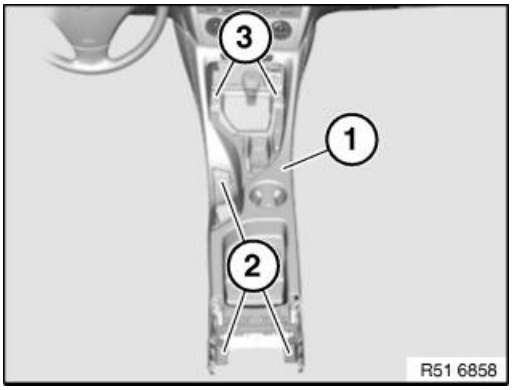
Schematic diagram is for example purposes. Some parts may differ in certain details.

- Renew screw.

  Parts: Bolts
- Tighten screw and mount cover (1) on the storage compartment (2).

Centre console to body

Replace self-locking screws.	4,6 Nm

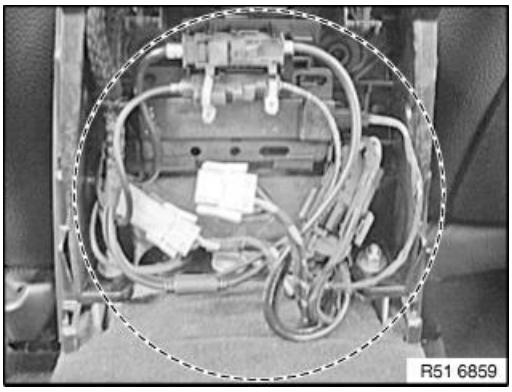


- Renew screws (3).

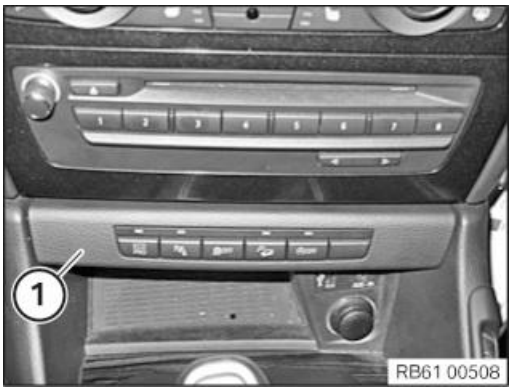
  Parts: Bolts
- Tighten nuts (2) and screws (3) on the front centre console (1).

Centre console to body

Replace self-locking screws.	4,6 Nm



- Connect all the existing rear connectors in the marked area.



- **In a version starting from 07/2012:** Install centre console control panel (SZM) (1).

  When doing so, ensure that the ribbon cable for the centre console control panel (SZM) (1) does not get caught.

POSTPROCESSES

6 – Additional work for versions up to 07/2012

▸ **Installing the bottom right instrument panel trim**

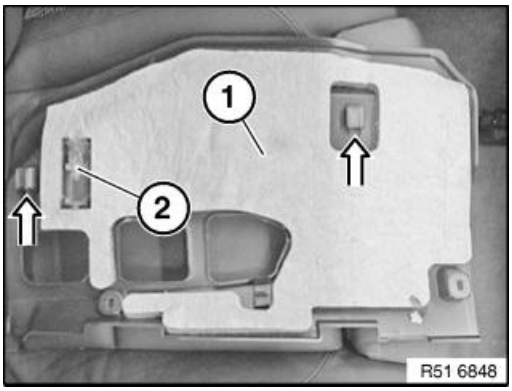
cardiagn.com

RISK OF DAMAGE

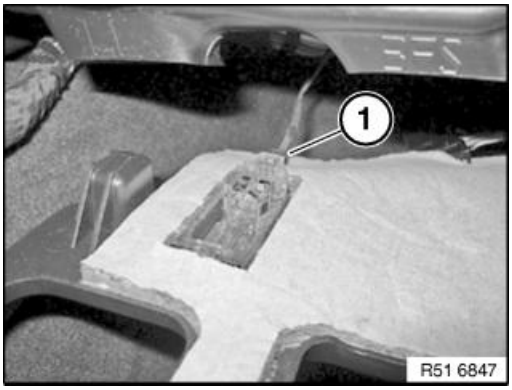
Scratches.

Tools and sharp-edged components can cause scratches.

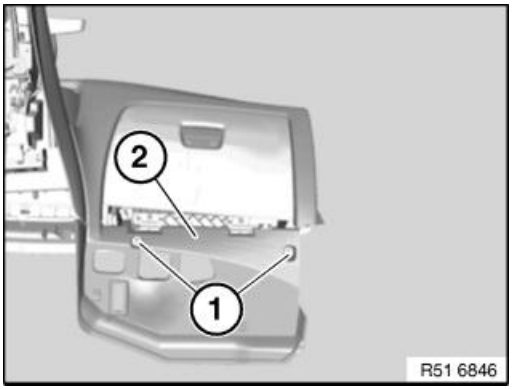
- Protect working area.
- Handle tools and components carefully.



- Insert lower right instrument panel trim (1) into brackets (arrows).
- Make sure that footwell light (2) fits correctly.



- Connect the plug connection (1) of the footwell light.



- Install the bottom right instrument panel trim (2).
- Tighten the screws (1).

Instrument panel trim, bottom

Screw		2,4 Nm

▸ **Installing the trim panel for the pedal mechanism**

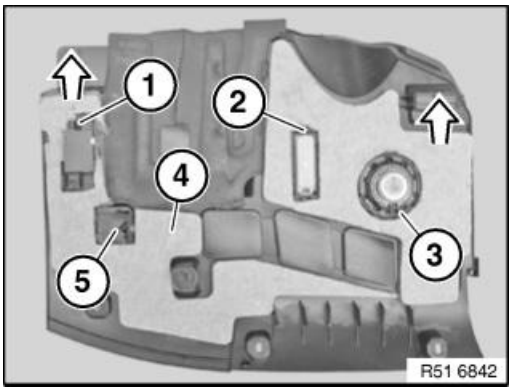
RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

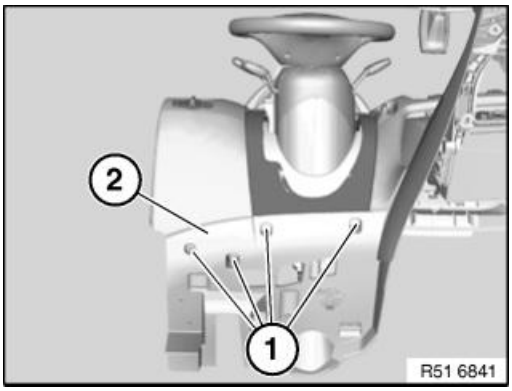
cardiagn.com



NOTICE

For a better overview the removed condition is shown here.

- Insert trim panel for the pedal mechanism (4) at front into the brackets (arrows).
- Connect the plug connections of the footwell light (2) and the MOST diagnostic interface (5).
- If applicable, connect the plug connection of the Bluetooth aerial (1).
- If applicable, connect the plug connection on the acoustic sensor (3).



- Install the trim panel for the pedal mechanism (2).
- Tighten the screws (1) on trim panel for the pedal mechanism (2).

Instrument panel trim, bottom

Screw		2,4 Nm

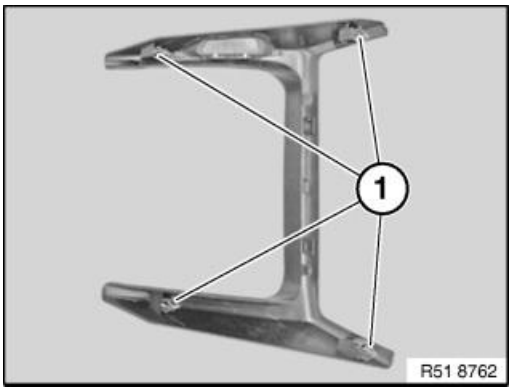
▸ **Install the centre console trim**

RISK OF DAMAGE

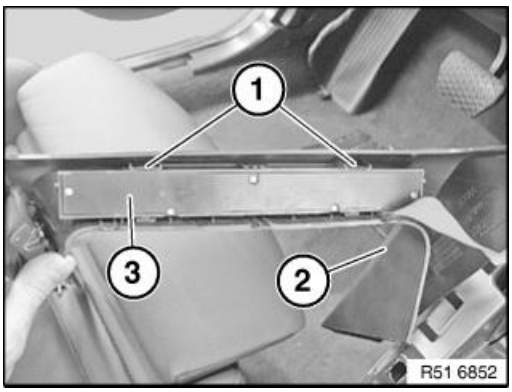
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

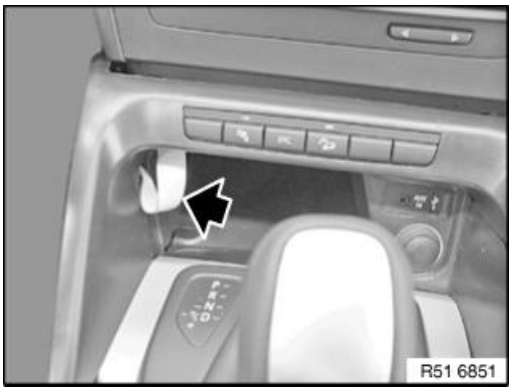


- Ensure that the clamps (1) are not damaged or missing.

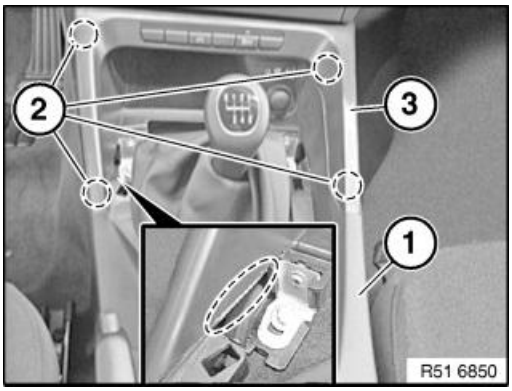


- Install centre console control panel (SZM) (3) into the centre console trim (2) and clip in to the retaining lugs (1).

cardiagn.com



- Ensure that the ribbon cable (arrow) of the control panel does not get caught.



- Attach centre console trim (3) and engage in marked area and at the clamps (2) into the centre console (1).

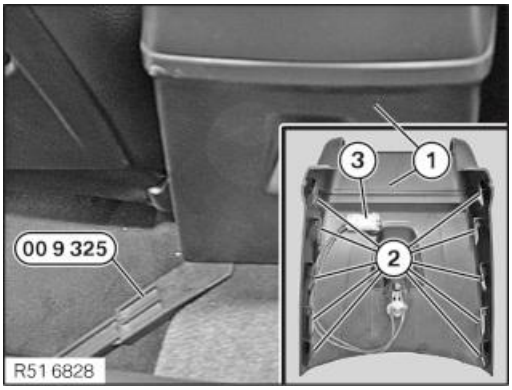
7 – Installing the rear centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Ensure that the latch mechanisms (2) of the rear centre console trim (1) are not damaged or missing.
- Connect the plug connection (3) if necessary.
- Attach and lock rear centre console trim (1).

8 – Install the storage compartment trim

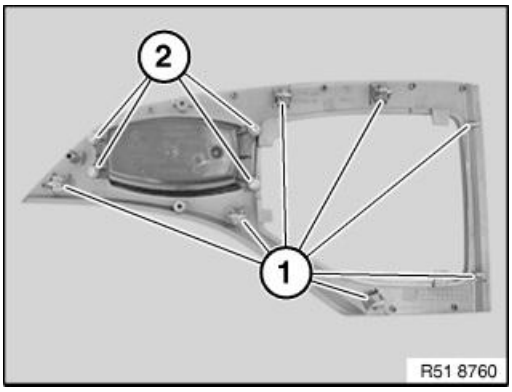
RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

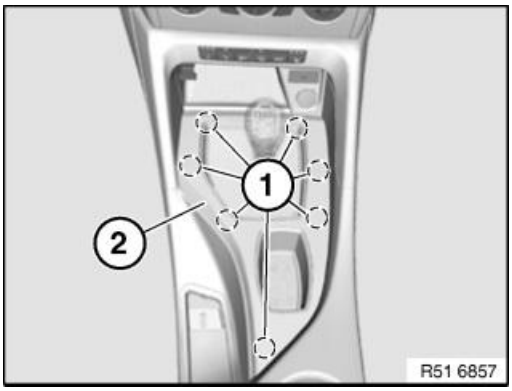
- Protect working area.
- Handle tools and components carefully.

cardiagn.com



- Renew faulty retaining clips (1).

  Parts: Retaining clips
- When replacing the storage compartment trim: Release screws (2) on the storage compartment or the controller and remount the storage compartment or the controller.



- Install storage compartment trim (2).
- Guide in the frame with the gaiter through the opening of storage compartment trim (2).
- Engage storage compartment trim (2) in retaining clips (1).



- Mount and lock gaiter (1).

Additional Information

Overview of Tightening Torques

Centre console to body	Used in step 5
Replace self-locking screws.	4,6 Nm

Instrument panel trim, bottom		Used in step 6
Screw		2,4 Nm

Overview of Special Tools

cardiagn.com

0 496 569 (00 9 325) Wedge



Common

Used in step 2

Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

cardiagn.com

51 16 992 Disassembling and assembling lock barrel (lock barrel removed)

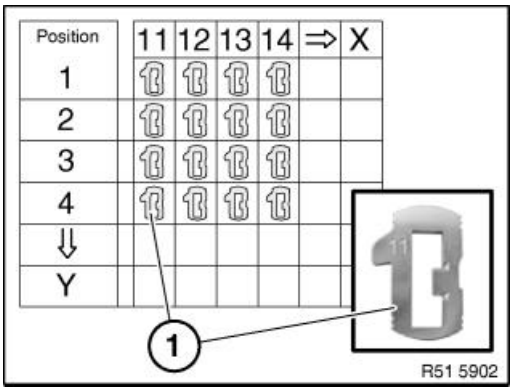
Necessary preliminary tasks:

- If necessary, remove lock barrel

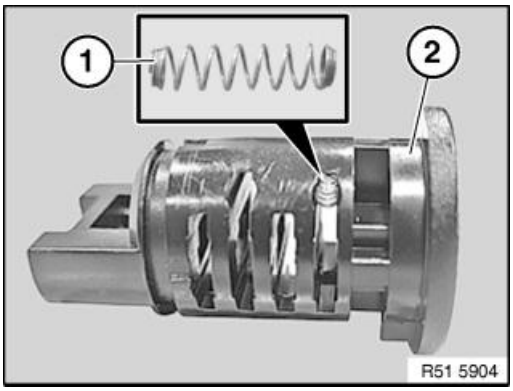
Note:

- **Lock barrel repair kit *(part number: 9 061 387 valid for:**
  E30
- **Lock barrel repair kit *(part number: 9 061 388 valid for:**
  E31, E32, E34, E36, E38, E39
- **Lock barrel repair kit *(part number: 7 001 461 valid for:**
  E46, E52, E53, E60, E61, E63, E64, E65, E66, E67, E84, E85, E86, E90, E91, E92, E93

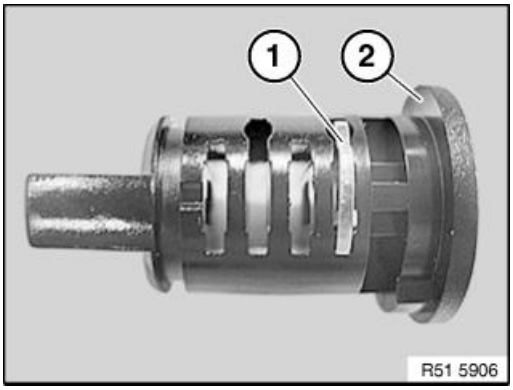
* sourcing reference BMW Group Parts Department



Sort supplied clamps (1) by stamped numerical sequence (X) in ascending order and number (Y).

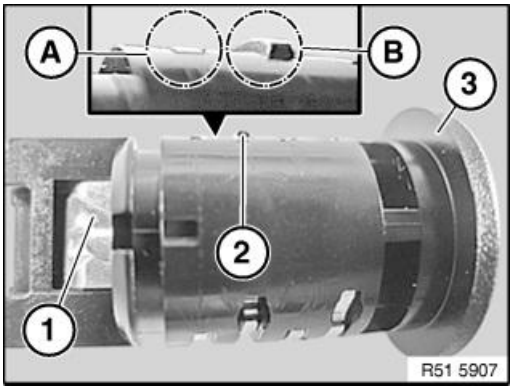


Insert spring (1) into first lock barrel position (2).*Note:*
lock barrel version (2) differs from vehicle to vehicle.



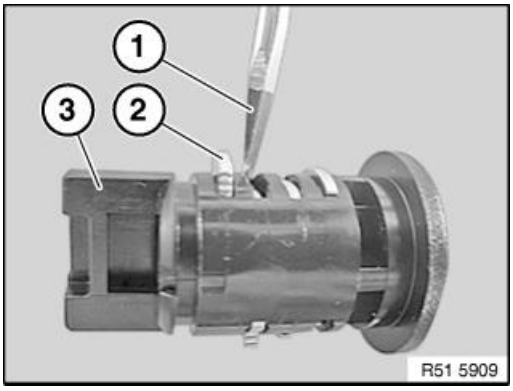
Insert clamp (1) with lowest number (X) of first position (Y) in lock barrel (2) and snap audibly into place.*Note:*
Number of clamps (1) differs from vehicle to vehicle.

cardiagn.com



Insert ignition key (1) in lock barrel (3) and check whether retainer (2) is flush with housing.

- (A) OK
- (B) not OK



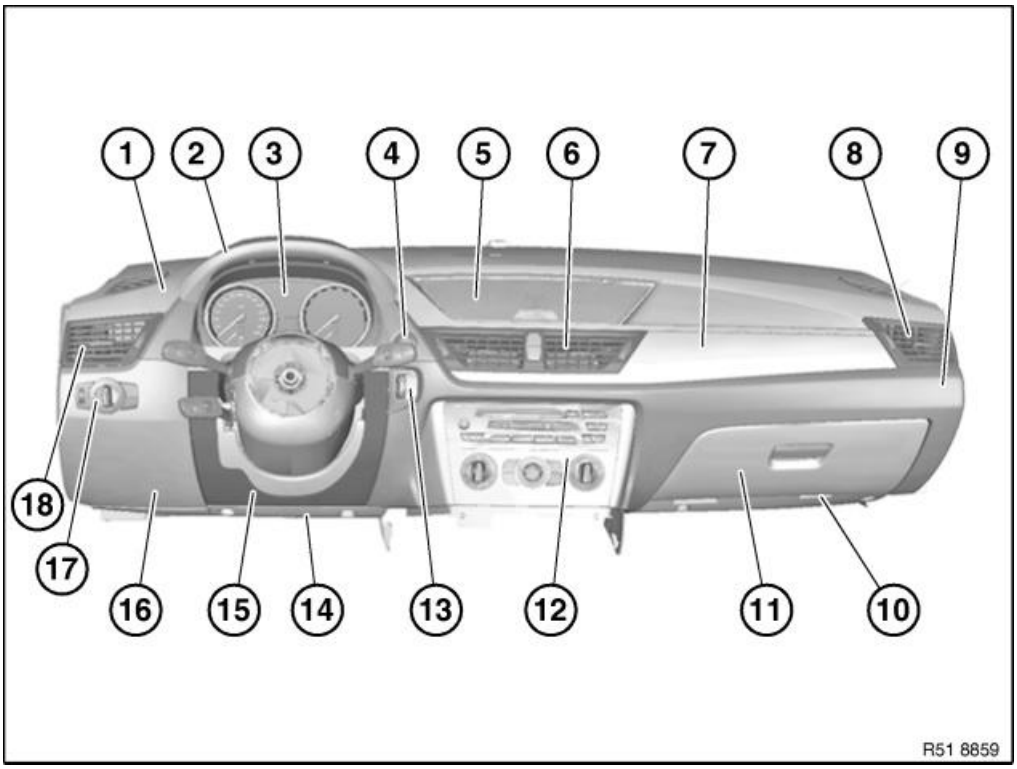
If clamp (2) is not OK, press clamp (2) out of lock barrel (3) with a suitable tool (1).

Continue with next number (X) higher of first position (Y) until clamp is OK.

The continue with all the other positions in accordance with the above-mentioned procedure.

cardiagn.com

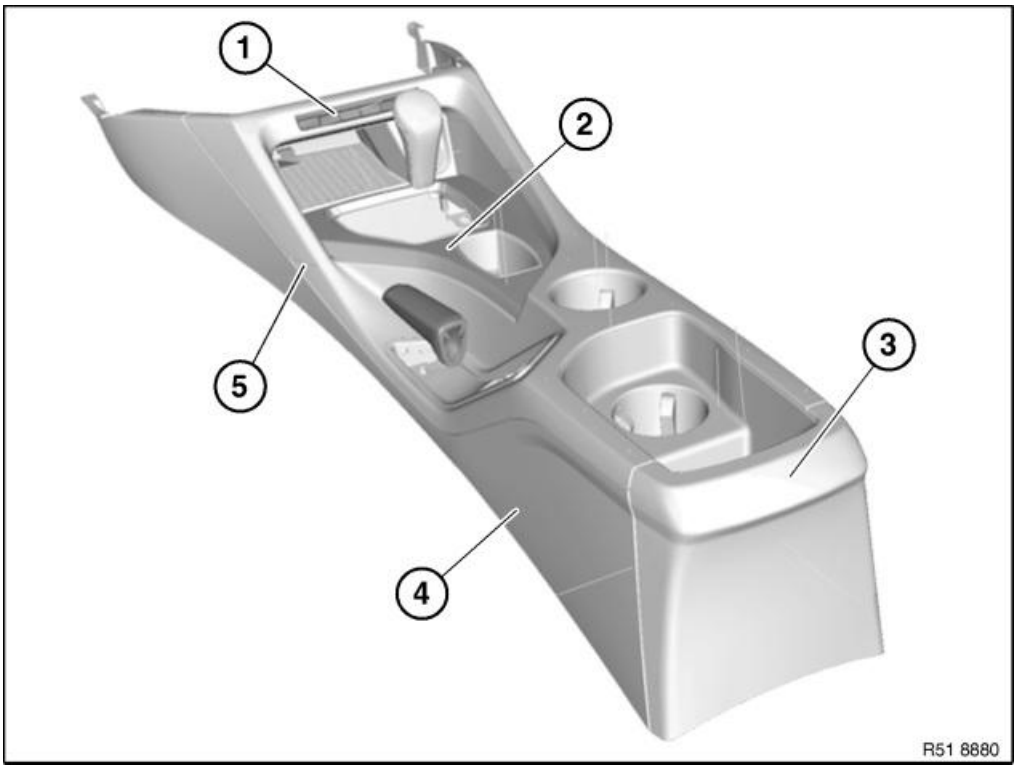
51 45 .. Overview of dashboard



1 Dashboard trim panel
2 Dashboard scoop
3 Instrument cluster
4 Start/Stop switch
5 Top storage compartment
6 Fresh-air grille, middle
7 Trim on instrument panel, right
8 Fresh-air grille, right
9 Trim on instrument panel, right (bottom)
10 Instrument panel trim, bottom right
11 Glove box, right
12 Control panel for heater/air conditioner
13 Insert for radio control key
14 Panel for pedals
15 Instrument panel trim, bottom left (steering-column shroud lower section)
16 Instrument panel trim, bottom left
17 Light operating unit
18 Fresh-air grille, left

cardiagn.com

51 16 ... Overview of storage compartment (centre console)



1 Centre console control panel
2 Trim for storage compartment
3 Rear centre console trim
4 Centre console, complete
5 Trim, centre console

cardiagn.com

51 16 163 Remove and install the rear centre console trim

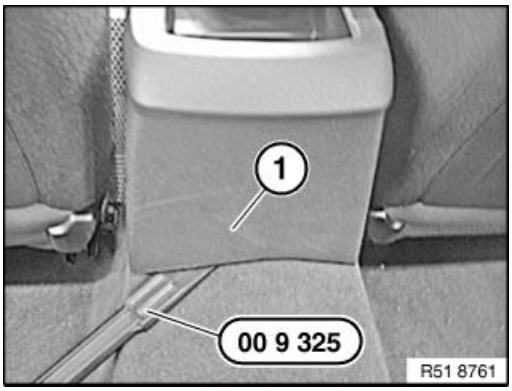
1 – Removing the rear centre console trim

RISK OF DAMAGE

Scratches.

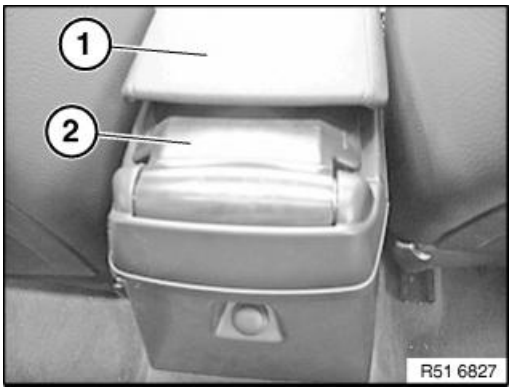
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



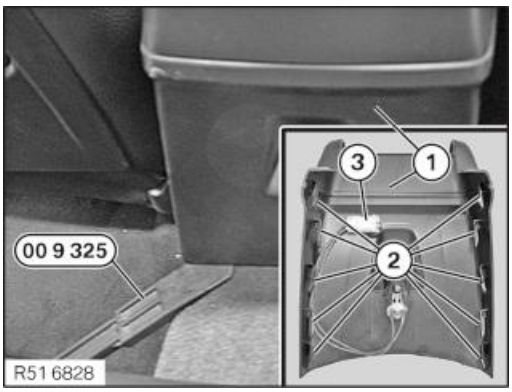
- **Variant without armrest:**

  Lever out rear centre console trim (1) with the special tool **0 496 569 (00 9 325)** upward.



- **Variant with armrest:**

  Push armrest (1) on the centre console (2) all the way to the front.



- Lever out rear centre console trim (1) with the special tool **0 496 569 (00 9 325)** out of the latch mechanisms (2) upward.
- If necessary unfasten plug connection (3).
- Remove rear centre console trim (1).

2 – Installing the rear centre console trim

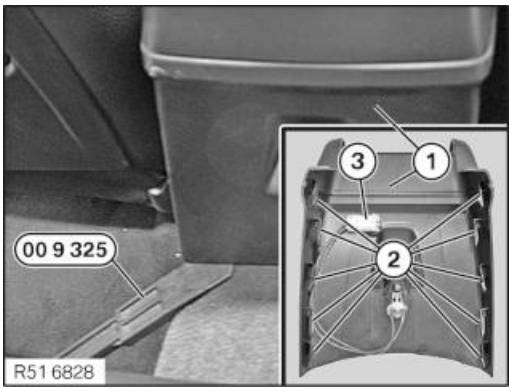
RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

cardiagn.com



- Ensure that the latch mechanisms (2) of the rear centre console trim (1) are not damaged or missing.
- Connect the plug connection (3) if necessary.
- Attach and lock rear centre console trim (1).

Additional Information

Overview of Special Tools

0 496 569 (00 9 325) Wedge



Common	Used in step 1
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

cardiagn.com

51 16 341 Remove and install/replace lock barrel for glove box

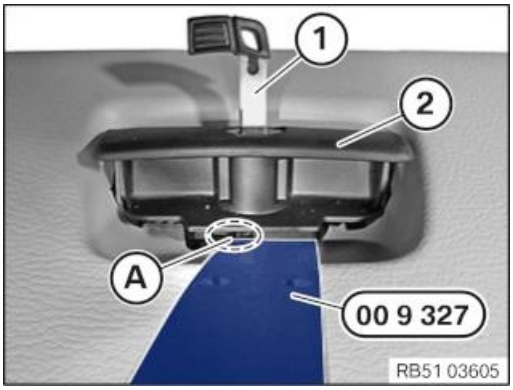
Special tools required:

- 00 9 327

Important!

Risk of damage!

When working on trim panel components, make sure that the sensitive surfaces are not scratched or damaged.

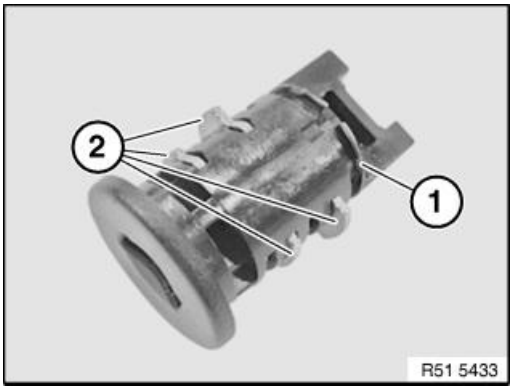


Insert ignition key (1) into lock barrel.

If possible, unlock (2) the lock.

Open lock (2) and insert special tool 00 9 327 .

Insert screwdriver in area (A) and pry lock barrel outwards.



Installation note:
The catch bar(1) and retainers (2) may not be damaged.

If necessary, assemble new lock barrel.

cardiagn.com

51 16 ... Removing and installing bracket for folding pack head airbag at holder for grab handle (headlining removed)



Warning!

Follow safety information for repair work on vehicles with airbag systems.

Important!

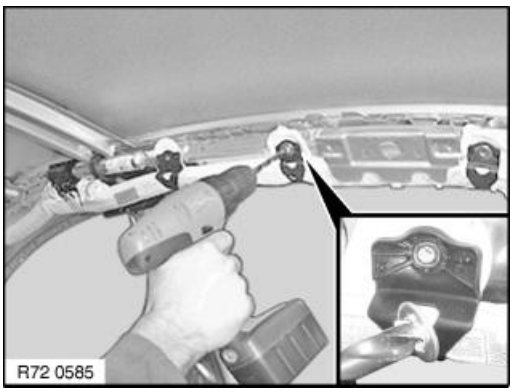
Risk of damage! Do not use sharp tools in the area of the head airbag.



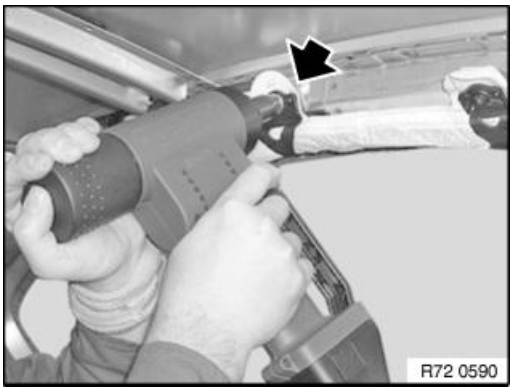
Important!

Spread protective mats in working area to prevent metal chips from drilling operations from damaging the interior:

- Dashboard
- Entrance area
- Passenger compartment



Drill off rivet head at bracket for folding pack head airbag with a twist drill (dia. 10 mm).



Installation note:
Rivet bracket for folding pack head airbag with rivet gun (see BMW workshop catalogue) (blind rivet dia. 6.4 mm).

Avoid rivet inclination.

cardiagn.com

51 16 165 Removing and installing complete centre console

When working on trim panel components, make sure that the sensitive surfaces are not scratched or damaged.

Necessary preliminary work:

- Move selector or gearshift lever towards rear
- Partially remove the gaiter for the parking brake lever
- Remove cover for storage compartment
- Remove the rear centre console trim

Version up to 07/2012 in addition:

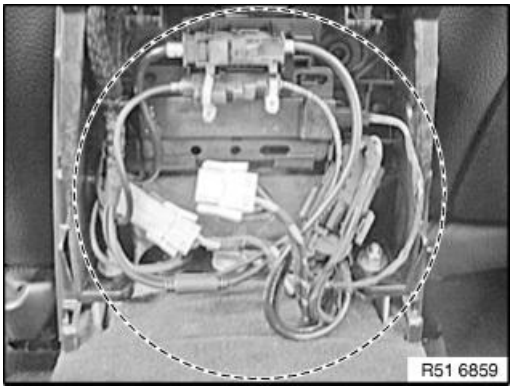
- Remove the centre console trim
- Dismantle instrument panel trim at bottom right
- Remove trim panel for pedal mechanism



Version after 07/2012:

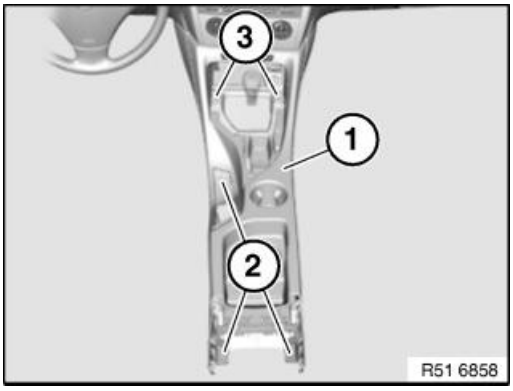
Pull out control panel (1) towards rear.

Installation note:
The ribbon cable of the switch cluster (1) may not be pinched.



Disconnect all existing plug connections in the marked area.

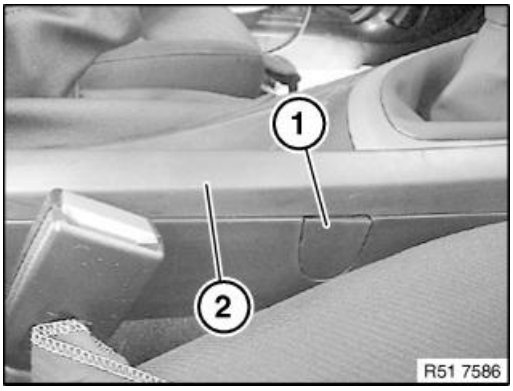
cardiagn.com



Release front nuts (2) and bolts (3) on centre console (1).

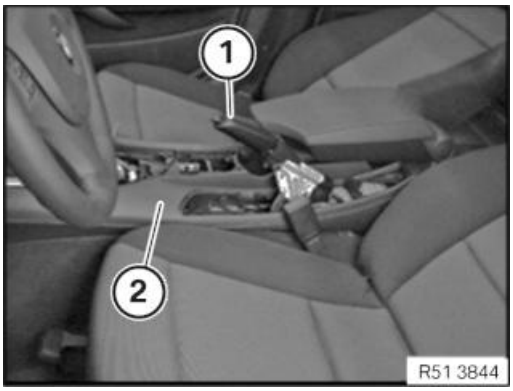
Tightening torque 51 16 17AZ.

Installation note:
Replace self-locking screws.



Note:
Diagram similar.

Lever out cover (1) on storage compartment (2) at side and release screw underneath.



Note:
Graphic similar.

Tighten parking brake lever (1) as far as possible.

Raise centre console (2) at rear and feed out to the top over parking brake lever (1) and gearshift or selector lever.

In so doing, disconnect remaining plug connections.

Carefully remove centre console (2).

cardiagn.com

51 16 160 Removing and installing or replacing centre console trim panel

Important!

Risk of damage!

When working on trim panel components, make sure that the sensitive surfaces are not scratched or damaged.

Optional equipment CIC:

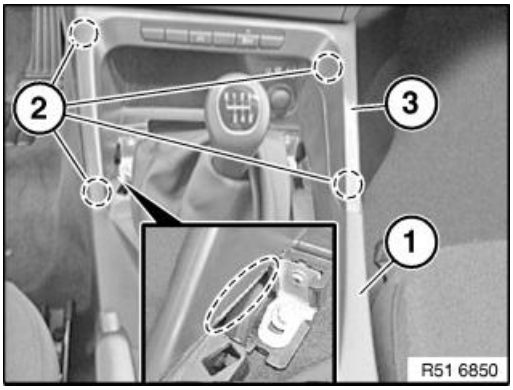
A hard disk is installed in the Car Information Computer (CIC).

Carry out mechanical work on the CIC and adjacent components with care.

Avoid subjecting the CIC to vibration/shocks.

Necessary preliminary work:

- Remove cover for storage compartment



Note:
Proceed with care when removing.

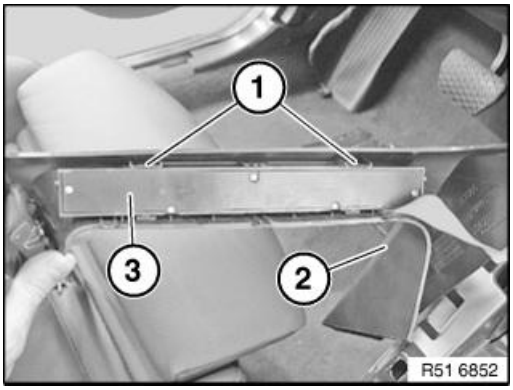
Protect centre console (1) adequately against scratches.

Pull left shank of centre console trim (3) in marked area with one hand upwards.

At same time, with second hand, pulling in jerks and directly towards rear, unclamp (2) centre console trim (3).

Likewise unclamp (2) right shank by pulling in jerks directly towards rear.

Installation note:
Renew faulty retaining clips.



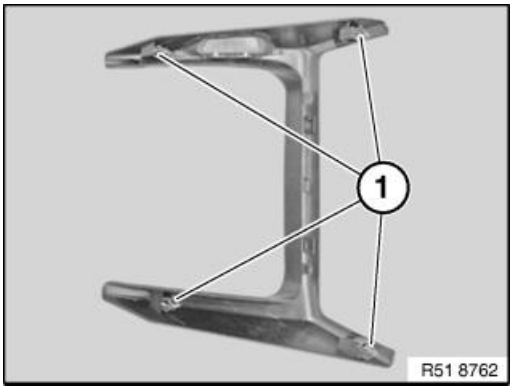
Unclamp switch centre (3) control panel (1) and remove centre console trim panel (2).

cardiagn.com



Installation note:
Do not trap the control panel ribbon cable (see arrow).

If the ribbon cable gets traps, check it for damage.

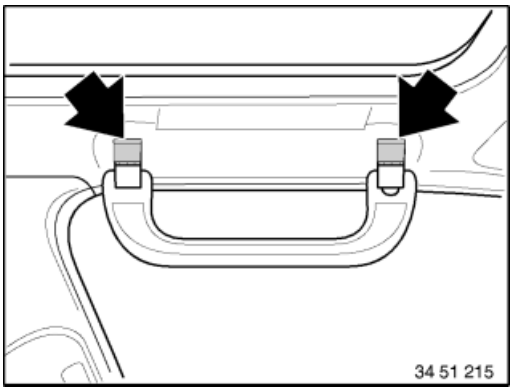


Replacement

Modify clamp clamps (1).

cardiagn.com

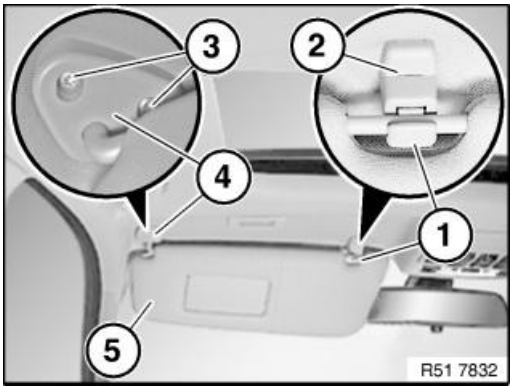
51 16 480 Removing and installing or replacing front grab handle



Fold covers down and unfasten screws.

cardiagn.com

51 16 080 Removing and installing or replacing sun visor and left or right counter support

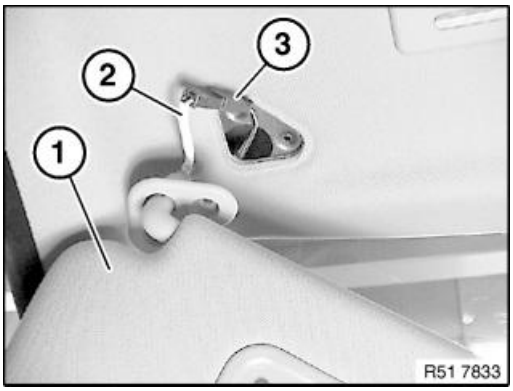


Note:
The operation is shown on the left side; proceed in the same way for the right side.

Fold down sun visor (5).

Lever out trim (2) on counter support (1) and release screw underneath.

Release screws (3) on holder (4).



Lift out sun visor (1).

If necessary, pull out cable (2) slightly and disconnect plug connection (3).

Installation:
Perform function check on lighting.

cardiagn.com

51 16 212 Removing and installing the storage compartment trim

1 – Remove the storage compartment trim

RISK OF DAMAGE

Scratches.

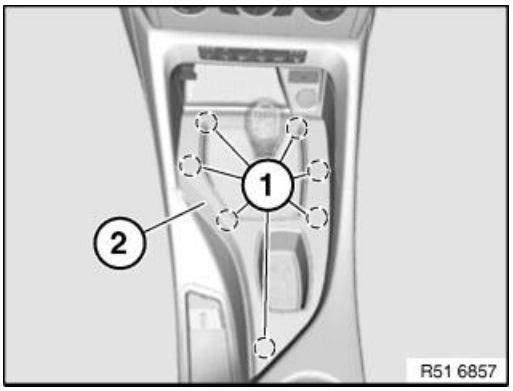
Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Press frame of gaiter (1) together a little and detach it from the centre console upward.

  Begin removing it from the front left side or the frame could be damaged.



- Release storage compartment trim (2) from retaining clips (1) by pulling it in the upward direction.
- Lift storage compartment trim (2) slightly, turn the frame with the gaiter and guide it out through the opening of storage compartment trim (2).
- Remove storage compartment trim (2).

2 – Install the storage compartment trim

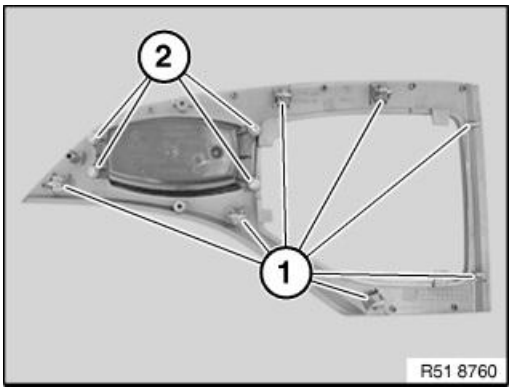
RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

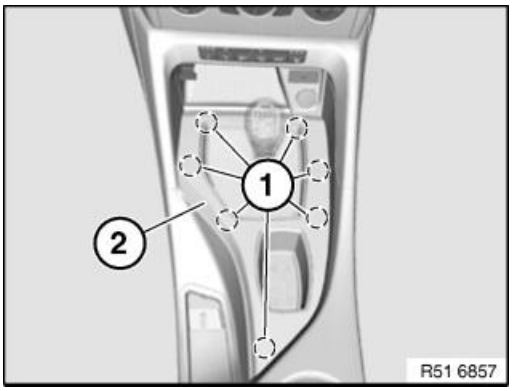
cardiagn.com



- Renew faulty retaining clips (1).

  Parts: Retaining clips

- When replacing the storage compartment trim: Release screws (2) on the storage compartment or the controller and remount the storage compartment or the controller.



- Install storage compartment trim (2).
- Guide in the frame with the gaiter through the opening of storage compartment trim (2).
- Engage storage compartment trim (2) in retaining clips (1).



- Mount and lock gaiter (1).

cardiagn.com

51 16 ... Removing and installing/renewing front left or right grab handle holder

Warning!

Follow safety information for repair work on vehicles with airbag systems.

Important!

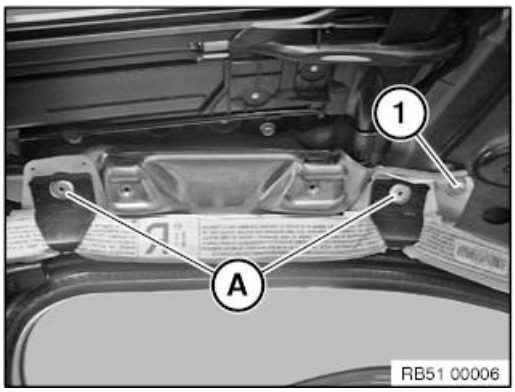
Risk of damage! Do not use sharp tools in the area of the head airbag.

Necessary preliminary tasks:

- Remove headlining

Only in the event of complete dismantling:

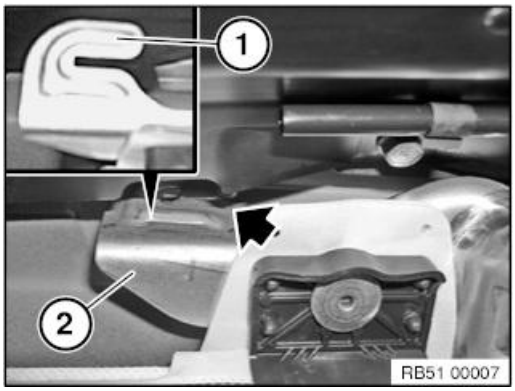
- Detach bracket for head airbag folding pack



Release screw (1).

Tightening torque 51 16 19AZ.

A = Bracket for head airbag folding pack



Feed retaining bracket (1) out of front grab handle holder (2) towards the rear.**Important!**

If the grab handle holder (2) has only been lowered, secure grab handle holder to prevent “sagging” so that the head airbag folding pack is not damaged.

Installation note:
Feed retaining bracket (1) back in again correctly.

cardiagn.com

51 16 060 Removing and installing/renewing inside mirror (with Japanese inside mirror with electronic toll function)

Important!

Work may only be carried out at a room/object temperature of 18 ... 28 °C.

If this can not be guaranteed (cold/hot countries), it is necessary to equalise the temperature of the windscreen, mirror base and inside mirror (e.g. vehicle left to stand indoors or in the shade for at least 30 minutes).

Version with remote key for central locking system:

If necessary, disconnect negative lead from battery.

Version with compass:

Check compass function if replacing or after disconnecting inside mirror plug connection or battery.

If necessary, calibrate compass in interior rearview mirror.

E60 Security version:

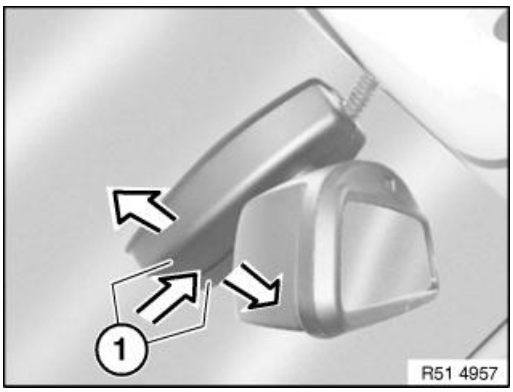
Rain sensor is not installed, cable connection is tied back in headlining.

Important!

To avoid windscreen breakage:

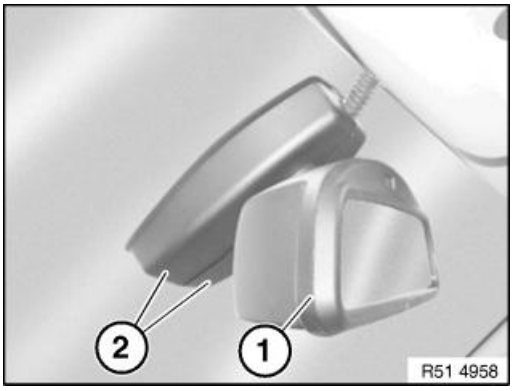
Screw inside mirror off mirror mount.

Inside mirror must not be pulled or pressed off towards front or rear.

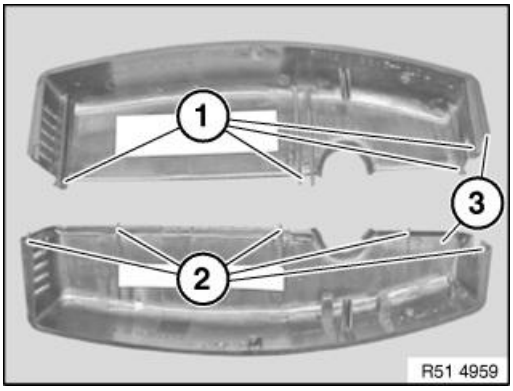


Press on end caps (1) and at same time pull them apart; this releases clip connection of both caps (1).

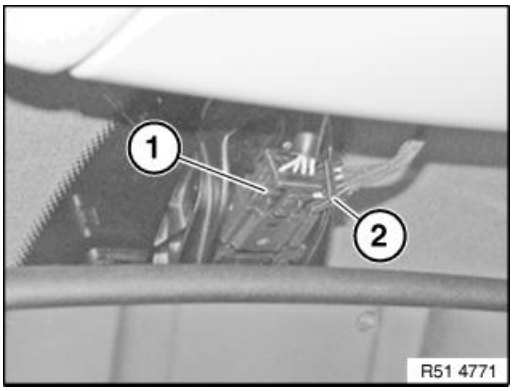
cardiagn.com



Turn inside mirror (1) to right and left and feed out end caps (2).



Installation note:
Latch mechanisms (1) and guides (2) of end caps (3) must not be damaged, replace if necessary.

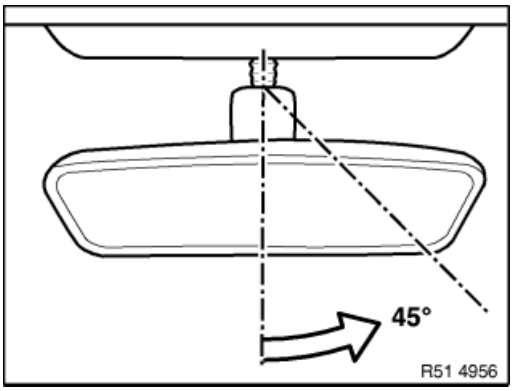


Disconnect plugs (1 and 2).

Note:
Pay attention to cable routing for rain sensor.

<u>E60 Security version:</u>

Rain sensor is not installed, cable connection is tied back in headlining.

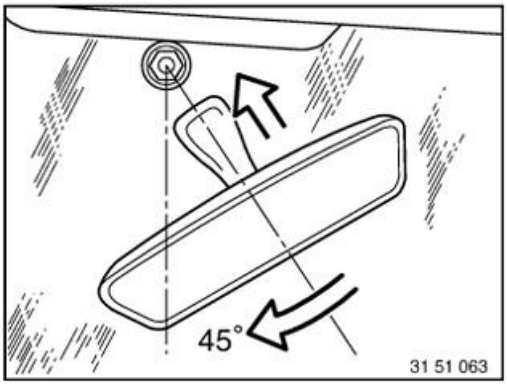


Important!

Do not pull or press inside mirror off towards front or rear.

Twist mirror base approx. 45° to right until mirror base is released from mirror mount.

cardiagn.com



Installation note:

1. Twist mirror foot by approx. 45° and fit to mirror base .
2. Turn mirror base until it engages on mirror mount.

Only in case of replacement with version with remote control for central locking:

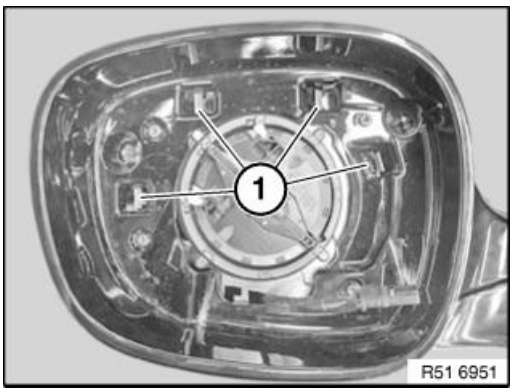
If necessary, initialise all transmitters (ignition keys), refer to Owner's Handbook.

cardiagn.com

51 16 041 Removing and installing/replacing cover cap on left or right exterior mirror

Necessary preliminary tasks:

- Remove mirror glass for mirror



Disengage retaining tabsÂ (1) from protective cap.

Pull backward on protective cap to remove.

Note:
Fold in exterior mirror for easier removal of protective cap.

cardiagn.com

51 16 212 Removing and installing/replacing cover for storage compartment



Attention!

Risk of damage!

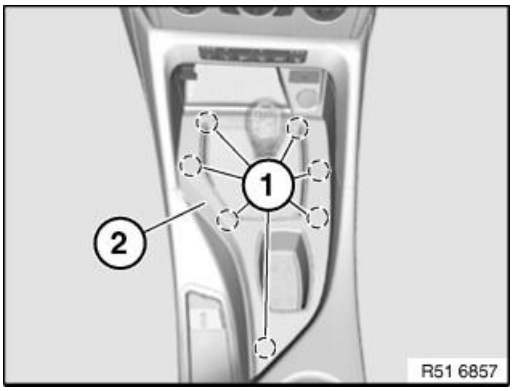
When working on trim panel components, make sure that the sensitive surfaces are not scratched or damaged.



Note:
Graphic similar.

Slightly press together the installation frame of gaiter (1) and loosen the gaiter from the centre console towards the top.**Attention!**

Start removing at front left, otherwise the frame may be damaged.



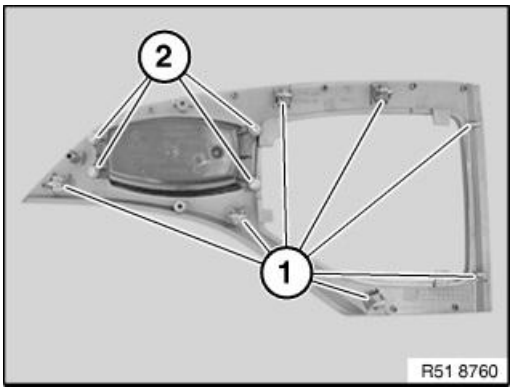
To release clamp clamp (1) pull up.

Slightly raise trim (2) rotate frame of gaiter through gearshift opening.

Remove cover (2).

<u>If optional equipment is fitted:</u>

Disconnect plug connection at front controller.



Installation note:
Replace defective retaining clips (1).

Replacement

Remount the retaining clips (1).

Release screws (2) on storage compartment.

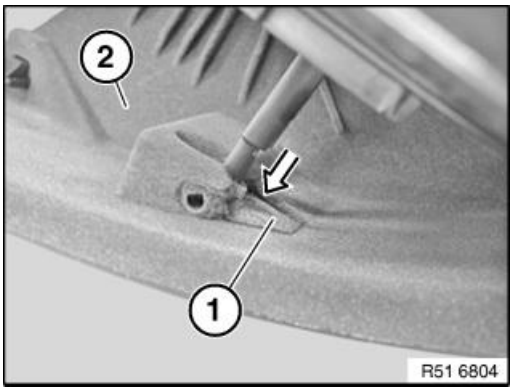
Remount the storage compartment.

<u>If optional equipment is fitted:</u>

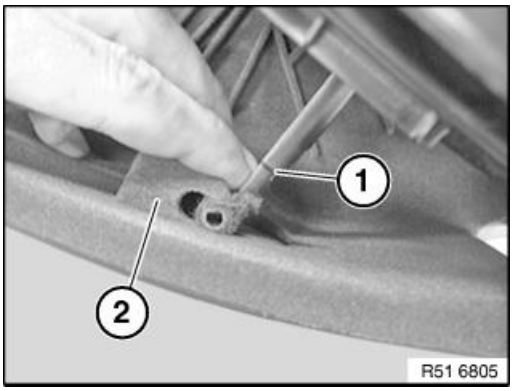
Remount the front CON.

cardiagn.com

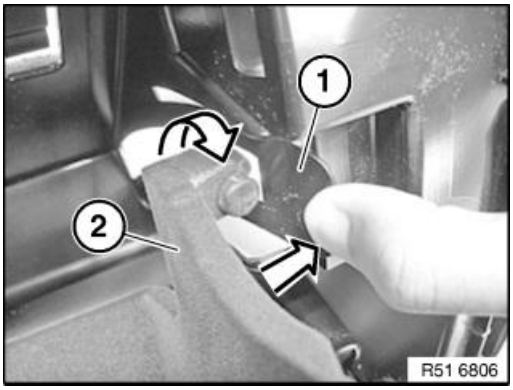
51 16 383 Removing and installing/replacing damper for glove box



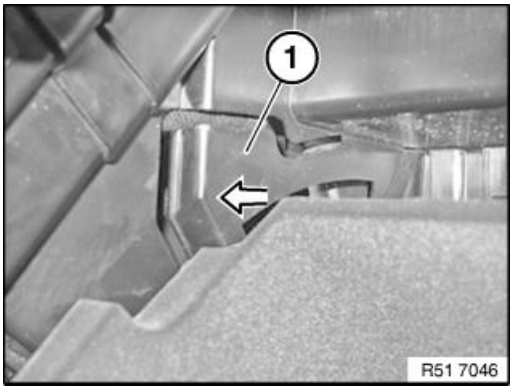
Press down holding tab (1) from glove compartment lid (2).



Feed out damper (1) from fixture (2).

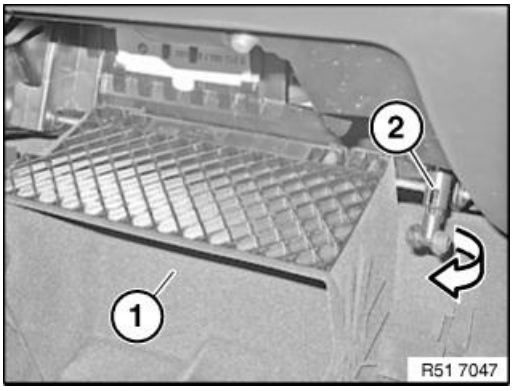


Press retaining lug (1) outwards to remove left stop (2).



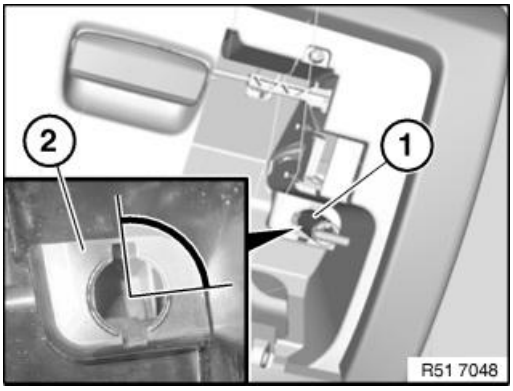
Press retaining lug (1) outwards to remove right stop.

cardiagn.com



Lower glove compartment cover (1).

Turn damper for glove compartment (2) through 90° and remove.



Note:
Graphic shows sectional view.
Installation:
Fit damper (1) correctly in opening (1) of glove compartment housing (2) and lock by turning through 90°.

cardiagn.com

51 16 ... Removing and installing/replacing holder, rear left/right grab handle

Warning!

Follow safety information for repair work on vehicles with airbag systems.

Important!

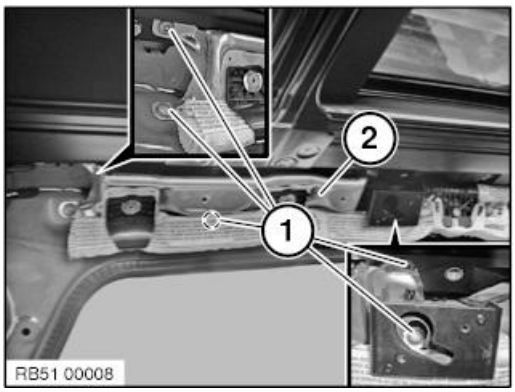
Risk of damage! Do not use sharp tools in the area of the head airbag.

Necessary preliminary tasks:

- Remove headlining

Only for complete dismantling:

- Remove bracket for folding pack head airbag



Note:
Graphic shows holder with front fixture for load area net.

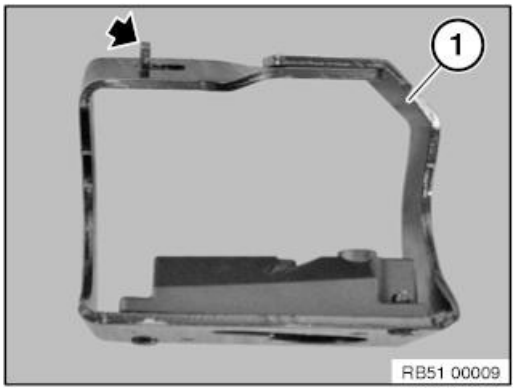
Release screws (1).

Tightening torque 51 16 19AZ.

If necessary, detach retaining tabs of wiring harness.

Important!

If holder for grab handle, rear, (2) is only lowered, secure holder for grab handle to prevent "sag" in order to ensure that folding pack head airbag is not damaged.



Installation note:
Only with optional equipment load area net:

- Correctly introduce latching tab at front fixture for separating net (1) into recess in body.

cardiagn.com

51 16 060 Removing and installing/replacing inside mirror (with high-beam assistant)

Important!

Work may only be carried out at a room/object temperature of 18 ... 28 °C.

If this can not be guaranteed (cold/hot countries), it is necessary to equalise the temperature of the windscreen, mirror base and inside mirror (e.g. vehicle left to stand indoors or in the shade for at least 30 minutes).

Equipment specification with remote control for central locking:

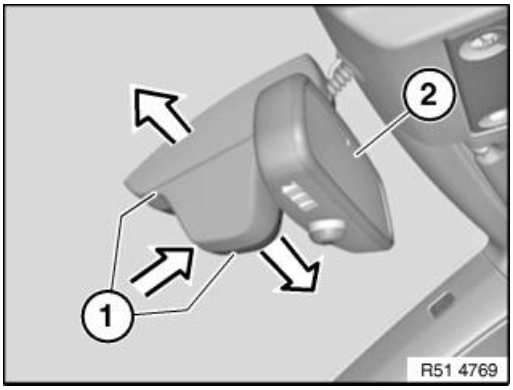
If necessary, disconnect ground cable from battery.

Important!

To avoid windscreen breakage:

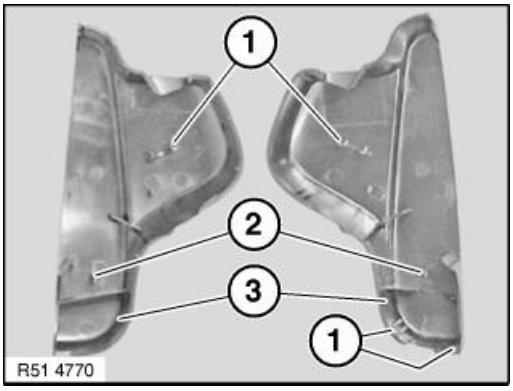
Twist off interior mirror from mirror mount.

Inside mirror must not be pulled or pressed off towards front or rear.



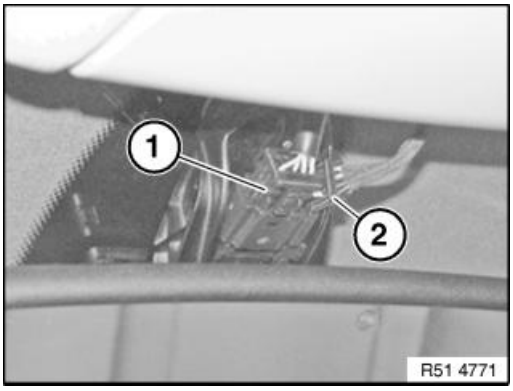
Press on end caps (1) and at same time pull them apart; this releases clip connection of both caps (1).

Twist inside mirror (2) and detach end caps (1) from inside mirror and feed out.

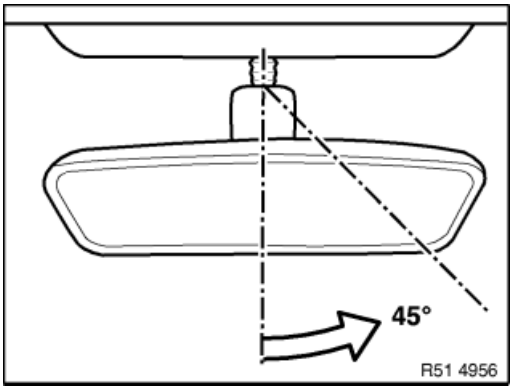


Installation note:
Retaining hooks (1 and 2) of end caps (3) must not be damaged.

cardiagn.com



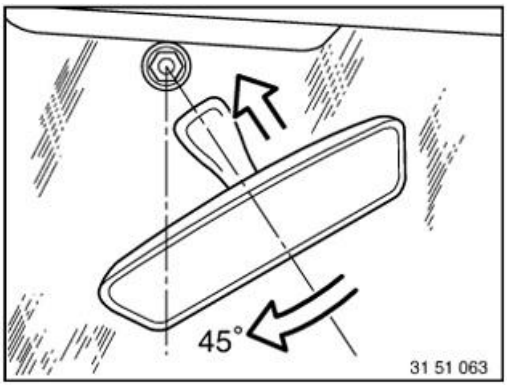
Disconnect plug connections (1 and 2).*Installation note:*
If necessary, pay attention to cable routing for rain sensor.



Important!

Do not pull or press inside mirror off towards front or rear.

Twist mirror base approx. 45° to right until mirror base is released from mirror base.



Installation note:

1. Twist mirror base by approx. 45° and fit to mirror mount.
2. Turn mirror base until it can be felt to engage on mirror mount.
3. Visually inspect for positive locking.

Note:
Normalisation or initialisation is not necessary.

High-Beam Assistant is automatically aligned under the following conditions:

- Driving on a motorway/ordinary road at night for approx. 50 km and
- Clearly visible road markings

In case of malfunction, check the diagnosis instructions.

For further information on Autobeam, refer to SBT Autobeam.

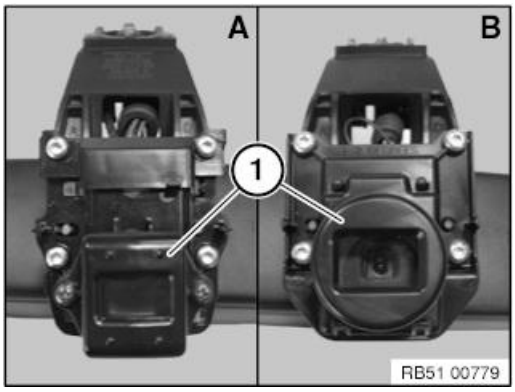
cardiagn.com

Replacement:

Carry out programming/encoding.

Only replace with equipment specification with remote control for central locking:

If necessary, initialise all transmitters (ignition keys), refer to Owner's Handbook.



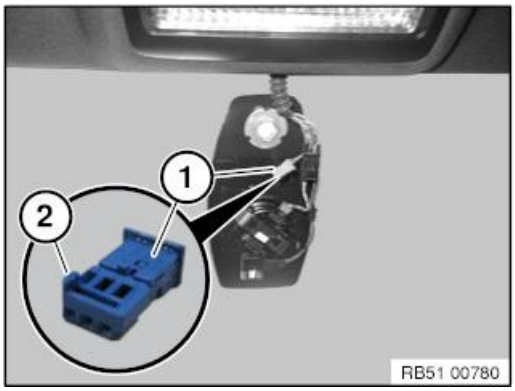
Replacement (only E70, E71, E72):

When installing an inside mirror with a new version the wiring harness on the vehicle must be adjusted if necessary.

A new inside mirror version must only be installed with the relevant end caps.

A Previous version with square camera (1)

B New version with round camera (1)



For vehicles with a blue connector (1) and installation of inside mirror with new version, the mechanical coding (2) must be removed.

cardiagn.com

51 16 060 Removing and installing/replacing inside mirror (with mirror arm end caps)

Important!

Work may only be carried out at a room/object temperature of 18 ... 28 °C.

If this can not be guaranteed (cold/hot countries), it is necessary to equalise the temperature of the windscreen, mirror base and inside mirror (e.g. vehicle left to stand indoors or in the shade for at least 30 minutes).

Version with remote key for central locking system:

If necessary, disconnect negative lead from battery.

Version with compass:

Check compass function if replacing or after disconnecting inside mirror plug connection or battery.

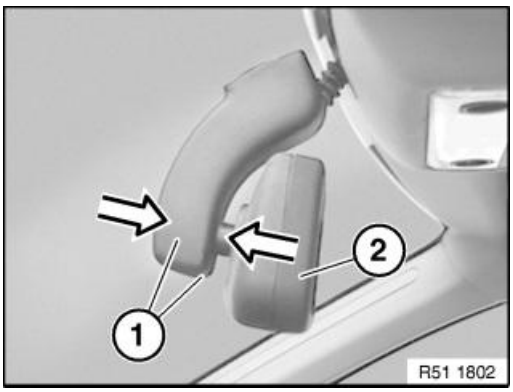
If necessary, calibrate compass in interior rearview mirror.

Important!

To avoid windscreen breakage:

Screw inside mirror off mirror mount.

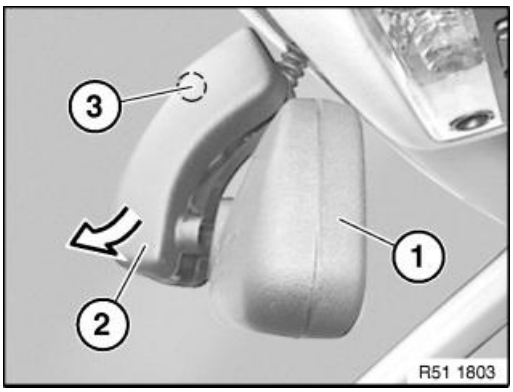
Inside mirror must not be pulled or pressed off towards front or rear.



Note:
Do not exert any pressure on mirror base when removing end caps (1).

Press end caps (1) towards mirror housing (2); this releases clip connection of both end caps (1).

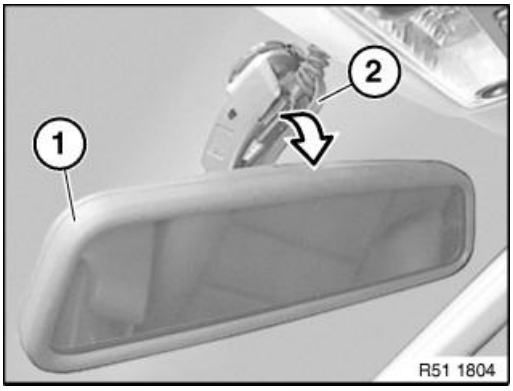
In order not to create any tension at the mirror base, simultaneously apply counterpressure to the mirror housing when removing the end caps.



Twist inside mirror (1) at an angle towards front and right/top.

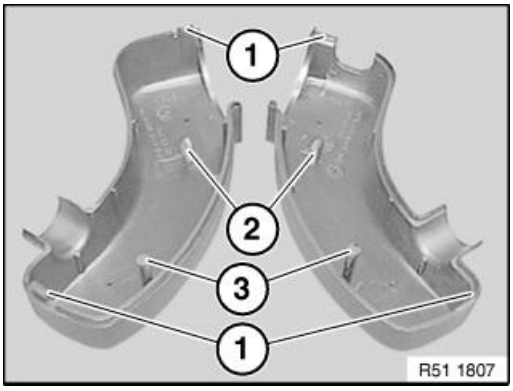
Swivel left end cap (2) off ball neck in direction of arrow; this detaches the engagement clip (3) from the metal foot.

cardiagn.com

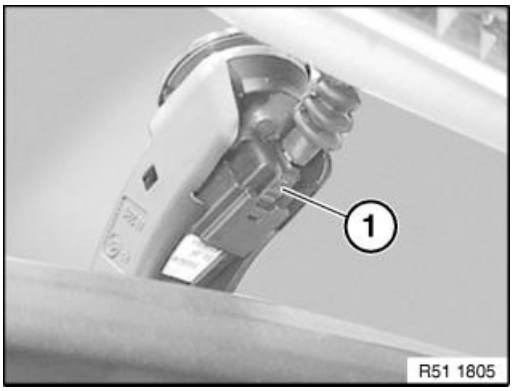


Twist inside mirror (1) at an angle towards front and left/top.

Swivel right end cap (2) off ball neck in direction of arrow; this detaches the engagement clip from the metal foot.

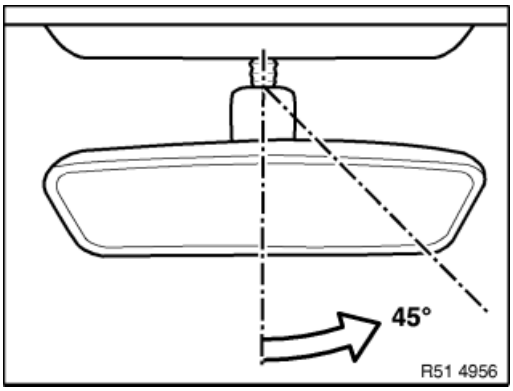


Installation note:
Clips (1) and retaining hooks (2) of end caps (3) must not be damaged, replace if necessary.



<u>Version with cable (X):</u>

Disconnect plug connection (1).

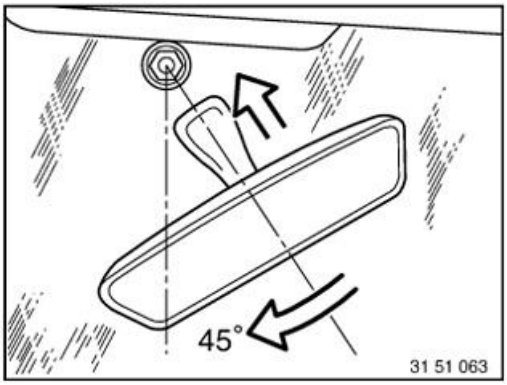


Important!

Do not pull or press inside mirror off towards front or rear.

Twist mirror base approx. 45° to right until mirror base is released from mirror mount.

cardiagn.com



Installation note:

1. Twist mirror foot by approx. 45° and fit to mirror base .
2. Turn mirror base until it engages on mirror mount.

Only replace with version with remote key for central locking system:
Initialise all transmitters (ignition keys), refer to Owner's Handbook.

cardiagn.com

51 16 060 Removing and installing/replacing inside mirror (with rain sensor)

Important!

Work may only be carried out at a room/object temperature of 18 ... 28 °C.

If this can not be guaranteed (cold/hot countries), it is necessary to equalise the temperature of the windscreen, mirror base and inside mirror (e.g. vehicle left to stand indoors or in the shade for at least 30 minutes).

Version with remote key for central locking system:

If necessary, disconnect negative lead from battery.

Version with compass:

Check compass function if replacing or after disconnecting inside mirror plug connection or battery.

If necessary, calibrate compass in interior rearview mirror.

E60 Security version:

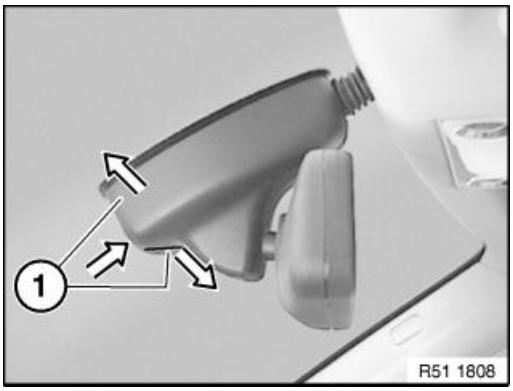
Rain sensor is not installed, cable connection is tied back in headlining.

Important!

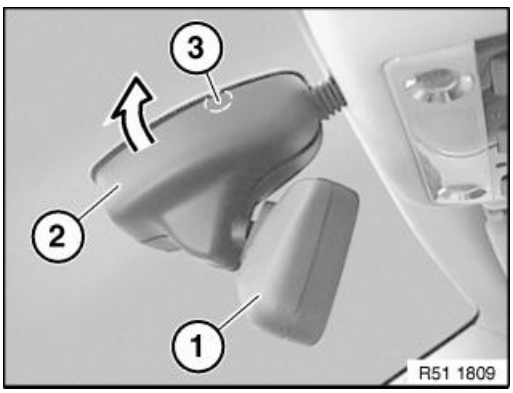
To avoid windscreen breakage:

Screw inside mirror off mirror mount.

Inside mirror must not be pulled or pressed off towards front or rear.



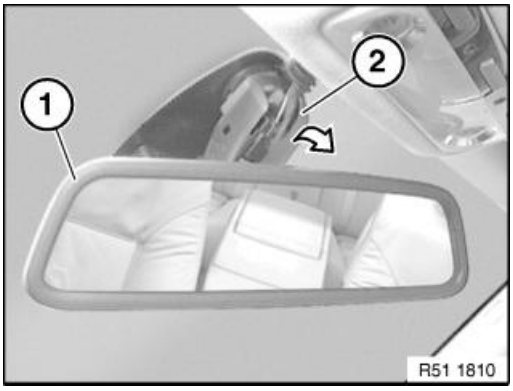
Press on end caps (1) and at same time press them apart; this releases clip connection of both caps (1).



Twist inside mirror (1) at an angle towards front and right/top.

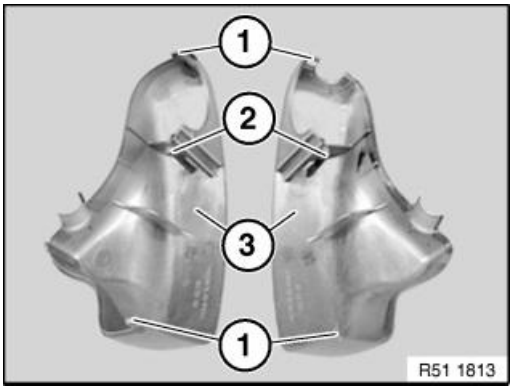
Swivel left end cap (2) off ball neck in direction of arrow; this detaches the engagement clip (3) from the metal foot.

cardiagn.com

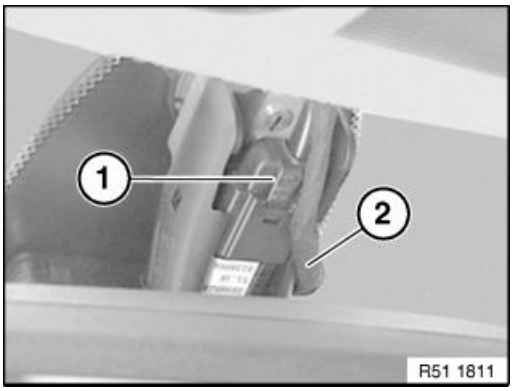


Twist inside mirror (1) at an angle towards front and left/top.

Swivel right end cap (2) off ball neck in direction of arrow; this detaches the engagement clip from the metal foot.



Installation note:
Clips (1) and retaining hooks (2) of end caps (3) must not be damaged, replace if necessary.

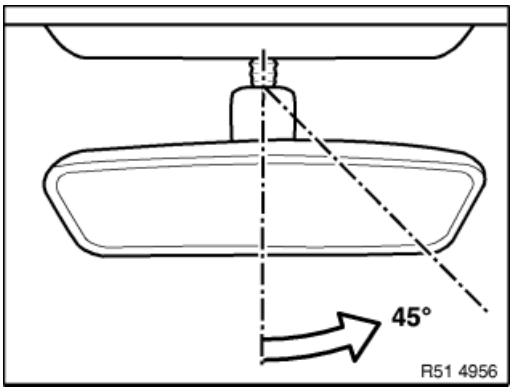


Disconnect plug connection (1).

Note:
Pay attention to cable routing (2) for rain sensor.

<u>E60 Security version:</u>

Rain sensor is not installed, cable connection is tied back in headlining.

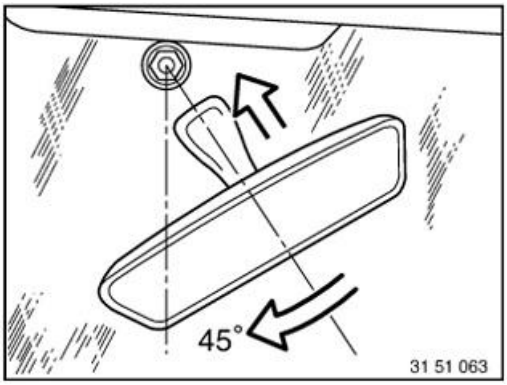


Important!

Do not pull or press inside mirror off towards front or rear.

Twist mirror base approx. 45° to right until mirror base is released from mirror mount.

cardiagn.com



Installation note:

1. Twist mirror foot by approx. 45° and fit to mirror base .
2. Turn mirror base until it engages on mirror mount.

Only in case of replacement with version with remote control for central locking:

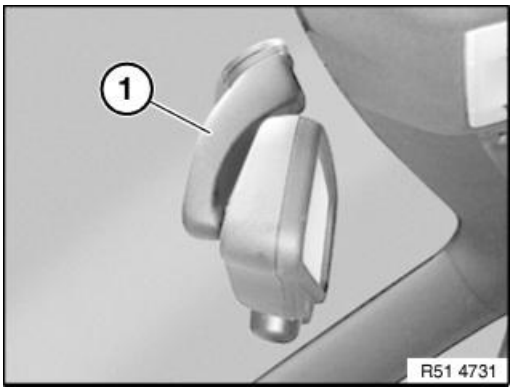
If necessary, initialise all transmitters (ignition keys), refer to Owner's Handbook.

cardiagn.com

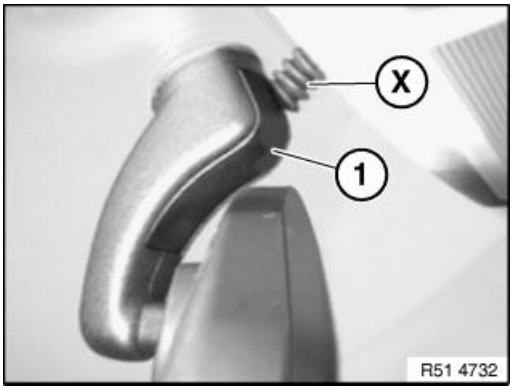
51 16 060 Removing and installing/replacing interior rearview mirror (overview)

Note:
Version with cable (X) for:

- Automatic dim action (electro-chrome technology) for interior rearview mirror
- Condensation sensor
- Remote control (infrared or radio)
- High-beam assistant
- Garage door openers
- Compass
- Rain sensor



Version without cable (X) with full foot (1).



Version with cable (X) and plug trim cover (1).

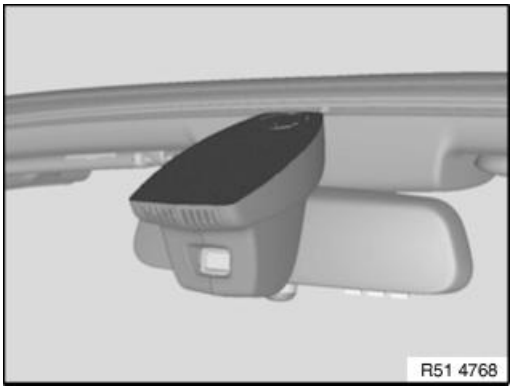


Version with mirror arm end caps (1).

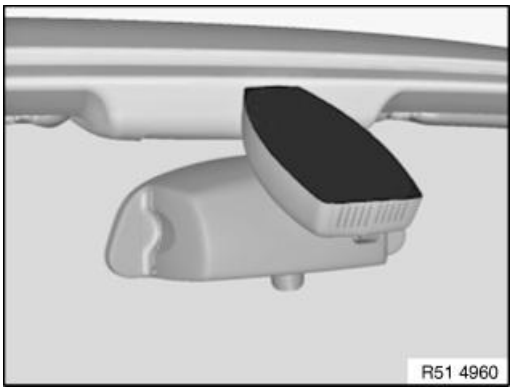
cardiagn.com



Version with rain sensor.



Version with Autobeam.



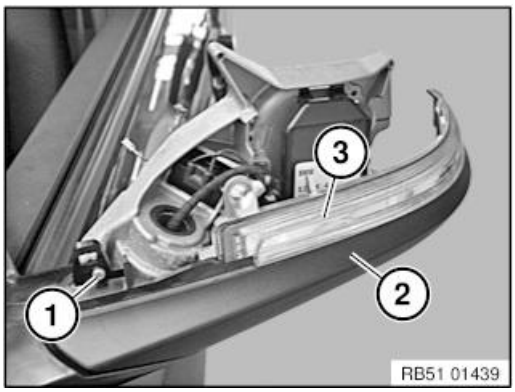
Version with toll mirror for Japan.

cardiagn.com

51 16 282 Removing and installing/replacing left or right lower housing section (from 07/12)

Necessary preliminary work:

- Remove retaining ring on exterior mirror



Release screw (1).

Carefully feed out lower housing section (2).

Remove side repeater (3) from lower housing section (2).

Installation note:
Make sure side repeater (3) is correctly fitted to lower housing section (2).

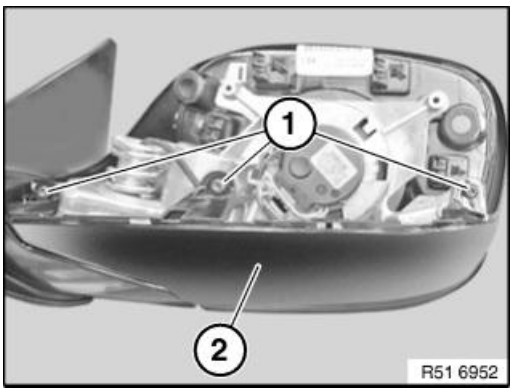
Make sure lower housing section (2) is correctly fitted to exterior mirror.

cardiagn.com

51 16 282 Removing and installing/replacing left or right lower housing section (up to 07/12)

Necessary preliminary work:

- Remove protective cap from exterior mirror



Release screws (1) on lower housing section (2).

Carefully remove lower housing section (2).

Installation note:
Plastic tab of lower housing section must snap into aluminium housing of mirror base plate.

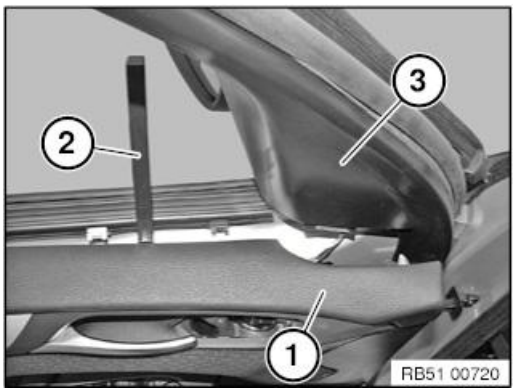
The housing shells of the exterior mirror must snap together.

cardiagn.com

51 16 001 Removing and installing/replacing mirror on left or right front door

Special tools required:

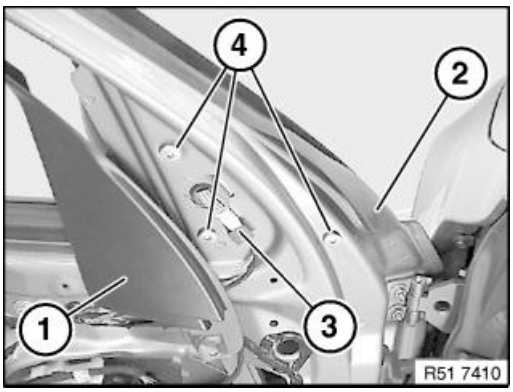
- 00 9 325



Partially unclip door trim panel (1) in the area of the rearview mirror with special tool 00 9 325 .

Secure door trim panel (1) with suitable tool (2).

Partially loosen door window frame cover (3).



Note:
Graphic is similar.

Press cover (1) and guide rubber (2) to one side.

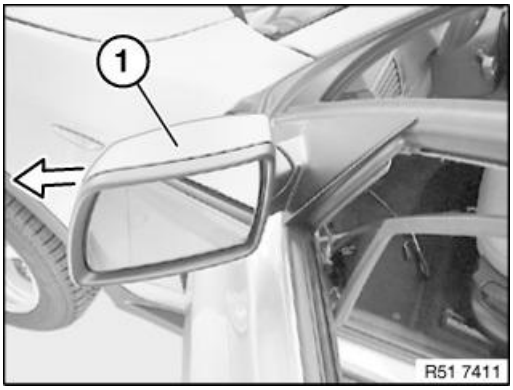
Disconnect plug connection (3).

Release screws (4).

Tightening torque 51 16 1AZ.

Replacement only:

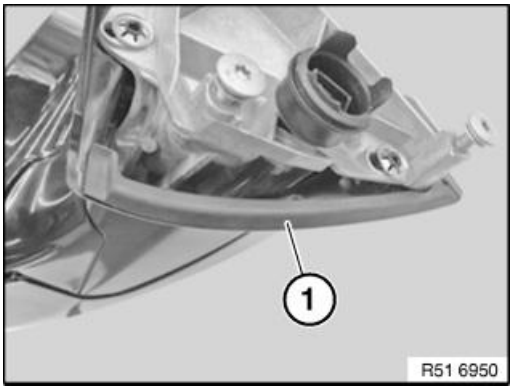
Due to the self-tapping screws, the tightening torque of the new mirror is increased by 2 Nm.



Graphic is similar.

Remove mirror (1) outwards.

cardiagn.com



Installation note:
The rubber sealing strip (1) must not be missing or damaged.

Run a function check.

Replacement

- Modify mirror glass
- Modify protective cap on exterior mirror
- Modify mirror triangle sealing

cardiagn.com

51 16 163 Removing and installing/replacing rear centre console trim

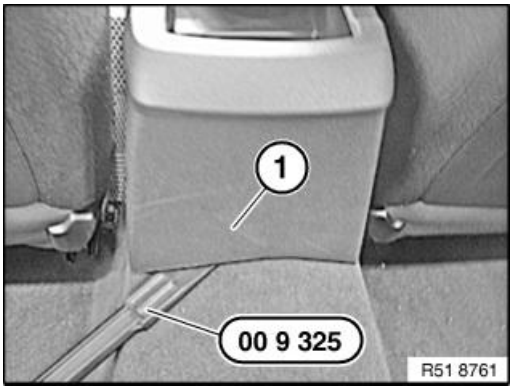
Special tools required:

- 00 9 325

Important!

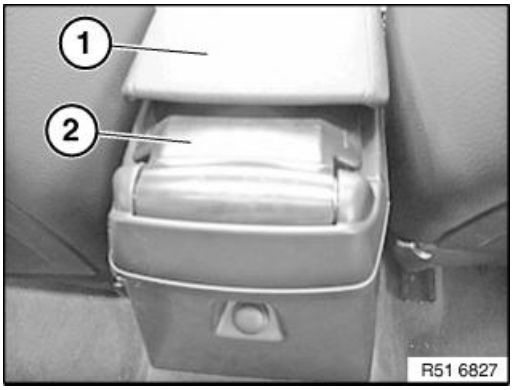
Risk of damage!

When working on trim panel components, make sure that the sensitive surfaces are not scratched or damaged.



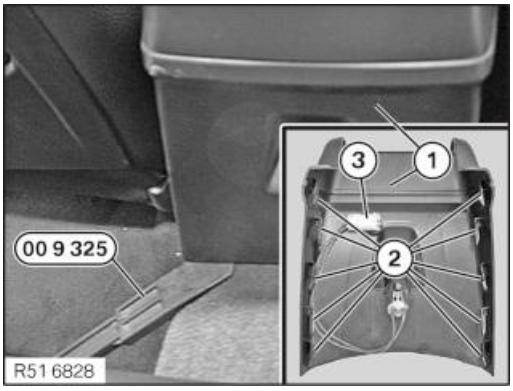
For versions without armrest:

Lever out rear centre console panel trim (1) with special tool 00 9 325 upwards.



For versions with armrest:

Move armrest (1) on centre console (2) completely forward.



Lever out rear centre console panel trim (1) with special tool 00 9 325 upwards.

Installation:
Retaining tabs (2) of rear centre console trim panel (1) must not be damaged.

If necessary, disconnect plug connection (3).

Remove rear centre console trim panel (1).

Replacement

Modify 12 V power socket if necessary.

cardiagn.com

51 16 450 Removing and installing/replacing rear left/right grab handle



Operation is identical to:

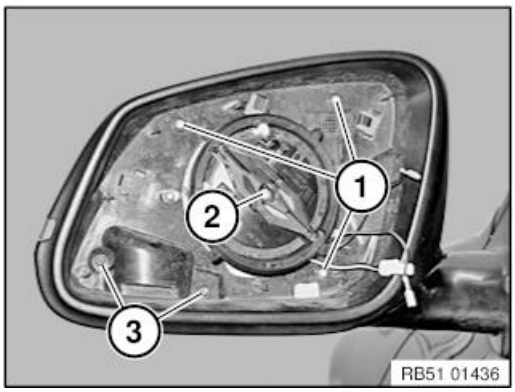
Removing and installing/replacing front grab handle.

cardiagn.com

51 16 045 Removing and installing/replacing retaining ring on left or right exterior mirror (from 07/12)

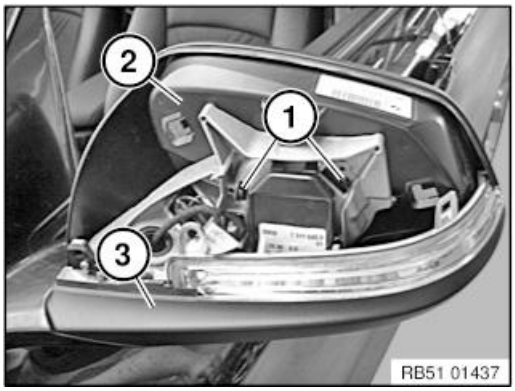
Necessary preliminary work:

- Remove protective cap from exterior mirror



Release screws (1 to 3).*Installation note:*
Observe installation locations of screws (1 to 3):

- Screws (1 and 2) with metric thread
- Screws (3) with non-metric thread



Release electric motor for electrically adjustable exterior mirror at latch mechanisms (1).

Feed out retaining ring (2) to the rear of exterior mirror and electric motor.

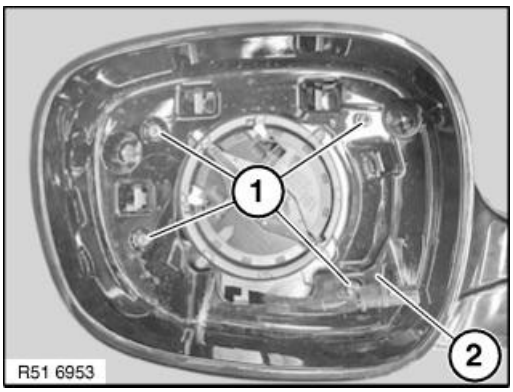
Installation note:
Make sure retaining ring (2) is correctly fitted on housing (3).

cardiagn.com

51 16 045 Removing and installing/replacing retaining ring on left or right exterior mirror (up to 07/12)

Necessary preliminary work:

- Remove protective cap from exterior mirror



Release screws (1) from circlip (2).

Carefully pull of circlip.

Note:
Fold out exterior mirror for easier dismantling of retaining ring.

Installation note:
Plastic nose of cover ring must engage in aluminium housing of mirror base.

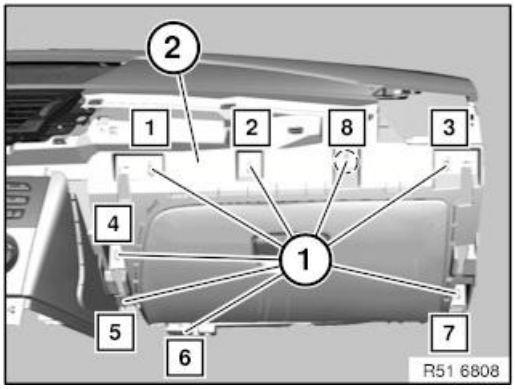
The housing shells of the exterior mirror must snap together.

cardiagn.com

51 16 366 Removing and installing/replacing right glove box with housing

Necessary preliminary tasks:

- Remove instrument panel trim at bottom right
- Remove trim on instrument panel on right



Remove screws (1) from the glove compartment enclosure (2).

Tightening torque 51 16 18AZ.

Installation note:
Observe tightening sequence. The installation position of the longer bolt (4.2 x 25) is marked with a circle.

Slightly lower the glove compartment enclosure (2) and disconnect plug connection from the glove box light.

Remove the glove compartment housing (2).

Installation note:
Properly adjust the glove compartment enclosure (2).

Replacement

Remount glove box light.

US version: Install new lock barrel.

If the replacement fuse assignment chart (included in deliveries with new glove boxes) does not match the vehicle's original fuse assignment chart, then:

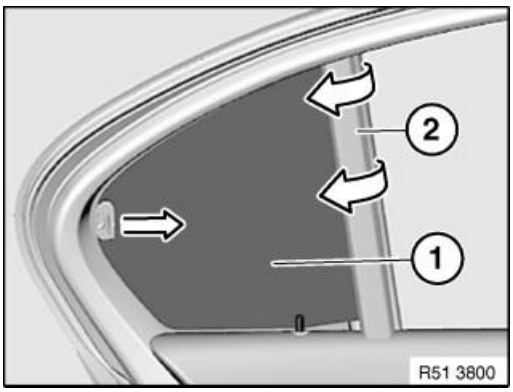
- the original fuse assignment chart must be used.
- The replacement fuse assignment chart must be disposed of.

cardiagn.com

51 16 400 Removing and installing/replacing roller sun blind on fixed side window of left or right rear door

Special tools required:

- 00 9 317



Retract roller sun blind (1).

Open side window.

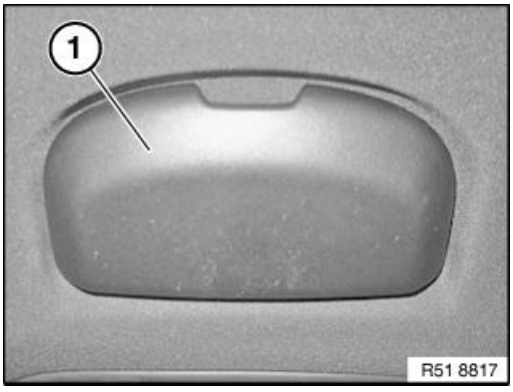
Unclip casing (2) of roller sun blind (1) with special tool 00 9 317 in direction of arrow.

Installation:
Casing (2) must not be damaged.

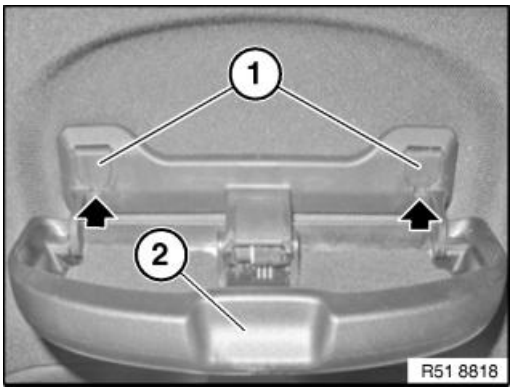
cardiagn.com

51 16 ... Removing and refitting/replacing spectacle compartment

When working on trim panel components, make sure that the sensitive surfaces are not scratched or damaged.



Open spectacle compartment (1).



Lever up covers (1) at front and back in the locations indicated and undo the screws behind them.

Remove spectacle compartment (2).

cardiagn.com

51 16 026 Replacing mirror glass

Special tools required:

- 00 9 317

Warning!

Risk of injury!

Move mirror glass with hand carefully and slowly.

If mirror glass is damaged:

Wear protective goggles and cut-proof gloves.

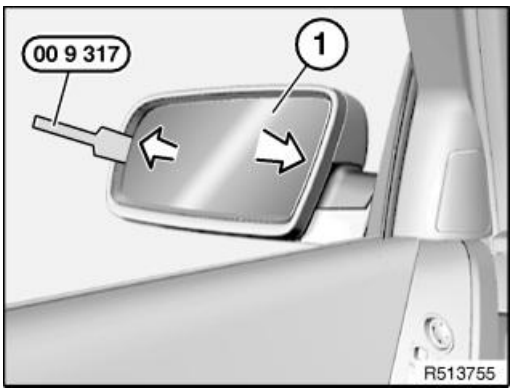
Risk of injury by flaking-off glass splinters.

Important!

Risk of damage!

Bring exterior mirror to room temperature to prevent catches from breaking off.

Graphics are only an example (The graphics used are from E60).



Important!

Risk of damage!

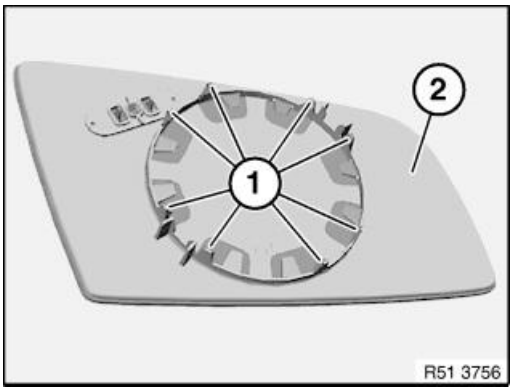
Secure mirror glass (1) against falling out.

Note:
Graphics

Press mirror glass (1) on side vehicle by hand to full extent.

Unclip mirror glass (1) all around from outer side with special tool 00 9 317 .

Unlock and disconnect associated plug connections, remove mirror glass (1).



Installation:
Retaining lugs (1) must not be damaged.

Fit mirror glass (2) with retaining lugs (1) flush on mirror adjusting drive and clip into place.

Ensure correct locking.

Make sure mirror adjusting drive functions correctly.

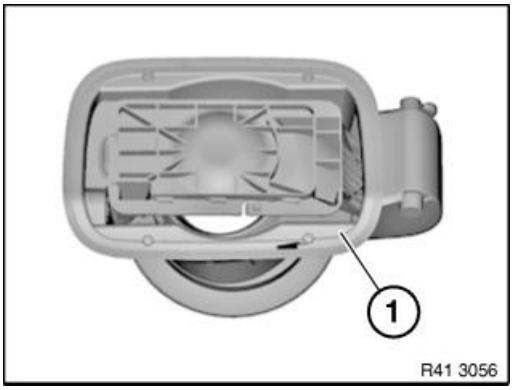
cardiagn.com

41 63 003 Replace cover bowl

Necessary preliminary work:

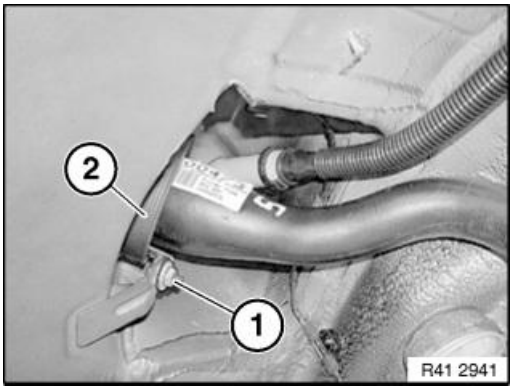
- Remove flap for fuel filler neck
- Remove front wheel arch cover (rear section)

Important!
Deformation of the sheet metal flanges in the side panel and the wheel arch results in permanent vehicle leakage. Carry out removal/installation with great care.



Following new body parts are required (refer to Electronic Parts Catalogue):

- (1) Filler bowl



Slacken nut (1).

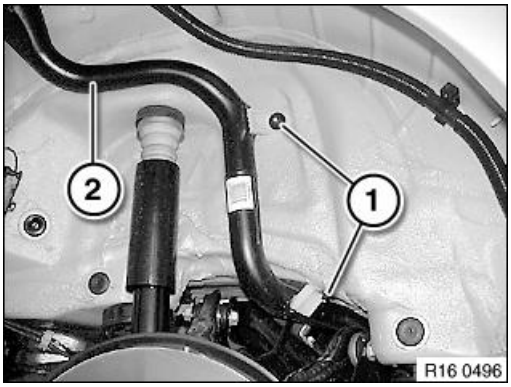
Press out gasket (2).

Installation note:
Make sure gasket (2) is correctly seated.

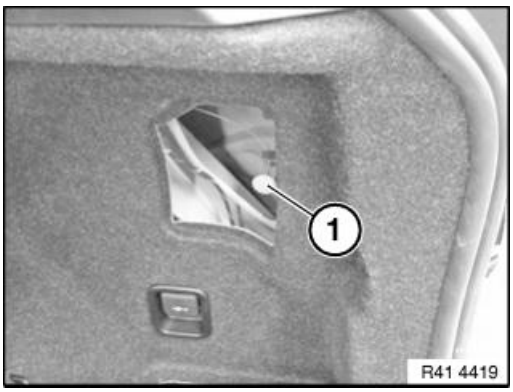
Installation note:
Clean **contact surface** on body and earth cable on fuel filler pipe.

Ground connection must be guaranteed.

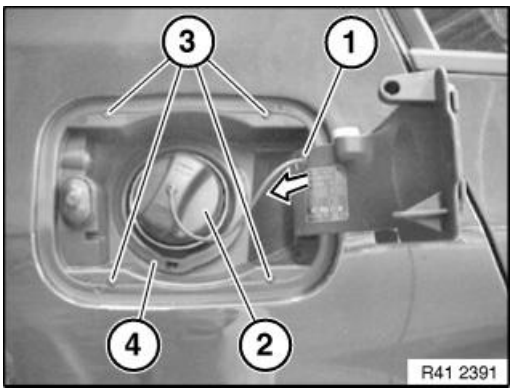
cardiagn.com



Unscrew nuts (1).



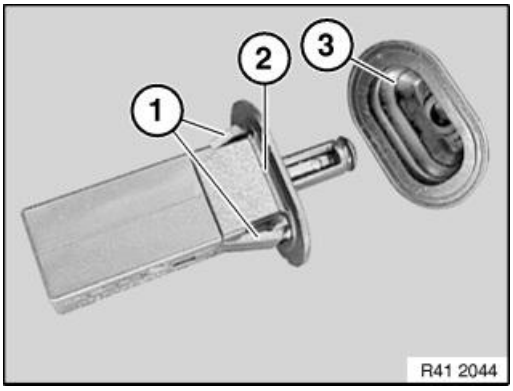
Release emergency release (1) from bracket.



Press retaining strap (1) inwards and remove.

Remove cover (2).

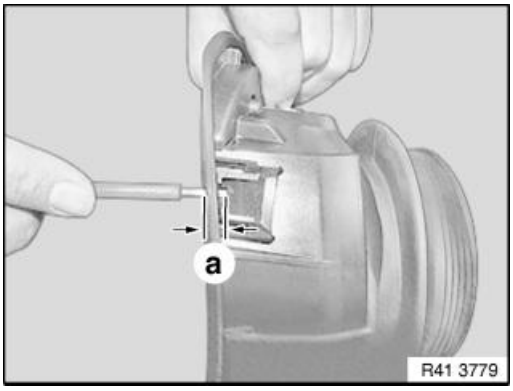
Remove rubber pad (3).



Release latch mechanisms (1) and remove ejector (2).*Installation note:*
Catches (1) on ejector (2) must not be damaged.

Check protective cap (3) for correct seating.

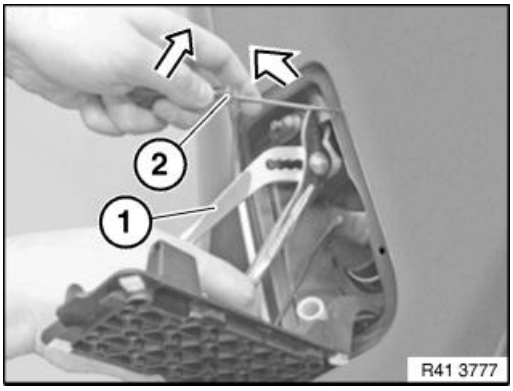
cardiagn.com



Note:
For purposes of clarity, picture shows cover bowl removed.

Insert screwdriver in bore hole to specified dimension a and unlock cover bowl latch mechanism.

Dimension a=8 mm



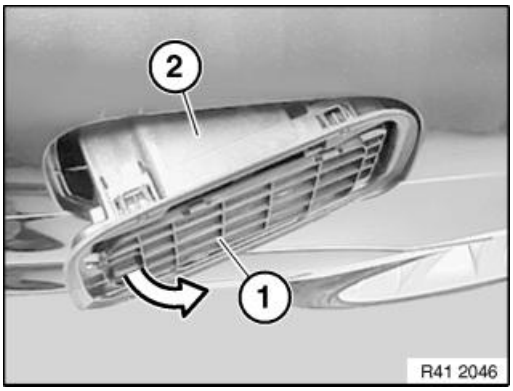
Hold cover bowl under tension.

Unlock catches individually with screwdriver (2).

Unlock catches in following order:

1. Top left
2. Bottom left
3. Top right
4. Bottom right

Move screwdriver in opposite direction at both lower catches.



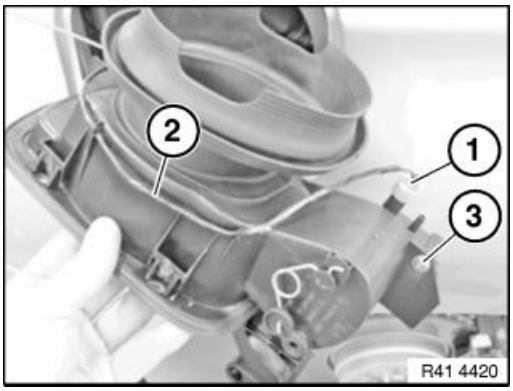
Close hinge arm (1).

Important!

Do not damage sheet metal flange of side wall.

Carefully twist out cover bowl (2) at first at rear in direction of arrow from side panel and remove.

Remove sealing sleeve from fuel filler pipe.

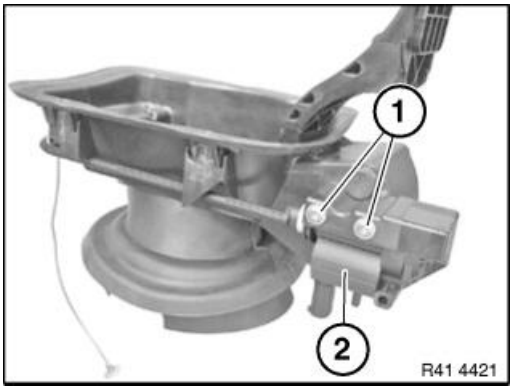


Unlock connector (1) and remove.

Unclip cable (2).

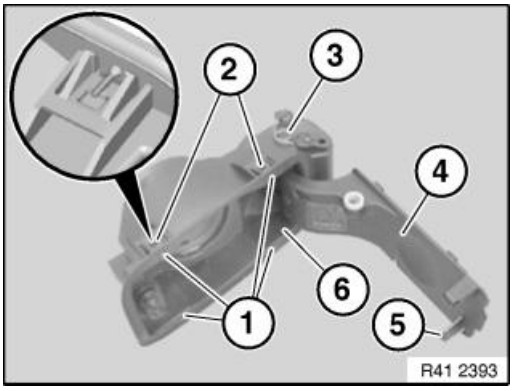
Release screw (3).

cardiagn.com



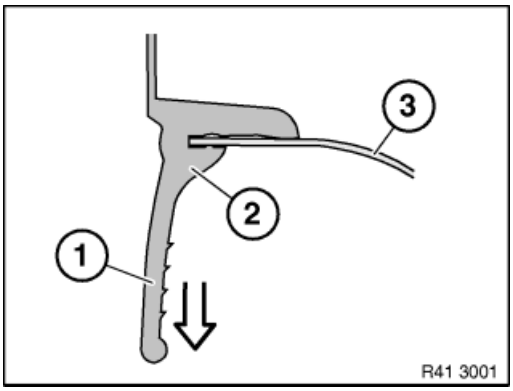
Release screws (1) and remove actuator drive (2) for fuel filler cap.*Installation note:*
Make sure actuator drive (2) for fuel filler flap is installed correctly.

Check central locking system before installation of cover bowl.

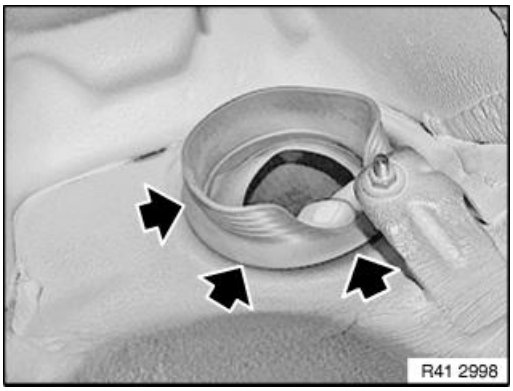


Installation note:
Following parts on cover bowl (6) must not be damaged or missing:

1 Rubber pad
2 Latch mechanisms, top/bottom
3 Spring
4 Catch
5 Guide



Installation note:
Using fitting aid (1), pull sealing lip (2) over sheet metal flange of wheel arch (3).



Installation note:
Illustrations shows fuel filler pipe removed.

Check that sealing lip is correctly seated. (watertightness).

cardiagn.com

51 16 992 Disassembling and assembling lock barrel (lock barrel removed)

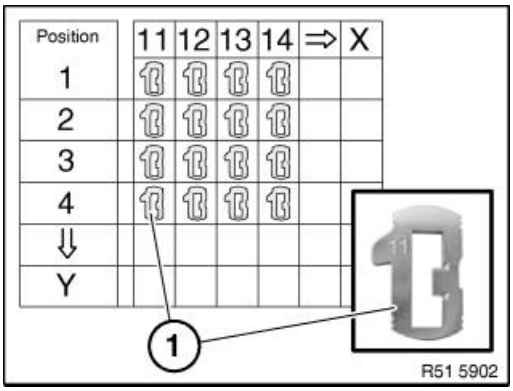
Necessary preliminary tasks:

- If necessary, remove lock barrel

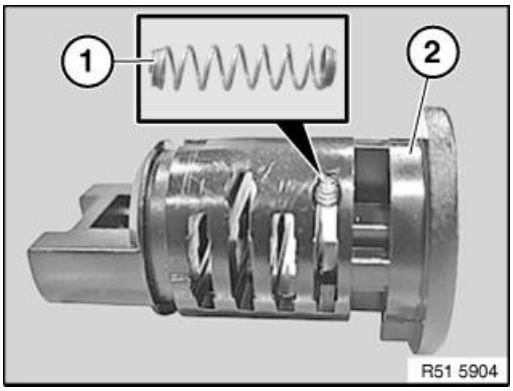
Note:

- **Lock barrel repair kit *(part number: 9 061 387 valid for:**
  E30
- **Lock barrel repair kit *(part number: 9 061 388 valid for:**
  E31, E32, E34, E36, E38, E39
- **Lock barrel repair kit *(part number: 7 001 461 valid for:**
  E46, E52, E53, E60, E61, E63, E64, E65, E66, E67, E84, E85, E86, E90, E91, E92, E93

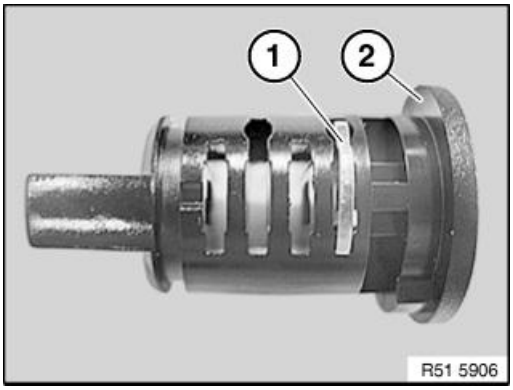
* sourcing reference BMW Group Parts Department



Sort supplied clamps (1) by stamped numerical sequence (X) in ascending order and number (Y).

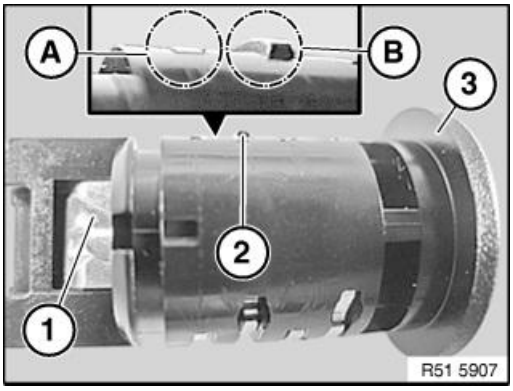


Insert spring (1) into first lock barrel position (2).*Note:*
lock barrel version (2) differs from vehicle to vehicle.



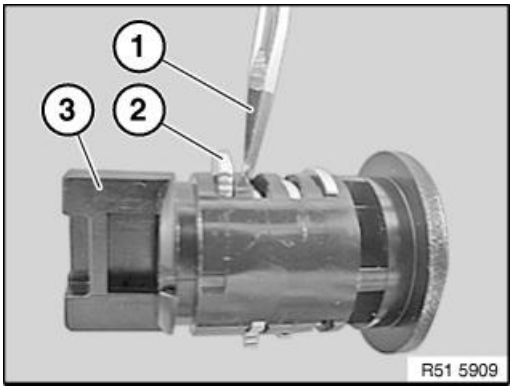
Insert clamp (1) with lowest number (X) of first position (Y) in lock barrel (2) and snap audibly into place.*Note:*
Number of clamps (1) differs from vehicle to vehicle.

cardiagn.com



Insert ignition key (1) in lock barrel (3) and check whether retainer (2) is flush with housing.

- (A) OK
- (B) not OK



If clamp (2) is not OK, press clamp (2) out of lock barrel (3) with a suitable tool (1).

Continue with next number (X) higher of first position (Y) until clamp is OK.

The continue with all the other positions in accordance with the above-mentioned procedure.

cardiagn.com

51 21 004 Adjusting front left or right door detent (lock wedge)



Operation is described in:

Adjusting left or right front door.

cardiagn.com

51 16 992 Disassembling and assembling lock barrel (lock barrel removed)

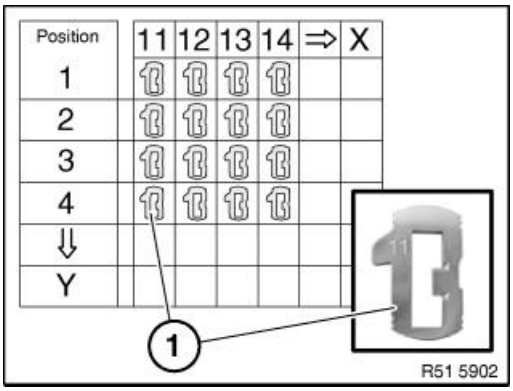
Necessary preliminary tasks:

- If necessary, remove lock barrel

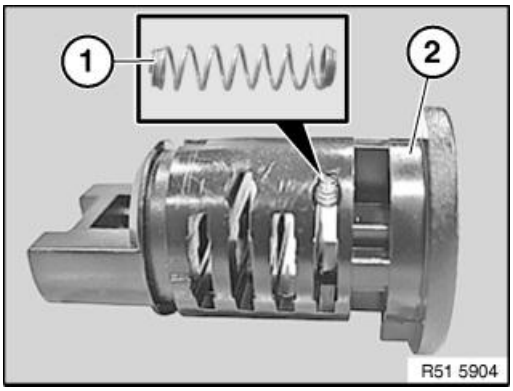
Note:

- **Lock barrel repair kit *(part number: 9 061 387 valid for:**
  E30
- **Lock barrel repair kit *(part number: 9 061 388 valid for:**
  E31, E32, E34, E36, E38, E39
- **Lock barrel repair kit *(part number: 7 001 461 valid for:**
  E46, E52, E53, E60, E61, E63, E64, E65, E66, E67, E84, E85, E86, E90, E91, E92, E93

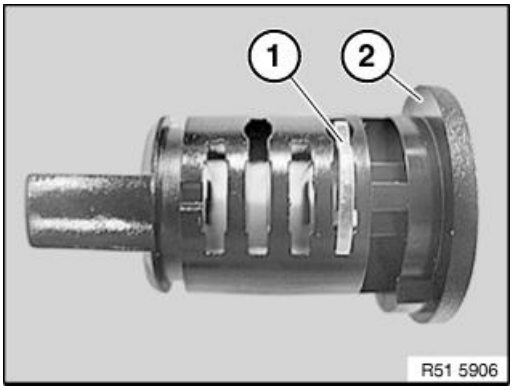
* sourcing reference BMW Group Parts Department



Sort supplied clamps (1) by stamped numerical sequence (X) in ascending order and number (Y).

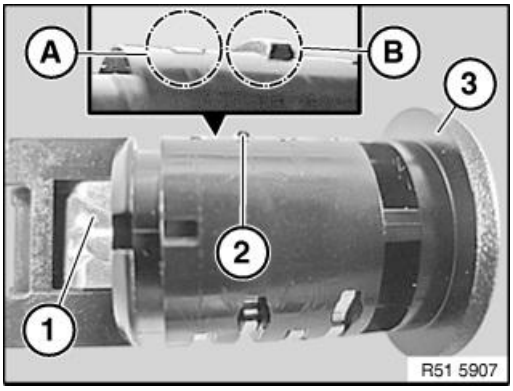


Insert spring (1) into first lock barrel position (2).*Note:*
lock barrel version (2) differs from vehicle to vehicle.



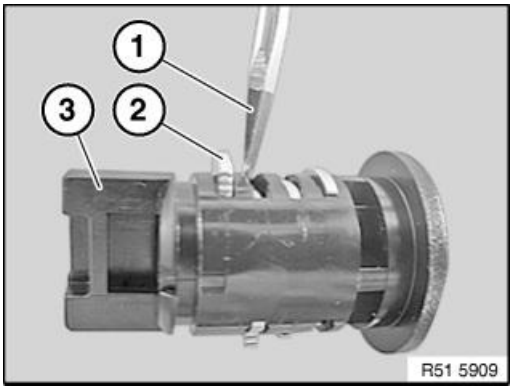
Insert clamp (1) with lowest number (X) of first position (Y) in lock barrel (2) and snap audibly into place.*Note:*
Number of clamps (1) differs from vehicle to vehicle.

cardiagn.com



Insert ignition key (1) in lock barrel (3) and check whether retainer (2) is flush with housing.

- (A) OK
- (B) not OK



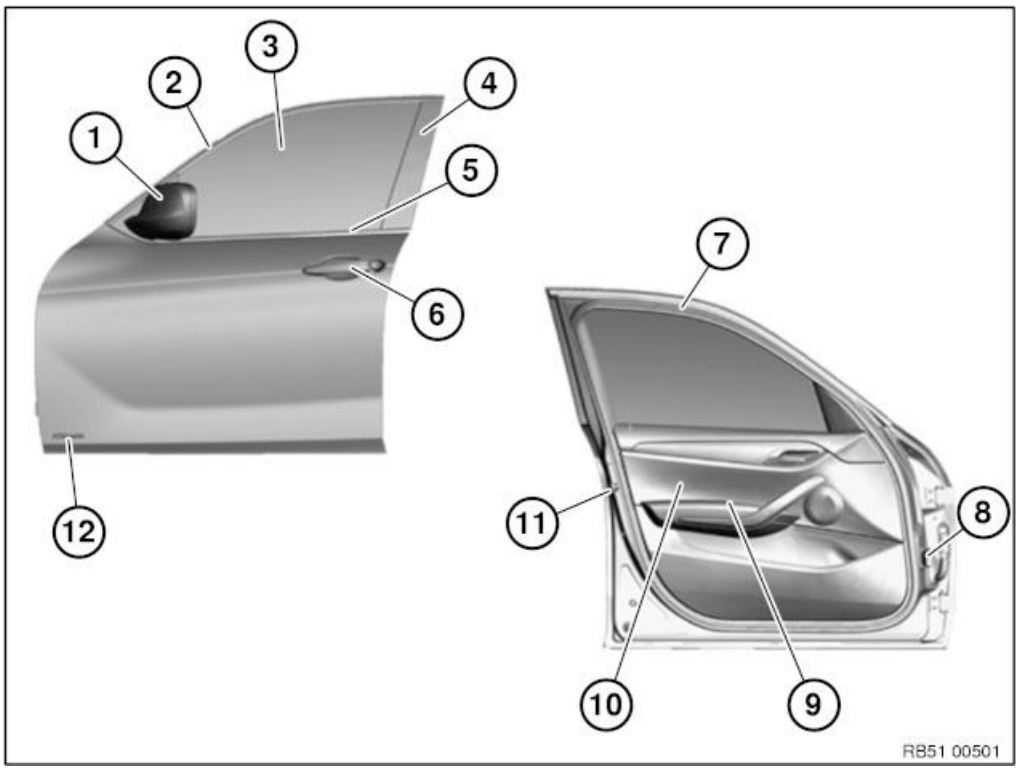
If clamp (2) is not OK, press clamp (2) out of lock barrel (3) with a suitable tool (1).

Continue with next number (X) higher of first position (Y) until clamp is OK.

The continue with all the other positions in accordance with the above-mentioned procedure.

cardiagn.com

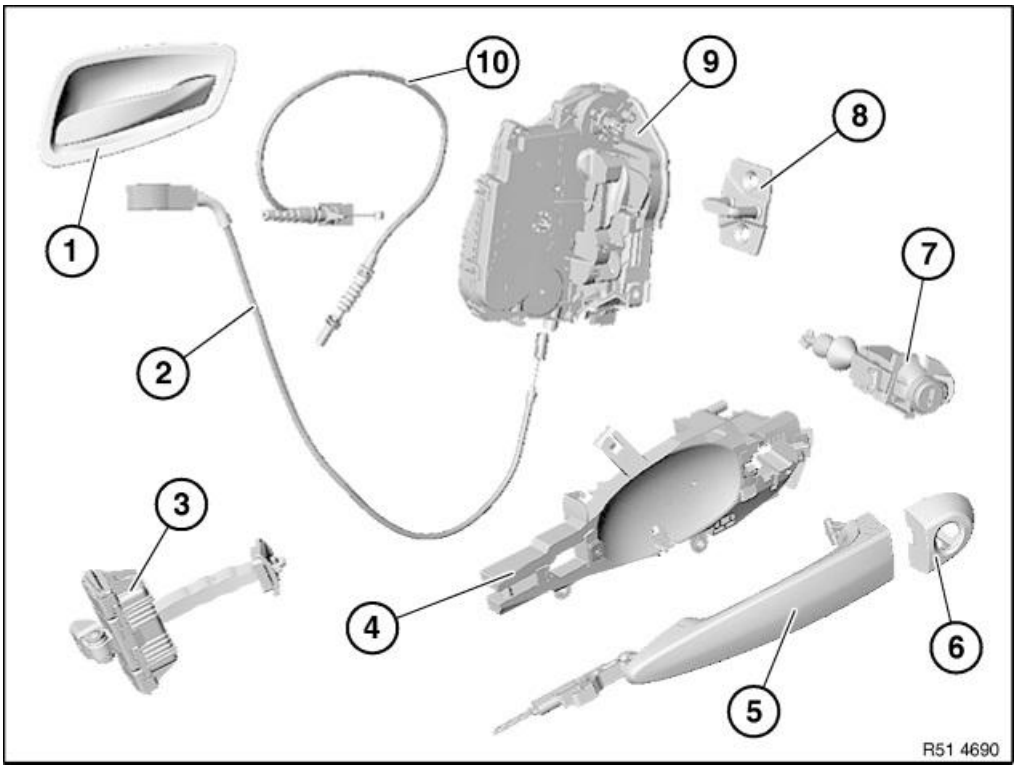
51 00 .. Overview of front door



1 Exterior mirror
2 Rubber guide for door window glass
3 Door window glass
4 Trim on window frame
5 Window cavity cover strip
6 Outer door handle
7 Cover on door window frame
8 Door brake
9 Rocker switch for window operation
10 Door trim panel
11 Door lock
12 Lettering

cardiagn.com

51 21 ... Overview of front door locks



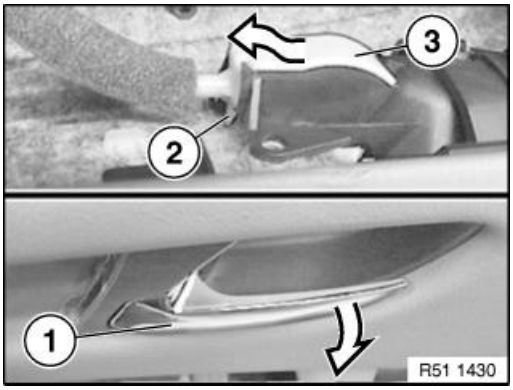
1 Door opener, inside
2 Bowden cable for inside door opener
3 Door brake
4 Carrier for outside door handle
5 Outer handle on front door
6 Cover on outer handle
7 Lock barrel (on driver's door only)
8 Door lock striker
9 Door lock
10 Bowden cable for outside door handle

cardiagn.com

51 21 225 Removing and installing or replacing inside door opener in left or right front door

Necessary preliminary tasks:

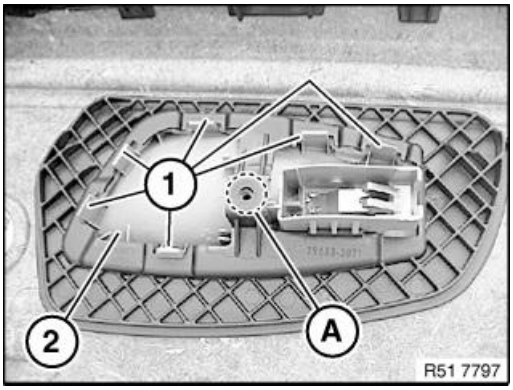
- Remove front door trim panel



Unhook Bowden cable for release lever:

- Tighten release lever (1).
- Lever out lock (2).
- Detach Bowden cable (3) towards rear/top.

Installation:
For fitting, press release lever (1) fully onto door trim panel.

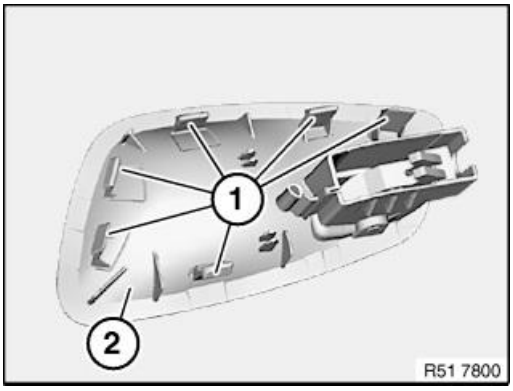


Note:
On initial installation there is no screw in area (A).

If necessary, release screw in area (A).

Release catches (1) and remove door opener (2).

Installation:
Repair screw must be inserted in area (A) when door opener is installed.



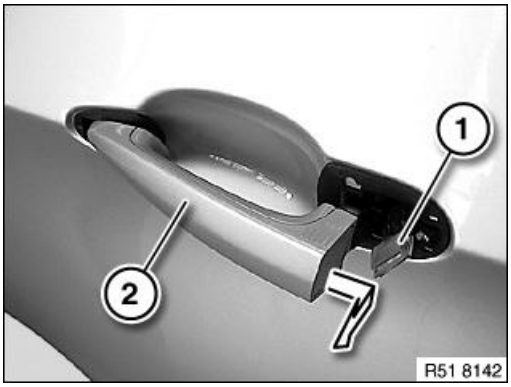
Installation:
Catches (1) on door opener (2) must not be damaged.

cardiagn.com

51 21 170 Removing and installing or replacing outside door handle from left or right front door

Necessary preliminary tasks:

- Remove cover on outside door handle

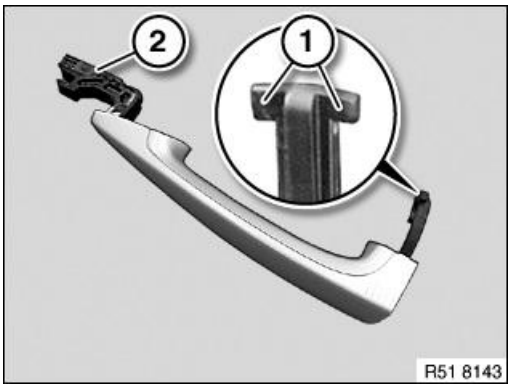


If necessary, lay outside door handle light (1) slightly to one side.

Pull out outside door handle (2) and feed out in direction of arrow.

Version with Comfort Access/CA:

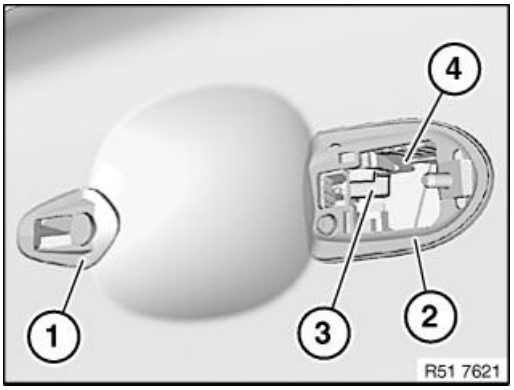
Carefully feed out outside door handle (2) and disconnect associated plug connection.



Installation:
Locator (1) must not be damaged.

Version with Comfort Access/CA:

Seal (2) must not be damaged.



Installation:
Seals (1 and 2) must not be damaged.

If necessary, pull lock actuator (3) outward until it engages retaining clasp (4).

Install outside handle and insert correctly into lock actuator (3).

Outside handle is in the correct position only after the cover has been fitted on the outside handle.

Carry out function check only with door open.

If replacing version with Comfort Access/CA:

Reset CAS control unit with diagnosis system or by disconnecting and connecting battery.

cardiagn.com

51 21 300 Removing and installing or replacing window cavity cover strip on outside of left or right front door

Special tools required:

- 00 9 324

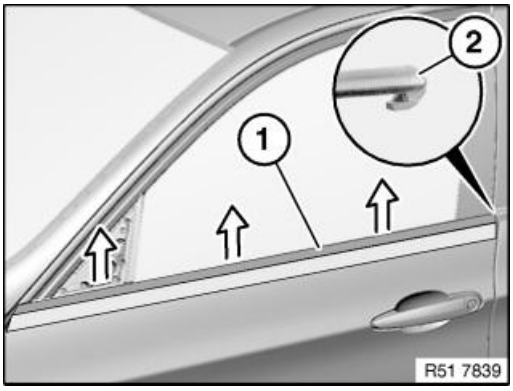
Important!

Observe procedure for using special tool 00 9 324 .

The "Instructions on fitting window guide seals" serve as the basis for this repair instruction and must be observed without fail.

Necessary preliminary tasks:

- Remove door mirror



Important!

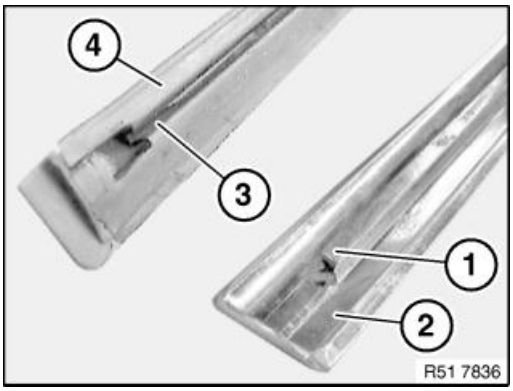
If reusing the existing window cavity cover strip (1), make sure it is not bent.

Lever out window cavity cover strip (1) with special tool 00 9 324 (starting at A-pillar).

Feed window cavity cover strip (1) at rear out of guide (2) and remove.

Installation:
Moisten window cavity cover strip (1) prior to fitting with approved anti-friction agent.

Window cavity cover strip (1) must be flush at front to door edge.



Version with Chromeline:

Installation:
If chrome strip (2) has been pulled out of cover strip (3), both parts must be reassembled.

Feed guide (1) of chrome strip (2) into groove (3) of window cavity cover strip (4).

Replacement:

Window cavity cover strip (4) and chrome strip (2) are replaced completely.

cardiagn.com

51 21 181 Removing and installing/renewing cover on outside handle with lock cylinder



Operation is identical to:

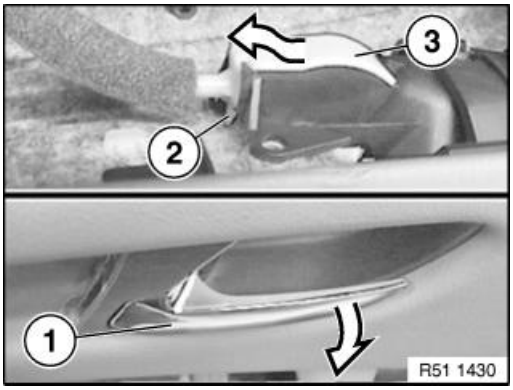
Removing and installing/renewing complete lock cylinder in left or right front door.

cardiagn.com

51 21 235 Removing and installing/replacing Bowden cable for inside door opener on left or right front door

Necessary preliminary tasks:

- Remove front door trim panel



Lever out lock (2)

Pull off Bowden cable housing (3) towards rear/top - the Bowden cable feeds out of its own accord in the process.

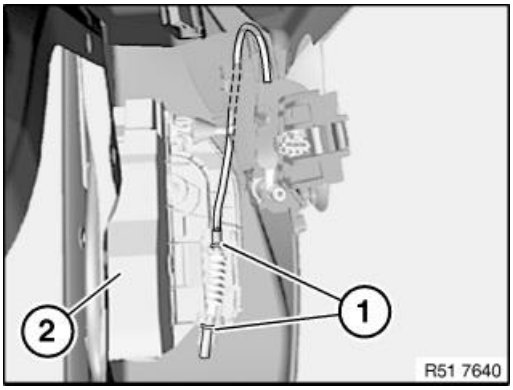
Installation note:
To install the Bowden cable, press release lever (1) against direction of arrow towards door trim panel.

cardiagn.com

51 21 233 Removing and installing/replacing Bowden cable for outside door handle on left or right front door

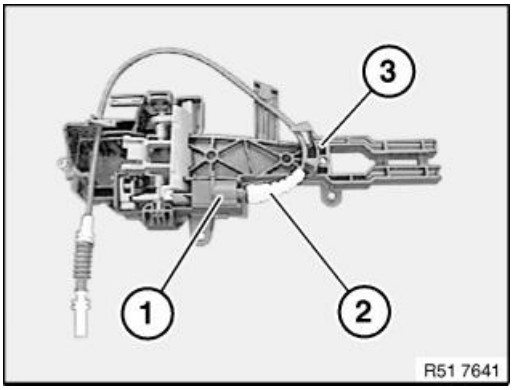
Necessary preliminary tasks:

- Remove sound insulation in front door



Release Bowden cable (1) from door lock (2).*Installation:*
Bowden cable (1) must be correctly engaged in locators in door lock (2).
Bowden cable (1) must be laid without kinks in bend to door lock (2).

Important!
Door cannot be opened if Bowden cable (1) is incorrectly laid.



Note:
Outside door handle shown removed for purposes of clarity.

If necessary, release cable strap (1).
Feed Bowden cable (2) out of carrier (3).

cardiagn.com

51 21 233 Removing and installing/replacing Bowden cable for outside door handle on left or right front door



Operation is described in:

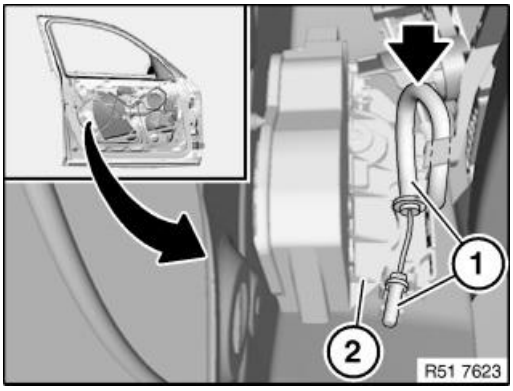
Removing and installing/replacing carrier for left or right outside door handle.

cardiagn.com

51 21 125 Removing and installing/replacing carrier for left or right outside door handle with lock cylinder

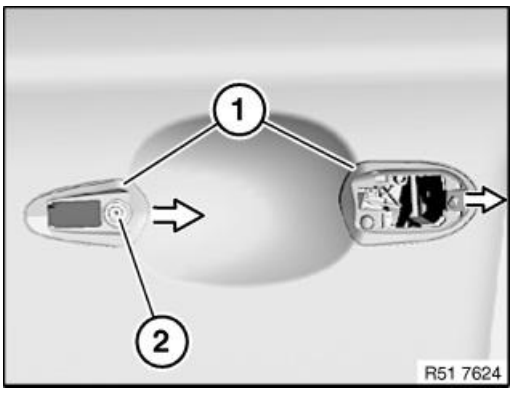
Necessary preliminary tasks:

- Remove outer handle
- Remove sound insulation
- If necessary, close door window glass

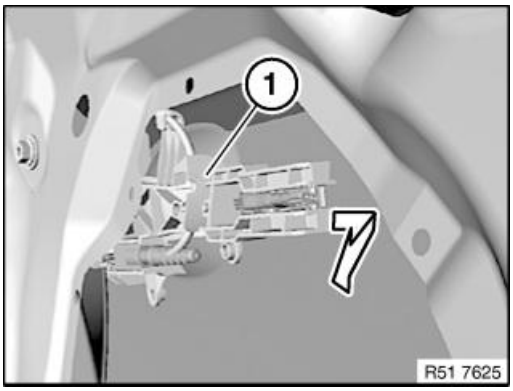


Release Bowden cable (1) from door lock (2).*Installation:*
Bowden cable (1) must be correctly engaged in locators in door lock (2).
Bowden cable (1) must be laid without kinks in bend to door lock (2).

Important!
Door can not be opened if Bowden cable (1) is incorrectly laid.

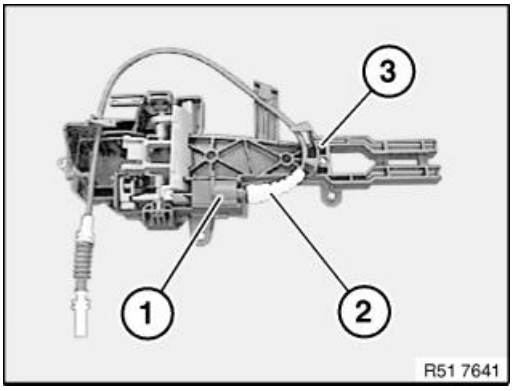


Remove seals (1) in direction of arrow.
Release screw (2).



If necessary, release cable holder on carrier (1).
Remove inner carrier (1) in direction of arrow and feed out of door.

cardiagn.com



Replacement:

If necessary, release cable connector (1).

Feed Bowden cable (2) out of carrier (3).

cardiagn.com

51 21 126 Removing and installing/replacing carrier for left or right outside door handle without lock cylinder

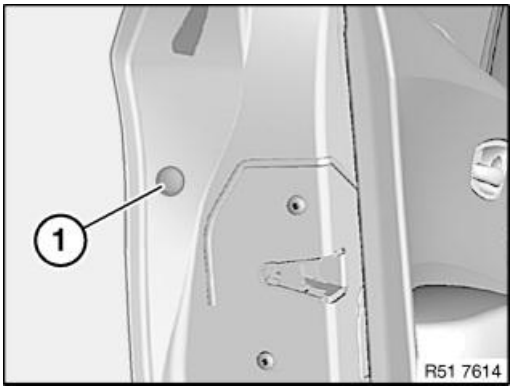


Operation is identical to:

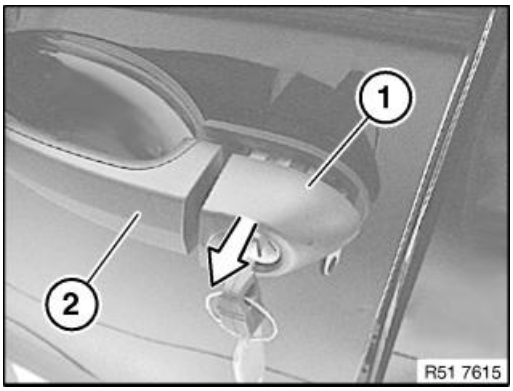
- Removing and installing/replacing carrier for outside door handle with lock cylinder.

cardiagn.com

51 21 140 Removing and installing/replacing complete lock barrel in left or right front door



Lever out cap (1) and release screw underneath.*Installation note:*
If necessary, replace faulty trim (1).

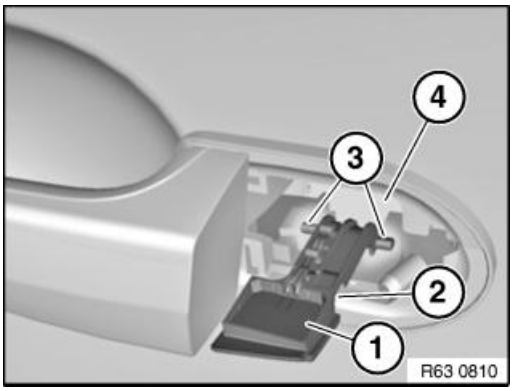


Insert ignition key into lock barrel.

Turn ignition key slightly and pull off cover (1) in direction of arrow with outside door handle (2) opened slightly.

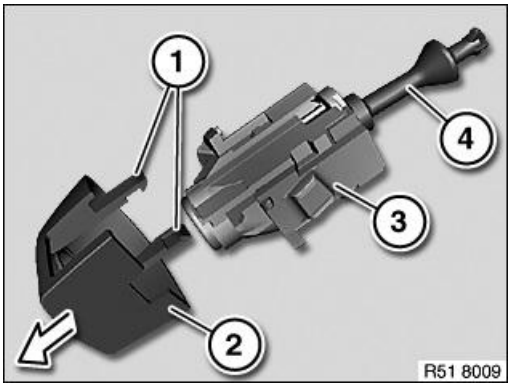
Installation note:
Lock barrel must be correctly seated in door lock.

Check function of lock barrel.



Version with light package: *Installation note:*
Make sure outside door handle light (1) is correctly positioned in area (2).

Guides (3) of outside door handle light (1) must be correctly seated in support for outer door handle (4).



Replacement:

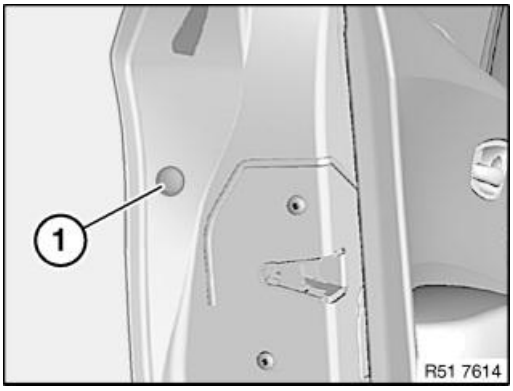
Remove latch mechanisms (1) and detach cover (2) from lock barrel (3).

Installation note:
Latch mechanisms (1) of cover (2) must not be damaged.

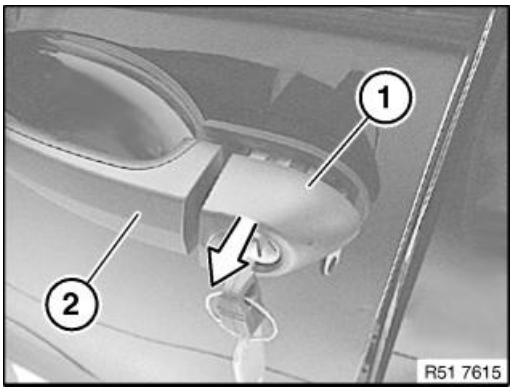
Paddle (4) of lock barrel (3) must not be damaged.

cardiagn.com

51 21 140 Removing and installing/replacing complete lock barrel in left or right front door



Lever out cap (1) and release screw underneath.*Installation note:*
If necessary, replace faulty trim (1).

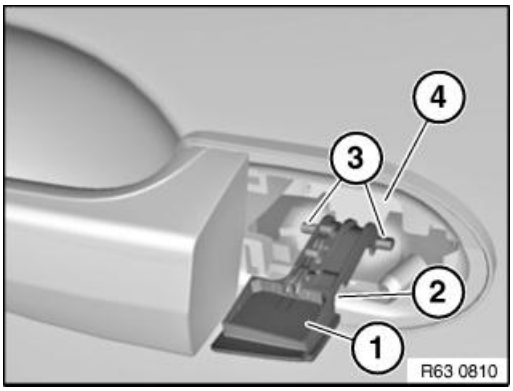


Insert ignition key into lock barrel.

Turn ignition key slightly and pull off cover (1) in direction of arrow with outside door handle (2) opened slightly.

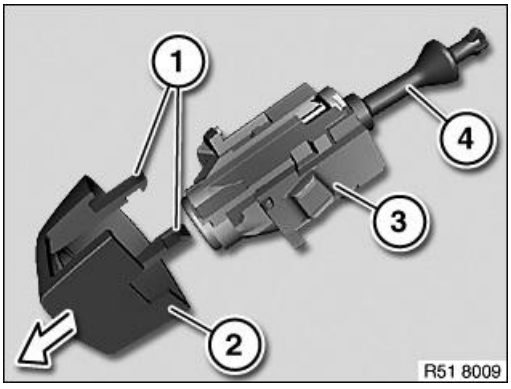
Installation note:
Lock barrel must be correctly seated in door lock.

Check function of lock barrel.



Version with light package: *Installation note:*
Make sure outside door handle light (1) is correctly positioned in area (2).

Guides (3) of outside door handle light (1) must be correctly seated in support for outer door handle (4).



Replacement:

Remove latch mechanisms (1) and detach cover (2) from lock barrel (3).

Installation note:
Latch mechanisms (1) of cover (2) must not be damaged.

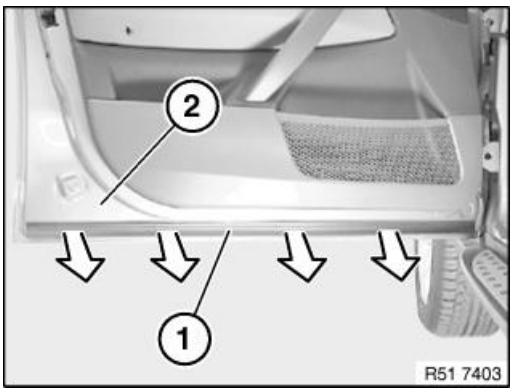
Paddle (4) of lock barrel (3) must not be damaged.

cardiagn.com

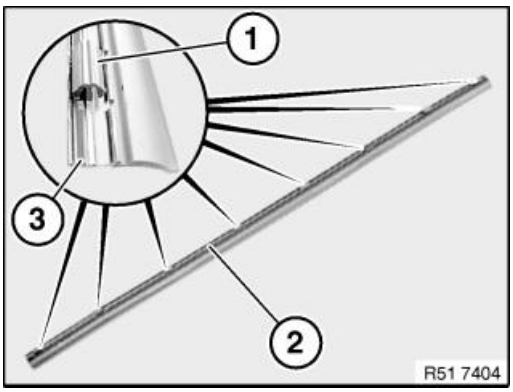
51 21 370 Removing and installing/replacing cover at bottom left or right on front door

Graphics are only an example (The graphics used are from E83).

Operations on right side analogous to left side shown. Use graphics in a mirror-inverted way.



Detach cover (1) in direction of arrow from front door (2).



Installation:
Catches (1) of cover (2) must not be damaged.

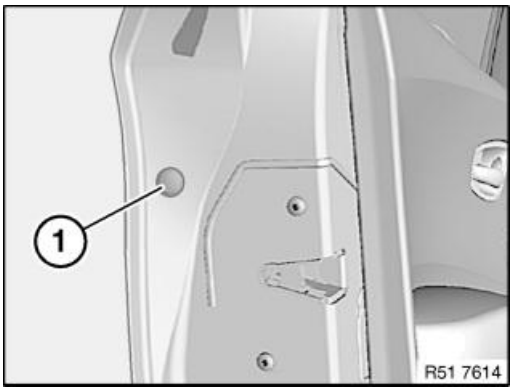
Not for E84:

Cover (2) has an aluminium insert (3).

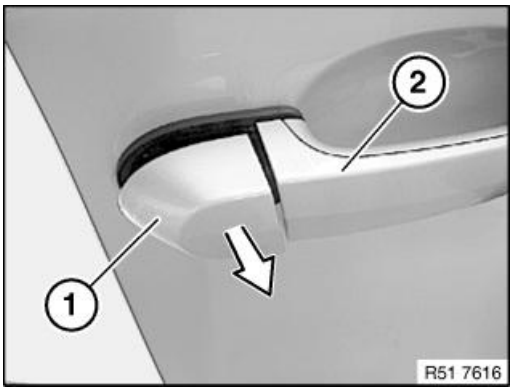
Only press on catches (1) when installing otherwise cover (2) will become uneven.

cardiagn.com

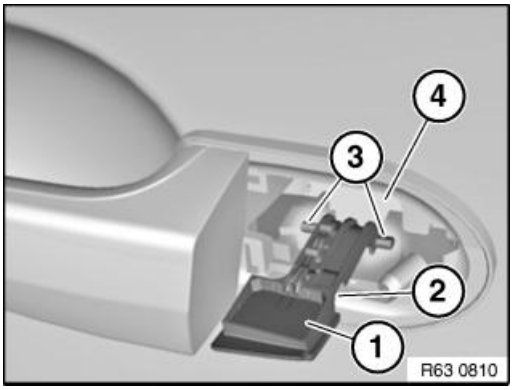
51 21 180 Removing and installing/replacing cover on outside door handle



Lever out cap (1) and release screw underneath.*Installation:*
If necessary, replace faulty trim (1).

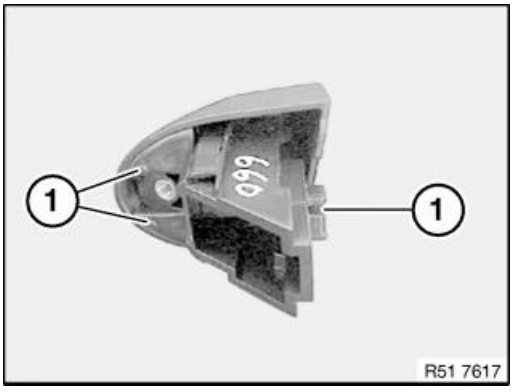


Pull off cover (1) in direction of arrow with outside door handle (2) opened slightly.



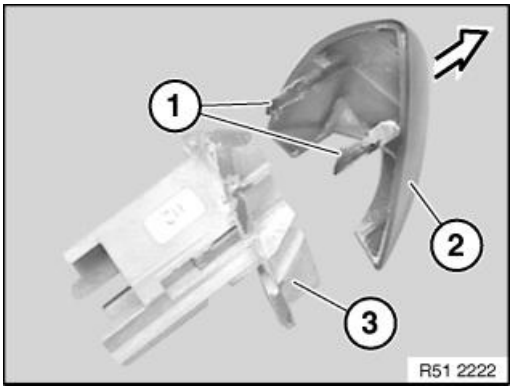
Version with light package: *Installation:*
Make sure outside door handle light (1) is correctly positioned in area (2).

Guides (3) of outside door handle light (1) must be correctly seated in carrier for outside door handle (4).



Installation:
Guides (1) must not be damaged.

cardiagn.com



Replacement:

Note:
Similar to graphic.

Detach cover (2) from filler piece (3).

Installation:
Catches (1) of cover (2) must not be damaged.

cardiagn.com

51 21 090 Removing and installing/replacing door lock in left or right front door

Special tools required:

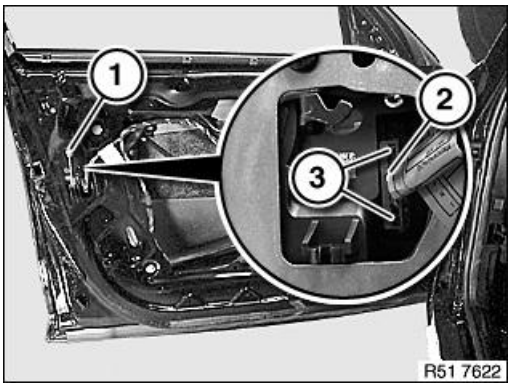
- 51 2 190

Necessary preliminary work:

- Remove rear section of power window regulator

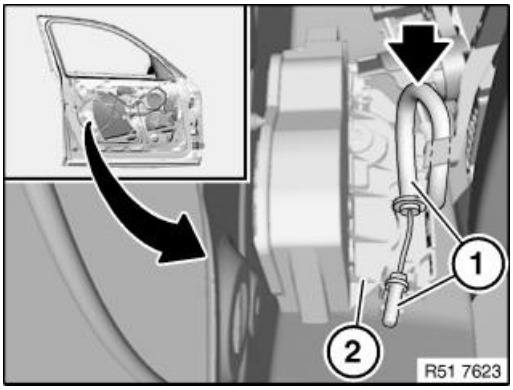
Driver's side only:

- Remove lock barrel



Unclip locking rod (1).

Unlock and disconnect plug connection (2) at tabs (3).



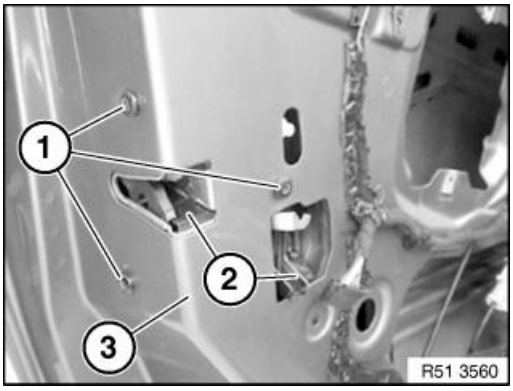
Unhook Bowden cable (1) from door lock (2).

If necessary, release cable clip on door lock (2).

Installation note:
Bowden cable (1) must be correctly engaged in locators in door lock (2).

Bowden cable (1) must be laid without kinks in bend to door lock (2).

Important!
Door cannot be opened if Bowden cable (1) is incorrectly laid.



Important!
Do not damage door lock seal when removing.

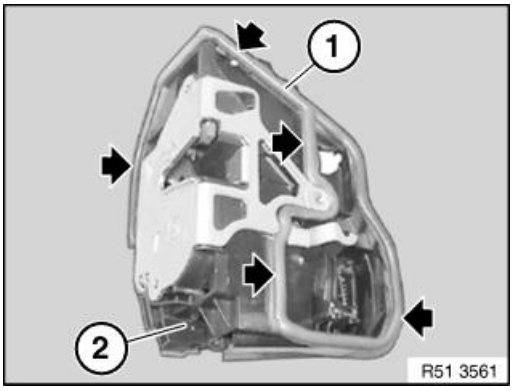
Release screws (1).

Remove door lock (2) from inside.

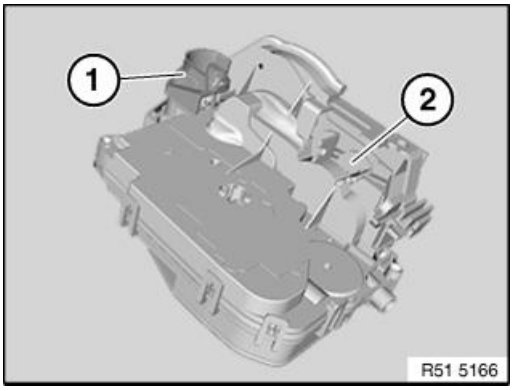
Installation note:
Pull door lock (2) with special tool into corner (3).

Important!
Observe the following notes on installation without fail in order to avoid leakage and electrical malfunction.

cardiagn.com



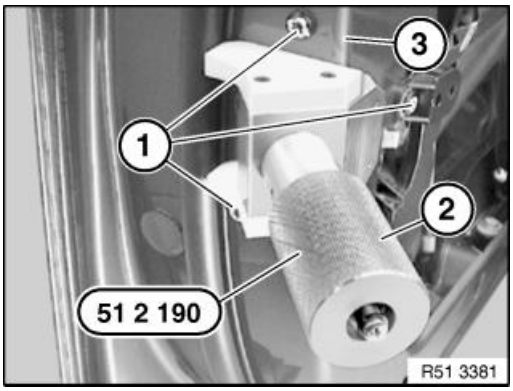
Installation note:
Gasket (1) on door lock (2) must not be damaged.



E90/E91 driver's side only: *Note:*
Cover (1) protects against water ingress.

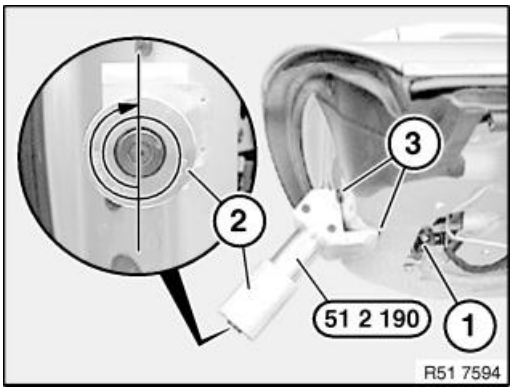
In event of problems with frozen door locks/lock barrels:

If necessary, retrofit cover (1) on door lock (2).



Installation note:

- Install door lock and insert screws (1), do not tighten down.
- Slide special tool 51 2 190 into opened rotary striker until striker engages in first stage



Installation note:

- Pre-tension door lock (1) with knurled screw (2) until special tool 51 2 190 just contacts corner points (3)

Important!

Risk of damage!

To tension door lock (1), it is only permitted to turn knurled screw (2) by a further 1 to 1.5 turns (max.).

Door lock seal must rest uniformly on inner door panel (water ingress).

- Tighten down door lock screws, tightening torque 51 21 1AZ.

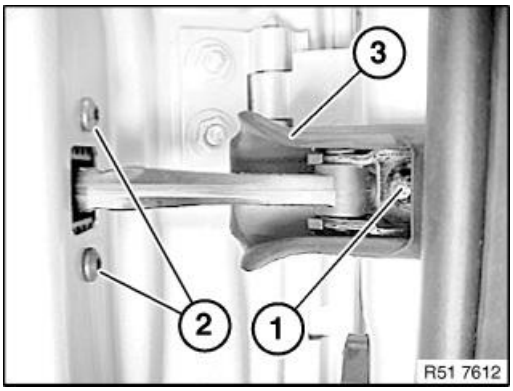
cardiagn.com

51 21 280 Removing and installing/replacing door stop on left or right front door

Necessary preliminary tasks:

- Close door windows
- Remove sound insulation in front area

Note:
Graphics used come from the E87.



Note:
Secure front door against falling closed.

Release screw (1).

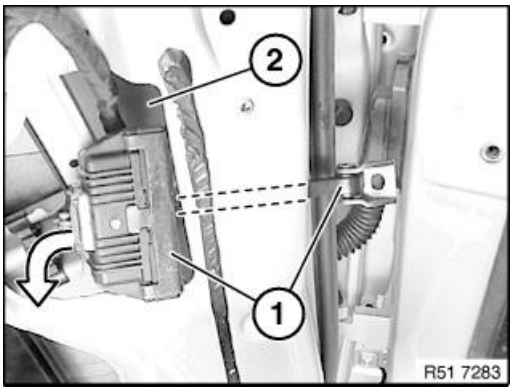
Tightening torque 51 21 3AZ.

Unfasten screws (2).

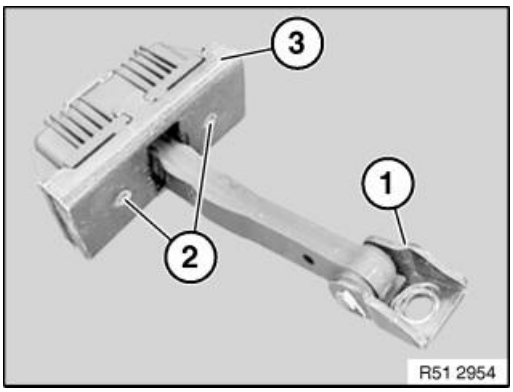
Tightening torque 51 21 4AZ.

Remove seal (3).

Installation:
Seal (3) must not be damaged.



Remove door retainer (1) via cutout (2).



Installation:
Following parts of door retainer (3) must not be damaged:

1	Hinge
2	Thread

cardiagn.com

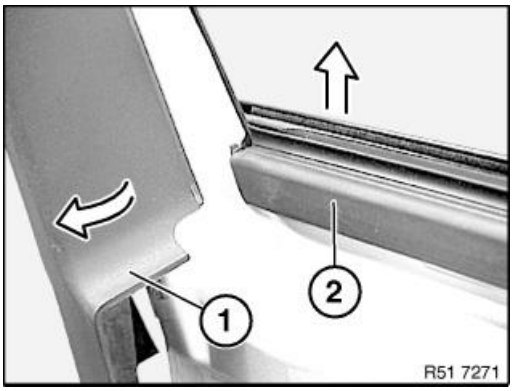
51 21 330 Removing and installing/replacing window cavity cover strip on inner front door

Necessary preliminary tasks:

- Remove front door trim

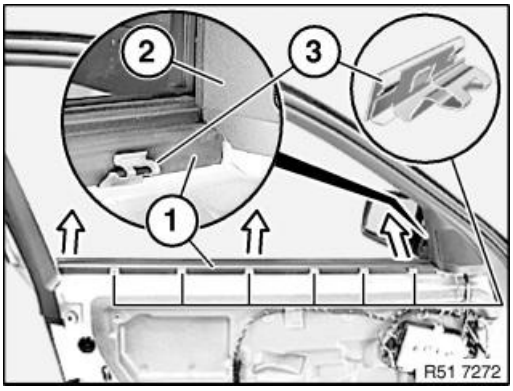
Important!

The "Instructions on fitting window guide seals" serve as the basis for this repair instruction and must be observed without fail.



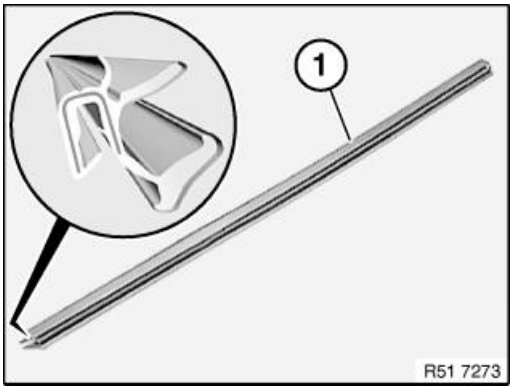
Lever out cover (1) at rear slightly.

Start at rear with removal of window cavity cover strip (2).



Pull off window cavity cover strip (1) towards top.*Installation:*
If necessary, replace faulty retainers (3).

Insert window cavity cover strip (1) below cover (2).



Installation:
Moisten window cavity cover strip (1) prior to fitting with approved anti-friction agent.

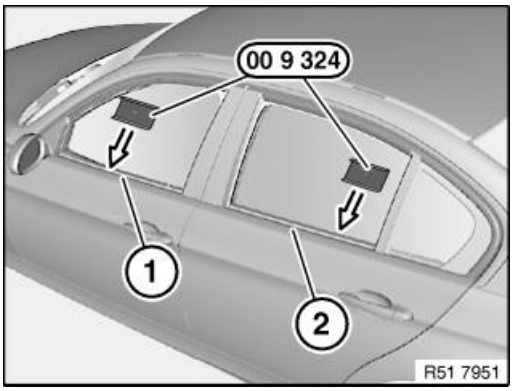
Start with installation at front.

cardiagn.com

51 21 ... Removing weather strip with special tool 00 9 324 at front or rear

Special tools required:

- 00 9 318
- 00 9 324



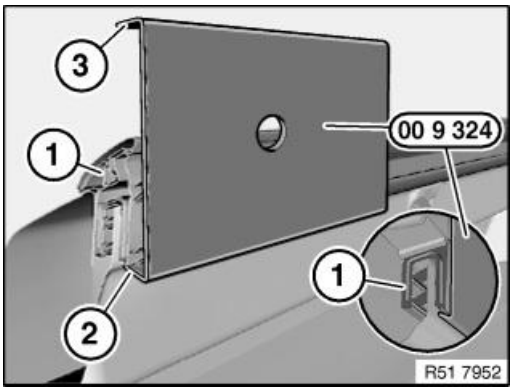
Open side window completely.

Front door:

Insert special tool 00 9 324 at front (at A-pillar) in window cavity (1) (TOP label pointing upwards).

Rear door:

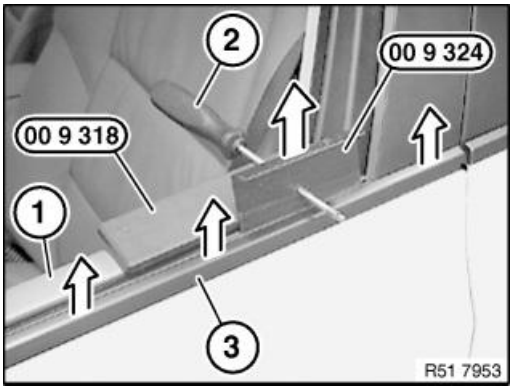
Insert special tool 00 9 324 at rear (at C-pillar) in window cavity (2) (TOP label pointing upwards).



Note:
For purposes of clarity, graphic shows inner door panel and side window removed.

Special tool 00 9 324 must be correctly guided under window cavity cover strip (1).

2	Short leg, bottom
3	Long leg, top (TOP)



Note:
Start at the front or rear, depending on the model.

Important!

Risk of damage!

Raise weather strip (3) no more than 5 mm in each levering operation, otherwise the strip will be bent.

Position special tool 00 9 318 on door trim panel (1).

Slide screwdriver (2) via the special tool 00 9 324 and lever window cavity cover strip (3) upwards no more than 5 mm.

Guide special tools 00 9 324 and 00 9 318 towards front/rear and lever out the window cavity cover strip (3).

cardiagn.com

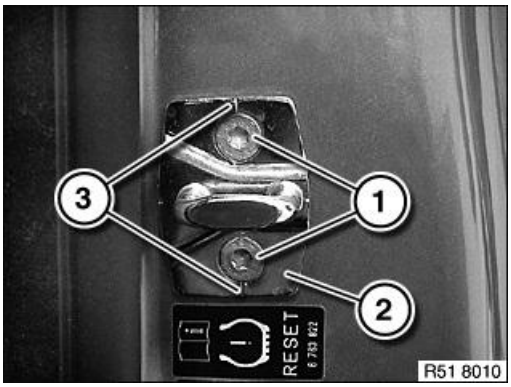
51 21 182 Replacing cover on outer handle with lock barrel

Operation is identical to:

Removing complete Â lock barrel for left or right front door.

cardiagn.com

51 21 003 Replacing door detent (lock striker), front left or right



Release screws (1) and remove door detent (2).*Installation:*
If necessary, carry out basic adjustment by way of notches (3) on lock striker (2).

Notches (3) must be vertical to B-pillar.

Tightening torque 51 21 2AZ.

Adjust lock striker.

cardiagn.com

51 22 004 Adjusting rear left or right door lock striker

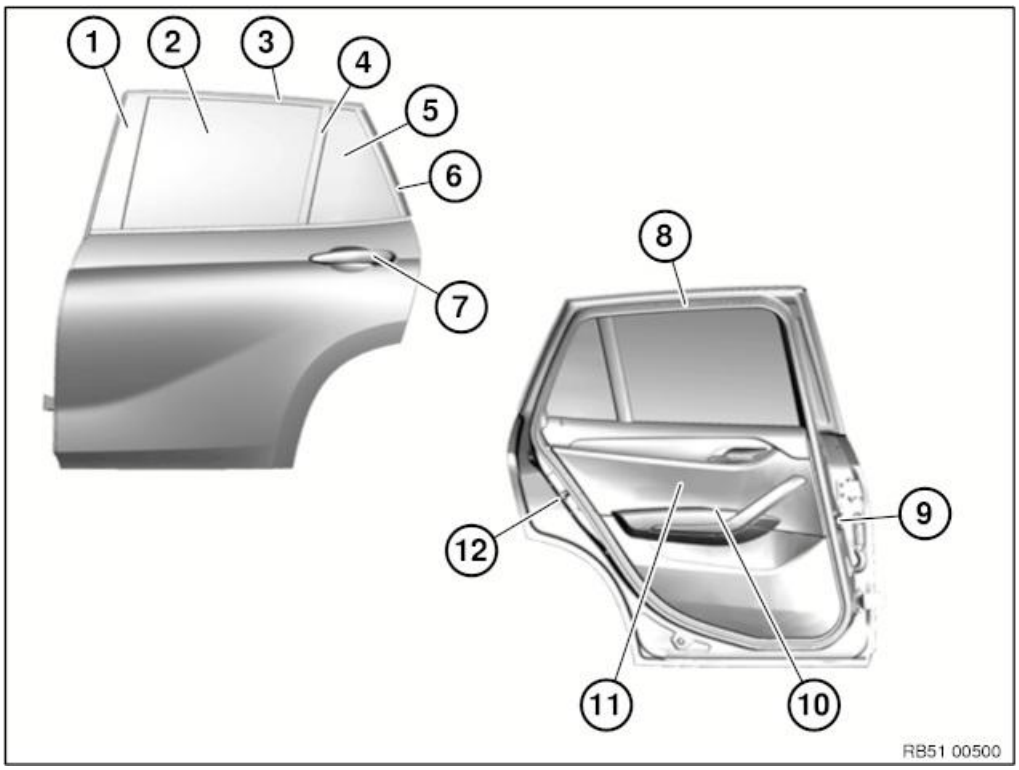


Operations described in:

- Adjusting doors

cardiagn.com

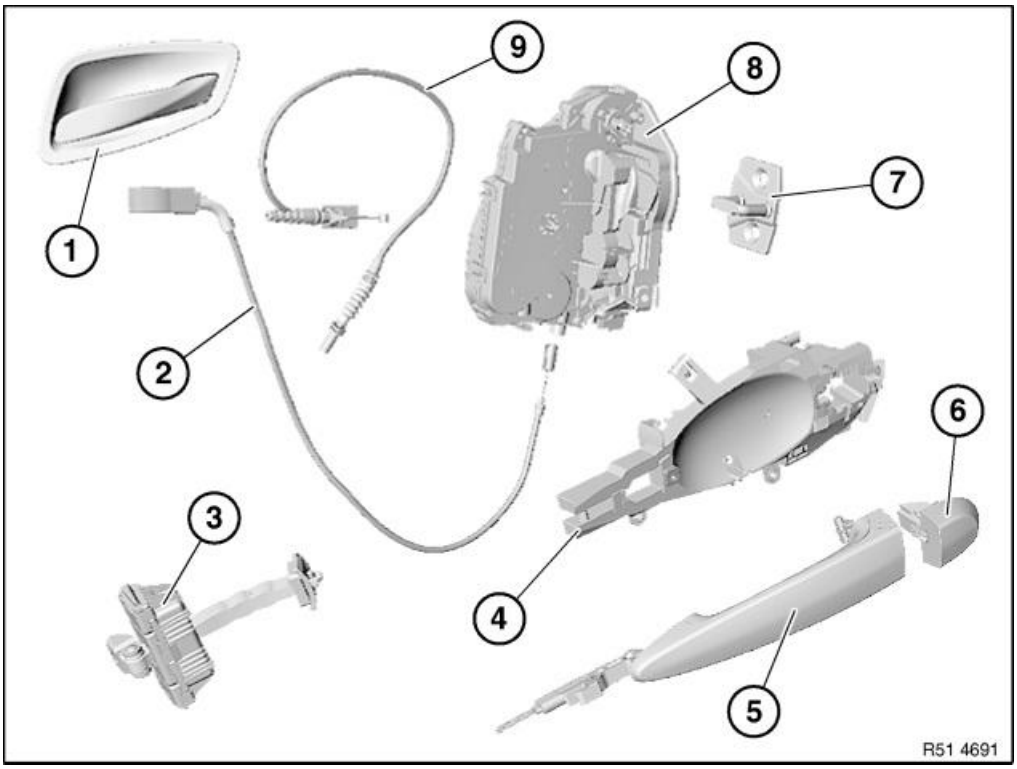
51 00 .. Overview of rear door



1 Cover (front) on window frame
2 Door window glass
3 Rubber guide for door window glass
4 Trim for window guide
5 Door window glass (stationary)
6 Cover on window frame (rear)
7 Outside handle
8 Cover on door window frame
9 Door brake
10 Rocker switch for side window operation
11 Door trim panel
12 Door lock

cardiagn.com

51 22 ... Overview of rear door locks



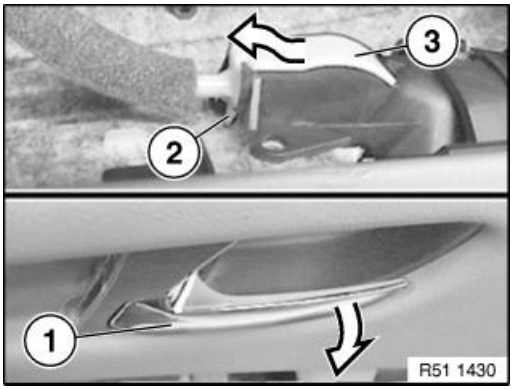
1 Door opener, inside
2 Bowden cable for inside door opener
3 Door stop
4 Support for outer door handle
5 Outer door handle on front door
6 Cover on outer door handle
7 Door lock striker
8 Door lock
9 Bowden cable for outer door handle

cardiagn.com

51 22 235 Removing and installing/replacing Bowden cable for inside door opener on left or right rear door

Necessary preliminary tasks:

- Remove rear door trim panel



Lever out lock (2)

Pull off Bowden cable housing (3) towards rear/top - the Bowden cable feeds out of its own accord in the process.

Installation note:
To install the Bowden cable, press release lever (1) against direction of arrow towards door trim panel.

cardiagn.com

51 22 233 Removing and installing/replacing Bowden cable for outside door handle on left or right rear door



Operation is described in:

Removing and installing/replacing carrier for outside door handle on left or right rear door.

cardiagn.com

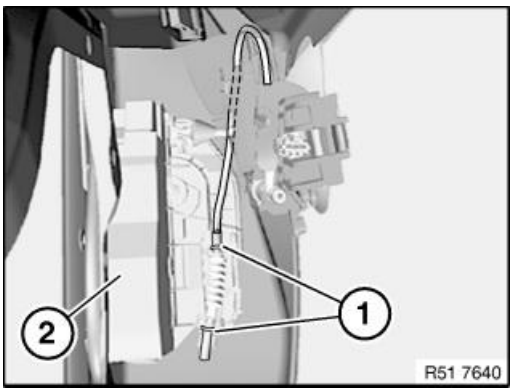
51 22 126 Removing and installing/replacing carrier for outside door handle on left or right rear door

Necessary preliminary tasks:

- Remove outer handle
- Remove sound insulation

E90 and E91 only:

- Remove door lock



E84 and 87 only:

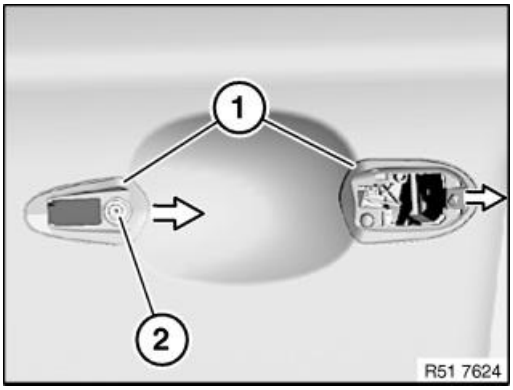
Release Bowden cable (1) from door lock (2).

Installation:
Bowden cable (1) must be correctly engaged in locators in door lock (2).

Bowden cable (1) must be laid without kinks in bend to door lock (2).

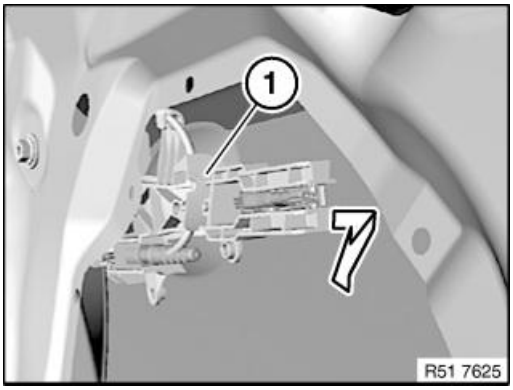
Important!

Door cannot be opened if Bowden cable (1) is incorrectly laid.



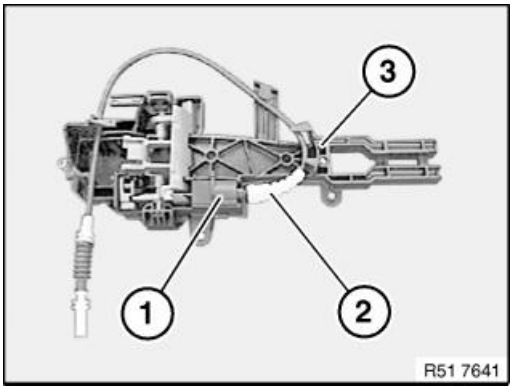
Remove seals (1) in direction of arrow.

Release screw (2).



Remove inner carrier (1) in direction of arrow.

cardiagn.com



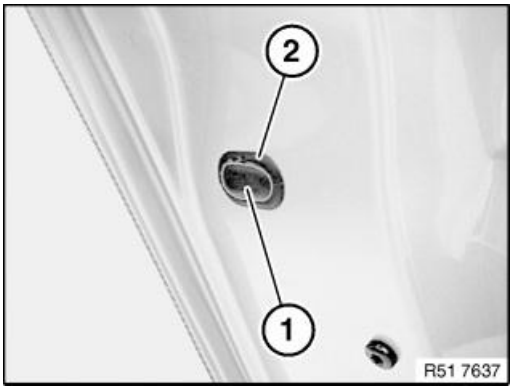
Replacement:

If necessary, release cable strap (1).

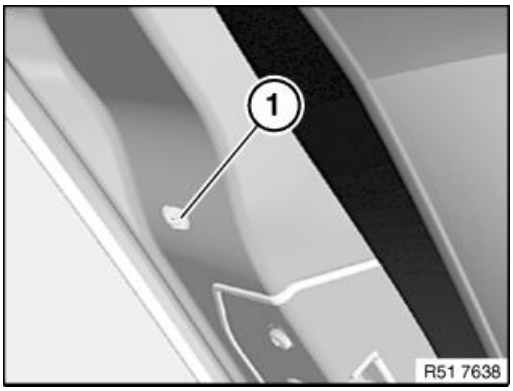
Feed Bowden cable (2) out of carrier (3).

cardiagn.com

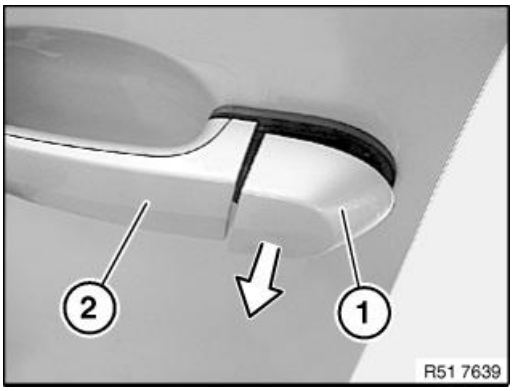
51 22 180 Removing and installing/replacing cover on outside handle, left or right



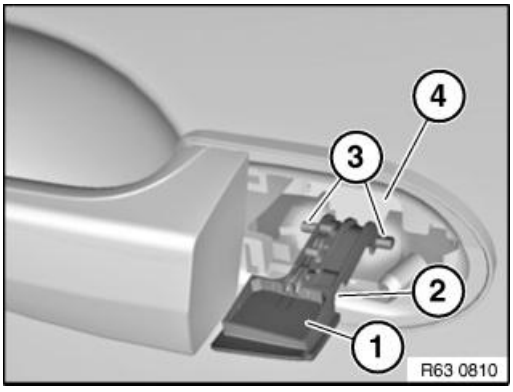
Lever out cap (1) and frame (2).



Release screw (1).



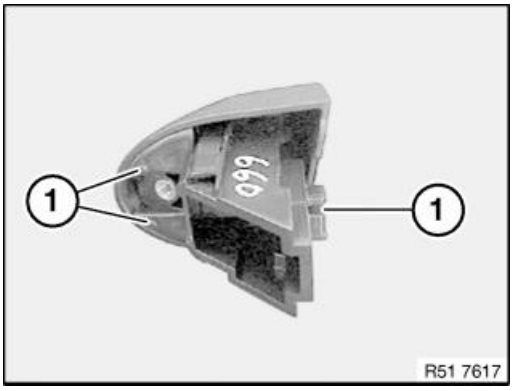
Pull off cover (1) in direction of arrow with outside door handle (2) opened slightly.



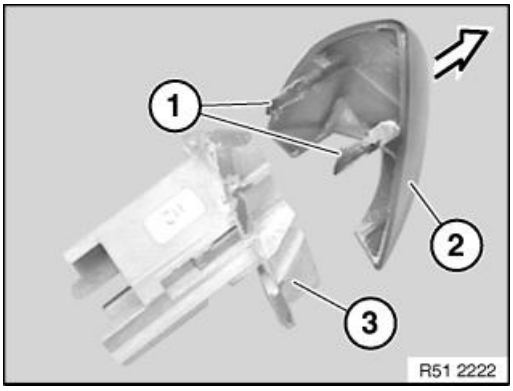
Version with light package: *Installation:*
Make sure door handle light (1) is correctly positioned in area (2).

Guides (3) must be correctly seated in carrier for outside door handle (4).

cardiagn.com



Installation:
Guides (1) must not be damaged.



Replacement:

Note:
Similar to graphic.

Detach cover (2) from filler piece (3).

Installation:
Catches (1) of cover (2) must not be damaged.

cardiagn.com

51 22 090 Removing and installing/replacing door lock in left or right rear door

Special tools required:

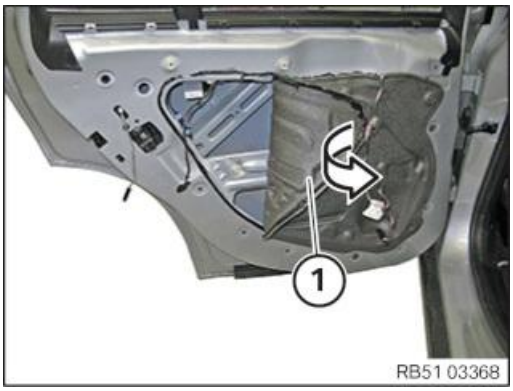
- 51 2 190

Necessary preliminary tasks:

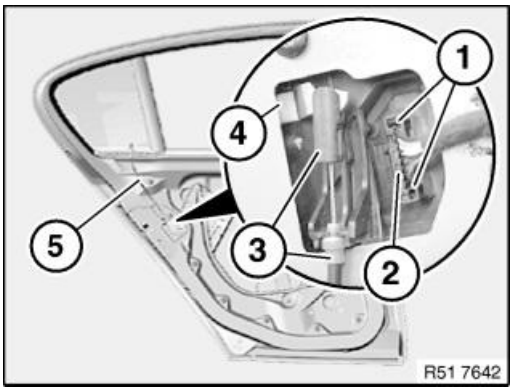
- Remove rear door trim



Undo sound insulation (1) in marked area .

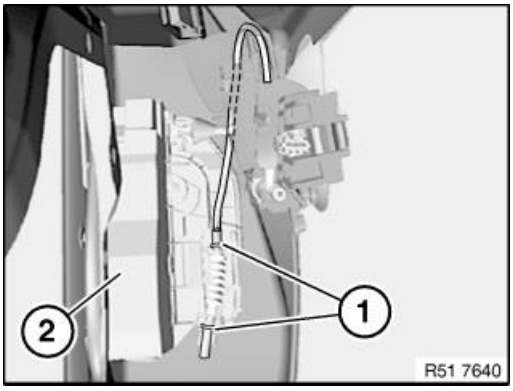


Lay sound insulation (1) to the side in direction of arrow.



Unlock and disconnect plug connection (2) at tabs (1).
Disengage Bowden cable (3) from door lock (4).
Unclip lock knob control rod (5).

cardiagn.com



Unhook Bowden cable (1) at door lock (2).

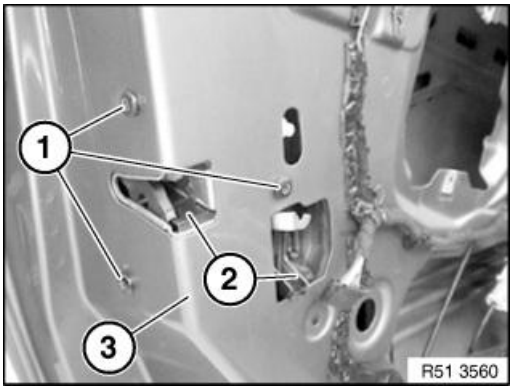
If necessary, release cable clip on door lock (2).

Installation note:
Bowden cable (1) must be correctly engaged in locators in door lock (2).

Bowden cable (1) must be laid without kinks in bend to door lock (2).

Important!

Door cannot be opened if Bowden cable (1) is incorrectly laid.



Important!

Do not damage door lock seal when removing.

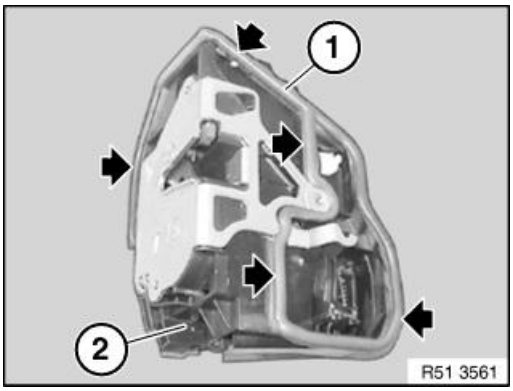
Release screws (1).

Remove door lock (2) from inside.

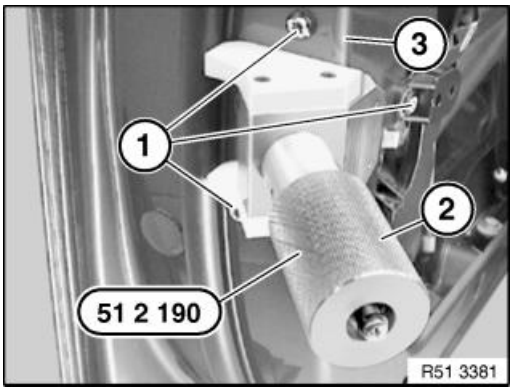
Important!

To avoid leaking and electrical malfunction:

Pull door lock (2) with special tool into corner (3), see images . R51 3381 and R51 7594.



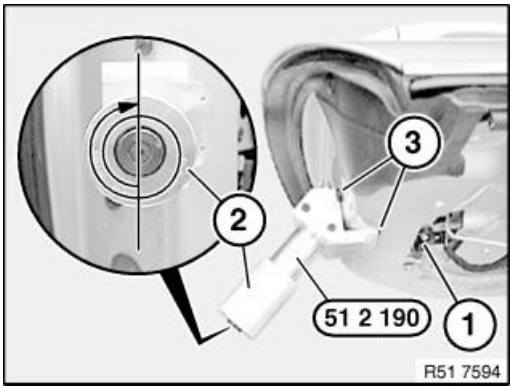
Installation note:
Gasket (1) on door lock (2) must not be damaged.



Installation note:

- Install door lock and insert screws (1), do not tighten down.
- Slide special tool 51 2 190 into opened rotary striker until striker engages in first stage

cardiagn.com



Installation note:

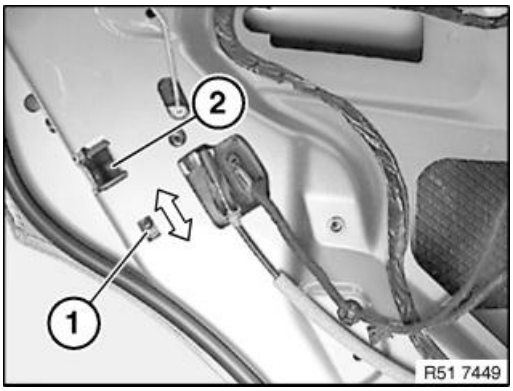
- Pre-tension door lock (1) with knurled screw (2) until special tool 51 2 190 just contacts corner points (3)

Important!

To tension door lock (1), it is only permitted to turn knurled screw (2) by a further 1 to 1.5 turns (max.) (risk of damage).

Door lock gasket must rest uniformly on inner door panel (water ingress).

- Tighten down door lock screws, tightening torque 51 22 1AZ.



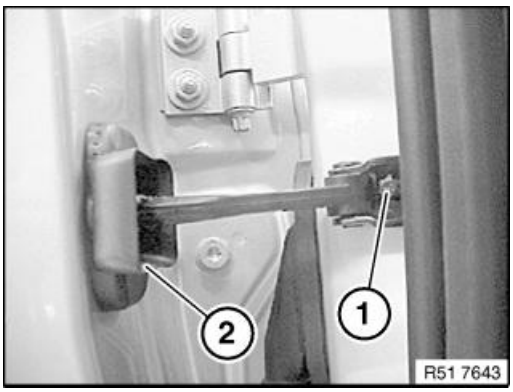
Installation note:
Check function of child safety catch (1) on door lock (2).

cardiagn.com

51 22 280 Removing and installing/replacing door retainer on rear left or right door

Necessary preliminary tasks:

- Close door windows
- Remove sound insulation in front area only



Note:
Secure rear door against falling closed.

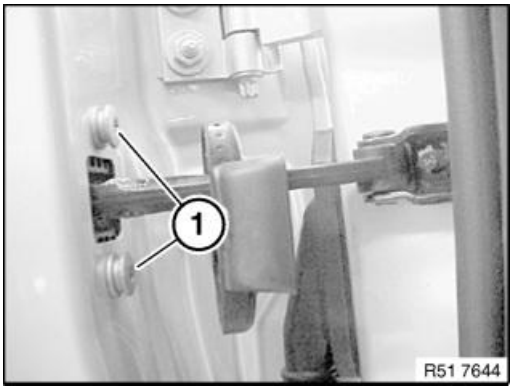
Release screw (1).

Tightening torque 51 22 3AZ.

Remove seal (2).

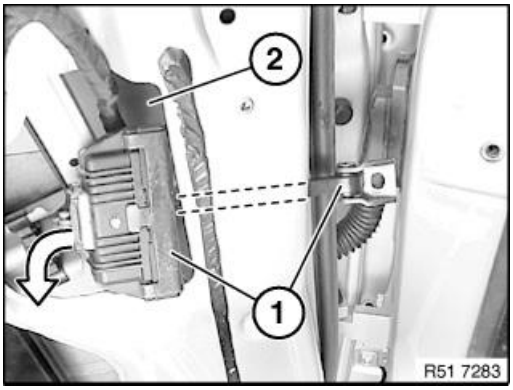
Installation:
Seal (2) must not be damaged.

Make sure seal (2) is correctly seated.



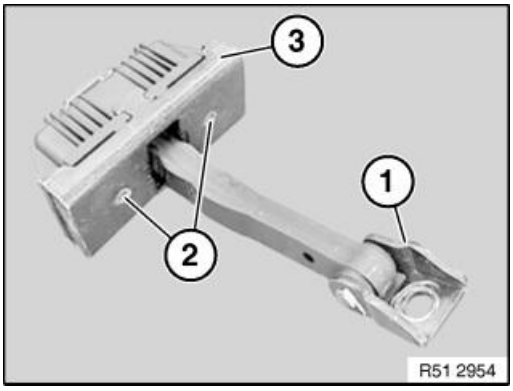
Release screws (1).

Tightening torque 51 22 4AZ.



Remove door retainer (1) via cutout (2).

cardiagn.com



Installation:
Following parts of door retainer (3) must not be damaged:

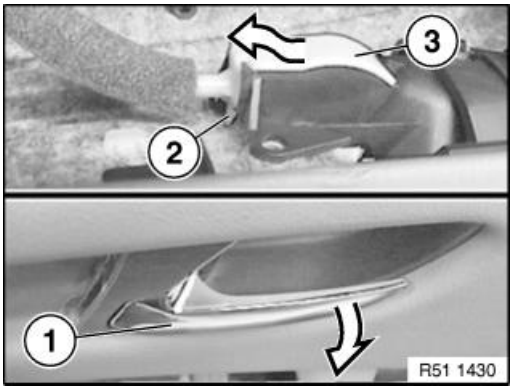
1	Hinge
2	Thread

cardiagn.com

51 22 225 Removing and installing/replacing inside door opener of rear left or right door

Necessary preliminary tasks:

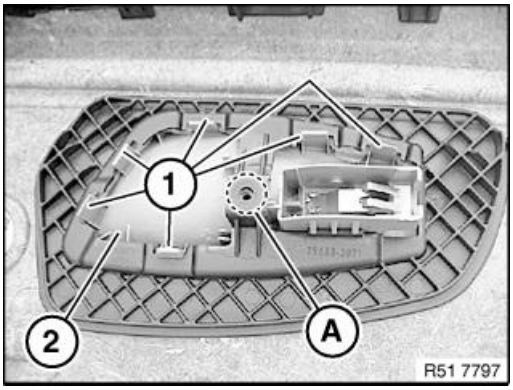
- Remove rear door trim panel



Unhook Bowden cable for release lever:

- Tighten release lever (1).
- Lever out lock (2).
- Detach Bowden cable (3) towards rear/top.

Installation:
For fitting, press release lever (1) fully onto door trim panel.

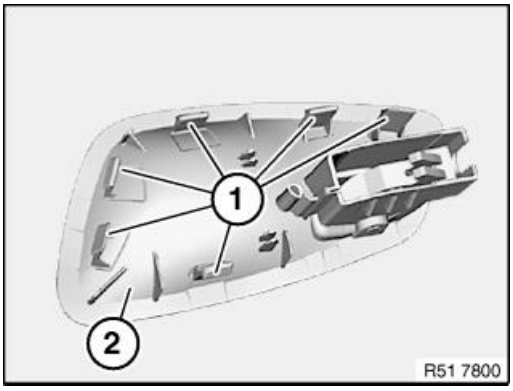


Note:
On initial installation there is no screw in area (A).

If necessary, release screw in area (A).

Release catches (1) and remove door opener (2).

Installation:
Repair screw must be inserted in area (A) when door opener is installed.



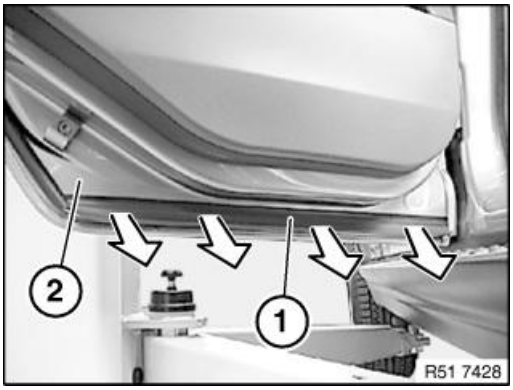
Installation:
Catches (1) on door opener (2) must not be damaged.

cardiagn.com

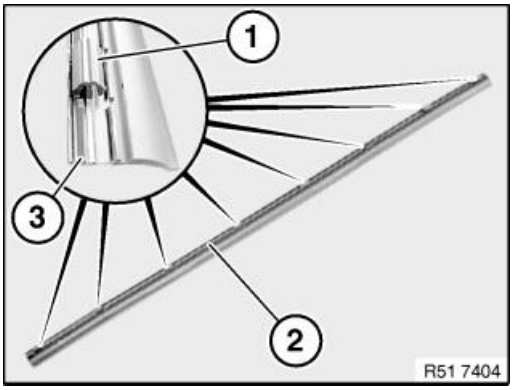
51 22 370 Removing and installing/replacing lower left and right cover on rear door

Graphics are only an example (The graphics used are from E83).

Operations on right side analogous to left side shown. Use graphics in a mirror-inverted way.



Detach cover (1) in direction of arrow from rear door (2).



Installation:
Catches (1) of cover (2) must not be damaged.

E83 only:

Cover (2) has an aluminium insert (3).

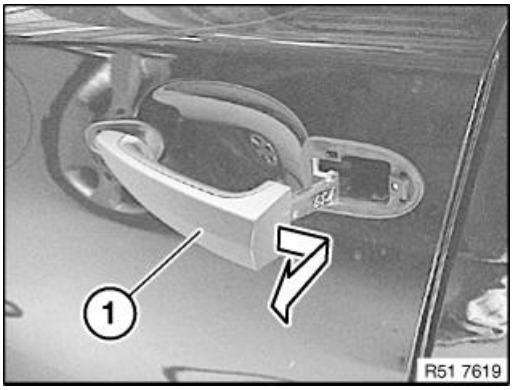
Only press on catches (1) when installing, otherwise cover (2) will become uneven.

cardiagn.com

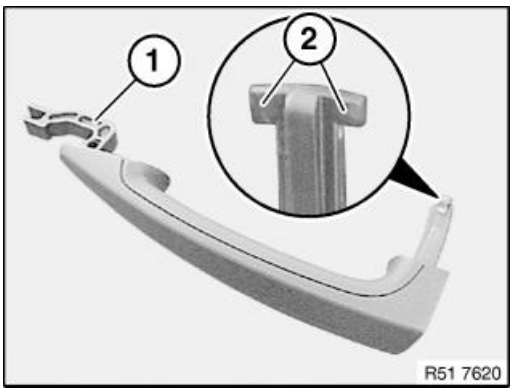
51 22 170 Removing and installing/replacing outer door handle on left or right rear door

Necessary preliminary tasks:

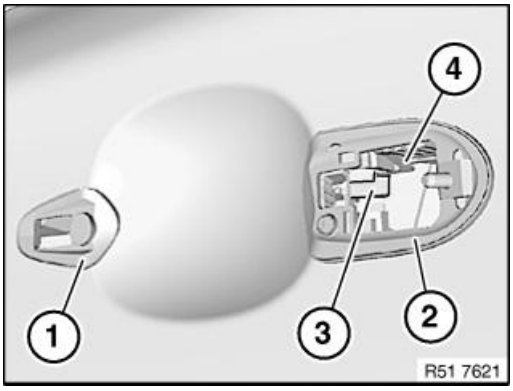
- Remove cover on outer door handle



Pull out outer door handle (1) and feed out in direction of arrow.



Installation note:
Guide (1) and locators (2) must not be damaged.



Installation note:
Seals (1 and 2) must not be damaged.

If necessary, pull lock actuator (3) outward until it engages retaining clasp (4).

Install outer door handle and insert correctly into lock actuator (3).

Outer door handle is in the correct position only after the cover has been fitted on the outer door handle.

Carry out function check only with door open.

cardiagn.com

51 22 200 Removing and installing/replacing outer handle and lock actuation of left or right rear door



Operations described in:

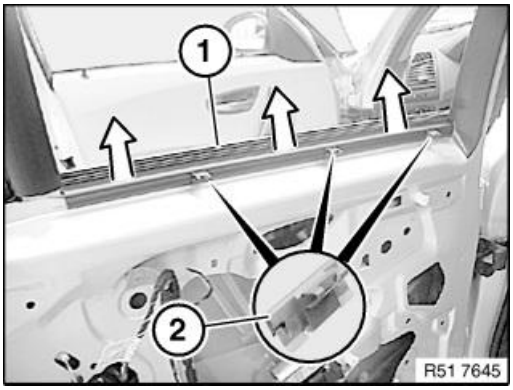
Removing and installing/replacing carrier for outer door handle on left or right rear door

cardiagn.com

51 22 330 Removing and installing/replacing window cavity cover strip on inside rear door

Necessary preliminary tasks:

- Remove rear door trim panel



Pull window cavity cover strip (1) off rear door.*Installation:*
If necessary, replace faulty clips (2).

cardiagn.com

51 22 300 Removing and installing/replacing window cavity cover strip on rear door on left or right

Special tools required:

- 00 9 324

Important!

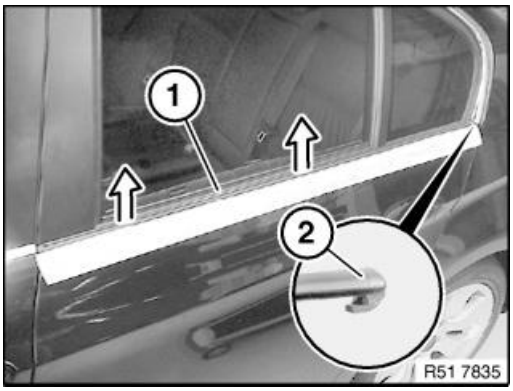
Observe procedure for using special tool 00 9 324 .

The "Instructions on fitting window guide seals" serve as the basis for this repair instruction and must be observed without fail.

Necessary preliminary tasks:

E91 only:

- Remove trim on window frame at rear



Important!

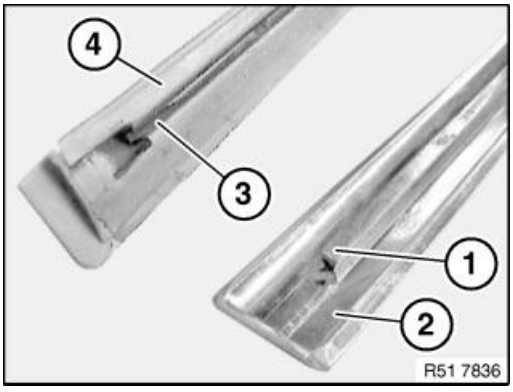
If reusing the existing window cavity cover strip (1), make sure it is not bent.

Lever out window cavity cover strip (1) with special tool 00 9 324 (starting at B-pillar).

Feed window cavity cover strip (1) at rear out of guide (2).

Installation:
Moisten window cavity cover strip (1) prior to fitting with approved anti-friction agent.

Window cavity cover strip (1) must be flush at front and rear with door edge.



Version with Chromeline:

Installation:
If chrome strip (2) has been pulled out of cover strip (3), both parts must be reassembled.

Feed guide (1) of chrome strip (2) into groove (3) of window cavity cover strip (4).

Replacement:

Window cavity cover strip (4) and chrome strip (2) are replaced completely.

cardiagn.com

51 22 001 Replacing door detent (lock striker), rear left or right



Operations identical to:

Replacing front left or right door lock striker

cardiagn.com

51 22 351 Replacing window cavity seal on inner left or right rear door

Procedure described below:

Removing and installing/replacing window cavity cover strip on inside rear door

cardiagn.com

51 23 004 Adjusting engine compartment lid catch



Operation is identical to:

- Adjusting engine compartment lid

cardiagn.com

51 23 131 Adjusting left or right striker on engine compartment lid



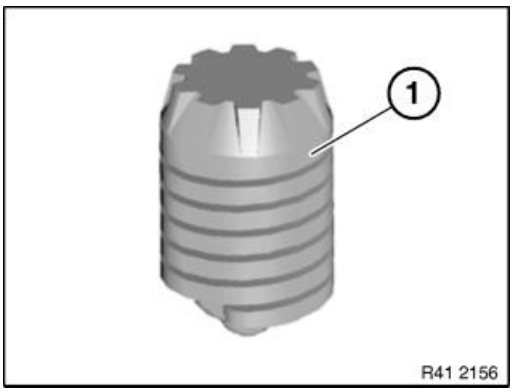
Operation is described in:

- Adjusting engine compartment lid

cardiagn.com

51 23 ... Adjusting/replacing bump stops

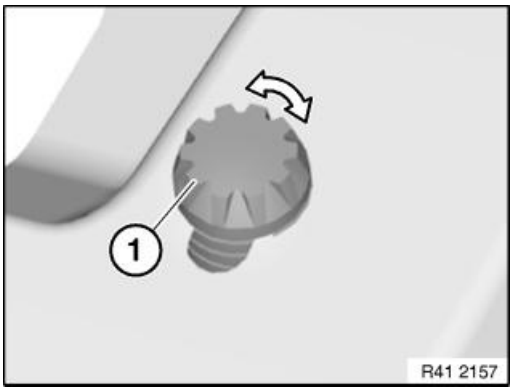
The illustrations are schematic representations and are to be applied to the relevant vehicle type.



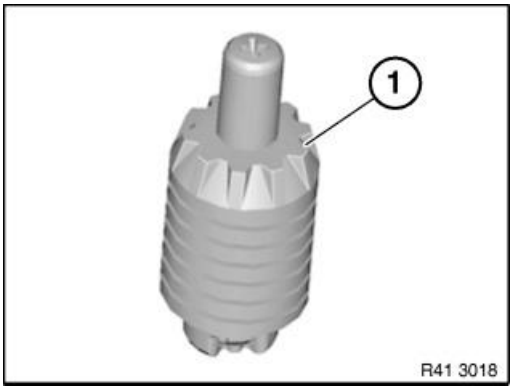
Version 1:

Following parts must not be damaged:

- (1) Bump stop



Adjust bump stop (1) to correct height by turning left or right.

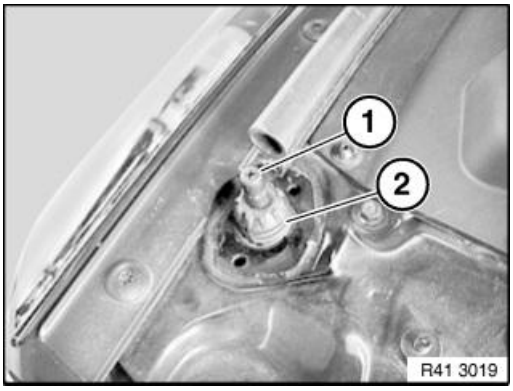


Version 2:

Replace damaged bump stops (refer to EPC):

- (1) Bump stop with ejector

cardiagn.com

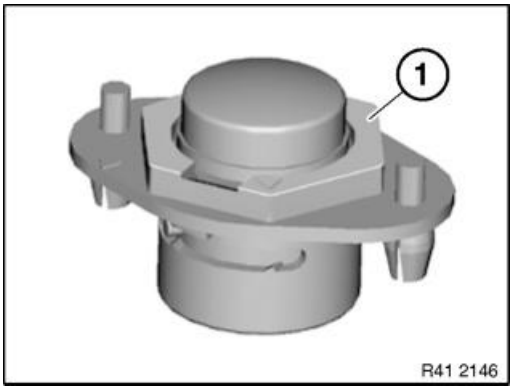


Press ejector (1) into bump stop and, in this position, twist approx. 90° counterclockwise with a Phillips screwdriver.

This locks the ejectors (1) in the bump stops.

Adjust bump stop (2) to correct height by turning left or right.

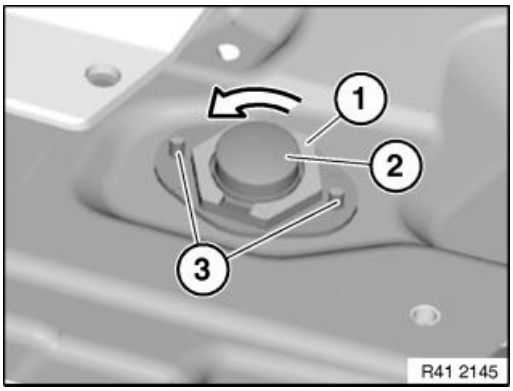
Unlock the ejector (1) again after completing adjustment.



Version 3:

Replace damaged bump stops (refer to EPC):

- (1) Bump stop



Turn lock (1) 45° counterclockwise.

Pull bump stop (2) upwards.

Close lid slowly until it is at the same height as the side panel.

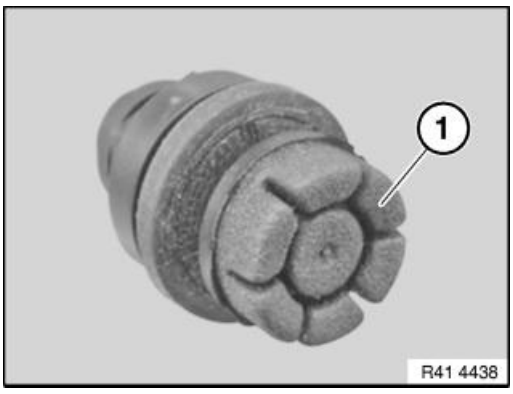
Open lid and turn lock (1) clockwise.

Installation:
Press bump stop into panel and drive in expanding pins (3).

cardiagn.com

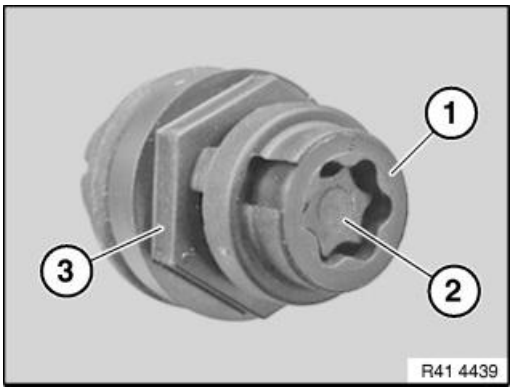
51 23 ... Adjusting/replacing bump stops

Necessary preliminary tasks:
Remove luggage compartment wheel arch panel.



Following parts must not be damaged:

- (1) Bump stop
- (2) Lock nut (following illustration)



General view of rear side:

- Adjust stop pads
  Remove cap (1).
  Adjust stop pad to correct height by turning screw (2) to left or right.

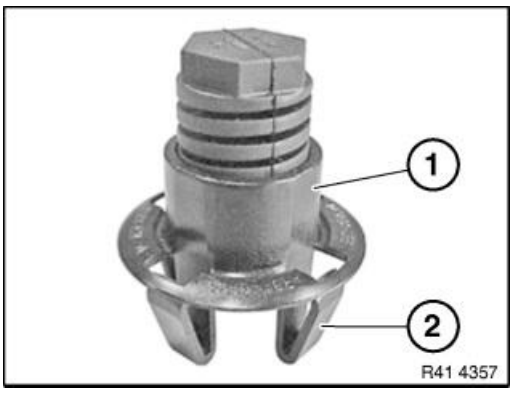
- Remove stop pads
  Release nut (3) and remove stop pads.

cardiagn.com

51 23 ... Adjusting/replacing bump stops

The graphics are schematic representations and are to be applied to the relevant vehicle type.

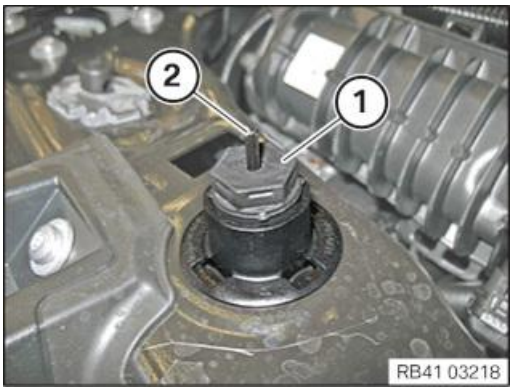
Prerequisite: Lid must be correctly adjusted.



Following parts must not be damaged:

- (1) Bump stop
- (2) Catches

Remove adjusting buffer by pressing latch mechanisms back.



Screw adjusting buffer (1) until the pin (2) can be pulled out.

Slowly pull the pin (2) out approx. 15 mm.

Slowly close engine compartment lid.

The pin (2) is thus pushed into the adjusting buffer (1).

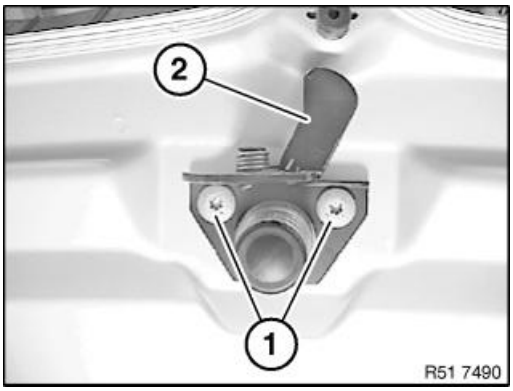


Raise engine compartment lid.

Unscrew the adjusting buffer (1) until it is flush with the upper edge of the pin (2).

cardiagn.com

51 23 160 Removing and installing/replacing arrester hook on engine hood



Raise bonnet/hood lid.

Release screws (1) and remove arrester hook (2).

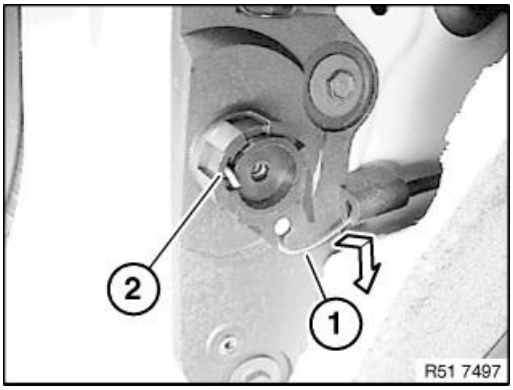
Tightening torque 51 23 1AZ.

cardiagn.com

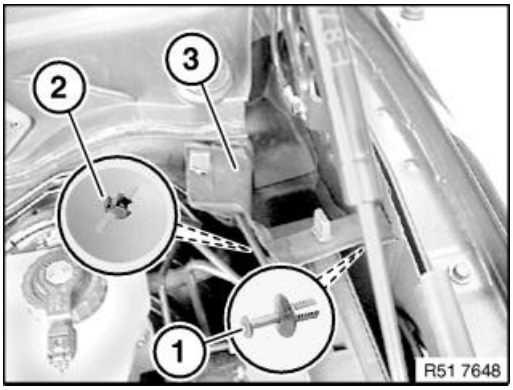
51 23 ... Removing and installing/replacing cable for front engine hood locks (to passenger compartment)

Necessary preliminary tasks:

- Remove footwell side trim panel
- Remove lower section of microfilter housing on left



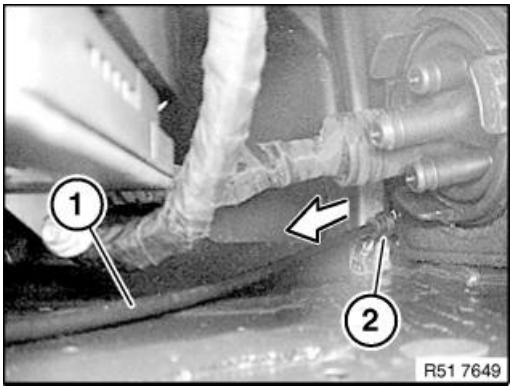
Disengage Bowden cable (1) from release lever (2) and feed out in direction of arrow.



Release expander rivet (1) and nut (2).

Feed out water channel (3) towards top.

Installation:
Make sure water channel (3) is correctly seated.



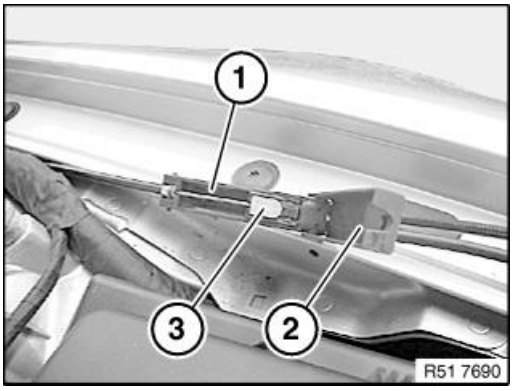
Feed out Bowden cable (1) in direction of engine compartment.*Installation:*
Lay Bowden cable (1) without kinks.

Important!

Grommet (2) must not be damaged.

Check that grommet (2) is correctly seated (water ingress).

cardiagn.com



Note:
Graphic is only an example.

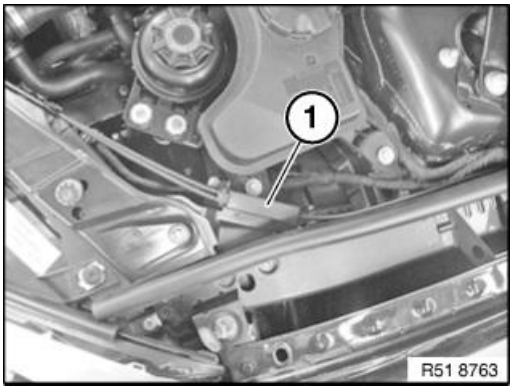
Unclip coupling (1) from side panel.

Lever out cover (2) at coupling (1).

Lever Bowden cable (3) out of coupling (1) and remove.

cardiagn.com

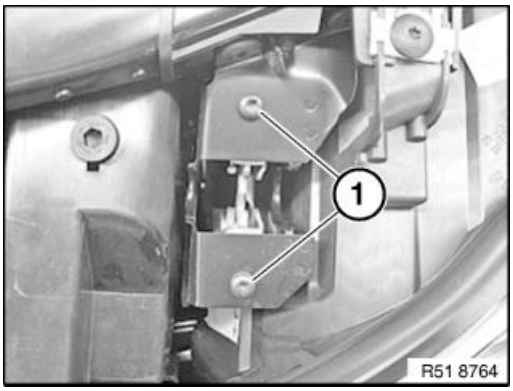
51 23 110 Removing and installing/replacing left engine compartment lid catches



Disconnect cable for front engine compartment lid catches and Bowden cable for engine compartment lid at rear at coupling (1).

Operation is described in:

Removing cable for front engine compartment lid catches .

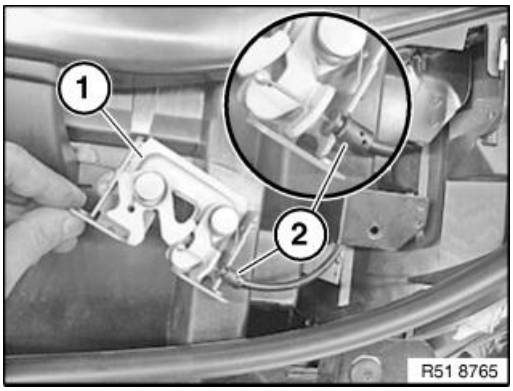


Release screws (1).

Tightening torque 51 23 2AZ .

Catch with microswitch:

Detach plug connection from microswitch.



Disengage Bowden cable (2) from engine compartment lid catch (1).

cardiagn.com

51 23 265 Removing and installing/replacing left or right gas pressure spring for engine compartment lid

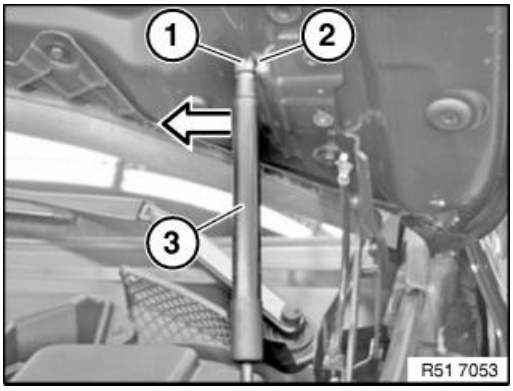


Warning!

Risk of injury and damage!

For the following tasks, you must take the appropriate measures to support the engine compartment lid.

As an alternative, you can enlist the help of a second person to hold the engine compartment lid.



Raise engine compartment lid.

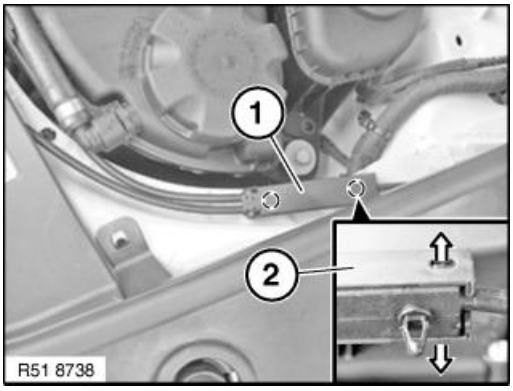
Disassembling ball socket (1).

Unclip gas spring strut (3) in direction of arrow from ball stud (2), top and bottom.

Detach gas pressurised prop.

cardiagn.com

51 23 211 Removing and installing/replacing pull cable for hood/bonnet locks at front

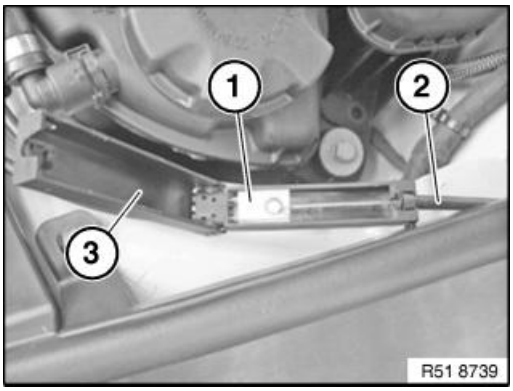


Note:
Graphic is only an example.

Unclip cable-to-clutch-housing clip (1) at marked points.

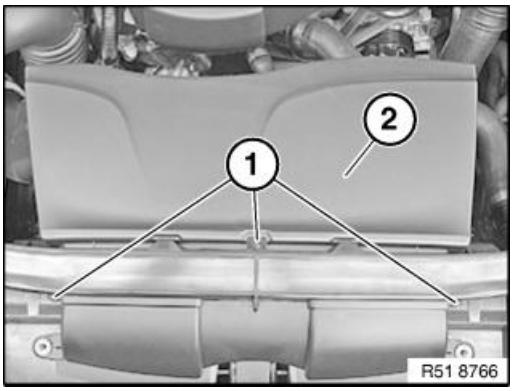
Installation:
Clips must not be damaged.

To open up clutch housing cover, lever up cover (2) in direction of arrow.

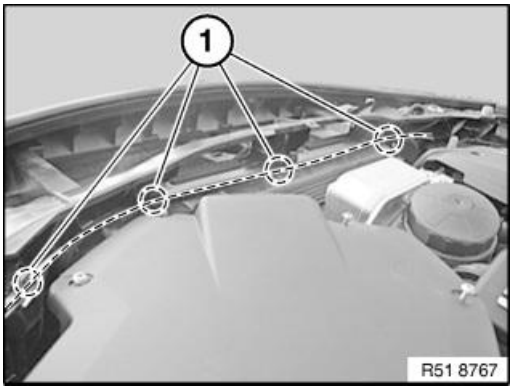


Note:
Graphic is only an example.

Thread rear cable (2) out of cable guide (1) and clutch housing (3).



Undo screws (1) and remove rear intake hood (2).



Unclip cables at marked points (1).

Carry out remaining operations for removing bonnet/hood locks left and right .

cardiagn.com

51 23 100 Removing and installing/replacing right engine hood/bonnet lock



Operation is identical to:

Removing and installing/replacing left engine hood lock .

cardiagn.com

51 23 ... Removing/installing ball sockets with clip



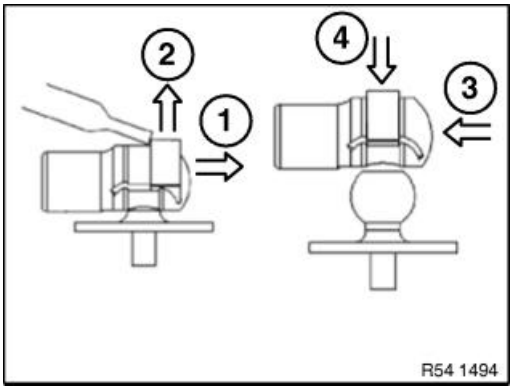
Warning!

Danger of injury! When installed, the gas pressurised shock absorber is under preload. Minimise preload as far as possible before removing.



Important!

Never lift off ball socket with engaged clamp.



Disassembly/assembly:

1. Push on clamp in direction of groove with screwdriver
2. Lift off ball socket from ball pin
3. Slide clamp back
4. Fit ball socket on ball stud and snap into place with force

Installation note:
Pack grease into two opposite positions in socket. The grease spreads after installation on the ball pin all round in the ball socket.

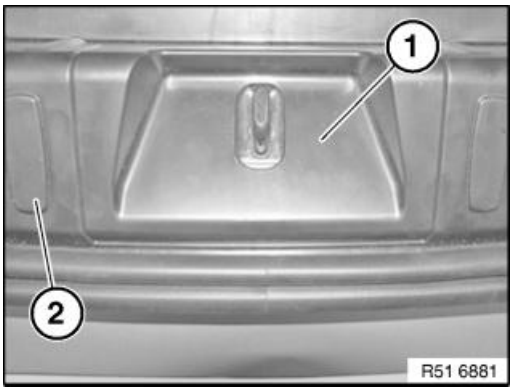
cardiagn.com

51 24 004 Adjusting rear lid lock

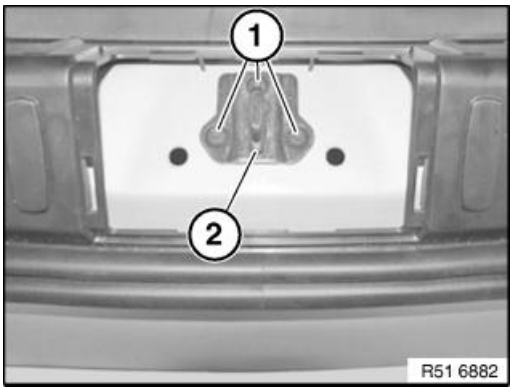
Precondition:

Rear lid must be correctly adjusted to fit; if necessary, adjust rear lid.

For ideal adjustment, refer to Body gap dimensions.



Pull off the striker cover (1) from the trim (2) loading edge forwards and up.*Installation note:*
Retaining tabs must not be damaged.



Release screws (1) on striker (2) so far that it can still be moved and centres itself.

Close the tailgate without force. The striker (2) adjusts itself automatically.

Open rear lid.

Tighten down screws (1) on striker (2).

Tightening torque 51 24 2AZ.

Important!

For checking. Striker (2) must not brush against rear lid lock.

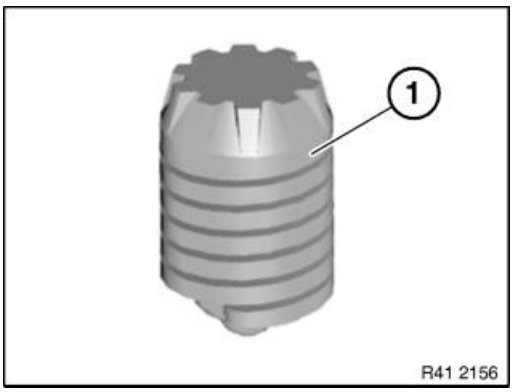
Version with reversing camera:

After adjusting, check reversing camera and if necessary recalibrate.

cardiagn.com

51 23 ... Adjusting/replacing bump stops

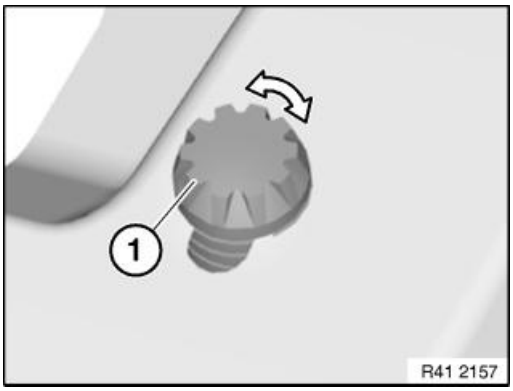
The illustrations are schematic representations and are to be applied to the relevant vehicle type.



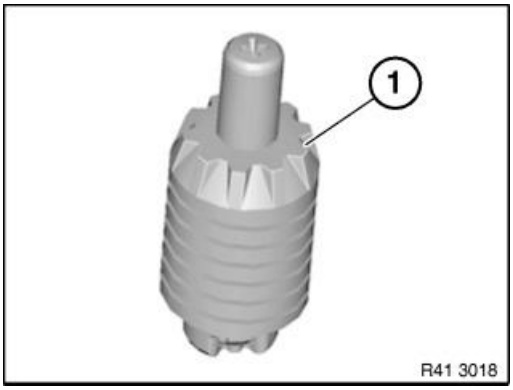
Version 1:

Following parts must not be damaged:

- (1) Bump stop



Adjust bump stop (1) to correct height by turning left or right.

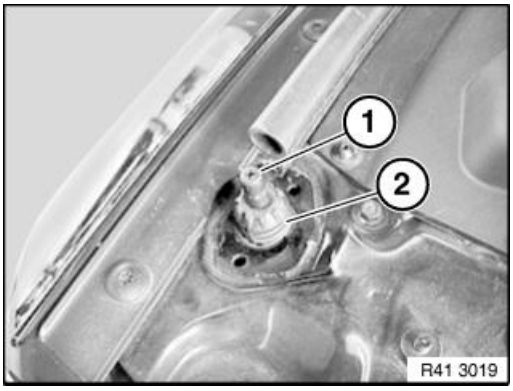


Version 2:

Replace damaged bump stops (refer to EPC):

- (1) Bump stop with ejector

cardiagn.com

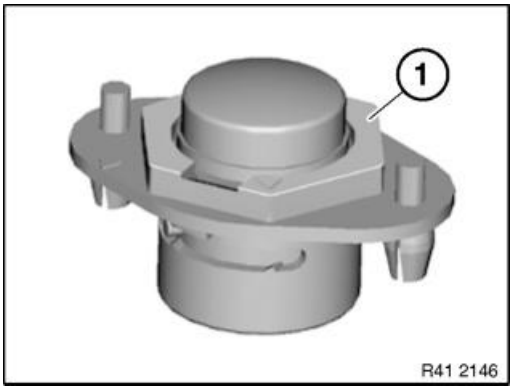


Press ejector (1) into bump stop and, in this position, twist approx. 90° counterclockwise with a Phillips screwdriver.

This locks the ejectors (1) in the bump stops.

Adjust bump stop (2) to correct height by turning left or right.

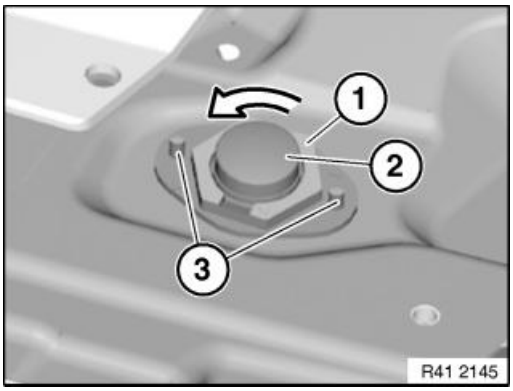
Unlock the ejector (1) again after completing adjustment.



Version 3:

Replace damaged bump stops (refer to EPC):

- (1) Bump stop



Turn lock (1) 45° counterclockwise.

Pull bump stop (2) upwards.

Close lid slowly until it is at the same height as the side panel.

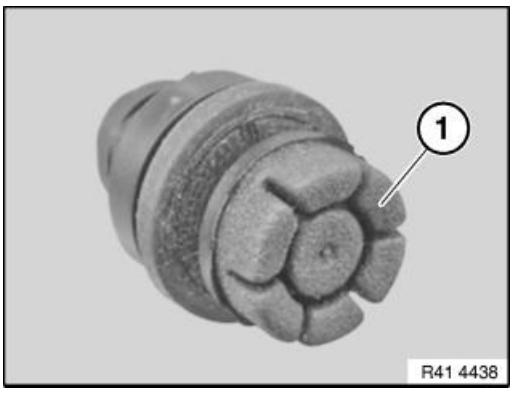
Open lid and turn lock (1) clockwise.

Installation:
Press bump stop into panel and drive in expanding pins (3).

cardiagn.com

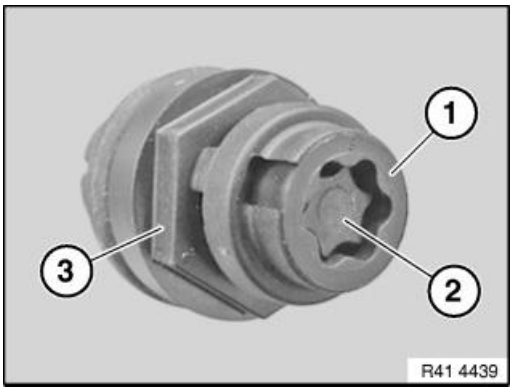
51 23 ... Adjusting/replacing bump stops

Necessary preliminary tasks:
Remove luggage compartment wheel arch panel.



Following parts must not be damaged:

- (1) Bump stop
- (2) Lock nut (following illustration)



General view of rear side:

- Adjust stop pads
  Remove cap (1).
  Adjust stop pad to correct height by turning screw (2) to left or right.

- Remove stop pads
  Release nut (3) and remove stop pads.

cardiagn.com

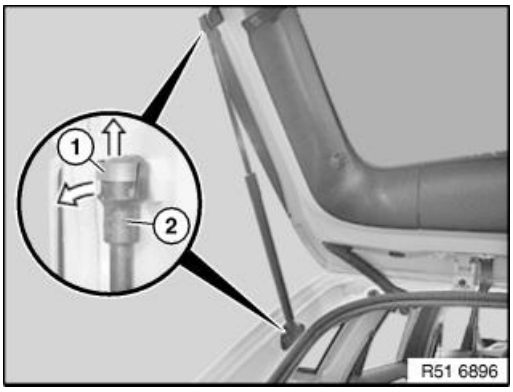
51 24 300 Removing and installing or replacing left or right gas pressure spring for tailgate



Warning!

Danger of injury!

Support tailgate in fully opened position with suitable device.



Make a written record of the alignment of gas strutÂ (2) before removing.

Slide retaining spring (1) to end of gas pressure spring (2) and lever out gas pressure spring (2).

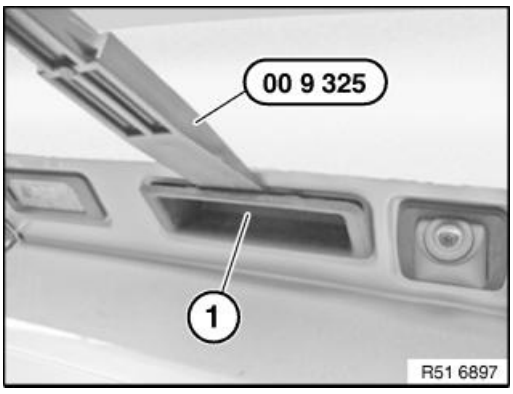
Repeat the procedure at the other end of the gas pressure spring (2) and remove.

cardiagn.com

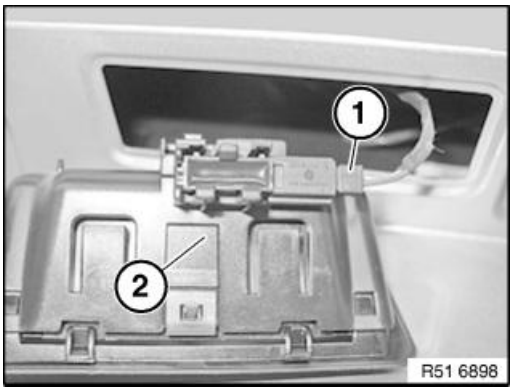
51 24 145 Removing and installing/replacing button for rear lid actuation

Special tools required:

- 00 9 325



Carefully lever out the button (1) towards the inside with special tool 00 9 325 as shown. While doing so do not damage rubber seal.*Installation:*
Button must engage twice audibly.

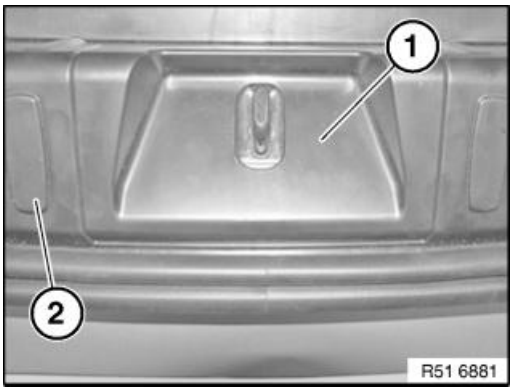


Disconnect plug connection (1) from button (2).

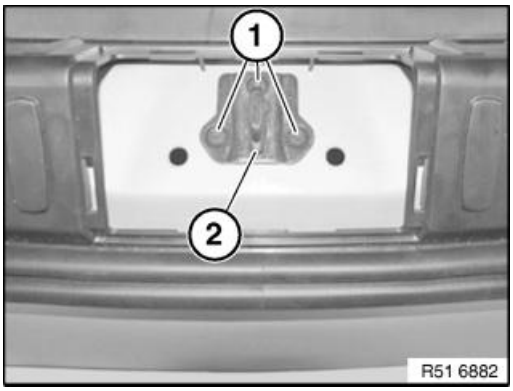
Remove button (2).

cardiagn.com

51 24 130 Removing and installing/replacing striker for tailgate catch



Pull off the striker cover (1) from the trim (2) loading edge forwards and up.*Installation:*
Retaining tabs must not be damaged.



Release screws (1) on striker (2) and remove striker.*Note:*
The bottom screw plate sits in a holding cage.

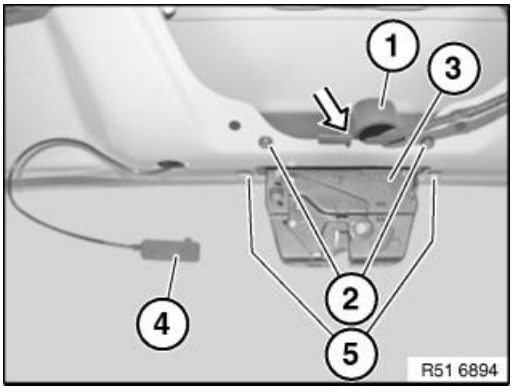
Then adjust tailgate catch .

cardiagn.com

51 24 105 Removing and installing/replacing tailgate lock

Necessary preliminary tasks:

- Remove trim for rear lid



Release screws (2) from cover (1) and feed out cover (1).

Tightening torque 51 24 5AZ.

Installation note:
Make sure cover is in the correctly installed position (see arrow).

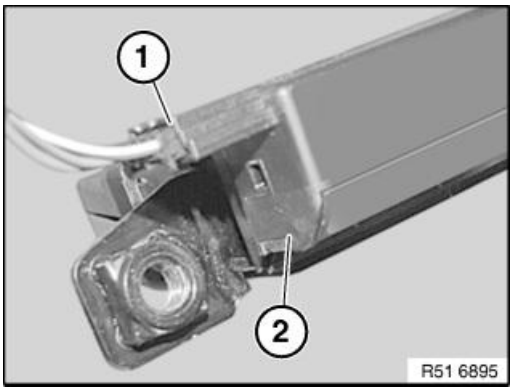
Release screws (5) on tailgate lock (3).

Tightening torque 51 24 1AZ.

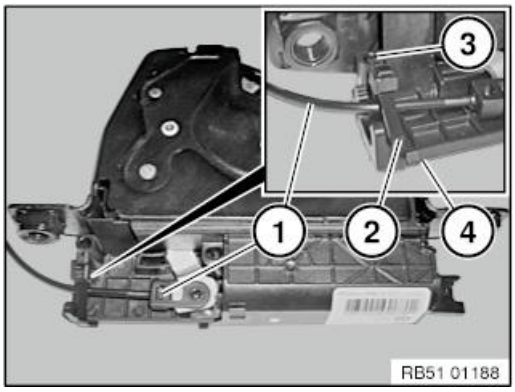
Feed tailgate lock (3) out of tailgate.

US version only

Remove tab for emergency release from tailgate (4).



Detach plug connection (1) at tailgate lock (2).*Installation note:*
Adjust tailgate catch.



Installation note:
To ensure correct functioning of the tailgate lock, emergency release (1) must be secured with cable strap (2).

Mount cable strap (2) if necessary.

Pass cable strap (2) through opening (3) and position to the left of latch mechanism (4).

Lock of cable strap (2) must be positioned centrally.

cardiagn.com

51 31 ... General procedure for the disassembly and installation of bonded window glass

1 General information

Follow general instructions on window bonding.

Materials needed for window bonding.

The vehicle can be towed away or driven without a windscreen, rear window and side window.

When carrying out disassembly/installation work and during the hardening time, the vehicle must be standing on its wheels on a level surface.

The windscreen, rear window and side windows are glued to the body. This bonding will increase the torsional rigidity of the vehicle. To obtain perfect bonding, comply with the installation procedure described in the following.

2 Disassembly

2.1 Disassembly in general

The following dismantling methods are applied, according to the version:

- Oscillating knife (not permissible for vehicles with window bonding on carbon body components)
- Cutting wire with wire pull handles
- "Spider" window glass removal system (unsuitable for severely damaged window glass)

Note:

> When cutting out the window glass with wire pull handles, there is a risk of damage to the window glass if the wire is pulled over the window edge.
>
> Unless otherwise described, only use this method when replacing the window glass.

Follow the vehicle-specific repair instructions!

2.2 Disassembly of damaged window glass

The disassembly method described in the REP may be unsuitable depending on the degree of damage.

- e.g. suction cups cannot be attached to window glass around cracks
- Damaged window glass may damage and tear the nylon string

Attention! Risk of damage!

Use one of the other disassembly methods at your own discretion in the event of severely damaged window glass.

Make sure adjacent components are adequately protected.

3 Installation

3.1 Preparation

Position the windscreen or rear window on a universal work top or secure the components on a tool trolley using suction lifters.

Attach two suction lifters to the outsides of the window glass in the event of storage on a universal work top.

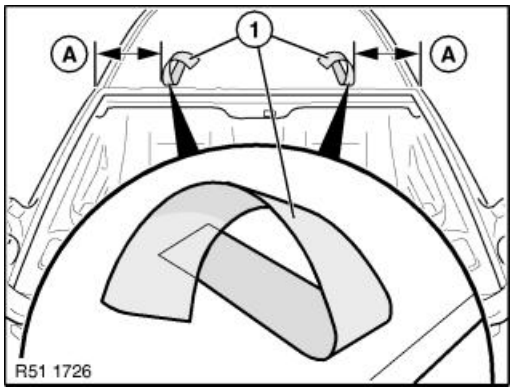
According to its size, fix side and door window glass onto the tool trolley using suction lifters or special tool 51 3 220 and set down on a suitable support.

Always keep the suction faces of the window glass suction lifters dry and clean.

Note:

> If accessibility is restricted, insert the window glass on a trial basis.

cardiagn.com



Bond two yellow plastic adhesive tapes (1) approx. 400 mm in length to the roof.

(A) = 250 mm

Only the yellow plastic adhesive tape may be used to fix the window glass.

The glass will slip down if other adhesive tapes are used.

Window glass slippage will result in leaks and wind noises.

After completing the paint work, the paint must be fully hardened before the plastic adhesive tapes are applied.

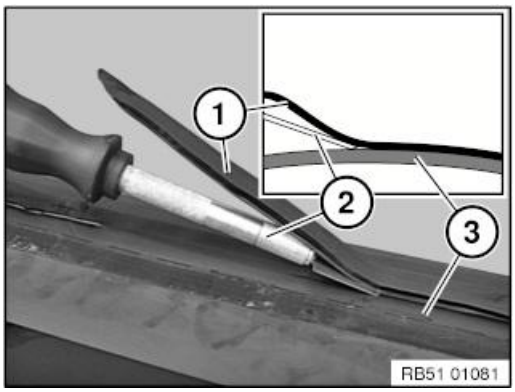
3.2 Pre-treatment of bonding surfaces

- Protect the vehicle interior against contamination, cover the Head-Up Display.
- Clean window glass and body aperture (with residual adhesive bead) with cleaning agent R2
  Attention! Do **not** use Sika remover 208 for cleaning in the adhesive area.
- Observe an air drying time of at least 5 minutes (at least 15 minutes when applied to residual adhesive bead)
- Remove residual adhesive bead from body and window glass (see point 3.3)
- Touch up paintwork damage to body aperture with BMW multibase filler (except for carbon body components)

Pretreatment on new body component (no residual adhesive beads present):

Surface	Pretreatment
Panel painted	Wipe cleaning agent R1 dry with a paper towel or observe the air drying time of at least 1 minute
Carbon	Only cleaning agent R2
Carbon painted (e.g. roof outer skin M3)	Wipe cleaning agent R1 dry with a paper towel or observe the air drying time of at least 1 minute
Plastic (e.g. I01 A-pillar)	Cleaning agent R2 and ScotchBrite Multiflex abrasive pad

3.3 Remove adhesive residue from the body and window glass



Do not remove residual adhesive bead (1) until shortly before bonding.

Use the pitchweld scraper to remove the residual adhesive bead (1) from the body aperture and window glass (3).

Position the pinchweld scraper (2) as shown and remove the residual adhesive bead (1) up to a thickness of approx. 0.5 mm.

Attention!

Carbon body components are not to have scratches with a depth greater than 0.2 mm.

Note, comply with life module check!

3.4 Installation of spacer (spacer buffer / dual-lock tapes)

Completely remove all residue of existing spacers before bonding new adhesive spacers.

The exact position of the spacers must be retained (see vehicle-specific repair instructions).

Incorrectly fitted spacers will result in:

cardiagn.com

- Window glass breakage due to tension
- leakage (if the spacer is in the adhesive area)
- Wind noises

3.5 Add-on part

Depending on the version, attach sealing, expanding foam tape, rain sensor, etc.

Observe Overview of additional work with rain sensor when working with versions including the rain sensor!

Follow the vehicle-specific repair instructions!

3.6 Pre-treatment of new window glass

- Apply a thin coat of glass activator (yellow stick); a final wipe is not necessary.
- Observe an air drying time of at least 2 minutes

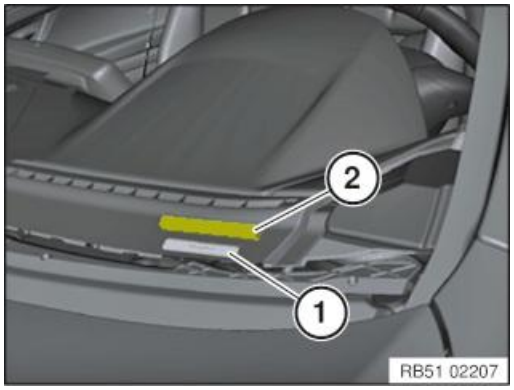
The glass activator is used for adhesion between glass or ceramic glass and the adhesive. Therefore, a thin, homogeneous and continuous line of glass activator must be applied. If the window glass is to be reused with a cut-back adhesive bead, glass activator is not needed.

It must be guaranteed that a 1 to 2 mm wide line of glass activator is located on the ceramic glass next to the squeezed adhesive bead.

The adhesive bead may become up to 15 mm wide in compressed condition. The width of the glass activator is therefore normally a minimum of 17 mm for windscreens and rear windows and a minimum of 9 mm for side windows.

The glass activator may not be applied in the field of view or the point grid. Fresh glass activator in the field of view must immediately be wiped off with cleaning agent R2 because hardened glass activator will leave a haze behind.

3.7 Version with inspection glass for vehicle identification number in windscreen



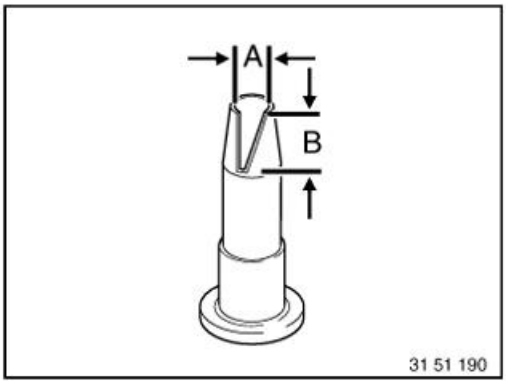
Foam tape (2) must be installed to protect the vehicle identification number (1) against tampering. If necessary, install foam tape 07 14 7 222 909.

Close off the inspection glass on the windscreen (bottom left) with Sika bonding base VP 206.

Except for:

- All US/GB models
- All models with a black dashboard cover, which means that the vehicle colour cannot be seen through the inspection glass

3.8 Nozzle preparation



Use the standard nozzle C for windscreens, rear windows, and body-specific fixed side window glass.

A	8 ±1 mm
B	12 ±1 mm

Prepare plastic nozzle for fixed door window glass.

A	8 ±1 mm
B	15 ±1 mm

Deviations are described in the vehicle-specific repair instructions.

cardiagn.com

Black ceramic glass impermeable to UV light is located on the peripheral zone of the inside of the window to protect the adhesive bead.

Ceramic glass must not be damaged.

3.9 Apply adhesive

Adhesive is applied to the window glass using a cartridge gun.

Glue cartridge must be vertical to window glass.

The almost vertical part of the adhesive bead must be facing the outer window glass edge.

On window glass with guidelines, the adhesive bead must be applied centrally between the guidelines.

On window glass without guidelines, the position of the adhesive bead is specified in the vehicle-specific repair instructions.

Coat bead joint.

Effect of differing adhesive quantities:

Too little adhesive:	Too much adhesive:
• Window glass rests too low in body aperture • Insufficient squeezing of adhesive bead (leaking)	• Window glass rests too high in body aperture • Wind noise may occur • Strains/tensions may occur (window glass breakage) • Dirt contamination of add-on parts by emerging adhesive • Adhesive on uninsulated strainer pressure lines of aerial(s) (interference of reception)

Note on bonding of windscreen:

The adhesive amount specified in the vehicle-specific repair instructions is sufficient if the specified adhesive bead size is maintained.

If too much adhesive is applied due to application-related variations (manual application), the specified adhesive amount may not be sufficient. To avoid interrupting adhesive application for longer than the permitted period, have another glue cartridge ready.

Attention!

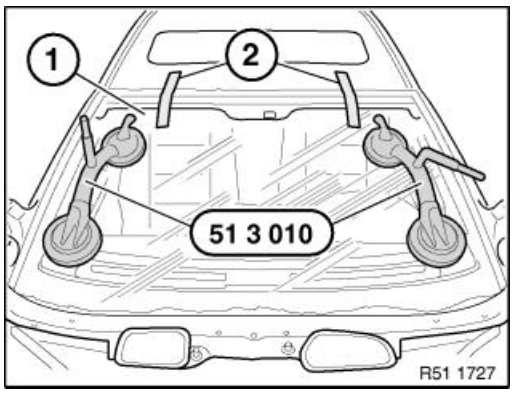
Once the adhesive bead has been applied, the window glass must be installed within 7 minutes (depending on air humidity, temperature).

After 7 minutes the adhesive bead forms a skin which can no longer guarantee a perfect bond.

3.10 Mounting the window glass

To prevent a pressure build-up in the passenger compartment when the doors are closed:

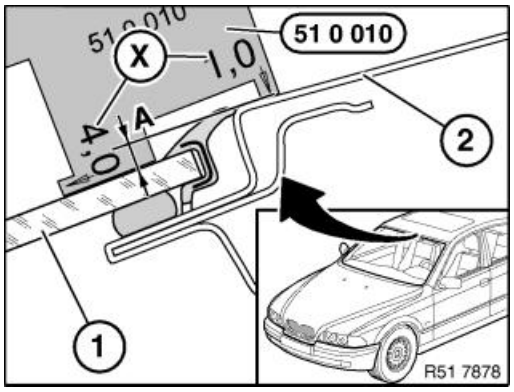
- Open a side window



Mount window glass (1) with suction lifter (51 3 010).

cardiagn.com

3.11 Adjusting the window glass



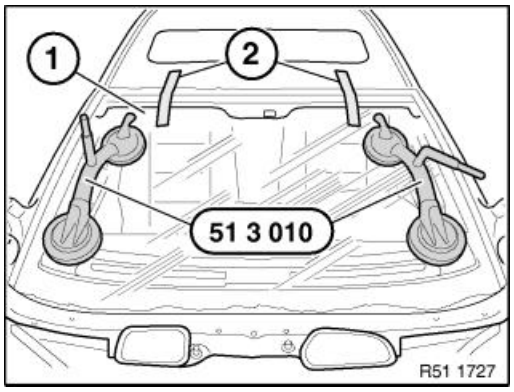
To avoid wind noise, the front and rear windows (1) must be lower than the roof outer skin (2).

Check ride height of the windscreen or rear window using special tool 51 0 010.

Dimension (A) of window glass offset, refer to vehicle-specific repair instructions.

X = measurement stages 1 ... 4 mm

3.12 Fixing the window glass



Fix the window glass with yellow plastic adhesive tapes (2).

Immediately remove dirt contamination with adhesive residue using Sika remover 208. Do not press out the window glass again.

Hardened adhesive can only be removed mechanically.

3.13 Label

Depending on version, apply label.

cardiagn.com

51 31 ... Materials for bonding window



Special tools required:

- 51 3 220

1 Tools

Type	Type	Order/part number
Electric special cutter	SuperCut FSC 1.6Q	81 43 2 296 987
Knife set Contains: Knife (U-shape) Knife (L shape) Knife (straight with stop roller)	 24 / 36 / 45 mm 25,4 mm 16 to 43 mm (adjustable) 14 mm (fixed)	81 43 9 428 596
"Roll Out 2000"	Wire cutting system	81 62 0 301 768
"Spider"	Cutting system with nylon string	81 43 2 357 248
Wire pull handles		81 43 2 326 501
Cartridge gun		81 49 2 213 059
Pinchweld scraper set		81 62 0 410 436
Siphon		81 64 2 184 377
Single suction cup	Special tool	51 3 220
Universal work table		81 49 0 151 675

2 Consumables:

Naming of Electronic Parts Catalogue	Designation, repair instructions /addition	BMW part number
Window glass repair kit, cold, 1 hour	Small repair kit	83 19 2 289 285 83 19 2 289 180 (US) 83 19 2 180 001 (China)
Window glass repair kit, cold, 1 hour	Large repair kit Like small repair kit, plus 1x window glass adhesive 300 ml	83 19 2 360 680 (not available for the US/China)
Cutting wire for glass repair	Cutting wire, square	83 19 2 150 267
Nylon string	Nylon string	81 43 2 344 272
Multi-base filler	BMW multibase filler	
Cleaning agent R1	Cleaning agent R1	83 19 2 211 217
Cleaning agent R2	Cleaning agent R2	83 19 0 417 324
Adhesive tape	Plastic adhesive tape, yellow	83 19 9 410 979
Adhesive cleaner 208	Sika remover 208	83 19 9 407 780
Aktivator 205	Sika Activator 205 (e.g. for rubber frame on windscreen)	83 19 0 030 155

cardiagn.com

Bonding base VP 206	Sika bonding base VP 206 (e.g. for inspection glass for vehicle identification number)	83 19 9 407 777

Storage of all consumables

Dry at 15 ° - 25 °C.

cardiagn.com

51 31 ... Notes on window bonding

These notes are not applicable for side window bonding (door "centre") on E38/L7.

General procedure for disassembly/installation of bonded window glass.

Version with Head-Up Display (HUD):

- Marking for HUD must be present on the windscreen

Adhesive quantities:

Approx. 1 1/4 glue cartridges are required to bond the windscreen on the following vehicles:

- 7 Series
- 5 Series from E60
- X5
- X3

Version with GPS navigation system 1 (up to 09/1997):

After installation of rear window:

- Recalibrate magnetic field probe
- Refer to functional description in ISID (Integrated Service Information Display)

cardiagn.com

51 31 ... Notes on window bonding repair kit

	Part number	Part number (US)	Part number (China)
Small repair kit	83 19 2 289 285	83 19 2 289 180	83 19 2 180 001
- Window glass adhesive 300 ml	83 19 2 289 286	83 19 2 289 181	83 19 2 180 002
- Glass activator	83 19 0 444 142		
- C nozzle	83 19 2 155 589		
- Plastic nozzle and paper tissue			
Large repair kit (Contains an additional window glass adhesive 300 ml)	83 19 2 360 680	Not available	Not available

Important!

Before working with the consumables, note the following information.

- Country-specific safety and industrial safety regulations
- Material safety data sheet of manufacturer
- Processing instructions on the packaging

1 Storage and processing of all consumables

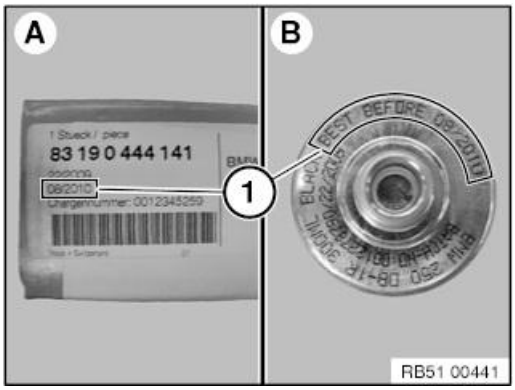
Dry at 15 ° - 25 °C.

2 Expiry date of adhesive:

Repair kit and glue cartridges are marked with a date (expiry).

Date (1) refers to the calendar week and year (KW/JJJJ).

The adhesive cannot be used after this date (1).



3 Hardening of adhesive:

The adhesive hardens by reacting with air humidity at room temperature.

Important!

Once the adhesive bead has been applied, the window glass must be installed within 7 minutes (depending on air humidity, temperature).

After 7 minutes the adhesive bead forms a skin which can no longer guarantee a perfect bond.

At ambient temperatures above 23 °C and 50 % relative air humidity (hot countries), the adhesive open time is shortened to approx. 5 minutes (skin formation time).

cardiagn.com

A relative air humidity of < 30% significantly slows hardening.

The adhesive hardening process is interrupted completely at ambient temperatures below 5 °C. In this event, there will be no increase in the strength of the bonded connection.

3.1 Minimum hardening time:

Minimum hardening time is reached beginning at 22 °C and 38 % relative air humidity.

- 1 hour, vehicles without front passenger airbag (after which vehicle can be moved)
- 2 hours, vehicles with front passenger airbag in countries without mandatory seat belt usage

Note:

> **In vehicles with front passenger airbag in countries without mandatory seat belt usage:**
>
> The vehicle can be transferred to the customer after a 1-hour hardening time with the following warning:
>
> **Once the windscreen glass has been bonded, all occupants must travel with their seat belts attached for 1 hour.**

Important!

> If the minimum hardening time is not adhered to, an accident can cause the passenger together with the windscreen to fall out of the vehicle after the front passenger airbag deploys.

During the minimum hardening time of 1 hour, the vehicle must not be subjected to load on one side such as e.g.:

- one wheel on kerb
- vehicle hoist
- etc.

Manoeuvring inside garage/workshop:

- only permitted on level ground
- do not under any circumstances drive over approach ramps, e.g. into multi-storey car parks

Do not remove adhesive tapes until after hardening time.

If the minimum hardening time of 1 hour is undercut, leaks and wind noises may occur at the window glass.

4 Disposal of adhesive:

Hardened adhesive is disposed of as normal waste.

Non-hardened adhesive, glue cartridge and mixtures of adhesive and solvents and the like must be disposed of as hazardous waste.

The adhesive is disposed of in paper sacks so that it can react with moisture.

5 Glass activator:

Warning!

> Wear cut resistant gloves when breaking the glass ampule.

Prepare glass activator for processing by shaking and snapping (breaking glass ampoule).

Apply glass activator by pressing gently. There is no need for final wiping. Air drying time approx. 2 minutes.

6 Expiry date of glass activator:

Repair kit and glass activator are marked with a date (best before date).

cardiagn.com

- The glass activator may only be used up to this date (if not already opened previously).
- After opening, keep only for one week even if the expiry date has not yet been reached.

7 Disposal of glass activator:

Glass activator must not be disposed of as part of household waste.

Glass activator must be disposed of as hazardous waste.

cardiagn.com

61 35 ... Overview, rain sensor (additional work when replacing the windscreen / sensor replacement)

- **1-Series:** E8x
- **3-Series:** E9x
- **5-Series:** E6x
- **6-Series:** E6x
- **X1:** E84
- **Z4:** E89

Sensor type/ Sensor shape	With windscreen replacement replacement sensor required	When replacing the sensor/ Programming/encoding necessary	When replacing the sensor/ Initialisation required	Connecting the diagnosis system required
Condensation sensor square 30 x 20 mm	Yes	No	No	No

- **5-Series:** E6x
- **6-Series:** E6x
- **7-Series:** E6x

Sensor type/ Sensor shape	With windscreen replacement replacement **sensor** required	When replacing **the sensor** Programming/encoding necessary	When replacing **substitute visuals** Programming/encoding necessary	When replacing **the sensor/ substitute visuals** Initialisation required	Connecting the diagnosis system required
all types square 60 x 40 mm	No	Yes	-	Yes	Yes
RLS approximately ø 50 mm	No (new **substitute visuals** required, refer to Electronic Parts Catalogue)	-	No	Yes	Yes

- **X5:** E70
- **X6**: E7x

cardiagn.com

Sensor type/ Sensor shape	With windscreen replacement replacement **sensor** required	When replacing **the sensor** Programming/encoding necessary	When replacing **substitute visuals** Programming/encoding necessary	When replacing **the sensor/** **substitute visuals** Initialisation required	Connecting the diagnosis system required
RLPSS (Rain, light and precipitation solar sensor) (Designation is located on the back of the sensor) approximately ø 50 mm	Yes	Yes	-	Yes	Yes
RLS (vehicle **with no HUD**) (Designation is located on the back of the sensor) approximately ø 50 mm	No (new **substitute visuals** required, refer to Electronic Parts Catalogue)	-	No	Yes	Yes
RLSS (vehicle **with HUD**) (Designation is located on the back of the sensor) approximately ø 50 mm	Yes	Yes	-	Yes	Yes

- **1-Series:** E8x
- **3-Series:** E9x
- **X1:** E84
- **X3:** E83
- **Z4:** E89

Sensor type/ Sensor shape	With windscreen replacement replacement sensor required	When replacing the sensor Programming/encoding necessary	When replacing the sensor Initialisation required	Connecting the diagnosis system required
all types square 60 x 40 mm	No	Yes	Yes	Yes

- **5-Series:** F1x
- **5 Series GT:** F07

cardiagn.com

- **6-Series:** F06, F1x
- **7-Series:** F0x
- **X3:** F25
- **X4:** F26

Sensor type/ Sensor shape	With windscreen replacement replacement **sensor** required	When replacing **the sensor** Programming/encoding necessary	When replacing **substitute visuals** Programming/encoding necessary	When replacing **the sensor/ substitute visuals** Initialisation required	Connecting the diagnosis system required
all types approximately ø 35 mm	No	No	-	Yes	Yes
all types approximately ø 50 mm	Yes	Yes	-	Yes	Yes
Only for F25 : RLS approximately ø 50 mm	No (new **substitute visuals** required, refer to Electronic Parts Catalogue)	-	No	Yes	Yes

- **X5:** F15, F85
- **X6:** F16, F86

Sensor type/ Sensor shape	With windscreen replacement replacement sensor required	When replacing the sensor Programming/encoding necessary	When replacing the sensor Initialisation required	Connecting the diagnosis system required
all types approximately ø 35 mm	No	No	No	No

- **1-Series:** F2x
- **2-Series:** F2x
- **3-Series:** F3x, F8x
- **3 Series GT:** F34
- **4-Series:** F3x, F8x

Sensor type/ Sensor shape	With windscreen replacement replacement sensor required	When replacing the sensor Programming/encoding necessary	When replacing the sensor Initialisation required	Connecting the diagnosis system required

cardiagn.com

all **up to 03/2014** except SBS (01) (Designation is located on the back of the sensor) approximately ø 35 mm	No	No	Yes	Yes
SBS (01) (Designation is located on the back of the sensor) approximately ø 35 mm	No	No	No	No
All **as from 03/2014** approximately ø 35 mm	No	No	No	No

- **2-Series:** F4x

Sensor type/ Sensor shape	With windscreen replacement replacement sensor required	When replacing the sensor Programming/encoding necessary	When replacing the sensor Initialisation required	Connecting the diagnosis system required
all types	No	No	No	No

BMW i:

Sensor type/ Sensor shape	With windscreen replacement replacement sensor required	When replacing the sensor Programming/encoding necessary	When replacing the sensor Initialisation required	Connecting the diagnosis system required
all types approximately ø 35 mm	No	No	No	No

BMW from **G series**

Sensor type/ Sensor shape	With windscreen replacement replacement sensor required	When replacing the sensor Programming/encoding necessary	When replacing the sensor Initialisation required	Connecting the diagnosis system required
all types	No	No	No	No

MINI (all):

Sensor type/ Sensor shape	With windscreen replacement replacement sensor required	When replacing the sensor Programming/encoding necessary	When replacing the sensor Initialisation required	Connecting the diagnosis system required
all types square 60 x 40 mm	No	Yes	Yes	Yes

cardiagn.com

all types approximately ø 35 mm	No	No	No	No

Rolls-Royce:

- RR1
- RR2
- RR3
- RR4
- RR5
- RR6

Sensor type/ Sensor shape	With windscreen replacement replacement sensor required	When replacing the sensor Programming/encoding necessary	When replacing the sensor Initialisation required	Connecting the diagnosis system required
all types square 60 x 40 mm	No	Yes	Yes	Yes
all types approximately ø 35 mm	No	No	Yes	Yes
all types approximately ø 50 mm	Yes	Yes	Yes	Yes

Rolls-Royce:

- RR11
- RR12

Sensor type/ Sensor shape	With windscreen replacement replacement sensor required	When replacing the sensor Programming/encoding necessary	When replacing the sensor Initialisation required	Connecting the diagnosis system required
all types approximately ø 35 mm	No	No	No	No

cardiagn.com

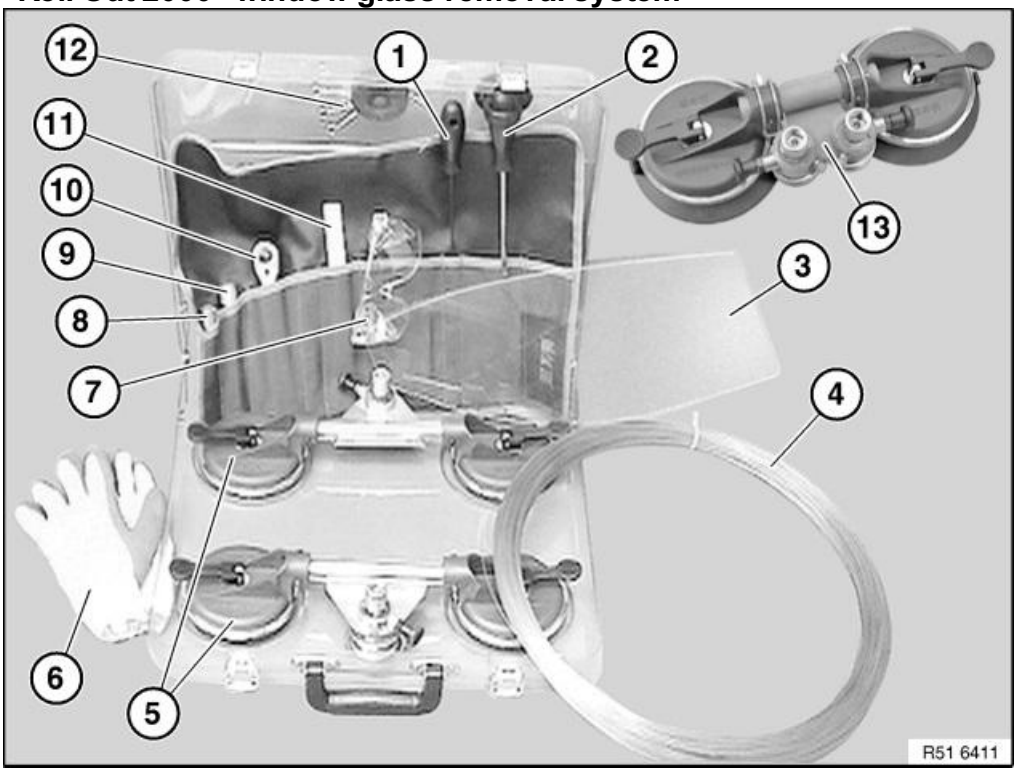
51 31 ... Remove windscreen with "Roll Out 2000"

Special tools required:

- 2 150 267

"Roll Out 2000" has been replaced by the "Spider" removal system."Roll Out 2000" may still be used. The "Spider" removal system is recommended for removing window glass.

"Roll Out 2000" window glass removal system



1	Wire starter	8	Extension (short)
2	Parabolic tool	9	Extension (long)
3	Plastic washer	10	Reversible ratchet
4	Wire cutting roller	11	Plastic wedge
5	Suction cup lifters	12	Guide needles
6	Protective gloves	13	Suction cup lifter with double spool
7	Safety goggles		

Note:
Both paint and ergonomic and health-endangering damage is minimised with the "Roll Out 2000" system.

Sourcing reference:

See Aftersales Assistance Portal (ASAP) - Service/Technical - Workshop Equipment (Start BMW) - Shop Workshop Equipment or at www.bmwgroup.com

cardiagn.com

Warning!

Follow safety instructions for working on vehicles with airbag systems (risk of injury).

Important!

Take care when handling sharp-edged tools and cutting wire (risk of damage to head airbag and window glass).

Important!

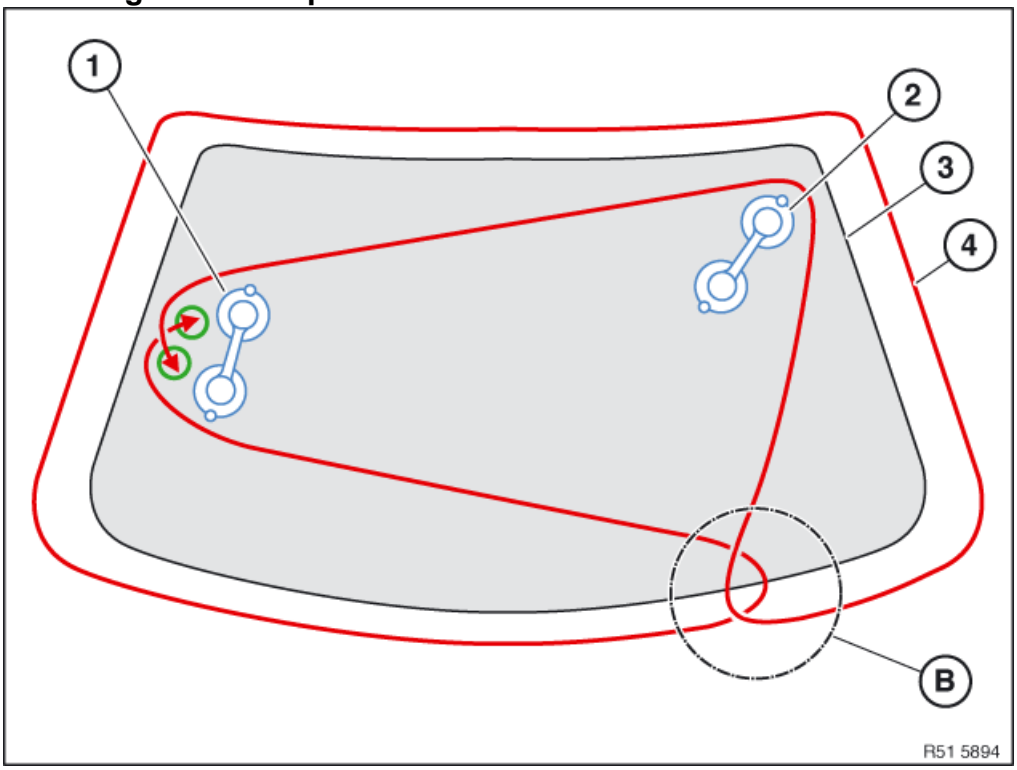
Always keep both suction cups dry and clean to ensure their optimum adhesion on the windscreen.

Suction cup may not be applied at the damaged point (crack in window glass).

Lubricate spool if lock rattling becomes too loud.

Always wear safety goggles and protective gloves for your own safety.

Mounting suction cup lifters on windscreen or rear window:



- Secure position of lifting jacks as shown (view from outside):
  1. Suction cup lifter with double spool
  2. Suction cup lifter with single spool (as deflecting point)
  3. Window
  4. Cutting wire

Note:

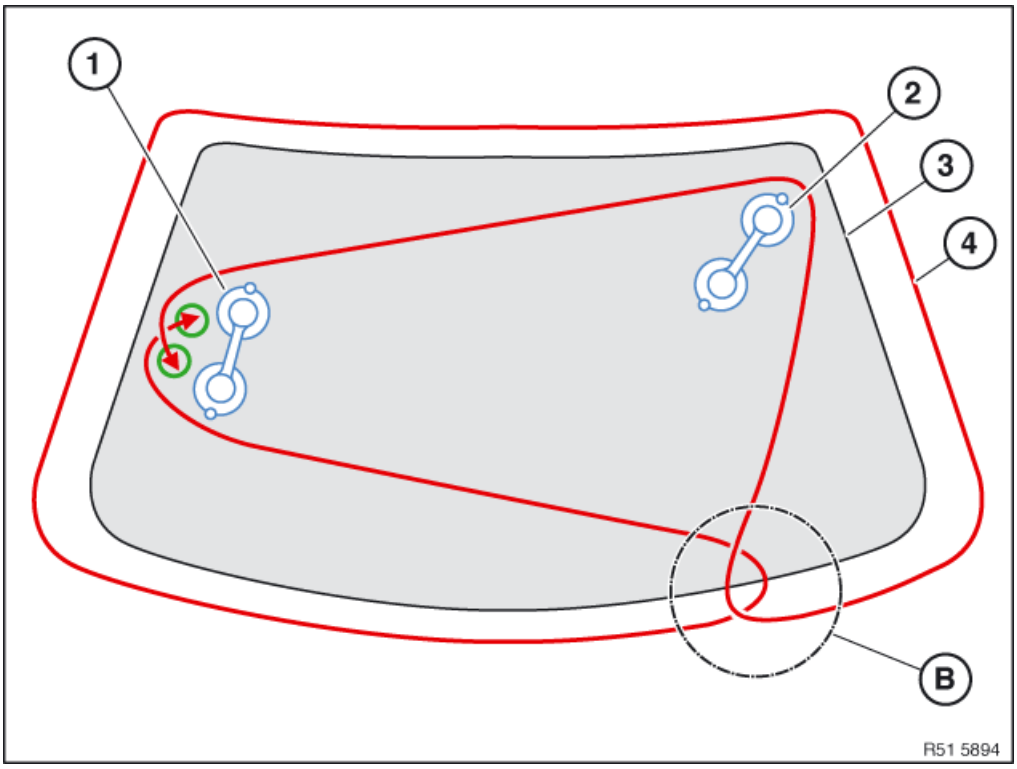
Optimum cutting is guaranteed when the cutting wire is at an acute angle to the adhesive bead. There is a risk of the cutting wire breaking if the angle is too obtuse.

The suction cup lifter (2) is used as the deflection point to achieve the corresponding angle.

Depending on the window glass version and the effort applied during cutting, it may be necessary to change the deflection point during cutting.

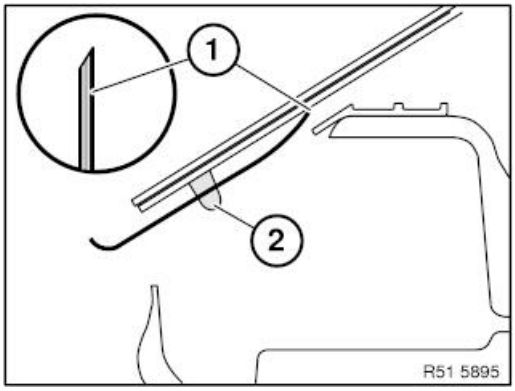
The suction cups without a spool can even be used as the deflection point.

cardiagn.com



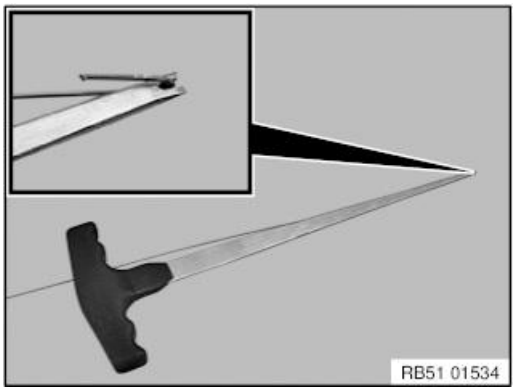
Preparatory work:

- Cut off required cutting wire length:
  Length approximately = 6 x window glass diagonal
- The cutting wire loops must lie on top of each other in area (B).
  They must not get caught up in each other. (Otherwise no possibility of cutting the adhesive bead/wire will break.)
  Overlapping of cutting wire loops approx. 10 cm.
  Distance from right window edge approx. 30 cm.



Pulling cutting wire into vehicle:

- Grip wire with pliers
  (If accessibility is bad, stick wire with wire starter 2 150 267 through adhesive bead.)
- Wire end (1) must be bent towards window glass.
- Heat wire end (1) and use it to pierce adhesive bead (2).
- Pull the wire approximately 1.5 m into the passenger compartment

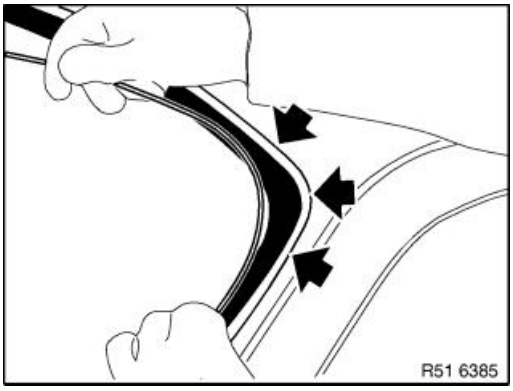


Using wire starter:

Bend wire end approx. 10 mm and insert in notched tip.

Pierce wire starter with uniform pressure through adhesive bead, wire end (bent part) must be positioned on window glass.

cardiagn.com



Laying cutting wire around window glass:

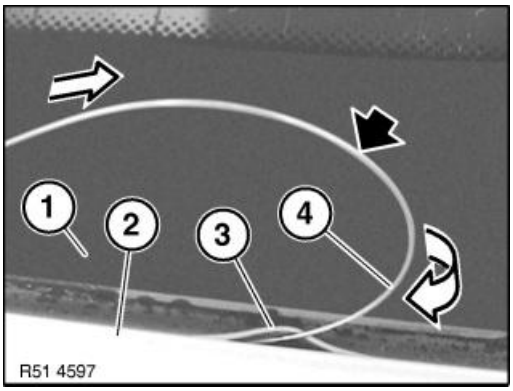
- Starting from pull-in point, lay wire eyelet created on the outside around the window glass
- Pull excess wire into passenger compartment

Important!

Make sure the cutting wire is located at all four corner points below the window glass.

Check that the cutting wire is not caught on clamps or body.

Secure window glass on outside with adhesive tape against sliding.



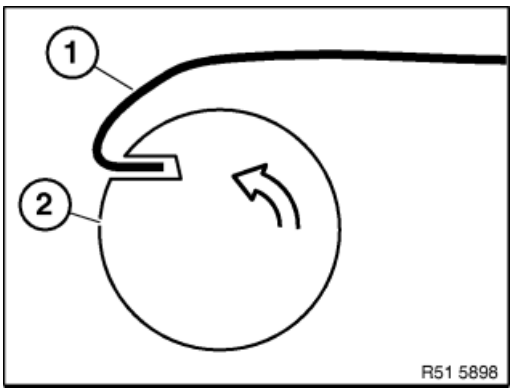
Note:
Window glass (1) with installed seals (3) or moulded-on surrounds:

- Moisten cutting wire (4) and seals (3) on window glass (1) with water
- Insert cutting wire (4) in bend (without kinking) between window glass(1) and body aperture (2)



Protect the passenger compartment:

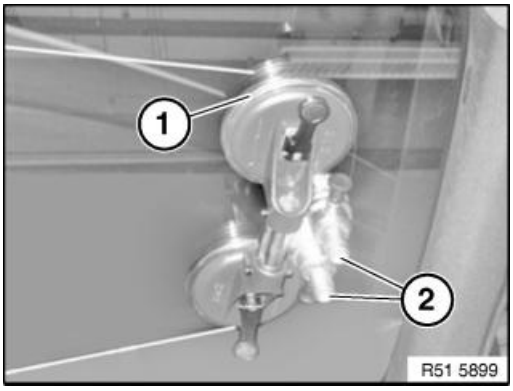
- To avoid damage and possible dirt contamination, protect A-pillars, roof and dashboard trim panel (3) by means of plastic washer (1)
- Always carry plastic washer (1) between respective wire (2) being tightened and trim panels



Attaching wire in hoisting winch with double coil:

- Bend over cutting wire end (1) approximately 10 mm and insert into slot of spool (2)
- Repeat process with other end of wire (1) and second spool (2)
- Wind cutting wire (1) onto spools by hand until cutting wire (1) is under slight tension

cardiagn.com



Starting the dismantling: *Note:*
Spools can only be rotated in one direction.

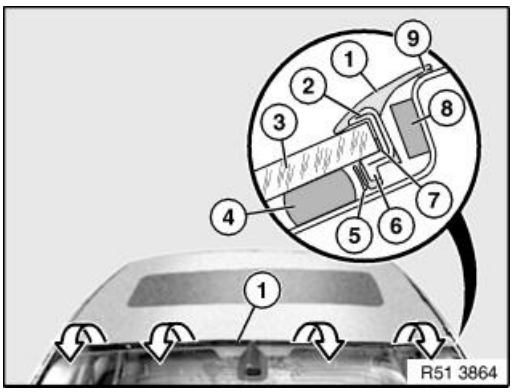
- Make sure the wire is always situated in the guide channel of the suction cup lifter (1)
- Fit reversible ratchet onto top spool shaft (2) and tighten wire
- Start by cutting lower adhesive bead
- At the end of the cutting process, the two wire loops join up at the lifting winch (1)
- Remove "Roll Out 2000"
- Remove window glass

cardiagn.com

51 31 021 Removing and installing / replacing rubber frame for windscreen (top)

Necessary preliminary tasks:

- Remove both gutter strips on windscreen



Important!

Rubber frame (1) features an aluminium section inlay (2).

If necessary, detach adhesive tape (9) between rubber frame (1) and roof outer skin.

If necessary, remove fitted spacer buffers (8).

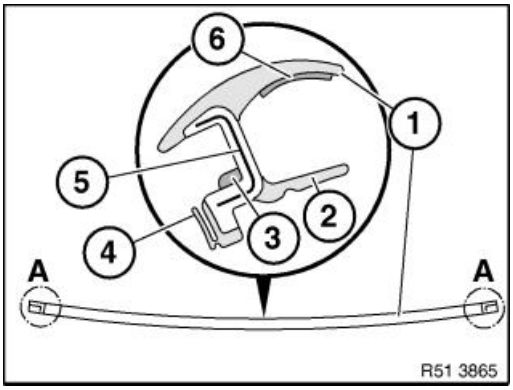
Carefully unwind rubber frame (1) (windscreen breakage).

Note:

Tear-off lip (5) may be stuck to adhesive (4).

When rubber frame (1) is removed, tear-off lip (5) can tear off and remain in vehicle.

3	Windscreen
6	Bridge
7	Pinched butyl



Replacement of rubber frame without windscreen removal:

There is no sealing lip (2) in area (A) on left/right.

Detach tear-off lip (4) from rubber frame (1).

If adhesive leaks over tear-off lip (4), this area must be cut out partially.

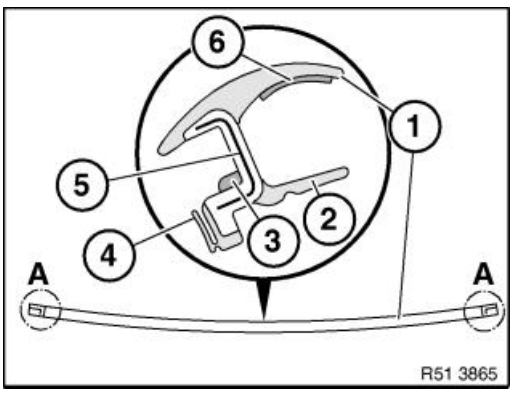
To facilitate installation, coat rubber frame (1) and body cutout with water.

Install rubber frame (1).

If necessary, pull liner* off adhesive tape (6) and press rubber frame (1) down firmly on roof outer skin.

3	Butylene tape
5	Aluminium strip

* Liner is the protective film on adhesive tape (6).



Replacement of rubber frame with removed or new windscreen:

There is no sealing lip (2) in area (A) on left/right.

Fit rubber frame (1) with tear-off lip (4).

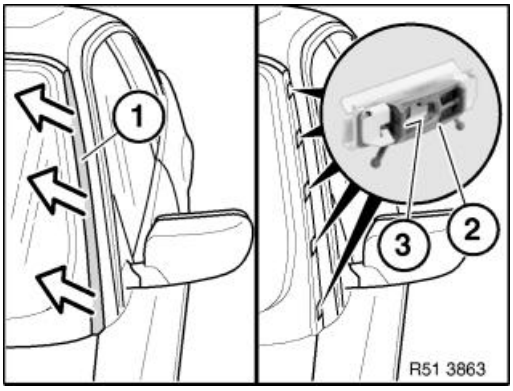
After installing windscreen: If necessary, pull liner* off adhesive tape (6) and press rubber frame (1) down firmly on roof outer skin.

3	Butylene tape
5	Aluminium strip

* Liner is the protective film on adhesive tape (6).

cardiagn.com

51 31 030 Removing and installing or replacing left or right gutter strip along windscreen



Unclip gutter strip (1) towards top.**Important!**
Replace clips (2) after each removal.

Note part number.

Installation:
Locks (3) of clips (2) must not be damaged.

Gutter strip (1) must not be damaged, replace if necessary.

cardiagn.com

51 31 200 Removing and installing/replacing rear window

Special tools required:

- 00 9 322
- 51 3 010

Important!

The "Instructions on cementing windscreen" serve as the basis for this repair instruction and must be observed without fail.

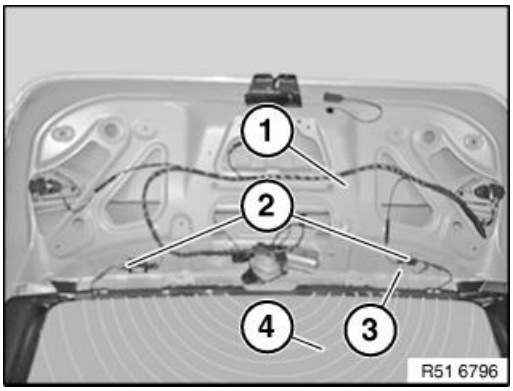
Removal can only be carried out with Roll Out 2000 .

When reusing the rear window:

Avoid damaging lines for rear window heating/aerial.

Necessary preliminary tasks:

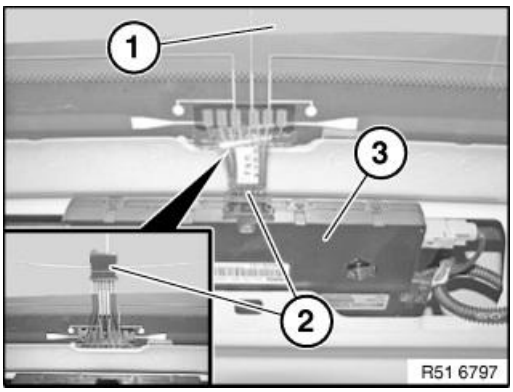
- Remove trim panel for rear window frame



Disconnect plug connections (2).

Release screw (3) on tailgate (1) and remove earth cable.

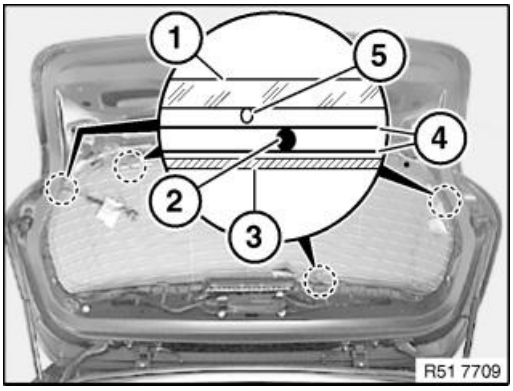
Secure electric able with adhesive tape to rear window (4).



Important!

Carefully disconnect ribbon cable (2) from (3). (risk of damage).

cardiagn.com



Important!

When cutting in area of electric cables (5):

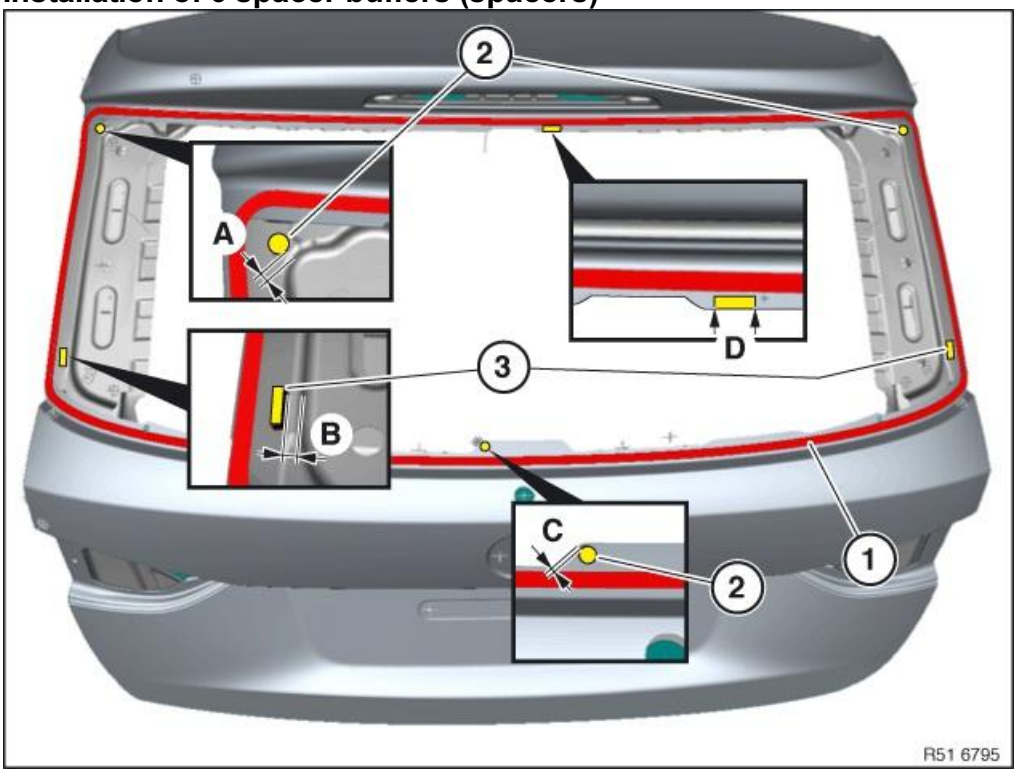
Protection (4) from Roll Out 2000 must be inserted between electric cable (5), cutting wire (2) and rear lid sheet panel (3).

The electric cables and the sheet panel will be damaged if the double protection is not fitted.

Cut out rear window (1) with Roll Out 2000 .

Lift out rear window (1) with special tool 51 3 010 .

Installation of 6 spacer buffers (spacers)



1	Position of adhesive bead	A	2 mm distance to radius
2	Round spacer buffer ⌀ 11 mm x 5 mm	B	2 mm distance to edge
3	Rectangular spacer buffer 20 mm x 5 mm	C	1 mm distance to radius
		D	0 mm distance to edge of tailgate

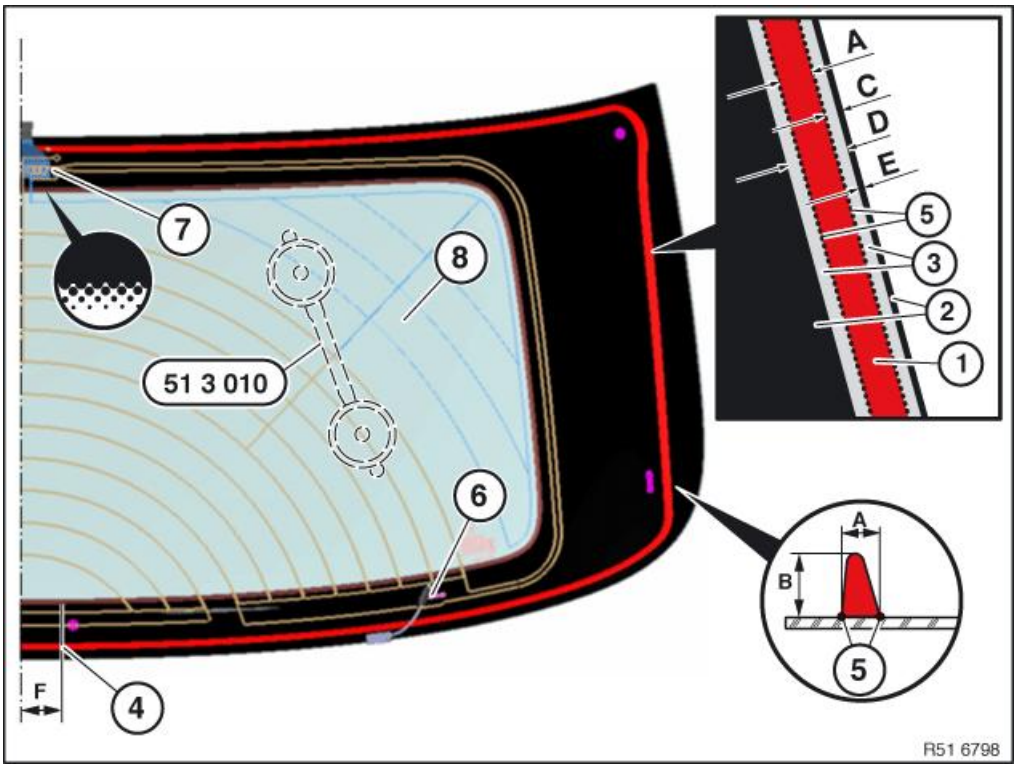
Important!
To avoid windscreen breakage and leaks:

Completely remove remnants of removed spacer buffers and maintain installation location exactly.

Spacer buffers (2) and (3) must not extend over sheet metal edge.

Overview of rear window cementing:

cardiagn.com

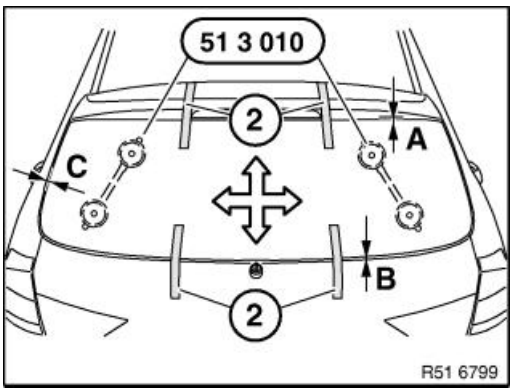


1	Adhesive bead	A	7 ± 1 mm (width of adhesive bead)
2	Ceramic layer	B	11 $^{+2}_{-}$ mm (height of adhesive bead)
3	Primer coat	C	0 mm (spacing from 1 to 5)
4	Application point of adhesive bead	D	21 ± 1 mm (width of primer trace)
5	Marking (all round 1 and 3)		
6	Connections for heated rear window	F	0-60 mm (centre of 5)
7	Connection for aerials		

Attach special tool 51 3 010 twice to tool trolley. Moisten suction surfaces and secure rear window from outside. If reusing removed rear window, remove residual adhesive down to 0.5 mm.

Almost vertical part (B) of adhesive bead (1) must be facing window edge.

Spread bead joint with special tool . 00 9 322



Note:
Adhesive area for plastic adhesive tapes (2) must be free from grease and dust.

Carefully working on rear window with special tool 51 3 010 :

- Place up in distance (A)
- Align evenly on the side at distance (C)
- Place below at distance (B) and press in
- If necessary, adjust gap dimension (A , B and C)
- Fix the height in this position, up and down ,with yellow plastic adhesive tape (2)

A =	1.9 ± 0.9 mm
B =	3.4 ± 2.0 mm
C =	3.8 ± 2.0 mm

cardiagn.com

cardiagn.com

51 31 000 Removing and installing/replacing windscreen

Special tools required:

- 51 3 010
- 51 0 300
- 00 9 322
- 51 0 010

Attention!

The "Instructions on window bonding" serve as the basis for this repair instructions and must be observed without fail.

Cover front side panel with protective covers.

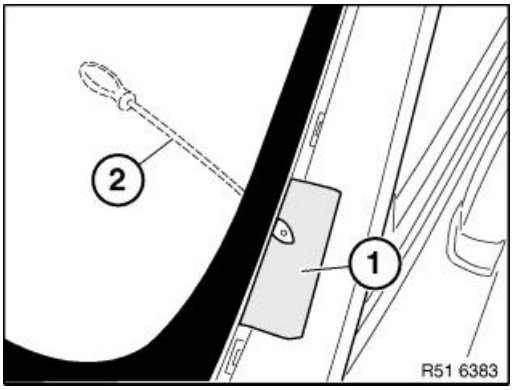
Note:
Removal is performed with Roll Out 2000. Only use an oscillating blade when replacing the windscreen.

Necessary preliminary tasks:

- Remove inside mirror
- Remove sun visors and counter supports
- Remove trim panels for roof pillar at front
- Remove cowl panel cover

Replacement:

- Remove windscreen rubber surround
- Remove supporting strip for cowl panel cover
- If needed, remount driving light sensor
- If necessary replace condensation sensor
- Tape off body aperture all round with fabric adhesive tape

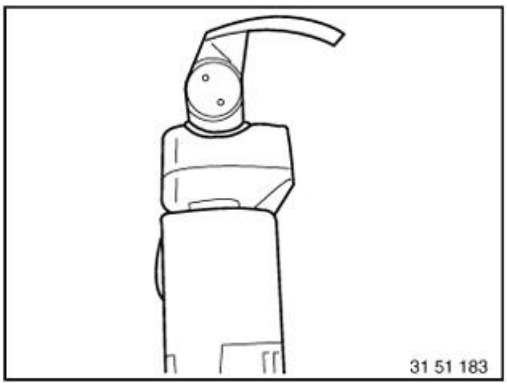


Attention!

Tape off body in area of piercing point with fabric adhesive tape (1).

Push wire starter (2) from Roll Out 2000 through adhesive bead.

cardiagn.com



Replacement only:

Mount U-shape knife (sourcing reference: BMW Group Parts) on tool:

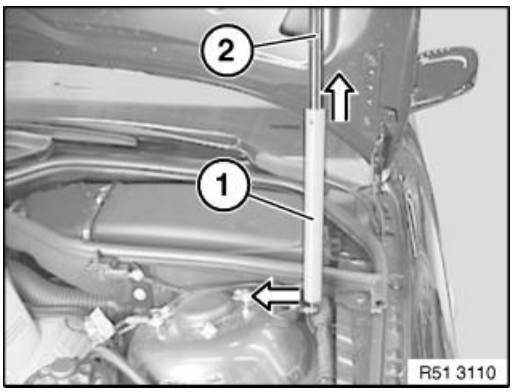
24 mm blade length.

Regrind blade with a grinding stone while machine is running (new blades also).

Carefully insert blade between body aperture and windscreen.

Guide handle of knife parallel to windscreen.

Cut through adhesive bead as closely as possible to windscreen.



Note:
When cutting is carried out at the bottom in the event of replacement, the engine compartment lid must be in the service position.

Move engine compartment lid into service position.

Cut through windscreen adhesive bead at bottom.

Lift out windscreen with special tools 51 3 010 .

Pull off adhesive tapes all round.

Installation note:
No spacer buffers are fitted because a retaining strip is mounted at the bottom.

If necessary, replace defective expanding foam tape.

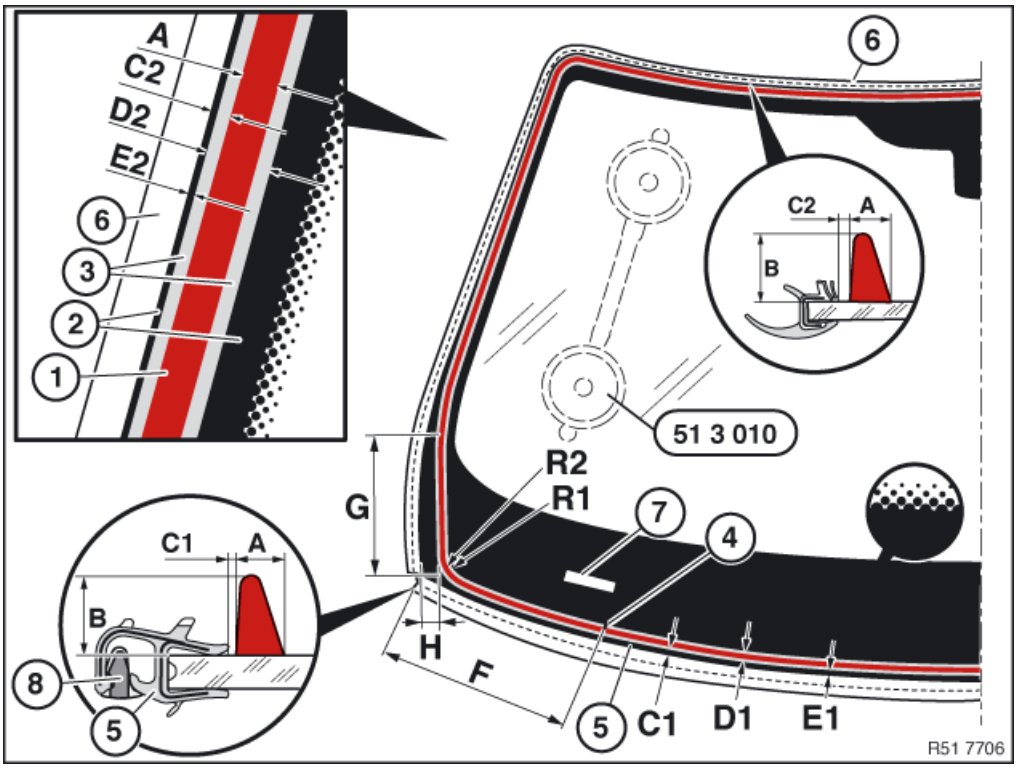
Replacement:

Version with visible vehicle identification number:

Stick 60 mm long expanding foam tape 5 mm above inspection glass for vehicle identification number onto ceramic layer.

Overview of windscreen bonding:

cardiagn.com



1	Adhesive bead	C1	1 ± 1 mm (distance 1 to 5)
2	Ceramic layer	C2	1 ± 1 mm (distance 1 to 6)
3	Primer coat	D1	17+ 2 mm (width of primer strip)
4	Application point of adhesive bead	D2	17+ 2 mm (width of primer strip)
5	Retaining strip, bottom	E1	0 mm (spacing from 3 to 5)
6	Rubber frame, top/side	E2	0 mm (spacing from 3 to 6)
7	Inspection glass for US/GB vehicle identification number	F	650 mm (spacing from 4 to 5)
8	Insert positioner	G	193 mm (beginning of radius to end of 6)
A	7 ± 1 mm (width of adhesive bead)	H	35 mm (end of 6 to 1)
B	11-2 mm (height of adhesive bead)	R1	approx. 25 mm (radius of 3)
		R2	approx. 20 mm (radius of 1)
		S1	Beginning of radius to point S2

Attach special tool 51 3 010 twice to tool trolley. Moisten suction faces and tension windscreen from outside.

If reusing removed windscreen, remove residual adhesive down to 0.5 mm.

If necessary, fit new retaining strip (5) and rubber frame (6), paying attention to centre markings in the process.

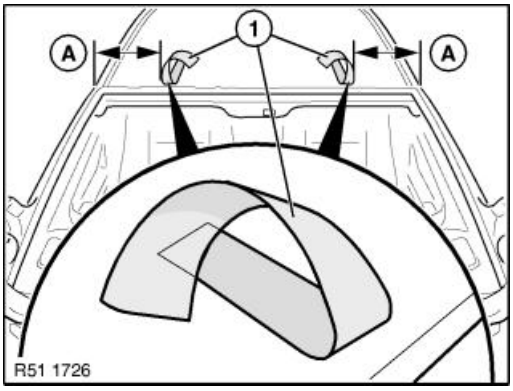
Insert positioner (8) for retaining strip (5) must be removed after it has been fitted on the windscreen but before the windscreen itself is installed.

If necessary, press expanding foam tape down with special hand roller tool 51 0 300 .

Virtually vertical part (B) of adhesive bead (1) must be positioned to rubber frame (6) and retaining strip (5).

Spread bead joint with special tool. 00 9 322

cardiagn.com

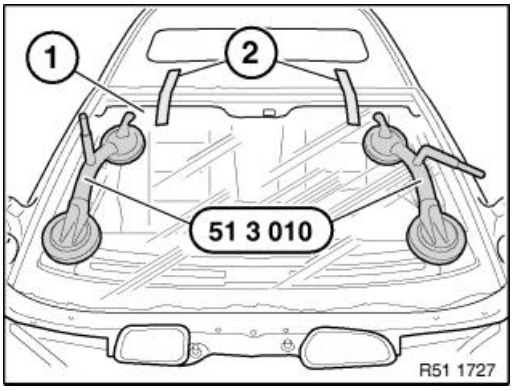


Note:
Adhesive area for plastic adhesive tapes (1) must be free from grease and dust.

Stick two yellow plastic adhesive tapes (1) to roof at distance (A) from outside corners.

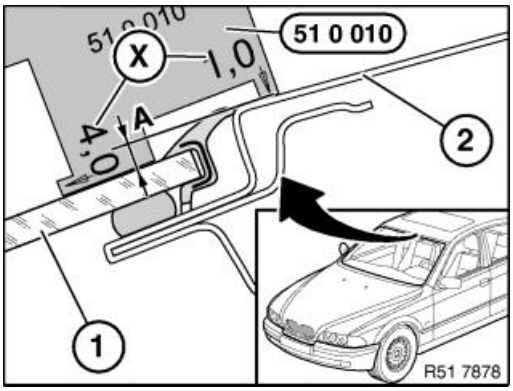
Length: 400 mm

A = 250 mm



Working on windscreen (1) carefully with special tool 51 3 010 :

- Position windscreen at top
- Align sides evenly
- Insert at bottom and press down
- press upwards until sealing rests evenly on roof
- Secure in terms of height in this position at top with two yellow plastic adhesive tapes (2)



Preload on top of windscreen to prevent wind noise:

Windscreen (1) must be lower than roof outer skin (2). This is the only way to prevent wind noises.

Position special tool 51 0 010 in middle of vehicle depending on dimension (A) and check underprotrusion of windscreen (1).

Windscreen underprotrusion (A):

A = 3± 0.5 mm

X = Measurement stages 1 ... 4 mm

cardiagn.com

51 31 ... Removing windows with a "Spider"

Windscreen removal system "Spider"



1	"Spider" separation device	6	Line threader
2	Bit holder	7	Line routing tool
3	Operating instructions	8	Suction anchor
4	Dashboard protection	9	Cord for separating adhesive strips
5	Angular transmission		

Accessories required for operation (not included):

Cordless screwdriver/drill with at least a 10.8 V Li-ion battery or a 18 V Ni-Cd battery and variable speed.

Note: Always use a low gear setting.

Note:
Damage as well as ergonomic and health-endangering damage are minimised with the "Spider" disassembly system.

Sourcing reference:

See Aftersales Assistance Portal (ASAP) - Service/Technical - Workshop Equipment (Start BMW) - Shop Workshop Equipment or at www.bmwgroup.com

Warning!
Follow safety instructions for working on vehicles with airbag systems (risk of injury).

Important!
Handle sharp-edged tools with care (risk of damage to the head airbag and the window glass).

cardiagn.com

Important!

Always keep both suction cups dry and clean to ensure their optimum adhesion on the windscreen.

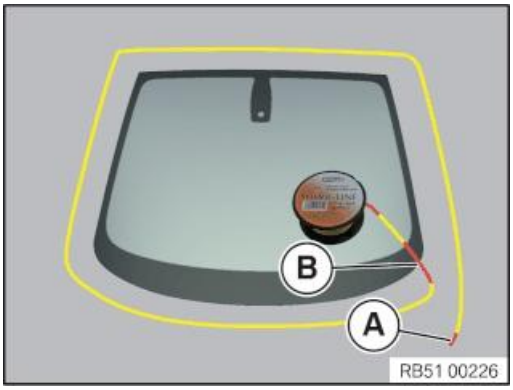
Suction cup may not be applied at the damaged point (crack in window glass).

The bearing bushes of the shaft (spindle) must always be lubricated.

Always wear safety goggles and protective gloves for your own safety.

The procedure for disassembly of the windscreen is described below as an example.

Deviations in the work procedure can be found in the vehicle-specific repair instructions.



General

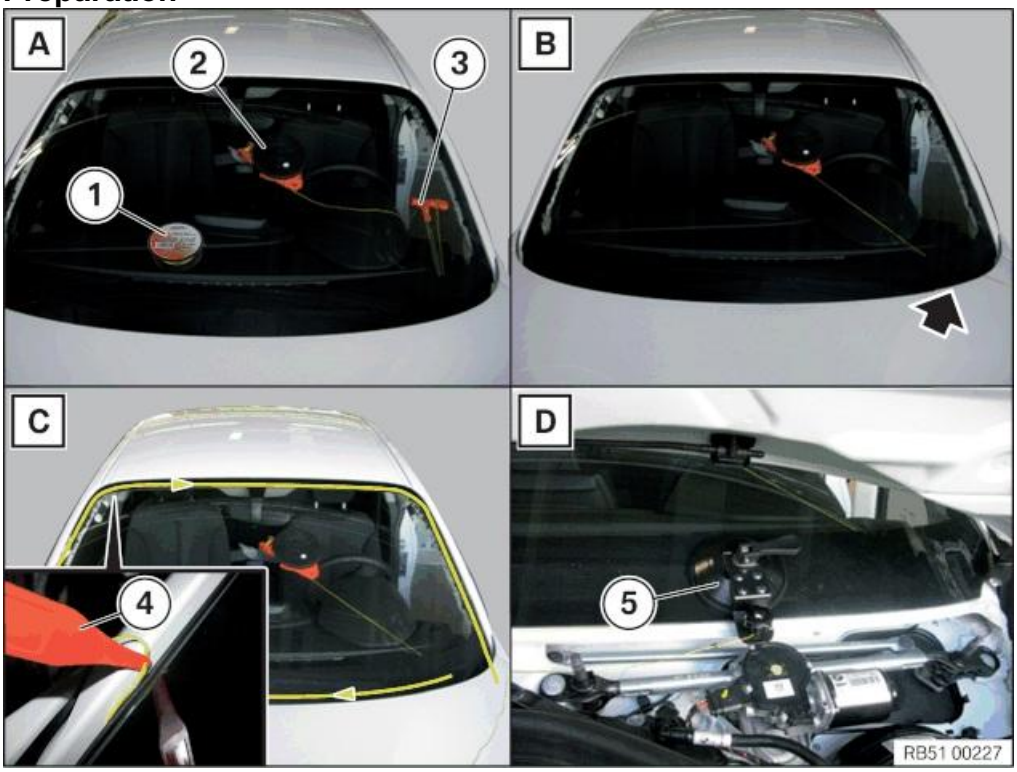
A cord approx. 6.8 m long is used to cut through the adhesive bead.

The cord length to be used is identified by a short red mark (A) approx. 5 cm.

The part of the cord laid outside around the window glass (approx. 5 m) is identified with a long red mark (B) (approx. 18 cm).

The marks are applied so that the cord has to be pulled from the inside to the outside.

Preparation



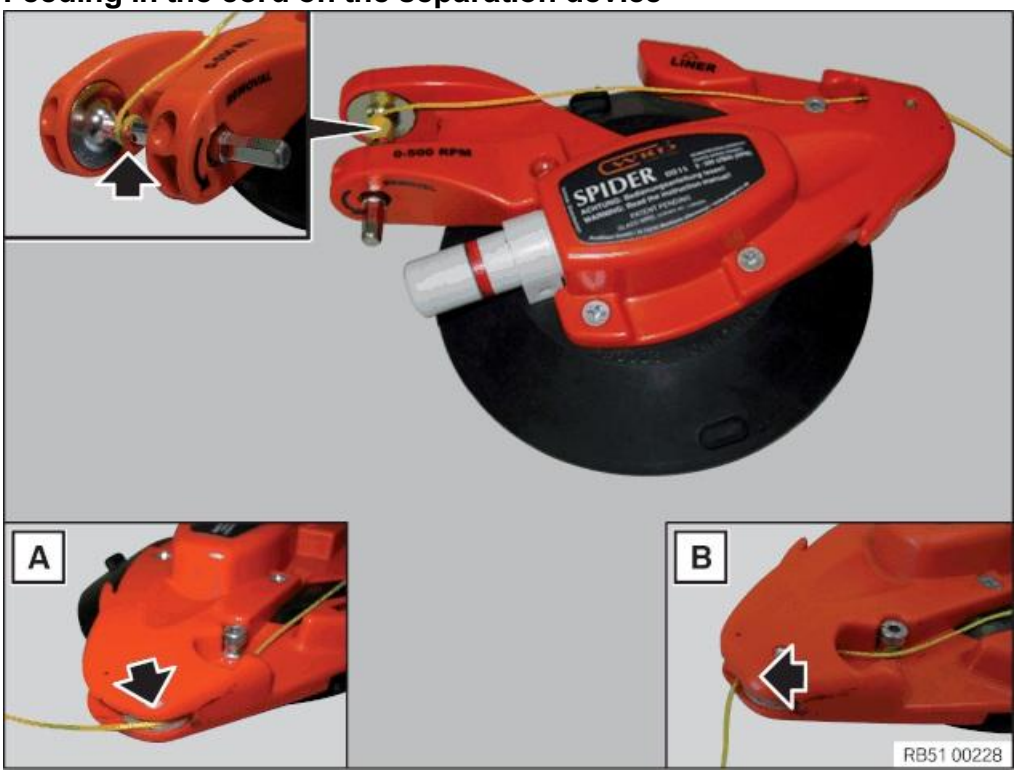
A. Pierce cord from the roller (1) or separation device (2) with cord threader (3) through the adhesive bead from the inside, protect the area from the inside as required.
B. Pull out cord up to the first red mark (approx. 18 cm long).
C. Lay cord around the window glass, use pulling aid (4) if required.
D. Secure suction anchor (5) outside on window glass, secure cord to suction anchor (5).

If required, unwind cord from roller (1) up to the second red mark (approx. 5 cm long) and cut off.

cardiagn.com

Make sure the cord lies below the window glass at all four corners.
Check that the cord is not caught on clamps or body.
Secure window glass on outside with adhesive tape against sliding.

Feeding in the cord on the separation device



Normally, the adhesive bead is cut through anticlockwise seen from the passenger compartment.

- This means the cord must be fed into the separation device as shown in graphic A.

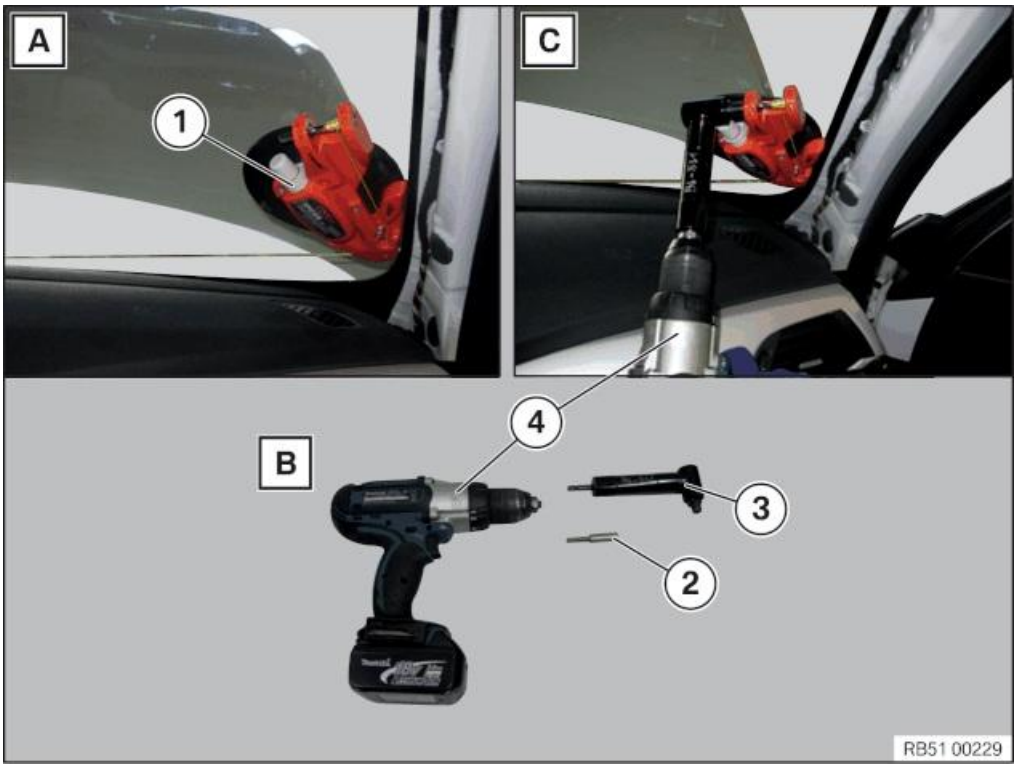
When accessibility is not optimal, the opposite cutting direction may be required (comply with vehicle-specific repair instructions).

- This means the cord must be fed into the separation device as shown in graphic B.

Feed cord into coil and wind it on, at the same time trapping the end of the cord.
When winding the cord, the correct direction of rotation on the separation device must be observed.

Cutting out procedure

cardiagn.com



Optimum cutting is guaranteed when the cord is at an acute angle to the adhesive bead. There is a risk of the cord ripping if the angle is too obtuse.

The separation device must be positioned correspondingly to achieve the appropriate angle.

A. Fix separation device (1) on window glass at bottom right.
B. Depending on accessibility, attach bit holder (2) or angle gear (3) to cordless screwdriver (4).
C. Place cordless screwdriver (4) on separation device (1) and start winding cord, observe direction of rotation on separation device.

If required, over trim panel components with plastic protection.

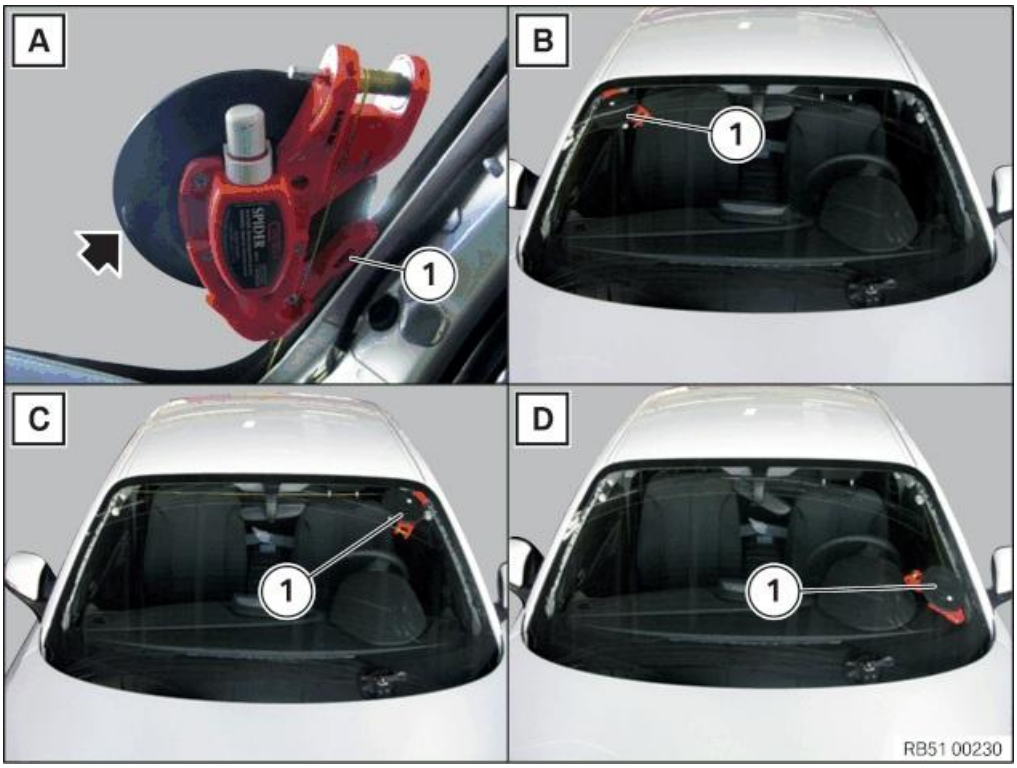
Guide cord with plastic protection around sharp-edged positions.

Cut through adhesive bead up to bottom area of A-pillar.

Turn back cordless screwdriver (4) approx. 2 rotations and remove.

Cutting out procedure

cardiagn.com



A. Discharge vacuum on windscreen removal tool (1) by pressing the tab, remove windscreen removal tool (1) from window glass.

B. Reset removal tool (1) at illustrated and wind up cord up to the position of windscreen removal tool (1).

C./D. Repeat further resetting, work sequence as given at B.

Additional resetting may be required for very curved window glass.

It is possible to reuse the cord. When a cord is used many times the risk of ripping increases.

Dirt contamination must be avoided when a cord is reused.

cardiagn.com

51 31 ... Removing windows with an oscillating knife



Warning!

Follow safety instructions for working on vehicles with airbag systems (risk of injury).

Important!

Handle sharp-edged tools with care (risk of damage to the head airbag and the window glass).



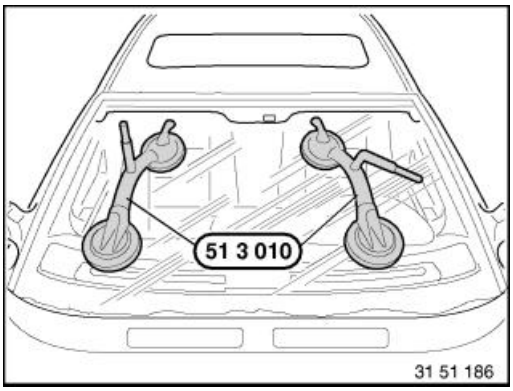
Important!

Follow the vehicle-specific repair instructions!

Always wear safety goggles and protective gloves for your own safety.

Cover the working area (side walls, roof-mounted aerial and if necessary interior equipment) with protective covers.

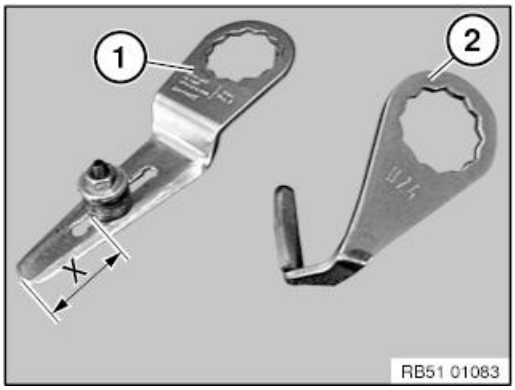
Tape off body with fabric adhesive tape (e.g. Tesa) in areas where the oscillating knife could damage the window glass or the paint.



Use suction cups (51 3 010) to lift out the window glass.

Always keep both suction cups dry and clean to ensure their optimum adhesion on the windscreen.

Secure window glass against falling out.



Depending on the area of application, knife 1 or 2 is used.

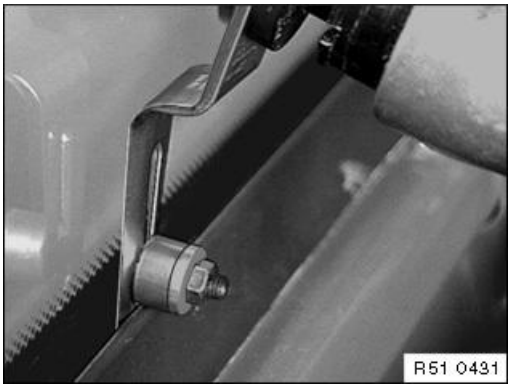
(1) Straight knife with adjustable thrust roller

(2) U-shaped knife

Dimension (X) on the knife (1) can be adjusted individually, see vehicle-specific repair instructions.

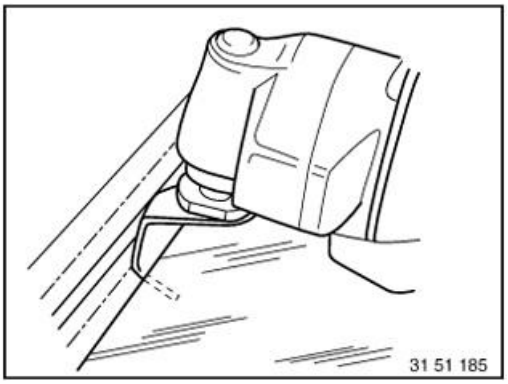
Note:
Sharpen knife blade before every use on a running machine with a grinding stone (even with new knife blade).

cardiagn.com



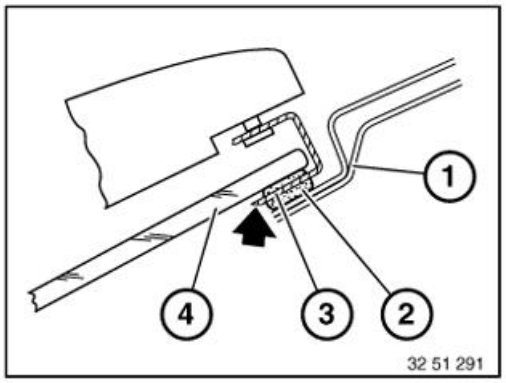
Removing from the inside:

Guide knife carefully between body and window glass.
Run blade of knife parallel to glass.
Take care not to damage paintwork.
Cut through adhesive bead all the way around.
Pull window glass outwards to remove.



Removal from outside:

Guide knife carefully between body and window glass.
Run blade of knife parallel to glass.
Take care not to damage paintwork.
Cut through adhesive bead all the way around.
Pull window glass outwards to remove.



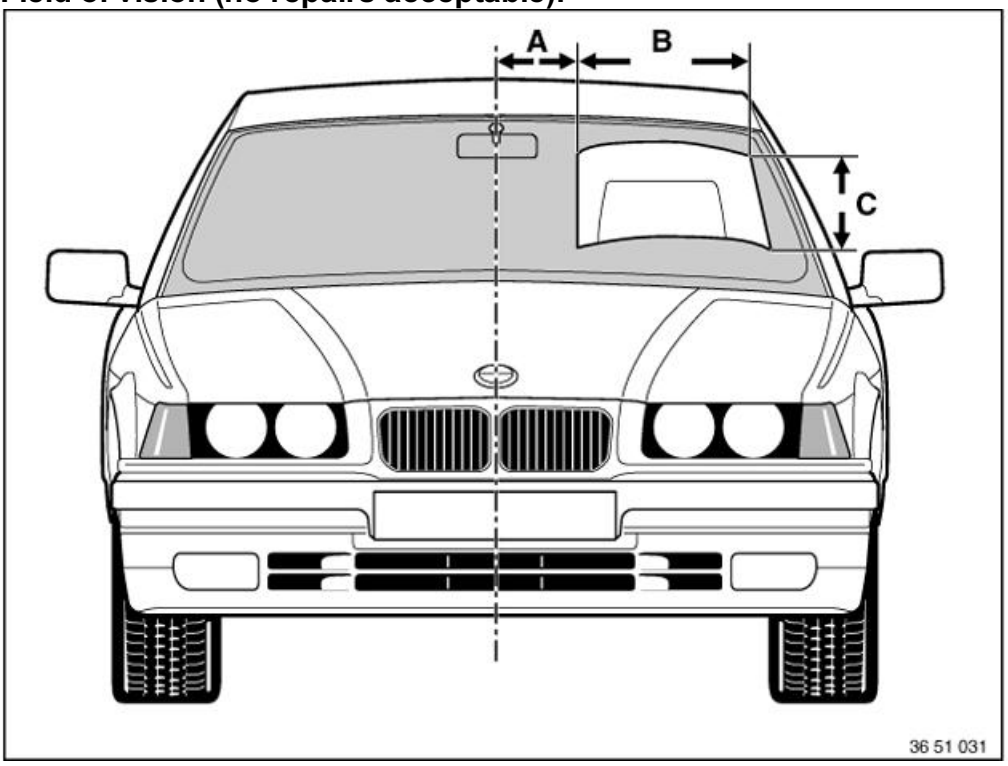
Cut through adhesive bead as closely as possible to window glass.

(1) Body opening
(2) Adhesive bead
(3) Knife
(4) Window

cardiagn.com

51 31 015 Repairing damage to windscreens caused by stone chips (clear and tinted laminated safety glass)

Field of vision (no repairs acceptable):



A 50Â mm (gap between field of view / centre of vehicle)

B Up to end of wiper range, outside (field of view width)

C Restriction by wiper range (height of field of view)

Important!

Repairs must only be carried out outside of the field of vision (refer to sketch).

If the stone chip damage is outside the field of vision, refer to repair instruction.

cardiagn.com

51 31 ... Window glass removal with wire pull handle

Special tools required:

- 2 150 267

Warning!

Follow safety instructions for working on vehicles with airbag systems (risk of injury).

Always wear safety goggles and protective gloves for your own safety.

Attention!

Handle sharp-edged tools with care (risk of damage to the head airbag and the window glass).

Attention!

Follow the vehicle-specific repair instructions!

Protect inner and outer working area (body, trim panels, cables etc.) against damage.

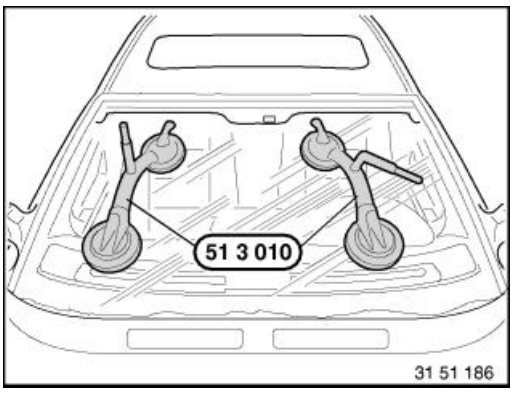
Depending on the area of application, a separating cord can also be used as an alternative to wire.

Using the separating cord prevents any damage to the body.

Do not pull the separating cord over any sharp edges (risk of tearing)!

Used tool:

- Wire pull handles
- Dashboard protection
- Wire starter (special tool 2 150 267)

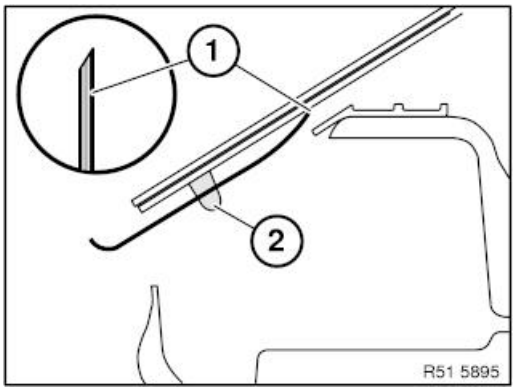


Use suction cups (51 3 010) to lift out the window glass.

Always keep both suction cups dry and clean to ensure their optimum adhesion on the windscreen.

Secure window glass (if necessary with adhesive tape) against falling out.

cardiagn.com

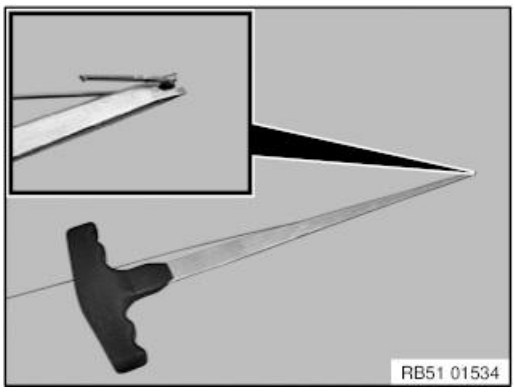


Pulling cutting wire into vehicle:

- Grip wire with pliers

  (If access is difficult: using wire starter 2 150 267 , feed wire through adhesive bead.)
- Wire end (1) must be bent towards window glass.
- Heat wire end (1) and use it to pierce adhesive bead (2).
- Pull approximately half of the wire into the passenger compartment

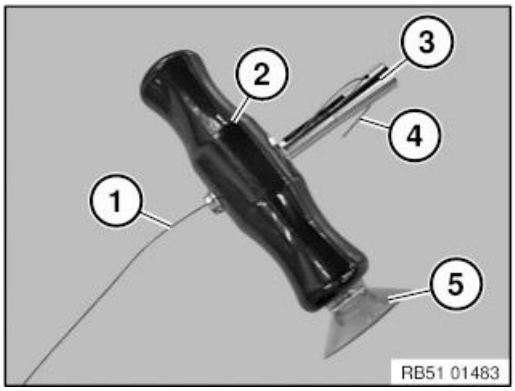
Note:
When using the separating cord, always pull it in using the wire starter 2 150 267 .



Using wire starter:

Bend wire end approx. 10 mm and insert in notched tip.

Pierce wire starter with uniform pressure through adhesive bead, wire end (bent part) must be positioned on window glass.



Attach wire pull handles:

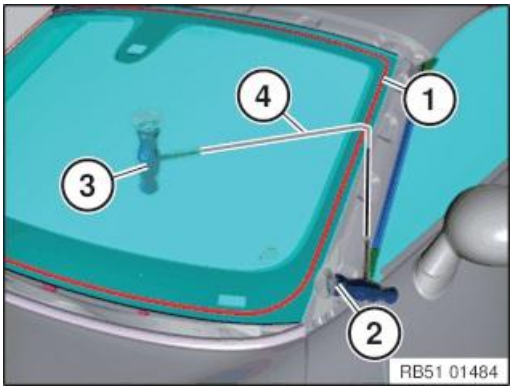
Feed in cutting wire (1) in cutting handle (2) and clamping element (3) as illustrated.

Move back cutting handle (2) over clamping element (3) and trap wire end (4).

Danger of injury!
Wire end (4) must not protrude out of cutting handle (2).

Cutting handle (2) can be secured with suction cup (5) to the vehicle window or body during each of the work operations. This prevents damage to the paint.

Fit second wire pull handle to other wire end.



Perform repair work with the aid of a second person.

Cutting wire (4) must be guided in cutting direction at an acute as possible angle (>45°) to adhesive bead (1).

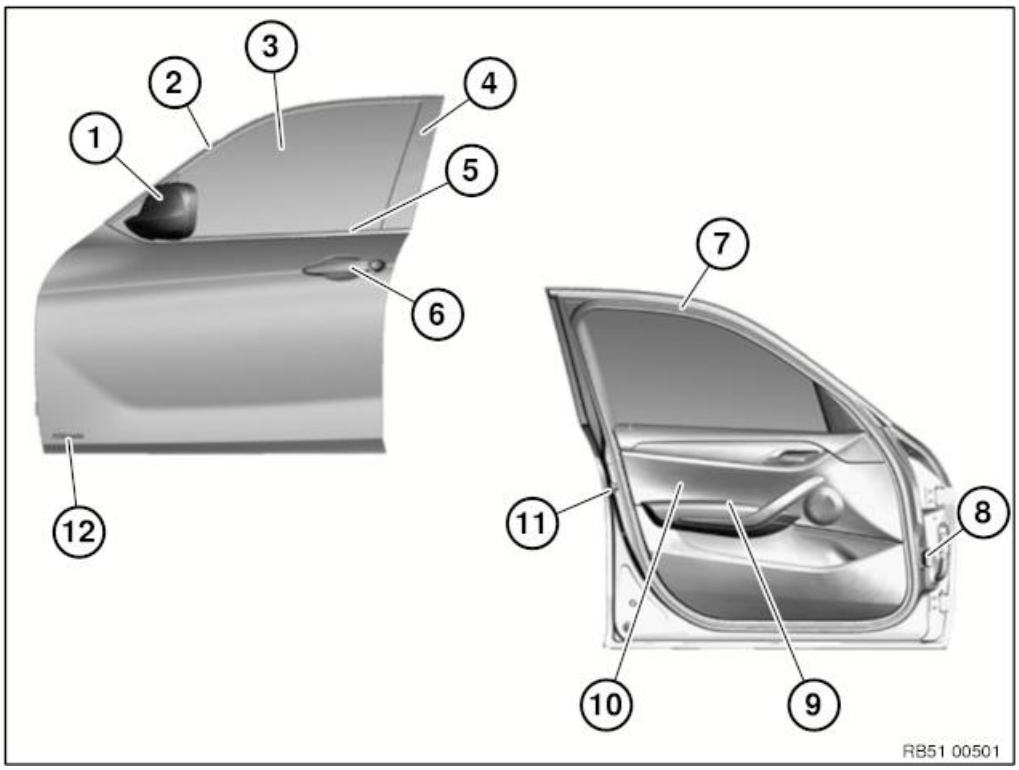
Cut through adhesive bead (1) by pulling cutting handle (2) and at the same time providing counter support with cutting handle (3).

Pull back cutting wire (4) with cutting handle (3) and make sure that cutting wire (4) is always held under tension.

Cut through remaining adhesive bead in the same way.

cardiagn.com

51 00 .. Overview of front door



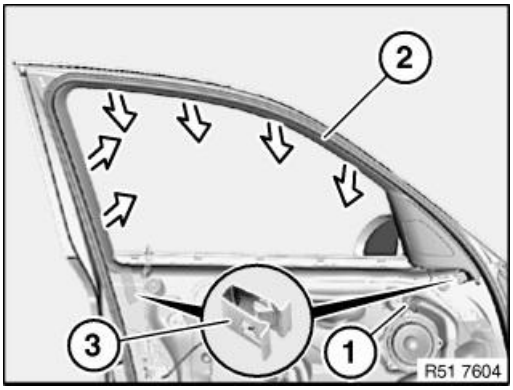
1 Exterior mirror
2 Rubber guide for door window glass
3 Door window glass
4 Trim on window frame
5 Window cavity cover strip
6 Outer door handle
7 Cover on door window frame
8 Door brake
9 Rocker switch for window operation
10 Door trim panel
11 Door lock
12 Lettering

cardiagn.com

51 32 160 Remove and install/replace housing cover on inner left or right side window frame

Necessary preliminary tasks:

- Remove front door trim



Important!

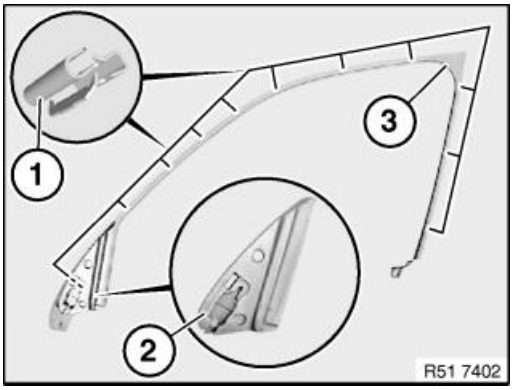
Risk of damage!

Cover (2) must not be kinked.

If necessary, feed out cable (1) and disconnect plug connection.

Lever cover (2) out of retainers (3).

Unclip cover (2) in direction of arrow and remove.



Installation:

Following parts of cover (3) must not be damaged or missing:

1 Retainer (not on E87)

2 Sound insulation

Replacement:

If necessary, remove speaker.

cardiagn.com

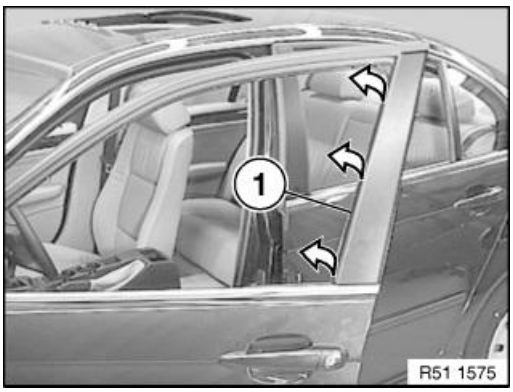
51 32 420 Remove and install/replace trim on window frame of front left or right door

Necessary preliminary work:

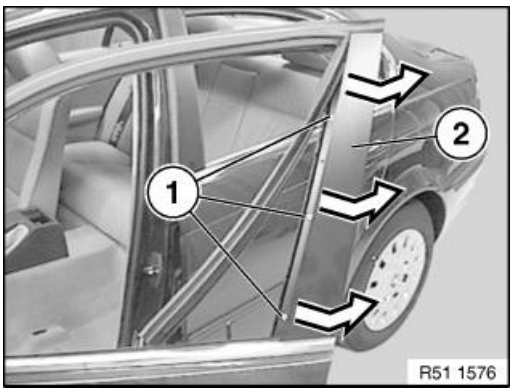
- Remove cover from door window frame

E83 only:

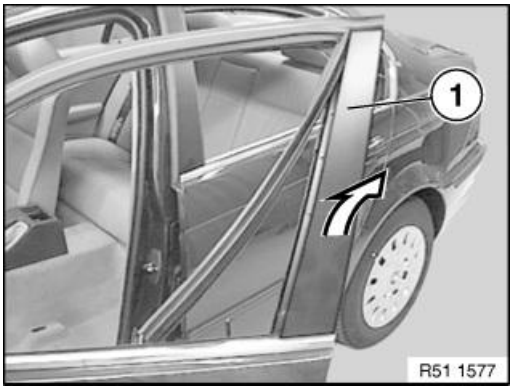
- Remove the weather strip on the outside of the front door



Partly pull off rubber window seal (1) at the rear.

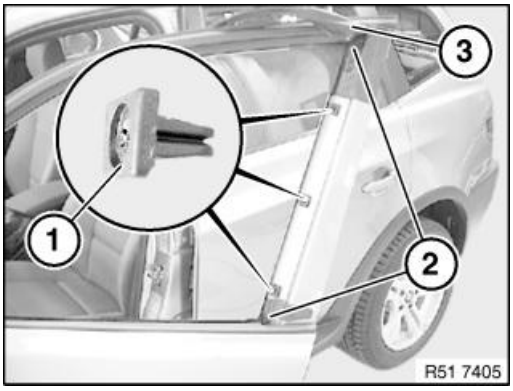


Release screws (1).
Lift off trim (2) and push approx. 3 mm to rear.



Remove cover (1) towards top.

cardiagn.com

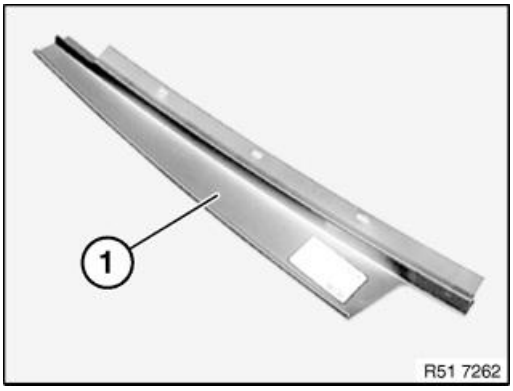


Installation note:
Following parts must not be damaged or missing:

1 Plastic nuts

2 Sound insulation

3 Seal



Installation note:
Check trim (1) for damage, replace if necessary.

cardiagn.com

51 32 170 Removing and installing/replacing door window glass, front left or right

Note:
When removing door lock, it is not necessary to remove window cavity cover strips or seals.
Necessary preliminary tasks:

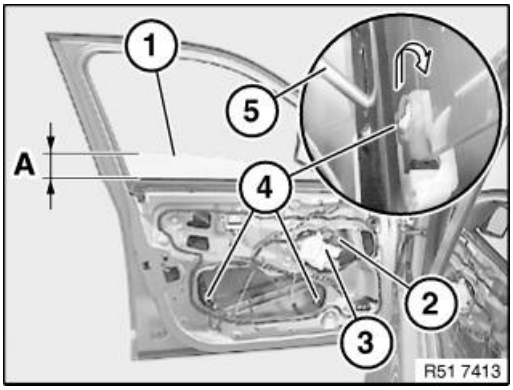
- Open door window to 105 mm.
- Remove sound insulation in front door

E87 only:

- Remove outer window cavity cover strip

E84/90 only:

- Remove inner window cavity seal



Door window glass (1) must be opened to dimension (A).

A = approx. 105 mm

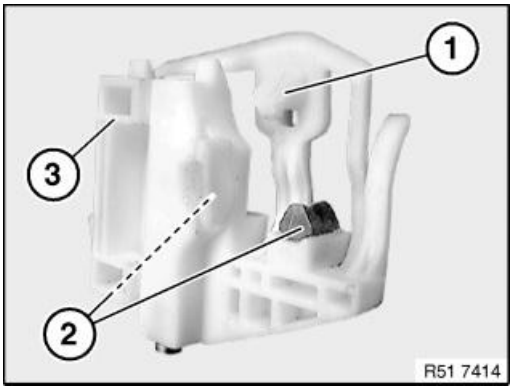
Important!
Disconnect plug connection (2) from power window motor (3) (risk of trapping).

Lever out catches (4) with screwdriver (5) in direction of arrow.

Installation:
Catch (4) must be correctly clipped into place.

Carry out function check on power window unit and anti-trapping protection.

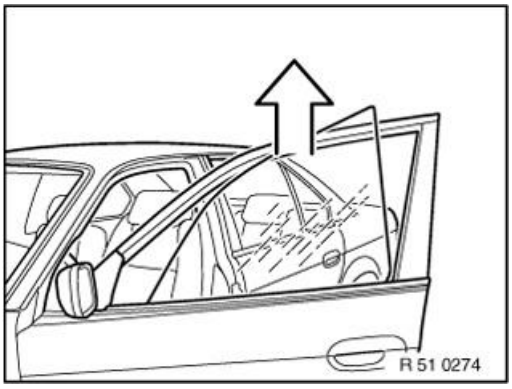
If necessary, normalize power window unit.



Installation:
Following parts of window guide (3) must not be damaged or missing:

1	Catch
2	Bump stop

cardiagn.com



When removing door lock:

Slide door window glass upwards and secure in door window frame with adhesive tapes or plastic wedge.

When removing door window glass:

Turn door window glass and lift out towards rear/top.

cardiagn.com

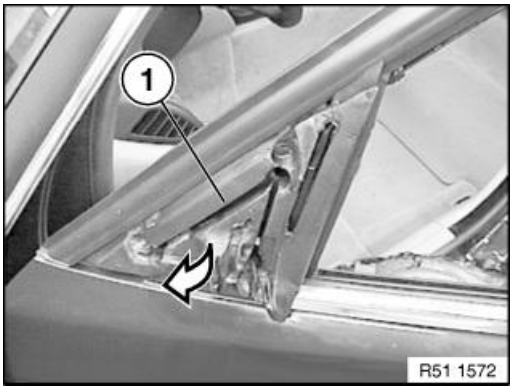
51 32 211 Replacing front left or right rubber guide for left or right door window

Necessary preliminary tasks:

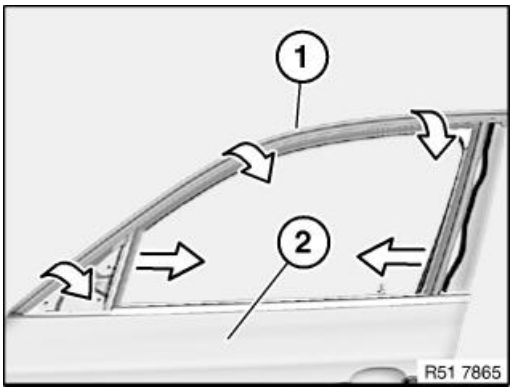
- Remove mirror
- Remove front door trim panel
- Remove cover on window frame of front door

Important!

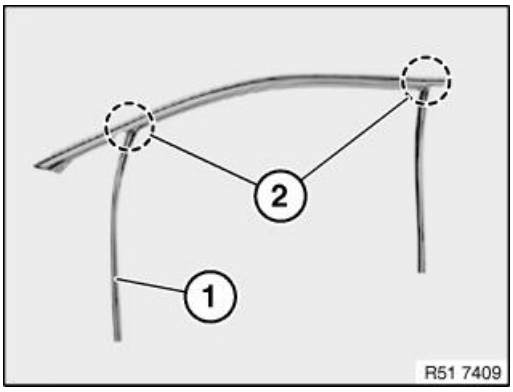
The "Notes on fitting window guide seals" serve as the basis for this repair instruction and must be observed without fail.



Remove sound insulation (1).



Detach rubber window seal (1) in direction of arrow from front door (2).*Installation note:*
Moisten rubber guide (2) prior to fitting with approved lubricant.



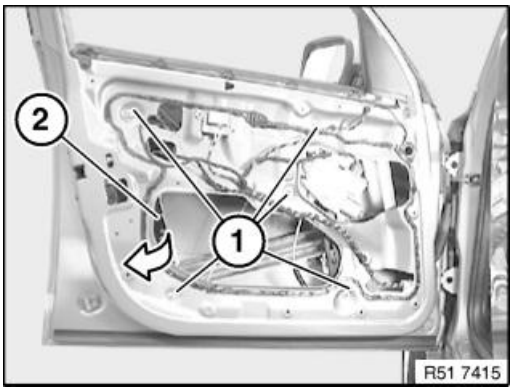
Installation note:
Rubber guide (1) must not be damaged in corners (2).

cardiagn.com

51 33 000 Removing and installing (replacing) power window regulator in left or right front door

Note:
Disengage, but do not remove, door window and secure in the door window frame.
Necessary preliminary work:

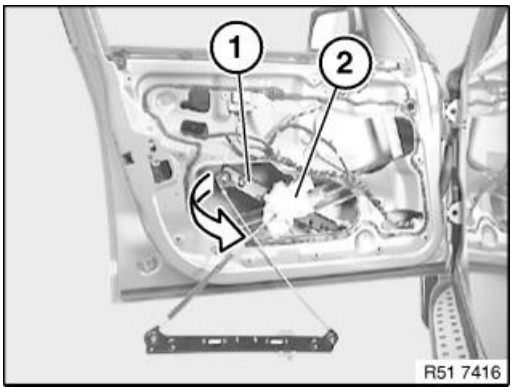
- Front door window



Unscrew nuts (1).

Feed out rear section of power window unit (2) in direction of arrow.

Tightening torque 51 33 1AZ.



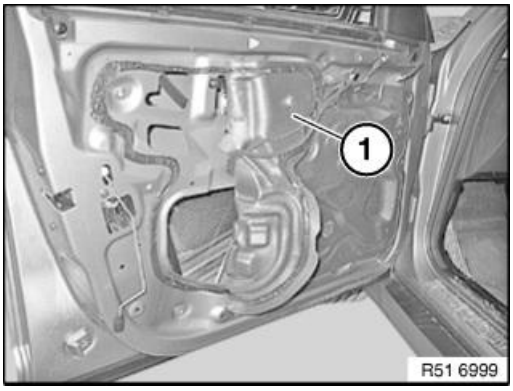
Feed out front section of power window unit (1) with flat motor (2) in direction of arrow from front door.

Replacement:

Remove flat motor for power window unit.

cardiagn.com

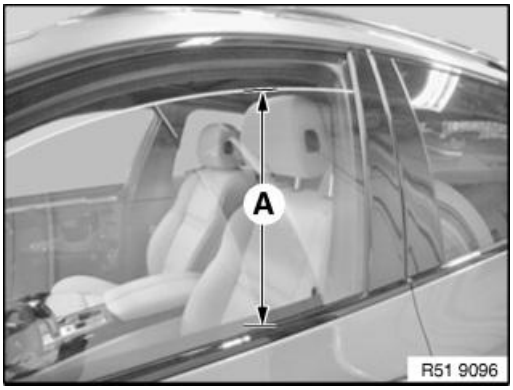
51 33 ... Slightly loosen power window regulator to remove door lock in left or right front door



Note:
To remove door lock, move rear section of sound insulation (1) toward centre.
Necessary preliminary tasks:

- Partly remove sound insulation from front door.

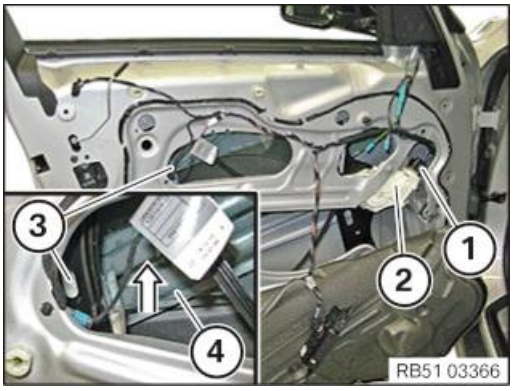
Note:
Before detaching the window lift rail, remove door lock and set down in bottom of door.



Raise side window glass to dimension (A).

Dimension (A) is the distance between the weather strip and upper edge of the side window glass.

Measurement (A) = 265 mm



Important!

Disconnect plug connection (1) from power window motor (2) (pinch hazard).

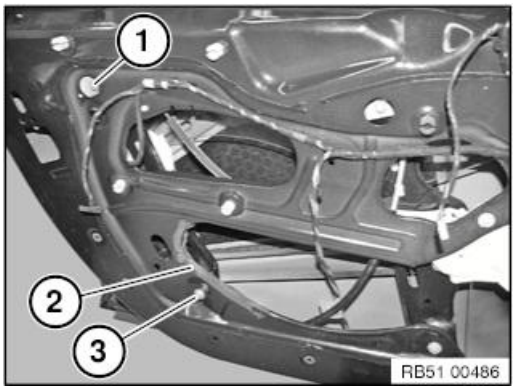
Carefully unlock mounting clip (3) of the power window in direction of arrow.

Push the window glass (4) lightly upwards so that the retaining lug on the mounting clip (3) disengages fully out of the bore hole of the window glass.(4).

Installation note:
The retaining lug on the mounting clip (3) must be correctly engaged.

Carry out function check on power window regulator and anti-trap mechanism.

cardiagn.com

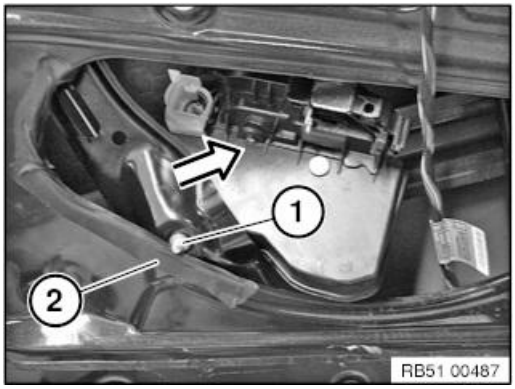


Mask off opening in inner door panel (2) with adhesive tape as shown.

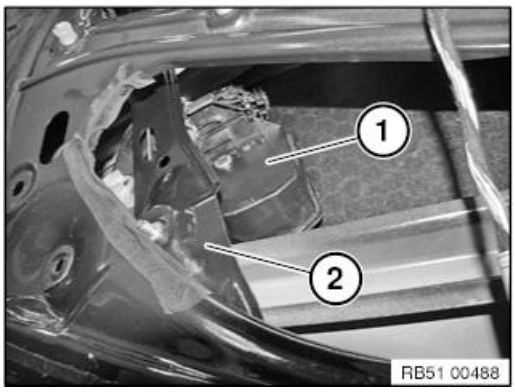
Loosen nut (1).

Unscrew nut (3).

Tightening torque 51 33 1AZ.



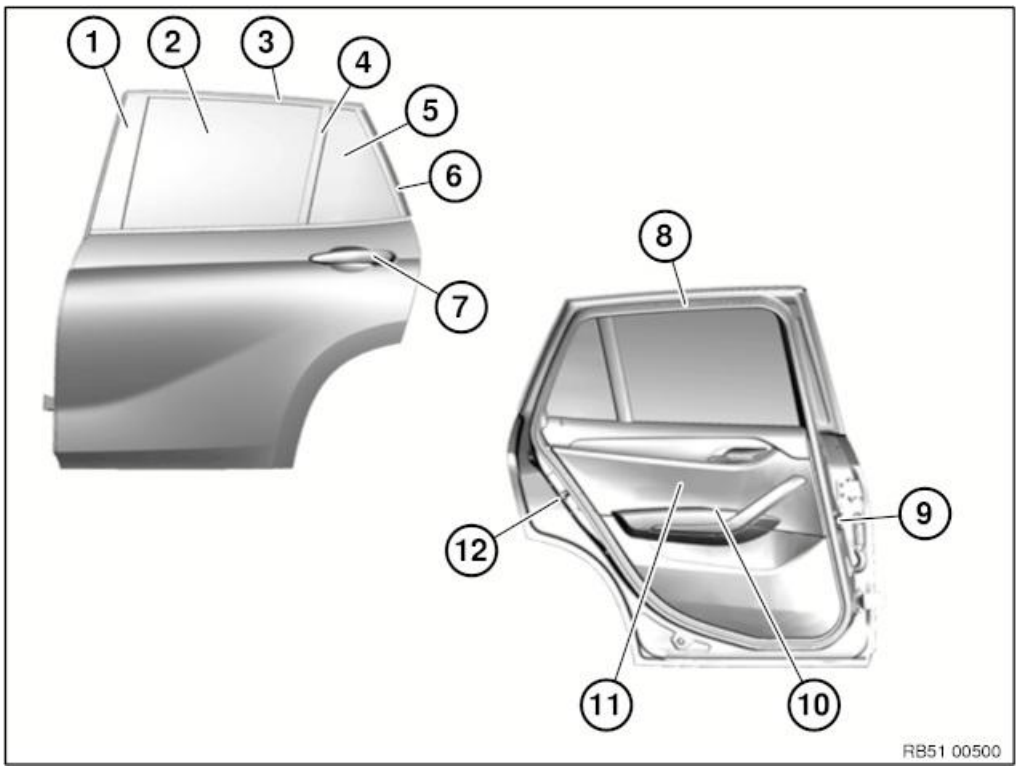
Pull window lift rail (1) in direction of arrow and attach to masked inner door panel (2).



Pass door lock (1) behind window lift rail (2).

cardiagn.com

51 00 .. Overview of rear door



1 Cover (front) on window frame
2 Door window glass
3 Rubber guide for door window glass
4 Trim for window guide
5 Door window glass (stationary)
6 Cover on window frame (rear)
7 Outside handle
8 Cover on door window frame
9 Door brake
10 Rocker switch for side window operation
11 Door trim panel
12 Door lock

cardiagn.com

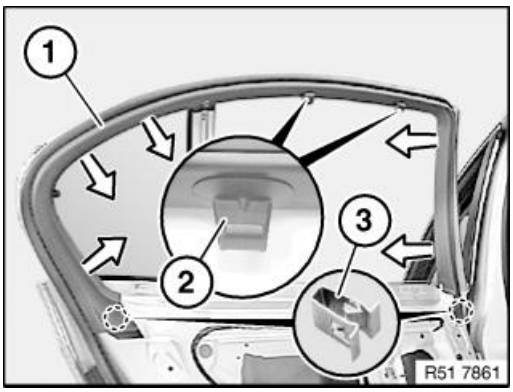
51 34 160 Removing and installing/replacing housing cover on inner left or right door window frame

Necessary preliminary tasks:

- Open door window.
- Remove rear door trim panel

Version with roller sun blind:

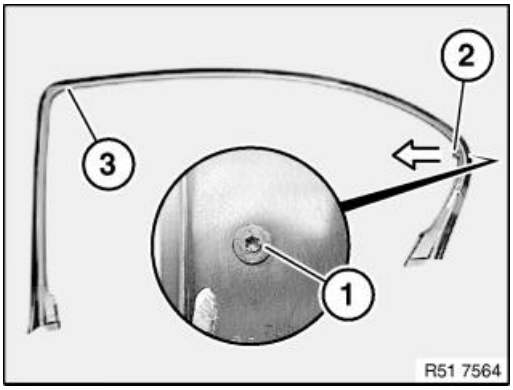
- Remove roller sun blind on fixed side window



Version with roller sun blind:

Pull off hooks (2) in outwards direction.

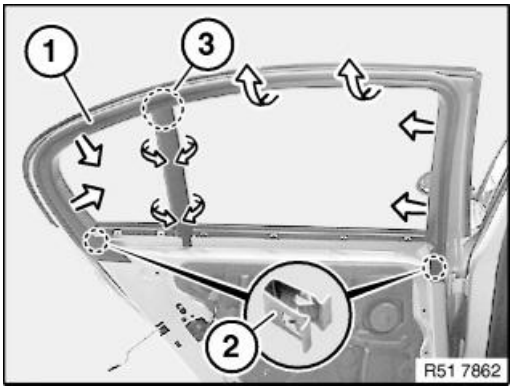
Detach cover (1) sideways from clips (3) and unclip in inwards direction or lever out and remove.



Replacement:

If necessary, release screw (1) on hook (2).

Remove hook (2) in direction of arrow from cover (4).



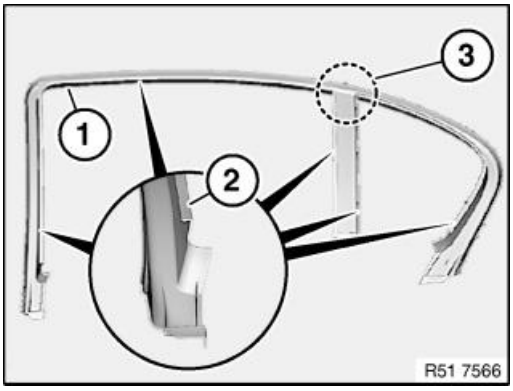
Version without roller sun blind:

Lever out cover (1) at clips (2).

Unclip cover (1) in direction of arrow or lever out and remove.

Note:
Do not tear off cover (1) in area (3).

cardiagn.com



Installation:
Following parts of cover (1) must not be damaged:

2 All-round guide

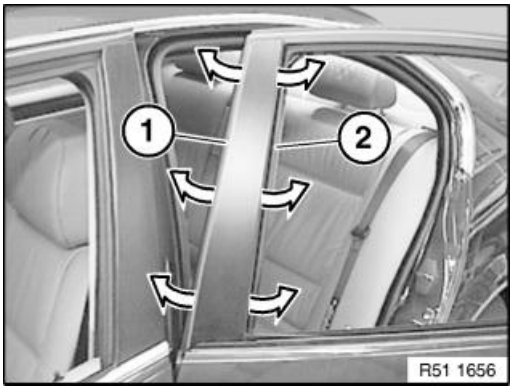
3 Connection point

cardiagn.com

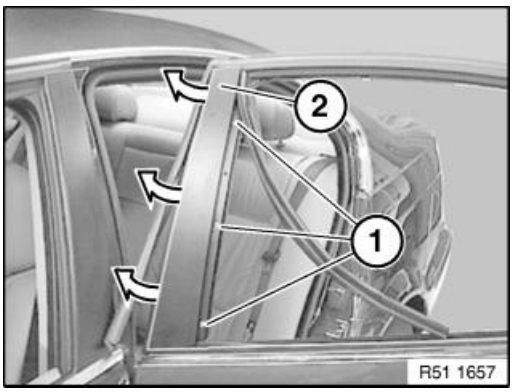
51 34 420 Removing and installing/replacing trim on window frame of rear door (front), left or right

Necessary preliminary tasks:

- Open rear side window



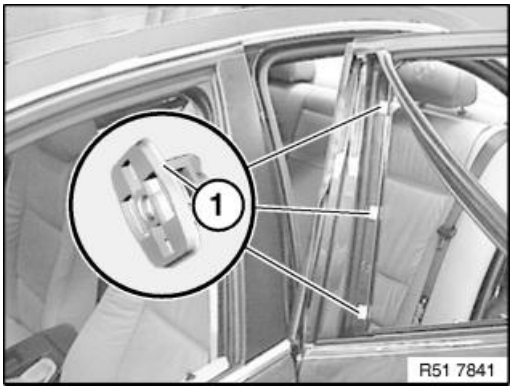
Detach rubber seal (1) and rubber guide (2) from trim.



Release screws (1).

Carefully detach trim (2) towards front/top.

Installation:
Fitted foam pieces must not be damaged when trim (2) is pushed in.



Installation:
If necessary, replace faulty plastic nuts (1).

cardiagn.com

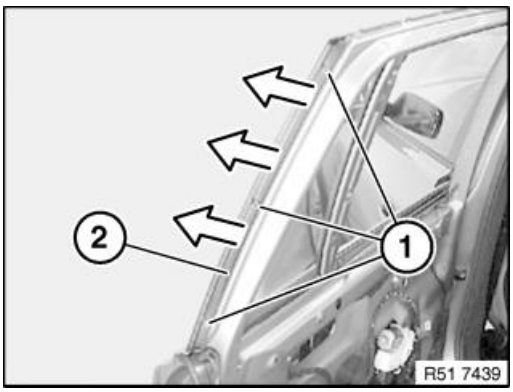
51 34 425 Removing and installing/replacing trim on window frame of rear door, rear left or right

Necessary preliminary tasks:

- Detach rubber guide for rear door window glass in area of trim

E61 and E83 only:

- Remove outer window cavity cover strip

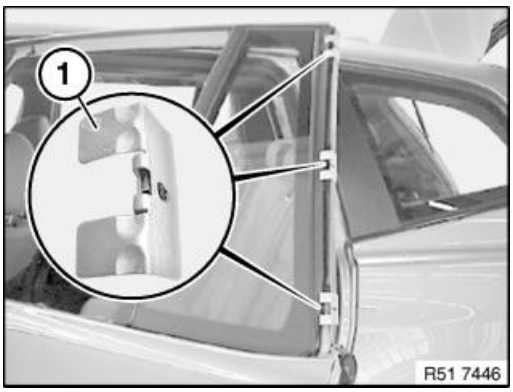


Release screws (1).

Remove trim (2) towards rear.

E61 only:

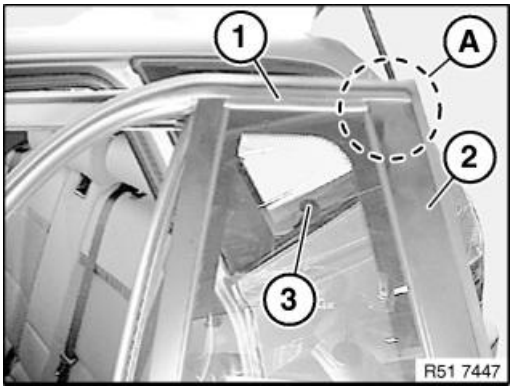
Starting from April 2009 centre screw (1) will be omitted.



Installation:
If necessary, replace faulty clips (1).

E61 only:

Starting from April 2009 centre retainer (1) will be omitted.



E83 and E91 only: *Installation:*
Fit rubber guide (1) before screwing trim (2) into place.

Make sure trim (2) is correctly seated on rubber guide (1) (area A) and on window glass (3).

cardiagn.com

51 34 191 Replacing left or right fixed door window in rear window frame

Special tools required:

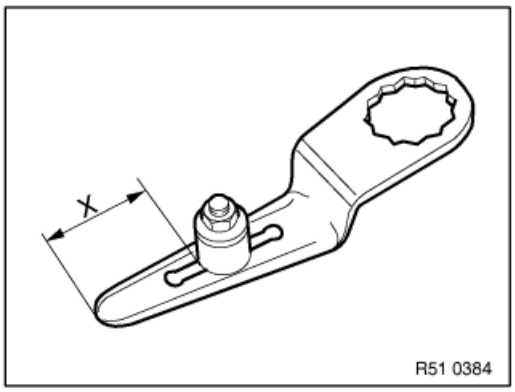
- 00 9 322
- 51 3 010
- 51 3 220

Important!

The "Instructions for window bonding" serve as the basis for these repair instructions and must be followed without fail.

Necessary preliminary work:

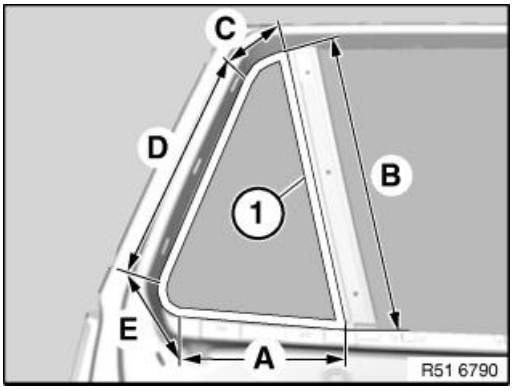
- Remove trim on window frame



Fit straight blade with adjustable roller (Sourcing Reference: BMW Parts Department) on tool and set dimension (X).

Adjust dimension (X) differently according to different position of adhesive bead, refer to Fig. R51 6790.

Note:
Prior to each use, regrind the knife with a grindstone while the machine is running (new knives also).



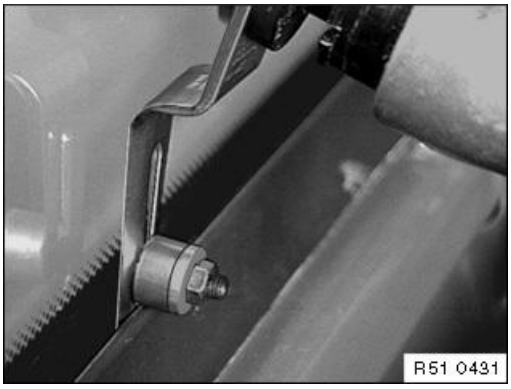
Tape off door window glass and sheet metal flange all round with fabric adhesive tape (1) (e.g. Tesa).

Adjust blade starting roller differently in areas (A) to (F) (risk of damage).

A =	15 mm
B =	10 mm
C =	25 ... 40 mm (65 mm from (B) with scalpel)
D =	50 mm
E =	45 ... 15 mm (60 mm from (A) with scalpel)

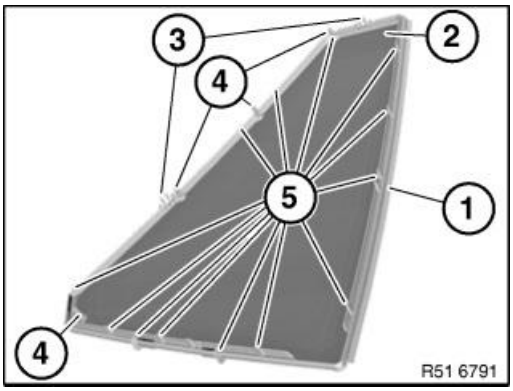
Carefully cut into corner points with scalpel.

cardiagn.com



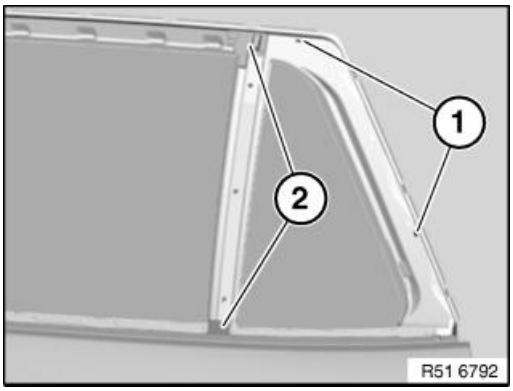
Carefully insert knife blade between body and door window.
Run handle of knife parallel to door window.
Remove door window with special tool 51 3 220 outwards.
Only when reusing the door window:

- Remove frame
- Cut off adhesive residue to a thickness of approx. 0.5 mm
- Detach fabric adhesive tape all round
- Clean door window with spirit

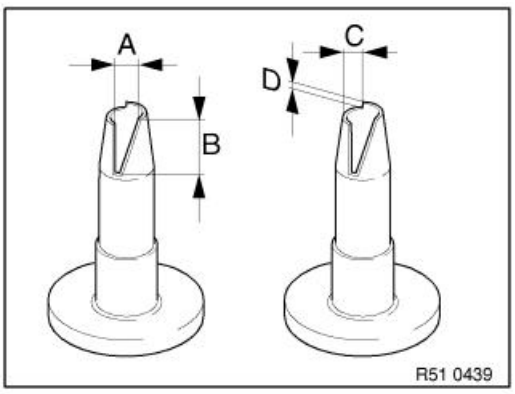


Attach new frame (1) to door window (2).
Following parts on frame (1) must not be damaged or missing:

3 Catches
4 Guides
5 Spacers (X-, Y- and Z-directions)



Remove remnants of (1) frame catch.*Installation note:*
Seals (2) must be fitted.

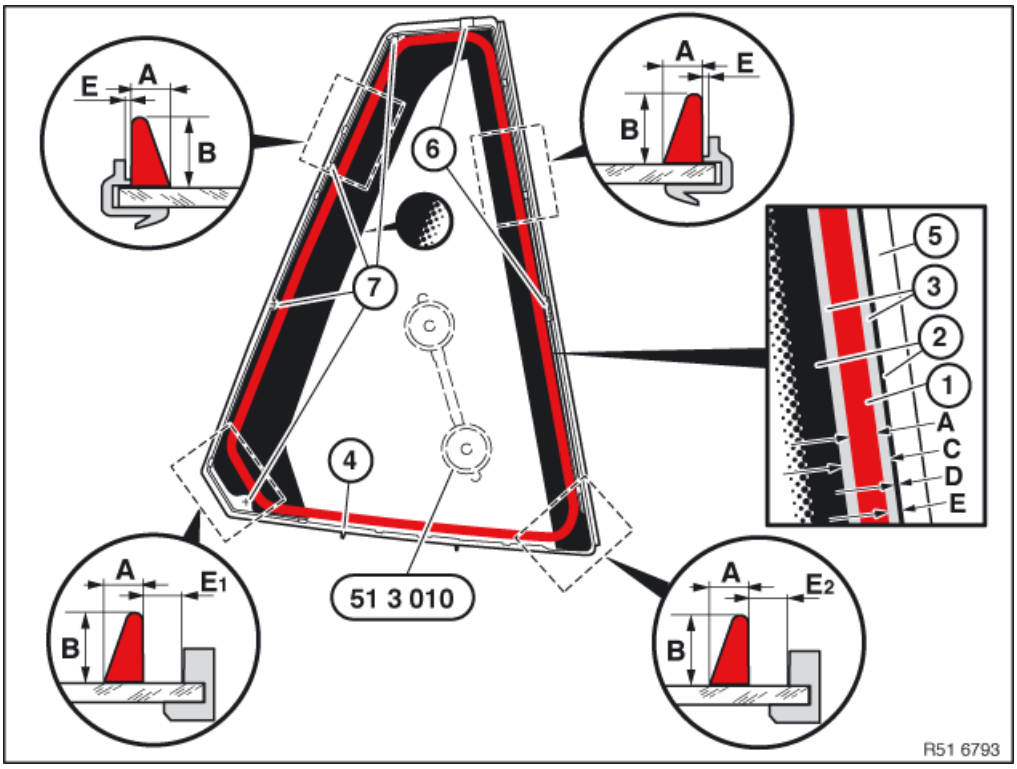


Cut nozzle to size.

A = 8±1 mm
B = 13.5±1.5 mm
C = 3 mm
D = 2 mm

Overview of door window bonding, fixed, rear (E84):

cardiagn.com

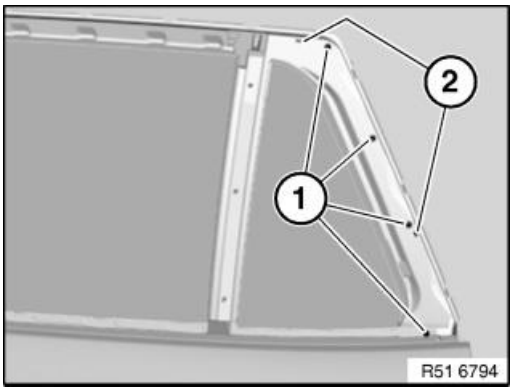


1	Adhesive bead	B	13^{+2}_{-1} mm (height of 1)
2	Ceramic layer	C	12 ± 1 mm (width of primer trace)
3	Primer coat	D	$0^{+0.5}$ mm (spacing from 3 to 5)
4	Application point of adhesive bead	E	1.5 ± 1 mm (spacing from 1 to 5)
5	Frame	F	95 ± 1.5 mm (spacing from 4 to 5 edge)
6	Catches		
7	Guides	R	15 mm (from adhesive bead)
A	8 ± 1 mm (width of 1)		

Attach two special tools 51 3 010 to tool trolley. Moisten suction surfaces and secure door window. Attach additional special tool 51 3 220 .

Almost vertical part (B) of cement bead (1) must face frame (5).

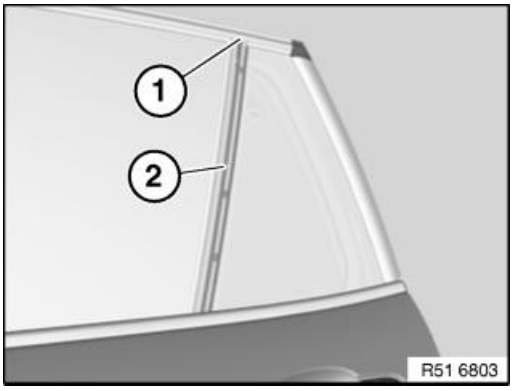
Spread bead joint (4) with special tool 00 9 322 .



Carefully position door window (with frame):

- With special tool 51 3 220
- first at bottom
- Insert window frame in bore holes (1).
- Clip catches on frame into penetrations (2)

cardiagn.com



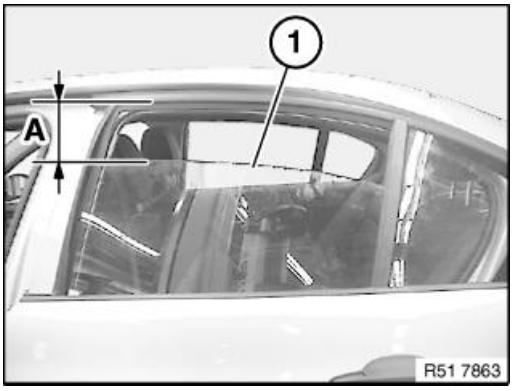
Note:
Assemble vehicle immediately after installing door window. If adhesive has hardened, covers can no longer be fitted. Position door seal (1) and cover (2) especially cleanly.

cardiagn.com

51 34 171 Replacing rear left or right door window

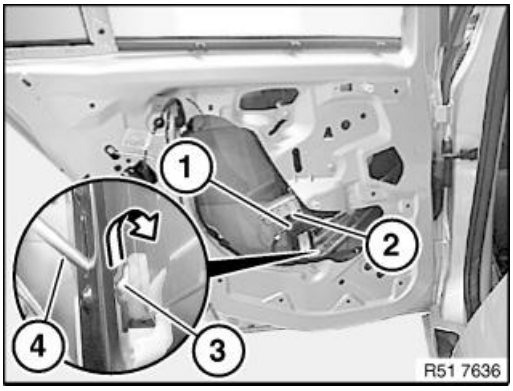
Necessary preliminary tasks:

- Remove sound insulation in rear door
- Remove inner window cavity cover strip
- Remove trim on rear door window frame



Open door window glass (1) down to distance (A)

A = approx. 120 mm



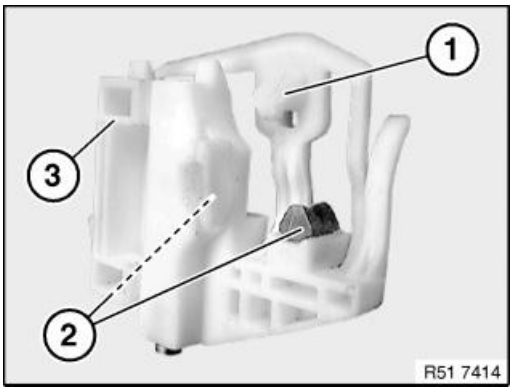
Important!

Disconnect plug connection (1) from power window motor (2) (risk of trapping).

Lever out catches (3) with screwdriver (4) in direction of arrow.*Installation:*
Catch (3) must be correctly clipped into place.

Carry out function check on power window unit and anti-trapping protection.

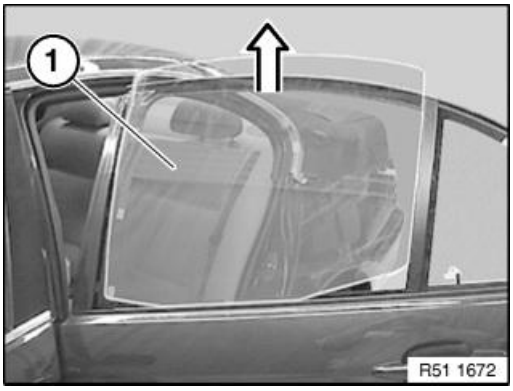
If necessary, normalize power window unit.



Installation:
Following parts of window guide (3) must not be damaged or missing:

1	Catch
2	Buffer stop

cardiagn.com



Remove door window glass (1) towards top.*Installation:*
Door window glass does not need to be adjusted.

cardiagn.com

51 34 211 Replacing rubber guide for rear left or right door window

Special tools required:

- 00 9 317

Important!

The "Instructions on fitting window guide seals" serve as the basis for this repair instruction and must be observed without fail.

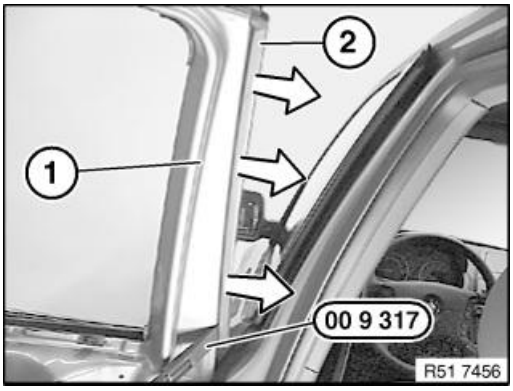
Necessary preliminary tasks:

- Remove cover on inside door window frame
- Release trim on window guide and slide downwards slightly, do not remove

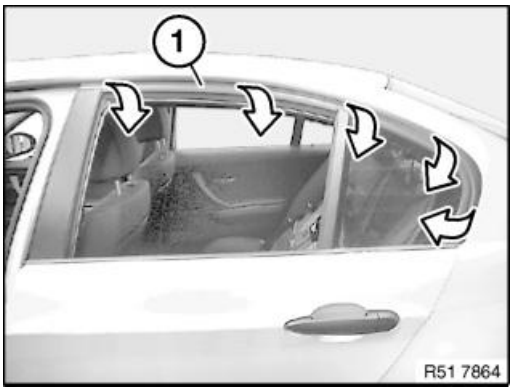
E91 only:

- Remove trim on window frame at rear

Note:
Window cavity cover strip does not have to be removed.



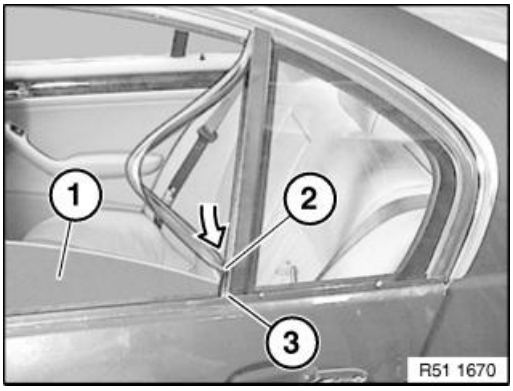
Lever out rubber guide (1) on door window frame at front (2) with special tool 00 9 317 .



Pull rubber guide (1) out of window guide.

Detach rubber guide (1) in direction of arrow from door.

cardiagn.com



Installation:
Moisten rubber guide (2) prior to fitting with approved anti-friction agent.

Close door window glass (1) a little.

Push rubber guide (2) onto door window glass (1) and into window guide (3).

cardiagn.com

51 34 ... Replacing the left or right window guide rail cover

Necessary preliminary tasks:

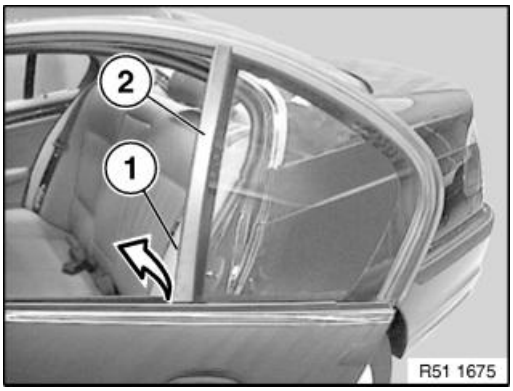
- Remove outer window cavity cover strip

Version without roller sunblind:

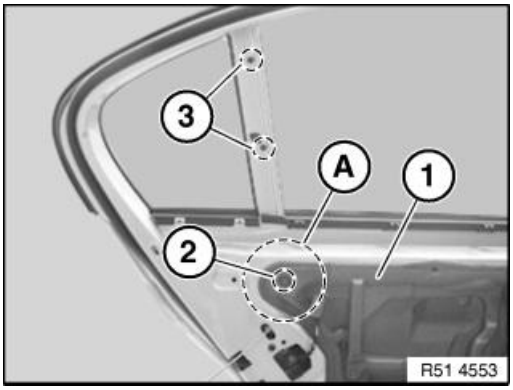
- Remove cover on door window frame

Version with roller sunblind:

- Remove roller sunblind on permanent side window

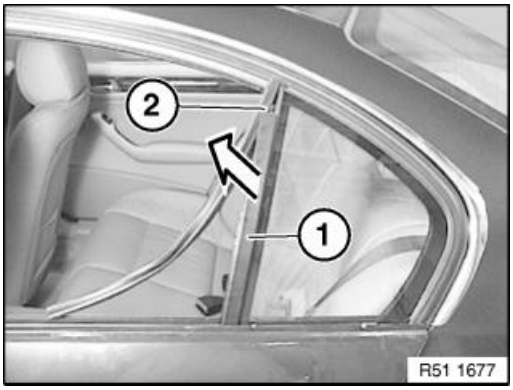


Pull rubber guide (1) out of cover (2).



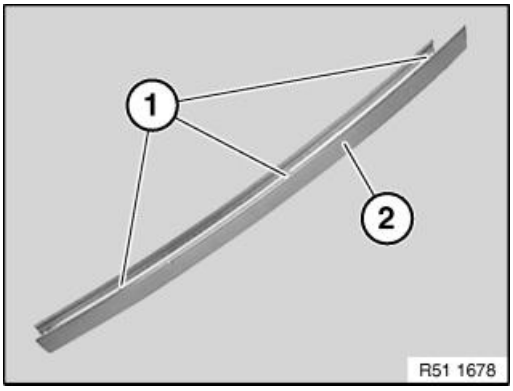
Important!
Follow the instructions for bonding sound insulation.

Open sound insulation (1) in area (A).
Release screw (2) behind the sound insulation (1).
Hold cover and undo screws (3).



Push cover (1) downwards from rubber guide (2) and remove towards top.*Installation note:*
Make sure rubber window seal (2) is correctly seated on cover (1).

cardiagn.com



Installation note:
Threads (1) of cover (2) must not be damaged.

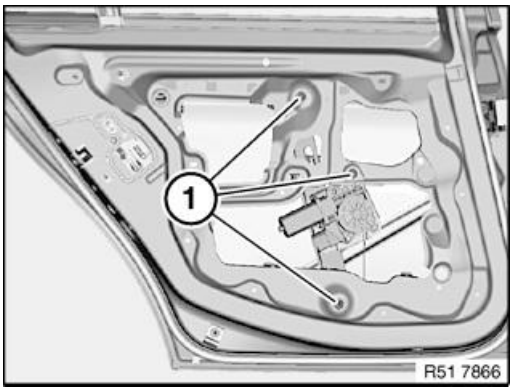
cardiagn.com

51 37 000 Removing and installing/replacing complete rear left or right power window regulator

Note:
Disengage, but do not remove, door window and secure in the door window frame.

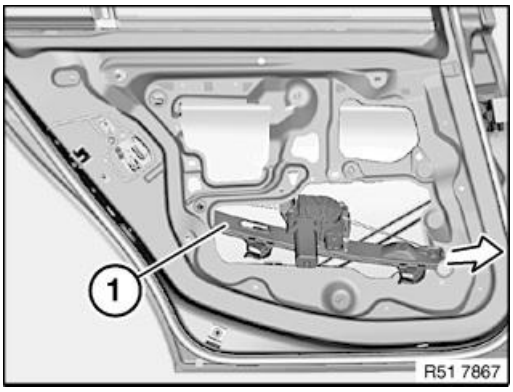
Necessary preliminary work:

- Door window glass, rear

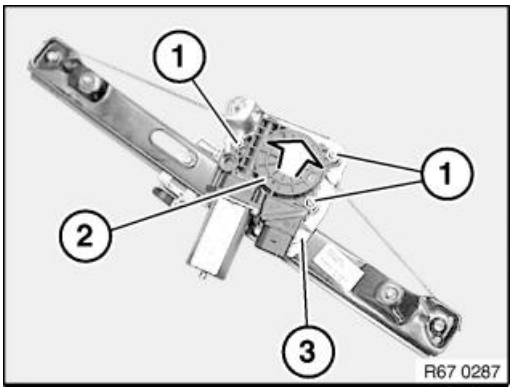


Unscrew nuts (1).

Tightening torque 51 35 2AZ.



Turn power window unit (1) in rear door and feed out in direction of arrow.



Replacement:

Release screws (1) and detach flat motor (2) from power window unit (3).

Tightening torque 51 35 1AZ.

cardiagn.com

51 34 191 Replacing left or right fixed door window in rear window frame

Special tools required:

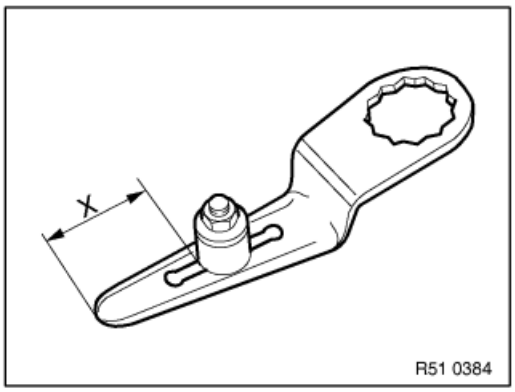
- 00 9 322
- 51 3 010
- 51 3 220

Important!

The "Instructions for window bonding" serve as the basis for these repair instructions and must be followed without fail.

Necessary preliminary work:

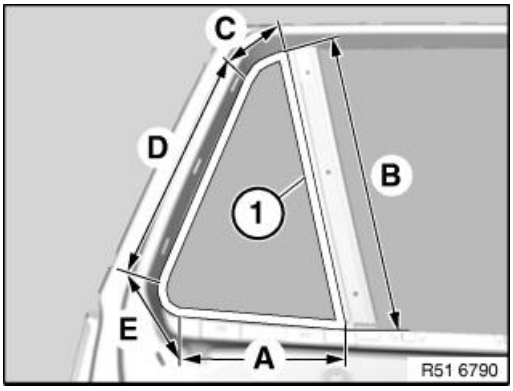
- Remove trim on window frame



Fit straight blade with adjustable roller (Sourcing Reference: BMW Parts Department) on tool and set dimension (X).

Adjust dimension (X) differently according to different position of adhesive bead, refer to Fig. R51 6790.

Note:
Prior to each use, regrind the knife with a grindstone while the machine is running (new knives also).



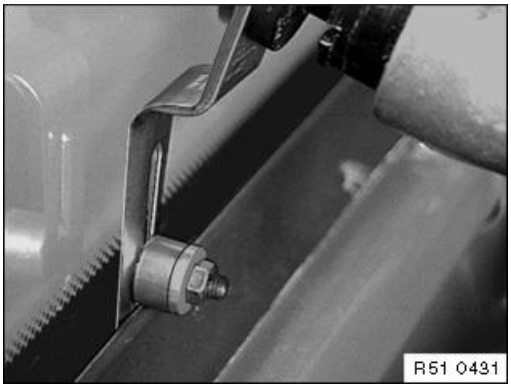
Tape off door window glass and sheet metal flange all round with fabric adhesive tape (1) (e.g. Tesa).

Adjust blade starting roller differently in areas (A) to (F) (risk of damage).

A =	15 mm
B =	10 mm
C =	25 ... 40 mm (65 mm from (B) with scalpel)
D =	50 mm
E =	45 ... 15 mm (60 mm from (A) with scalpel)

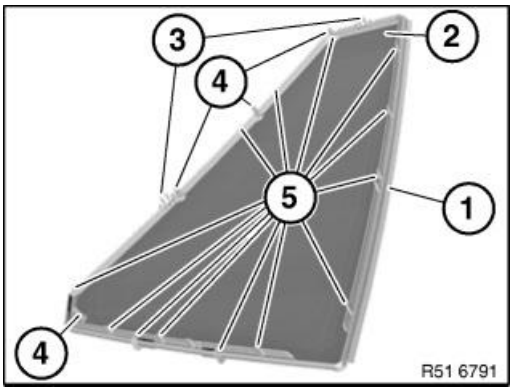
Carefully cut into corner points with scalpel.

cardiagn.com



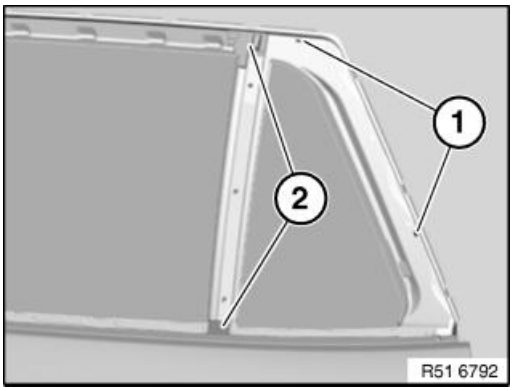
Carefully insert knife blade between body and door window.
Run handle of knife parallel to door window.
Remove door window with special tool 51 3 220 outwards.
Only when reusing the door window:

- Remove frame
- Cut off adhesive residue to a thickness of approx. 0.5 mm
- Detach fabric adhesive tape all round
- Clean door window with spirit

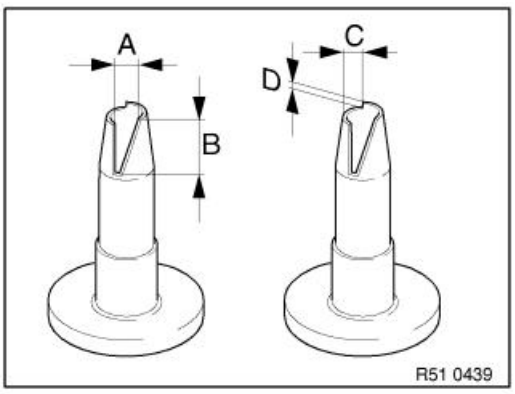


Attach new frame (1) to door window (2).
Following parts on frame (1) must not be damaged or missing:

3 Catches
4 Guides
5 Spacers (X-, Y- and Z-directions)



Remove remnants of (1) frame catch.*Installation note:*
Seals (2) must be fitted.

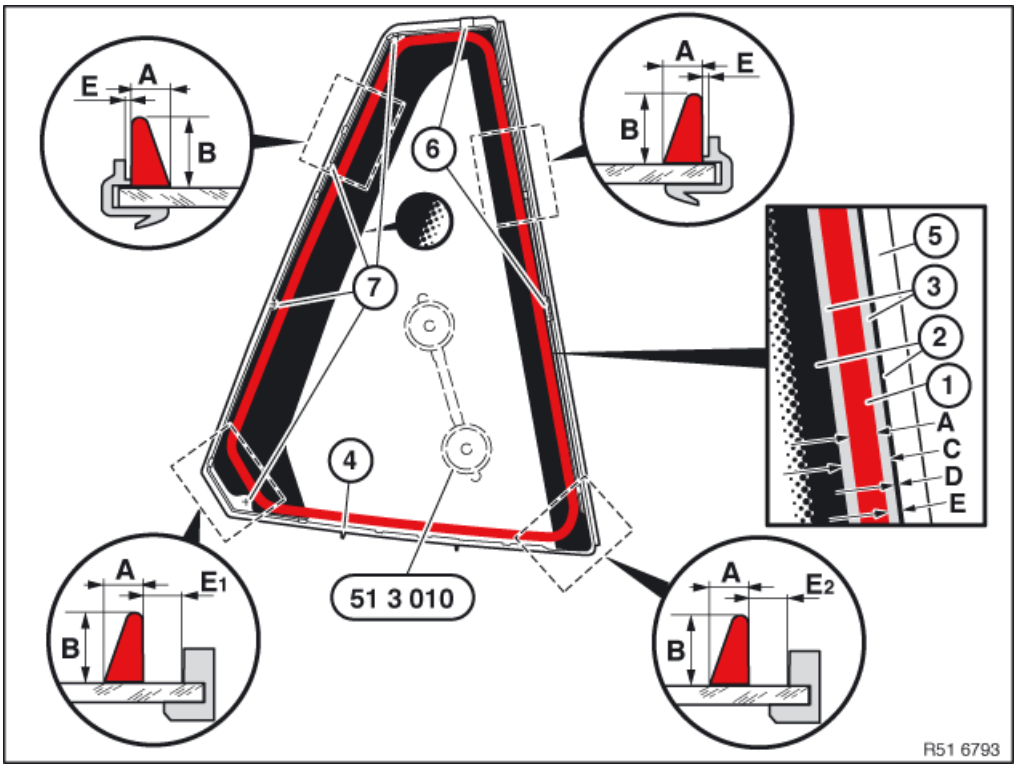


Cut nozzle to size.

A = 8±1 mm
B = 13.5±1.5 mm
C = 3 mm
D = 2 mm

Overview of door window bonding, fixed, rear (E84):

cardiagn.com

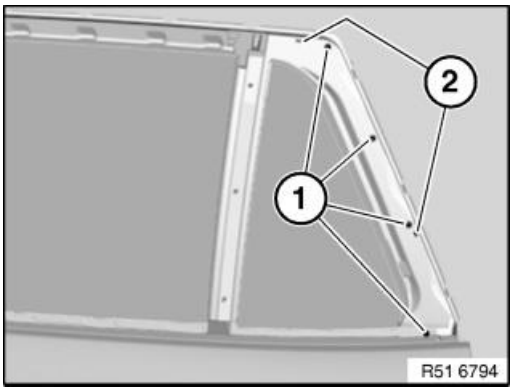


1	Adhesive bead	B	13^{+2}_{-1} mm (height of 1)
2	Ceramic layer	C	12 ± 1 mm (width of primer trace)
3	Primer coat	D	$0^{+0.5}$ mm (spacing from 3 to 5)
4	Application point of adhesive bead	E	1.5 ± 1 mm (spacing from 1 to 5)
5	Frame	F	95 ± 1.5 mm (spacing from 4 to 5 edge)
6	Catches		
7	Guides	R	15 mm (from adhesive bead)
A	8 ± 1 mm (width of 1)		

Attach two special tools 51 3 010 to tool trolley. Moisten suction surfaces and secure door window. Attach additional special tool 51 3 220 .

Almost vertical part (B) of cement bead (1) must face frame (5).

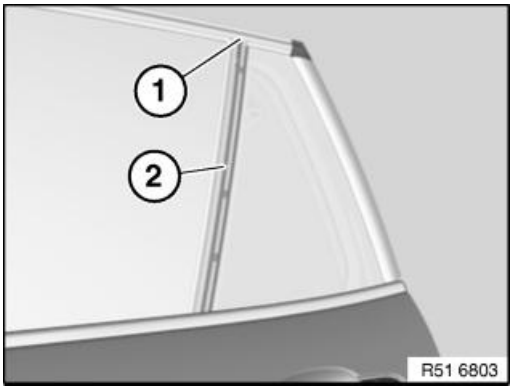
Spread bead joint (4) with special tool 00 9 322 .



Carefully position door window (with frame):

- With special tool 51 3 220
- first at bottom
- Insert window frame in bore holes (1).
- Clip catches on frame into penetrations (2)

cardiagn.com



Note:
Assemble vehicle immediately after installing door window. If adhesive has hardened, covers can no longer be fitted. Position door seal (1) and cover (2) especially cleanly.

cardiagn.com

51 36 070 Removing and installing / replacing left or right rear side window

Special tools required:

- 00 9 322
- 51 3 010
- 51 3 220

Important!

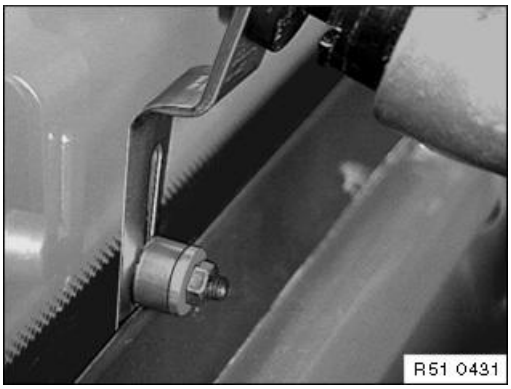
The "Instructions on bonding windscreen" serve as the basis for this repair instruction and must be observed without fail.

Cover rear side panels with protective covers.

Note:
Only use an oscillating blade when replacing the windscreen.

Necessary preliminary work:

- Remove side window trim strip
- Remove panel for roof pillar at rear (C-pillar)

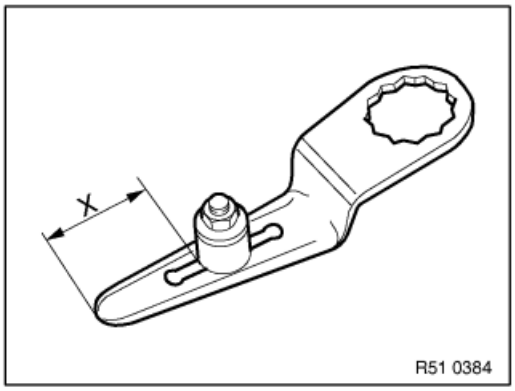


Secure outside of side window with adhesive tape.

Insert blade carefully between body and side window.

Guide web of blade parallel to side window. Cut through glue bead as close to body as possible.

Remove side window with special tool 51 3 010 .



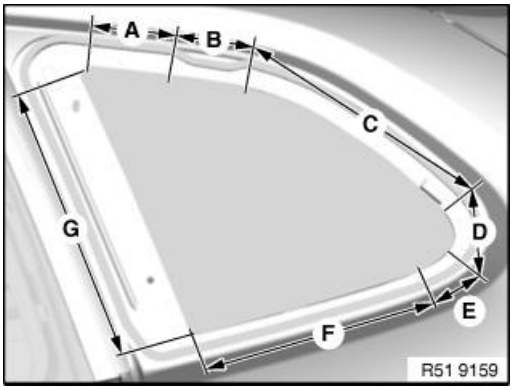
Fit straight blade with adjustable roller (Sourcing Reference: BMW Parts Department) on tool and set dimension (X).

X = see list in next figure

Note:
Sharpen knife blade before every use on a running machine (even with new knife blades).

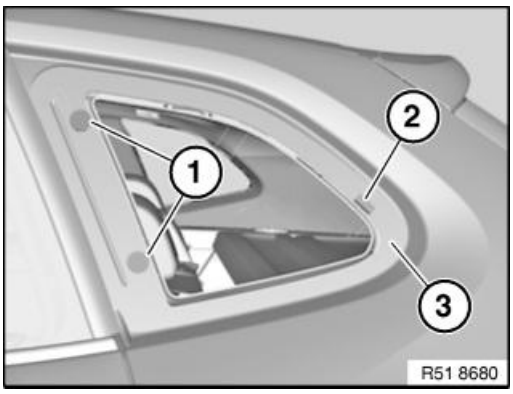
Tape off the side window and sheet metal flange all round with fabric adhesive tape.

cardiagn.com



Note:
Cut in alphabetical order.

Area	Cutting length	Cutting depth = X
A	60 mm	25 mm
B	15 mm	20 mm
C		24 mm
D		27 mm
E	30 mm	23 mm
F	230 mm	18 mm
G		55 mm



Dual lock tape Installation note:

Remove remainder of centring pin (1).

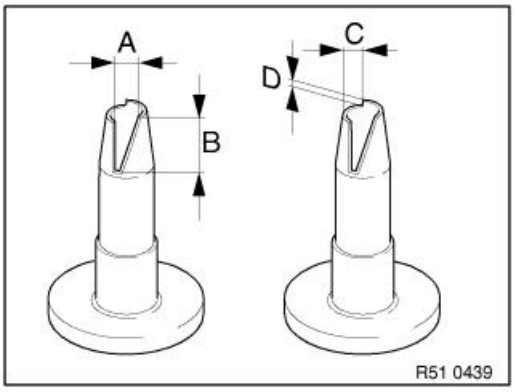
Remove rest of dual lock tape (2) and clean adhesive area.

Stick new dual lock tape (2) to raised marking on sheet metal flange (3).

Dual lock tape:

2 = 20 x 10 mm

Dual lock tapes on side window must be matched to dual lock tapes on sheet metal flange.



Cut nozzle to size.

A = 8 ± 2 mm

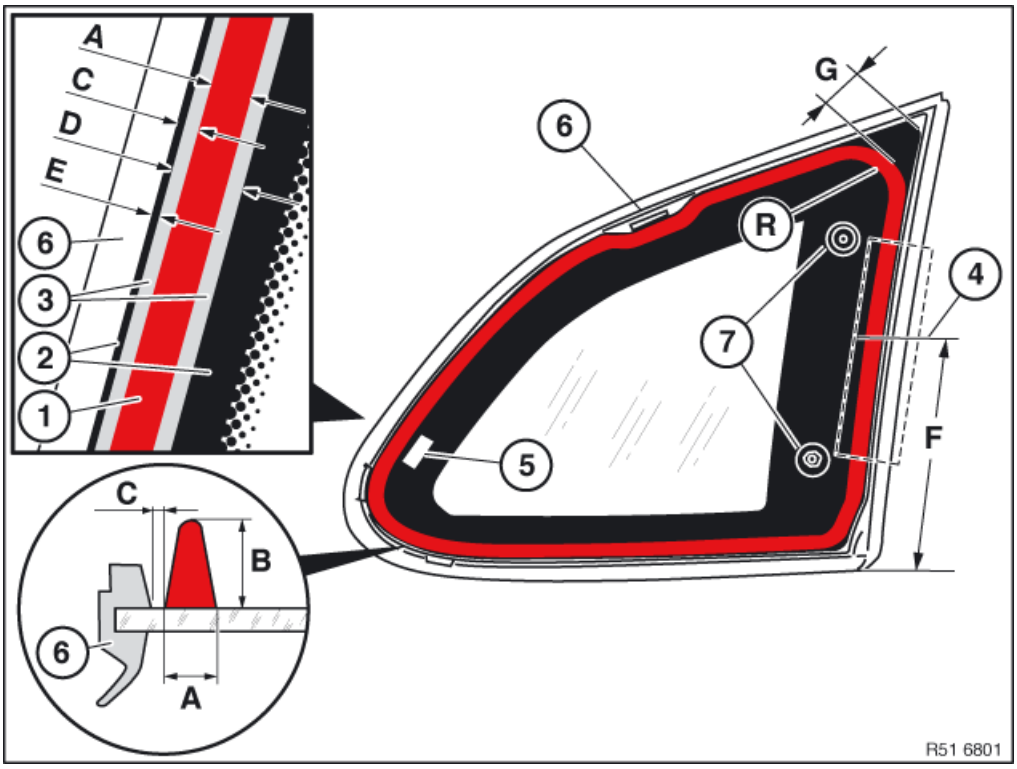
B = 11_{-2} mm

C = 4 mm

D= 2.5 mm

Overview for side window bonding, rear (E84):

cardiagn.com



1	Adhesive bead	A	8 ± 2 mm (width of adhesive bead)
2	Ceramic layer	B	11 $_{-2}$ mm (height of adhesive bead)
3	Primer coat	C	1.0 ± 1 mm (spacing from 1 to 6 except dimension B G)
4	Application point of adhesive bead	D	17 ± 2 mm (width of primer trace)
5	Dual lock tapes	E	0 mm (spacing from 3 to 6)
6	TPE spray-coating	F	Approx. 190 mm (spacing 4 to 6, bottom)
7	Clips	G	30 mm (spacing from 6)
		R	approx. 40 mm radius

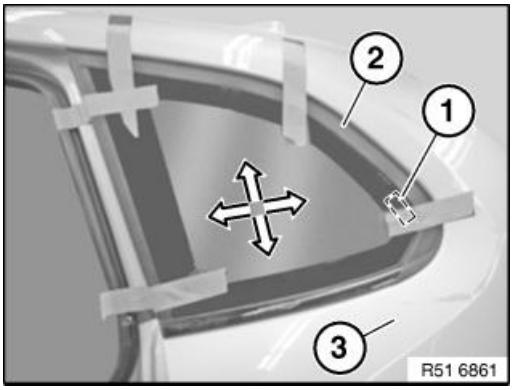
Attach special tool 51 3 010 to tool trolley. Moisten suction surfaces and secure side window.

When reusing the existing side window, remove residual adhesive to 0.5 mm.

If necessary, remove remainder of dual lock tapes (5). Clean adhesive area and stick on new dual lock tapes (5).

Almost vertical part (B) of adhesive bead (1) must face PVC moulding (6).

Spread bead joint (4) with special tool 00 9 322 .



Attach side window with special tool 51 3 220 at bottom first with TPE spray-coating (2).

Fit clips in corresponding bore hole of new side window.

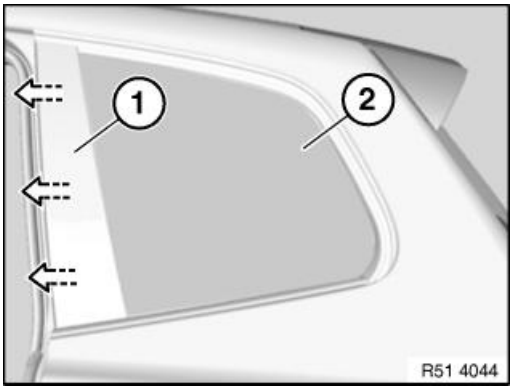
Ensure that TPE coating (2) is flush with side panel (3).

Snap side window into dual lock tape (1).

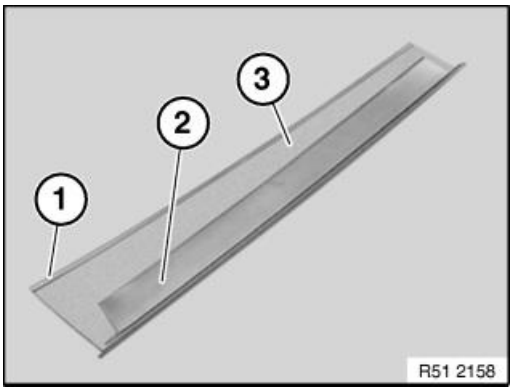
Fix side window in position with yellow plastic adhesive tape (sourcing reference: BMW Parts Department).

cardiagn.com

51 36 030 Removing and installing/replacing left or right trim on C-pillar (outside on rear side window)



Raise trim (1) at rear approx. 2 mm and pull off in stages by approx. 2 mm from top downwards from door window (2) in direction of arrow.



Installation:

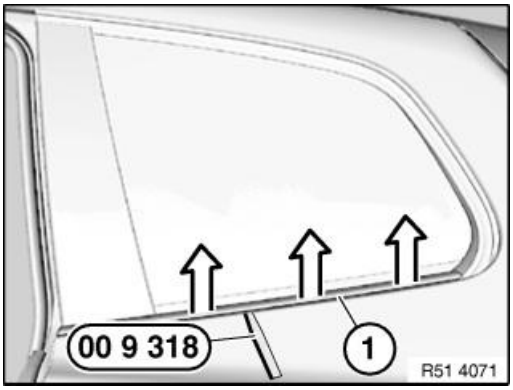
Fold (1) and retaining lug (2) of trim (3) must not be bent up.

cardiagn.com

51 36 040 Removing and installing/replacing strip on side window at rear bottom left or right

Special tools required:

- 00 9 318



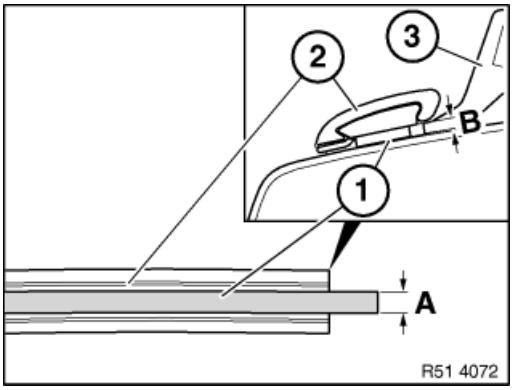
Carefully lever out strip (1) with special tool 00 9 318 , starting at front, in direction of arrow.*Installation:*
Clean bonding area with adhesive remover (sourcing reference: BMW Parts Service).

Air drying time: 1 minute

Important!

Adhesive areas must be dry and free of dust and grease.

Once it has been cleaned, do not touch the adhesive area with bare hands.



Installation:
Stick double-sided adhesive tape (1) (sourcing reference: BMW Parts Service) on middle of strip (2).

Remove protective film.

Press strip (2) firmly onto body (3).

Manual contact pressure: approx. 10 N/cm^2

Note:
Firm thumb pressure creates approx. 50 Nm/cm^2.

Double-sided adhesive tape (1):

Measurement a=7.0 mm

Measurement b=0.8 mm

Replacement:

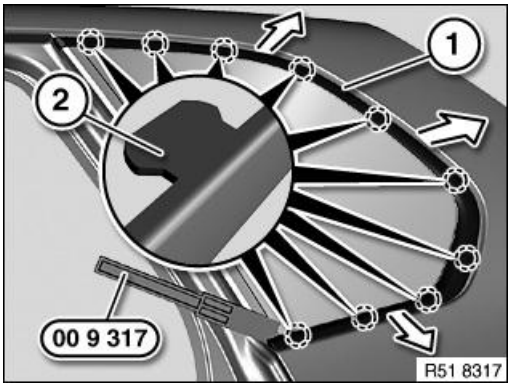
Adhesive tape (1) already attached to strip (2).

cardiagn.com

51 36 056 Removing and installing/replacing trim strip on side window on rear left or right

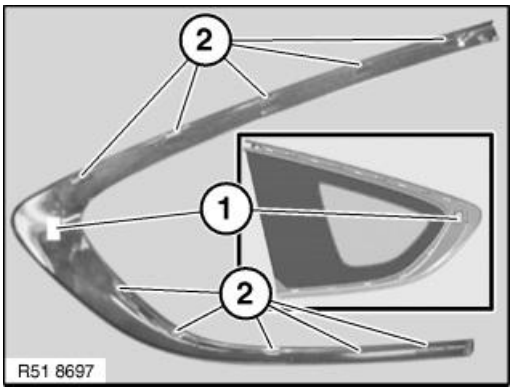
Special tools required:

- 00 9 317



Note:
Trim strip (1) must not be bent during removal.

Starting at bottom, unclip trim strip (1) 00 9 317 from tabs (2) in succession with special tool.



Installation note:
Tabs (2) must not be missing or damaged.

Lock Dual-Look (1) on trim strip by applying pressure.

cardiagn.com

51 31 ... Notes on window bonding

These notes are not applicable for side window bonding (door "centre") on E38/L7.

General procedure for disassembly/installation of bonded window glass.

Version with Head-Up Display (HUD):

- Marking for HUD must be present on the windscreen

Adhesive quantities:

Approx. 1 1/4 glue cartridges are required to bond the windscreen on the following vehicles:

- 7 Series
- 5 Series from E60
- X5
- X3

Version with GPS navigation system 1 (up to 09/1997):

After installation of rear window:

- Recalibrate magnetic field probe
- Refer to functional description in ISID (Integrated Service Information Display)

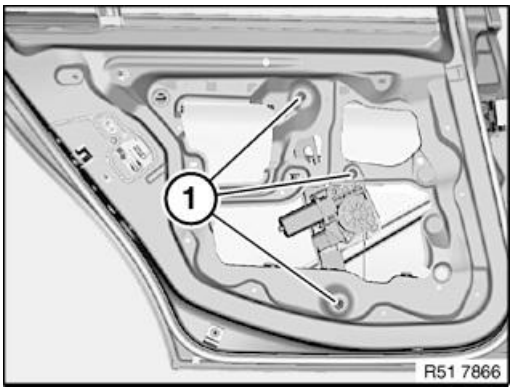
cardiagn.com

51 37 000 Removing and installing/replacing complete rear left or right power window regulator

Note:
Disengage, but do not remove, door window and secure in the door window frame.

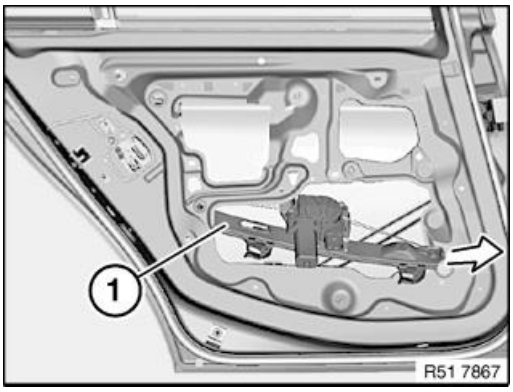
Necessary preliminary work:

- Door window glass, rear

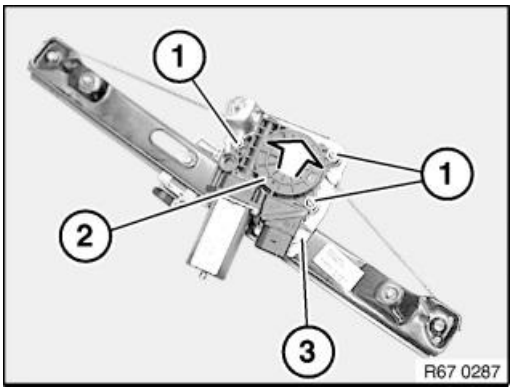


Unscrew nuts (1).

Tightening torque 51 35 2AZ.



Turn power window unit (1) in rear door and feed out in direction of arrow.



Replacement:

Release screws (1) and detach flat motor (2) from power window unit (3).

Tightening torque 51 35 1AZ.

cardiagn.com

51 48 ... Notes for bonding sound insulation (SI), doors



Special tools required:

- 51 0 300

Attention!

Do not yank at the sound insulation (risk of damage).

General:

Sound insulation is bonded to the inner door panel.

Bonded sound insulation must not be subjected to load (e.g. leak test) before 5 hours have elapsed.

On-the-job safety:

When working with bonding products (adhesive, cleaning agent, etc.):

- Wear safety goggles, protective gloves and if necessary an apron.
- Ensure the area is well ventilated.
- Change work clothing contaminated with adhesive immediately.
- Change work clothing contaminated with solvents and swelling agents immediately (keep spare work clothing on hand).
- Take skin protection measures, provide washing facilities including hot water, use silicone-free skin creams.
- Always keep an eye douche on hand, change the water regularly (once a month).
- Comply with the relevant safety regulations.

Handling adhesive area on inner door panel:

Adhesive	Cleaning
a. Butyl bead applied to sound insulation with protective film b. Butyl mini-round profile ⌀ 4 mm from the roller c. Butyl round profile ⌀ 6 mm from the roller	a. Cleaning agentR2 *Under no circumstances: paint thinning* b. Carry out bonding only after an air drying time ≥ 1 min. Air drying time may be omitted if the entire bonding surface is wiped with a dry cloth c. After cleaning, the bonding surface may not be touched with hands or fouled again

Repair in area of sound insulation, door:

Repair	
	• Cut the butyl rope between the sound insulation and the inner door panel with a sharp knife • After the repair is finished, position a new butyl rope ⌀ 4 mm directly on the original adhesive bead • Heat the butyl bead with a standard hot air blower until the butyl rope strings when touched slightly. Do not damage the sound insulation in the process • Press on with special tool 51 0 300. Perform this work extremely carefully because the increased amount of adhesive requires contact pressure of ≥ 20 N/cm^2 (compared to firm thumb pressure ~ 30 N/cm^2) • Visually check the adhesive bead and its compression (no capillaries or broken adhesive bead permitted)

cardiagn.com

in the event of damaged sound insulation or leakage	• In the cases mentioned, the complete sound insulation must be replaced. After removing the sound insulation, removal all butyl remnants from the inner door panel. Apply 6 mm ⌀ butyl rope to new sound insulation • Press on with special tool 51 0 300. Contact pressure ≥ 20 N/cm^2 (compare to firm thumb pressure ~ 30 N/cm^2)

The sound insulation must be bonded watertight below the door lock:

- Flat bonding surface required all round.
- No bonding in the event of moisture (e.g. condensation, etc.).
- Bonding area must not show any traces of adhesion-reducing residues (e.g. separating agents, greases, oils, paraffins, plastisols, cavity wax, polishing dust residues, etc.).
- Remove the protective film directly before joining (under no circumstances remove earlier, since the butyl, because of its stickiness, will very quickly pick up adhesion-reducing dirt contaminants).
- The sound insulation must be attached with positional accuracy to the inner door panel because it will no longer be possible to change the position without damaging the butyl bead.
- With repainted areas, the maximum permitted temperature of 90°C may not be exceeded in the area of the sound insulation. Otherwise, the sound insulation must be removed (and replaced, if necessary).

Expiry date of adhesive:

24 months, see label on packaging.

Disposal of the cleaning cloth:

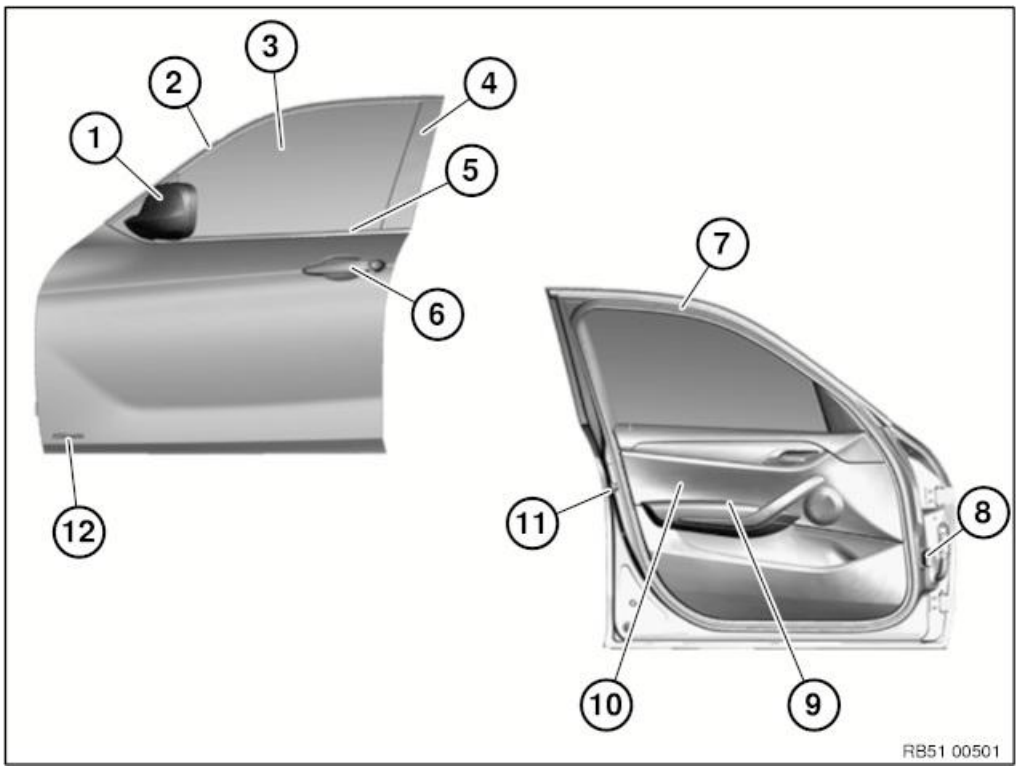
Cleaning cloths and cleaning agent residues are hazardous waste (see also safety data sheet).

Disposal of adhesive:

Hazardous waste (see also safety data sheet).

cardiagn.com

51 00 .. Overview of front door



1 Exterior mirror
2 Rubber guide for door window glass
3 Door window glass
4 Trim on window frame
5 Window cavity cover strip
6 Outer door handle
7 Cover on door window frame
8 Door brake
9 Rocker switch for window operation
10 Door trim panel
11 Door lock
12 Lettering

cardiagn.com

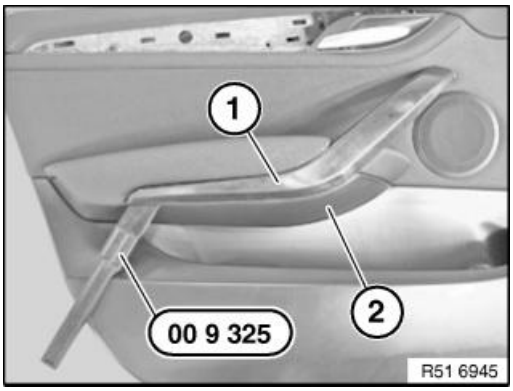
51 41 000 Removing and installing left or right front door trim panel

Special tools required:

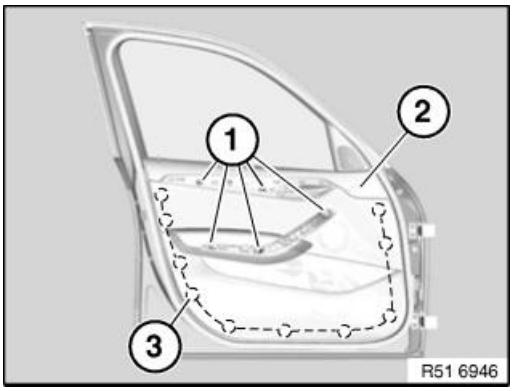
- 00 9 325

Necessary preliminary tasks:

- Remove decorative strip from door trim panel



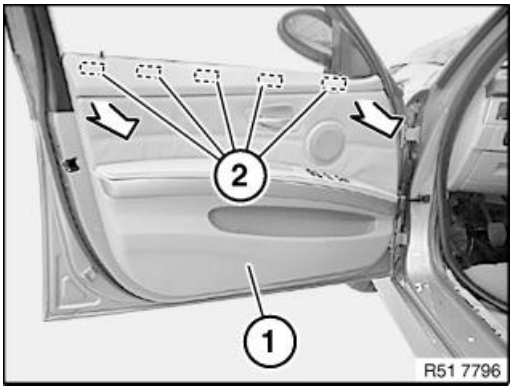
Unclip and remove cover (1) at handle (2) with special tool 00 9 325 as shown.



Release screws (1).

Tightening torque 51 41 1AZ.

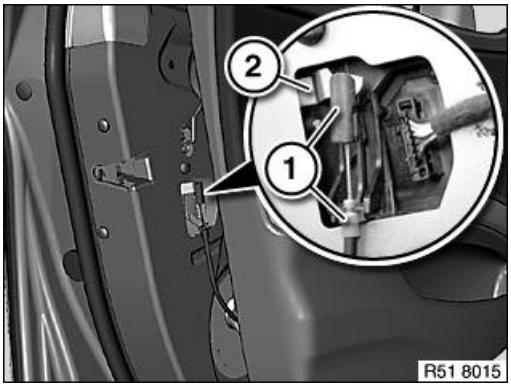
Unclip clips (3) of door trim panel (2) starting from bottom with special tool 00 9 325 .



Note:
Graphic is similar.

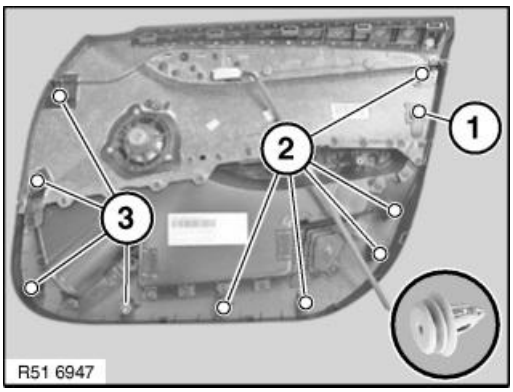
Carefully unclip door trim panel (1) at top from clamps (2).

cardiagn.com



Unhook Bowden cable (1) from door lock (2).

Disconnect all plug connections and remove door trim panel.



Installation note:
Replace faulty clips.

Ensure correct installation location:

1 Light beige clip

2 White clamp

3 Grey clip

Install clips (2) and (3) with sealing ring.

Installation note:
After assembling the door trim panel proceed as follows:

- Open side window
- Lock with vehicle key
- Check for ease of movement on locking button linkage
- If necessary, align linkage

cardiagn.com

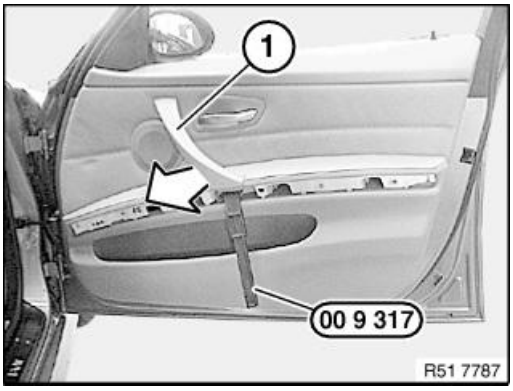
51 41 017 Removing and installing/replacing cover on front door handle (passenger side)

Special tools required:

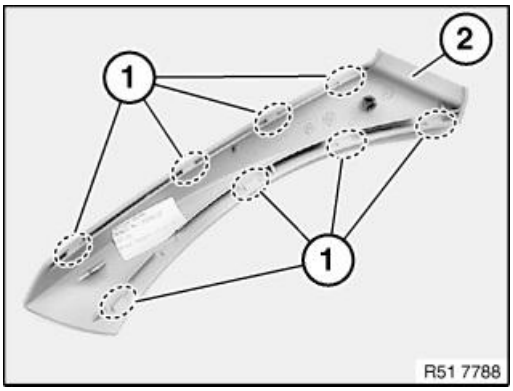
- 00 9 317

Necessary preliminary tasks:

- Remove decorative strip from front door (passenger side)



Lever out cover (1) with special tool 00 9 317 .



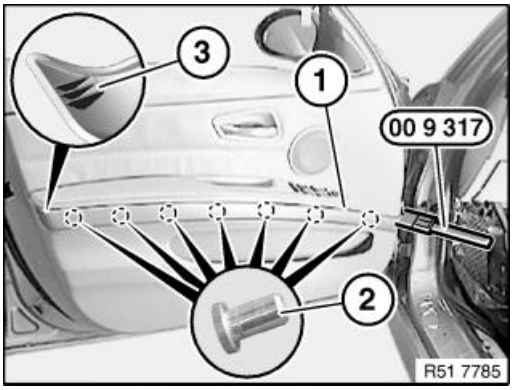
Installation:
Catches (1) of cover (2) must not be damaged.

cardiagn.com

51 41 030 Removing and installing/replacing decorative strip on front left or right door trim panel

Special tools required:

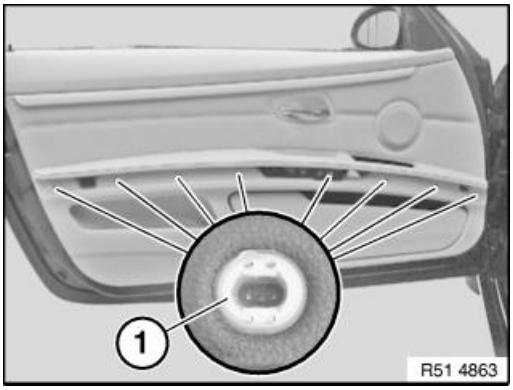
- 00 9 317



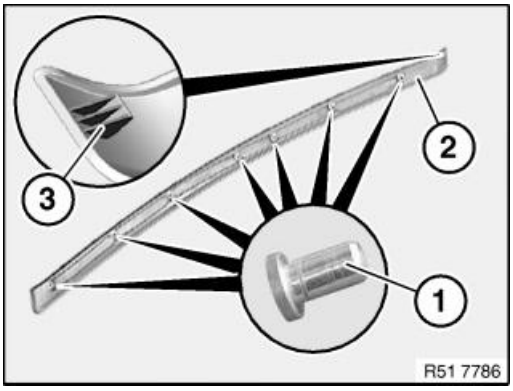
Starting at front, release decorative strip (1) with special tool 00 9 317 from clips (2).

Feed decorative strip (1) towards rear out of retaining hook (3) and remove.

Installation:
No clip (Hutfix) must be fitted under third clip (2) from rear.



Installation:
Released or damaged Hutfix clips (1) must be replaced.



Installation:
Clips (1) on decorative strip (2) and counterpiece on door trim panel must not be damaged.

Retaining hook (3) must not be damaged.

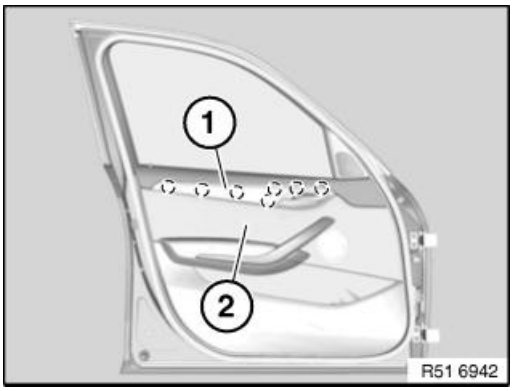
cardiagn.com

51 41 030 Removing and installing/replacing decorative strip on front left or right door trim panel

Special tools required:

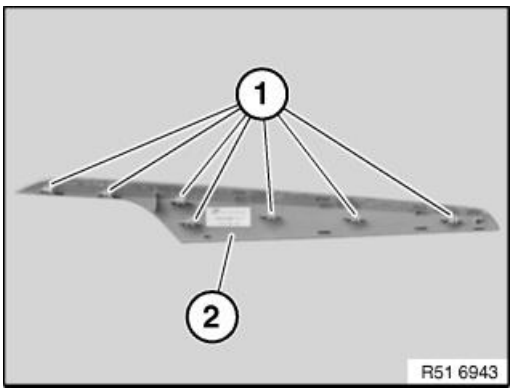
- 00 9 325

When working on trim panel components, make sure that visible surfaces are not scratched or damaged (e.g. by sharp-edged tools).



Use special tool 00 9 325 to unclamp the decorative strip (1) at the marked points and remove from the door trim panel (2).*Installation note:* Retaining clips must not be damaged and clamps of decorative strip (1) must not be broken.

Properly snap in decorative strip (1)



Replacement

Remount retaining clips (1) on decorative strip (2).

cardiagn.com

51 48 060 Removing and installing/replacing sound insulation in left or right front door

Important!

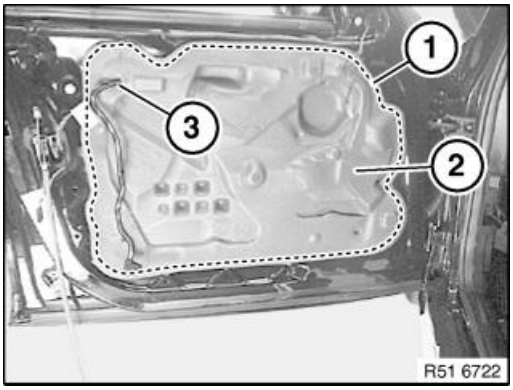
Instructions for sound insulation are an essential part of these repair instructions and must be followed without fail.

Do not detach sound insulation in jerks (risk of damage).

After every repair, check that the sound insulation is water-tight (water ingress).

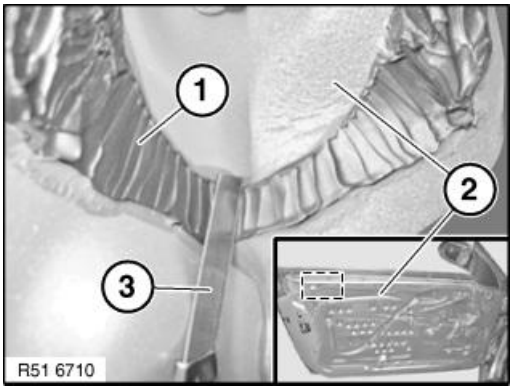
Necessary preliminary tasks:

- Remove door trim panel



Position of sealing bead (1).

Feed cable (3) out of sound insulation (2).



Important!

When cutting through sealing bead (1), do not damage sound insulation (2) and if necessary cable.

With a suitable sharp cutting tool (3) cut through sealing bead (1) of sound insulation (2) in the area to be detached.

Clean bonding area with adhesive remover (sourcing reference: BMW Parts Service).

Air drying time: 1 minute

Important!

Adhesive areas must be dry and free of dust and grease.

Once it has been cleaned, do not touch the adhesive area with bare hands.

cardiagn.com

Note:
Replacement:

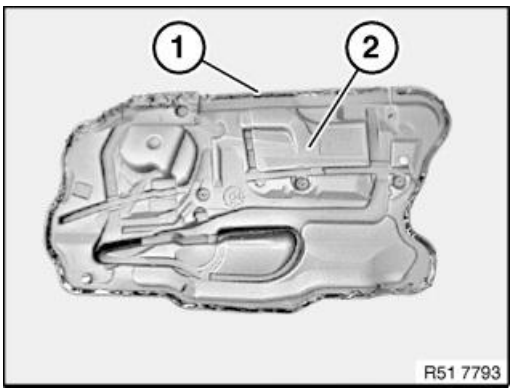
Lay 6 mm dia. butyl rope (sourcing reference: BMW Parts Department) in specified adhesive area.

Heat butyl cord (hot air blower) and press down firmly on sound insulation all round.

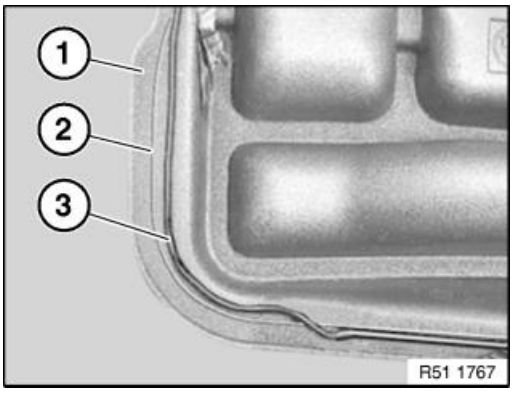
Contact pressure with hand roller: approx. 20 N/cm ^{2}

Manual contact pressure: approx. 10 N/cm ^{2}

Note:
Firm thumb pressure has approx. 30 N/cm ^{2}



Note:
Position of butyl rope (1) on sound insulation (2).



Note:
A marking (2) is provided all round on the sound insulation (1).

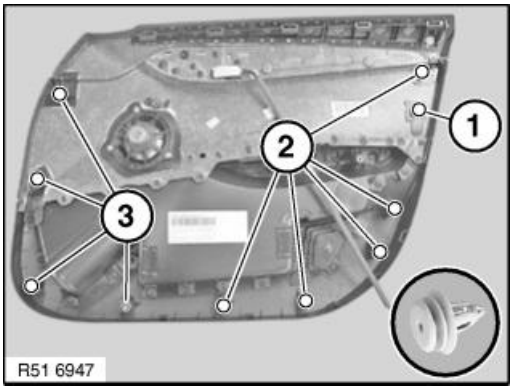
Butyl rope (3) rests on or inside the marking (2).

cardiagn.com

51 41 001 Replacing front left or right door trim panel

Necessary preliminary tasks:

- Remove front door trim
- Rebuild Bowden cable for inside door opener
- Modify mid-range speaker
- Rebuild rocker switch for side window operation



Rebuild all clips (1, 2 and 3).

Ensure correct installation location:

1 Light beige clip

2 White clip

3 Grey clip

Remove clips (2) and (3) with sealing ring.

Installation:
Remove faulty clips.

cardiagn.com

51 48 ... Notes for bonding sound insulation (SI), doors



Special tools required:

- 51 0 300

Attention!

Do not yank at the sound insulation (risk of damage).

General:

Sound insulation is bonded to the inner door panel.

Bonded sound insulation must not be subjected to load (e.g. leak test) before 5 hours have elapsed.

On-the-job safety:

When working with bonding products (adhesive, cleaning agent, etc.):

- Wear safety goggles, protective gloves and if necessary an apron.
- Ensure the area is well ventilated.
- Change work clothing contaminated with adhesive immediately.
- Change work clothing contaminated with solvents and swelling agents immediately (keep spare work clothing on hand).
- Take skin protection measures, provide washing facilities including hot water, use silicone-free skin creams.
- Always keep an eye douche on hand, change the water regularly (once a month).
- Comply with the relevant safety regulations.

Handling adhesive area on inner door panel:

Adhesive	Cleaning
a. Butyl bead applied to sound insulation with protective film b. Butyl mini-round profile ⌀ 4 mm from the roller c. Butyl round profile ⌀ 6 mm from the roller	a. Cleaning agentR2 *Under no circumstances: paint thinning* b. Carry out bonding only after an air drying time ≥ 1 min. Air drying time may be omitted if the entire bonding surface is wiped with a dry cloth c. After cleaning, the bonding surface may not be touched with hands or fouled again

Repair in area of sound insulation, door:

Repair	
	• Cut the butyl rope between the sound insulation and the inner door panel with a sharp knife • After the repair is finished, position a new butyl rope ⌀ 4 mm directly on the original adhesive bead • Heat the butyl bead with a standard hot air blower until the butyl rope strings when touched slightly. Do not damage the sound insulation in the process • Press on with special tool 51 0 300. Perform this work extremely carefully because the increased amount of adhesive requires contact pressure of ≥ 20 N/cm^2 (compared to firm thumb pressure ~ 30 N/cm^2) • Visually check the adhesive bead and its compression (no capillaries or broken adhesive bead permitted)

cardiagn.com

in the event of damaged sound insulation or leakage	• In the cases mentioned, the complete sound insulation must be replaced. After removing the sound insulation, removal all butyl remnants from the inner door panel. Apply 6 mm ⌀ butyl rope to new sound insulation • Press on with special tool 51 0 300. Contact pressure ≥ 20 N/cm^2 (compare to firm thumb pressure ~ 30 N/cm^2)

The sound insulation must be bonded watertight below the door lock:

- Flat bonding surface required all round.
- No bonding in the event of moisture (e.g. condensation, etc.).
- Bonding area must not show any traces of adhesion-reducing residues (e.g. separating agents, greases, oils, paraffins, plastisols, cavity wax, polishing dust residues, etc.).
- Remove the protective film directly before joining (under no circumstances remove earlier, since the butyl, because of its stickiness, will very quickly pick up adhesion-reducing dirt contaminants).
- The sound insulation must be attached with positional accuracy to the inner door panel because it will no longer be possible to change the position without damaging the butyl bead.
- With repainted areas, the maximum permitted temperature of 90°C may not be exceeded in the area of the sound insulation. Otherwise, the sound insulation must be removed (and replaced, if necessary).

Expiry date of adhesive:

24 months, see label on packaging.

Disposal of the cleaning cloth:

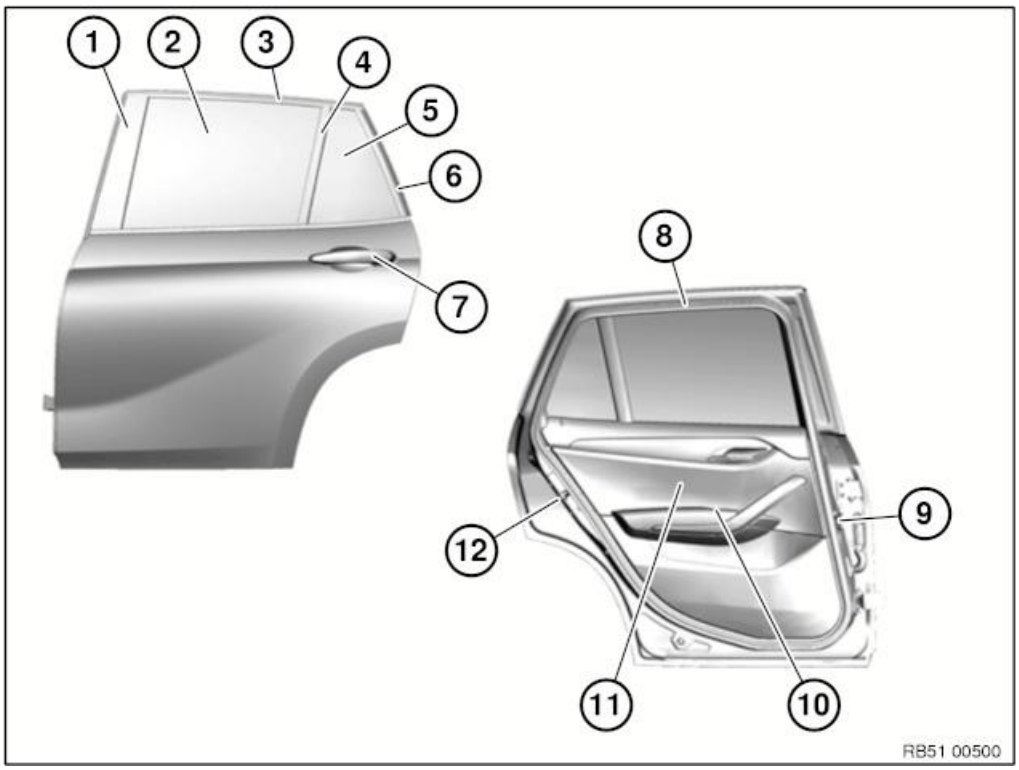
Cleaning cloths and cleaning agent residues are hazardous waste (see also safety data sheet).

Disposal of adhesive:

Hazardous waste (see also safety data sheet).

cardiagn.com

51 00 .. Overview of rear door



1 Cover (front) on window frame
2 Door window glass
3 Rubber guide for door window glass
4 Trim for window guide
5 Door window glass (stationary)
6 Cover on window frame (rear)
7 Outside handle
8 Cover on door window frame
9 Door brake
10 Rocker switch for side window operation
11 Door trim panel
12 Door lock

cardiagn.com

51 42 000 Remove and install left or right rear door trim panel

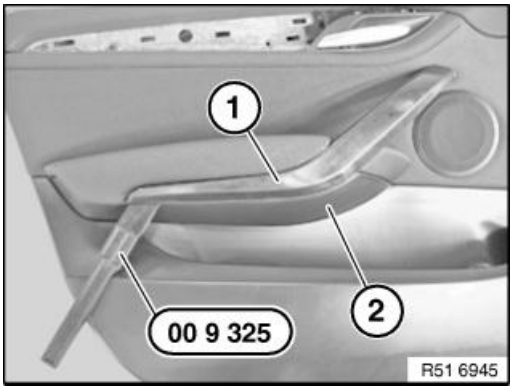
Special tools required:

- 00 9 325

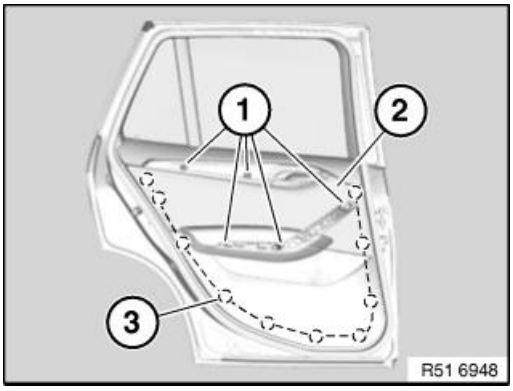
When working on trim panel components, make sure that visible surfaces are not scratched or damaged (e.g. by sharp-edged tools).

Necessary preliminary tasks:

- Remove decorative strip from door trim panel



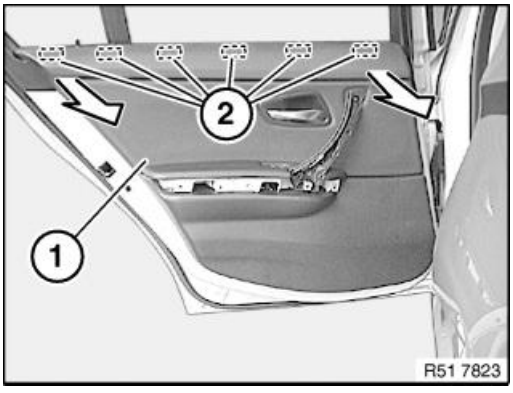
Unclip and remove cover (1) at handle (2) with special tool 00 9 325 as shown.



Release screws (1).

Tightening torque 51 42 1AZ.

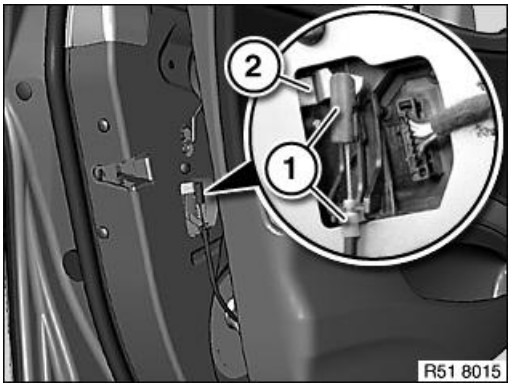
Unclip clips (3) of door trim panel (2) starting from bottom with special tool 00 9 325 .



Note:
Graphic is similar.

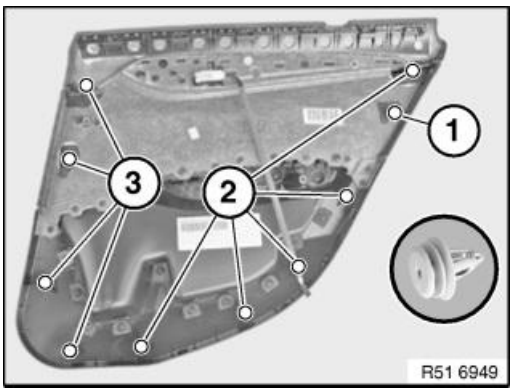
Carefully unclip door trim panel (1) at top from clamps (2).

cardiagn.com



Unhook Bowden cable (1) from door lock (2).

Disconnect plug connections on power window switch and remove door trim panel.



Installation note:
Replace faulty clips.

Ensure correct installation location:

1 Light beige clip

2 White clamp

3 Grey clip

Install clips (2) and (3) with sealing ring.

Installation note:
After assembling the door trim panel proceed as follows:

- Open side window
- Lock with vehicle key
- Check for ease of movement on locking button linkage
- If necessary, align linkage

cardiagn.com

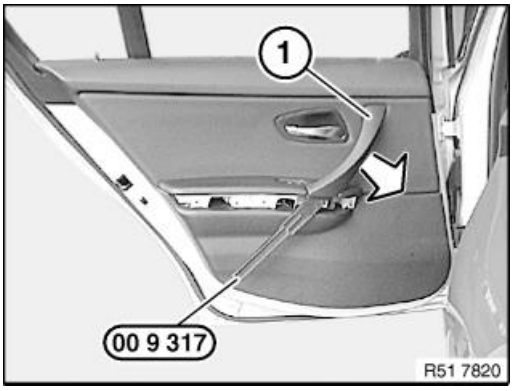
51 42 017 Removing and installing/replacing cover on door handle, rear left or right

Special tools required:

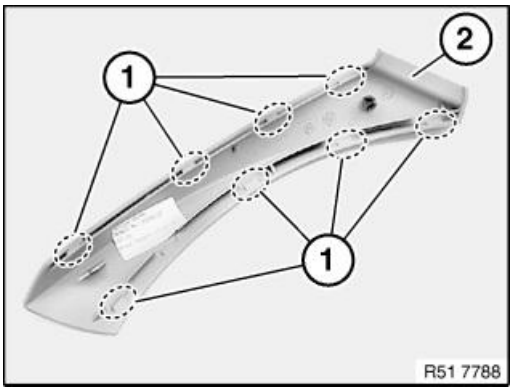
- 00 9 317

Necessary preliminary tasks:

- Remove decorative strip from door trim panel at rear



Lever out cover (1) with special tool 00 9 317 .



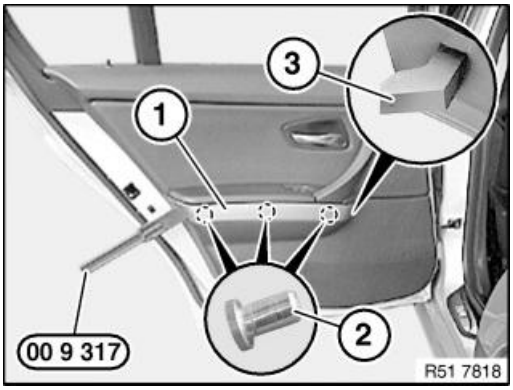
Installation:
Catches (1) of cover (2) must not be damaged.

cardiagn.com

51 42 030 Removing and installing/replacing decorative strip (light strip) on rear left or right door trim panel

Special tools required:

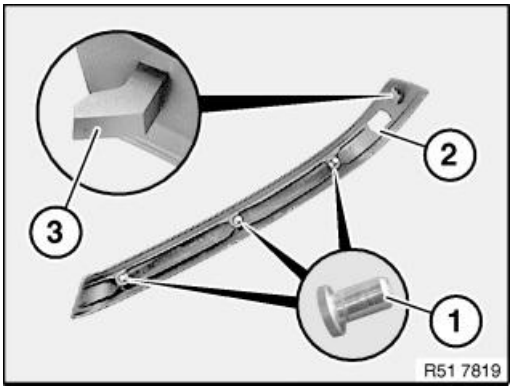
- 00 9 317



Starting at rear, release decorative strip (1) with special tool 00 9 317 from clips (2).

Feed decorative strip (1) towards front out of retaining hook (3) and remove.

Installation:
Released or damaged Hutfix clips must be replaced.



Installation:
Clips (1) on decorative strip (2) and counterpieces on door trim panel must not be damaged.

Retaining hook (3) must not be damaged.

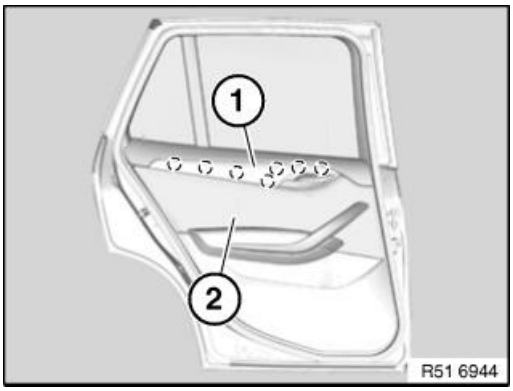
cardiagn.com

51 42 030 Removing and installing/replacing decorative strip on left or right rear door trim panel

Special tools required:

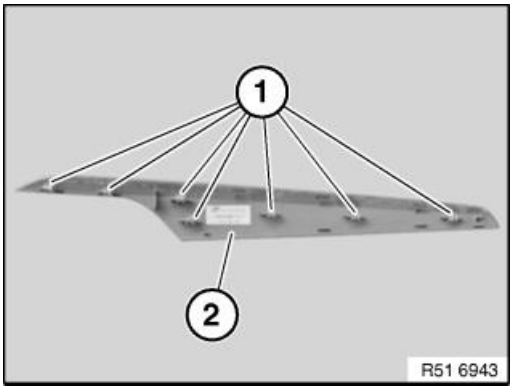
- 00 9 325

When working on trim panel components, make sure that visible surfaces are not scratched or damaged (e.g. by sharp-edged tools).



Use special tool 00 9 325 to unclip decorative strip (1) at market points and remove from door trim panel (2).*Installation note:*
Retaining clips must not be damaged and clamps of decorative strip (1) must not be broken.

Properly snap in decorative strip (1)



Replacement

Remount retaining clips (1) on decorative strip (2).

cardiagn.com

51 48 070 Removing and installing/replacing sound insulation on left or right rear door

Important!

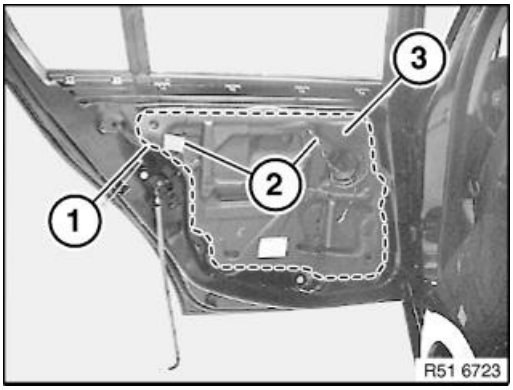
Instructions for sound insulation are an essential part of these repair instructions and must be followed without fail.

Do not detach sound insulation in jerks (risk of damage).

It is essential to ensure the sound insulation is watertight (water intrusion) every time any repair work has been carried out.

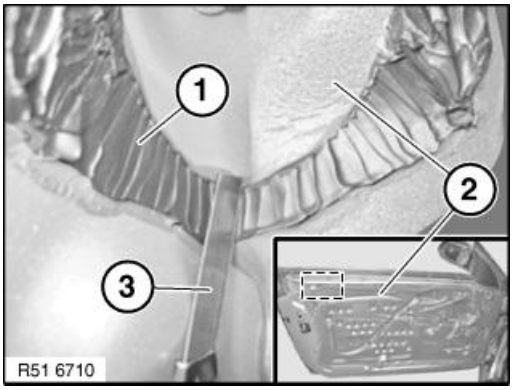
Necessary preliminary tasks:

- Remove rear door trim panel



Position of sealing bead (1).

Feed wires (2) out of sound insulation (3).



Important!

When cutting through sealing bead (1), do not damage sound insulation (2) and if necessary cable.

With a suitable sharp cutting tool (3) cut through sealing bead (1) of sound insulation (2) in the area to be detached.

Clean bonding area with adhesive remover (sourcing reference: BMW Parts Service).

Air drying time: 1 minute

Important!

Adhesive areas must be dry and free of dust and grease.

Once it has been cleaned, do not touch the adhesive area with bare hands.

cardiagn.com

Note:
Replacement:

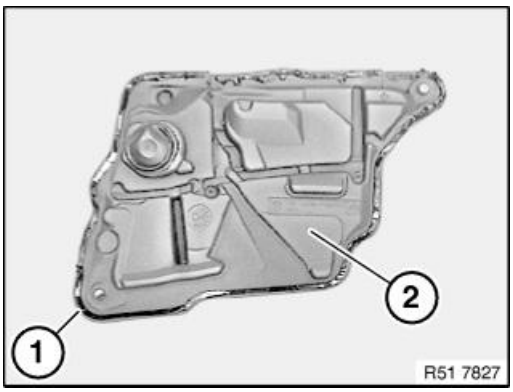
Lay 6 mm dia. butyl rope (sourcing reference: BMW Parts Department) in specified adhesive area.

Heat butylene tape (hot air blower) and press down firmly on sound insulation all round.

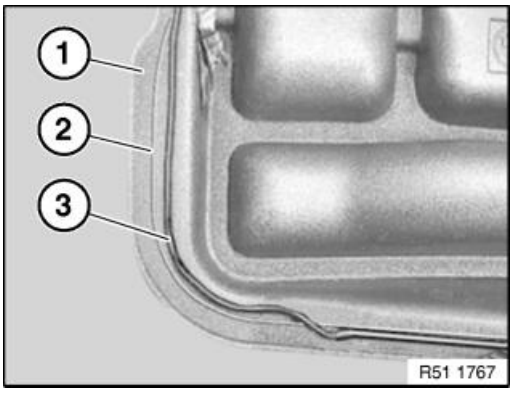
Contact pressure with hand roller: approx. 20 N/cm ^{2}

Manual contact pressure: approx. 10 N/cm ^{2}

Note:
Firm thumb pressure has approx. 30 N/cm ^{2}



Note:
Position of butyl rope (1) on sound insulation (2).



Note:
A marking (2) is provided all round on the sound insulation (1).

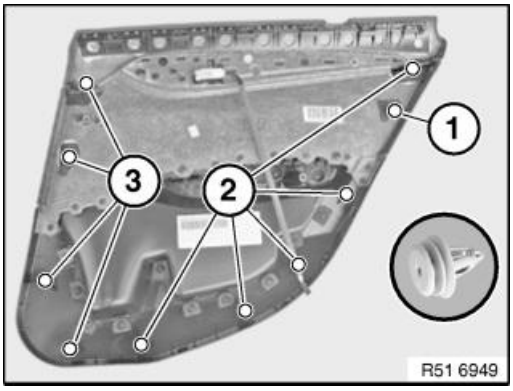
Butyl rope (3) rests on or inside the marking (2).

cardiagn.com

51 42 001 Replacing left or right rear door trim panel

Necessary preliminary tasks:

- Remove rear door trim panel
- Modify Bowden cable for inside door opener
- Modify Rocker switch for side window operation



Modify all clips (1, 2 and 3).

Check for correct installation location:

1 Light beige clip

2 White clip

3 Grey clip

Install clips (2) and (3) with sealing ring.

Installation:
Replace faulty clips.

cardiagn.com

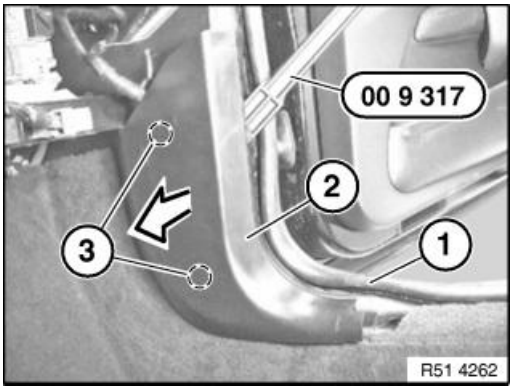
51 43 075 Removing and installing / replacing side trim panel, footwell, on A-pillar, right

Special tools required:

- 00 9 317

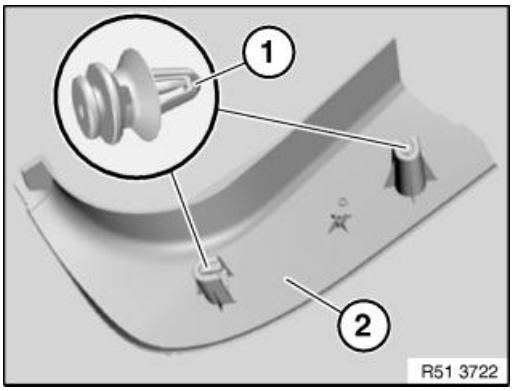
Necessary preliminary tasks:

- Remove front entrance cover strip (inside)



Detach mucket (1) in area of side trim panel (2).

Unclip side trim panel (2) 00 9 317 with special tool in direction of arrow at retaining points (3) and remove.



Installation:
If necessary, lever out clips (1) remaining in bores.

If necessary, replace faulty clips (1).

Position side trim panel (2) preinstalled with clips (1) on associated bores and clip into place.

cardiagn.com

51 43 150 Removing and installing or replacing trim for left or right door pillar (bottom)

Necessary preliminary tasks:

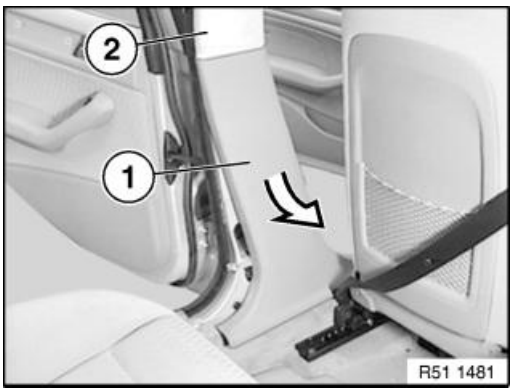
- Remove front door sill cover strip

E84 only:

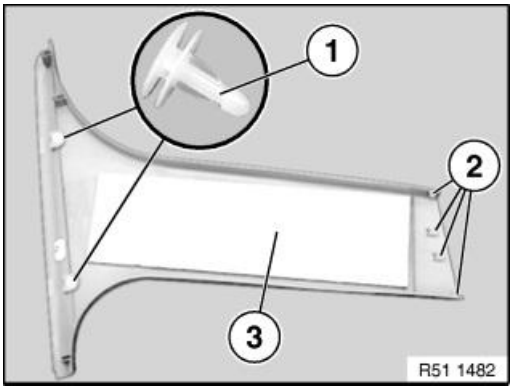
- Remove rear door sill cover strip



Snap trim (2) out of clips (1) at bottom.
Feed out trim (2) for door pillar from door sill cover strip (3).



Partially detach edge protection in area of B-pillar panel.
Carefully feed out bottom trim (1) from top trim (2).



Installation:
If necessary, replace faulty clips (1).
Guides (2) on trim (3) must not be damaged.

cardiagn.com

51 43 201 Removing and installing or replacing trim for roof pillar at front (A-pillar), left or right

Special tools required:

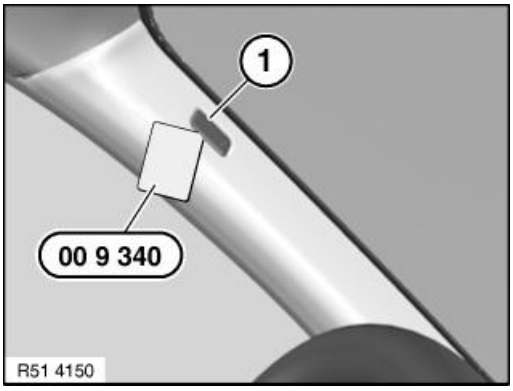
- 00 9 340

Warning!

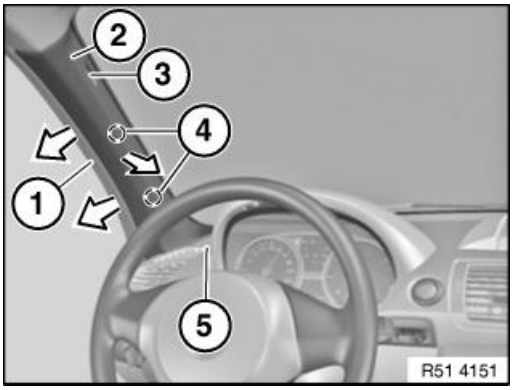
Follow safety instructions for working on vehicles with airbag systems.

Important!

Do not use any sharp-edged tools to remove trim (risk of damage to head airbag).



Unclip and remove sealing cap (1) using special tool 00 9 340 .



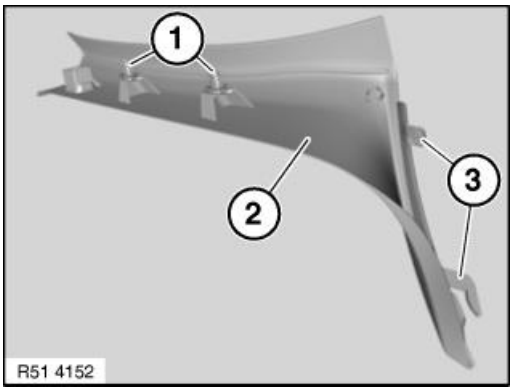
Detach edge protector (1) in area of trim (2).

Release bolt (3).

Tightening torque 51 43 1AZ .

Unclip panel (2) at fastening points (4).

Feed out panel (2) from instrument panel (5) and remove.



Installation:

If necessary, lever out clips (1) remaining in bore.

If necessary, replace faulty clips (1).

Make sure guides (3) of panel (2) are correctly seated in associated mountings.

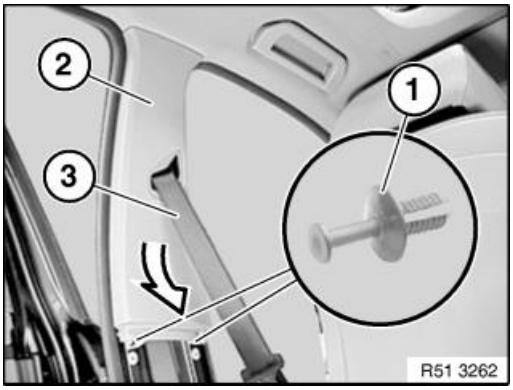
Position panel (2) pre-installed with clips (1) on associated bores and clip into place.

cardiagn.com

51 43 148 Removing and installing or replacing trim on left or right door pillar (top)

Necessary preliminary tasks:

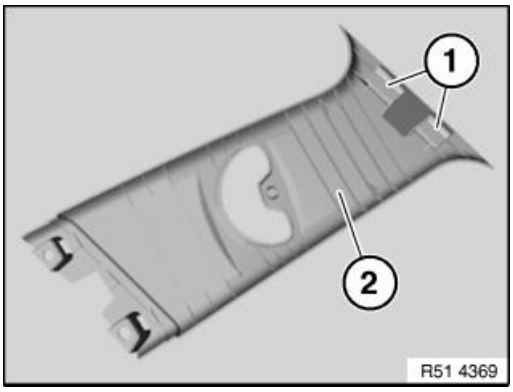
- Remove panel for door pillar (bottom)
- Release seat belt screw on front seat



Release expansion rivets (1).

Pull off trim (2) towards bottom.

Feed out seatbelt strap (3).



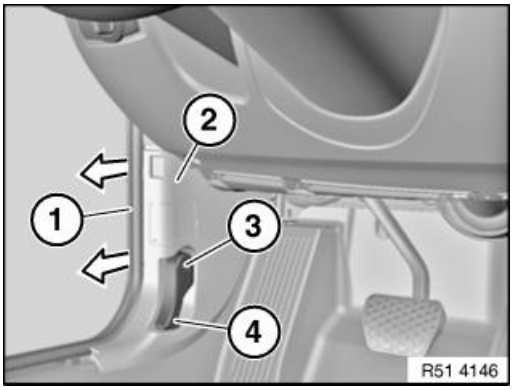
Installation:
Guides (1) on trim (2) must not be damaged.

cardiagn.com

51 43 070 Removing and installing/replacing side trim panel, footwell, on A-pillar, left

Necessary preliminary tasks:

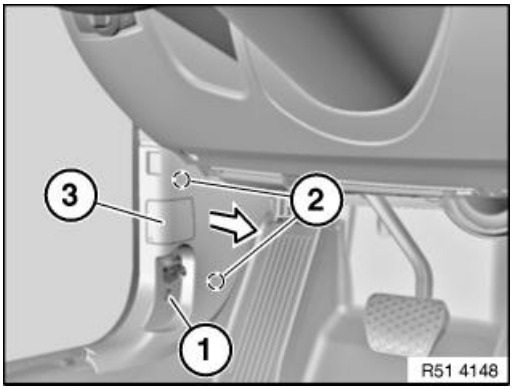
- Remove front entrance cover strip (inside)
- Remove trim panel for pedal assembly



Detach mucket (1) in area of side trim panel (2).

Release bolt (3).

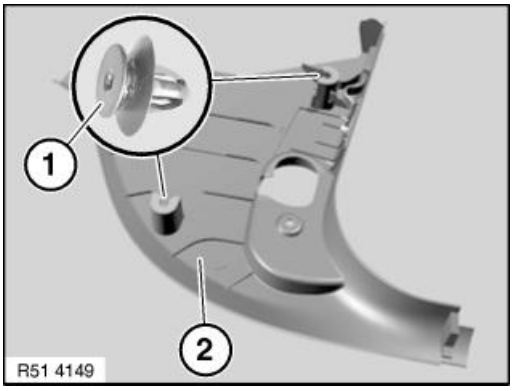
Remove hood/bonnet release lever (4) from side trim panel (2).



Release screw (1).

Unclip side trim panel (3) in direction of arrow from retaining points (2).

If necessary, disconnect associated plug connection and remove side trim panel (3).



Installation:
If necessary, lever out clips (1) remaining in bore.

If necessary, replace faulty clips (1).

Position side trim panel (2) preinstalled with clips (1) on associated bores and clip into place.

Replacement:

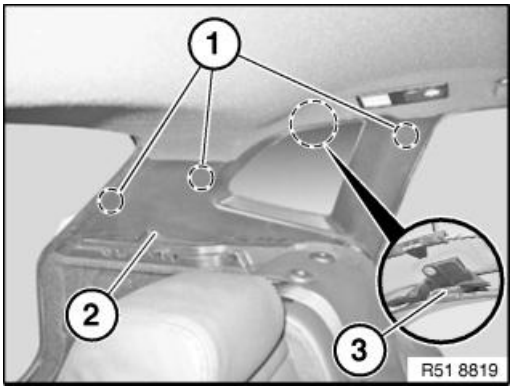
Not E84:

Remove switch for unlocking tailgate .

cardiagn.com

51 43 251 Removing and installing/replacing trim panel for left or right rear roof pillar (C-pillar)

When working on trim panel components, make sure that the sensitive surfaces are not scratched or damaged.



Remove edge guard on rear lid and door in area of trim panel (2).

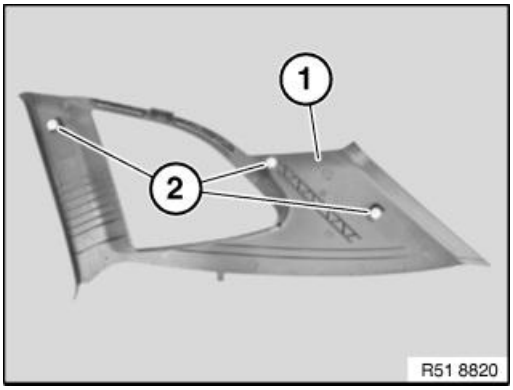
Unclip trim panel (2).

Pull trim panel upward out of retaining fixture (3).

Lift out trim (2) towards inside.

Installation:
Fit trim panel correctly in retaining fixture (3).

Retaining fixture (3) and retaining clips (2) must not be damaged.



Replacement

Replace retaining clips (2) of trim panel (1).

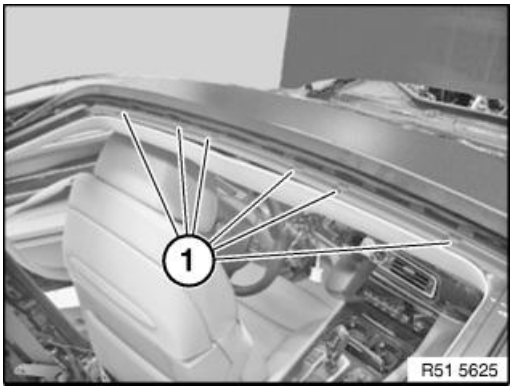
cardiagn.com

51 44 013 Removing and installing/replacing roofliner (with panorama glass roof)

When working on trim panel components, make sure that the sensitive surfaces are not scratched or damaged.

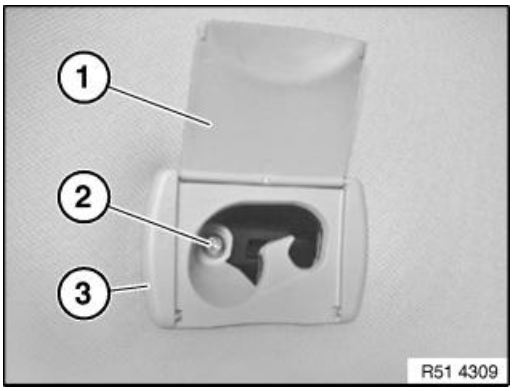
Necessary preliminary tasks:

- Open slide/tilt sunroof
- Remove sun visor and counter supports on left and right
- Remove switch centre
- Remove all handles
- If necessary, remove glasses holder
- Remove trim panel for roof pillar at front (A-pillar) left and right
- Remove trim panel for door pillar (top), left and right
- Remove trim panel for roof pillar at rear (C-pillar) left and right



Note:
Graphic used is similar.

Release 5x screws (1).



Version with dividing net mounts:

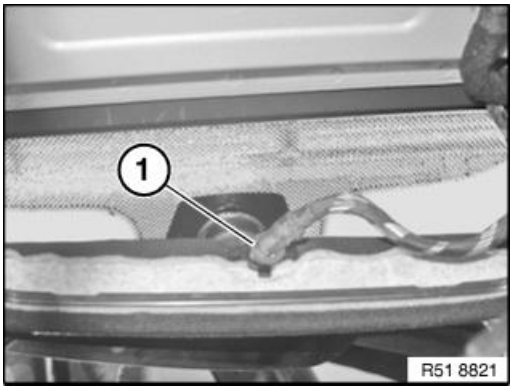
Remove all dividing net mounts (3).

Open protective cap (1).

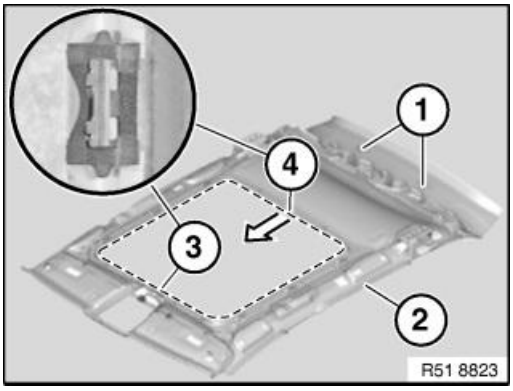
Release screw (2) and remove dividing net mounts (3).

Installation:
Pay attention to position specifications on reverse side of dividing net mounts.

cardiagn.com



Feed out rubber grommet (1) from inside mirror wiring harness.



Note:
Shown removed here for purposes of clarity.

Unclip roofliner (2) at rear (1).

Fold down rear seat backrests, then move backrest of front seats to maximum rear position.

Detach mucket from rear lid and all doors in roofliner area (2).

Unclip retaining clips (3) at panorama glass roof opening at front and side only.

Important!

Do not jolt roofliner edges during removal.

The following tasks must be carried out with a second person assisting:

Important!

To prevent deformation of panorama glass roof frame, slide roofliner (2) forwards until rear retaining clips (4) feed out at roofliner (2).

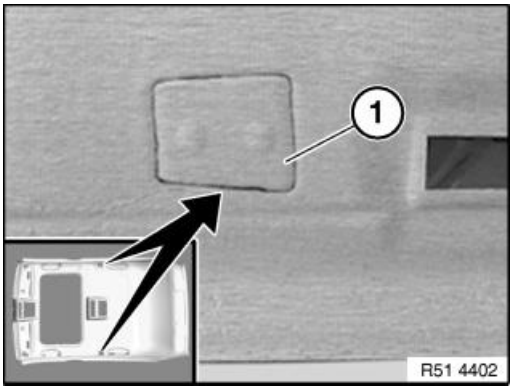
Subsequently feed retaining clips (4) out of panorama glass roof frame.

Fold away roofliner (2) towards bottom right and remove through rear lid opening.

Installation sequence:

1. Secure roof liner with mucket
2. Snap in retaining clips at rear
3. Feed in rubber grommet of inside mirror wiring harness
4. Screw down grab handles at front left and right
5. Screw down grab handles at rear left and right
6. Screw down sun visors and counter supports

cardiagn.com



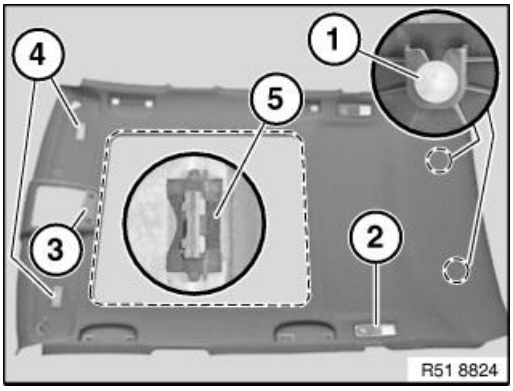
Replacement:

Version with dividing net mounts.

Cut out premarked openings (1) on left and right with a scalpel.

Important!

Ensure a clean cut so that the headliner material is not damaged on the inside.



Note:
Graphic shown as an example.

- Modify retaining clips (1) and (5)
- Modify interior light (2) on left and right
- If necessary, modify both make-up mirror lights (4)
- Depending on equipment fitted, modify further modules (3)

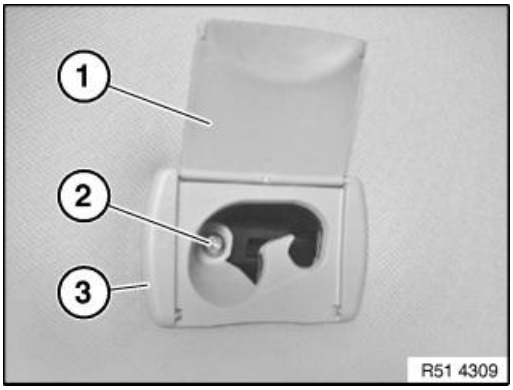
cardiagn.com

51 44 002 Removing and installing/replacing roofliner (without panorama glass roof)

When working on trim panel components, make sure that the sensitive surfaces are not scratched or damaged.

Necessary preliminary tasks:

- Remove sun visor and counter supports on left and right
- Remove interior roof light or switch cluster (front)
- Remove all handles
- If necessary, remove glasses holder
- Remove trim panel for roof pillar at front (A-pillar) left and right
- Remove trim panel for door pillar (top), left and right
- Remove trim panel for roof pillar at rear (C-pillar) left and right



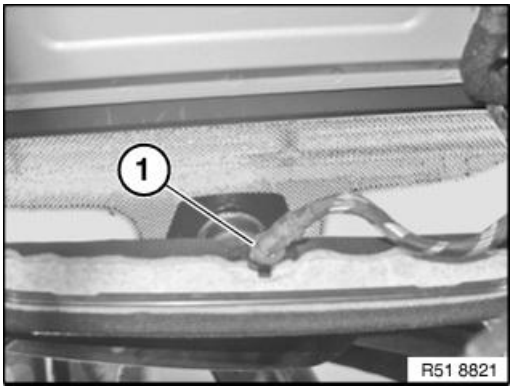
Version with dividing net mounts:

Remove all dividing net mounts (3).

Open protective cap (1).

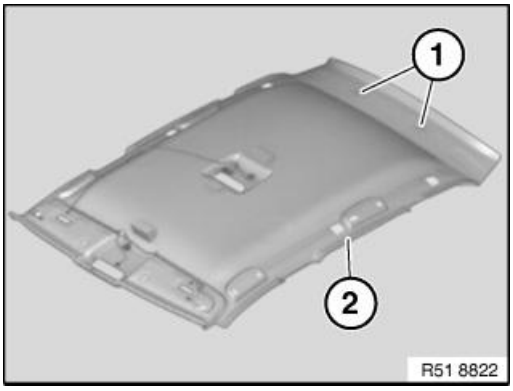
Release screw (2) and remove dividing net mounts (3).

Installation:
Observe position indications on reverse side of dividing net mounts (1).



Feed out rubber grommet (1) from inside mirror wiring harness.

cardiagn.com



Note:
Shown removed here for purposes of clarity.

Unclip roofliner (2) at rear (1).

Fold down rear seat backrests, then move backrest of front seats to maximum rear position.

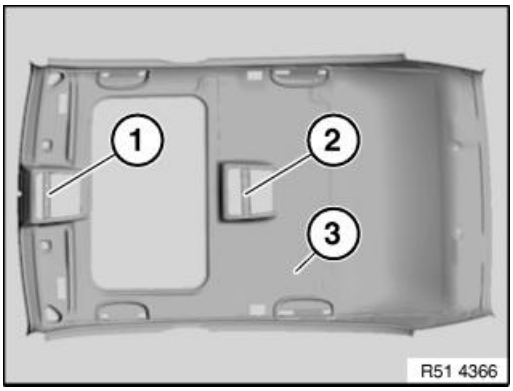
Detach mucket from rear lid and all doors in roofliner area.

Important!

Do not jolt roofliner edges during removal.

The following tasks must be carried out with a second person assisting:

Fold away roofliner (2) towards bottom right and remove through rear lid opening.

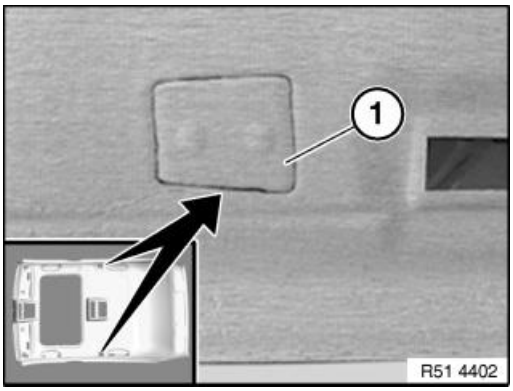


Installation:
Following parts of headliner (3) must not be damaged or missing:

- Mount (1) for front console
- Mount (2) for rear console
- Retaining clips, rear

Installation sequence:

1. Secure roof liner with mucket
2. Snap in retaining clips at rear
3. Feed in rubber grommet of inside mirror wiring harness
4. Screw down grab handles at front left and right
5. Screw down grab handles at rear left and right
6. Screw down sun visors and counter supports



Replacement:

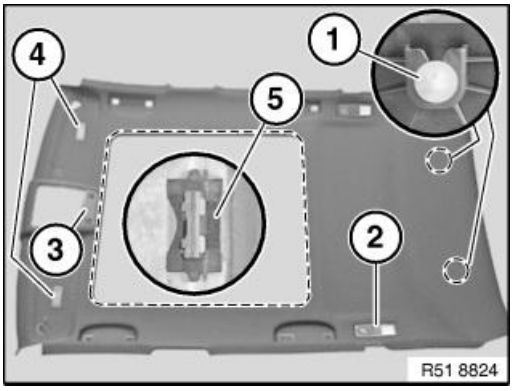
<u>Version with dividing net mounts only:</u>

Cut out premarked openings (1) on left and right with a scalpel.

Important!

Ensure a clean cut so that the headliner material is not damaged on the inside.

cardiagn.com

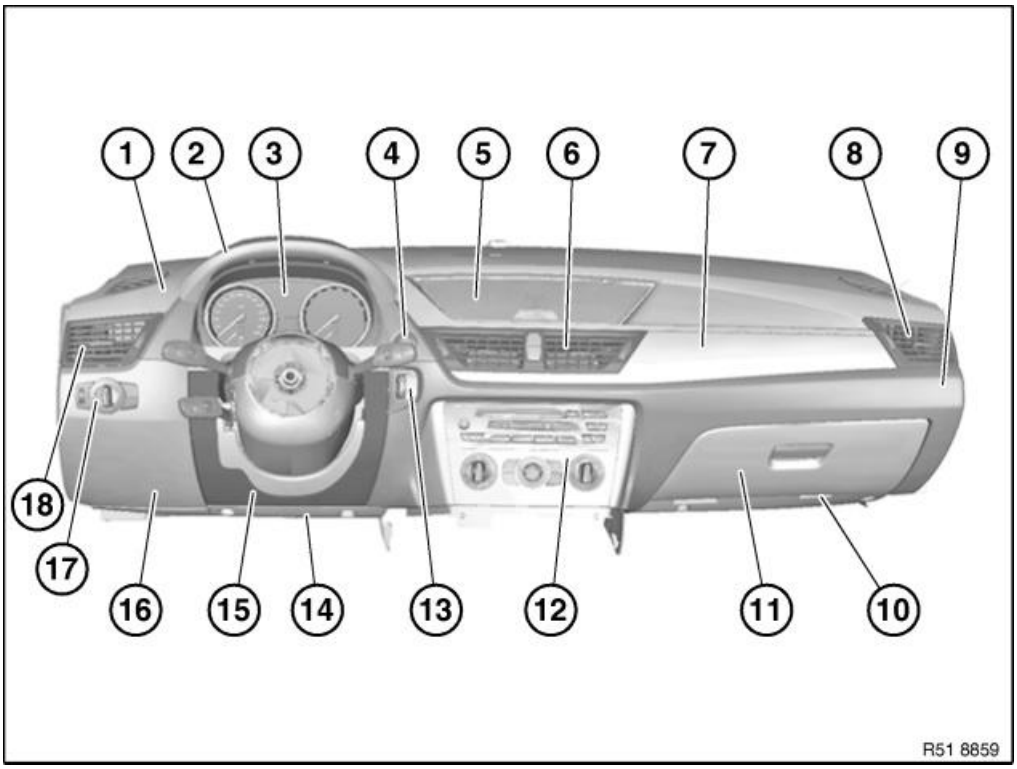


Note:
Graphic shown as an example.

- Modify retaining clips (1)
- Modify rear interior roof light (2)
- If necessary, modify both make-up mirror lights (4)
- Depending on equipment fitted, modify further modules (3)

cardiagn.com

51 45 .. Overview of dashboard



1 Dashboard trim panel
2 Dashboard scoop
3 Instrument cluster
4 Start/Stop switch
5 Top storage compartment
6 Fresh-air grille, middle
7 Trim on instrument panel, right
8 Fresh-air grille, right
9 Trim on instrument panel, right (bottom)
10 Instrument panel trim, bottom right
11 Glove box, right
12 Control panel for heater/air conditioner
13 Insert for radio control key
14 Panel for pedals
15 Instrument panel trim, bottom left (steering-column shroud lower section)
16 Instrument panel trim, bottom left
17 Light operating unit
18 Fresh-air grille, left

cardiagn.com

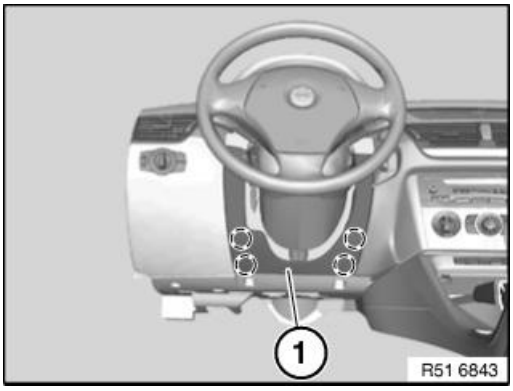
51 45 187 Remove and install trim of instrument panel (steering column shroud, lower part) lower left side



Important!

Risk of damage!

When working on trim panel components, make sure that the sensitive surfaces are not scratched or damaged.



Remove clamps (highlighted area) from steering column shroud (1).

Remove steering column shroud (1).

Installation:

Clamps and retaining tabs must not be damaged.

Cleanly press in steering column shroudÂ (1).

cardiagn.com

51 45 263 Removing and installing cover on right instrument panel (radio/glove box)

Special tools required:

- 00 9 340

Important!

Risk of damage!

When working on trim panel components, make sure that the sensitive surfaces are not scratched or damaged.

Optional equipment CIC:

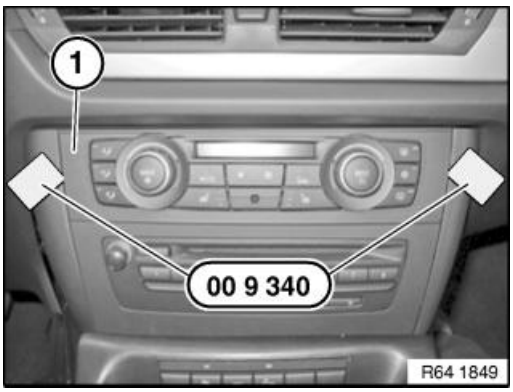
A hard disk is installed in the Car Information Computer (CIC).

Carry out mechanical work on the CIC and adjacent components with care.

Avoid subjecting the CIC to shaking/shocks.

Necessary preliminary tasks:

- Remove right fresh-air grille
- Remove trim on right instrument panel
- Remove lower left trim from instrument panel
- Remove radio-operated key insert
- Remove centre console trim

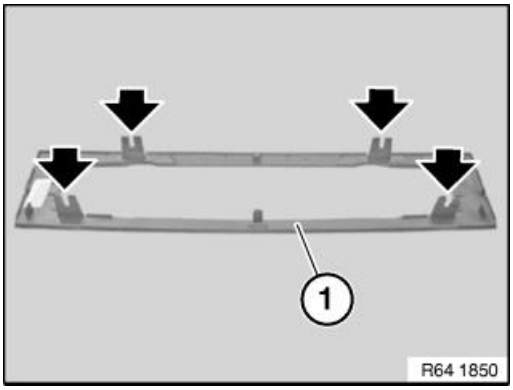


Depending on equipment in upper insert:

- Remove radio

or

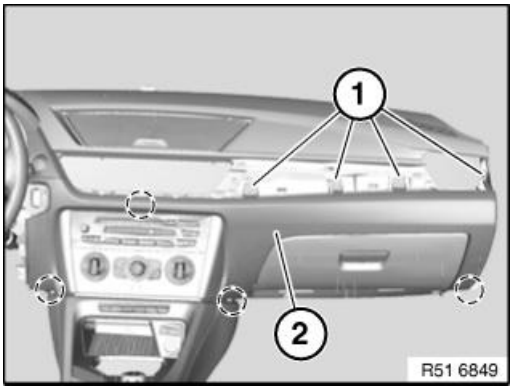
- Unclip trim for A/C - heater control panel (1) with special tool 00 9 340 , as pictured



Installation:

Marked retaining lug on climate/heater control panel cover (1) must not be damaged.

cardiagn.com



Release screws (1) from right instrument panel cover (2).

Unclamp cover in marked area and carefully remove from the driver's side over the centre console toward the rear.

Warning!

Absolutely avoid scratches or damage of the surfaces.

Installation:
Renew faulty retaining clips.

Replacement

Modify retaining clip.

cardiagn.com

51 45 030 Removing and installing instrument panel trim

Important!

Read and comply with notes on protection against electrostatic damage (ESD protection).

Observe the following instructions to facilitate removal of the instrument panel trim:

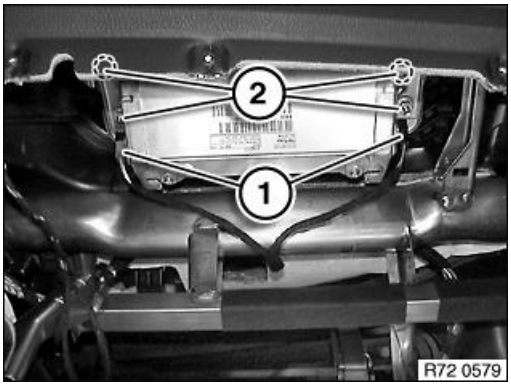
- Move front seats back completely and lower

Necessary preliminary work:

- Disconnect battery negative cable
- Remove steering wheel
- Remove trim panel for roof pillar at front , left and right
- Remove instrument panel trim at bottom left
- Remove right glove box with housing
- Remove heater/air conditioning control panel
- Remove complete centre console
- Remove steering column shroud
- Remove Start/Stop switch
- Remove instrument panel
- Remove storage compartment
- Remove mid-range speaker

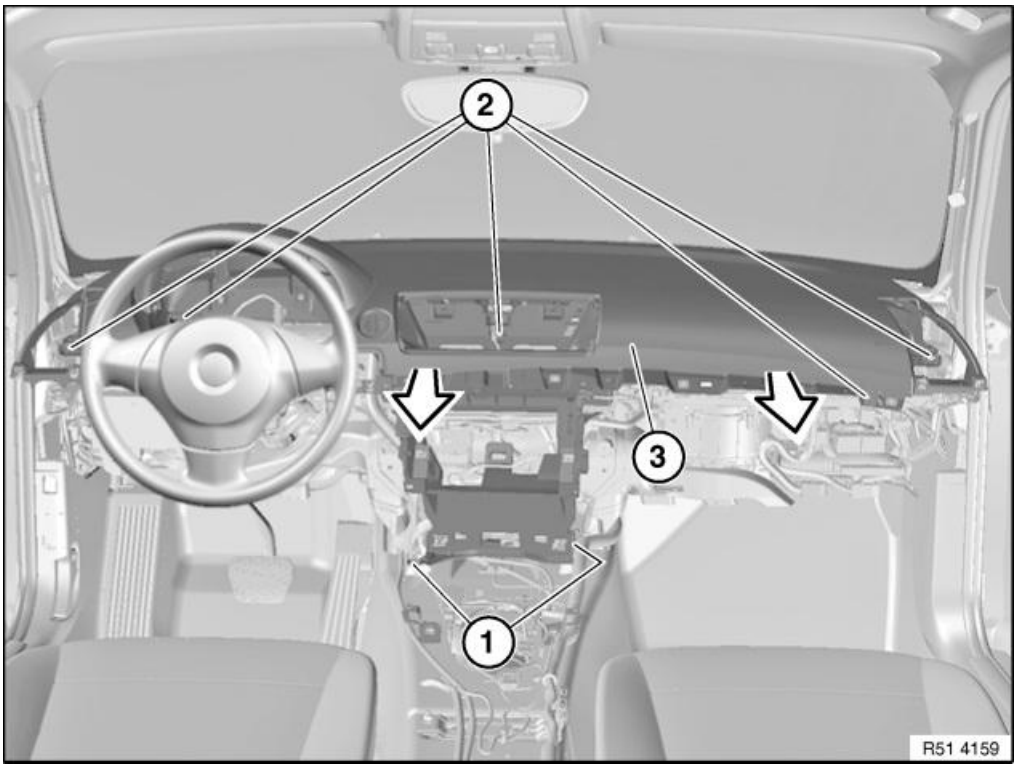
In appropriate version:

- Remove radio receiver
- Remove Central Information Display
- Remove Car Information Computer
- Remove solar sensor



Release plug connections (1) to right airbag module and disconnect.

cardiagn.com



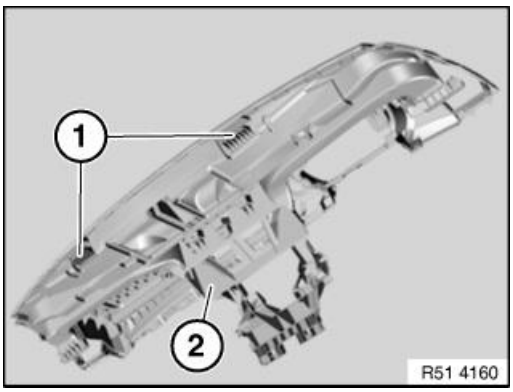
Release screws (1).

Tightening torque 51 71 5AZ.

Unfasten screws (2).

Pull back instrument panel trim (3) in direction of arrow.

If necessary, disconnect available plug connections and remove instrument panel trim (3).



Installation note:
Make sure guides (1) of instrument panel trim (2) are correctly seated in mountings.

Make sure gaskets are correctly seated on air ducts.

cardiagn.com

51 16 160 Removing and installing or replacing centre console trim panel

Important!

Risk of damage!

When working on trim panel components, make sure that the sensitive surfaces are not scratched or damaged.

Optional equipment CIC:

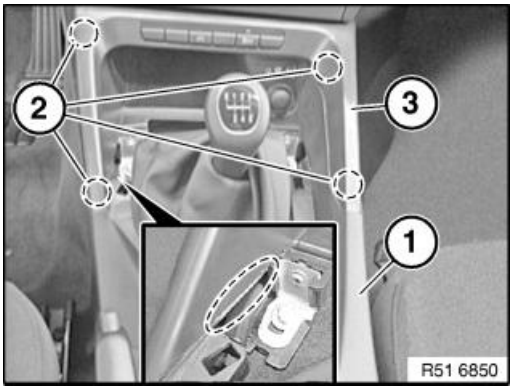
A hard disk is installed in the Car Information Computer (CIC).

Carry out mechanical work on the CIC and adjacent components with care.

Avoid subjecting the CIC to vibration/shocks.

Necessary preliminary work:

- Remove cover for storage compartment



Note:
Proceed with care when removing.

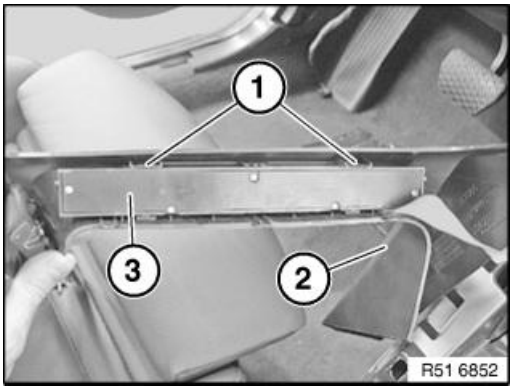
Protect centre console (1) adequately against scratches.

Pull left shank of centre console trim (3) in marked area with one hand upwards.

At same time, with second hand, pulling in jerks and directly towards rear, unclamp (2) centre console trim (3).

Likewise unclamp (2) right shank by pulling in jerks directly towards rear.

Installation note:
Renew faulty retaining clips.



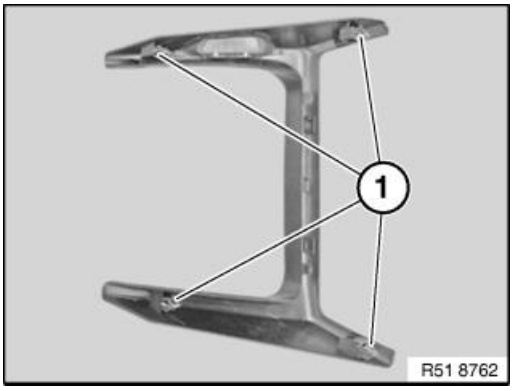
Unclamp switch centre (3) control panel (1) and remove centre console trim panel (2).

cardiagn.com



Installation note:
Do not trap the control panel ribbon cable (see arrow).

If the ribbon cable gets traps, check it for damage.



Replacement

Modify clamp clamps (1).

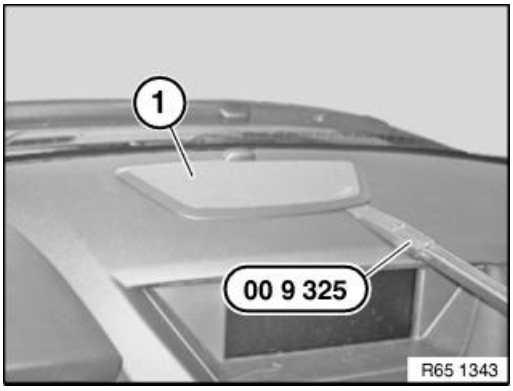
cardiagn.com

51 45 115 Removing and installing speaker frame on panel for instrument panel at top

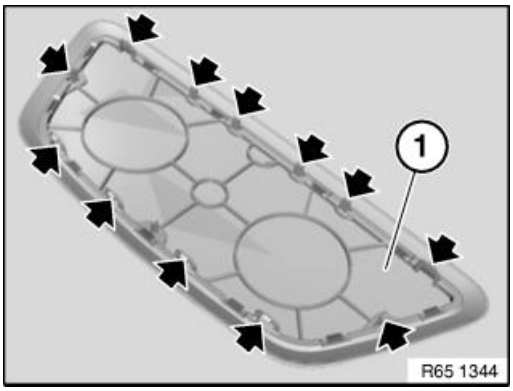
Special tools required:

- 00 9 325

When working on trim panel components, make sure that the sensitive surfaces are not scratched or damaged.



Unclip trim (1) with special tool 00 9 325 from latch mechanisms and remove upwards.



Retaining lugs (1) on speaker covers (2) must not be damaged.

Make sure speaker cover (2) is correctly seated.

cardiagn.com

51 45 266 Removing and installing/replacing instrument panel trim on right

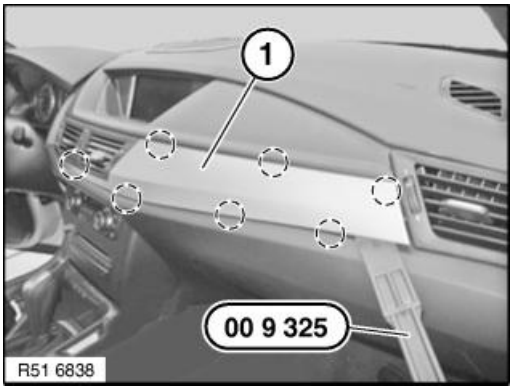
Special tools required:

- 00 9 325

Important!

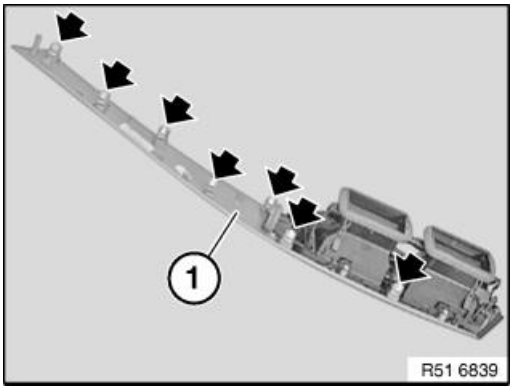
Risk of damage!

When working on trim panel components, make sure that the sensitive surfaces are not scratched or damaged.



Lever out the cover (1) on the marked points with special tool 00 9 325 .

Disconnect plug connection and remove cover (1).



Installation:
Renew faulty retaining clips.

Replacement

Modify centre fresh air grille.

Modify retaining clip.

cardiagn.com

51 45 180 Removing and installing/replacing instrument panel trim, bottom left

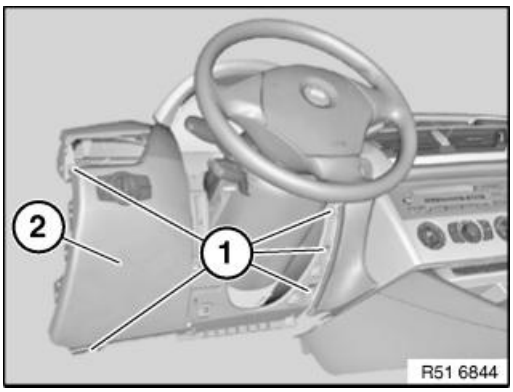
Important!

Risk of damage!

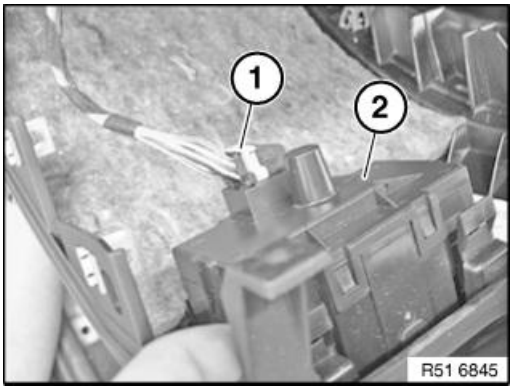
When working on trim panel components, make sure that the sensitive surfaces are not scratched or damaged.

Necessary preliminary tasks:

- Remove lower section of steering column trim
- Remove left fresh-air grill
- Remove trim panel for pedal assembly



Release screws (1) from lower dashboard trim panel (2).



Release plug connection (1) on light switch (2) and disconnect.

Remove lower instrument panel trim.

Replacement

- Modify light switch
- Modify retaining clips and sheet metal nuts and renew if necessary.

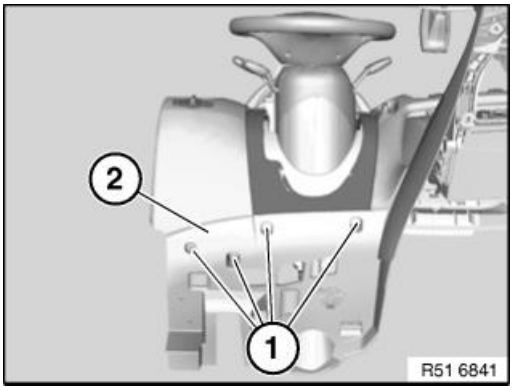
cardiagn.com

51 45 184 Removing and installing/replacing panel for pedals

Important!

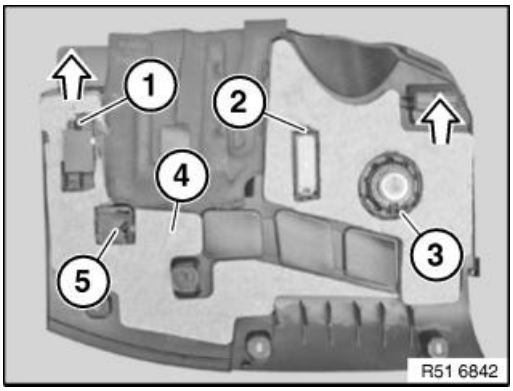
Risk of damage!

When working on trim panel components, make sure that the sensitive surfaces are not scratched or damaged.



Release screws (1) of trim panel for pedal (2).

Slightly lower trim panel for pedal (2).



Note:
Shown removed here for purposes of clarity.

Disconnect plug connections from footwell light (2) and diagnostic MOST interface (5).

Only for optional equipment:

- Disconnect plug connection for Bluetooth aerial (1).
- Disconnect acoustic signal (3) plug connection.

Remove trim panel for pedal (4).

Installation:
Feed in trim panel for pedal (4) first in the brackets (arrow).

Replacement

- Modify footwell light (2)
- Modify MOST diagnostic interface (5).

Only for optional equipment:

- Modify Bluetooth aerial (1)
- Modify acoustic signal (3)

cardiagn.com

51 16 163 Removing and installing/replacing rear centre console trim

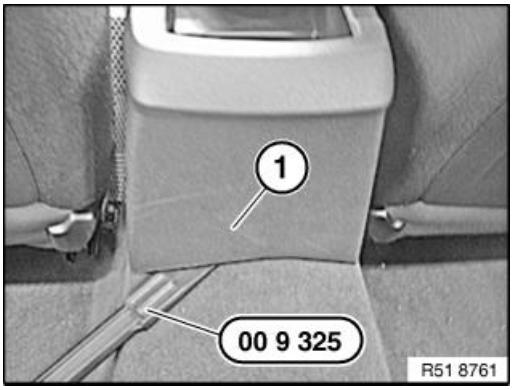
Special tools required:

- 00 9 325

Important!

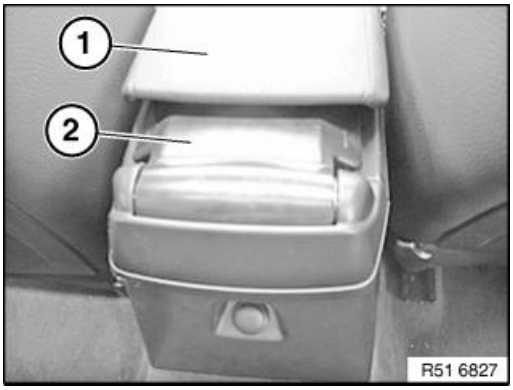
Risk of damage!

When working on trim panel components, make sure that the sensitive surfaces are not scratched or damaged.



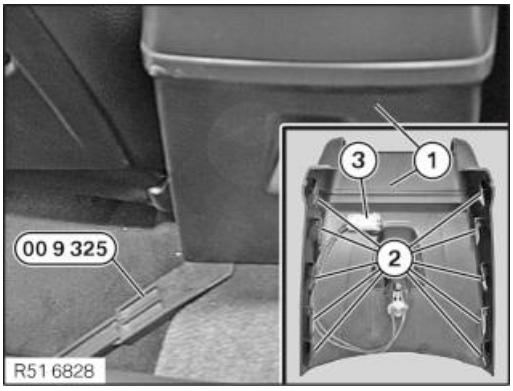
For versions without armrest:

Lever out rear centre console panel trim (1) with special tool 00 9 325 upwards.



For versions with armrest:

Move armrest (1) on centre console (2) completely forward.



Lever out rear centre console panel trim (1) with special tool 00 9 325 upwards.

Installation:
Retaining tabs (2) of rear centre console trim panel (1) must not be damaged.

If necessary, disconnect plug connection (3).

Remove rear centre console trim panel (1).

Replacement

Modify 12 V power socket if necessary.

cardiagn.com

51 45 ... Removing and installing/replacing right instrument panel trim (end cover)

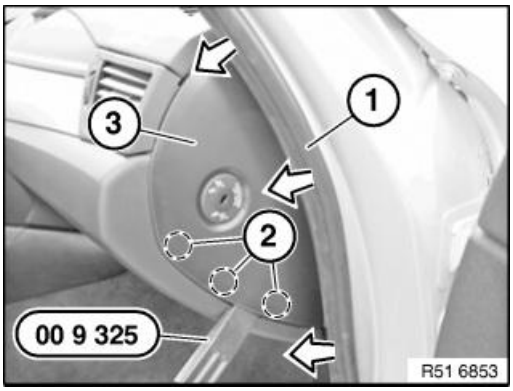
Special tools required:

- 00 9 325

Important!

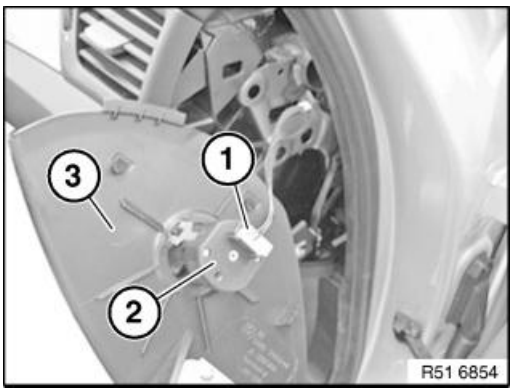
Risk of damage!

When working on trim panel components, make sure that the sensitive surfaces are not scratched or damaged.



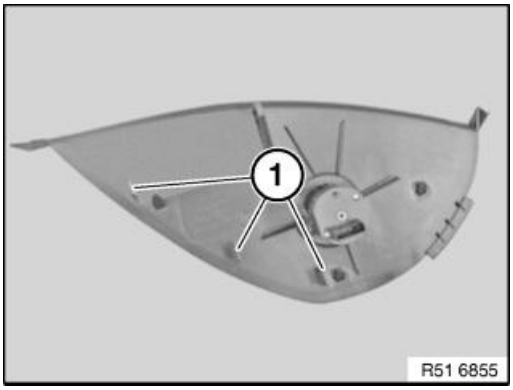
Detach mucket (1) in area of right instrument panel trim (3) in direction of arrow.

Lever out right instrument panel trim (3) 00 9 325 with special tool at mounting points (2) and remove.



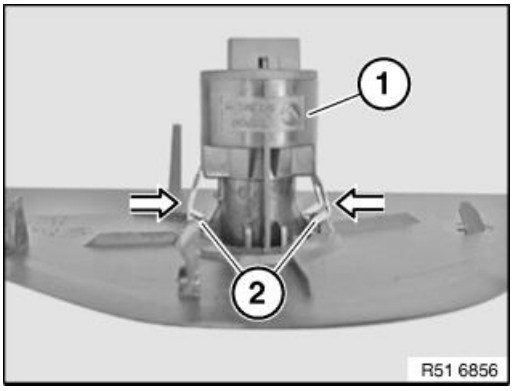
Disconnect plug connection (1) from passenger airbag switch (2).

Put down right instrument panel trim (3).



Installation:
Retaining lugs on right instrument panel trim (1) must not be damaged

cardiagn.com



Replacement

Squeeze clamps (2) together (arrow) and modify switch of front passenger air bag(1).

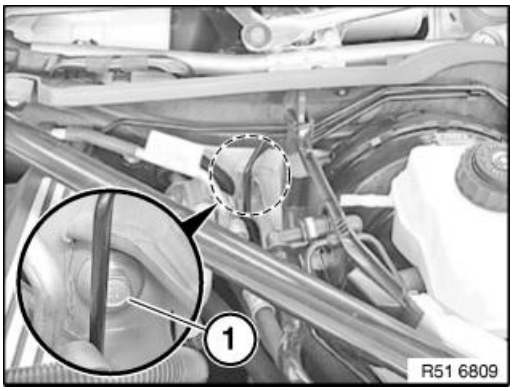
cardiagn.com

51 45 075 Removing and installing/replacing support for dashboard

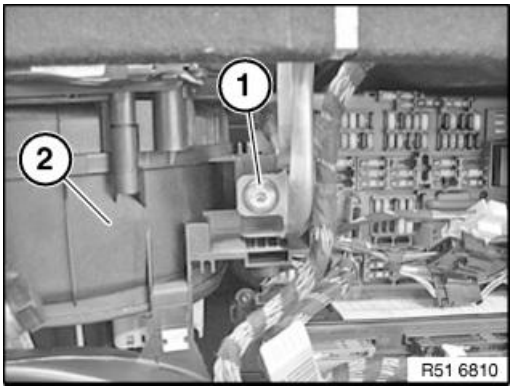
Necessary preliminary tasks:

- Remove instrument panel trim
- Remove cowl panel cover

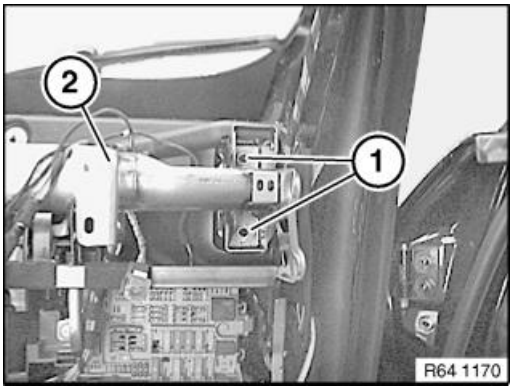
Installation:
Make sure wiring harnesses/cable ducts are correctly routed and secured.



Release screw (1) on bulkhead in engine compartment.
Tightening torque 51 71 5AZ .

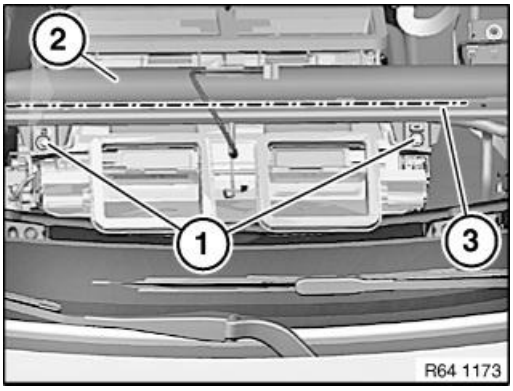


Release right screw (1) on heating and air-conditioning unit (2).
Tightening torque 51 71 6AZ .



Release nuts (1) on right on support (2).
Tightening torque 51 71 5AZ .

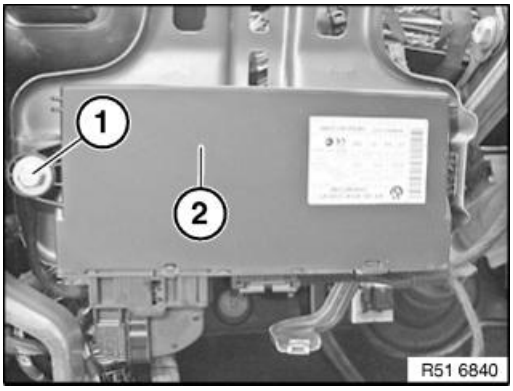
cardiagn.com



Detach wiring harness (3) from support (2).

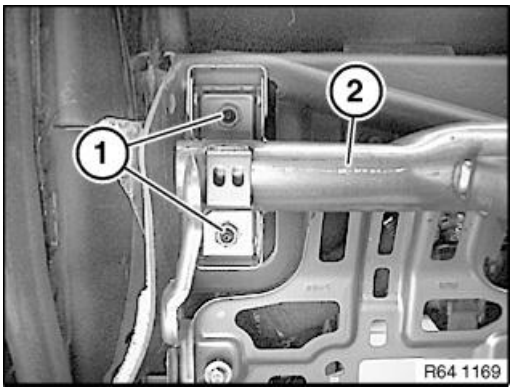
Remove upper screw (1) from support (2) on heating and air-conditioning unit

Tightening torque 64 11 6AZ .



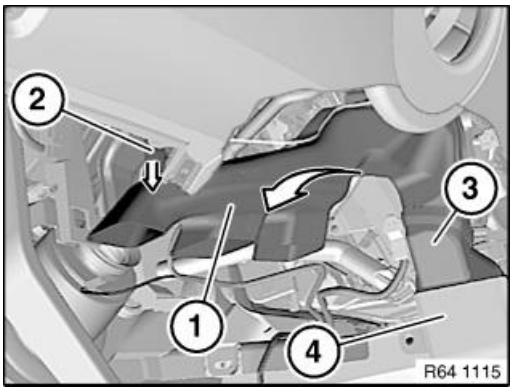
Release screw (1) from CAS control unit(2).

Remove CAS control unit (2).



Remove left nut (1) from support (2).

Tightening torque 51 71 5AZ .

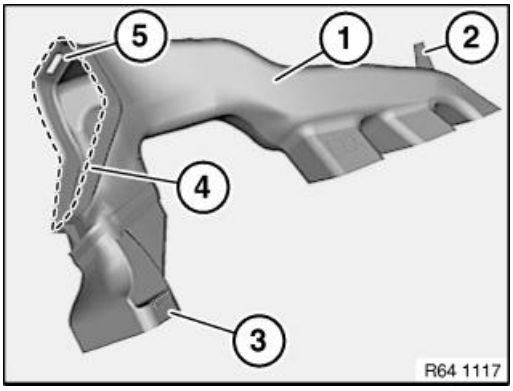


Note:
Lower instrument panel trim partially shown.

Detach left footwell heating duct (1) in area (2) in direction of arrow.

Detach left footwell heating duct (1) with adapter (3) from heater/air conditioner and remove in direction of arrow from left rear compartment heating duct (4).

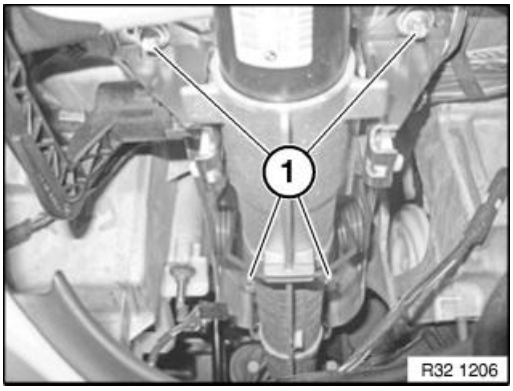
cardiagn.com



Installation:
Make sure retainer (2) is correctly seated on left footwell heating duct (1).

Insert footwell heating duct (1) with adapter (3) in rear compartment heating duct (4).

Attach footwell heating duct (1) in area (4) to heater/air conditioner. Make sure assembly is locked exactly at point (5).

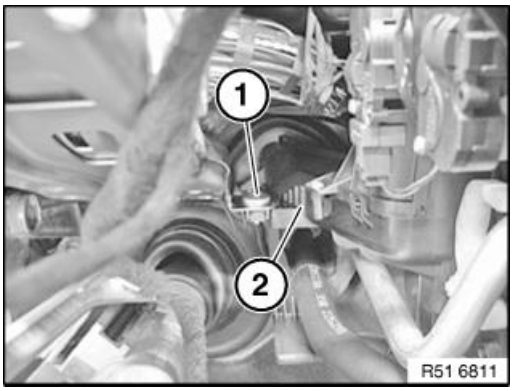


Secure steering column against falling out.

Release screw (1) on steering column.

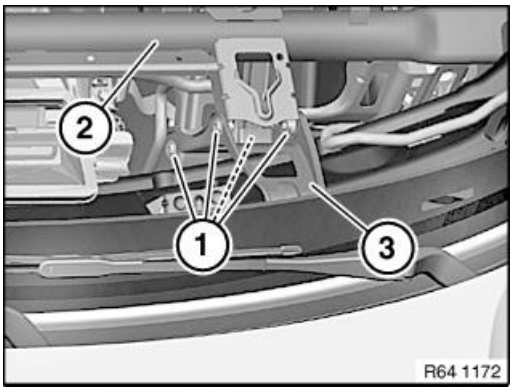
Tightening torque 32 31 2AZ .

Carefully place steering column onto seat and secure from twisting.



Release left screw (1) on heating and air-conditioning unit (2).

Tightening torque 51 71 6AZ .



Note:
For better clarity view is shown from above and through frond window (area of steering column).

Release screws (1) on support (2) from bracket (3).

Tightening torque 51 71 4AZ .

Detach support (2) and remove from vehicle with assistance of a second person.

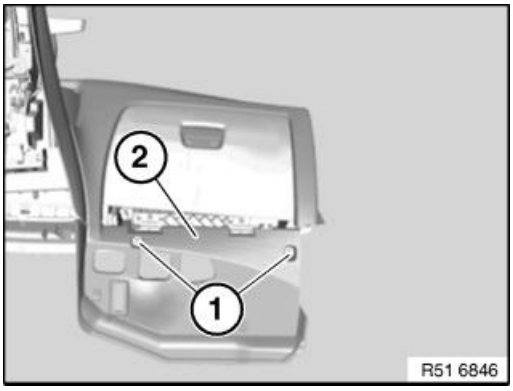
cardiagn.com

51 45 181 Removing and installing/replacing trim for instrument panel, bottom right

Important!

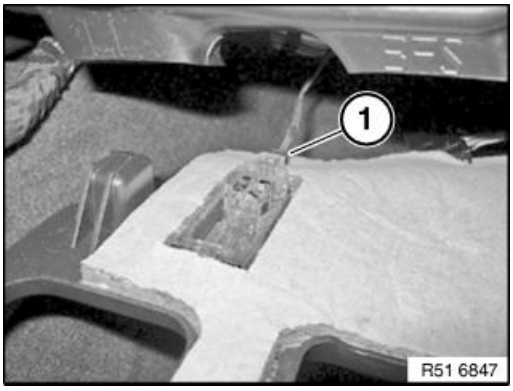
Risk of damage!

When working on trim panel components, make sure that the sensitive surfaces are not scratched or damaged.



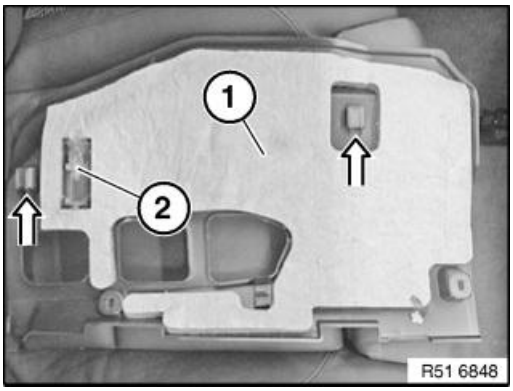
Release screws (1) on bottom right instrument panel trim (2).

Slightly lower bottom right instrument panel trim (2).



Disconnect plug connections (1) of foot well light.

Pull trim of lower right instrument panel to the rear and remove



Installation:

First insert lower right instrument panel trim (1) into supports (arrow) .

Replacement

- Modify footwell light (2)

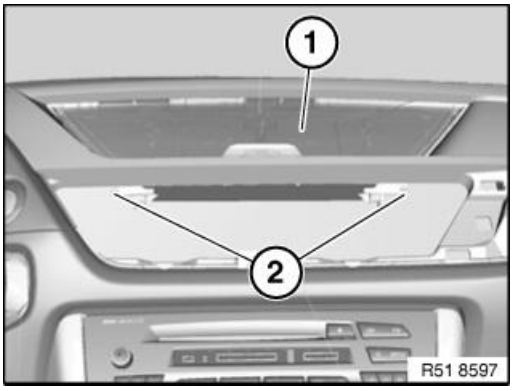
cardiagn.com

51 45 460 Removing and installing/replacing upper instrument panel storage compartment

When working on trim panel components, make sure that visible surfaces are not scratched or damaged (e.g. by sharp-edged tools).

Necessary preliminary work:

- Remove right instrument panel trim



Release screwsÂ (2) on storage compartment (1).

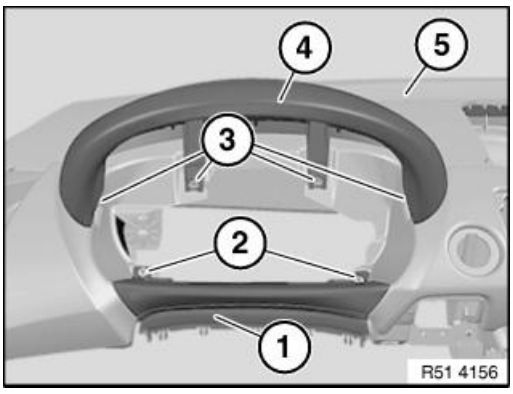
Remove storage compartment (1).

cardiagn.com

51 45 031 Replacing instrument panel trim

Necessary preliminary tasks:

- Remove instrument panel trim

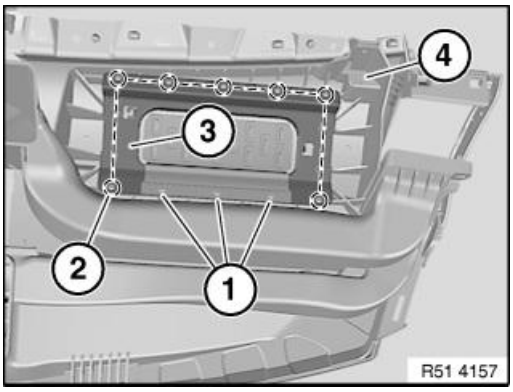


Note:
Similar to graphic.

Release screws (2) and remove steering column gap cover (1) trim panel (5).

Release screws (3) and remove scoop (4) from trim panel (5).

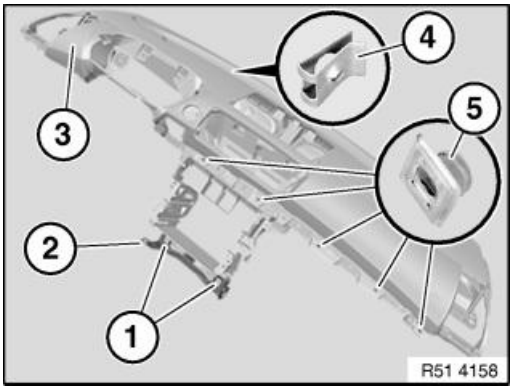
Tightening torque 51 45 5AZ.



If necessary release screws (1 and 2).

Tightening torque 72 12 1AZ.

If necessary, remove front passenger airbag channel (3) from trim panel (4).



Release screws (1) and remove holder (2).

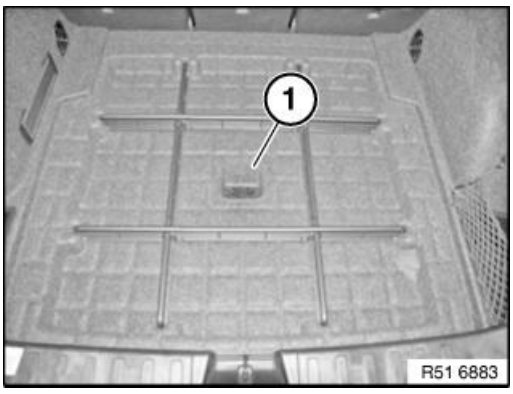
None of the sheet metal nut (4) and clips (5) on trim panel (3) must not be damaged.

cardiagn.com

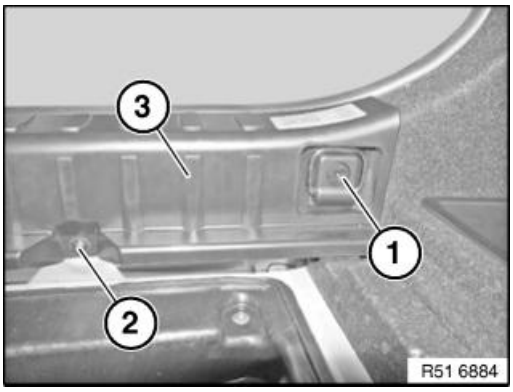
51 46 050 Removing and installing/replacing cover for rear panel at top

Necessary preliminary tasks:

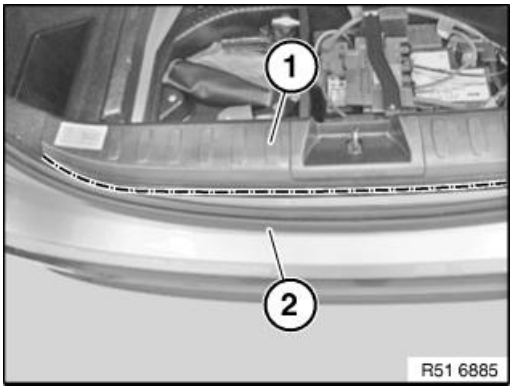
- Remove luggage compartment floor trim panel



Lift trim panel for spare wheel well (1) completely out at an angle.

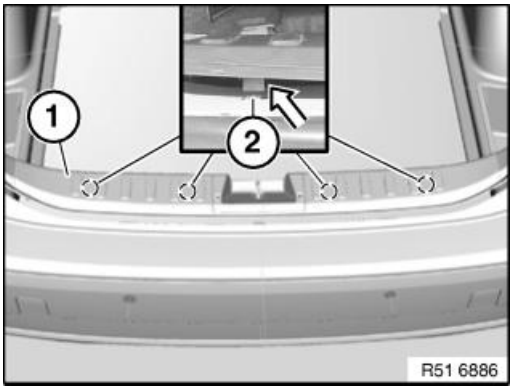


Release screws (1) from lashing eyes on left and right.
Tightening torque 51 47 1AZ .
Release screws (2) from cover (3) on left and right.
Tightening torque 51 47 2AZ .



Pull off seal for rear lid (2) in marked area of cover (1).

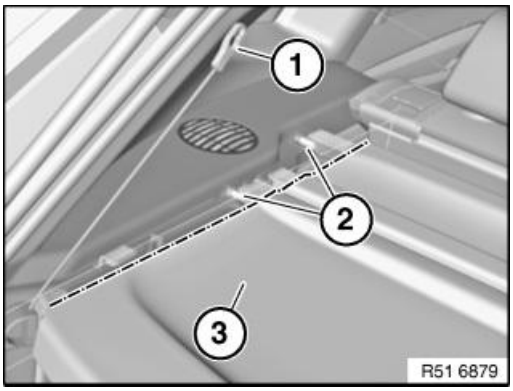
cardiagn.com



Lever off cover (1) straight up from retaining clips (2).*Installation:* Replace faulty retaining clips (2).Retaining bridges for rear end panel (arrow) cover must not be damaged.

cardiagn.com

51 46 003 Removing and installing/replacing trim panel for storage shelf



Unhook lift wire (1) left and right.

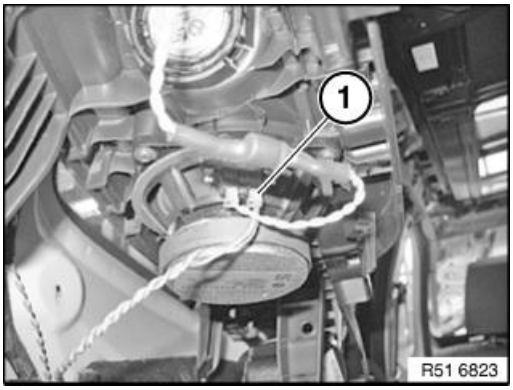
Pull out trim panel for storage shelf (3) to the rear from the left and right bracket (2).

cardiagn.com

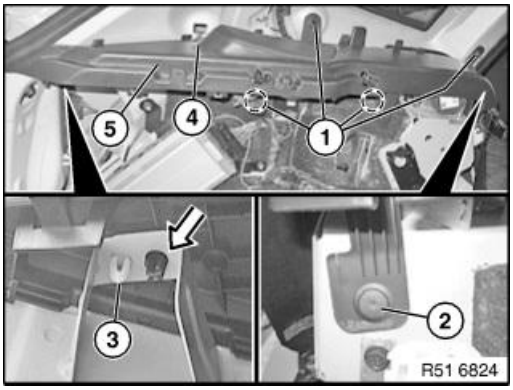
51 46 020 Removing and refitting/replacing left or right mounting for rear storage shelf

Necessary preliminary tasks:

- Remove luggage compartment wheel arch panel
- Remove panel for roof pillar at rear



Disconnect plug connection (1) from speaker.



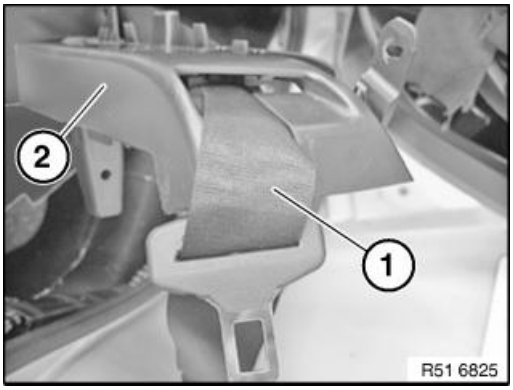
Release screws (1).

Open plastic rivet (2) and remove.

Unclamp mounting (5) at the back (3).

Unhook mounting (5) from bracket (4).

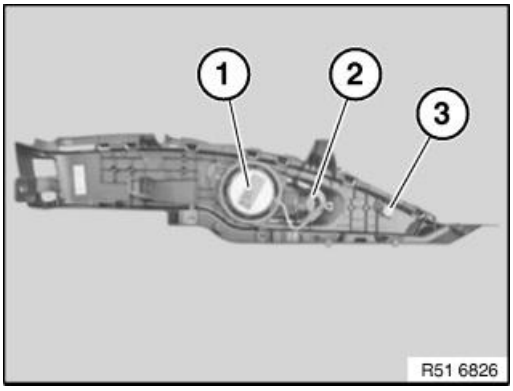
Installation note:
Position mounting (5) correctly (arrow). Replace defective clamp (3).



Unthread seat belt (1) from mounting (2).

Remove mounting (2).

cardiagn.com



Replacement

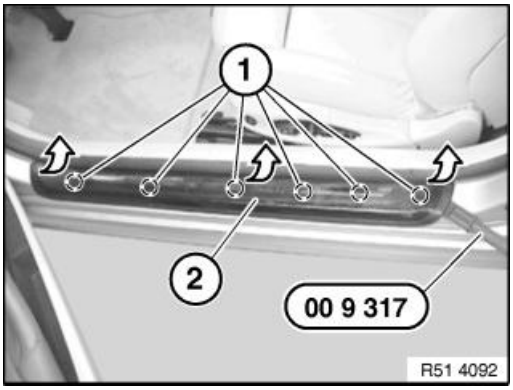
- Remount mid-range speaker (1)
- Remount tweeter (2)
- Remount retaining clip (3)

cardiagn.com

51 47 065 Removing and installing / replacing finishing strip at front left or right entrance

Special tools required:

- 00 9 317



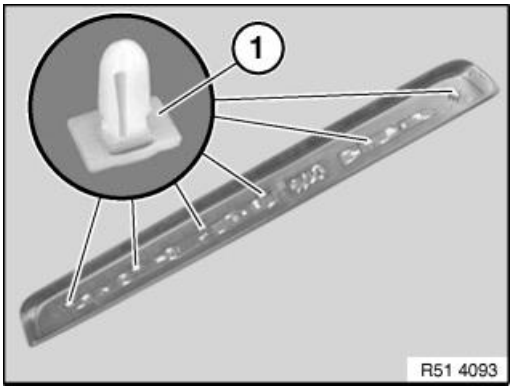
Important!

Risk of damage!

Do not raise finishing strip (2) over entire length simultaneously.

Unclip clips (1) for finishing strip (2) with special tool 00 9 317 .

Remove finishing strip (2).



Installation:

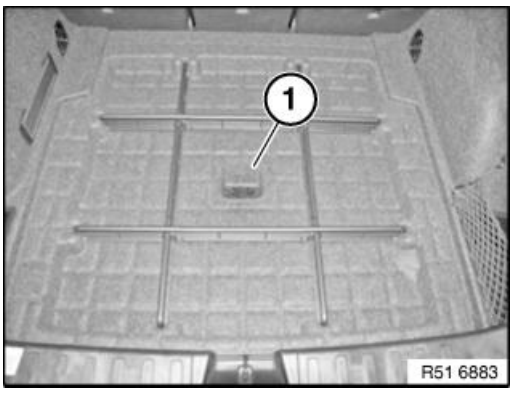
If necessary, replace faulty clips (1).

cardiagn.com

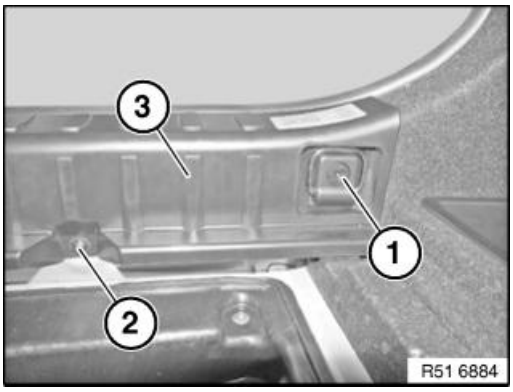
51 46 050 Removing and installing/replacing cover for rear panel at top

Necessary preliminary tasks:

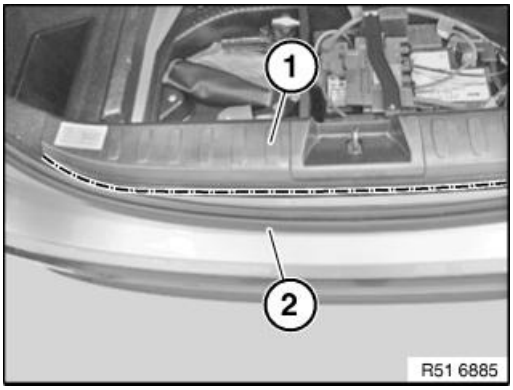
- Remove luggage compartment floor trim panel



Lift trim panel for spare wheel well (1) completely out at an angle.

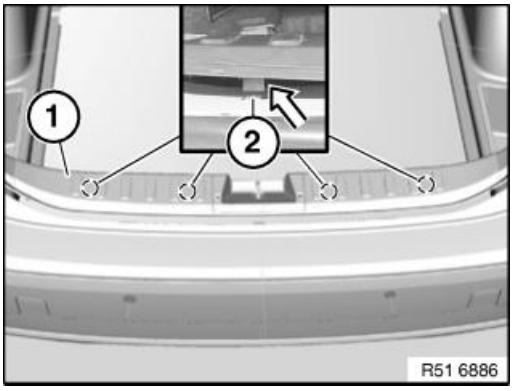


Release screws (1) from lashing eyes on left and right.
Tightening torque 51 47 1AZ .
Release screws (2) from cover (3) on left and right.
Tightening torque 51 47 2AZ .



Pull off seal for rear lid (2) in marked area of cover (1).

cardiagn.com



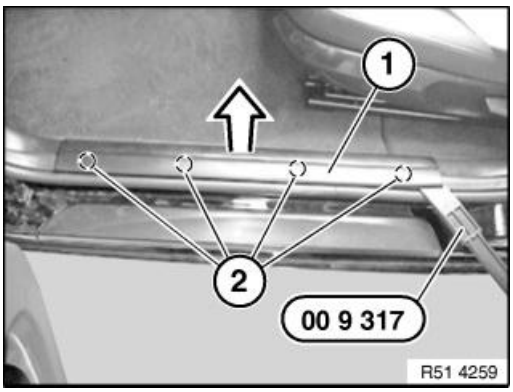
Lever off cover (1) straight up from retaining clips (2).*Installation:* Replace faulty retaining clips (2).Retaining bridges for rear end panel (arrow) cover must not be damaged.

cardiagn.com

51 47 000 Removing and installing/replacing front (inside) left or right door sill cover strip

Special tools required:

- 00 9 317



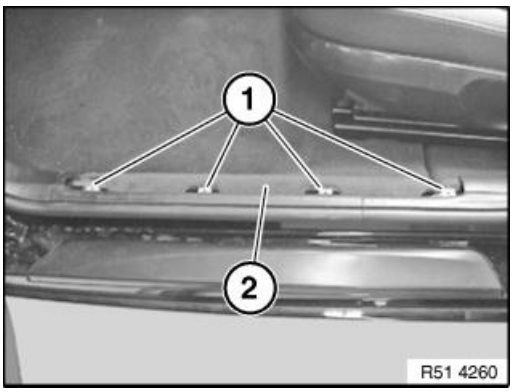
Important!

Do not raise door sill cover strip (1) over entire length simultaneously.

E84 only:

clipped 3 times (2).

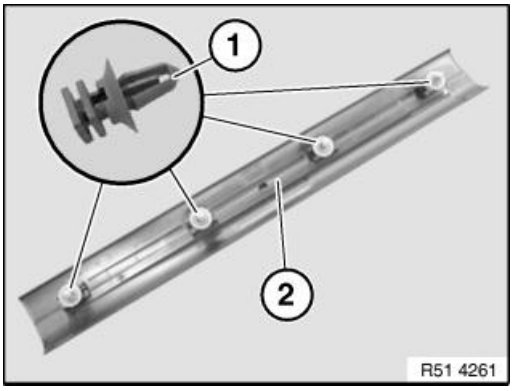
Unclip door sill cover strip (1) from clip (2), starting from the rear and moving forward, using special tool 00 9 317 .



If necessary lift clip (1) from floor panel (2) and clip on door sill cover strip.

E84 only:

Clipped 3x.



Installation note:

If necessary, replace faulty clips (1) on door sill cover strip (2).

E84 only:

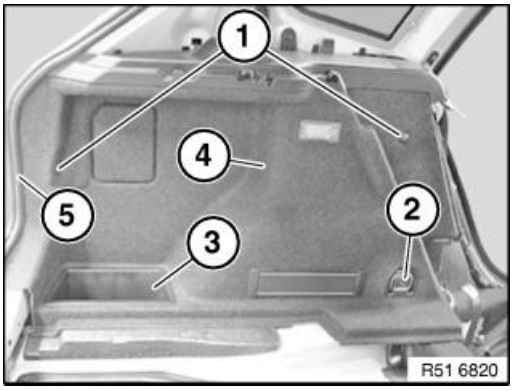
Clipped 3x.

cardiagn.com

51 47 151 Removing and installing/replacing left luggage compartment wheel arch trim

Necessary preliminary tasks:

- Tilt backrest forwards.
- Remove panel for rear window shelf
- Remove trim on rear apron
- Remove luggage compartment light



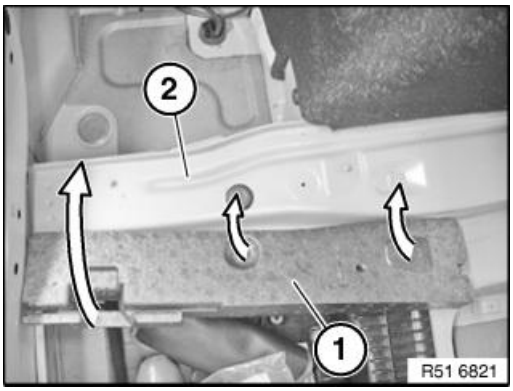
Open rivets (1) and remove.

Release lashing eye screw (2) and remove facing (lashing eye remains in vehicle).

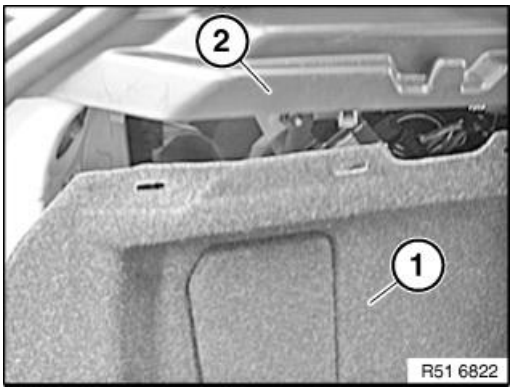
Remove storage compartmentÂ (3).

Remove tailgate seal (5) in the area of the luggage compartment wheel arch panel (4).

Lever out luggage compartment wheel arch panel (4) and pull to the inside.



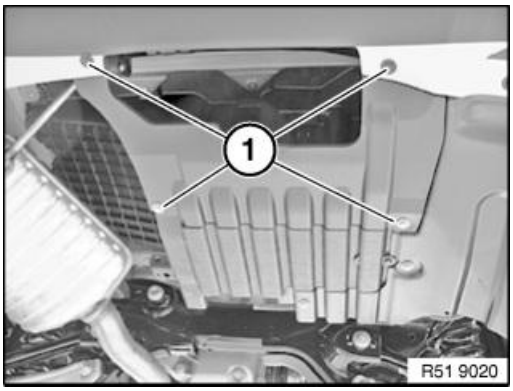
Installation:
If necessary, pressfit shaped foam part (1) back onto body frame (2) (see arrow).



Unclip panel of luggage compartment wheel arch (1) from the upper sill panel (2).

cardiagn.com

51 12 ... Removing and installing/replacing lower cover (middle)



Release screwsÂ (1).

Remove lower cover.

Replacement

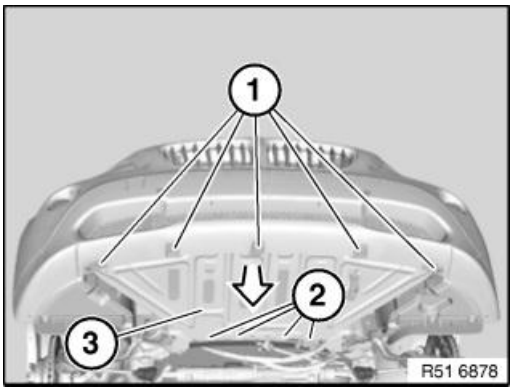
Modify sheet nuts

cardiagn.com

51 75 020 Removing and installing/replacing lower pedestrian protection

Necessary preliminary tasks:

- Remove front underbody protection



Release screws (1).

Unfasten screws (2).

Tightening torque 31 10 7AZ .

Remove pedestrian protection (3) by pulling diagonally downward and rearward (in direction of arrow).

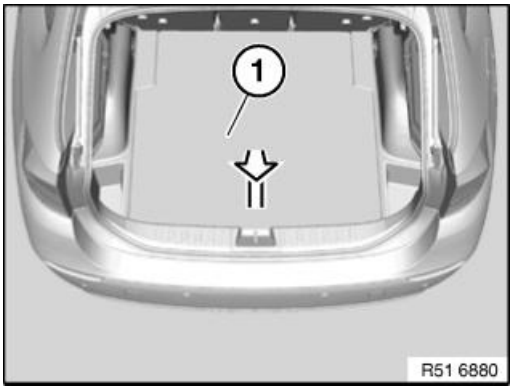
Installation:
Correctly align pedestrian protection and then tighten screw (1) and (2).

Replacement

Modify sheet nuts

cardiagn.com

51 47 101 Removing and installing/replacing luggage compartment floor trim panel



Note:
Storage shelf removed for purposes of clarity.

Lift up rear luggage compartment floor trim panelÂ (1) and lift out slanted upwards.

cardiagn.com

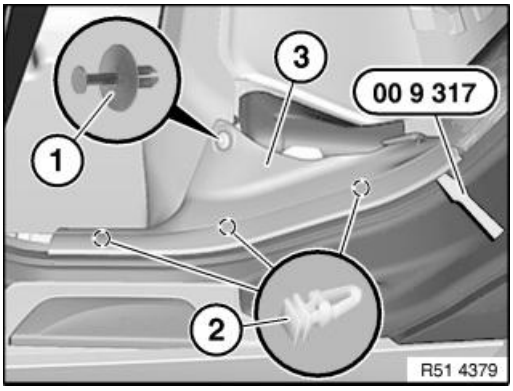
51 47 030 Removing and installing/replacing rear (inside) left or right entrance cover strip

Special tools required:

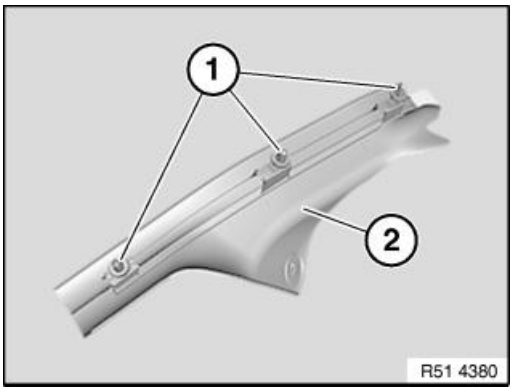
- 00 9 317

Necessary preliminary tasks:

- Remove rear seat



Release expansion rivet (1).
Unclip (2) the entrance cover strip (3) with special tool 00 9 317 .
Pull entrance cover strip (3) up and remove.



Installation:
If necessary, replace faulty clips (1).
Fit entrance cover strip (2) with preinstalled clips (1).

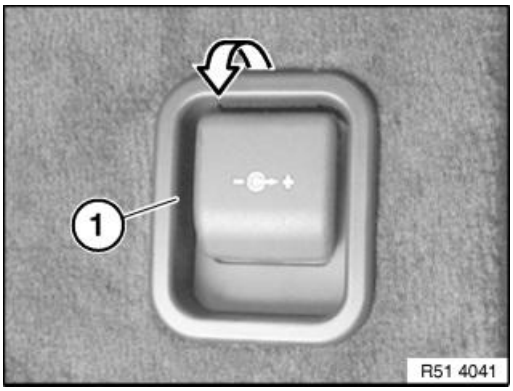
cardiagn.com

51 47 161 Removing and installing/replacing right luggage compartment wheel arch trim

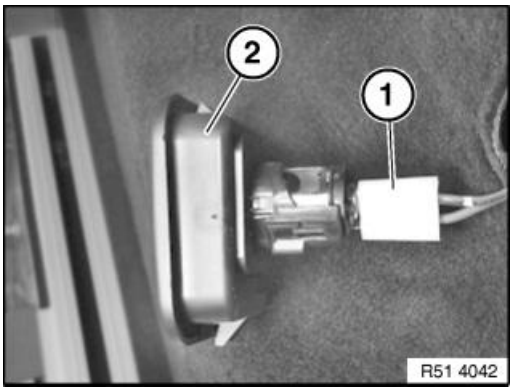
Operation steps are identical with the following, except for the scope of 12 volt socket instead of interior light:

Removing and installing/replacing left luggage compartment wheel arch trim .

(use graphics there in mirror image)

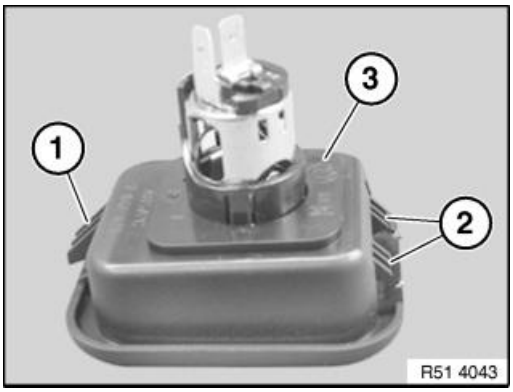


Lift out 12-V-socket (1) in direction of arrow.



Disconnect plug connection (1) on 12-V-socket (2).

Remove 12-V-socket (2).

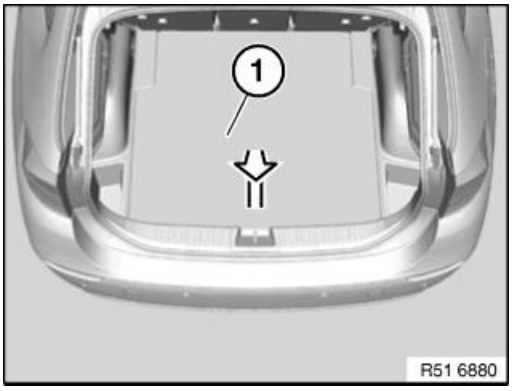


Installation:
Guide (1) and latch mechanisms (2) on 12-V-socket (3) must not be damaged.

cardiagn.com

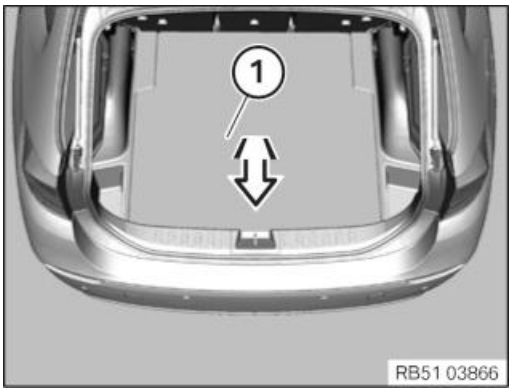
51 47 101 Removing and installing/replacing the luggage compartment floor trim panel\PREMIUM

1 – Removing the luggage compartment floor trim panel



- Lift the luggage compartment floor trim panel (1) at the rear and remove it in the direction of the arrow.

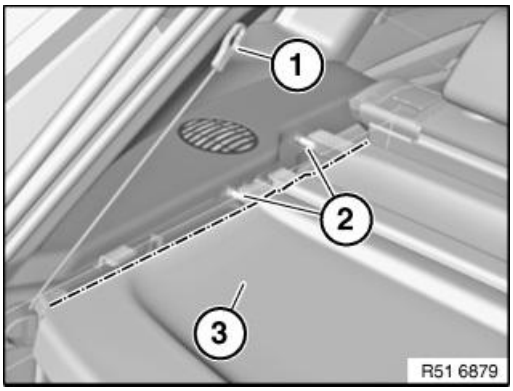
2 – Installing the luggage compartment floor trim panel



- Insert the luggage compartment floor trim panel (1) in the direction of the arrow.

cardiagn.com

51 46 003 Removing and installing/replacing trim panel for storage shelf

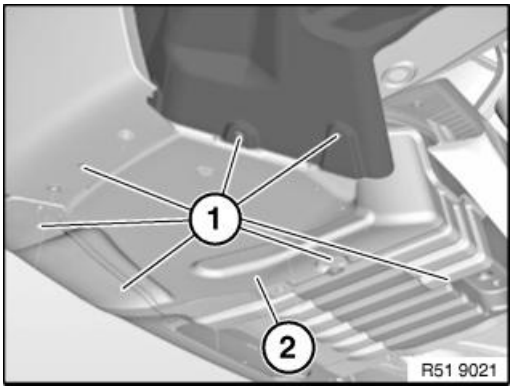


Unhook lift wire (1) left and right.

Pull out trim panel for storage shelf (3) to the rear from the left and right bracket (2).

cardiagn.com

51 75 ... Removing and installing/replacing underbody panelling (carbon canister)



Release screws (1).

Remove underbody panelling (2).

Replacement

Modify sheet nuts

cardiagn.com

51 47 490 Removing and installing/replacing underbody protection (front)

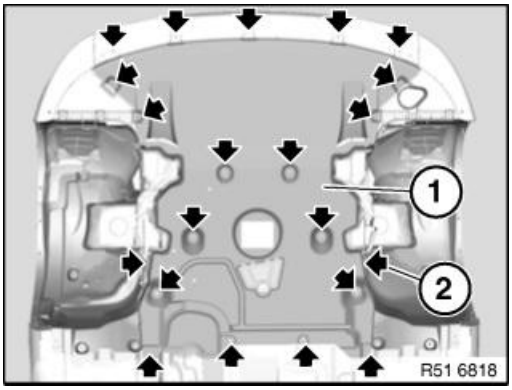
NOTICE

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

1 – Removing the front underbody protection

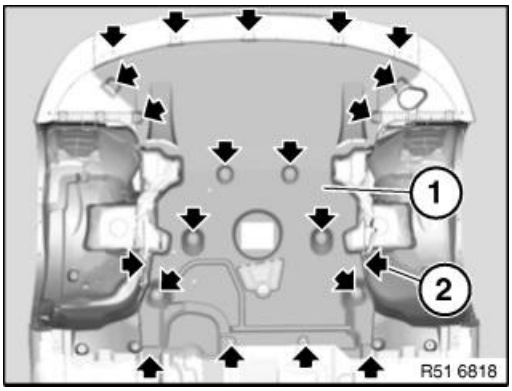
NOTICE

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



- Remove the screws (arrows) (2).
- Remove the front underbody protection (1).

2 – Installing the front underbody protection



- Position the front underbody protection (1).
- Tighten the screws (arrows) (2).

Underbody panelling on body

Screw not metric			3 Nm
Screw M6			8.8 Nm
Nut			2.5 Nm

Additional Information

Overview of Tightening Torques

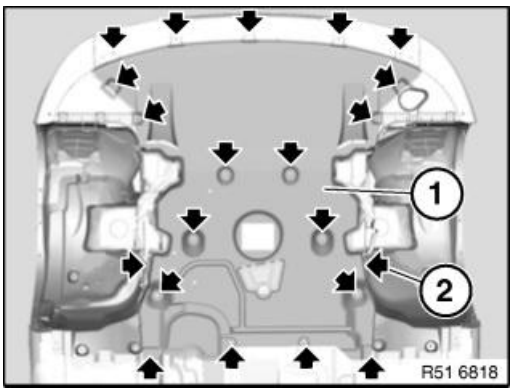
Underbody panelling on body Used in step 2

Screw not metric			3 Nm
Screw M6			8.8 Nm
Nut			2.5 Nm

cardiagn.com

51 47 490 Removing and installing/replacing underbody protection (front)

Note:
Illustration only an example. Detail deviations, depending on engine version, are possible.



Unfasten screws (2).

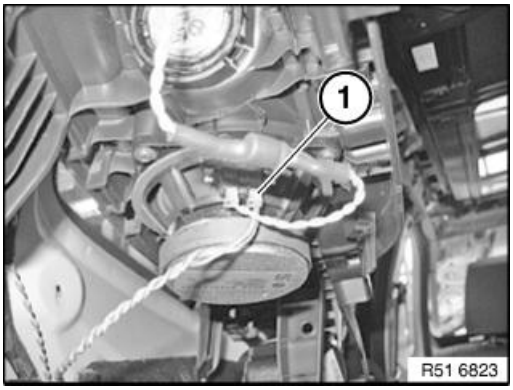
Remove front underbody protectionÂ (1).

cardiagn.com

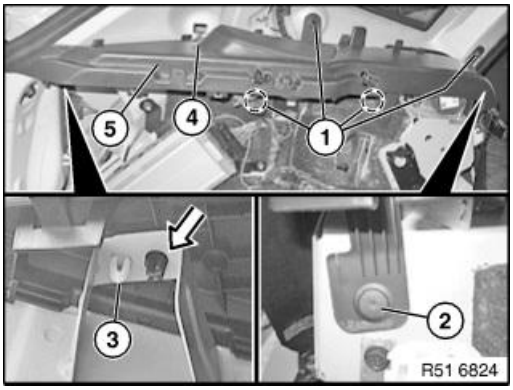
51 46 020 Removing and refitting/replacing left or right mounting for rear storage shelf

Necessary preliminary tasks:

- Remove luggage compartment wheel arch panel
- Remove panel for roof pillar at rear



Disconnect plug connection (1) from speaker.



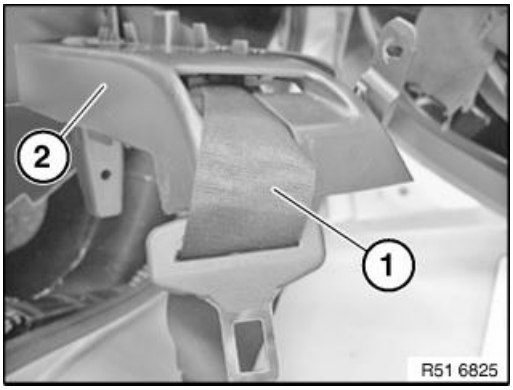
Release screws (1).

Open plastic rivet (2) and remove.

Unclamp mounting (5) at the back (3).

Unhook mounting (5) from bracket (4).

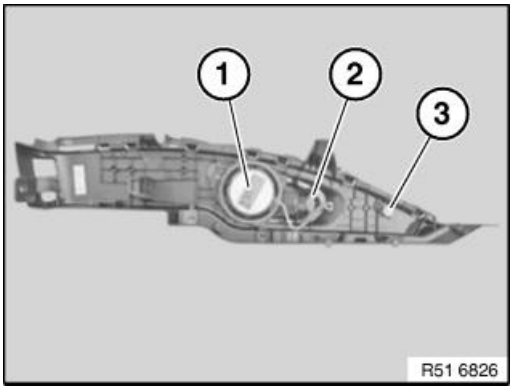
Installation note:
Position mounting (5) correctly (arrow). Replace defective clamp (3).



Unthread seat belt (1) from mounting (2).

Remove mounting (2).

cardiagn.com



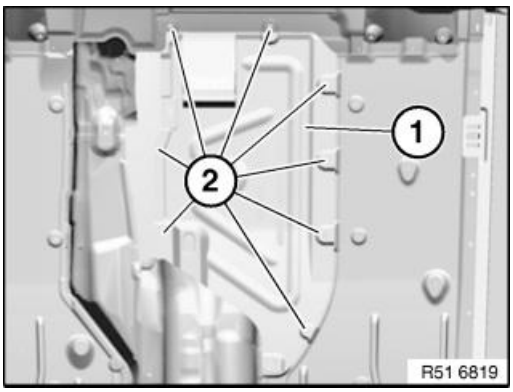
Replacement

- Remount mid-range speaker (1)
- Remount tweeter (2)
- Remount retaining clip (3)

cardiagn.com

51 47 491 Removing refitting/replacing rear engine undercover

Note:
Illustration only an example. Detail deviations, depending on engine version, are possible.



Unfasten screws (2).

Unthread and remove the rear underbody protectionÂ (1) to the bottom.

Installation note:
Ensure correct fit.

cardiagn.com

51 48 ... Notes for bonding sound insulation (SI), doors



Special tools required:

- 51 0 300

Attention!

Do not yank at the sound insulation (risk of damage).

General:

Sound insulation is bonded to the inner door panel.

Bonded sound insulation must not be subjected to load (e.g. leak test) before 5 hours have elapsed.

On-the-job safety:

When working with bonding products (adhesive, cleaning agent, etc.):

- Wear safety goggles, protective gloves and if necessary an apron.
- Ensure the area is well ventilated.
- Change work clothing contaminated with adhesive immediately.
- Change work clothing contaminated with solvents and swelling agents immediately (keep spare work clothing on hand).
- Take skin protection measures, provide washing facilities including hot water, use silicone-free skin creams.
- Always keep an eye douche on hand, change the water regularly (once a month).
- Comply with the relevant safety regulations.

Handling adhesive area on inner door panel:

Adhesive	Cleaning
a. Butyl bead applied to sound insulation with protective film b. Butyl mini-round profile ⌀ 4 mm from the roller c. Butyl round profile ⌀ 6 mm from the roller	a. Cleaning agentR2 *Under no circumstances: paint thinning* b. Carry out bonding only after an air drying time ≥ 1 min. Air drying time may be omitted if the entire bonding surface is wiped with a dry cloth c. After cleaning, the bonding surface may not be touched with hands or fouled again

Repair in area of sound insulation, door:

Repair	
	• Cut the butyl rope between the sound insulation and the inner door panel with a sharp knife • After the repair is finished, position a new butyl rope ⌀ 4 mm directly on the original adhesive bead • Heat the butyl bead with a standard hot air blower until the butyl rope strings when touched slightly. Do not damage the sound insulation in the process • Press on with special tool 51 0 300. Perform this work extremely carefully because the increased amount of adhesive requires contact pressure of ≥ 20 N/cm^2 (compared to firm thumb pressure ~ 30 N/cm^2) • Visually check the adhesive bead and its compression (no capillaries or broken adhesive bead permitted)

cardiagn.com

in the event of damaged sound insulation or leakage	• In the cases mentioned, the complete sound insulation must be replaced. After removing the sound insulation, removal all butyl remnants from the inner door panel. Apply 6 mm ⌀ butyl rope to new sound insulation • Press on with special tool 51 0 300. Contact pressure ≥ 20 N/cm^2 (compare to firm thumb pressure ~ 30 N/cm^2)

The sound insulation must be bonded watertight below the door lock:

- Flat bonding surface required all round.
- No bonding in the event of moisture (e.g. condensation, etc.).
- Bonding area must not show any traces of adhesion-reducing residues (e.g. separating agents, greases, oils, paraffins, plastisols, cavity wax, polishing dust residues, etc.).
- Remove the protective film directly before joining (under no circumstances remove earlier, since the butyl, because of its stickiness, will very quickly pick up adhesion-reducing dirt contaminants).
- The sound insulation must be attached with positional accuracy to the inner door panel because it will no longer be possible to change the position without damaging the butyl bead.
- With repainted areas, the maximum permitted temperature of 90°C may not be exceeded in the area of the sound insulation. Otherwise, the sound insulation must be removed (and replaced, if necessary).

Expiry date of adhesive:

24 months, see label on packaging.

Disposal of the cleaning cloth:

Cleaning cloths and cleaning agent residues are hazardous waste (see also safety data sheet).

Disposal of adhesive:

Hazardous waste (see also safety data sheet).

cardiagn.com

51 48 060 Removing and installing/replacing sound insulation in left or right front door

Important!

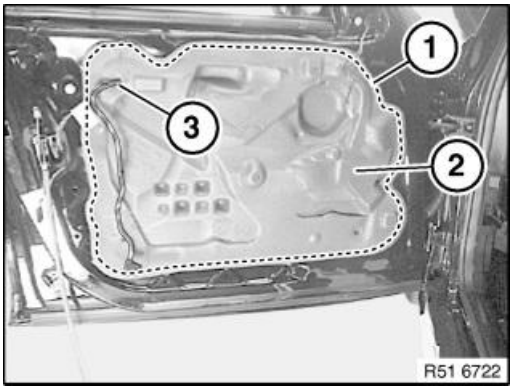
Instructions for sound insulation are an essential part of these repair instructions and must be followed without fail.

Do not detach sound insulation in jerks (risk of damage).

After every repair, check that the sound insulation is water-tight (water ingress).

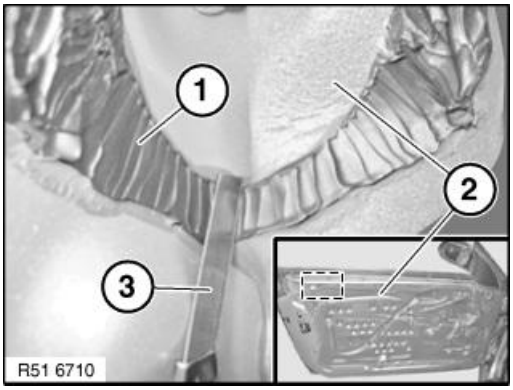
Necessary preliminary tasks:

- Remove door trim panel



Position of sealing bead (1).

Feed cable (3) out of sound insulation (2).



Important!

When cutting through sealing bead (1), do not damage sound insulation (2) and if necessary cable.

With a suitable sharp cutting tool (3) cut through sealing bead (1) of sound insulation (2) in the area to be detached.

Clean bonding area with adhesive remover (sourcing reference: BMW Parts Service).

Air drying time: 1 minute

Important!

Adhesive areas must be dry and free of dust and grease.

Once it has been cleaned, do not touch the adhesive area with bare hands.

cardiagn.com

Note:
Replacement:

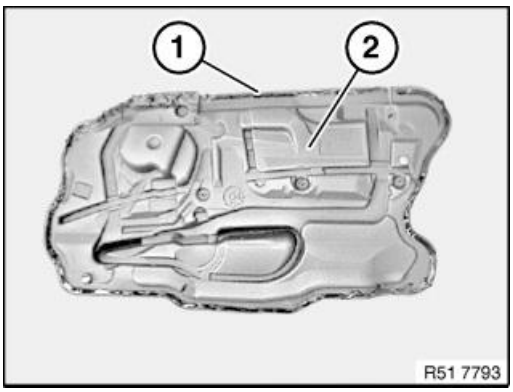
Lay 6 mm dia. butyl rope (sourcing reference: BMW Parts Department) in specified adhesive area.

Heat butyl cord (hot air blower) and press down firmly on sound insulation all round.

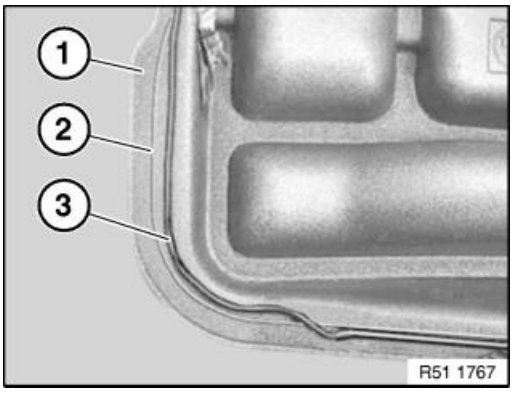
Contact pressure with hand roller: approx. 20 N/cm ^{2}

Manual contact pressure: approx. 10 N/cm ^{2}

Note:
Firm thumb pressure has approx. 30 N/cm ^{2}



Note:
Position of butyl rope (1) on sound insulation (2).



Note:
A marking (2) is provided all round on the sound insulation (1).

Butyl rope (3) rests on or inside the marking (2).

cardiagn.com

51 48 070 Removing and installing/replacing sound insulation on left or right rear door

Important!

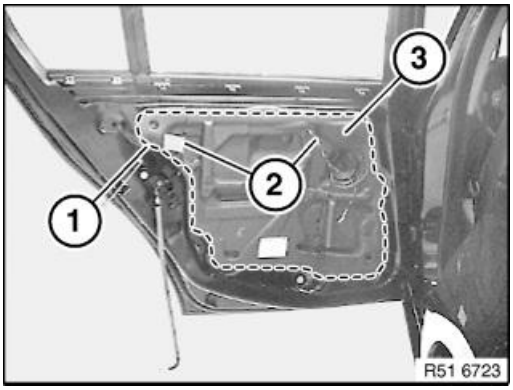
Instructions for sound insulation are an essential part of these repair instructions and must be followed without fail.

Do not detach sound insulation in jerks (risk of damage).

It is essential to ensure the sound insulation is watertight (water intrusion) every time any repair work has been carried out.

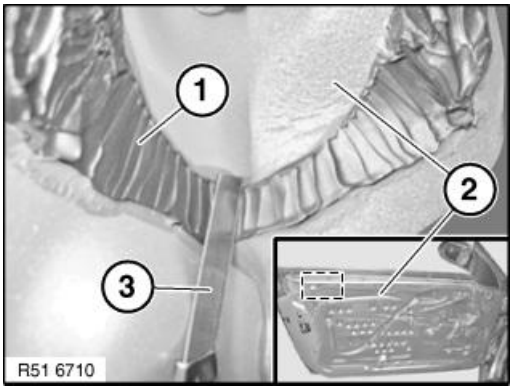
Necessary preliminary tasks:

- Remove rear door trim panel



Position of sealing bead (1).

Feed wires (2) out of sound insulation (3).



Important!

When cutting through sealing bead (1), do not damage sound insulation (2) and if necessary cable.

With a suitable sharp cutting tool (3) cut through sealing bead (1) of sound insulation (2) in the area to be detached.

Clean bonding area with adhesive remover (sourcing reference: BMW Parts Service).

Air drying time: 1 minute

Important!

Adhesive areas must be dry and free of dust and grease.

Once it has been cleaned, do not touch the adhesive area with bare hands.

cardiagn.com

Note:
Replacement:

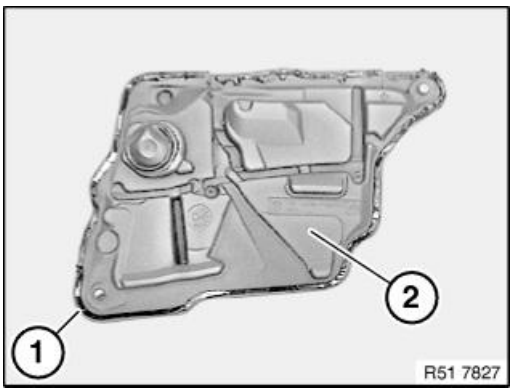
Lay 6 mm dia. butyl rope (sourcing reference: BMW Parts Department) in specified adhesive area.

Heat butylene tape (hot air blower) and press down firmly on sound insulation all round.

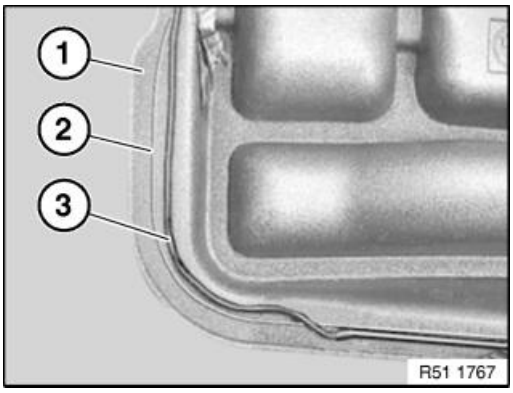
Contact pressure with hand roller: approx. 20 N/cm ^{2}

Manual contact pressure: approx. 10 N/cm ^{2}

Note:
Firm thumb pressure has approx. 30 N/cm ^{2}



Note:
Position of butyl rope (1) on sound insulation (2).

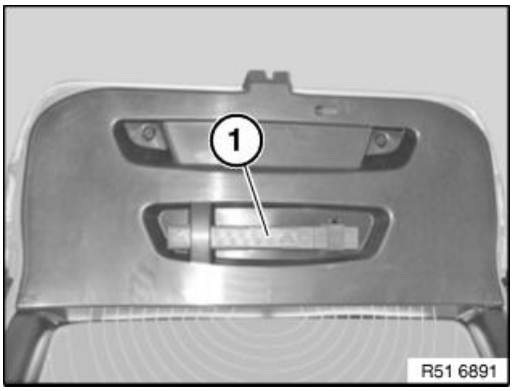


Note:
A marking (2) is provided all round on the sound insulation (1).

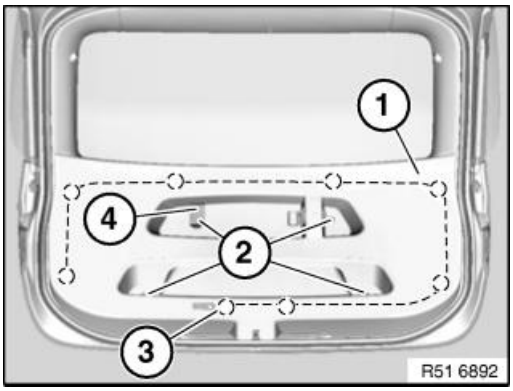
Butyl rope (3) rests on or inside the marking (2).

cardiagn.com

51 49 000 Removing and installing or replacing trim for tailgate



Remove warning triangle (1).



Release screw (2) from warning triangle holder (4).

Remove warning triangle holder (4).

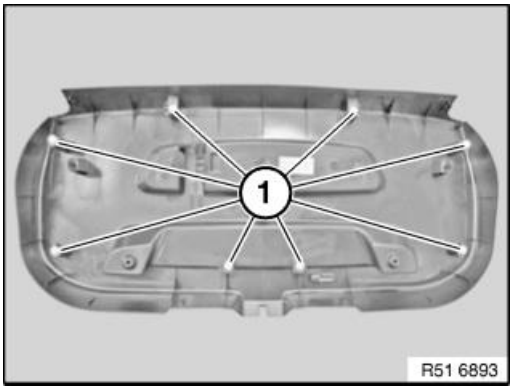
Release remaining bolts (2).

Use appropriate tool to unclip trim panel (see highlighted area) from tailgate (1).

US version only

Feed out tailgate lock with emergency release (3).

Remove panel for tailgate (1).



Installation:
Replace faulty clips (1).

Insert trim of tailgate properly.

US version only

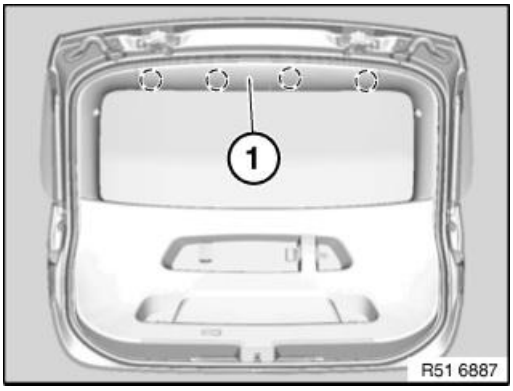
Properly feed through emergency release of tailgate lock.

Replacement

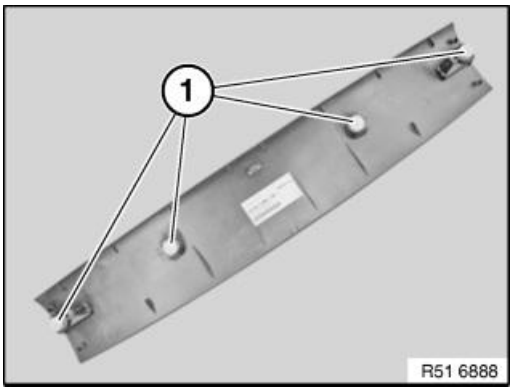
Modify clips (1).

cardiagn.com

51 49 015 Removing and installing/replacing cover for rear window frame at top



Unclip cover (1) in marked area and remove downwards.*Installation:* Replace faulty clips.



Replacement

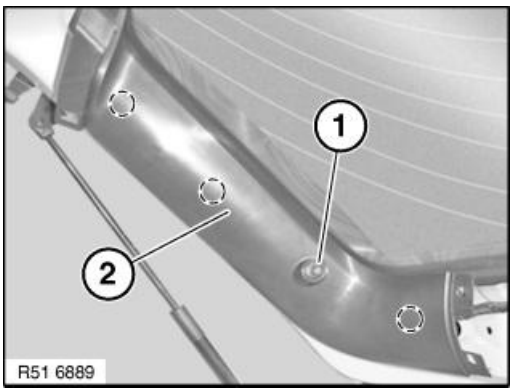
Modify clipsÂ (1).

cardiagn.com

51 49 003 Removing and installing/replacing cover for rear window frame on left or right

Necessary preliminary tasks:

- Remove trim for rear lid
- Remove upper rear window frame cover

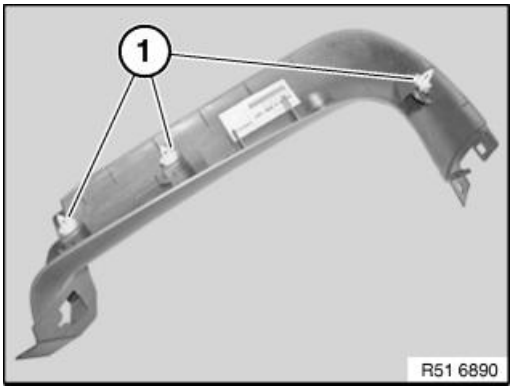


Unhook rear shelf line.

Release screw (1).

Unclip trim panel (2) in marked areas are remove byy pulling downward.

Installation note:
Replace faulty clips.



Replacement

Remount clipsÂ (1).

cardiagn.com

51 71 371 Removing and installing/replacing trailing link on left or right spring strut dome

Special tools required:

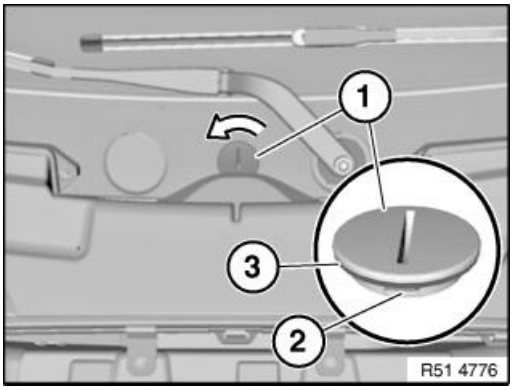
- 00 9 120

Important!

Risk of damage!

Driving without the tension strut is not permissible, as the body can be damaged.

Tension strut bolts must be tightened to torque and then tightened down with special tool 00 9 120 .



Important!

Risk of damage!

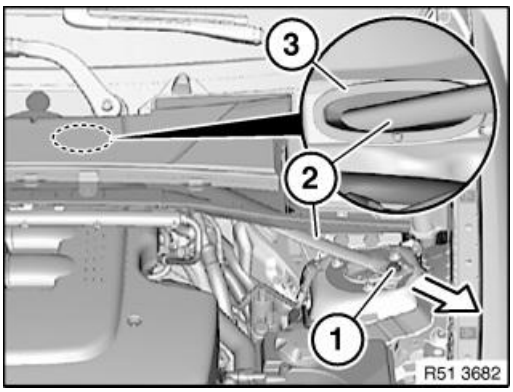
Latch mechanism (2) and gasket (3) of the cover (1) must not be damaged.

Even minor damage to the cover (1) can lead to water ingress; replace cover (1) if necessary.

Note:
Cover (1) available in two versions:

A. Turn cover (with notch) about 45° to the left
B. Disengage cover (without notch) in upward direction

Remove cover (1) and release screw underneath.



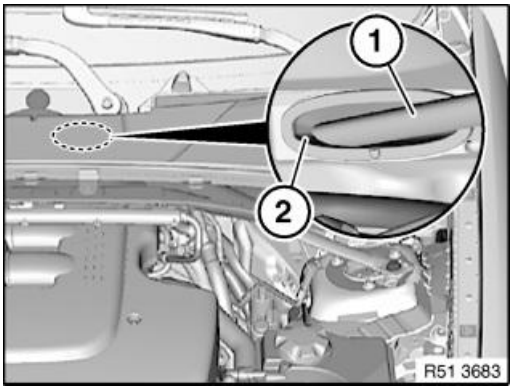
Version A:

Note:
Grommet (3) must not be pulled out of the bulkhead, as correct feeding in is not possible in installed state.

Release screw (1).

Hold down grommet (3) and pull out tension strut (2) in direction of arrow.

cardiagn.com

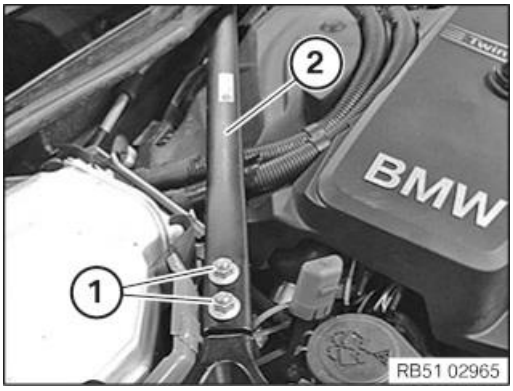


Installation note:
Replace screws.

Feed tension strut (1) carefully into the grommet (2).

Tighten screws to torque and then tighten to angle of rotation using special tool 00 9 120 .

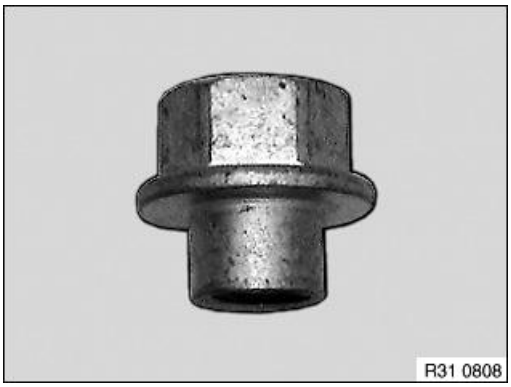
Tightening torque 51 71 2AZ.



Version B:

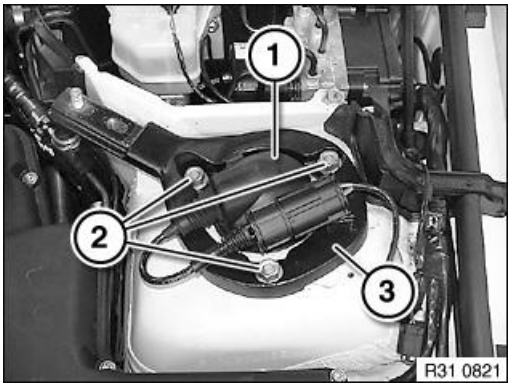
Loosen the nuts (1) and remove the strut brace (2).

Tightening torque 51 71 19AZ.



Important!

The nuts shown must be used to ensure the screw connection of the strut brace ring is correct.



Unclip protective cap (1) and disconnect plug connection underneath.

Slacken nuts (2) and remove the strut brace ring (3).

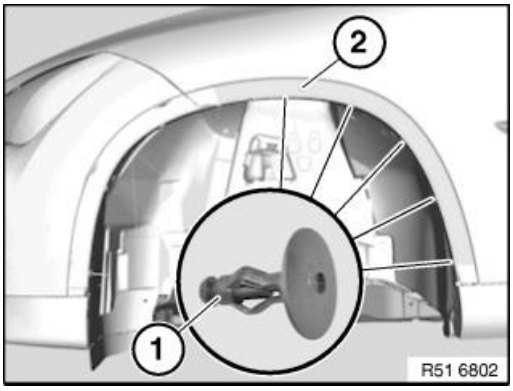
Tightening torque 31 31 1AZ.

Installation note:
Make sure the protective cap (1) is correctly seated.

Replace nuts (2).

cardiagn.com

51 71 ... Partially remove and install cover of front left or right wheel arch (rear part)

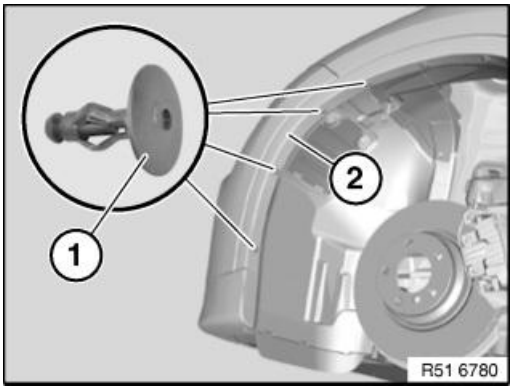


Note:
Wheel shown removed for purposes of clarity.

Remove highlighted plastic rivets (1) from wheel arch trim (2).*Installation note:*
Replace the plastic rivetÂ (1).

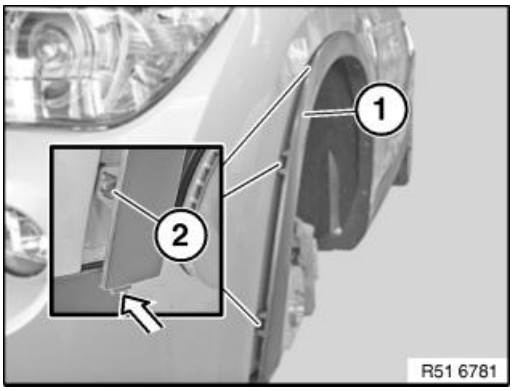
cardiagn.com

51 71 ... Partially removing and installing cover of front left or right wheel arch (front section)



Note:
Wheel shown removed for purposes of clarity.

Remove highlighted plastic rivets (1) from wheel arch trim (2).*Installation note:*
Replace the plastic rivet (1).



Unclip wheel arch strip (1) in front area (2).*Installation note:*
Observe lower guide tab (arrow).

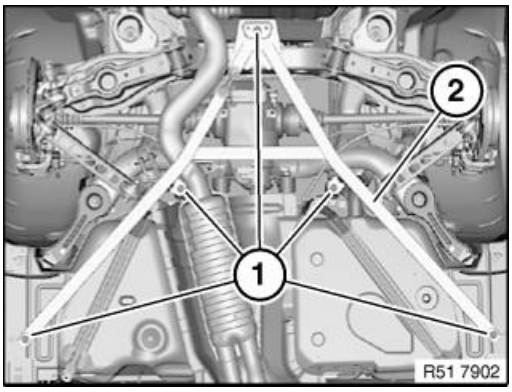
cardiagn.com

51 71 382 Removing and installing (replacing) the rear tension struts \PREMIUM

1 – Removing the tension strut of the rear axle

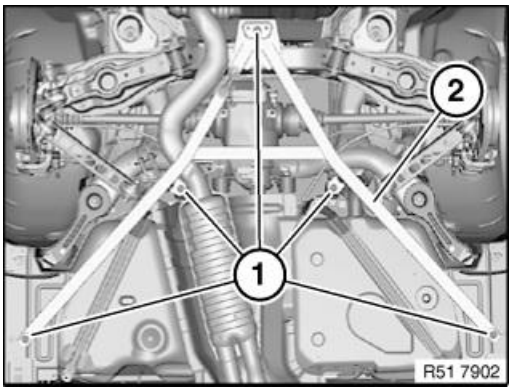
TECHNICAL INFORMATION

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



- Loosen the screws (1) and remove the tension strut (2).

2 – Installing the tension strut of the rear axle



- Install the tension strut (2) and tighten the screws (1).

Trailing link to rear axle		
M10		50 Nm

Additional Information

Overview of Tightening Torques

Trailing link to rear axle		Used in step 2
M10		50 Nm

cardiagn.com

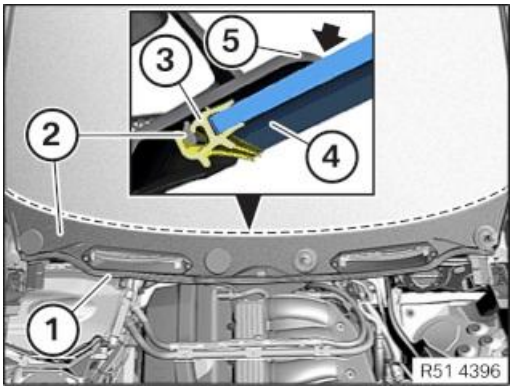
51 13 115 Removing and installing / replacing cowl panel cover

Necessary preliminary tasks:

- Remove windscreen wiper arm on left and right
- Remove microfilter housing

Important!

Danger of water ingress via fan housing into passenger compartment if cowl panel cover is not correctly fitted.



Release edge protection (1).

Remove cowl panel cover (2) in upwards direction.

Installation note:
Pay attention to the correct seating of the retaining strip (3) at the windscreen (4); if necessary, press the retaining strip (3) onto the windscreen (4).

If the retaining strip (3) no longer can be correctly seated, it must be replaced.

The cowl panel cover (2) must be clipped into the retaining strip (3) correctly.

The sealing lip (5) must make contact with the windscreen (4) along its entire length.

If the sealing lip (5) is faulty, the cowl panel cover (2) must be replaced.

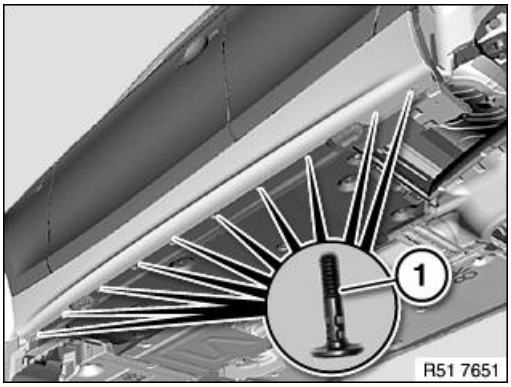
cardiagn.com

51 71 447 Removing and installing or replacing panel for cover on left or right side member

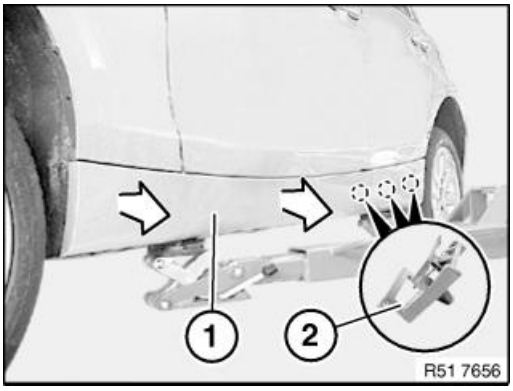
When working on trim panel components, make sure that the sensitive surfaces are not scratched or damaged.

Necessary preliminary tasks:

- Partially remove wheel arch trim at front and rear

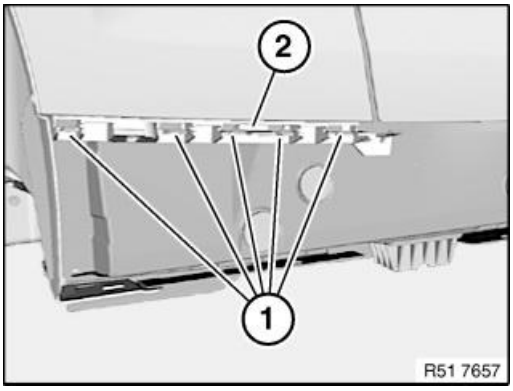


Release screws (1).



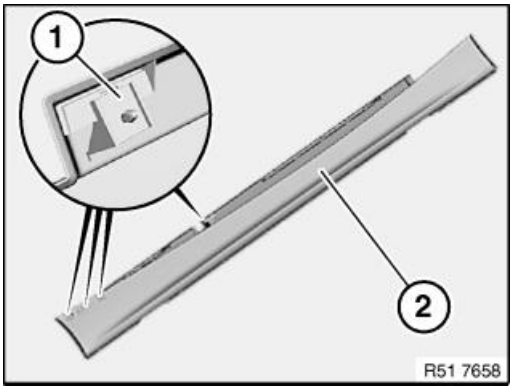
Unclip panel (1) at front.

Unclip panel (1) at rear from holders (2) and remove in direction of arrow.



Installation:
Catches (1) on holder (2) must not be damaged.

cardiagn.com

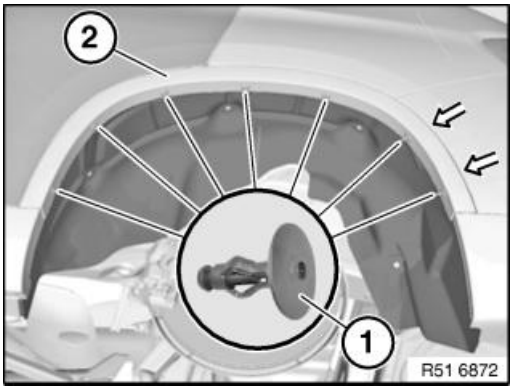


Installation:
If necessary, detach holders (1) from body and fit on panel (2).

If necessary, replace faulty holders (1).

cardiagn.com

51 71 478 Removing and installing/replacing cover on rear left or right wheel arch



Note:
Wheel shown removed for purposes of clarity.

Release expanding rivets (1).

Unclip and remove cover from rear bumper (see arrows)

Installation note:
Replace expanding rivets (1). Retaining tabs on coverÂ (2) must not be damaged.

cardiagn.com

51 71 040 Removing and installing/replacing front left or right wheel arch cover (front and rear part)

Necessary preliminary tasks:

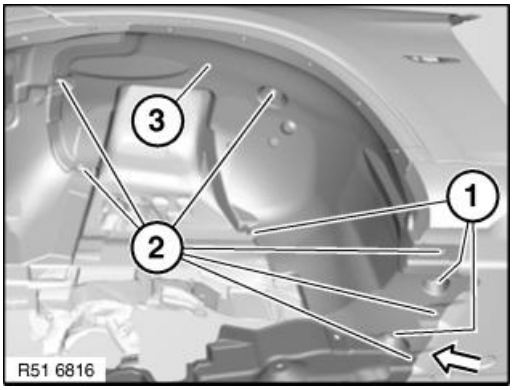
- Remove front wheel arch cover
- Remove rear wheel arch cover

cardiagn.com

51 71 039 Removing and installing/replacing front left or right wheel arch cover (rear section)

Necessary preliminary tasks:

- Remove front wheel
- Remove wheel arch cover partially



Note:
For clarity the vehicle is only partially pictured.

Release nuts (1) and screws (2).

Lever out the cover (3) on stud bolt of the nuts (1).

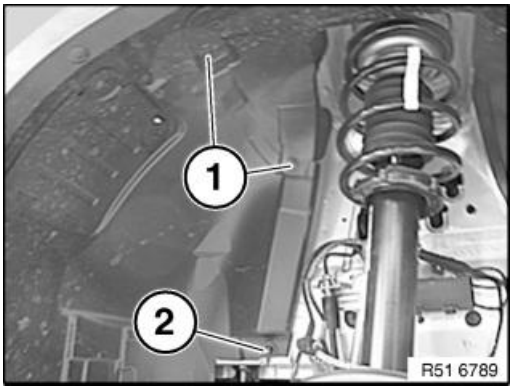
Installation note:
in the area of the arrows side sill or front underbody protection overlaps the cover (3).

cardiagn.com

51 71 038 Removing and installing/replacing front wheel arch cover (front section) on the left or right

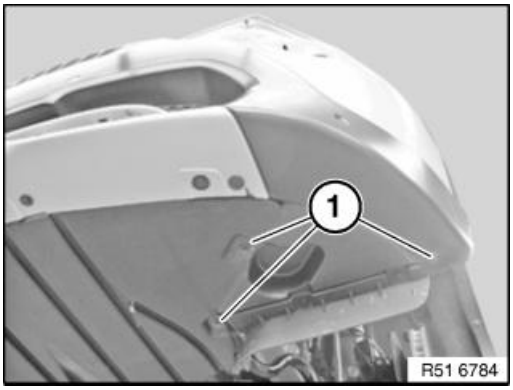
Necessary preliminary work:

- Remove front wheel
- Partially removing wheel arch trim



Release screws (1) and nuts (2).

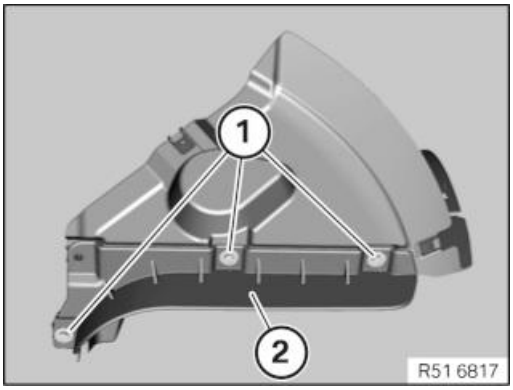
Remove cover from stud bolt of nut (2).



Release screws (1).

Pull cover backwards and pull out.

Installation note:
Replace damaged sheet metal nut.



Replacement

Release screws (1) on air guide (2).

Remount air guide (2).

Remount sheet metal nuts.

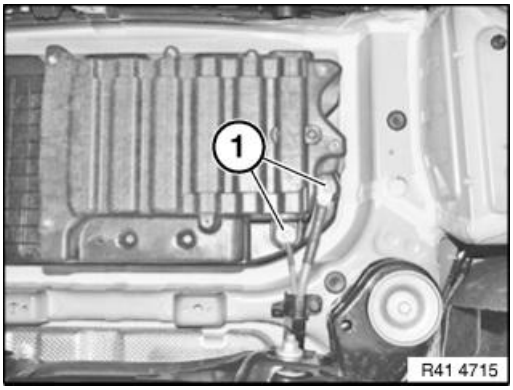
Installation note:
Replace damaged sheet metal nut.

cardiagn.com

51 71 ... Removing and installing/replacing multifunction pan

Necessary preliminary tasks:

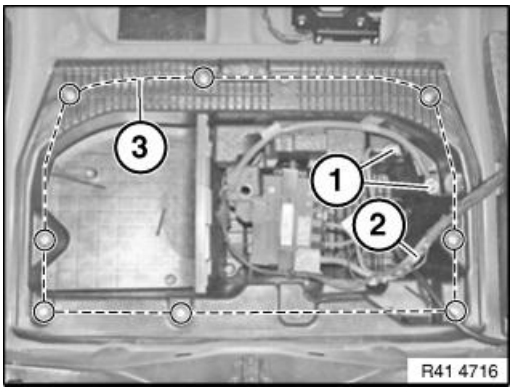
- Remove top trim from tail panel
- Remove battery
- Remove bottom covers
- Remove underbody panelling



View from below:

Unscrew nuts (1).

Tightening torque 61 12 3AZ .

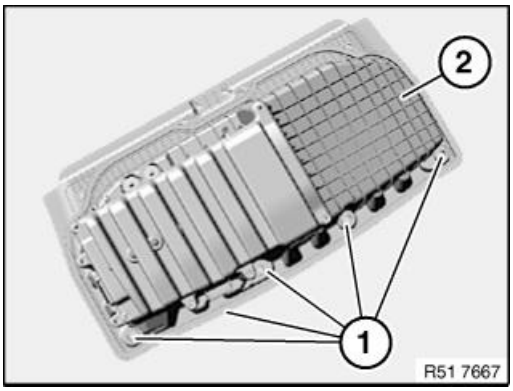


Unscrew nuts (1).

Release battery wiring harness (2) and lay to one side.

Tightening torque 61 12 3AZ .

Release rivet joints (3) and remove multifunction pan.



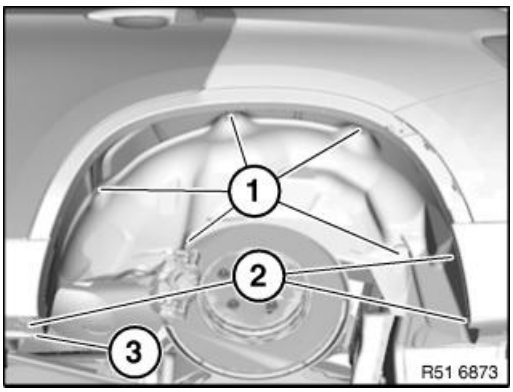
Installation:
Seals (1) on multifunction pan (2) must be replaced each time they are removed.

cardiagn.com

51 71 041 Removing and installing/replacing rear left or right wheel arch cover

Necessary preliminary tasks:

- Remove rear wheel
- Remove cover on rear wheel arch



Unfasten plastic nuts (1) and screws (2).

Pull air guide (3) down and remove wheel arch cover.

cardiagn.com

51 71 382 Removing and installing/replacing tension strut (on rear axle)

Special tools required:

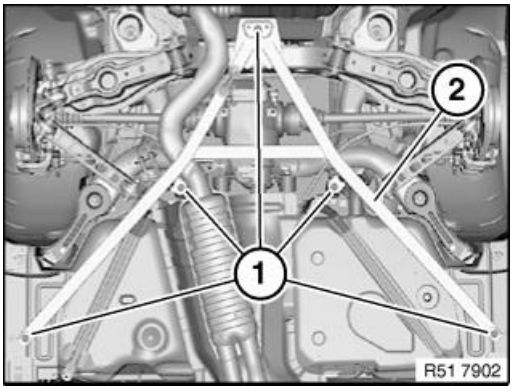
- 00 9 120

Important!

Vehicles must not be driven without trailing links.

Driving without trailing links may damage the vehicle body.

Tension strut bolts must be tightened to torque and then tightened down with special tool 00 9 120 .



Release screws (1) and remove trailing link (2).*Installation note:*
Replace screws.

Tightening torque 51 71 3AZ.

cardiagn.com

51 71 371 Removing and installing/replacing trailing link on left or right spring strut dome

Special tools required:

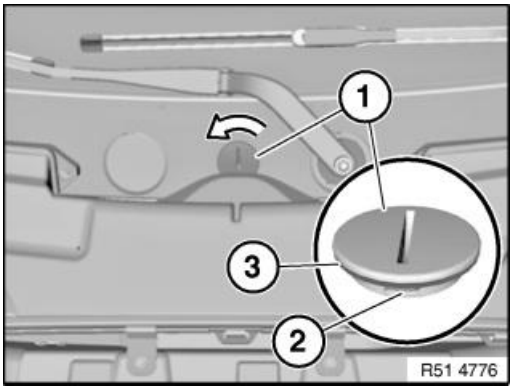
- 00 9 120

Important!

Risk of damage!

Driving without the tension strut is not permissible, as the body can be damaged.

Tension strut bolts must be tightened to torque and then tightened down with special tool 00 9 120 .



Important!

Risk of damage!

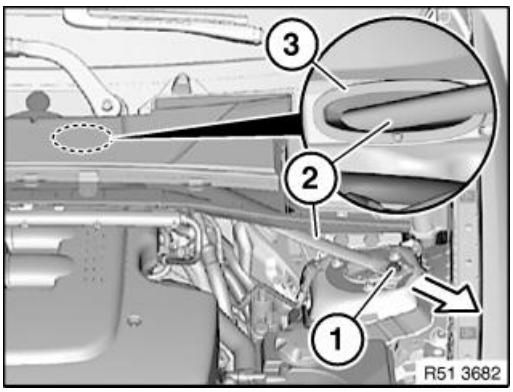
Latch mechanism (2) and gasket (3) of the cover (1) must not be damaged.

Even minor damage to the cover (1) can lead to water ingress; replace cover (1) if necessary.

Note:
Cover (1) available in two versions:

A. Turn cover (with notch) about 45° to the left
B. Disengage cover (without notch) in upward direction

Remove cover (1) and release screw underneath.



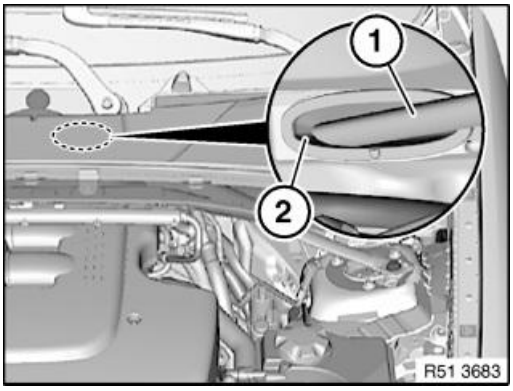
Version A:

Note:
Grommet (3) must not be pulled out of the bulkhead, as correct feeding in is not possible in installed state.

Release screw (1).

Hold down grommet (3) and pull out tension strut (2) in direction of arrow.

cardiagn.com

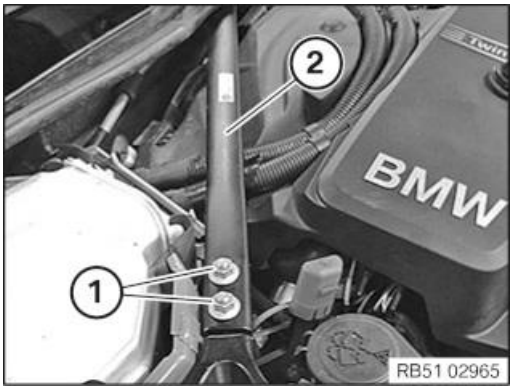


Installation note:
Replace screws.

Feed tension strut (1) carefully into the grommet (2).

Tighten screws to torque and then tighten to angle of rotation using special tool 00 9 120 .

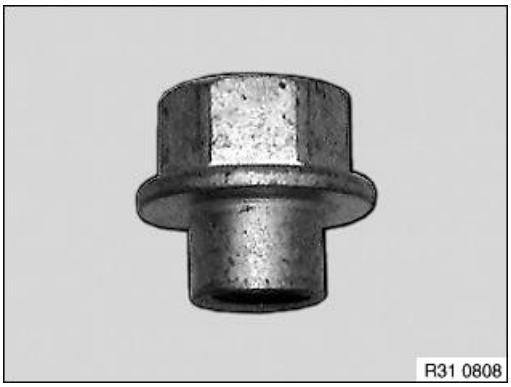
Tightening torque 51 71 2AZ.



Version B:

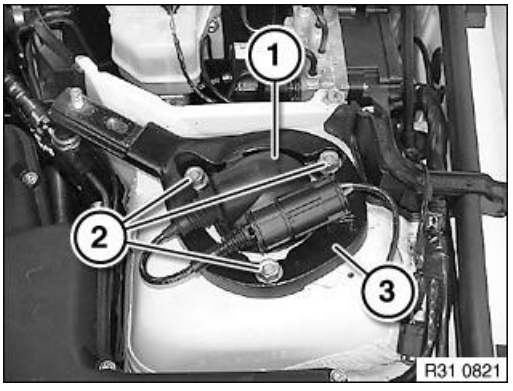
Loosen the nuts (1) and remove the strut brace (2).

Tightening torque 51 71 19AZ.



Important!

The nuts shown must be used to ensure the screw connection of the strut brace ring is correct.



Unclip protective cap (1) and disconnect plug connection underneath.

Slacken nuts (2) and remove the strut brace ring (3).

Tightening torque 31 31 1AZ.

Installation note:
Make sure the protective cap (1) is correctly seated.

Replace nuts (2).

cardiagn.com

51 71 470 Removing and installing/replacing trim on front left or right wheel arch

Necessary preliminary tasks:

- Raise vehicle
- Remove wheel arch trim

cardiagn.com

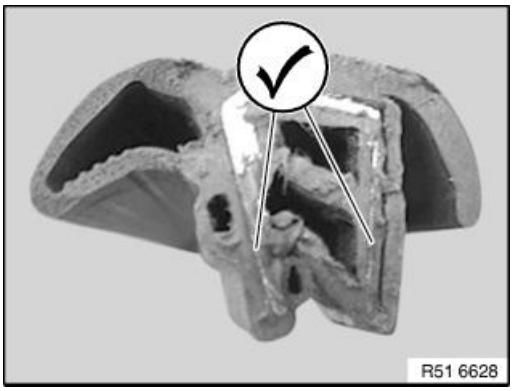
51 72 ... Sealing installation

Note:
The utmost care must be taken when removing all sealings on the vehicle. Incorrect fitting can lead to wind noise and water ingress among other things and can affect the ease of closing and opening.

The following instructions only apply to sealing without sealant.

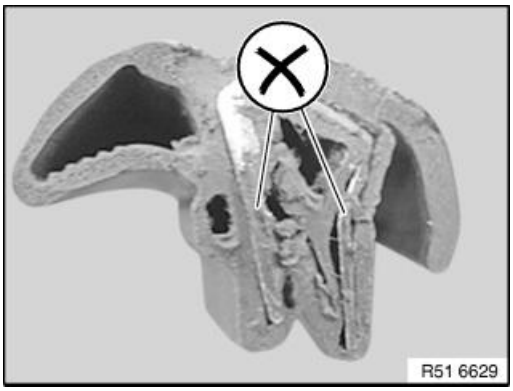
Sealings with sealant must be replaced each time they are disassembled.

Sealing surfaces must be cleaned.

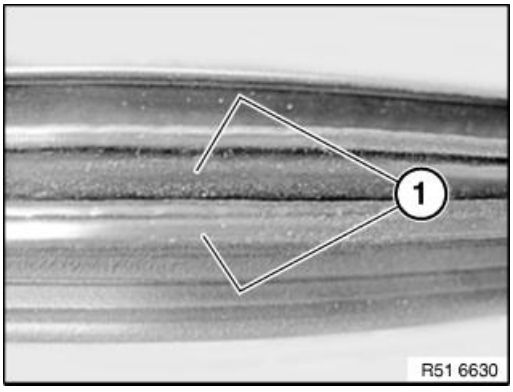


- <u>In general, the following applies:</u>

  Sealings on the side frame can be fitted and removed any number of times.
- Sealings must not be damaged or torn.
- The clamping surface must be compressed by hand far enough to ensure that a tight connection on the side flange is still possible. The sealing shanks may touch each other slightly. A completely compressed sealing is not permitted.

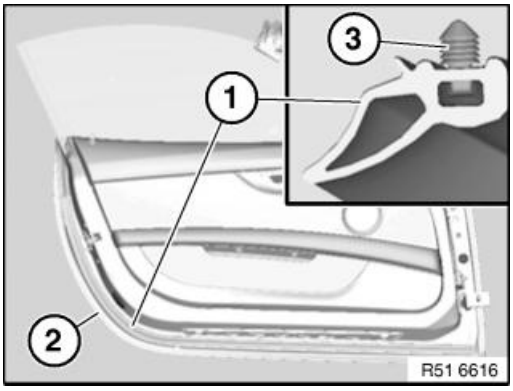


- It is not necessary to use special tools to compress the clamping surface. This can be done carefully by hand.
- The sealings must always be fitted except in the case of blockages. There is no defined contact pressure.
- A new gasket must be fitted if sealings in the tailgate area are repeatedly fitted and removed (water ingress due to cracked sheet metal).
- Sealings must be checked for correct fit after installation. If necessary, sealings should be lifted over the adjacent components using the appropriate tool. Neighbouring components must not be damaged.
- Sealings must be replaced if the metal inlay of the sealing is visible (corrosion).



- Ensure the clamping surface is even all round.

cardiagn.com



- Sealings that are installed with plastic clips fit tightly against the body. If this is not the case, replace the clips or sealings.

cardiagn.com

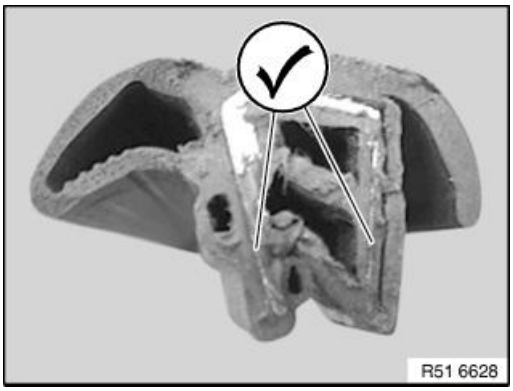
51 72 ... Sealing installation

Note:
The utmost care must be taken when removing all sealings on the vehicle. Incorrect fitting can lead to wind noise and water ingress among other things and can affect the ease of closing and opening.

The following instructions only apply to sealing without sealant.

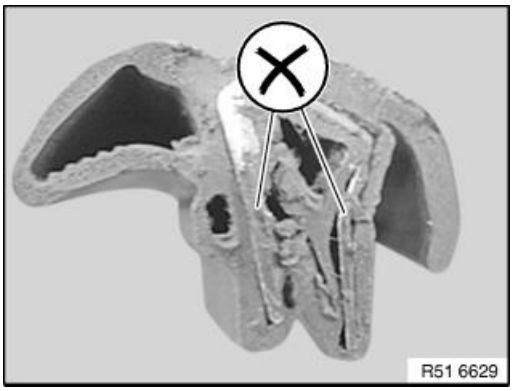
Sealings with sealant must be replaced each time they are disassembled.

Sealing surfaces must be cleaned.

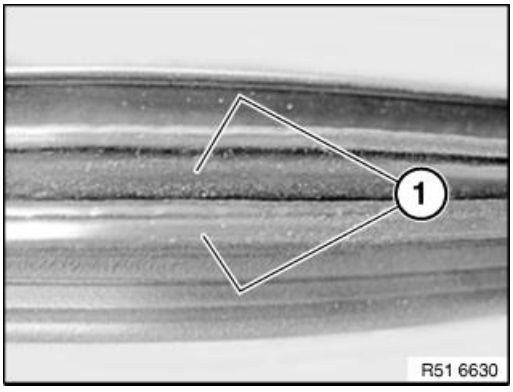


- <u>In general, the following applies:</u>

  Sealings on the side frame can be fitted and removed any number of times.
- Sealings must not be damaged or torn.
- The clamping surface must be compressed by hand far enough to ensure that a tight connection on the side flange is still possible. The sealing shanks may touch each other slightly. A completely compressed sealing is not permitted.

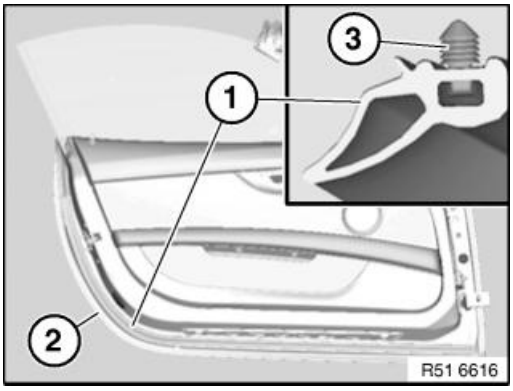


- It is not necessary to use special tools to compress the clamping surface. This can be done carefully by hand.
- The sealings must always be fitted except in the case of blockages. There is no defined contact pressure.
- A new gasket must be fitted if sealings in the tailgate area are repeatedly fitted and removed (water ingress due to cracked sheet metal).
- Sealings must be checked for correct fit after installation. If necessary, sealings should be lifted over the adjacent components using the appropriate tool. Neighbouring components must not be damaged.
- Sealings must be replaced if the metal inlay of the sealing is visible (corrosion).



- Ensure the clamping surface is even all round.

cardiagn.com



- Sealings that are installed with plastic clips fit tightly against the body. If this is not the case, replace the clips or sealings.

cardiagn.com

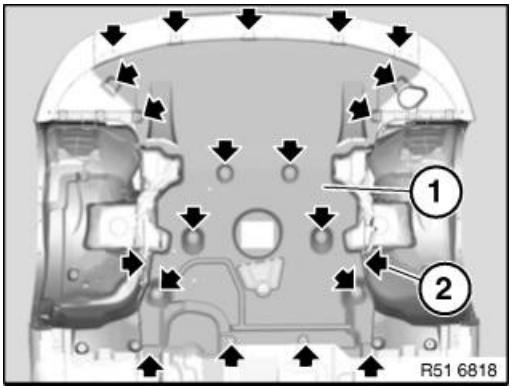
51 75 020 Removing and installing/replacing pedestrian protection \PREMIUM

PRELIMINARY WORK

1 – Removing the front underbody protection

NOTICE

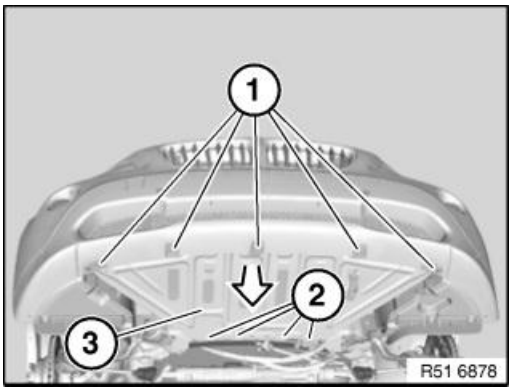
Schematic diagram is for example purposes. Some parts may differ in certain details.



- Remove the screws (arrows) (2).
- Remove the front underbody protection (1).

MAIN WORK

2 – Remove pedestrian protection

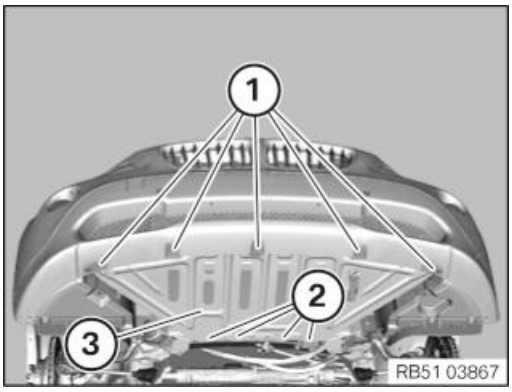


- Loosen screws (1).
- Loosen screws (2).
- Remove the pedestrian warning (3) at an angle towards the bottom rear.

- **When replacing the pedestrian warning:**

  Remount sheet metal nuts.

3 – Installing the pedestrian warning



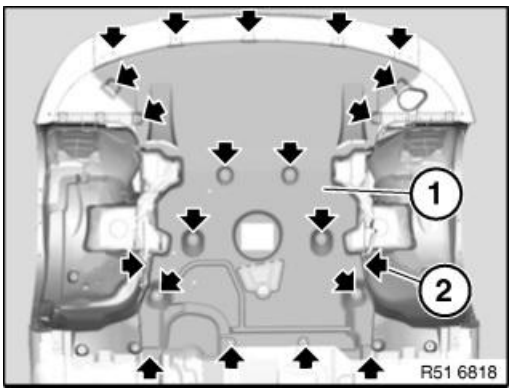
- Install and correctly attach the pedestrian warning (3).
- Tighten down screws (1) and (2).

Pedestrian protection to front axle support

	25 Nm

cardiagn.com

4 – Installing the front underbody protection



- Position the front underbody protection (1).
- Tighten the screws (arrows) (2).

Underbody panelling on body

Screw not metric			3 Nm
Screw M6			8.8 Nm
Nut			2.5 Nm

Additional Information

Overview of Tightening Torques

Pedestrian protection to front axle support Used in step 3

	25 Nm

Underbody panelling on body Used in step 4

Screw not metric			3 Nm
Screw M6			8.8 Nm
Nut			2.5 Nm

cardiagn.com