51 Body Equipment

51 00		Plastic part repairing instructions	51–00/1
51 11	000	Front bumper – remove and install	51–11/1
	005	Front bumper – disassemble and assemble	51–11/3
	794	Impact absorber for front bumper – replace (bumper removed)	51–11/5
	...	Impact absorbers for front bumper – check	51–11/6
51 12	000	Rear bumper – remove and install	51–12/1
	005	Rear bumper – disassemble and assemble	51–12/2
	742	Impact absorber for rear bumper – replace (bumper removed)	51–12/3
	...	Impact absorbers for rear bumper – check	51–12/3
51 13	301	Roof strip, left or right – remove and install	51–13/1
	303	Side window opening cover strip, left or right – remove and install	51–13/1
51 16	000	Mirror on front door, left or right – remove and install	51–16/1
	026	Mirror glass – replace	51–16/1
	060	Mirror on inside of car – remove and install	51–16/2
	200	Center console – remove and install	51–16/2
	203	Rear console – remove and install	51–16/4
	360	Glove box lock – remove and install	51–16/5
	362	Glove box, right, upper – remove and install	51–16/5
	363	Glove box, right, lower – remove and install	51–16/6
51 21	090	Front door lock, left or right – remove and install	51–21/1
	140	Front door lock cylinder, left or right – replace	51–21/2
	170	Front door outside handle, left or right – remove and install	51–21/3

51 Body Equipment

51 31 ...		Window installing instructions	51–31/1
	...	Windshield cementing instructions	51–31/2
	000	Windshield – remove and install	51–31/3
	...	Rear window cementing instructions	51–31/7
	200	Rear window – remove and install	51–31/8
	...	Repairing stone-damaged safety glass windshields (clear or tinted)	51–31/1
51 32 120		Window guide rails, front or rear, in front door, left or right – remove and install	51–32/1
	154	Front door window, left or right – adjust	51–32/1
	170	Front door window, left or right – remove and install	51–32/5
51 33 000		Power window regulator in front door – remove and install	51–33/1
	020	Power window motor in front door – remove and install	51–33/2

51 Body Equipment

51 37 000	Power window regulator, rear, left or right – remove and install	51–37/1
020	Power window motor, rear, left or right – remove and install	51–37/1
154	Rear side window (with regulator), left or right – adjust	51–37/2
171	Rear side window, left or right – replace	51–37/4
51 41 000	Front door trim panel, left or right – remove and install	51–41/1
51 43 000	Rear side trim panel, left or right – remove and install	51–43/1
51 44 011	Roof liner – replace	51–44/1
51 45 030	Dashboard trim panel – remove and install	51–45/1
51 46 000	Hatrack trim panel – remove and install	51–46/1
013	Rear window sun shade – remove and install	51–46/2
51 47 315	Passenger compartment carpets, front and rear – remove and install	51–47/1

51-00/1

51 00 ... INFORMATION FOR REPAIRING PLASTIC PARTS

The hardtop repairing conditions mentioned below conform with legislation in the Federal Republic of Germany. Always conform with pertinent legislation in a different country.

These repairing instructions are provided for qualified workers and assumes their skill, conscientiousness and sense of responsibility. The instructions are limited to factory approved repairing materials and methods as well as associated tips to make the work easier. Only general working procedures are de- scribed in these instructions. The scope of work and order of procedures will always have to be adapted to the pertinent damage condition. Repairs are an economical solution, so that optical deficiency cannot be excluded on a longterm basis due to the different physical properties of the concerned materials.

The following E 31 parts are made of plastic and can be repaired with Airo/CARPOX 383 or 3M 5900 plastic repairing material.

- Front spoiler
- Bumpers
- Side guards

Airo/CARPOX 383 repairing material must be used for repairs in visible zones (reflecting surfaces).

Important!
Only such damage, which does not have influence on the strength and rigidness of the bumper, may be repaired. The following types of damage may not be repaired in the interest of safety.

- Damage on body mounting points.
- Damage in immediate vicinity of body mounting points.
- Peel-offs.
- Ruptures.
- Cracks, extending from corners and edges.
- Continuous cracks with a length of more than 100 mm (4").
- Holes from a size of 100 mm^2 (1.5 $In.^2$) on.

Parts with these types of damage must be replaced!

Refer to the BMW Painting Manual for information on painting plastic parts.

Required Materials:

- Sanding discs, grain size P 120 and P 220
- Sandpaper, grain size P 400
- Wet sandpaper, grain size P 800
- 3M Cement Remover 8984
- 3M Aluminum Adhesive Tape Scotch 424
- 3M Glass Grid Fabric 9030
- Airo/CARPOX 383 or 3M 5900 plastic repairing material
- Mask
- Gloves
- Infrared lamp

Source of Supply: HWB

Safety Precautions:

- Extracting of grinding abrasion.
- Wearing mask and gloves while grinding.
- Working only in well ventilated rooms.
- Washing hands frequently.
- Storing food separately.
- Not eating, drinking or smoking while working.
- Not inhaling vapors.

First Aid:

Take off dirty clothes immediately. If dust has gotten in eyes, rinse out with water thoroughly and go to a physician.
If great amount of vapors are inhaled, go outdoors in fresh air and, if necessary, visit a physician.

Information on Toxicology:

Irritates eyes, skin and the respiratory track. No damaging effects are known as long as handling is correct.

Measures in Case of Fire:

Fire extinguishing agents: powders, foam, CO_2, halon, water mist.

Scrapping:

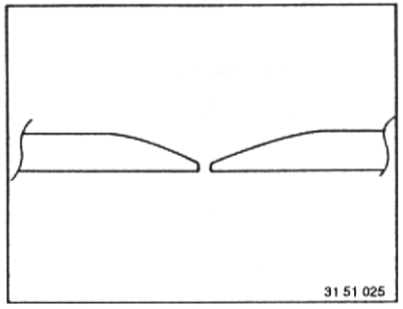
Never let it get into drink water systems.
Single components of the repair material must be scrapped as special refuse.
After mixing the single components and hardening, it can be brought to the normal refuse station.

PROCEDURES:

Deep damage – points 1 ... 11.

Surface damage up to substrate – points 1 ... 4 and points 7 ... 11.

1. **Clean repair surface with cement remover and wipe off with a clean, dry cloth.**

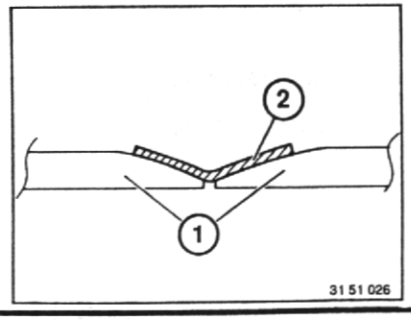


2. **Grind down front of repair surface flat (grain size P 120).**

   Roughen back of deep damaged repair surface (grain size P 120).

3. **Clean repair surface with cement remover and wipe off with a clean, dry cloth.**

   Note:
   Let cleaned surface dry at room temperature about 10 mintues before continuing with the next step.



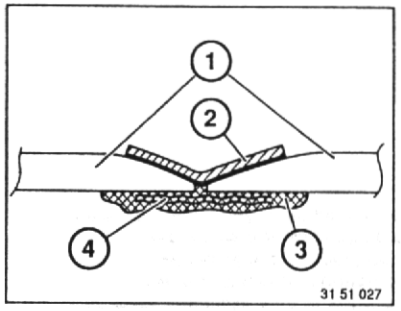
4. **Paste aluminum adhesive tape over the damaged surface on the front.**

   1 = Damaged plastic part

   2 = Aluminum adhesive tape

5. **Cut glass grid fabric to size for the repair surface.**

6. **Mix repairing material to instructions from the supplier.**



7. **Apply coat of repairing material on back of the repair surface. Apply glass grid fabric, cover with repairing material and harden with infrared light.**

   1 = Damaged plastic part

   2 = Aluminum adhesive tape

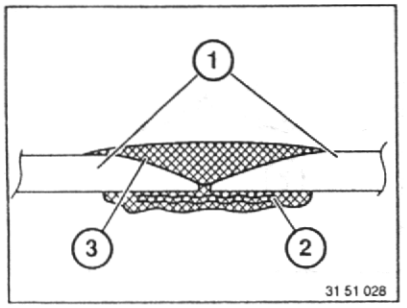
   3 = Plastic repairing material

   4 = Glass grid fabric

Hardening plastic repairing material with infrared light:

- **Lamp to surface distance = 300 ... 400 mm (11.811 ... 15.748").**
- **Lamp time = 15 ... 30 minutes depending on thickness of coat.**
- **Max. surface temperature = 60 ... 70° C (140 ... 160° F).**

8. **Pull off aluminum adhesive tape and grind down and clean the face of the repaired surface (grain size P 220).**



9. Apply coat of repairing material on front and harden with infrared light.

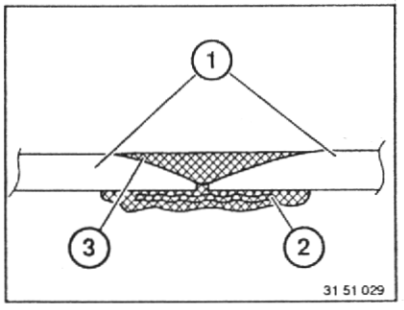
   1 =Damaged plastic part

   2 =Hardened plastic repairing material on back

   3 =Plastic repairing material coat on front

Hardening plastic repairing material with infrared light:

- Lamp to surface distance = 300 ... 400 mm (11.811 ... 15.748").
- Lamp time = 15 ... 30 minutes depending on coat thickness.
- Max. surface temperature = 60 ... 70° C (140 ... 160° F).



10. Smooth front of repaired surface (grain size P 220).

    1 =Damaged plastic part

    2 =Hardened plastic repairing material on back

    3 =Hardened and sanded plastic repairing material on front

11. If applicable, touch up blowholes and pores, and harden with infrared light.
    Smooth front of repaired surface (grain size P 400).
    Finish repaired surface with wet grinding sandpaper (grain size P 800).

Important!
It is absolutely necessary to use the specified grain size grinding materials to guarantee perfect results (thermal development).

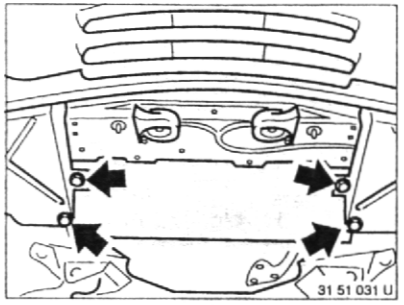
Procedures for Repairing Minor Bruises and Scratches:

1. Grind down damaged zone generously (down into the subtrate) with dry sanding paper (grain size: 400 - 500).
2. Clean ground zone with a plastic cleaner.
3. Apply coat of plastic adhesion solution.
   Apply several coats of BMW Rapid Filler + 20 % BMW Softface Additive on the cleaned surface until the shape of the part can be restored after grinding.
4. Grind down filled surface with wet sanding paper (grain size: 800 - 1000).
   Continue as described in point 3, if ground through spots or damaged spots are still visible.
5. Grind down entire part if applicable (depending on extent of damage).
6. Apply final coat of paint with two-component BMW acrylic paint + 20 % BMW softface additive; for double-layer metallic paint finishes 20 % softface additive is mixed with the BMW acrylic clear lacquer.

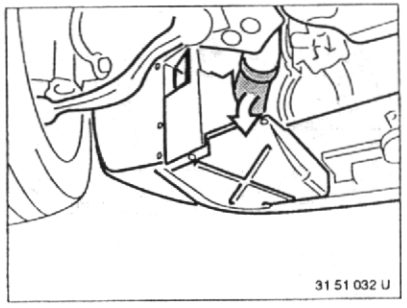
   Refer to the BMW Paint Spraying Manual for spraying instructions, materials and so on.

Caution!
Use mask and make sure of sufficient ventilation.
Conform with accident prevention stipulations for working with paints.
Conform with local and national legislation concerning safety at work and accident prevention as well as working material ordinances.
Refer to instructions supplied by the manufacturers!

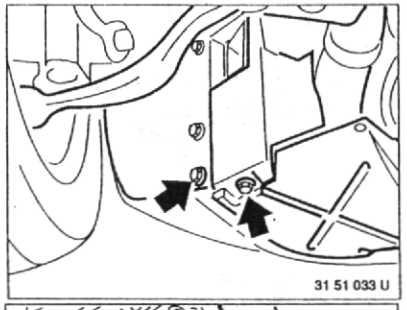
51 11 000 REMOVING AND INSTALLING FRONT BUMPER ASSEMBLY



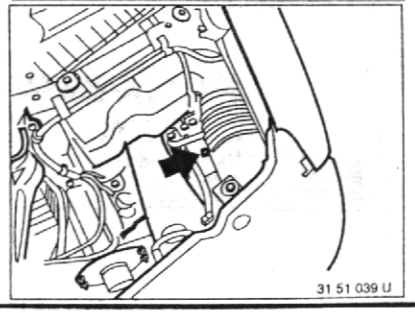
Remove concealed headlights with consoles – see Group 63.
Unscrew screws and take off lower panel.



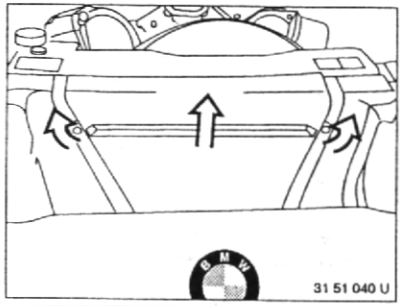
Pull off alternator cooling hose.



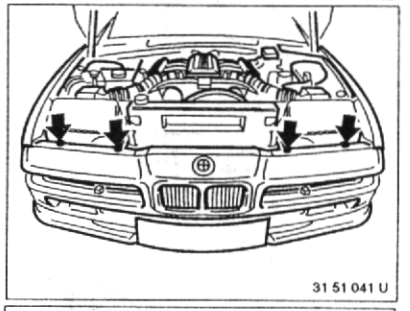
Unscrew left and right bolts.



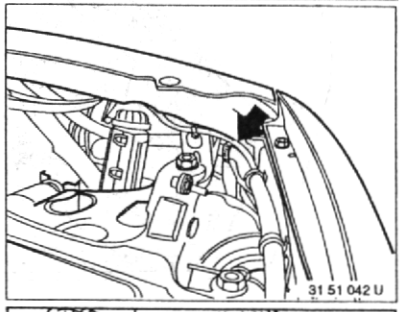
Loosen hose clamps on left and right air intakes.



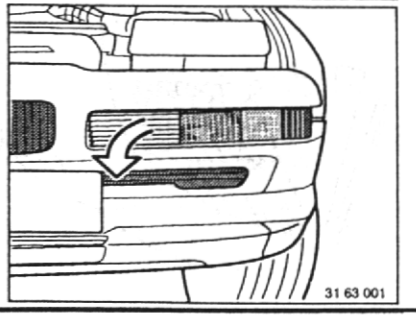
Unlock and unclip cover from above.



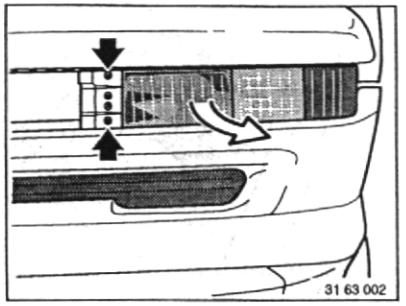
Unscrew screws.



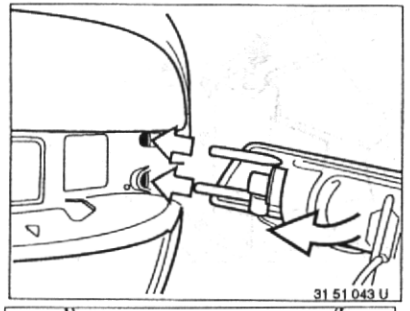
Loosen hose clamp and pull off hose of headlight cleaners.



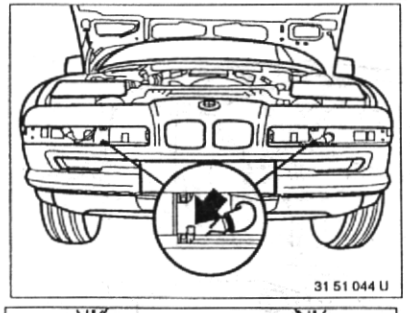
Unclip left and right grills forward.



Unscrew screws.
Swing out left and right light assemblies forward and remove.
Disconnect plugs.

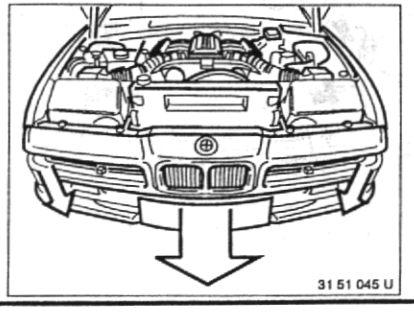


Installation:
Insert pins in retaining bores.



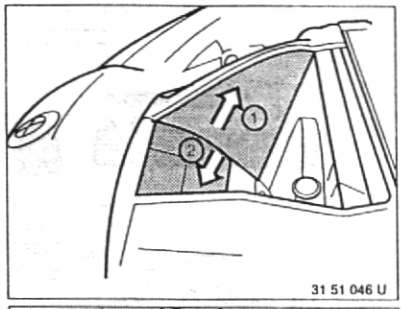
Unscrew screws.

Installation:
Tightening torque*.

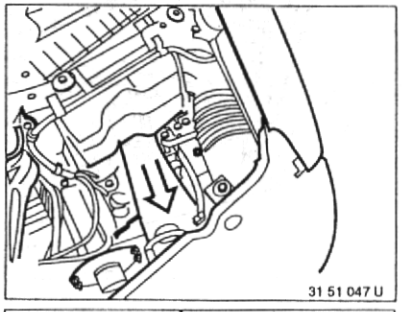


Pull left and right sides of bumper forward and remove bumper from front.

* **See Specifications**

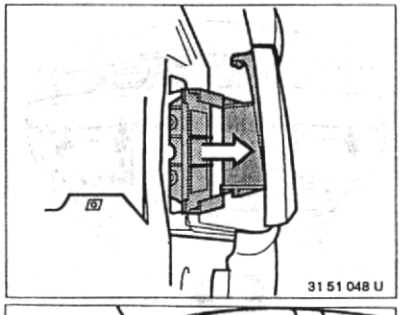


Installation:
Press air guide (1) toward outside.
Air guide (2) must seat inside.

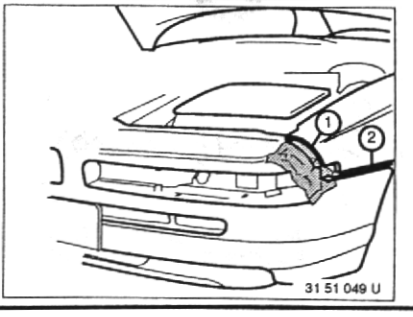


Installation:
Insert and engage brake cooling air guides in left and right air intakes.

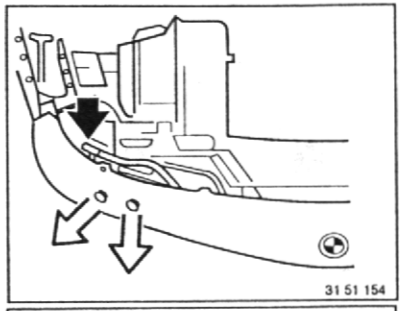
– Headlight was removed in picture. –



Installation:
Guide sides of bumper into brackets.



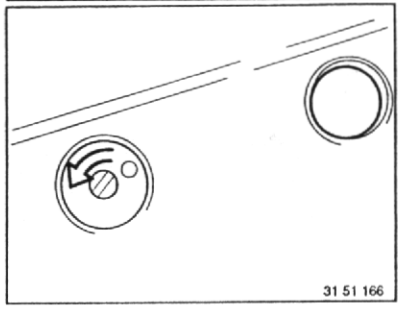
Installation:
Lubricate side seals (1 and 2) with a rubber lubricant.
Hold a piece of clear plastic sheet between the bumper and seal (2) while guiding in.



51 11 005 DISASSEMBLING AND ASSEMBLING FRONT BUMPER

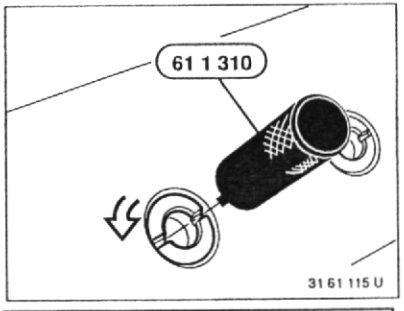
Important!
Headlight cleaners will still have residual water.

Apply pneumatic gun and run out nozzles with air pressure – max. pressure = 5 bar (71 psi).
Pull off left and right covers from above.



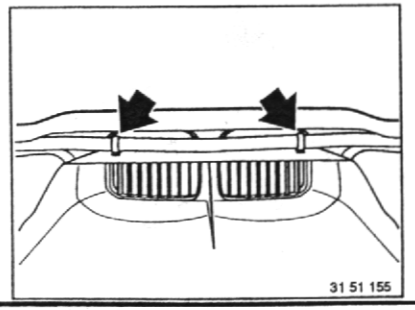
Unscrew cover carrier.

Installation:
Adjust cover height.
Screw cover carrier out or in until the cover is flushed with the body when in installed state.

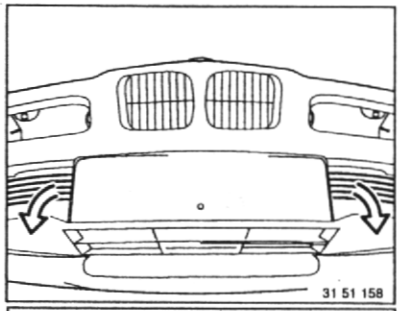


Unscrew ring with Special Tool 61 1 310.

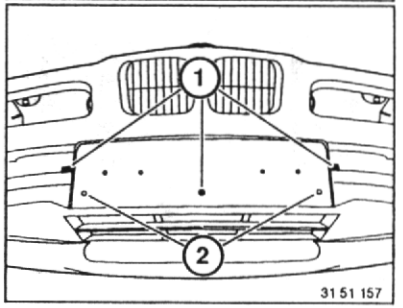
Installation:
Install headlight nozzles with pins inserted in slot of bumper.



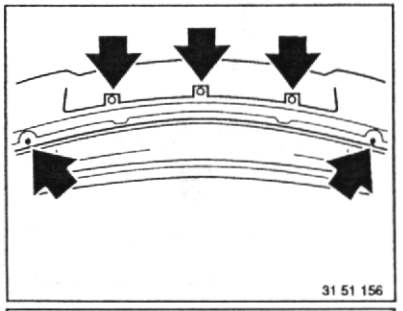
Unscrew hose holder and remove headlight nozzles with hoses.



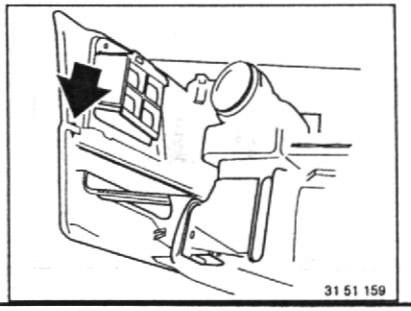
Unclip covers toward front.



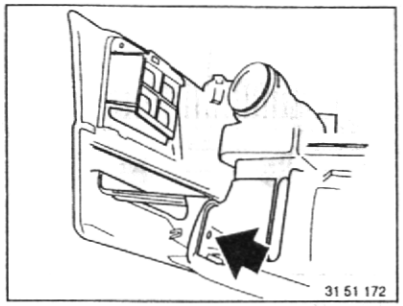
Unscrew screws (1).
Pull out plug (2).
Take off license plate holder.



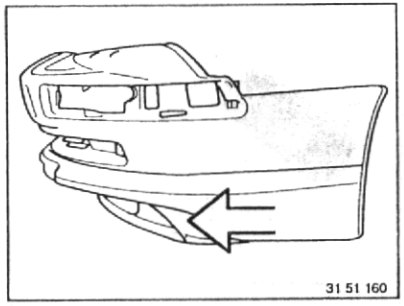
Unscrew screws from underside of bumper.



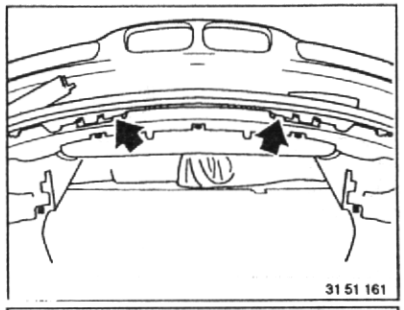
Unscrew left and right screws.



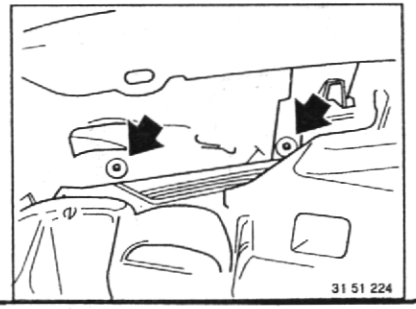
Loosen left and right clips.



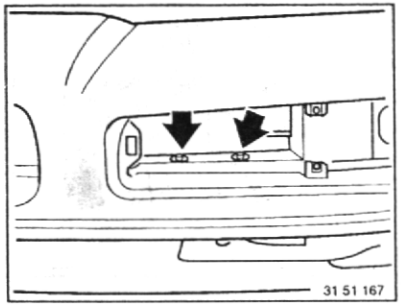
Pull lower bumper section forward off of the lower bumper section firmly (held by clips).



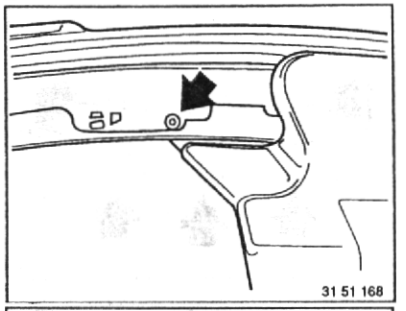
Loosen clips and lift out air guide toward rear.



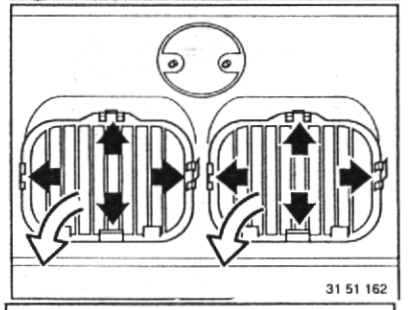
Loosen left and right clips.



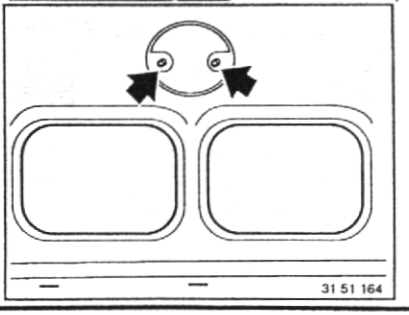
Loosen left and right clips.



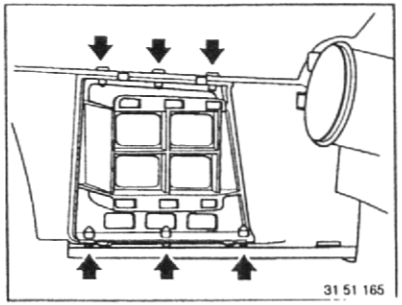
Turn bumper around and loosen clips on left and right sides.
Pry out left and right air intakes and bumper carrier toward rear.



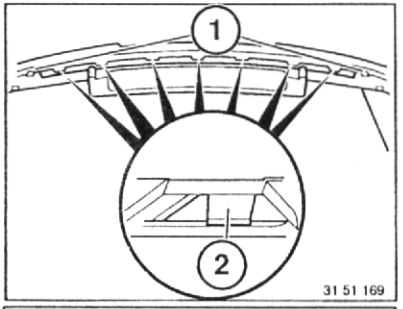
Press clips aside and lift out grill.



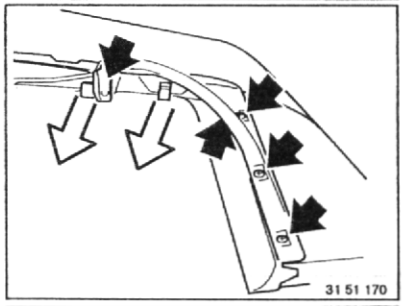
Press up pins and take off BMW emblem on the top side.



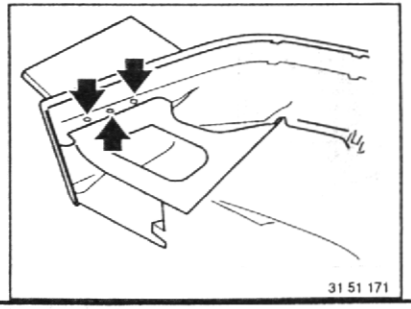
Loosen clips and take off left and right holders.
If applicable, take off remaining clips and stamped nuts from top of bumper.



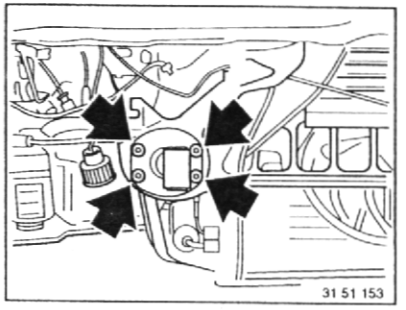
Lower Bumper Section:
Loosen left and right clips (1).
Press down on left and right locking hooks (2) and pull off spoiler lip forward.



Pull off left and right clips toward rear.
Unscrew left and right screws and nuts.
Take off spoiler.



Loosen left and right clips and take off holders.
If applicable, take off remaining clips and stamped nuts.

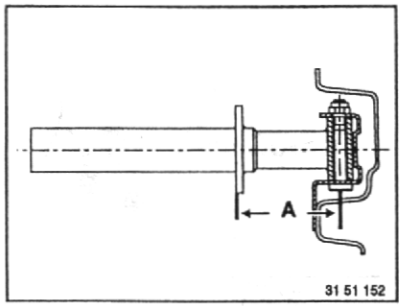


51 11 794 **REPLACING ONE IMPACT ABSORBER FOR FRONT BUMPER**
– Bumper Removed –

Unscrew bolts and pull out impact absorber forward.

Installation:
Tightening torque*.

See Specifications

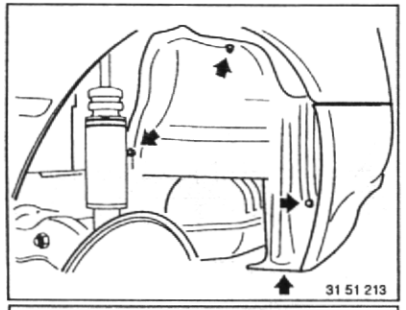


51 11 ... CHECKING IMPACT ABSORBERS FOR BUMPER

Remove impact absorbers for bumper – see 51 11 794.

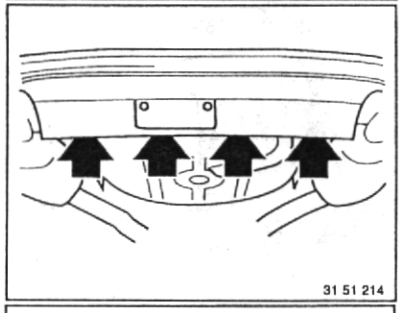
Check distance (A).
Distance A = 151 mm (5.945").

Impact absorber must be replaced if distance (A) is less than specified.

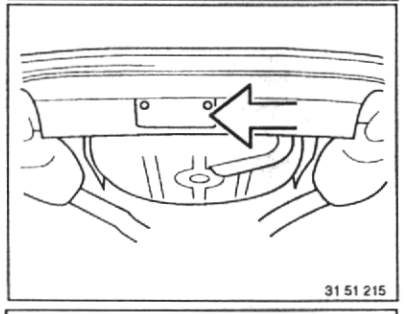


51 12 000 REMOVING AND INSTALLING REAR BUMPER ASSEMBLY

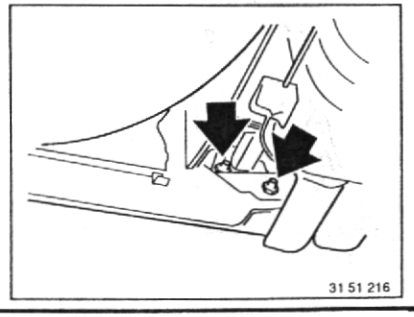
Unscrew screws in left and right wheel houses and take off panels.



Unhook rear panel at front.



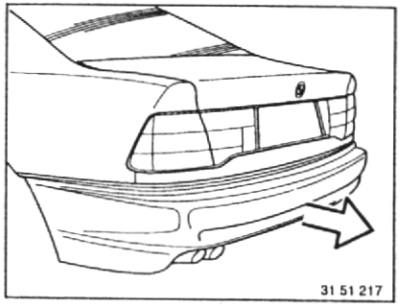
Push rear panel aside and take off.



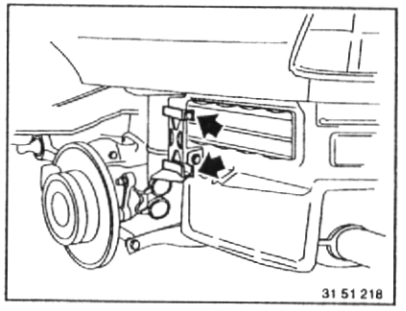
Unscrew left and right bolts.

Installation:
Tightening torque*

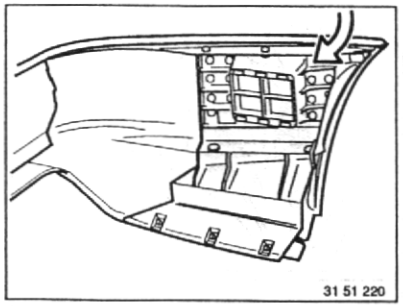
See Specifications



Take off bumper toward rear.

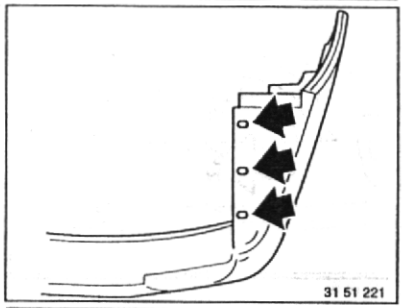


Installation:
Guide sides of bumper into brackets.

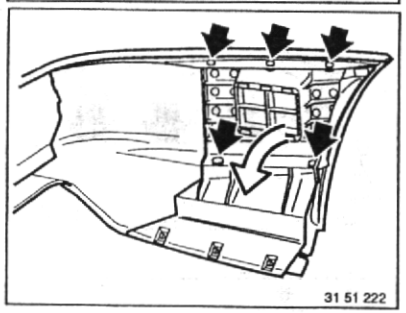


51 12 005 DISASSEMBLING AND ASSEMBLING REAR BUMPER

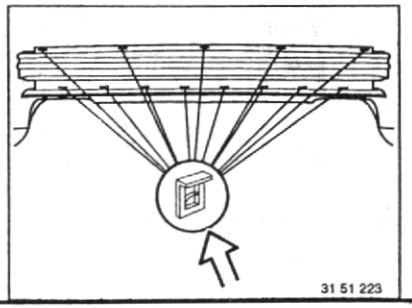
Remove rear bumper – see 51 12 000.
Pull off rubber guard.



Loosen clips at left and right bottom.



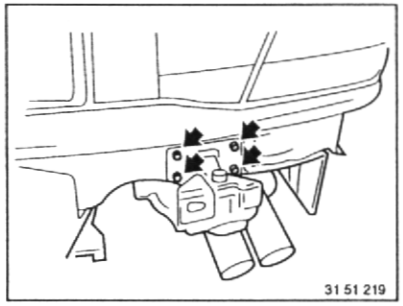
Loosen clips at left and right inside and take off holders.



Press locking hooks into wedges and remove wedges from above.
Remove bumper carrier.

Take off clips and stamped nuts.

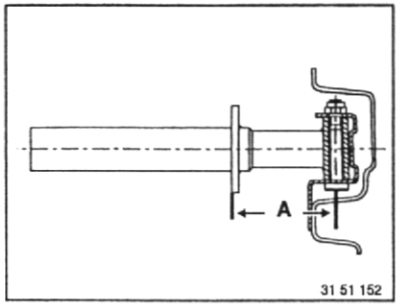
Note:
If the rear bumper is replaced after car was damaged in an accident, check the rear bumper impact absorbers if necessary – see 51 12 ...



51 12 742 REPLACING ONE IMPACT ABSORBER FOR REAR BUMPER
– Bumper Removed –

Unscrew bolts and pull out impact absorber toward rear.

Installation:
Tightening torque*.



51 12 ... CHECKING IMPACT ABSORBERS FOR REAR BUMPER

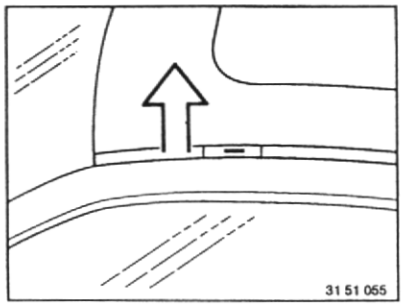
Remove rear bumper impact absorbers – see 51 12 742.

Check distance (A).
Distance A = 108 mm (4.252").

Impact absorber must be replaced, if distance (A) is less than that specified.

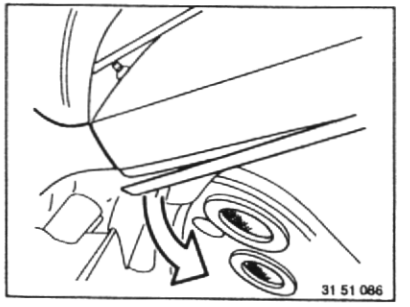
* See Specifications

* See Specifications



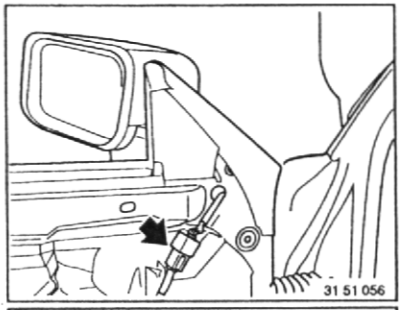
51 13 301 REMOVING AND INSTALLING LEFT OR RIGHT ROOF STRIP

Unclip roof strip from above.



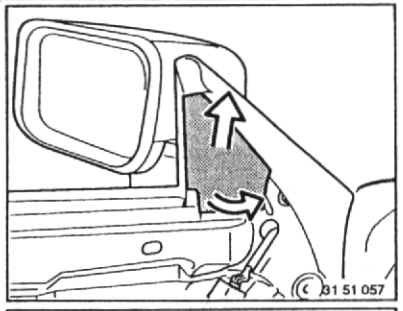
51 13 303 REMOVING AND INSTALLING COVER STRIP IN LEFT OR RIGHT SIDE WINDOW OPENING

Pull cover strip carefully from front to rear off of the sheet metal fold.

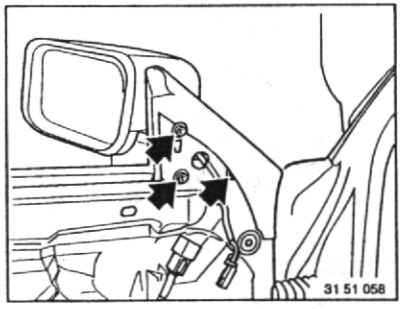


51 16 000 REMOVING AND INSTALLING MIRROR ON LEFT OR RIGHT FRONT DOOR

Remove front door trim panel – see 51 41 000.
Disconnect plug.

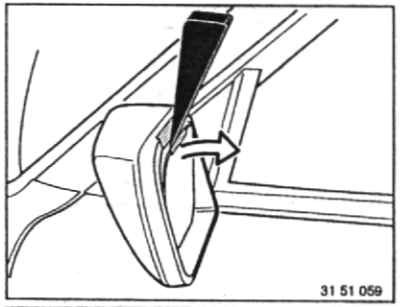


Unclip plate at bottom, push up and take off.



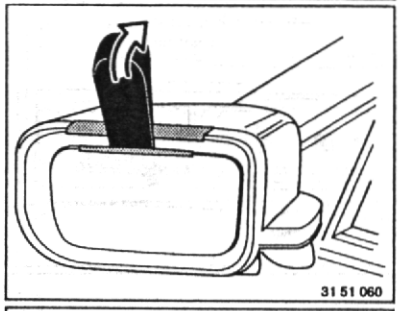
Unscrew screws.

Installation:
Tightening torque*.

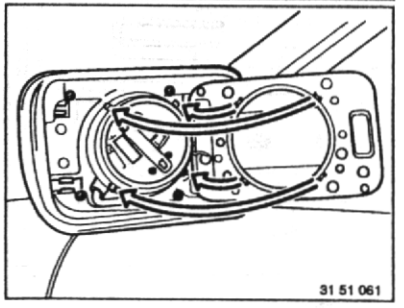


51 16 026 REPLACING GLASS FOR MIRROR

Tilt mirror glass.
Paste tape on mirror glass and edge of housing – prevents damage.

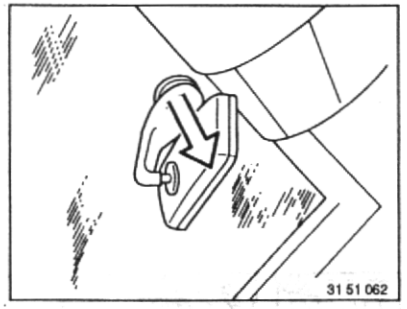


Unclip mirror glass with a wood wedge. Disconnect plug and take off mirror glass.



Installation:
Insert mirror glass with retaining clips on the tabs and clip in glass.

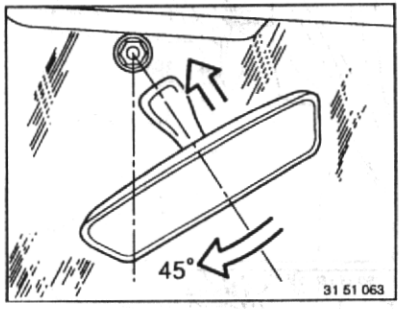
* See Specifications



51 16 060 REMOVING AND INSTALLING INSIDE MIRROR

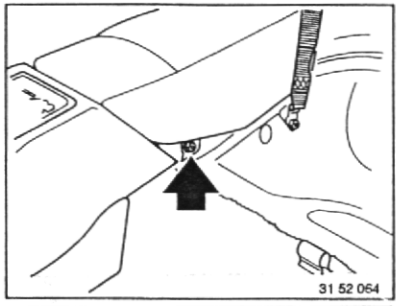
Pull mirror toward rear off of the base.

Cars with Automatic Inside Mirror Dimmer:
Open mirror trim panel and disconnect plug.



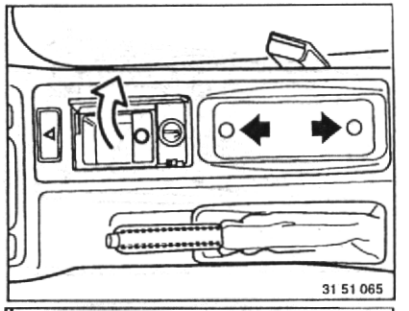
Installation:

1. Mount mirror foot turned approx. 45° on the mirror base.
2. Turn mirror foot until it engages in the mirror base.

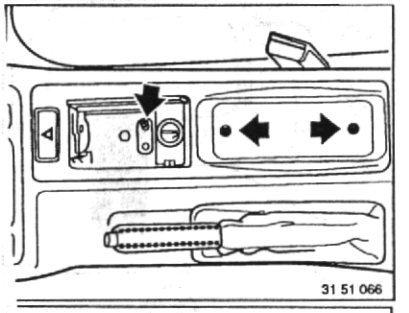


51 16 200 REMOVING AND INSTALLING CENTER CONSOLE

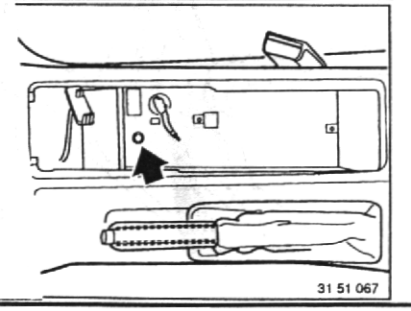
Remove rear seats – see Group 52.
Remove rear tray – see 51 16 203.
Unscrew left/right screws and take off center armrest.



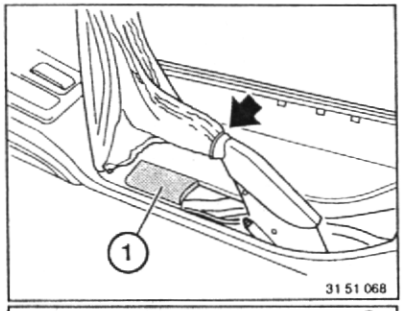
Lift out ashtray.
Take off covers.



Unscrew screws.
Lift out tray.
Disconnect plug and pull out ashtray light.

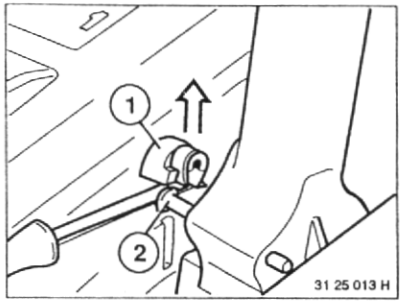


Unscrew screw.

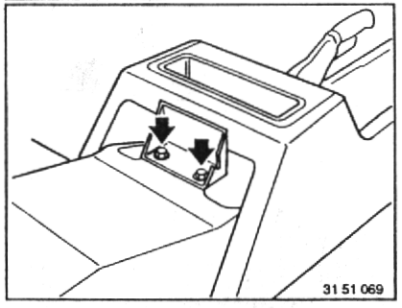


Unclip and fold back parking brake cover.
Cut off retaining strap and remove cover.
Take out plate (1).

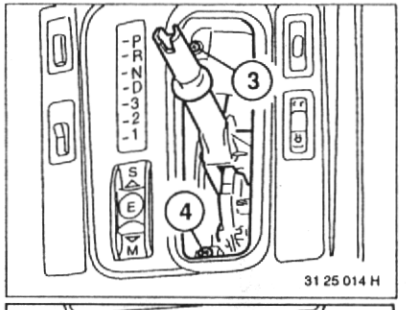
Installation:
Replace retaining strap.



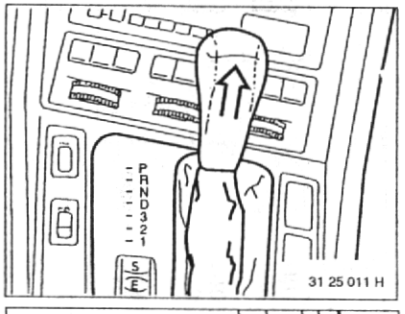
Unclip drive clip (1) upward with a screwdriver and pusg pin (2) aside.
Pin (2) remains in the selector lever.



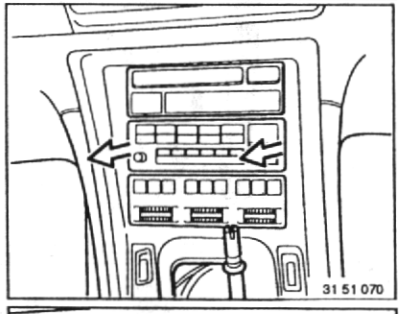
Unscrew screws.



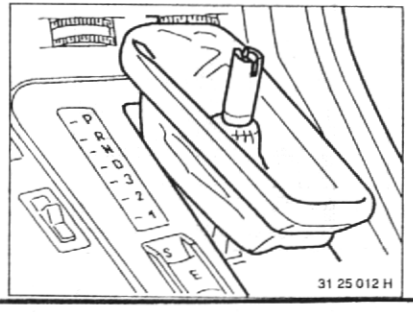
Unscrew screws (3 and 4) and lift out cover from above.
Disconnect plug.



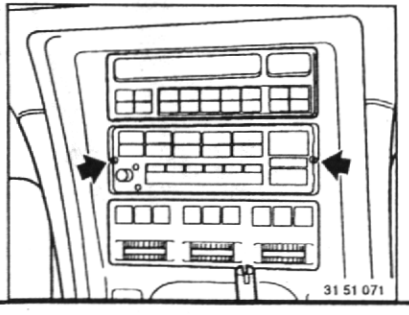
Pull off selector lever grip from above.
Pulling-off force = approx. 25 N (27.5 lbs.).



Pull off radio frame.

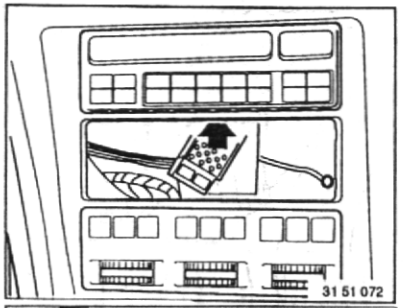


Unclip and pull off cover from above.

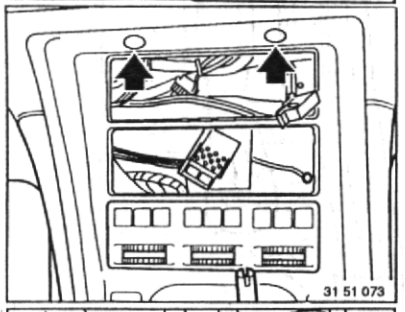


Unscrew screws.
Pull out radio and disconnect plugs.

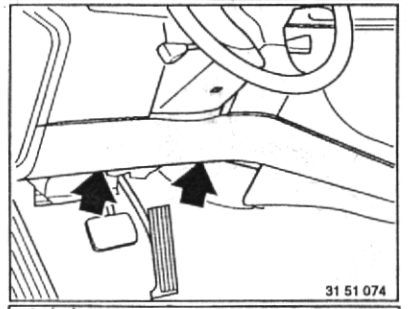
Note:
Remove radio – see Group 65.



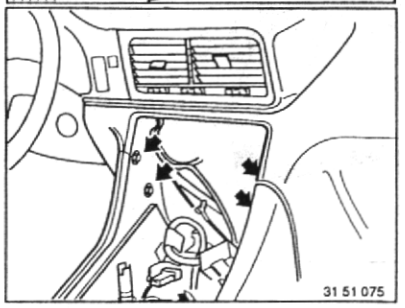
Press in clip in the middle and pull out on-board computer.
Disconnect plug.



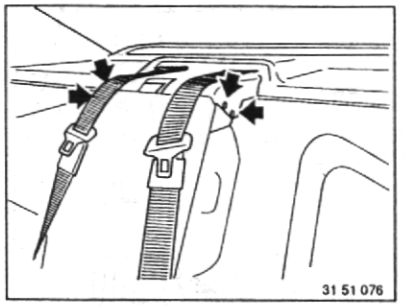
Lift out frames.
Unscrew screws and take off trim panel.
Disconnect plug.

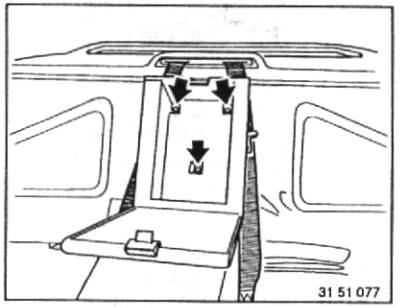


Turn clips and unclip and remove dashboard trim panel.



Unscrew left and right screws and lift out center console.

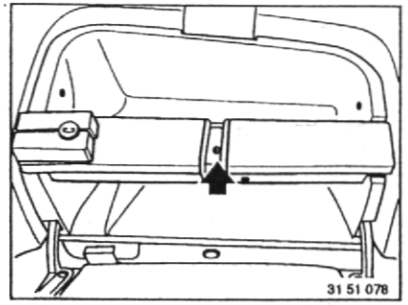




51 16 203 REMOVING AND INSTALLING REAR CONSOLE

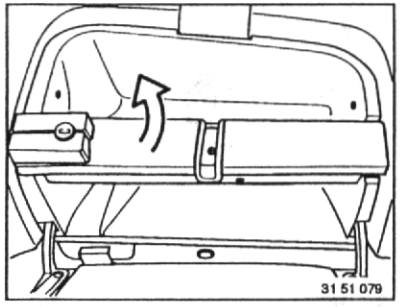
Remove both rear seats – see Gr. 52.
Unscrew screws on left and right sides.
Open box for first aid kit and take off trim panel.

Remove first aid kit.
Unscrew screws and remove complete box.

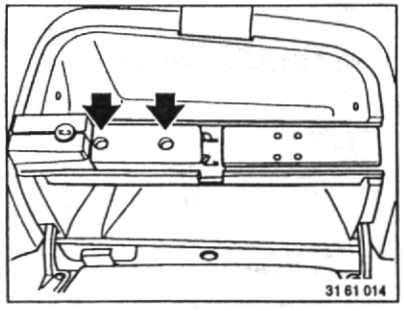


51 16 360 REMOVING AND INSTALLING LOCK FOR GLOVE BOXES

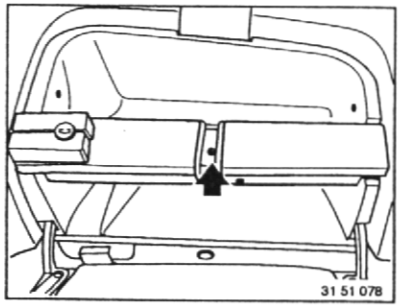
Open both glove boxes.
Unscrew screw and take off frame.



Pull off frame from above.

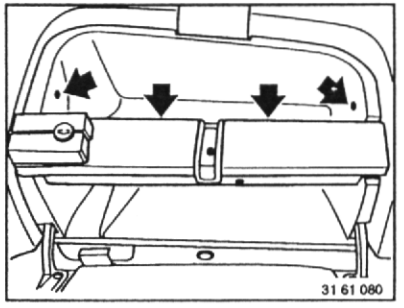


Unscrew screws and remove lock.

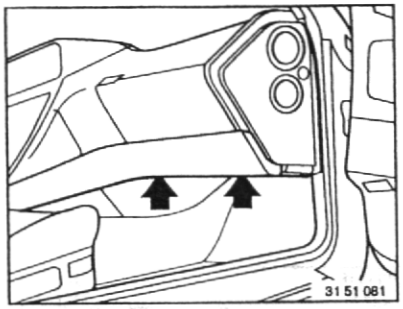


51 16 362 REMOVING AND INSTALLING TOP RIGHT GLOVE BOX

Open lids for top and bottom glove boxes.
Unscrew screw and take off frame.

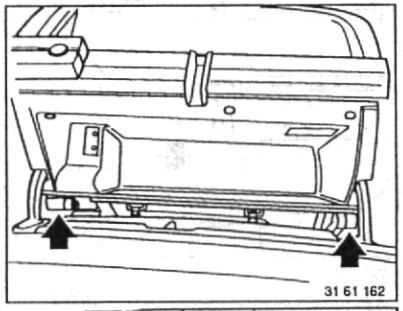


Unscrew screws and lift out glove box.

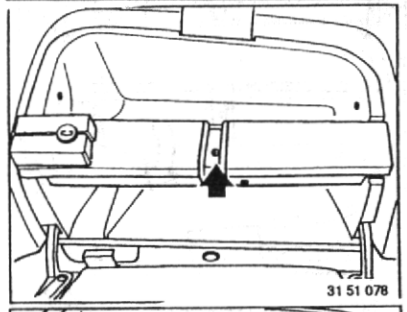


51 16 363 REMOVING AND INSTALLING RIGHT BOTTOM GLOVE BOX

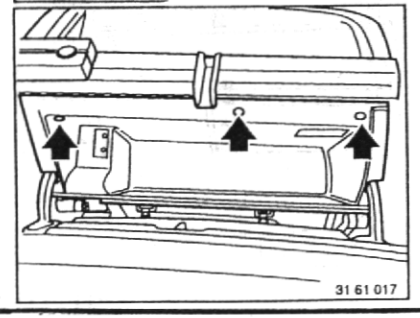
Turn clips and unclip and remove dashboard trim panel.



Unscrew screws.



Open lids for top and bottom glove boxes.
Unscrew screw and take off frame.



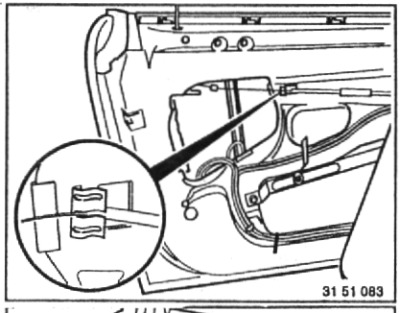
Unscrew screws.
Lift out glove box.
Disconnect plug.

51 21 090 REMOVING AND INSTALLING LOCK OF LEFT OR RIGHT FRONT DOOR

Raise side window.
Remove door trim panel – see 51 41 000.

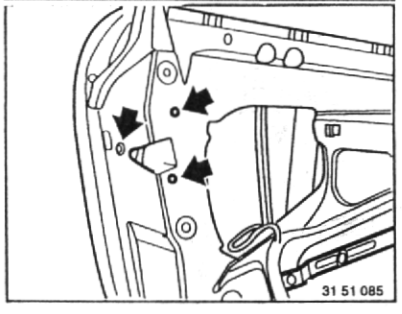
Important!
Disconnect power window plug in the interest of safety.

Remove outside door handle – see 51 21 170.



Unhook inside door lock operating cable.

Installation:
Check for correct seating of cable sleeve.



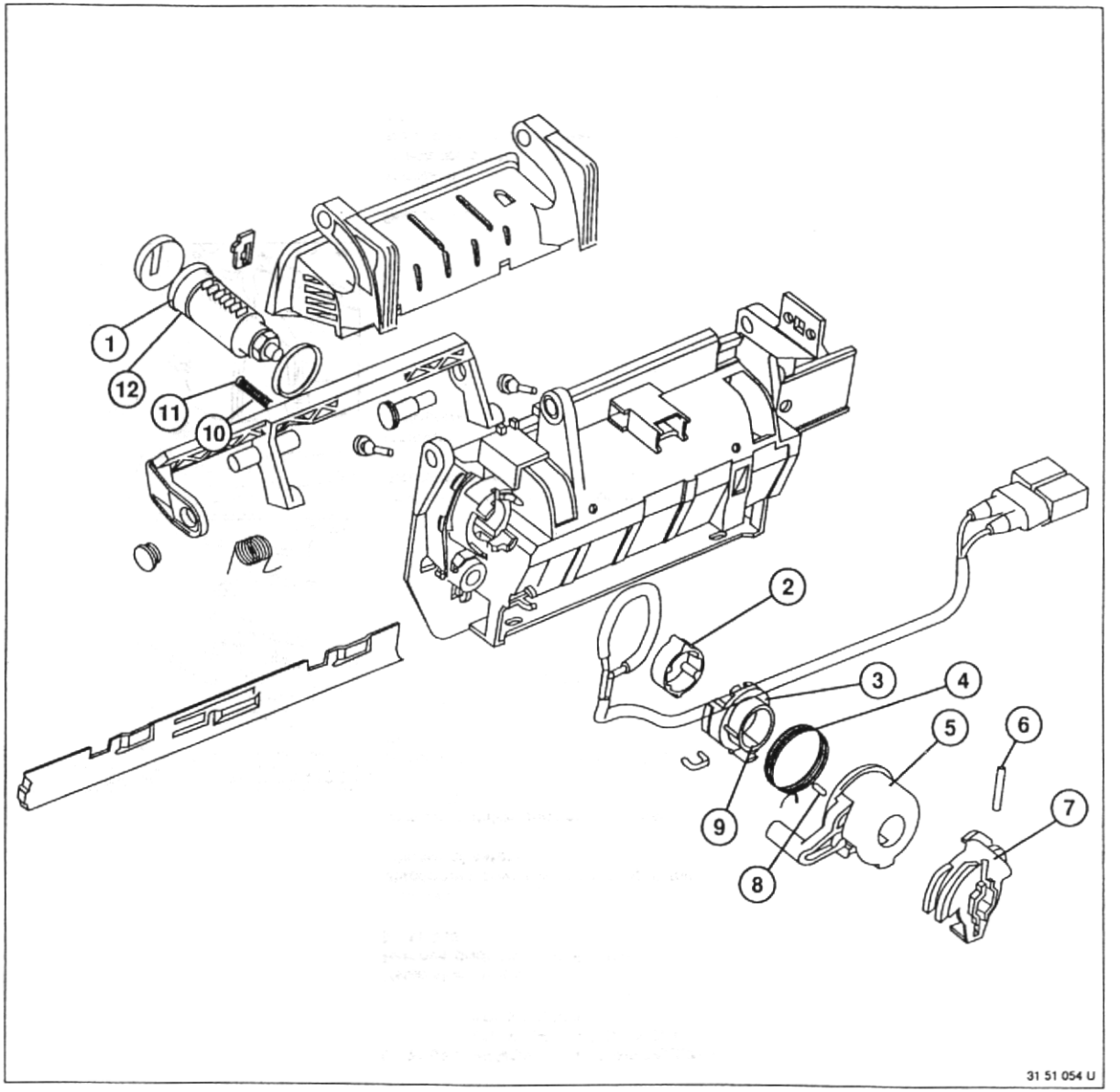
Unscrew screws and lift out lock.
Disconnect plug and unclip wires.

Installation:
Tightening torque*.

Disconnect plug.

Installation:
Check for correct seating of plug – a loud "click" must be heard for engagment.

* See Specifications



51 21 140 REPLACING COMPLETE LOCK CYLINDER OF LEFT OR RIGHT FRONT DOOR

Note:
Removal and installation of the lock cylinder are only possible with the main key.

Insert main key in lock cylinder.

Remove outside door handle – see 51 21 170.

Caution!
Clips have great tension – wear protective goggles.

Loosen and hold clips carefully.
Take off cap and microswitch.

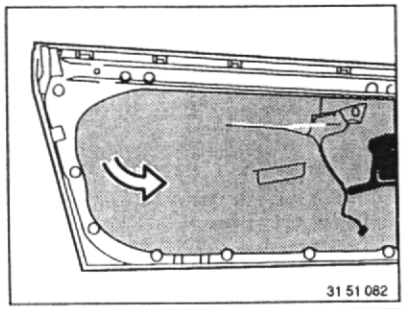
Press out pin (6) with a pointed pliers.
– Don't knock it out! –

Take off eccentric (7) with drive (5), spring (4) and guide ring (3) as a single unit and do not disassemble if not absolutely necessary.

Installation:
Place cylindrical roller (8) in opening (9).

Take off insert ring (2).
Pull lock cylinder (1) out of the door handle.

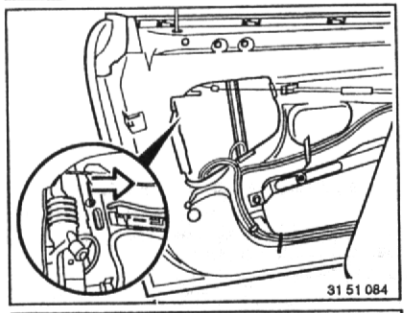
Installation:
Hold ball (11) on spring (10) with grease.
Push lock cylinder into door handle.
Press in key lock (12) with a pointed item, press lock cylinder into door handle firmly and hold.



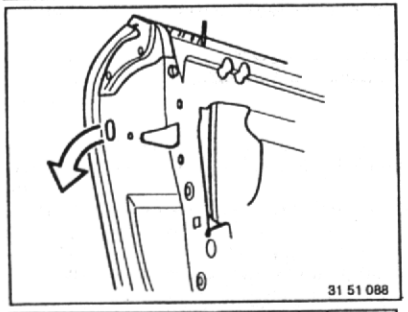
51 21 170 REMOVING AND INSTALLING OUTSIDE HANDLE OF LEFT OR RIGHT FRONT DOOR

Raise side window.
Remove door trim panel – see 51 41 000.
Pull cover forward partially.

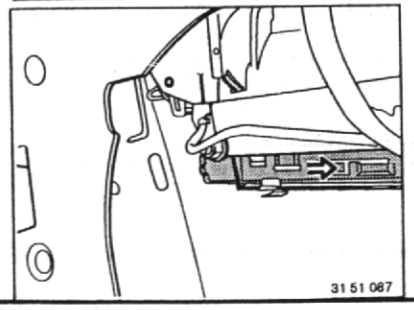
Important!
Disconnect power window plug in the interest of safety.



Unclip linkage.



Pull out plug.



Push strip forward and take off plate on outside handle.

Unscrew screws from inside and take off outside handle.
Disconnect plug and unclip wires.

Installation:
Tightening torque*.

Installation:
Mount outside handle that pin (1) is inserted in drive (2).

* See Specifications

51-31/1

51 31 . . . WINDOW INSTALLING INSTRUCTIONS

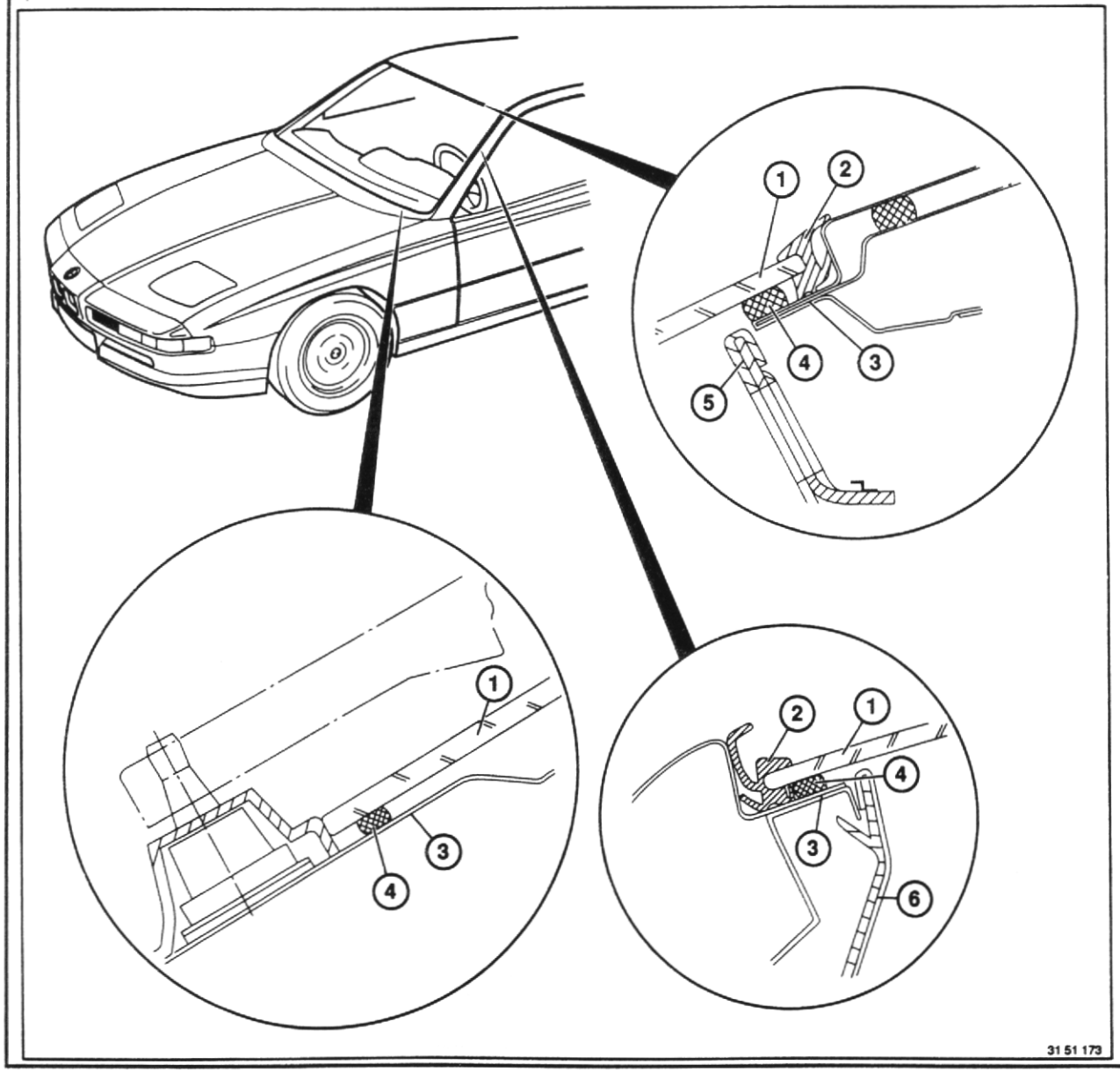
Windshield and rear window are cemented with the body for a positive connection. This improves the torsional strength of the car. Conformance with the following procedures is necessary to guarantee correctly cemented windows.

Window glass is removed with an electric cutter* having an oscillating knife* without damaging the paint finish in the body opening as well as possible. Safety goggles and gloves must be worn for cutting out windows. Damaged body paint finish in the opening must be touched up with a BMW EP primer. The inside of the glass has a coat of glass ceramic, which is ultra violet penetration proof, in the edge area for protection of the cement bead. The glass ceramic surface is brushed in thin with primer (repair kit*). Primer must dry at least 10 minutes. Edges of the body opening are also given a light coat of primer. The single component polyurethane (1 K-PUR) approved by BMW must be used as cement (repair kit*). The cement is applied on the window with a cartridge.
Installation must be completed within 10 minutes, since otherwise the cement bead will have a skin and no longer provide sufficient adhesion.

Important!
Always remove contamination from cement remainders with benzin before the cement has hardened. Do not remove the window again for this purpose.

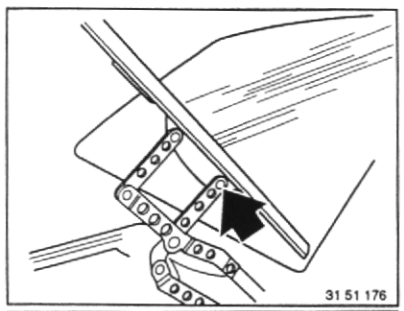
The cement hardens through reaction with air moisture at room temperature. Minimum hardening time is 4 hours at 22° C (72° F) and 38 % relative humidity. The car must not be subjected to onesided loads (e.g. one wheel on curbstone, lifting platform, etc.) during the minimum hardening time.
One side window should be opened, to avoid excessive pressure inside of the car when closing the doors.
The car can be towed or driven without a windshield or rear window.

* Source of Supply: HWB



51 31 ... CEMENTED WINDSHIELD SURVEY

1 = Windshield
2 = Rubber frame seal
3 = Body flange
4 = Cement bead
5 = Roof liner
6 = A-pillar trim
7 = Windshield wiper arm



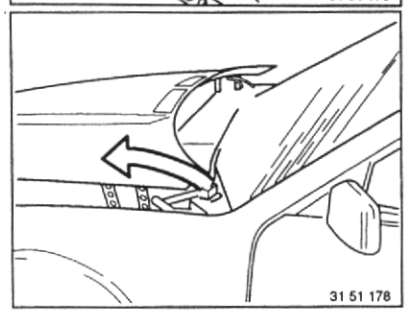
51 31 000 REMOVING AND INSTALLING WINDSHIELD

Cover bumper (top) and headlight lid with fenders guards or covers.

Important!
Hold engine hood, as otherwise hood would fall into windshield.

Unscrew left and right screws.

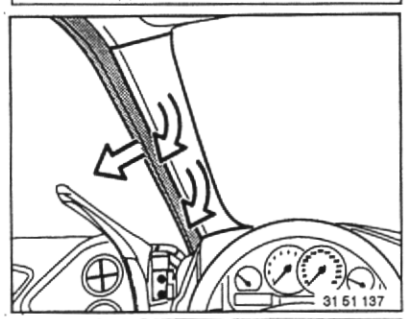
Installation:
Tightening torque*.



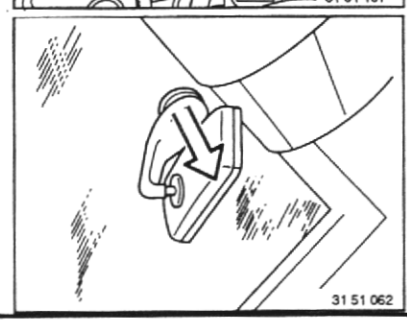
Lower engine hood on to fender guards or cover and pull forward.

Remove wiper arms – see Group 61.

Unclip left/right plates at top.
Open engine hood.



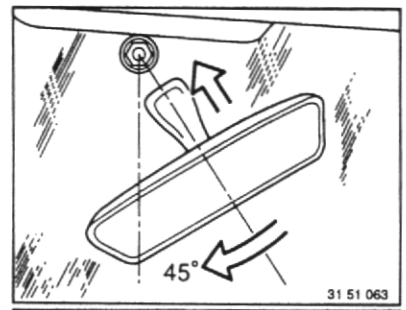
Unclip left and right plates.



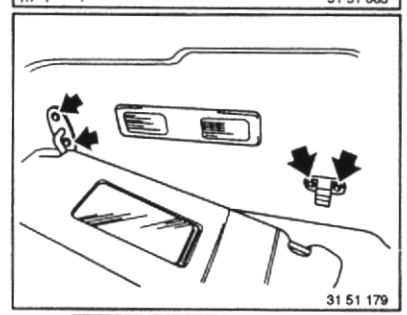
Pull mirror back off of the mirror base.

Cars with Automatic Inside Mirror Dimmer:
Open mirror trim panel and disconnect plug.

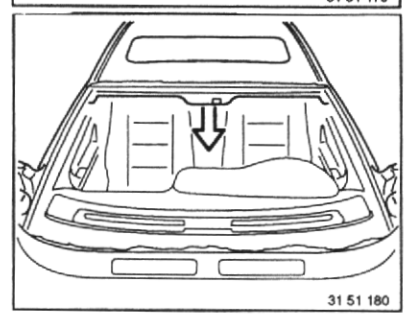
* See Specifications



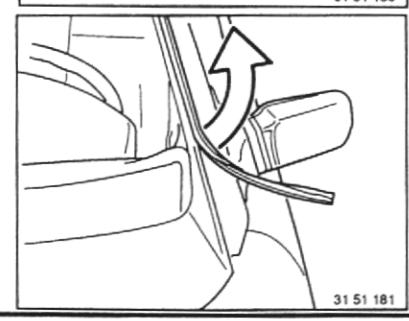
Installation:
1. Mount mirror foot turned about 45° on the mirror base.
2. Turn mirror foot until it engages on the mirror base.



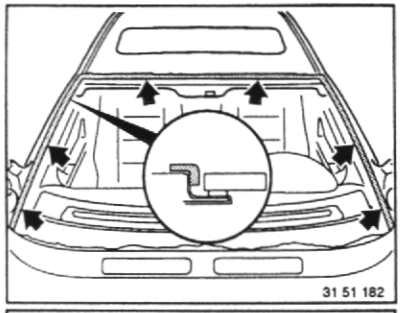
Unscrew screws.
Take off left and right sun visors and holders.
Disconnect plug.



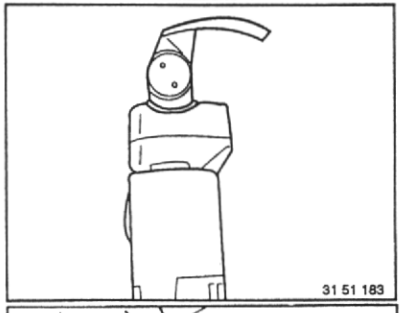
Lower front end of roof liner slightly.



Pull out seal.

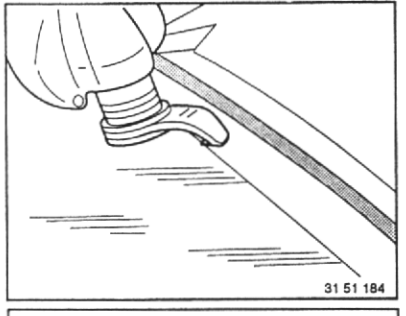


Paste two layers of cloth adhesive tape (e.g. Tesa) on the body all around.

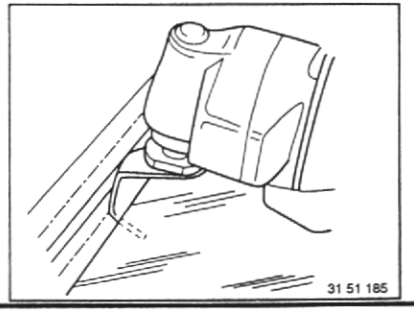


Mount long knife* (40 mm/1.575" long knife blade) on tool.

Note:
If necessary, resharpen knife with the machine running.

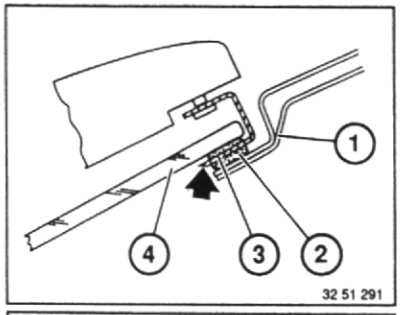


Insert knife* carefully between the body and window glass.



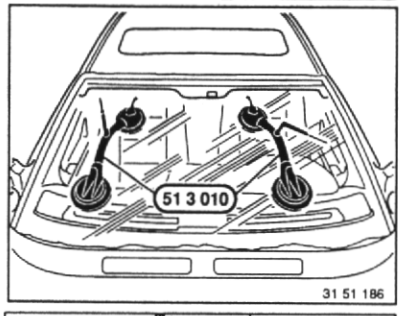
Guide web of knife* parallel to the window glass.

* Source of Supply: HWB

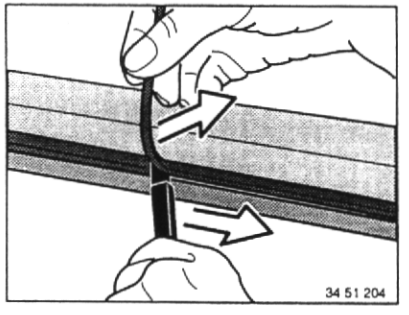


Cut through cement bead all around as close as possible to the window glass.

1 = Body opening
2 = Cement bead
3 = Knife
4 = Window glass



Lift out windshield with Special Tool 51 3 010.



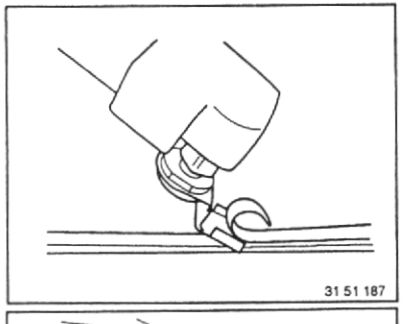
Reduce remaining cement in body opening to a thickness of about 0.5 mm (0.020").
Cut off cement remainders with an universal knife (sharp as a razor blade) carefully to avoid damaging the paint finish in the body opening.

* Source of Supply: HWB

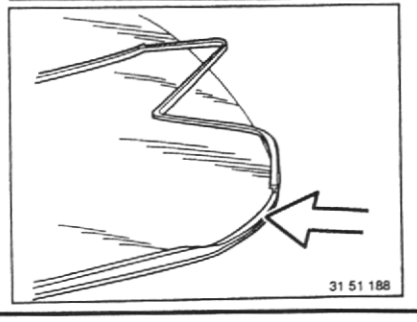
Important!
Always touch up damaged paint finish to guarantee the longterm corrosion inhibition!
Use BMW EP primer (2K) for this!

Remove cement remainders, grind out scratches not in a visible zone and touch up with BMW EP primer.

Large-area damage must be ground off down to blank metal and then coated with BMW EP primer (coat thickness = 30 ... 40 µm). If complete paint build-up is necessary in a visible zone, cement must be removed from the ce-menting surface before applying a coat of paint.

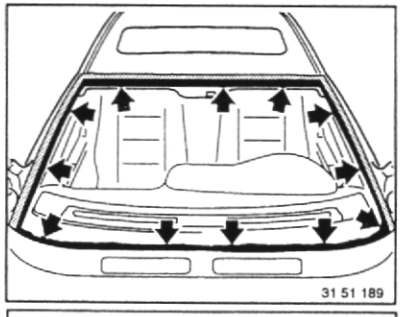


When reusing the windshield glass, reduce the cement remaining on the glass to a thickness of 0.5 mm (0.020") with a knife*.



Install and press rubber frame seal on windshield glass.

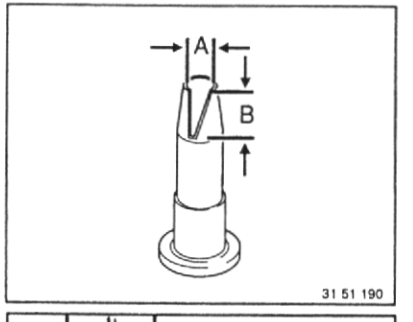
* Source of Supply: HWB



Important!
BMW EP primer must be hardened!

Coat windshield glass and body in area of the cemented surface with a primer (in repair kit)*.

Note:
Drying time: approx. 10 minutes.

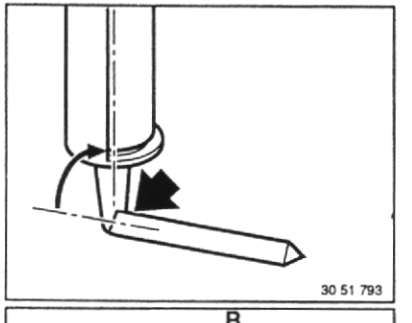


Cut nozzle to size.

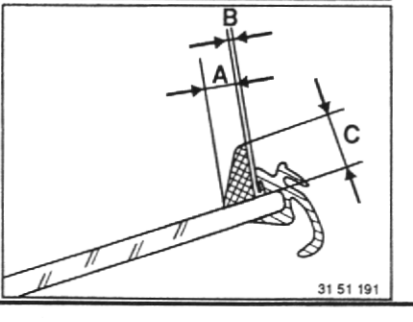
A = 6 ... 8 mm (0.236 ... 0.315")
B = 12 ... 14 mm (0.472 ... 0.551")

Note:
Use a cartridge gun* (pneumatic or electric) to produce an uniform cement bead.

Note date by when cement must be used up!



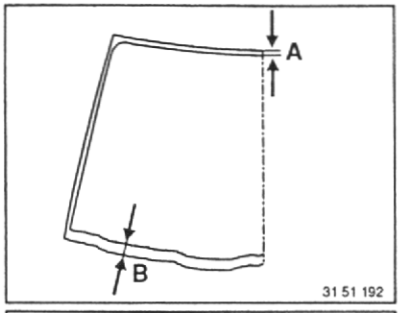
If applicable, produce a trial bead first. Cartridge must be held perpendicular to the window glass.



Shape of Cement Bead:
A = 6 ... 8 mm (0.236 ... 0.315")
B = 1 mm (0.039")
C = 9 ... 14 mm (0.354 ... 0.551")

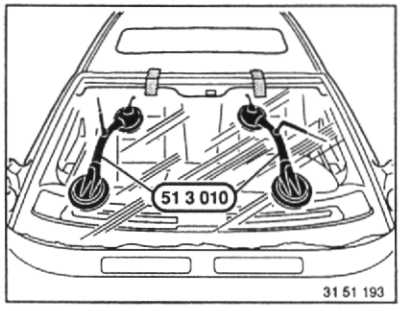
A-pillars:	**9 mm (0.354")**
Roof connection:	**11 mm (0.433")**
Lower cowl:	**11...14 mm (0.433 ... 0.551")**

Note:
Various bead heights are reached by changing the pulling speed.



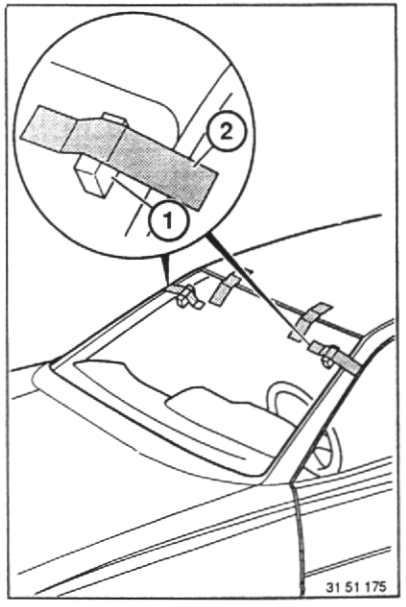
A = 1 mm (0.039"); distance of cement bead to rubber frame seal.

B = 20 mm (0.787"); distance of cement bead to edge of window at bottom of cowl panel.



Install and press on windshield glass carefully with Special Tool 51 3 010. Push up glass and hold in position with cloth adhesive tape (e.g. Tesa).

Length: 300 mm (11.811")
Width: 50 mm (1.969")



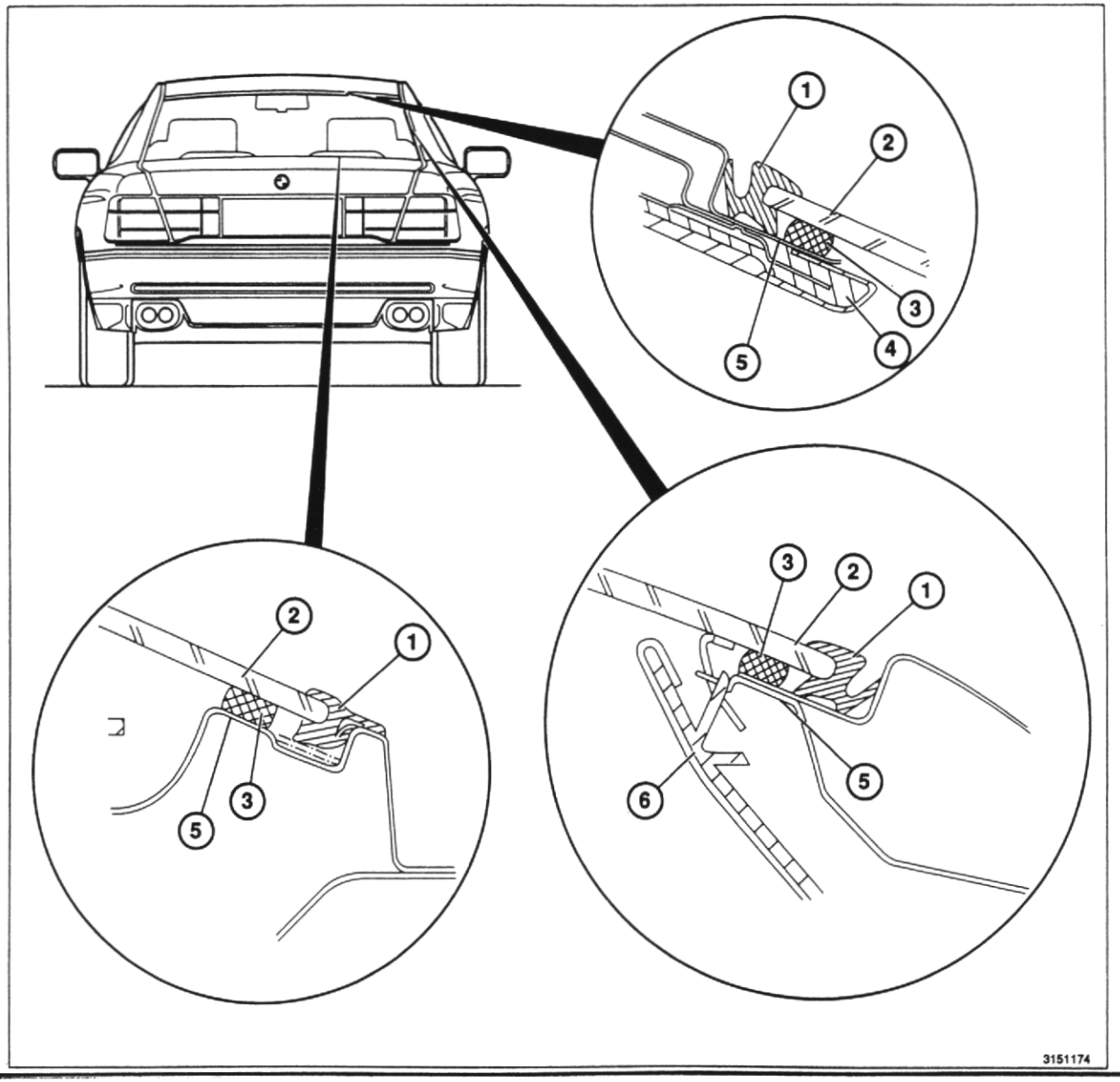
Press top of window glass over small wood blocks (1) into the corners and hold in position with cloth adhesive tape (2) (e.g. Tesa).

Approx size of wood blocks:
20 x 40 x 40 mm (0.787 x 1.575 x 1.575")

Important!
Remove dirt from cement with benzine before hardening. Do not press out window glass again for this purpose.

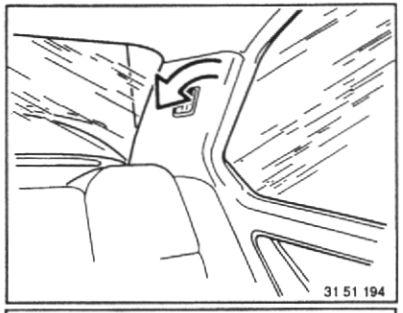
Note:
Leaks can be detected by spraying water underneath the sealing lip or with an ultrasonic leak detector* and Repaired with a corresponding nozzle.

Assemble car.



51 31 ... REAR WINDOW CEMENTING SURVEY

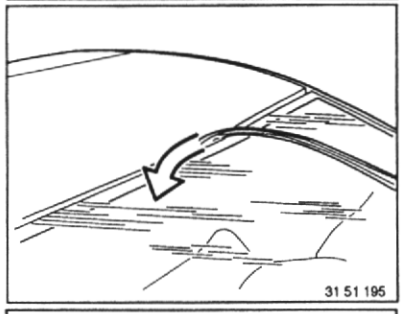
1 = Rubber frame seal
2 = Rear window
3 = Cement bead
4 = Roof liner
5 = Body flange
6 = C-pillar plate



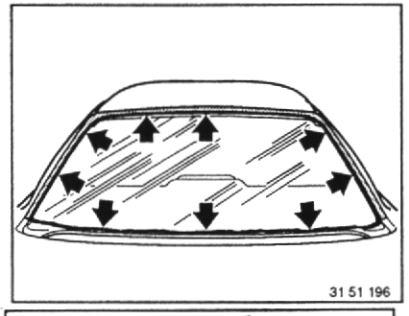
51 31 200 REMOVING AND INSTALLING REAR WINDOW

Unclip plate for C-pillar.
Disconnect plugs on rear window defogger and window antenna.

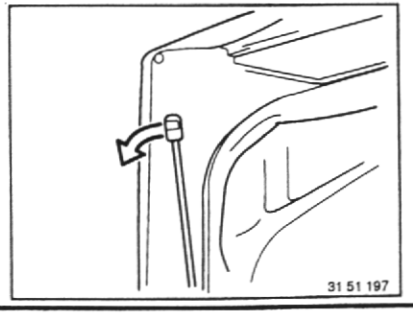
Cover top of side panels with fender guards, blanket or something similar.



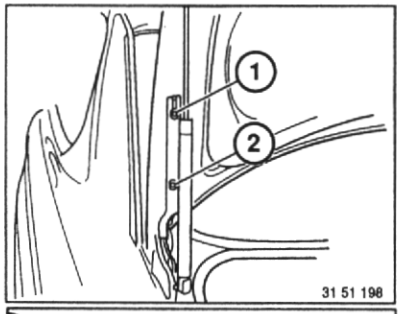
Pull out seal.



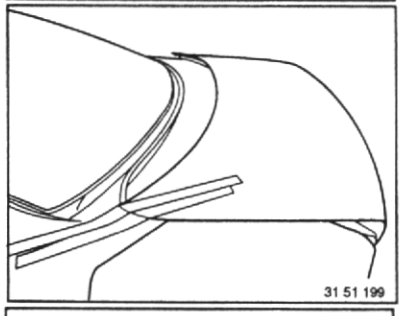
Paste double layer of cloth adhesive tape (e.g. Tesa) on body all around.



Loosen retainers and disconnect left and right gas pressure props.



Unscrew bolt (1).
Unscrew bolt (2).



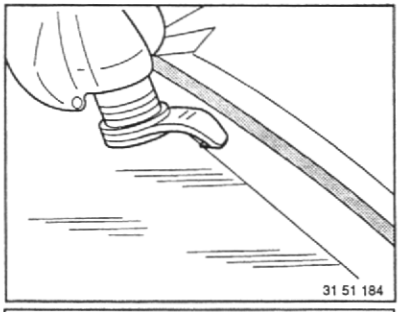
Pull back trunk lid, place on fender guards and hold with cloth adhesive tape.



Mount a long knife* (40 mm / 1.575" long blade) on tool.

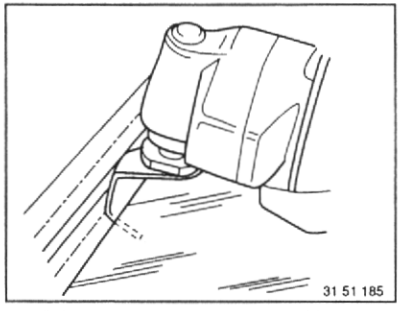
Note:
If necessary, resharpen knife with the machine running.

Source of Supply: HWB

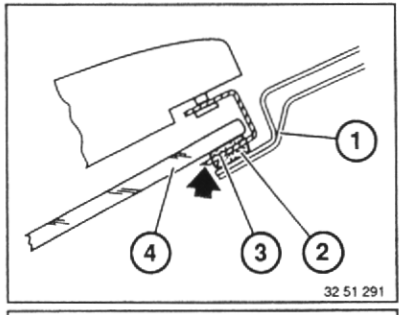


Inserte knife* between body and window carefully.

Note:
Be careful not to damage the roof liner or wires for rear window defogger and window antenna while cutting out the window glass.

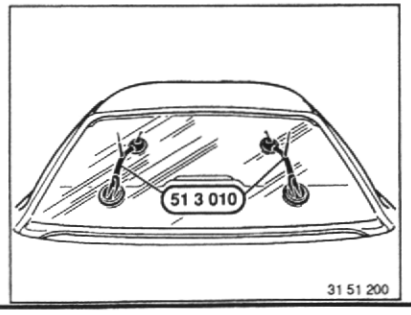


Guide web of knife* parallel to the window.



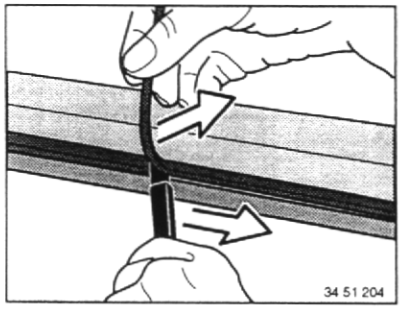
Cut through cement bead all around as close as possible to the window glass.

1 = Body opening
2 = Cement bead
3 = Knife
4 = Window glass



Lift out rear window with Special Tool 51 3 010.

* Source of Supply: HWB

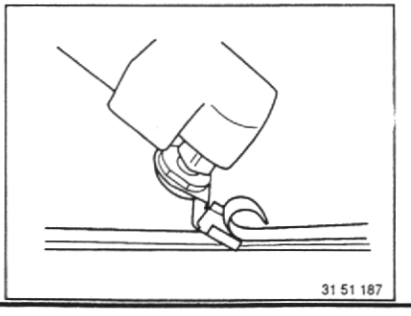


Reduce thickness of cement remaining on the body opening to approx. 0.5 mm (0.020").
Cut off cement with an universal knife (sharp as a razor blade) to avoid damaging the paint finish on the body opening.

Important!
Damaged paint finish must always be touched up to guarantee longterm corrosion inhibition.
Use BMW EP primer (2K) for this purpose!

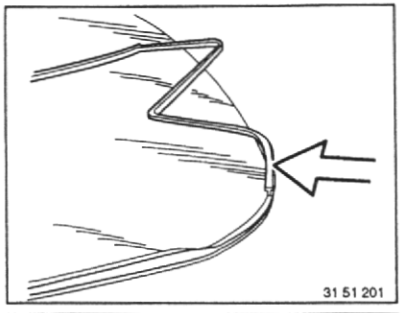
Remove cement, sand out scratches in non-visible zones and touch up with BMW EP primer.

Large-area surface damage must be ground off down to the blank metal and then coated with BMW EP primer (coat thickness: 30 ... 40 µm).
If a complete paint build-up is necessary in a visible zone, cement must be removed from the prime-coated cementing flange before application of the final paint coat.

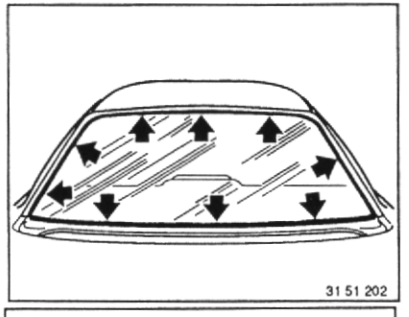


When reusing the window, reduce thickness of cement on the glass to 0.5 mm (0.020") with a knife*.

* Source of Supply: HWB



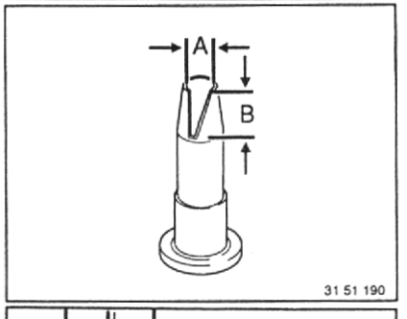
Install and pressure rubber frame seal on window glass.



Important!
BMW EP primer must be hardened!

Coat window glass and body in area of the cementing surface with primer (in repair kit)*.

Note:
Drying time: about 10 minutes.

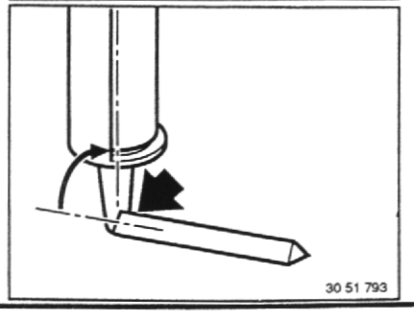


Cut nozzle to size.

A = 6 ... 8 mm (0.236 ... 0.315")
B = 12 ... 14 mm (0.472 ... 0.551")

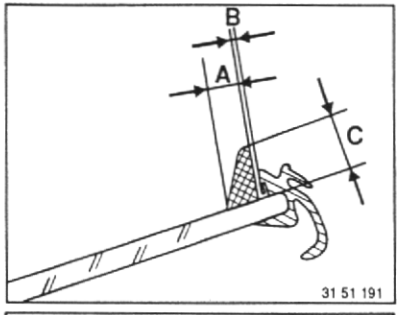
Note:
Use a cartridge gun* (pneumatic or electric) for uniform application of the cement bead.

Note date by when the cement must be used up!



If necessary, produce a trial bead first. Cartridge must be held perpendicular to the window glass.

* Source of Supply: HWB

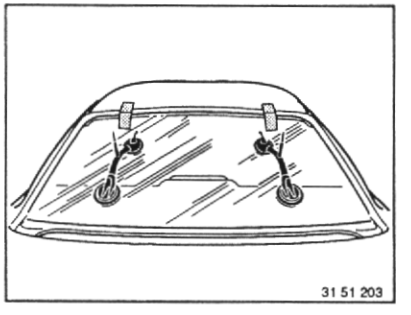


Shape of Cement Bead:

A = 6 ... 8 mm (0.236 ... 0.315")
B = 1 mm (0.039") distance to seal
C = 11 ... 14 mm (0.433 ... 0.551")

C-pillars:	14 mm (0.551")
Roof connection:	11 mm (0.433")
Bottom of cowl:	11 mm (0.433")

Note:
Different bead heights are reached by changing the pulling speed.



Install and press on window glass carefully with Special Tool 51 3 010.
Push up window glass and hold in position with cloth adhesive tape (e.g. Tesa).

Length:	300 mm (11.811")
Width:	50 mm (1.969")

Important!
Always remove dirt from cement remainders with benzine before it hardens. Do not press out the window again for this purpose.

Note:
Leaks can be found by spraying water underneath the sealing lip or with an ultrasonic leak detector* and repaired with a corresponding nozzle.

Reassemble car.
Align trunk lid, see Group 41.

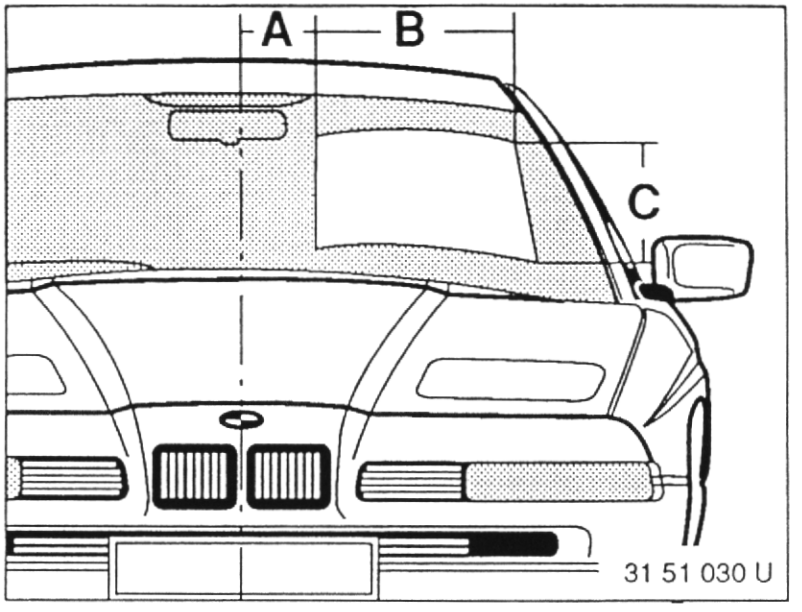
51 31 ... REPAIRING LAMINATED SAFETY GLASS WINDSHIELDS (CLEAR AND TINTED) DAMAGED BY FLYING STONES

These instructions are meant for specialists and assume their skill, conscientiousness and sense of responsibility. The instructions are also limited to factory approved repairing materials*, repairing methods and tips to make the work easier. Only general procedures are described in the instructions. Scope of work must be adapted to the actual damage situation. Repairing procedures are an economical solution, so that optical deficiencies cannot be excluded. Consequently the repair should only be carried out when explicitly ordered by the customer.

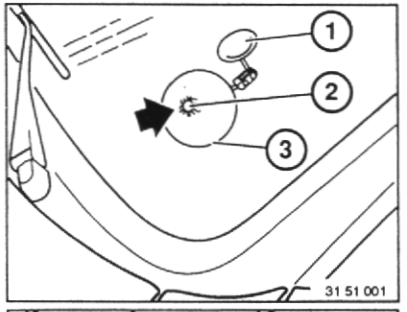
The conditions listed below for repairing laminated safety glass windshields conform with legislation in Germany. Always conform with the pertinent legislation in other countries.

Important!

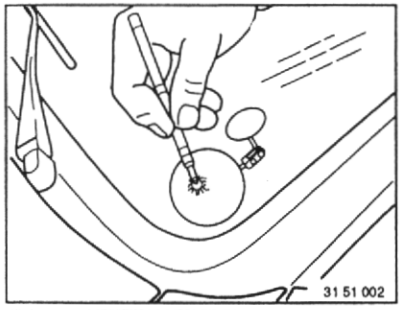
1. Only damage on the outside surface of the windshield may be repaired. Inside window surface and the plastic sheet must not be damaged at all.
2. Repairing should take place as soon as possible after the window had been damaged. Moisture and/or dirt must not have been allowed to penetrate into the damaged spot.
3. The crater produced where the stone had hit the window must not exceed a diameter of 5 mm (0.197").
4. Cracks extending radially from the point where the stone had hit must not be longer than 50 mm (1.969"). They must not end in the rubber frame or ornamental frame of the windshield.
5. Repairs may be carried out only outside of the driver's field of view (see sketch). View through the repaired point must be clear, transparent and without distortion whenever possible.
6. Always conform with instructions supplied by the manufacturers.



A = 240 mm (9.449") (distance from view field to center of car)
B = 290 mm (11.417") (view field width)
C = Wiped field limit

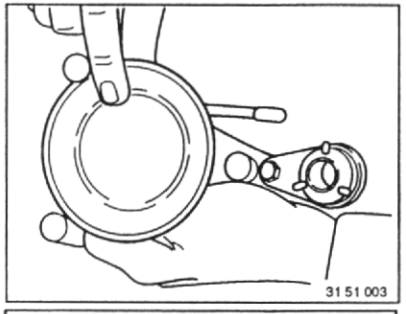


Apply a thin coat of gel on suction cup (1) of the concave mirror and position suction cup on inside of the windshield in such a manner that the impact spot (2) can be seen from the outside in concave mirror (3).

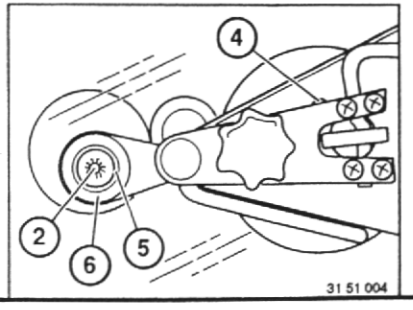


Remove all glass splitters from the impact spot from the outside with a scribe so that a rough surface is produced.

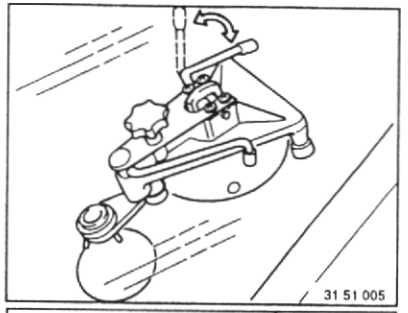
Important!
Don't increase the size of the impact spot hole.



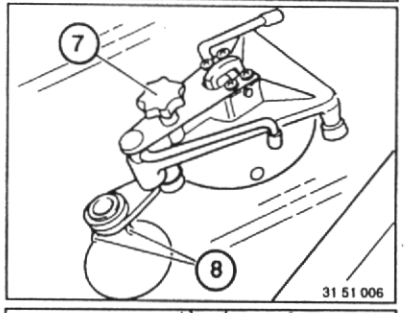
Apply a thin coat of gel on the suction cup of the tool holder.



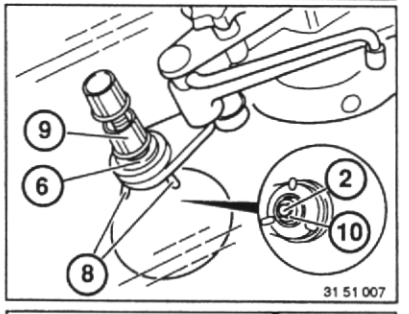
Position tool holder (4) on outside of the window in such a manner that opening (5) of head (6) is precisely over the impact spot (2).



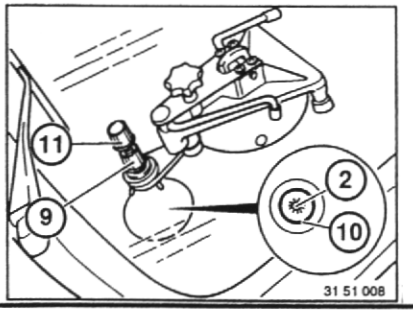
Move locking lever forward and back.



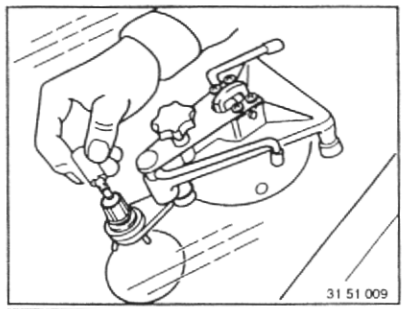
Screw in knurled head screw (7) far enough that base (8) bears firmly on the windshield.



Screw in cylinder (9) in head (6) far enough that rubber seal (10) surrounds impact spot (2) on the window firmly and base (8) just barely lifts off again.

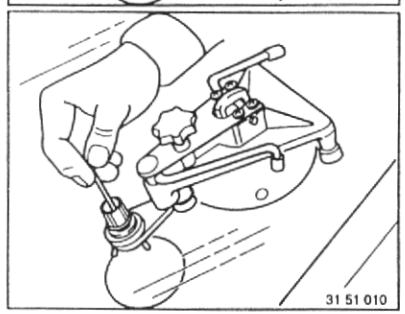


Screw injector (11) out of cylinder (9). Look into cylinder (9) from above and check whether rubber seal (10) is positioned centrally over impact spot (2). Reposition, if necessary.

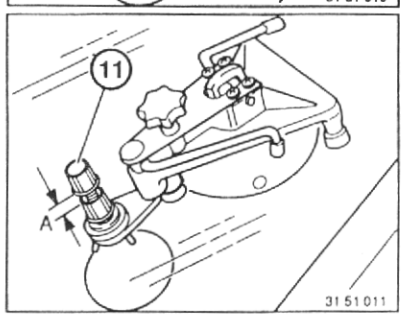


Open bottle of resin and pour about 1/3rd of its contents into the cylinder.

Important!
Always close the resin bottle immediately after use and protect it against ultraviolet light.

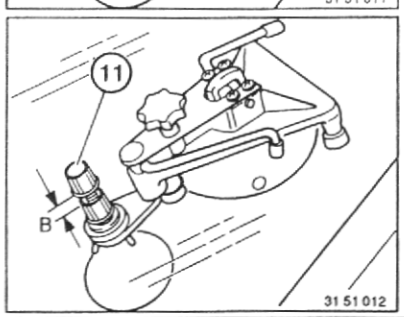


Stirr resin poured into the cylinder with a wooden rod to remove air bubbles.



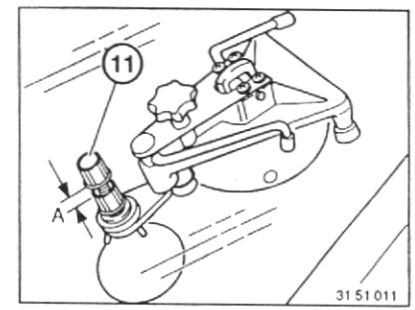
Screw injector (11) into cylinder up to distance A (slight resistance noticed) and let everything rest about 5 minutes.
Distance A = 5 mm (0.197").

Note:
Pressure will be about 16 bar (225 psi) in this position. When observing the impact spot,it will be recognized that air in the impact spot disappears slowly (recognized as black shade).



Unscrew injector (11) quickly to distabce B.
Distance B = 12 mm (0.472").

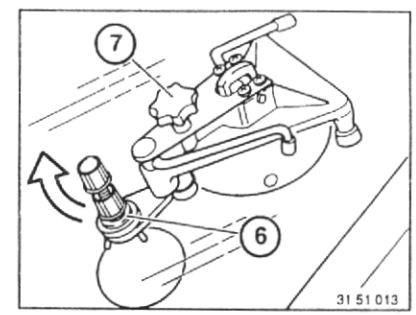
Note:
In this position there will now be vacuum which "pulls" the remaining air out of the impact spot.



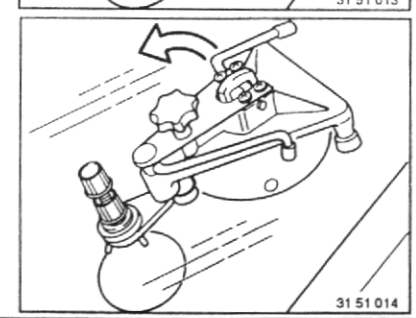
Screw injector (11) into cylinder to distance A again (slight resistance noticed) and let everything rest several minutes again.
Distance A = 5 mm (0.197").

Repeat this step several times, alternating between pressure and vacuum, and then let injector (11) rest for a time in an intermediate position between distance A and distance B.

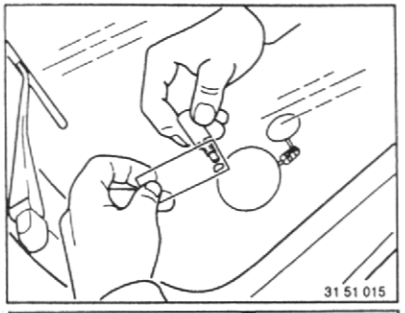
Note:
If this has still not removed all of the air, heat the inside of the window with a lighter several seconds. The flame should be held as close as possible to the window, but not touch it.



Loosen knurled head screw (7), swing head (6) aside and observe the repaired spot from above and in the concave mirror from various angles.
Air inclusions should no longer be visible.
Should air inclusions still be seen, swing head (6) back over the impact spot and screw in knurled head screw (7) as far as before.
Repeat the steps as from the pressure/vacuum step.

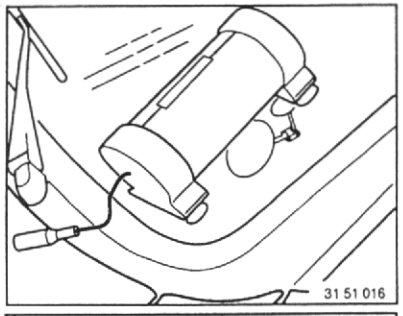


Swing locking lever forward and remove tool holder from the windshield.

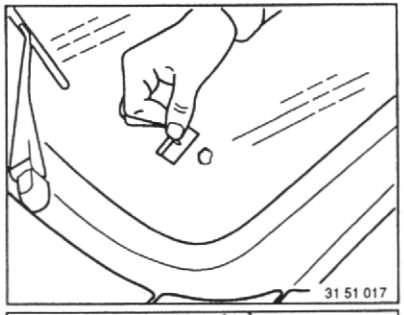


Let one drop of resin drip on the impact spot and cover with clear plastic sheet.

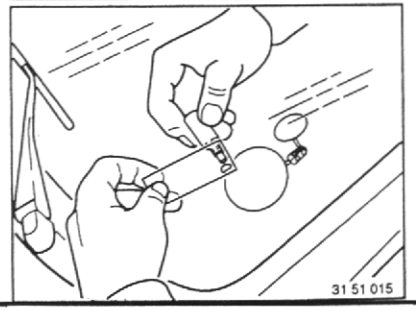
Note:
Only place clear plastic sheet over the impact spot — don't press it on!



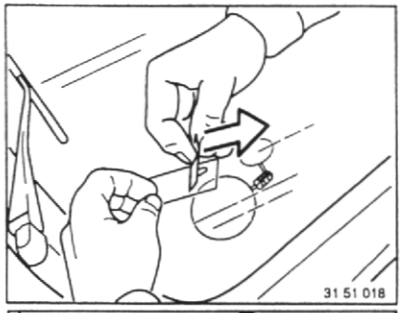
Apply ultraviolet lamp over the repaired spot and press on firmly (suction cups).
Connect ultraviolet lamp and let resin harden about 10 minutes.



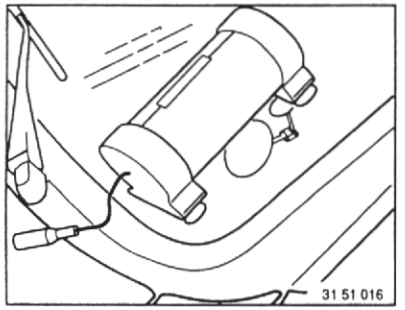
Remove ultraviolet lamp, pull off clear plastic sheet and scrape off excessive resin with a razor blade.



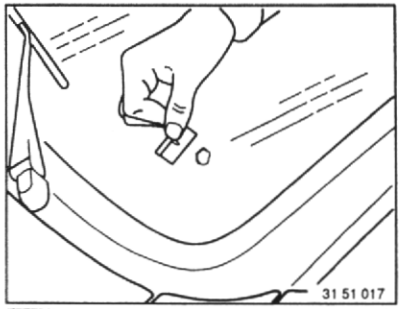
Let another drop of resin drip on the impact spot and cover with a new piece of clear plastic sheet.



Move the razor blade over the clear plastic sheet carefully to have excessive resin run out on the sides.

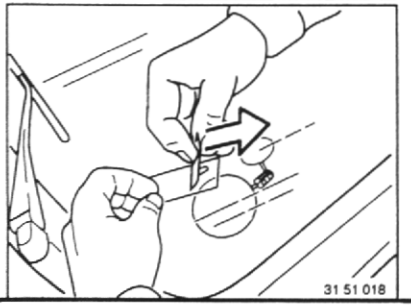


Set up ultraviolet lamp over the repaired spot again and press on firmly (suction cups).
Connect ultraviolet lamp and let resin harden about 10 minutes.



Remove ultraviolet lamp, pull off clear plastic sheet and scrape off excessive resin all around the impact spot with a razor blade.

Important!
Don't scrape on impact spot (2)!

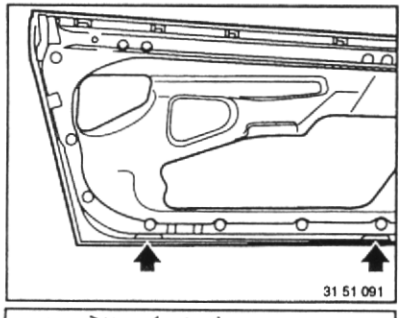


Polish the repaired spot with a cloth not losing lint and a polish until the surface is clean and smooth.

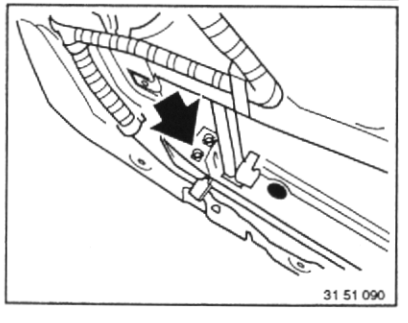
51 32 120 REMOVING AND INSTALLING FRONT OR REAR WINDOW GUIDE RAILS IN LEFT OR RIGHT FRONT DOOR

Remove door window – see 51 32 170.
Remove power window regulator – see 51 33 000.

Installation:
Install door window.
Adjust door window – see 51 32 154.



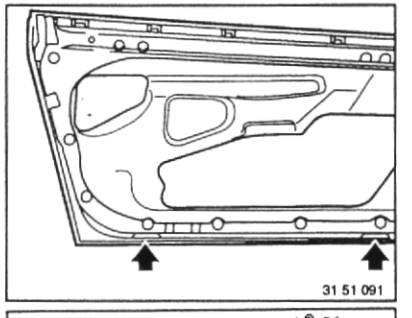
Unscrew screws and take off window guide rails.



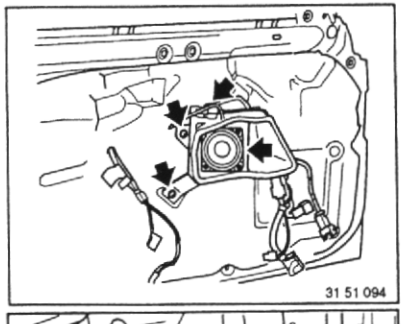
Installation:
Insert screw in inner threads of the rear window guide rail.

51 32 154 ADJUSTING FRONT DOOR WINDOW

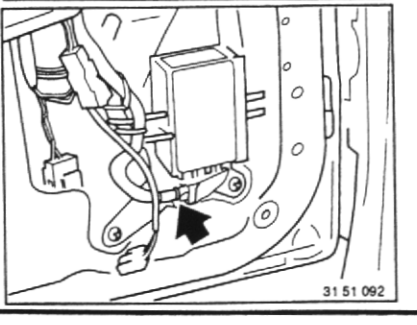
Requirements:
Door aligned correctly – see Group 41.
Seals in good condition and mounted correctly.



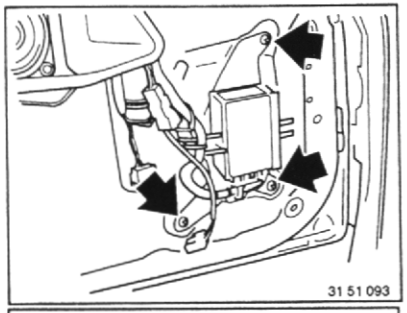
Note:
If only the submerged depth of the door window has to be corrected, it is not necessary to remove the door trim panel.
Lower door window, remove rubber plugs from underside of door and adjust the height stops through the open holes.



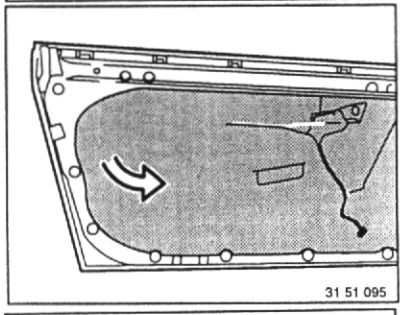
Remove door trim panel – see 51 41 000.
Unscrew screws, disconnect plug and take off loudspeaker.



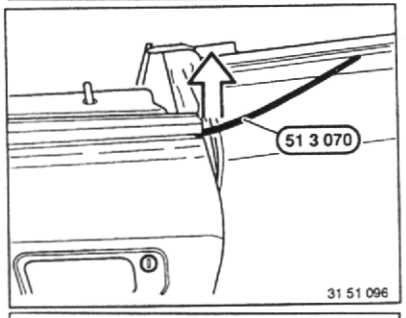
Disconnect ratchet strap and plug.



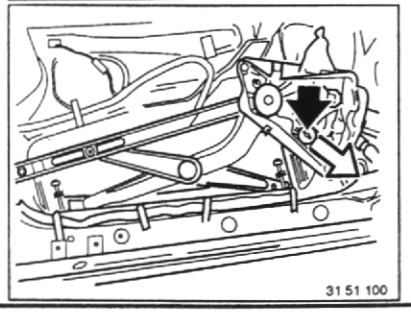
Unscrew screws and take off door module.



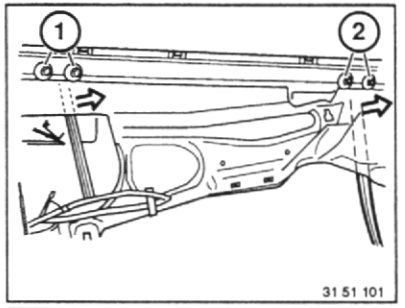
Pull off cover.



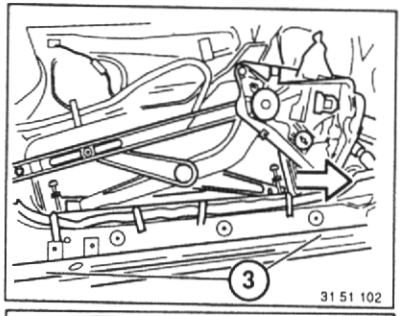
Lift off window recess strip from above with Special Tool 51 3 070.



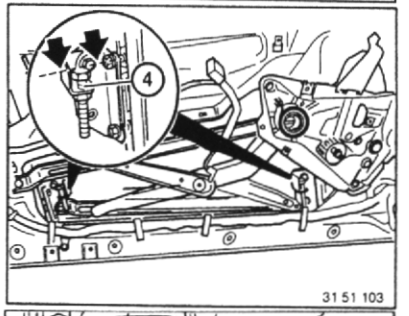
Connect power window switch and lower the door window.
Loosen screw and press down on main stop.



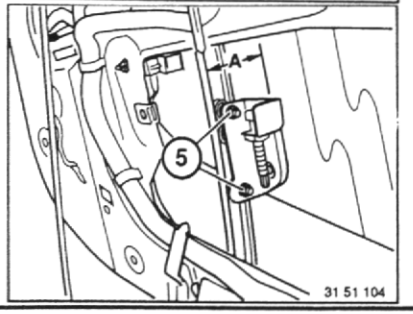
Loosen screws (1 and 2), press door window forward and and place it on the door window seal.
Tighten screws (1 and 2).



Loosen screws (3) and press in front and rear window guide rails at the bottom the maximum amount toward the center of the car.
Tighten screws (3).

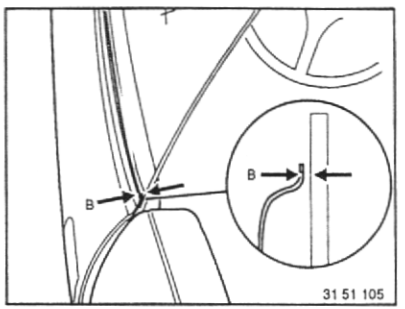


Screw in height stops (4) to height of the edge.



Loosen screws (5) and adjust distance (A) between the door window glass and front / rear window guide rails.

Distance A = 30 mm (1.181").



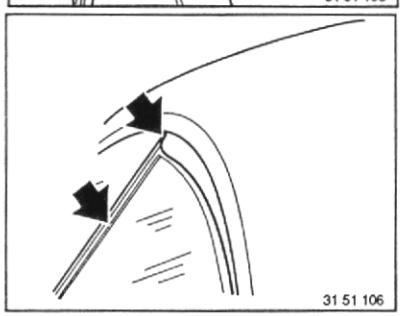
Raise door window approx. 300 mm (12.992") and adjust distance (B).

Distance B = 6 + 1 mm (0.236 + 0.039").

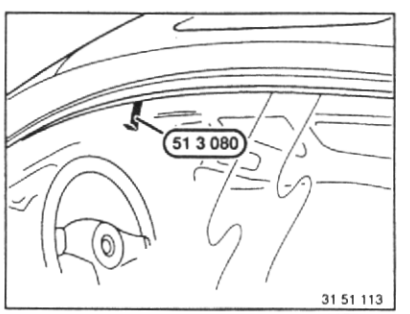
Note:
Distance (A) must not be changed.

Tighten screws (5).
Tightening torque*.

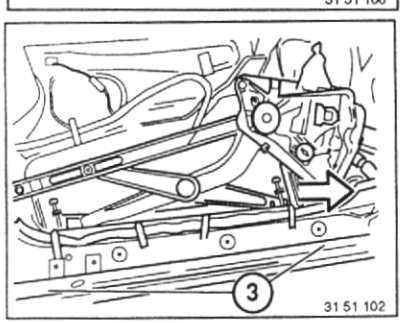
Initialisation is correct, if
- the door window moves down several millimeters when lifting the door handle slightly or operating the inside door opener slightly and
- the door window moves up completely several seconds after releasing the door handle.



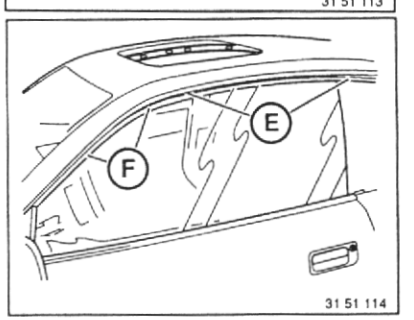
Mount window recess strip.
Lower rear side window completely.
Shut door and raise front door window so far that the glass pane is shortly before the seal.
Outside surface of seal and door window glass must be flush.



Shut door.
Lower door window about 25 mm (1") and apply Special Tool 51 3 080 on the window.



Correcting:
Loosen screws (3) at bottom of window guide rails and correct the angle of the door window glass.
Tighten screws (3).

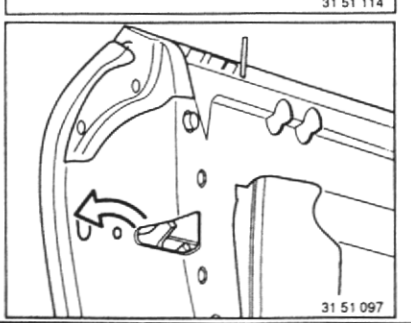


Raise door window and check submerged depth (E and F).

Depth E = 5 ± 1 mm (0.197 ± 0.039")
Depth F = 2 ± 1 mm (0.079 ± 0.039")

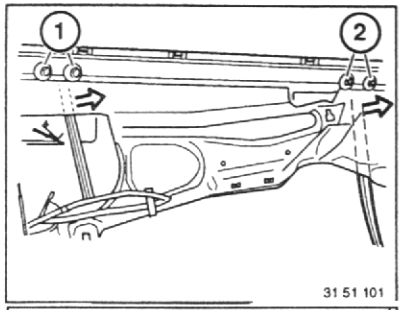
Correct submerged depth (E) with height stops (4).

Connect door module.
Shut door.
Lower door window, raise completely and hold switch pressed about 3 seconds.



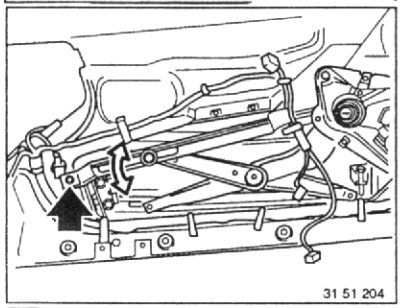
Note:
If the submerged depth does not have to be corrected, make a mark on the outside of the door window glass at the height of the window recess strip. Open door and turn striker in striker direction. Run door window to the marked position and unscrew height stops (4) to stop position plus one turn. Remove mark. Operate door opener (striker opens).

* See Specifications



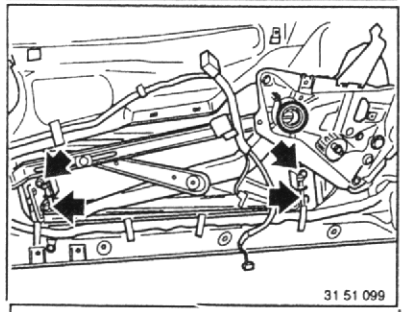
Correcting Submerged Depth (F):
Loosen screws (1 and 2) at top of window guide rails.
Set side window forward or back.
Tighten screws (2).
Lower and raise window.
Tighten screws (1).

Note:
Always keep to the specified sequence to avoid operating noise later.

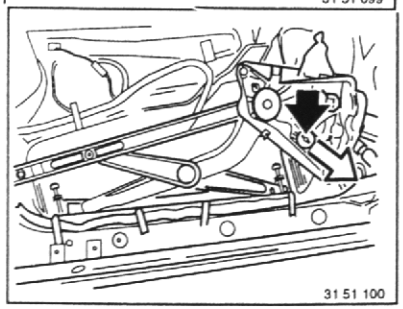


Correcting Submerged Uniformity:

Rough Adjustment:
Loosen screw.
Swing strut up or down.
Tighten screw.

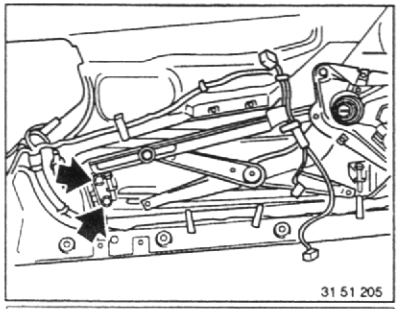


Fine Adjustment:
Loosen screws and tilt the door window glass.
Tighten screws.
Tightening torque*.

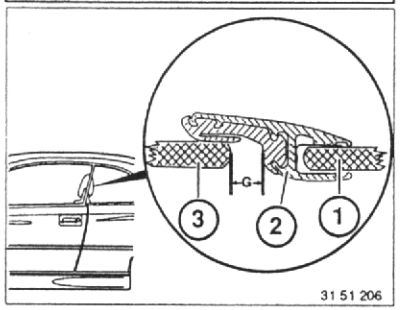


Shut door and raise door window.
Loosen screw and press up main stop to the stopping position.
Tighten screw.
Tightening torque*.

* See Specifications



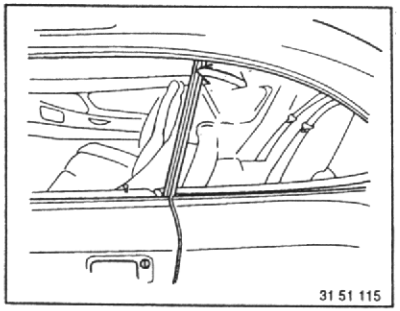
Note:
If the door window glass falls forward or back while lowering or raising it, loosen screws (raise door window), press rear roller guides up against the stop in the guide rails and tighten screws.
Tightening torque*.



Raise rear side window.
Check distance (G) and deviation in parallel between the rear side window and front door window.
If necessary, adjust rear side window – see 51 34 154.

1 = Rear side window
2 = Rubber lip
3 = Front door window

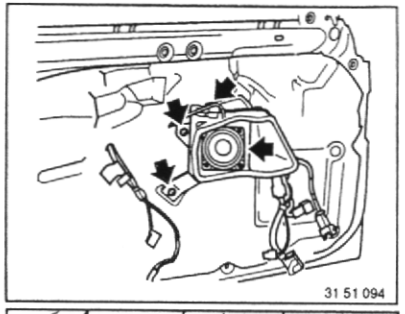
Distance G = 6 mm (0.236").



Lower front door window about 25 mm (1").
Lower and raise rear side window.
In so doing check overlapping between front door window and rear side window.
If necessary, preload rear side window again – see 51 37 154.

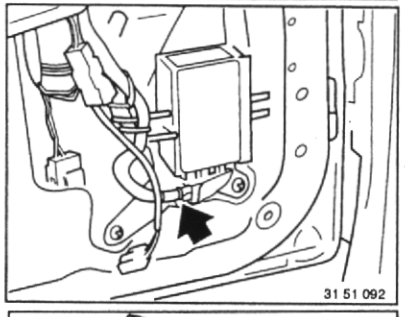
Reassemble door.

* See Specifications


31 51 094

51 32 170 REMOVING AND INSTALLING LEFT OR RIGHT FRONT DOOR WINDOW

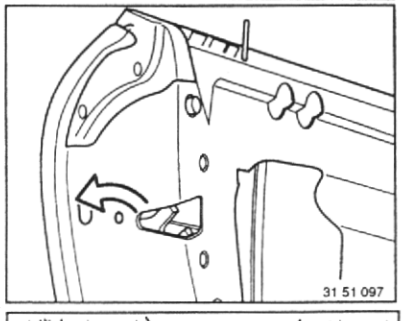
Remove door trim panel – see 51 41 000.
Unscrew screws.
Disconnect plug.
Take off loudspeaker.

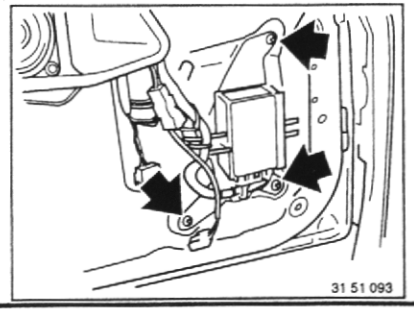

31 51 092

Disconnect ratchet strap and plug.

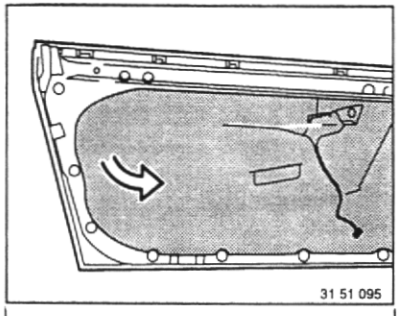
Installation:
Connect door module and power window switch.
Turn striker in "door closed" direction.
Raise door window completely and hold switch pressed in about 3 seconds.
Initialization of power window electronics is correct, if
- **the door window lowers several millimeters when lifting the door handle slightly or operating the inside door opener slightly and**
- **the door window raises completely several seconds after releasing the door handle.**

Unlock door.
Check and, if necessary, correct the door window adjustment – see 51 32 154.

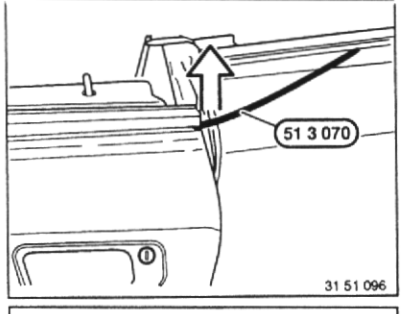

31 51 097


31 51 093

Unscrew screws and take off door module.

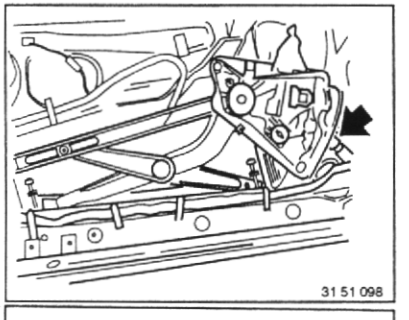

31 51 095

Pull off cover.



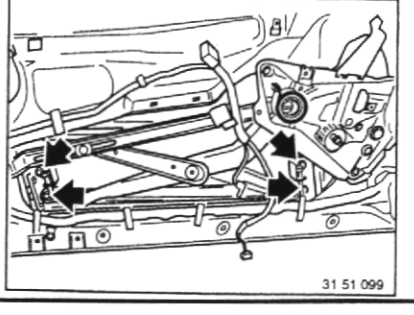
31 51 096

Lift off window recess strip from above with Special Tool 51 3 070.


31 51 098

Lower door window.

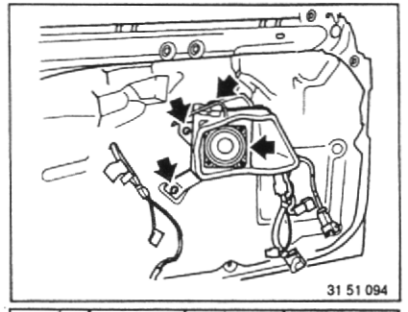
Important!
Disconnect plug on power window motor in the interest of safety.


31 51 099

Hold door window glass and unscrew screws.
Lift out door window from above.

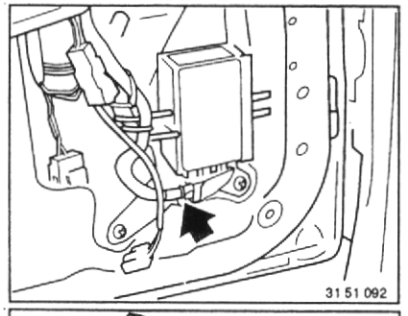
Installation:
Insert door window and install screws.
Press roller guides up in guide rails against the stop and tighten screws.
Tightening torque*.

* See Specifications


31 51 094

51 33 000 REMOVING AND INSTALLING POWER WINDOW REGULATOR IN FRONT DOOR

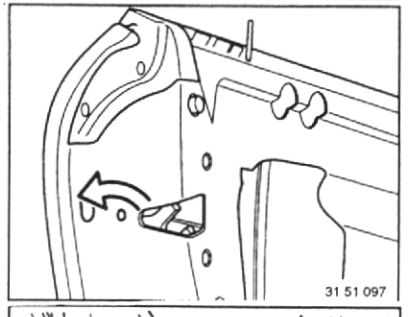
Remove door trim panel – see 51 41 000.
Unscrew screws.
Disconnect plug.
Take off loudspeaker.


31 51 092

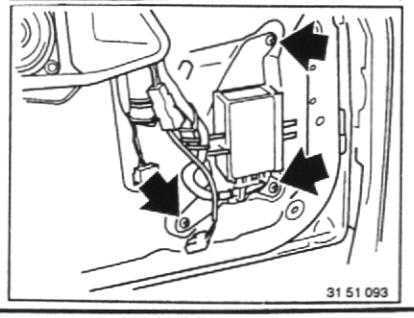
Disconnect ratchet strap and plug.

Installation:
Connect door module and power window switch.
Turn striker in "door closed" direction.
Raise door window completely and hold switch pressed in about 3 seconds.
Initialization of power window electronics is correct, if

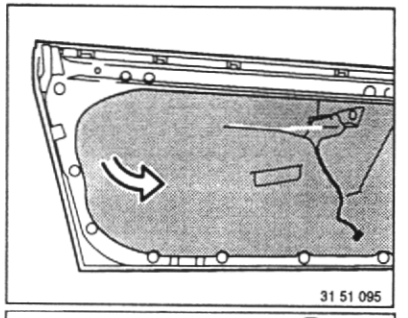
- the door window moves down several millimeters when lifting the door handle slightly or operating the inside door opener slightly and
- the door window raises completely several seconds after releasing the door handle.


31 51 097

Unlock door.
Check and, if necessary, correct the door window adjustment – see 51 32 154.

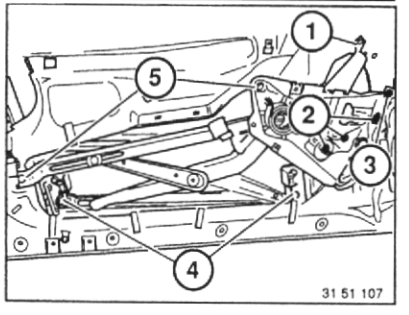

31 51 093

Unscrew screws and take off door module.


31 51 095

Pull off cover.

Important!
Disconnect plug on the power window motor in the interest of safety.



31 51 107

Loosen screw (1) and take off cover.
Unscrew screws (3 ... 5).
Take off window regulator.

Installation:
Tightening torque*.

Note:
If the door window cannot be lowered, unscrew screws (2 and 3).
Pull window regulator forward slightly and move power window motor back off of the window regulator.
Press down window by hand and unscrew screws (4).

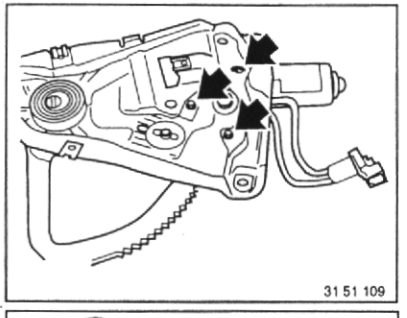
Caution!
Spring has great force – danger of clamping.

Note:
In case of a window regulator riveted to the door panel, rivets must be ground off and replaced by M 6 x 12 screws, washers and self-locking nuts.

* See Specifications

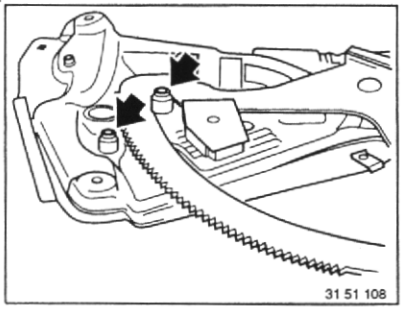
51 33 020 REMOVING AND INSTALLING MOTOR FOR POWER WINDOW REGULATOR IN FRONT DOOR

Remove power window regulator – see 51 33 000.



Unscrew screws and take off power window motor.

Installation:
Tightening torque*.

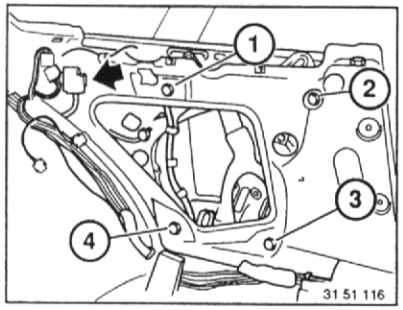


Installation:
Check installed direction of spacers.

* See Specifications

51 37 000 REMOVING AND INSTALLING - LEFT OR RIGHT REAR POWER WINDOW REGULATOR

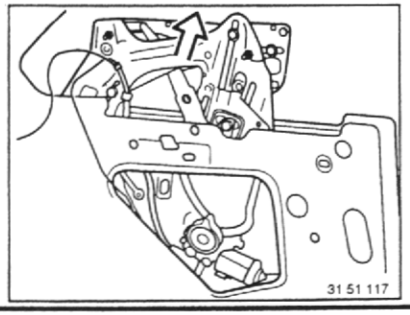
Installation:
Adjust side window – 51 37 154.
Remove rear side window – see 51 37 171.
Run up window regulator completely.



Disconnect plug.
Unscrew nuts (1 ... 3) and screw (4).

Press window regulator toward outside and screw in bolts (1 and 2) completely.
Unscrew bolt (3).

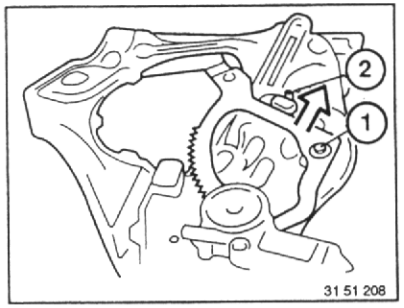
Installation:
Screw in bolt (3) against the stop in the window regulator.



Lift out window regulator from above.

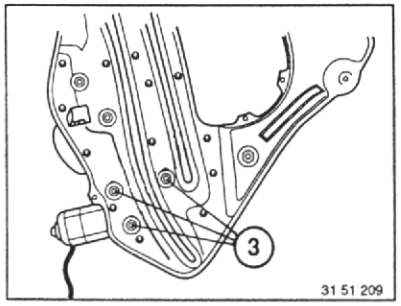
51 37 020 REMOVING AND INSTALLING MOTOR FOR LEFT OR RIGHT REAR POWER WINDOW REGULATOR

Remove rear power window regulator – see 51 37 000.



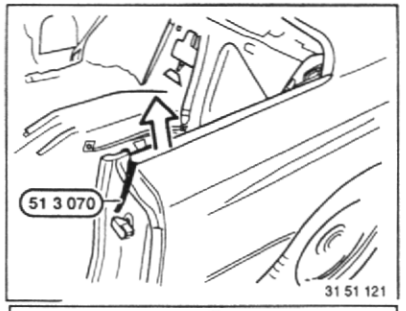
Unscrew screws (1 and 2).
Disengage toothed element upwards off of the power window motor.

Installation:
Tightening torque*.



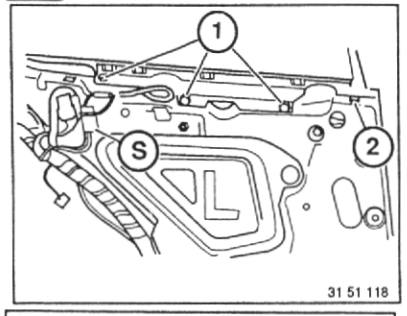
Turn power window regulator around, unscrew screws (3) and take off motor.

* See Specifications



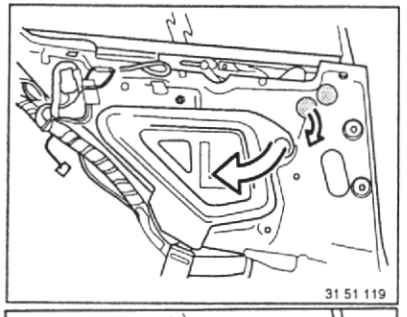
51 37 154 ADJUSTING LEFT OR RIGHT REAR SIDE WINDOW (WITH WINDOW REGULATOR)

Remove rear seat – see Group 52.
Remove rear side trim panel – see 51 43 000.
Lift off window recess strip from above with Special Tool 51 3 070.

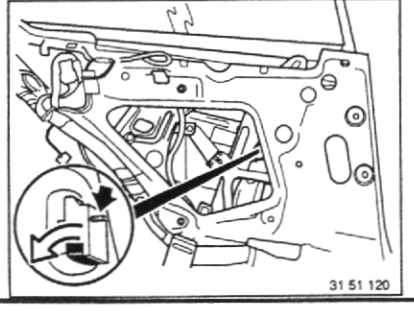


Unscrew screws (7).
Loosen stop screw (8), push back and lift off connecting bracket.

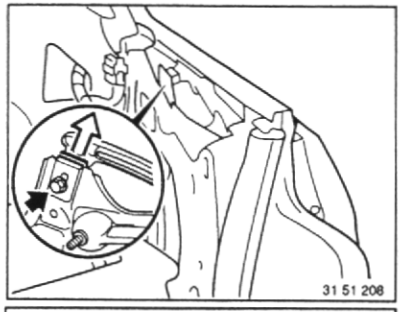
S = Plug for power window motor



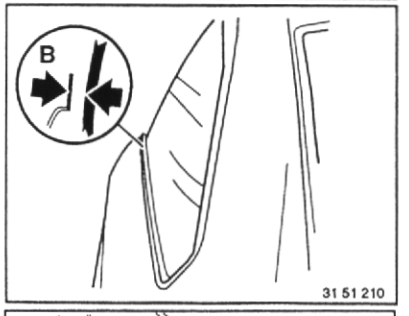
Pull off covers.



Loosen screw and push back main stop maximum distance.

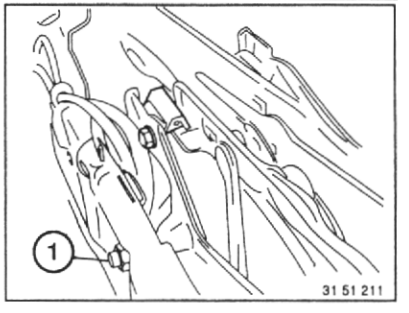


Loosen screw and push up hook completely.



Raise side window approx. 350 mm (13.780") and adjust distance (B) with adjusting screw (2).

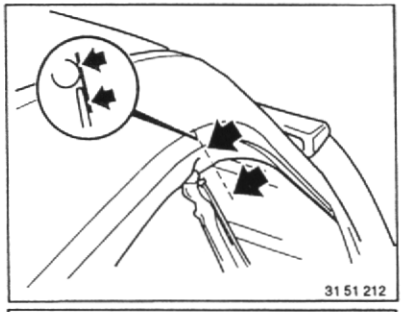
Distance B = 6 + 1 mm (0.236 + 0.039").



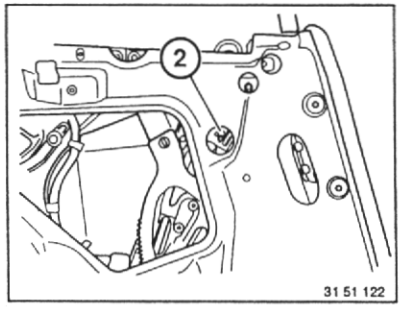
Loosen or tighten adjusting screw (1) until the hook overlaps (grabs).

Note:
Height of hook is adjusted later in a final step.

Mount outside recess seal and connecting bracket.
Adjust front stop to maximum travel.



Raise side window until it is shortly before the seal.
Outside of seal and window glass must be flush in the front zone of the side window.

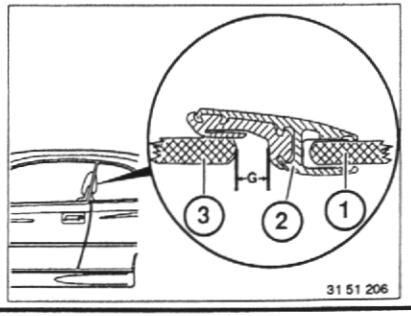


Correcting:

Important!
Disconnect plug on power window motor in the interest of safety.

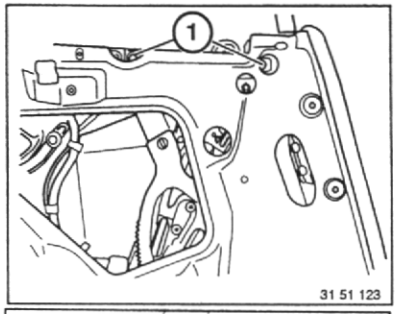
Loosen lower nut (2) on adjusting screw of the side window and correct the angle of the side window glass.
Tighten nut (2).

If applicable, connect plug on power window motor and raise the side window completely.

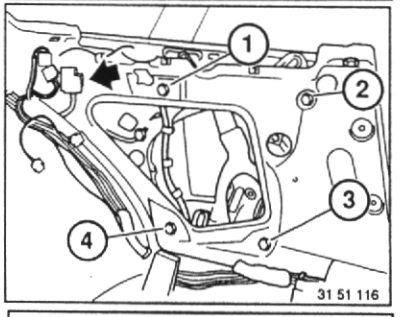


Check distance (G) and deviation in parallel between the rear side window and front door window.

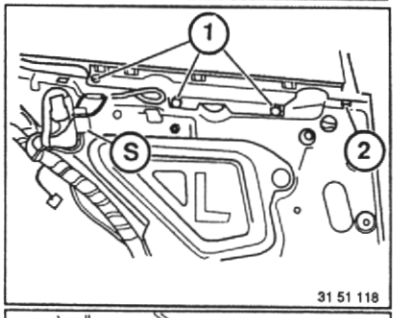
Distance G = 6 mm (0.236").



Correcting Parallel Deviation:
Loosen screws (1) and tilt the side window glass.
Tighten screws (1).
Tightening torque*.



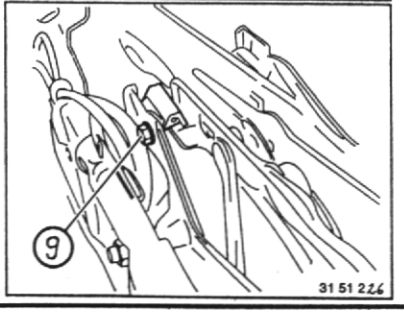
Correcting Distance (G):
Loosen nuts (1 ... 3) and screw (4).
Offset side window and window regulator toward front or rear.
Tighten nuts (1 ... 3) and screw (4).
Tightening torque*.



Lower side window about 25 mm (1") and apply Special Tool 51 3 080 on the window glass.
Raise window and check submerged depth (E) in the front zone of the side window.

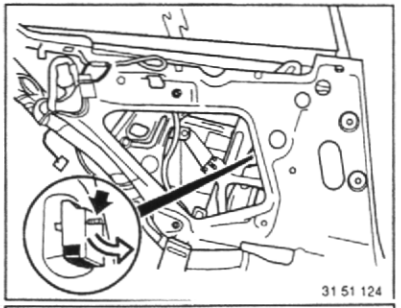
Depth E = 5 ± 1 mm (0.197 ± 0.039").

Correct with stop screw (8).

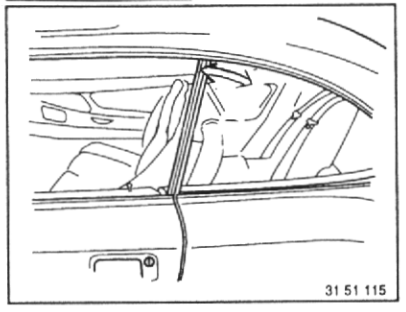


Loosen screw (9).
Press hook down to the stop and tighten adjusting screw (9).

* See Specifications



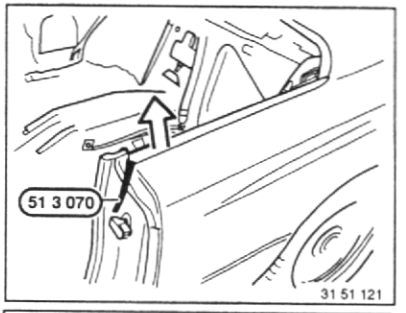
Loosen screw (2) and press main stop forward to the stop position.
Tighten screw (2).
Tightening torque*.



Lower front door window about 25 mm (1").
Lower and raise rear side window and check overlap of front door window and rear side window.
If applicable, preload rear side window more.

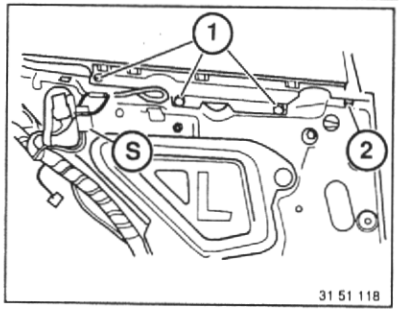
Note:
Rear side window must provide compensation for all tolerances (glass cutting, body tolerances, etc.).
Consequently in some cases it could be necessary to deviate from the specified adjusting values.

* See Specifications



51 37 171 REPLACING LEFT OR RIGHT REAR SIDE WINDOW

Remove rear seat – see Group 52.
Remove rear side trim panel – see 51 43 000.
Lift off window recess strip from above with Special Tool 51 3 070.

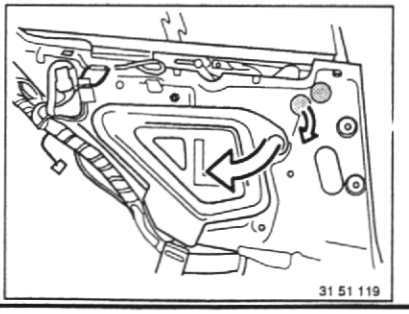


Unscrew screws (1).
Loosen screw (2).
Push back and lift off connecting bracket.

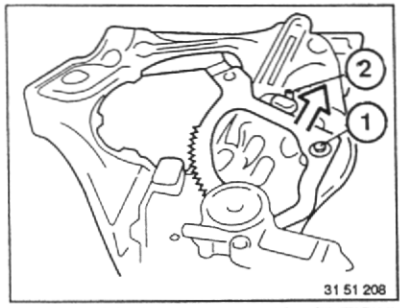
Installation:
Adjust rear side window – see 51 37 154.

Raise side window and run out of seal by about 20 mm (0.787").

Important!
Disconnect plug (5) on power window motor in the interest of safety.

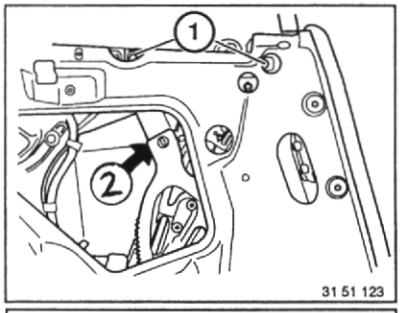


Pull off covers.

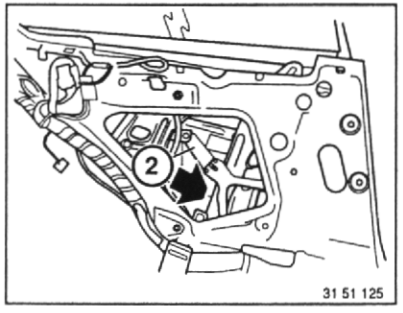


Note:
If the window cannot be operated electrically, unscrew screw (1) and disengage toothed element upward off of the power window motor.
Main stop (2) must be unscrewed depending on the position of the side window.

Installation:
Tightening torque*.

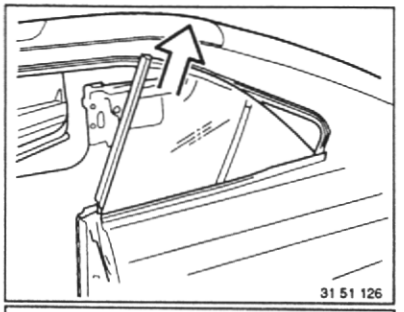


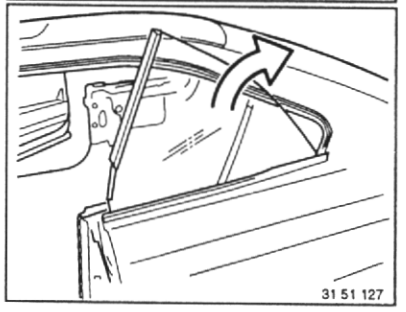
Loosen nuts (1 and 2) and screw in adjusting screw completely.



Unscrew screws (1) and nut of adjusting screw (2).
Hold side window tight, press in at top and swing adjusting screw (2) out of the window regulator at the bottom.
Lower the side window and tighten adjusting screw (2).

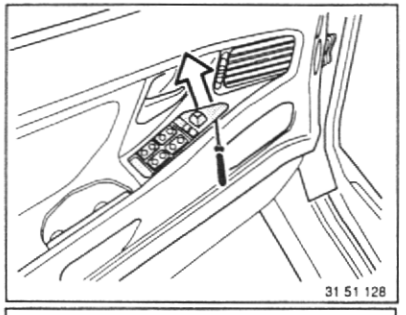
Installation:
Tightening torque*.





If necessary, remove front stop.
Lift and remove side window from above.

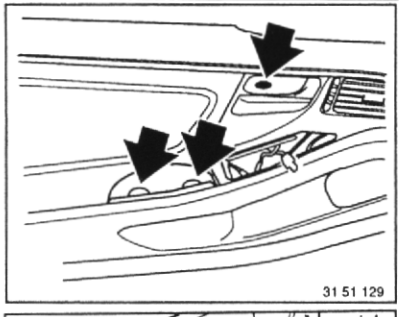
* See Specifications



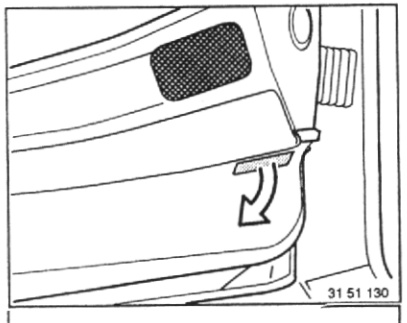
51 41 000 REMOVING AND INSTALLING LEFT OR RIGHT FRONT DOOR TRIM PANEL

Lift out control and disconnect plug.

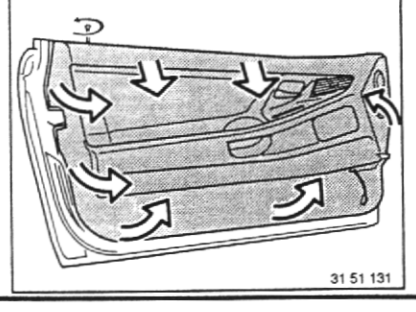
Installation:
Check for correct seating of hook!



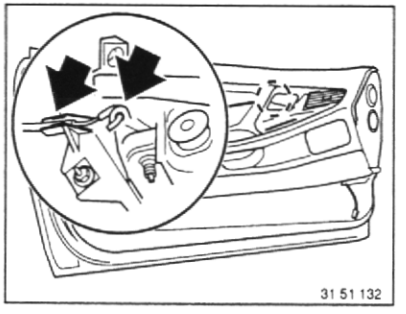
Lift out plates and unscrew screws.



Lift out light and disconnect plug.



Unscrew catch button.
Unclip door trim panel all around.

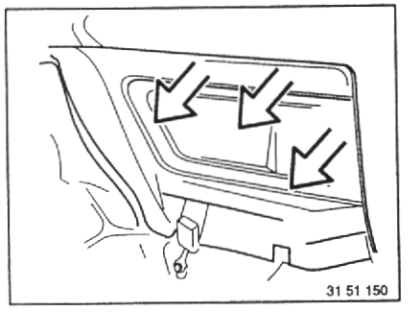


Lift off door trim panel.
Disconnect plug.
Disconnect door unlocking cable.

Installation:
Check for correct seating of cable!

51 43 000 REMOVING AND INSTALLING LEFT OR RIGHT REAR SIDE TRIM PANEL

Lift out left or right rear seat – see Group 52.



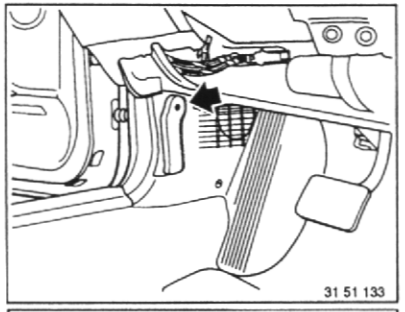
Unclip and lift off trim panel from above.

51 44 011 REPLACING ROOF LINER

Lower all windows.
Pull off left and right edge guards partially.
Unclip A-pillar plates.
Unclip C-pillar plates.
Remove left and right sun visors with holders.

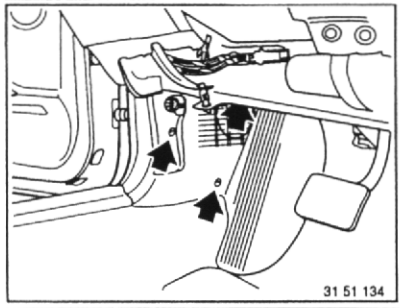
Unclip left and right inside lights.
Close sun roof completely and press in retainers for sun roof opening roof liner all around.
Unclip trim panel (sun roof switch).

Lower front end of roof liner, push back and disconnect on metal fold.
Lift out roof liner from the side.

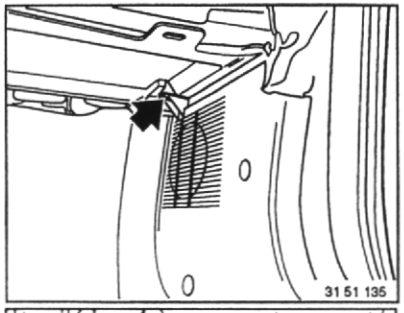


51 45 030 REMOVING AND INSTALLING DASHBOARD TRIM PANEL

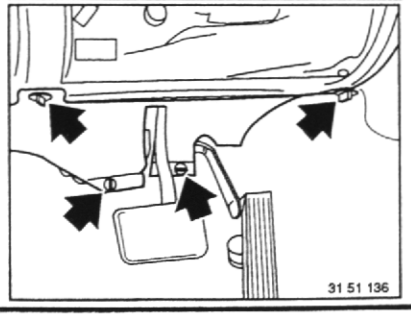
Remove steering wheel – see Group 31.
Remove and let steering column switch hang down – see Group 61.
Remove instrument cluster – see Group 62.
Remove center console – see 51 16 200.
Unscrew screw and take off hood release lever.



Turn clips and take off trim panel at left.

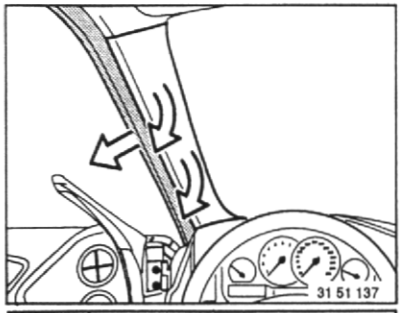


Additionally for Right Side:
Unscrew screws.

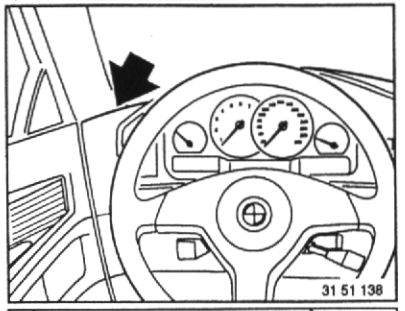


Turn clips and take off bottom dashboard trim panel.
Additionally for Right Side:
Disconnect plug.

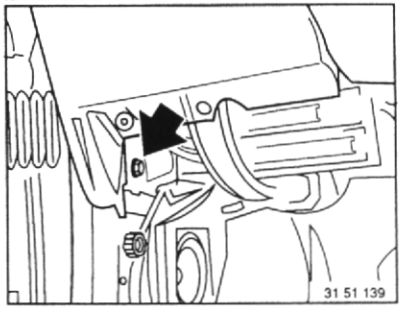
Installation:
Check for correct seating of heater duct.



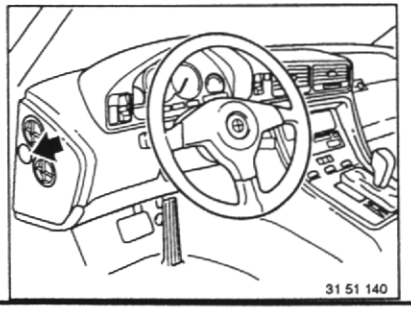
Unclip left and right A-pillar plates.



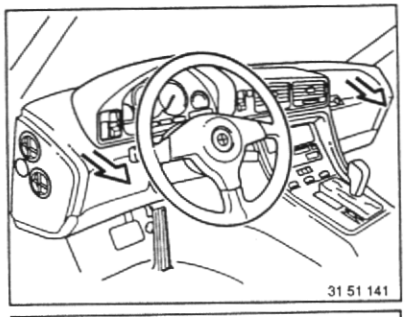
Unscrew left and right front screws.



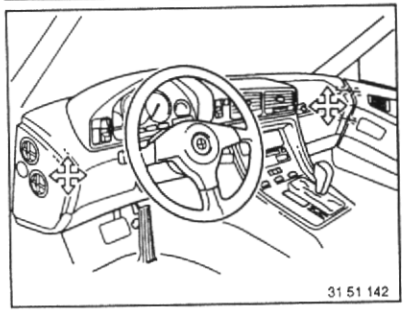
Loosen left and right screws (footwell).



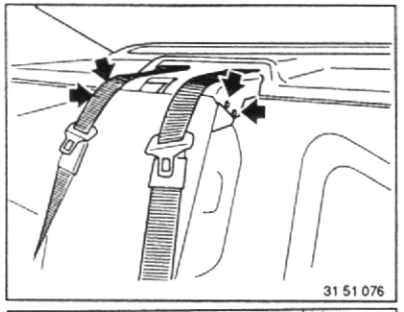
Lift out left and right plates and unscrew screws.



Lift out dashboard toward rear.
Disconnect plugs.

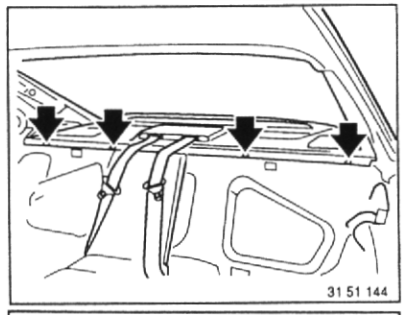


Installation:
Align dashboard and door trim panels with the doors shut.

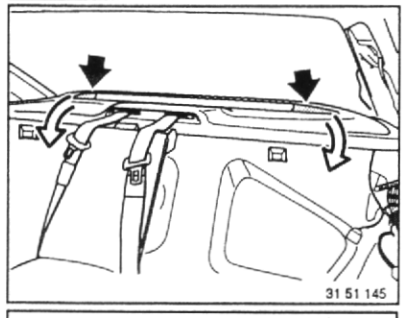


51 46 000 REMOVING AND INSTALLING HATRACK

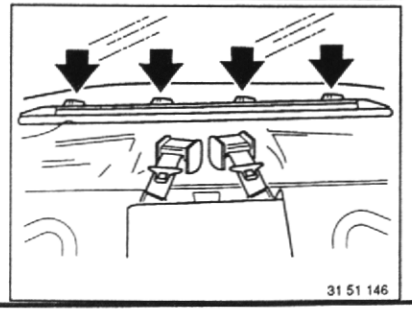
Remove both rear seats – see Gr. 52.
Remove both rear side trim panels – see 51 43 000.
Unscrew left and right screws.
Open box for first aid kit and take off trim panel.



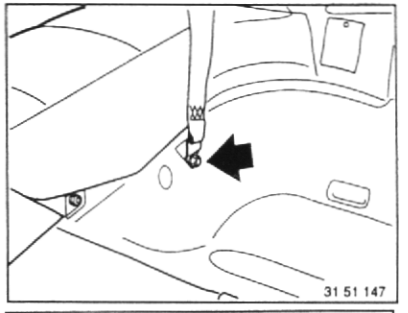
Pull out clips from above.



Guide sun shade carefully through the hatrack on the left side first and then the right side.

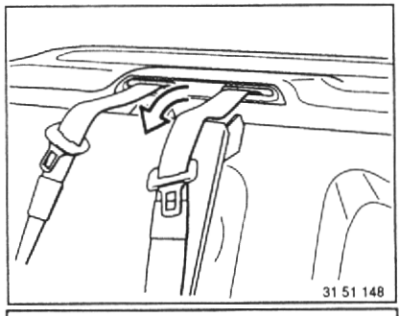


Installation:
Guide sun shade through the hatrack (right corner first and then left corner), then push back hatrack and guide retainers into the openings where they must engage. Press on self-adhesive holders.

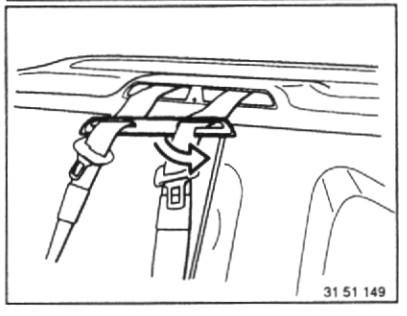


Unscrew left and right seat belts.

Installation:
Tightening torque*.

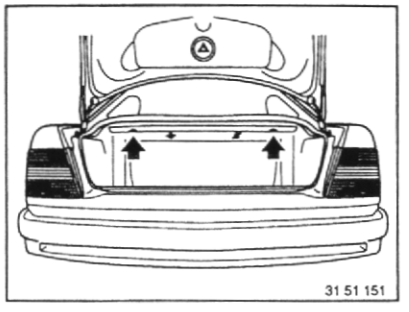


Unclip seat belt guide from inside.



Pull seat belt out of guide from the side.
Remove hatrack.

* See Specifications



51 46 013 REMOVING AND INSTALLING REAR SUN SHADE

Remove hatrack – see 51 46 000.
Raise trunk lid and unscrew screws.
Disconnect plug and remove sun shade.

51 47 315 REMOVING AND INSTALLING FRONT AND REAR PASSENGER COMPARTMENT CARPETS

Disconnect battery – see Gr. 61.
Remove seats – see Gr. 52.
Remove center console, dashboard and front side trim panels (footwell) – see Gr. 51.
Remove heater – see Gr. 64.
Remove accelerator pedal and full load stop – see Gr. 35.

Disconnect or unscrew left and right entrance strips, wire plugs and ratchet strap as well as plug plate in front of the shift gate.
Disconnect plug and ratchet strap in front of the parking brake lever.
Remove parking brake lever.

Unscrew plastic nuts for installation of carpet and ratchet straps on the cardan tunnel.