

51 Body equipment

51 0 . . .	Instructions on the repair of plastic components	51-	0/1
51 11 000	Bumper, complete front section – remove and install	51-	11/1
005	Bumper, front – disassemble and assemble	51-	11/3
794	One shock absorber (impact absorber) for front bumper – replace (bumper removed)	51-	11/6
. . .	Shock absorber (impact absorber) for bumper – check	51-	11/6
51 12 000	Bumper, complete rear unit – remove and install	51-	12/1
005	Rear bumper – disassemble and assemble	51-	12/2
742	One shock absorber (impact absorber) for rear bumper – replace (bumper removed)	51-	12/3
. . .	Vibration damper (impact absorber) for bumper – check	51-	12/3
51 13 301	Roof strip, left or right – remove and install	51-	13/1
303	Cover strip in side window opening, left or right – remove and install	51-	13/1
51 16 000	Rear-view mirror on front door, left or right – remove and install	51-	16/1
026	Mirror glass for rear-view mirror – replace	51-	16/1
060	Rear-view mirror, inside – remove and install/replace	51-	16/2
200	Oddments tray – remove and install	51-	16/2
203	Oddments tray, rear – remove and install	51-	16/4
340	Lock for right glove box – remove and install/replace	51-	16/5
362	Glove box, right upper – remove and install/replace	51-	16/7
363	Glove box, lower – remove and install/replace	51-	16/8
51 21 090	Door lock on front door, left or right – remove and install	51-	21/1
140	Lock cylinder, complete unit, for front door, complete unit, left or right – replace	51-	21/2
170	Handle on front door, left or right – remove and install	51-	21/3
51 31 . . .	Window installing instructions	51-	31/1
. . .	Front window cementing survey	51-	31/2
000	Front windshield – remove and install	51-	31/3
. . .	Rear window cementing survey	51-	31/7
200	Rear window – remove and install	51-	31/8
. . .	Repairing flying stone damaged composite safety glass windshields (clear or tinted)	51-	31/12
51 32 120	Front (or rear) window guide rails in front door, left or right – remove and install	51-	32/1
154	Front door window – adjust	51-	32/1
170	Front door window, left or right – remove and install	51-	32/6
51 33 000	Power window regulator in front door – remove and install	51-	33/1
020	Reversing motor for power window regulator in front door – remove and install	51-	33/2
51 37 000	Rear power window regulator, left or right, complete – remove and install	51-	37/1
020	Flat motor for power window regulator, rear, left or right – remove and install	51-	37/1
154	Side window (with window regulator), rear, left or right – adjust	51-	37/2
171	Rear side window, left or right – replace	51-	37/4
51 41 000	Door trim, front left or right – remove and install	51-	41/1
51 43 000	Side trim, rear, left or right – remove and install/replace	51-	43/1
251	Trim for rear roof pillar, left or right – replace	51-	43/1
51 44 011	Headlining – replace	51-	44/1
51 45 030	Trim for instrument panel – remove and install	51-	45/1
51 46 000	Trim for shelf (rear shelf) – remove and install/replace	51-	46/1
002	Trim for shelf – replace (with sun roller blind)	51-	46/1
013	Rear window roller blind – remove and install/replace	51-	46/2
51 47 315	Carpet for front and rear passenger compartment – remove and install	51-	47/1

51 0 ... INFORMATION FOR REPAIRING PLASTIC PARTS

The conditions mentioned below for plastic part repairs conform with legislation in Germany. Always conform with pertinent legislation in other countries.

These repairing instructions are provided for qualified workers and assume 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 described 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 Alro/CARPOX 383 or 3M 5900 plastic repairing material.

- Front spoiler
- Bumpers
- Side guards

Alro/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 rigidity 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.
- Holes of size 100 mm² or more.

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 9894
- 3M Aluminum Adhesive Tape Scotch 424
- 3M Glass Grind Fabric 9030
- Alro/CARPOX 383 or 3M 5900 plastic repairing material
- Mask
- Gloves
- Infrared lamp

Source of Supply: BMW Parts

Safety Precautions:

- Extract sanding abrasion.
- Wear mask and gloves while grinding.
- Work only in well ventilated rooms.
- Wash hands frequently.
- Store food separately.
- Don't eat, drink or smoke while working.
- Don't inhale 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 a large amount of vapors is inhaled, go outdoors into the 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, CO₂, halon, water mist.

Disposal:

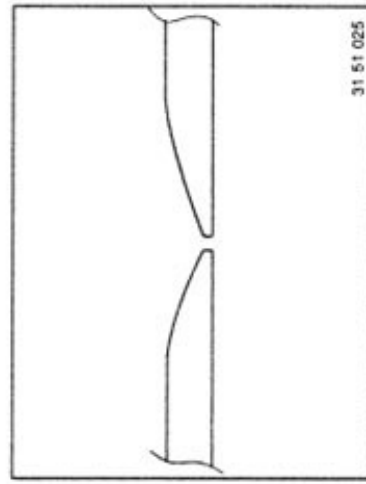
Never let it get into drink water systems.

Single components of the repair material must be disposed 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.



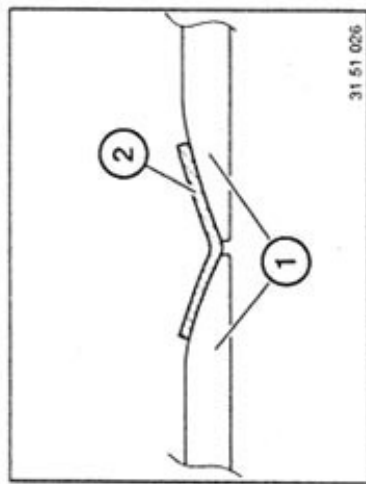
2. Sand down front of repair surface flat (grain size P 120).
Roughen back of deep damaged repair surface (grain size P 120).

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

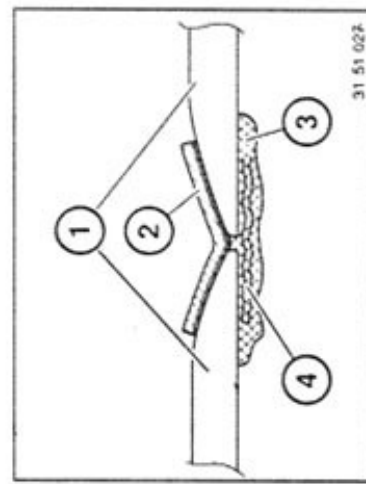
Note:
Let cleaned surface dry at room temperature about 10 minutes before continuing with the next step.

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.

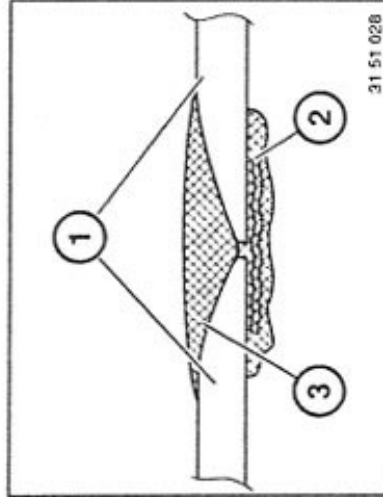


7. Apply coat of repairing material on back of the repair surface. Apply glass grid fabric, cover with repairing material and harden with Infrared light.
- 1 = Damaged plastic part
2 = Aluminum adhesive tape
3 = Plastic repairing material
4 = Glass grid fabric

Hardening plastic repairing material with Infrared light:

- Lamp to surface distance = 300 ... 400 mm.
- Lamp on time = 15 ... 30 minutes depending on thickness of coat.
- Max. surface temperature = 60 ... 70° C.

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

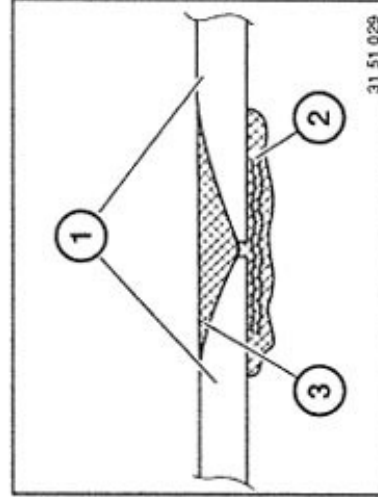


9. Apply coat of repairing material on front and harden with infrared light.

- 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.
- Lamp on time = 15 ... 30 minutes depending on thickness of coat.
- Max. surface temperature = 60 ... 70° C.



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 sanding materials to guarantee perfect results (thermal development).

Procedures for Repairing Minor Bruises and Scratches:

1. Grind down damaged zone generously (down into the substrate) 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.

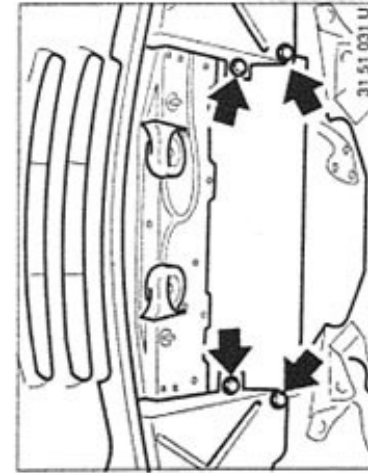
Caution!

Use mask and ensure sufficient ventilation.

Conform with accident prevention regulations for working with paints.

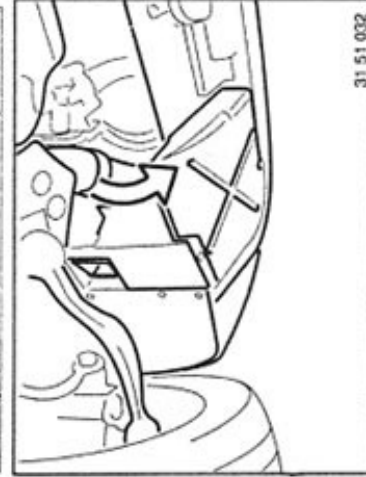
Conform with local and national legislation concerning safety at work and accident prevention as well as working material ordinances.

Refer to instructions supplied by the manufacturers!

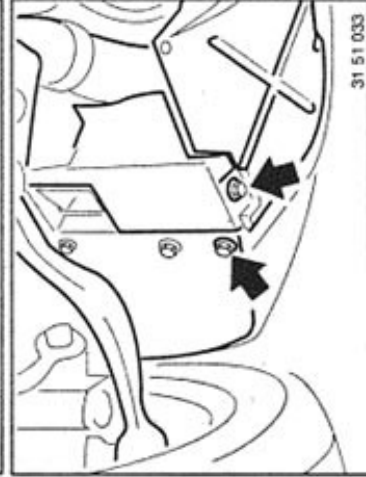


51 11 000 Removing and installing complete front bumper

Completely removing pop-up headlights, refer to 63 12 090.
Unfasten screws and remove trim on underside.



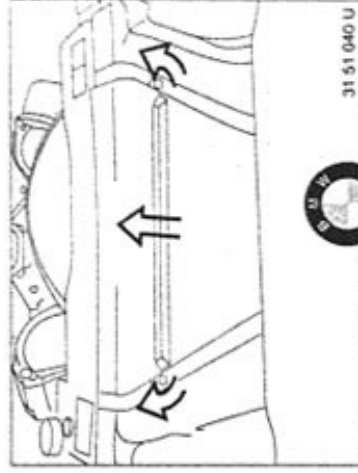
Remove hose for alternator cooling.



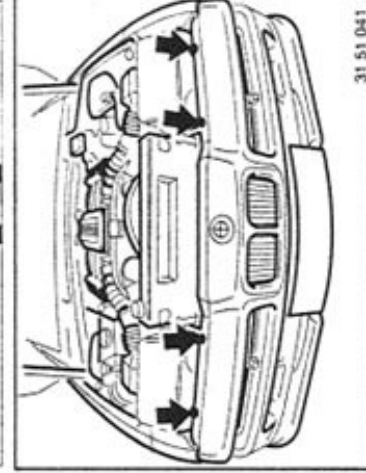
Unfasten screws on left and right sides.



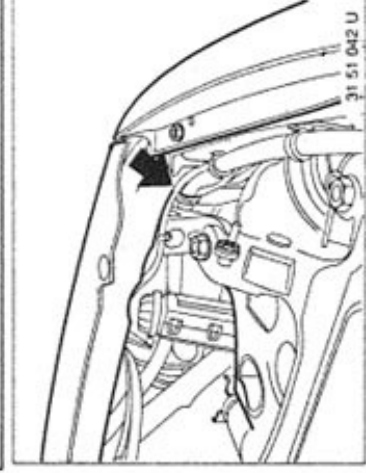
Unfasten hose clips on left and right sides of air manifold.



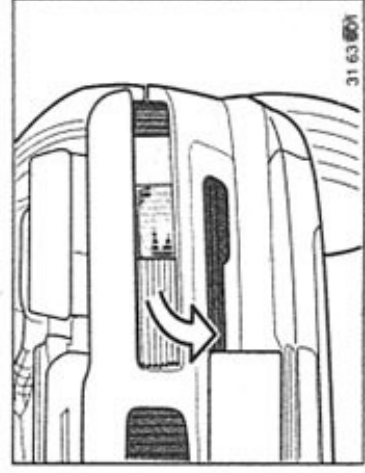
Unfasten locking fixture and unclip cover by pulling upwards.



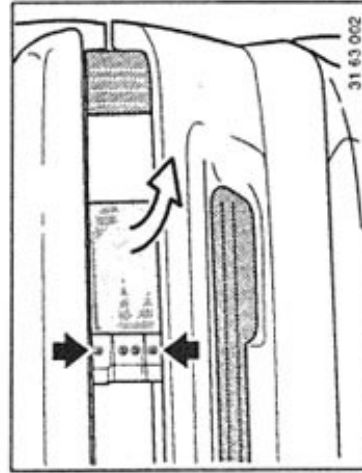
Unfasten screws.



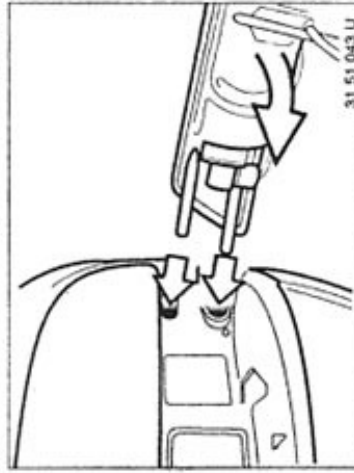
Unfasten hose clip and remove hose for headlight cleaning system.



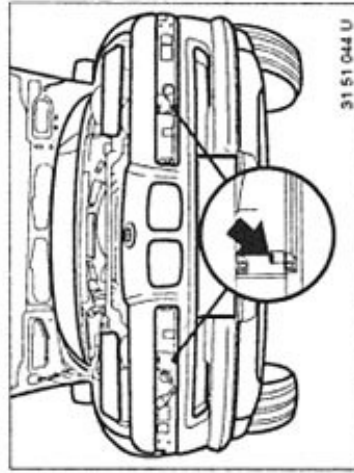
Pull left and right radiator grill panels forwards to unclip.



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

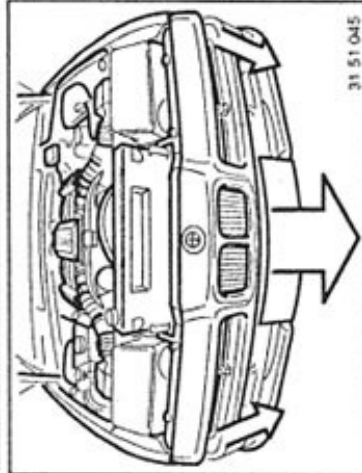


Installation:
Insert pins in retaining bores.



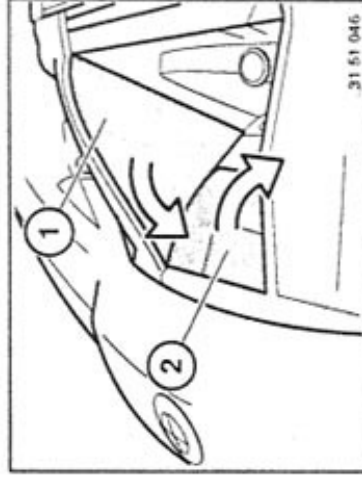
Unscrew screws.

Installation:
Lock screws with Loctite No. 270**.
Tightening torque*.

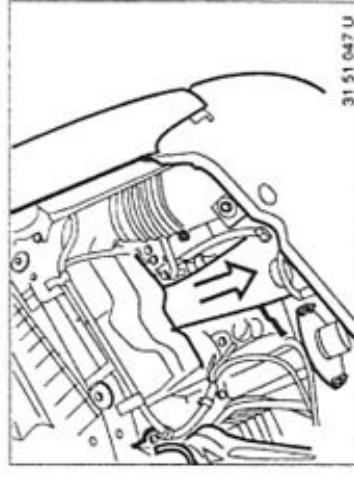


Pull left and right sides of bumper forward and remove bumper from front.

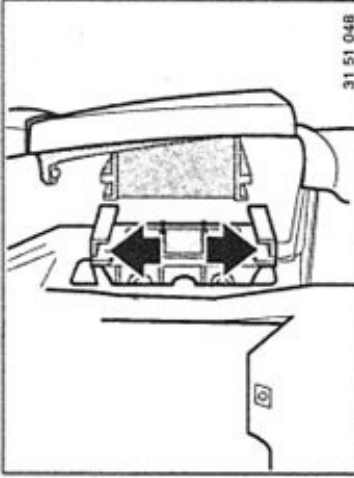
* Refer to Specifications
** Source of Supply: BMW Parts



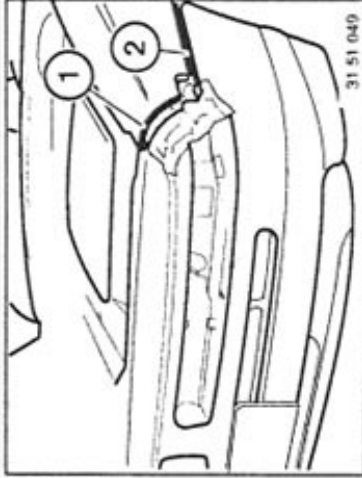
Installation:
Press air guide (1) toward outside.
Air guide (2) must seat inside.



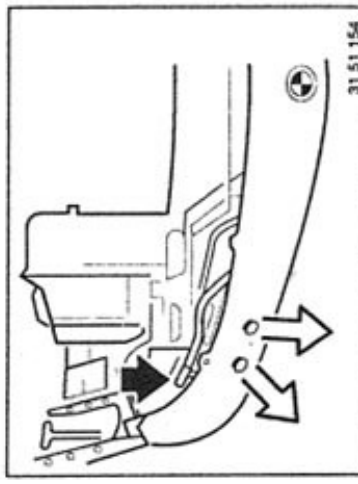
Installation:
Insert and engage brake cooling air guides in left and right air intakes.
- Headlight was removed for this picture. -



Installation:
Guide sides of bumper into brackets.

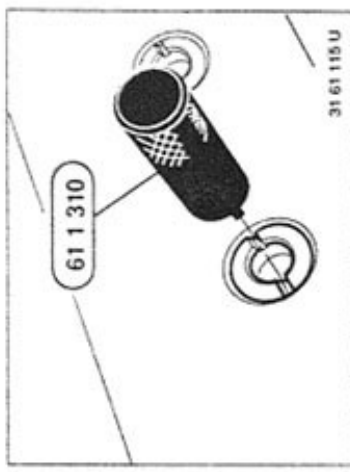


Installation:
Lubricate side seals (1 and 2) with a rubber lubricant.
Hold a piece of clear plastic sheet between the bumper and seal (2) while guiding in.

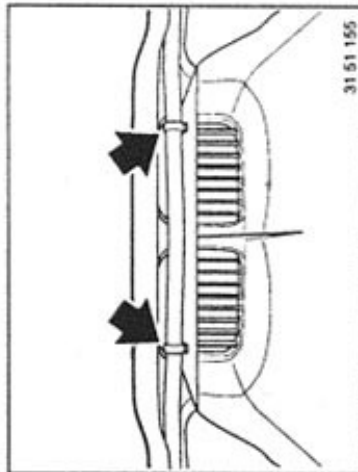


51 11 005 DISASSEMBLING AND ASSEMBLING FRONT BUMPER

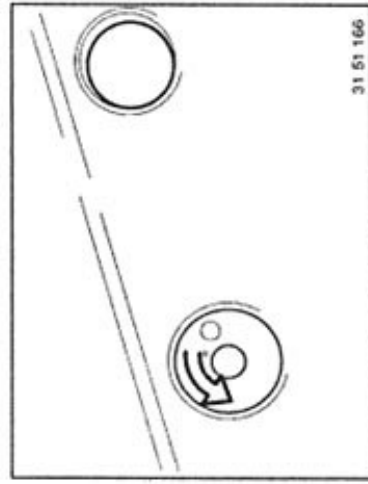
Important!
There will be residual water in the headlight cleaners which is ejected.
Apply pneumatic gun and run the nozzles out with air pressure (max. pressure = 5 bar).
Pull left and right covers off from above.



Unscrew ring using Special Tool 61 1 310.
Installation:
Install headlight cleaner nozzles that pins are inserted into slots of bumper.

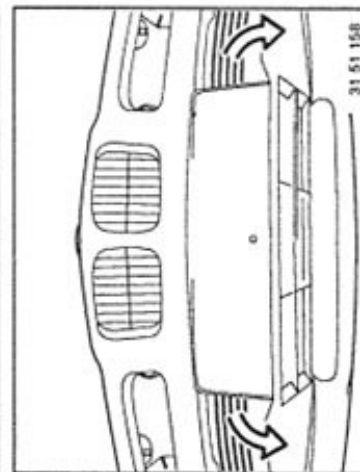


Loosen hose retainers and remove headlight cleaner nozzles together with hoses.

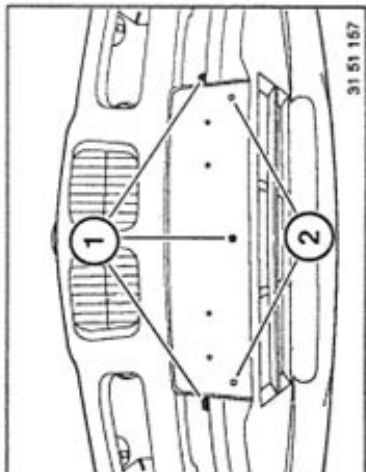


Unscrew cover carrier.

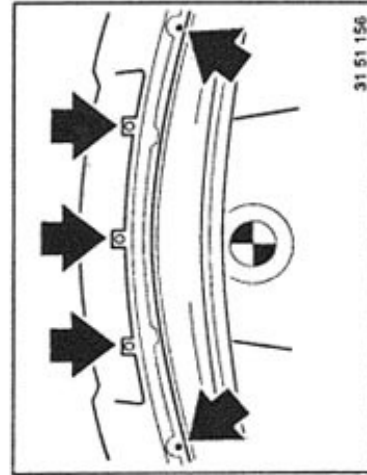
Installation:
Adjust cover height.
Screw cover carrier out or in until the cover is flush with the body when in installed state.



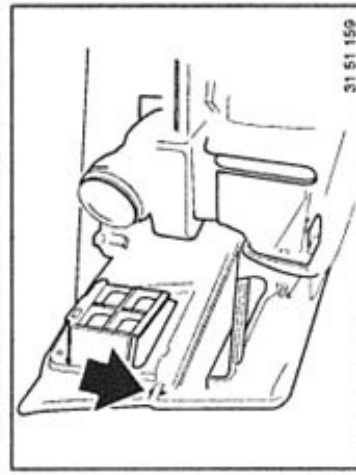
Unclip covers towards front.



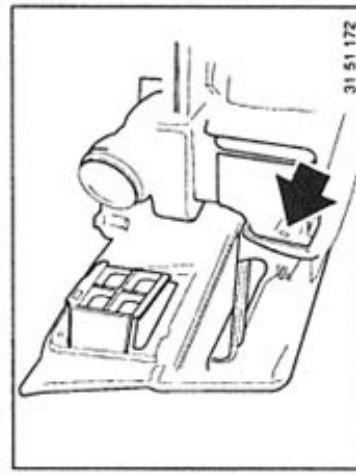
Unscrew screws (1).
Pull plugs (2) out.
Remove license plate holder.



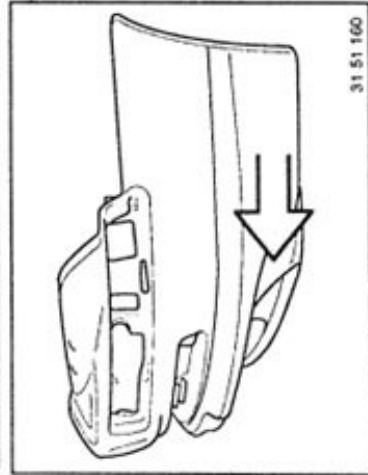
Unscrew screws from underside of bumper.



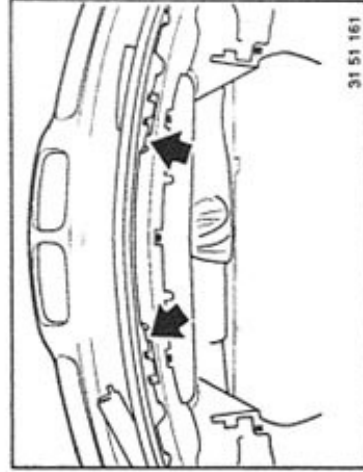
Unscrew left and right screws.



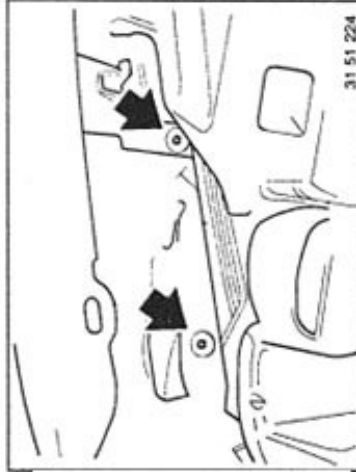
Loosen left and right clips.



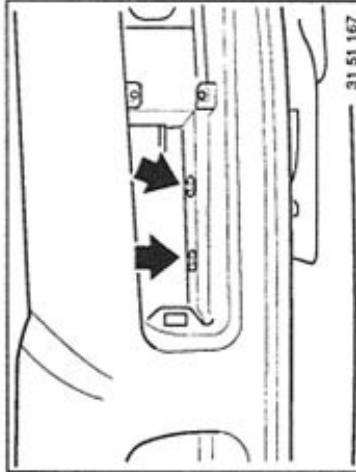
Pull lower bumper section forward firmly off of the upper bumper section (held by clips).



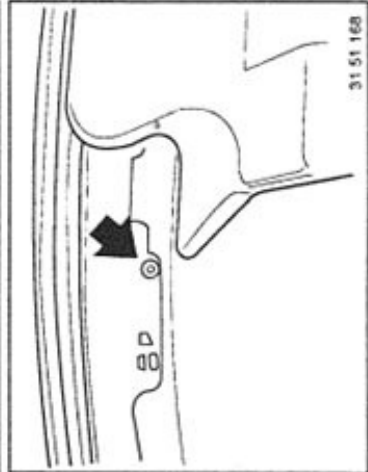
Loosen clips and lift air guide out towards the rear.



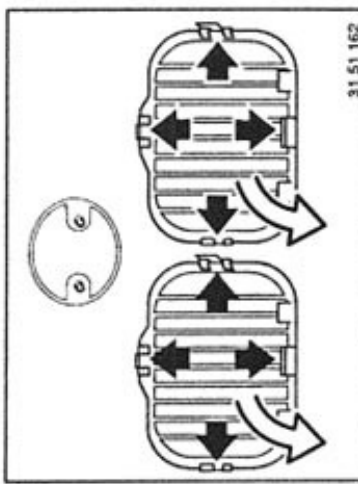
Loosen left and right clips.



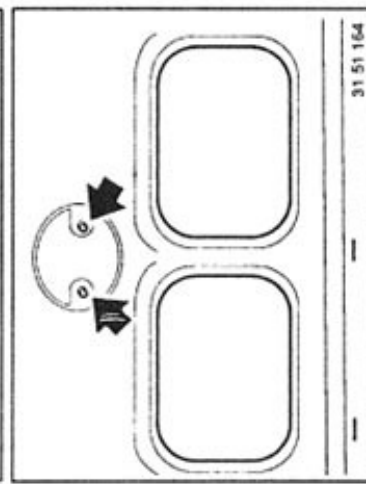
Loosen left and right clips.



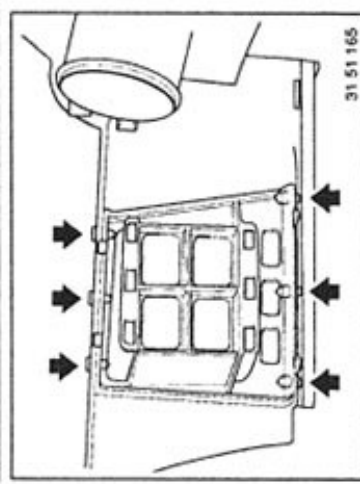
Turn bumper around and loosen clips on left and right sides.
Pry left and right air intakes and bumper carrier out towards the rear.



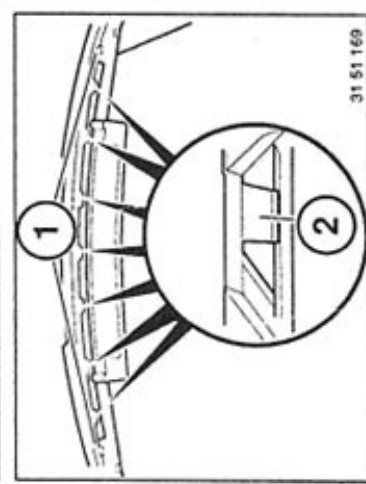
Press clips aside and lift grill out.



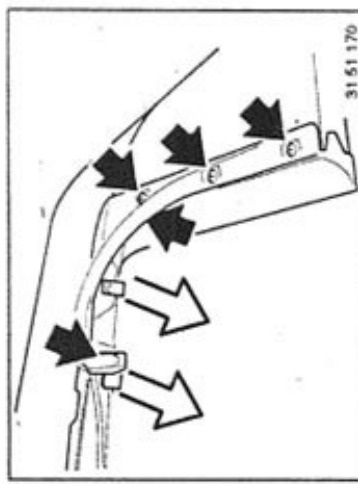
Press pins up and take BMW emblem off on the top side.



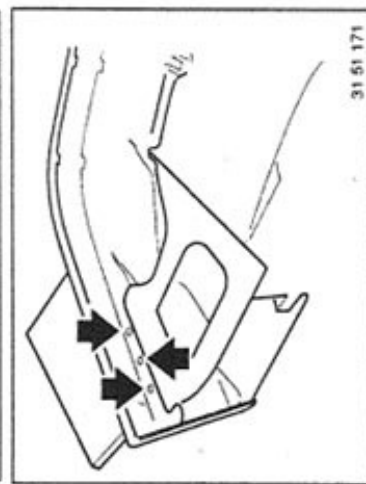
Loosen clips and take left and right holders off.
If applicable, remove remaining clips and stamped metal nuts from top of bumper.



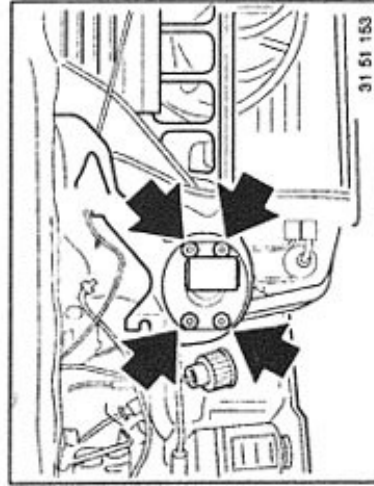
Lower Bumper Section:
Loosen left and right clips (1).
Press down on left and right locking hooks (2) and pull spoiler lip off towards the front.



Pull left and right clips off towards the rear.
Unscrew screws and nuts on left and right sides.
Remove spoiler.



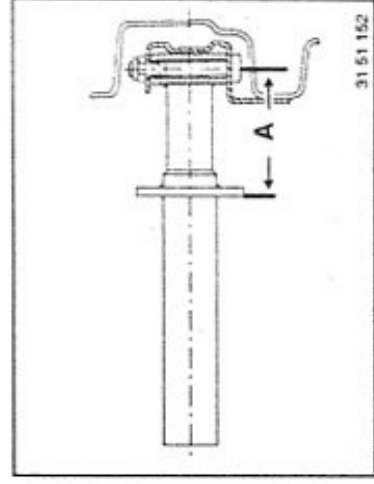
Loosen left and right clips and remove holders.
If applicable, remove remaining clips and stamped metal nuts.



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

Unscrew bolts and pull impact absorber out towards the front.

Installation:
 Tightening torque*.

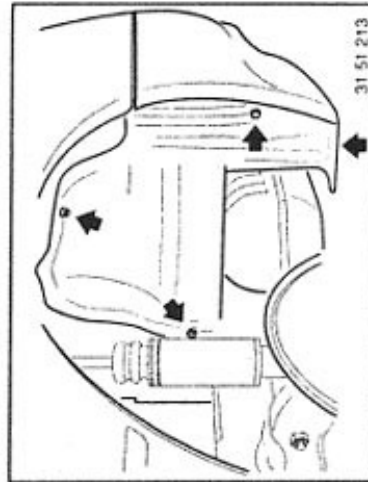


51 11 ... CHECKING IMPACT ABSORBERS FOR BUMPER

Remove impact absorbers for bumper - refer to 51 11 794.

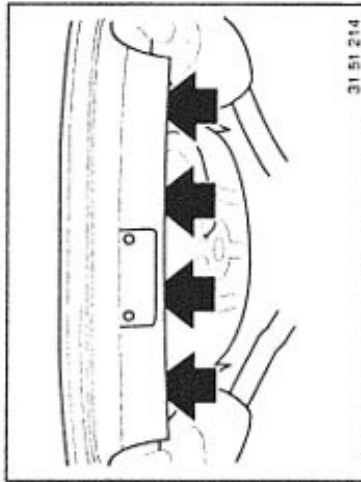
Check distance (A).
 Distance (A) = 151 mm.

The impact absorber must be replaced if distance (A) is less than the specified value.

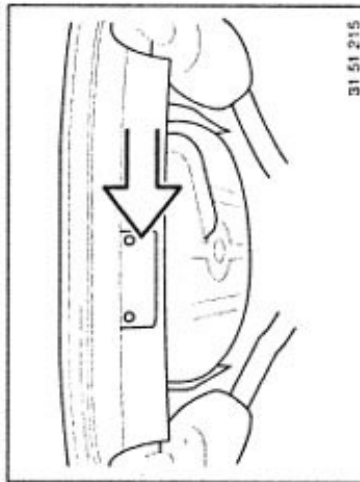


**51 12 000 REMOVING AND INSTALLING
REAR BUMPER ASSEMBLY**

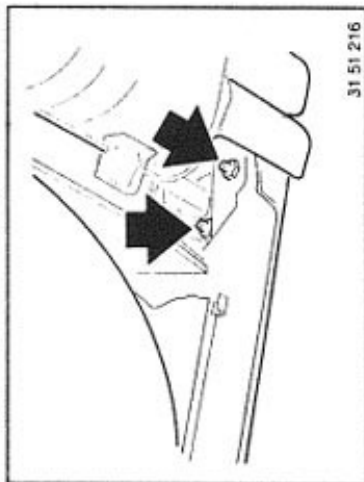
Unscrew screws in left and right wheel houses and take off panels.



Unhook rear panel at front.



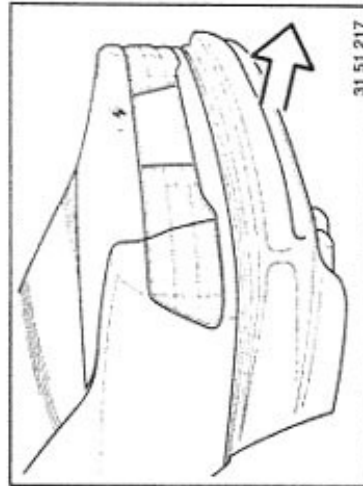
Push rear panel aside and take off.



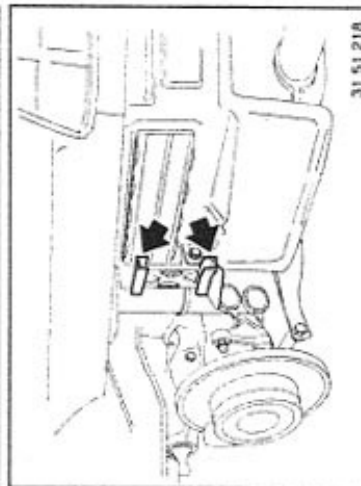
Unscrew left and right bolts.

Installation:
Tightening torque*.

• See Specifications



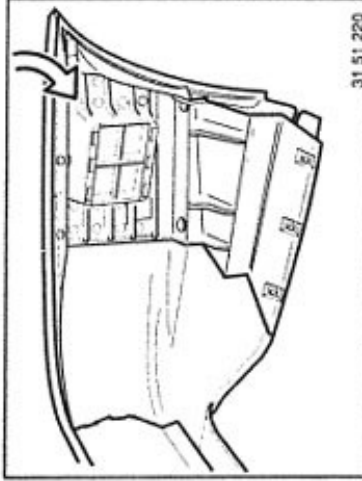
Take off bumper toward rear.



Installation:
Guide sides of bumper into brackets.

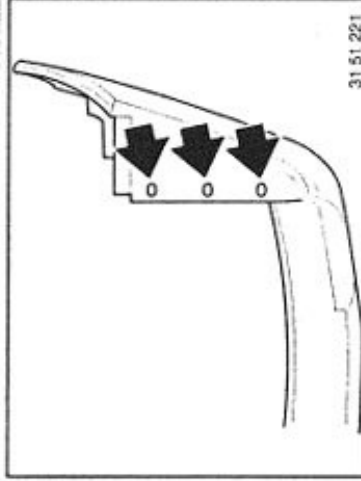
51 12 005 DISASSEMBLING AND ASSEMBLING REAR BUMPER

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



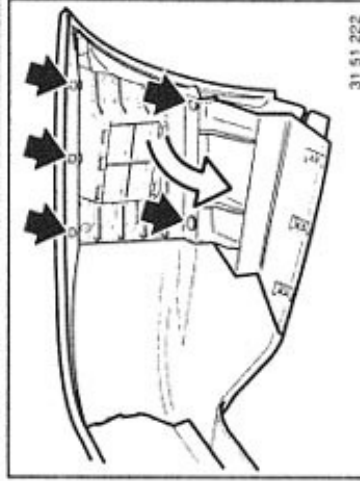
31 51 220

Loosen clips at left and right bottom.



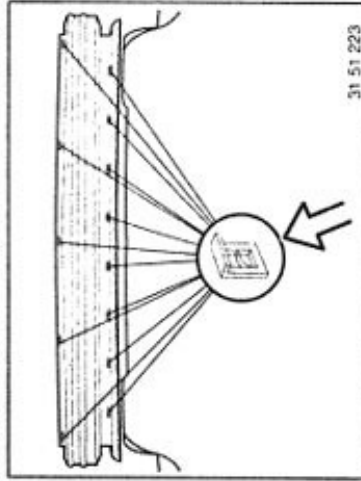
31 51 221

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



31 51 222

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

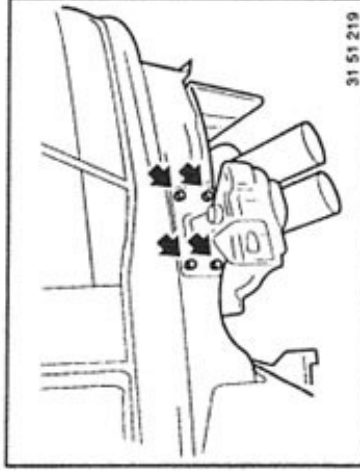


31 51 223

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 ...

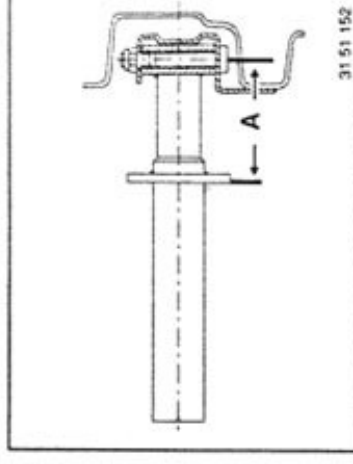


**51 12 742 REPLACING ONE IMPACT
ABSORBER FOR REAR
BUMPER**

– Bumper Removed –

Unscrew bolts and pull out impact
absorber toward rear.

Installation:
Tightening torque*.

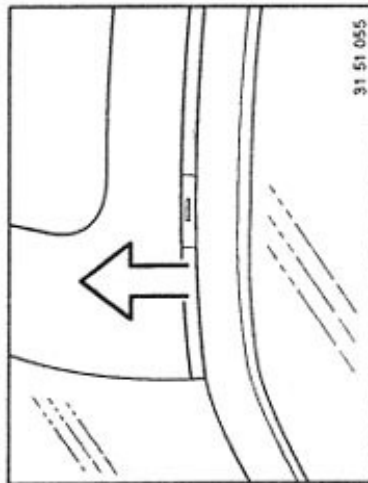


**51 12 ... CHECKING IMPACT
ABSORBERS FOR REAR
BUMPER**

Remove rear bumper impact absorbers
– see 51 12 742.

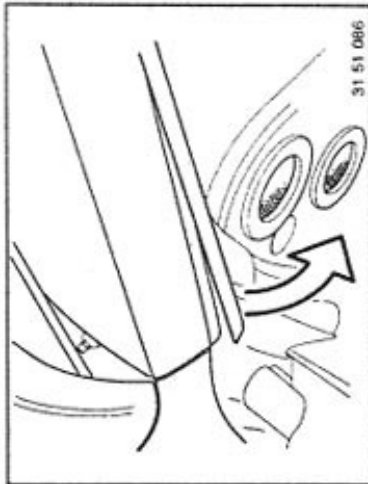
Check distance (A).
Distance A = 108 mm (4.252").

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



**51 13 301 REMOVING AND INSTALLING
LEFT OR RIGHT ROOF
STRIP**

Unclip roof strip from above.

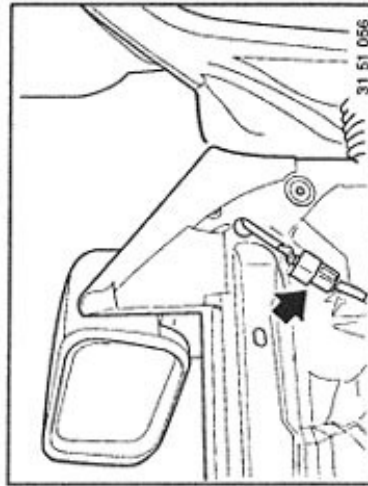


**51 13 303 REMOVING AND INSTALLING
COVER STRIP IN LEFT OR
RIGHT SIDE WINDOW
OPENING**

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

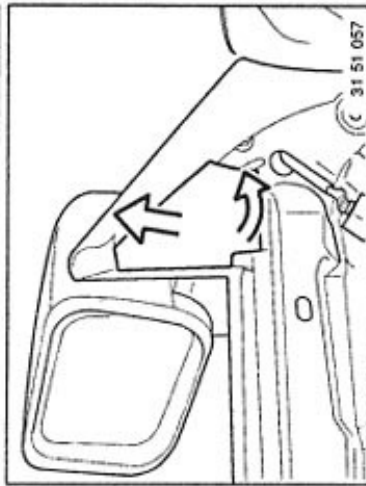
51 16 000 REMOVING AND INSTALLING MIRROR ON LEFT OR RIGHT FRONT DOOR

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



31 51 056

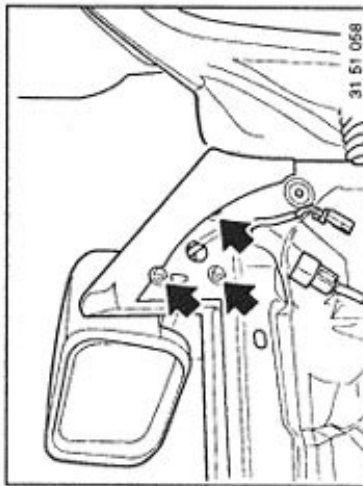
Unclip plate at bottom, push up and
take off.



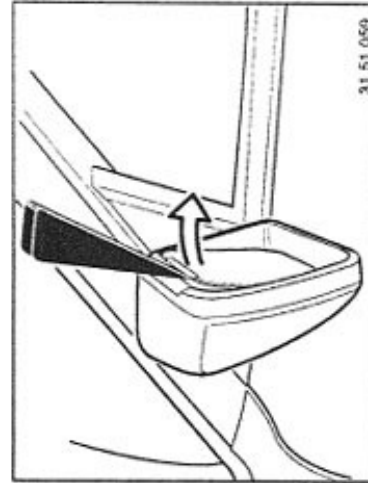
31 51 057

Unscrew screws.

Installation:
Tightening torque*.



31 51 058

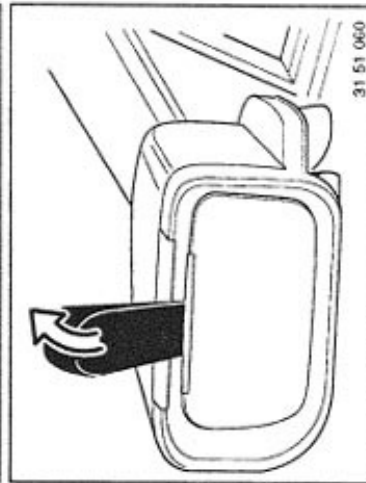


31 51 059

51 16 026 REPLACING GLASS FOR MIRROR

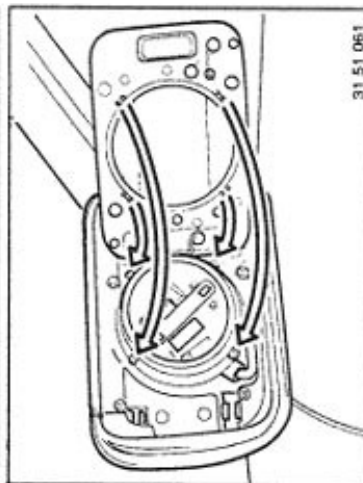
Tilt mirror glass.
Paste tape on mirror glass and edge of
housing – prevents damage.

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

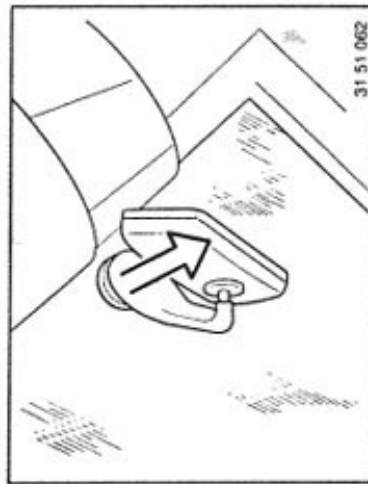


31 51 060

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



31 51 061

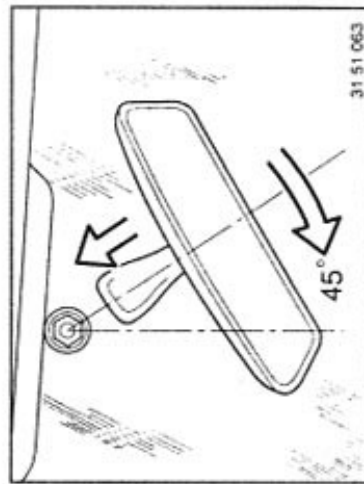


51 16 060 Removing and installing or replacing inside rear-view mirror

Pull mirror backwards off mirror mount.

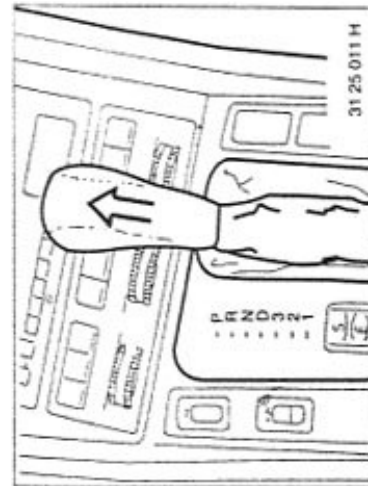
Rear-view mirror with automatic dimmability and or infrared receiver:

Open mirror trim and unfasten connector.



Installation:

1. Fit mirror base to mirror mount, first turning through approx. 45°.
2. Rotate mirror base until it locates on the mirror mount.

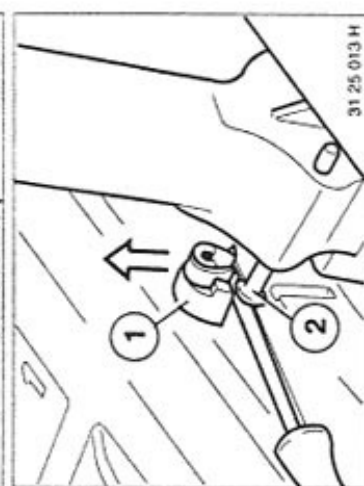
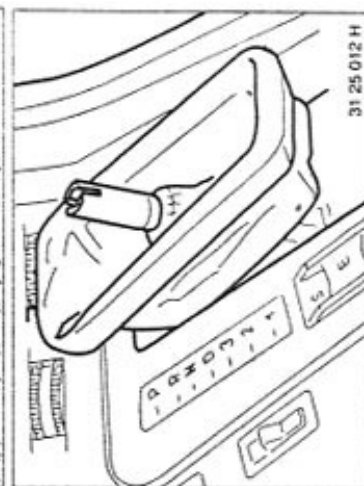


51 16 200 Removing and installing oddments tray

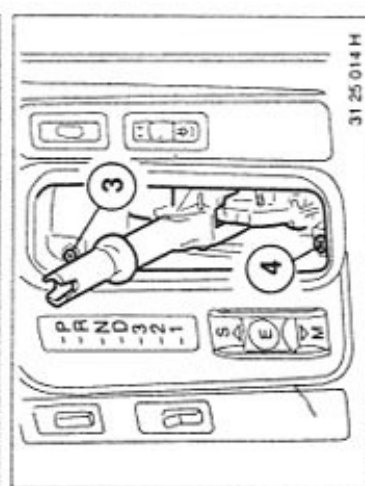
- o Remove finisher from centre console: Remove radio, refer to 65 11 030.

Pull selector lever handle upwards to remove. Extraction force-approx. 25 N.

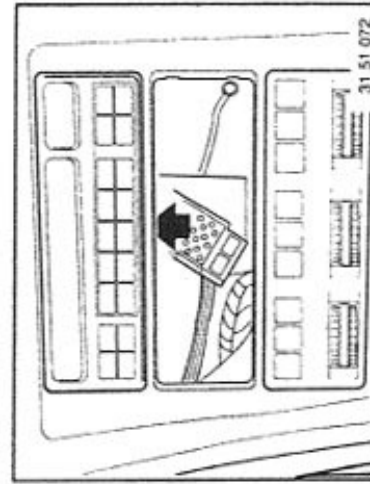
Unclip cover and pull upwards.



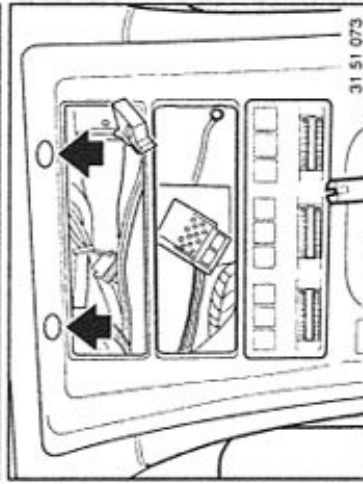
Push driver clip (1) upwards with a screwdriver and push pin (2) to one side. Pin (2) remains on shift lever.



Unfasten screws (3) and (4) and lift cover upwards to remove. Unfasten connector.

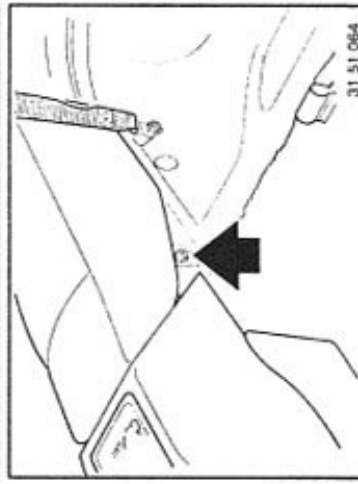


Press down clip in center and remove Multi Information Display (MID).
Unfasten connector.

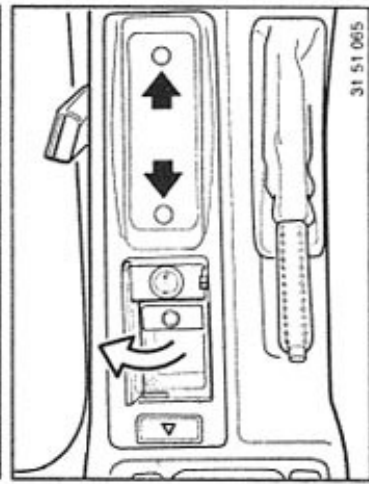


Remove finishers.
Unfasten screws and remove trim.
Unfasten connector (heater control).

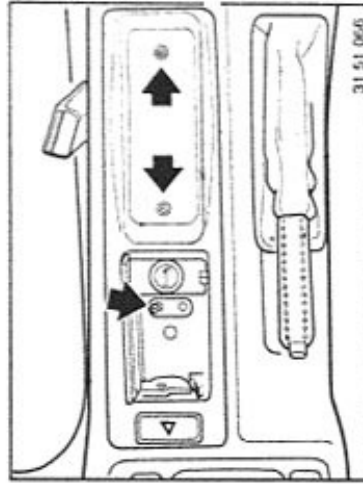
Note:
The operation "Removing centre console" ends here.



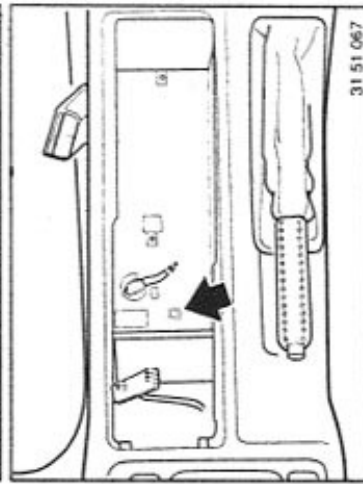
Remove both back seats, see 52 20 100.
Remove rear oddments tray, see 51 16 203.
Unfasten screws on left and right sides and remove centre armrest.



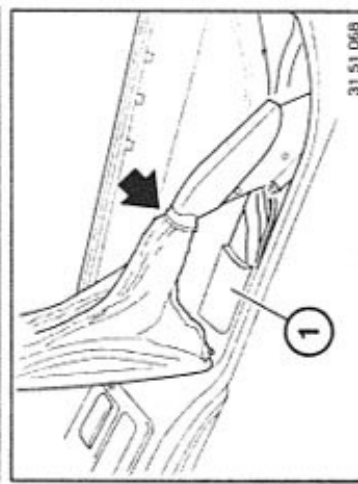
Remove ashtray.
Remove covers.



Unfasten screws and remove oddments tray.
Unfasten connector and remove ashtray light

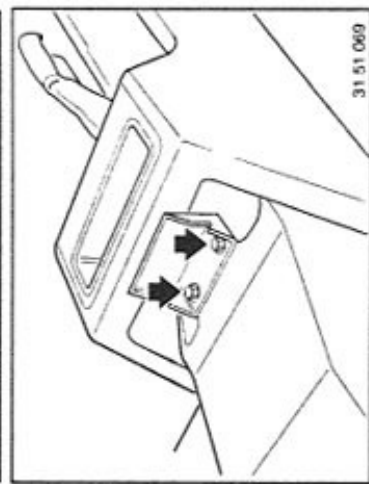


Unfasten screw.

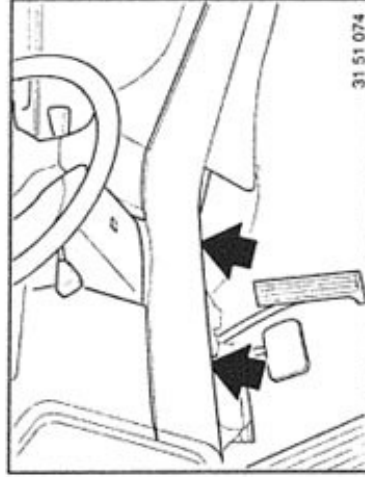


Unclip cover sleeve (handbrake) and fold down. Disconnect retaining strap and remove cover sleeve.
Remove finisher (1).

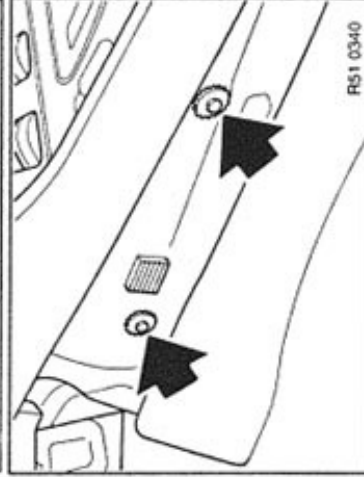
Installation:
Replace retaining strap.



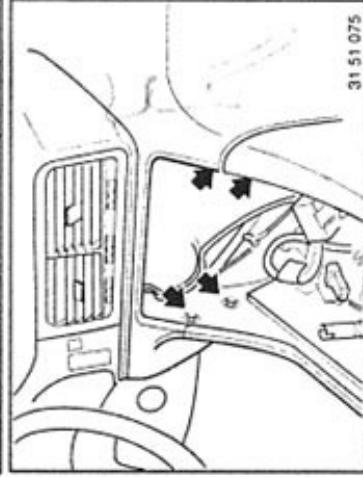
Unfasten screws.



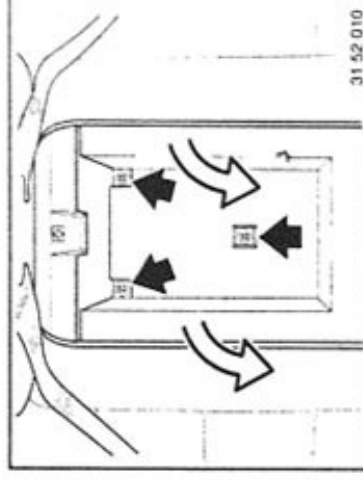
Twist clips, unfasten lower instrument panel trim and remove.



Unfasten screws on left/right sides.

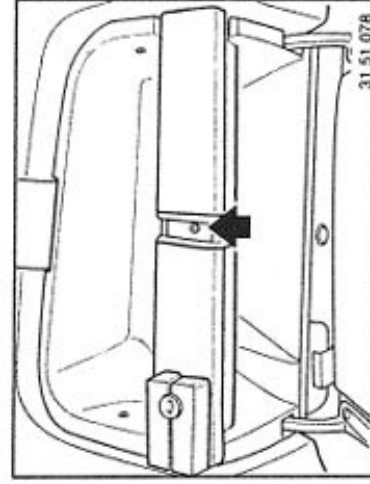


Unfasten screws on left and right sides and remove oddments tray (centre console).



51 16 203 Removing and installing rear oddments tray

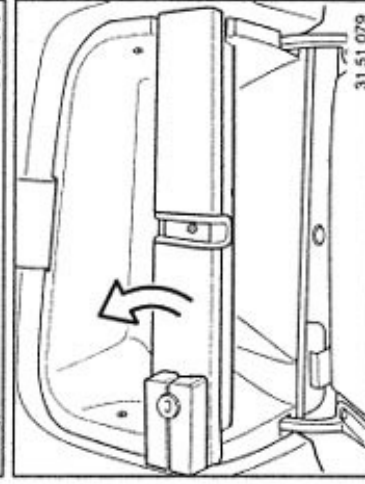
Remove first-aid kit.
Unfasten screws and carefully remove tray



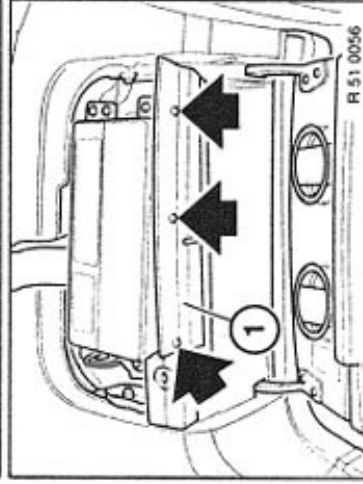
51 16 340 Removing and installing or replacing fastener for glovebox on right side

Open both glovebox lids and lift out finisher for passenger airbag.

Unfasten screw and remove finisher.

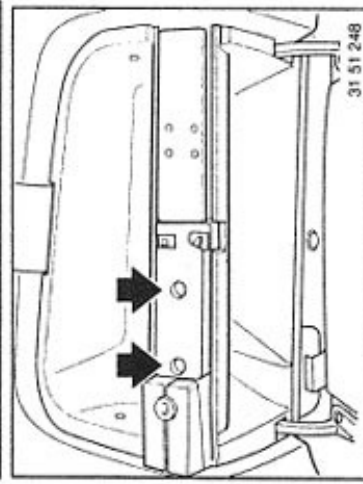


Remove finisher by lifting upwards.



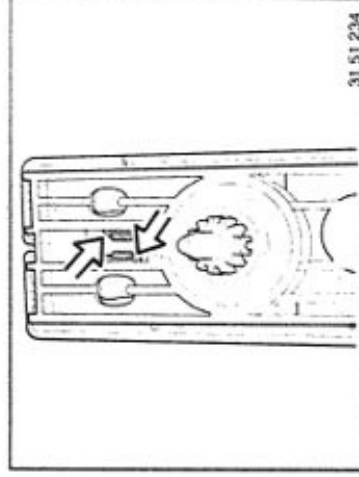
On passenger airbag:

Unfasten screws and remove finisher (1).

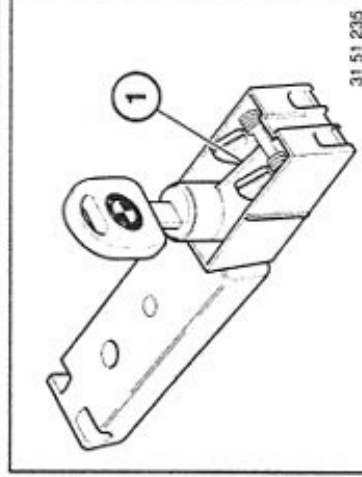


Unfasten screws and remove lock (with passenger airbag, now only one screw on right side).

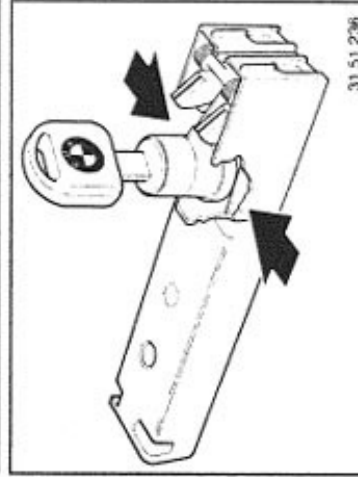
Note:
Installation and removal ends here: rest of section deals with replacement.



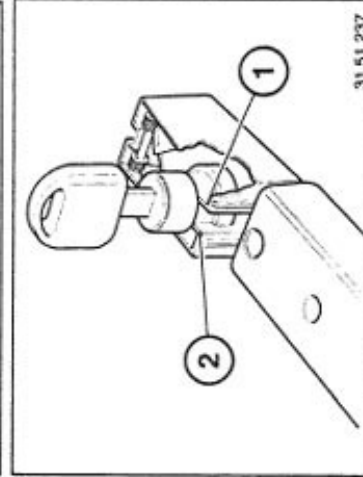
Press down clips on left and right sides of old lock and remove pushbuttons.



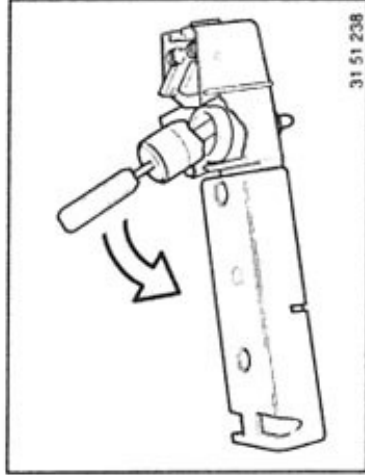
Insert main key in lock cylinder.
Cut web (1) with diagonal cutting pliers.



Break off left/right sides of housing.



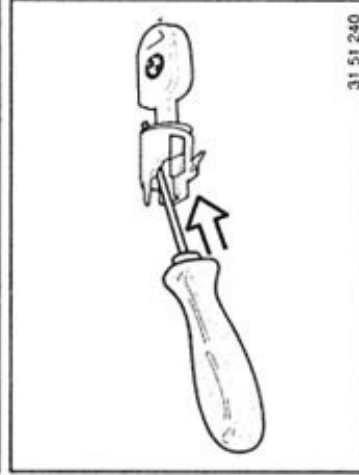
Break off webs (1) and (2).



Tilt lock cylinder to remove.

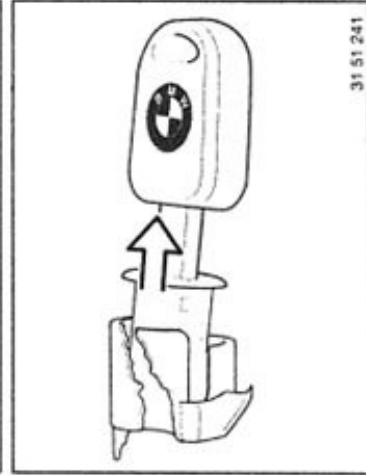


Remove metal ring. Carefully remove main key from locking cylinder. Remove metal ring and reinsert main key in the locking cylinder.

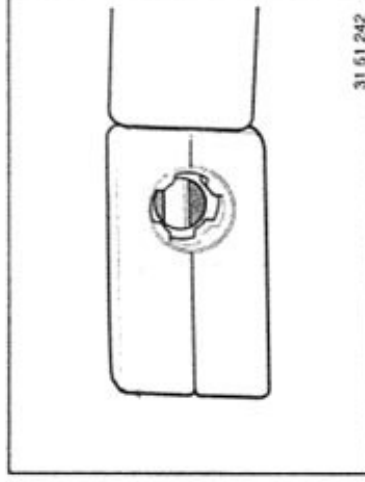


Caution!
Do not damage tumblers.

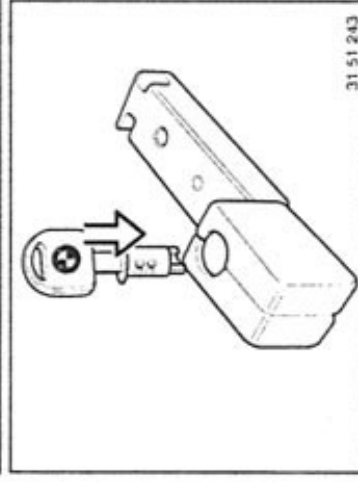
Insert screwdriver between lock cylinder and plastic sheath and break open plastic sheath.



Remove lock cylinder from plastic sheath.



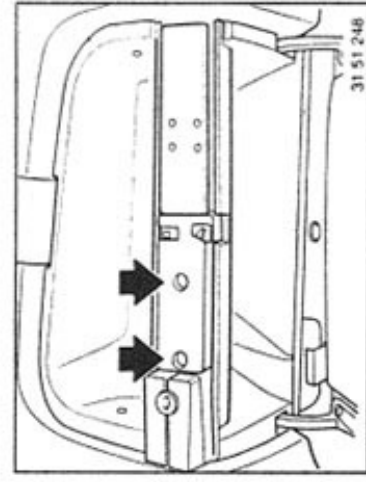
Turn new lock into "open" position.



Install lock cylinder and engage.



Installation:
Fit lock strip in opposite sequence to removal. Tighten screws gently.

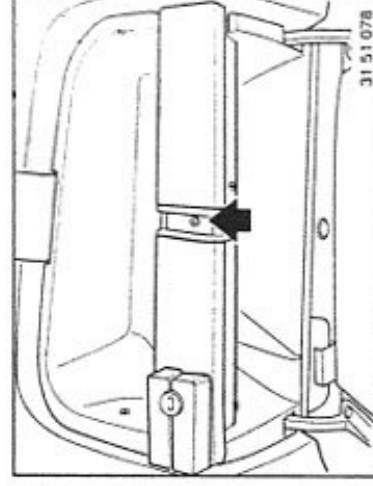


Fit lock to lock strip.

Installation:

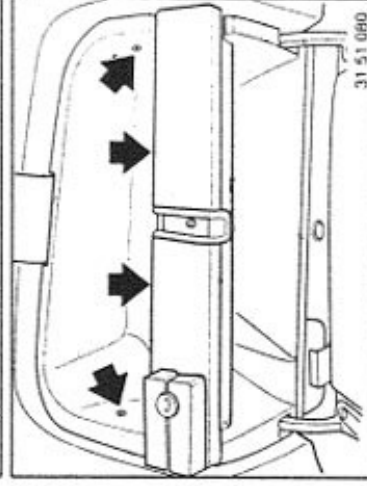
Perform function check!

- Lock glovebox with main key; lid must be locked.
- Unlock glovebox; lid must be unlocked.

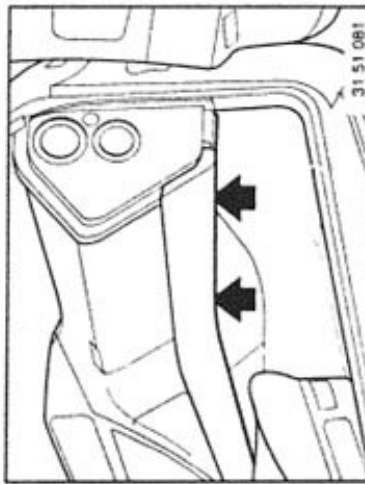


51 16 362 Removing and installing or replacing upper right glovebox

Open cover for upper and lower glovebox.
Unfasten screw and remove finisher.



Unfasten screws and remove glovebox.



31 51 081

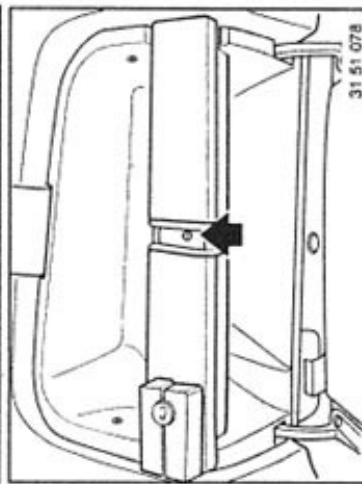
51 16 363 Removing and installing or replacing lower right glovebox

Twist clips and remove.



R 51 0057

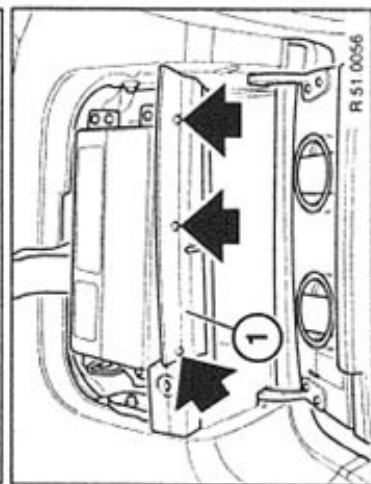
Lift out side instrument panel trim (beside transmission tunnel - burr fastener) and unclip by pulling backwards.



31 51 078

Open both covers on glovebox and remove finisher for passenger airbag.

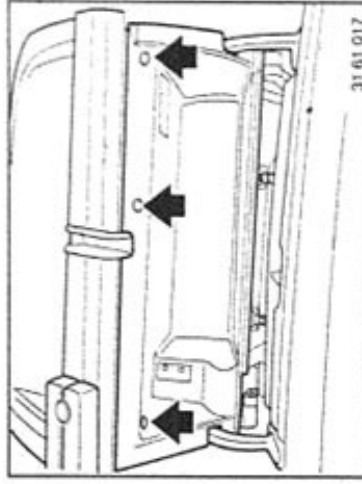
Unfasten screw and remove finisher.



R 51 0056

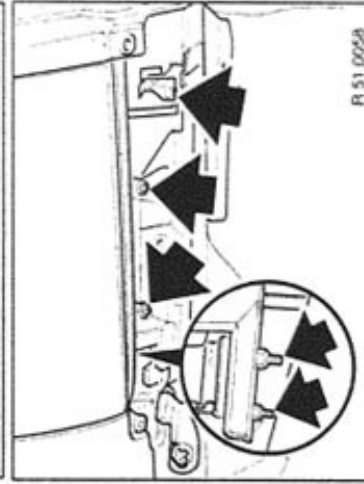
With passenger airbag:

Unfasten screws and remove finisher.



31 61 017

Unfasten screws.



R 51 0058

Unfasten screws and nuts. Lift out glovebox and unfasten connector.

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

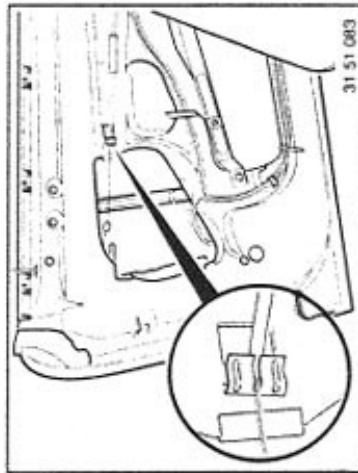
Raise side window.
 Remove door trim panel – see
 51 41 000.

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

Remove outside door handle – see
 51 21 170.

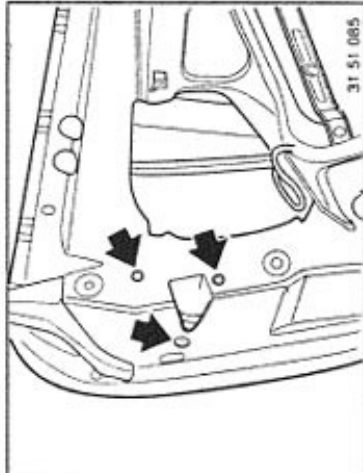
Unhook inside door lock operating
 cable.

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 engage-
 ment.

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.

Remove outside door handle - refer to 51 21 170.

Insert main key into lock cylinder.

Caution!

Clips have great tension - wear protective goggles.

Loosen and hold clips tight carefully. Remove cap and microswitch.

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

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

Installation:

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

Remove insert ring (2).

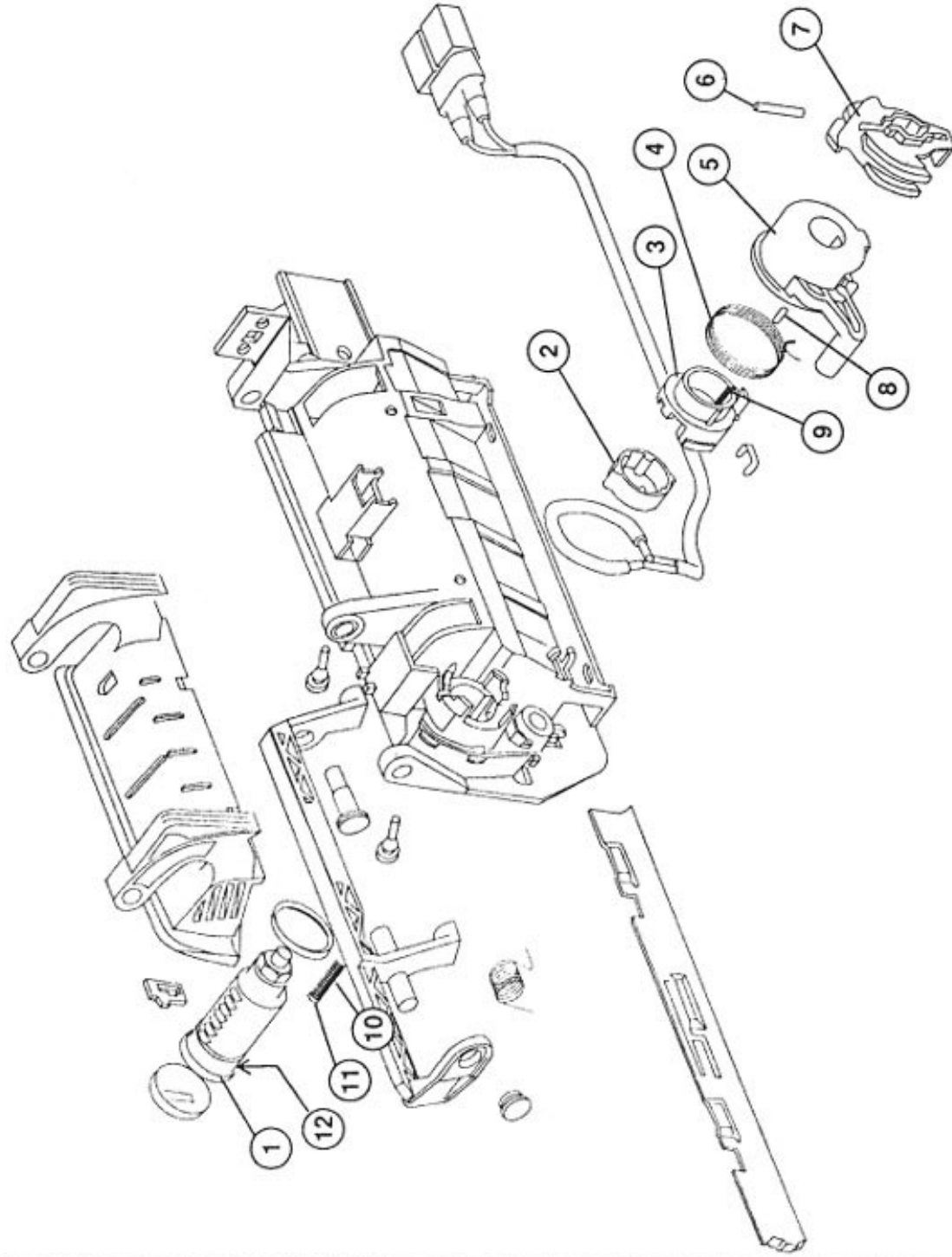
Pull lock cylinder (1) out of the door handle.

Installation:

Hold ball (11) on spring (10) with grease.

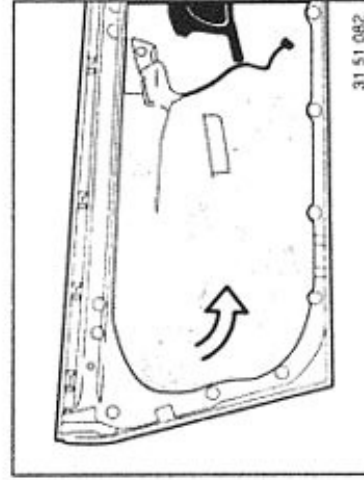
Push lock cylinder into door handle.

Press key lock (12) in using a pointed item, press lock cylinder firmly into door handle and hold tight.



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

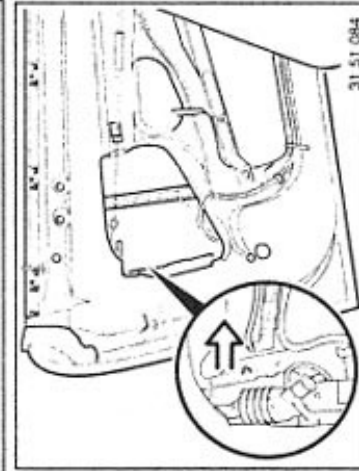
Close side window.
Remove door trim,
refer to 51 41 000



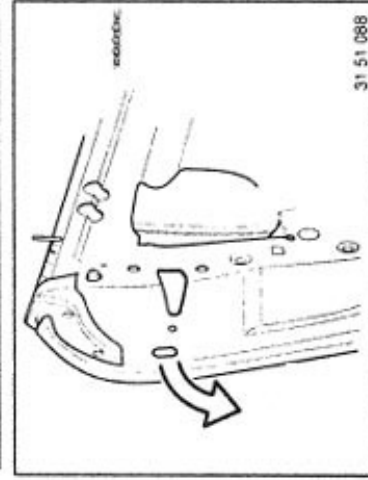
Pull cover partially forwards.

Caution!

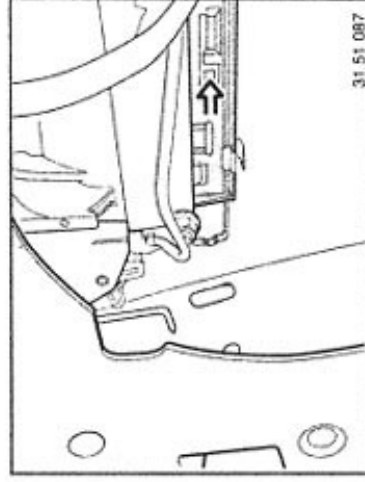
For safety reasons, unfasten connector from electr. window regulator.



Unclip linkages.



Remove plugs.



Slide strip forwards with special tool 51 3 190 and remove finisher from outside handle.

Unfasten inside screws and remove outside handle.
Unfasten connector and unclip lines.

Tightening torque refer to Technical Data 51 21 2AZ

Installation:
Install outside handle with stud (1) in spline (2).

51-31 . . . Instructions on cementing windows

Front and rear windows are cemented to body (positive connection). This improves the torsional strength of the vehicle. Conformance with the following procedures is necessary to ensure windows are correctly cemented.

Note:

When using Sika Tack - Ultrafast (hot treatment), the cement must be heated in the cartridge oven* to 80°C.
Open rear end of aluminum membrane before placing cartridge in oven.

Removal:

Cement bead is cut through using an electric cutter* with oscillating blade*, as far as possible without damaging paint on the body aperture. When cutting out the window, wear protective goggles and gloves. Damaged paint finish in body openings must be touched up with BMW EP prime filler*. Large areas of damage must be ground down to base metal and coated with BMW EP prime filler (2K) (layer thickness 30 ... 40 µm). If a complete buildup of paint is required in the visible area, masking must be stripped off the primed cement flange before application of top coat.

Preparation for assembly:**Note:**

When using Sika Tack - Ultrafast (hot treatment):
Before applying the cement, it must first be heated in a cartridge oven* to 80°C.
Sealed cement containers can be reheated several times and they remain stable for approx. 10 hours at 80°C.

The inside edge of the window is coated with a glass ceramic layer impermeable to UV light to protect the cement bead. A thin coat of primer is applied by brush to the glass ceramic surface (repair kit)*. Primer must be allowed to breathe for at least 10 minutes.

The body aperture is also coated with a thin layer of primer, requiring 10 minutes to air-dry. For cementing, only use the 1-component polyurethane cements (Sikaflex 255 FC for cold treatment or Sika Tack - Ultrafast for hot treatment)*. The cement is applied to the window with a cartridge press (compressed air or electrically operated)*.

If a cement other than one approved by BMW is used, radio reception is seriously impaired. The heating filaments also act as antennas.

Mounting:**Caution!**

Assembly must be completed within 8 ... 10 minutes otherwise the cement bead forms a skin which no longer forms a perfect adhesive bond.
Always remove cement residue with cleaning agent (Sika-Entferner 208*) before cement hardens.
Do not press window back out at this point.
Hardened cement can now only be removed mechanically.

The car can be towed without a windshield or rear window.

To prevent a pressure buildup inside the car when the doors are closed, one side window should be open.

Cement hardens by reaction with humidity at room temperature.

The minimum hardening time is achieved at 22°C and 38% relative humidity, refer to table.
The vehicle must not be subjected to one-sided loads during the minimum hardening time (for example one wheel on kerb, lifting platform etc.). Maneuvering inside the workshop is still permitted.

Caution!

Safety instruction after cementing (windshield with passenger airbag):

To ensure that the "passenger airbag" restraint system functions perfectly (support of airbag against windshield), all occupants must drive with seatbelts fastened until the minimum hardening time (refer to table) is reached after the windshield has been cemented.

Cements and minimum hardening time:

Cement	Minimum hardening time		Minimum hardening time with passenger airbag (crash loading from airbag)
	without passenger airbag (vehicle can be moved)	passenger airbag (vehicle can be moved)	
Sikaflex 255 FC (cold treatment)	4 hours		18 ... 24 hours
Sika Tack - Ultrafast (hot treatment)	2 hours		12 hours

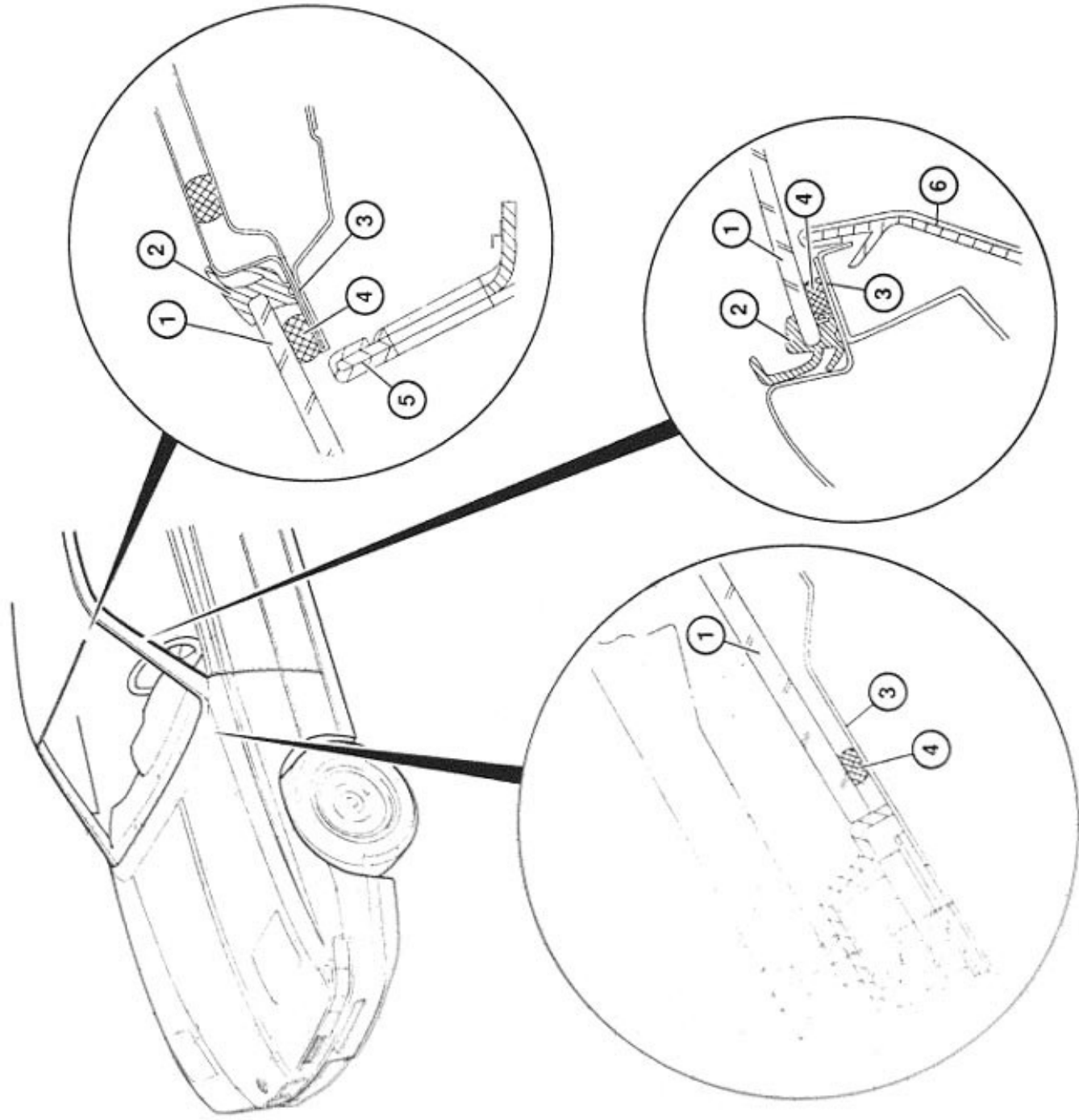
Note:

For vehicles with passenger airbags, the vehicle can be presented to customers after the hardening time (vehicle movable, dependent upon type of cement) with the following warning notice:
All occupants must ride with seatbelts fastened for a specified time after the windshield has been cemented (refer to table, crash loadings from airbag).

*Source of Supply: BMWParts Service

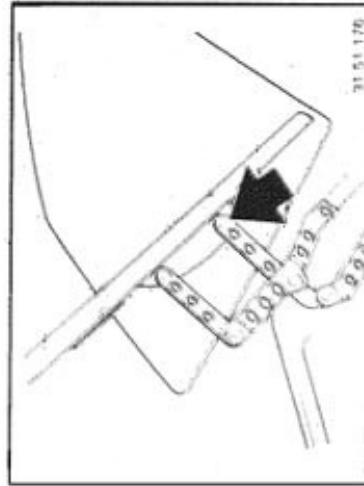
51 31 ... CEMENTED WINDSHIELD SURVEY

- 1 Windshield
- 2 Seal
- 3 Body flange
- 4 Cement bead
- 5 Roof liner
- 6 A-pillar trim panel



51 31 000 REMOVING AND INSTALLING WINDSHIELD

Cover bumper (top) and headlight lids with covers or side panel/fender guards to prevent damage to the paint finish.

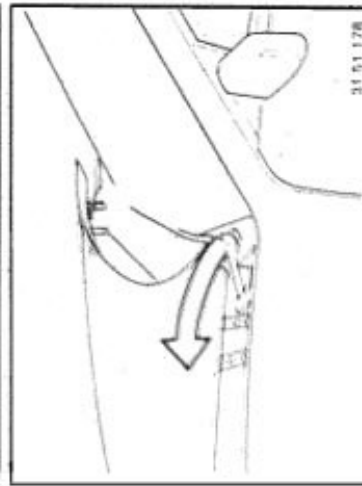


Important!

Secure the engine hood to prevent it from falling into the windshield.

Unscrew left and right screws.

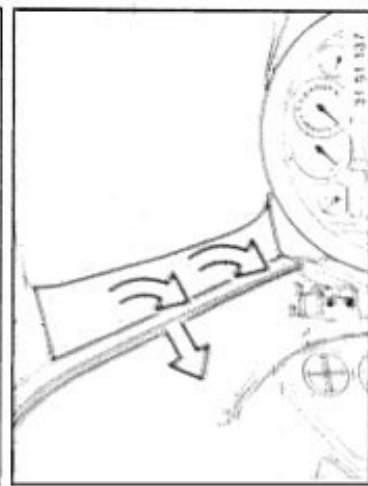
Installation:
Tightening torque*.



Lower the engine hood onto the side panel / fender guards or covers and pull forward.

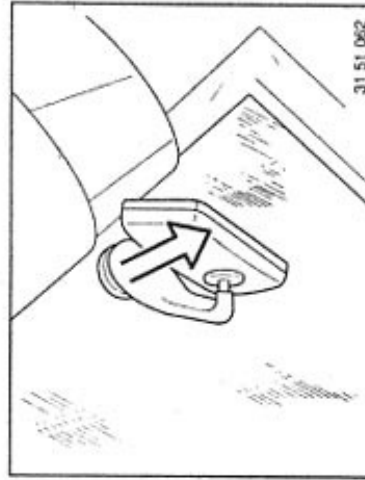
Remove wiper arms - refer to 61 61 071.

Unclip left and right plates upwards. Raise the engine hood.



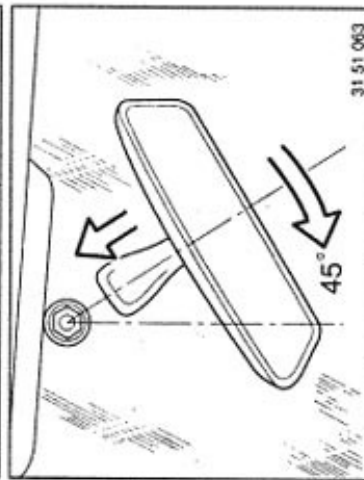
Unclip left and right plates.

Refer to Specifications



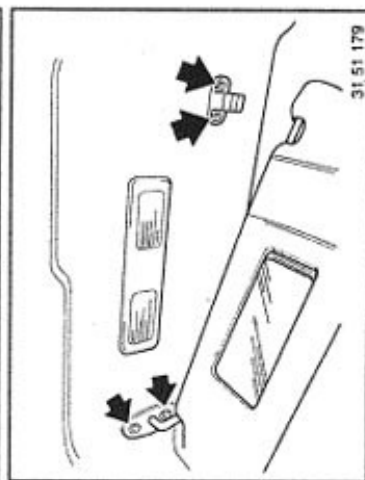
Pull mirror back off of the mirror base.

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

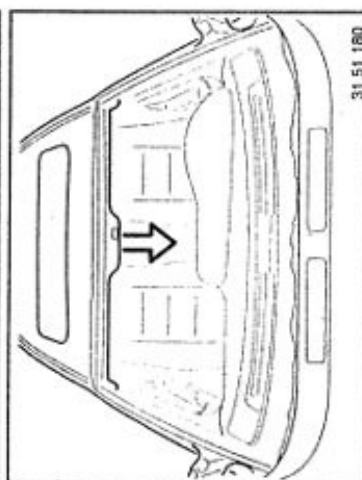


Installation:

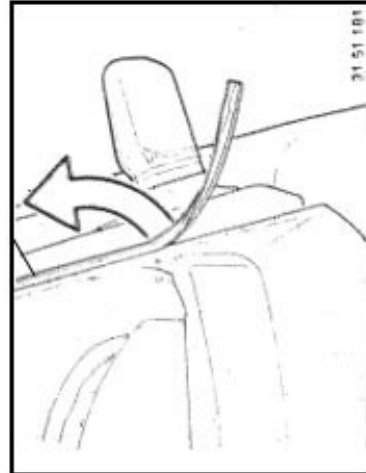
1. Mount mirror foot turned about 45° on the mirror base.
2. Turn mirror foot until it engages on the mirror base.



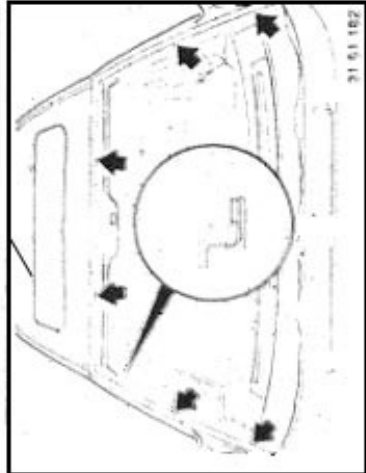
Unscrew screws.
Remove left and right sun visors and holders.
Disconnect plug.



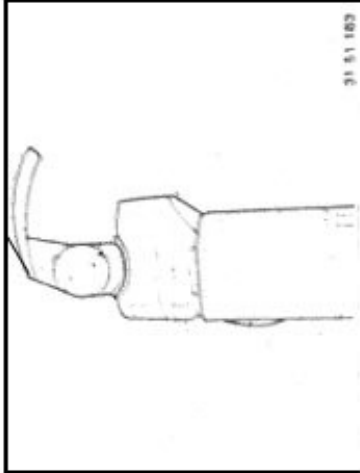
Lower front end of the roof liner slightly.



Pull seal out.

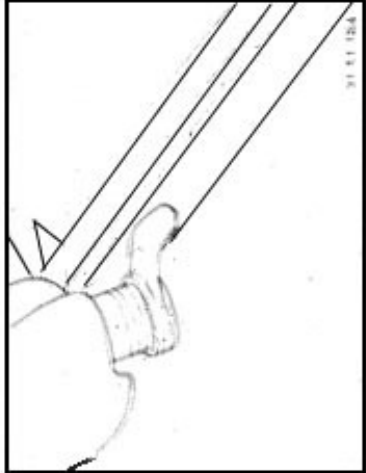


Paste two layers of cloth adhesive tape (e.g. Tesa) on the edges of the body opening.



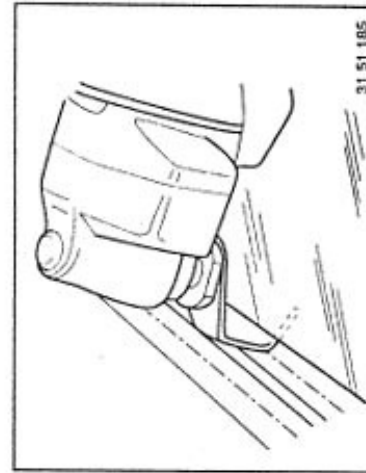
Mount long knife* (36 mm knife blade) on tool.

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

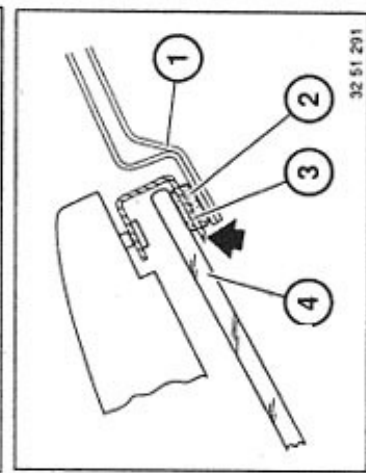


Insert knife* carefully between the body and windshield glass.

* Source of Supply: BMW Parts

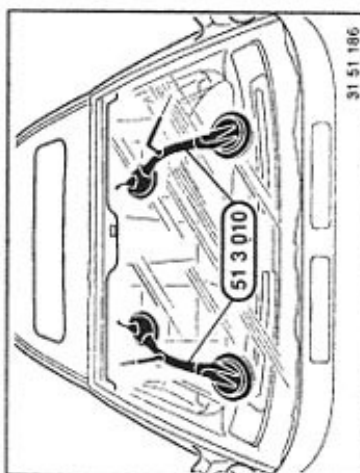


Guide web of knife* parallel to the windshield glass.

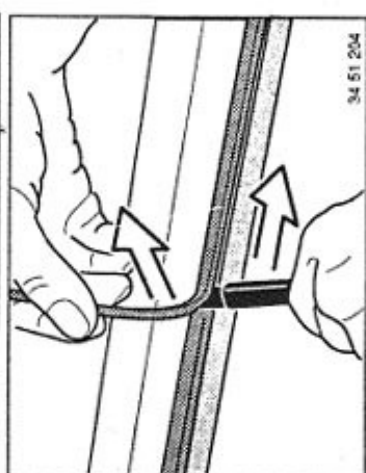


Cut through cement bead all around as close as possible to the windshield glass.

- 1 Body opening
- 2 Cement bead
- 3 Knife
- 4 Windshield



Lift windshield out using Special Tool 51 3 010.



Reduce thickness of cement remaining on the edges of the body opening to about 0.5 mm.
Cut off surplus cement carefully using an universal knife (sharp as a razor blade) to avoid damaging the paint finish in the body opening.

* Source of Supply: BMW Parts

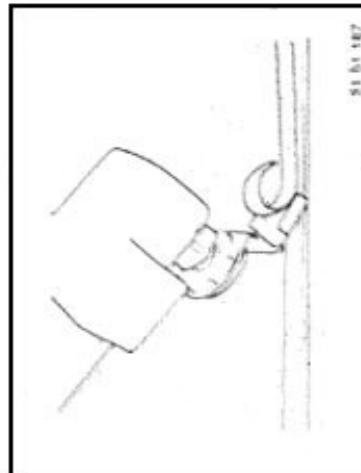
Important!

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

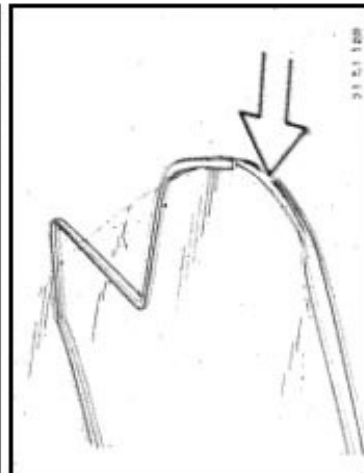
Remove remainders of cement, sand out scratches which are not in visible zones and touch up with BMW EP primer*.

Large-area damage must be ground off down to blank metal and then coated with BMW EP primer* (coat thickness = 30 ... 40 µm).

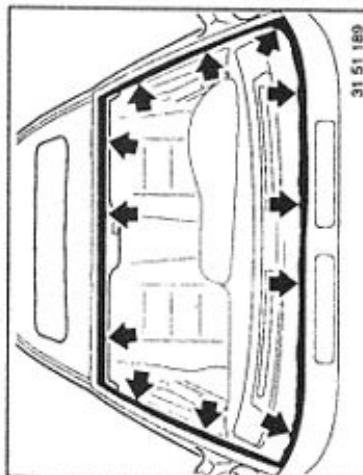
If complete paint build-up is necessary in a visible zone, cement must be removed from the cementing surface before applying a coat of paint.



When reusing the windshield glass, reduce the thickness of the cement remaining on the glass to 0.5 mm using a knife*.



Install seat on windshield glass and press firmly.



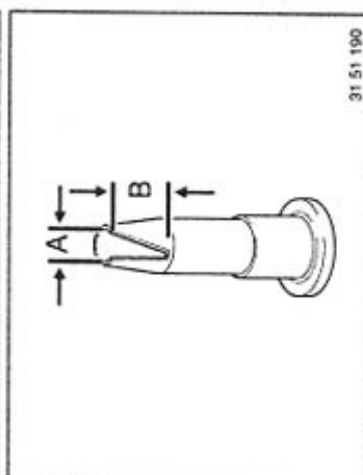
Important!

BMW EP primer* must be hardened.

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

Note:

Air drying time: about 10 minutes.



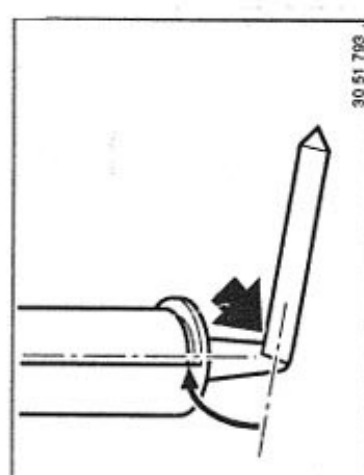
Cut nozzle to size.

Distance A = 7 ± 1 mm
Distance B = 13 ± 1 mm

Note:

Use a cartridge gun* (pneumatic or electric) to produce uniform cement beads.

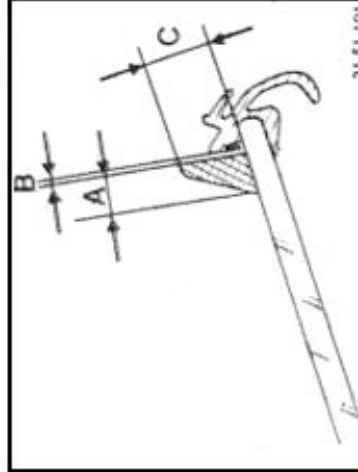
Note expiration date for application of cement!



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

* Source of Supply: BMW Parts

Source of Supply: BMW Parts

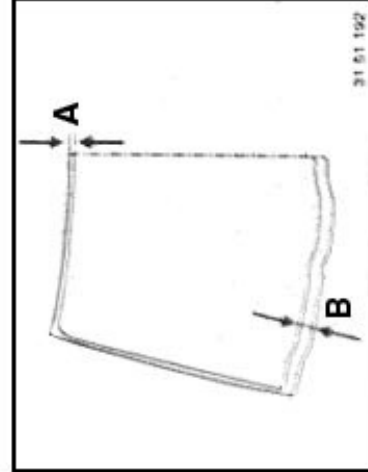


Shape of Cement Bead:

- Distance A = 7 ± 1 mm
- Distance B = 1 mm
- Distance C = 12 ± 2 mm

- A-pillars: 9 mm
- Roof joint: 11 mm
- Cowl panel at bottom: 12 ± 1 mm

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

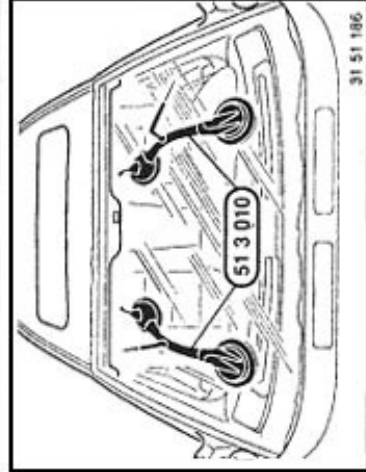


(A) is the distance of the cement bead to the seal.

Distance (A) = 1 mm

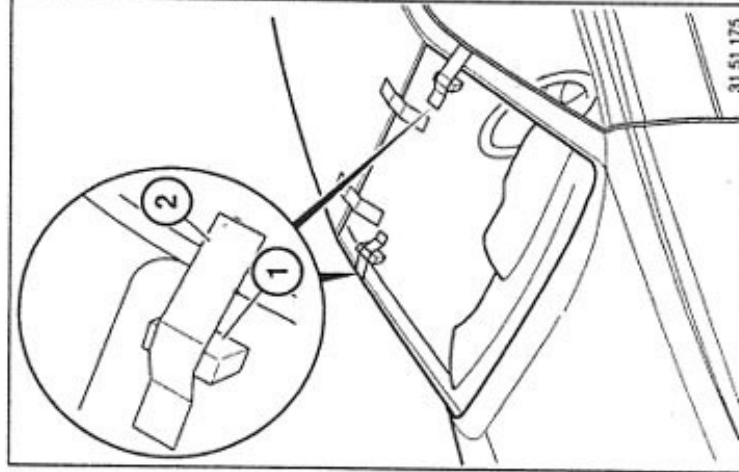
(B) is the distance of the cement bead to the edge of the windshield at the bottom of the cowl pane.

Distance (B) = 20 mm



Install windshield carefully using Special Tool 51 3 010 and press on.
Push windshield upwards and hold with cloth adhesive tape (e.g. Tesa).

Length: 300 mm
Width: 50 mm



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

Size of wood blocks: approx. 20 x 40 x 40 mm.

Important!

Remove dirt from residue cement with benzine before it has hardened. Do not press the windshield out again for this purpose.

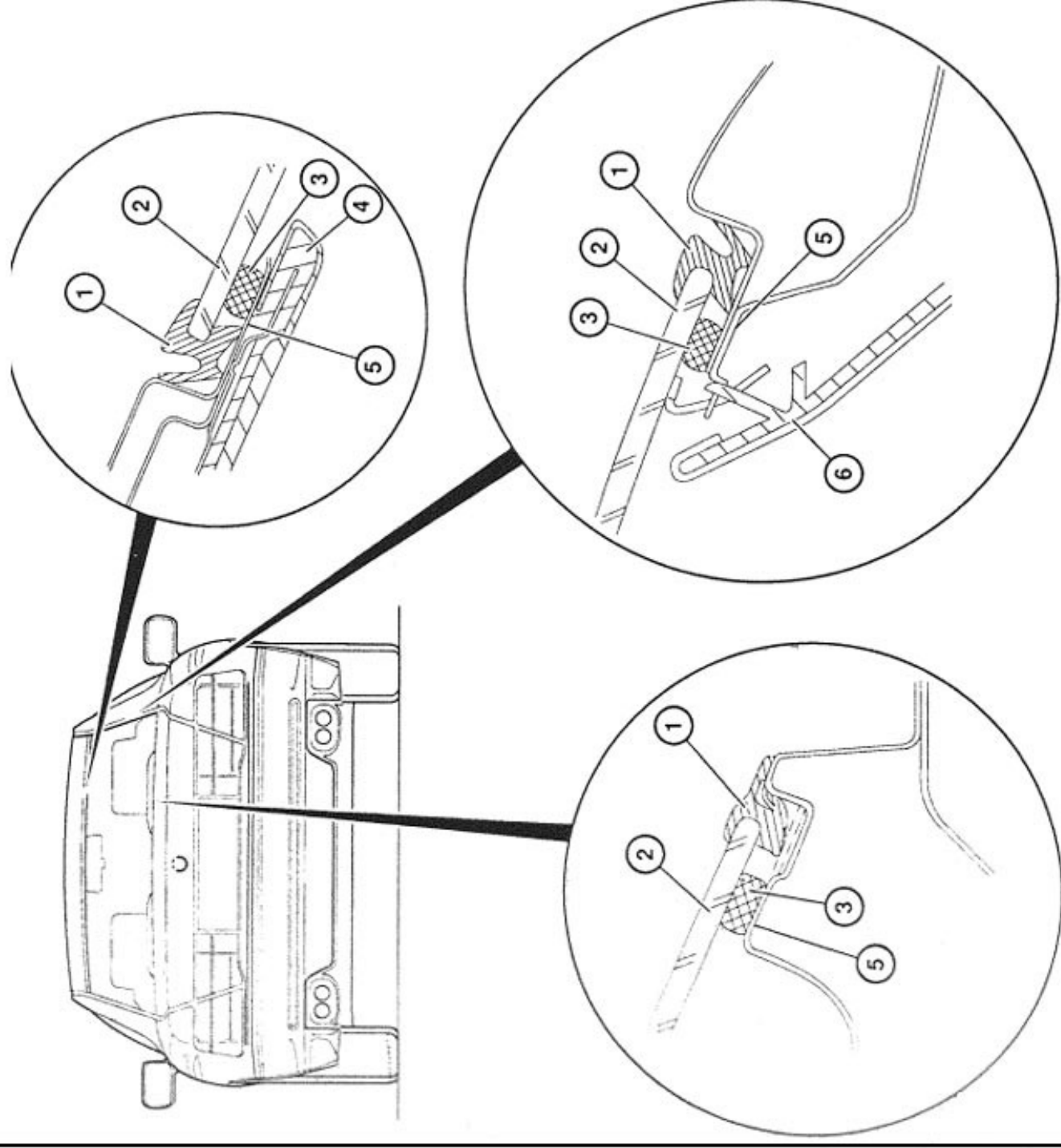
Note:

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.

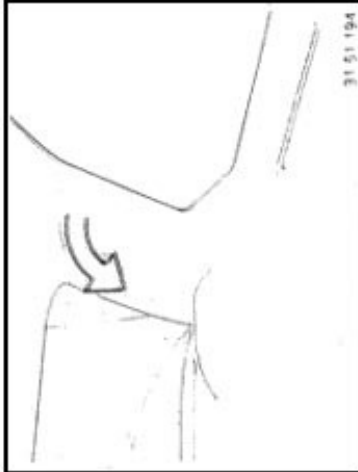
51 31 ... REAR WINDOW CEMENTING SURVEY

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

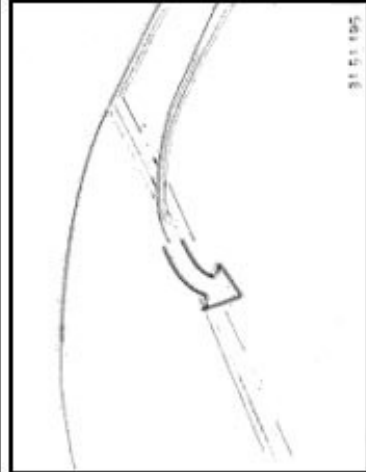


51 31 200 REMOVING AND INSTALLING
REAR WINDOW

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



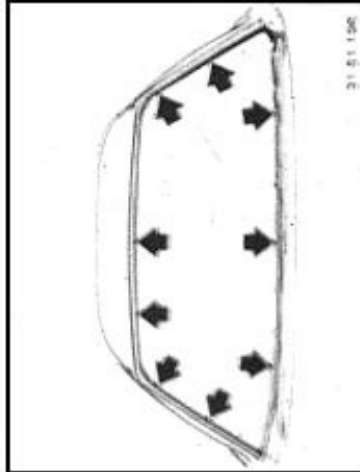
31 51 194



31 51 195

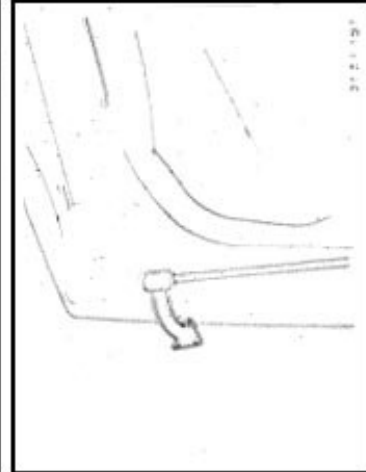
Pull seal out.

Paste a double layer of cloth adhesive tape
(e.g. Tesa) on the edges of the body
opening.



31 51 196

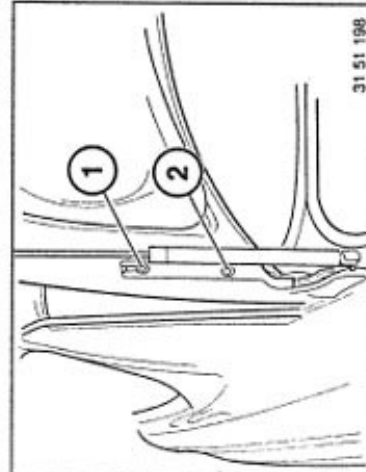
Loosen retainers and disconnect left and
right gas pressure props.



31 51 197

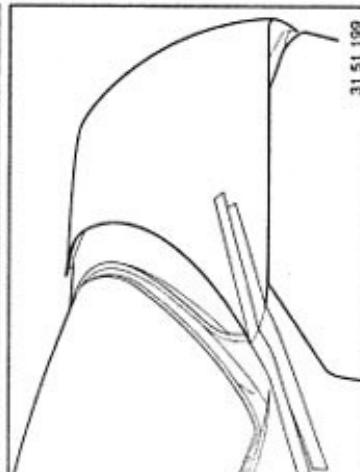
Cover top of side panels with side panel/
fender guards, blankets or something
similar.

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



31 51 198

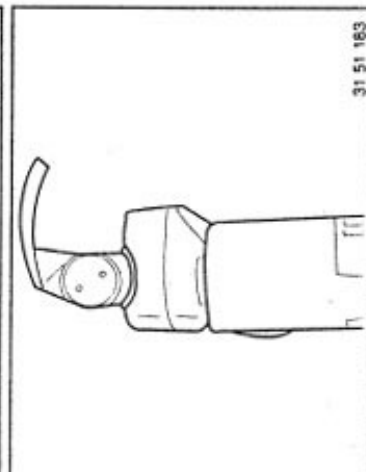
Pull trunk lid back, place on side panel/
fender guards and hold with cloth adhesive
tape.



31 51 199

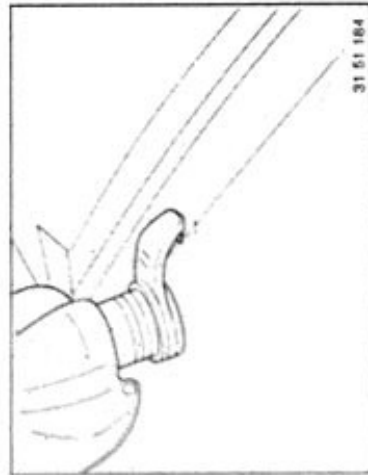
Mount a long knife* (36 mm long blade) on
tool.

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



31 51 183

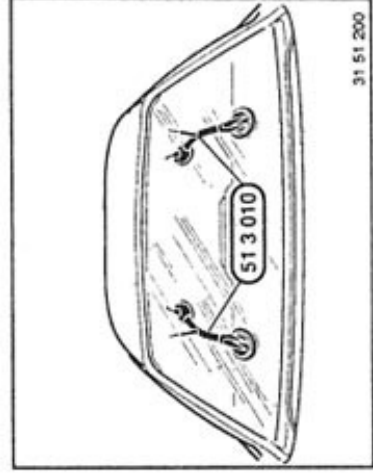
* Source of Supply: BMW Parts



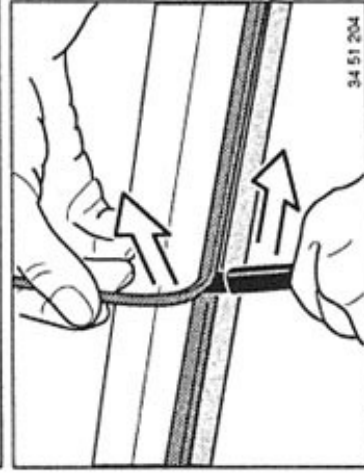
Insert knife* carefully between the body and rear window glass.

Note:

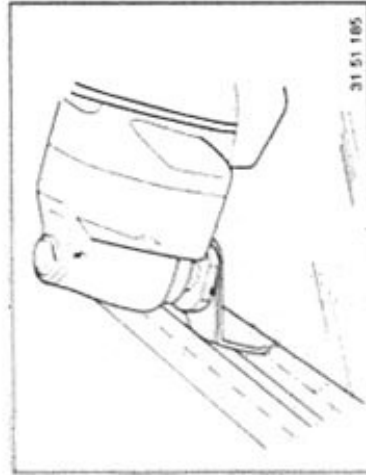
Ensure that roof liner or wires for the rear window defogger and window antenna are not damaged while cutting the rear window out.



Lift rear window out using Special Tool 51 3 010.

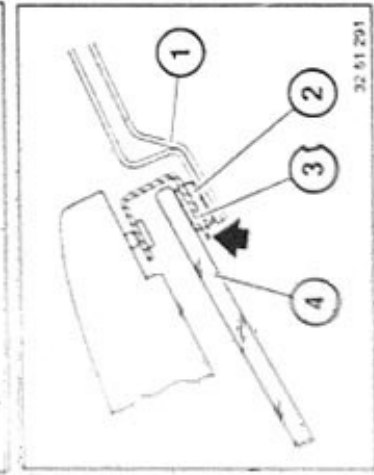


Guide web of knife* parallel to the rear window.



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

- 1 Body opening
- 2 Cement bead
- 3 Knife
- 4 Rear window glass



Reduce the thickness of cement remaining on edges of the body opening to approx. 0.5 mm.
Cut off surplus cement carefully using an universal knife (sharp as a razor blade) to avoid damaging the paint finish in the body opening.

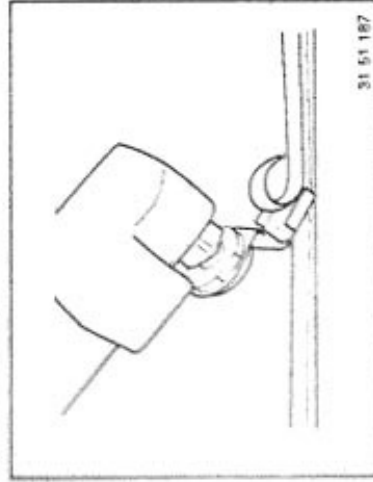
Important!

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

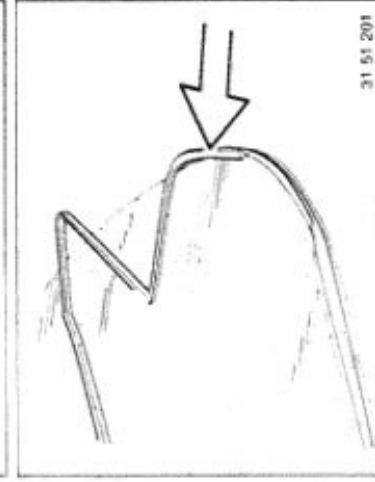
Remove remainders of cement, sand out scratches which are not in visible zones and touch up with BMW EP primer*.

Large-area damage must be ground off down to blank metal and then coated with BMW EP primer* (coat thickness = 30 ... 40 µm).

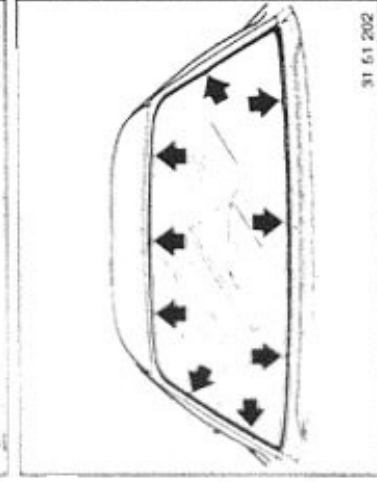
If complete paint build-up is necessary in a visible zone, cement must be removed from the cementing surface before applying a coat of paint.



When reusing the rear window glass, reduce the thickness of the cement remaining on the glass to 0.5 mm using a knife*.



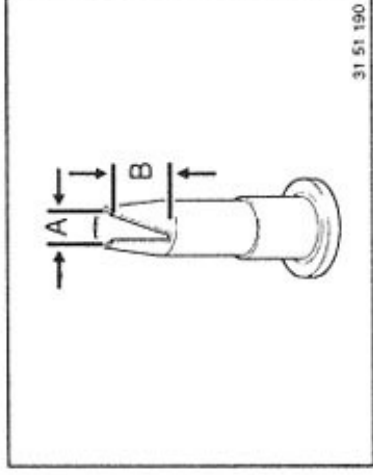
Install seal on rear window glass and press firmly.



Important!
BMW EP primer* must be hardened.

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

Note:
Air drying time: about 10 minutes.

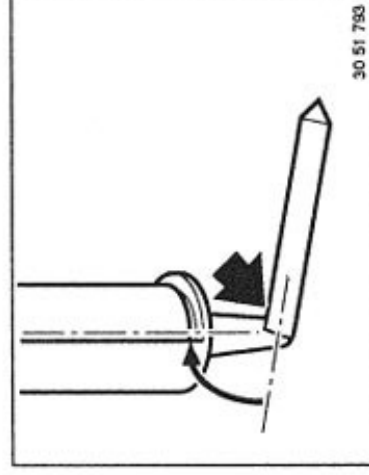


Cut nozzle to size.

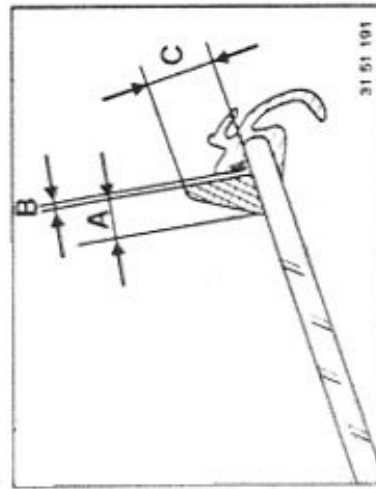
Distance A = 7 ± 1 mm
Distance B = 13 ± 1 mm

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

Note: expiration date for application of cement!



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



Shape of Cement Bead:

Distance A = 7 ± 1 mm
 Distance B = 1 mm (distance to seal)
 Distance C = 12 ± 1 mm

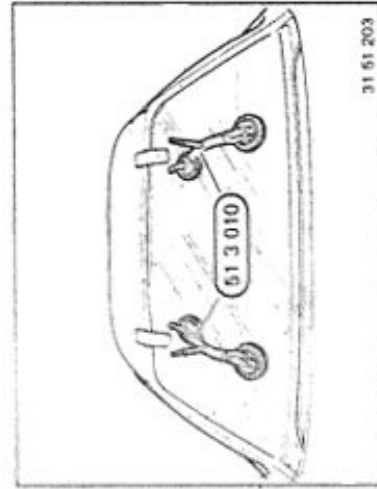
A-pillars: 14 mm
 Roof joint: 11 mm
 Cowl panel at bottom: 11 mm

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

Important!
 Remove dirt from residue cement with benzine before it has hardened. Do not press the rear window out 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.
 Align trunk lid - refer to 41 62 014.



Install rear window carefully using Special Tool 51 3 010 and press on.
 Push rear window upwards and hold with cloth adhesive tape (e.g. Tesa).

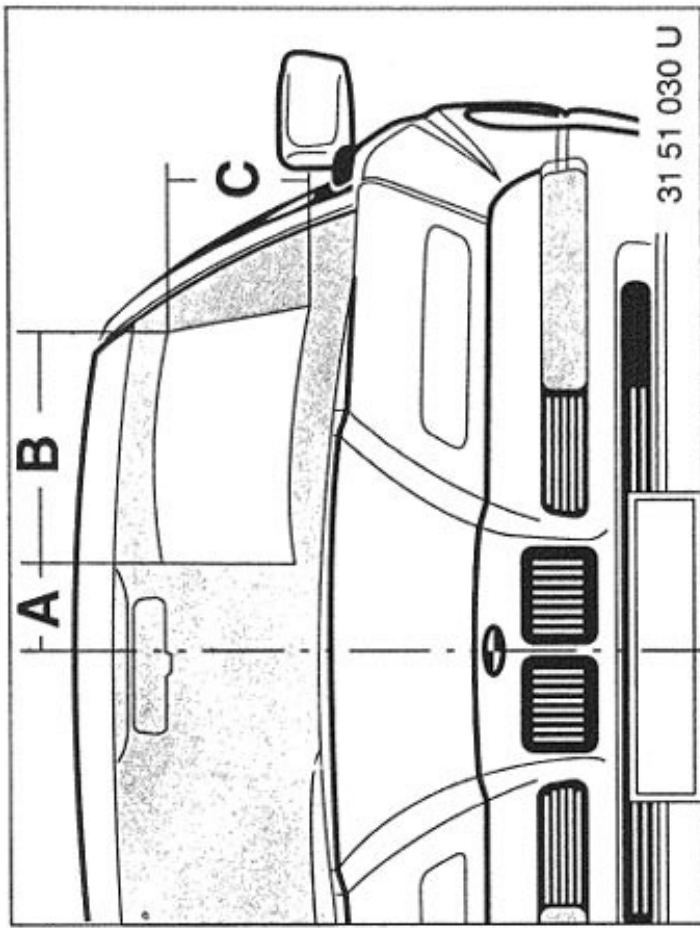
Length: 300 mm
 Width: 50 mm

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.

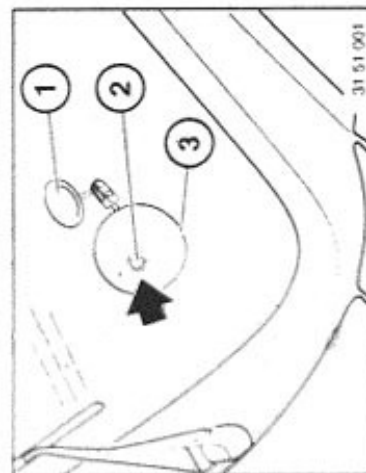
Important!

1. Only damage on the outside surface of the windshield may be repaired. Inside window surface and the plastic sheet between inside and outside glass panes 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.
4. Cracks extending radially from the point where the stone had hit must not be longer than 50 mm. They must not end in the rubber seal 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 zone must be clear, transparent and without distortion as well as possible.
6. Always conform with instructions supplied by the manufacturers.



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

31 51 030 U



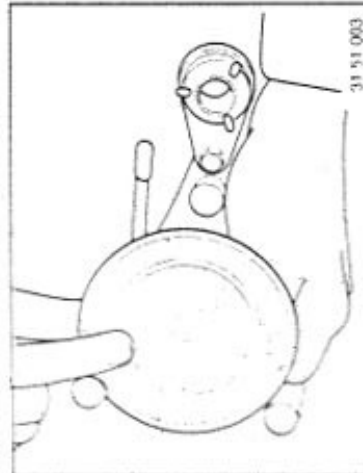
Apply a thin coat of gel on suction cup (1) of the concave mirror and position the suction cup on inside of the windshield in such a manner that the impact spot (2) can be seen from the outside in concave mirror (3).



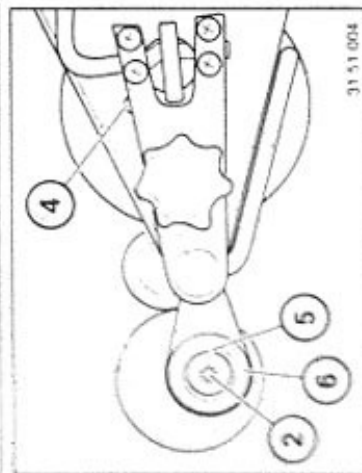
Remove all glass splitters from the impact spot from the outside using a scribe so that a rough surface is produced.

Important!

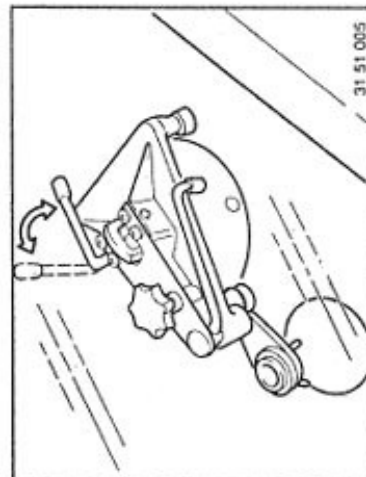
Don't increase the size of the impact spot hole.



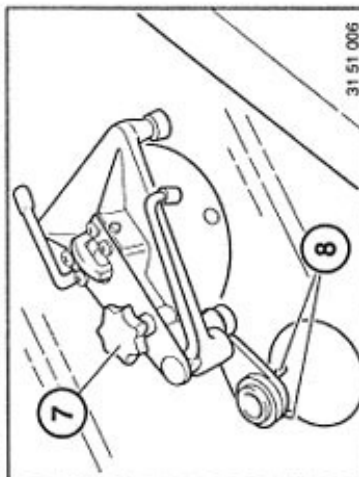
Apply a thin coat of gel on the suction cup of the tool holder.



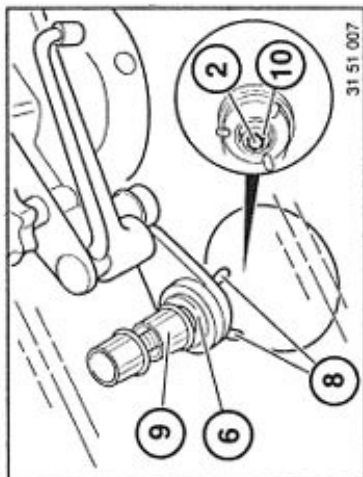
Position tool holder (4) on outside of the window in such a manner that opening (6) of head (2) is precisely over the impact spot (2).



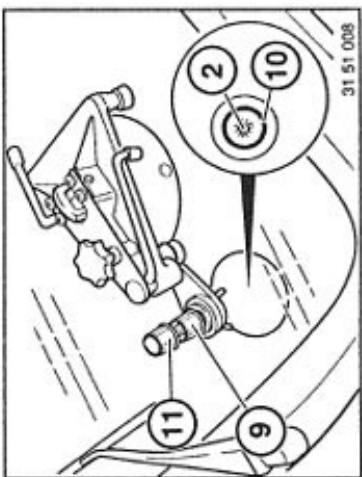
Move locking lever forward and back again.



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



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

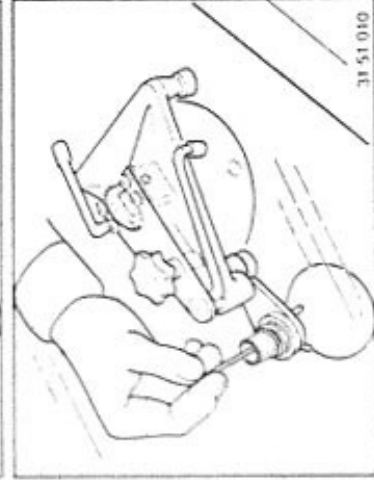


Screw injector (11) out of cylinder (9). Look into cylinder (9) from above and check whether rubber seal (10) is positioned centrally over impact spot (2). Reposition, if necessary.

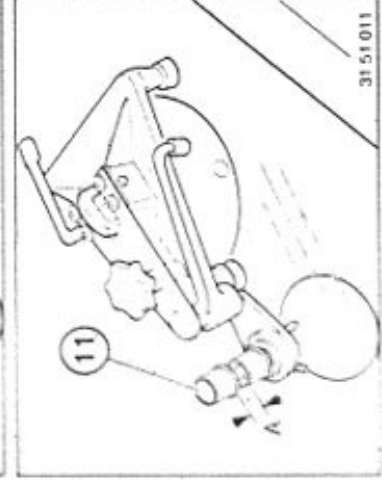


Open bottle of resin and pour about 1/3rd of its contents into the cylinder.

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



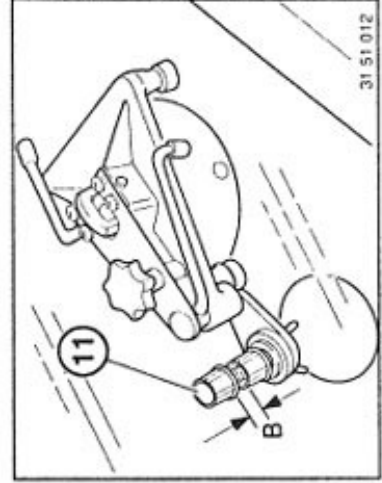
Stir resin poured into the cylinder with a wooden rod to remove air bubbles.



Screw injector (11) into cylinder up to distance A (slight resistance noticed) and let everything rest as it is about 5 minutes.

Distance A = 5 mm.

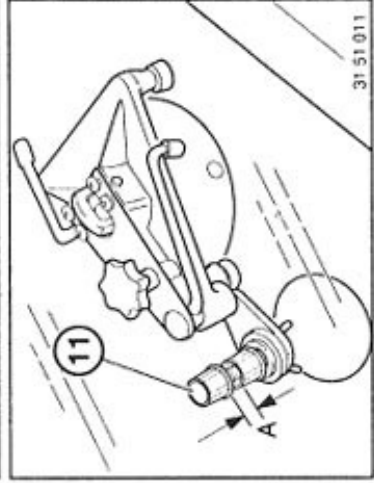
Note:
Pressure in this position will be about 16 bar. When observing the impact spot, it will be recognized that air in the impact spot disappears slowly (recognized as black shade).



Unscrew injector (11) quickly to distance B.

Distance B = 12 mm.

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

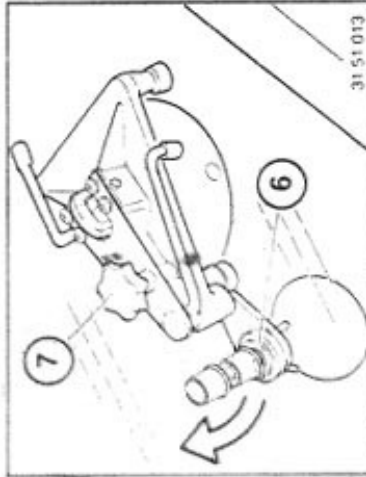


Screw injector (11) into cylinder back to distance A (slight resistance noticed) and again let everything rest as it is several minutes.

Distance A = 5 mm.

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.

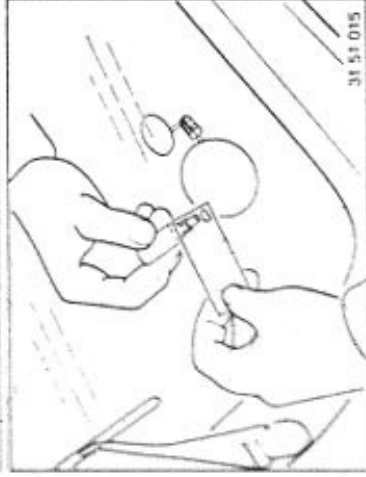
Note:
If this has not yet removed all of the air, heat the inside of the window with a lighter several seconds. The flame should be held as close as possible to the window, but not touch it.



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 knurled head screw (7) in as far as before.
Repeat the steps as from the pressure / vacuum procedure.

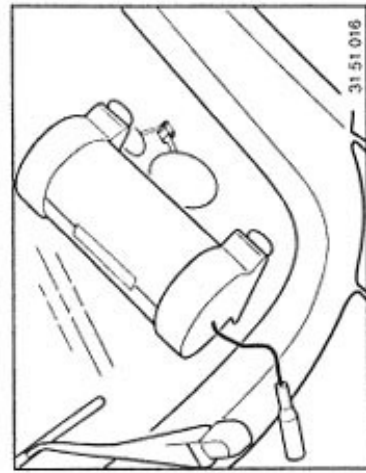


Swing locking lever forward and remove tool holder from the windshield.



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

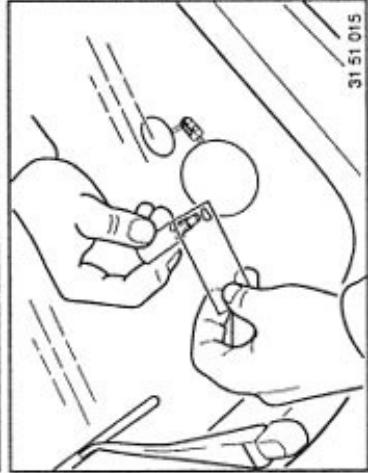
Note:
Only place clear plastic sheet over the impact spot – don't press it on.



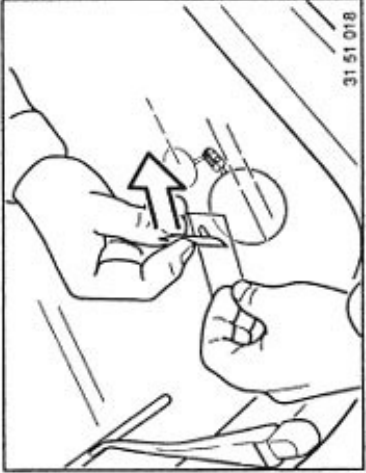
Apply ultraviolet lamp over the repaired spot and press firmly (suction cups). Connect ultraviolet lamp and let resin harden about 10 minutes.



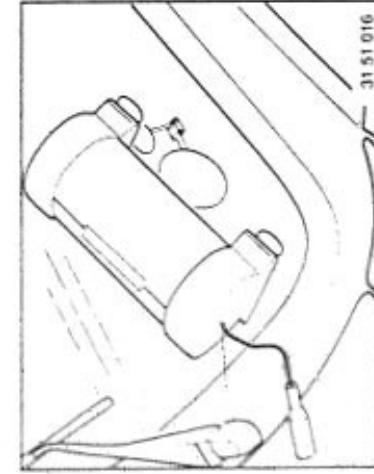
Remove ultraviolet lamp, pull off clear plastic sheet and scrape off excessive resin with a razor blade.



Let another drop of resin drip onto 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 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 over 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

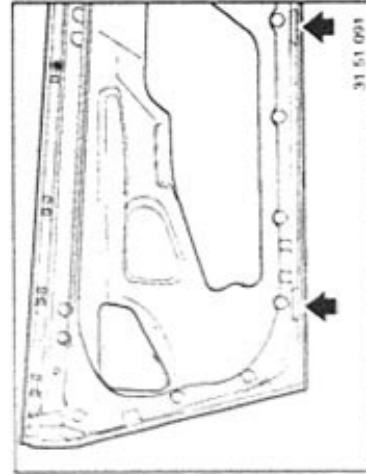
Remove door window – see 51 32 170.
Remove power window regulator – see
51 33 000.

Installation:

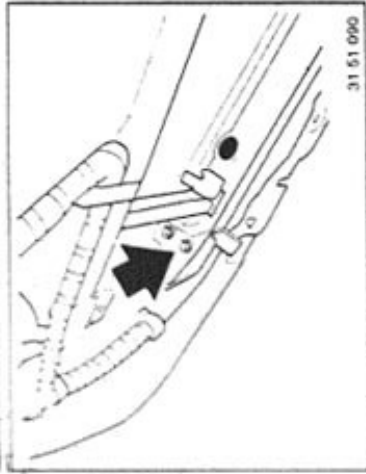
Install door window.
Adjust door window – see 51 32 154.

Unscrew screws and take off window
guide rails.

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



31 51 091

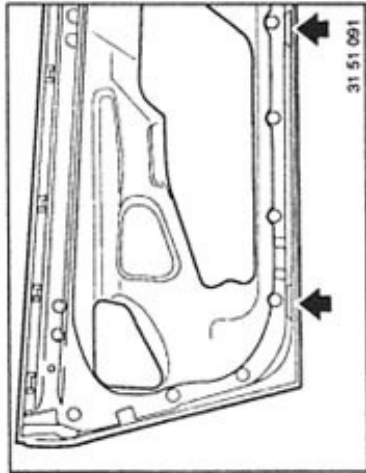


31 51 090

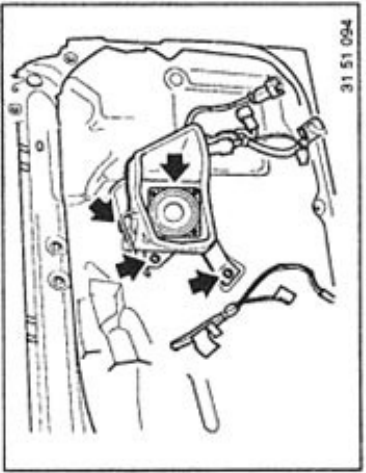
51 32 154 ADJUSTING FRONT DOOR WINDOW

Requirements:

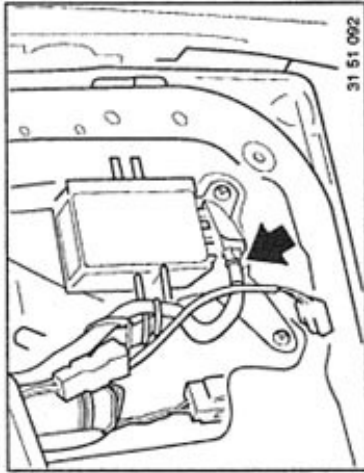
Door aligned correctly – see Group 41.
Seals in good condition and mounted
correctly.



31 51 091



31 51 094

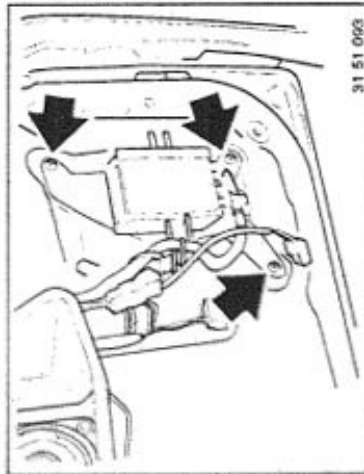


31 51 092

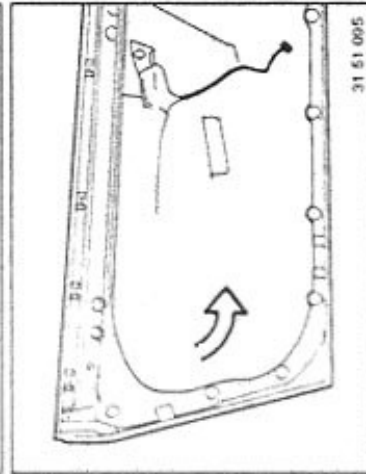
Note:
If only the submerged depth of the
door window has to be corrected, it is
not necessary to remove the door trim
panel.
Lower door window, remove rubber
plugs from underside of door and ad-
just the height stops through the open
holes.

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

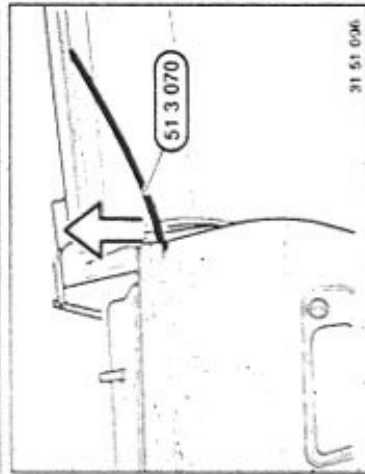
Disconnect ratchet strap and plug.



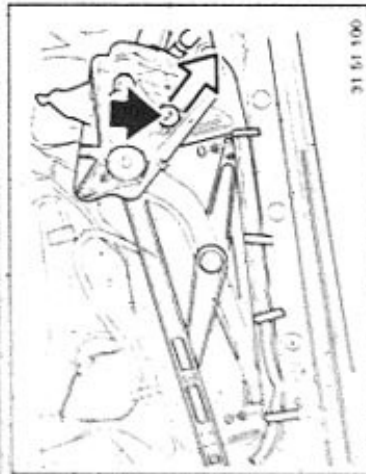
Unscrew screws and remove door module.



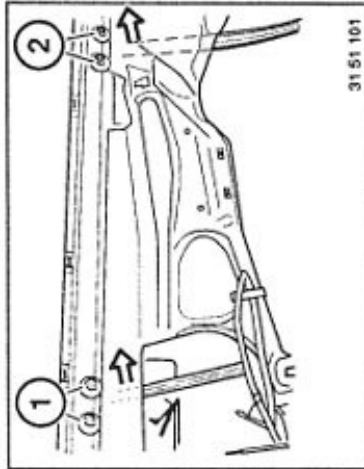
Pull cover off.



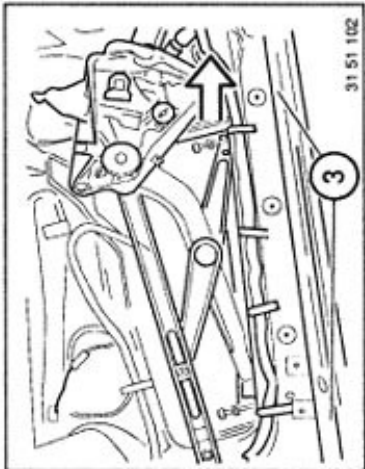
Lift window recess strip from above using Special Tool 51 3 070.



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



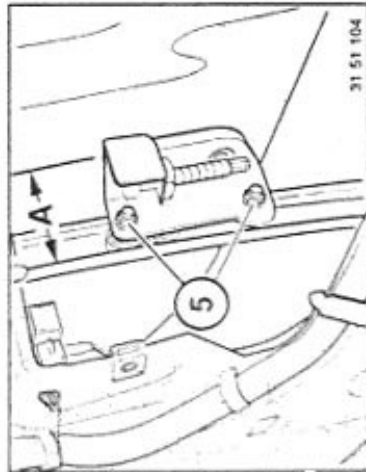
Raise the door window.
Loosen screws (1 and 2), press door window forward and place it on the door window seal.
Tighten screws (1 and 2).



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



Lower the door window.
Screw height stops (4) in up 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.



Raise the door window approx. 330 mm and adjust distance (B).

Distance B = 6 ± 1 mm.

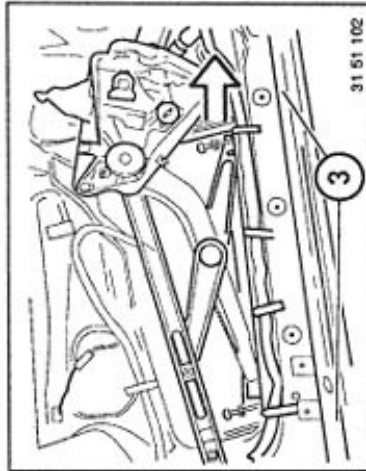
Note:

Distance (A) must not be changed.

Tighten screws (5).

Installation:

Tightening torque*.



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

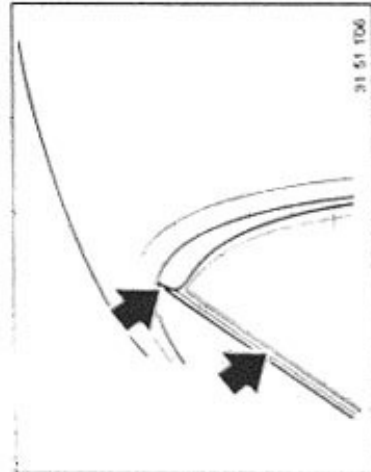
Connect the door module.

Shut the door.

Lower the door window, raise it completely and hold switch pressed about 3 seconds.

Initialization 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.



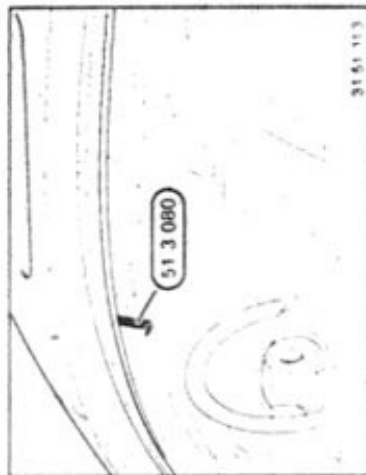
Mount window recess strip.

Lower rear side window completely.

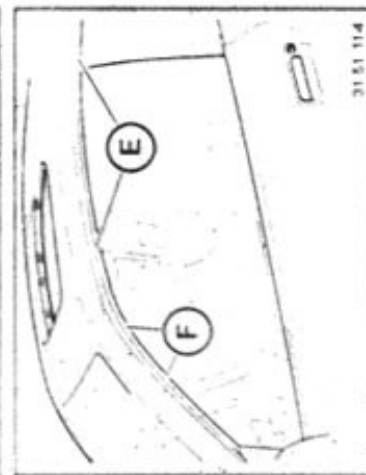
Shut the door and raise the front door window so far that the glass pane is shortly before the seal.

Outside surfaces of the seal and door window glass must be flush.

- Refer to Specifications



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



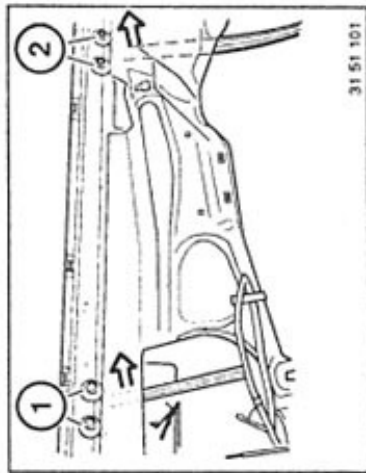
Raise the door window and check submersion depth (E and F).

Submerged depth $E = 5 \pm 1$ mm
Submerged depth $F = 2 \pm 1$ mm

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

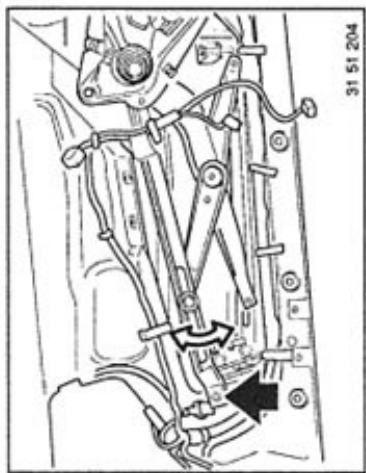


Note:
If the submerged depth does not have to be corrected, make a mark on the outside of the door window glass at the height of the window recess strip.
Open the door and turn striker in striker direction.
Run the door window to the marked position and unscrew height stops (4) to stop position plus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



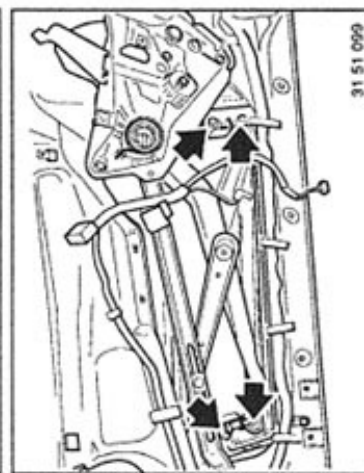
Correcting Submerged Depth (F):
Loosen screws (1 and 2) at top of the window guide rails.
Set the side window forward or back.
Tighten screws (2).
Lower and raise the window.
Tighten screws (1).

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



Correcting Submerged Depth Uniformly:

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



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

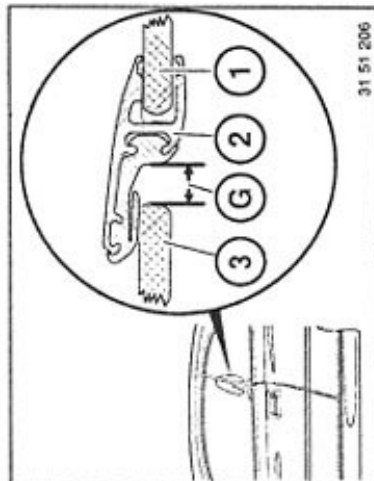
Installation:
Tightening torque*.

* Refer to Specifications



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

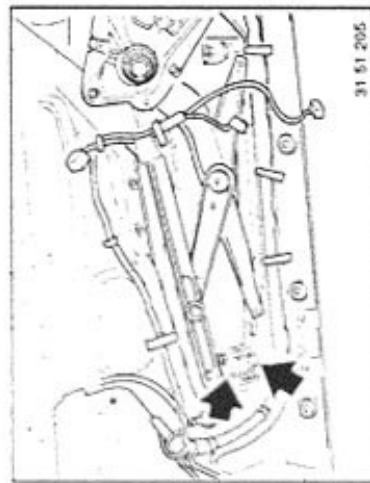
Installation:
Tightening torque*.



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

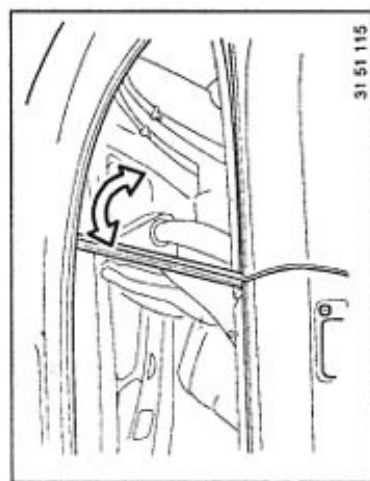
1 = Rear side window
2 = Rubber lip
3 = Front door window

Distance G = 5 mm.



Note:
If the door window glass falls forward or back while lowering or raising it, loosen the screws (raise the door window), press rear roller guide up against the stop into the guide rail and tighten screws.

Installation:
Tightening torque*.

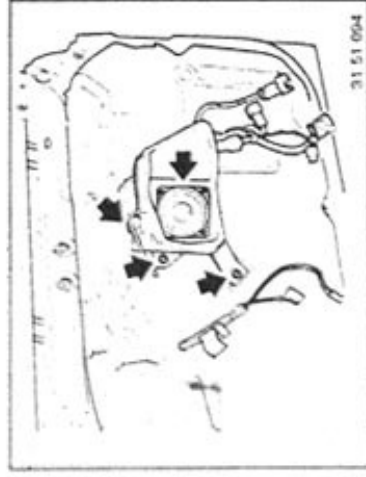


Lower the front door window about 25 mm.
Lower and raise the rear side window.
In so doing check overlapping between front door window and rear side window.
If necessary, preload the rear side window additionally - refer to 51 37 154.

Reassemble door.

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

Remove door trim panel - refer to
51 41 000.
Unscrew screws.
Disconnect plug.
Remove loudspeaker.



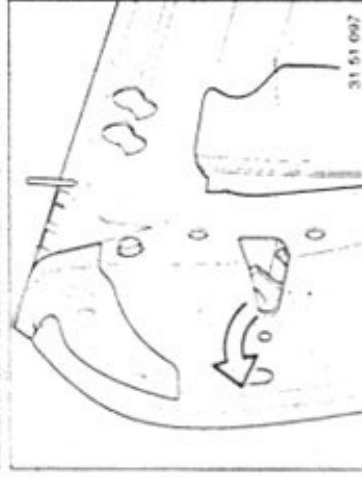
Loosen strap and disconnect plug.

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

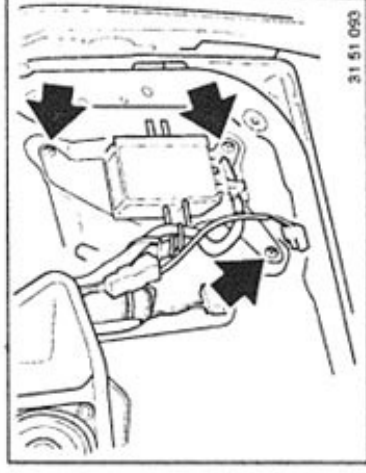
- the door window moves down several millimeters when lifting the door handle slightly or operating the inside door opener slightly and



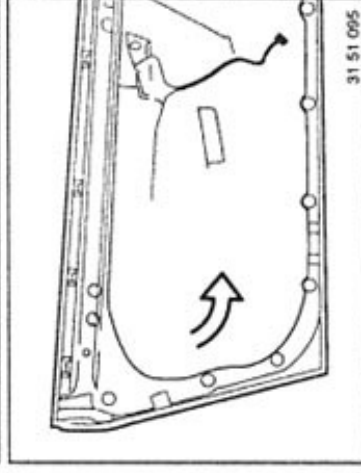
- the door window moves up completely several seconds after releasing the door handle.



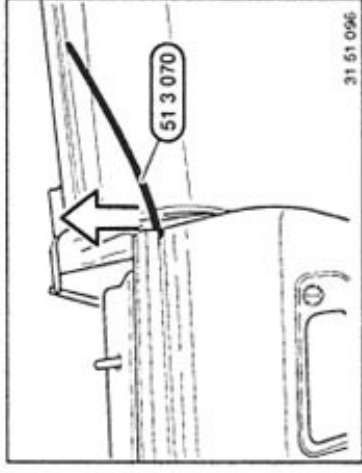
Unlock door.
Check and, if necessary, correct the door
window adjustment - refer to 51 32 154.



Pull cover off.



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

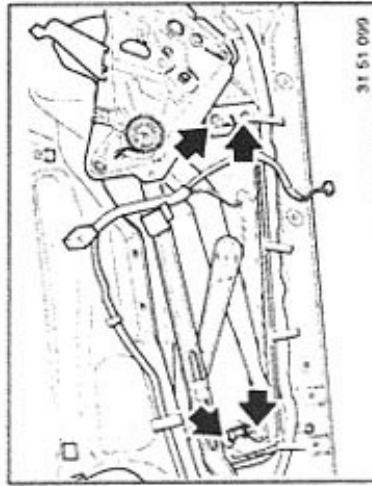


Lower the door window.

Caution!
Disconnect the plug on the power window
motor in the interest of safety (danger of
injury).



Unscrew screws and remove door module.



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

Installation:

Insert door window and install screws.
Press roller guides up into the guide rails as far as stops and tighten the screws.
Tightening torque*.

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

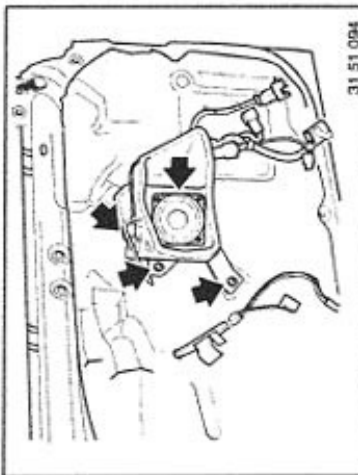
Remove door trim panel - refer to

51 41 000.

Unscrew screws.

Disconnect plug.

Remove loudspeaker.



31 51 094

Loosen strap and disconnect plug.

Installation:

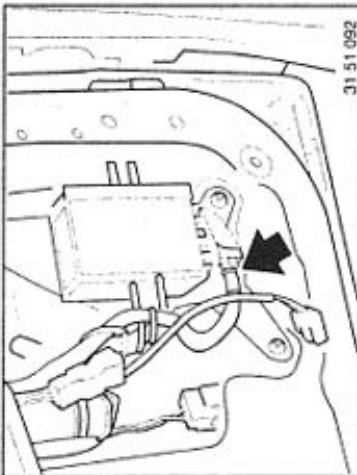
Connect door module and power window switch.

Turn striker to "door closed" position.

Raise the 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

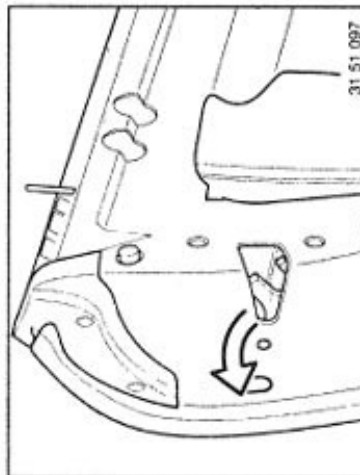


31 51 092

- the door window moves up completely several seconds after releasing the door handle.

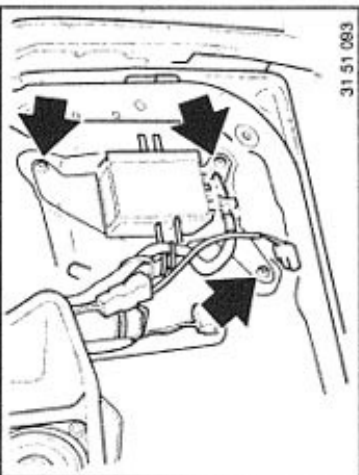
Unlock door.

Check and, if necessary, correct the door window adjustment - refer to 51 32 154.



31 51 097

Unscrew screws and remove door module.

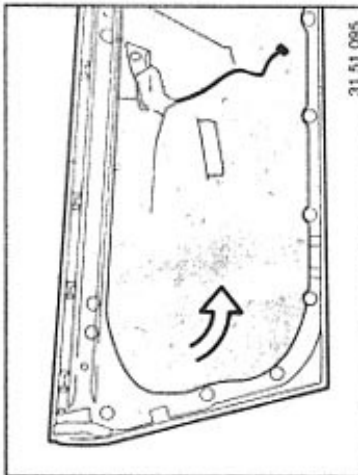


31 51 093

Pull cover off.

Caution!

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



31 51 095

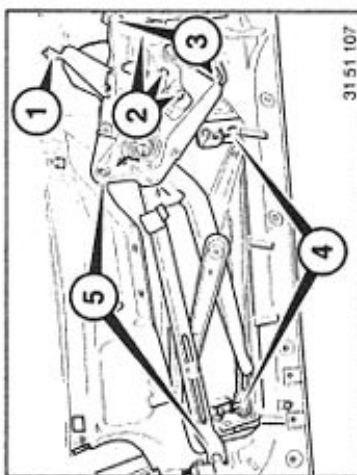
Unscrew screw (1) and remove cover.

Unscrew screws (3 ... 5).

Remove window regulator.

Installation:

Tightening torque*.



31 51 107

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 the window down by hand and unscrew screws (4).

Caution!

Spring has great force - danger of clamping.

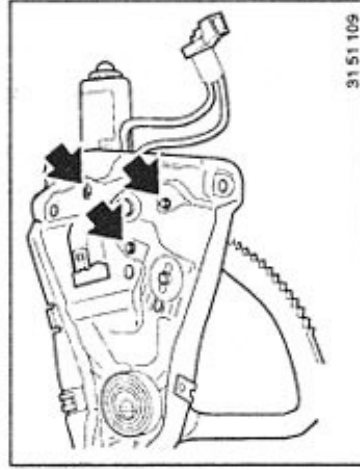
Note:

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

* Refer to Specifications

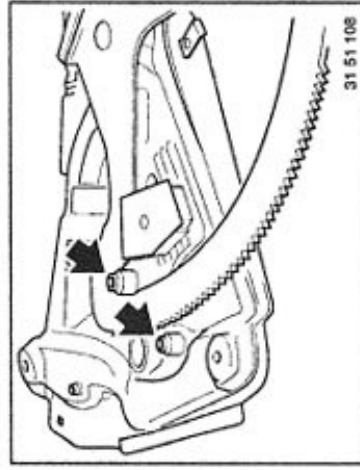
51 33 020 REMOVING AND INSTALLING MOTOR FOR POWER WINDOW REGULATOR IN FRONT DOOR

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.

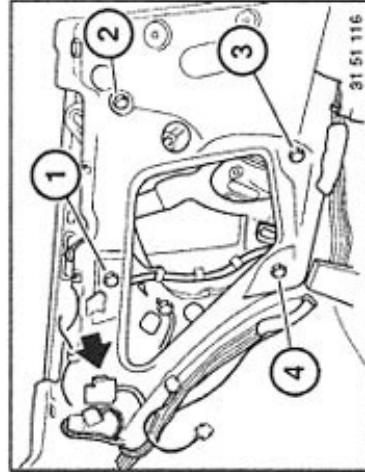
**51 37 000 REMOVING AND INSTALLING
LEFT OR RIGHT REAR POWER
WINDOW REGULATOR**

Installation:

Adjust side window - refer to 51 37 154.

Remove rear side window - refer to
51 37 171.

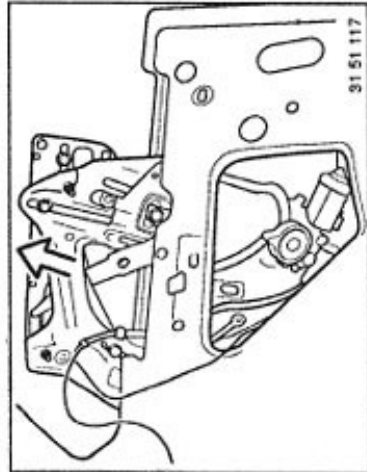
Run window regulator up completely.



Disconnect plug.
Unscrew nuts (1 ... 3) and screw (4).
If necessary, loosen and tighten nuts and
bolts with help of Special Tool 41 6 100.

Press window regulator towards outside
and screw bolts (1 and 2) in completely.

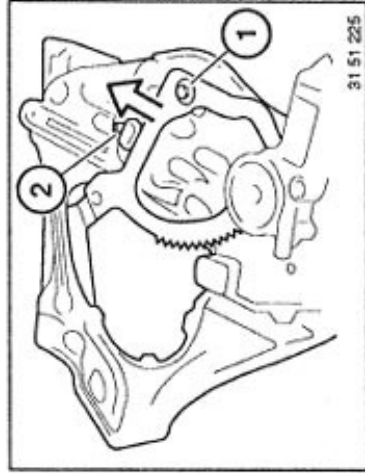
Installation:
Screw bolt (3) in as far as stop in the
window regulator.



Lift window regulator out from above.

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

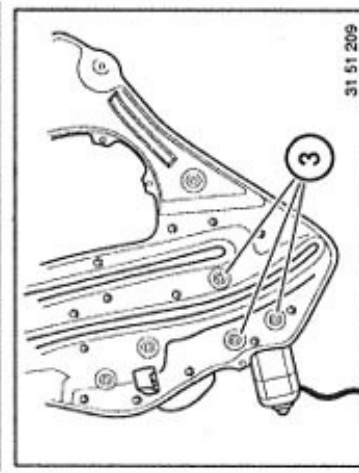
Remove rear power window regulator -
refer to 51 37 000.



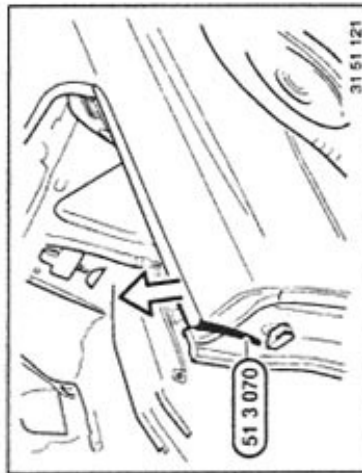
Unscrew screws (1 and 2).
Disengage toothed element upwards off of
the power window motor.

Installation:
Tightening torque*.

Turn power window regulator around, un-
screw screws (3) and remove motor.

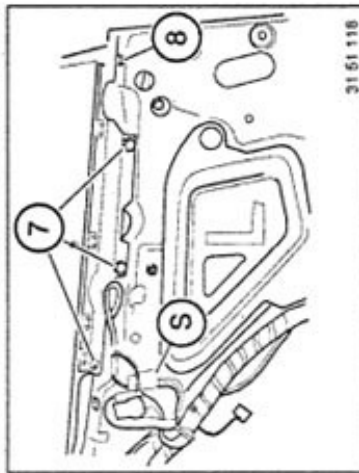


• Refer to Specifications

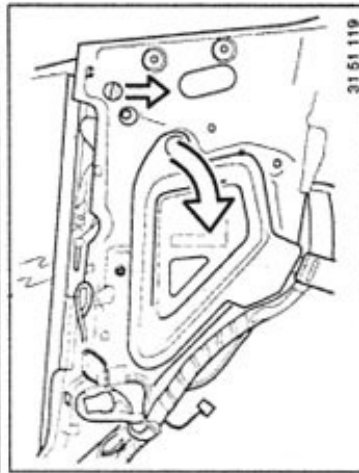


51 37 154 ADJUSTING LEFT OR RIGHT REAR SIDE WINDOW (WITH WINDOW REGULATOR)

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.



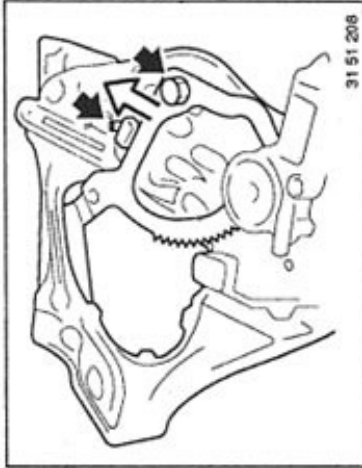
Unscrew screws (7).
Loosen stop screw (8), push back and lift off connecting bracket.
S = Plug for power window motor



Pull off covers.



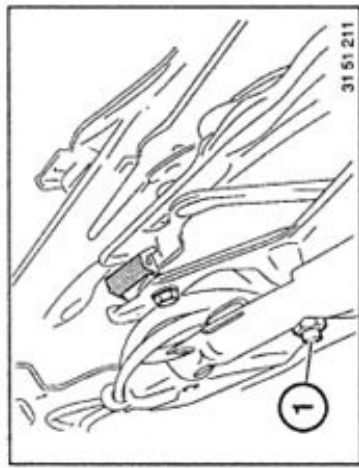
Loosen screw and push back main stop maximum distance.



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:

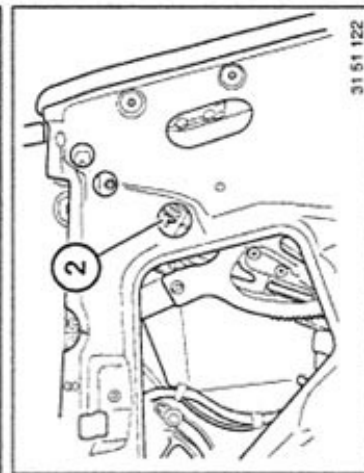
Height of hook is adjusted later in a final step.

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



31 51 212

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



31 51 122

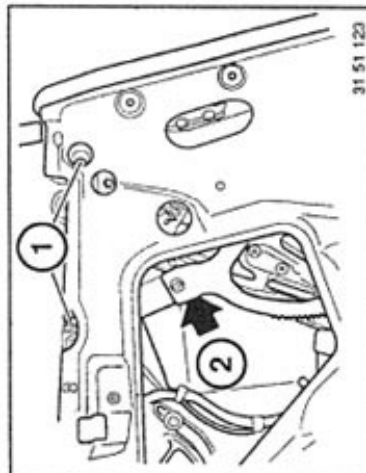
Correcting:

Caution!

Disconnect the power window motor plug 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).

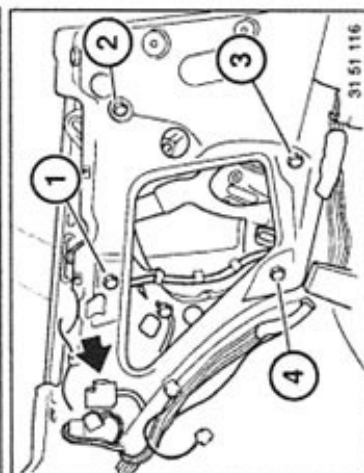
If applicable, connect plug on the power window motor and raise the side window completely.



31 51 123

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

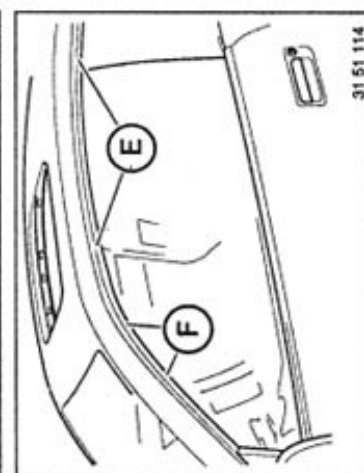
Installation:
Tightening torque*.



31 51 116

Correcting Distance (G):
Loosen nuts (1 ... 3) and screw (4).
Move the side window and window regulator towards front or rear.
Tighten nuts (1 ... 3) and screw (4).

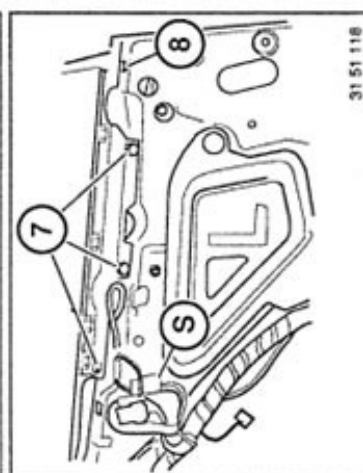
Installation:
Tightening torque*.



31 51 114

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

Submerged depth $E = 5 \pm 1$ mm.

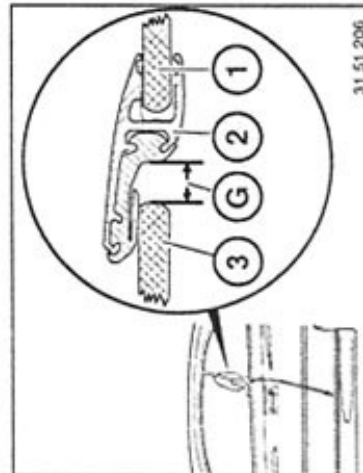


31 51 118

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

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

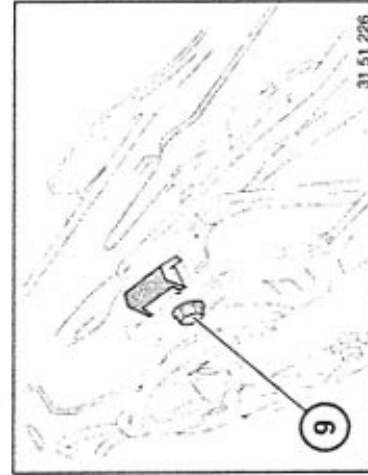
Distance $G = 6$ mm.



31 51 206

Correct on stop screw (8).

* Refer to Specifications

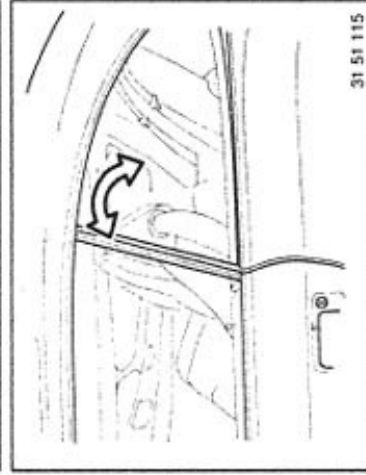


Loosen screw (9).
Press hook down onto the stop and tighten adjusting screw (9).



Loosen screw (2) and press main stop forward onto the stop.
Tighten screw (2).

Installation:
Tightening torque*.

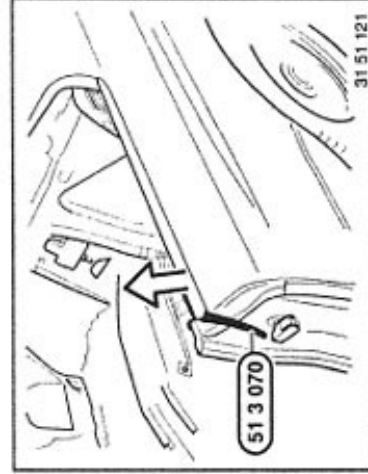


Lower the front door window about 25 mm.
Lower and raise the rear side window and check overlapping of the front door window and rear side window.
If applicable, preload the rear side window further.

Note:

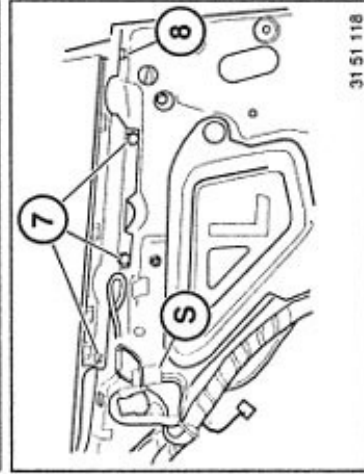
The rear side window must compensate all tolerances (glass cutting, body tolerances, etc.).
Consequently in some cases it might be necessary to deviate from the specified adjusting values.

• Refer to Specifications



51 37 171 REPLACING LEFT OR RIGHT REAR SIDE WINDOW

Remove rear seat - refer to 52 20 100.
Remove rear side trim panel - refer to 51 43 000.
Lift window recess strip off from above using Special Tool 51 3 070.



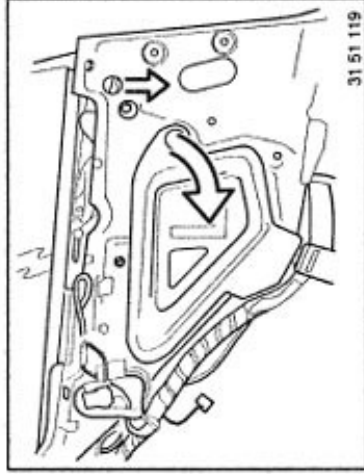
Unscrew screws (7).
Loosen screw (8).
Push back and lift off connecting bracket.

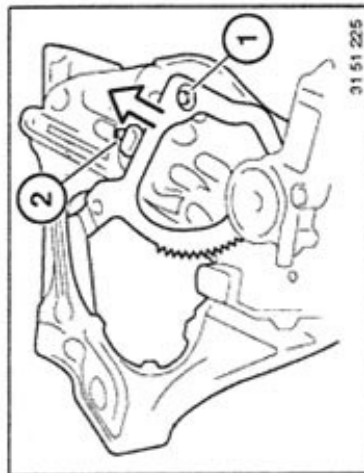
Installation:
Adjust rear side window - refer to 51 37 154.

Raise the side window and run it out of the seal by about 20 mm.

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

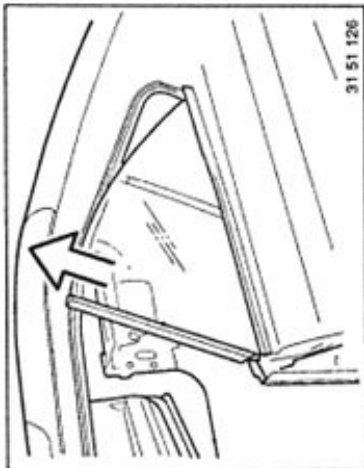
Pull covers off.



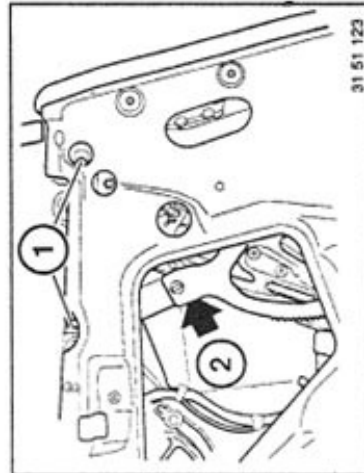
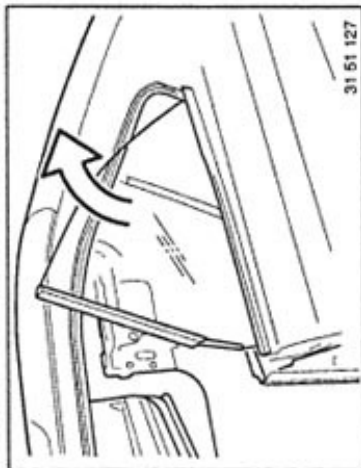


Note:
If the window cannot be operated electrically, unscrew screw (1) and disengage toothed element upwards off of the power window motor.
Main stop (2) must be unscrewed according to the position of the side window.

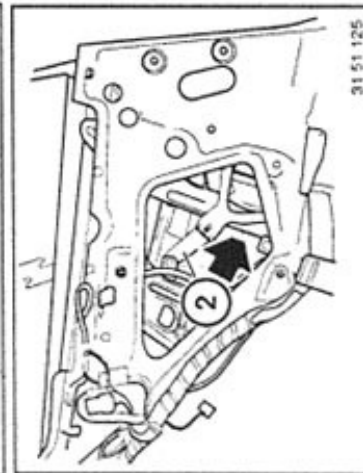
Installation:
Tightening torque*.



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



Unscrew screws (1) and nut on adjusting screw (2).
Screw adjusting screw in completely.



Hold tight on the side window, 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*.

• Refer to Specifications



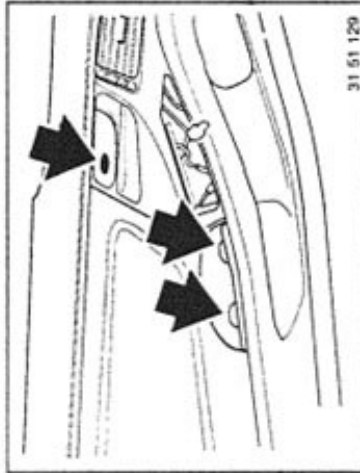
31 51 128

**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!



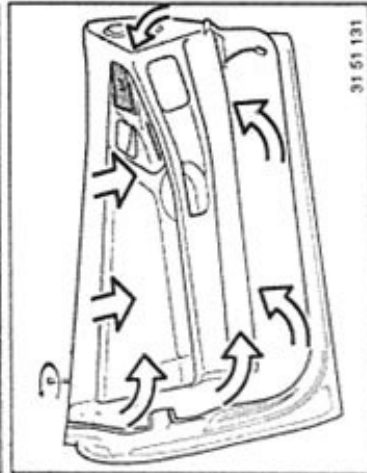
31 51 129

Lift out plates and unscrew screws.



31 51 130

Lift out light and disconnect plug.



31 51 131

Unscrew catch button.
Unclip door trim panel all around.



31 51 132

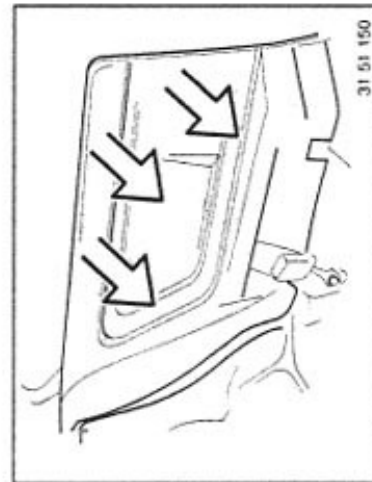
Lift off door trim panel.
Disconnect plug.
Disconnect door unlocking cable.

Installation:

Check for correct seating of cable!

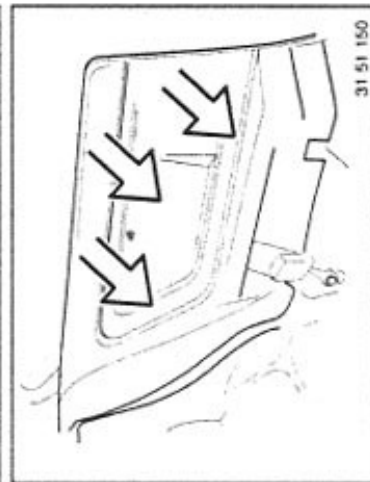
51 43 000 Removing and installing or replacing left or right side trim panel

Open door window and side window.
Slide front seat forwards.



One-piece back seat:

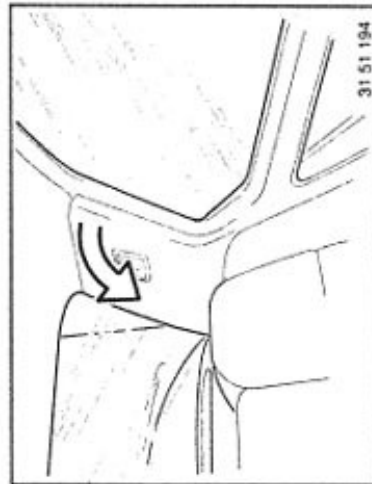
Unclip trim sections and lift out upwards.



Folding back seat backrests:

Remove back seat, see 52 20 100.

Unclip trim and lift out upwards.



51 43 251 Replacing rear left or right roof pillar trim

Unclip finisher on C-pillar.

Unfasten connector from rear window heating and rear window antenna.

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).

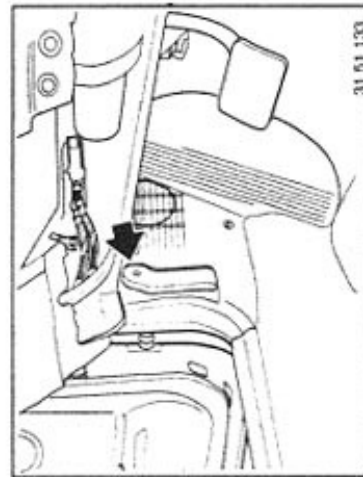
Lower front end of roof liner, push back and disconnect on metal fold.

Lift out roof liner from the side.

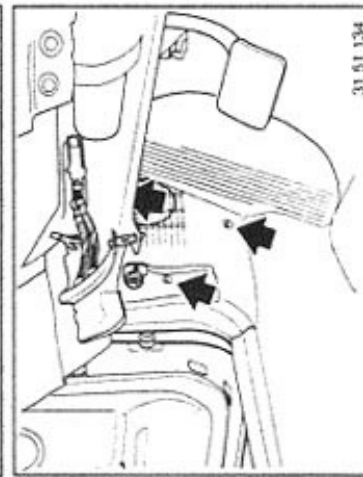
51 45 030 Removing and installing trim from instrument panel

Remove steering wheel, see 32 33 000.
Remove switch for steering column adjustment and allow to hang down, see 61 31 035.
Remove instrument carrier, see 62 21 000.
Remove glovebox, see 51 16 200.
If necessary, remove passenger airbag, see 32 34 504.

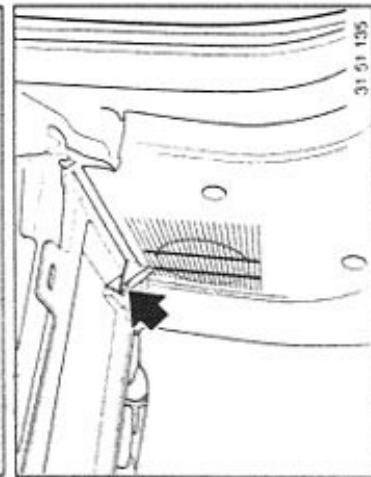
Unfasten screw and remove lever for unlocking front lid.



31 51 133



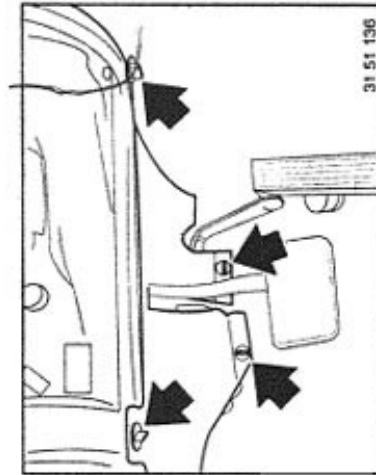
31 51 134



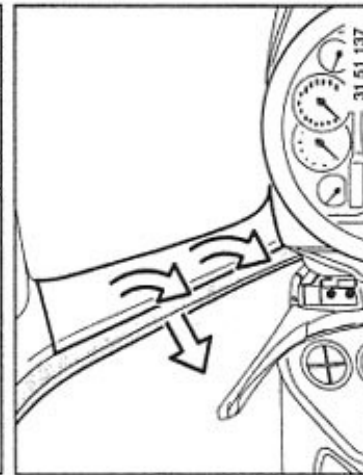
31 51 135

Twist clips and remove trim from left side.

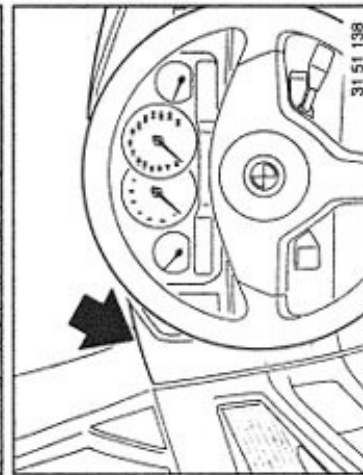
In addition, on the right side:
Unfasten screws.



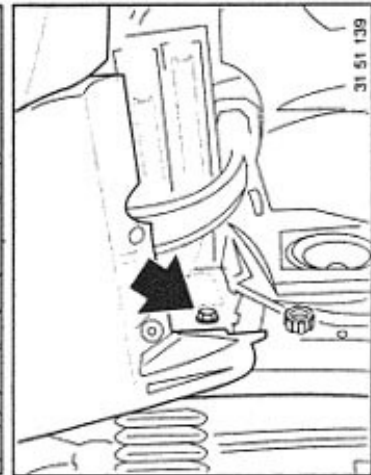
31 51 136



31 51 137



31 51 138



31 51 139

Twist clips and remove rear instrument door panel - lower section of trim.

In addition, on the right side:

Unfasten connector.

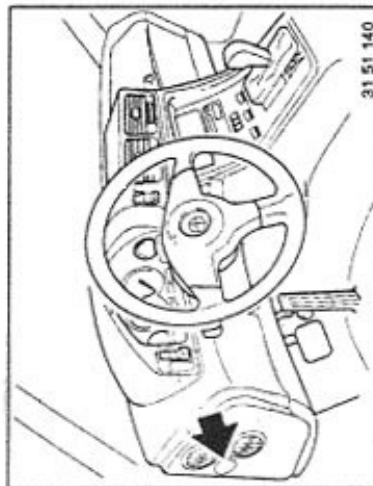
Installation:

Ensure that heating ducts are correctly seated.

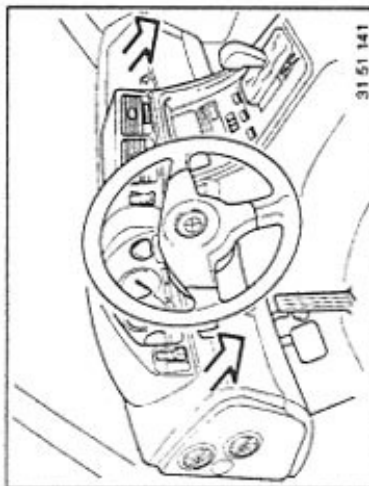
Unclip A-pillar finishers on left and right sides.

Unfasten screws on front left and right sides.

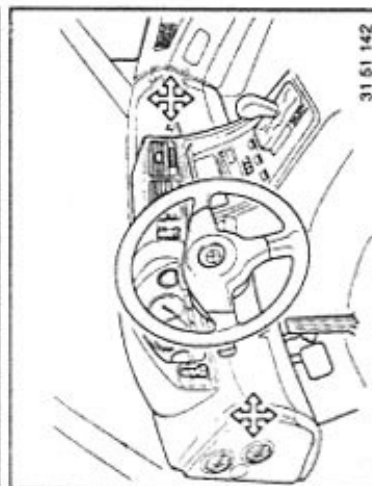
Loosen screws on left and right sides (footwell).



Lift left and right plates out and unscrew plates.



Lift dashboard out towards rear. Disconnect plugs.



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

51 46 000 Removing and installing or replacing trim for rear window shelf

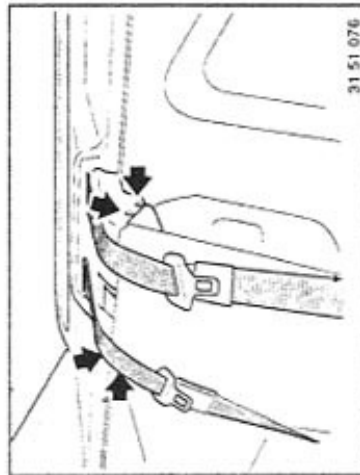
51 46 002 Replace trim for rear window shelf (with rear sun roller blind)

Remove both back seats, see 52 20 100.

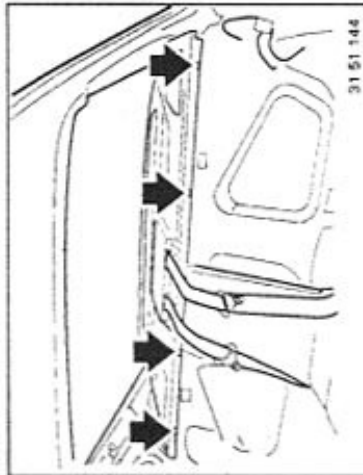
Remove rear sections of side trim, see 51 43 000.

In addition, on vehicles fitted with a rear window roller blind:

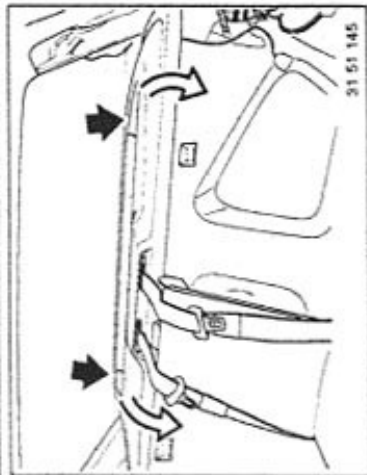
Remove trim sections on both C-pillars, see 51 43 251.



31 51 076



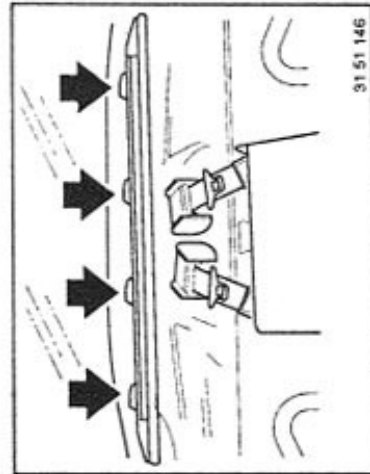
31 51 144



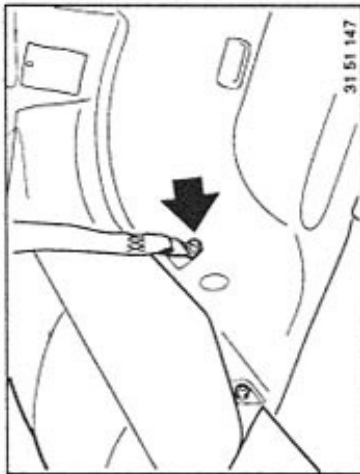
31 51 145

Lift clips up to remove.

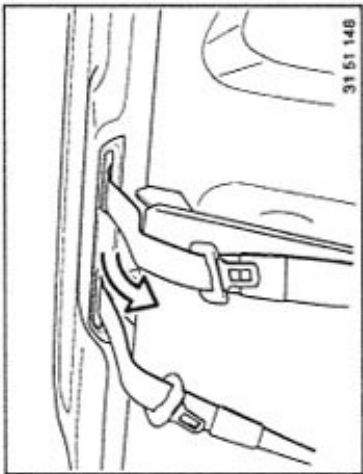
Carefully guide left, then right, sides of sun roller blind through rear window shelf.



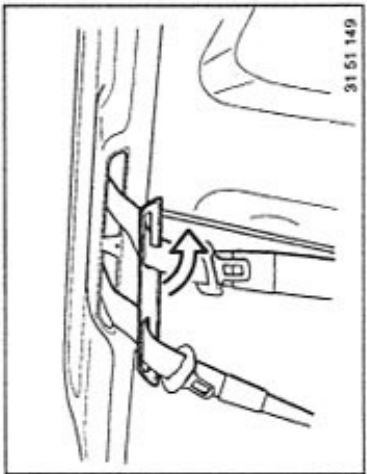
31 51 146



31 51 147



31 51 148



31 51 149

Installation:

Carefully guide sun roller blind through the rear window shelf (first the right corner, then the left), then slide the rear window shelf backwards, guiding the retaining clips over the recesses where they should engage. Press on burr fasteners.

Unfasten seatbelt on left and right sides.

Installation:

Tightening torque 72 11 1A2*

Unclip seatbelt guide from inside.

Remove seatbelt out of guide by lifting to side.
Remove rear seat shelf.

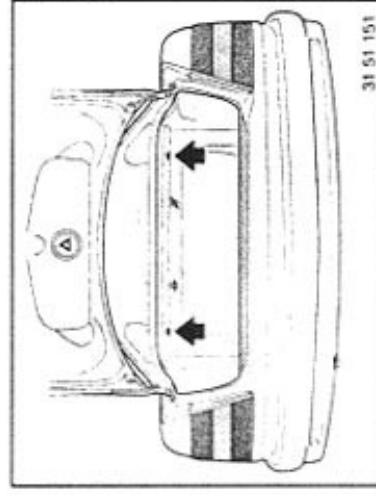
Only replacement:

Remove loudspeaker finishers.

* Refer to Technical Data

51 46 013 Removing and installing or replacing sun roller blind

Remove rear seat shelf, see 51 46 002.



Open trunk lid and unfasten screws.
Unfasten connector and remove sun roller
blind.

Only replacement:

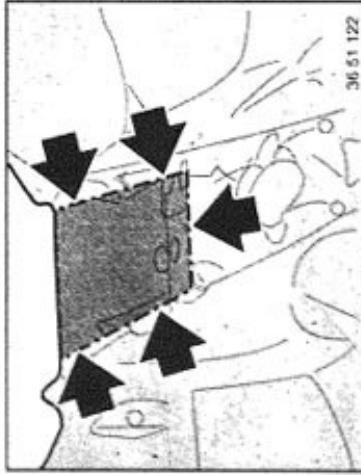
Remove control unit for sun roller blind on
rear window.

51 47 315 REMOVING AND INSTALLING FRONT AND REAR CARPETS FOR PASSENGER COMPART- MENT

Disconnect battery - refer to Gr. 61.
Remove seats - refer to Gr. 52.
Remove center console, dashboard and
front side trim panels (footwells) - refer to
Gr. 51.
Remove accelerator pedal and full load
stop - refer to Gr. 35.

Disconnect or unscrew left and right en-
trance strips, wire plugs and wire straps as
well as plug plate in front of the shift gate.
Disconnect plug and loosen strap in front
of the parking brake lever.
Remove the parking brake lever.

Unscrew plastic nuts securing carpets and
wire straps on the cardan tunnel.



Installation:

The old or new carpet must then be cut out
in the tunnel zone.

52.0 ... DIAGNOSING DAMAGE OF BELT SYSTEM INTEGRATED IN FRONT SEAT AFTER ACCIDENT

In the interest of occupants' safety no other repairs are permitted than those described below! Damaged components must be replaced!

Reference must be taken to the following criteria when diagnosing damage.

- Backrest play, measured at upper belt outlet point perpendicular to the backrest = max. 20 mm.

Measuring maximum backrest play:

Set seat to highest height position and backrest to most upright position.

Press backrest against front stop with force of about 200 N.

Measure distance perpendicular to backrest from upper belt outlet point to windshield and note value.

Now press backrest against rear stop with force of about 200 N and again measure distance perpendicular to backrest from upper belt outlet point to windshield.

The difference of both measured distances is the backrest play.

- Bending of belt anchors on seat frame (for both lower belt points) towards seat cushion, i.e. belt lock bears on seat cushion.

Belt anchors may be bent back to their original position without effecting the vehicle's safety.

- All disturbances such as noise, seizure, hesitation, etc. as well as not reaching the final positions for all seat control functions.

- Front-end Collision

Refer to the diagram for sequence of procedure. Indicators for the stress of the seat after a front-end collision are chiefly the belt anchors on the seat frame. It can be recognized on them, whether forces had been exerted to the belt system. This will be noticed on the bending of anchors towards the seat cushion and will always make it necessary to inspect the seat outside of the car.

- Rear-end Collision

Refer to the diagram for sequence of procedure. The chief indicator for stress of the seat-integrated belt system after a rear-end collision is excessive backrest play. This point must be given special attention when checking.

- Side Collision, Oblique Collision and Rollover

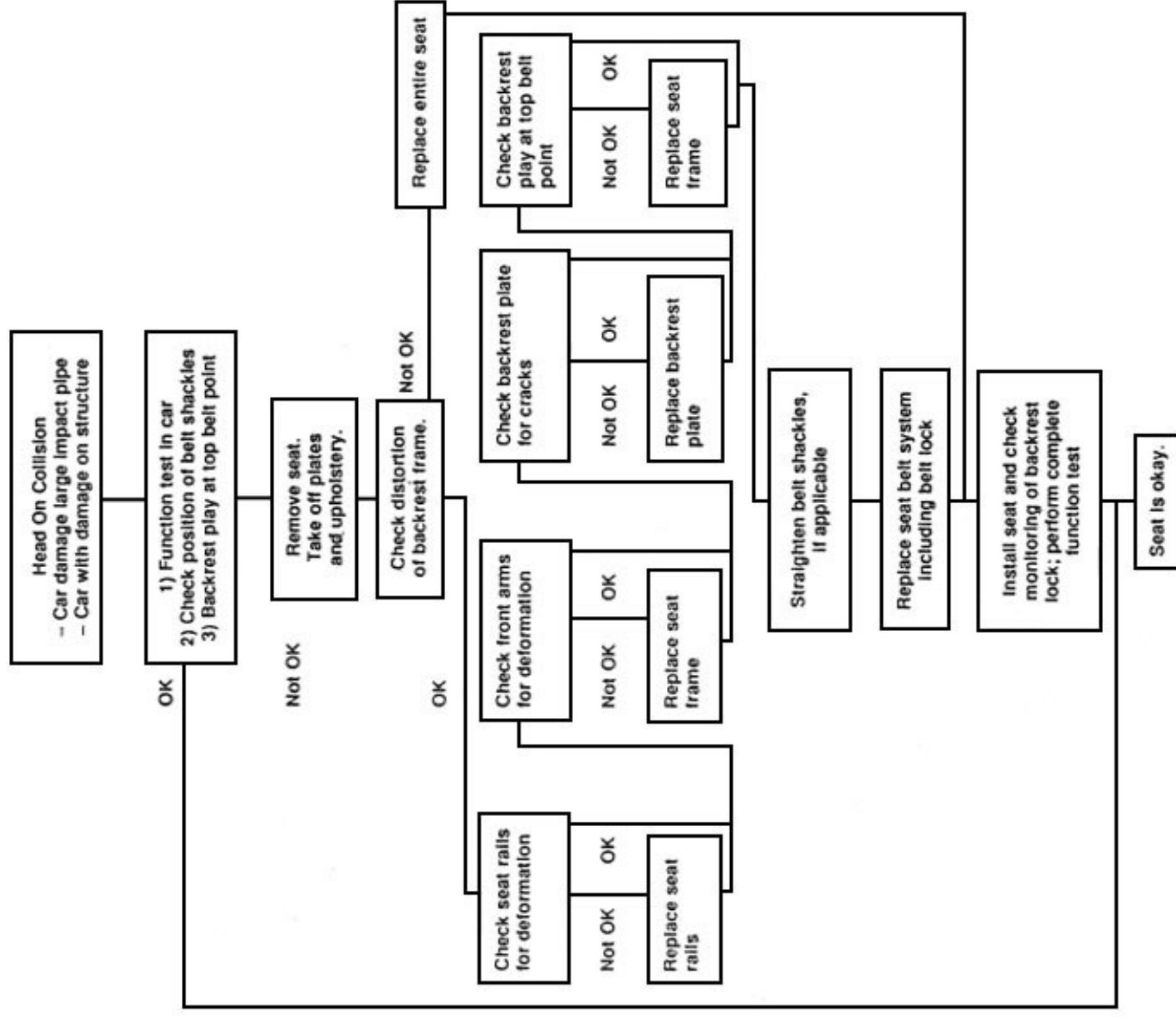
Proceed as described for the front-end collision if belt anchors on the seat frame are bent (belt lock bears on seat cushion).

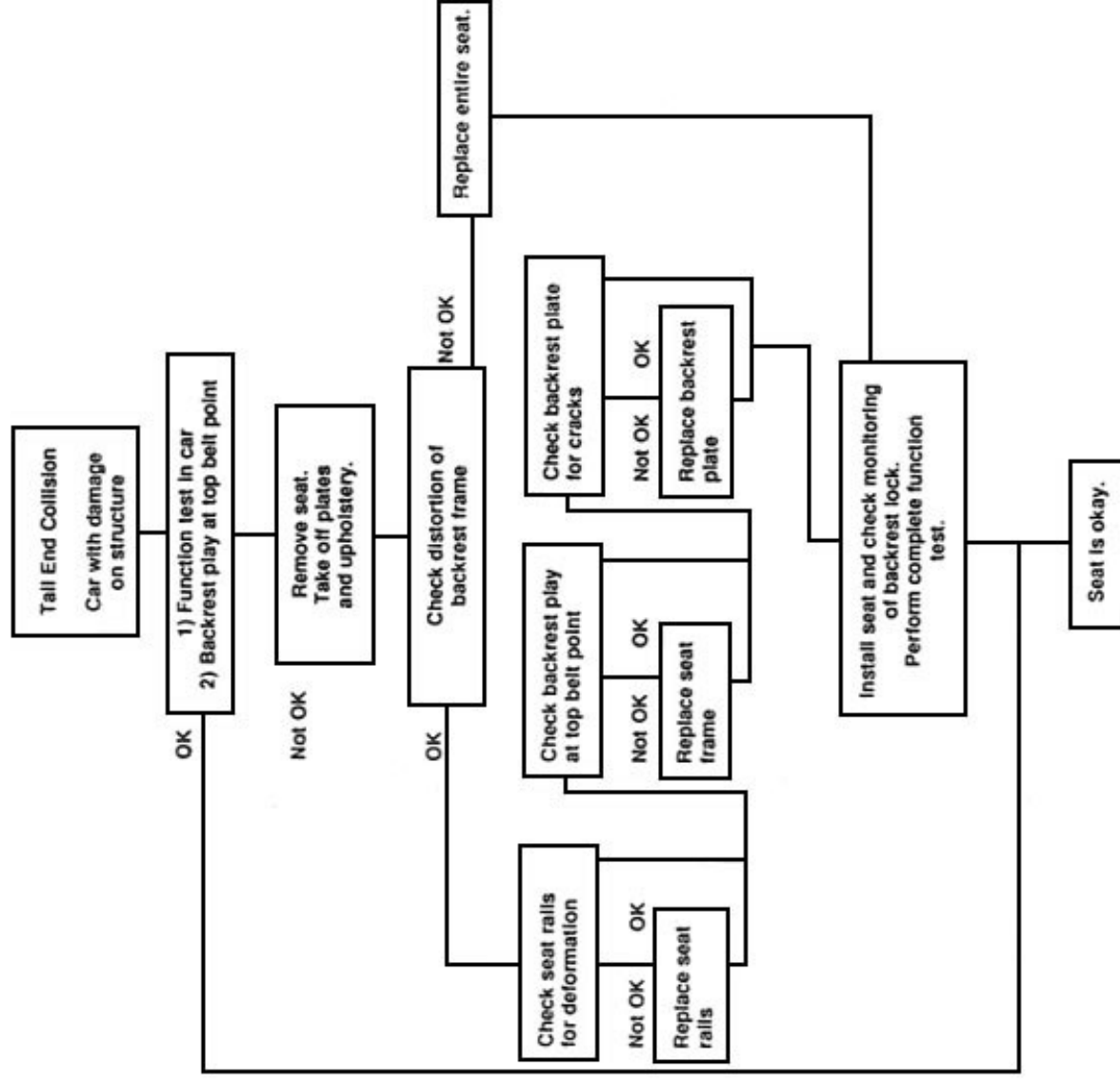
Proceed as described for the rear-end collision if belt anchors are not bent, but considerable backrest play is noticed. If the seat is within the zone in which the car is deformed, replace the damaged parts or components.

Notes:

Electrically Operated Seats:

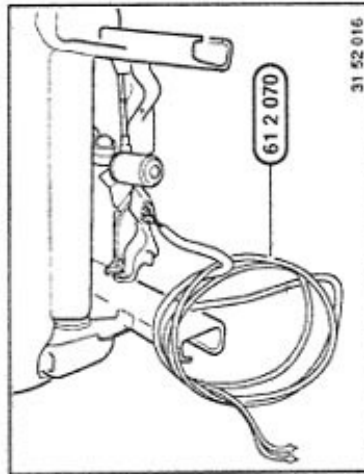
Troubleshooting electronics:
refer to Car Electric/Electronic Test Plan.



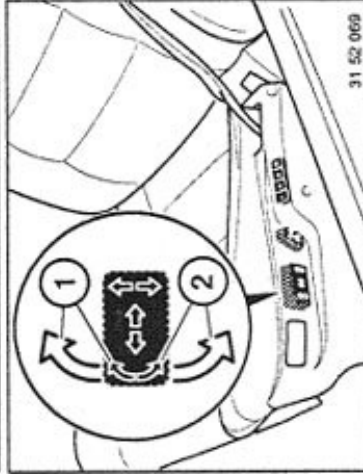


52 0 ... CHECKING FUNCTION OF ELECTRIC FRONT SEAT ADJUSTMENT

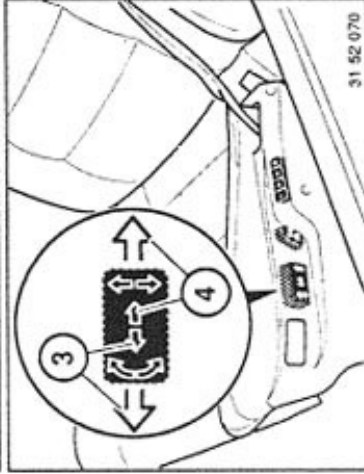
If applicable on removed seat, connect Special Tool 61 2 070 (adapter lead) to white plug (outer) and 12 V power supply source.
Carry out test.



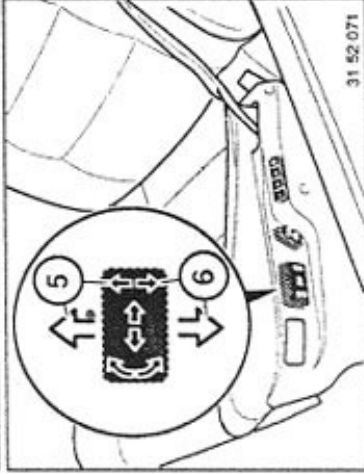
31 52 016



31 52 069



31 52 070



31 52 071

Inclination Adjustment:

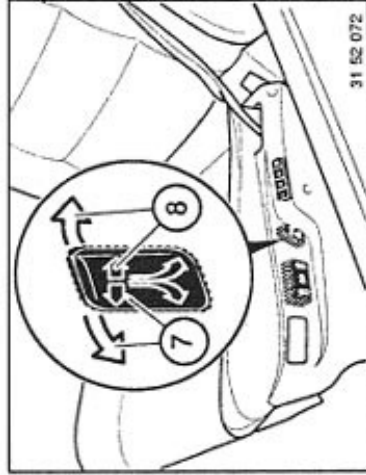
Front end of seat inclined upwards (1).
Front end of seat inclined downwards (2).
Maximum adjustment distance between (1) and (2), measured at front edge of seat = approx. 45 mm.

Axial Adjustment:

Seat moved forward (3).
Seat moved back (4).
Maximum adjustment distance between (3) and (4) = approx. 170 mm.

Height Adjustment:

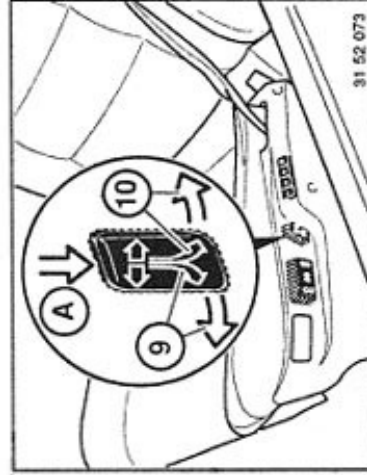
Seat moved up (5), headrest down.
Seat moved down (6), headrest up.
Maximum adjustment distance of seat between (5) and (6) = approx. 40 mm and of headrest = approx. 30 mm.



31 52 072

Backrest Inclination Adjustment:

Backrest moved forward (7), headrest down.
Backrest moved back (8), headrest up.
Maximum adjustment distance between (7) and (8) as measured at upper edge of backrest = approx. 185 mm, and of headrest = approx. 10 mm.



31 52 073

Lumbar Support:

Press switch downwards (A).
The lumbar support can only be operated in this position.
Inflating (9).
Deflating (10).

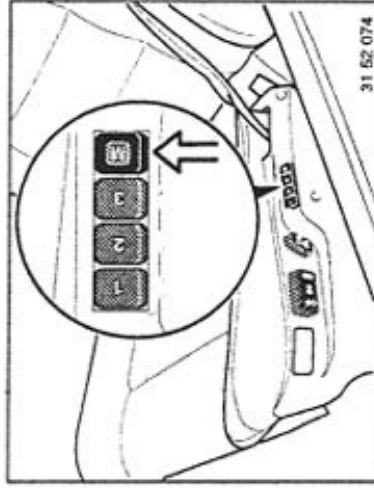
Note:

The position of the lumbar support cannot be stored in the memory.

52 0 ... CHECKING FUNCTION OF MEMORY

Storing Positions In Memory:

Move the seat, outside mirrors and steering wheel to desired positions.
Press key (M₊), which lights up.
Then press program key (1, 2 or 3).
Light in key (m) goes out and storing has been completed.



Calling Positions Stored In Memory:

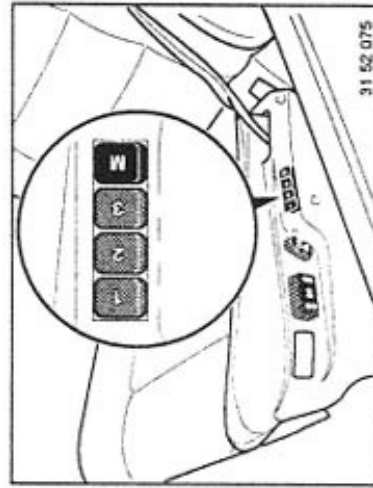
Press program key (1, 2 or 3) so long until all motors have been switched off.

Note:

A maximum of two motors on the seat will be operated simultaneously.

Sequence:

- 1 Axial adjustment, backrest inclination and steering wheel adjustment
- 2 Axial adjustment and height adjustment
- 3 Seat inclination adjustment
- 4 Both outside mirrors

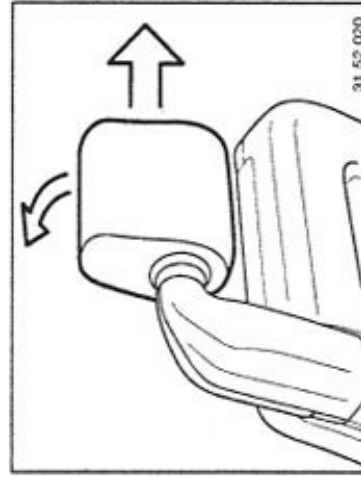


52 10 000 REMOVING AND INSTALLING LEFT OR RIGHT FRONT SEAT

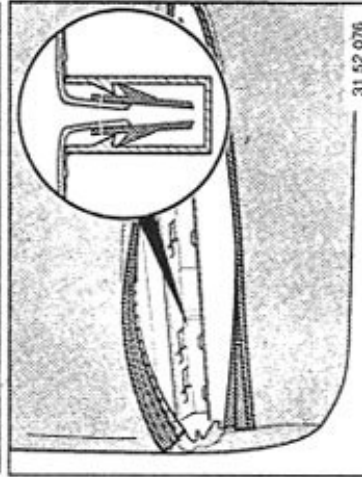
Note:

A second person is required to lift the front seat out of the car.

Lower front and rear side windows.



31 52 020



31 52 076



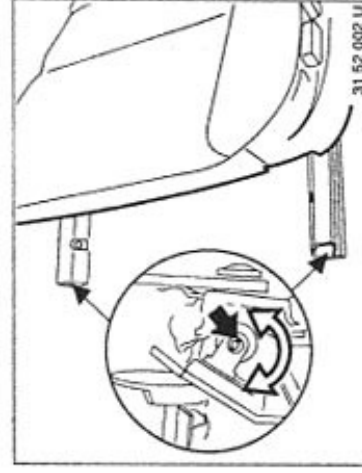
31 52 001 U

Set the backrest upright.
Run the seat height adjustment down.

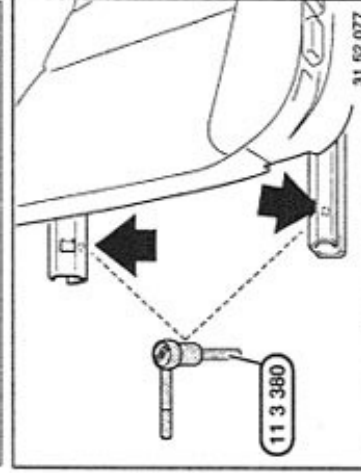
Pull headrest padding off by applying slight swinging movements.

Installation:
If clips of the headrest cover have been opened, place the clip strips in the headrest padding and clip the strips.

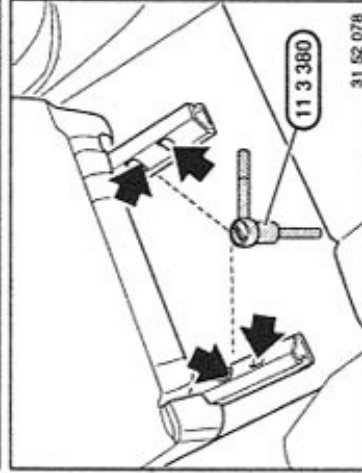
If electric forward/back seat drive has failed, the seat can be moved manually with a screwdriver (8 mm blade width).



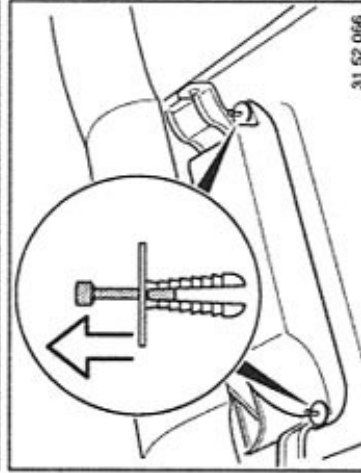
31 52 002 U



31 52 077



31 52 078



31 52 066

Insert screwdriver into slot and turn.
Turned clockwise = seat moved forward.
Turned counterclockwise = seat moved back.

Run the seat back as far as possible.
Unscrew bolts using Special Tool 11 3 380 and remove them.

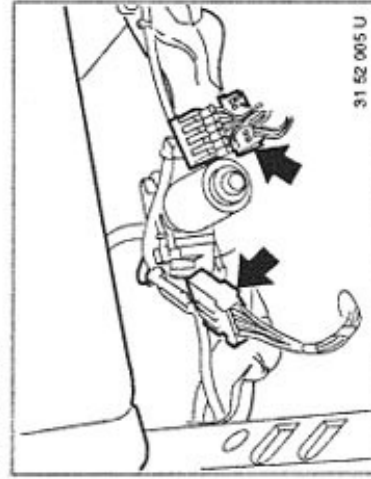
Installation:
Tightening torque*.

Run the seat forward and up as far as possible.
Unscrew bolts using Special Tool 11 3 380 and remove them.

Installation:
Tightening torque*.

Pull pins out and remove securing plugs.
Remove cover.

* Refer to Specifications



31 52 005 U

Note:

Cover side member panel to avoid damaging it while lifting out the seat.

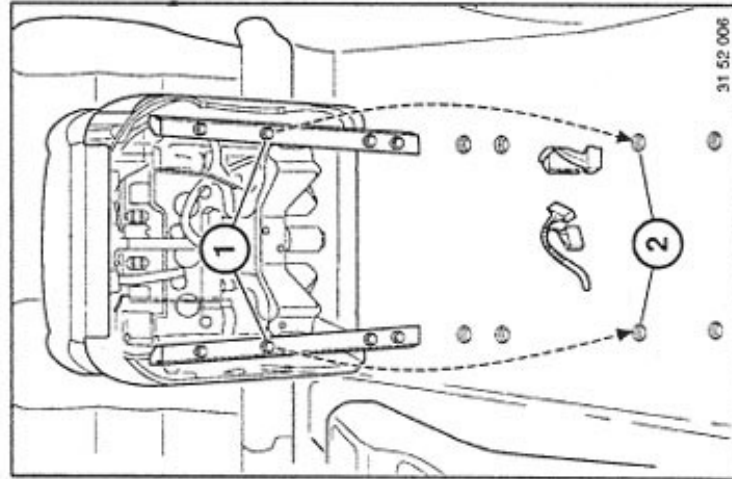
Lift seat at rear end and disconnect plugs.

Note:

Lift seat out of car (with help from second person) and place it on wooden blocks (transverse to the seat rails).

Installation:

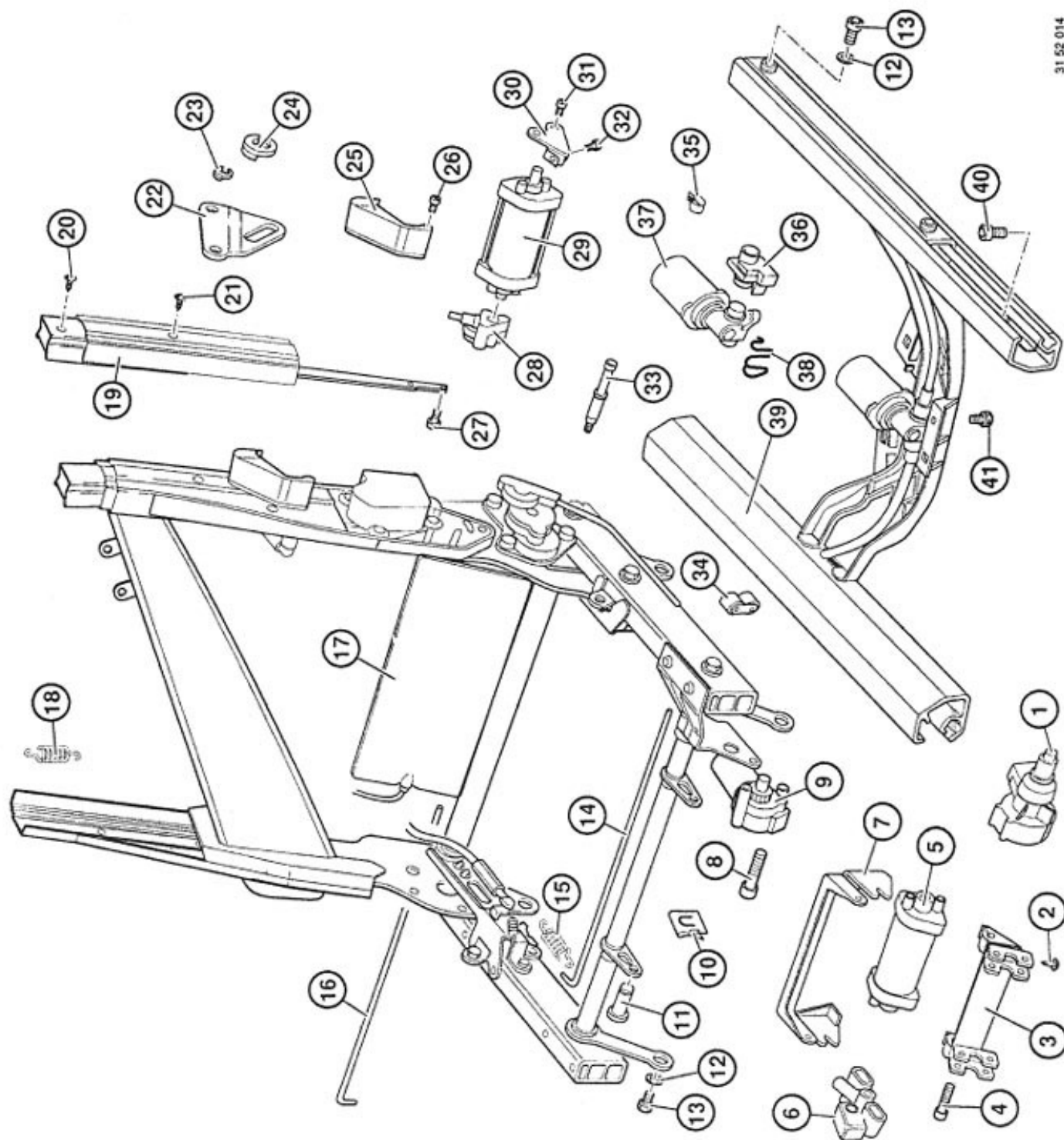
Guide pins (1) on seat into bores (2) in car floor plate.



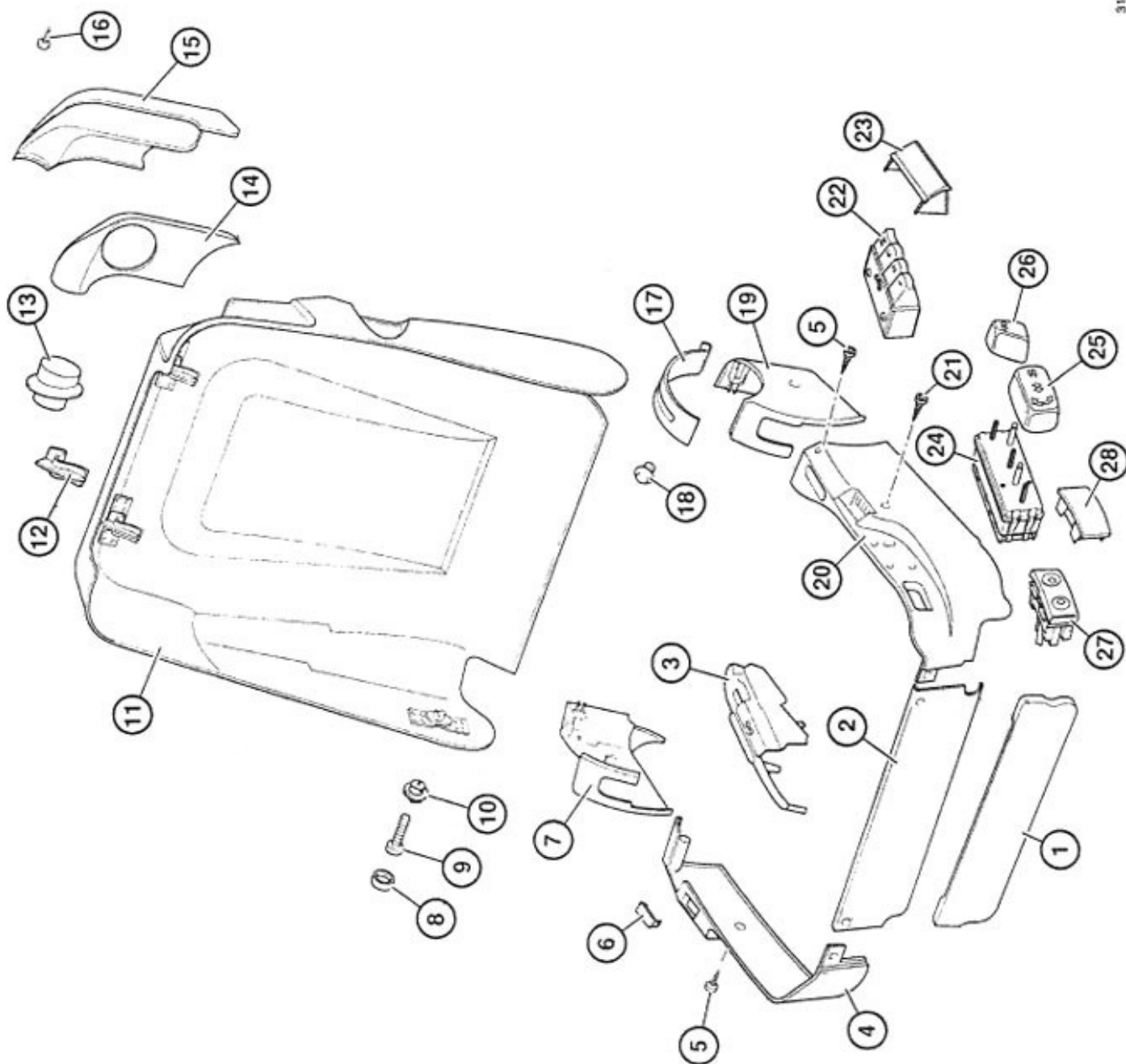
31 52 006

- 1 Regulator (memory)
- 2 Oval head screw
- 3 Holder
- 4 Bolt
- 5 Up/down drive
- 6 Regulator (memory)
- 7 Rail
- 8 Bolt
- 9 Inclination drive
- 10 Lockplate
- 11 Shaft
- 12 Washer
- 13 Oval head screw
- 14 Torsion bar
- 15 Spring
- 16 Torsion bar L/R
- 17 Lumbar support
- 18 Spring
- 19 Front rail L/R
- 20 Screw
- 21 Screw
- 22 Lever L/R
- 23 Retainer
- 24 Lockwasher
- 25 Lever L/R
- 26 Screw
- 27 Shaft
- 28 Backrest regulator (memory)
- 29 Backrest drive
- 30 Holder
- 31 Screw
- 32 Oval head screw
- 33 Shaft bolt
- 34 Retainer
- 35 Clamp
- 36 Regulator (memory)
- 37 Forward/back drive
- 38 Spring
- 39 Seat rail
- 40 Fillister head bolt
- 41 Hexagon head bolt

Note:
Refer to Group 72 for all seat belt components.

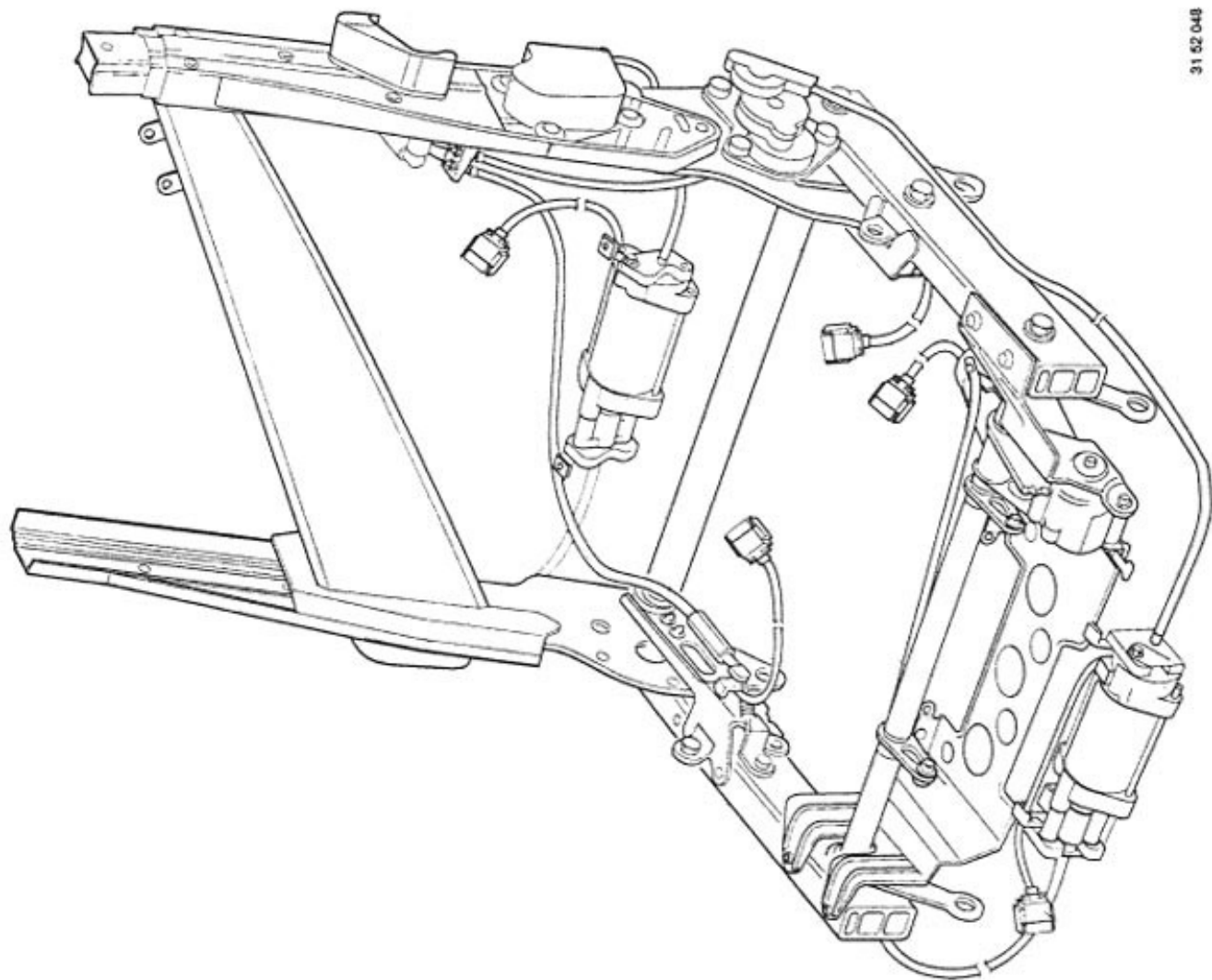


- 1 Pocket
- 2 Front panel
- 3 Cover L/R
- 4 Inside panel L/R
- 5 Ctsk. self-tapping screw
- 6 Cap
- 7 Inside panel L/R
- 8 Cap
- 9 Round head screw
- 10 Clamp
- 11 Rear panel L/R
- 12 Hook
- 13 Cover
- 14 Front panel L/R
- 15 Rear panel L/R
- 16 Oval head self-tapping screw
- 17 Cover L/R
- 18 Clamp
- 19 Outside panel L/R
- 20 Outside panel L/R
- 21 Oval head self-tapping screw
- 22 Memory switch
- 23 Cap
- 24 Front seat control switch L/R
- 25 Control knob L/R
- 26 Control knob L/R
- 27 Thigh support switch
- 28 Cap L/R



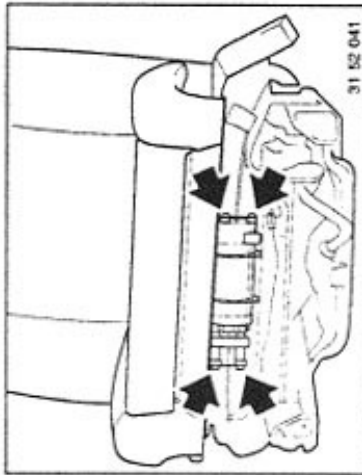
Remove front seat – refer to 52 10 000.
Remove rear panel for front seat backrest
– refer to 52 10 450.
Remove seat belt – refer to Gr. 72.
Remove backrest shell – refer to 52 10 082.
Remove cushion shell – refer to 52 10 080.
Remove seat rails – refer to 52 10 100.
Remove seat control unit – refer to Gr. 61.
Remove seat wiring harness – refer to
electric wire routing in Gr. 61.
Check microswitch – refer to Gr. 61.
Adjust cable – refer to 52 10 575.

Assemble new seat cushion/backrest
frames in reverse sequence.

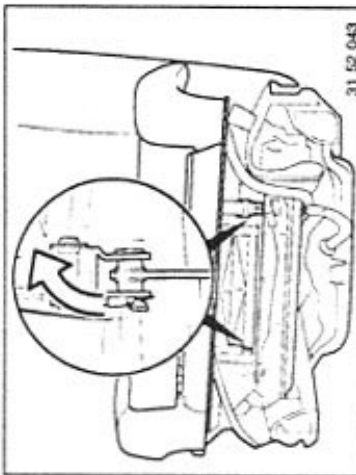


**52 10 080 REMOVING AND INSTALLING
OR REPLACING CUSHION
SHELL ON LEFT OR RIGHT
FRONT SEAT**

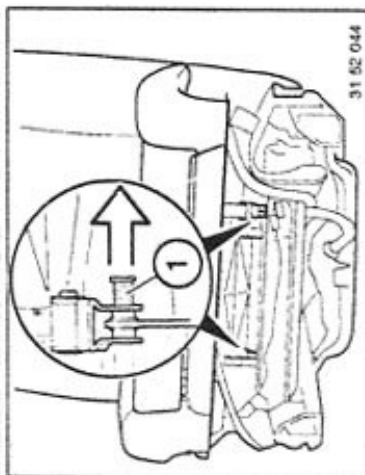
Remove front seat – refer to 52 10 000.
Remove rear panel for front seat backrest
– refer to 52 10 450.
Remove backrest shell – refer to 52 10 082.



31 52 041



31 52 043

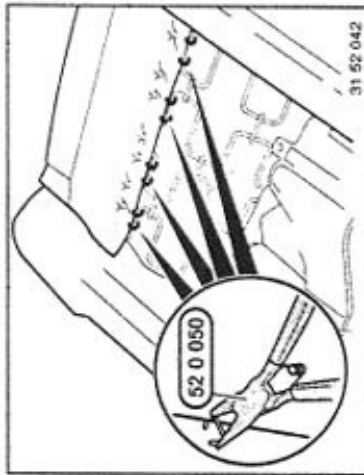


31 52 044

Unbend lockplate.

Remove shaft (1).

Unscrew screws on up/down drive motor.



31 52 042

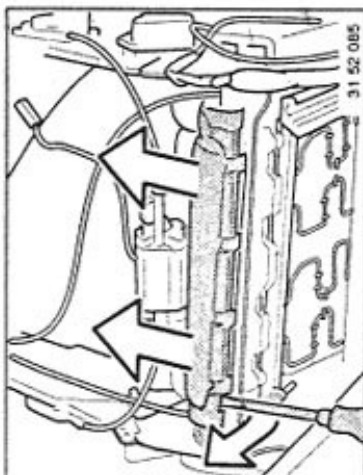
Detach clamps and fold cover back.

Installation:
Lock new clamps by bending with Special
Tool 52 0 050.

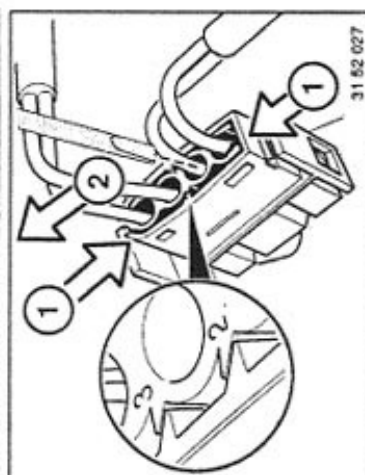
Important!
Ensure that seat heating wires are not
damaged while bending clamps.

Disengage rear end of cushion shell using
a large screwdriver and remove.

Installation:
Cushion shell must be heard engaging in
the seat frame.

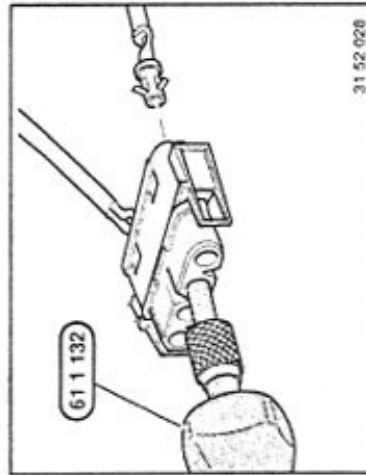


31 52 085



31 52 027

If applicable, disconnect seat heating wires
at plug.
Unlock the secondary lock.
Squeeze plug together at (1) and unlock
simultaneously with a screwdriver in
direction (2).



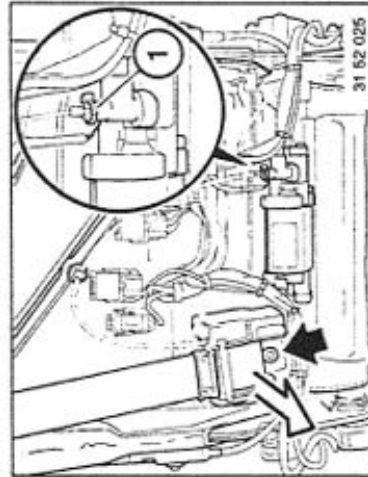
Disconnect two backrest heating wires using Special Tool 61 1 132.

Installation:

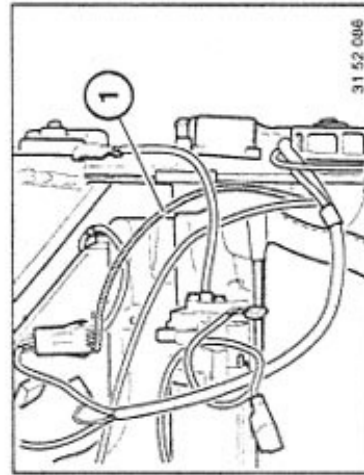
Lock the secondary lock again.
Check seat heating system for breaks with an ohmmeter.

52 10 082 REMOVING AND INSTALLING OR REPLACING BACKREST SHELL ON LEFT OR RIGHT FRONT SEAT

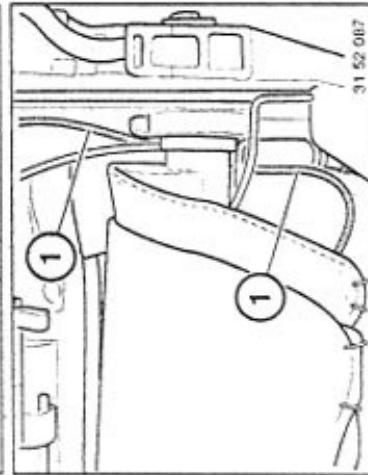
Remove front seat – refer to 52 10 000.
Remove rear panel for front seat backrest – refer to 52 10 450.



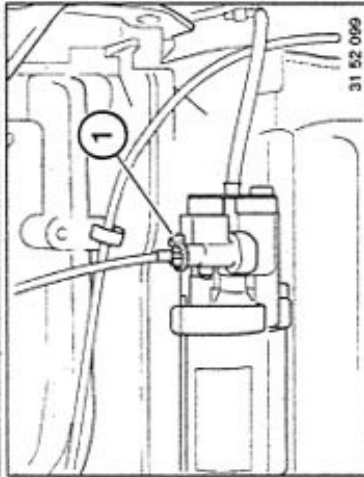
Disconnect cable (1) and pull shaft out of feed gearbox.
Unscrew bolt, remove automatic reel seat belt towards the rear and let it hang down.



Installation:
Check routing of seat heating wires (1).

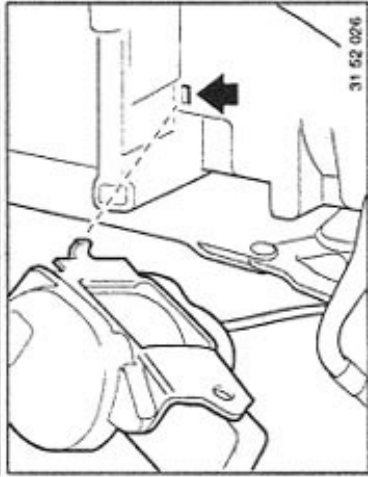


Installation:
Check routing of seat heating wires (1).



Installation:
The shaft must be routed without kinks and must not bear on the backrest shell panel.

The tip of wire clamp (1) must point to the side to avoid damaging the rear panel.

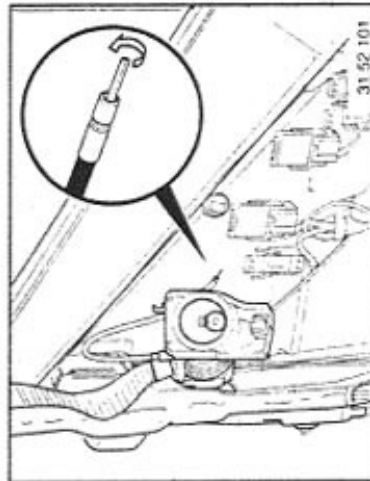


Installation:
Install automatic reel seat belt that the bent tab is inserted into the rear panel.
Replace screws.
Tightening torque*.

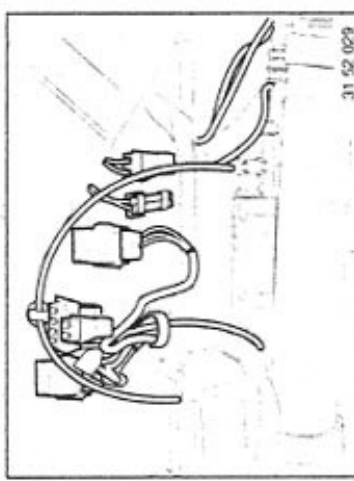
* Refer to Specifications

Installation:

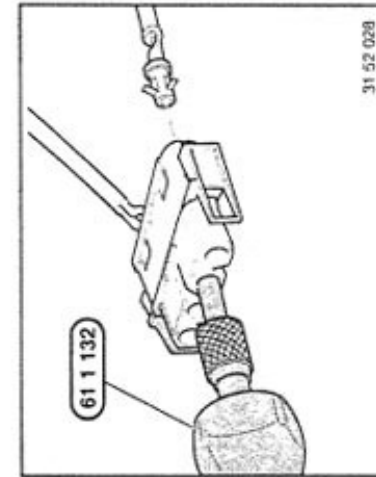
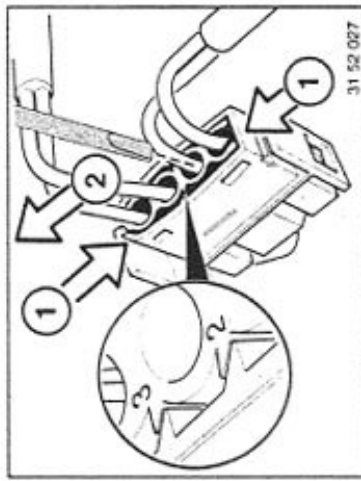
Turn shaft for transmission counter-clockwise to its stop position.



Remove all relays, plug connectors and motors.



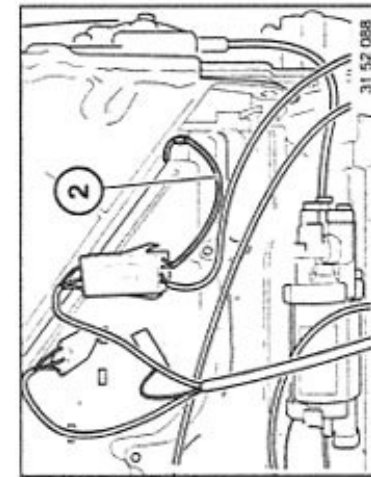
If necessary, unpin cable for seat heating from connector.
Unlock the secondary locking mechanism.
Squeeze together connector at (1) and, at the same time, unlock by turning screwdriver in direction (2).



Use special tool 61 1 132 to unpin two cables on the seatback heating.

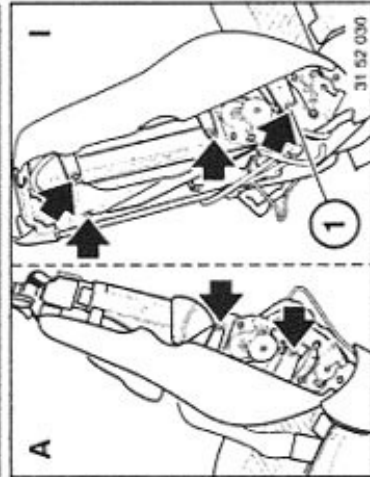
Installation:

Relock secondary locking mechanism.
Check seat heating for interrupts with ohmmeter.

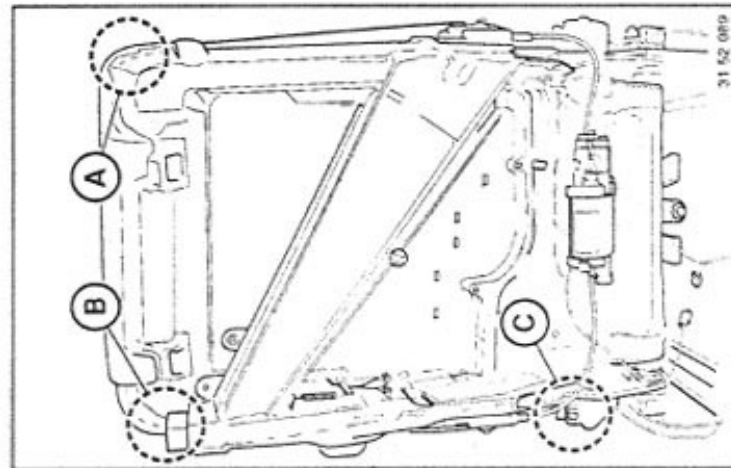


Installation:
Check wiring layout,
fault memory, fault memory.
Clear fault memory.

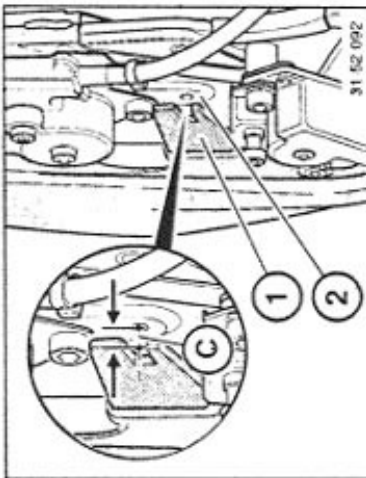
Unfasten screws and remove backrest shell.

**Installation:**

First tighten screw (1) on inside edge.



Installation:
Distances (A, B and C) must be maintained.



Distance (C):

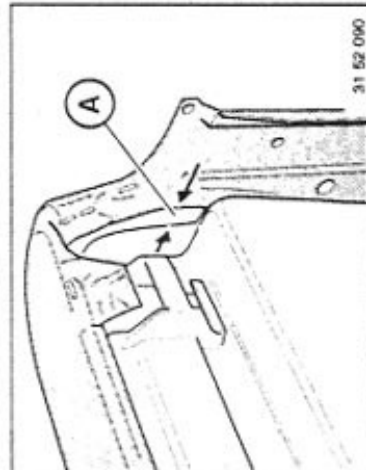
Distance C = < 2 mm.

Installation:

If distance (C) is larger than 2 mm, the distance must be adjusted by installing washers between securing tab (1) and backrest frame (2).

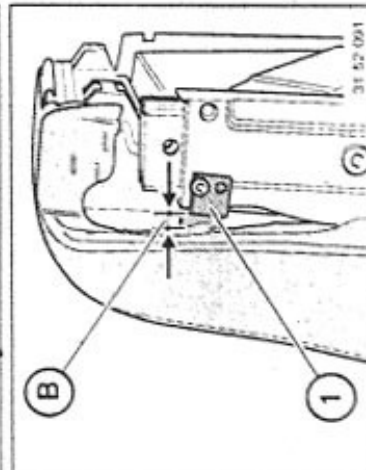
Distance (A):

Distance A = 12 mm.



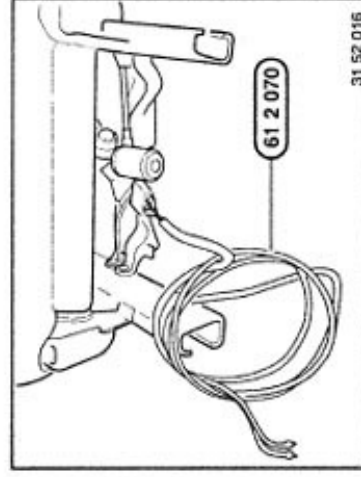
Distance (B):

Distance B = 16 mm.

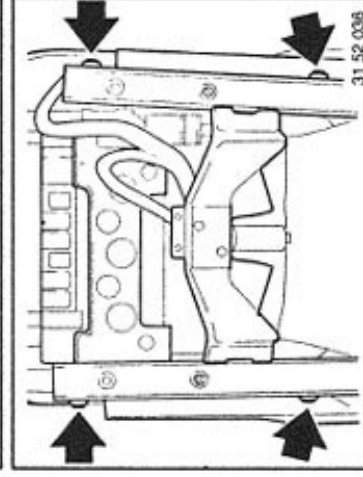


52 10 100 Removing and installing or replacing seat rail on left or right front seat

Remove front seat, see 52 10 000.



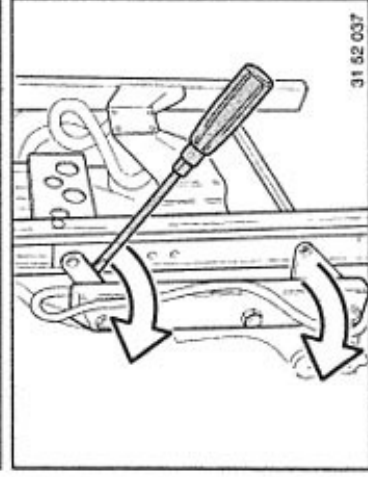
Connect adapter cable 61 2 070 to the white connector (outside) and to a 12 V power source.
Move seat into "upper" position.



Unfasten screws.

Installation:
Tightening torque*
Install screws with Loctite 270**.

Unfasten cable connector on wiring harness.
Remove connector from control unit.



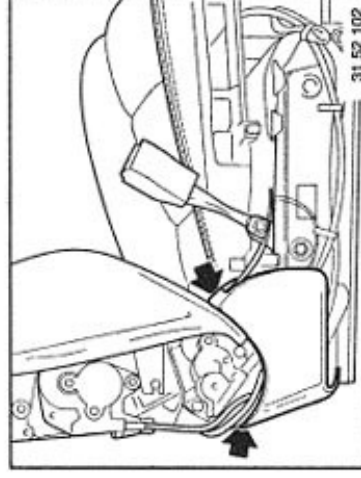
Lift out left and right seat rails with screwdriver.

Installation:
Perform function check.

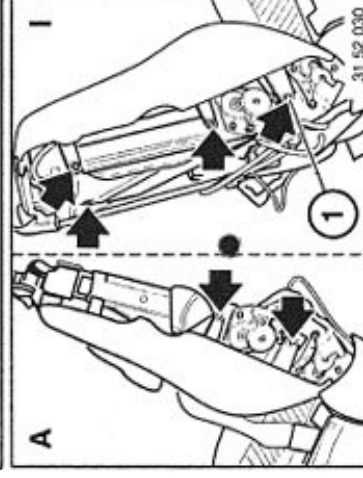
* Refer to Technical Data
** Source of supply: BMW Parts Service

52 10 105 Replacing rail (connecting rod)

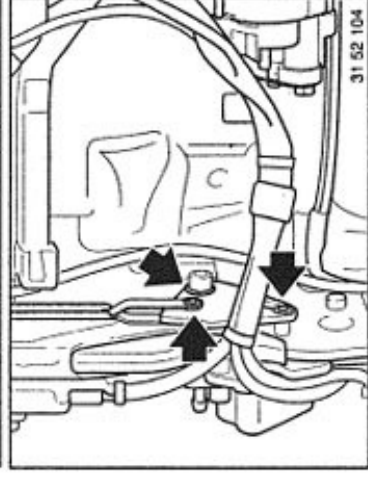
Remove front seat, see 52 10 000.
Remove rear wall, see 52 10 450.
Remove belt, see 72 11 030.



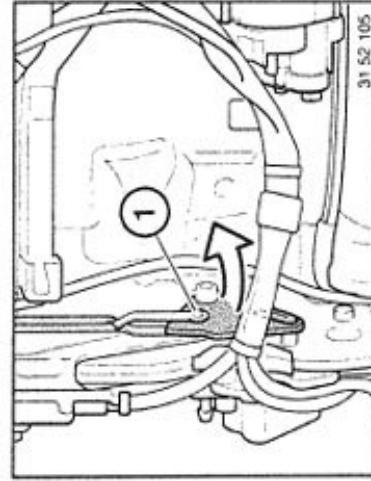
Unfasten screws and clips on inside finisher and allow finisher to hang down.



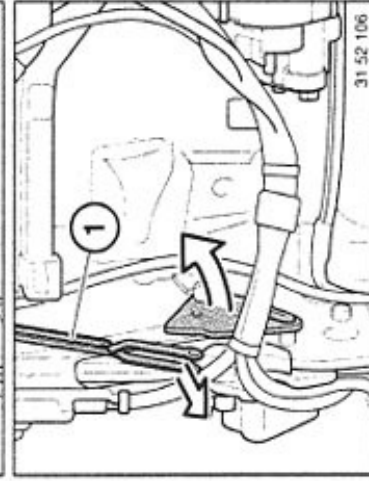
Loosen screws.
Push outside backrest cushion forwards.



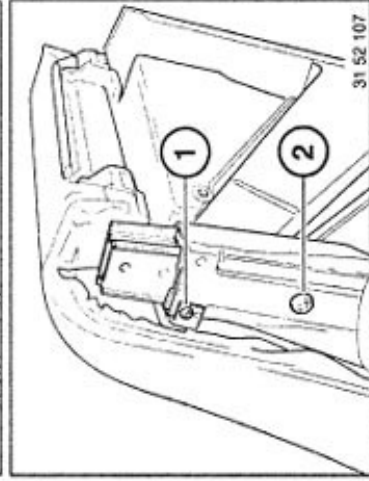
Unfasten retaining washers.



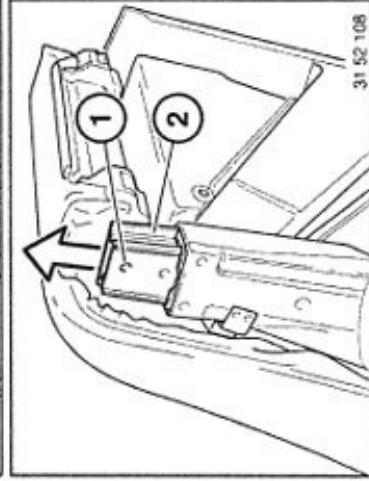
Press lower triangular plate to one side and remove pin (1).



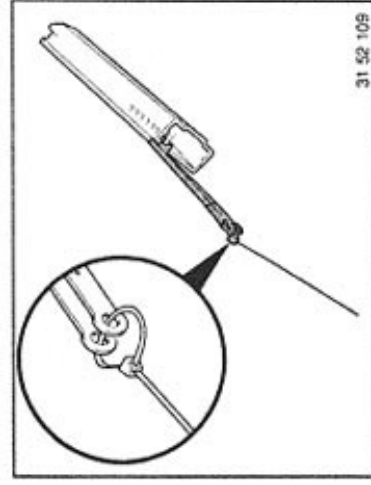
Pull coupling bar (1) backwards. When doing so, press backrest cushion forwards and remove triangular plate by pulling to one side.



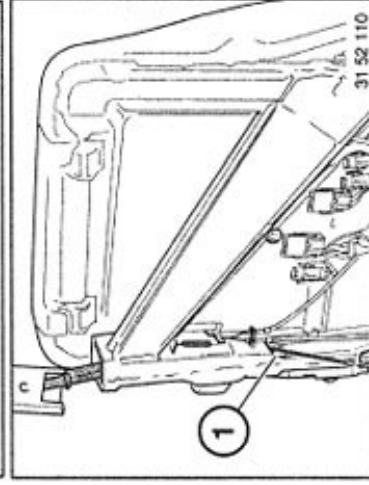
Unfasten screws (1). Tightening torque refer to Technical Data 52 10 3AZ. Unfasten screw (2). Tightening torque refer to Technical Data 52 10 4AZ.



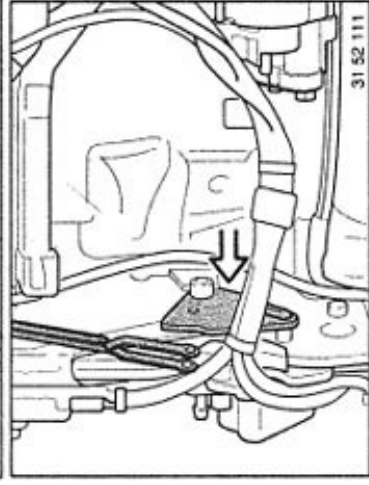
Fit hardwood wedge to bore (1) and drive out guide (2) upwards with gentle blows.



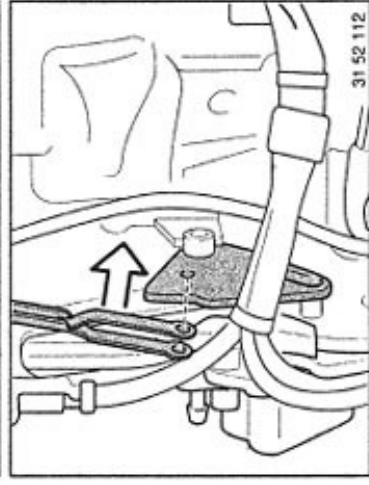
Installation:
As a directional aid, secure cable connector to the bores of the new coupling bar.



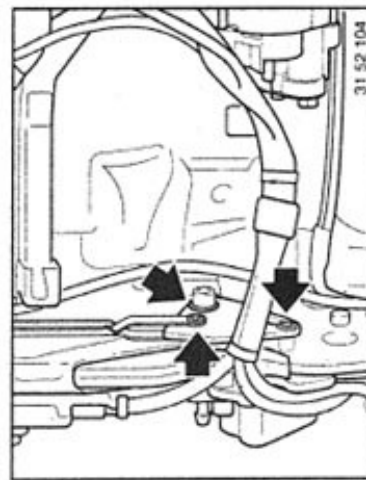
Guide coupling bar through bore (1) with cable connector. Remove cable connector.



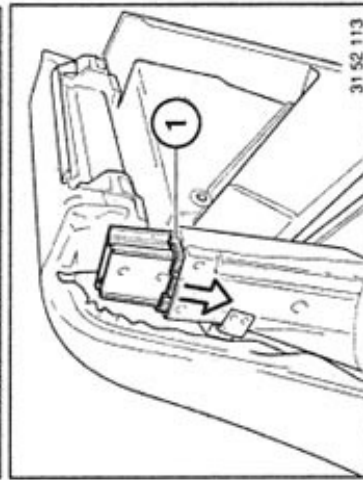
Press backrest cushion forwards and install new triangular plate.



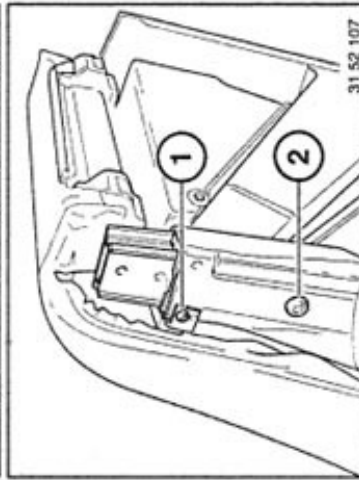
Slide coupling bar over the triangular plate, install pin with pliers and press into place with a screwdriver.



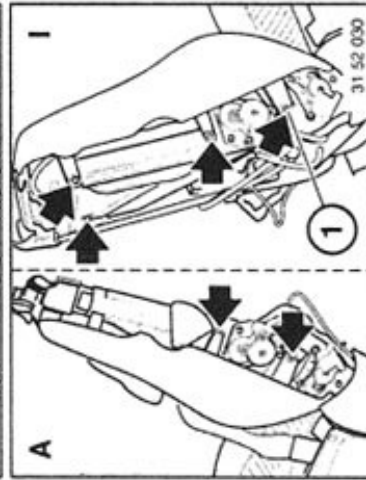
Fit retaining discs.



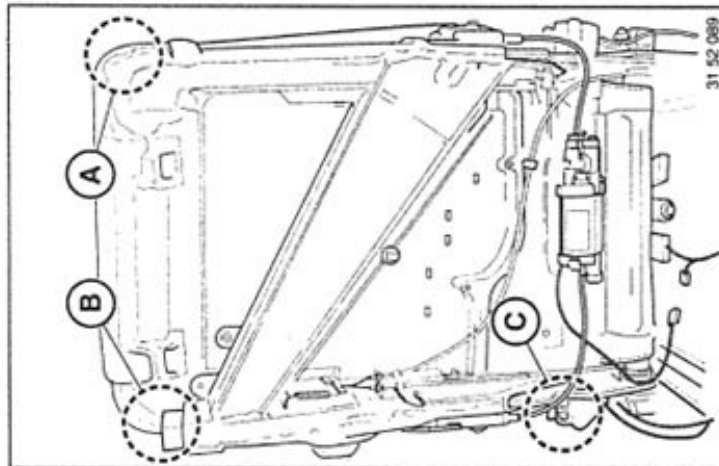
Drive in guide (1) with plastic hammer until it is flush with backrest frame.



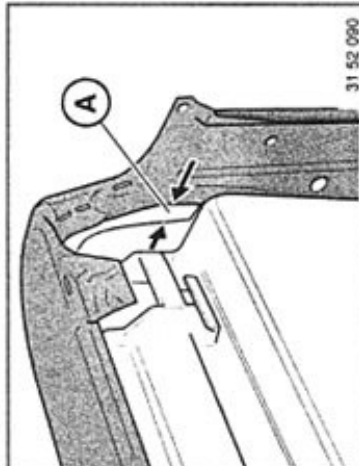
Tighten spacer bracket into top bore with screw (1).
Tightening torque refer to Technical Data 52 10 3AZ.
Tighten screw (2).
Tightening torque refer to Technical Data 52 10 4AZ.



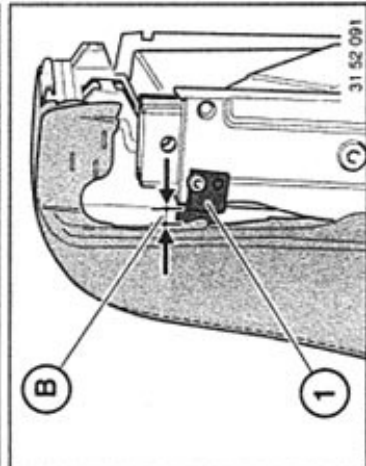
Installation:
Tighten inside screw (1).



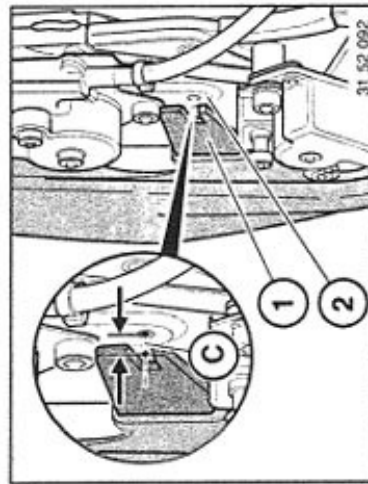
Installation:
Maintain gaps (A), (B) and (C).



Gap (A):
dimension (A) = 12 mm



Gap (B):
dimension (B) = 16 mm

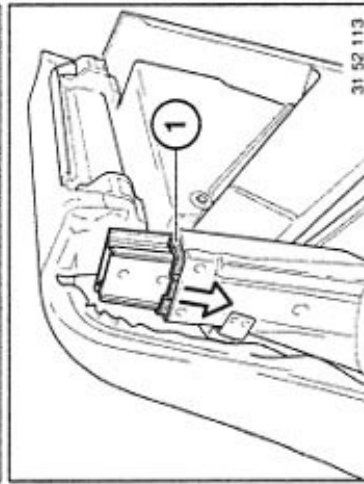


Distance (C):

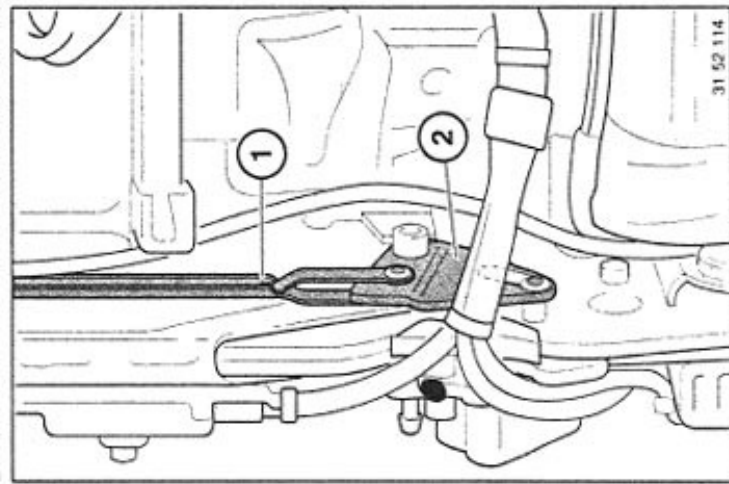
Distance C = < 2 mm.

Installation:

If distance (C) is larger than 2 mm, the distance must be adjusted by installing washers between securing tab (1) and backrest frame (2).



Run the seat height drive to both final positions.
In so doing guide (1) must be run out and in free of noise or hesitation.



Set the seat backrest upright.

Check connecting rod and triangular plate (visual check).

Connecting rod (1) and slot in triangular plate (2) absolutely straight = OK.

Connecting rod (1) / slot in triangular plate (2) bent or lightly distorted = replace connecting rod and triangular plate.

Important!

Straightening is not permitted in the interest of occupant safety (danger to life).

52 10 400 REMOVING AND INSTALLING OR REPLACING LUMBAR SUPPORT ON LEFT OR RIGHT FRONT SEAT

Remove front seat – refer to 52 10 000.
Remove rear panel for front seat backrest – refer to 52 10 450.
Remove backrest shell – refer to 52 10 082.
Remove backrest cover – refer to 52 11 031.
Remove padding – refer to 52 11 141.

Unbend clamps and remove lumbar support.

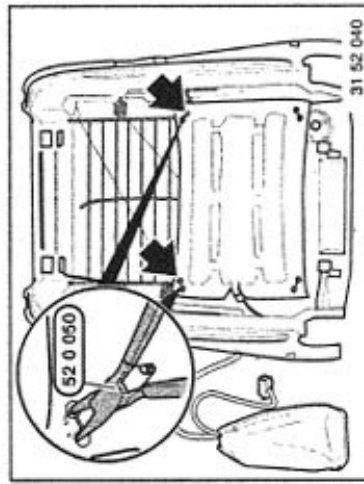
Note:

Be careful not to damage the lumbar support.

Installation:

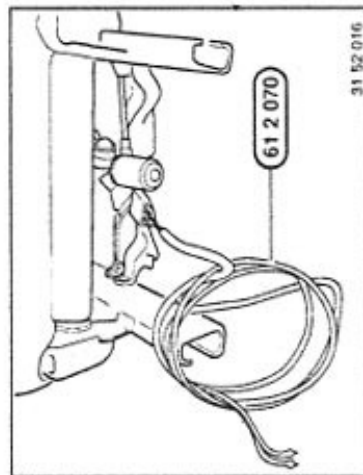
Lock clamps by bending with Special Tool 52 0 050.

Check function of lumbar support.

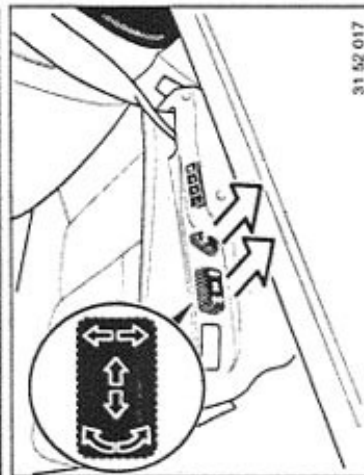


**52 10 450 REMOVING AND INSTALLING
OR REPLACING REAR PANEL
FOR LEFT OR RIGHT FRONT
SEAT BACKREST**

Remove front seat – refer to 52 10 000.

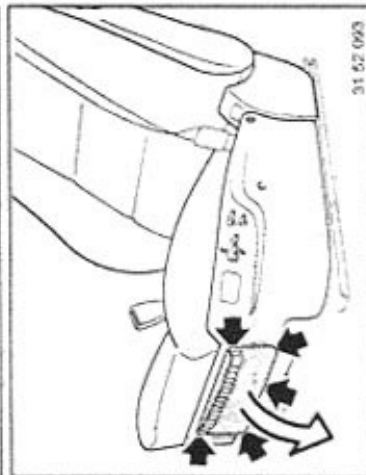


Connect Special Tool 61 2 070 (adapter lead) to white plug (outer) and 12 V power supply source.
Move seat to "bottom" position and backrest to "upright" position.

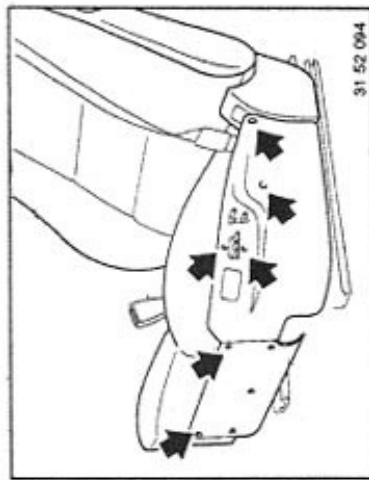


Pull off control knobs.

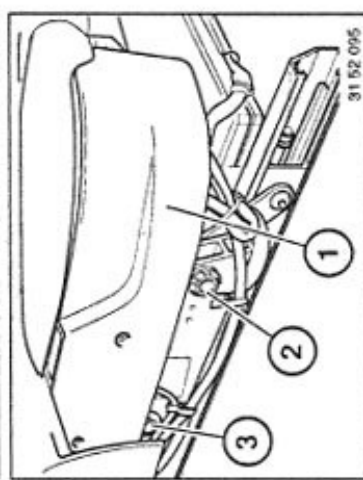
Installation:
The curved arrows for seat inclination must be at front end.



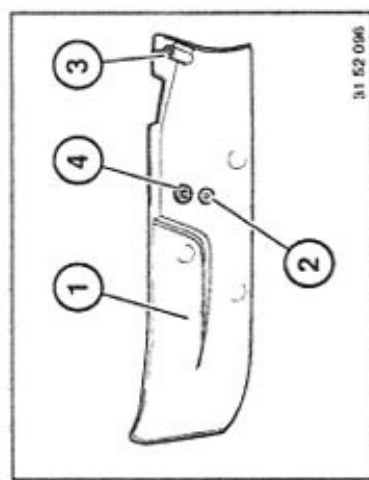
Unclip pocket.



Unscrew screws and remove trim panels.



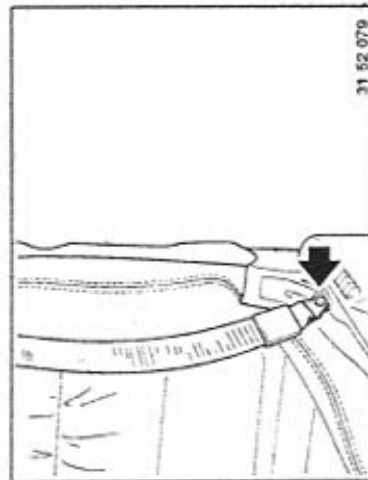
Installation:
Ensure correct clipping and parallelism of front and side trim panels.
Ensure sufficient clearance of trim panel (1) at points (2 and 3) as otherwise there would be a scraping noise when running the seat up or down.



Remedy:
Use, for example, washers (4) at screwed points (2 and 3).

52 Seats

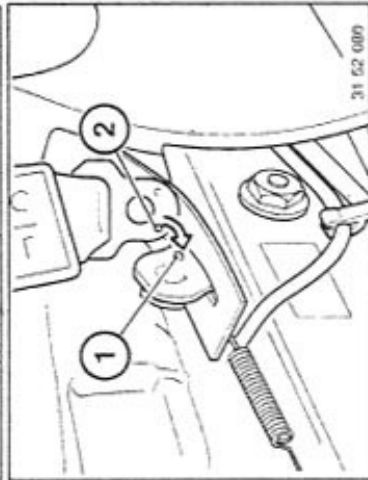
52 0	Damage assessment of front seat – belt system integrated in seat after an accident	52-	0/1
52 0	Function check of power adjustment of front seat	52-	0/4
52 0	Function check of memory	52-	0/5
52 10 000	Front seat, left or right – remove and install	52-	10/1
. . . .	Front seat survey	52-	10/3
002	Front seat (seat backrest frame), left or right – replace	52-	10/5
080	Seat shell on front seat, left or right – remove and install or replace	52-	10/6
082	Backrest bucket on front seat, left or right – remove and install or replace	52-	10/7
100	Seat rail on front seat, left or right, – remove and install or replace	52-	10/10
105	Rail (coupling bar) – replace	52-	10/10
400	Lumbar support on front seat, left or right – remove and install or replace	52-	10/13
450	Rear wall for front seat backrest, left or right – remove and install or replace	52-	10/14
495	Actuator drive for seat height on front seat – remove and install or replace	52-	10/17
575	One Bowden cable on front seat, left or right – adjust	52-	10/17
900	Actuator drive for seat adjustment (longitudinal adjustment) on front seat - remove and install or replace	52-	10/18
913	Actuator drive for tilt adjustment on front seat – remove and install or replace	52-	10/18
920	Actuator drive for backrest adjustment on front seat – remove and install or replace	52-	10/19
52 11 003	Seat cover on front seat, left or right – replace	52-	11/1
031	Backrest cover for front seat, left or right – replace	52-	11/2
101	Support (foam rubber section) from front seat, left or right – replace	52-	11/3
141	Support (foam rubber section) for front seat backrest, left or right – replace	52-	11/4
592	Heating element for front seat (seat surface), left or right – replace	52-	11/5
593	Heating element for front seat (backrest), left or right – replace	52-	11/6
52 20 070	Backrest for rear seat, left or right – remove and install/replace	52-	20/1
100	Rear seat, left or right – remove and install/replace	52-	20/1
	• Rear seat – one piece	52-	20/1
	• Rear seat backrest , folding	52-	20/2
245	Lock for rear seat backrest, left or right – replace	52-	20/2
51 20 400	Back wall for rear seat backrest, left or right – remove and install/ completely replace	52-	20/3
52 21 055	Cover for rear seat backrest, left or right – remove and install/replace	52-	21/1



31 52 079

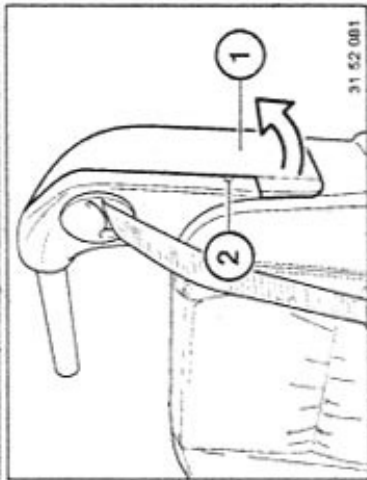
Pull plate out from the side and unscrew screw**.

Installation:
Replace screw**. Tightening torque*.



31 52 080

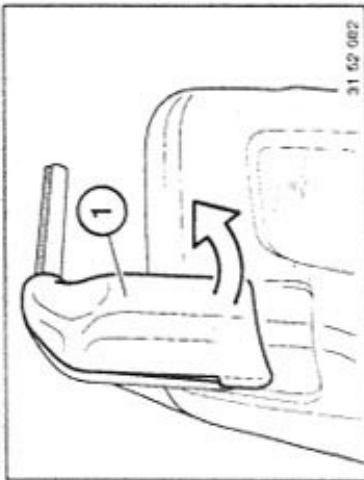
Installation:
Pin (1) must engage in bore (2).



31 52 081

Grab hold underneath plate (1) from the side, press to point (2), counterhold and unclip plate (1) from the side.

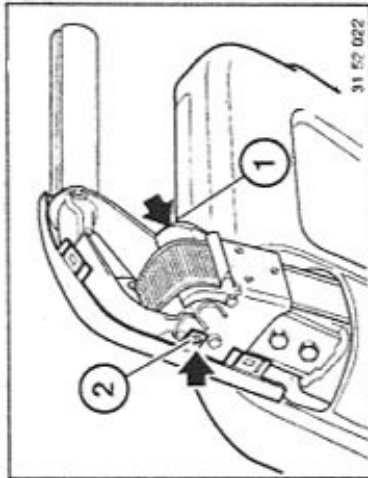
Installation:
Plate must be heard to engage.



31 52 082

Grab hold underneath plate (1) from behind and unclip plate (1) towards rear and upwards.

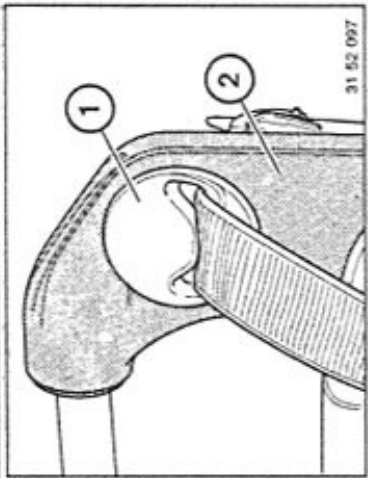
* Refer to Specifications
** Source of Supply: BMW Parts



31 52 022

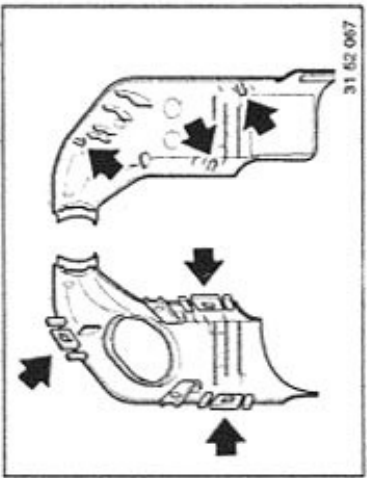
Unscrew screws (1 and 2) and remove plate.

Installation:
First tighten screw (1) to center the plate.



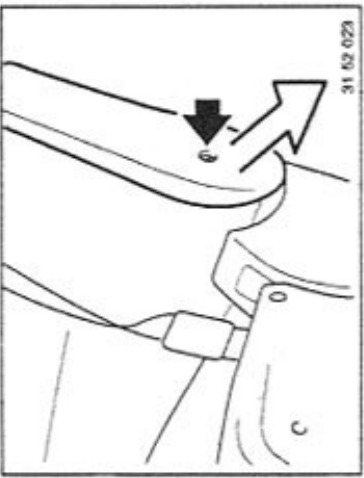
31 52 097

Installation:
Escutcheon (1) must turn freely in plate (2).



31 52 067

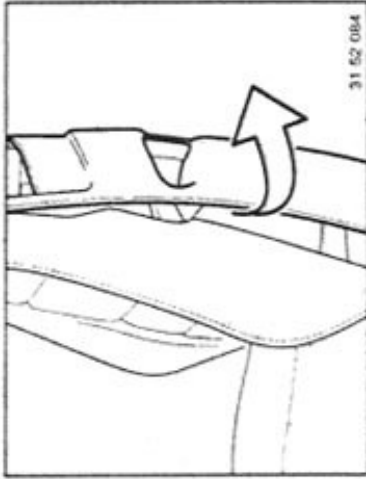
Clips and fasteners of plate must not be damaged. Damaged parts must be replaced.



31 52 029

Remove caps. Unscrew left and right screws. Unclip backrest trim panel towards outside from the side.

Installation:
Install caps on screws.

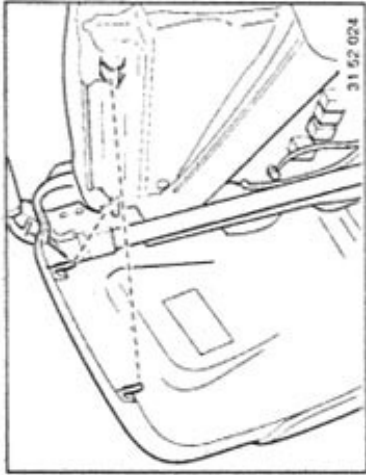


31 52 084

Lift trim panel upwards over the unlocking lever from the side.

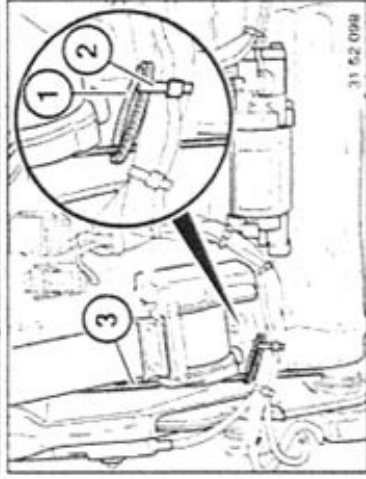
Important!

Don't damage the backrest trim panel.



31 52 024

Installation:
Engage backrest trim panel at top.
Make sure of uniform spacing between the upholstery and trim panel.
Make sure that upholstery edge is parallel to the backrest shell edge.



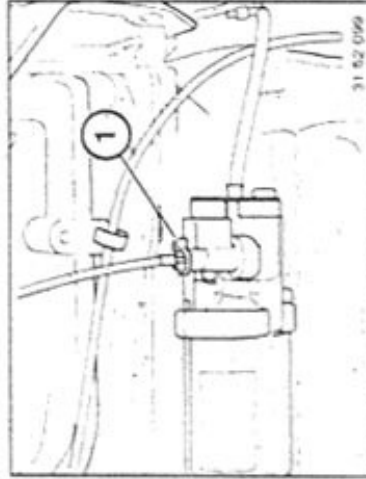
31 52 099

Installation:

Install wire straps (1 and 2).

Size the length of wire strap (1) that cable (3) cannot be crushed between the connecting rod and backrest frame while adjusting backrest inclination.

Installation:
If it is not possible to mount the backrest trim panel parallel, the backrest shell must be adjusted again - refer to 52 10 082.



31 52 099

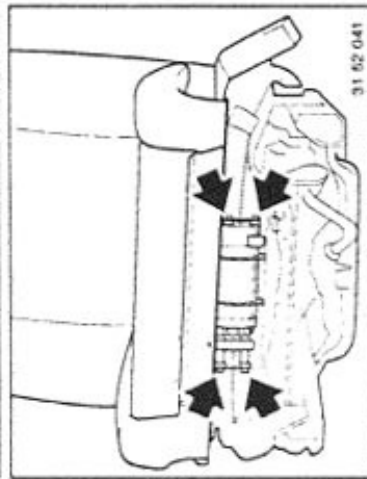
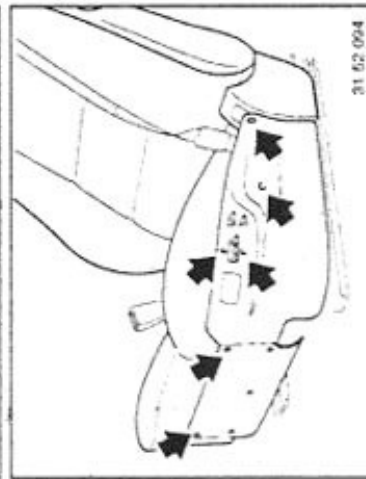
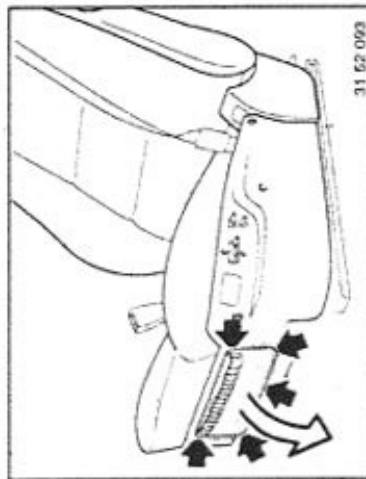
Installation:

The shaft must be routed without bends and must not touch the rear wall trim panel.

The tip of wire strap (1) must point to the side to avoid damaging the rear wall.

52 10 495 REMOVING AND INSTALLING OR REPLACING FRONT CUSHION HEIGHT DRIVE ON FRONT SEAT

Unclip pocket.



Unscrew screws and remove trim panels.

Loosen wire straps and unscrew screws.
Disconnect plug on control unit.
Remove lockplates of shafts and motor for
height adjustment.

Installation:
Reinsert spacers into rubber parts.
Check function.

52 10 575 ADJUSTING ONE CABLE ON LEFT OR RIGHT FRONT SEAT

Remove front seat – refer to 52 10 000.
Remove rear panel for front seat backrest
– refer to 52 10 450.

Push handle up until clicking of the micro-
switches is heard.

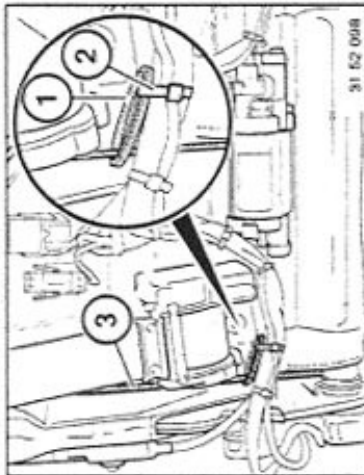
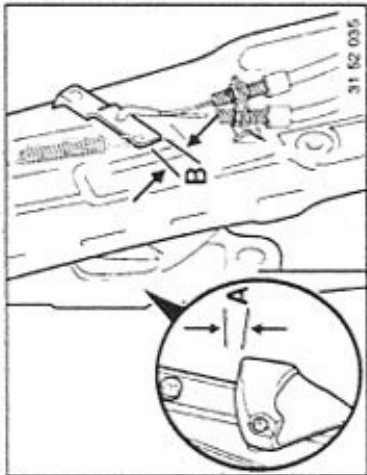
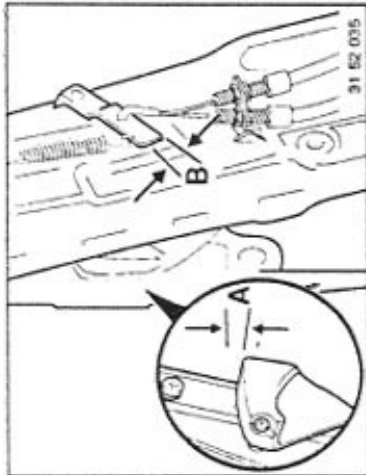
Distance (A) = 4 to 5 mm
Clearance (B) = approx. 2 mm

Note:
Microswitches must operate prior to un-
locking the backrest.

Unscrew nuts and adjust cables.

Note:
Both microswitches must operate simul-
taneously.

Installation:
Check microswitches – refer to 61 31 ...

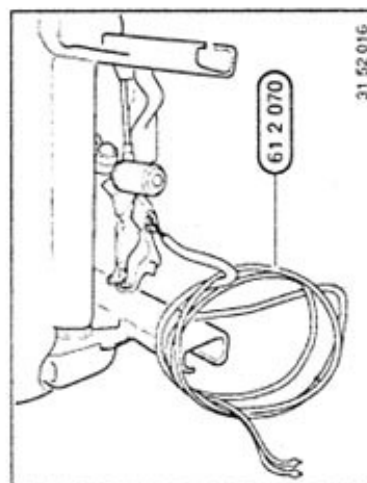


Installation:
Install wire straps (1 and 2).

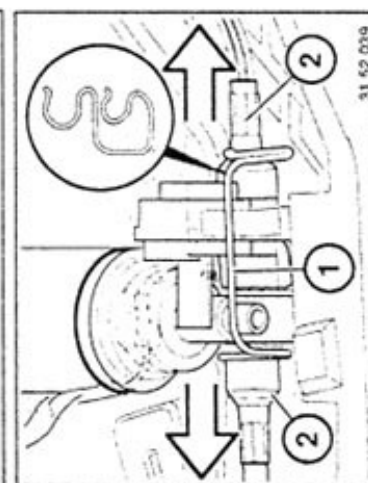
Size the length of wire strap (1) that cable
(3) cannot be crushed between the con-
necting rod and backrest frame while
adjusting backrest inclination.

52 10 900 REMOVING AND INSTALLING
OR REPLACING FORWARD /
BACK DRIVE ON FRONT SEAT

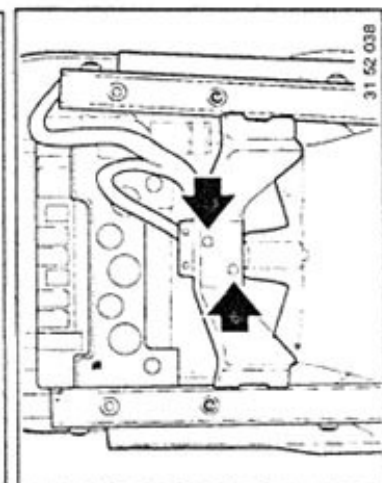
Remove front seat – refer to 52 10 000.



Connect Special Tool 61 2 070 (adapter lead) to white plug (outer) and 12 V power supply source.
Move seat to "top" position.
Move front seat inclination to "top" position.



Remove plug from seat control unit.
Loosen clamp (1) and pull drive shafts (2) off.

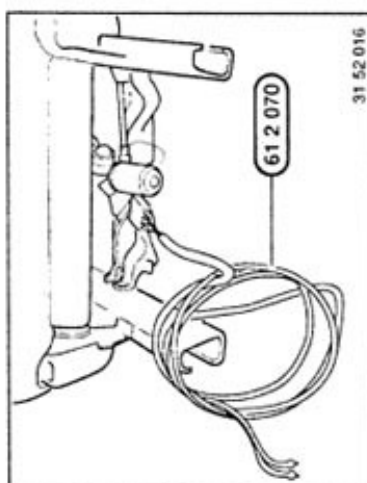


Unscrew screws and remove drive.

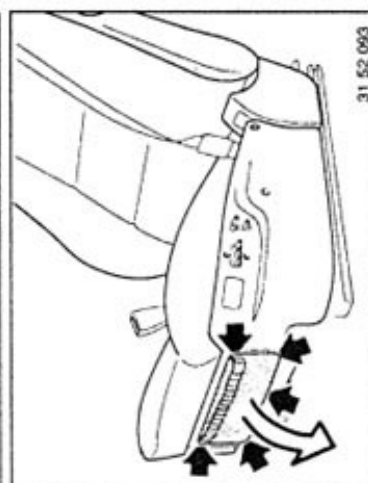
Installation:
Check function.

52 10 913 REMOVING AND INSTALLING
OR REPLACING INCLINATION
DRIVE ON FRONT SEAT

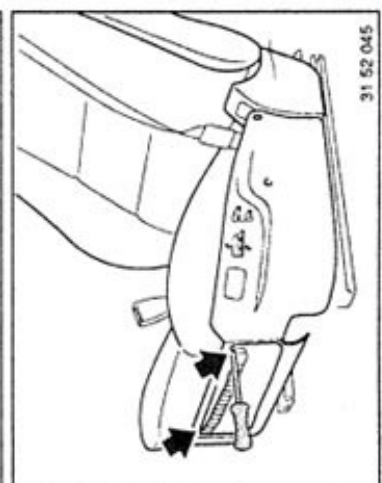
Remove front seat – refer to 52 10 000.



Connect Special Tool 61 2 070 (adapter lead) to white plug (outer) and 12 V power supply source.
Move seat to "top" position.
Remove seat control unit – refer to 61 31 099.

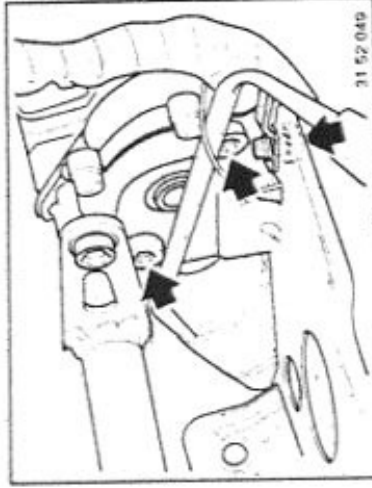


Unclip pocket.

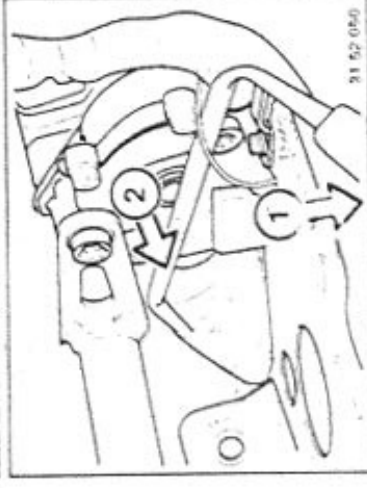


Unscrew screws and remove trim panel.

Uncover wires and disconnect plugs.
Unscrew screws.
Press front end of cushion shell up slightly
– refer to 52 10 080.



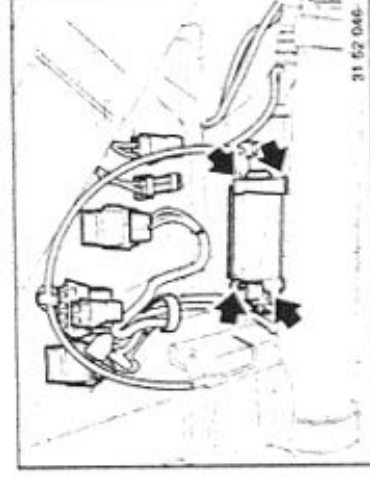
Press plate (1) of seat control unit downwards.
Push holder (2) aside and remove motor.
Installation:
Check function.



52 10 920 REMOVING AND INSTALLING
OR REPLACING BACKREST
DRIVE ON FRONT SEAT

Remove front seat – refer to 52 10 000.
Remove rear panel for front seat backrest
– refer to 52 10 450.

Unscrew screws.
Remove lockplates of shafts and motor for
backrest adjustment.
Installation:
Check function.



52 11 003 REPLACING CUSHION COVER
FOR LEFT OR RIGHT FRONT
SEAT

Remove front seat – refer to 52 10 000.
Remove rear panel for front seat backrest
– refer to 52 10 450



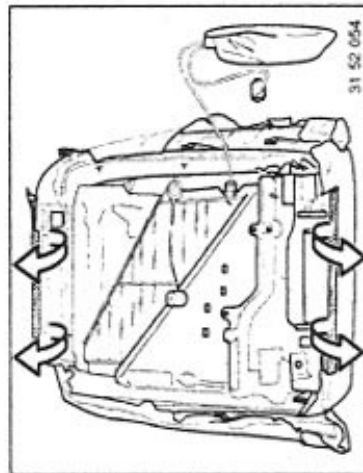
Unbend clamps.

Installation:

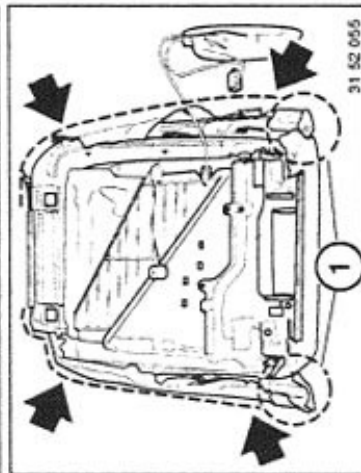
Lock new clamps* by bending with Special
Tool 52 0 050.

52 11 031 REPLACING BACKREST COVER FOR LEFT OR RIGHT FRONT SEAT

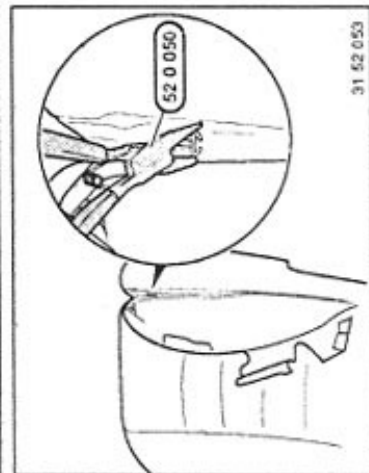
Remove front seat – refer to 52 10 000.
Remove rear panel for front seat backrest
– refer to 52 10 450.
Remove backrest shell – refer to 52 10 082.



31 52 054



31 52 055

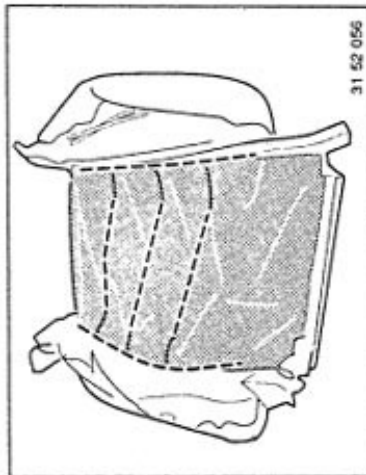


31 52 053

Remove cover.
Pull securing rods out.

Note:
Remove all clamps.

Installation:
Pull old securing rods into new cover;
cutting the new cover accordingly for this
purpose.



31 52 056

Pull off clamping bars at top and bottom of
cover.

Unbend all clamps.

Installation:
Secure new (6 mm) clamps* with a pneu-
matic tacker*.
Cement cover in zone (1) with 3 M Cement
Spray*.

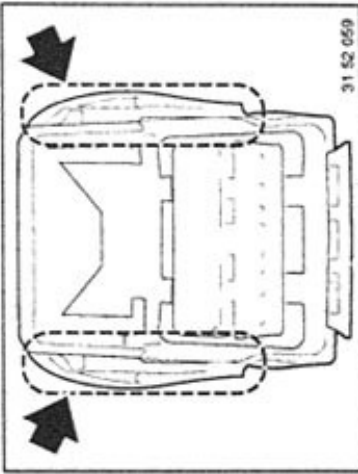
Unbend clamps.

Installation:
Lock new clamps* by bending with Special
Tool 52 0 050.

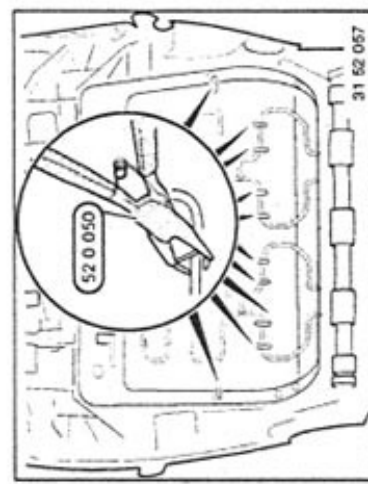
* Source of Supply: BMW Parts

52 11 101 REPLACING CUSHION PADDING (FOAM RUBBER) FOR LEFT OR RIGHT FRONT SEAT

- Remove front seat – refer to 52 10 000.
- Remove rear panel for front seat backrest – refer to 52 10 450.
- Remove backrest shell – refer to 52 10 082.
- Remove cushion shell – refer to 52 10 080.
- Remove cushion cover – refer to 52 11 003.

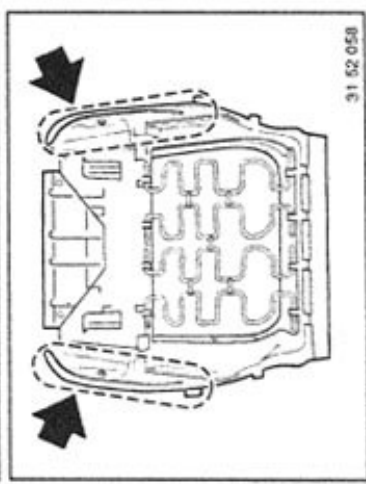


Installation:
Spray corresponding surfaces on padding.
Press both parts together.



Unbend clamps and remove padding.

Installation:
Lock new clamps by bending with Special Tool 52 0 050.

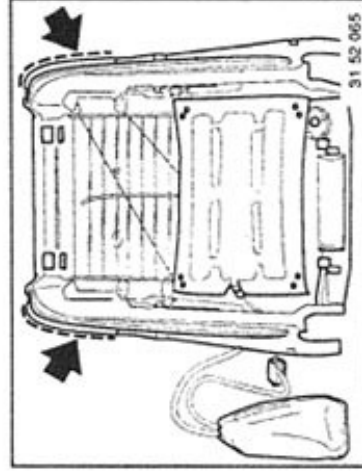


Installation:
Apply 3 M Cement Spray* on left and right cementing surfaces.

* Source of Supply: BMW Parts

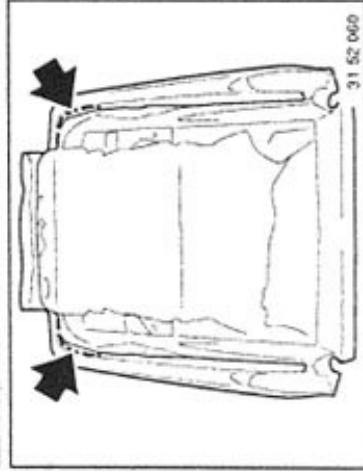
52 11 141 REPLACING BACKREST PADDING (FOAM RUBBER) FOR LEFT OR RIGHT FRONT SEAT

Remove front seat – refer to 52 10 000.
 Remove rear panel for front seat backrest – refer to 52 10 450.
 Remove backrest shell – refer to 52 10 082.
 Remove backrest cover - refer to 52 11 031.



Remove padding.

Installation:
 Apply 3 M Cement Spray* on left and right cementing surfaces.

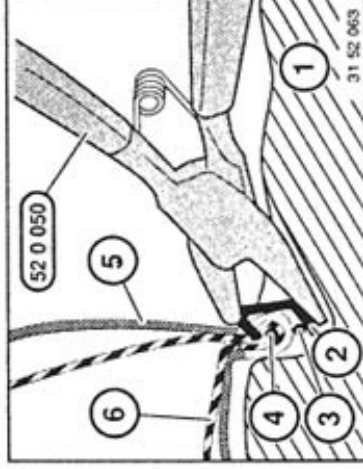


Installation:
 Spray corresponding surfaces on padding.
 Press both parts together.

• Source of Supply: BMW Parts

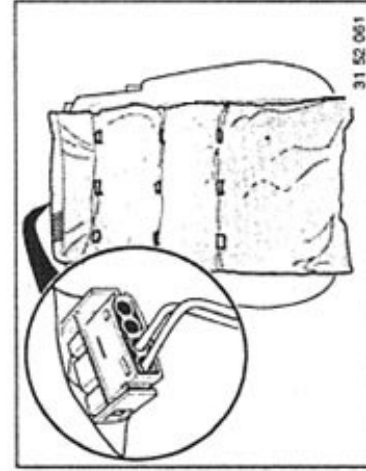
52 11 592 REPLACING CUSHION HEATING ELEMENT FOR LEFT OR RIGHT FRONT SEAT

Remove front seat – refer to 52 10 000.
 Remove rear panel for front seat backrest – refer to 52 10 450.
 Remove backrest shell – refer to 52 10 082.
 Remove cushion shell – refer to 52 10 080.
 Remove cushion cover – refer to 52 11 003.

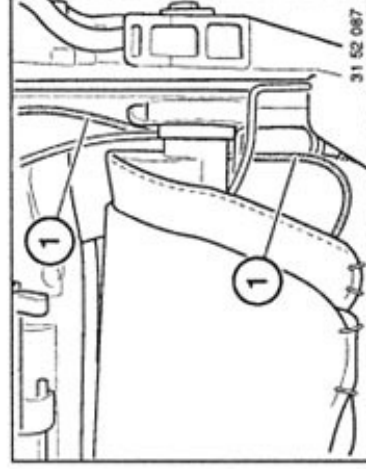


Installation:
 Lock new clamps by bending with Special Tool 52 0 050.

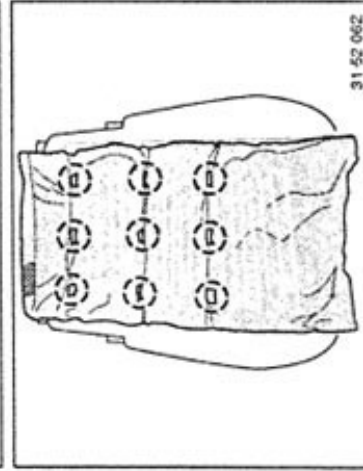
- 1 Foam rubber padding
- 2 Clamp
- 3 Securing rod in padding
- 4 Securing rod in cover
- 5 Heating element
- 6 Cover



Pull wires through padding and remove heating element.



Installation:
 Check routing of wires (1).

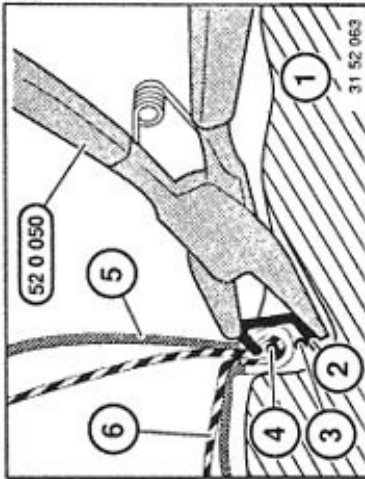


Installation:
 The heating element must be secured together with the cover to the padding at the shown positions.

Caution!
 Don't damage the heating conductor of the heating element.

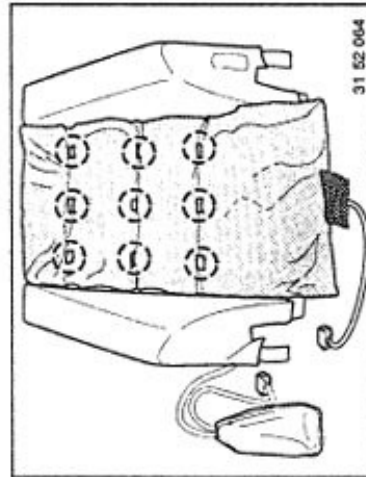
52 11 593 REPLACING BACKREST HEATING ELEMENT FOR LEFT OR RIGHT FRONT SEAT

Remove front seat – refer to 52 10 000.
 Remove rear panel for front seat backrest – refer to 52 10 450.
 Remove backrest shell – refer to 52 10 082.
 Remove backrest cover - refer to 52 11 080.



Installation:
 Lock new clamps by bending with Special Tool 52 0 050.

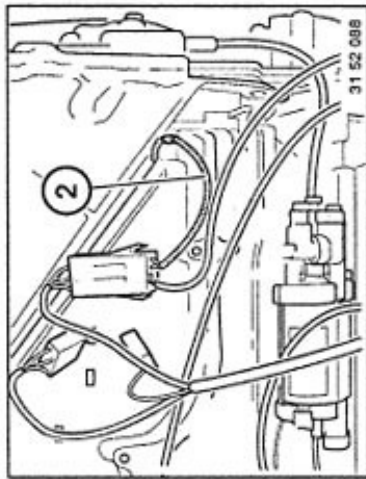
- 1 Foam rubber padding
- 2 Clamp
- 3 Securing rod in padding
- 4 Securing rod in cover
- 5 Heating element
- 6 Cover



Remove heating element.

Installation:
 The heating element must be secured together with the cover to the padding at the shown positions.

Caution!
 Don't damage the heating conductor of the heating element.

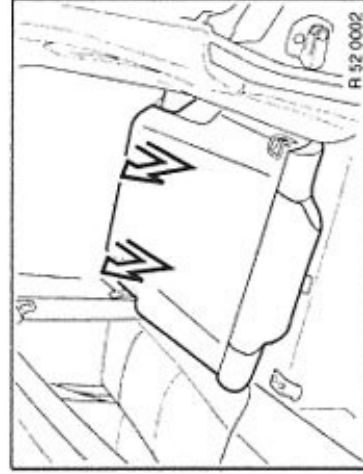


Installation:
 Check routing of wires (2).

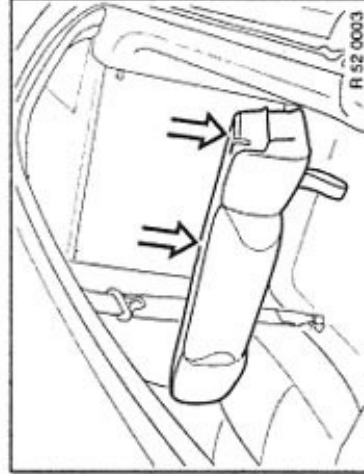
52 20 070 Removing and installing or replacing backrest on left or right back seat

Remove back seat, see 52 20 100.

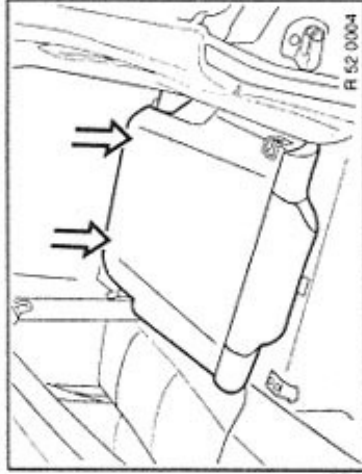
Unlock backrest with the loop and fold forwards.



Lift out rear backrest forwards / upwards.



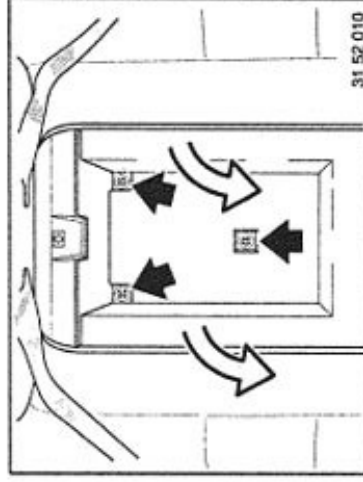
Installation:
Install backrest in spring at 45°.



Fold backrest downwards and press down firmly to engage.

52 20 100 Removing and installing or replacing left or right back seat

Open door window and side window.

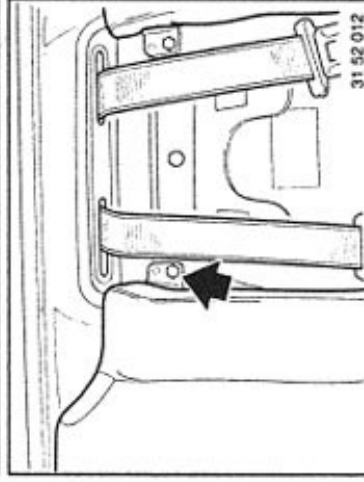


o One-piece back seat:

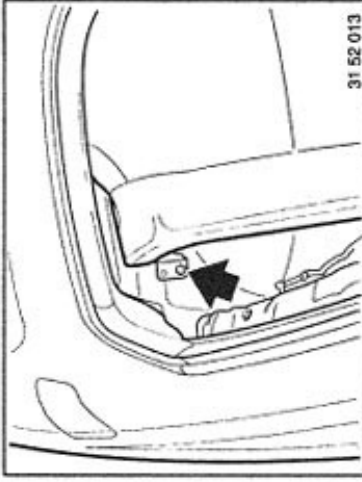
Remove side trim, see 51 43 000.

Remove first aid box.

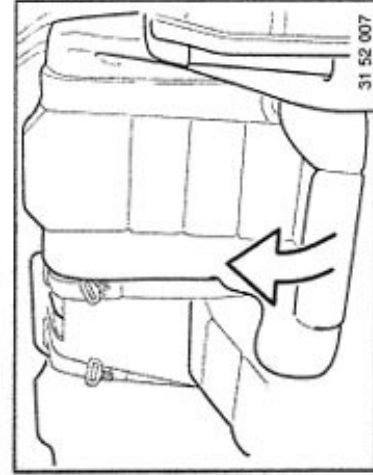
Unfasten screws and carefully remove tray.



Unfasten inside screws.
Tightening torque, refer to Technical Data 52 24 1AZ



Unfasten outside screws.
Tightening torque, refer to Technical Data 52 24 1AZ



31 52 007

Lift front of seat and lift upwards to disengage.



R 52 0005

o Folding back seat:

Note:

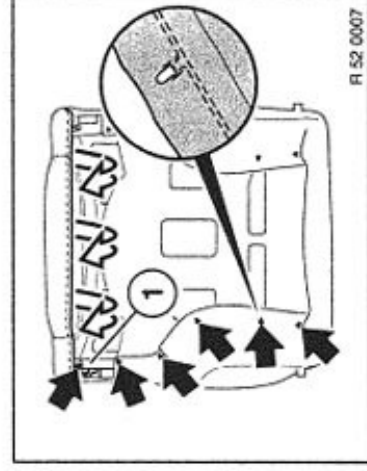
Side trim does not have to be dismantled.

Lift back seat forwards and upwards to remove.

52 20 245 Replacing lock on back seat backrest on left or right

Unscrew back section of rear seat, refer to 52 20 400.

If necessary, remove finisher from hinge.



R 52 0007

Remove strip from top.
Unfasten cover from outside face (1) of lock.

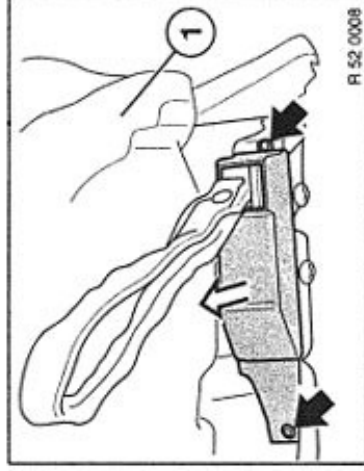
Remove cover and foam from outside face.

Note:

Remove the foam rubber cemented to the top fold (risk of damage).

Installation:

Secure foam with standard spray adhesive (for foam rubber).



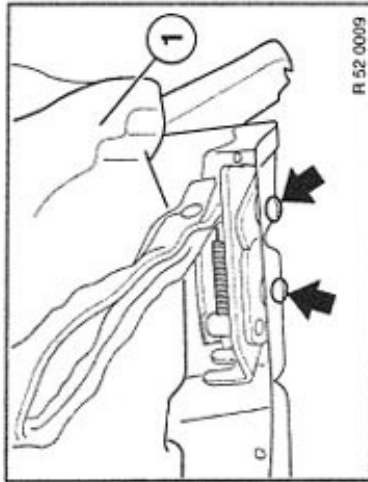
R 52 0008

Drill out rivets from cover.

Installation:

Rivet diameter 4 mm.

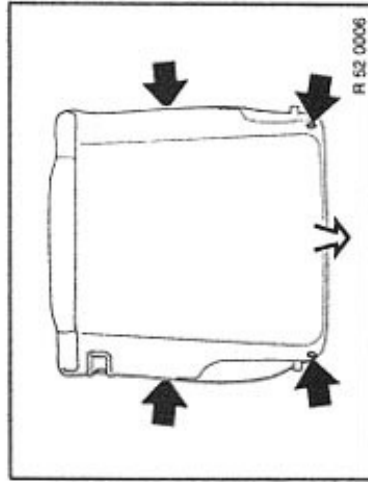
Unfasten screws and remove lock.



51 20 400 Removing and installing or completely replacing back wall from back seat backrest

Remove backrest, see 52 20 070.

Unfasten screws.
Lift up lower cover and remove.



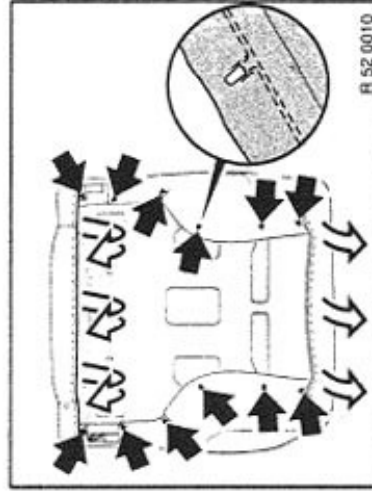
52 21 055 Removing and installing or replacing cover for back seat backrest on left or right

Remove back wall from back seat backrest, see 52 20 400.

Remove finisher from left / right mount.

Lift up strip to remove.

Disconnect backrest cover from clamping strip tips and remove by pulling downwards.



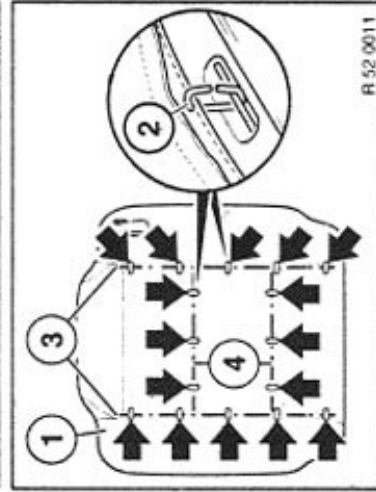
R 52 0010

Fold backrest cover (1) to one side. Unfasten clips (2) in the cushion (foam padding) from the cover rods (3).

Remove cover rods (3) by pulling upwards. Unfasten remaining clips (2) from cover rods (4) and remove backrest cover (1).

Note:

Remove clips completely.



R 52 0011

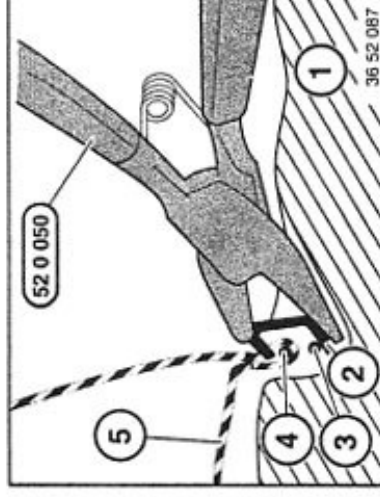
Only replacement:

Installation:

Remove retaining rods from cover. Cut new cover and slide in retaining rods.

Installation:
Bend new clips with special tool 52 0 050.

- 1 Support
- 2 Clip
- 3 Retaining rod in the support
- 4 Retaining rod in the cover
- 5 Cover

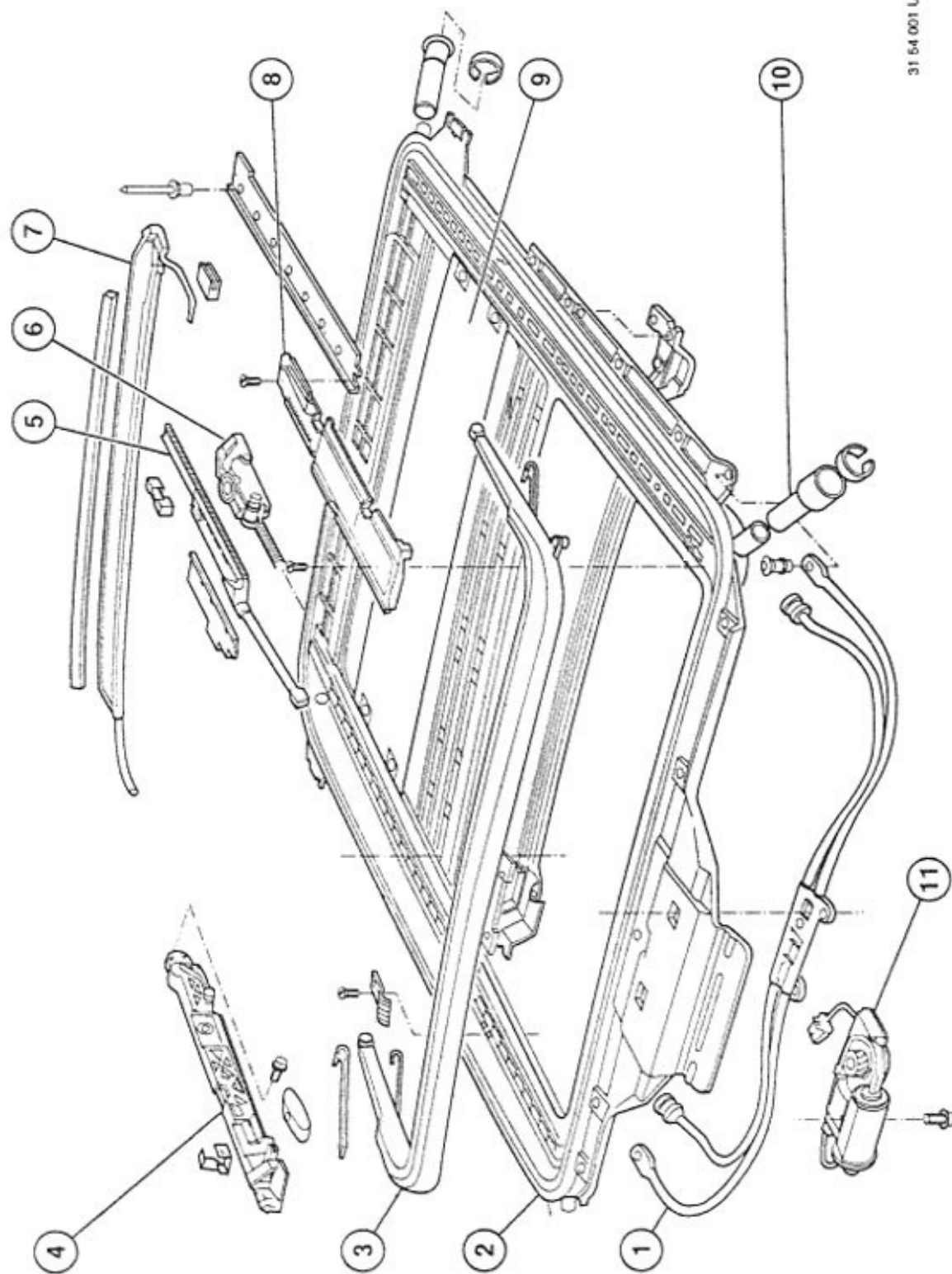


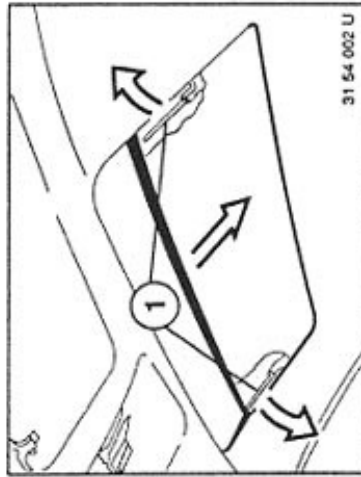
36 52 087

54 Hood, sunroof

54 12 . . .	Layout of slide/tilt sunroof	54-12/1
004	Slide/tilt sunroof – adjust	54-12/2
100	Slide/tilt sunroof lid – remove and install	54-12/3
130	Headliner for slide/tilt sunroof lid – remove and install	54-12/4
135	Water gutter – remove and install	54-12/5
210	Slide/tilt sunroof, complete unit – remove and install	54-12/5
241	Both drive cables for slide/tilt sunroof – remove and install	54-12/6
54 13 010	Motor and gearbox unit for slide/tilt sunroof – remove and install or replace	54-13/1
015	Module for slide/tilt sunroof – remove and install or replace	54-13/2

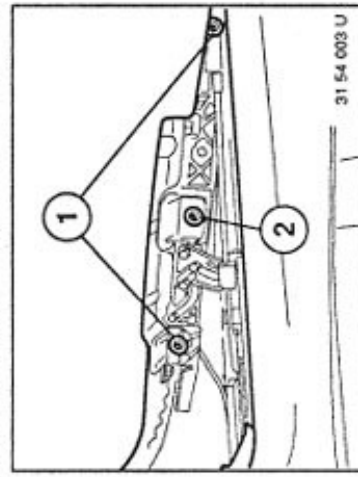
- 1 Guide pipe
- 2 Frame
- 3 Wind deflector
- 4 Gate
- 5 Rack
- 6 Drive cable
- 7 Water drain channel
- 8 Sliding rail
- 9 Floating roof liner
- 10 Water drain hose
- 11 Motor gearbox unit / module



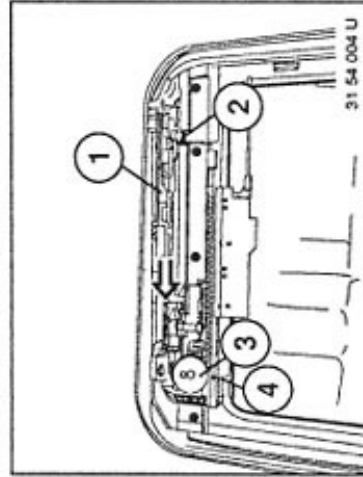


54 12 004 ADJUSTING SUN ROOF

Open the sun roof to lifted position. Press locking lever (1) out and push the floating roof liner back.

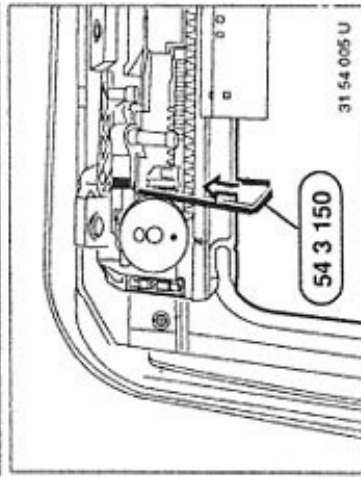


Loosen screws (1 and 2) on left and right sides. Close the sun roof.



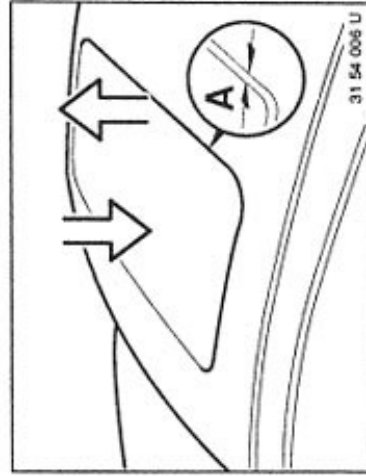
Press gate (1) back against stop (2) on left and right sides. Bore (3) and notch (4) must be opposite each other on left and right sides.

Note:
The sun roof lid was removed for this picture.



Insert Special Tool 54 3 150 on left and right sides and lock the gate with it.

Note:
The sun roof lid was removed for this picture.



Ideal Adjustment:

Uniform distance (A) of lid to roof at front and rear.

Height:

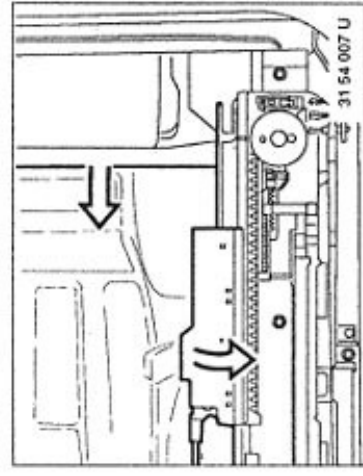
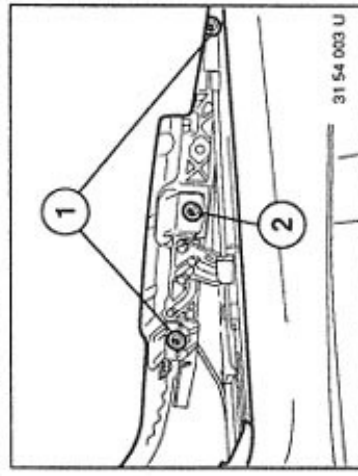
Front: flush to 1 mm deeper
Rear: flush to 1 mm higher

Installation:
Replace screws.

Tighten screws (1) on left and right sides.

Installation:
Tightening torque*.

Remove Special Tool 54 3 150.



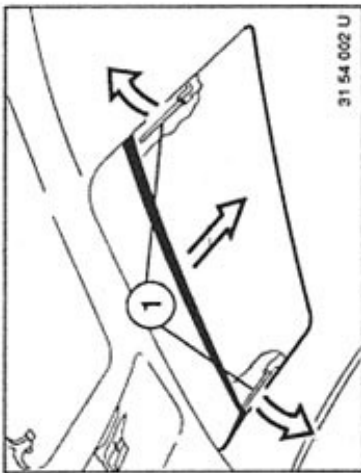
Important!
Lift left and right racks and pull floating roof liner forward half the distance (if not retainers on the racks would break off when operating the sun roof).

Note:
The sun roof lid was removed for this picture.

Open the sun roof to lifted position. Tighten screws (2) on left and right sides.

Installation:
Replace screws.
Tightening torque*.

* Refer to Specifications

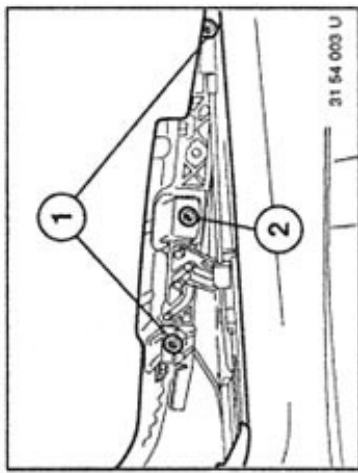


31 54 002 U

54 12 100 REMOVING AND INSTALLING SUN ROOF LID

Removing:

Open the sun roof to lifted position.
Press locking lever out and push the
floating roof liner back.

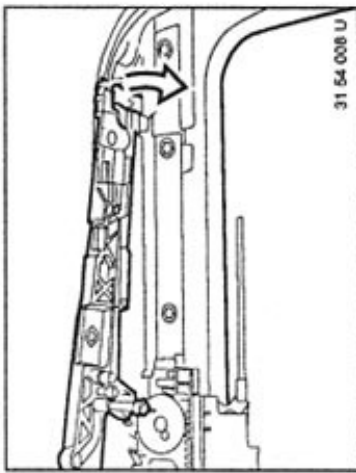


31 54 003 U

Loosen screws (1) on left and right sides.
Unscrew screws (2) on left and right sides.

Installation:

Replace screws.

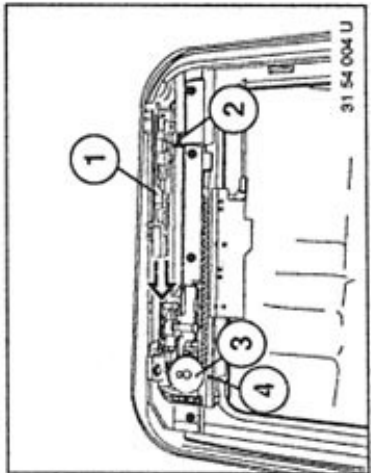


31 54 008 U

Press retainers in on left and right sides
using a screwdriver and remove sun roof
lid from above.

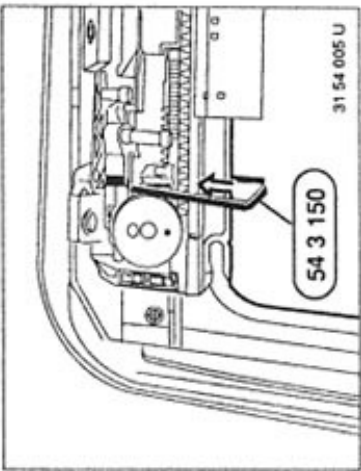
Note:

The sun roof lid was removed for this
picture.



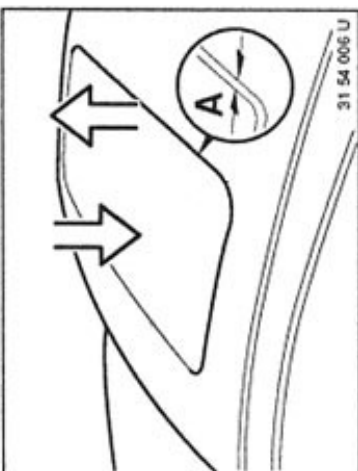
31 54 004 U

Installing:
Move sun roof lid or gates to "closed"
position.
Press gate (1) back against stop (2).
Bore (3) and notch (4) must be opposite
each other.



31 54 005 U

Insert Special Tool 54 3 150 on left and
right sides and lock the gate with it.



31 54 006 U

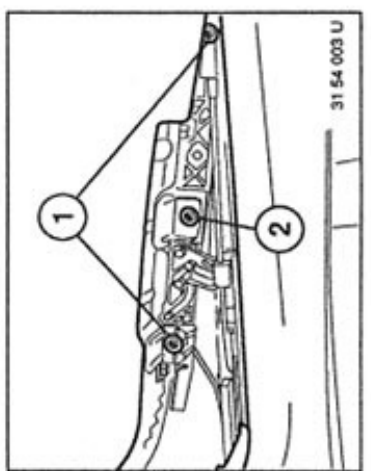
Mount and adjust lid.

Ideal Adjustment:

Uniform distance (A) of lid to roof at front
and rear.

Height:

Front: flush to 1 mm deeper
Rear: flush to 1 mm higher

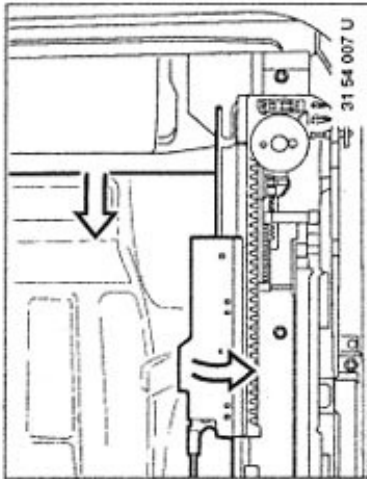


31 54 003 U

Tighten screws (1).
Tightening torque*.

Remove Special Tool 54 3 150.

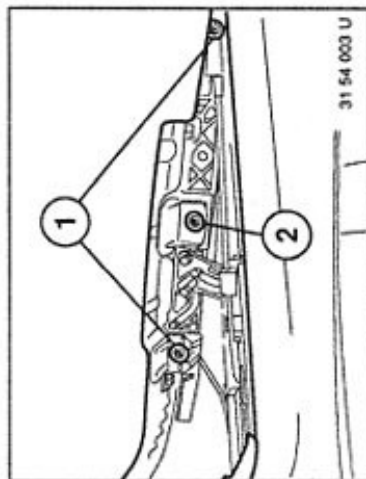
* Refer to Specifications



Important!
Lift left and right racks and pull floating roof liner forward half the distance (if not retainers on the racks would break off when operating the sun roof).

Note:
The sun roof lid was removed for this picture.

Installation:
Replace screws.

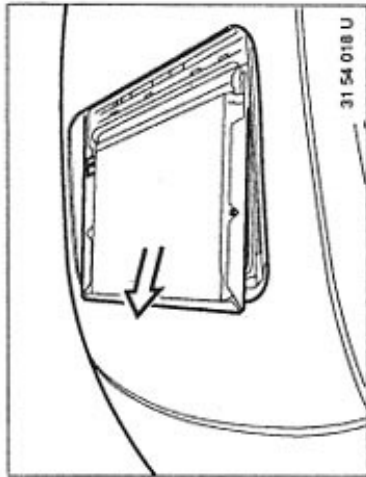


Open the sun roof to lifted position.
Install and tighten screw (2).
Tightening torque*.

Pull floating roof liner forward as far as possible and engage.

54 12 130 REMOVING AND INSTALLING ROOF LINER FRAME FOR SUN ROOF LID

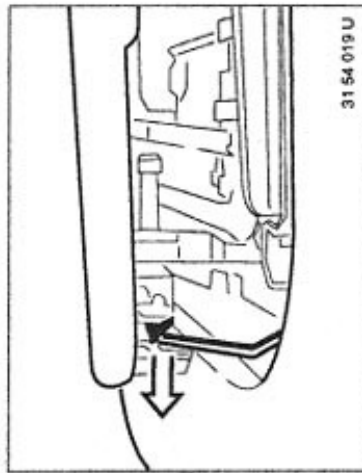
Remove both drive cables for sun roof -
refer to 54 12 241.



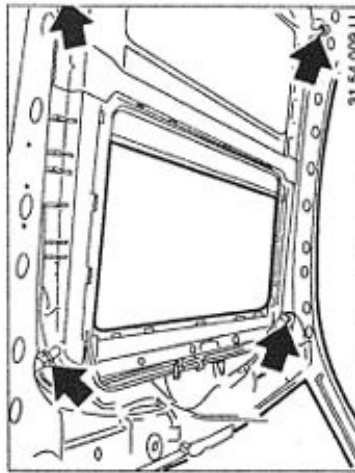
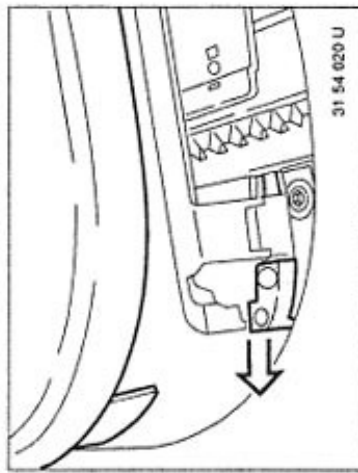
Pull floating roof liner forward as far as possible and lift it out.

54 12 135 REMOVING AND INSTALLING WATER DRAIN

Open sun roof to lifted position.
Unclip linkage from behind on left and right sides.



Unclip left or right slide.
Push rain molding strip aside and lift out water drain.

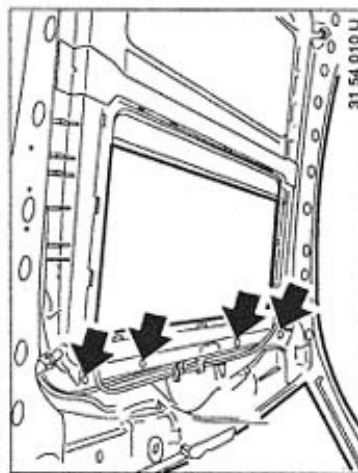


54 12 210 REMOVING AND INSTALLING SUN ROOF ASSEMBLY

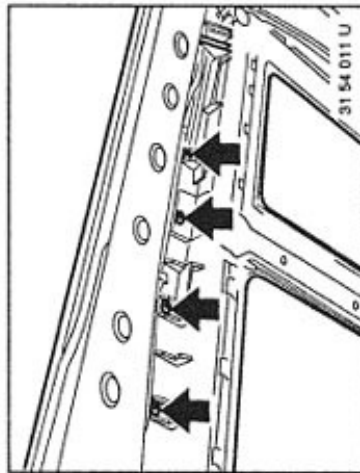
Open sun roof and lower side windows.
Remove roof liner – see Group 51.
Remove motor and gearbox unit for sun roof – see 54 13 010.
Loosen clamps at front and rear on left and right sides.
Pull off water drain hoses.

Installation:
Replace clamps.

Unscrew screws on left and right sides.

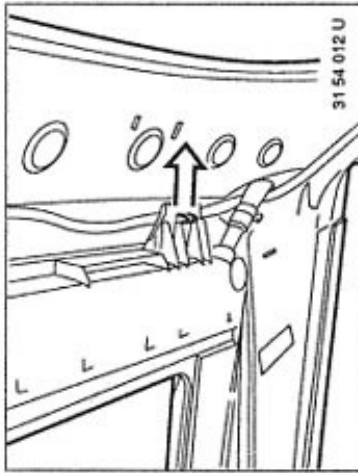


Unscrew screws on left and right sides.



Press out retainers on left and right sides.
Lower rear end of sun roof cassette slightly and then pull back.

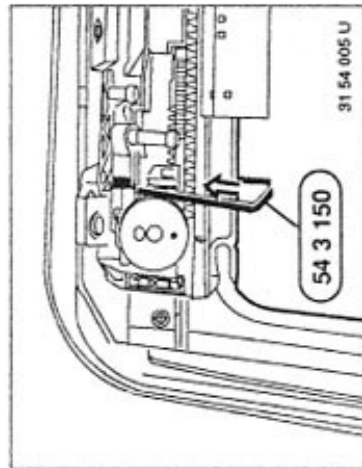
Installation:
Hook in sun roof cassette.



• See Specifications

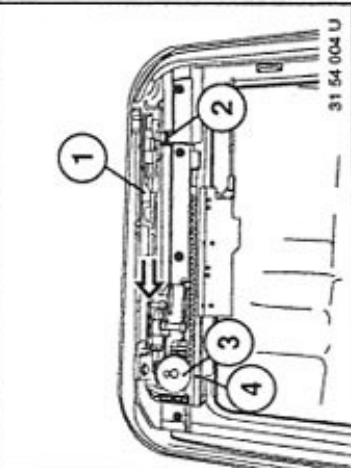
54 12 241 REMOVING AND INSTALLING BOTH DRIVE CABLES FOR SUN ROOF

Remove sun roof lid – see 54 12 100.
Remove motor/gearbox unit – see 54 13 010.



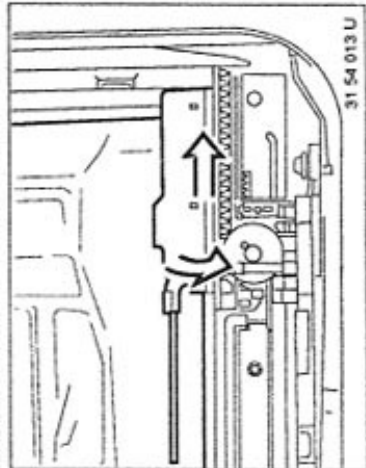
31 54 005 U

Installation:
Insert Special Tool 54 3 150 on left and right sides to lock the gates.



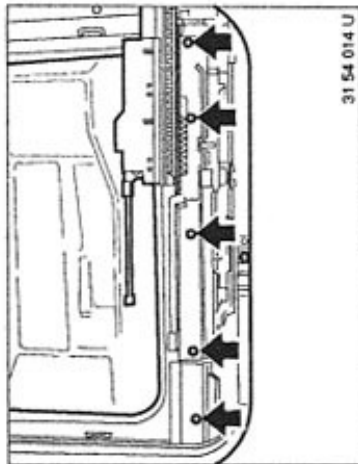
31 54 004 U

Installation:
Push drive cable with gate forward uniformly to "closed sun roof position" on left and right sides.
Then press back gate (1) against stop (2) on left and right sides.
Bore (3) and notch (4) must be opposite each other on left and right sides.

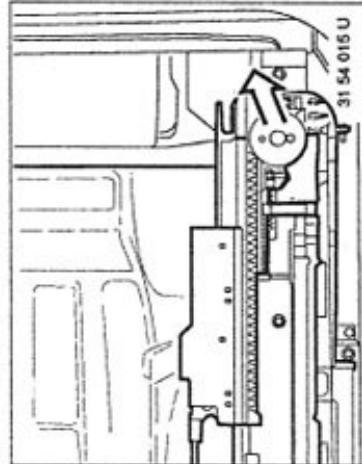


31 54 013 U

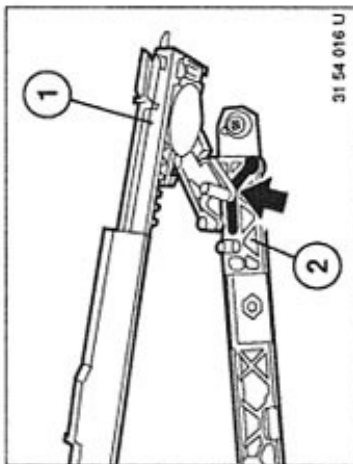
Push back drive cable with gate uniformly on left and right sides, while lifting the rack (if not, clips would break off).



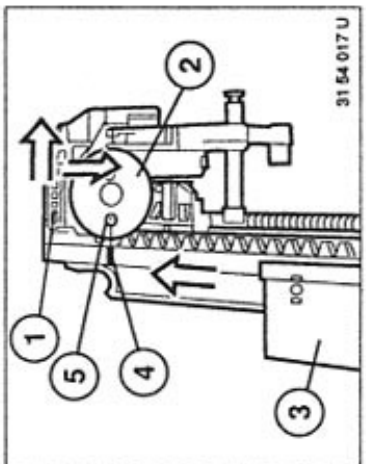
31 54 014 U



31 54 015 U



31 54 016 U



31 54 017 U

Unscrew screws and take off sliding rails.

Installation:
Replace screws.
Tightening torque*.

Push drive cable with gate forward completely on left and right sides.
Lift gate and unclip linkage on left and right sides.
Lift and pull out drive cable with gate toward rear.

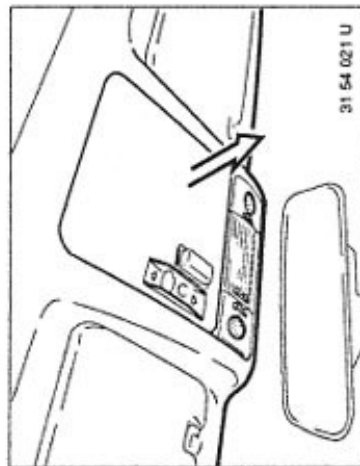
Installation:
Don't lubricate drive cables.

Press drive cable (1) off of gate (2) in middle position.
Drive cable (1) is marked L for left or R for right.

Push lock (1) aside, press on gear (2) firmly and push rack (3) forward.

Installation:
Notch (4) and bore (5) must be aligned with the lock engaged.
Correct the position if necessary.

• See Specifications

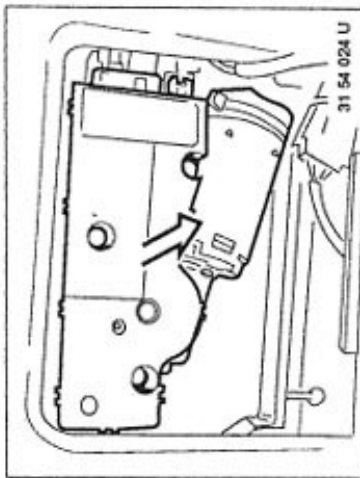


**54 13 010 REMOVING AND INSTALLING
OR REPLACING MOTOR AND
GEARBOX UNIT FOR SUN
ROOF**

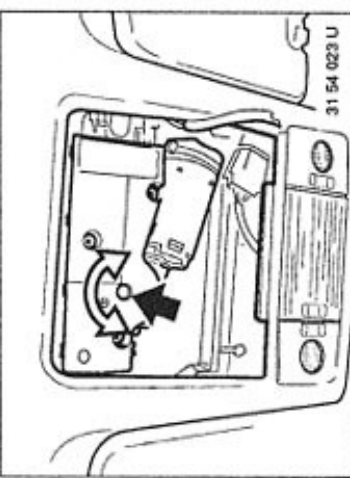
Lift cover out.

Installation:

Check function.
If applicable, initialize the sun roof module
by operating and holding the switch ap-
prox. 15 seconds (plug connection on sun
roof module must have been disconnected
once).

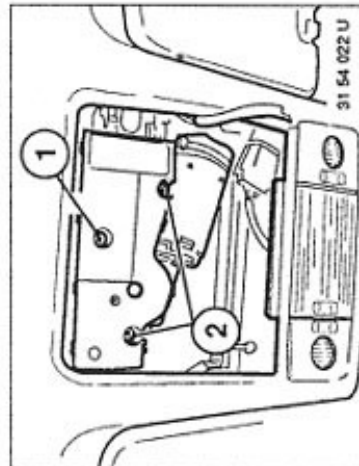


Lift the sun roof module off of the motor /
gearbox unit.



Installation:

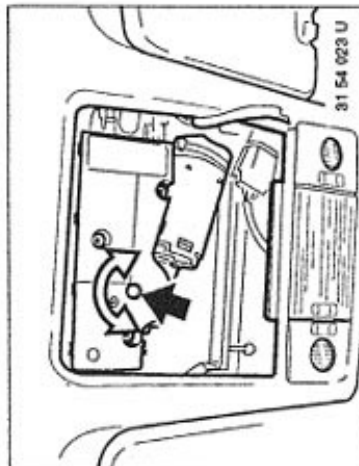
Turn the motor and gearbox shaft using a
hexagon socket wrench until the sun roof
module can be installed.



Unscrew screws /1 and 2).
Remove motor/gearbox unit and sun roof
module.
Disconnect plug.

Installation:
Tightening torque*.

Screw 1 = long
Screw 2 = short

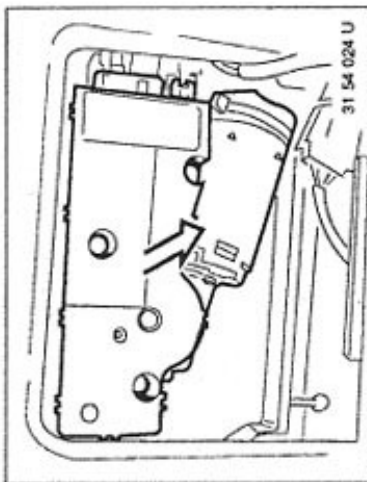


Installation:
Turn the motor shaft using a hexagon
socket wrench until the gearbox gear
engages in the drive cables.

• Refer to Specifications

54 13 015 REMOVING AND INSTALLING
OR REPLACING MODULE FOR
SUN ROOF

Procedures are identical with those for
"Removing and Installing Motor and
Gearbox Unit for Sun Roof".



31 54 024 U