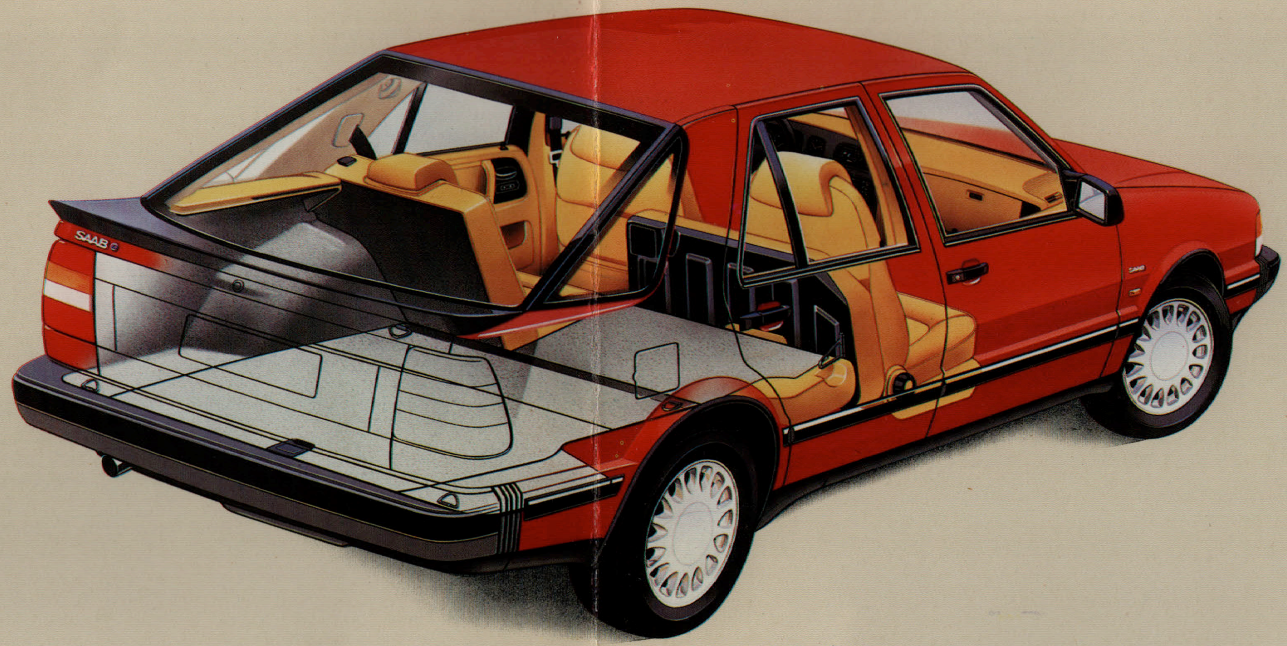
SAAB

9000

SERVICE MANUAL

8:1 Body

M 1986–88–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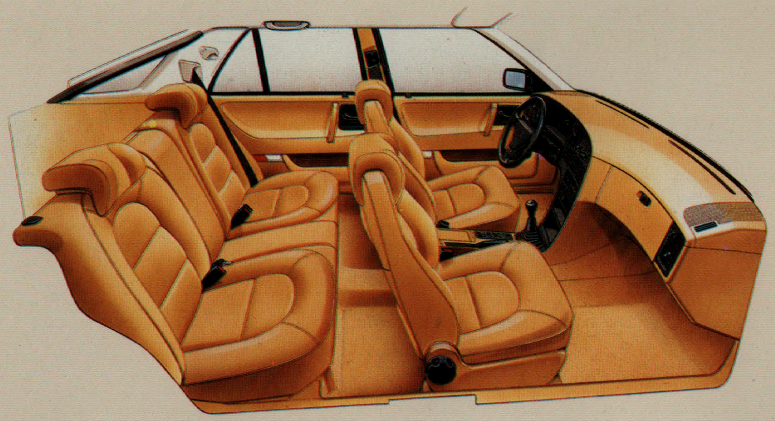

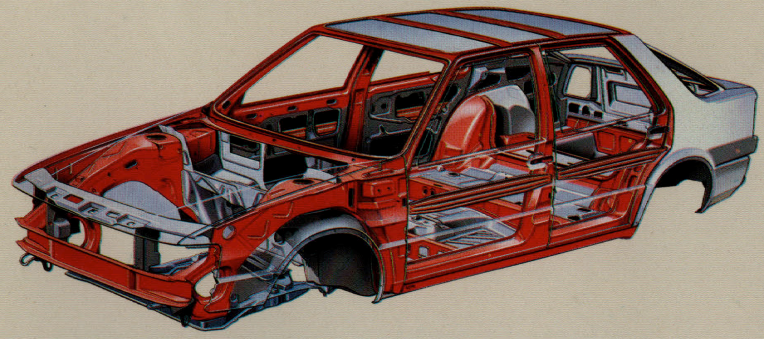

SAAB 9000

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Units

The basic and derived units used throughout the Service Manual are in accordance with the SI system.

For users not familiar with the SI units, some non-Continental units are given in brackets after the respective SI unit.

The following symbols and abbreviations are used:

SI unit	Equivalent unit and symbol
mm	inch (in)
kg	pound (lb)
N	pound-force (lbf)
Nm	pound-force foot (lbf ft)
bar	pound-force per square inch (lbf/in^2) (Also abbreviated: psi)
l (litre)	US liquid quart (liq qt) (Also abbreviated: qts) US gallon (USgal)
°C	°F

Conversion factors

1 in = 25.4 mm	1 mm = 0.039 in
1 lbf = 4.45 N	1 N = 0.23 lbf
1 lbf ft = 1.36 Nm	1 Nm = 0.74 lbf ft
1 psi = 0.07 bar	1 bar = 14.5 lbf/in^2
1 liq qt = 0.95 l	1 l = 1.05 liq qt
1 US liq qt = 0.83 UKqt	1 USgal = 0.83 UKgal

Market codes

The codes refer to market specifications

AT	Austria	FR	France
AU	Australia	GB	Great Britain
BE	Belgium	GR	Greece
CA	Canada	IS	Iceland
CH	Switzerland	IT	Italy
DE	Germany	JP	Japan
DK	Denmark	ME	Middle East
ES	Spain	NL	Netherlands
EU	Europe	NO	Norway
FE	Far East	SE	Sweden
FI	Finland	US	USA

Production: Technical Publications, Saab-Scania, Trollhättan, Sweden

Technical data

Important safety considerations

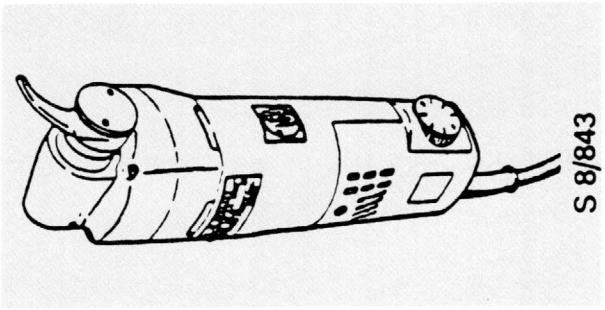
Safety precautions must be taken when handling Betaseal glass fitting kits, part no. (45) 30 07 119, manufactured by Gurit Essex A.G.CH.

General precautions:

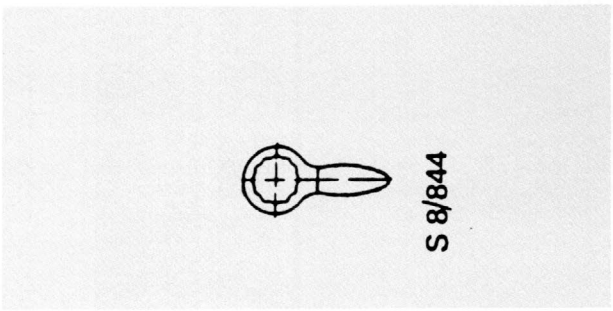
- Read the warning text on the product label
- If seeking medical advice, always take the product container with you
- Make sure the premises are well ventilated
- Always wear protective gloves and safety goggles
- No smoking in the vicinity
- Keep the adhesive kit well out of the reach of children

Health hazard	Adhesive	Cleaning solvent	Glass primer
On inhalation	May cause allergy		May cause allergy
Incontact with skin	May cause allergy	Dries up natural oils in the skin	May cause allergy
If splashed in eyes	May cause passing irritation	May cause passing irritation	May cause passing irritation
First aid			
Inhalation	Fresh air & rest	Fresh air & rest	Fresh air & rest
Skin contact	Thorough washing with soap & water	Washing with soap & water	Thorough washing with soap & water
Splashes in eyes	Thorough flushing with water (at least 15 min). Seek medical advice if distress persists	Thorough flushing with water (at least 15 min). Seek medical advice if distress persists	Thorough flushing with water (at least 15 min). Seek medical advice if distress persists
Swallowing	Drink large amount of milk/cream/ cooking oil or water. Do not induce vomiting. Seek medical advice immediately		Drink large amount of milk/cream/ cooking oil or water. Do not induce vomiting. Seek medical advice immediately
Labelling			
Warning text	Health hazard	Possible health hazard	Health hazard
Warningsymbol			
Fire and explosion risk	Slight	Highly flammable - flash point +13°C (55°F) 	Highly flammable - flash point -6°C (21°F) 

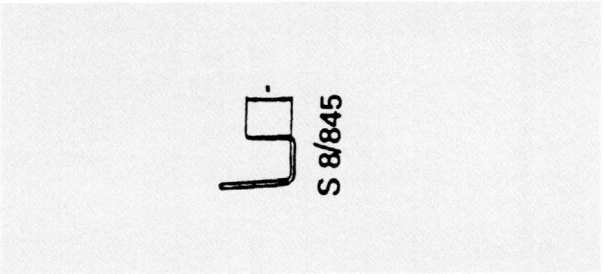
Special tools



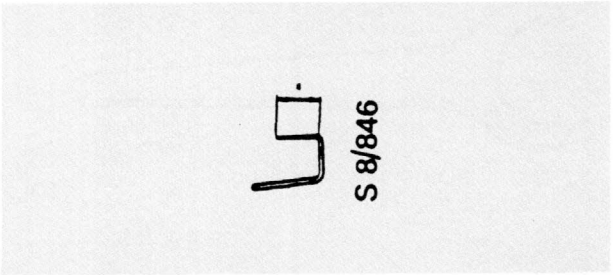
(45) 30 05 154 Power saw



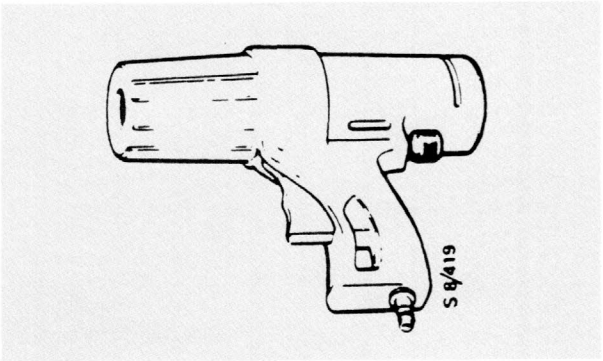
(45) 30 05 162 Trimming blade



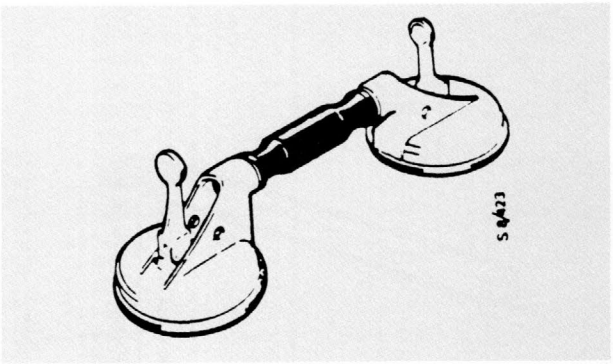
(45) 30 05 170 24-mm blade



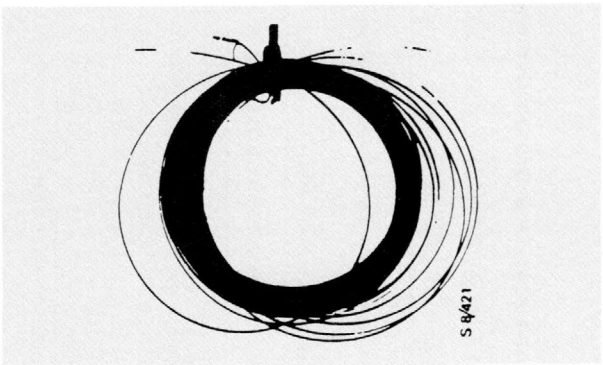
(45) 30 05 188 36-mm blade



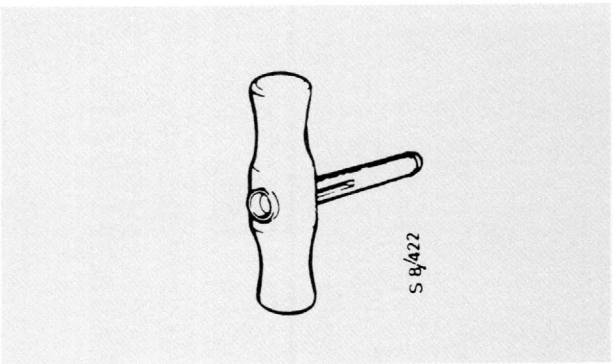
(45) 30 14 123 Pneumatic adhesive gun for use with adhesive cartridges. Pressure adjustable between 0 and 10 bar (0 & 145 psi).



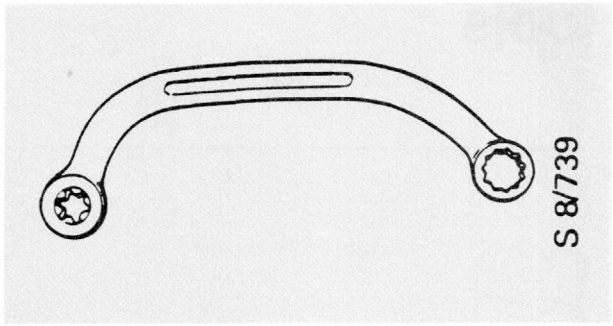
(45) 32 14 107 Glass suckers for window glass. Set of two.



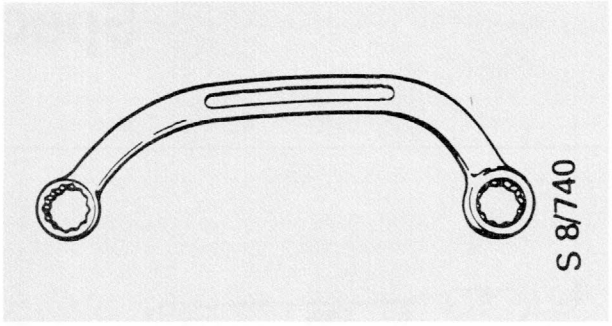
(45) 30 14 115 Cutting wire for removal of bonded glass. Length 25 m.



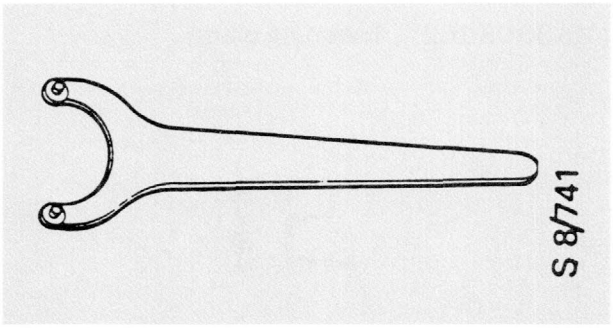
(45) 30 14 099 Cutting-wire toggle for removal of bonded glass. Set of two.



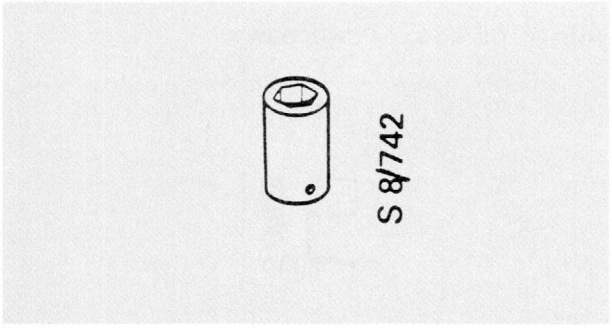
82 92 476 Torx E12 spanner for door hinges.



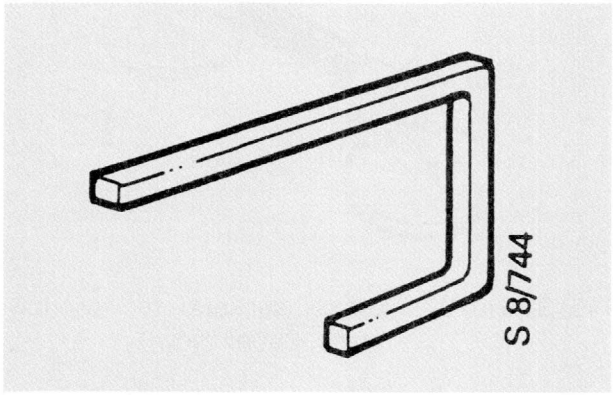
82 92 484 Door-hinge spanner, 13 mm across flats.



82 92 468 Peg spanner for striker plate.



82 92 450 Socket.

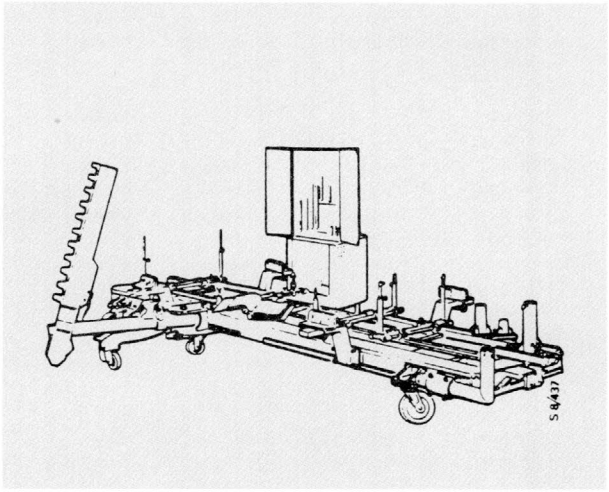


82 92 500 Aligning tool for sunroof.

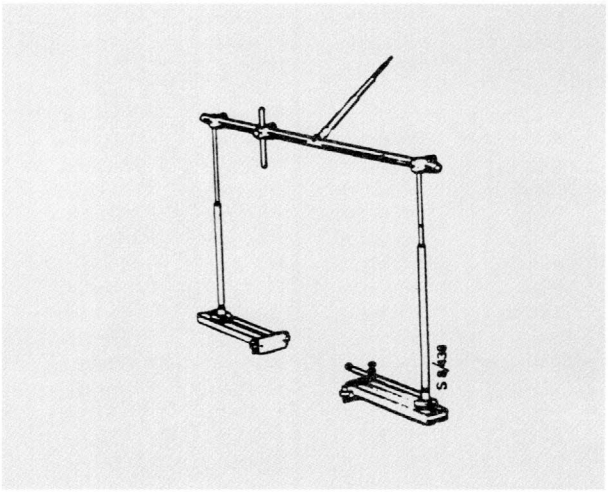
Body alignment equipment

Purchase of aligning bench equipment

It is recommended that you consult your regional After-Sales Area Manager before ordering aligning bench equipment.



A typical universal aligning bench complete with measuring system, draw aligner and storage cabinet



Measuring equipment for use with aligning bench for positioning MacPherson struts and checking inside symmetry of the body.

Technical description

The car is of unitary construction, consisting of a number of pressed steel sections. Most of the joints overlap and are spot welded, although seam welding is also used in places where it is more appropriate.

The body is stiffened by a system of steel members, steel flanges in the door and window apertures, and through stationary window glass being bonded in.

The system of steel members consists of pressed sheet-steel box sections incorporated in the shell, a front structure with a rigid crossmember, and a removable subframe with mounting points for the power train, front suspension arms and the rack-and-pinion gear.

The system of steel members also incorporates fixing points for the rear suspension and doors.

The bonnet, doors and front wings are bolted on, which makes it possible to adjust the fit. The front wheel arches are formed by plastic wing liners, each split into two individual sections to facilitate removal and fitting.

Body insulation

The underside of the car is coated with polyester underseal and a thick anti- corrosion compound. In addition to providing protection for the underbody, the treatment also has good noise-damping properties.

The cabin and luggage compartment have been insulated with bituminous felt and other sound-absorbing materials after thorough testing to determine the most suitable size, thickness and location for optimum sound damping. The insulating felt on the floor pan and insides of the doors is fitted after the body has been primed, and melts onto the steel when the body shell passes through the stoving oven. The felt therefore also provides effective protection against corrosion. Insulation is also provided on the underside of the bonnet, in the form of a compression-moulded sheet held in place by clips.

Preparatory to welding

Disconnect both battery leads.

In electric or short-arc welding, it is vital that 100% earthing is achieved and that the earth lead is connected as close as possible to the welding point.

These criteria must be satisfied if welding work is to be carried out without the need to disconnect all electronic control units.

Caution

Inadequate earthing will result in the electronic components being destroyed by surges of current passing through the body shell.

Welding joints critical to safety

At a number of places on the body, it is essential that the welded joints are strong enough to withstand the torsional stresses and loads to which they may be subjected if the car is in a collision.

Pay special attention to the following points:

Apply welding primer to the surfaces between the panels to prevent corrosion attacking and weakening the steel around the weld.

When fitting a new panel or section, always make at least as many spot welds as the original steel had.

When seam welding, make sure that the bead is at least as long and in the same place as the original.

Make sure that weld penetration is complete at all welds.

Surface treatment in conjunction with bodywork repairs

It is important that surfaces that do not receive the enamel finish, e.g. cavities, panel joints and surfaces to which filler has been applied, are also suitably treated.

Materials for use in surface treatment include welding primer, sealants, metal filler, etc.

Always use reputable makes and follow the manufacturer's instructions carefully.

To avoid possible disputes in conjunction with claims, consult the paint shop to ensure that appropriate materials are used for treatment of the surface. One of the problems that can arise is blistering resulting from the incompatibility of some metal fillers and paints.

Thinners

To provide a good key for paint, metal fillers and sealants, all traces of grease and excess welding primer must be removed from the surface by means of a suitable solvent.

N.B.
Use no other liquids for the final wash. Soak the surface thoroughly and then **wipe it dry,** to be sure of removing all traces of grease. Always use a clean cloth.

Welding primer

Welding primer must be applied to the edges of the metal before they are welded together.

Rub down the edge of the new part to expose the bare metal and ensure a good electrical contact. Grind or file down the mating surface to smooth out the old spot welds and remove all traces of paint, oxide and any corrosion from the metal.

Clean the metal surfaces thoroughly and then immediately apply the welding primer.

After welding, wash off any excess welding primer.

N.B.
Welding primer provides a poor key for paint, filler or sealant.

Cleaning of welded joints and bluing

Instead of grinding, a rotary wire brush may be used to clean welded joints of acceptable appearance or no cosmetic importance. Make sure that all slag and mill scale are removed.

Paintable sealants

All metal folds and joints that were factory sealed should be resealed after repair to keep water out of the joint itself and from finding its way through the joint into the car.

Thoroughly clean the surface around the flange or joint and apply paintable sealant.

N.B.
It is difficult to get paint to cover the edges of sheet steel, with the result that corrosion may soon set in. It is therefore vital that the folded edges on the doors and tailgate, for instance, are also well sealed.

Metal filler

Make good any blemishes in the surface using filler, and then rub down to produce a smooth finish. Best results will be obtained from the use of a polyester filler, such as Herberts Stando Soft Plastic with hardener.

Rough up the surface to be filled, to provide a good key, and then wash it thoroughly. Mix the filler and hardener carefully in the correct proportions. Uniform distribution of the red hardener indicates a correct mix.

Apply the filler, working it in all directions. Hold the filler knife or other applicator perpendicular to the surface to ensure even distribution of the filler.

Repeat the process for additional applications: i.e. thoroughly clean the surface, mix the filler, apply it and work it out carefully.

N.B.
Wash the surface thoroughly with thinner before each application of filler as even small traces of oil from the skin can impair the key and cause blistering in the stoving oven.

Never use more hardener than required to achieve the correct mix. Excess hardener will not be used in the curing of the filler but will react with the enamel finish, causing discoloration. Always follow the manufacturer's instructions carefully.

Anti-corrosion treatment

Cavities and metal joints should be treated with a thin (penetrating) anti- corrosion oil.

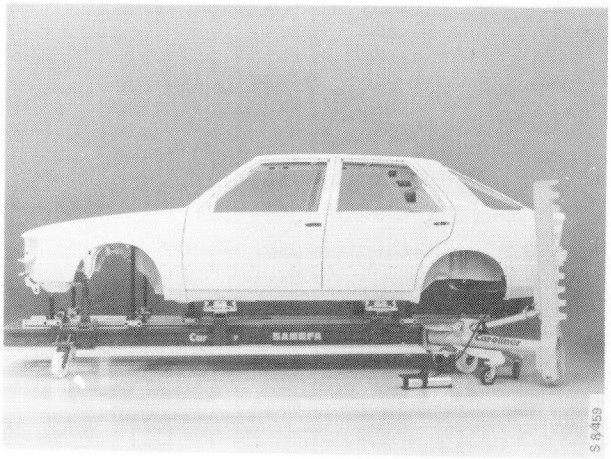
The underbody should be treated with a thick (non-penetrating) anti-corrosion oil. It is advisable to treat the most vulnerable areas, such as inside the rear wheel arches and the undersides of the sills, with bituminous underseal before the anti-corrosion oil is applied.

Anti-corrosion treatment should be carried out after the body has received its enamel finish. This is because anti-corrosion oils contain a naphtha-based solvent which usually evaporates slowly; however, in the stoving oven the process is speeded up, with the likelihood that the solvent will collect on painted surfaces, preventing the paint from adhering properly. There is also a danger that the anti-corrosion oil will penetrate joints in the body and cause paint to lift.

Aligning bench for bodywork repairs

We must emphasize the importance of checking the body dimensions on cars that have undergone extensive body repairs to ensure that the dimensions and tolerances are correct (see 'Checking the body dimensions' in section 810). Such checking can only be carried out efficiently using some form of aligning bench complete with a set of fixtures or a universal measuring system.

The measuring system used must be sufficiently accurate, and include the correct data sheets, to enable the specified tolerances to be kept.



Body shell on aligning bench

Bonnet

The bonnet locking mechanism comprises two locks fitted in the front cross-member, which engage the spring-loaded striker pins when the bonnet is closed.

A safety catch prevents the bonnet from lifting completely when the release mechanism is operated.

The release mechanism is operated by a cable running from the lever located underneath the dash panel inside the car. Operation of the lever releases the bonnet, allowing the leading edge to spring up. The safety catch must then be released before the bonnet can be opened.

The bonnet is propped in the open position by two gas-filled struts.

Doors

All door hinges run in plastic bearings. The top half of the hinge can be lifted off the hinge pin although, for security reasons, only when the door is wide open. A collar on the top half of the hinge, which engages a slot in the lower half, prevents the door being lifted off in any other position.

Keys

Three keys are supplied with each car and it is intended that the owner should keep one of these as a spare in a wallet or purse. To prevent the keys being copied or identified by unauthorized persons, the keys are unmarked.

To identify the keys prior to delivery, a tag containing the identification number for the keys is attached to the key ring. As soon as the number has been noted on the sales document, the tag must be destroyed.

Lock-system spares

New keys or lock cylinders may be ordered as spare parts by quoting the key identification number. In this way, the system of having one key that fits all locks can be maintained.

N.B.
It is the dealer's responsibility to ensure that keys are never handed over to unauthorized persons. It is advisable, therefore, that customers be requested to provide proof of ownership and identity if these are in any doubt, and the dealer should make a note of the relevant details for future reference if required.

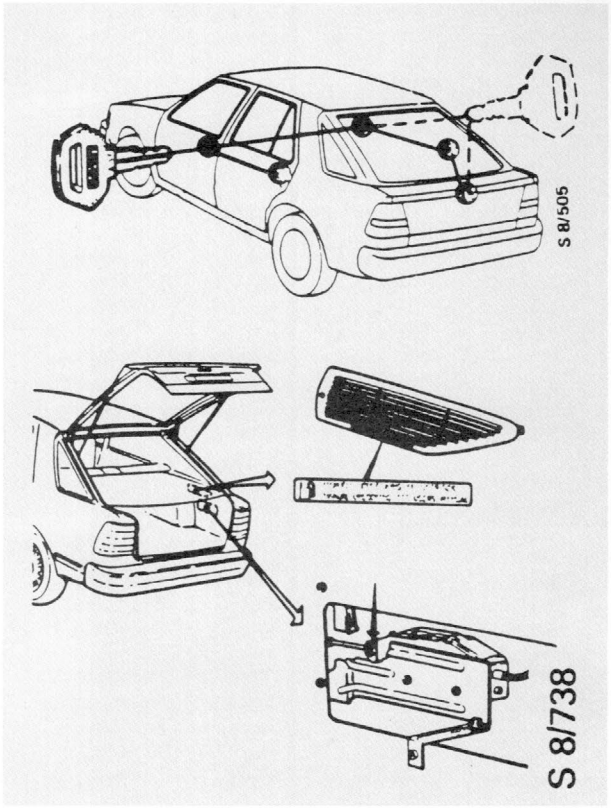
Central locking

The central-locking system comprises a number of electric solenoids that actuate the locks for the doors, tailgate and fuel filler flap when the key is inserted in the lock for the driver's door.

Both front doors and the tailgate can also be locked and unlocked by key individually.

If the central locking system should be immobilized by a break in power supply, all the locks can still be operated individually by means of the key.

The central-locking solenoid for the fuel filler flap can be operated manually once access to it has been gained by removal of the air outlet grille on the RH side in the luggage compartment. As from chassis no. AG1020300, a clip has been provided on the tie rod for the lock to facilitate manual operation.



Sunroof

The sunroof assembly incorporates the sunroof panel itself, which is fitted to two tilt mechanisms. The sunroof is operated by cables driven by an electric motor. The motor and control relay are accommodated in the front of the sunroof housing.

A rocker switch for operation of the sunroof is located on the console between the front seats.

As well as sliding forwards and backwards, the sunroof can also be tilted open at the trailing edge. Each time the sunroof slides to the closed position, a relay breaks the circuit, switching off the actuating motor. To change the sliding direction of the sunroof, the switch should be released and then depressed again.

A manual winder for emergency operation of the sunroof is stored behind the cover on the overhead switch panel.

Window glass

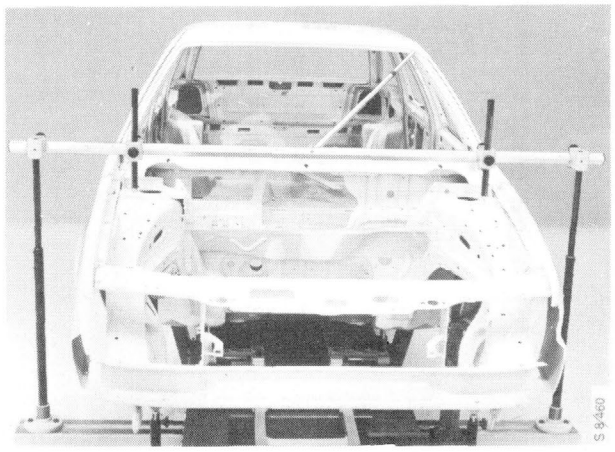
All non-opening window glass is bonded to the flanges in the window apertures. The glass therefore contributes to the strength and stiffness of the body.

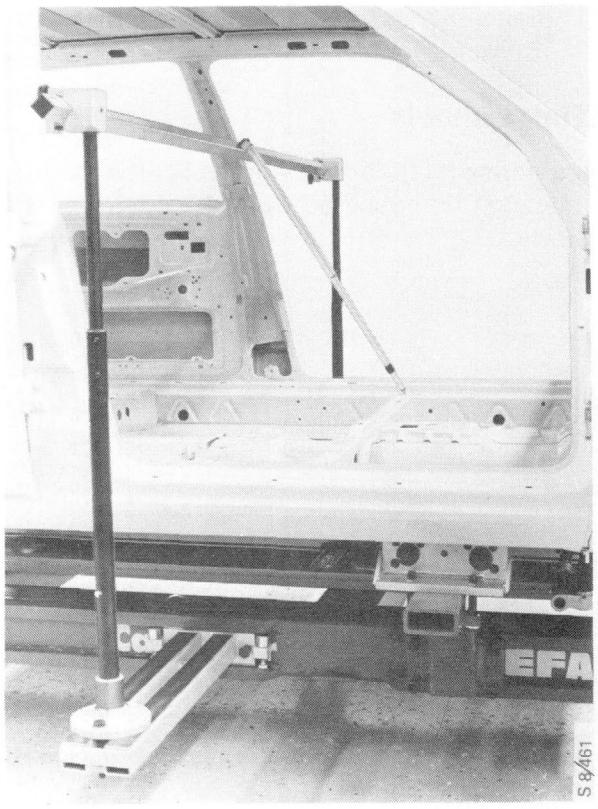
External mouldings are held in place by metal retaining strips fitted to the edge of the glass.

Body shell

Checking the body dimensions

When body parts are being replaced and in all body aligning work, it is vital that the fixing points for the power train subframe and chassis components are correctly positioned and that the door and other apertures in the body are true and not distorted. We recommend that all major repair work be carried out with the body mounted on an aligning bench, to ensure that the body does not become distorted or lose its symmetry in any way during the work. Major repair work refers to realignment of deformation in the body's system of steel members. Diagonal measurements should also be made to ensure that no distortion or loss of symmetry remains after the body has been realigned.



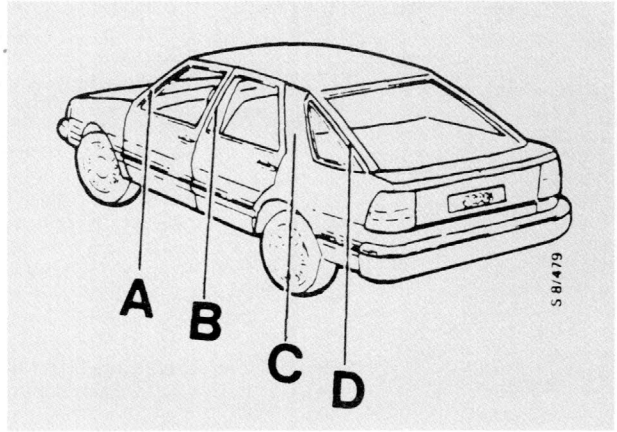


Measuring equipment for the front body structure and measuring rods for checking the symmetry

Pillar identification

The body pillars are denoted by letters as follows:

A pillar = Windscreen pillar
B pillar = Side pillar between doors
C pillar = Pillar between rear door aperture and rear sidelight
D pillar = Pillar between rear sidelight and tailgate aperture



Measuring procedure and data

The directions in which the measurements are made are given in the 'Direction' column in the Table, with reference to the coordinate system.

X-coordinate = Datum line for longitudinal measurements
Y-coordinate = Datum line for transverse measurements (left to right)
Z-coordinate = Datum line for vertical measurements

The digit following the coordinate in the column denotes the tolerance as follows:

1 = Design dimension in coordinate system
2 = Actual measurement, generally a direct diagonal measurement
3 = Tolerance for best fit

Other symbols

An asterisk (*) before an item indicates that the dimension is measured from the centre of the hole.

Each coordinate originates from a datum (0) line. Since datum line X0 cannot be used in practice, it is not shown.

Datum line Y0 This is the centre line of the body, dividing the shell into left and right halves. Transverse dimensions are specified between two measuring points. To measure the dimension on one side only, mark out the Y0 line between the holes as shown on the drawing and then halve the dimension and tolerance.

Datum line Z0 The line runs along the fold in the body between the floor pan and side panel. Measurements to be made below the Z0 line have a negative value (i.e. the value is prefixed by a '-' sign).

Item No.	Fig. No.	Dimension, mm	Measuring points	Direction
1	1	4230.0 ± 3	Overall length: *bumper hole in front crossmember & bumper abutment surface at tail edge	X.1
2	1, 2	1878.15 ± 1	*Datum point & *rear hole for subframe mounting	X.1
3	1, 2	750.0 ± 1	Subframe mountings (rear hole for front mounting)	X.1
4	1, 2	321.0 ± 2	*Rear hole for subframe mounting & *bumper hole in front crossmember	X.1
5	1, 4	898.0 ± 1	*Datum point & *front hole for torque arm	X.1
6	1, 4	383.0 ± 2	*Front hole for torque arm & tail edge, bumper abutment surface	X.1
7	2	1323.0 ± 1	Front crossmember, *distance between outer holes	Y.1
8	2	1050.0 ± 2	Subframe mountings, *distance between LH and RH sides	Y.1
9	2	1071.5 ± 2	*Rear hole for subframe front mounting & *outer hole for rear subframe mounting	Diagonal.1
10	2	895.0 ± 0.6	*Distance between outer holes in subframe mountings	Y.1
11	2, 3	752.0 ± 1	*Distance between datum holes	Y.1
12	1, 5	1388.0 ± 3	Distance between *front bolt holes in wing flanges	Y.2
13	1	1172.0 ± 1	Distance between MacPherson struts: *datum holes on LH and RH sides	Y.1
14	1	617.0 ± 1	Z0 & *oval hole for MacPherson strut fixing	Z.1
15	1	24.5 ± 1	Z0 & abutment surface for front subframe fixing	Z.1
16	1, 3	8.5 ± 1	Z0 datum line & abutment surface of rear subframe fixing	Z.1
17	1, 2	282.5 ± 1	*Subframe fixing & *MacPherson strut fixing	X.1
18	2	168.0 ± 1	*Datum hole & *subframe fixing	X.1
19	1, 2	2827.0 ± 2	*Rear hole for front subframe fixing & *front hole for spring link	Diagonal.2
20	1, 4	1032.5 ± 1	*Distance between front holes for LH & RH spring links	Y.1
21	4, 6	1173.0 ± 1	*Distance between front holes for LH and RH torque arms	Y.1
22	4	1427.5 ± 1	Distance between *front hole for spring link & *front hole for torque arm	Diagonal.2
23	4	949.5 ± 1	*LH hole in crossmember for Panhard rod & *front hole in RH spring link	Diagonal.2
24	4	947.5 ± 1	*RH hole in crossmember for Panhard rod & *front hole in LH spring link	Diagonal.2
25	1, 7	1113.0 ± 1	*Distance between LH and RH damper fixing holes	Y.1
26	1, 7	1450.0 ± 2	Distance between sill flanges	Y.1
27	7	1295.0 ± 1	*Distance between anchorage points for LH and RH seat belts	Y.1
28	8	198.5 ± 1	Datum line Z0 & *lower hole for bumper fixing	Z.1
29	8	1141.0 ± 1	*Distance between bumper fixing holes	Y.1
30	8	1481.0 ± 1	*Distance between outer, lower screw holes for rear light clusters	Y.1

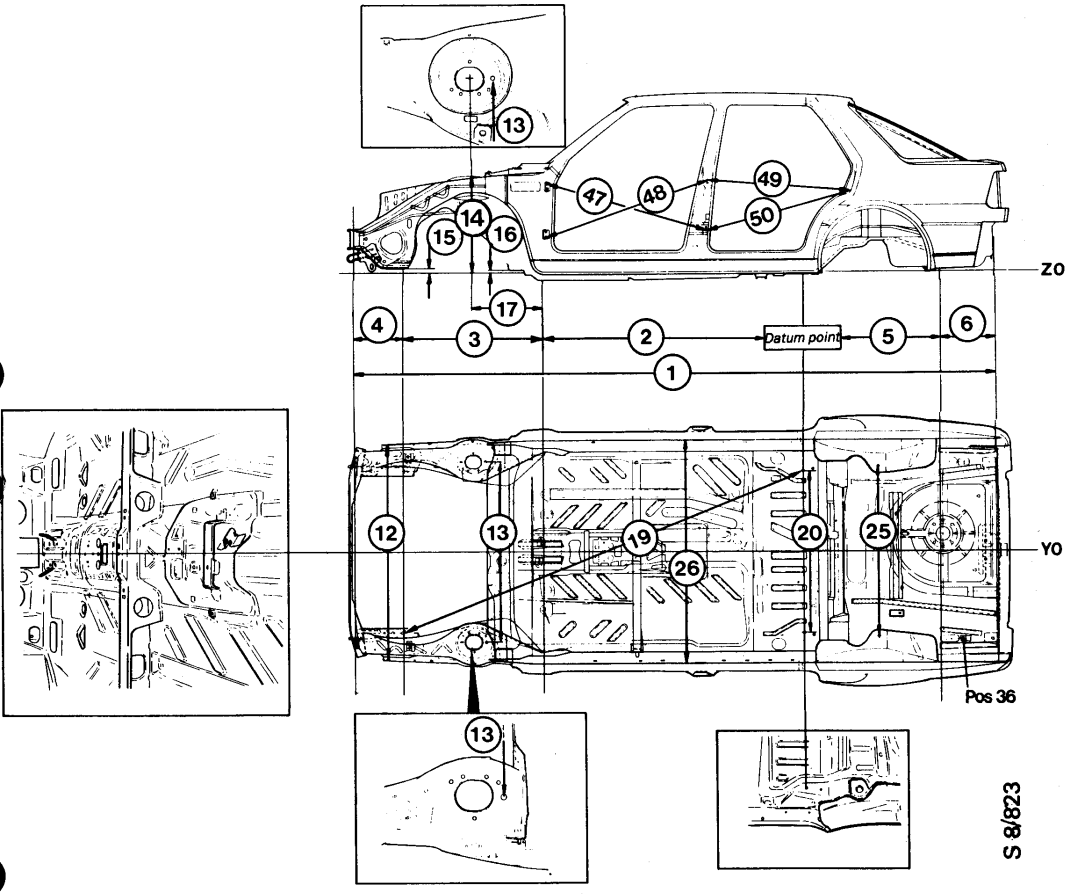


Fig. 1

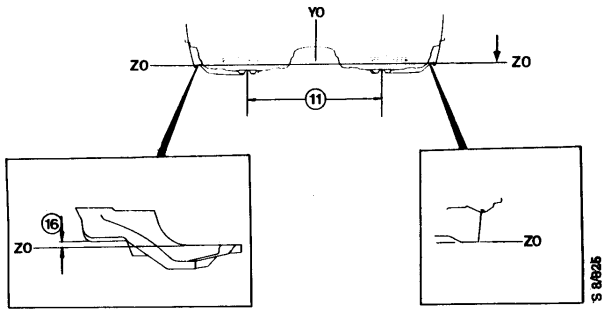


Fig. 3

Line of intersection through sill

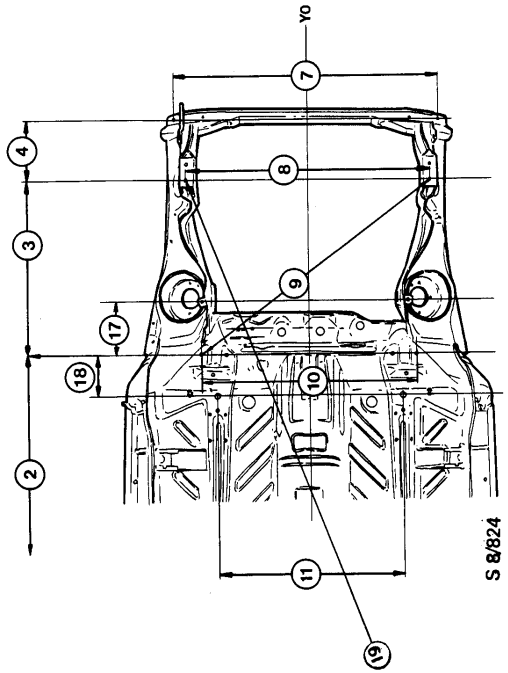
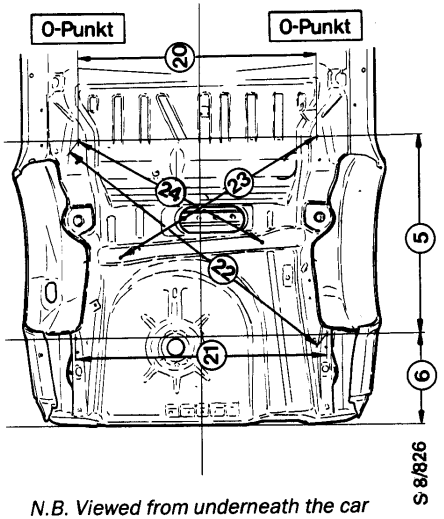


Fig. 2



N.B. Viewed from underneath the car

Fig. 4

Item No.	Fig. No.	Dimension, mm	Measuring points	Direction
31	8	441.0 ± 1	Z0 datum line & *lower screw hole for rear light cluster	Z.1
32	8	1488.0 ± 1	Distance between LH and RH side panels at bumper fixing points	Y.1
33	8	155.0 ± 1	Z0 datum line & side panel at *fixing point for bumper	Z.1
34	8	344.0 ± 2	Corner-to-corner distance in tailgate aperture	Y.3
35	8	1331.0 ± 1	*Y0 datum hole & *top hole for hinge fixing	Diagonal.2
36	8	885.0 ± 3	Y0 datum hole & rear top corner	Diagonal.2
37	8	209.0 ± 1	*Top fixing hole for hinge & *clevis pin hole for tailgate strut	Diagonal.2
38	6	489.0 ± 1	Z0 datum line & *hole in wheel arch for damper fixing	Z.1
39	6	18.0 ± 1	Z0 datum line & *front hole for spring link fixing	Z.1
40	6	178.6 ± 1	Z0 datum line & datum hole in side member	Z.1
41	7	1335.5 ± 1	Distance between *top attachment holes for seat belts	Y.1
42	7	1327.5 ± 1	Distance between LH & RH *top attachment points for backrest	Y.1
43	7	1571.0 ± 2	*Distance between LH and RH striker pins for rear doors	Y.1
44	7	1093.0 ± 2	*Distance between LH and RH top attachment holes for hinges	Y.1
45	6	1626.2 ± 2	Floor pan & *top hole in B pillar	Diagonal.2
46	6	1058.0 ± 1	Floor pan & *top hole in B pillar	Z.1
47	1	1098.0 ± 3	Front door aperture: *top screw hole for top hinge fixing & *lower screw hole for lower hinge fixing in B pillar	Diagonal.3
48	1	1135.0 ± 3	Front door aperture: *bottom screw hole for bottom hinge fixing & *top screw hole for top hinge fixing in B pillar	Diagonal.3
49	1	964.0 ± 3	*Top screw hole for top hinge fixing in B pillar & *striker pin	Diagonal.3
50	1	1015.5 ± 3	*Bottom screw hole for bottom hinge fixing in B pillar & *striker pin	Diagonal.3
51	5	1574.0 ± 2	*Distance between B pillars at striker pins	Y.1
52	5	1171.0 ± 1	*Distance between B pillars at top datum holes	Y.1
53	5	819.5 ± 1	Vertical distance between Y0 datum line in windscreen aperture and *wiper spindle hole	Z.1
54	5	1431.0 ± 4	Maximum distance between diagonally opposed corners	Diagonal.3
55	5	1100.0 ± 1	*Distance between wiper spindle holes	Y.1
56	5	626.0 ± 1	*Distance between middle wiper spindle hole & datum hole at MacPherson strut fixing point	Diagonal.2
57	5	1120.0 ± 3	*Distance between middle wiper spindle hole & front bolt hole in wing flange	Diagonal.2
58	5	1711.0 ± 3	*Distance between front bolt hole in wing flange & rear screw hole for bonnet hinge	Diagonal.2

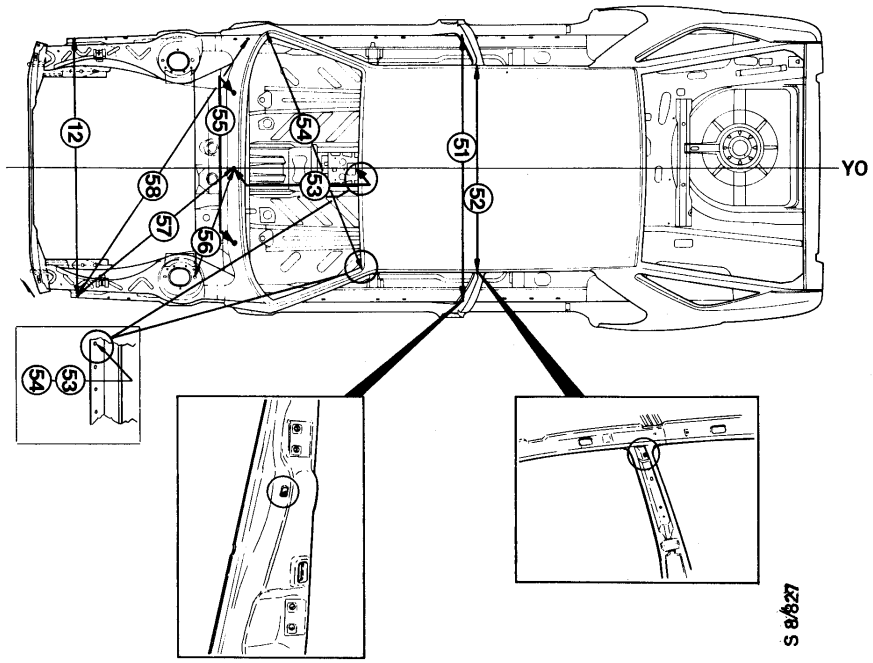


Fig. 5

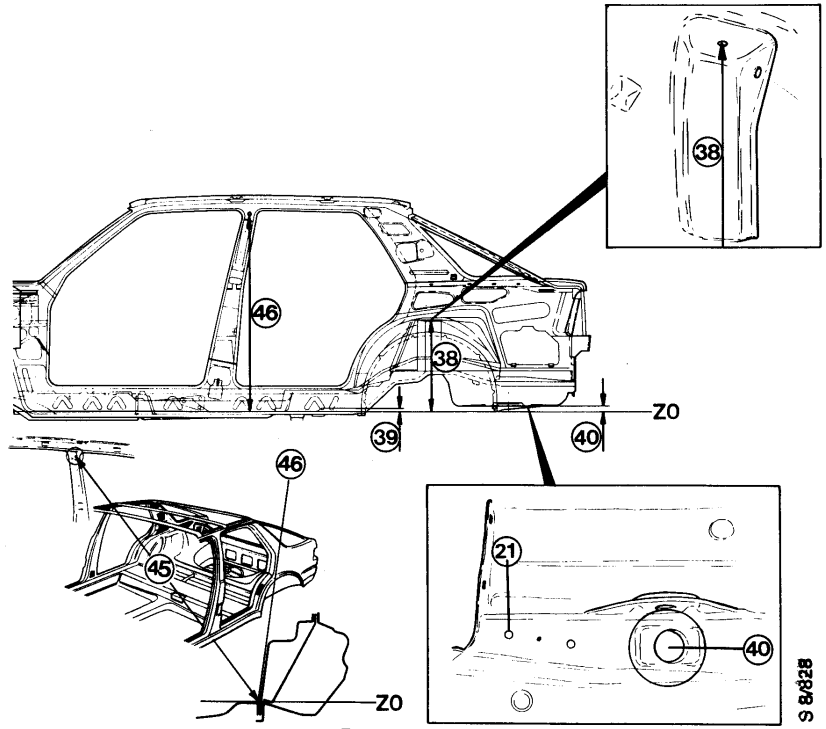


Fig. 6

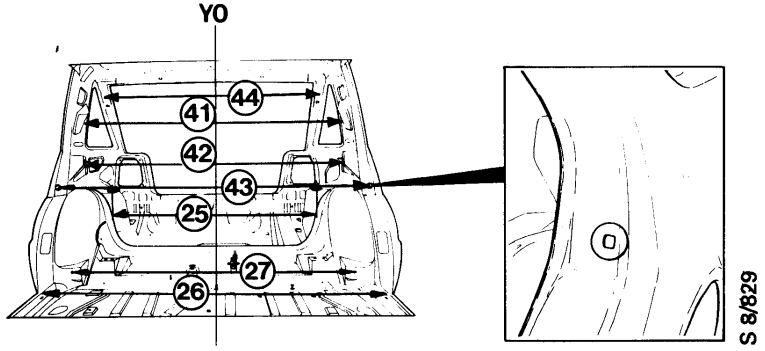


Fig. 7

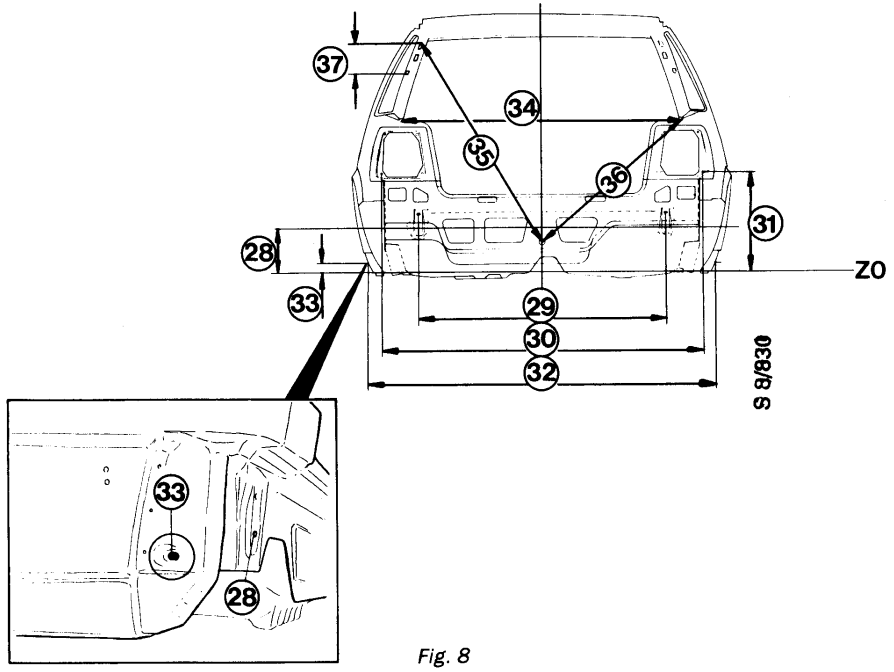
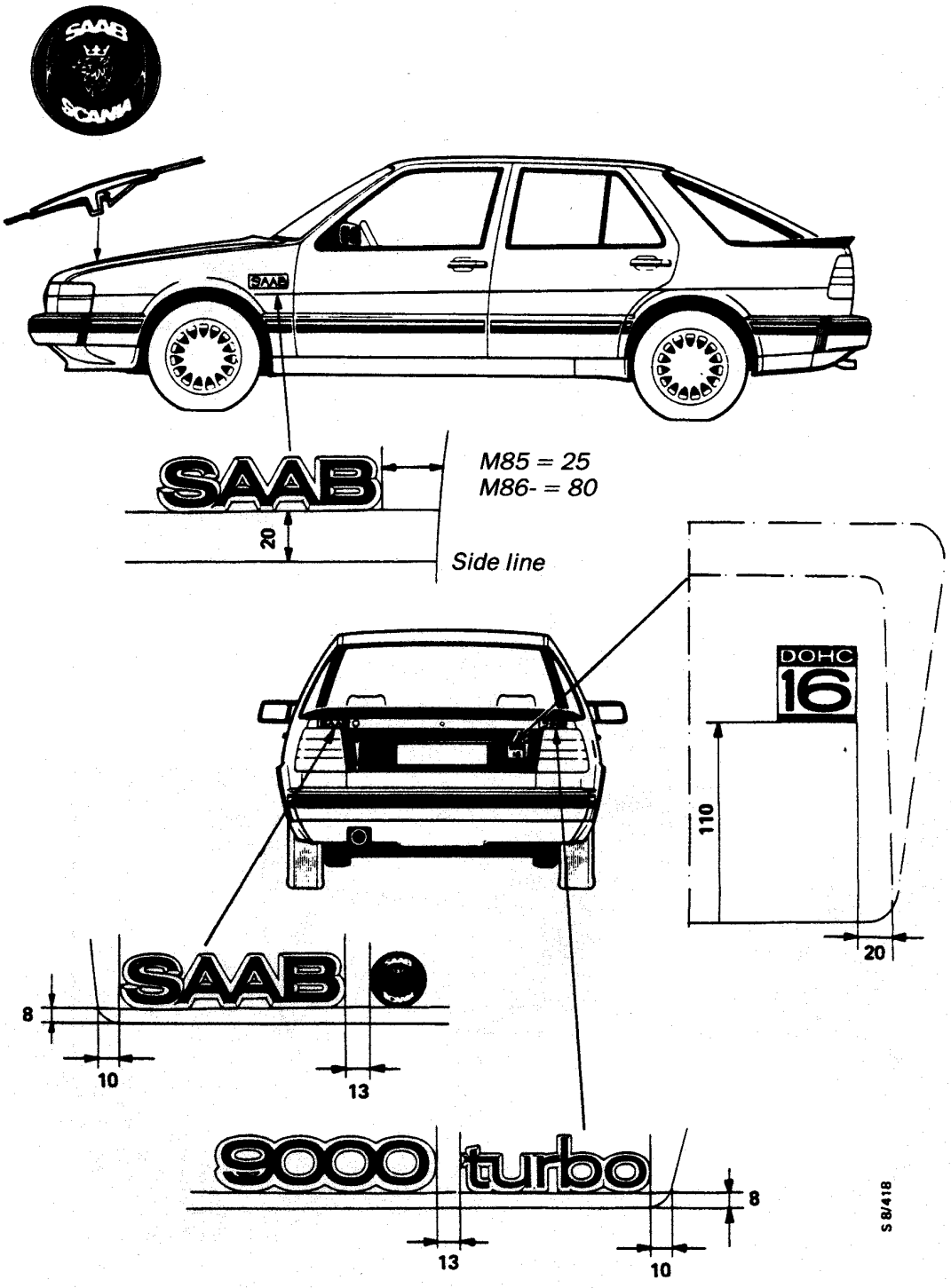


Fig. 8

Mouldings and emblems

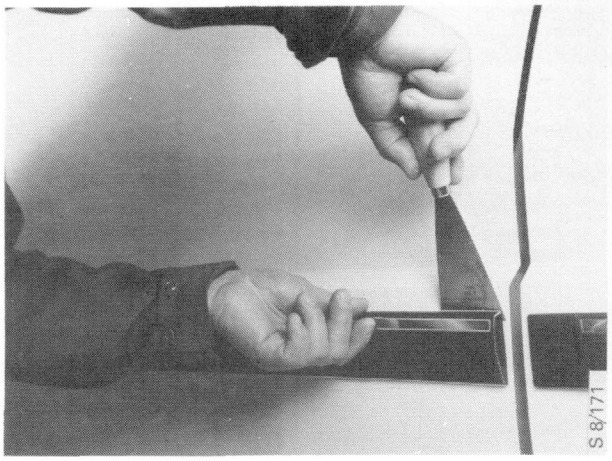
Bonnet emblems and mouldings along the side of the car are fitted with studs which are pressed into plastic fasteners in the body. The bottom edges and ends of mouldings are also held in position by adhesive tape. All other emblems are secured by means of adhesive tape only. To ensure that the tape sticks firmly, the paintwork must first be thoroughly cleaned using pure cleaning petrol.



Positioning of emblems. All measurements in mm.

Moulding replacement

1 Use a spatula or stripping knife to release the studs from the fasteners in the door.

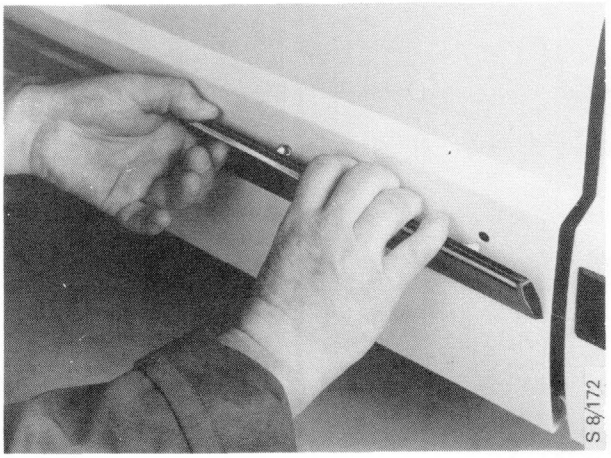


2 Ease back carefully the top edge of the moulding.

3 Using the spatula, prise the moulding off the door. Note that the bottom edge and ends of the moulding are held by adhesive tape.

4 Thoroughly clean the paintwork using pure cleaning petrol to ensure that the tape will stick securely to the door.

5 Remove the backing tape from the new moulding. Press the studs into the fasteners and press along the entire length of moulding to ensure that the tape has stuck securely.

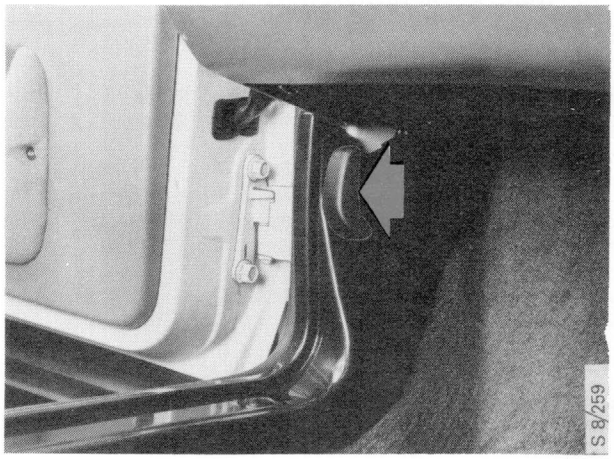


Bonnet and grille

Bonnet

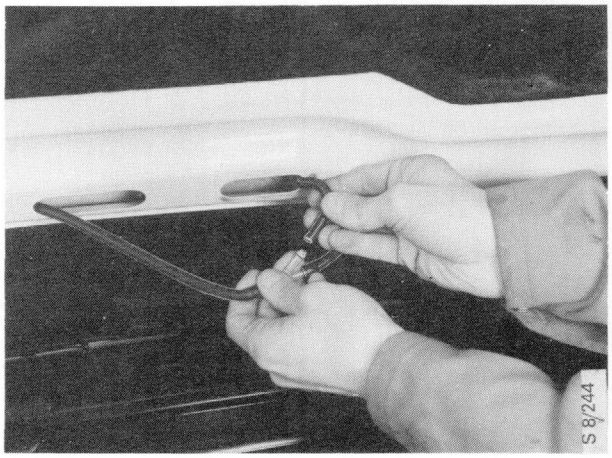
Removal and refitting

1 Release the bonnet by means of the lever inside the car.

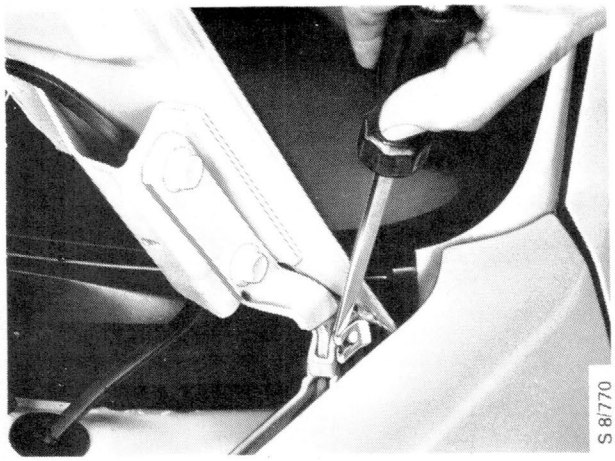


2 Open the bonnet wide and disconnect the hose to the washer jets.

As from M87 cars, unplug the electrical connector for the engine compartment lighting, located behind the grommet on the LH side of the bulkhead.

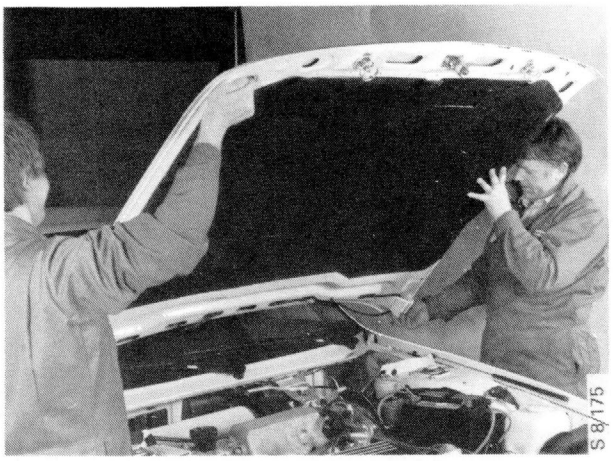


3 Remove the clips from the hinge clevis pins.



4 Detach the struts from the bonnet and fold them down towards the front.

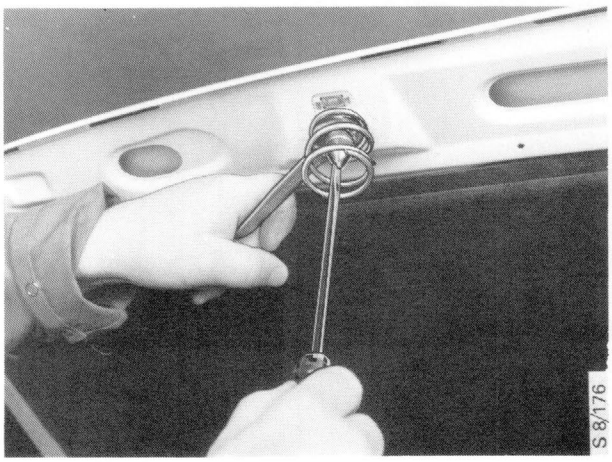
Press out the clevis pins from the hinges and, with the aid of a helper, lift off the bonnet.



To adjust the fit of the bonnet

The holes for the hinge fixings are elongated, thereby enabling the position of the bonnet to be adjusted.

To adjust the height of the bonnet, adjust the position of the striker pins. Undo the locknut and use a screwdriver to turn the pin. Retighten the locknut.

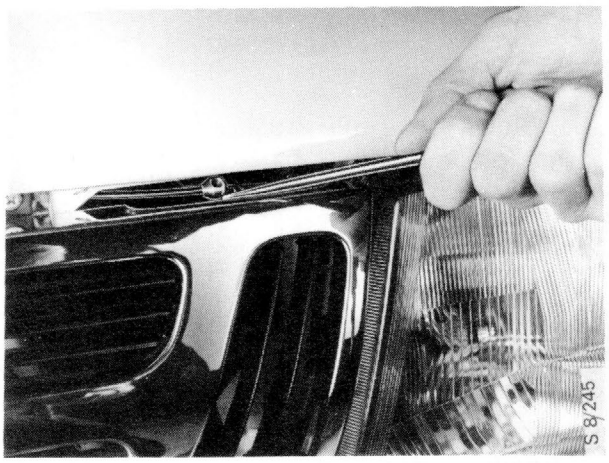


After adjustment:

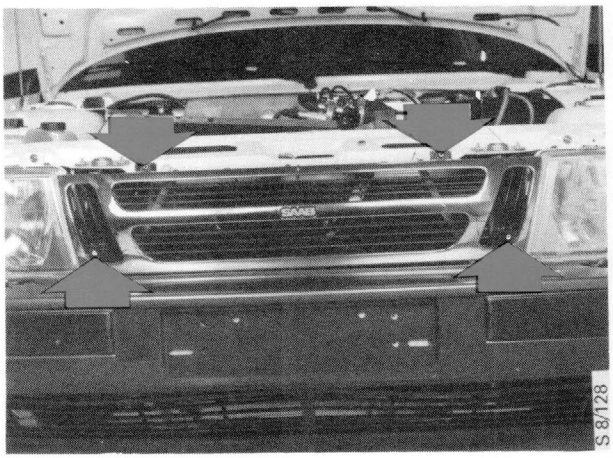
Open and close the bonnet a few times, checking the operation of each lock by applying an upward pull to the leading edge of the bonnet at each lock. The bonnet should lock when released from a height of about 300 mm (12 in).

To fit a new bonnet-release cable

If the bonnet release mechanism fails to operate, the bonnet can be opened by inserting a screwdriver between the bonnet and the grille, and releasing the catches by pressing them towards the right.

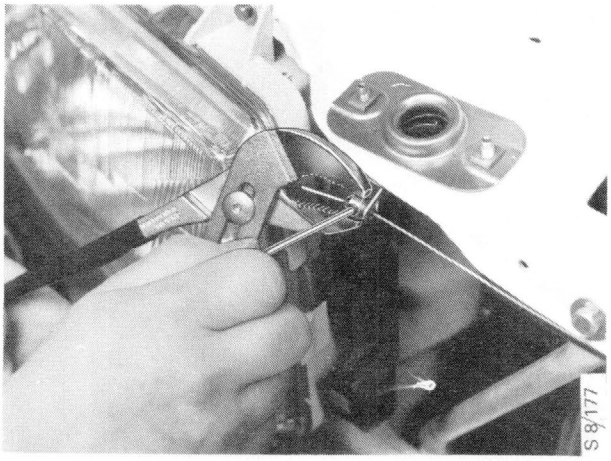


1 Remove the grille.

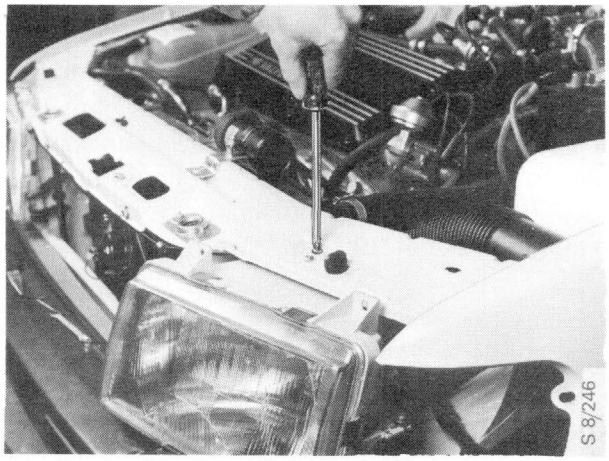


2 Remove the LH headlamp and light cluster.

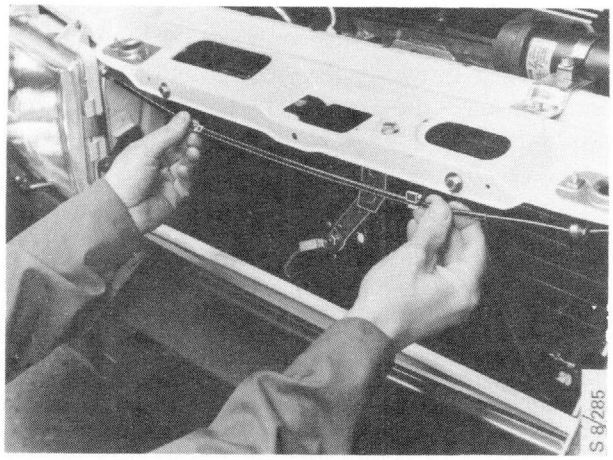
3 Undo the cable stops.



4 Unscrew the cable clip from above the headlamp.



5 Detach the cable from the clips on the radiator member.



6 Release the clips from the radiator member.

7 Jack up the front of the car and remove the LH front wheel and wing liner.

8 Remove the scuffplate from the left front door sill and fold back the carpeting from under the dash panel.

9 Disconnect the cable from the bonnet release lever, release the clip and withdraw the cable.

Refit in the reverse order.

Open and close the bonnet a few times, checking the operation of each lock by applying an upward pull to the leading edge of the bonnet at each lock. The bonnet should lock when released from a height of about 300 mm (12 in).

Bonnet locks

To replace

N.B.
On M86 and earlier model cars with chassis no. CG1006124 or earlier (LHD cars) or CG1007702 or earlier (RHD cars), bonnet locks and striker pins constitute a set and must be replaced together.

1 Remove the grille.

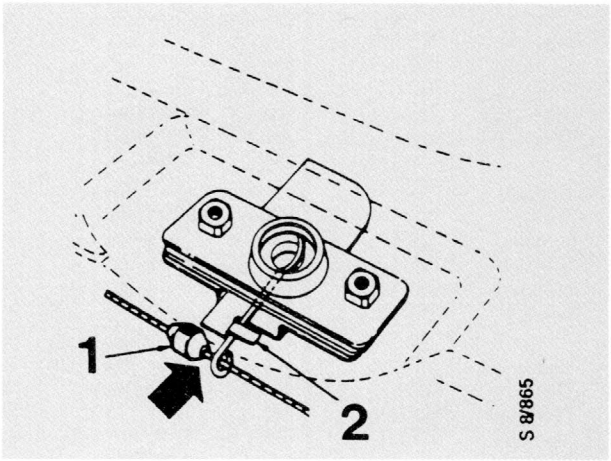
2 Remove the lock and striker pin.

3 Fit a new striker pin, complete with washer, spring and nut.

4 Fit the new lock leaving the retaining screws slack.

5 Close the bonnet carefully, making sure that the lock is properly aligned with the striker pin, and tighten the retaining screws.

6 Fit the cable and cable stop. Check that the spring is in contact with the stop in the home position and that there is clearance between the cable stop and spring.



1 Cable stop
2 Stop

7 Adjust the striker pin to obtain a good fit between the bonnet and wings.

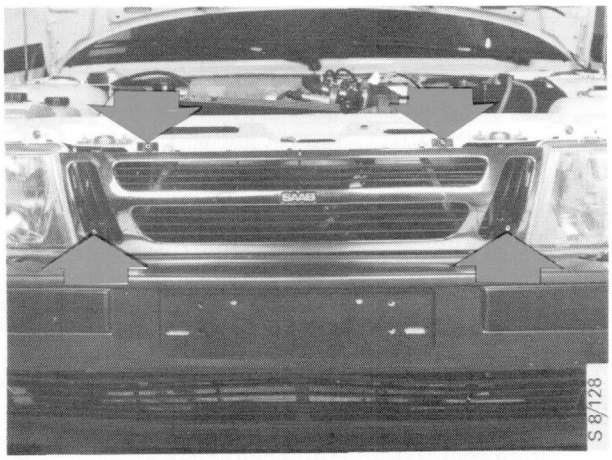
8 Open and close the bonnet a few times, checking the operation of each lock by applying an upward pull to the leading edge of the bonnet at each lock. The bonnet should lock when released from a height of about 300 mm (12 in).

9 Refit the grille.

Grille

Removal and refitting

The grille is secured by four screws, as shown.

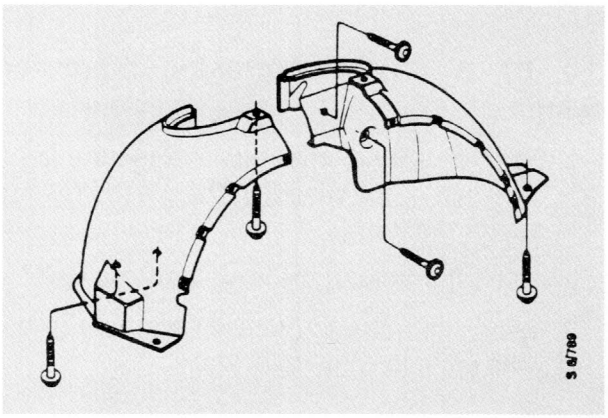


Front wings

Removal

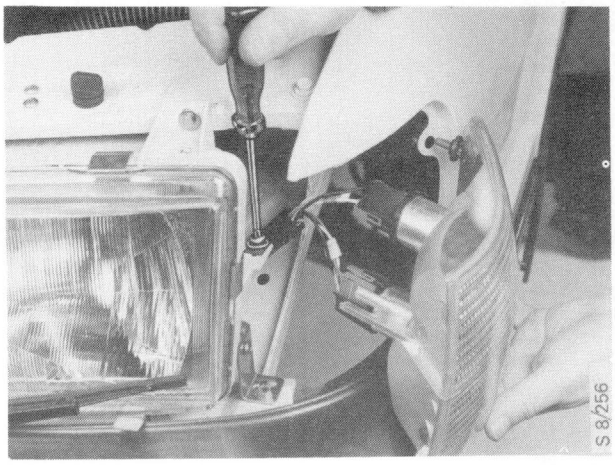
1 Jack up and support the front of the car and remove the front wheel.

2 Remove the eight nuts securing the wing liner to the wing and the seven screws securing the wing liner to the wheel arch. Lift out the two halves of the wing liner.

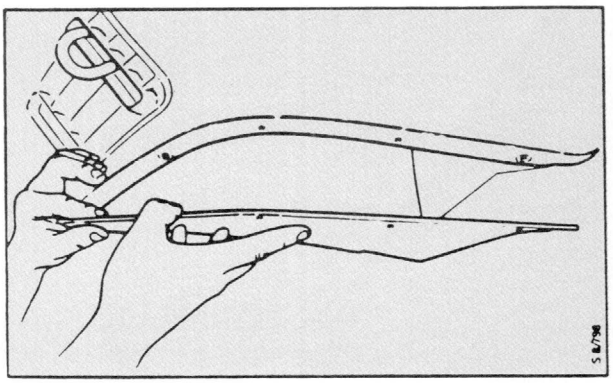


3 Remove the front light cluster.

As from M86:
Remove the direction indicator repeater lamp.

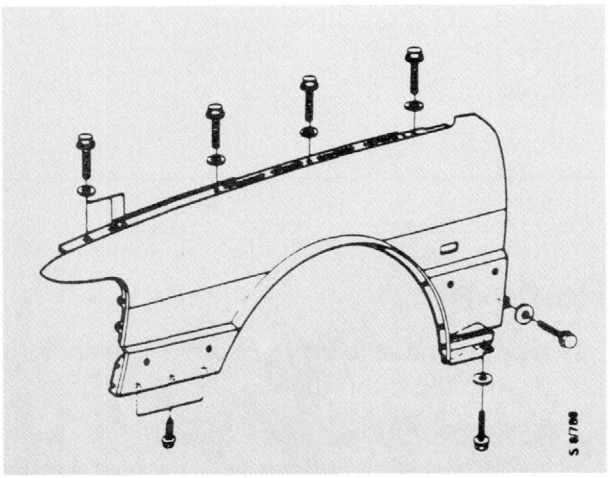


4 Remove the outer shield panel (six screws).



5 Remove the three bolts securing the spoiler to the edge of the wing.

6 Undo the bolts holding the wing to the body and lift off the wing.

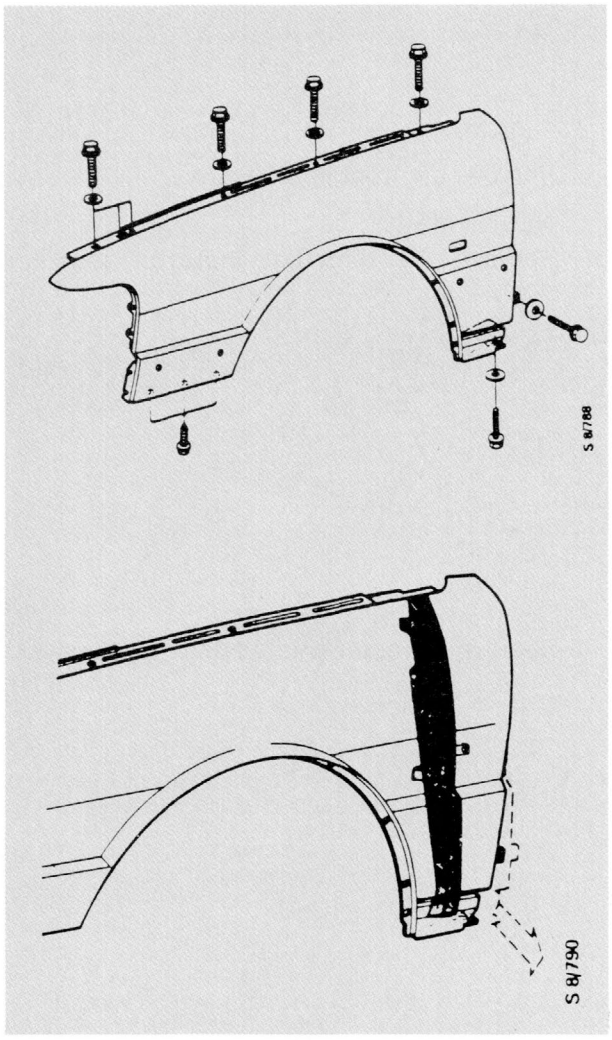


To fit a painted/corrosioned-proofed wing

1 Fit three spring steel fasteners to the leading edge of the wing and the plastic fasteners for the trim.

2 Insert the front of the wing in the bumper.

3 Insert the bolts at the front and rear of the wing edge leaving them slack.



4 Fit the fillet in the trailing edge of the wing.

5 Insert the two bolts in the trailing edge of the wing, leaving them slack.

6 Adjust the fit and alignment with the door and bonnet.

7 When the fit and alignment are correct, fit and tighten all bolts.

8 As from chassis no.:

G1016484 (LHD cars)
G1012254 (RHD cars)

Fit the bolt in the end piece.

9 Refit the wing liner and wheel arch trim.

10 Secure the spoiler (three bolts) to the front of the wing.

11 Refit the outer shield panel.

12 Refit the front light cluster and (M86 onwards) the indicator repeater lamp.

13 Refit the trim and emblems.

Doors and sunroof

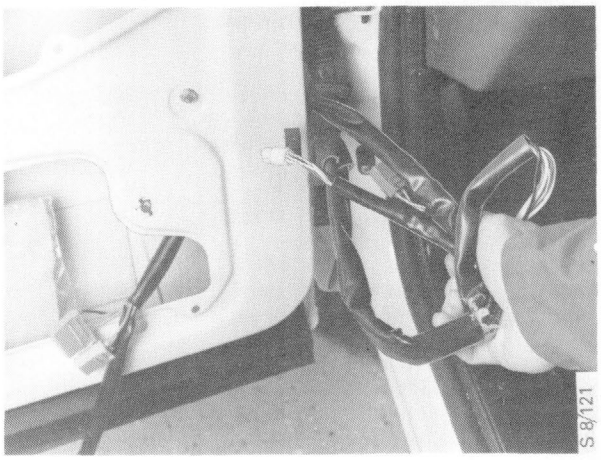
Front doors

To remove

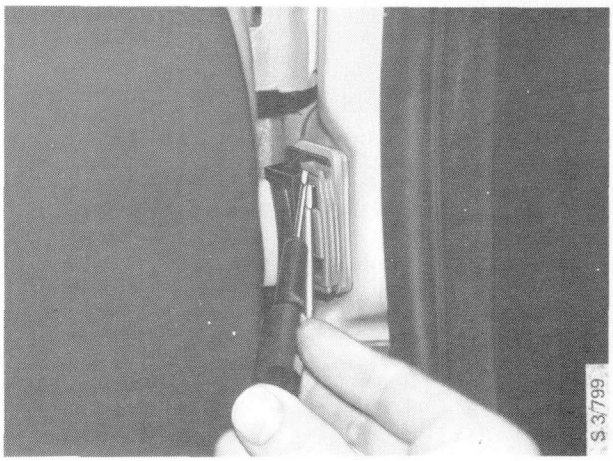
Disconnect the negative (-) battery lead and cover the terminal pole on the battery.

1 Remove the door trim panel and moisture barrier.

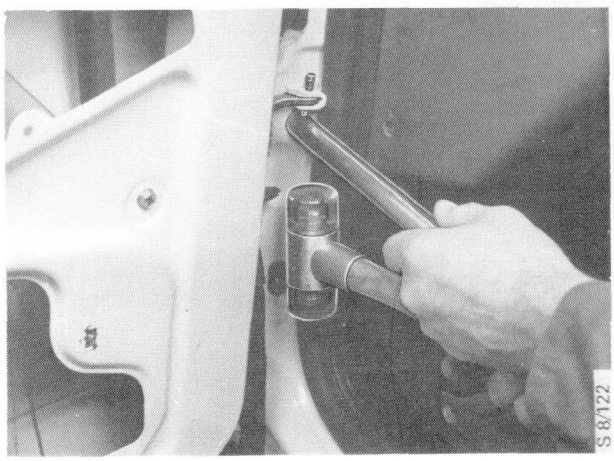
2 Unplug the electrical connectors in the door.



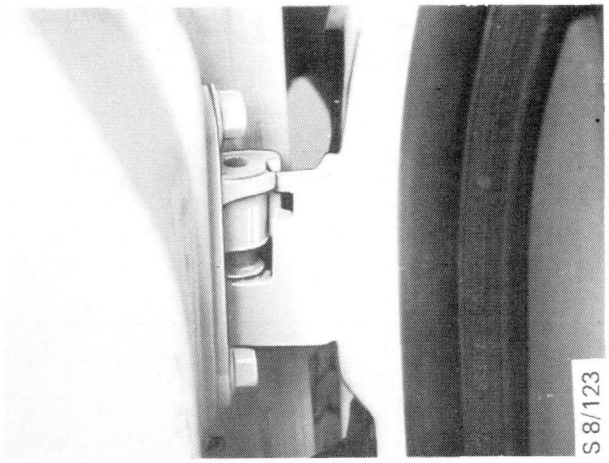
As from M88, a 22-pin connector is fitted to the A pillar. Remove the red retaining clip using two screwdrivers and pull apart the connector halves.



3 Tap out the door check roll pin.

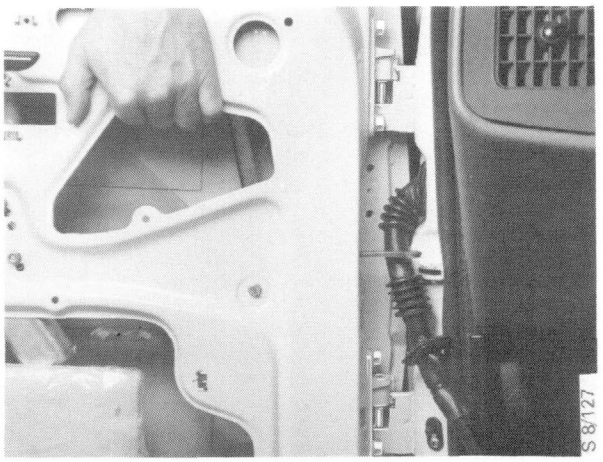


4 Open the door wide and lift it carefully off its hinges.



To refit

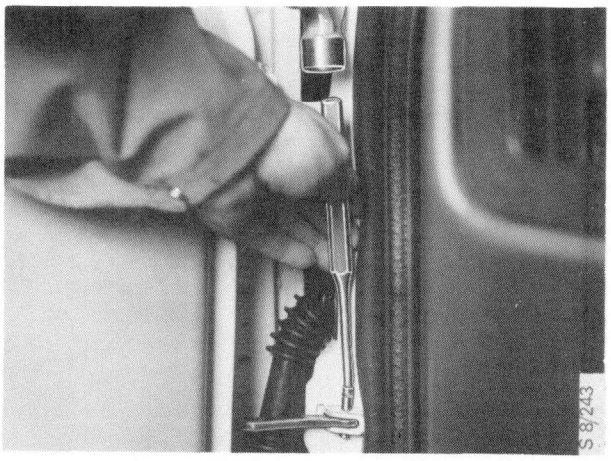
1 Lift the door onto its hinges.



2 Feed the wiring loom through the aperture in the door and reconnect the connectors.

22-pin connector, M88 onwards:
Plug the connectors together. Press in and slide back the connector body to secure it in place. Refit the red plastic retaining clip.

3 Fit a new door check roll pin.



4 Refit the moisture barrier and door trim panel.

5 Reconnect the battery.

To adjust the fit of the door

Remove the door check roll pin.

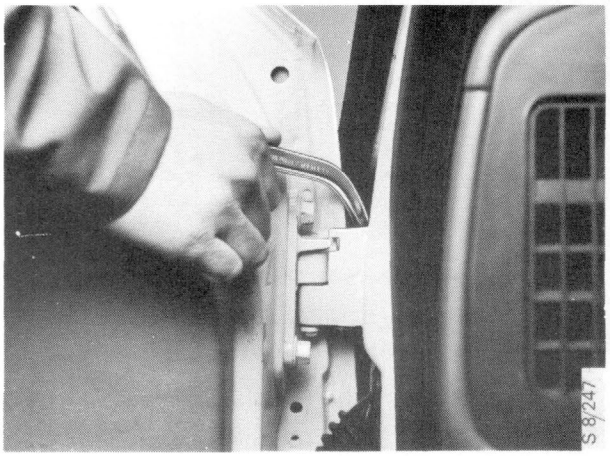
Slacken off the hinge bolts in the frame, after which the door can be adjusted both vertically and horizontally.

Tools:

Torx E12 spanner	82 92 476
13-mm spanner	82 92 484

Finally, apply paintable sealant round the hinge and bolts and touch up the paintwork with a paintbrush.

Refit the door check roll pin.

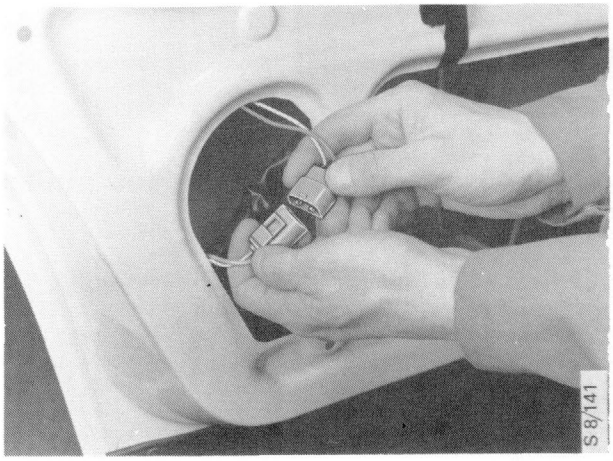


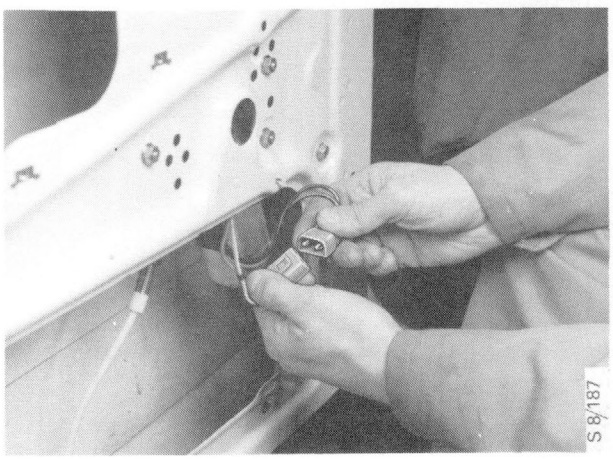
Rear doors

To remove

Disconnect the negative (-) battery lead and cover the terminal pole on the battery.

1 Remove the door trim panel. Unplug the electric connectors, ease out the grommet and withdraw the wiring loom through the aperture in the door.





2 Tap out the door check roll pin.

3 Open the door wide and lift it carefully off its hinges.

To refit

1 Lift the door onto its hinges.

2 Insert the wiring loom through the aperture in the door, reconnect the connectors and refit the rubber grommet.

3 Fit a new door check roll pin.

4 Refit the door trim panel.

Reconnect the battery.

To adjust the fit of the door

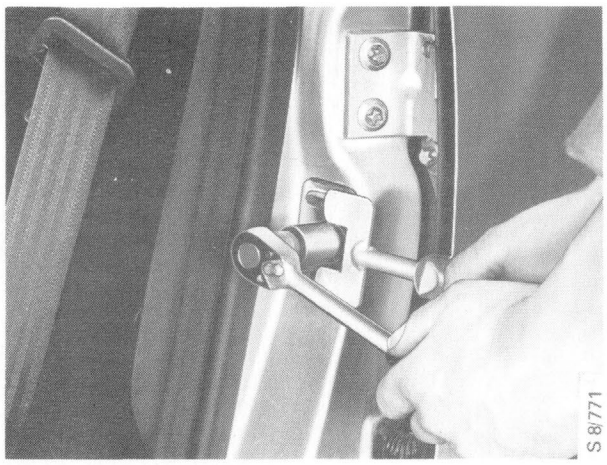
The procedure is the same as for the front doors with the exception that there is no need to disconnect the door check.

To adjust front and rear door striker plates

Holding the backplate in position, undo the striker pin.

Tools:

Socket	82 92 450
Peg spanner for backplate	82 92 468

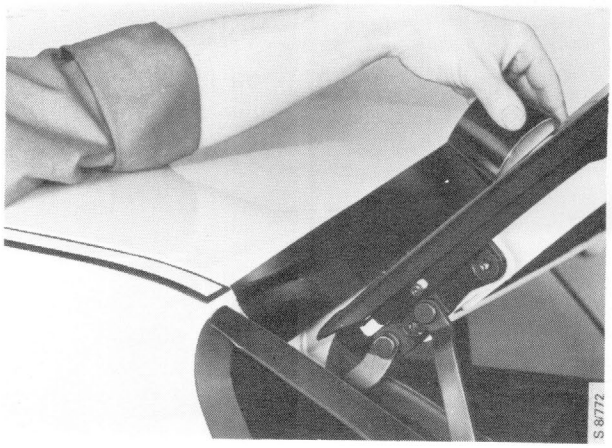


Tailgate

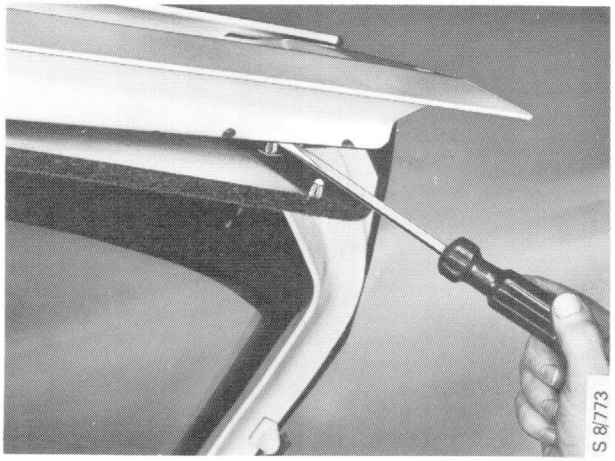
Removal/refitting

Disconnect the negative (-) battery lead and cover the terminal pole on the battery.

1 Fix a length of adhesive tape along the edge of the roof to protect the paintwork.



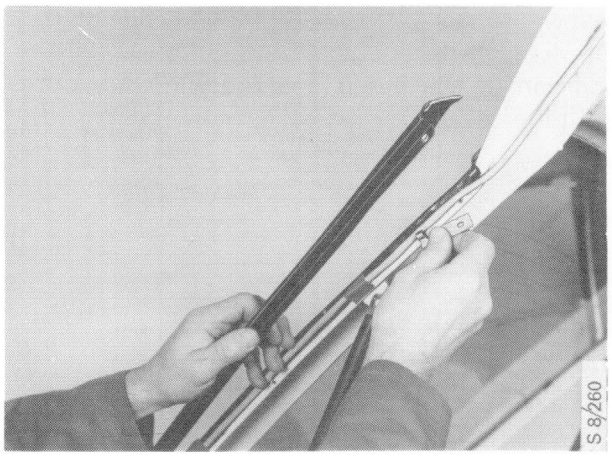
2 Remove the tailgate trim.



3 Disconnect the electrical connectors on either side of the tailgate.

4 Label the leads and disconnect them from the connectors.

5 Remove the finishers from either side of the tailgate.



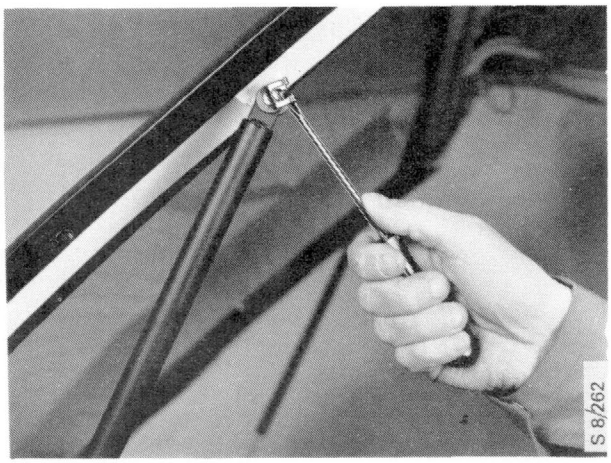
6 Release the guides and grommet and withdraw the electrical leads.

7 Remove the cable clips.

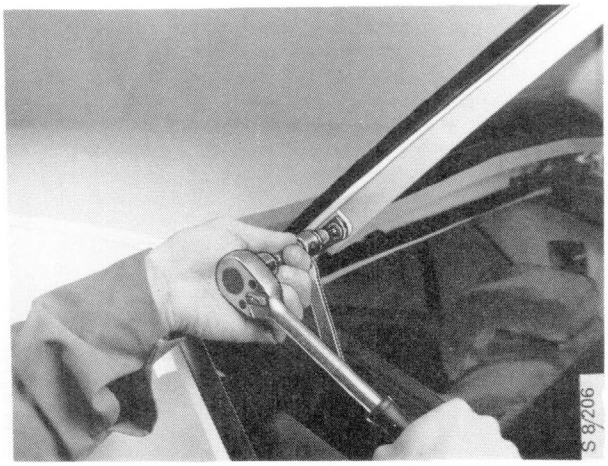
8 Release the electrical leads from the clips along the top edge of the tailgate.

9 Remove the clips from the tailgate end of the struts.

Prop up the tailgate (prop length: approx. 1450 mm/57 in) and remove the struts.



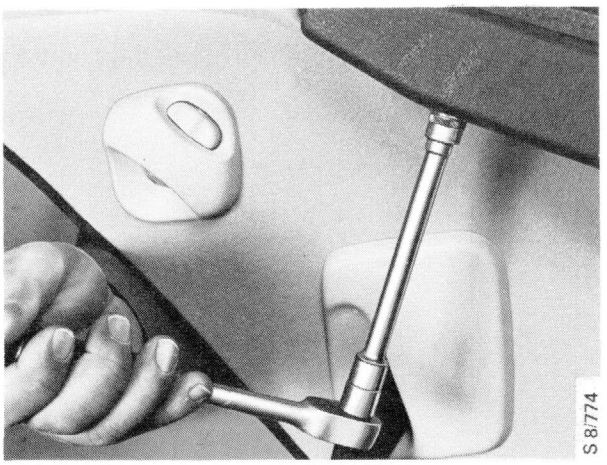
10 Undo the tailgate bolts and, with the aid of a helper, lift off the tailgate.



Refit in the reverse order.

To adjust the tailgate fit

Remove the covers from the D pillar. Slacken off the nuts on the inside of the pillar, adjust the position of the hinge and retighten the nuts. Refit the covers.



Electric window regulators

Automatic control for driver's door

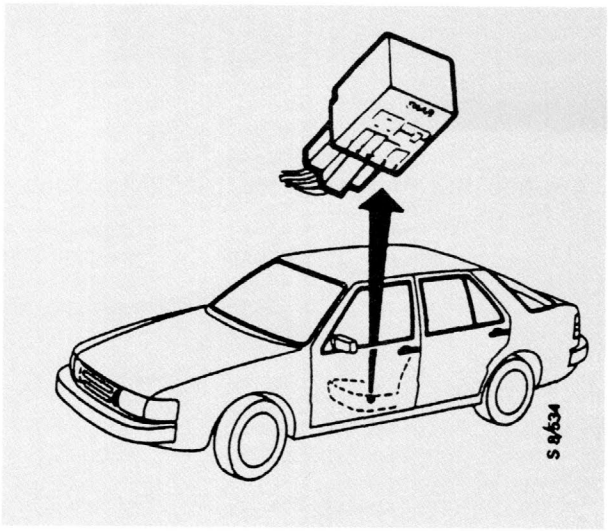
As from M86, the driver's door on cars with electric windows has a new switch and relay for operation of the window.

The switch has two positions for lowering the window and, as before, one for raising it.

The switch operates as follows:

- Pressing the switch gently to the first detent position will cause the window to be wound down for as long as the button is depressed.
- Pressing the switch down to the second detent position causes the step relay to operate and the window to wind all the way down automatically. The function will cease automatically when the window is all the way down or if the switch is moved to the position to raise the window.

The relay for the driver's window is located under the LH front seat.



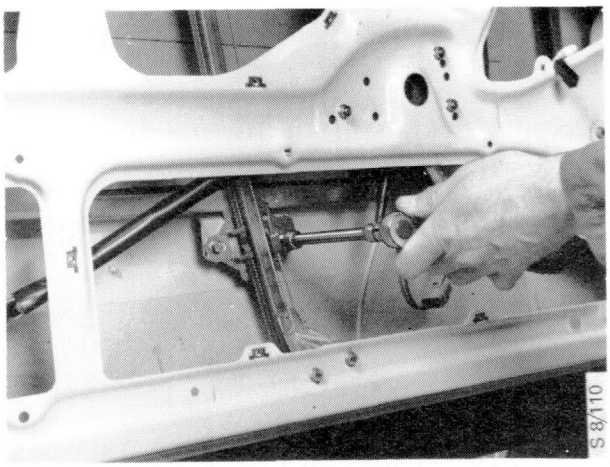
Regulator replacement - front doors

1 Remove the door trim panel and plastic moisture barrier.

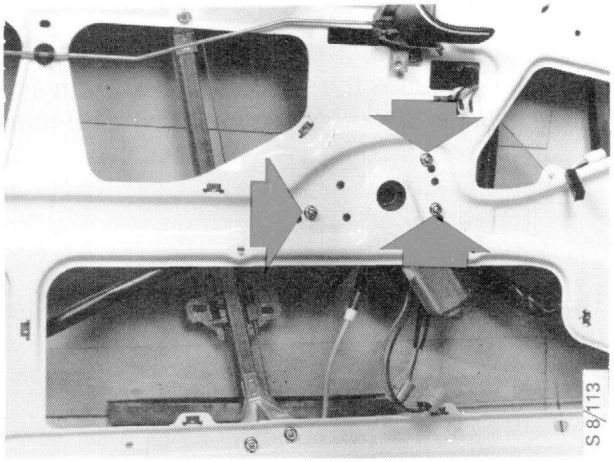
2 Lower the window to the halfway position and then disconnect the negative (-) battery lead and cover the terminal pole on the battery.

Snip through the cable tie and unplug the connectors for the regulator motor.

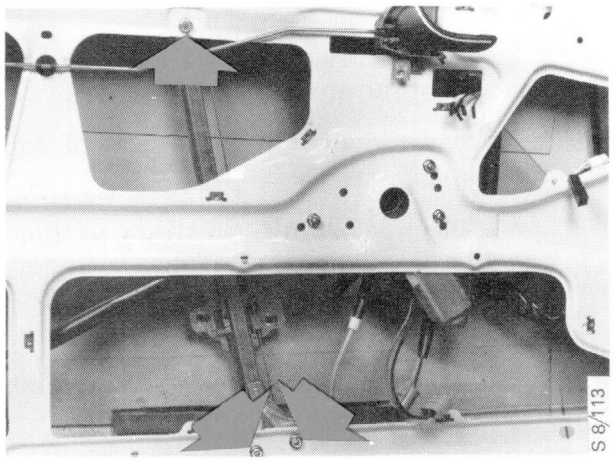
3 Undo the bolts securing the glass to the glass lift channel and carefully lower the glass inside the door.



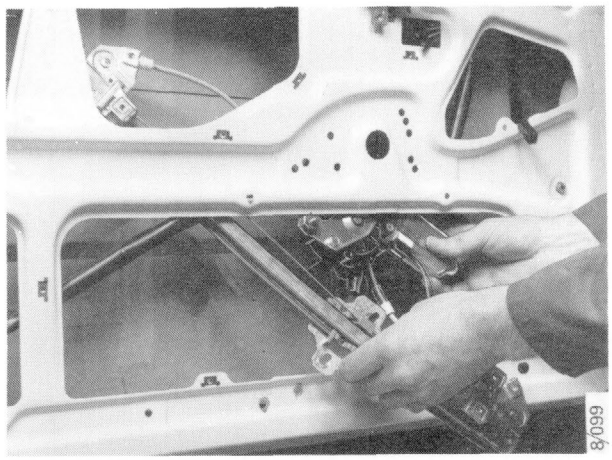
4 Undo the nuts securing the motor to the door.



5 Undo the securing bolts for the regulator assembly.



6 Lift out the regulator assembly.



Refit in the reverse order.

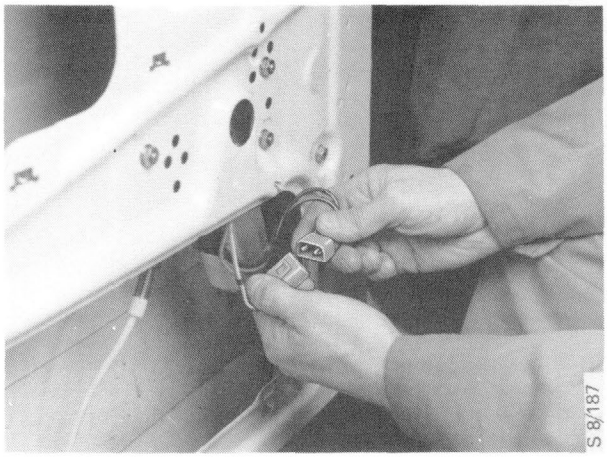
Adjust the fit of the glass in the frame.

Regulator replacement - rear doors

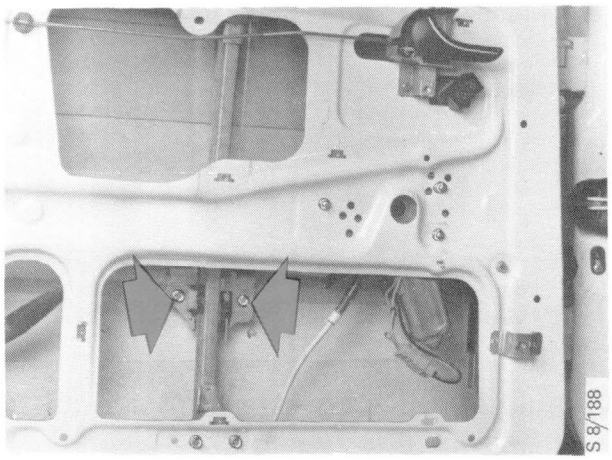
1 Remove the door trim panel and plastic moisture barrier.

2 Lower the window to the halfway position and then disconnect the negative (-) battery lead and cover the terminal pole on the battery.

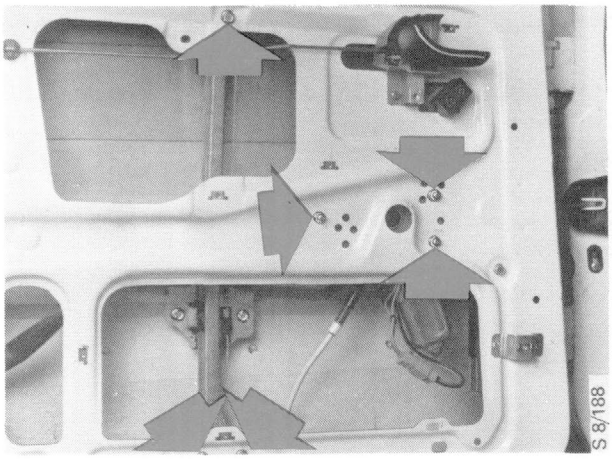
Snip through the cable tie and unplug the connectors for the regulator motor.



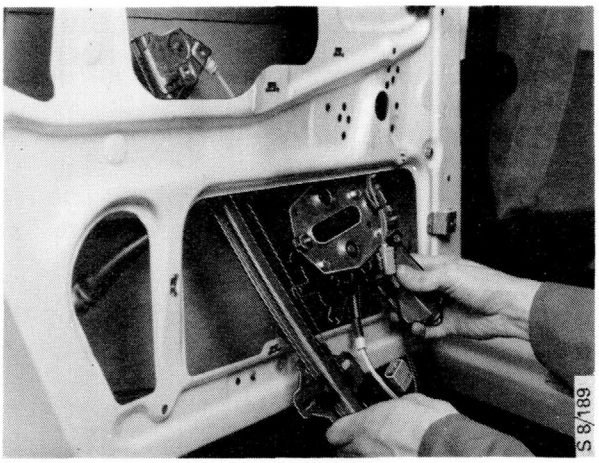
3 Undo the bolts securing the glass to the glass lift channel and carefully lower the glass inside the door.



4 Undo the nuts securing the motor to the door. Undo the securing bolts for the regulator assembly.



5 Lift out the regulator assembly.



Refit in the reverse order.

Adjust the fit of the glass by inserting the bolts in the glass lift channel, leaving them slack. Close the window and tighten the bolts.

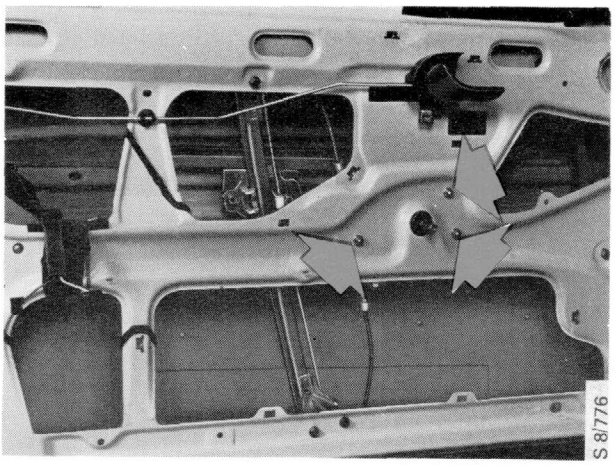
Manual window regulators

Regulator replacement - front doors

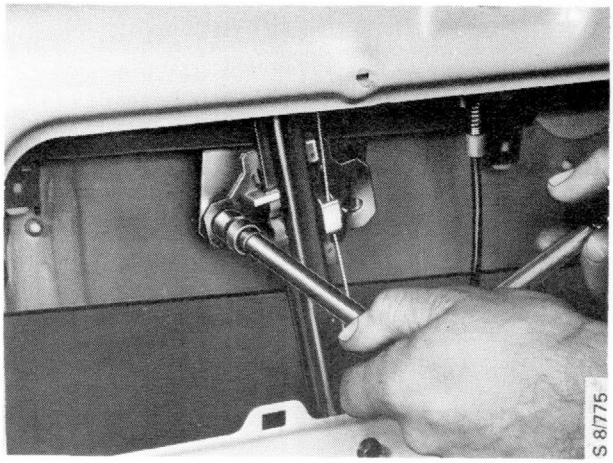
1 Remove the door trim panel and plastic moisture barrier.

2 Wind the window halfway down.

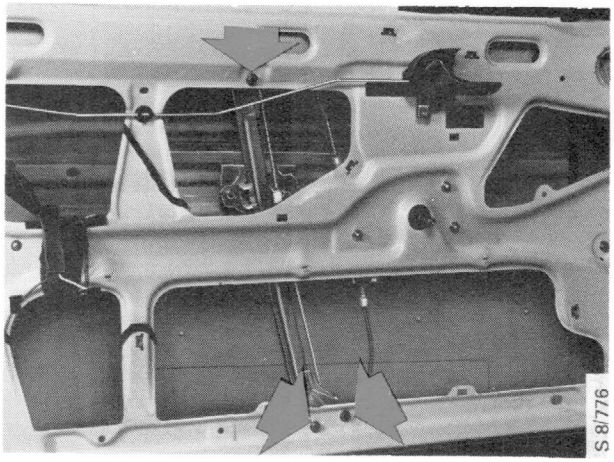
3 Undo the nuts securing the regulator mechanism.



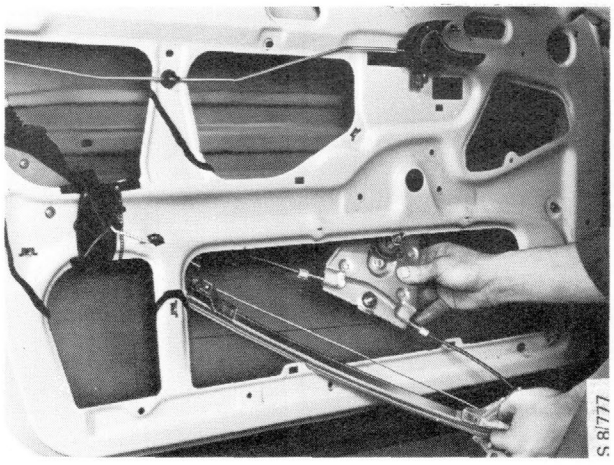
4 Undo the bolts securing the glass to the glass lift channel and carefully lower the glass inside the door.



5 Remove the securing bolts for the regulator mechanism.



6 Lift out the regulator mechanism.



Refit in the reverse order.

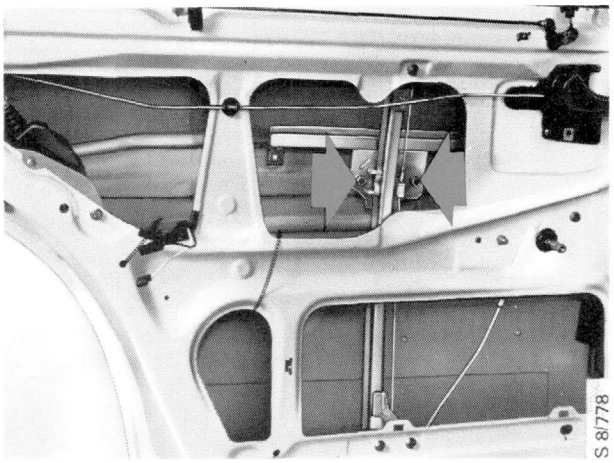
Adjust the fit of the glass by inserting the bolts in the glass lift channel, leaving them slack. Close the window and tighten the bolts.

Regulator replacement - rear doors

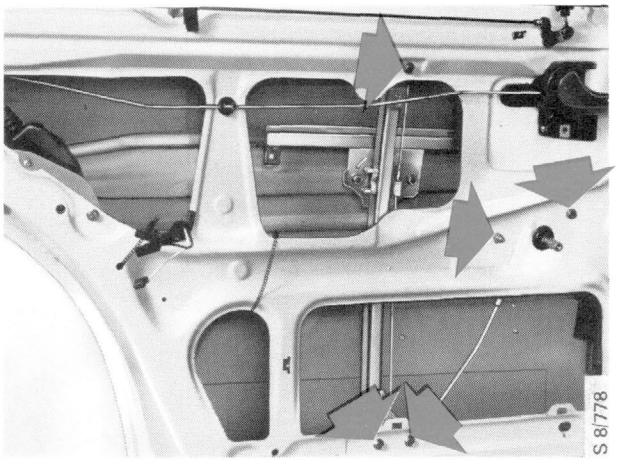
1 Remove the door trim panel and plastic moisture barrier.

2 Wind the window halfway down.

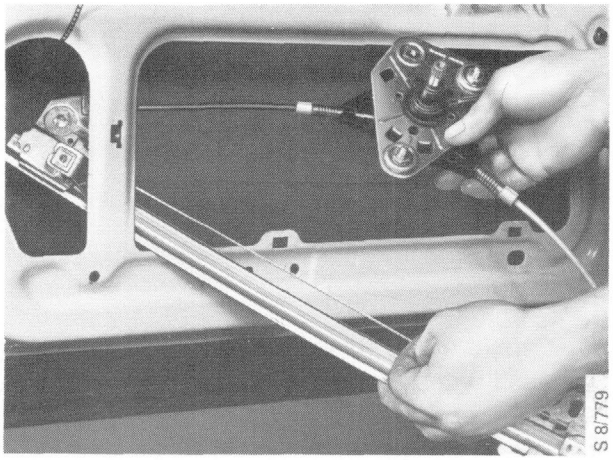
3 Undo the bolts securing the glass to the glass lift channel and carefully lower the glass inside the door.



4 Undo the nuts securing the regulator mechanism and remove the bolts.



5 Lift out the regulator mechanism.



Refit in the reverse order.

Adjust the fit of the glass by inserting the bolts in the glass lift channel, leaving them slack. Close the window and tighten the bolts.

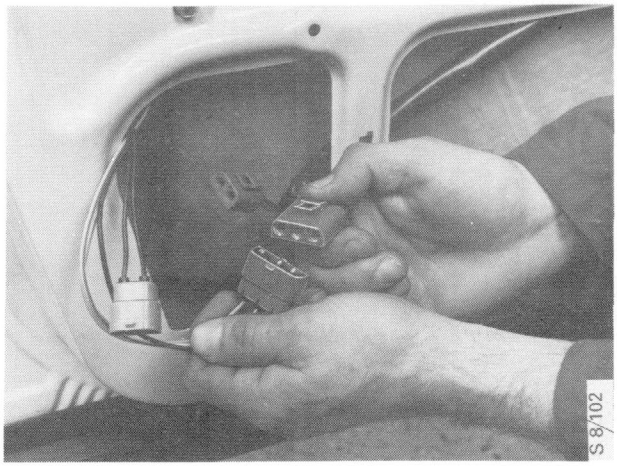
Central locking

Lock motor replacement - front doors

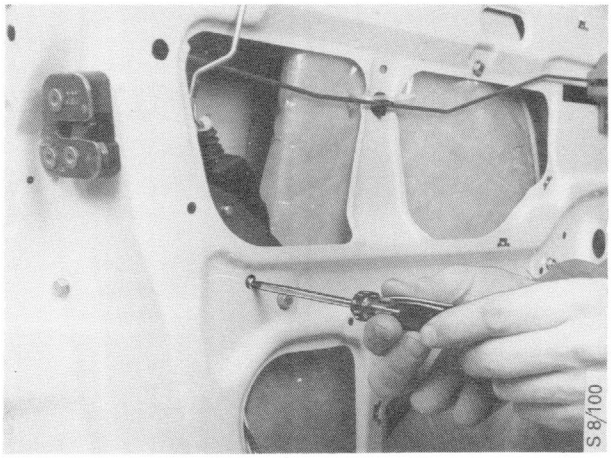
Disconnect the negative (-) battery lead and cover the terminal pole on the battery.

1 Remove the door trim panel and fold back the plastic moisture barrier.

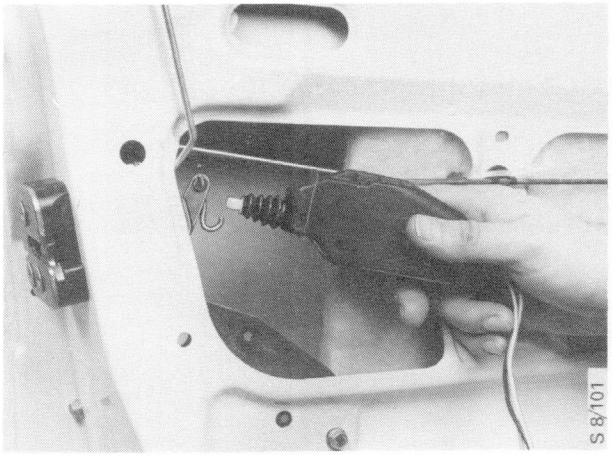
2 Unplug the electrical connectors.



3 Remove the screws.



4 Unhook the lock motor from the linkage and lift it out.



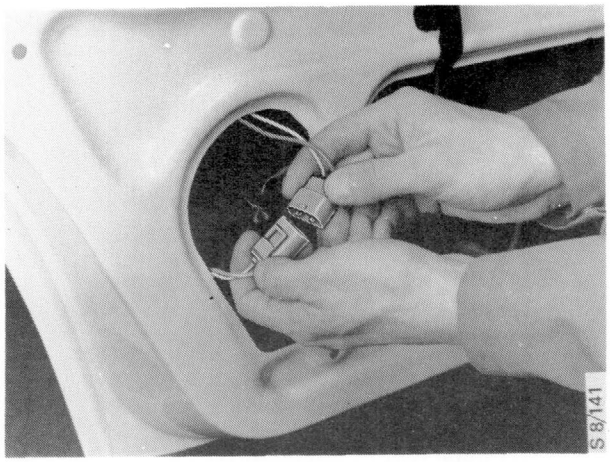
Refit in the reverse order.

Lock motor replacement - rear doors

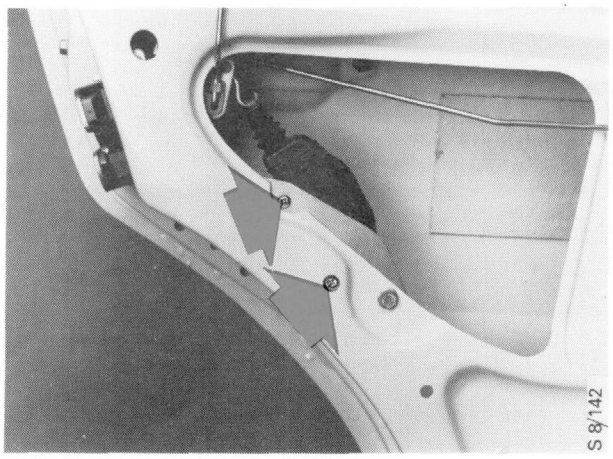
Disconnect the negative (-) battery lead and cover the terminal pole on the battery.

1 Remove the door trim panel and fold back the plastic moisture barrier.

2 Unplug the electrical connector.



3 Remove the screws.



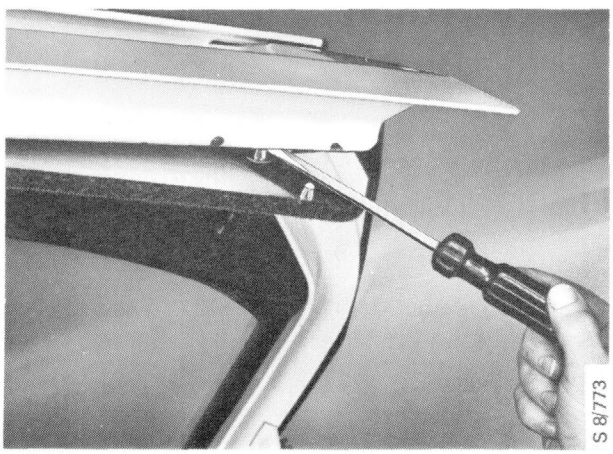
4 Unhook the lock motor from the linkage and lift it out.

Refit in the reverse order.

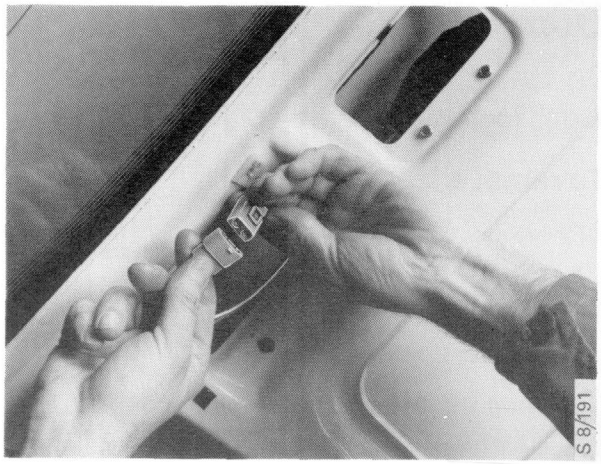
Lock motor replacement - tailgate

Disconnect the negative (-) battery lead and cover the terminal pole on the battery.

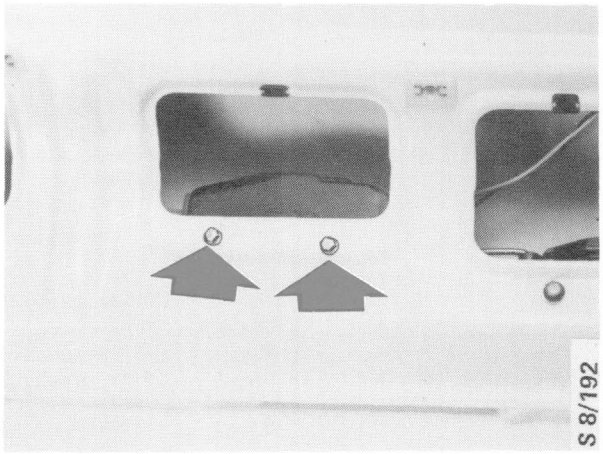
1 Remove the tailgate trim.



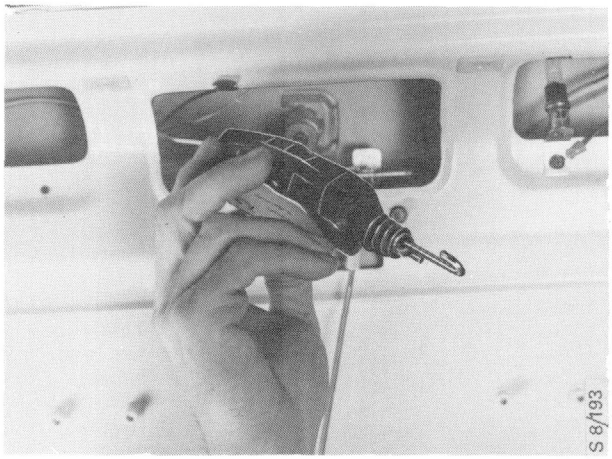
2 Unplug the electrical connector.



3 Remove the two lock motor securing bolts.



4 Lift out the lock motor and unhook the linkage.



Refit in the reverse order.

Door locks

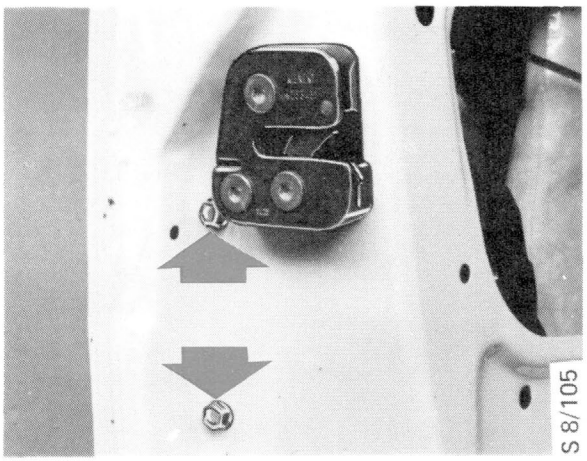
Door lock replacement - front doors

To remove

Disconnect the negative (-) battery lead and cover the terminal pole on the battery.

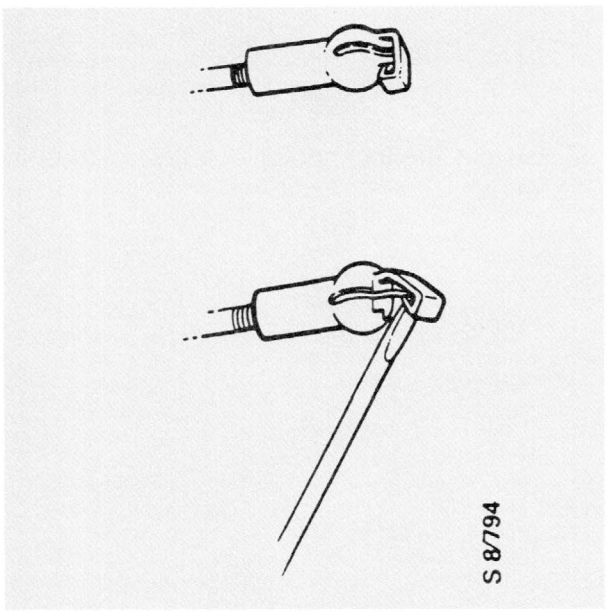
1 Remove the door trim panel and fold back the plastic moisture barrier.

2 Undo the two securing bolts and lift out the guide bar.

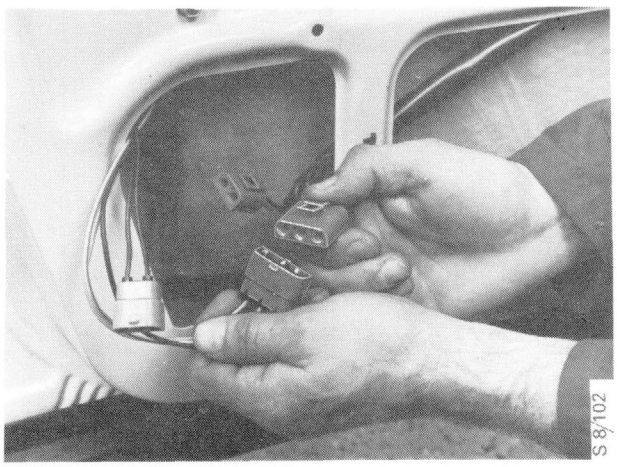


3 Unhook the link to the lock mechanism from the inside door handle.

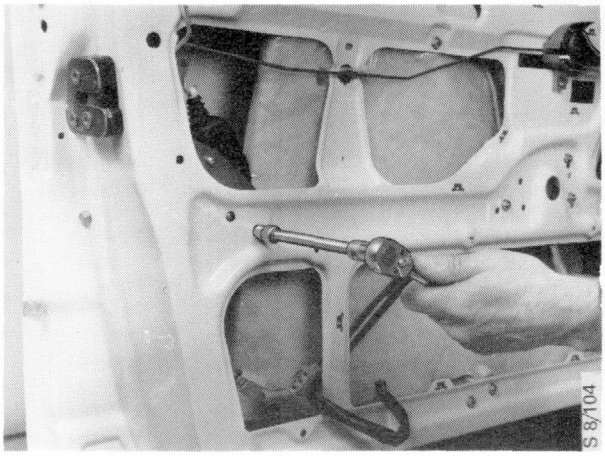
4 Separate the ball joint in the lock-cylinder linkage.



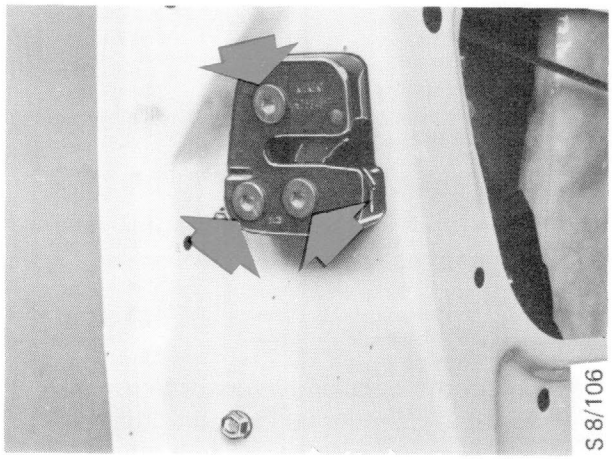
5 Snip through the cable tie and unplug the electrical connectors.



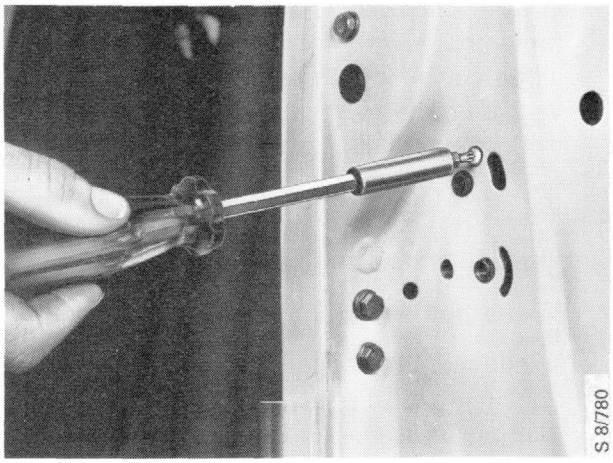
6 Remove the lock lock motor securing bolts.



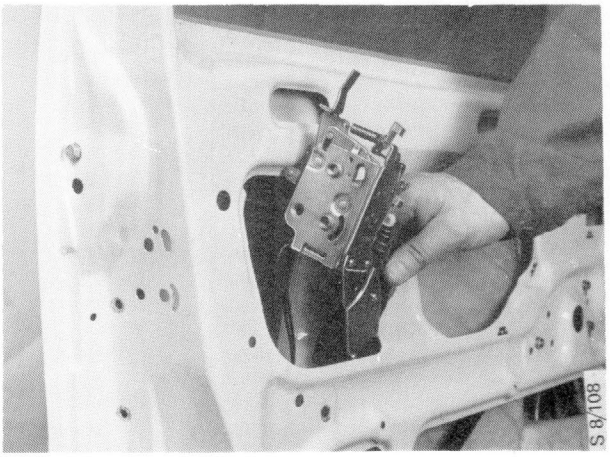
7 Undo the securing screws and lift off the latch unit.



8 Remove the securing screws for the inner lock mechanism.



9 Lift out the inner lock mechanism complete with central-locking lock motor.

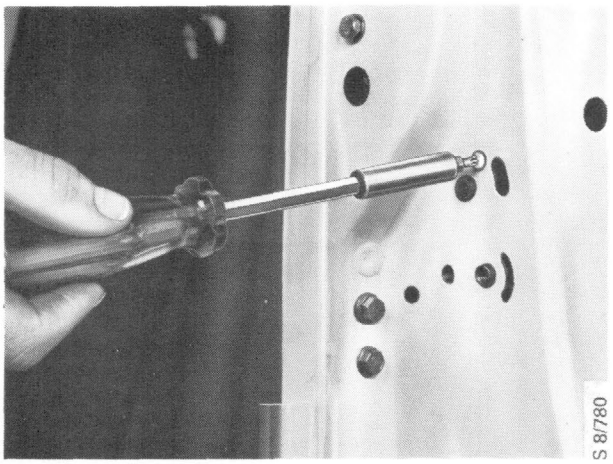


To fit

When applicable, transfer the clips, linkage and central-locking lock motor to the new lock.

1 Lift the inner lock mechanism and lock motor assembly into position.

2 Fit the screws.



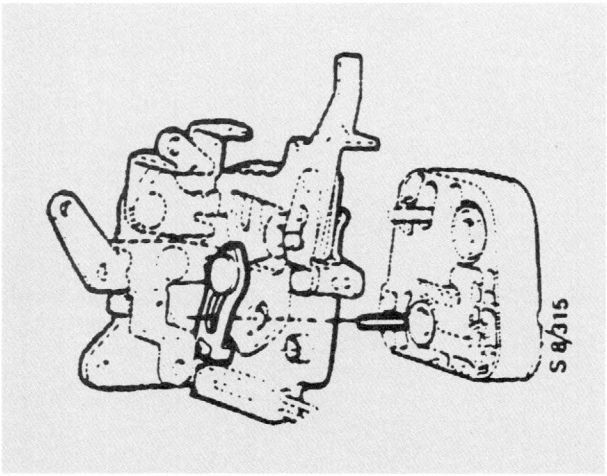
3 Bolt the lock motor bracket onto the door.

4 Fit the latch unit, ensuring that the locating peg engages the slot.

Caution

To avoid the door-open sensor being broken, the latch must be moved to the locking position before the latch unit is fitted.

Once the lock assembly has been fitted, remember always to use the inside or outside door handle to open the door to prevent damage to the striker plate or lock when the door is closed.



5 Reconnect the ball joint to the lock cylinder.

6 Refit the tie rod for the inside door handle.

7 Reconnect the connectors and tie the leads back, inserting the cable tie through the connectors.

8 Fit the guide bar for the window glass, leaving the bolts slack. Adjust the guide bar so that the glass slides freely and then tighten the bolts.

9 Refit the moisture barrier.

10 Refit the door trim panel.

Reconnect the battery.

Door lock replacement - rear doors

To remove

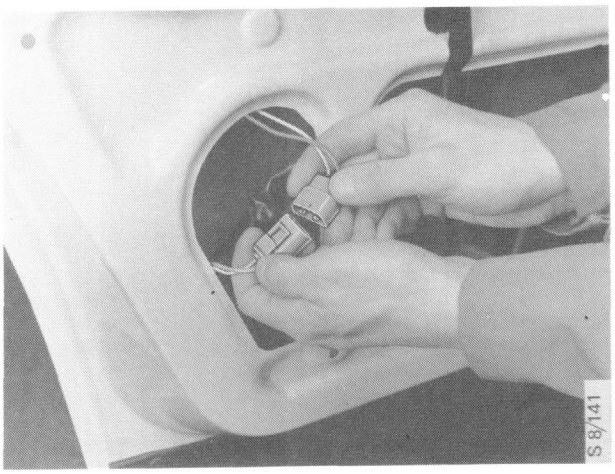
Disconnect the negative (-) battery lead and cover the terminal pole on the battery.

1 Remove the door trim panel and fold back the plastic moisture barrier.

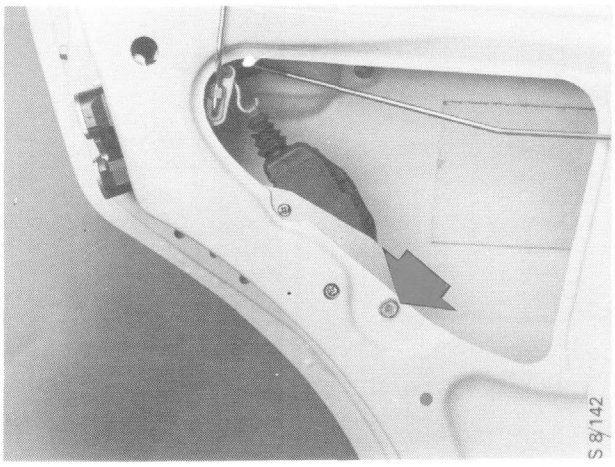
2 Disconnect the tie rod for the inside door handle from the lock mechanism.

3 Disconnect the interior locking button link from the lock mechanism.

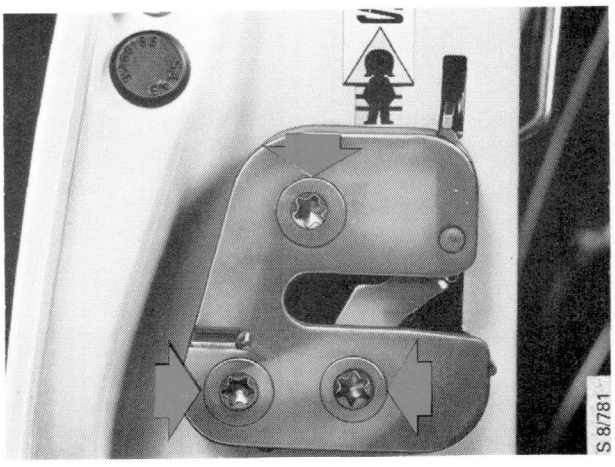
4 Snip through the cable tie and unplug the connectors.



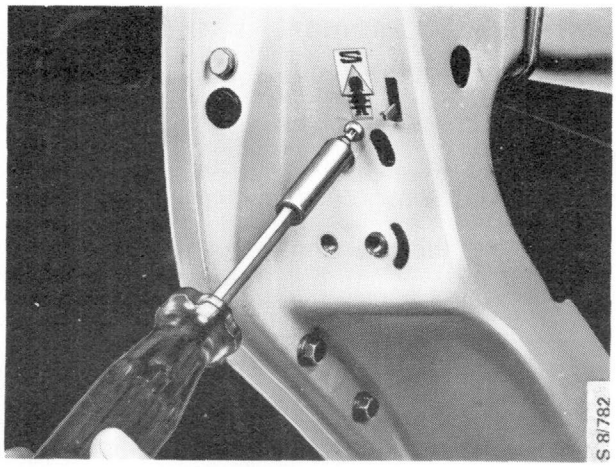
5 Undo the securing bolt for the lock motor.



6 Undo the securing screws and lift off the latch unit.



7 Undo the retaining screw for the lock assembly.



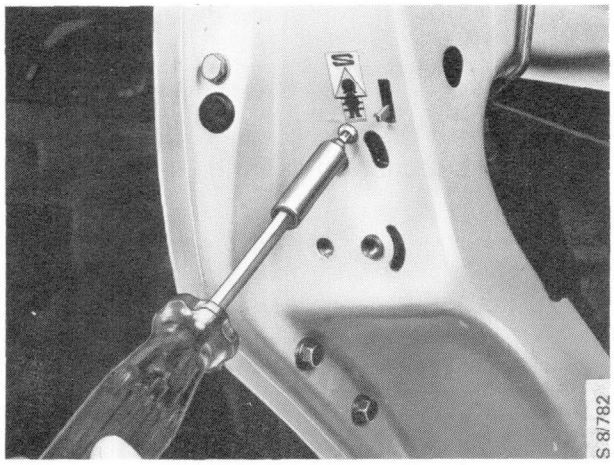
8 Lift out the lock assembly complete with lock motor.

To fit

When applicable, transfer the clips and lock motor to the new lock.

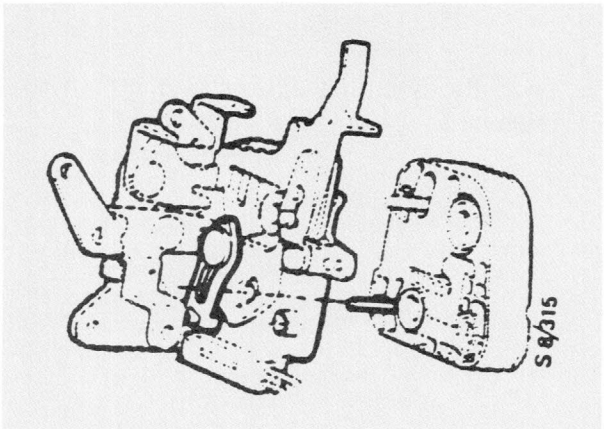
1 Lift the lock complete with lock motor into position.

2 Fit the lock-assembly retaining screw.



3 Bolt the lock motor bracket onto the door.

4 Refit the latch unit, ensuring that the locating peg engages the slot.



Caution

To avoid the door-open sensor being broken, the latch must be moved to the locking position before the latch unit is fitted.

Once the lock assembly has been fitted, remember always to use the inside or outside door handle to open the door to prevent damage to the striker plate or lock when the door is closed.

5 Reconnect the link for the interior locking button and the tie rod for the inside handle to the lock mechanism.

6 Reconnect the connectors and tie back the leads, inserting the cable tie through the connectors.

7 Refit the moisture barrier.

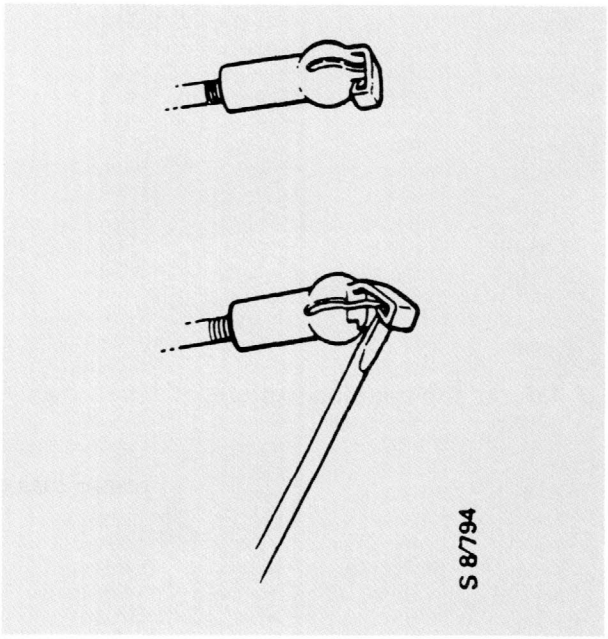
8 Refit the door trim panel.

Reconnect the battery.

Replacing the tailgate handle

1 Remove the tailgate trim.

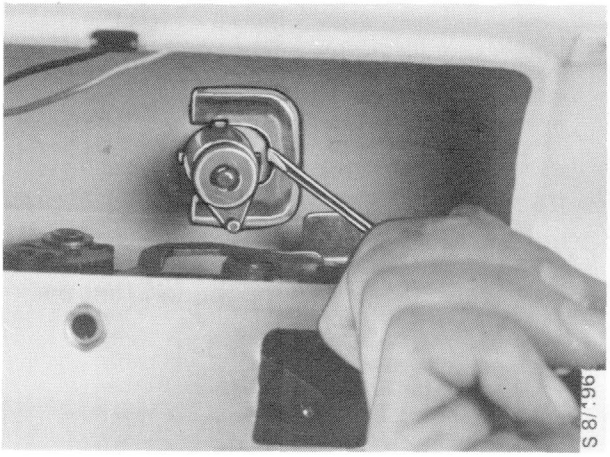
2 Disconnect the linkage from the handle.



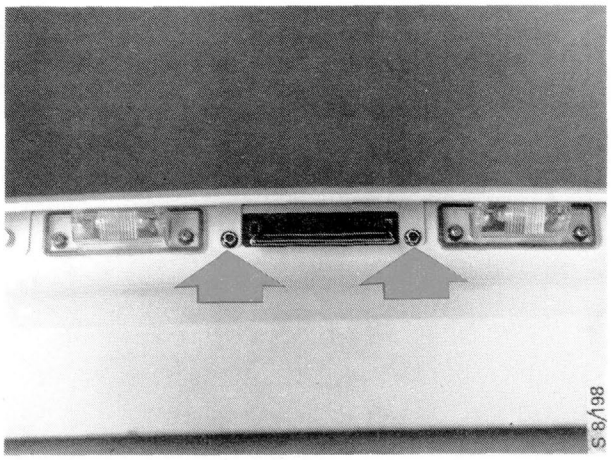
3 Disconnect the link from the lock cylinder.

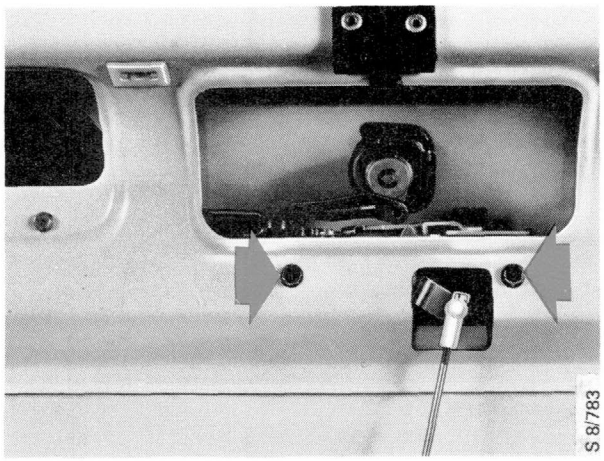
4 Unbolt the lock motor and unhook the link.

5 Use a screwdriver to slide back the cylinder retainer and then withdraw the lock cylinder.

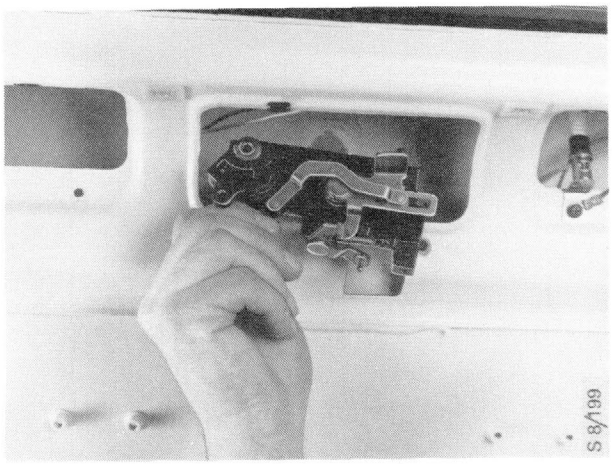


6 Remove the four securing screws for the handle.





7 Lift out the handle assembly.

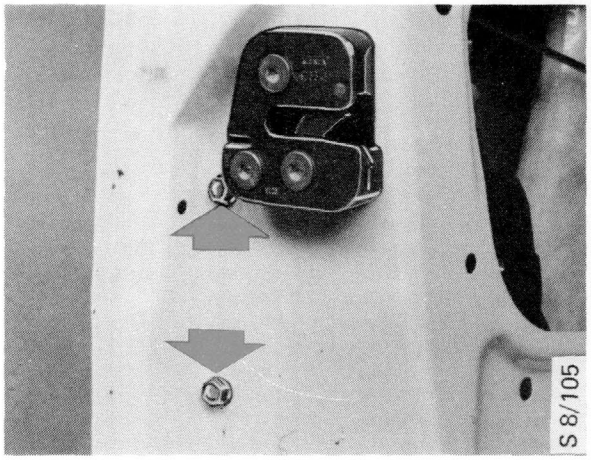


Refit in the reverse order.

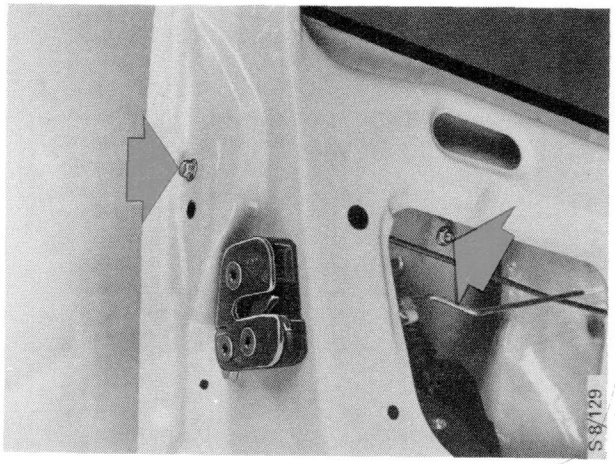
Replacing the outside door handle -front doors

1 Remove the door trim panel and fold back the plastic moisture barrier.

2 Undo the securing bolts and lift out the window guide bar.



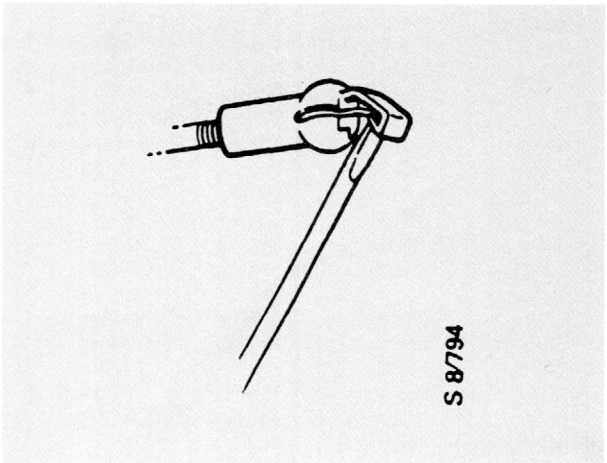
3 Remove the bolt and the nut.



4 Twist the leading edge of the handle down.

N.B.
Take care not to let the screw scratch the paintwork.

Lift out the handle and disconnect the ball joint.



Refit in the reverse order.

N.B.
Make sure that the handle's actuating lever is on the correct side of the lock mechanism's lever.

Replacing the outside door handle -rear doors

1 Remove the door trim panel and fold back the plastic moisture barrier.

2 Remove the bolt and the nut.

3 Twist down the leading edge of the handle and lift off the handle.

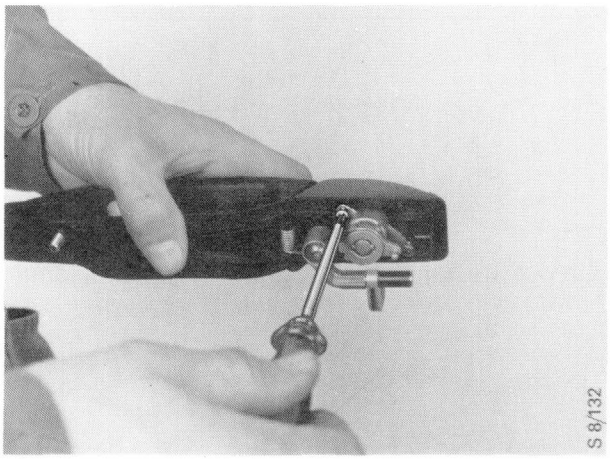
N.B.
Take care not to let the screw scratch the paintwork.

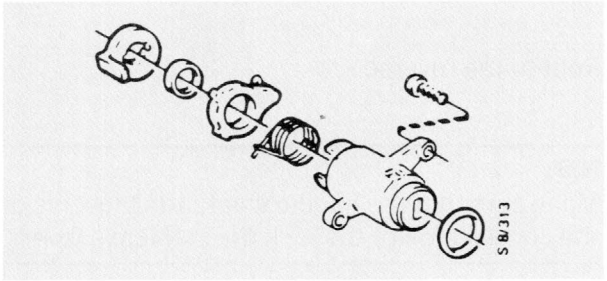
Refit in the reverse order.

N.B.
Make sure that the handle's actuating lever is on the correct side of the lock mechanism's lever.

Replacing the lock cylinder - front doors

Remove the handle, undo the screws and pull out the cylinder.

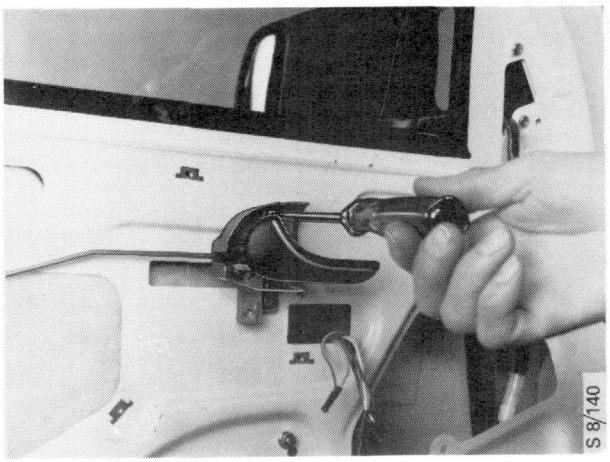




Replacing the inside door handle

1 Remove the door trim panel and plastic moisture barrier.

2 Undo the screws, unhook the actuating lever and remove the handle.



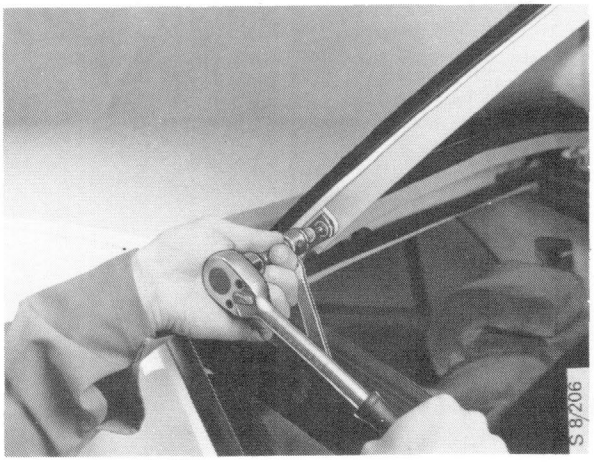
Refit in the reverse order.

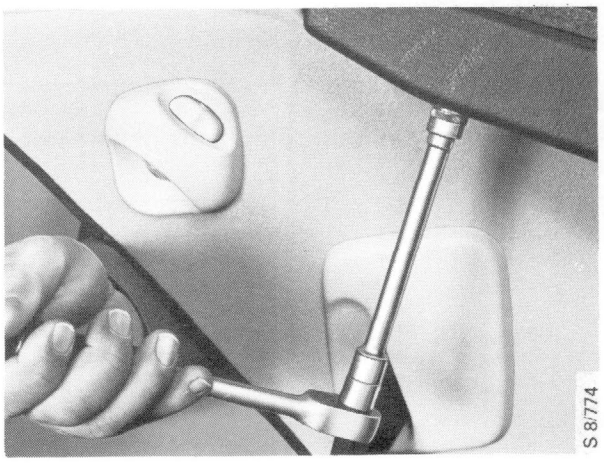
Replacing the tailgate hinges

1 Prop open the tailgate (prop length: approx. 1450 mm/57 in).

2 Remove the cover from the D pillar.

3 Unbolt and remove the hinge.





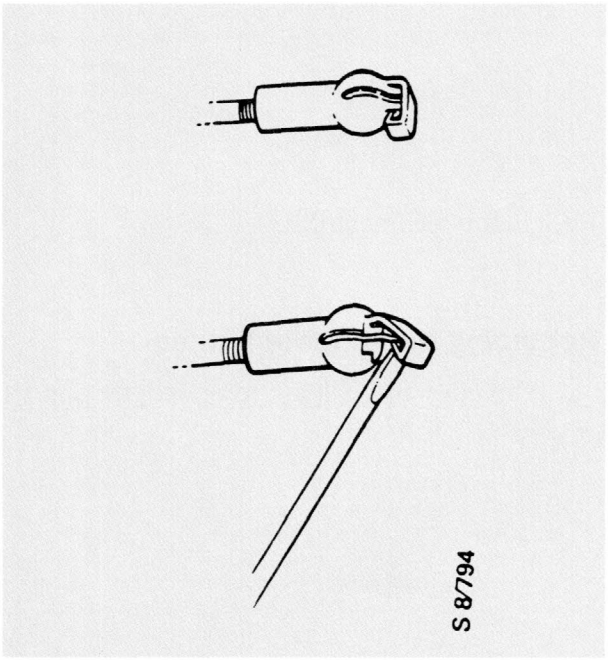
Fit the new hinge and adjust the tailgate fit.

Replacing the tailgate lock

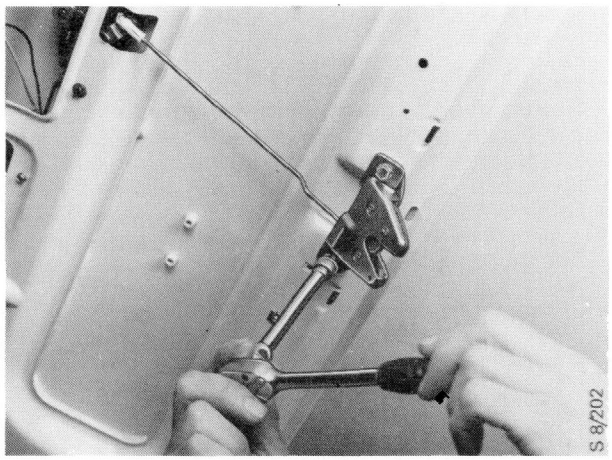
To remove

1 Remove the tailgate trim.

2 Disconnect the linkage from the handle.



3 Undo the two bolts and remove the lock.



To fit

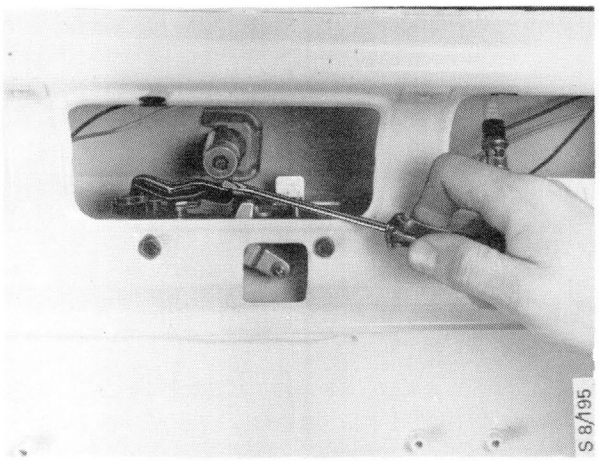
1 Fit the lock and connect the linkage. Align the lock correctly with the striker plate.

N.B.
Make sure there is some play in the handle when the tailgate is locked.

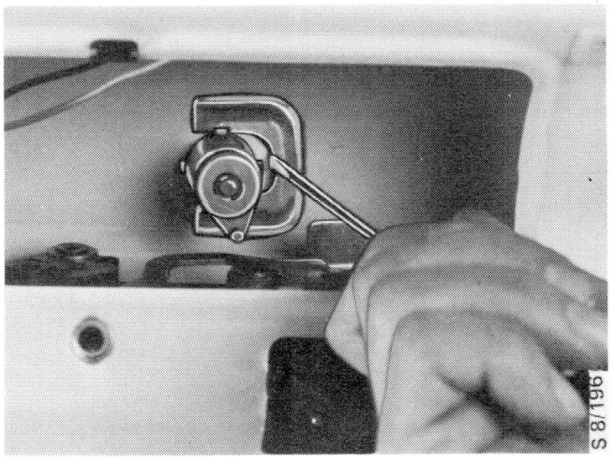
Replacing the tailgate lock cylinder

1 Remove the tailgate trim.

2 Disconnect the link from the ball joint at the lock cylinder.



3 Use a screwdriver to slide back the cylinder retainer and withdraw the lock cylinder.

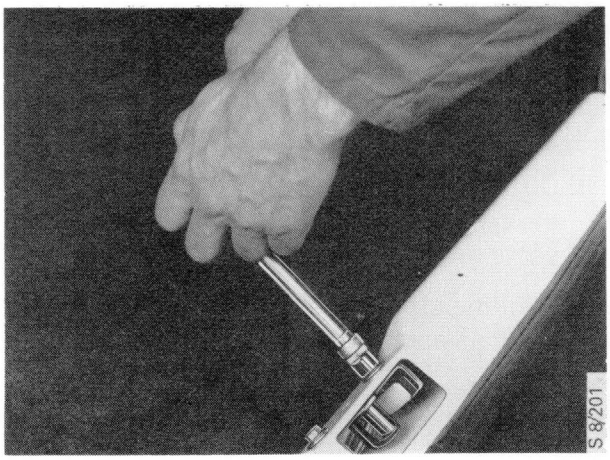


Replacing the tailgate striker plate

1 Remove the covers from the rear light clusters on either side.

2 Unscrew and remove the scuff plate.

3 Undo the bolts and lift off the striker plate.



Fit the new striker plate and align it correctly with the lock before tightening the bolts.

Rear spoiler

Spoiler side section

To remove

1 **Side section with aerial fitted:**
Remove the nut and sleeve for the aerial.

Side section without aerial:
Pull back the luggage compartment trim to gain access to the nut securing the cover, and remove the cover.

2 Apply hot air to the spoiler section securing tape so that it comes away easily. Take care not to apply excessive heat as this is liable to damage the paintwork or spoiler section.

N.B.
Do not use force to remove the spoiler sections as this can cause the enamel to lift.

3 Lift off the spoiler section.

To fit

1 If the spoiler section is to be refitted, clean it thoroughly, removing all traces of old adhesive and dirt.

2 Fit double-sided adhesive tape to the cleaned surface of the spoiler section.

3 Thoroughly clean the metalwork, removing all traces of old adhesive and dirt.

4 Guide the studs on the spoiler section into the plastic fasteners and press the spoiler section into position.

5 Refit the sleeve and nut for the aerial or the cover as applicable.

6 Refit the trim.

Tailgate spoiler

To remove

1 Remove the tailgate trim.

2 Remove the tailgate rubber stops to gain access to the outer spoiler nuts.

3 Remove the spoiler nuts.
M86 onwards: Remove the bracket on either side.

4 Apply hot air to the spoiler section securing tape so that it comes away easily. Take care not to apply excessive heat as this is liable to damage the paintwork or spoiler section.

5 Lift off the spoiler section.

N.B.
Do not use force to remove the spoiler sections as this can cause the enamel to lift.

To fit

1 If the spoiler section is to be refitted, clean it thoroughly, removing all traces of old adhesive and dirt. Fit double-sided adhesive tape to the cleaned surface of the spoiler section.

2 Thoroughly clean the metalwork, removing all traces of old adhesive and dirt. Make sure that the zinc tape is correctly seated at the holes.

3 Shut the tailgate.

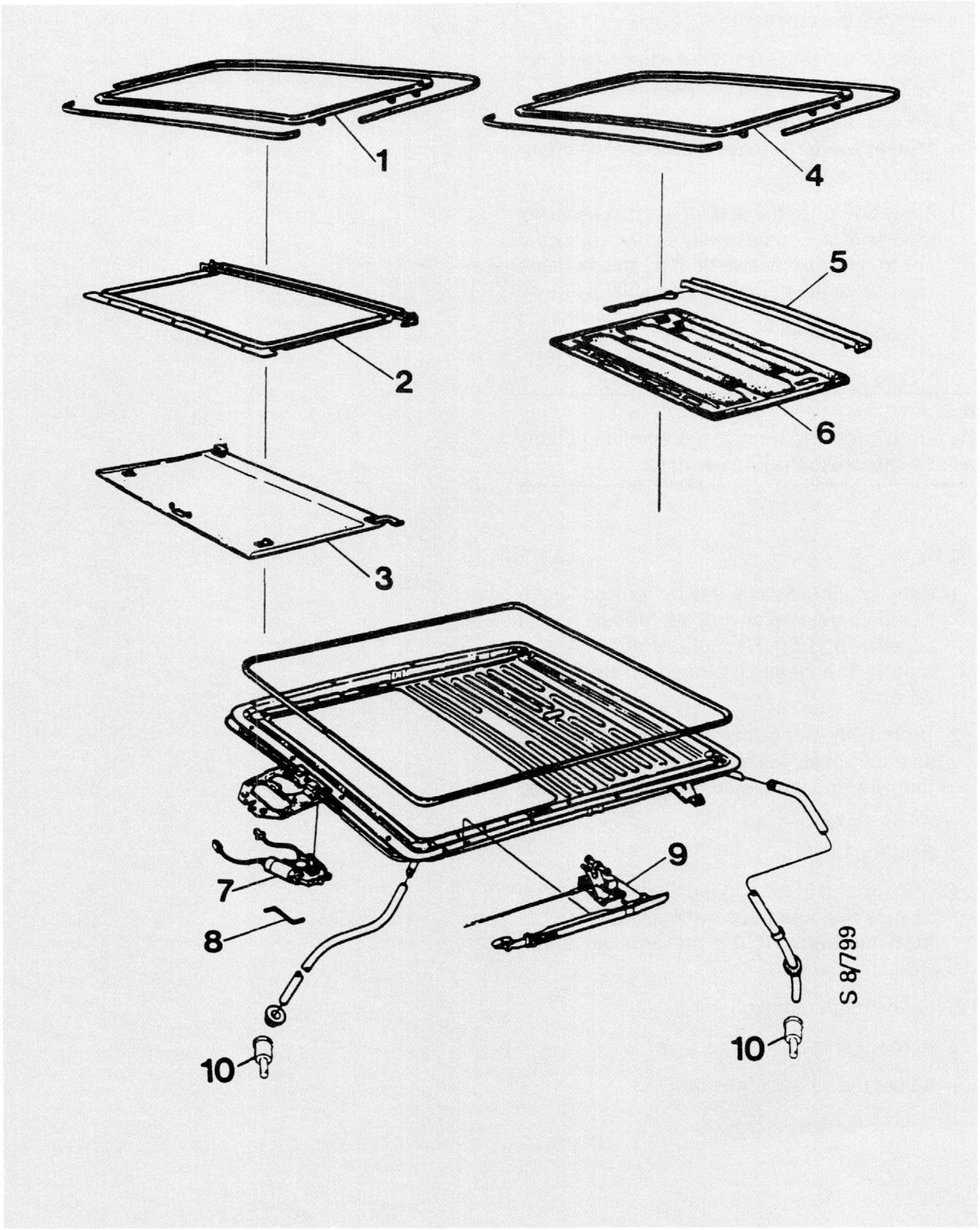
4 Offer up and fit the spoiler. Fit the three plastic nuts first and the outer nuts last.
M86 onwards: fit the brackets on either side.

5 Fit the rubber stops.

6 Refit the trim.

7 Adjust the height of the tailgate.

Sunroof



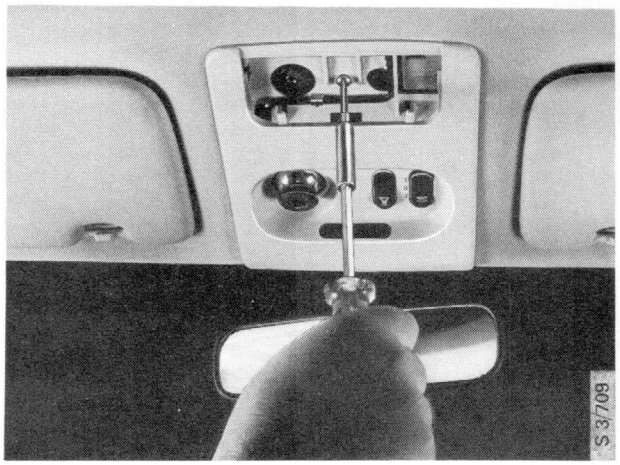
1 Glass sunroof
2 Frame
3 Sunshade
4 Steel sunroof
5 Drain channel
6 Trim
7 Actuating motor
8 Winder
9 Tilt and slide mechanism
10 Non-return valve

Sunroof assembly

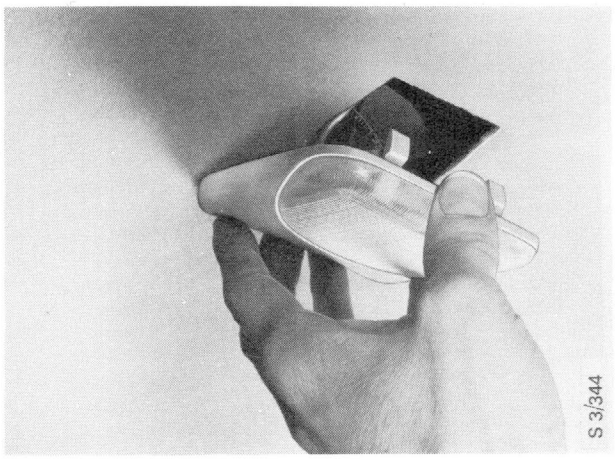
To remove

Disconnect the negative (-) battery lead and cover the terminal pole on the battery.

1 Remove the overhead switch panel surround.

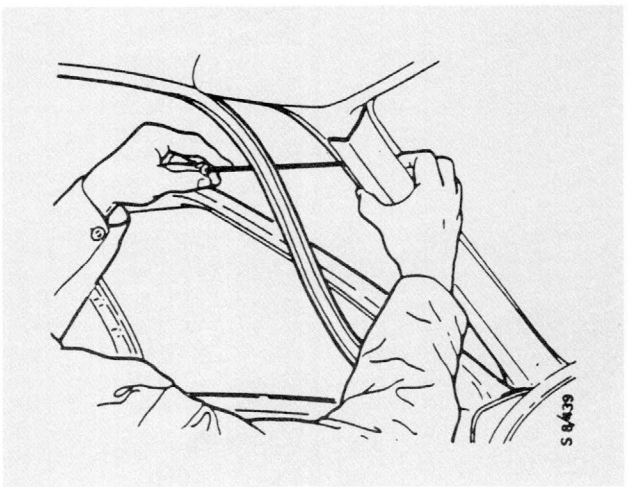


2 Pull down the dome light and unplug the leads.

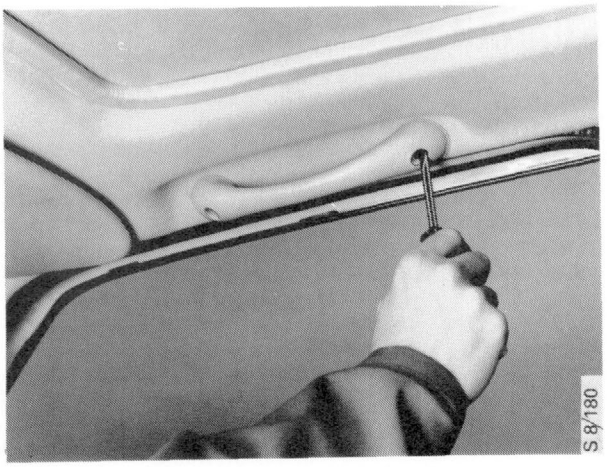


3 Ease the trim seals away from the top of the door frames.

4 Remove the A pillar trim.



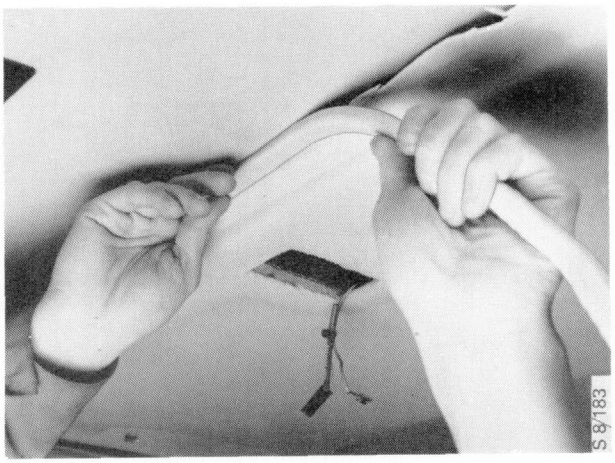
5 Remove the screw caps and courtesy handle/blanks from over the doors.



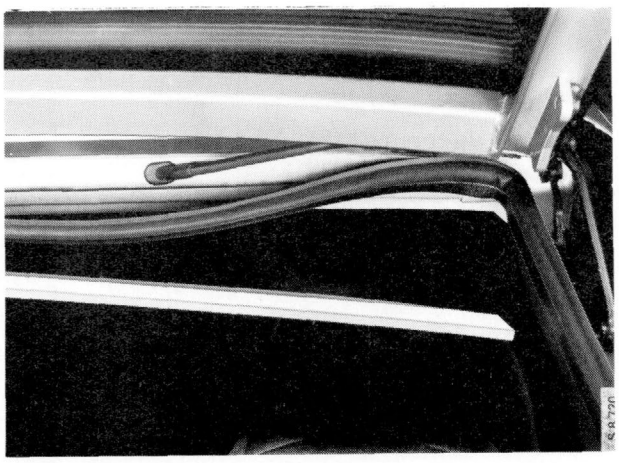
6 Remove the sill scuff plate, seat belt anchorage and B-pillar trim on the RH side of the car.

7 Remove the sun visors.

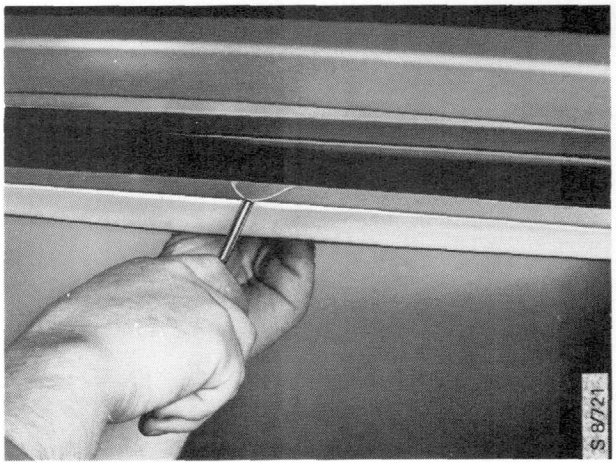
8 Remove the moulding from around the sunroof and ease down the trim.

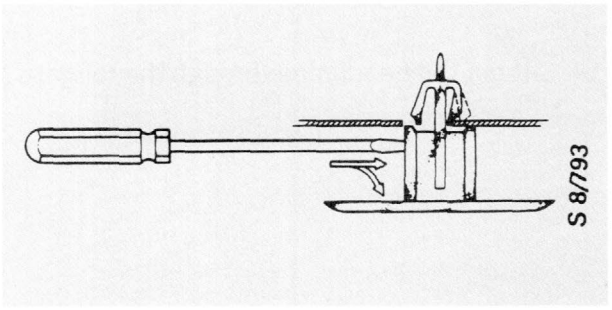


9 Pull away the tailgate seal and remove the plastic moulding.

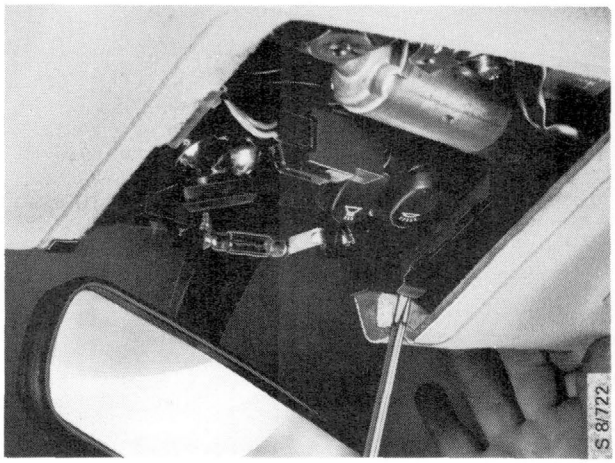


10 Remove the plastic plug-type fastener for the trailing edge of the headlining, taking care not to pinch the electrical lead.



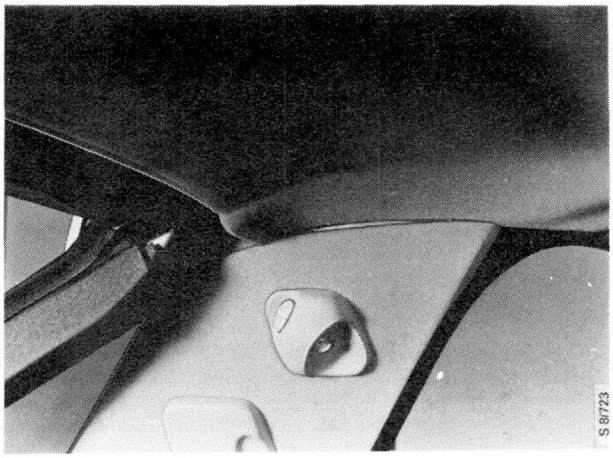


11 Release the headlining from the overhead panel and ease down the leading edge.



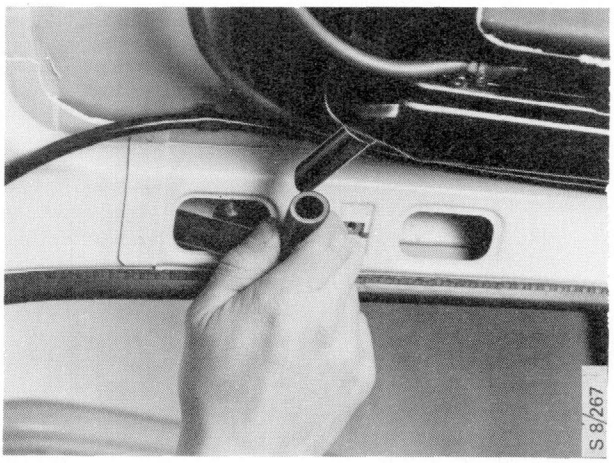
12 Release the headlining from the LH B-pillar trim.

13 Slide the headlining forward to release it from the trim on the C pillars.

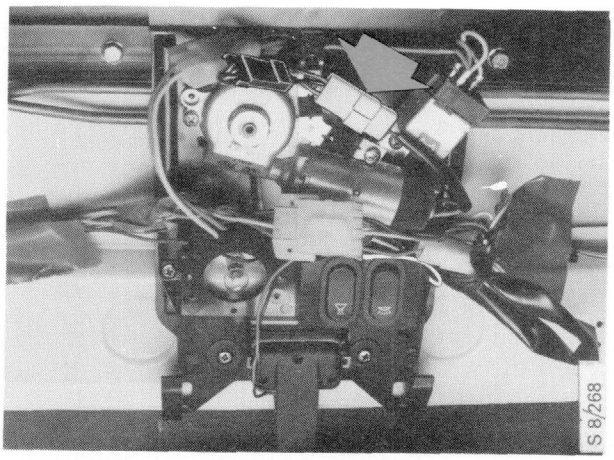


14 Lift out the headlining through the tailgate.

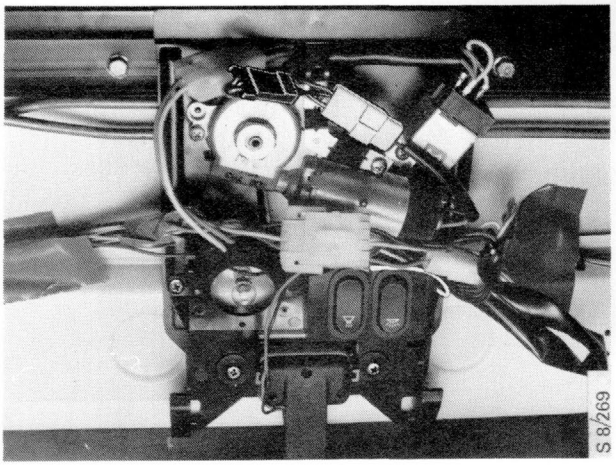
15 Disconnect the drain hoses (one in each corner).



16 Unplug the connector for the actuating motor.



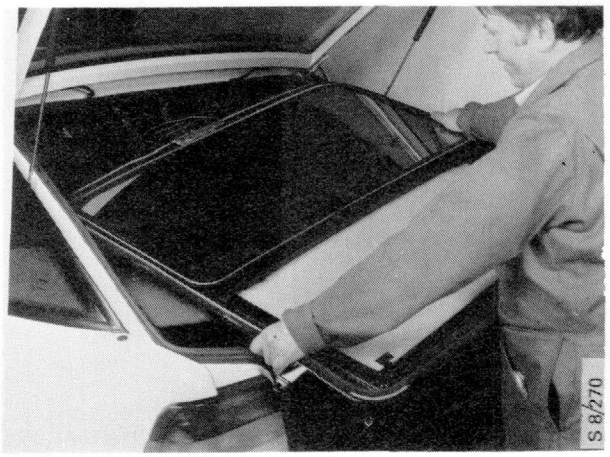
17 Unscrew and lower the overhead panel base plate.



18 Remove the rear-view mirror.

19 Undo the sunroof securing screws.

20 Lift out the sunroof assembly.



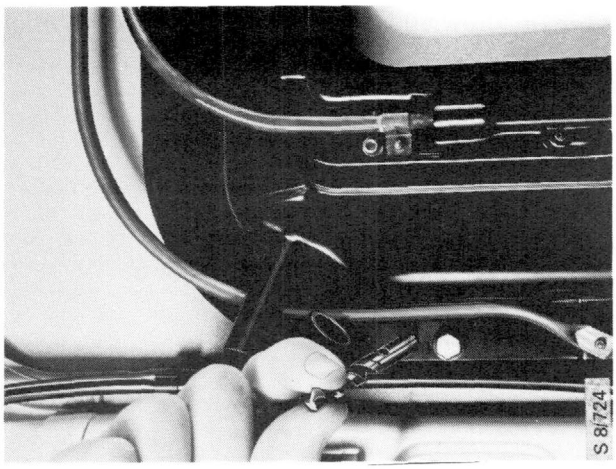
To refit

The sunroof must be fully open on fitting.

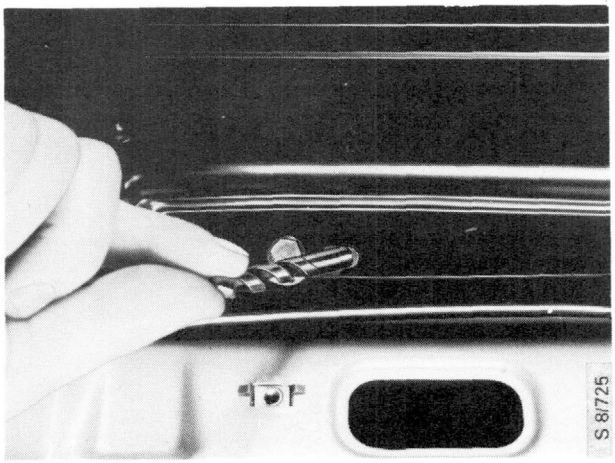
1 Lift the sunroof assembly into position.

2 Fit but leave the securing screws slack.

3 Find the two locating holes on the RH side of the assembly: the front one approximately 10 mm forward of the front securing screw and the rear one in line with the B pillar. Using two 8 mm drills, guide the assembly into position inside the reinforced frame in the roof.



Front locating hole



Rear locating hole

4 Starting at the front, tighten the vertical screws.

5 Next, tighten the screws in the side fixings.

6 Refit the rear-view mirror.

7 Refit the overhead panel base plate.

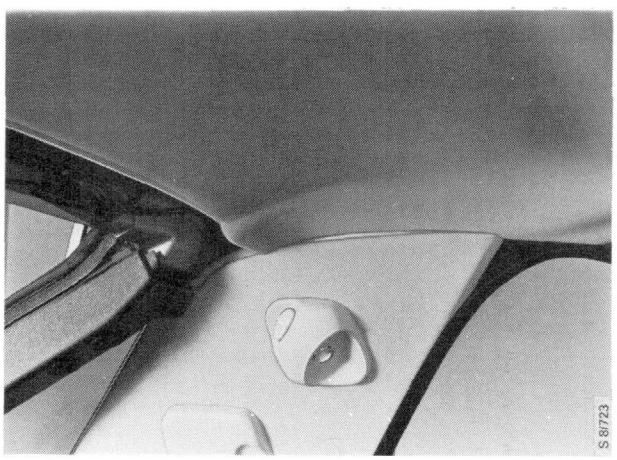
8 Plug together the connectors for the actuating motor.

9 Connect the drain hoses.

10 Lift the headlining in through the tailgate.

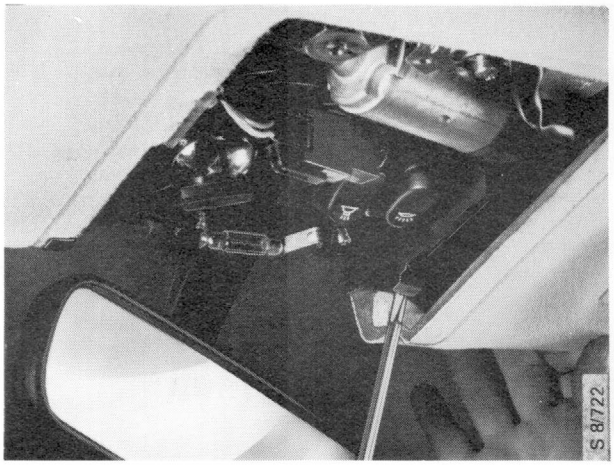
11 Slide the headlining forwards beyond the C pillar.

12 Slide the headlining back so that it fits snugly behind the C pillar trim.



13 Support the headlining on the LH B pillar.

14 Fit the headlining at the overhead switch panel.



15 Refit the top of the trim seal in the door apertures.

16 Refit the courtesy handle/blanks complete with screw caps above the doors.

17 Apply adhesive to the edge of the headlining and fit the moulding round the sunroof aperture.

18 Refit the B pillar trim.

19 Refit the dome light.

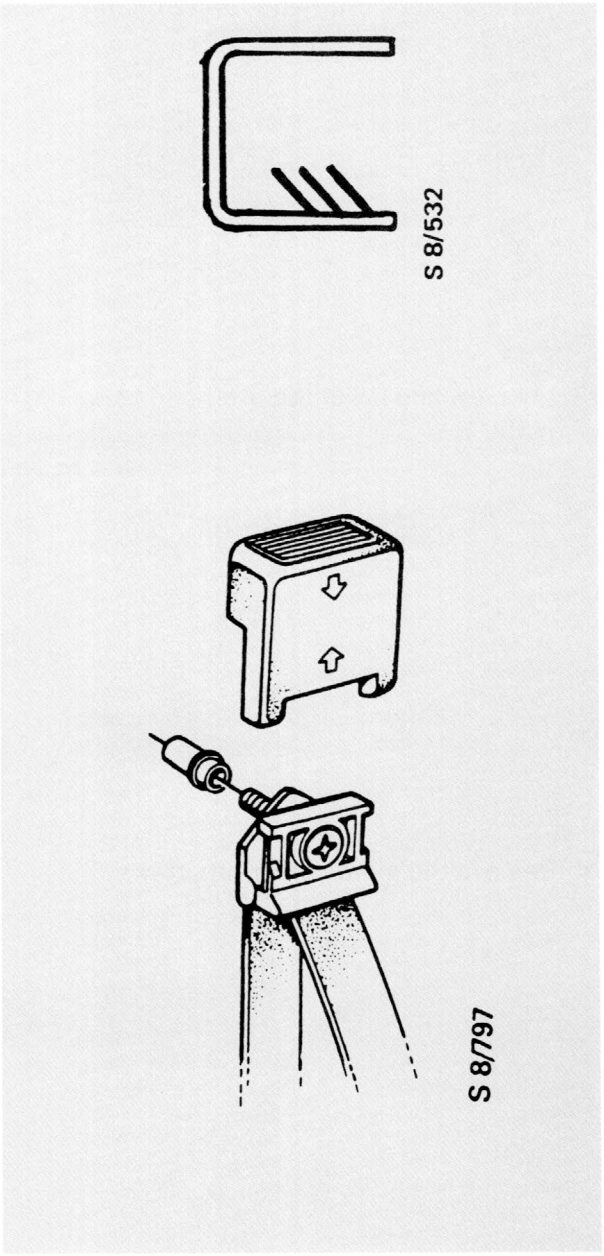
20 Complete the fitting of the door trim seals.

21 Refit the sun visors.

22 Refit the A pillar trim.

23 Refit the overhead switch panel surround.

24 Refit the RH seat-belt guide to the B pillar.



Belt-guide screw and spacer

25 Refit the sill scuff plate.

26 Refit the plastic fastener at the back of the headlining.

27 Refit the plastic moulding and tailgate seal.

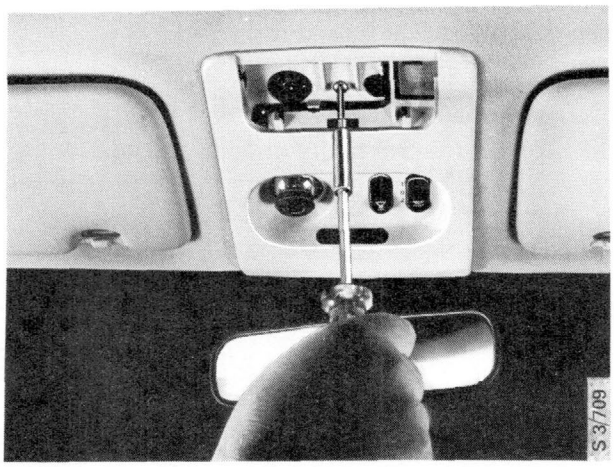
Reconnect the battery.

Sunroof actuating motor

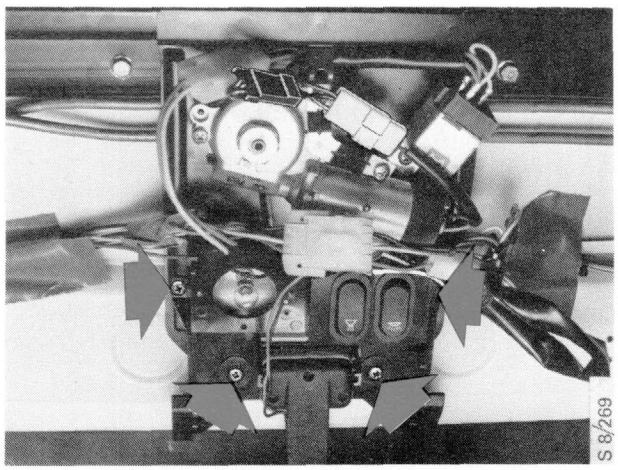
Removal/refitting

1 Make sure the sunroof is closed. Disconnect the negative (-) battery lead and cover the terminal pole on the battery.

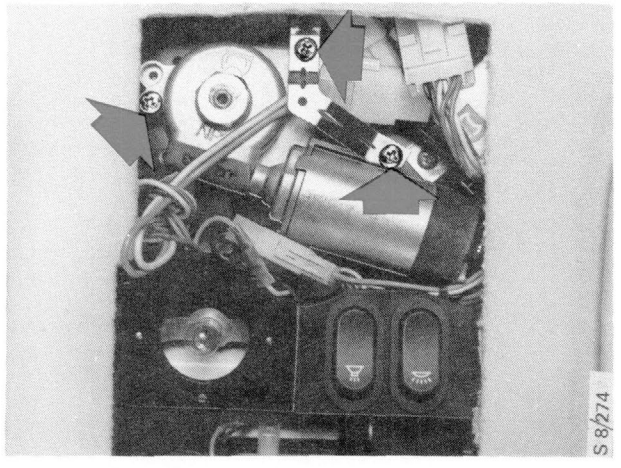
2 Remove the overhead switch panel surround.



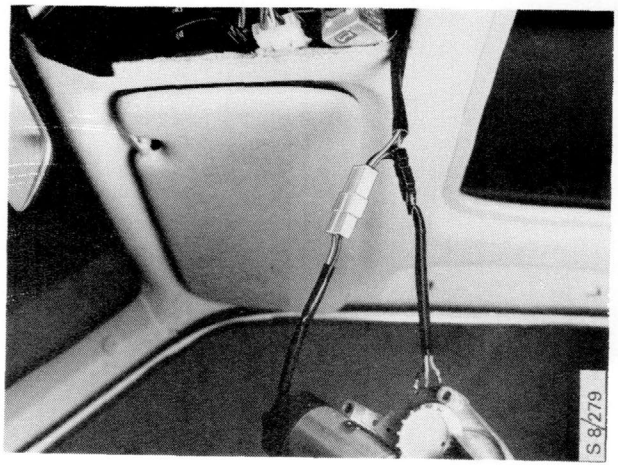
3 Unscrew and lower the overhead panel base plate.



4 Remove the motor securing screws.

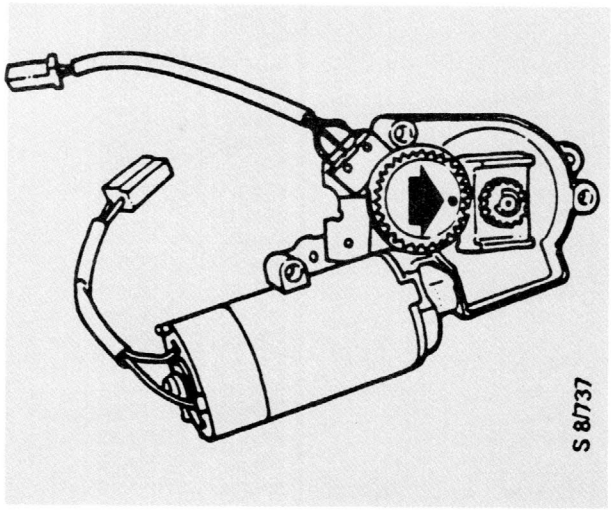


5 Lift out the motor and unplug the connectors.



Refit in the reverse order.

With the mechanism in the roof-open position, run the motor to close the roof, waiting until the motor cuts out automatically in the home position. This ensures that the pinion is in the roof-closed position (mark lined up as shown).



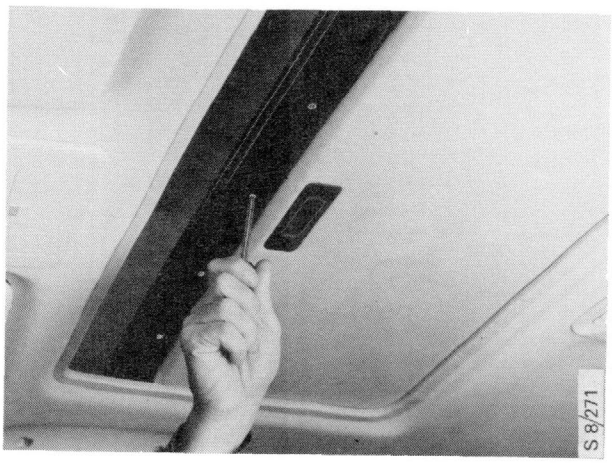
Position of pinion for closed roof

Slide/tilt mechanism and cable

To remove

1 **Cars with glass sunroof:**

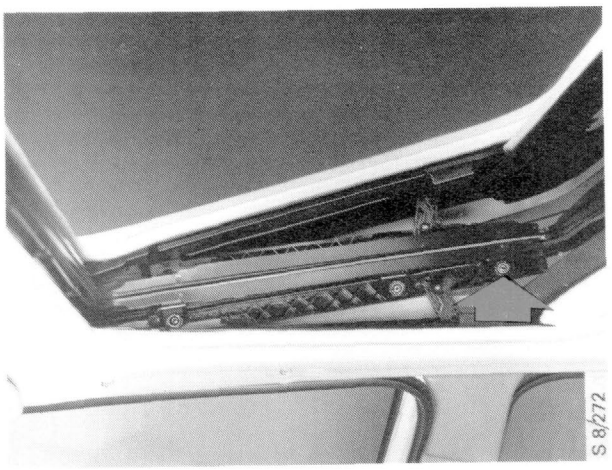
a) Slide back the sunshade, open the sunroof and remove the screws securing the frame.



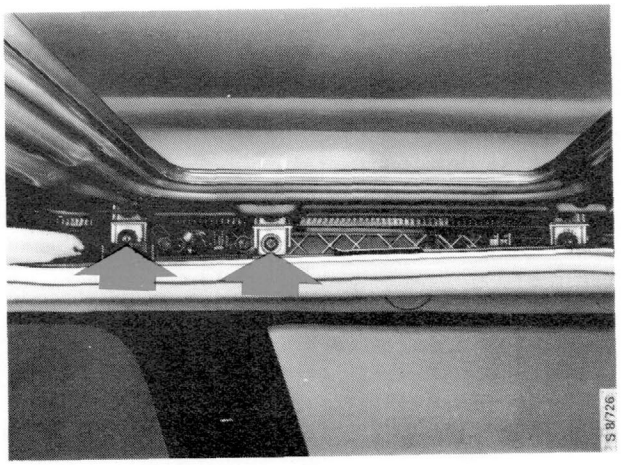
b) Close the sunroof and tilt open the back.

c) Slide the frame towards the rear of the car.

d) Remove the rearmost screw on either side.



e) Close the sunroof and remove the front screws.



f) Lift off the sunroof.

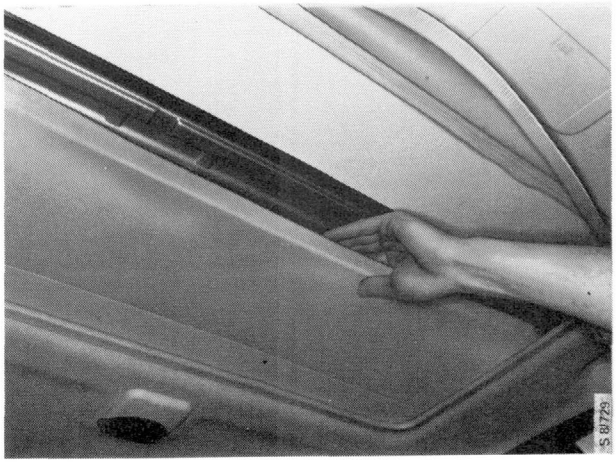
1 **Cars with steel sunroof:**

a) Slide the sunroof back approximately 15 cm (6 in).

b) Pull away the moulding from the leading edge.

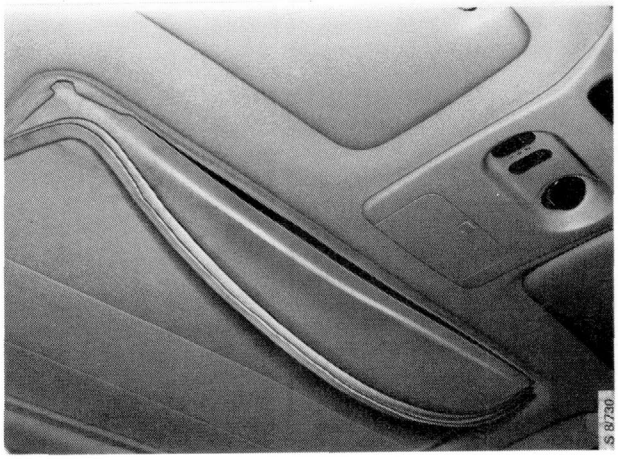
c) Ease down the leading edge of the sunroof trim (held by clips).

d) Close the sunroof, pulling the trim forward at the same time.



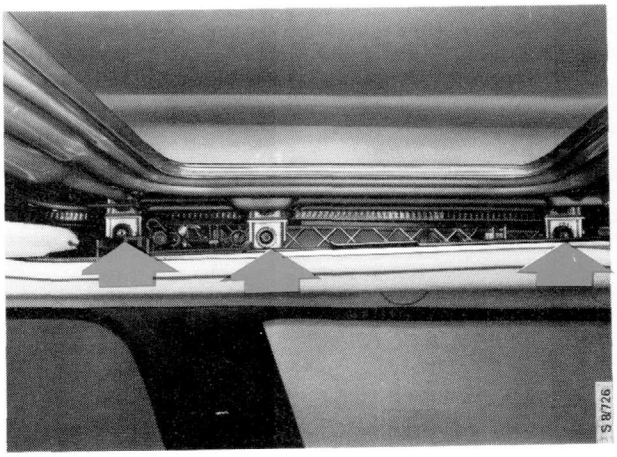
N.B.
If the trim is allowed to slip back, the drain channel at the back of the sunroof will come adrift.

When the sunroof is closed, the trim must hang below the edge of the sunroof aperture as shown.



e) Slide back the trim.

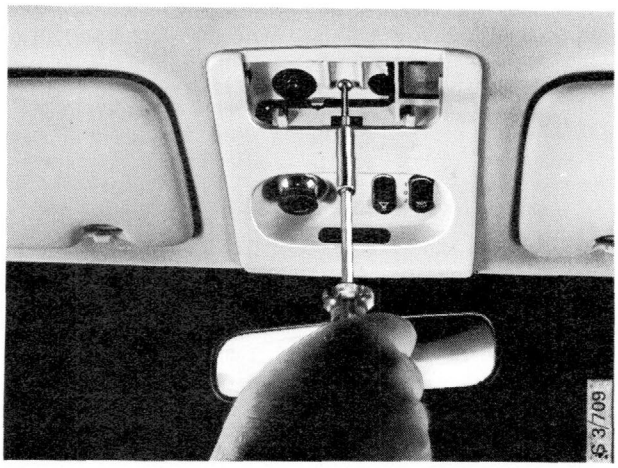
f) Remove the sunroof securing screws.



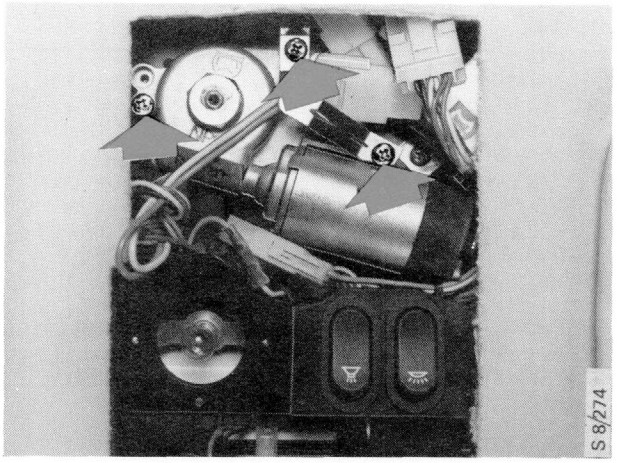
g) Lift off the sunroof.

The following procedure applies to both glass and steel sunroofs.

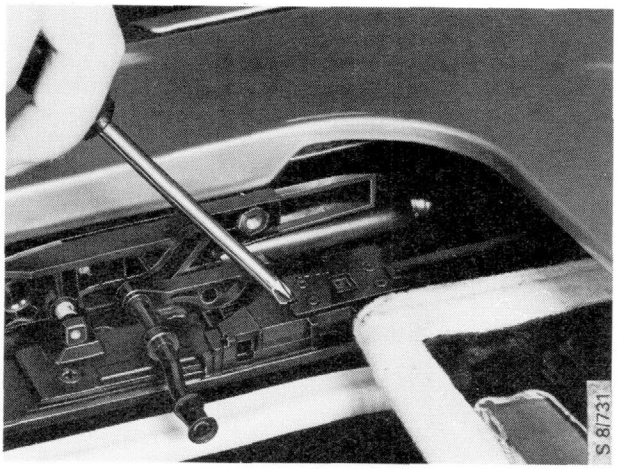
2 Remove the overhead switch panel surround.



3 Remove the securing screws for the actuating motor and lower the motor to free the pinion from the cables.

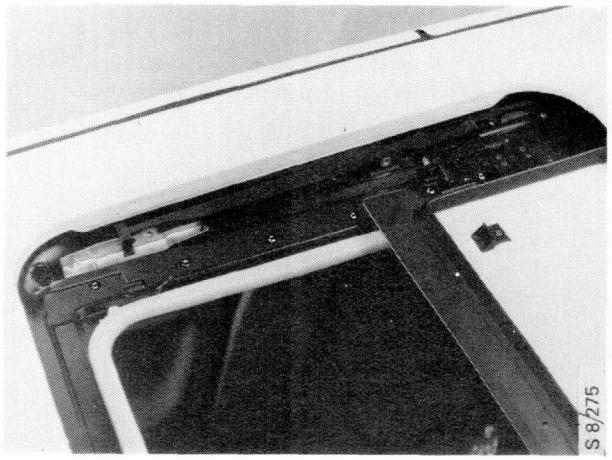


4 Push the slide mechanism back 5 - 10 cm (2 - 4 in).

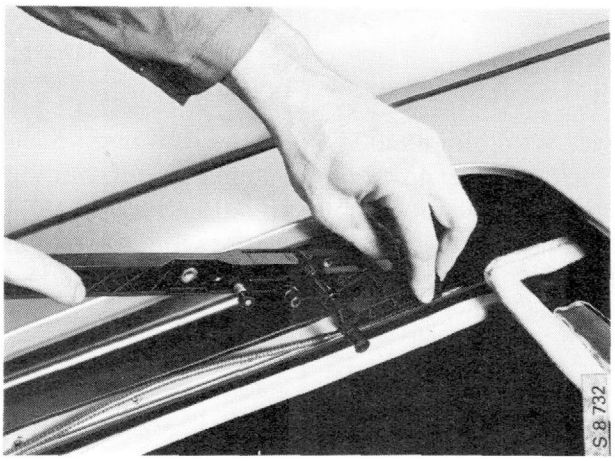


A steel sunroof is illustrated - the same procedure applies to glass sunroofs

5 Unscrew and remove the front guide rail and end piece.



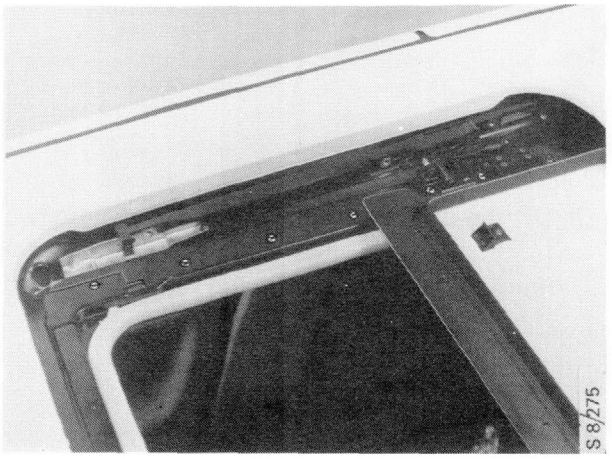
6 Pull the slide mechanism forwards, raise the tilt mechanism and withdraw the cable from the tubular guide.



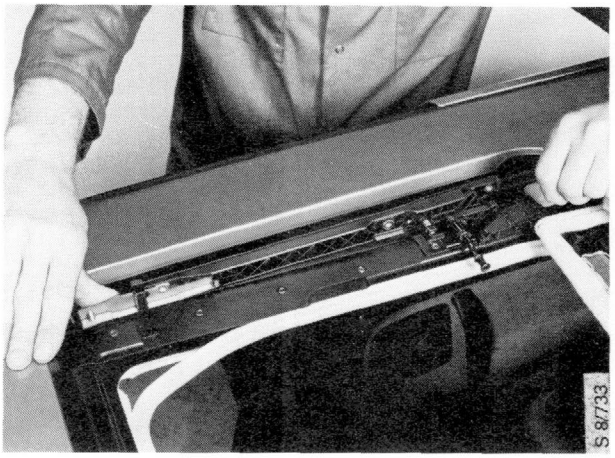
To refit

1 Insert the cable in the tubular guide, fit the slide mechanism and push it back.

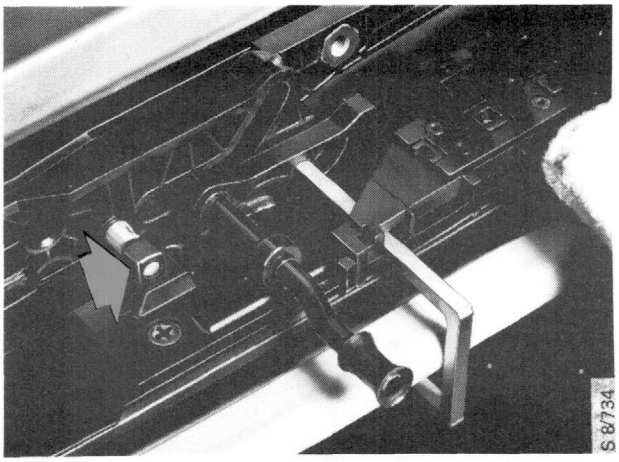
2 Refit the front guide rail and end piece.



3 Push the slide and tilt mechanism to the closed position.

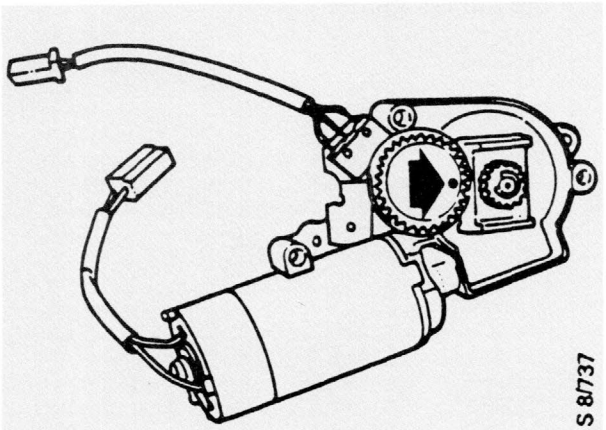


4 With the mechanism in the closed position, fit special tools 82 92 500, one on either side of the sunroof, inserting the tool through all four parts to be held together.



Special tool fitted. Note the position of the locating pin (arrowed).

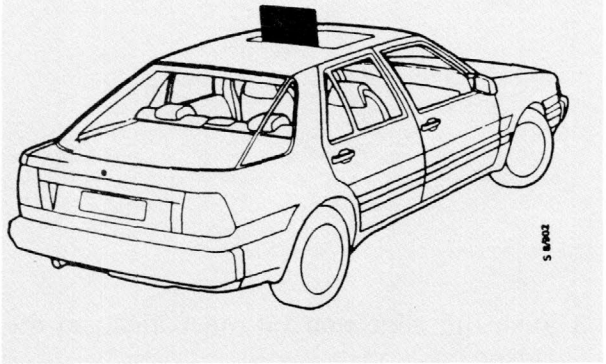
5 With the mechanism in the roof-open position, run the motor to close the roof, waiting until the motor cuts out automatically in the home position. This ensures that the pinion is in the roof-closed position (mark lined up as shown).



6 Refit the actuating motor.

7 Lift the sunroof into position and fit the two front screws on either side. Adjust the alignment of the sunroof with the roof and tighten the screws.

To make the adjustment work easier, insert a piece of card (approx. 1 mm thick) between the trailing edge of the sunroof and the car roof.



8 Remove the special tools.

9 Tilt the sunroof open and fit the rear screw on either side.

N.B.
Never make any adjustment to the sunroof unless the special tools are fitted as detailed in step 4.

10 Cars with glass sunroof:

a) Slide the frame forwards.

b) Lower the sunroof and then open it to enable the frame securing screws to be fitted.

Fit the screws.

10 Cars with steel sunroof:

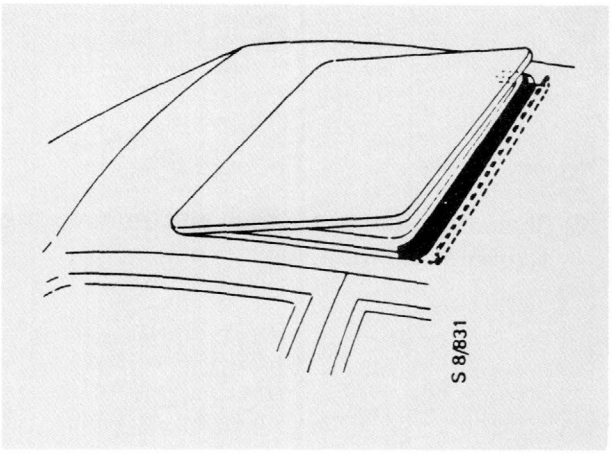
a) Lower the sunroof to the closed position.

b) Slide the sunroof trim forward and bend the leading edge below the level of the headlining. The trim should now engage the rear clip. Open the sunroof a fraction and press home the clips for the trim on the leading edge of the sunroof.

c) Refit the moulding.

d) Adjust the metal rib in the leading edge of the sunroof trim to ensure a good fit along the edge of the sunroof aperture.

e) Operate the sunroof back and forth, tilt it open and check that the drain channel is fitted correctly.

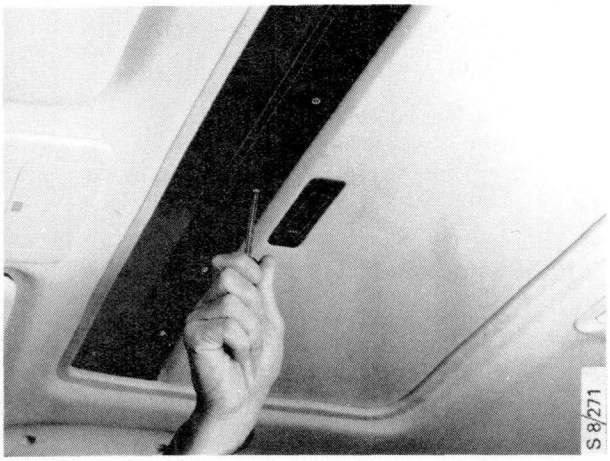


11 Refit the overhead switch panel surround.

Adjusting the sunroof

Glass sunroofs

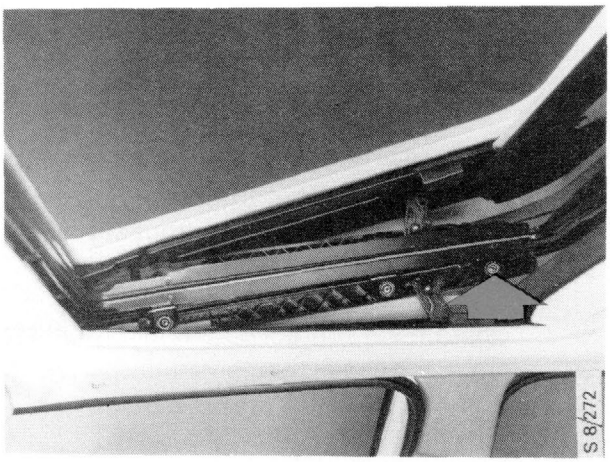
1 Slide back the sunshade. Open the sunroof and remove the frame securing screws.



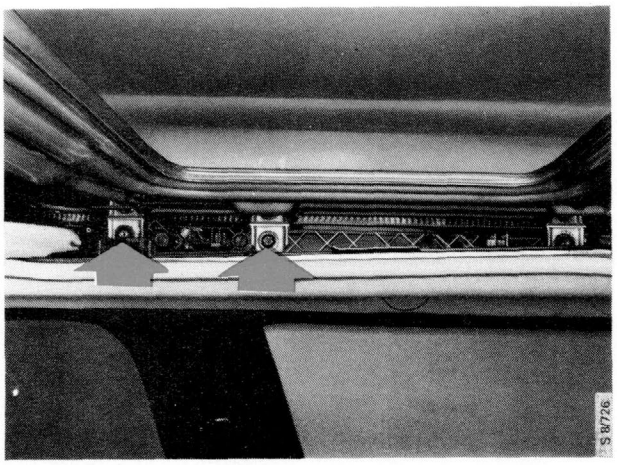
2 Close the roof and tilt open.

3 Slide the frame backwards.

4 Remove the rearmost screw on either side.

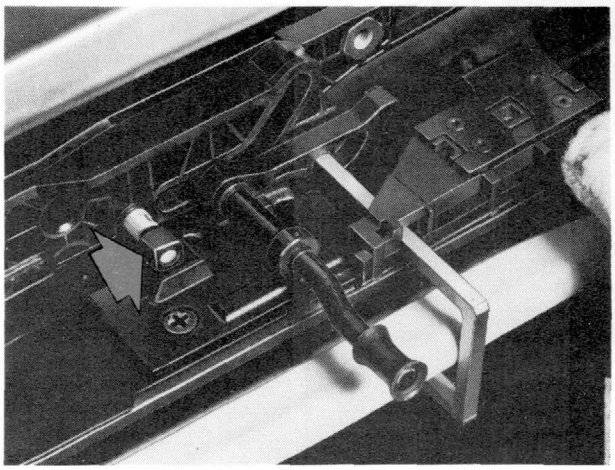


5 Close the sunroof again and remove the screws at the front.



6 Lift off the sunroof.

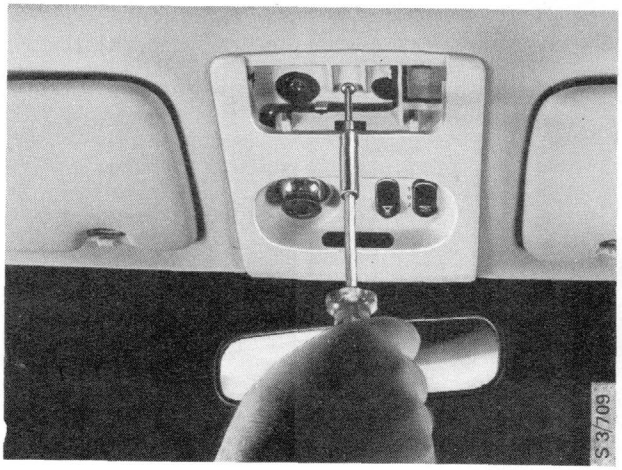
7 With the mechanism in the closed position, fit special tools 82 92 500, one on either side of the sunroof, inserting the tool through all four parts to be held together.



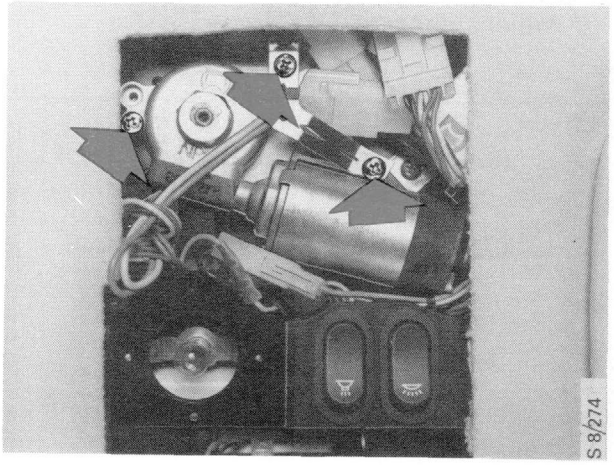
Special tool fitted. Note the position of the locating pin (arrowed).

If the tools cannot be fitted, carry out steps 8 - 11 inclusive. If step 7 completed successfully, go straight to step 12.

8 Remove the overhead switch panel surround.

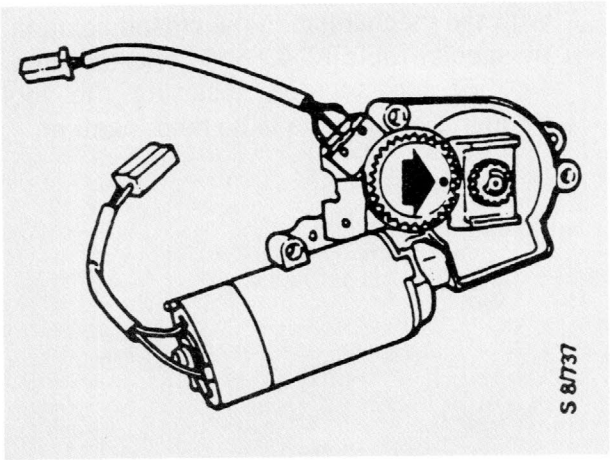


9 Unscrew the actuating motor and lower it to free the cables.



10 Fit the special tools on either side as detailed in step 7.

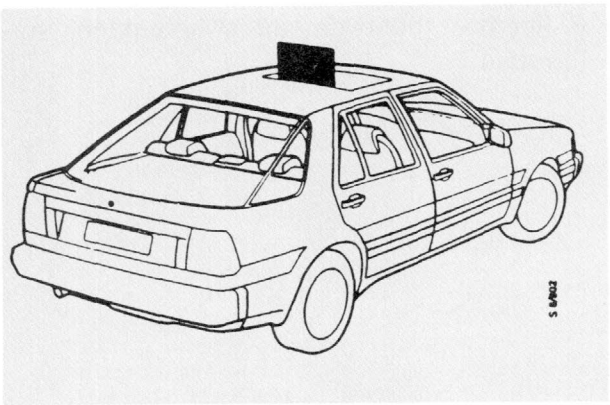
11 With the mechanism in the roof-open position, run the motor to close the roof, waiting until the motor cuts out automatically in the home position. This ensures that the pinion is in the roof-closed position (mark lined up as shown).
Refit the actuating motor and overhead panel surround.



Actuating motor in position for closed sunroof.

12 Lift the sunroof into position and fit the two front screws on either side. Adjust the alignment of the sunroof with the roof and tighten the screws.

To make the adjustment work easier, insert a piece of card (approx. 1 mm thick) between the trailing edge of the sunroof and the car roof.



13 Remove the special tools.

14 Tilt the sunroof open and fit the rear screw on either side.

N.B.
Never make any adjustment to the sunroof unless the special tools are fitted as detailed in step 7.

15 Slide the frame forwards.

16 Lower the sunroof and then open it to enable the frame securing screws to be fitted.
Fit the screws.

Adjusting the sunroof

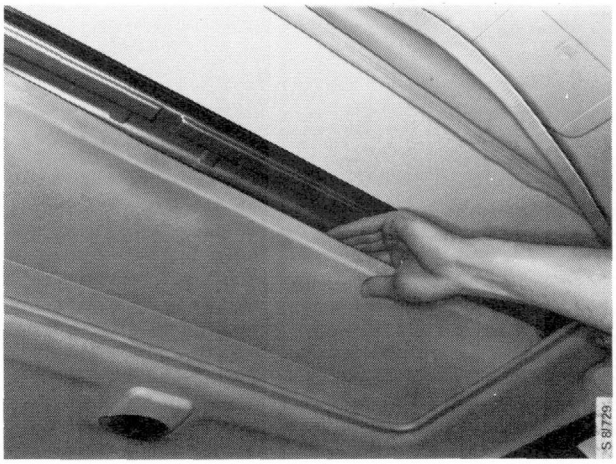
Steel sunroofs

1 Slide the sunroof back approximately 15 cm (6 in).

2 Pull away the moulding from the leading edge.

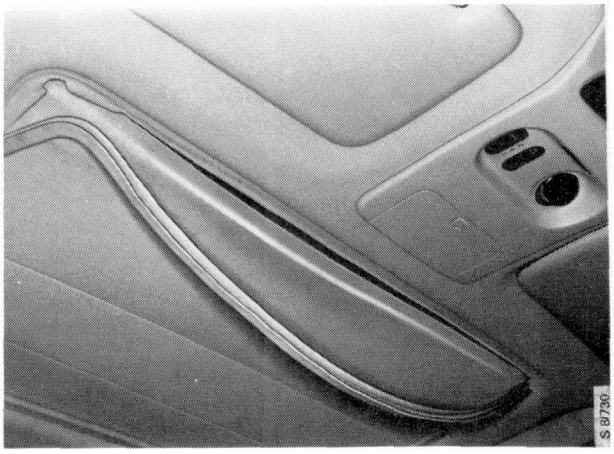
3 Ease down the leading edge of the sunroof trim (held by clips).

4 Close the sunroof, pulling the trim forward at the same time.



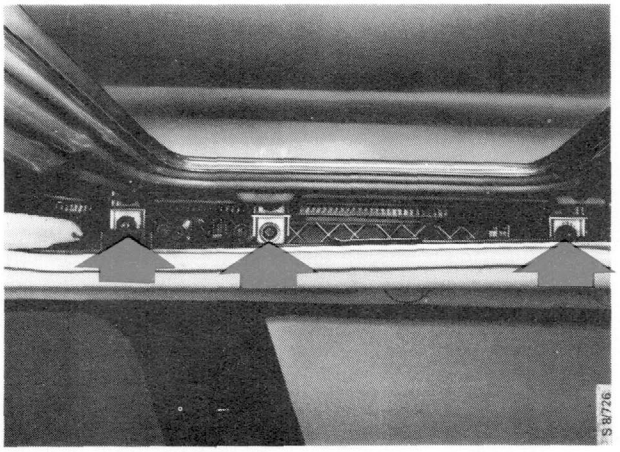
N.B.
If the trim is allowed to slip back, the drain channel at the back of the sunroof will come adrift.

When the sunroof is closed, the trim must hang below the edge of the sunroof aperture as shown.

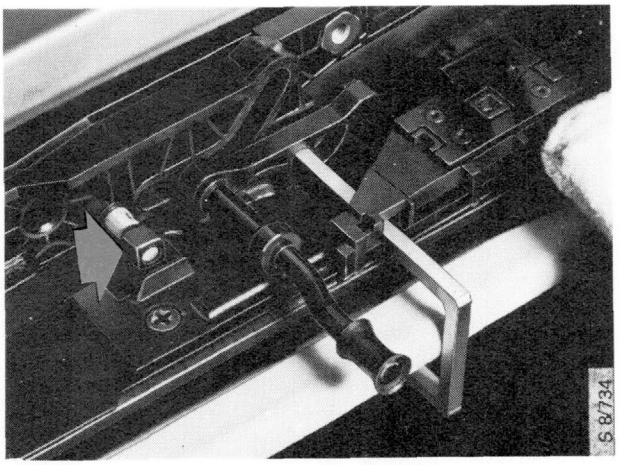


5 Slide back the trim.

6 Remove the sunroof securing screws and lift off the sunroof.



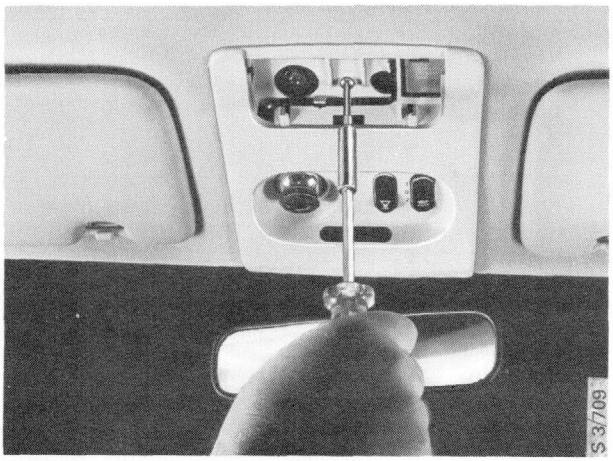
7 With the mechanism in the closed position, fit special tools 82 92 500, one on either side of the sunroof, inserting the tool through all four parts to be held together.



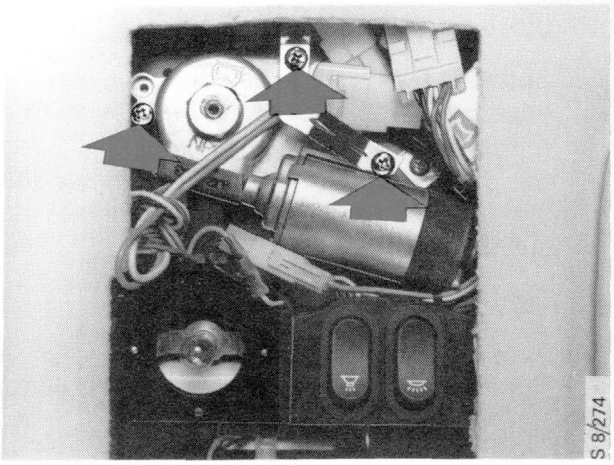
Special tool fitted. Note the position of the locating pin (arrowed).

If the tools cannot be fitted, carry out steps 8 - 11 inclusive. If step 7 completed successfully, go straight to step 12.

8 Remove the overhead switch panel surround.

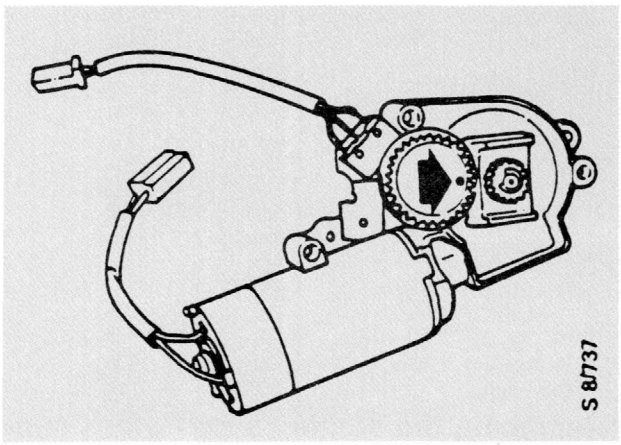


9 Unscrew the actuating motor and lower it to free the pinion from the cables.



10 Fit the special tools on either side as detailed in step 7.

11 With the mechanism in the roof-open position, run the motor to close the roof, waiting until the motor cuts out automatically in the home position. This ensures that the pinion is in the roof-closed position (mark lined up as shown).
Refit the actuating motor and overhead panel surround.



Actuating motor in position for closed sunroof.

12 Lift the sunroof into position and fit the two front screws on either side. Adjust the alignment of the sunroof with the roof and tighten the screws.

To make the adjustment work easier, insert a piece of card (approx. 1 mm thick) between the trailing edge of the sunroof and the car roof.

13 Remove the special tools.

14 Tilt the sunroof open and fit the rear screw on either side.

N.B.
Never make any adjustment to the sunroof unless the special tools are fitted as detailed in step 7.

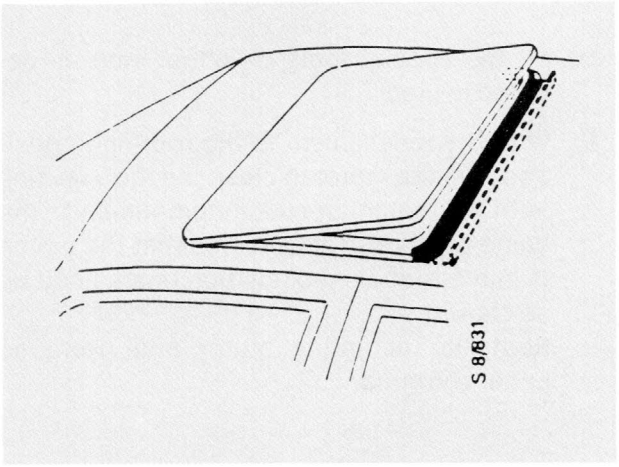
15 Close the sunroof.

16 Slide the trim forward and bend the leading edge below the level of the headlining. The trim should now engage the rear clip. Open the sunroof a fraction and press home the clips for the trim on the leading edge of the sunroof.

17 Refit the moulding.

18 Adjust the metal rib in the leading edge of the sunroof trim to ensure a good fit along the edge of the sunroof aperture.

19 Operate the sunroof back and forth, tilt it open and check that the drain channel is fitted correctly.



Replacing the sealing strip - glass sunroofs

Remove the sunroof and pull off the sealing strip. Clean the groove and fit the new seal.

Replacing the sealing strip - steel sunroofs

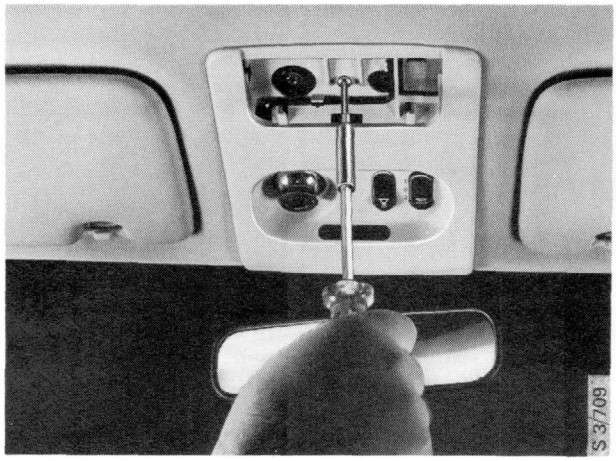
Remove the sunroof and pull off the sealing strip. Check that the protective tape along the edge of the sunroof is in good condition and then fit the new seal.

Sunshade/sunroof trim

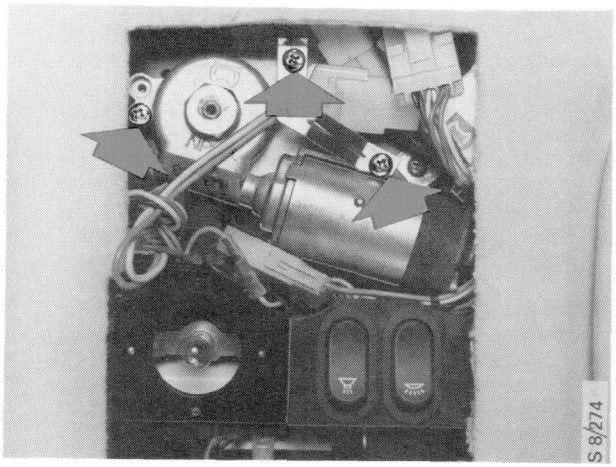
To remove

1 Remove the sunroof.

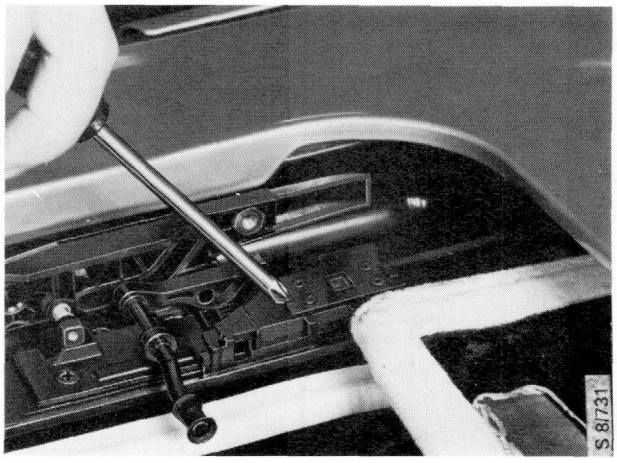
2 Remove the overhead switch panel surround.



3 Remove the securing screws for the actuating motor and lower the motor to free the pinion from the cables.

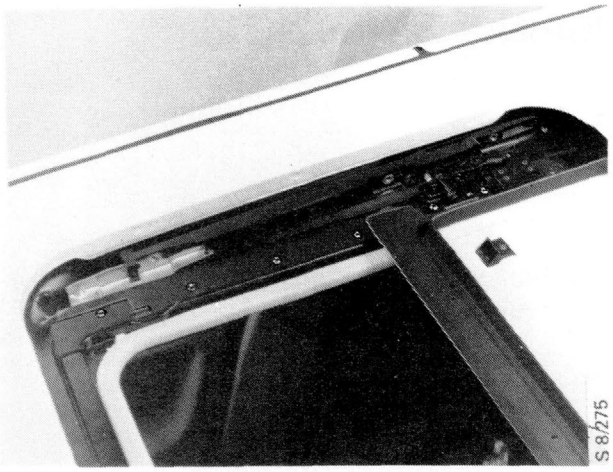


4 Push the slide mechanism back 5 - 10 cm (2 - 4 in).

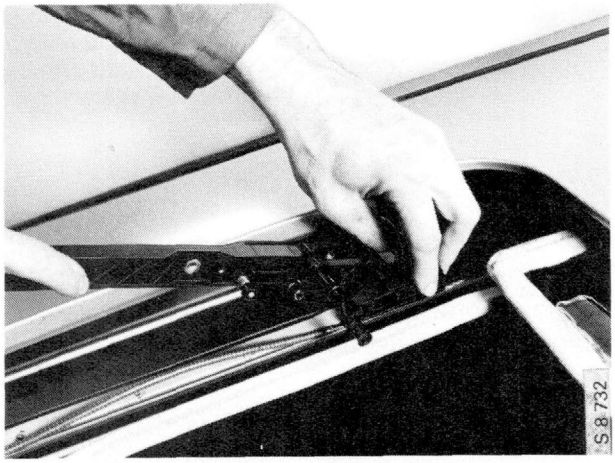


A steel sunroof is illustrated - the same procedure applies to glass sunroofs

5 Unscrew and remove the front guide rail and end piece.



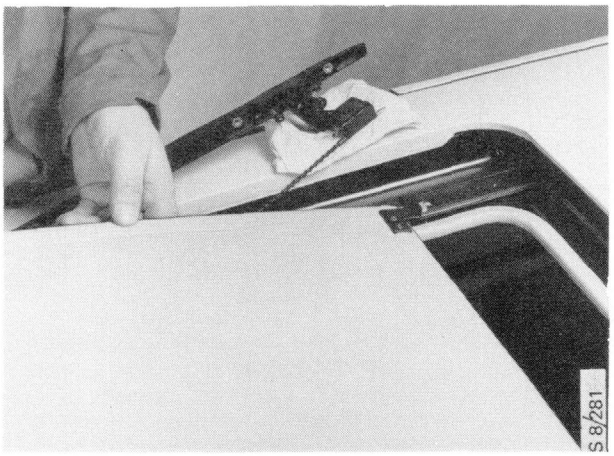
6 Pull the slide mechanism forwards, raise the tilt mechanism and put the tilt and slide mechanism to one side.



7 Cars with glass sunroof:

a) Slide the frame forwards in the guide rails and lift it out.

b) Lift out the sunshade.



7 Cars with steel sunroofs:

a) Slide the trim forward and lift it out taking care not to damage the retainer for the drain channel.

To fit

1 Cars with glass sunroof:

Lift the sunshade frame into position.

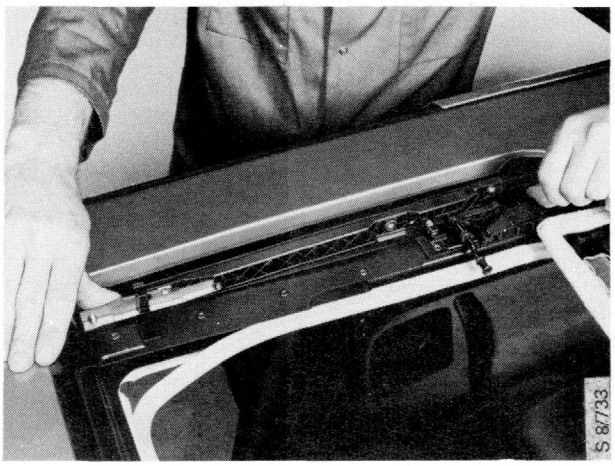
1 Cars with steel sunroof:

Refit the sunroof trim, taking care not to damage the drain channel retainer.

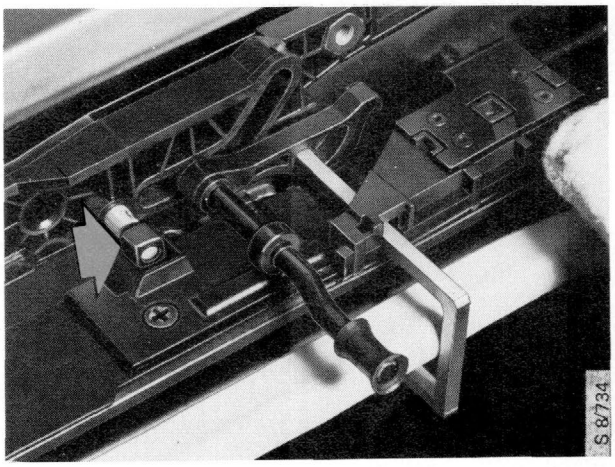
2 Put back the tilt and slide mechanism.

3 Refit the front guide rail and end piece.

4 Push the slide mechanism to the closed position.

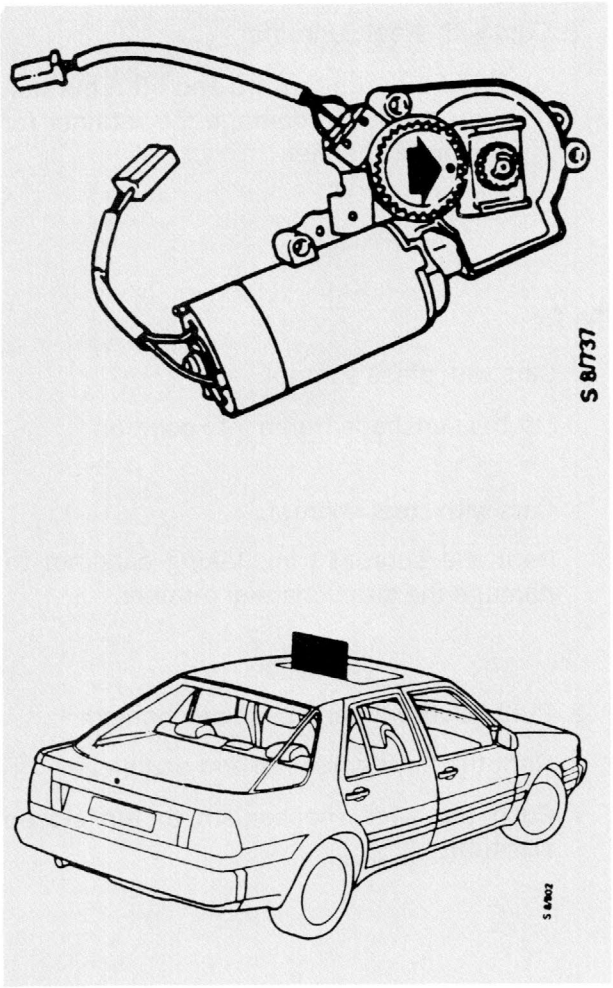


5 With the mechanism in the closed position, fit special tools 82 92 500, one on either side of the sunroof, inserting the tool through all four parts to be held together.



Special tool fitted. Note the position of the locating pin (arrowed).

6 With the mechanism in the roof-open position, run the motor to close the roof, waiting until the motor cuts out automatically in the home position. This ensures that the pinion is in the roof-closed position (mark lined up as shown).



7 Refit the actuating motor.

8 Lift the sunroof into position and fit the two front screws on either side. Adjust the alignment of the sunroof with the roof and tighten the screws.

To make the adjustment work easier, insert a piece of card (approx. 1 mm thick) between the trailing edge of the sunroof and the car roof.

9 Remove the special tools.

10 Tilt the sunroof open and fit the rear screw on either side.

N.B.
Never make any adjustment to the sunroof unless the special tools are fitted as detailed in step 5.

11 Cars with glass sunroof:

a) Slide the frame forwards.

b) Lower the sunroof and then open it to enable the frame securing screws to be fitted.
Fit the screws.

11 Cars with steel sunroof:

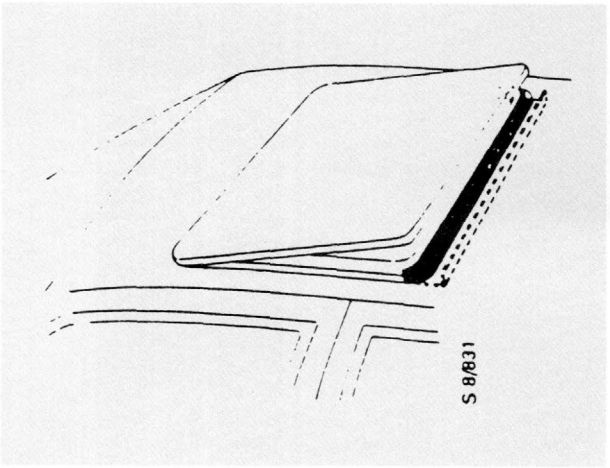
a) Lower the sunroof to the closed position.

b) Slide the sunroof trim forward and bend the leading edge below the level of the headlining. The trim should now engage the rear clip. Open the sunroof a fraction and press home the clips for the trim on the leading edge of the sunroof.

c) Refit the moulding.

d) Adjust the metal rib in the leading edge of the sunroof trim to ensure a good fit along the edge of the sunroof aperture.

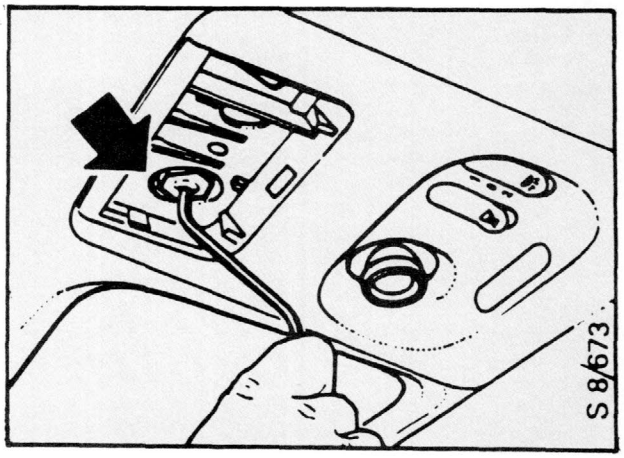
e) Operate the sunroof back and forth, tilt it open and check that the drain channel is fitted correctly.



12 Refit the overhead switch panel surround.

Manual operation of electric sunroof

A manual winder for emergency operation of the sunroof (e.g. in the event of an electrical fault) is stored behind the cover on the overhead switch panel. Slacken the nut two or three turns, insert the short end of the winder in the hexagonal hole and turn it clockwise to close the sunroof. Tighten the nut carefully to the specified torque.



N.B.
Tighten the nut carefully to avoid damaging the spindle.

Tightening torque:
7 Nm (5.2 lbf ft) min.
7.5 Nm (5.8 lbf ft) max.

Window glass

All non-opening window glass is bonded to the flanges in the window apertures. The glass therefore contributes to the strength and stiffness of the body.

External mouldings are held in place by metal retaining strips fitted to the edge of the glass.

Materials

Spare part kits (spare part code 45) containing the adhesive, cleaning solvent and primer required for replacing the glass in an individual window are available.

N.B.
Only those adhesives, primers and cleaning solvents available as genuine Saab spares have been tested and approved for fitting of window glass.

Spacers and spacer strips to position window glass correctly in the opening are supplied with each new window glass.

Special tools

For details of special tools required, refer to the section on special tools (Section 108).

Bodywork and paintwork repair procedure

Window-glass adhesive must not be applied to unpainted metal owing to the risk of corrosion spreading under it. If the paint has been removed from the window flange, or if a new body section has been fitted, the flange must be primed and painted to provide a suitable key for the adhesive.

Important safety considerations

Safety precautions must be taken when handling Betaseal glass fitting kits, part no. (45) 30 07 119, manufactured by Gurit Essex A.G.CH.

General precautions:

- Read the warning text on the product label
- If seeking medical advice, always take the product container with you
- Make sure the premises are well ventilated
- Always wear protective gloves and safety goggles
- No smoking in the vicinity
- Keep the adhesive kit well out of the reach of children.

Health hazard	Adhesive	Cleaning solvent	Glass primer
On inhalation	May cause allergy		May cause allergy
In contact with skin	May cause allergy	Dries up natural oils in the skin	May cause allergy
If splashed in eyes	May cause passing irritation	May cause passing irritation	May cause passing irritation
First aid			
Inhalation	Fresh air & rest	Fresh air & rest	Fresh air & rest
Skin contact	Thorough washing with soap & water	Washing with soap & water	Thorough washing with soap & water
Splashes in eyes	Thorough flushing with water (at least 15 min). Seek medical advice if distress persists	Thorough flushing with water (at least 15 min). Seek medical advice if distress persists	Thorough flushing with water (at least 15 min). Seek medical advice if distress persists
Swallowing	Drink large amount of milk/cream/ cooking oil or water. Do not induce vomiting. Seek medical advice immediately		Drink large amount of milk/cream/ cooking oil or water. Do not induce vomiting. Seek medical advice immediately
Labelling			
Warning text	Health hazard	Possible health hazard	Health hazard
Warningsymbol			
Fire and explosion risk	Slight	Highly flammable - flash point +13°C (55°F) 	Highly flammable - flash point -6°C (21°F) 

Replacing bonded glass

The stripping work required preparatory to fitting new window glass and the refitting work afterwards are described separately.

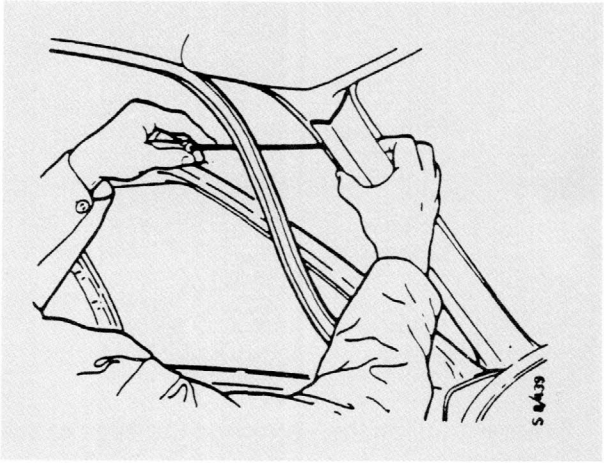
The actual work of removing an old window and fitting a new one is much the same for all windows.

Old window glass can be cut out using a power saw or, alternatively, a length of cutting wire, whereby one end of the wire is inserted through the bead of adhesive and then attached to a toggle. The wire is pulled along the bead, cutting through the adhesive as it goes.

Stripping work required for replacing the windscreen

On some cars the windscreen may be held in place by metal holders or ties that are bonded to the windscreen and screwed to the inside of the windscreen frame.

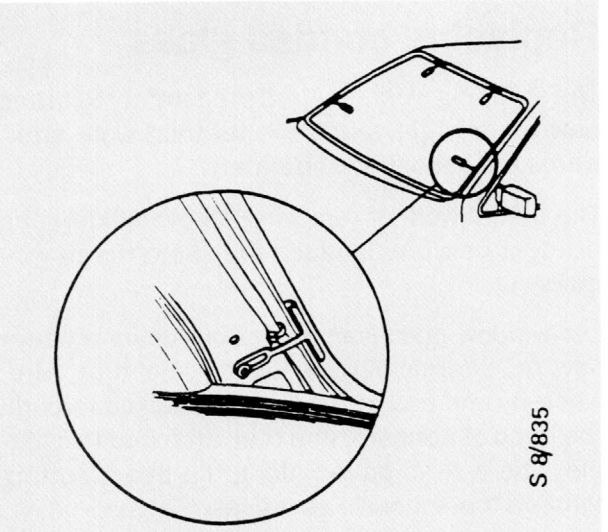
1 Pull back the door trim seals from the A pillars and remove the A-pillar trim.



2 Remove the sun visors and brackets, the rear-view mirror, the overhead switch panel surround and the front courtesy handle and blanks, to allow the leading edge of the headlining to be lowered a fraction.

Cars with sunroof
Ease away the moulding from the sunroof aperture.

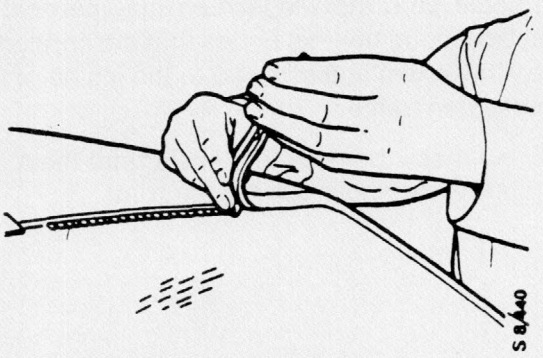
3 When applicable: unscrew the metal windscreen ties.



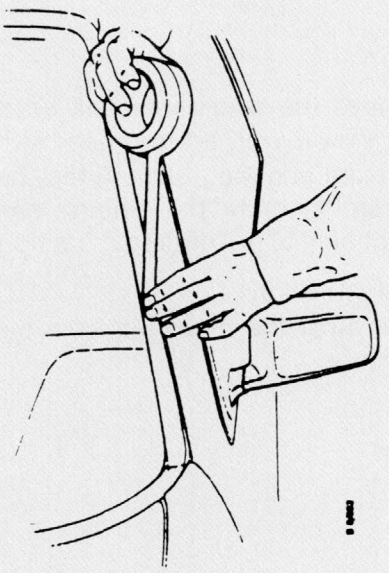
4 Cover over the fascia and seats.

5 Place protective covers over the bonnet and wings.

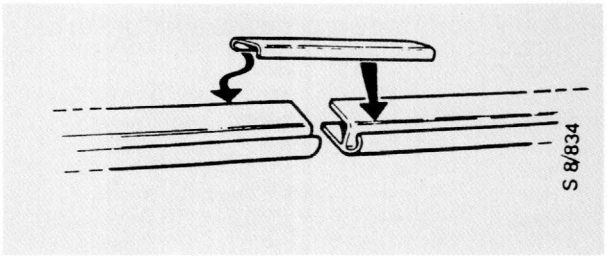
6 Remove the cover pieces and mouldings from the windscreen.



7 Apply tape all the way round the edge to prevent damage to the paintwork. Position the tape with its edge along the outer curved part of the frame.



8 Remove the retaining strip cover pieces (moulding of latest design only), pull up and withdraw the retaining strip.



9 Remove the old glass and fit the new as described below.

Stripping work required for replacing tailgate glass

1 Remove the tailgate trim.

2 Disconnect the electrical leads from the glass.

3 Remove the side mouldings from the window frame and the bottom moulding and retaining strip.

4 Remove the old glass and fit the new one as described below.

Stripping work required for replacing rear sidelights

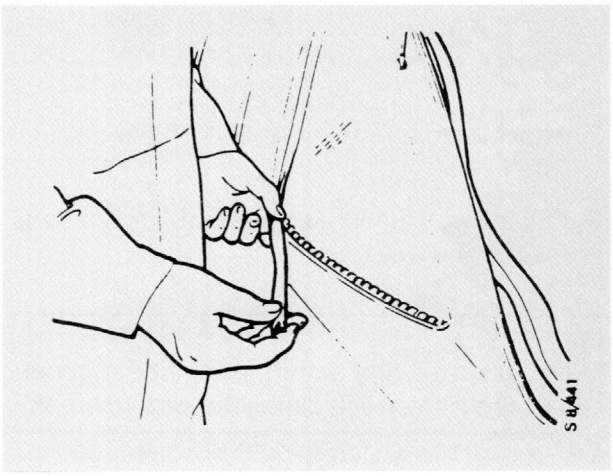
1 Pull the tailgate trim seal free at the side.

2 Remove the side shelf.

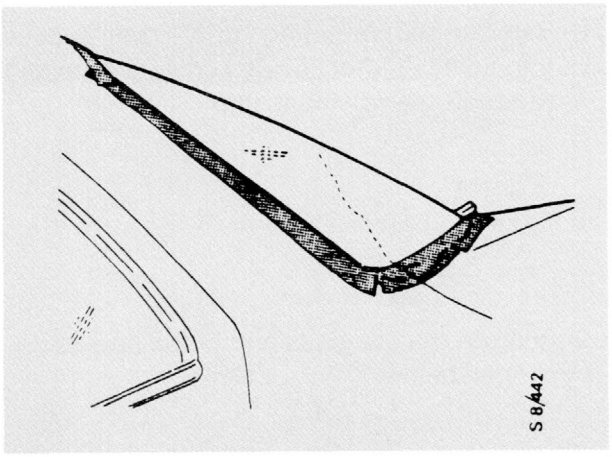
3 Remove the D-pillar trim.

4 Ease the trim away from the C-pillar.

5 Remove the moulding from the retaining strip.



6 Apply fabric tape around the aperture to protect the paintwork.

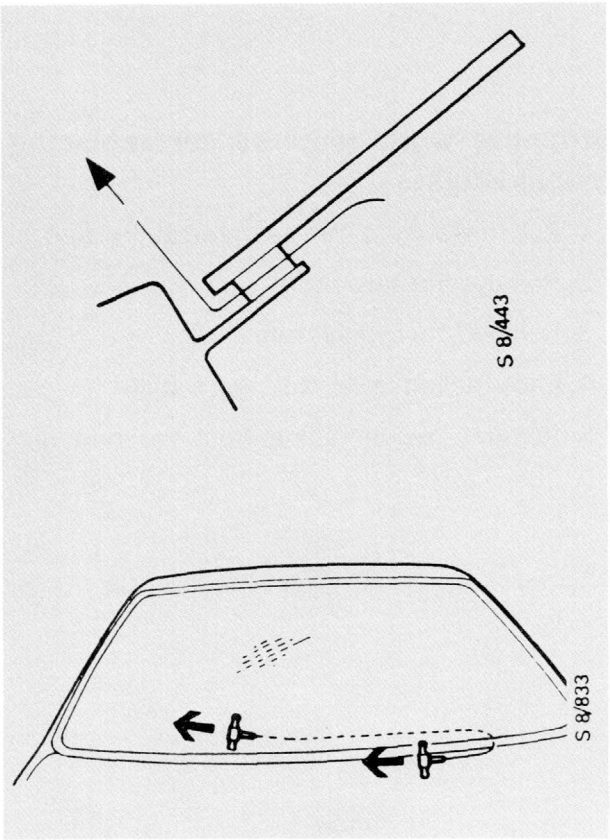


7 Remove the moulding retaining strip from the window frame.

8 Remove and fit the sidelight as described below.

Removal of windscreen/tailgate window using cutting wire

1 Insert one end of the cutting wire (length required: approx. 2 m) through the adhesive bead in one of the corners.



2 Attach a toggle to each end of the cutting wire.

3 Pull the wire along the glass until the glass is free all the way round.

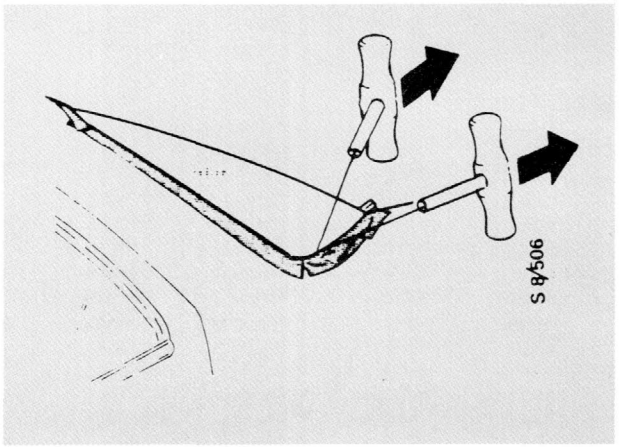
N.B.
Do not use a sawing action, as the heat generated by the friction will cause the wire to break.

Removal of rear sidelights using cutting wire

1 Insert one end of the wire through the adhesive bead (length of wire required: approx. 0.5 m).

2 Attach a toggle to each end of the cutting wire.

3 Pull the wire along the glass until the glass is free all the way round.



N.B.
Do not use a sawing action, as the heat generated by the friction will cause the wire to break.

4 Lift out the glass.

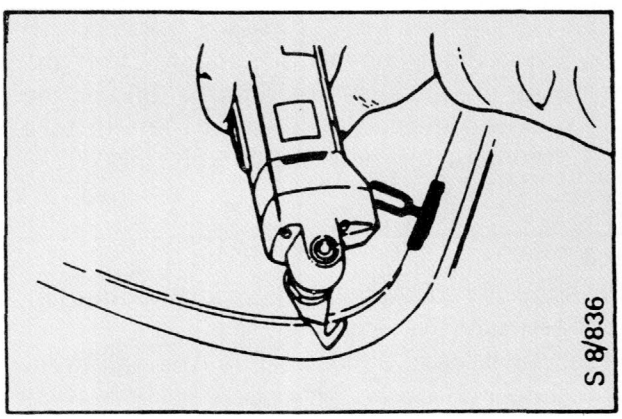
Removal of windscreen, tailgate window or sidelight using the power saw

1 Cut out the glass as follows:

- Start by using the 24-mm blade.

N.B.
Because the adhesive is fairly tough, always sharpen the blade on a stone before use.
Note that the cutting efficiency of the blade decreases as the blade gets hotter.

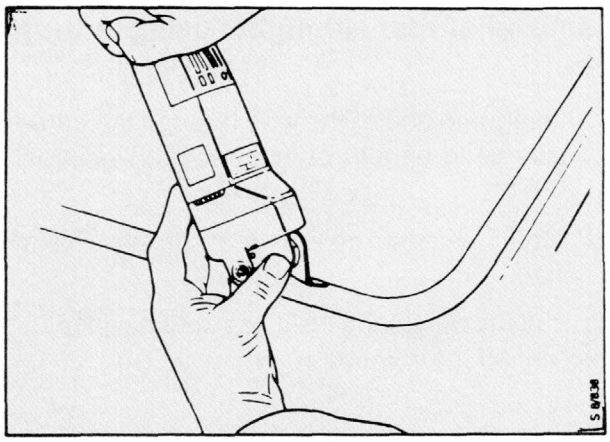
- Start the machine and insert the blade through the bead of adhesive in one of the bottom corners.



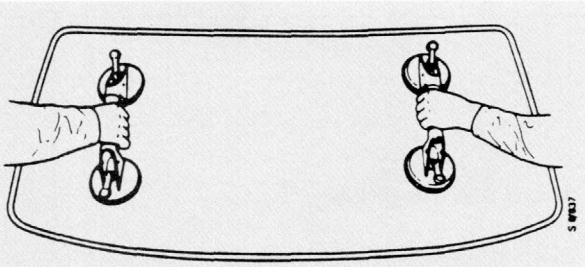
N.B.
Take care not to damage the paint work and, when applicable, remember to keep the blade clear of the metal ties.

- Working in a clockwise direction, cut all the way round the glass.

  If the glass is still not free, cut round it again using the 36-mm blade.

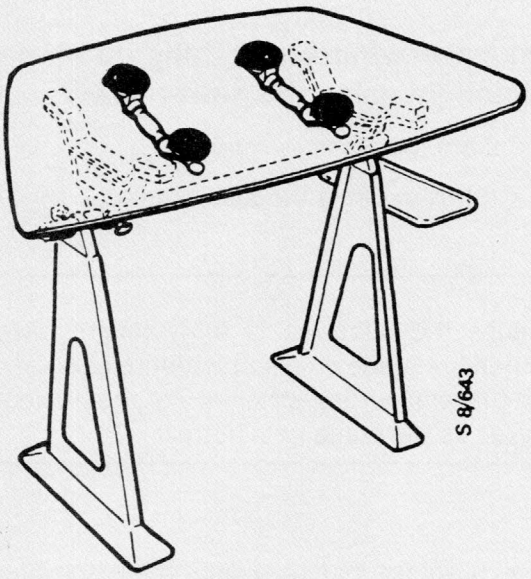


2 Attach the glass suckers and lift out the glass.

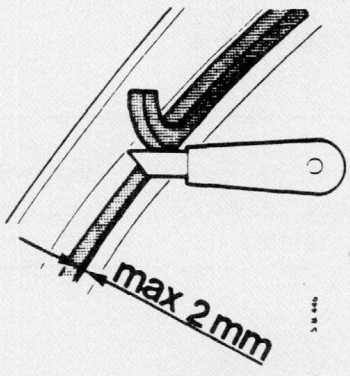


Preparatory work prior to fitting the new glass

1 Apply the glass suckers to the outside of the glass and place the glass on a stand, inside up.



2 Using the trimming blade/knife, trim the bead of adhesive on the frame (and on the removed glass if it is to be refitted) to a maximum thickness (height) of 2 mm.



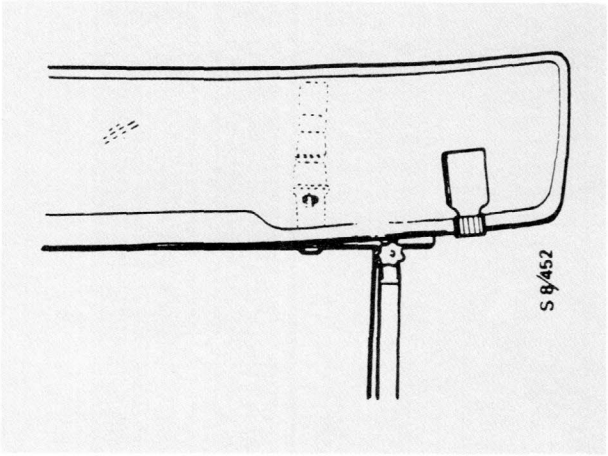
N.B.
Old adhesive adhering firmly provides a good key for fresh adhesive.
Remove all loose adhesive from the paintwork and glass.

To fit the glass

Make sure that the car is standing evenly on all four wheels on level ground.

To provide a good key, all surfaces must be scrupulously clean (all traces of grease removed) and prepared with primer. The following description applies to the fitting of new glass into frames with newly painted flanges. Carry out the preparatory work described in the preceding section (as applicable) and then proceed as follows.

1 Thoroughly clean the edge of the glass and the metal flange using the cleaning solution. Use one cloth to apply the solution, taking care not to leave any dry spots, and use a different cloth to wipe the surfaces dry.



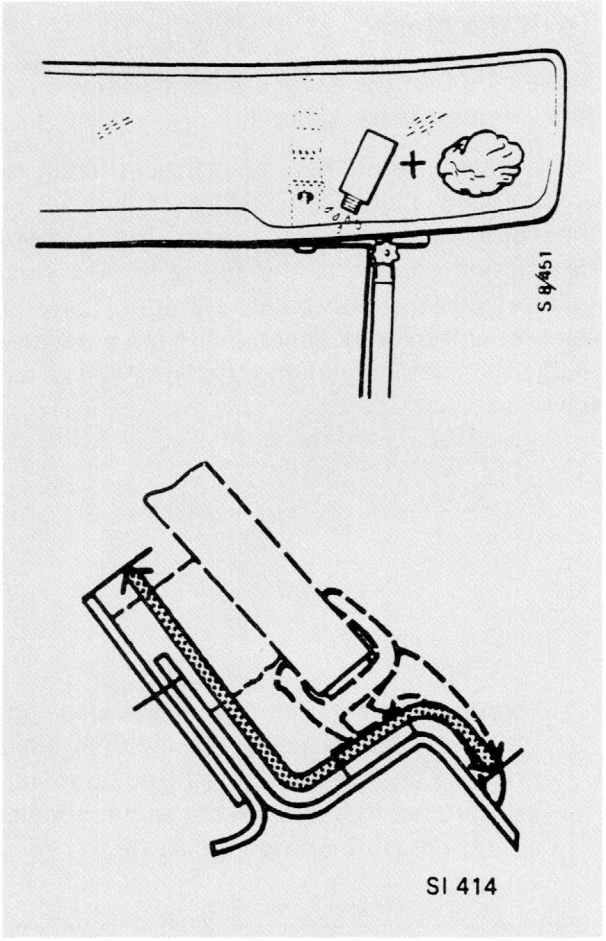
N.B.
Do not allow the cleaner to dry naturally, as traces of grease may be left. Always use clean, lint-free rags, refolding them frequently and using a clean one for each job.

2 Touch up the paintwork that will be covered by the moulding.

N.B.
The enamel finish must be flawless, to prevent the onset of serious corrosion.

3 Apply primer to the edge of the glass and to the metal flange, making sure that the metal surface is covered with a generous coat right up to the tape. Remember to remove the tape before fitting the glass.

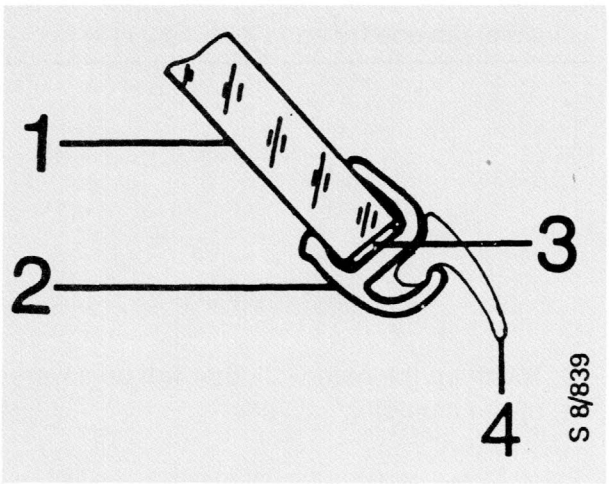
N.B.
Any spots of primer getting onto the paintwork must be removed **immediately,** whilst they can still be wiped off without damaging the enamel



Surfaces to be treated with primer

4 Refit the moulding retaining strips and any cover pieces.

N.B.
Do not attempt to hammer the strip into position using a mallet. Simply apply pressure to the strip so that the sealant adheres to the edge of the glass.

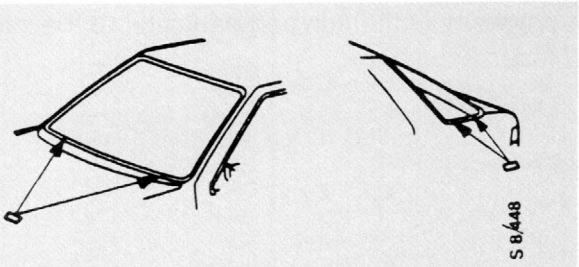


1 Glass
2 Retaining strip
3 Sealant
4 Moulding

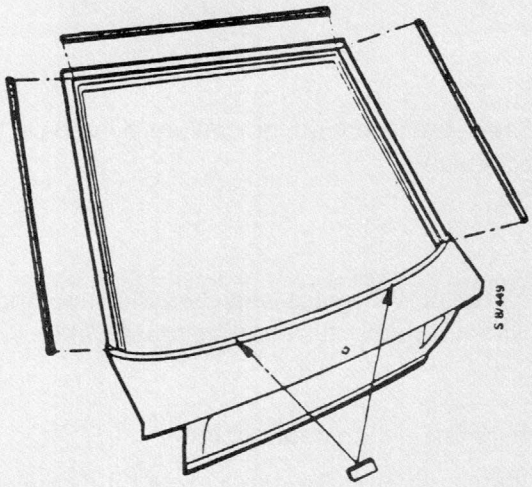
5 Refit the moulding.

N.B.
Make sure that the joint in the rubber comes mid-way along the bottom.

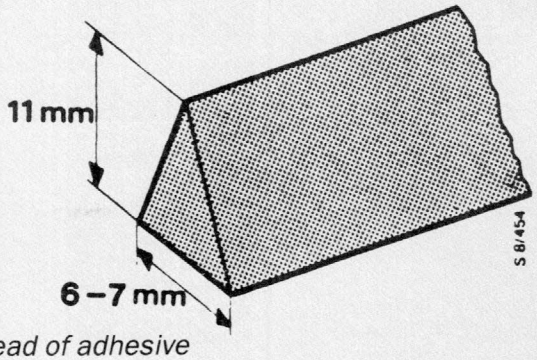
6 Position the spacers at the bottom of the frame.



Tailgate window: Place spacer strips along the frame.

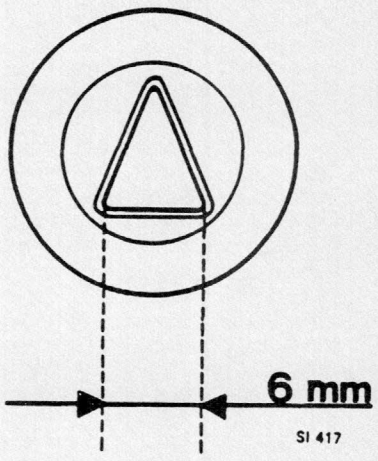


7 Apply a bead of adhesive to the metal flange, adjusting the pressure of the air gun to obtain a bead of the correct shape.

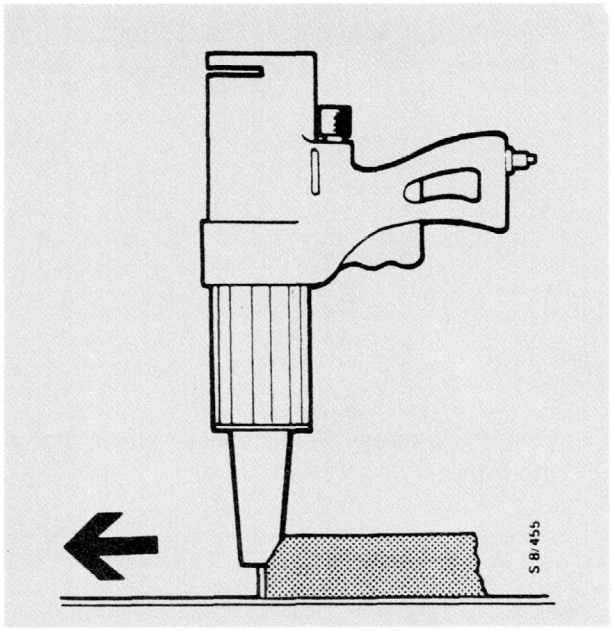


Bead of adhesive

N.B.
The width of the applicator nozzle will need adjusting. To do this, immerse the nozzle in hot water to make it pliable, and then squeeze it to the size shown. Provided that the nozzle is adjusted properly, the amount of adhesive contained in one cartridge will be sufficient for one windscreen.



- Always hold the gun perpendicular to the surface.

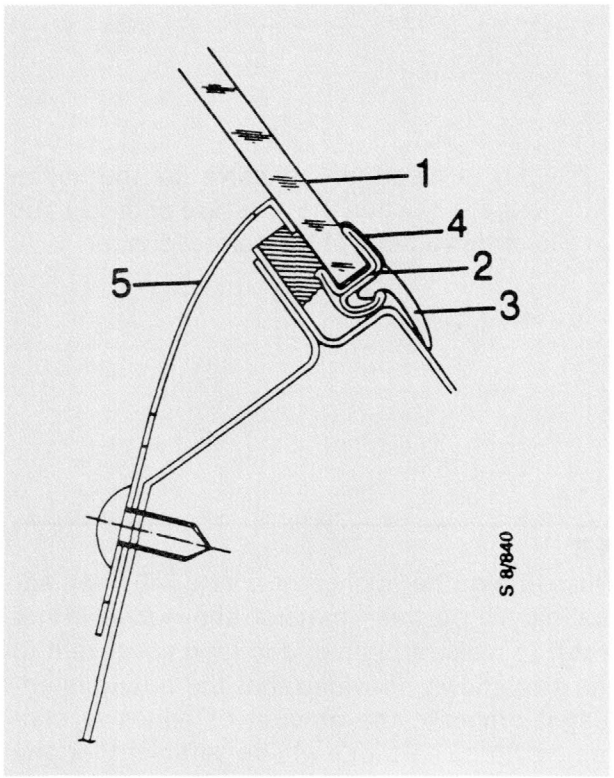


- Check that there are no cavities or voids in the adhesive.

8 Offer up the glass and press into position, flush with the surrounding metalwork.

Windscreen - when applicable:

9 Fold back the metal ties and fit the screws.



1 Windscreen
2 Moulding retaining strip
3 Moulding
4 Cover piece
5 Metal tie

Hardening and water testing

Since the hardening process is accelerated by moisture, a test for leaks can be carried out immediately after the glass has been fitted. Ideally, when window glass is fitted, a car should be kept overnight; this gives the adhesive more time to set, which is particularly desirable in cold weather.

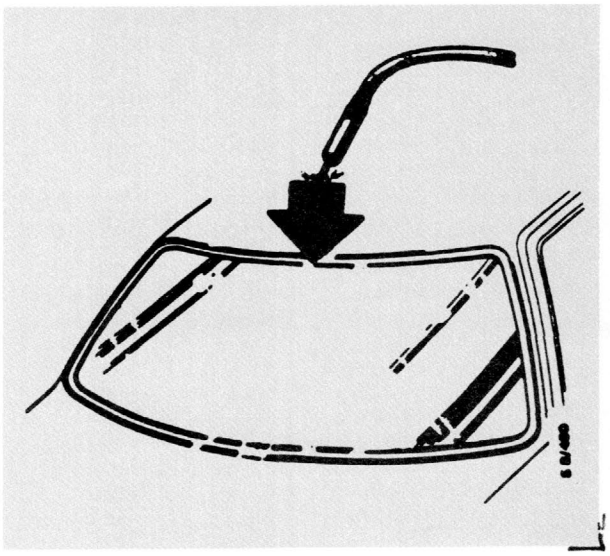
Do not move the car until two hours have elapsed.

To test for leaks

1 Raise the edge of the moulding midway along the top of the glass and pour water over it.

2 Check for leaks inside the car.

3 Seal any leakage points from the inside.



Cleaning

The use of pure cleaning petrol is recommended to remove any surplus adhesive.

N.B.
Take care not to dislodge the gla ss by pressing too hard when cleaning the inside.

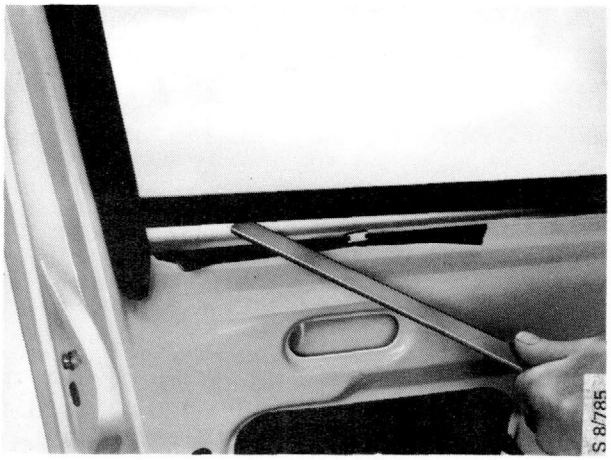
Refit the parts removed.

Front doors

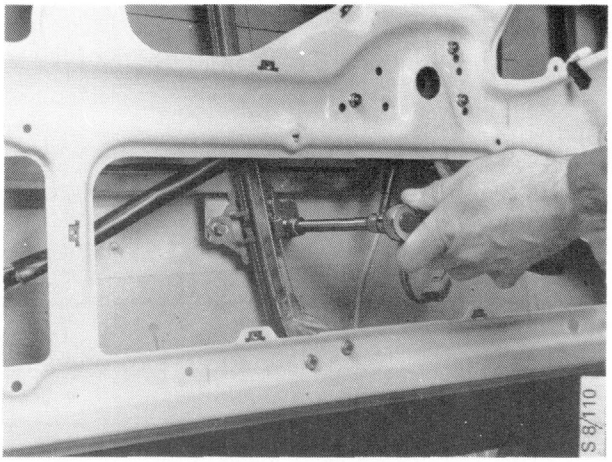
To replace the glass

1 Remove the door trim panel and plastic moisture barrier.

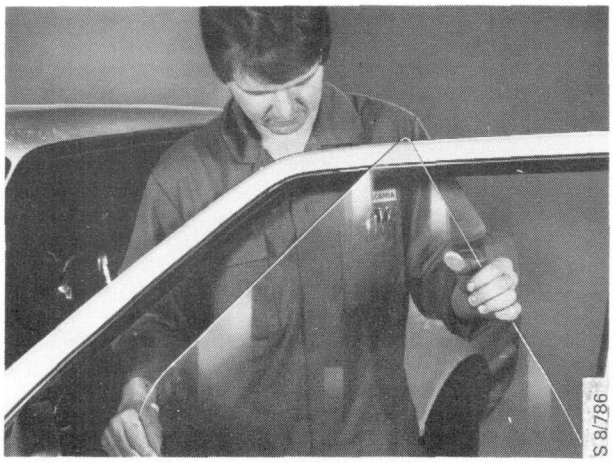
2 Remove the external moulding.



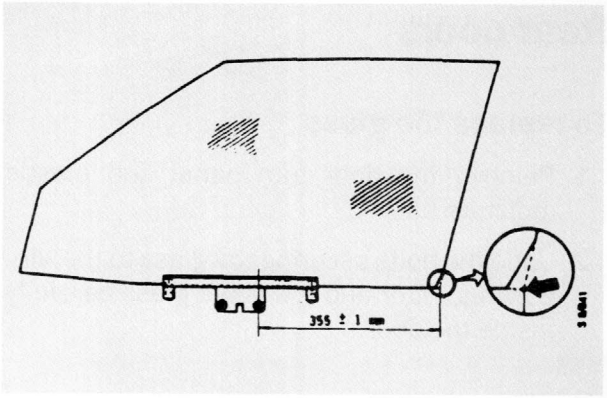
3 Remove the bolts securing the glass to the window regulator.



4 Carefully lift out the glass.



If new glass is to be fitted, the carrier must be transferred from the old glass to the new. Measure the dimension shown as follows: place a straightedge on the trailing edge of the glass and measure between the point of intersection between the straightedge and the bottom corner of the glass, and the rear hole in the carrier. When correctly positioned, push the carrier onto the glass.



Refit in the reverse order.

Replacing the window-moulding frame

1 Lower the window.

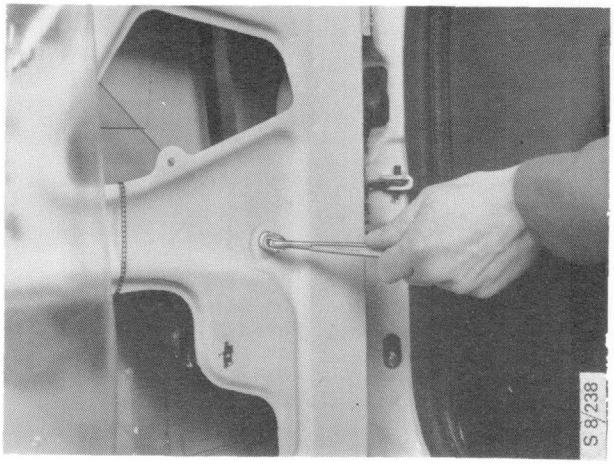
2 Remove the door trim panel and fold back the leading edge of the plastic moisture barrier.

3 Remove the door mirror.

4 Pull off the external bottom window moulding.

5 Detach the dust-excluder strip from the moulding frame but leave it attached to the window channel.

6 Remove the window channel securing screw and lower the channel.



7 Undo the screws in the moulding frame and remove the frame.

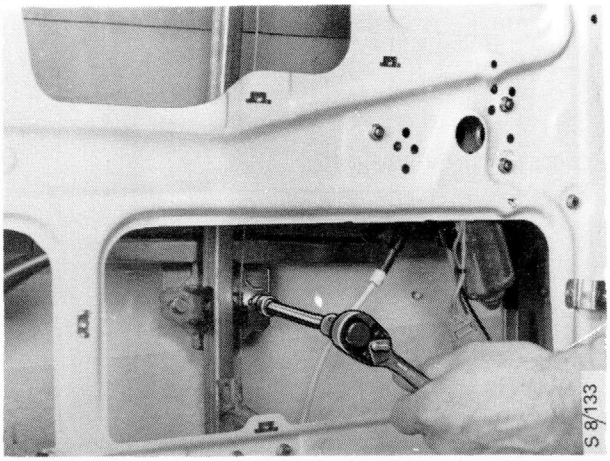
Refit in the reverse order.

Rear doors

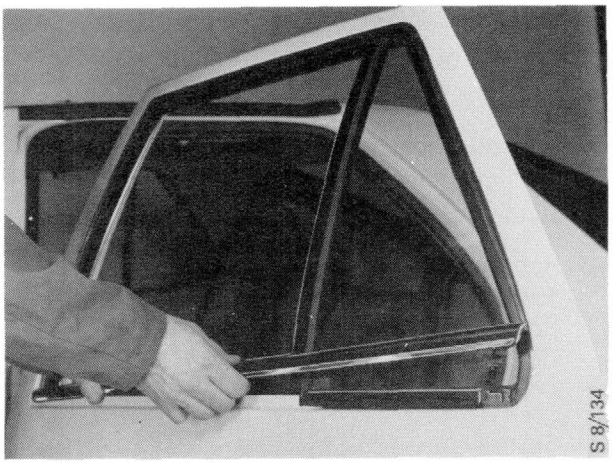
To replace the glass

1 Remove the door trim panel and plastic moisture barrier.

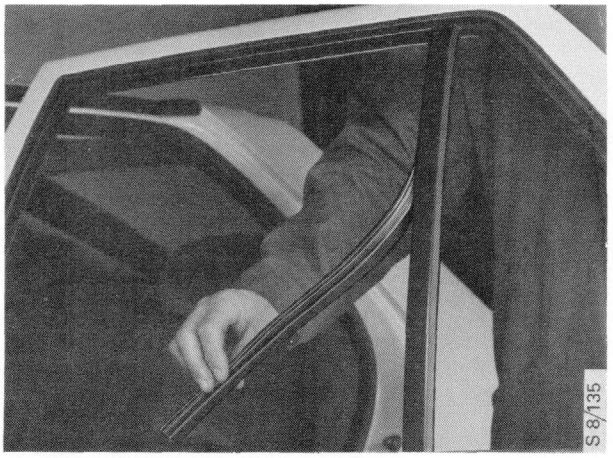
2 Undo the bolts securing the glass to the window regulator and lower the glass carefully inside the door.



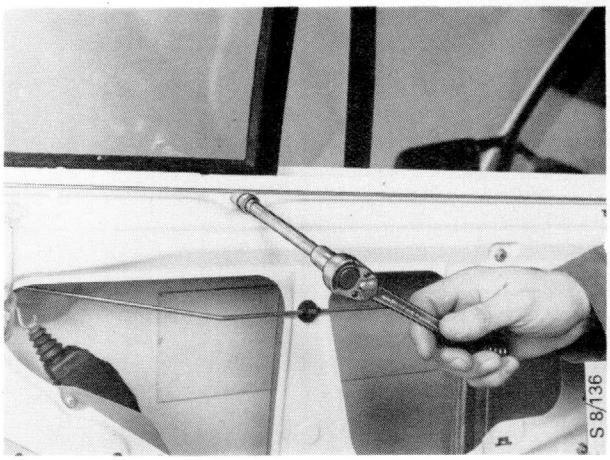
3 Remove the external bottom window moulding.



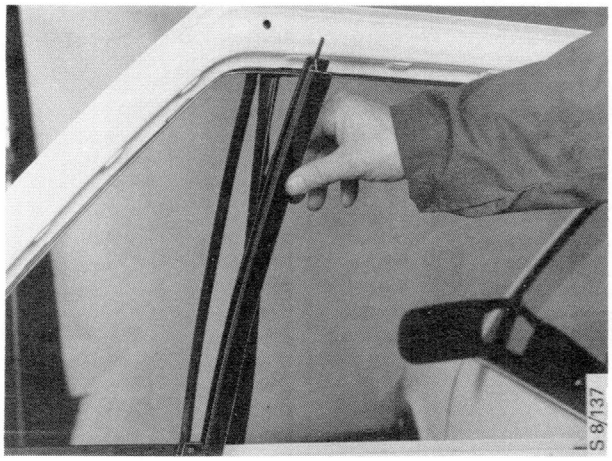
4 Pull the rubber seal out of the window channel.



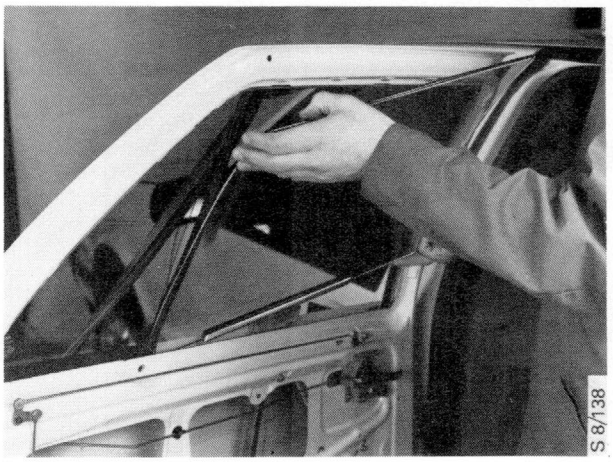
5 Remove the window channel bolt.



6 Remove the window channel and save the spacer and protective cap.

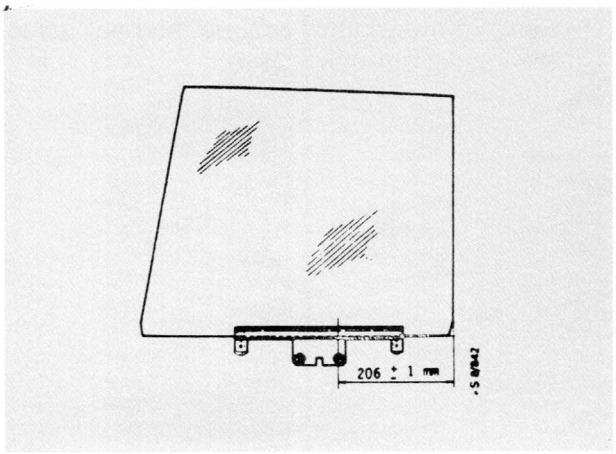


7 Lift out the glass.



Refit in the reverse order.

If new glass is to be fitted, the carrier must be transferred from the old glass to the new. Measure the dimension shown as follows: place a straightedge on the trailing edge of the glass and measure between the point of intersection between the straightedge and the bottom corner of the glass, and the rear hole in the carrier. When correctly positioned, push the carrier onto the glass.

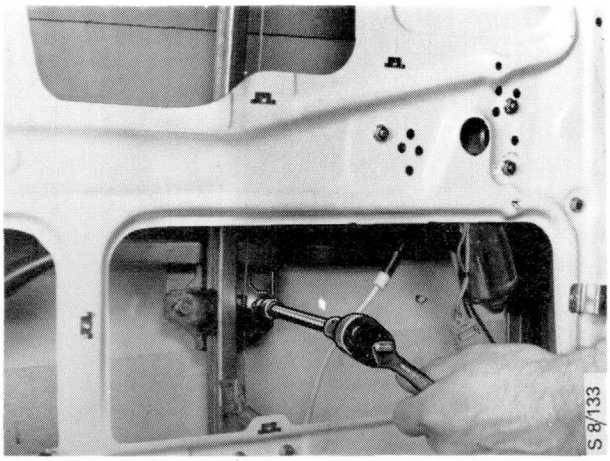


N.B.
Make sure that the clip engages the groove in the external moulding.

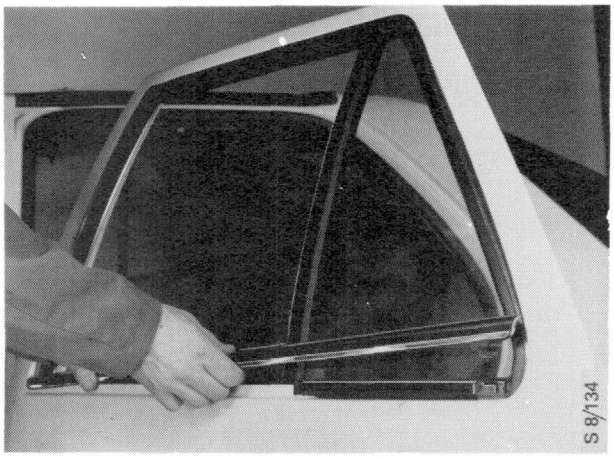
Replacing the fixed glass

1 Remove the door trim panel and plastic moisture barrier.

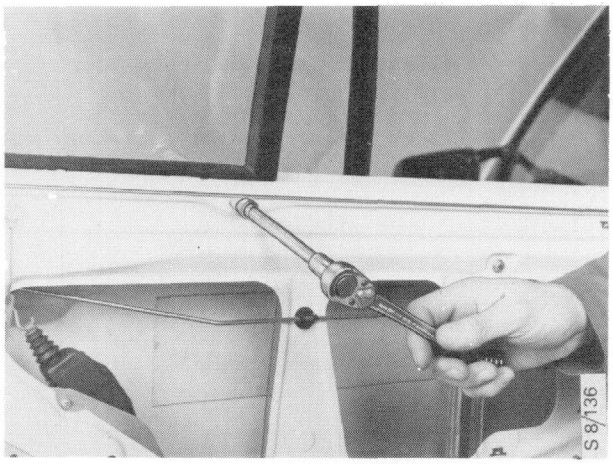
2 Undo the bolts securing the glass to the window regulator and lower the glass carefully inside the door.



3 Remove the external bottom window moulding and detach the rubber seal from the window guide and frame.



4 Remove the window channel bolt.



5 Remove the window channel and put aside the spacer and screw cap.

6 Remove the glass complete with rubber moulding.

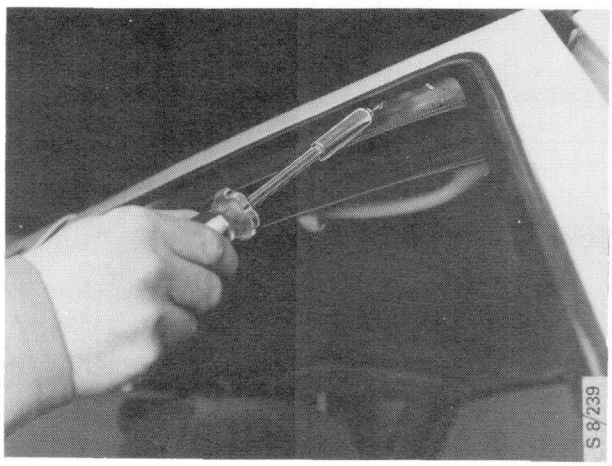
Refit in the reverse order.

Coat the rubber moulding with paraffin oil to facilitate fitting of the glass. Remember to fit the spacer and cap.

To replace the moulding frame

1 Remove the fixed glass from the door.

2 Unscrew the moulding frame and then fit the new frame.



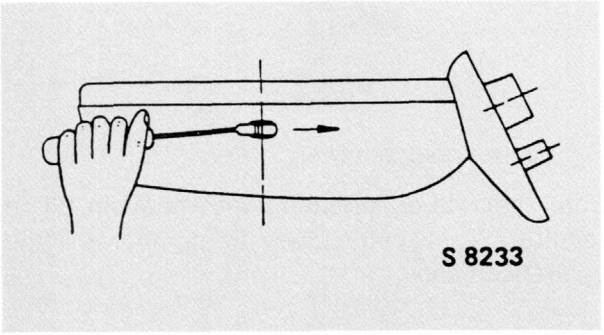
Door mirrors

To remove the glass

An elongated hole is located in the underside of the mirror frame.

1 Adjust the mirror so that it is perfectly square and not tilted. The notched plastic ring will now be centred in the hole.

2 Insert a screwdriver and turn the plastic ring two notches (clicks) to the right, to bring the third notch to the centre of the hole (the ring should be turned to the right on both LH and RH door mirrors).



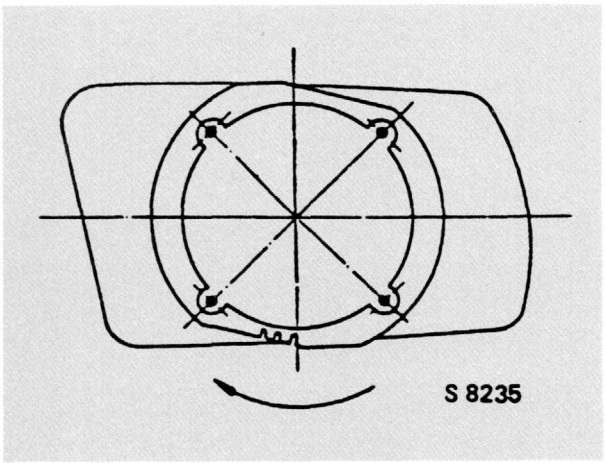
3 Lift out the mirror glass assembly.

To fit a new mirror glass

1 Insert the mirror glass assembly. Turn it slightly anticlockwise to bring the plastic lugs on the mirror in line with the notches on the plastic ring.

2 Fit the mirror onto the driver unit in the frame. The plastic lugs should fit into the hole in the driver ring.

3 Insert a screwdriver in the elongated hole in the underside of the frame and turn the plastic ring two notches (clicks) to the left to secure it.



Replacing electric door mirrors

1 Remove the door trim panel and fold back the plastic moisture barrier.

2 Remove the cover over the mirror securing screws.

3 Remove the cable tie and unplug the connector.

4 Undo the screws and remove the mirror.

Refit in the reverse order.

Check that the seals are correctly seated and in good condition.

To replace manual door mirrors

1 Remove the door trim panel.

2 Remove the rubber gaiter from the adjusting lever.

3 Remove the nut from the adjusting lever.

4 Remove the cover over the mirror securing screws.

5 Undo the screws and remove the mirror.

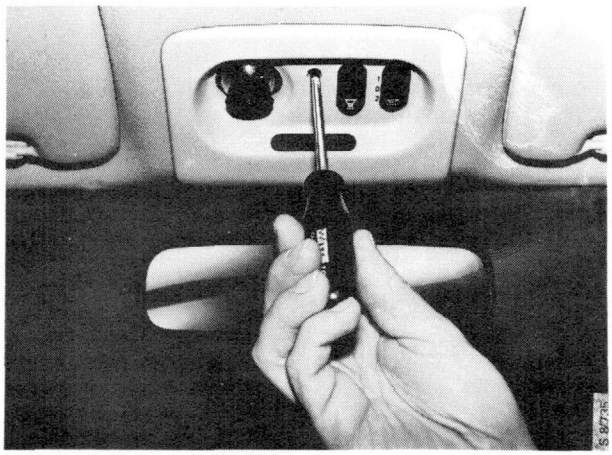
Refit in the reverse order.

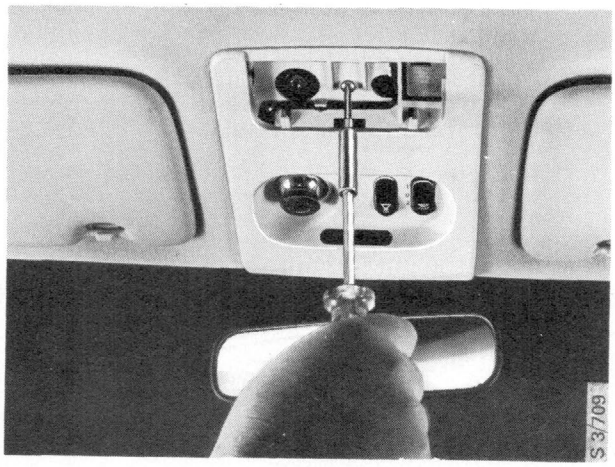
Check that the seals are correctly seated and in good condition.

Rear-view mirror

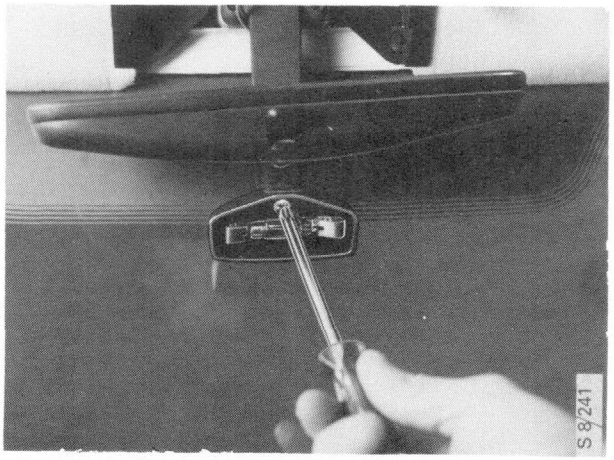
To remove and refit

1 Remove the overhead switch panel surround.

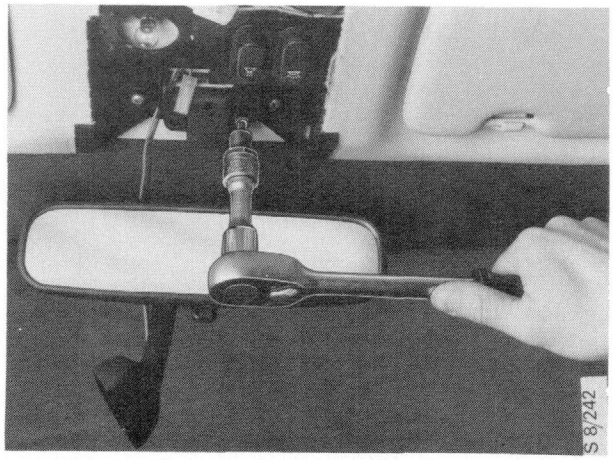




2 Remove the glass from the mirror light and unscrew the light fitting.



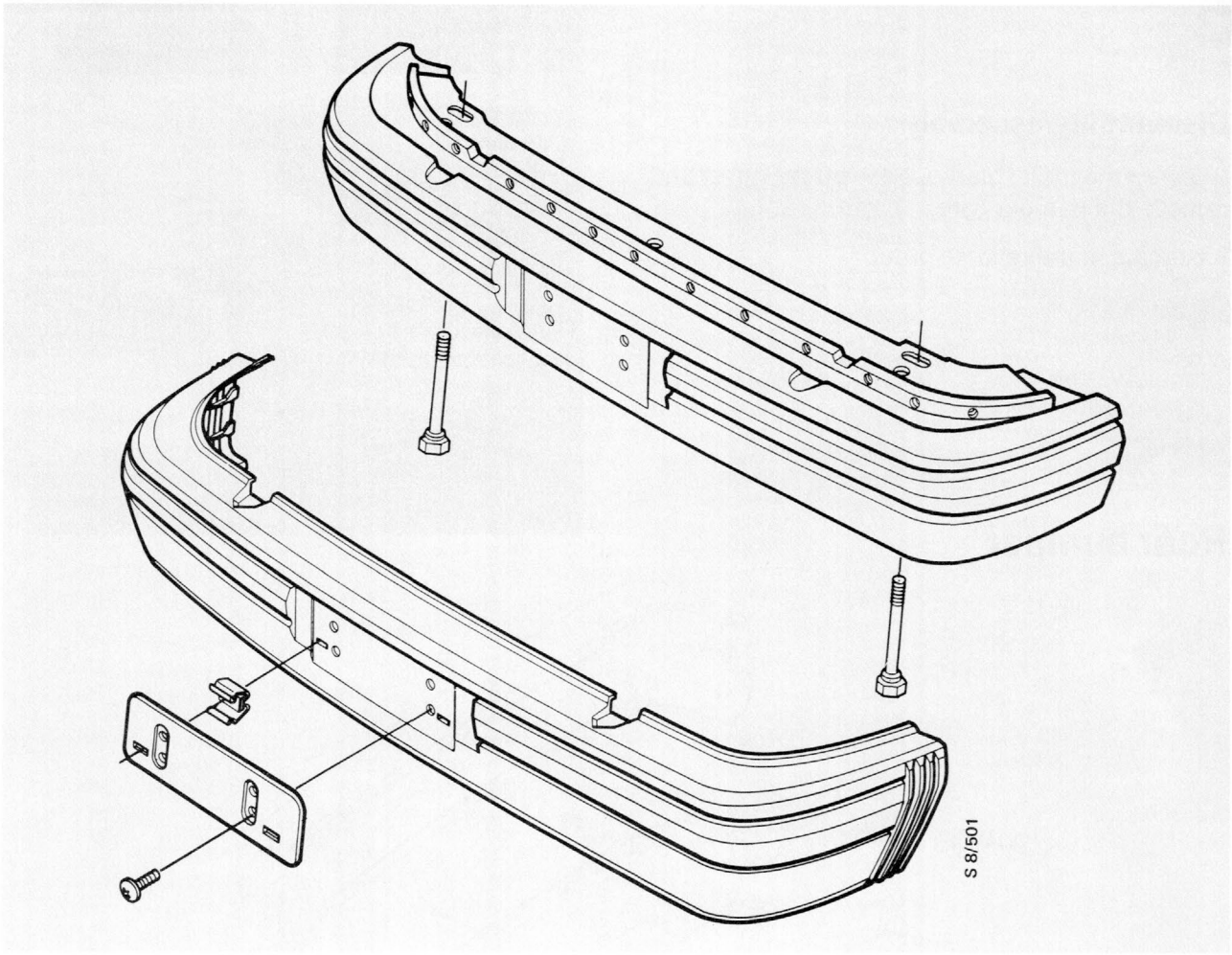
3 Unscrew and remove the mirror.



Refit in the reverse order.

Bumpers

Front bumper



Front bumper

To remove and refit

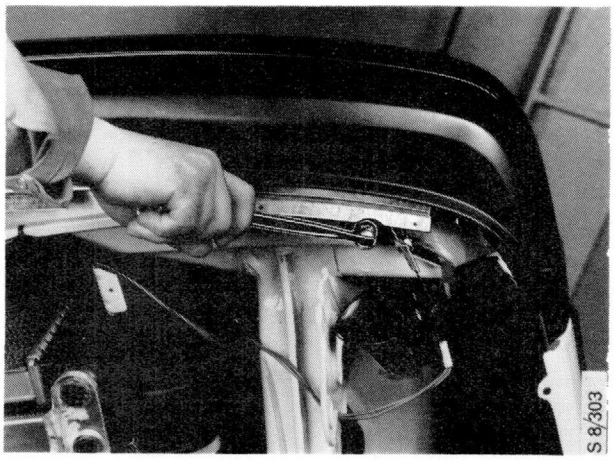
1 Remove the two outer sections and middle section of the bumper cover.

2 Unscrew the temperature sensor and pass it through the aperture in the spoiler.

Undo the spoiler retaining screws.

3 Remove the two bumper securing bolts and lift off the bumper.

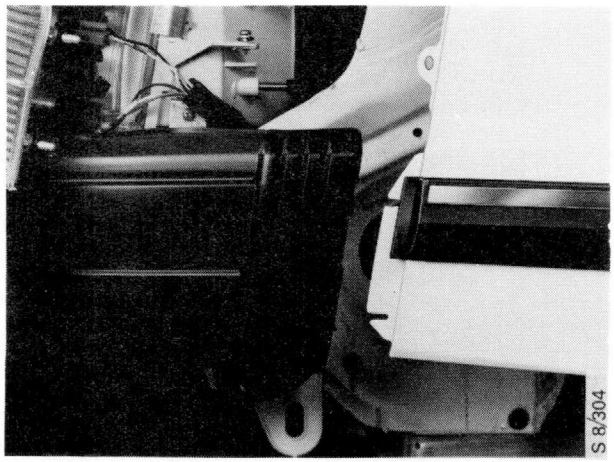
When refitting the bumper, make sure that the tongues on the front of the body engage the corresponding recesses in the bumper cover.



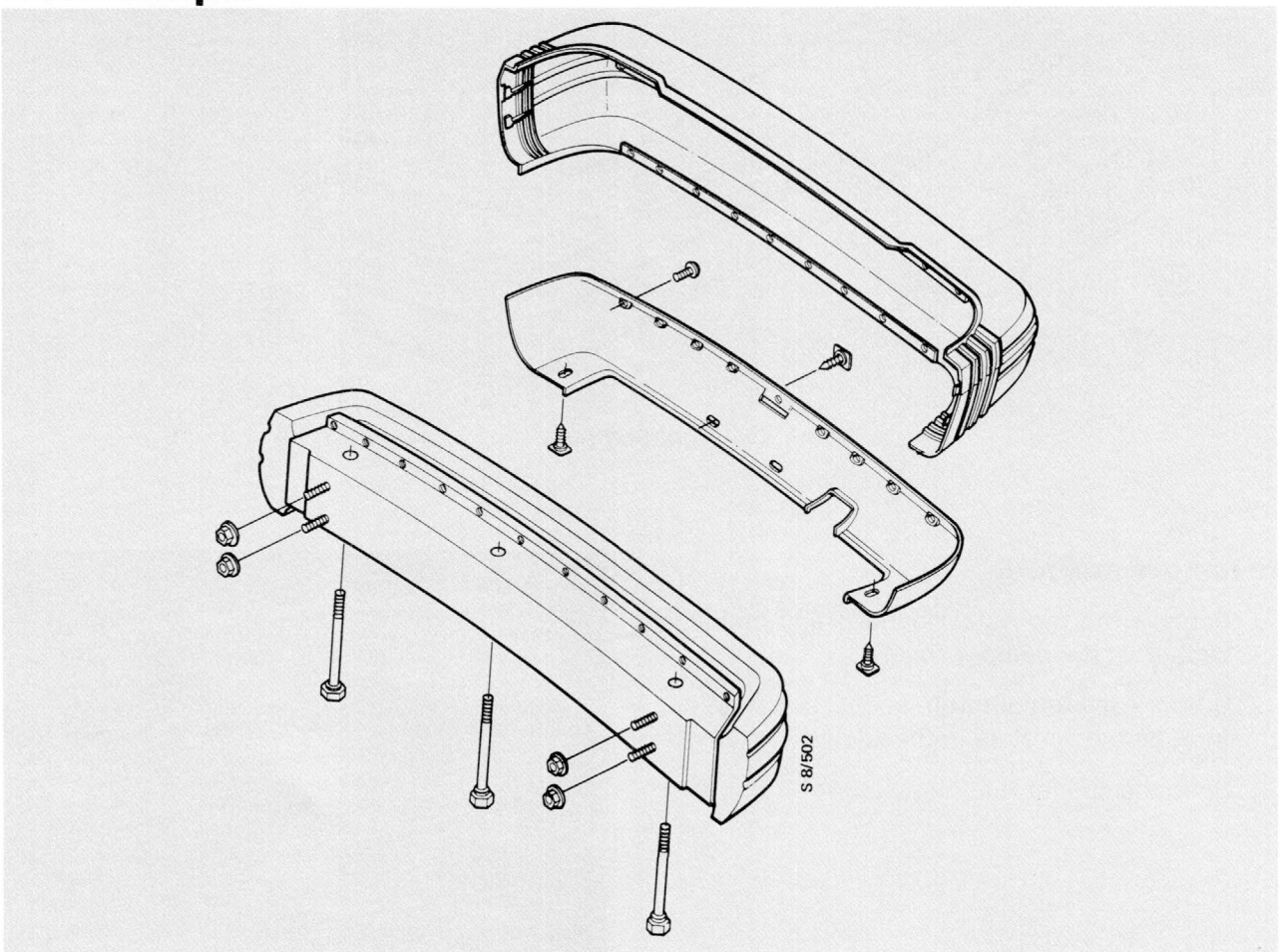
Dismantling/assembly

Unscrew the metal plates, prise off the cover and remove the bumper core.

Assemble in the reverse order.



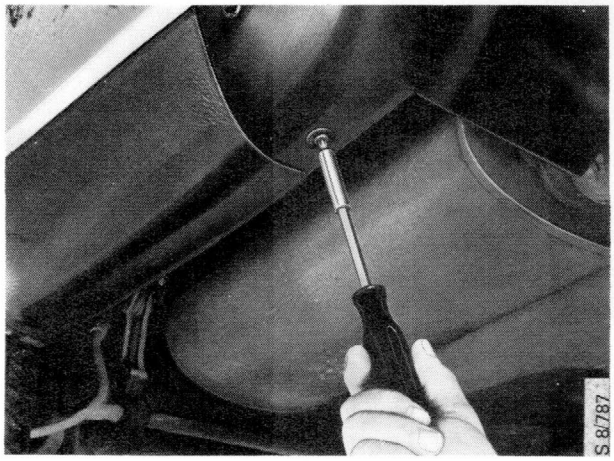
Rear bumper



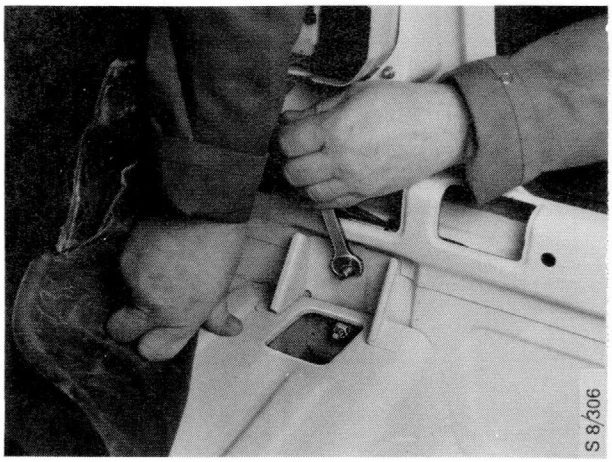
Rear bumper

To remove and refit

1 Undo the two screws securing the cover panel to the body.



2 Raise the panel over the spare-wheel well. Fold back the carpet from under the rear-light clusters and undo the two nuts on either side.



3 Lift off the bumper, saving the two rubber spacers.

Refit in the reverse order.

Dismantling/assembly

Unscrew the metal plates, prise off the cover and remove the bumper core.

Alphabetical section guide

Saab-Scania AB
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