

# GENERAL CONTENTS TOOL

## Part 8

## BODY

# CONTENTS

## Group 80. General

|             |     |
|-------------|-----|
| Tools ..... | 8:1 |
|-------------|-----|

## Group 81. Body frame

|                   |     |
|-------------------|-----|
| Description ..... | 8:2 |
|-------------------|-----|

## Group 82. Hood and fenders

|                                 |     |
|---------------------------------|-----|
| Description .....               | 8:4 |
| Repair Instructions .....       | 8:4 |
| Removing and fitting hood ..... | 8:4 |
| Hood lock .....                 | 8:4 |

## Group 83. Doors and luggage compartment lid

|   |      |
|---|------|
| Description .....   | 8:5  |
| Repair Instructions .....   | 8:5  |
| Removing door upholstery and inside door<br>openers .....         | 8:5  |
| Removing and fitting doors .....                                  | 8:6  |
| Door stops .....  | 8:7  |
| Removing door locks and handles .....                             | 8:7  |
| Dismantling lock handles .....                                    | 8:8  |
| Fitting and adjusting door locks and lock<br>handles .....        | 8:8  |
| Latch plates .....  | 8:8  |
| Removing and fitting ventilation window<br>with frame .....       | 8:9  |
| Removing and fitting ventilation window<br>without frame .....    | 8:9  |
| Removing and fitting window winder and<br>winding mechanism ..... | 8:10 |
| Luggage compartment lid .....                                     | 8:10 |
| Lock for luggage compartment lid .....                            | 8:11 |
| Fuel tank cap with lock .....                                     | 8:11 |

## Group 84. Trim moulding, glass and sealing strips

|                            |      |
|----------------------------|------|
| Repair Instructions .....  | 8:12 |
| Trim moulding .....        | 8:12 |
| Waist moulding .....       | 8:12 |
| Door moulding .....        | 8:12 |
| Rear fender moulding ..... | 8:12 |

|   |      |
|---|------|
| Removing windshield and rear window<br>moulding ..... | 8:12 |
| Fitting windshield and rear window<br>moulding .....  | 8:13 |
| Glass .....   | 8:13 |
| Removing windshield .....                             | 8:13 |
| Fitting windshield .....                              | 8:13 |
| Removing rear window .....                            | 8:14 |
| Fitting rear window .....                             | 8:14 |
| Rear quarter window .....                             | 8:15 |
| Sealing strips .....                                  | 8:15 |
| Door strips .....                                     | 8:15 |
| Door opening strips .....                             | 8:15 |
| Luggage compartment lid strip .....                   | 8:15 |

## Group 85. Upholstery, interior equipment and heating system

|  |      |
|--|------|
| Description .....                                    | 8:16 |
| Headlining .....                                     | 8:16 |
| Door upholstery .....                                | 8:16 |
| Covering for firewall and floor .....                | 8:16 |
| Front seats .....                                    | 8:16 |
| Rear seats .....                                     | 8:17 |
| Heating system .....                                 | 8:17 |
| Repair Instructions .....                            | 8:18 |
| Headlining .....                                     | 8:18 |
| Removing front seats .....                           | 8:18 |
| Instrument panel .....                               | 8:18 |
| Heating system .....                                 | 8:18 |
| Removing fan motor .....                             | 8:18 |
| Replacing fan motor brushes .....                    | 8:18 |
| Removing heater .....                                | 8:19 |
| Dismantling heater .....                             | 8:19 |
| Checking cell system .....                           | 8:19 |
| Assembling heater .....                              | 8:19 |
| Fitting heater .....                                 | 8:20 |
| Adjusting heating controls .....                     | 8:20 |
| Replacing ventilation device and con-<br>trols ..... | 8:20 |

## Group 86. Bumpers

|                 |      |
|-----------------|------|
| Control drawing | 8:20 |
|-----------------|------|

# GENERAL TOOLS

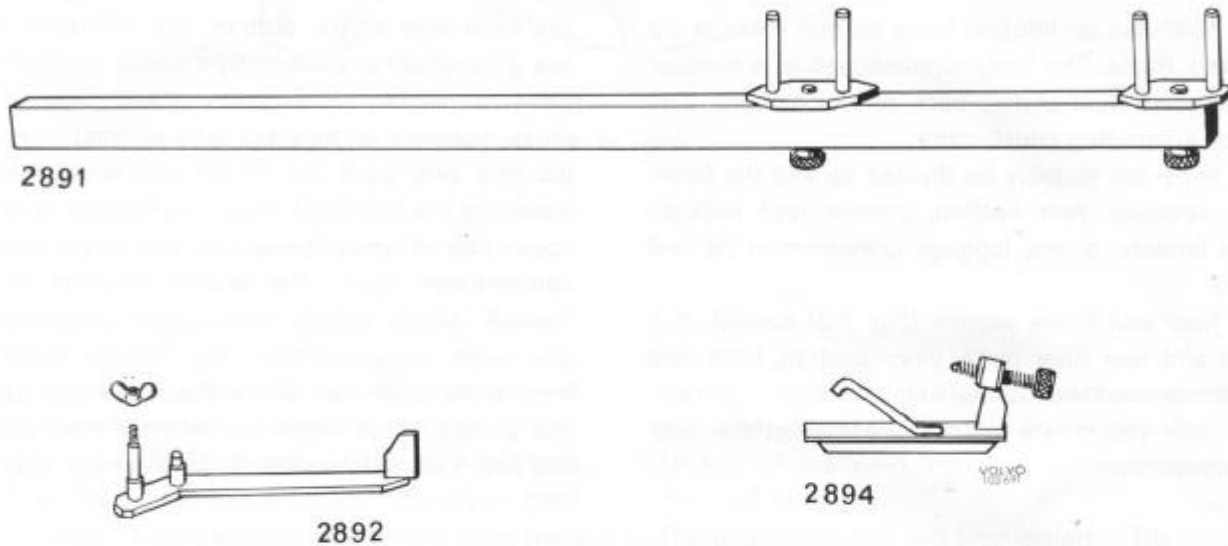


Fig. 8-1. Tools

- SVO 2891 Rule for measuring height of side-member
- SVO 2892 Arm for measuring height of side-member
- SVO 2894 Holder for fixing measuring rule

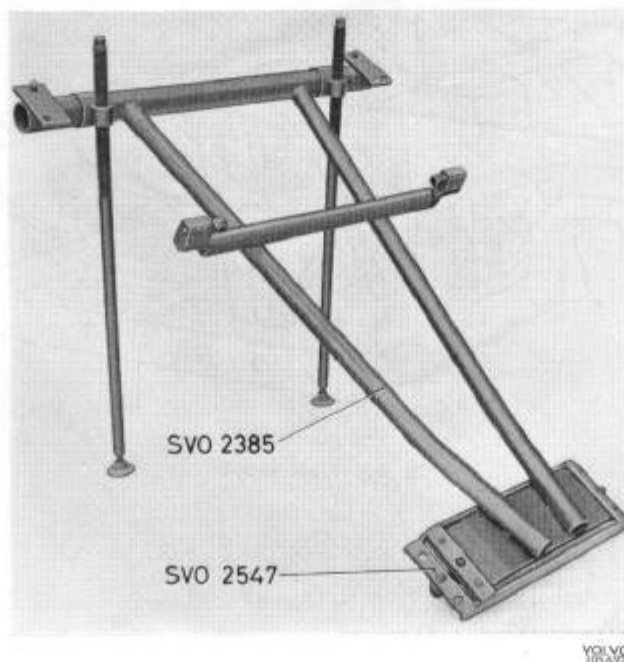


Fig. 8-2.

SVO 2385 + SVO 2547 Fixture for replacing side-members

# BODY FRAME

## DESCRIPTION

The 1800 has an integral body so that there is no chassis frame. The body is composed of a number of pressed steel plates, each of which forms part of the supporting construction.

The body can suitably be divided up into the floor, side sections, rear section, scuttle, roof section, front fenders, doors, luggage compartment lid and hood.

The floor and frame section (Fig. 8-3) consist of a front and rear floor plate, inner cantrail, front and rear cross-members, tunnel and scuttle.

The floor plates are welded together at the rear seat support.

On each side at the bottom, the rear floor plate has a longitudinal reinforcing member and between these a number of cross-members. One of the cross-members is provided with an attachment for the rear axle track bar. In the rear floor plate for mounting the fuel tank, there is a flanged hole, the upper part of which forms a section of the luggage compartment floor. The scuttle consists of the firewall, wheel arches, front upper cross-member and lower cross-member. The firewall forms the front transverse wall of the body and has welded end pieces. Projecting from the front floor section are two front side-members. At the front, they are

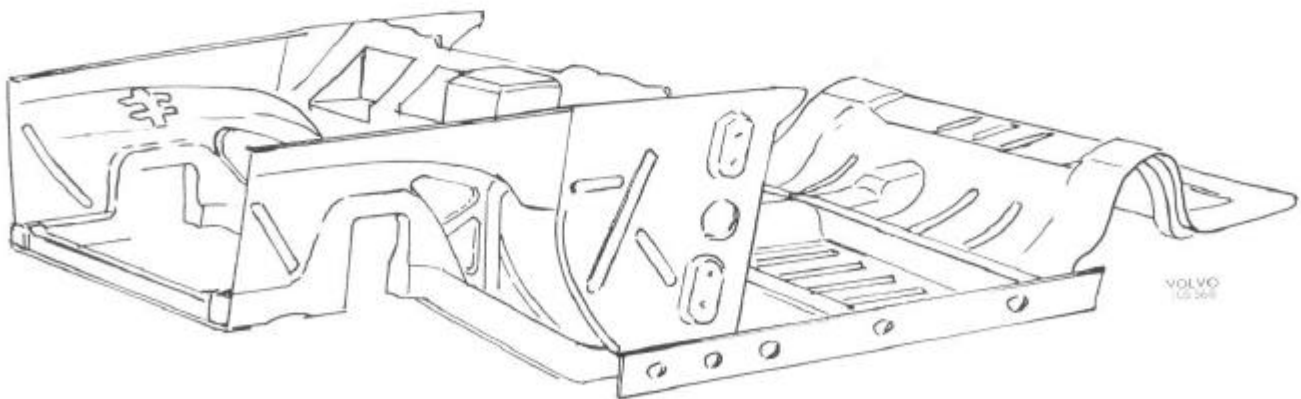


Fig. 8-3. Floor section

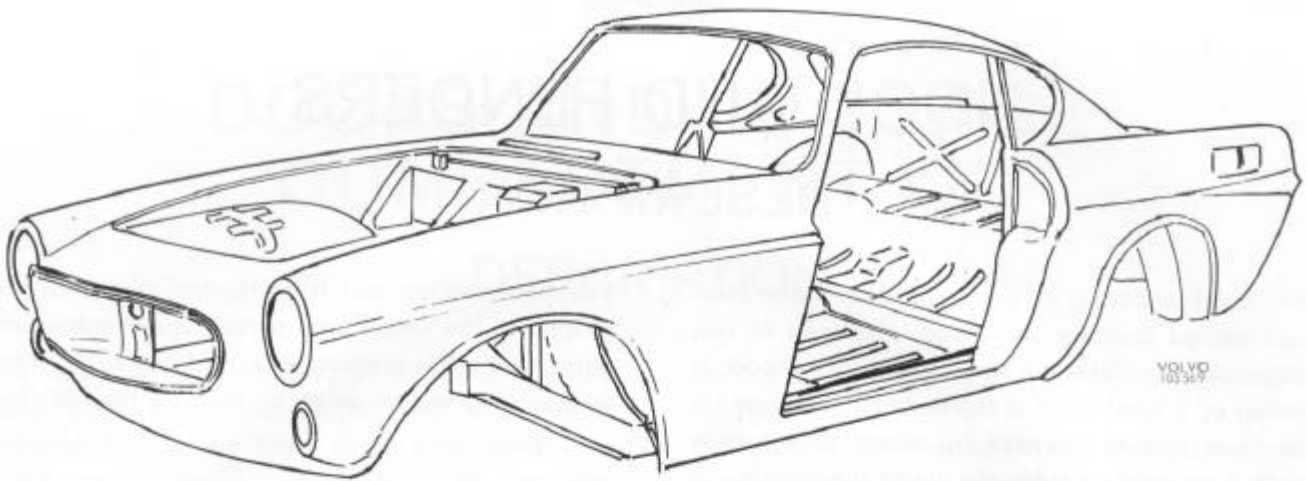


Fig. 8-4. Body

joined together by means of a cross-member and at the rear they are connected to the front cross-member under the front seats. Upper side-members run from the upper corner at the firewall — front post. These are spot-welded to the front post, front side plate and wheel arch plates. Attached to the side-members are the front axle member and the

bumper support bars. The roof section consists of a number of plates. The roof plates form the upper section of the cowl, the windscreen opening and the roof itself.

The body is sound- and heat-isolated. The isolation consists of "waffle" board which is glued to the plate.

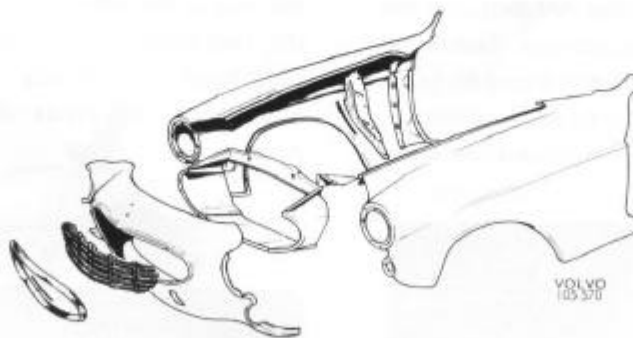


Fig. 8-5. Front fenders and front section

# HOOD AND FENDERS

## DESCRIPTION

The hood consists of an outer and inner plate spot-welded together. The hood is opened on two hinges at the front. When closed, the hood is locked by a lever fitted at the firewall. The lever for the hood lock is released by means of a handle located under the dashboard inside the vehicle.

The front section and front fenders (Fig. 8-5) are welded to the wheel arch plates, upper side-members, front cross-member and front posts. The front section also serves as an air duct for the radiator.

## REPAIR INSTRUCTIONS

### Removing and fitting hood

1. Unscrew the hood support from the hood and fold down the hood.
2. Unscrew the four bolts securing the radiator grille and remove the grille.
3. Remove the hood by unscrewing the hood hinge bolts (2, Fig. 8-6) from the hood. In order to get at the bolts for the right-hand hinge, the outer part of the air cleaner must be taken off.

When the hood is fitted, line it up in the opening so that there is the same slit all round the hood before tightening the hinge bolts. The holes in the hinges are larger than the diameter of the bolts so that it is possible to adjust the location of the hood both laterally and longitudinally. The hood elevation can be adjusted at the front end by placing shims (1, Fig. 8-6) between hood and hinges, and at the rear end with shims placed between

hood and lock brackets. At the rear edge there are also adjustable rubber plugs (1, Fig. 8-7).

### HOOD LOCK

The hood lock is mounted at the firewall and is operated by means of a handle under the dashboard. The hood tensioning with the hood down is adjusted partly by screwing in or out the rubber stops (1, Fig. 8-7) and partly by placing shims under the lock catches on the hood. The lock brackets are bolted to the rear corner of the hood and are lubricated with paraffin when adjusting.

To adjust the cross shaft for the lock, first release the nut at the handle inside the vehicle. Then undo the two bolts at the cross pin attachment on the right-hand side inside the engine compartment, after which the cross shaft can be pulled to the right.

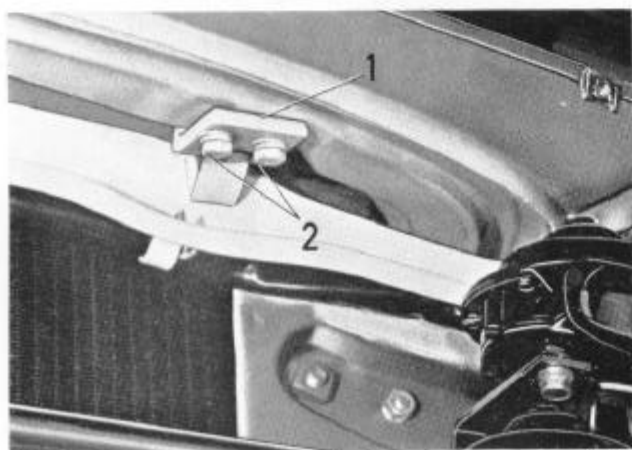


Fig. 8-6. Hood hinges

1. Shims      2. Hood hinge bolts

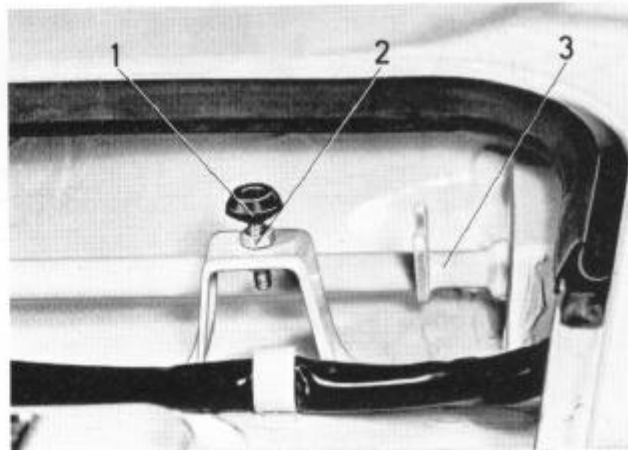


Fig. 8-7. Hood lock and rear adjustment

1. Rubber stop      3. Hood lock cross shaft  
2. Locknut

# DOORS AND LUGGAGE COMPARTMENT LID

## DESCRIPTION

The doors are constructed of an inner and an outer plate which are flanged and spot-welded together. Hinges are fitted to the inner plate. The doors are adjustable both longitudinally, vertically and laterally.

The door locks are screwed to the doors. The push button for the outer door handle actuates a lever which, in its turn, releases a rotating lock plunger. The inside door handle is mounted at the remote control, which is fixed to the inner door plate by means of a screw. The handle transmits movement to the lock plunger by means of link rods. The lock

mechanism is fitted in a cylinder under the door handle.

The window winders consist of lifting arms with toothed segments. Two parallel lifting arms, one of them linked to a toothed segment, move the window to the desired opening when the window winder is turned.

The luggage compartment lid is made up of an inner and outer plate. Its hinges are bolted to the front end of the lid and to the body. Two torsion rods located at the hinges hold the luggage compartment lid open at the desired position. The lid lock is fitted at the rear end.

## REPAIR INSTRUCTIONS

### REMOVING DOOR UPHOLSTERY AND INSIDE DOOR OPENER

1. Remove the window winder by pushing in the trim washer against the upholstery and then against the window winder in the same direc-

tion as the winder (see Fig. 8-8). This releases the spring clip and the winding handle can be taken off.

2. Release the two screws located in the upper door panel.
3. Take off the upper door panel by carefully inserting a screwdriver or similar under the edge of the panel upholstery and then levering outwards (see Fig. 8-9). When the clips have loosened from the door, lift the upholstery off upwards.



Fig. 8-8. Removing window winder

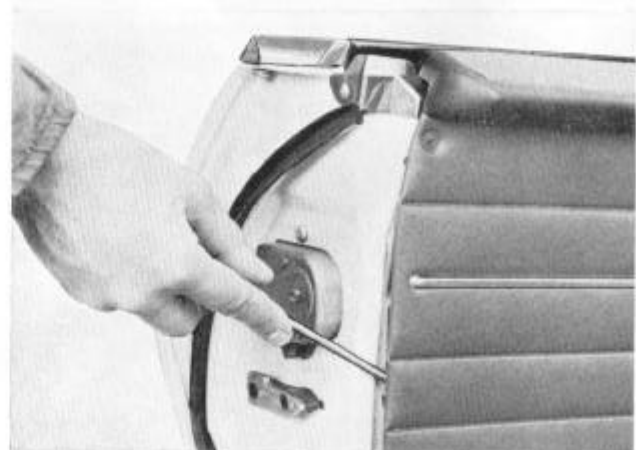


Fig. 8-9. Removing door upholstery



Fig. 8-10. Screws for lower door upholstery panel

4. Then release the two screws for the strip on the upper edge of the lower upholstery section (see Fig. 8-10) and the two screws in the upholstery. Then repeat as above by inserting a screwdriver or similar in under the edge of the upholstery and levering outwards. This part of the upholstery can be drawn straight out and the armrest will accompany it.
5. Remove the plastic and paper protection from the door plate.
6. Release the inside door opener by tapping out the pin with a suitable drift (see Fig. 8-11).

### REMOVING AND FITTING DOOR

The door can be removed with or without the hinges remaining in the door. If the hinges are to remain on the body, first remove the door up-

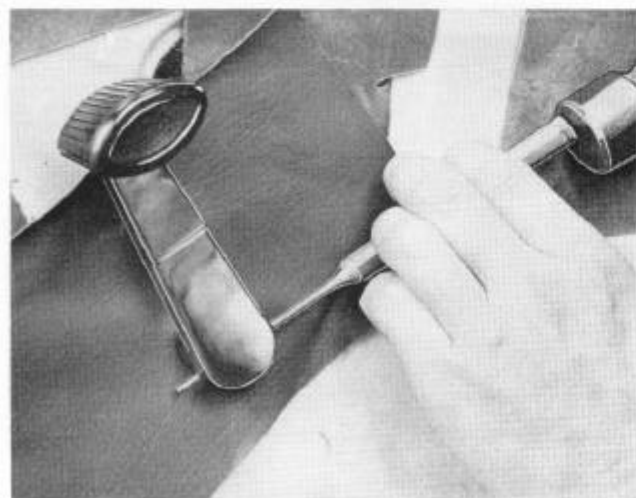


Fig. 8-11. Removing inside lock handle

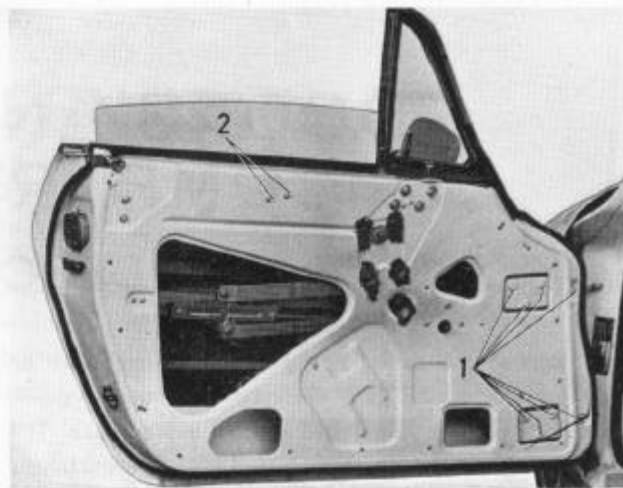


Fig. 8-12. Door inside

1. Bolts for hinge 2. Screws for window winder upper stop

holstery according to the instructions in the previous section. Then undo the bolts (1, Fig. 8-12) and the door can be drawn outwards from the hinges.

When the door is to be removed complete with hinges, first take off the front side upholstery. After that drill or knock out the door stop pivot pin (1, Fig. 8-13). After the bolts for the hinges have been released (two bolts for each hinge) the door can be lifted off.

When fitting, the door can be adjusted longitudinally and vertically because the bolt holes in the body are larger than the diameter of the bolts. Lateral adjustment of the door is made by means of shims.

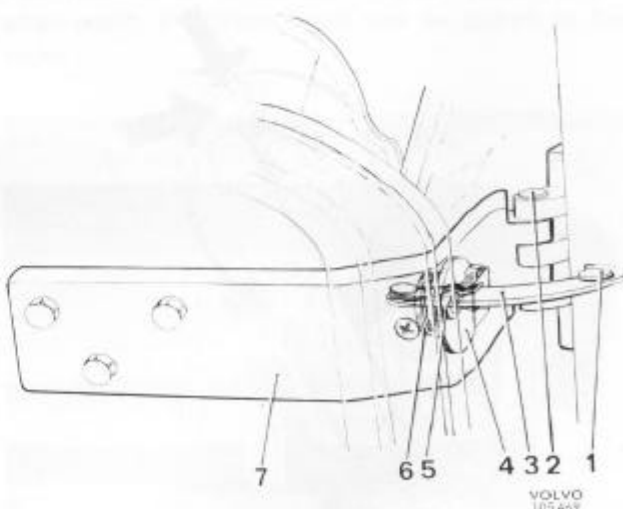


Fig. 8-13. Door stop

- |               |                     |
|---------------|---------------------|
| 1. Pivot pin  | 5. Guide            |
| 2. Hinge pin  | 6. Rubber buffer    |
| 3. Link       | 7. Upper door hinge |
| 4. Lock plate |                     |

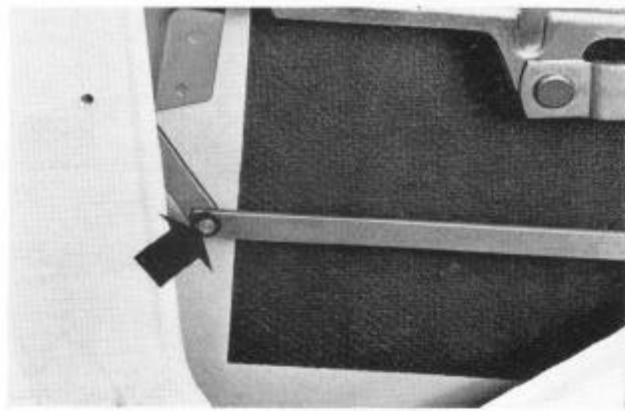


Fig. 8-14. Locking for remote control lever

## DOOR STOP

The door stop (Fig. 8-13), consists of a lock plate and a guide bolted to the upper hinge and a link with rubber buffer. In order to remove the door stop, the door must first be taken off (see points 1—5 under "Removing door upholstery"). The link is released by drilling out or knocking out the pivot pin.

## REMOVING DOOR LOCK AND LOCK HANDLE

1. Carry out points 1—6 under "Removing door upholstery and inside door opener".
2. Remove the locking for the remote control lever (see Fig. 8-14).
3. Unscrew the three bolts for the remote control (see Fig. 8-15) and take out the control from the door.
4. Remove the locking (9, Fig. 8-17) for the lever between the lock and the outer handle.
5. Unscrew the two screws (1, Fig. 8-16) for the link arm for the remote control and the two screws (2, Fig. 8-16) which hold the guide for the lock.

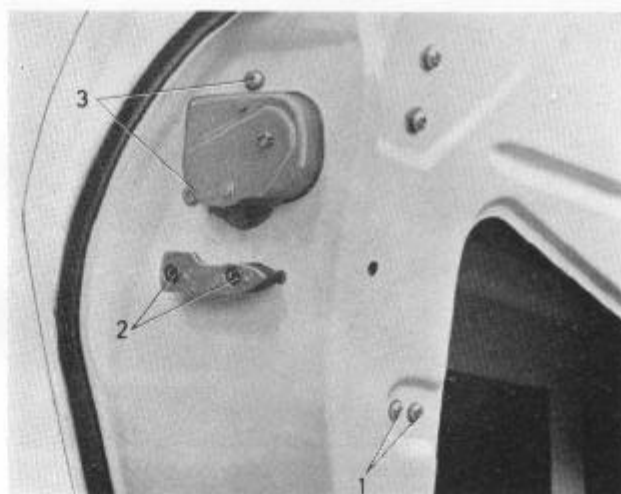


Fig. 8-16. Screws for door lock

6. Unscrew the remaining two screws (3, Fig. 8-16) and take the lock out through the hole in the inner plate of the door.
7. Remove the lock handle by unscrewing the screw (6) and nuts (7, Fig. 8-17).

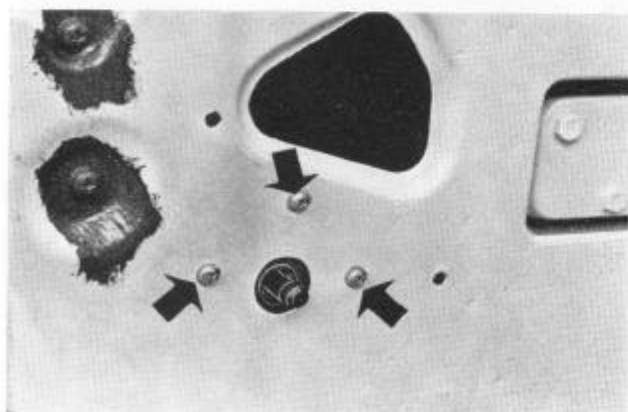


Fig. 8-15. Screws for remote control

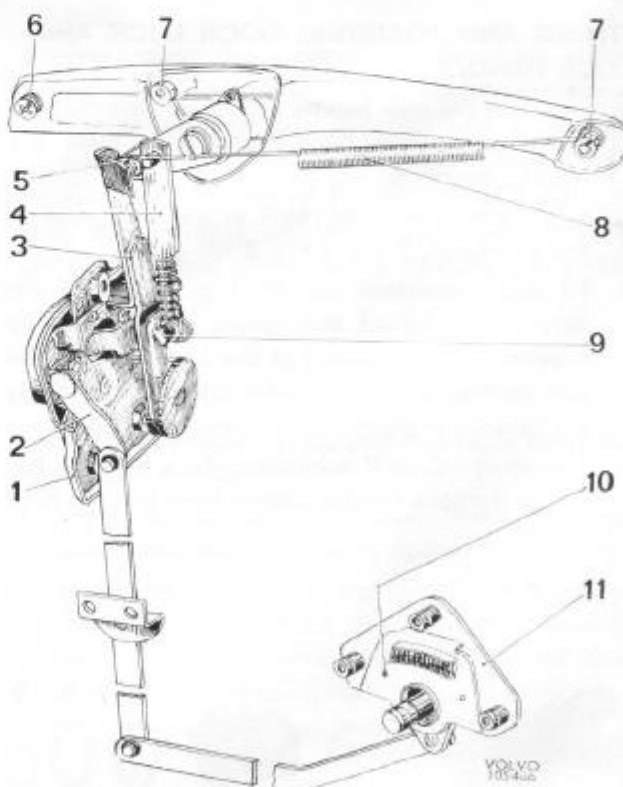


Fig. 8-17. Door lock with remote control

- |                          |   |
|--------------------------|---|
| 1. Lock                  | 7. Nuts for lock handle                           |
| 2. Lever                 | 8. Spring   |
| 3. Lever                 | 9. Locking for lever                              |
| 4. Connection link       | 10. Hole for split pin for fitting remote control |
| 5. Adjusting screw       | 11. Remote control                                |
| 6. Screw for lock handle |   |

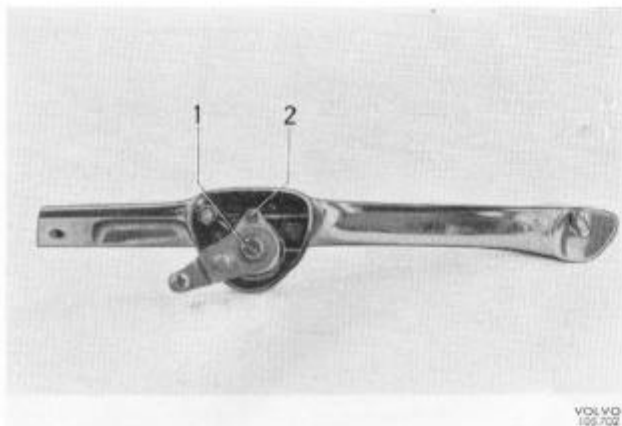


Fig. 8-18. Lock handle

1. Bolt for control lever 2. Bolt for sleeve

### DISMANTLING LOCK HANDLE

1. Unscrew the bolt (1, Fig. 8-18) for the control arm and the bolt (2) for the sleeve and take off both sleeve and spring.
2. Remove the circlip (5, Fig. 8-19). The lock cylinder can then be taken out of the push button.

### FITTING AND ADJUSTING DOOR LOCK AND LOCK HANDLE

1. Unscrew the lock handle and make sure that the washers between handle and door plate are located properly.
2. Place the lock in position in the door and fit the screws (1, 2 and 3, Fig. 8-16).
3. Fit the connection link (4, Fig. 8-17) and the spring (8). Adjust the length of the link by screwing on the spring at the lower end of the link so that the lock handle control arm meets the lock lever (3) in the unlocked position.
4. Check or adjust if necessary the clearance between the lock handle control lever and the door

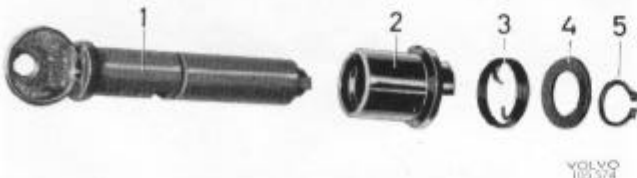


Fig. 8-19. Door lock push button dismantled

1. Lock cylinder 2. Push button  
3. Spring 4. Washer  
5. Circlip



Fig. 8-20. Clearance between lock handle control lever and door lock lever

A=1—2 mm (1/16")

lock lever (Fig. 8-20). The clearance should be 1—2 mm (1/16"). Adjust with the screw (5, Fig. 8-17).

5. Tighten the remote control lever so that the spring in the control is compressed, and lock the control in this position by placing a split pin in the hole (10, Fig. 8-17).
6. Fit the remote control in the door without tightening the screws fully.
7. Push the remote control backwards until the lever stops against the lock. Hold the control in this position and tighten the screws.
8. Remove the split pin and test the function of the lock.

### LATCH PLATE

The latch plate (Fig. 8-21) is made of steel and is fitted with a nut plate. The latch plate is adjustable thanks to the holes in the body being larger than the attaching bolts.

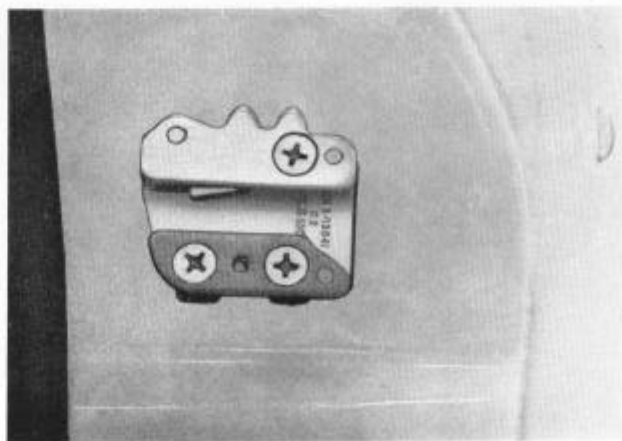
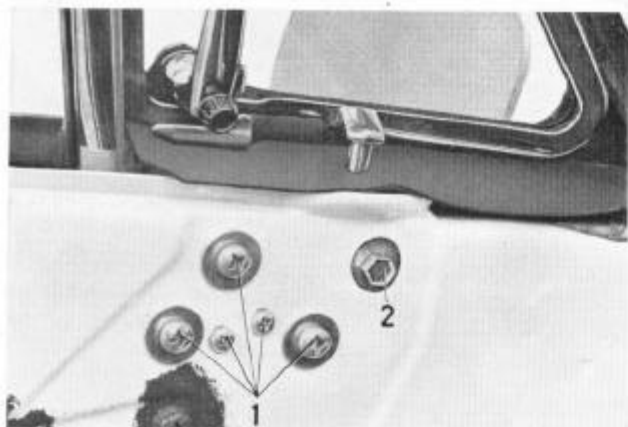


Fig. 8-21. Latch plate



**Fig. 8-22. Screws for ventilation window**

1. Screws for ventilation window frame
2. Bolt for ventilation window lower pivot pin

The vertical location of the latch plate is checked by closing the door with the outside door handle push button depressed so that the guide pin glides straight into the latch plate.

N.B. This should be done immediately after fitting the latch plate.

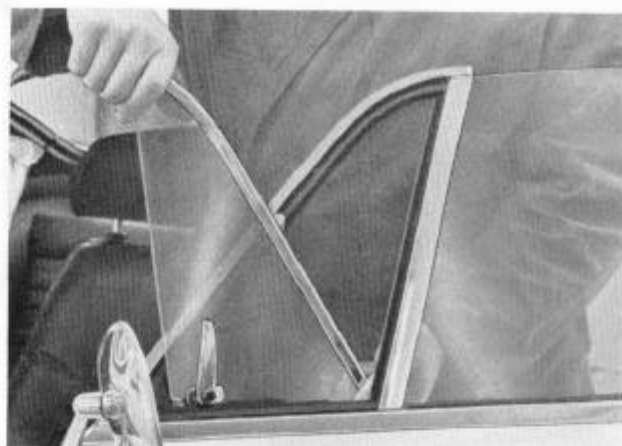
#### **REMOVING AND FITTING VENTILATION WINDOW WITH FRAME**

The frame of the ventilation window is integrally built with one of the guide rails for the winding window. The ventilation window with frame can be suitably removed as follows:

1. Carry out points 1-5 under "Removing door upholstery and inside door opener".



**Fig. 8-23. Taking out ventilation window with frame**



**Fig. 8-24. Taking out ventilation window without frame**

2. Unscrew the screws for the chromium plate on the front edge of the door and remove the plate.
3. With the winding window in the closed position, unscrew the two screws holding the guide rail inside the door.
4. Undo the screws holding the frame (1, Fig. 8-22).
5. Wind down the winding window to the bottom position. Then pull the ventilation window straight up and turn it a half turn so that the attachment on the lower part of the guide rail can be taken out of the door (Fig. 8-23).

N.B. When fitting, check to make sure that the winding window glides easily into the guide rails.

#### **REMOVING AND FITTING VENTILATION WINDOW WITHOUT FRAME**

1. Carry out points 1—3 under "Removing door upholstery and inside door opener".
2. Undo the plastic covering the door and release the bolt (2, Fig. 8-22). Put your hand through the large hole in the inner plate of the door and remove the cover for the ventilation window pivot pin.
3. Open the ventilation window completely and press it downwards so that its upper pivot pin unhooks, after which the window can be removed (Fig. 8-24).
4. When fitting, tighten the bolt (2, Fig. 8-22) until the window is sufficiently stiff to open and close.

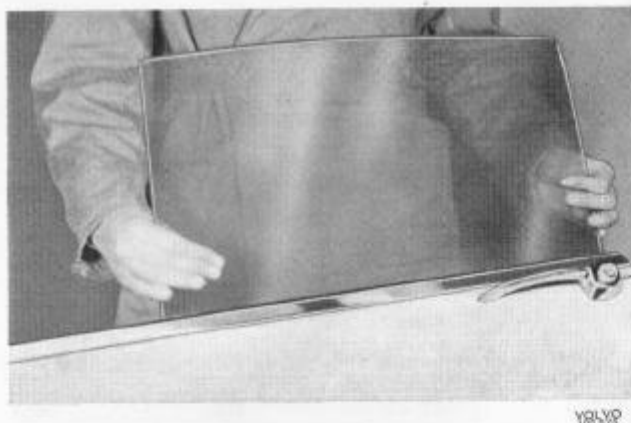


Fig. 8-25. Taking out winding window

### REMOVING AND FITTING WINDING WINDOW AND WINDING MECHANISM

1. Remove the stop for the winding window upper position (1, Fig. 8-12).
2. Wind up the window as far as it can go, then lower it between a quarter to a half turn. N.B. Hold the window at this operation.
3. Move the window backwards and turn it inwards so that it goes out of the slot in the winding mechanism (Fig. 8-25).
4. Lower the winding mechanism and lift up the window.
5. Release the five screws for the winding mechanism (Fig. 8-26) and take out the mechanism.
6. When fitting, make sure that the winding window runs easily in the slot. The rear guide strip for the winding window is adjustable concerning the fitting of the window against the sealing strip.

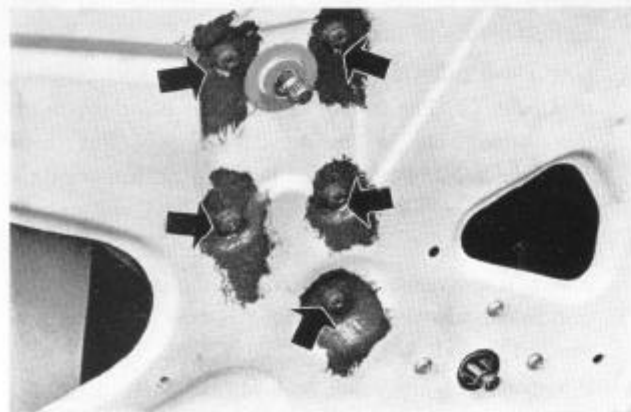


Fig. 8-26. Screws for winding mechanism

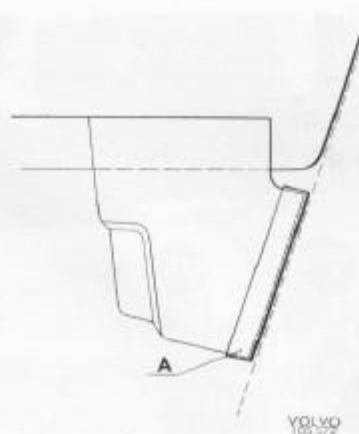


Fig. 8-27. Plastic cover A on winding rail should be in line with rear edge of window

When changing only the window, fit it so that its rear end is in line with the plastic of the window rail (Fig. 8-27).

### LUGGAGE COMPARTMENT LID

The luggage compartment lid is suspended by two hinges, which are bolted each with two bolts to the inner plate of the lid (1, Fig. 8-28) and by means of a nut and three bolts (2).

The holes in the part of the hinges which are secured to the luggage compartment lid are oval and this permits longitudinal adjustment of the lid. To adjust the lid vertically, shims of different dimensions can be placed between the lid and hinges.

When removing the hinges, first pull the torsion rod (3) straight out so that it releases from its

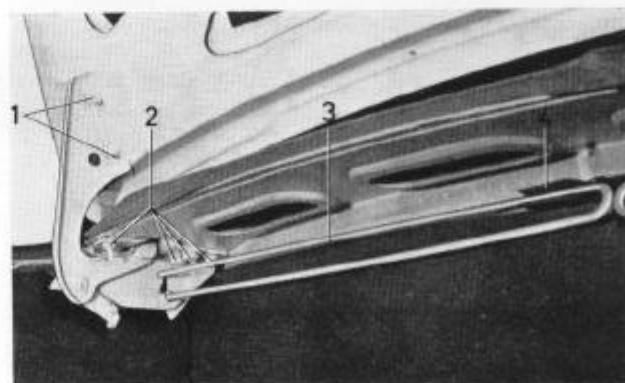
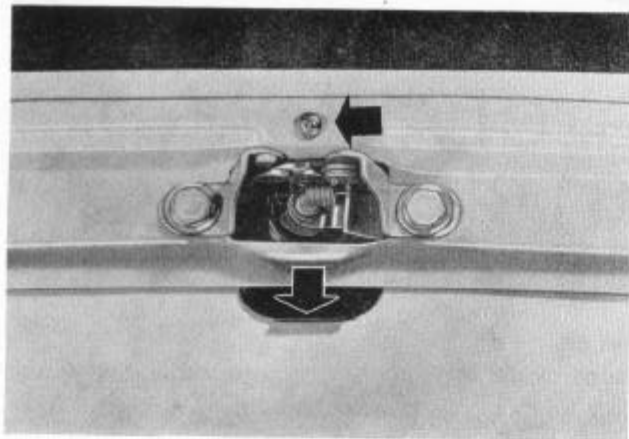


Fig. 8-28. Luggage compartment lid suspension  
1. Attaching bolts for luggage compartment lid  
2. Attaching bolts for hinges  
3. Torsion rod  
4. Attachment for torsion rod



VOLVO  
101727

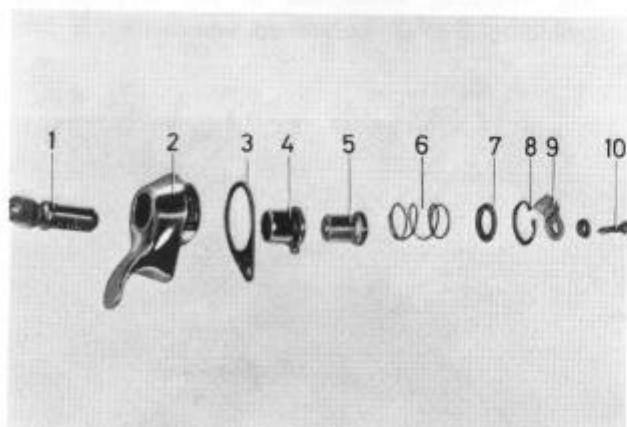
Fig. 8-29. Removing luggage compartment lid lock

rubber attachment (4). When the three bolts and the nut have been removed, the entire hinge with torsion rod can be removed.

#### LUGGAGE COMPARTMENT LID LOCK

To remove the lock, first release the bolt in the upper edge of the inside of the lid. Then pull out the lock plate and the lock can then be removed (Fig. 8-29).

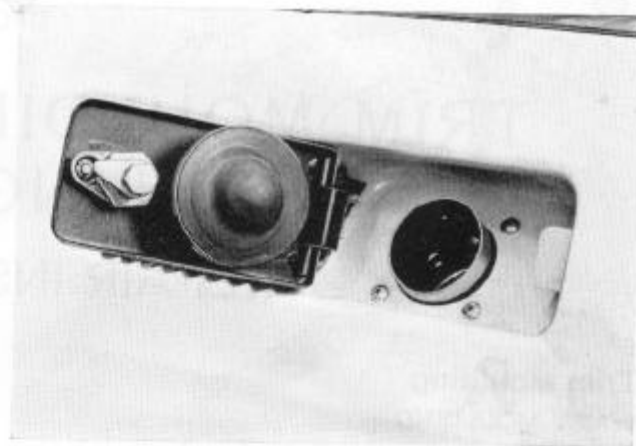
Dismantling takes place by unscrewing the screw (10, Fig. 8-30) in the lower section of the lock. The lock plunger can then be taken out by fitting the key in the lock. It can also be done with the lock in the luggage compartment lid. When remov-



VOLVO  
105132

Fig. 8-30. Luggage compartment lid lock dismantled

- |                  |              |
|------------------|--------------|
| 1. Lock cylinder | 6. Spring    |
| 2. Handle        | 7. Washer    |
| 3. Washer        | 8. Lock ring |
| 4. Push button   | 9. Lock arm  |
| 5. Lock plunger  | 10. Screw    |



VOLVO  
105709

Fig. 8-31. Tank cap with lock

ing the remaining lock components, first remove the lock ring (8) so that all the other parts can be taken out.

#### FUEL TANK CAP WITH LOCK

To remove the tank cap, the left air extractor vent outside grille must first be removed. The grille is attached by means of a clip on the inside of the rear fender. The tank cap is bolted on by means of two bolts.

The lock cylinder is removed by taking off the bolt (7) and lock arm (6, Fig. 8-32). If the entire lock is to be removed, the bolt nut (5, Fig. 8-32) must be removed.



VOLVO  
105177

Fig. 8-32. Tank cap lock dismantled

- |                  |             |
|------------------|-------------|
| 1. Lock cylinder | 5. Locknut  |
| 2. Housing       | 6. Lock arm |
| 3. Spacer        | 7. Bolt     |
| 4. Lower section |             |

# TRIM MOULDING, GLASS AND SEALING STRIPS

## REPAIR INSTRUCTIONS

### Trim moulding

#### WAIST MOULDING

The waist trim moulding for the front fenders, doors and rear fenders is attached by means of resilient clips. To remove the moulding, insert some suitable wooden tool between the body and the moulding next to the clips and lever outwards (Fig. 8-33). To fit the moulding, first put the clamps on the moulding. Then hold the moulding against the body with the clamps opposite their holes and push the moulding against the body with the hand.

#### DOOR MOULDING

The door trim moulding is attached by means of clips from the rear edge of the door and up to the ventilation window. At the ventilation window the moulding is attached by the ventilation window frame holding the moulding clamped downwards. To remove the moulding, the plate on the front edge of the door must first be removed. Then place a suitable wooden lever under the moulding beginning at the rear and lever up the moulding bit by bit up to the ventilation window (Fig. 8-34).

N.B. Use masking tape or similar under the wooden lever when levering up the moulding in order not to damage the paintwork. When this is done, the moulding can be removed by bending the front

edge of the ventilation window inwards, this enabling the moulding to be drawn up.

In order to remove the door moulding under the rear side window, the window must first be taken off. To do this follow the instructions given under "Rear side window". The moulding can then be removed by releasing its plate screws.

#### REAR FENDER MOULDING

The moulding on the upper edge of the rear fender is attached by means of screw clamps. In order to release the front nut, the rear side panel upholstery inside the vehicle must be removed, while the other nuts are released from the luggage compartment after the sideboard has been taken off.

### Removing windshield and rear window trim moulding

1. The trim moulding is released from the rubber stripping (do not pull off the trim moulding) by inserting a nylon knife (moistened) in between and all round the moulding.
2. Slide over the connectors to one half of the moulding.
3. Remove the trim moulding by pressing the rubber stripping seam out of the way of the moulding with a moistened wooden knife and

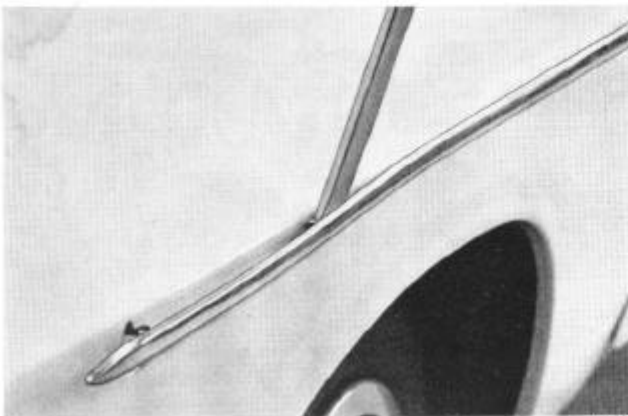


Fig. 8-33. Removing waist trim moulding

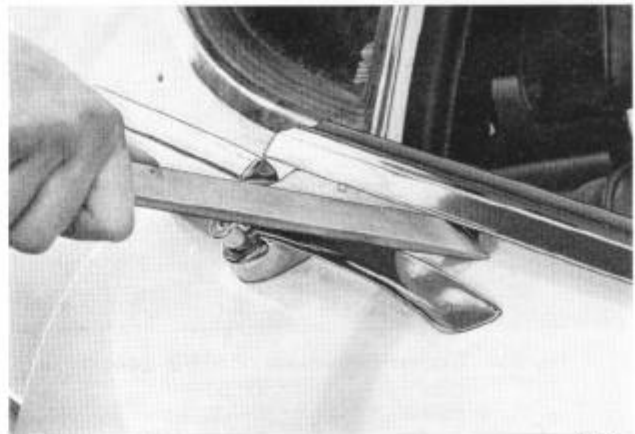
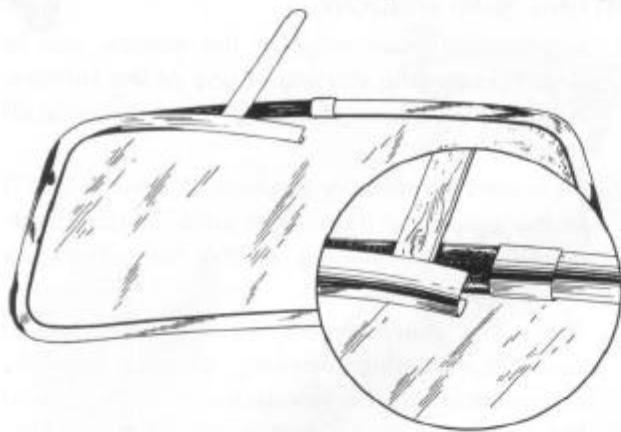


Fig. 8-34. Removing door trim moulding



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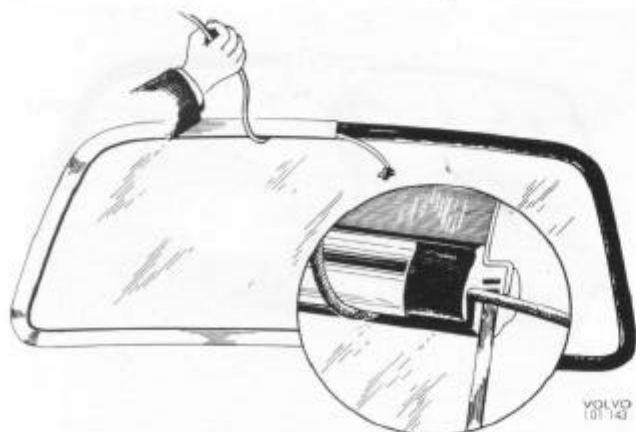
Fig. 8-35. Removing trim moulding for windshield and rear window

with another such knife releasing the moulding at the middle (Fig. 8-35). Carefully lift the moulding out of the way while using the other wooden knife to move the rubber stripping to the side.

#### FITTING WINDSHIELD AND REAR WINDOW TRIM MOULDING

Place a leather cord ( $\varnothing$  4 mm = 5/32"), moistened in soap solution or kerosine, in the rubber stripping groove for the moulding.

Place one half of the moulding in position and press it in while drawing the leather cord up over the moulding out of the way, so that the moulding is pressed against the rubber stripping (Fig. 8-36). Slide over the connecting pieces and repeat with the other moulding half. Adjust the position of the joining pieces to make sure that they cover both the halves.



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Fig. 8-36. Fitting trim moulding for windshield and rear window



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Fig. 8-37. Cutting windshield rubber stripping

## Glass

### REMOVING WINDSHIELD

1. Place some kind of protective cover over the hood and dashboard.
2. Remove the trim moulding in accordance with the instructions just given and take off the piper arms.
3. Cut up the rubber stripping along the groove for the trim moulding and remove the cut rubber so that the windscreen is uncovered there (Fig. 8-37).
4. Press out the windshield.
5. Pull round the rubber stripping and clean the windshield frame with toluene.

### FITTING WINDSHIELD

1. Clean the rubber stripping, windshield and windshield frame with toluene.
2. Fit the rubber stripping on the windshield.
3. Fit a cord (suitably of terylene), beginning in the middle of the upper side, in the rubber stripping slot for the plate edge (Fig. 8-38).
4. Set the windshield with rubber stripping in position. Carefully tap several blows with the **palm of the hand** (with glove on) so that the windshield fits well all round. From the inside carefully take off the cord. This causes the rubber stripping to cover the plate edge (Fig. 8-39). Sometimes it may be necessary to adjust the location of the windshield with the palm of the hand. If the cord is too stiff, there is risk of the stripping being damaged. This can be remedied by striking with the palm of the hand from the inside or vice versa if the rubber strip does not cover the edge of the plate properly.
5. Check that the rubber strip seals well all round. If necessary adjust the position of the windscreen both vertically and laterally by striking with the palm of the hand.



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Fig. 8-38. Putting fitting cord in rubber strip

6. With a sealing compound gun fill in between windshield — rubber strip and between rubber strip — body with sealing compound.
7. Clean off surplus sealing compound from the body and windscreen with toluene.
8. Fit the trim moulding in accordance with previous instructions and the wiper arms.

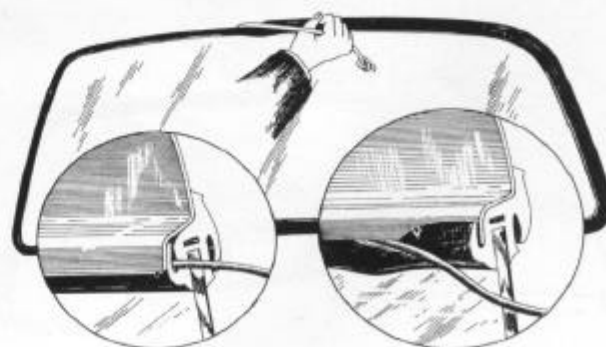
N.B. The sealed joints must not come in contact with water for at least one hour after the sealing has been carried out.

## REMOVING REAR WINDOW

1. Remove the upper rear side panels and disconnect the cable from the contacts on the rear window.
2. Remove the trim moulding in accordance with previous instructions.
3. Release the rubber strip from the window and from the body by inserting a nylon putty knife moistened in synthetic washing solution (the putty knife should be moistened now and then during the course of the work) all round between rubber strip and window, and rubber strip and body.
4. Start removing the rubber strip in the upper left-hand corner by levering the rubber strip over the edge of the body from the inside and at the same time by carefully pulling out the strip from outside with a pair of grips. Then pull off with care the strip by hand all round and remove the rear window.
5. Clean round the edge of the body and remove all the old sealing compound. If the compound has hardened to the body, carefully scrape it off and then wash clean with naphta. Check to make sure that the sheet-metal edge is not deformed in any way. If the sealing compound has not dried on the body edge, the rubber strip can also be washed with naphta. Otherwise fit a new rubber strip.

## FITTING REAR WINDOW

1. Moisten the outer edge of the window and fit on a rubber strip starting at one of the corners. Adjust the strip so that it is fitted properly all round.
2. Fit a cord (preferably terylene  $\varnothing$  4 mm = 5/32") in the groove of the rubber strip for the sheet-metal edge, beginning at the top centre as shown in Fig. 8-38.
3. Place the rear window with rubber strip in position. Wearing working gloves, carefully strike the window a few blows with the palm of the hand to ensure that it makes good contact all round. Carefully pull out the cord from inside. This will cause the rubber strip to "creep" over the sheet-metal edge as shown in Fig. 8-39. It may sometimes be necessary to adjust the position of the window with the palm of the hand. If the cord feels stiff to pull out, there is risk of damage to the strip, and to avoid this, strike the window from inside with the palm of the hand and vice versa if the rubber strip does not "creep" over the edge of the sheet-metal properly.
4. Check that the rubber strip seals well all round. If necessary adjust the position of the rear window both vertically and laterally by striking with the palm of the hand.
5. Seal the joints between the rubber strip and window and rubber strip and sheet metal with sealing compound, using a gun with a flat nylon nozzle. Make sure that the sealing compound fills the joint well. Scrape off surplus compound and wash the window and sheet metal with naphta. Then clean and polish round the window and sheet metal with some suitable polishing agent.
6. Fit the trim moulding in accordance with previous instructions.
7. Connect up the cables to the rear window contacts and re-fit the side panels.



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Fig. 8-39. Fitting windshield and rear window

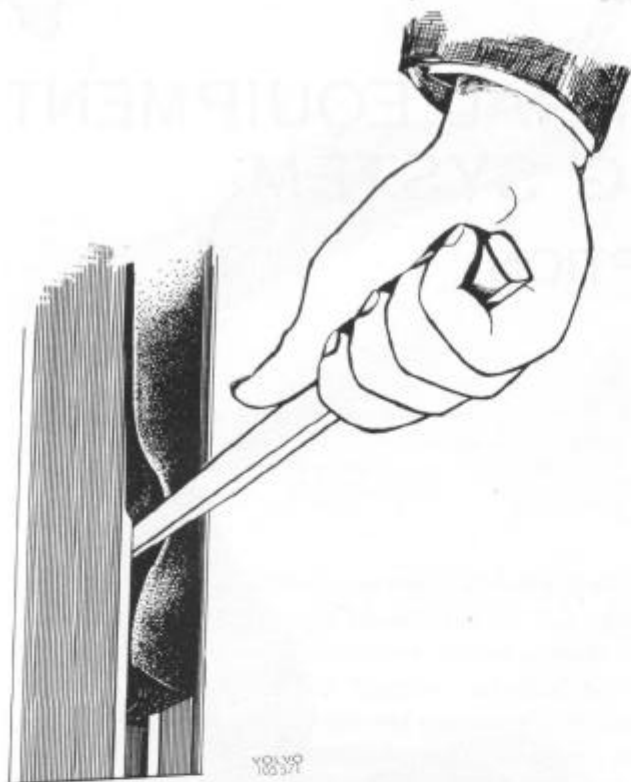


Fig. 8-40. Fitting sealing strip for door

## REAR QUARTER WINDOW

Except for removal and fitting of the electric cables, see corresponding section under "Rear window".

## Sealing strips

### DOOR STRIP

The sealing strips are secured by means of spot-welded fastening rails.

A sealing strip is removed by pulling it outwards, so that the ridge of the strip releases from the rail. When fitting the sealing strip, place one of

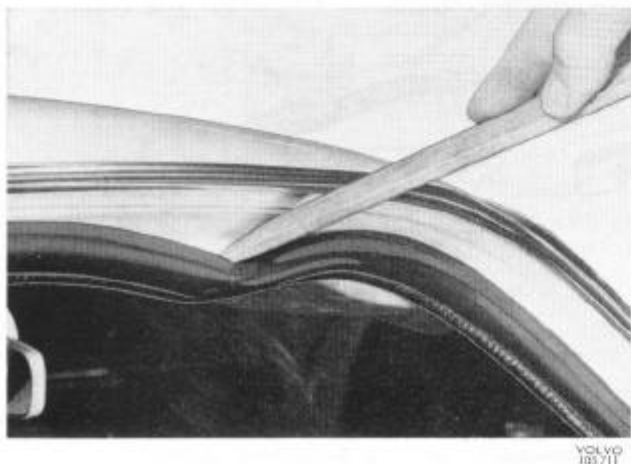


Fig. 8-41. Removing sealing strip for door opening

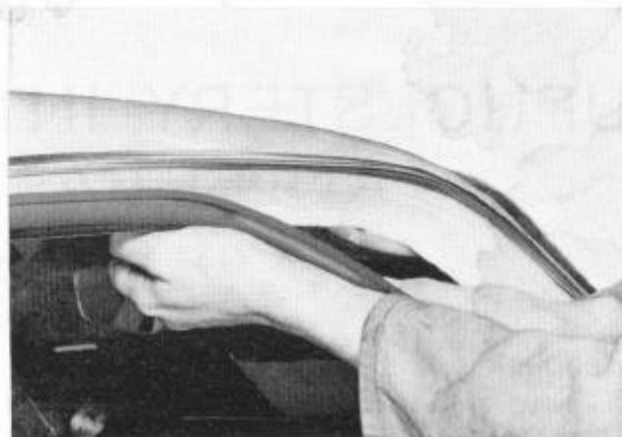


Fig. 8-42. Fitting sealing strip for door opening

the ridges in position in the rail and press down the other ridge into the rail with the help of a wooden putty knife. Move the knife along the rail as shown in Fig. 8-40.

## SEALING STRIP FOR DOOR OPENING

The strip which seals all round the door opening in the body is fixed to the opening's spot-welded flange. To remove the strip, first release it with a wooden putty knife (see Fig. 8-41) and then pull off the strip from the flange.

The strip is fitted by pressing it firmly against the flange with the hand (see Fig. 8-42).

## SEALING STRIP FOR LUGGAGE COMPARTMENT LID

The strip, which is glued in a groove in the body, is suitably replaced in the following way:

1. Remove the old strips and clean the sheet-metal thoroughly from any stripping. Use thinner, gasoline or similar. Take care not to damage the paintwork with the cleaning agent.
2. Clean the new rubber strips with gasoline or methylated spirit.
3. Coat the rubber strips with contact glue and let them dry sufficiently so that they are not sticky and then fit the strips.
4. Coat the surfaces in the groove where the strip is to be fitted with contact glue.
5. Press the non-sticky rubber strips on to the newly applied glue in the groove. Press the strip on firmly so that no air bubbles remain in the glue joint. Let the contact glue dry for about 15 minutes before closing the luggage compartment lid.

# UPHOLSTERY, INTERNAL EQUIPMENT AND HEATING SYSTEM

## DESCRIPTION

### Headlining

The headlining consists of plastic fabric stretched on roof ribs and secured in retainers fitted on the upper limit of the body sides.

### Door upholstery

The door upholstery consists of wood-fibre sheeting lined with non-woven padding and covered with upholstery material. It is secured to the door by means of clips and screws. The front armrests, which are made of moulded plastic, make up a part of the lower door upholstery panelling.

### Covering for firewall and floor

The sides of the firewall are lined with millboard and provided with pockets. The cowl itself is covered with plastic impregnated felt mat. The floor is covered with textile mats.

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Fig. 8-43. Front seat

### Front seats

The front seat (Fig. 8-43) is built up on a tubular frame fitted with rubber webbing for the backrest

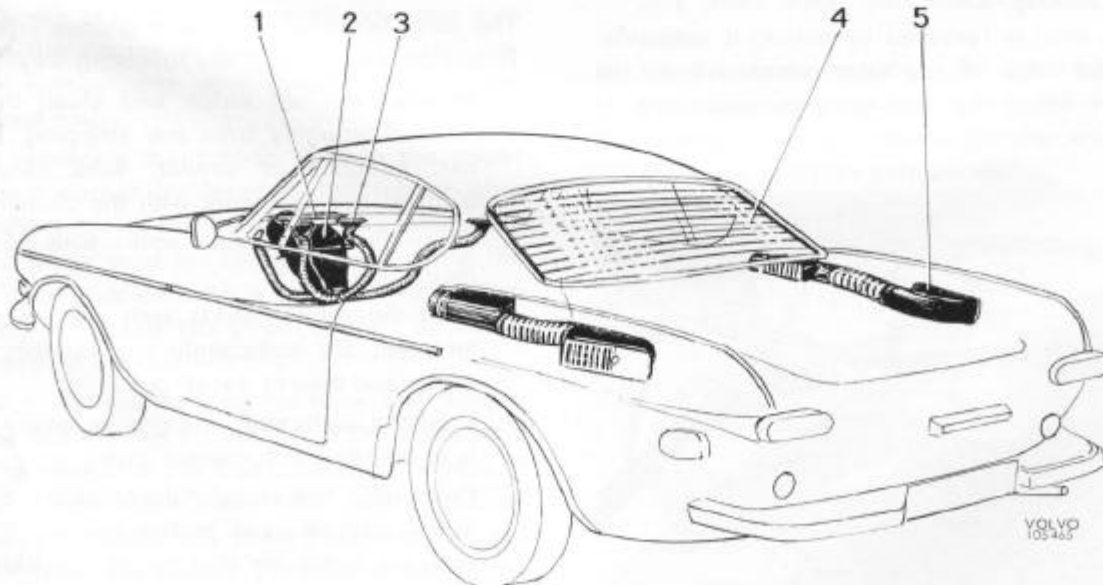
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Fig. 8-44. Heating system

1. Air intake for heater and fresh-air intake  
2. Heater

3. Defroster for windshield  
4. Electrically heated rear window

5. Air extractor vents

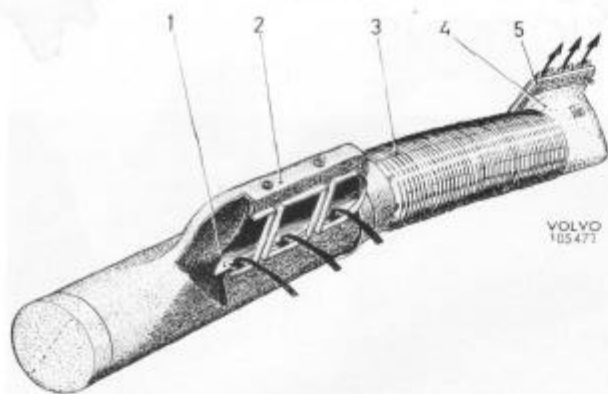


Fig. 8-45. Air extractor vents

- |                                 |                  |
|---------------------------------|------------------|
| 1. Non-return valve             | 4. Outer section |
| 2. Housing for non-return valve | 5. Outer grille  |
| 3. House                        |                  |

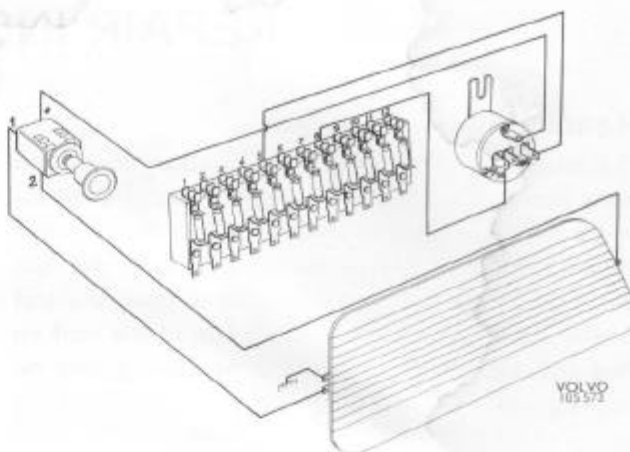


Fig. 8-47. Wiring diagram for electrically heated rear window

and cushion. The stuffing consists of foam plastic covered with leather and plastic fabric. The rake is regulated by means of a lever on the outside of the seat and the lumbar support adjusted by a knob on the side of the backrest nearest the tunnel. The seat cushion is secured to the seat frame by means of snap buttons. The head restraint can be adjusted vertically.

## Rear seat

The rear seat consists of rubber webbing with a loose foam plastic cushion. The backrest can be folded forwards in order to provide more room for luggage.

## Heating system

The heating system is a combined warm air and fresh air system. The incoming air is forced by a fan through the cellular system of the heater unit and out into the car. The fresh air is heated and

directed to the required areas inside the car by means of the various controls.

There are two adjustable intakes for only fresh air located in the upper section of the firewall.

Good compartment ventilation is further improved by two air extractor vents fitted with non-return valves and located in the rear fenders (see Fig. 8-45).

The heated air temperature is regulated by means of a heat control valve. How this valve functions in principle can be seen from Fig. 8-46.

The function of the heat control valve is to keep the temperature of the heated air at a pre-set and constant temperature. This is done by means of the thermostat built into the control valve. The temperature control regulates the supply of heated coolant to the cell system. The heat control valve is connected in series with the cell system so that all coolant passing through the cell system also passes through the control valve. The heated coolant in turn heats the air which is fed through the heater unit by the heater fan or the slipstream. If the coolant temperature increases, the thermostat capillary tube expands and acts on the valve in the control system so that there is a smaller flow of coolant. With less coolant flowing through, the air temperature through the unit will be lower and this in turn affects the capillary tube which contracts and permits more fluid to flow through. This cycle is repeated continuously so that a stable air temperature is achieved.

Also included in the heating system of the car is the electrically heated rear window. The amount of heat is controlled by a switch on the dashboard with which one of two output ranges can be chosen: 150 watts and 40 watts. The control switch is wired across a control relay (see wiring diagram) which cuts off the current when the ignition is switched off.

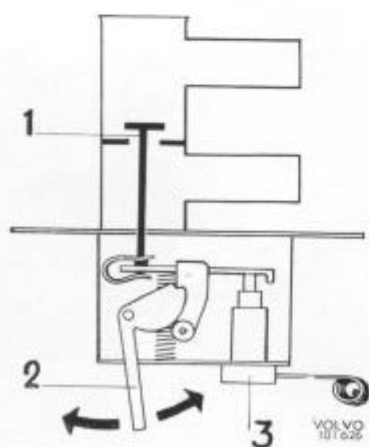


Fig. 8-46. Principle of heat control valve

- |                               |               |
|-------------------------------|---------------|
| 1. Valve                      | 3. Thermostat |
| 2. Lever for heating controls |               |

# REPAIR INSTRUCTIONS

## Headlining

The headlining (Fig. 8-48) is stretched on a wooden fibre frame and is provided with a number of stretchers which keep the headlining at full stretch. When removing, first release the holder for the sun visor. With a suitable tool bend down the end of the stretchers all round the edge of the roof so that the clips release and the headlining can be taken down.

## Removing front seats

Release the snap buttons holding the cushion to the frame and remove the cushion. Hook loose the return spring of the seat and unscrew the four bolts securing the slide rails to the floor.

## Instrument panel

The instrument panel is screwed to the body. The screws are accessible from underneath partly at the sides and partly at the edge of the wind-shield.

## Heating system

### REMOVING FAN MOTOR

The fan motor and fan are replaced as one unit.

1. Remove the valve cover and place a rag over the valve mechanism.
2. Unscrew the pressure regulator bracket from the heater. Let it remain hanging in the hoses.
3. Disconnect the cables from the fan motor terminals.
4. Unscrew the fan motor from the heater.



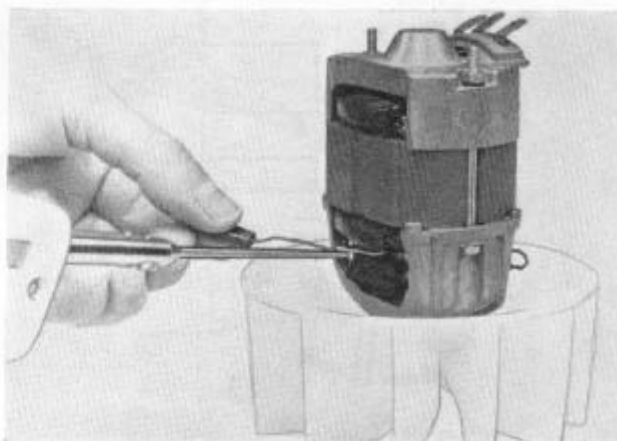
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Fig. 8-49. Taking out fan motor

5. Pull out the motor as far as possible from the heater and unscrew the motor mounting plate. The fan motor can then be taken out of the heater (see Fig. 8-49).

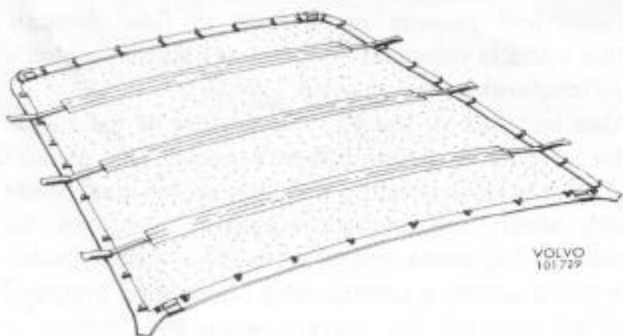
### REPLACING FAN MOTOR BRUSHES

1. Remove the fan motor according to the instructions in previous section.
2. Lift the spring-loaded retainers and unhook the brushes.
3. Disconnect the old brushes by heating loose the retainers.
4. Solder on new brushes (see Fig. 8-50).



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Fig. 8-50. Soldering brushes



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Fig. 8-48. Headlining

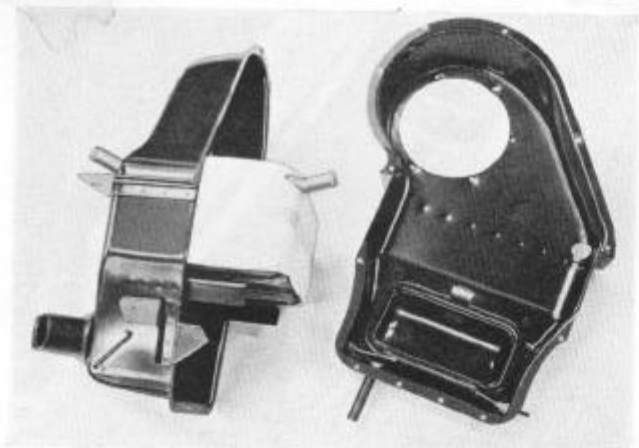


Fig. 8-51. Heater halves separated

### REMOVING HEATER

The heater is removed as a complete unit according to the following (applies also to repairs to or replacement of cell system).

1. Drain the coolant.
2. Disconnect the hoses at the cell system and the heater control valve, also the cables from the fan motor.
3. Disconnect the heater fresh-air intake.
4. Unscrew the pressure regulator bracket and allow the regulator to remain hanging in the hoses.
5. Unscrew the heater's four attaching nuts.
6. Remove the defroster hoses and disconnect the heater control valve and the wires from the controls.
7. Lift out the heater with the heater control valve.

### DISMANTLING HEATER

1. Unscrew the fan motor.
2. Unscrew the screws holding together the heater halves and separate them (Fig. 8-51).
3. Lift out the cell system (Fig. 8-52).

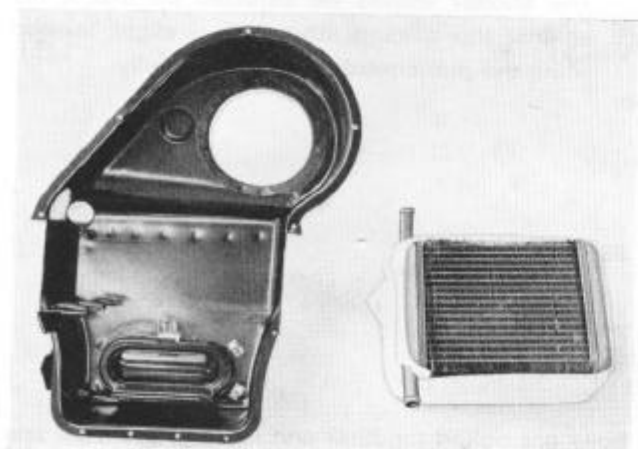


Fig. 8-52. Cell system taken out

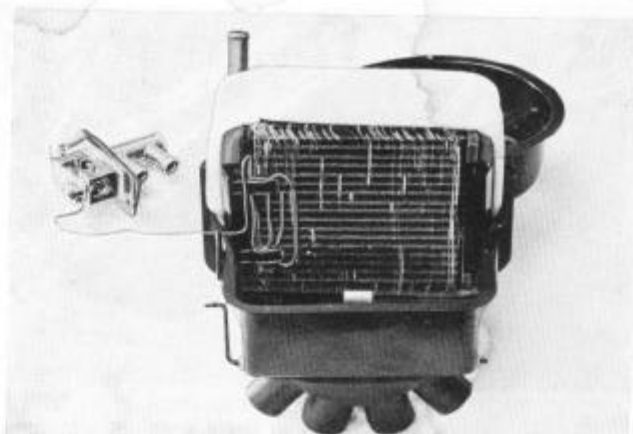


Fig. 8-53. Placing of thermostat capillary tube

### CHECKING CELL SYSTEM

Clean the outside of the cell system and lower it under pressure, but max. 1.2 kp/cm<sup>2</sup> (17 p.s.i.), into heated water, temperature approx. 70—80°C (158—176°F). The cell system seams are tin-soldered. The connection pipes are hard-soldered. After any leakage point has been discovered, clean the point in question very thoroughly so that the new solder can fill the gap properly.

After completing the sealing, re-check the cell system for leakage in accordance with the above testing procedure.

### ASSEMBLING HEATER

1. Check the shutters to make sure they do not jam or are loose.
2. Install the thermostat capillary tube, see Fig. 8-53.
3. Where needed, apply new sealing compound. Place it in the joint between both the halves of the heater before screwing them together (see Fig. 8-54).
4. Screw on the fan motor.



Fig. 8-54. Sealing heater joint

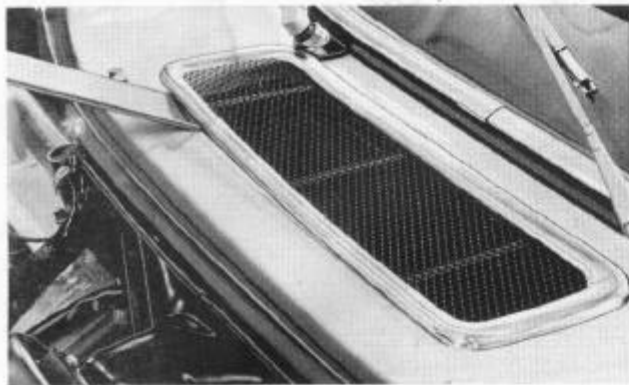


Fig. 8-55. Removing air intake grille

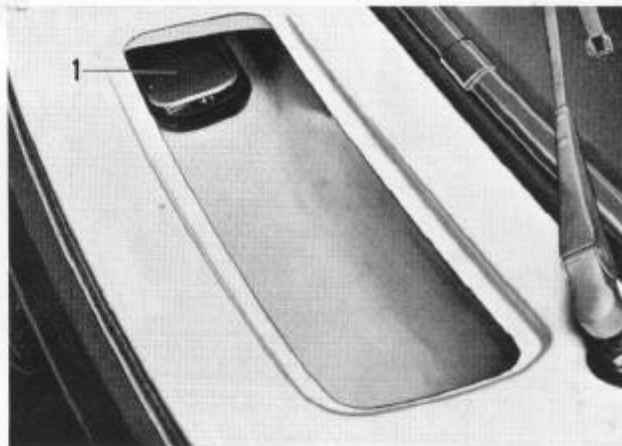


Fig. 8-56. Air intake

1. Opening for fresh-air intake

### FITTING HEATER

Make sure that all damaged hoses and packings are replaced. Check their locations after installation. Handle the heat control valve and its copper tubing with care.

1. Insert the heater fresh-air duct, and screw it on securely.
2. Screw on the heater.
3. Fit the heat control valve and the hoses to the defroster and cell system.
4. Install the wires from the heat control and fit the connections to the fan motor.

After fitting, check the shutters, controls and the fan motor function. Make sure that the heater drain hose is open and located in the proper position. Top up with coolant if necessary.

Start the engine, increase the speed rapidly a sufficient number of times in order to ensure that the system is vented and top up to the required level with coolant. Repeat this procedure until the cooling system is completely vented.

### ADJUSTING HEATING CONTROLS

Move the controls up to the closed position. Then check the location of the shutter and the heat con-

trol valve. If these are not in the fully closed position, they should be adjusted. To do this, slacken the wire sleeves at the respective attaching points on the heater or heat control valve. After adjustment has been carried out, move the heating controls up and down several times and check the function.

### REPLACING VENTILATION DEVICE AND CONTROLS

1. Remove the fresh-air grille with the help of a wooden putty knife (see Fig. 8-55).
2. Remove the splash guard insert clamps and lift up the insert. Make sure that no clamps fall down into the heater.
3. Unscrew the nut holding the pull control and press out the ventilation device in the direction, underneath — upwards.
4. Check before fitting that the shutter does not stick and that the sealing strip is fully satisfactory and properly installed.

The shutter should be adjusted so that it fits against the sealing strip with a slight tension when the pull control is pushed in fully.

## GROUP 86

# BUMPERS

Both rear and front bumpers consist of three sections, the outer ones of which are faced with rubber strips bolted to the bumper. The bumper sec-

tions are bolted together and fitted to the front and rear side-members respectively, each bumper by means of four support irons.



