



**MONTERINGSANVISNING · INSTALLATION INSTRUCTIONS
MONTAGEANLEITUNG · INSTRUCTIONS DE MONTAGE**

Saab 9-5 B205, B235, B308

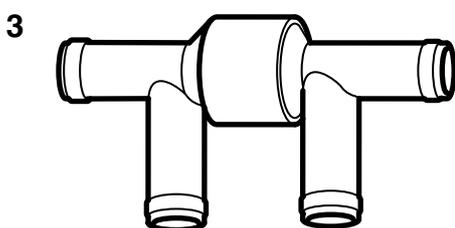
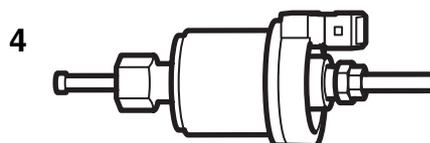
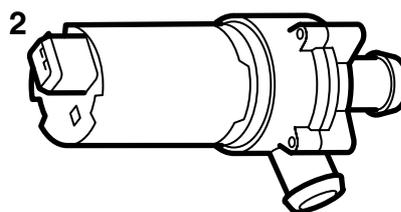
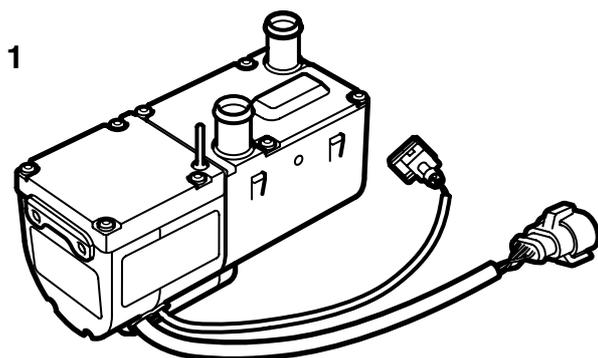
Engine/cabin heater

Accessories Part No.	Group	Date	Instruction Part No.	Replaces
400 106 639 400 130 217	9:87-7	Nov 05	47 29 653	47 29 653 Sep 04

Important

Always check which national requirements and regulations apply for fitting a fuel driven engine/passenger compartment heater. Ensure that all requirements are complied with.

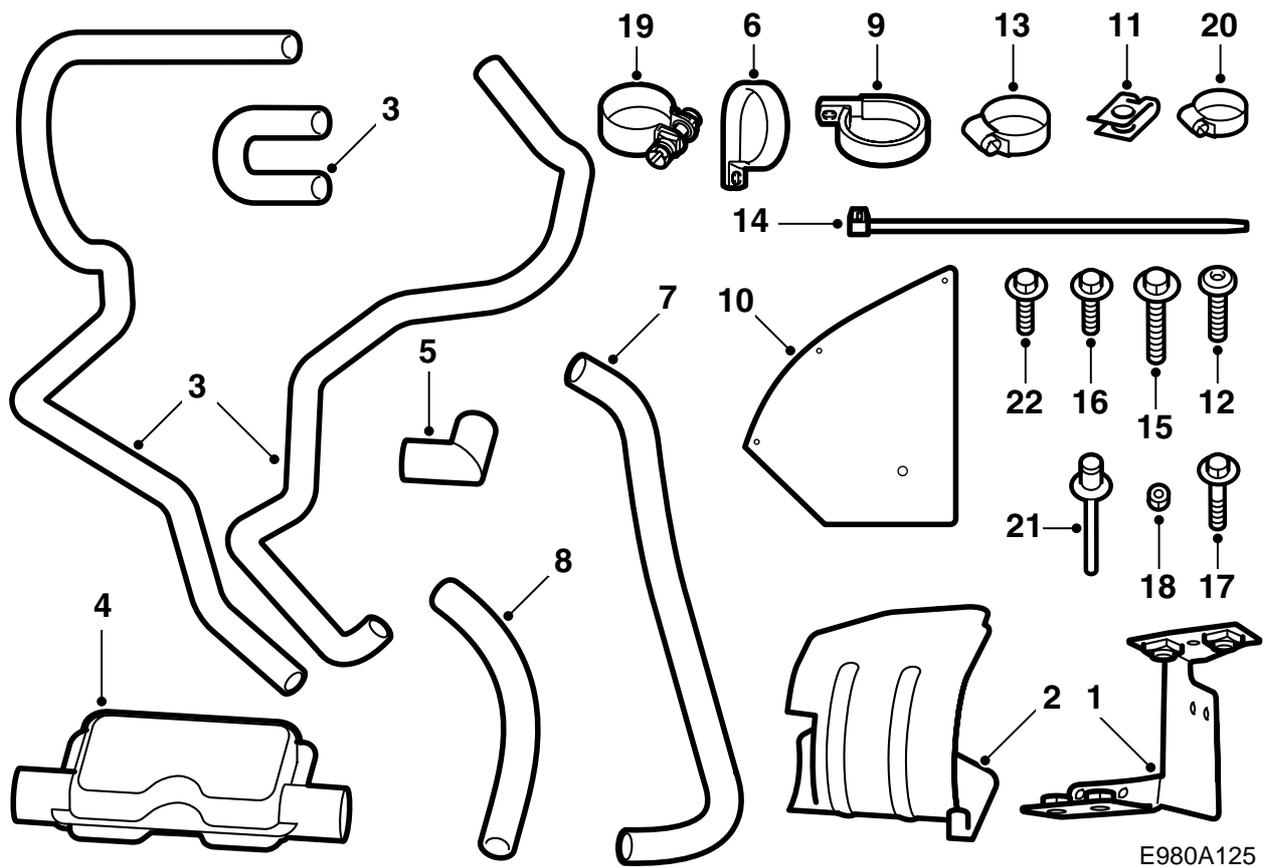
From and including M04 the installation of the engine/passenger compartment heater fulfils the requirements in 2001/56/EC (Heating systems).



E980A222

Heater kit 400 106 621 contains:

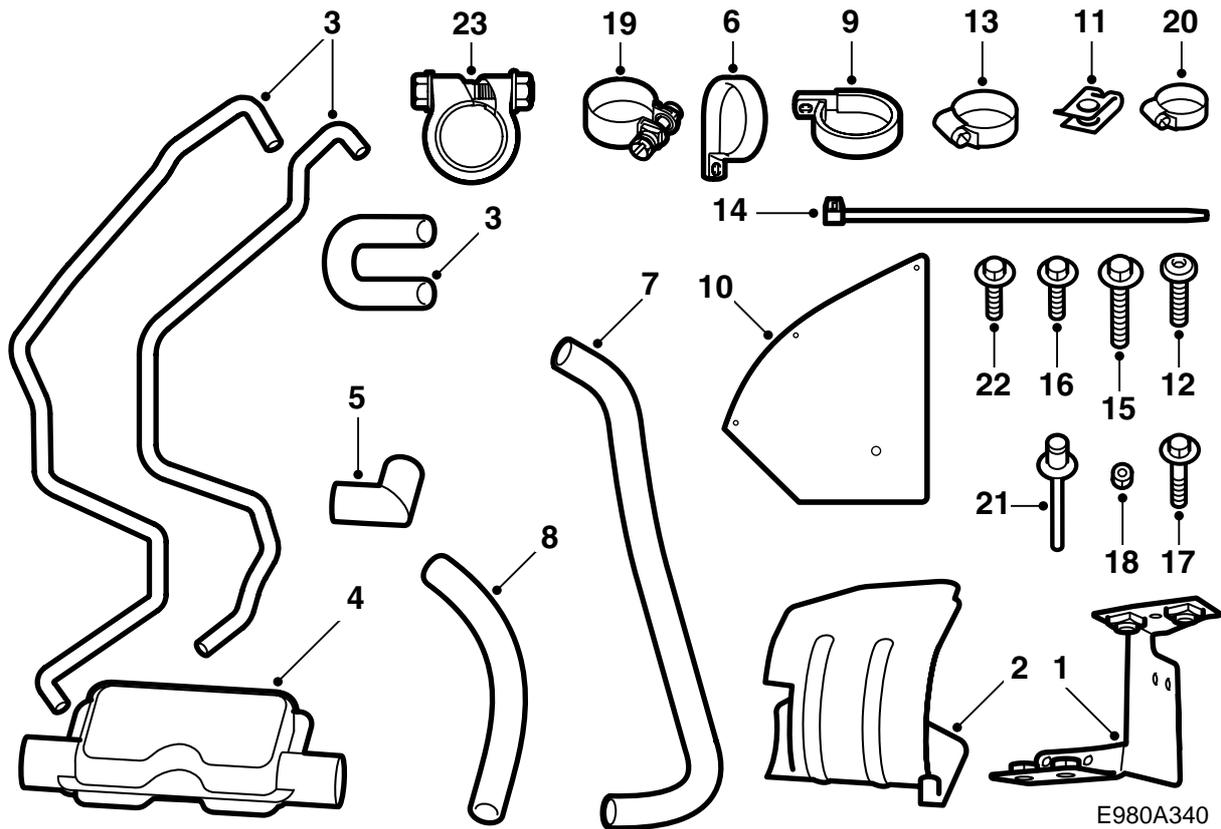
- 1 Petrol heater
- 2 Circulation pump
- 3 Non-return valve
- 4 Fuel Pump
- 5 Label



E980A125

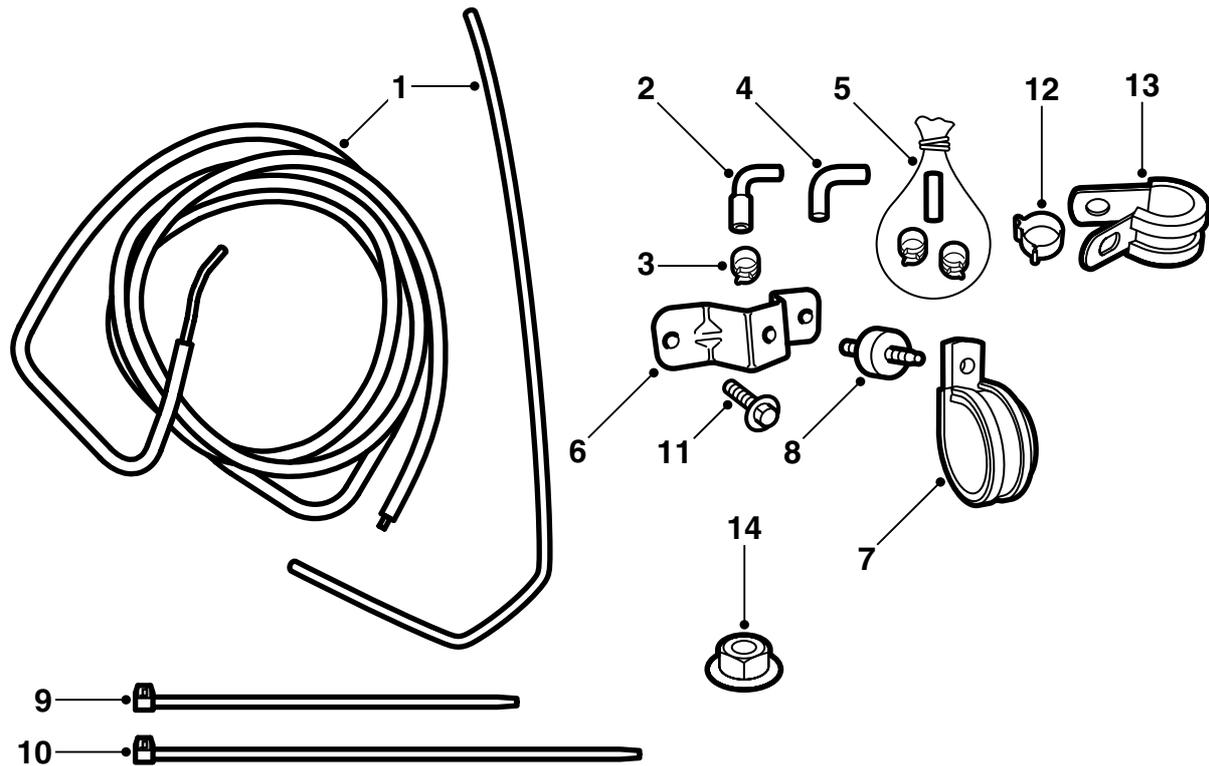
Mounting kit 400 106 639 contains:

- 1 Bracket
- 2 Holder
- 3 Coolant hoses (x3)
- 4 Silencer
- 5 Exhaust pipe 90°
- 6 Clip (exhaust hose) (x2)
- 7 Exhaust hose
- 8 Intake hose
- 9 Holder, coolant pump
- 10 Splash guard
- 11 Clips (x4)
- 12 Screw (x3)
- 13 Hose clip (x8)
- 14 Cable tie (x2)
- 15 Screw, M6
- 16 Screw (x9)
- 17 Screw M8 (x4)
- 18 Nut M6
- 19 Clamp (x3) (exhaust pipe)
- 20 Clamp (intake)
- 21 Blind rivet (x2)
- 22 Screw M6 (x2)



Mounting kit 400 130 217 contains:

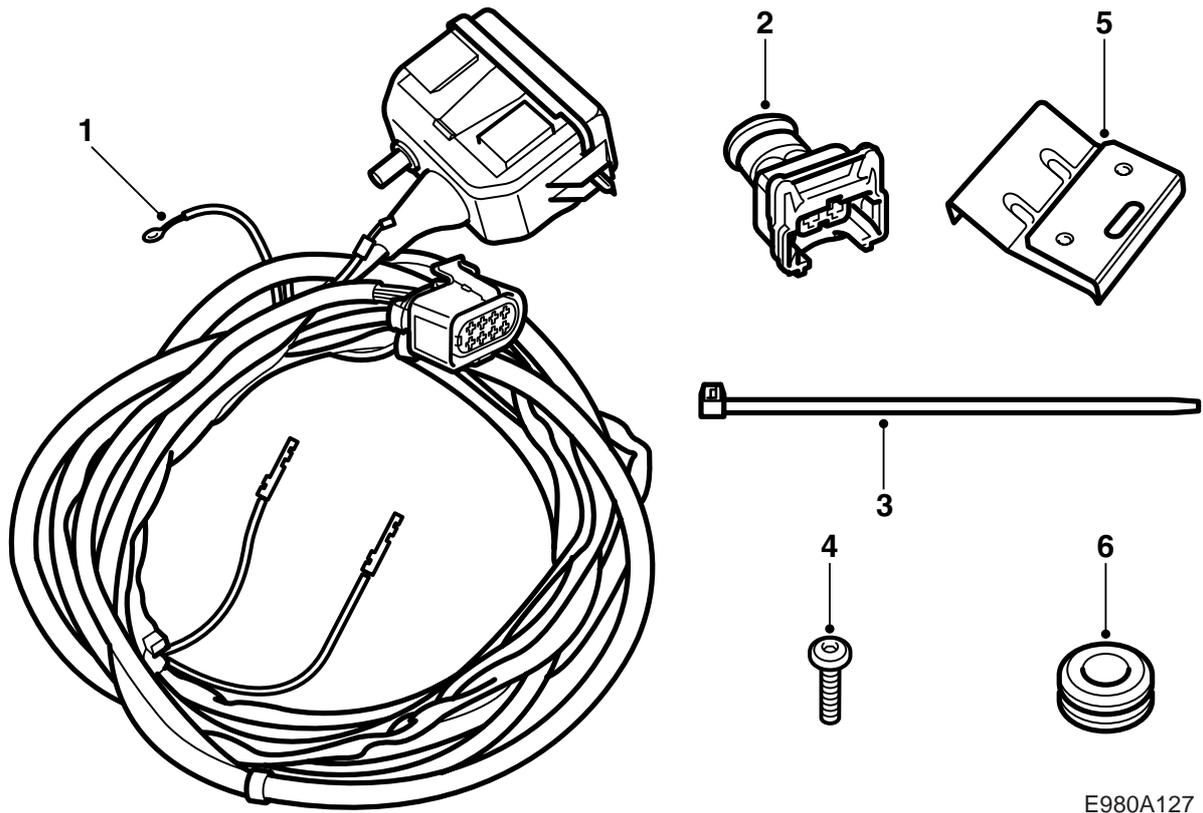
- 1 Bracket
- 2 Holder
- 3 Coolant hoses (x3)
- 4 Silencer
- 5 Exhaust pipe 90°
- 6 Clip (exhaust hose) (x2)
- 7 Exhaust hose
- 8 Intake hose
- 9 Holder, coolant pump
- 10 Splash guard
- 11 Clips (x4)
- 12 Screw (x3)
- 13 Hose clip (x8)
- 14 Cable tie (x2)
- 15 Screw, M6
- 16 Screw (x9)
- 17 Screw M8 (x4)
- 18 Nut M6
- 19 Clamp (exhaust pipe)
- 20 Clamp (intake)
- 21 Blind rivet (x2)
- 22 Screw M6 (x2)
- 23 Clamp (x2) (exhaust pipe)



E980A341

Fuel connection kit 400 126 363 contains:

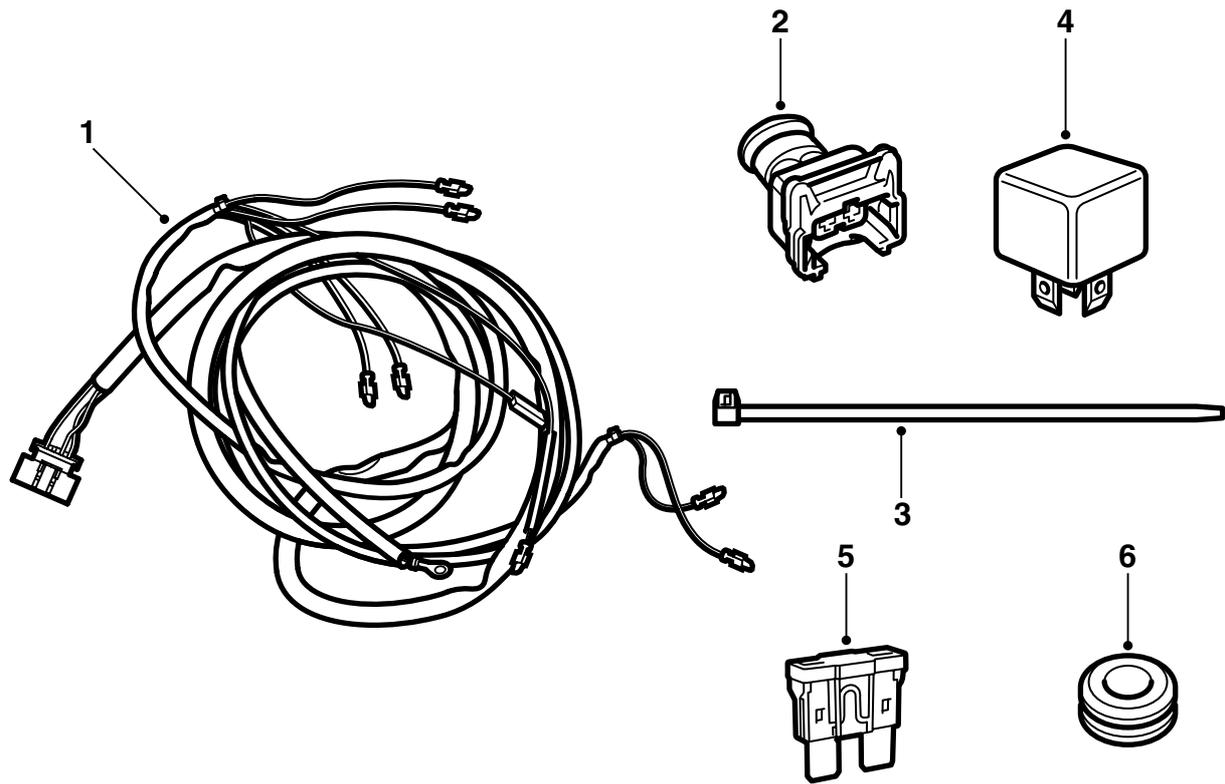
- 1 Fuel line (x2)
- 2 Junction hose, angled (x2)
- 3 Clamp (x2)
- 4 Junction hose, angled
- 5 Fuel connection kit (tank)
- 6 Bracket, fuel pump
- 7 Clamp
- 8 Rubber spacer
- 9 Cable tie (x10)
- 10 Cable tie
- 11 Screw (x2)
- 12 Hose clip (x4)
- 13 Clamp (x3)
- 14 Nut (x3)



E980A127

Electric connection kit 400 106 654 contains:

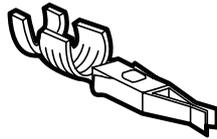
- 1 Wiring harness
- 2 Connector 2-pin
- 3 Cable tie (x11)
- 4 Screw (x2)
- 5 Bracket
- 6 Grommet (x2)



E980A342

Electric connection kit 400 130 225 contains:

- 1 Wiring harness
- 2 Connector 2-pin
- 3 Cable tie (x11)
- 4 Relay
- 5 Fuse 15A
- 6 Grommet (x2)



E980A494

Additional kit 32 000 515 contains:
Cable terminal

Safety regulations

 **WARNING**

Read through the entire installation instructions before beginning work.

Work when installing the heater involves interference with the fuel system. Please observe the following points in connection with assembly:

- Provide good ventilation. If approved fuel fume extractors are available, then they should be used.
 - Use protective gloves! Prolonged contact with fuel can cause skin irritation.
 - Keep a class BE fire extinguisher near at hand. Be mindful of the danger of sparks occurring when making and breaking electric circuits, in the event of a short circuit, etc.
 - Smoking is prohibited.
-
- Assembly of the heater should be performed by qualified staff and in accordance with the installation instructions.

Important

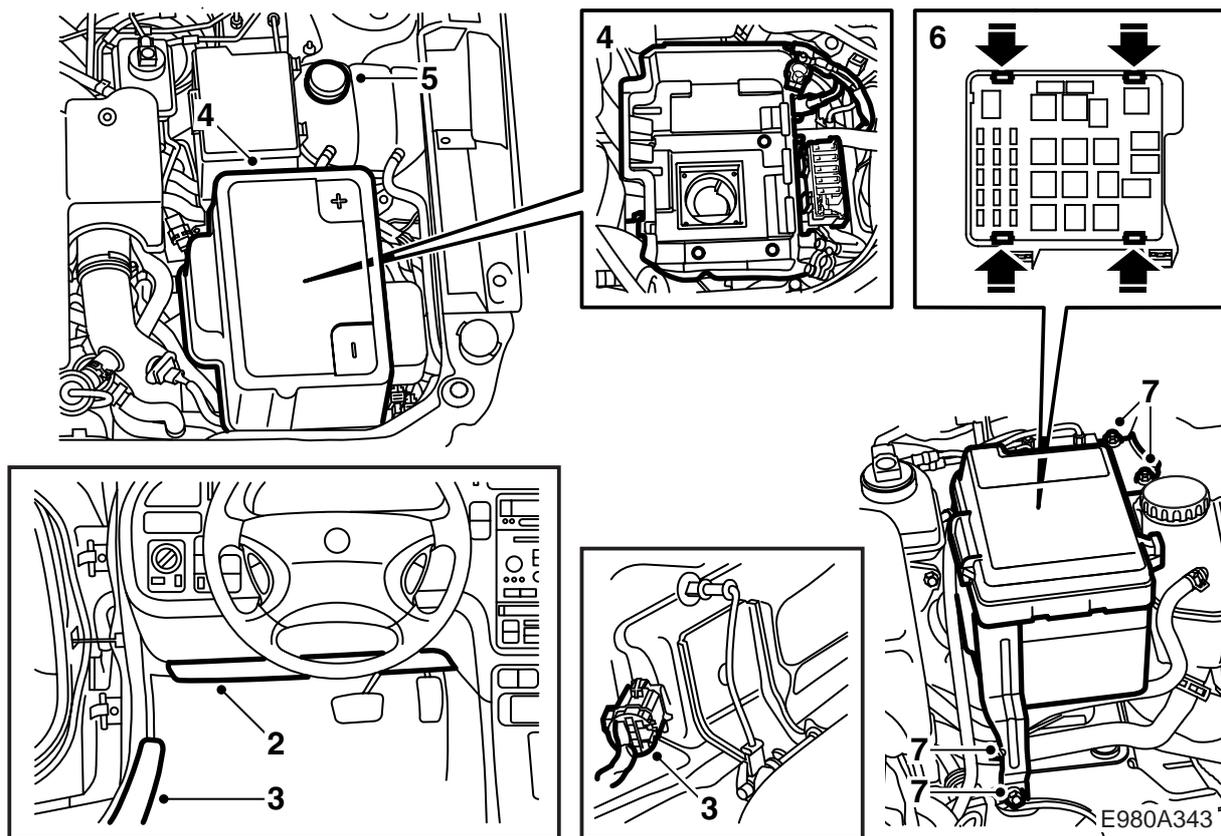
All ends must meet completely when joining fuel lines in this kit.

- The heater should never be used in an enclosed space, like the garage or workshop, without the exhaust ventilation being used.
- Always turn off the heater in service stations and similar premises.

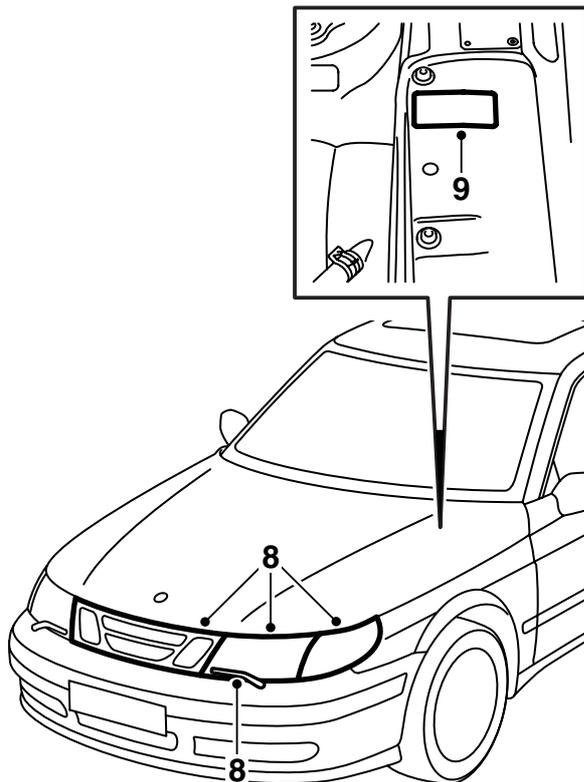
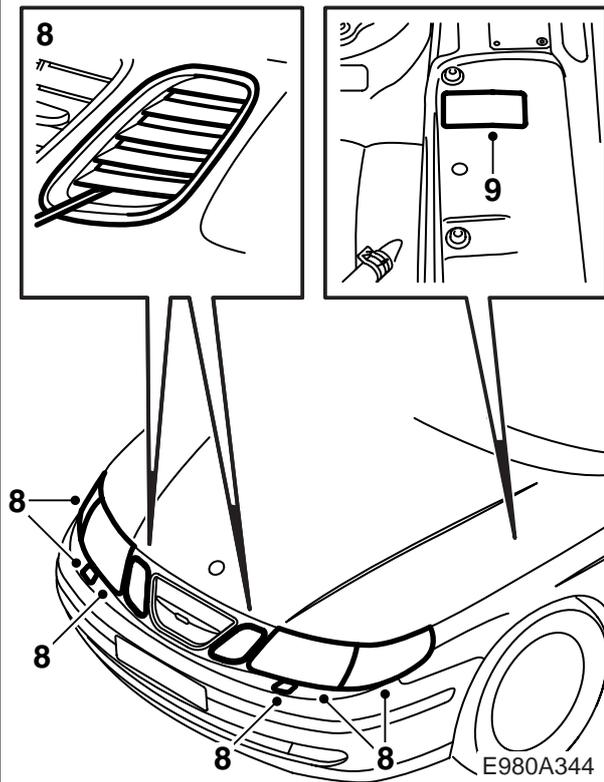
Important

When the heater is being used as a parking heater, it will consume some of the battery's capacity. This is especially evident in cold weather when the battery is already under hard strain. It is therefore recommended that with ambient temperatures down to -20° , to drive the car for at least the same length of time as the heater has been running. At lower temperatures we recommend not using the heater for longer than 30 minutes. The battery should also be checked at regular intervals and recharged as necessary.

The heater should be activated at least once a month, even during the summer. This will prevent fuel left in the lines from evaporating and leaving deposits that can cause operational problems.



- 1 Check the radio code and make a note of it if the car is equipped with a radio other than Saab Audio System.
- 2 **LHD:** Remove the sound baffle under the left-hand side of the dashboard including the data link connector and floor lighting where appropriate.
RHD: Remove the glove box.
- 3 Remove the left-hand sill protection strip, hinge forward the back seat cushions, free the connector housing of the left-hand back-seat cushion heater (if fitted) and lift out the left-hand section of the back seat. Fold back the mat and remove the tank access cover.
- 4 Remove the battery cover, battery cables and the battery.
M02-: Remove the battery tray.
- 5 Undo and push aside the expansion tank.
- 6 **M02-:** Open the lid of the electrical centre and lift up the relay mounting plate by pushing in the four retaining catches
- 7 **M02-:** Detach and lift up the engine bay electrical centre. Remove the cable tie from the electrical centre's mounting bracket and lift away the electrical centre.

-MY01**MY02-**

8 **-M01:** Remove the grille, headlamp surrounds, indicator lights and the headlamps. Undo the left-hand headlamp wiper motor.

Important

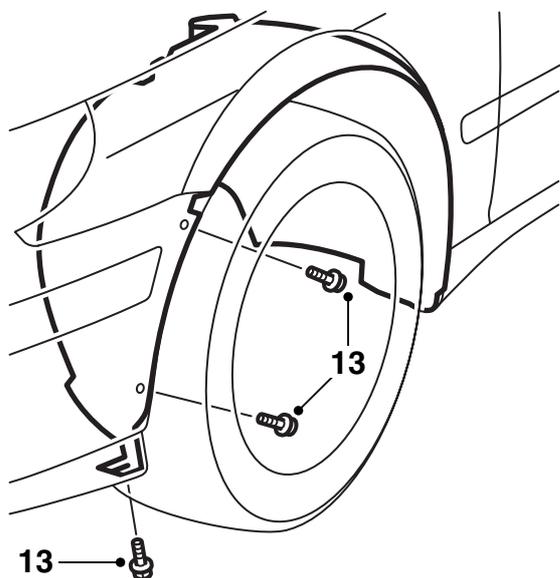
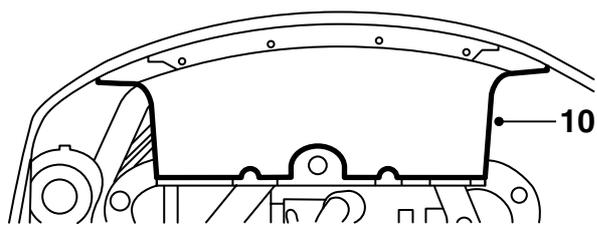
If a spacer washer is fitted between the headlamp and the body frame it must be retained for refitting when the headlamp is refitted.

M02-05: Remove both the outer grille segments, indicator lights, headlamps and the headlamp washer covers.

9 Using white spirit, clean an area on the left-hand front wing, level with the cooling system's expansion tank. Peel off the extra label from the heater and affix it to the cleaned area.

Important

Under no circumstances may this label conceal any part of another label or plate.



10 Raise the car.

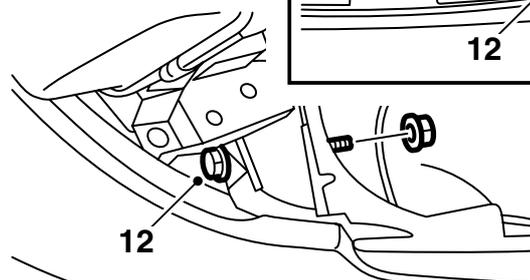
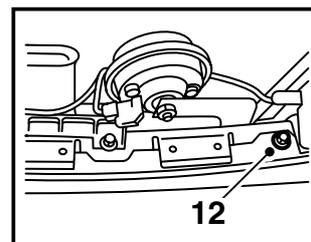
⚠ WARNING

Locate the right-hand lifting point as far out as possible in order to allow room for mounting the fuel pump.

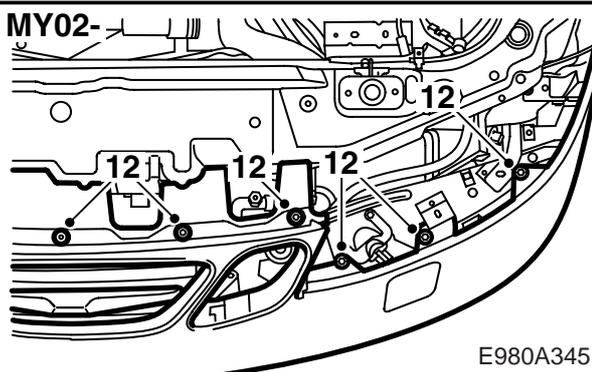
Remove the front spoiler shield.

- 11 Where fitted, remove the engine-block heater plug from the bumper.
- 12 **-M01:** Remove the 4 screws which fix the bumper to the bumper beam and the nuts which hold the bumper to the front wing.
- M02-05:** Remove the 6 screws which fix the bumper to the bumper beam and the 5 clips above the grille.
- 13 **-M05:** Remove the 6 screws (3 on each side) where the bumper is attached to the wing liners.
- 14 **M98:** Where fog lights or a temperature sensor have been fitted disconnect their respective cables.
- M99-01:** Disconnect the bumper wiring harness connector. The connector is located under the left-hand headlamp.
- M02-:** Disconnect the bumper wiring harness connector. The connector is located under the right-hand headlamp.
- 15 **-M05:** First loosen the bumper from the front wings, on both sides, and then pull the bumper forwards.

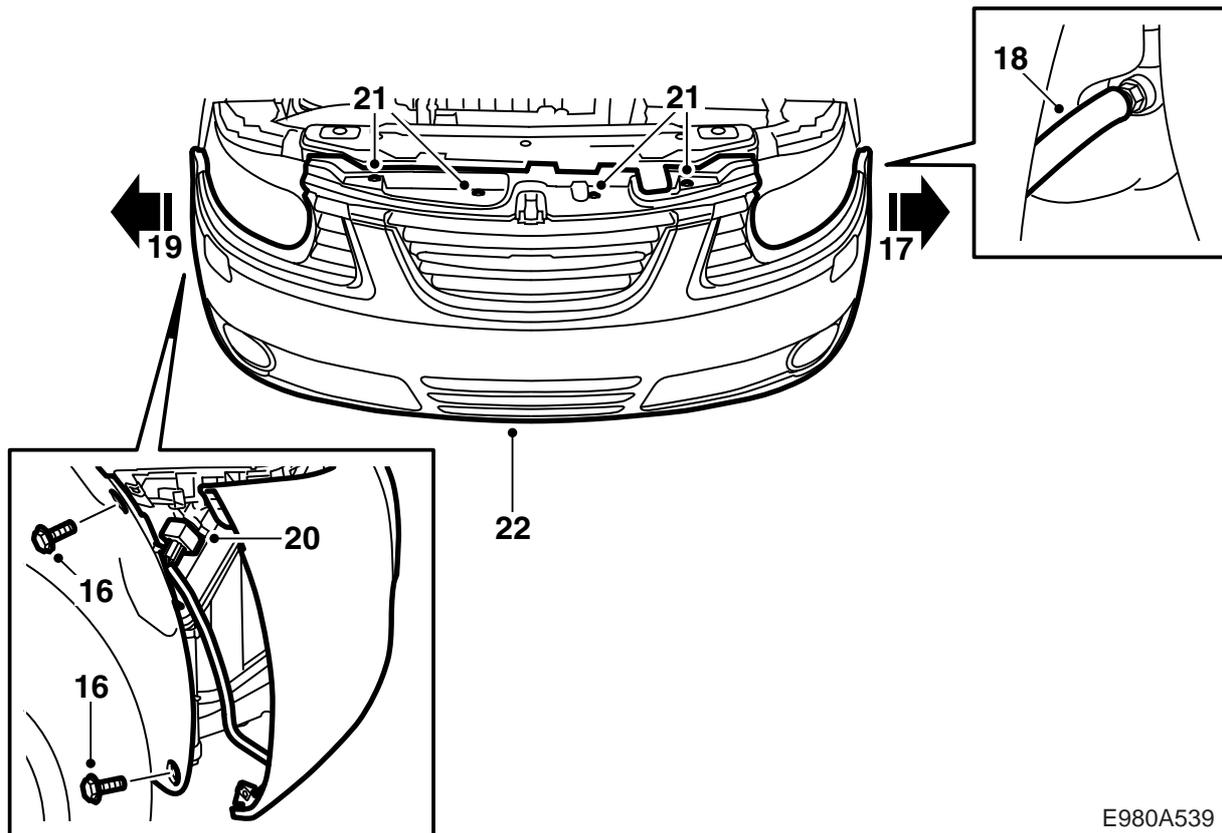
-MY01



MY02-

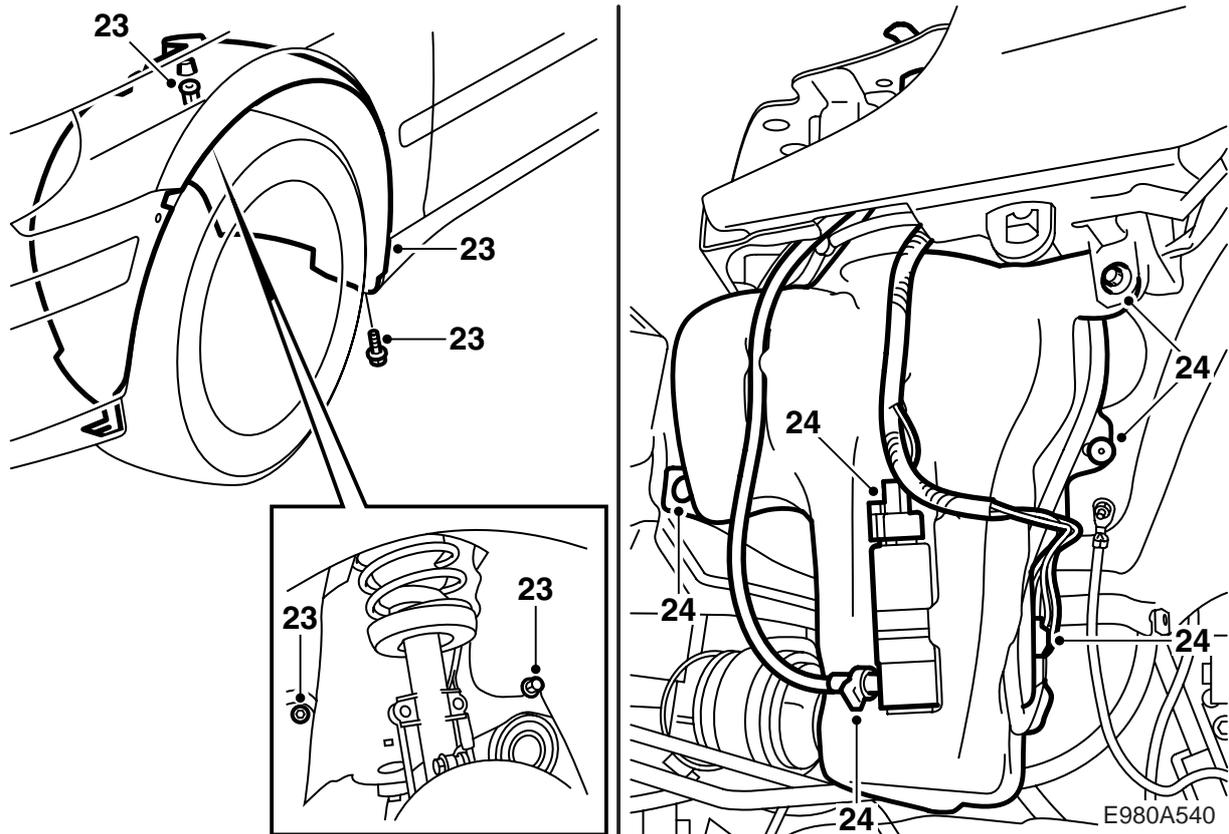


E980A345



E980A539

- 16 **M06-**: Remove the bumper shell screws to the wing liner on both sides.
- 17 **M06-**: Detach the shell from the side bracket on the left-hand side. Detach the hook using a screwdriver.
- 18 **M06-, cars with headlamp washers:** Position a collection container under the car. Remove the hose's quick-release coupling for the headlamp washers. Plug the hole for the washer fluid reservoir connection.
- 19 **M06-**: Detach the shell from the side bracket on the right-hand side. Detach the hook using a screwdriver.
- 20 **M06-**: Separate the connector for the front bumper harness.
- 21 **M06-**: Remove the bumper shell's upper clips. Remove the screws.
- 22 **M06-**: With help from an assistant, lift off the bumper shell.



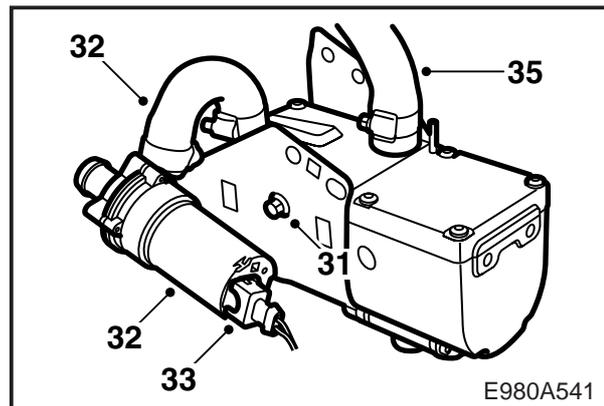
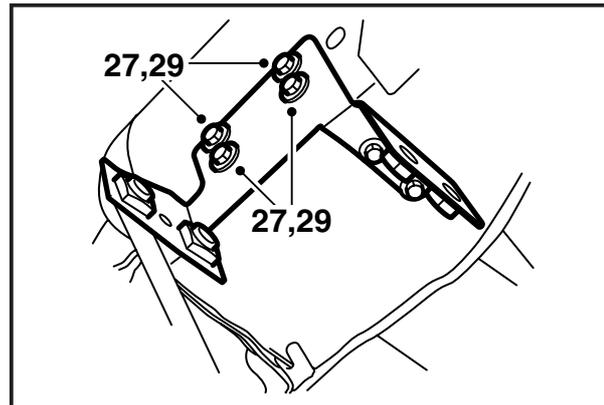
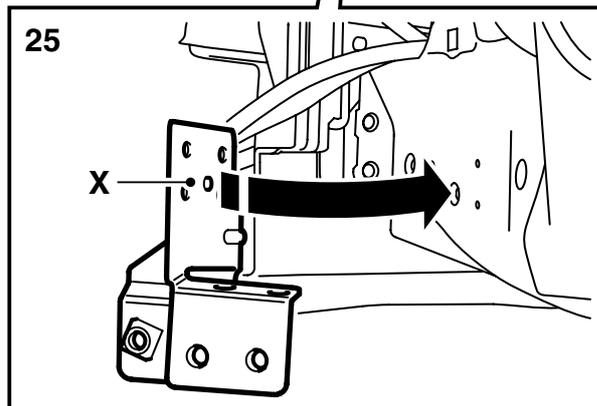
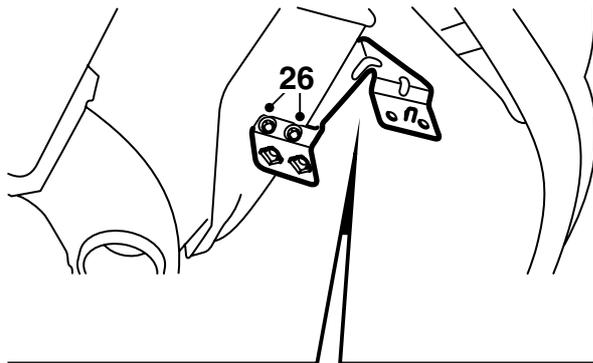
23 Remove the left-hand front wheel and the left-hand wing liner.

24 Undo the connections to the pump and the level sensor. Empty the washer fluid reservoir.

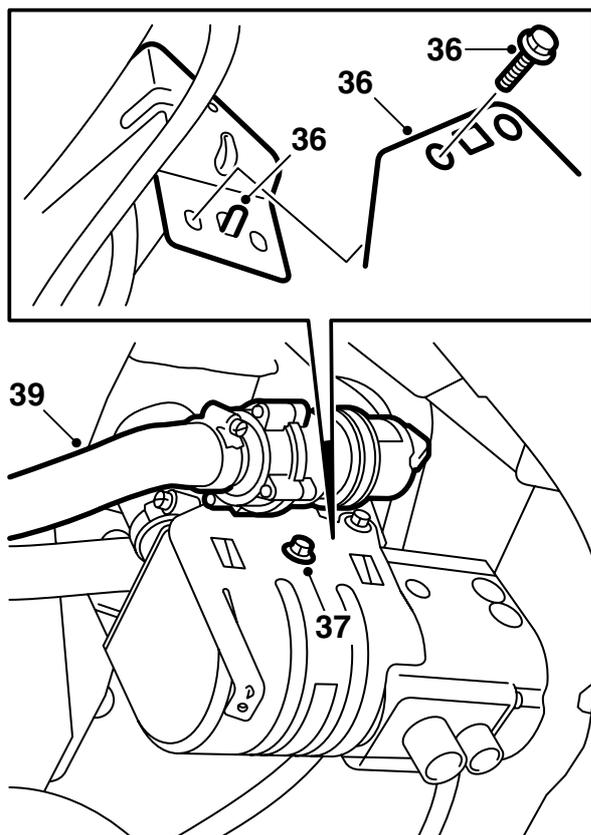
If the reservoir is fixed with blind rivets they must be drilled out. Punch out the core pin of each rivet and drill out, using first a 4 mm bit and then a 5 mm bit. Remove the washer fluid reservoir.

Important

This method **must** be employed to prevent damaging the surrounding components.



- 25 Hold the bracket in front of the press fold on the chassis plate, see illustration, so that the protrusion (X) on the bracket fits into the depression in the chassis plate. Mark the position of the two holes on the underside.
- 26 Drill two 3 mm holes on the underside of the chassis frame and screw the bracket into position.
- 27 Drill four 3 mm holes from the side. Remove the bracket.
- 28 Deburr the holes and remove loose drillings and flakes of paint. Clean with Teroson FL Cleaner. Apply Standox 1K Primer Filler. Apply finish paint.
- 29 Install the bracket.
- 30 Position the heater in the holder so that the retaining lugs engage properly.
- 31 Fit the two screws that secure the heater in the holder.
- 32 Connect the circulation pump to the heater inlet with the hose and hose clips, see illustration.
The pump is mounted on the bracket at a later stage in the assembly procedure.
- 33 Connect the two pin connector from the heater to the circulation pump.
- 34 Thread the pressure hose (respectively 46 72 317 (-M01), 53 23 118 (M02-)) in through the engine bay. It should be manoeuvred, with the slightly wider end first, down between the radiator and the structural member and in front of the sub-frame's forward mounting point.
- 35 Attach the slightly wider end of the pressure hose to the heater outlet, see illustration.



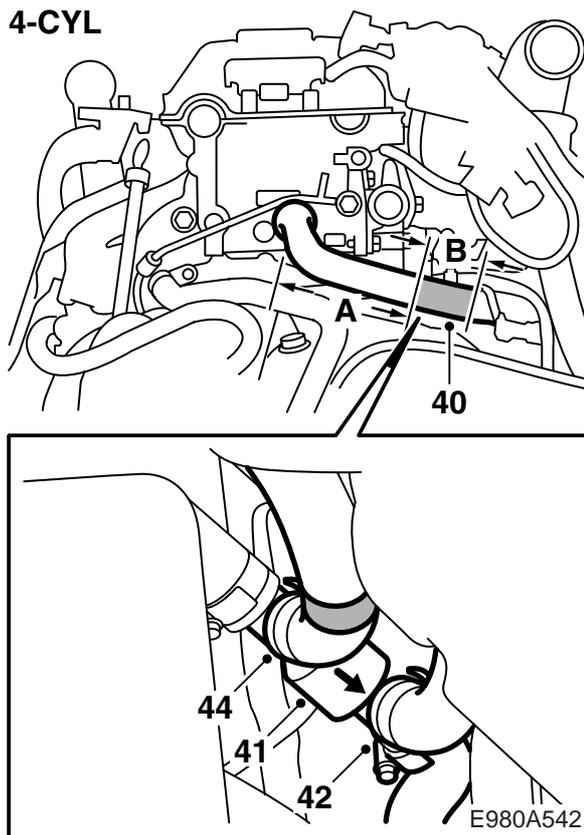
- 36 Hang up the holder, with the heater, on the hook on the front edge of the bracket and screw into position.
- 37 Tighten the 2 screws which retain the heater in the holder.
- 38 Loosen the cap on the expansion tank to release any pressure in it and then tighten it down again.

⚠ WARNING

Take care if the engine is hot as the coolant will also be very hot. There is also a danger of getting burnt on the exhaust manifold.

- 39 **4-CYL:** Mark the ends of the suction hose (respectively 45 77 995 (-M01), 53 23 100 (M02-)) with tape or paint. Then manoeuvre it, with the slightly wider end first, from the engine bay towards the heater and fit it on to the circulation pump's inlet, see illustration.
- 40 **4-CYL:** Clamp the coolant hose which leads from the engine to the cabin heat exchanger, use tongs 30 07 739 (2), cut and shorten the hose as shown in the illustration.
- A 140 mm (-M01)
220 mm (M02-)
- B 90 mm (-M01)
70 mm (M02-)

4-CYL



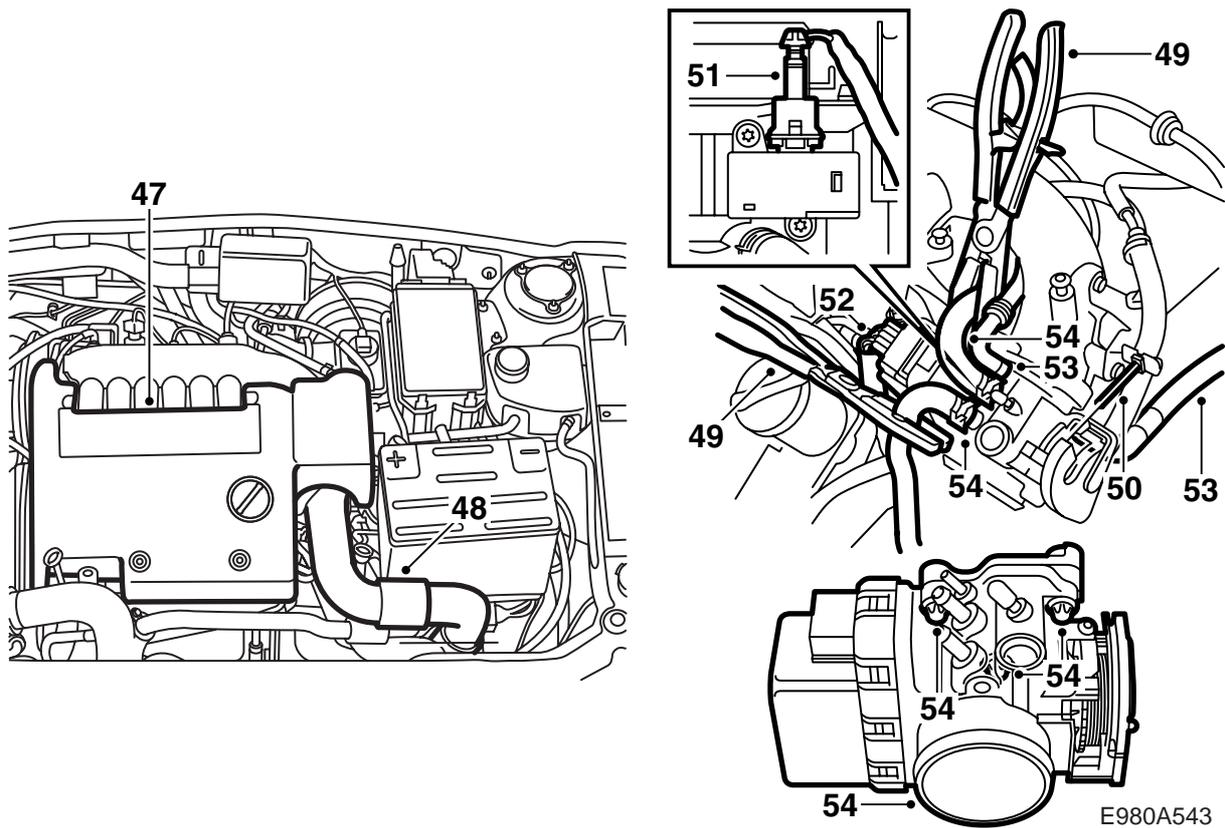
- 41 **4-CYL:** Fit the non-return valve, with 2 hose clips, into the cut hose.

Important

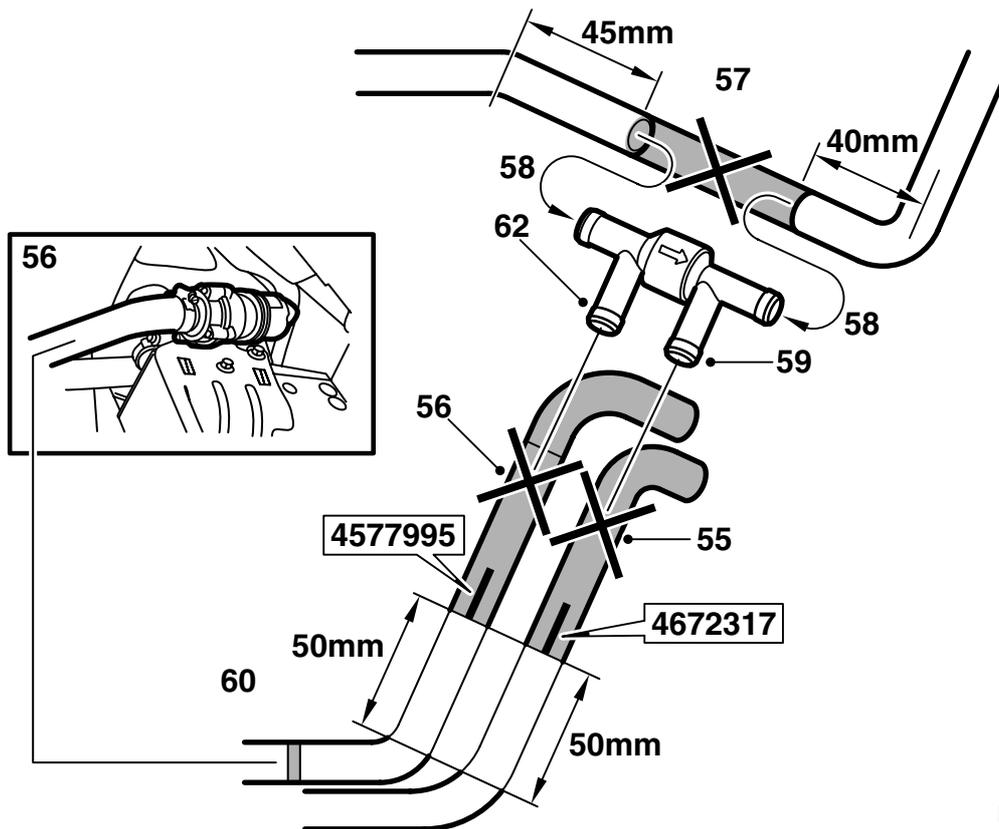
The direction of flow in the non-return valve should be towards the heater unit, as shown in the illustration.

The connections to the heater should be pointing upwards.

- 42 **4-CYL:** Connect the unmarked hose (pressure hose) from the heater to the non-return valve.
- 43 **4-CYL:** Place a funnel in the marked hose (suction hose), hold up the hoses and fill the heating system with coolant. Fill also the whole hose.
- 44 **4-CYL:** Remove the funnel, pinch off the hose and fit it to the non-return valve with a hose clip.
- 45 **4-CYL:** Remove the tongs, top up with coolant and check for leaks with a pressure tester.
- 46 **4-CYL:** Check that the hoses are not kinked or twisted. They must not be touching hot or sharp components. If necessary, fasten the hoses with the cable ties supplied.



- 47 **V6:** Remove the engine cover.
- 48 **V6:** Undo and set aside the turbo pressure pipe from the throttle housing.
- 49 **V6:** Clamp the 2 coolant hoses leading to the throttle housing.
- 50 **V6:** Detach the throttle cable from the throttle arm.
- 51 **V6:** Unplug the limp-home solenoid connector.
- 52 **V6:** Unplug the throttle housing's 10 pin connector.
- 53 **V6:** Detach the vacuum hose and the connection to the venting line under the limp-home solenoid.
- 54 **V6:** Undo the 3 throttle housing mounting screws and remove the throttle housing.



E980A544

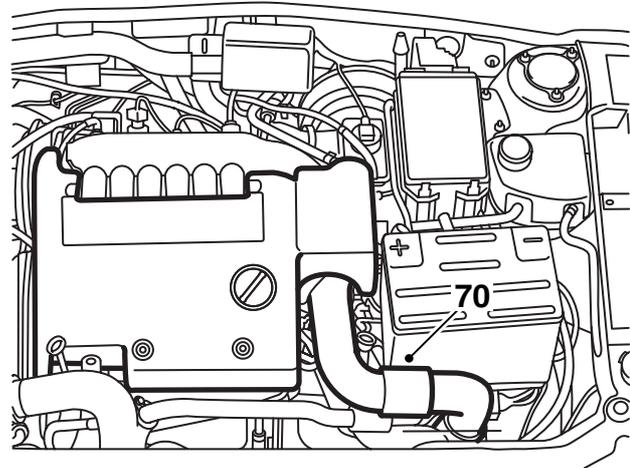
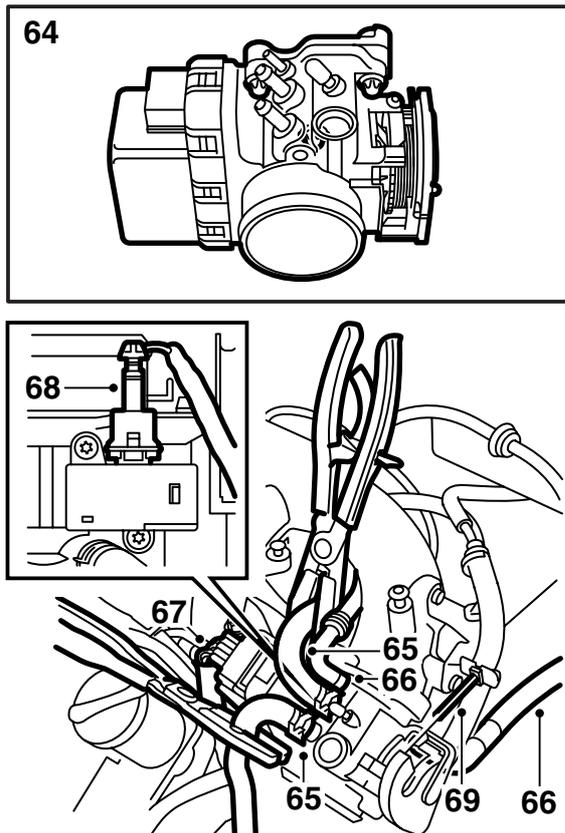
- 55 **V6:** Cut the pressure hose (46 72 317) which is fixed at the other end to the heater outlet. Cut as shown in the illustration.
- 56 **V6:** Mark the suction hose (45 77 995) with tape or paint. Cut the end of the hose as illustrated. Then manoeuvre the slightly wider, uncut end, from the engine bay towards the heater and connect to the inlet of the circulation pump.
- 57 **V6:** Measure and mark out the section to be removed from the hose between the engine and the cabin heat exchanger, see illustration. Clamp the coolant hose with two tongs (30 07 739) and cut the hose.
- 58 **V6:** Fit the non-return valve into the cut hose with 2 hose clips.
- 59 **V6:** Remove the funnel. Pinch off the hose and attach it to the non-return valve with a hose clip, see illustration.
- 60 **V6:** Remove the tongs, top up with coolant and check the system for leaks with a pressure tester.
- 61 **V6:** Check that the hoses are not kinked or twisted. They must not be touching hot or sharp components. If necessary, fasten the hoses with the cable ties supplied.

Important

The direction of flow in the non-return valve should be towards the heater unit, as shown in the illustration.

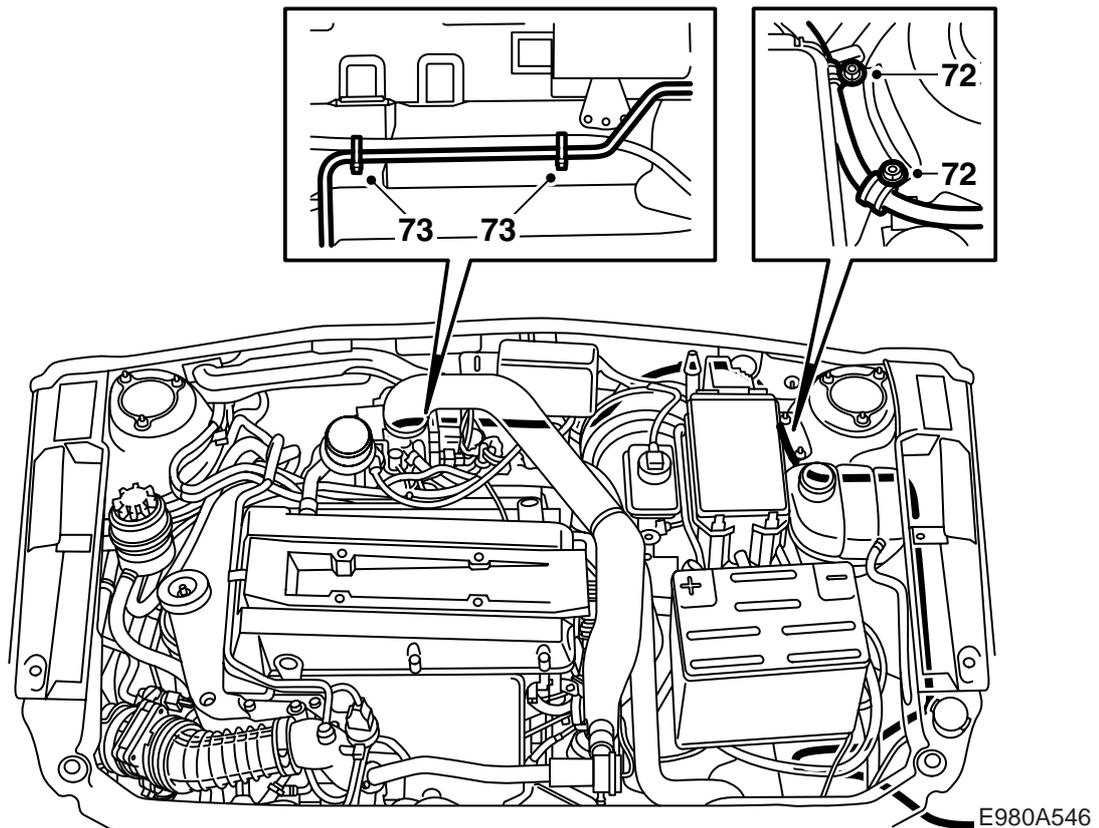
The heater connections must be aligned as in the illustration.

- 59 **V6:** Connect the unmarked hose (pressure hose) from the heater to the non-return valve, see illustration.
- 60 **V6:** Place a funnel in the marked hose (suction hose), hold up the hoses and fill the heating system with coolant. Fill also the whole hose.



E980A545

- 64 **V6:** Position the throttle housing and screw it down with the 3 mounting screws. If necessary use a new gasket and smear the surfaces with a thin film of vaseline.
- 65 **V6:** Connect the 2 coolant hoses to the throttle housing.
- 66 **V6:** Fit the vacuum hose and the connection to the venting line under the limp-home solenoid.
- 67 **V6:** Connect the 10 pin connector to the throttle housing.
- 68 **V6:** Connect the limp-home solenoid's connector. Remove the tongs from the coolant hoses.
- 69 **V6:** Attach the throttle cable.
- 70 **V6:** Connect the turbo pressure pipe to the throttle housing.



71 Route the long petrol hose inside the engine bay as follows:

⚠ WARNING

Take care to prevent the fuel hose from kinking and sustaining damage.

LHD -M01: From the battery tray - beside the expansion tank (the bend in the hose shall be located in front of the suspension strut turret) - under the brake servo - over the brake pipe to the ABS unit - over the hoses to the cabin heat exchanger and then alongside the rear brake pipes. At the boundary between the bulkhead and the floor pan the fuel hose is routed towards the ordinary fuel pipes.

LHD M02-: From the battery tray - beside the expansion tank (the bend in the hose shall be located in front of the suspension strut turret) - between the brake servo and the bulkhead - over the brake pipe - over the hoses to the cabin heat exchanger and then alongside the rear brake pipes. At the boundary between the bulkhead and the floor pan the fuel hose is routed towards the ordinary fuel pipes.

RHD -M01: From the battery tray - beside the expansion tank (the bend in the hose shall be located in front of the suspension strut turret) - over the brake pipe to the ABS unit - over the hoses to the cabin heat exchanger - between the rear engine mount and the steering-box valve-block and behind the power-steering pipe and the anti-roll bar. At the boundary between the bulkhead and the floor pan the fuel hose is routed towards the ordinary fuel pipes.

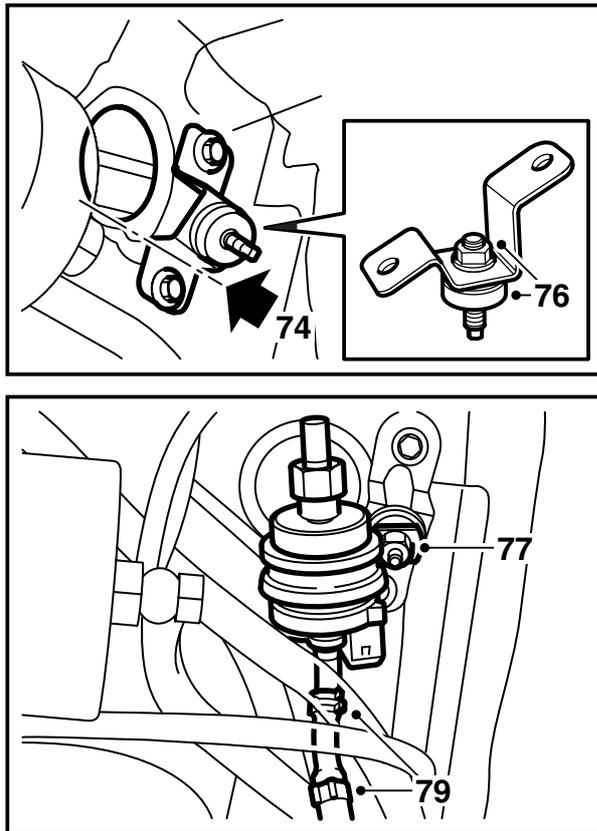
RHD M02-: From the battery tray - beside the expansion tank (the bend in the hose shall be located in front of the suspension strut turret) - over the brake pipe - over the hoses to the cabin heat exchanger - between the rear engine mount and the steering-box valve-block and behind the power steering pipe and the anti-roll bar. At the boundary between the bulkhead and the floor pan the fuel hose is routed towards the ordinary fuel pipes.

72 Fasten the hose to the suspension strut turret with two of the rubber covered clips.

73 Fasten the hose to the wiring harness on the bulkhead partition using cable ties.

Important

Do not tighten the cable ties just yet in order to facilitate adjustment of the fuel hose.



- 74 Raise the car, remove the fuel filter cover and position the fuel pump bracket in front of the fuel filter.

Important

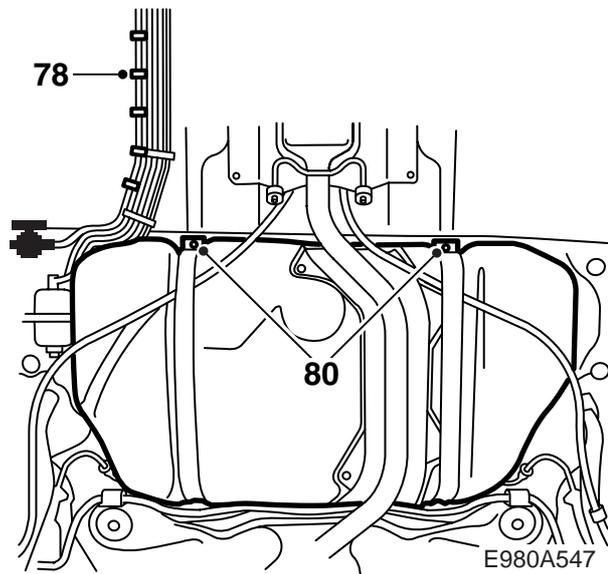
The bracket is angled. When correctly positioned the corner of the bend shall align with the edge of the hole as illustrated. Furthermore the bulge shall point to the right-hand side of the car.

Drill two 3 mm holes in the floor using the bracket as a template.

WARNING

Be careful not to damage the existing fuel lines in the car.

- 75 Deburr the holes and remove loose drillings, swarf and flakes of paint. Clean with Teroson FL Cleaner. Apply Standox 1K Primer Filler. Apply finishing paint. Apply Terotex HV 400 or Mercasol 1 cavity sealant on internal surfaces.
- 76 Mount the rubber spacer onto the bracket and screw the bracket into position.
- 77 Fit the holder on the fuel pump and mount it on the bracket with the delivery side (the smaller connection) facing the left-hand side of the car, see illustration. The bracket must be mounted so that the pump's delivery connection (the smaller one) points upwards.

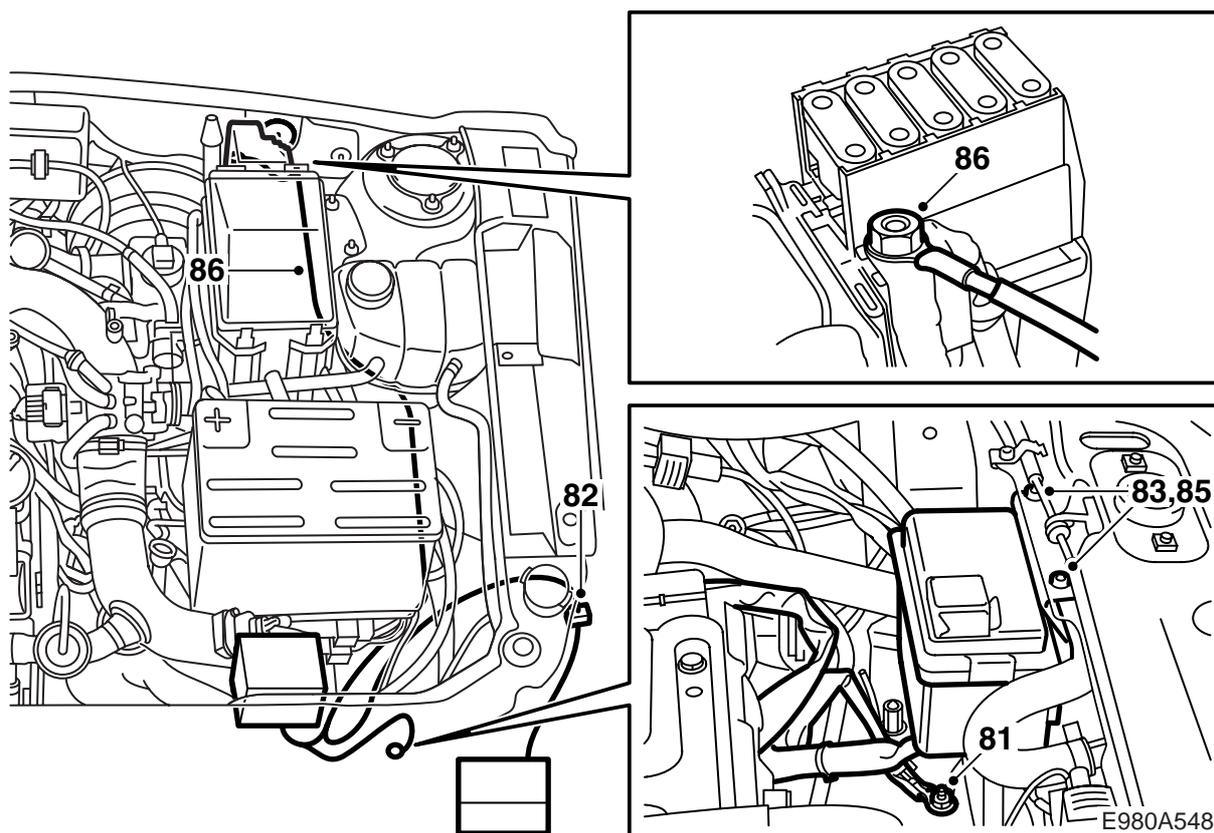


- 78 Using 8 cable ties (do not tighten excessively), fasten the fuel line under the car, parallel with the existing fuel pipes, see illustration.
- 79 Connect the angled line with junction hose and two clips to the delivery side of the fuel pump.

Important

If necessary, adjust the pump's position so that the connector is clear of surrounding components. Check also that there are no kinks in the fuel hoses.

- 80 Lower the fuel tank by slackening the four screws about 15 turns. This will lower the tank by about 15 mm.



- 81 Lower the car and connect the black cable with the ring cable-shoe to the earth point G2 in front of the battery tray (-M01) or respectively earth point G30 (not the earth point where the battery minus cable is connected) to the left of the battery tray (M02-).
- 82 Manoeuvre the 8 pin plug down between the body frame and the left-hand front wing and connect to the heater.

Important

The 8-pin heater connector is sealed with adhesive tape. The tape must be removed before connecting it but the pins in the connector must not be touched under any circumstances.

Fasten as necessary so that the cable does not lie close to hot or sharp components.

- 83 **-M01:** Position the bracket for the heater's electrical centre on the radiator beam central with the bonnet catch, the electrical centre must not rest against the radiator hose, and drill two 5.5 mm holes using the bracket as a template.

Important

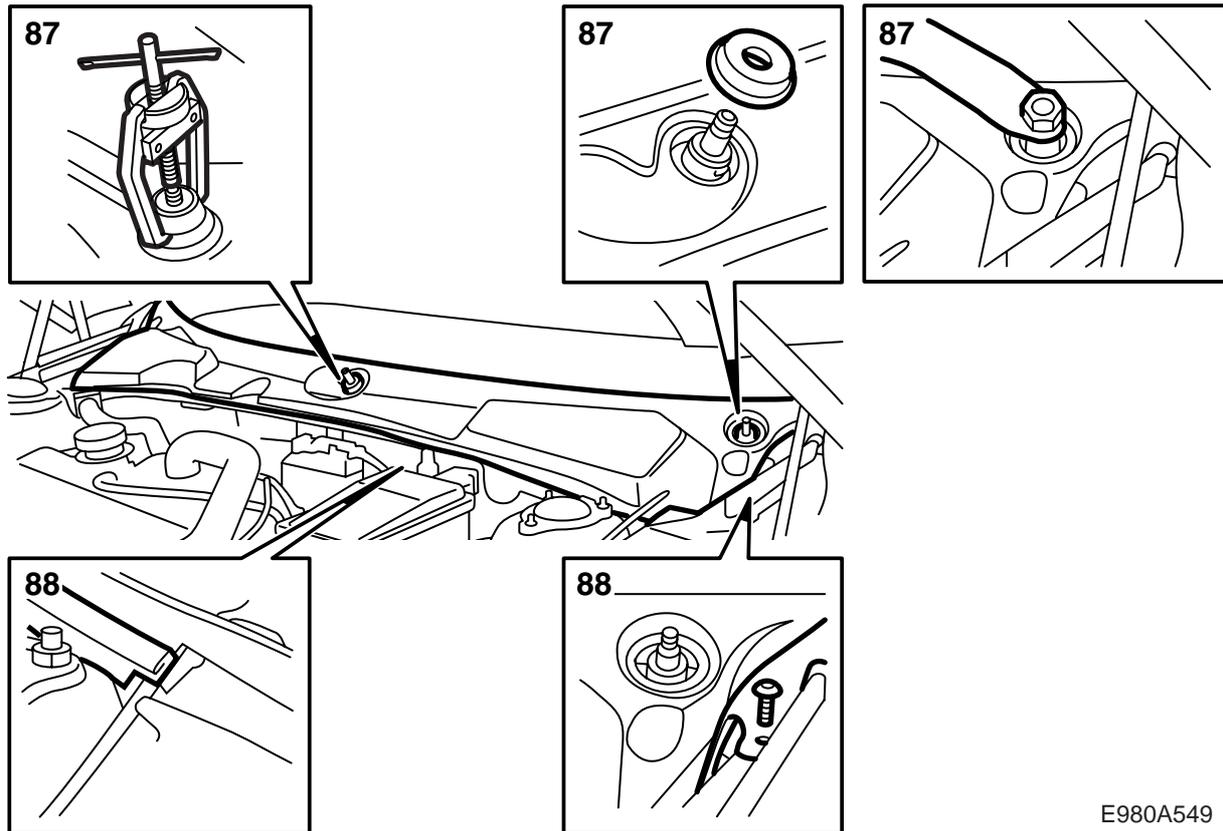
Be careful not to damage the bonnet catch cable or the vent pipe from the radiator to the expansion tank.

- 84 **-M01:** Deburr the holes and remove loose swarf and flakes of paint. Clean with Teroson FL Cleaner. Apply Standox 1K Primer Filler. Apply finish paint.

- 85 **-M01:** Hold the bracket under the radiator beam, screw in place and mount the electrical centre.

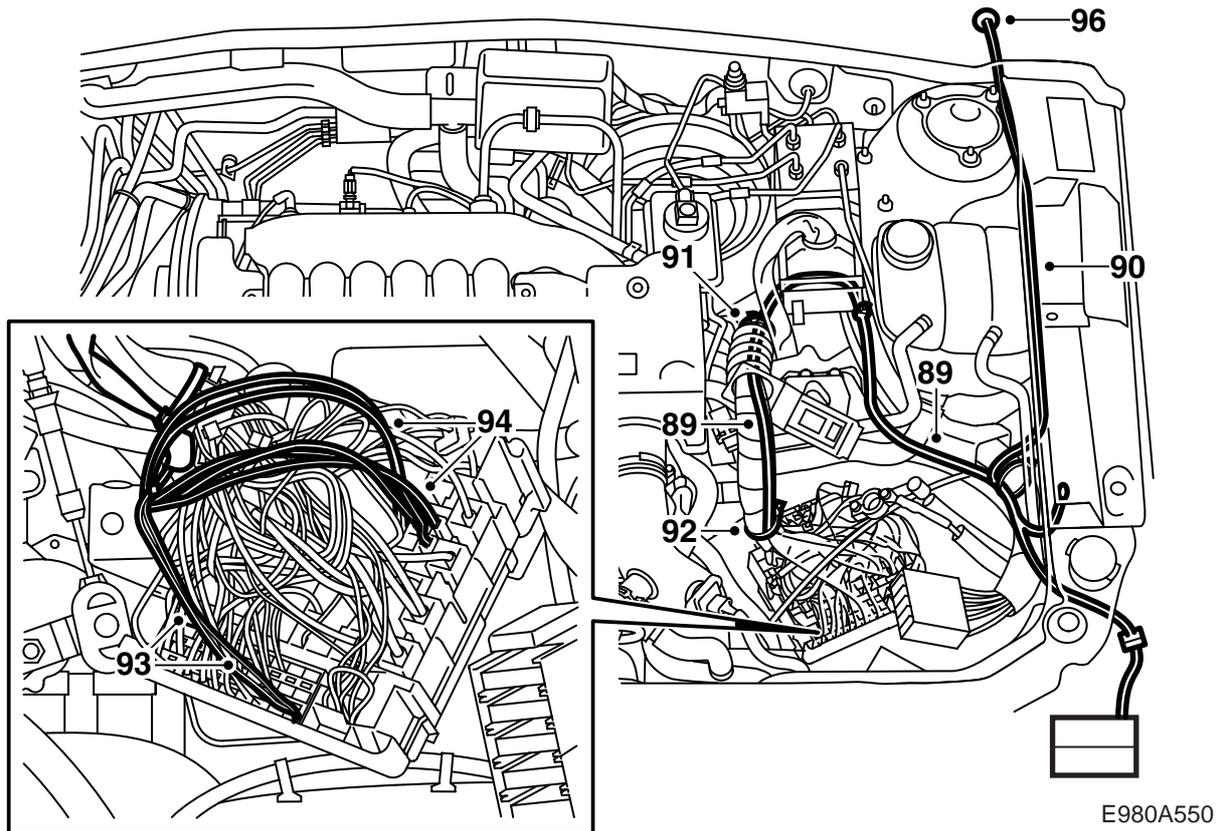
V6-M01: The section of hose between the charging air cooler and the throttle housing, where two sensors are mounted, can, if necessary, be twisted when mounting the electrical centre.

- 86 **-M01:** Connect the wiring harness's red cable with ring cable shoe to the terminal block on the main fuse holder.



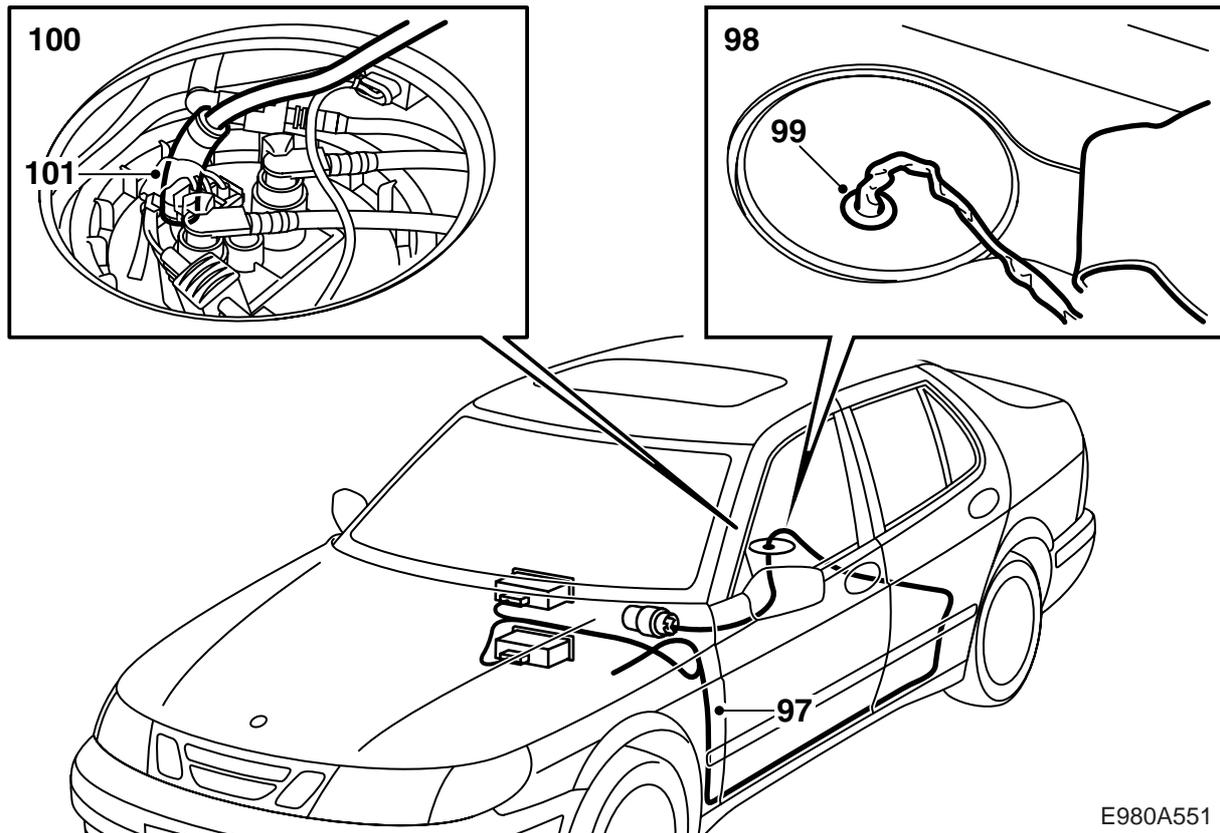
E980A549

- 87 Remove the windscreen wiper arms. Use puller 85 80 144.
- 88 Remove the bonnet weatherstrip and cover panel over the bulkhead partition space.



E980A550

- 89 **M02-**: Route the section of cable harness with the most cables alongside the car's ordinary harness towards the engine bay's electrical centre.
- 90 Route the section of harness that shall go to the cabin between the coolant reservoir and the body. Continue along the bonnet catch cable in to the bulkhead space.
- 91 **M02-**: Remove the tape and cable tie from the electrical centre gaiter and thread the harness through the gaiter into the electrical centre.
- 92 **M02-**: Fasten the wiring harness from the kit to the car's wiring harness with the edge of the tape located by the cable tie securing the electrical centre wiring harness to the relay plate, and position a cable tie at the white marking.
- 93 **M02-**: Connect the harness cable shoe which has red/grey and red/white cable to fuse FF5.
- 94 **M02-**: Connect the cables to relay position FR5 as follows (the marking on the top in brackets):
 Red/white cable to position 84 (1)
 Two red/white cables to position 80(3)
 Blue cable to position 82 (2)
 Brown cable to position 81(5)
- 95 Fit a grommet on the wiring harness.
- 96 **LHD**: Remove the plug to the left of the bonnet-catch cable grommet, make a hole in the insulation and push the harness through into the cabin. The harness should be pushed through until the marking is level with the grommet hole. Push the grommet into place and seal with Teroson T242 (part No. 30 15 781) or equivalent sealer.
- RHD**: Remove the section of insulation matting where the rubber plug is situated (this can be felt as a small bulge). Remove the rubber plug, make a hole in the insulation and push the harness through into the cabin. The harness should be pushed through until the marking is level with the grommet hole. Push the grommet into place and seal with Teroson T242 (part No. 30 15 781) or equivalent sealer.



E980A551

97 Route the fuel pump cables (violet and black) from the bulkhead to the left-hand A-post. From there along the plastic channels in the left-hand sill, under the mat and across to the hole under the back seat.

98 Drill a 15 mm hole for the grommet in the cover over the fuel tank, see illustration.

99 Fit the grommet over the wiring harness and insert the wiring through the hole in the cover. Press the grommet into place.

100 Carefully drill a 6.2 mm hole in the connection in the lid of the car's fuel pump, making sure the drill does not go in at an angle.

103 Tape the end of the remaining fuel pipe together with the fuel pump cables so that dirt does not come into the pipe and then tape the pipe and cables to the welding rod. Pull the pipe and cables down to the heater fuel pump.

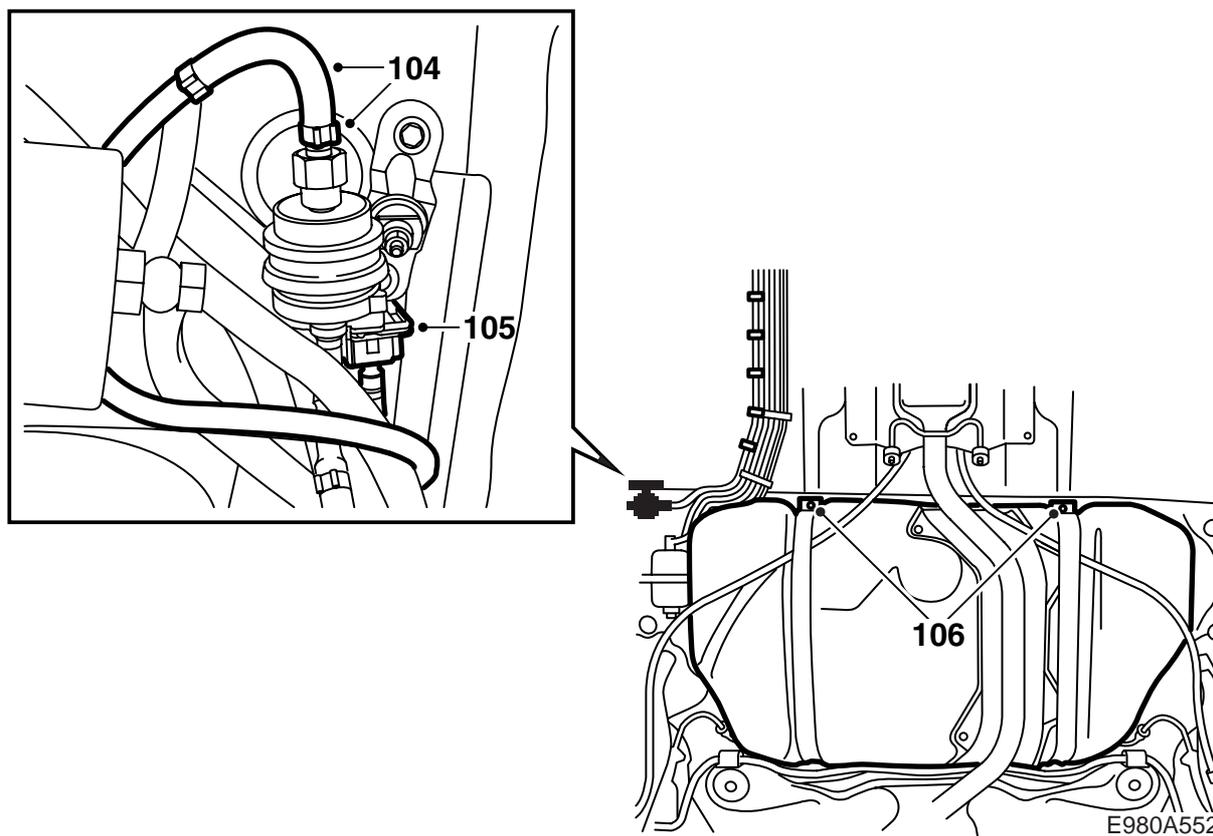
Important

The drill must not be angled when drilling as this may damage the tank connection.

Remove cuttings.

101 Open the bag with the fuel connection kit and discard the installation instructions found in the bag. Couple the larger end of the connection hose onto the tank connection with a clip and fit the other clip onto the connecting hose. Press down the line with the tapered end far enough for the bend to touch the connecting hose and fit the hose clips.

102 Manoeuvre a welding rod (about 1.5 m) into position alongside the fuel lines down towards the fuel filter and then on to the front of the top of the fuel tank.



104 Connect the fuel line with junction hose and 2 clips to the suction side of the fuel pump.

Important

Form the end of the fuel pipe leading to the pump inlet (suction side) with the fingers/hands, so that when the 90 degree junction hose is fitted it is deflected as little as possible from its original shape.

If the angle is too small, it is highly probable that the supply of fuel will be cut off, the hose will be damaged and malfunctioning of the heater will result.

105 Fit the connector to the fuel pump harness (the polarity is not important) and connect it to the pump.

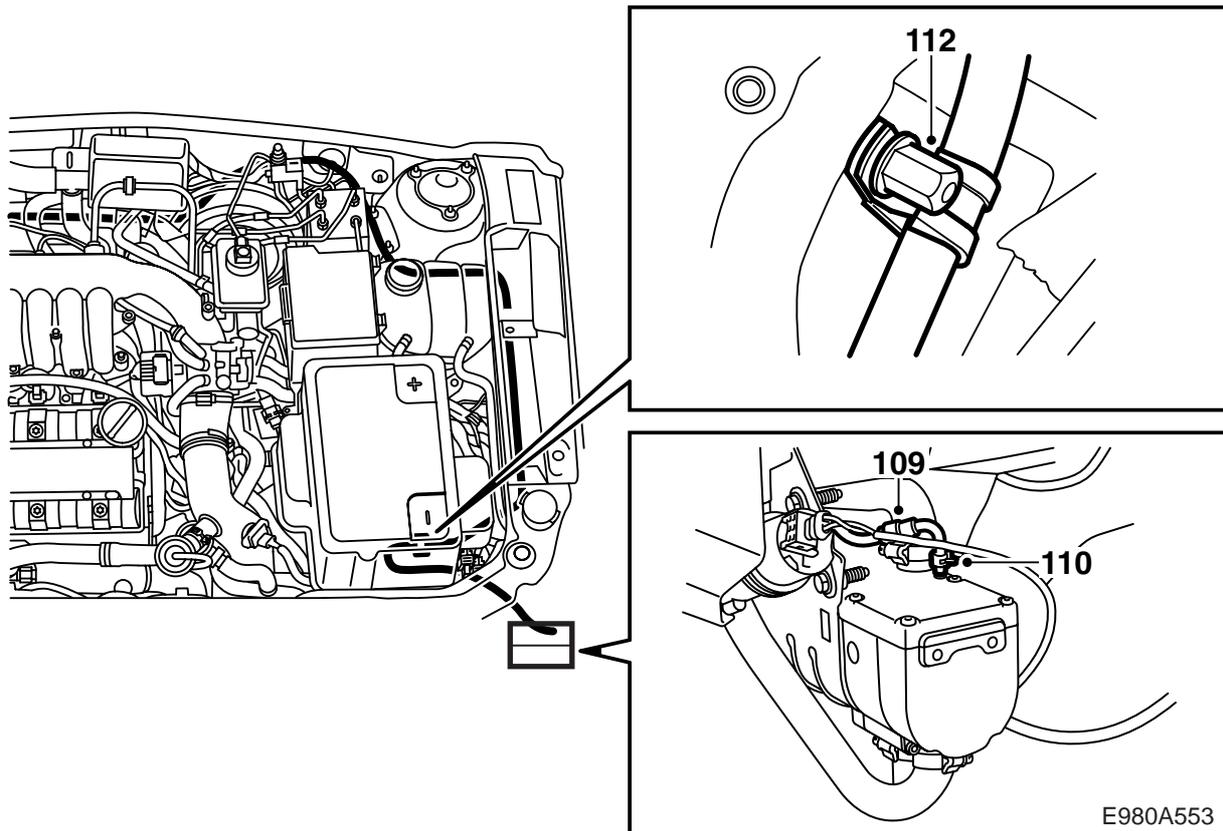
106 Raise the fuel tank and tighten the screws.

Tightening torque 25 Nm (18 lbf ft)

Important

Check that the pipes and cables are not caught up.

107 Fasten the fuel line and harness in abutment to the heater's fuel pump. Fit the fuel filter cover as fitted previously (use the heavy duty cable tie from the kit).



108 Tighten the cable tie along the brake pipes, but do not tighten so hard that the fuel line is damaged. Lower the car and tighten the cable ties along the bulkhead partition as well.

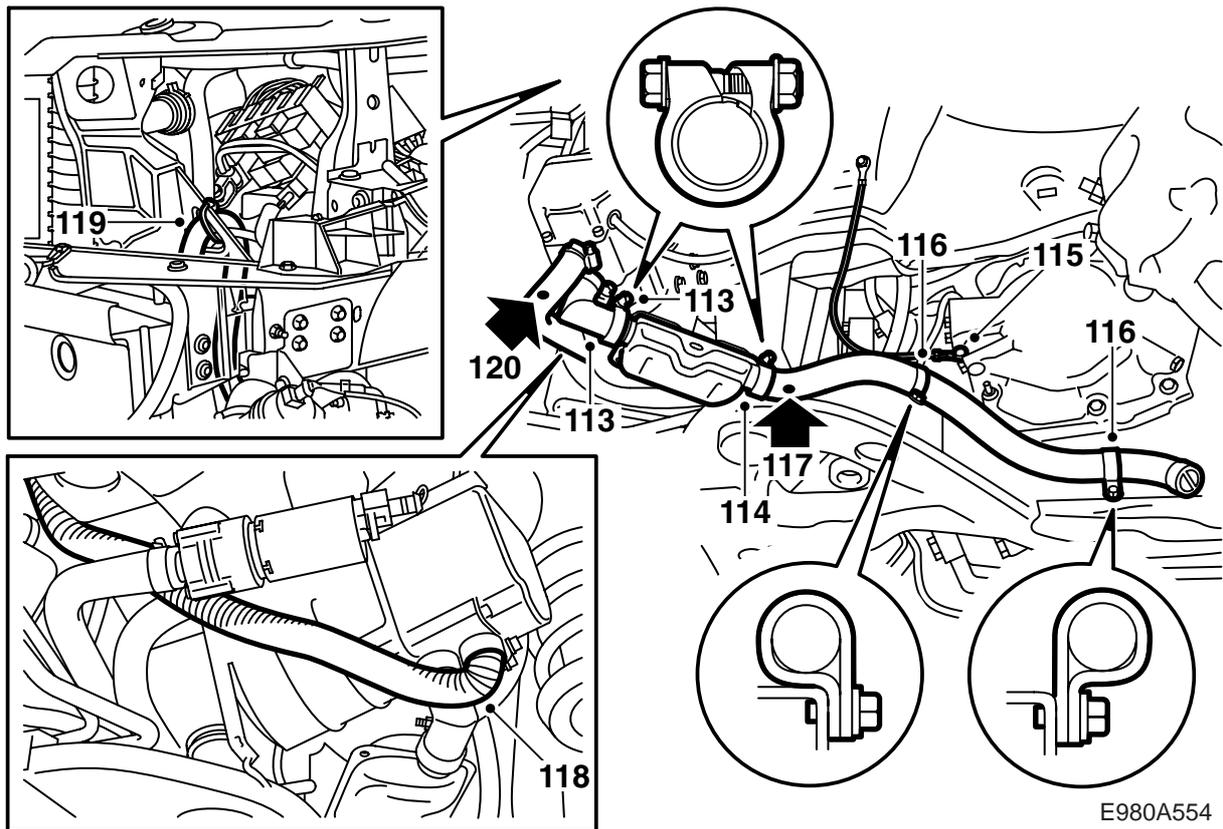
109 Push the fuel line down to the heater and fit the angled connecting hose to the fuel line by means of a hose clip, see illustration, with the narrow part facing the heater.

Cars with electric vacuum pump: The fuel lines must run between the pump and the bracket and be fastened to the bracket, see illustration, so that the fuel line cannot come in contact with warm or sharp objects.

110 Connect the hose to the heater's fuel connecting pipe by means of a hose clip.

111 Adjust the line so that it does not come into contact with hot or sharp components.

112 Adjust the fuel pipe in the engine bay and fasten it with a rubber covered clip to the earthing point by the battery.



E980A554

113 Fit the angled exhaust pipe onto the heater's exhaust connector with a clamp. Assemble the silencer (push the ends properly together) together with a clamp. Point the silencer backwards and angled towards the chassis frame, as illustrated, and tighten the clamps.

Tightening torque 5 Nm (3.7 lbf ft)

114 Fit the exhaust hose on the silencer and secure it with a clip.

115 Fit the holder onto the exhaust hose and bend the hose over the subframe, see illustration, so that it cannot make contact with the front wheel, wing liner, gearbox or subframe. Make sure there is at least 40 mm clearance between the exhaust hose and the ground lead, adjusting the ground lead connection to the gearbox by rotating the cable terminal if necessary.

Important

Check that the ground cable is mounted as shown in the illustration. If it is not, it must be repositioned.

Tightening torque 25 Nm (18 lbf ft)

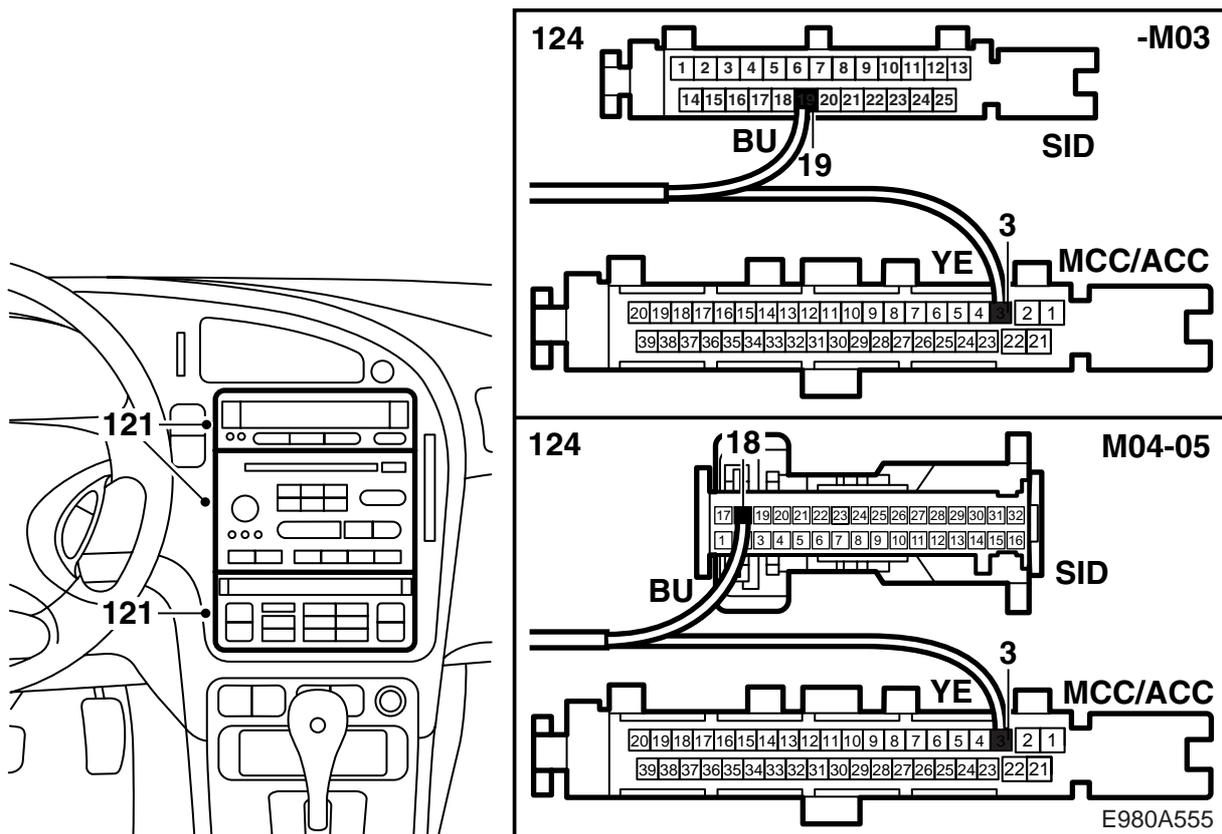
116 Centre punch and drill two 4 mm holes in the subframe, see illustration. Fix both exhaust hose holders to the subframe, see illustration, and bend the ends of the hose downwards and outwards towards the wheel hub. Make sure the exhaust hose will not rattle or make a noise and that there is at least 10 mm clearance between the hose and the gearbox.

117 Drill a 3 mm drain hole in the exhaust hose at its lowest point adjacent to the silencer.

118 Bend the intake hose 100° at one end and connect it to the heater intake connector with a clamp.

119 Route the intake hose behind the left-hand headlamp into the engine bay. Bend the upper end downwards through 180° and manoeuvre it through the triangular hole in the radiator beam reinforcement so as to prevent water entering the heater. The mouth of the hose should point towards the left-hand headlamp so as to supply the coolest possible air to the burner. Fasten the hose.

120 Drill a 3 mm drain hole in the intake hose at its lowest point adjacent to the heater connection.



121-M05: Pull out the radio, the SID-unit and the air conditioning control panel from the dashboard. Unplug the connectors from the air conditioning control panel and the SID.

122-M05: Route the blue (BU) and the yellow (YE) cable to the centre console and fasten them so as to avoid risk of pinching.

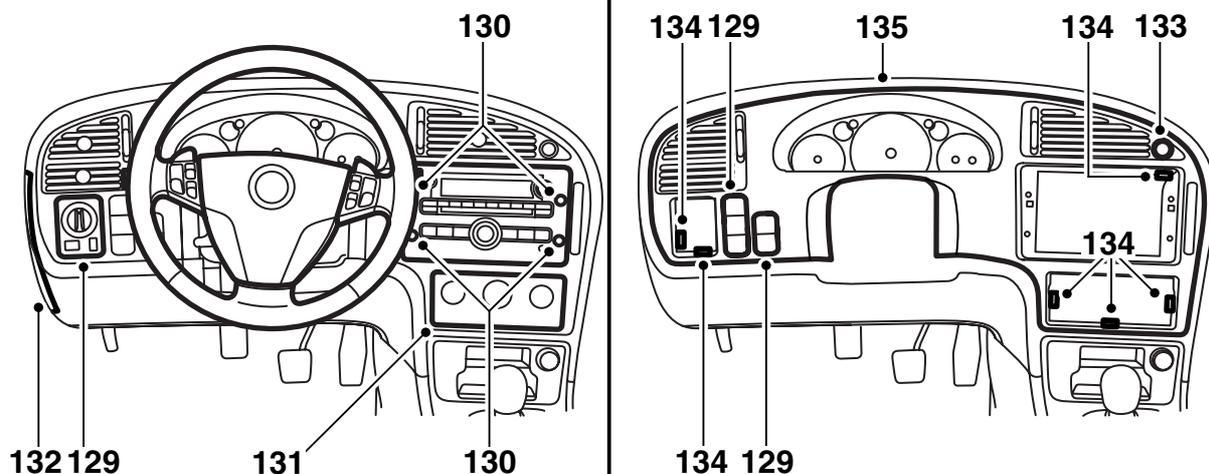
123-M05: Carefully slide apart the upper and lower sections of the connectors.

124-M03: Connect the blue (BU) cable to position 19 in the SID unit's connector and the yellow (YE) cable to position 3 in the connector for the air conditioning control panel. Plug in the connector.

M04-05: Remove the cable terminal from the blue (BU) cable and fit the cable terminal from the kit. Connect the blue (BU) cable to position 18 in the SID unit connector and the yellow (YE) cable to position 3 in the connector for the air conditioning control panel. Plug in the connector.

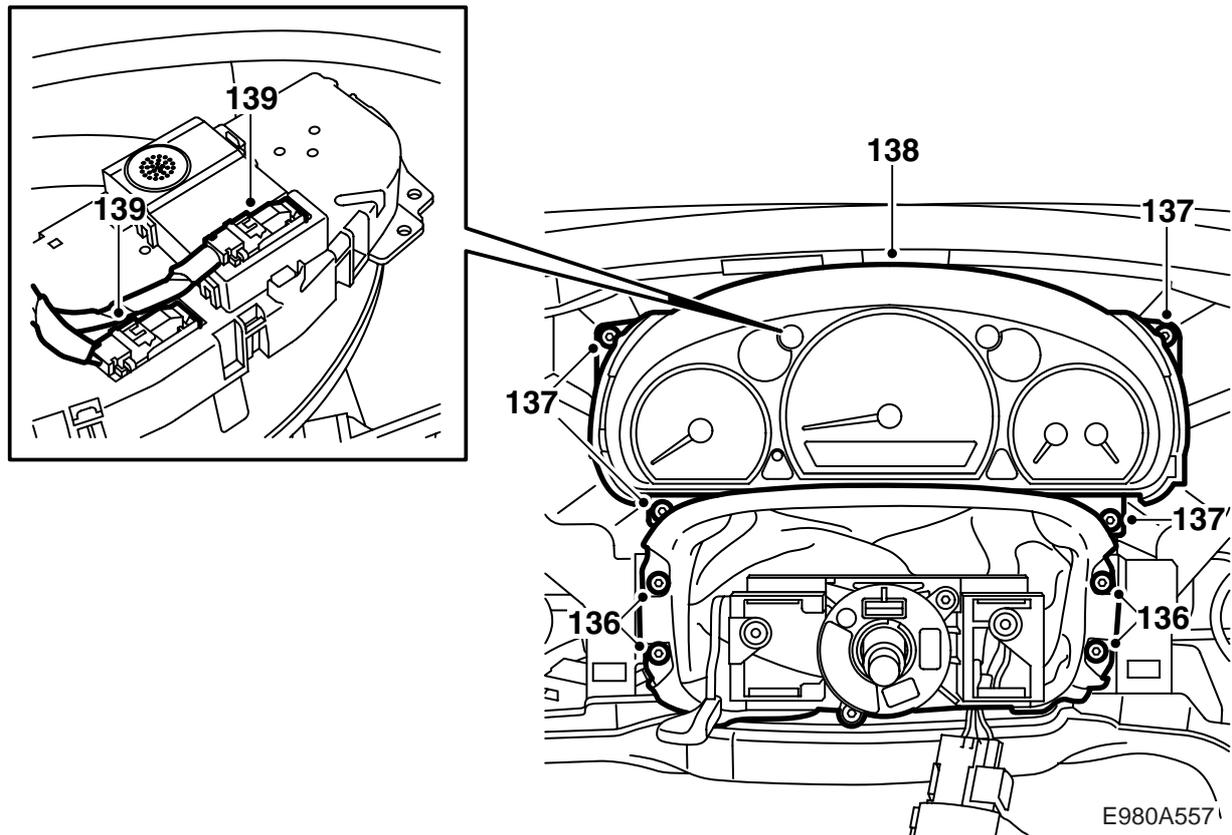
125-M05: Plug in the connectors and install the radio, the SID unit and the air conditioning control panel.

126-M05: Fasten the cables in place under the dashboard so that they run clear of moving parts and cannot give rise to rattling or other unwanted noise.



E980A556

- 127**M06**:- Pull the steering wheel out, and down, and then lock it.
- 128**M06**:- Remove the upper and lower steering column covers, three screws.
- 129**M06**:- Detach the switches for the indicators and windscreen wipers.
- 130**M06**:- Remove the covers and audio unit, four screws.
- 131**M06**:- Remove the heating and ventilation panel and unplug the connector.
- 132**M06**:- Remove the cover over the fuse holder on the side of the panel. Detach the light switch and other switches and unplug their connectors too.
- 133**M06**:- Detach the switch for the hazard warning lights and unplug the connector.
- 134**M06**:- Remove the instrument plate, secured with six screws and four clips.
- 135**M06**:- Lift the instrument plate away.

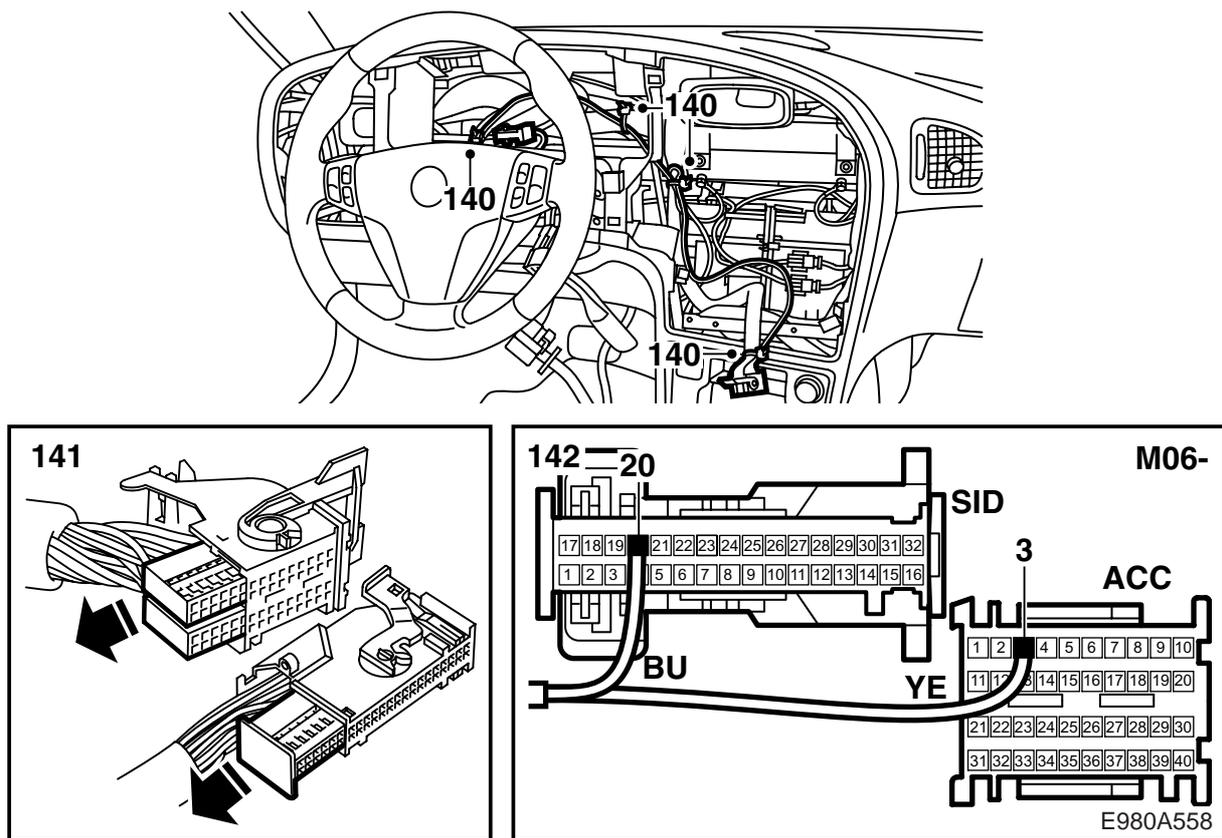


136M06-: Remove the screws for the steering column gaiter.

137M06-: Remove the screws for the main instrument unit.

138M06-: Lift the main instrument unit away.

139M06-: Unplug the connectors.



140M06- Route the blue (BU) and the yellow (YE) cable to the centre console and fasten them so as to avoid risk of pinching.

141M06- Carefully slide apart the upper and lower sections of the connectors.

142M06- Remove approx. 25 cm of the tape and uncouple both cables. Remove the cable terminal from the blue (BU) cable and fit the cable terminal from the kit. Connect the blue (BU) cable to position 20 in the SID unit connector.

Remove the cable terminal from the yellow cable and fit a new cable terminal. Connect the yellow (YE) cable to position 3 in the connector for the air conditioning control panel. Press the upper and lower sections of the connectors together.

143M06- Fit the main instrument unit.

144M06- Lift the instrument plate into place.

145M06- Check from the driver's side that the air ducts are positioned correctly.

Note

Check that no connectors or cables are trapped.

146M06- Fit the instrument plate, secured with six screws and four clips.

147M06- Connect and fit the light switch and other switches.

Refit the cover over the fuse holder on the side of the panel.

148M06- Fit the switch for the hazard warning lights and plug the connector in from behind.

Note

There is a marking that indicates which side of the hazard warning switch should be upwards.

149M06- Connect and fit the heating and ventilation panel.

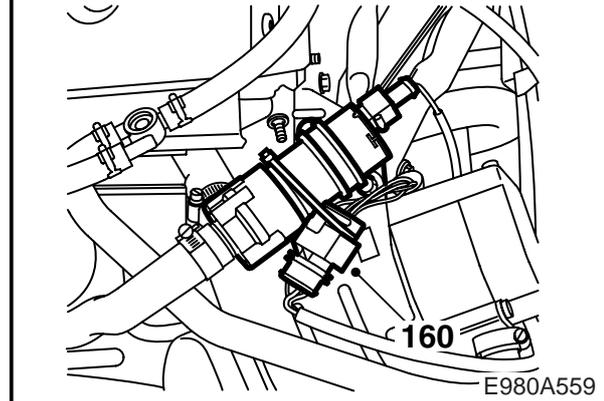
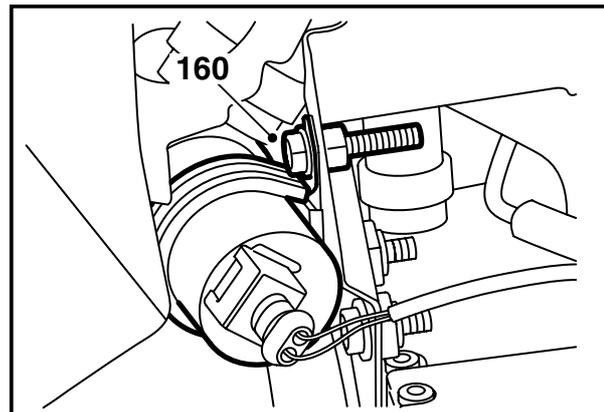
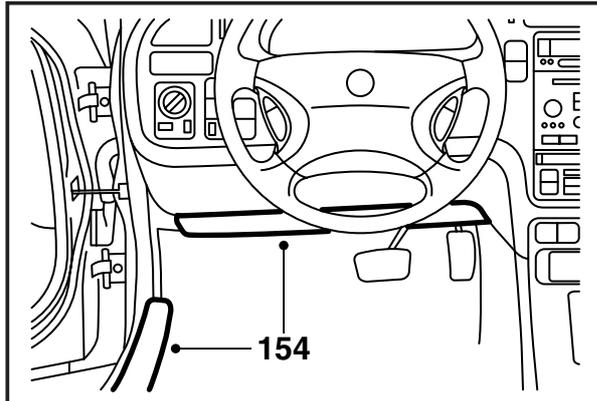
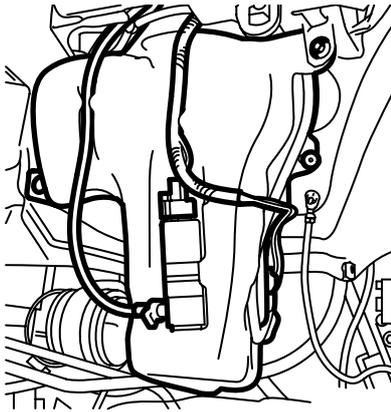
150M06- Fit the audio unit and the covers.

151M06- Refit the switches for the indicators and windscreen wipers.

152M06- Fit the upper and lower steering column covers.

153M06- Fasten the cables in place under the dashboard so that they run clear of moving parts and cannot give rise to rattling or other unwanted noise.

159



154LHD: Fit the sound baffle under the instrument panel and the sill protection strip.

RHD: Fit the glove box and the sill protection strip.

All: Fit the fuel tank access cover, fold back the mat, fit the back seat cushions and hinge them back.

Important

Don't forget to plug in the heating pad, if fitted.

155 Fasten the heater coolant hoses with cable ties. Adjust them so that they are not squeezed or subject to damage.

156 Install the engine bay electrical centre, the relay plate and the cover. Fit the cable tie to the electrical centre mounting bracket.

157M02-: Fit the battery tray.

All: Fit and connect the battery.

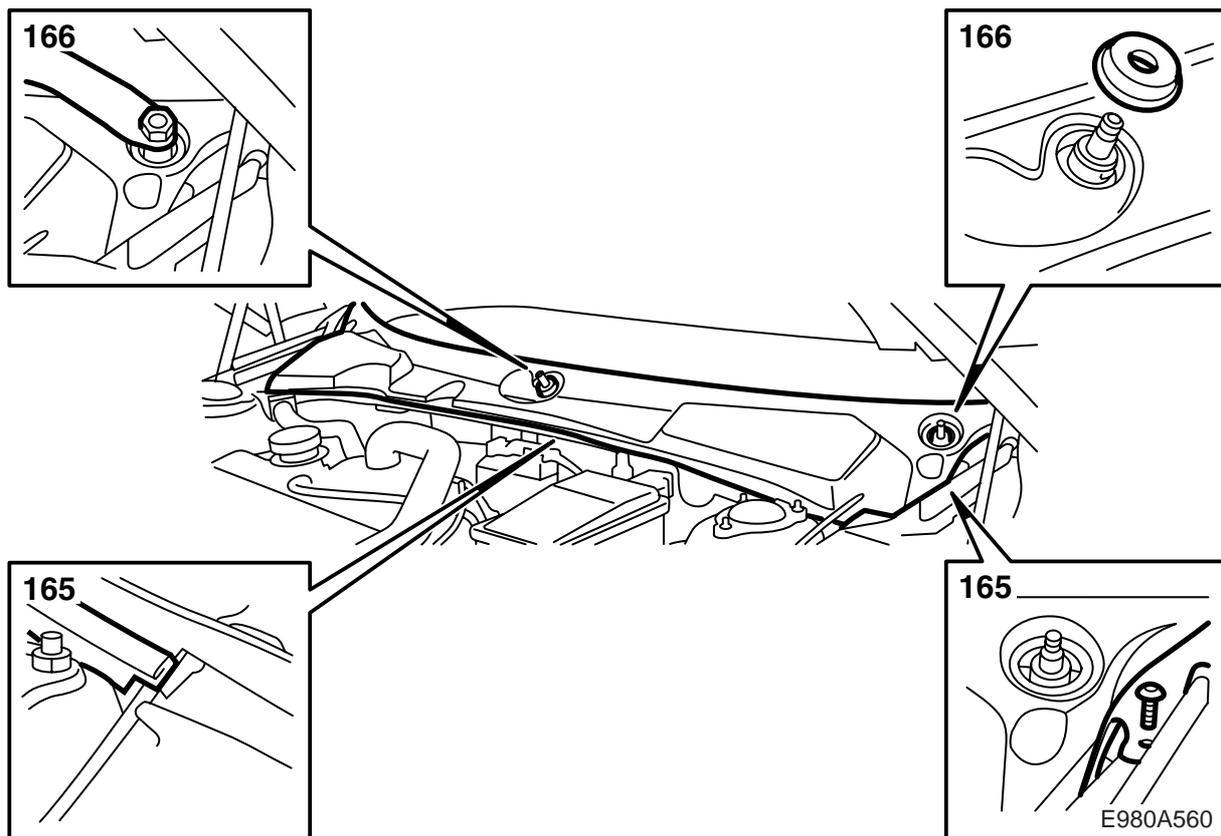
158V6: Refit the engine cover.

159 Fit the washer reservoir in the same manner as fitted previously, connect the washer pump and the level sensor.

160 Position the circulation pump holder and fasten it to the upper bracket hole with a nut and screw.

-M01: Fasten the heater's 8-pin connector behind the heater, towards the front wheel.

M02-: Fasten the heater's 8-pin connector to the underside of the pump.



161Bleed the cooling system:

Note

The A/C or ACC should be turned OFF.

4-CYL: Start the engine and let it run until the thermostat opens.

V6: Fill up the system to the MAX level. Screw the cap on the expansion tank, start the engine and warm it up at varying rpm until the radiator fan starts. Carefully open the expansion tank cap and top up to the MAX level. Screw down the expansion tank cap and run the engine at varying rpm until the radiator fan has started three more times.

162Switch off the engine and allow it to cool down. Check the coolant level and top up as necessary to the MAX level.

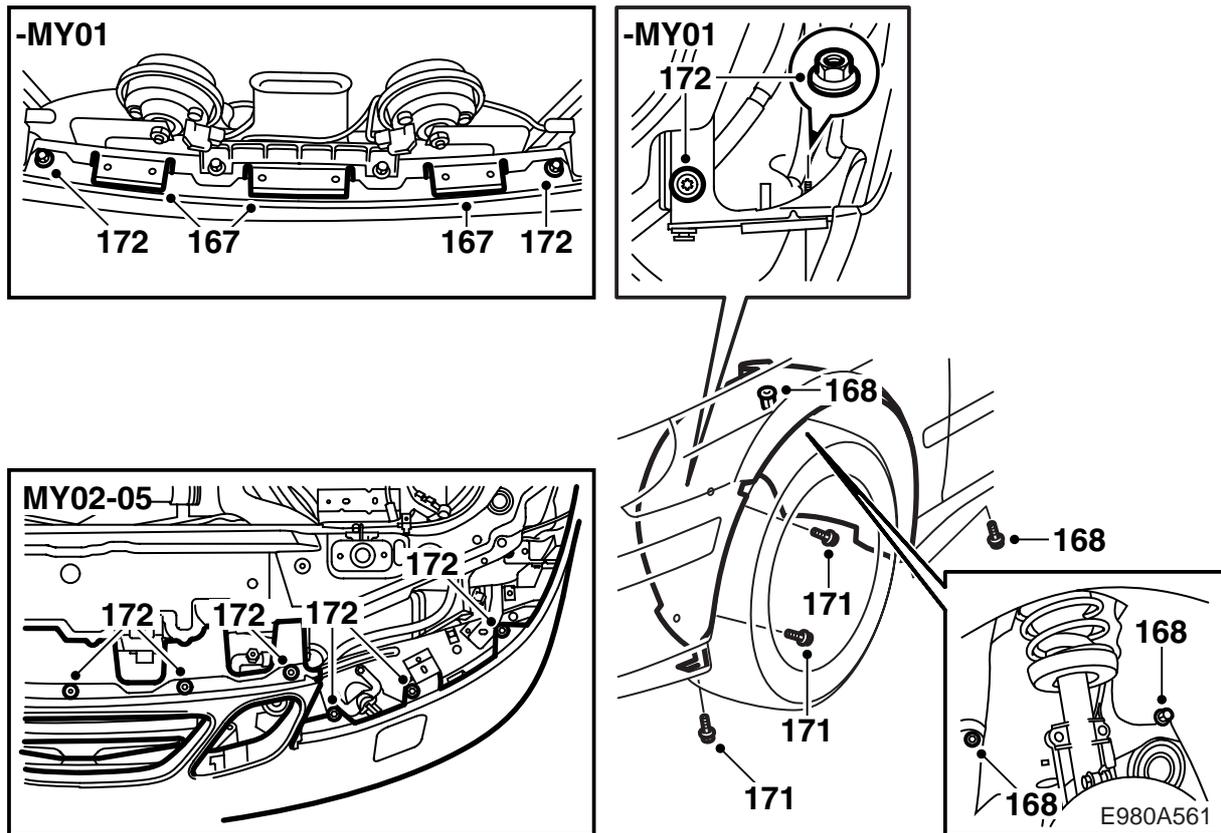
163Programme the SID unit as follows:

- connect the diagnostic tool and contact SID
- select PROGRAMMING
- select Parking Heater Activation and Activation By Timer
- select Parking Heater Type and Fuel Powered

164First start the heater and then the engine. Keep them both running until there is no more air in the system.

165Fit the cover over the bulkhead space and the bonnet sealing strip.

166Fit the windscreen wiper arms.



167-**M05**: Check that none of the metal tabs is damaged or bent down.

168Fit the wing liner and check that the heater exhaust hose is not touching the liner.

169Fit the bumper to the bumper beam.

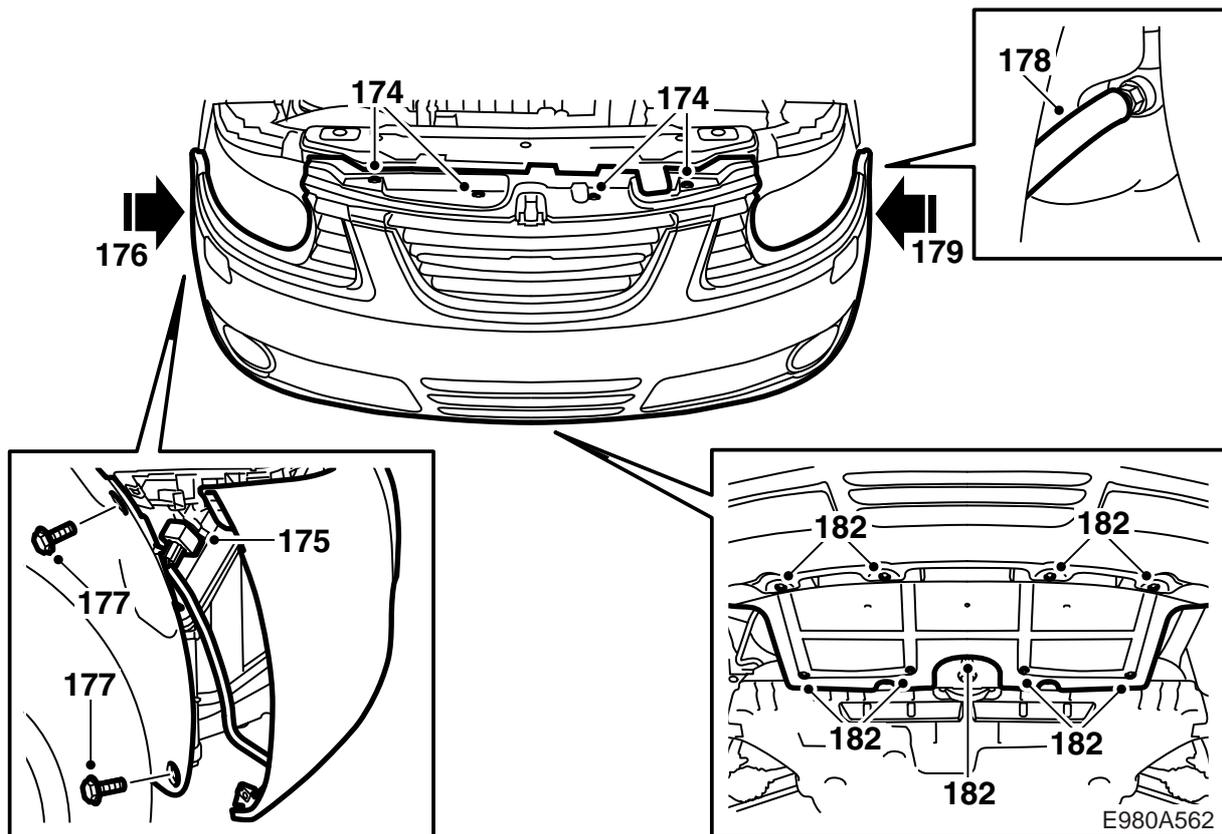
-**M01**: Ensure that the wiper blade stop and the wiper motor shaft are correctly positioned.

170-**M01**: Position the steel bumper reinforcement so that it is located between the wing and the wing liner.

171-**M05**: Fit the 6 screws (3 on each side) where the bumper is attached to the wing liners.

172-**M01**: Install the 4 screws which hold the bumper to the bumper beam and the nuts which hold the bumper to the front wings.

M02-05: Install the 6 screws which hold the bumper to the bumper beam and the 5 clips which are located over the grille.



173M06-: With help from an assistant, lift the bumper shell on.

174M06-: Fit the bumper shell's upper clips. Fit the screws.

175M06-: Plug in the connector for the front bumper harness on the right-hand side.

176M06-: Press the shell back and press it into the bracket on the right-hand side.

177M06-: Fit the wing liner's screws on the right-hand side.

178M06-, cars with headlamp washers: Remove the plug and connect hose's quick-release coupling to the washer fluid reservoir.

179M06-: Press the shell back and press it into the bracket on the left-hand side.

180M06-: Fit the wing liner's screws on the left-hand side.

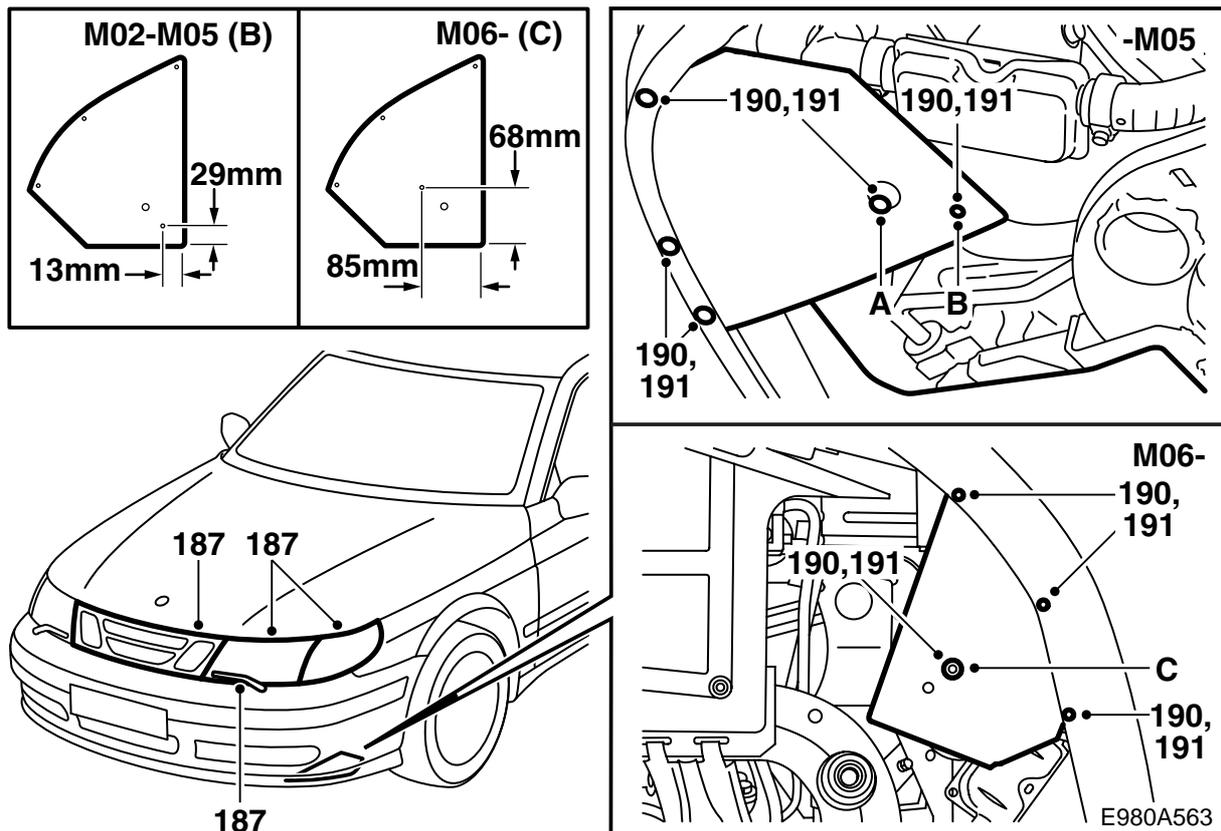
181M06-: Raise the car.

182M06-: Fit the front spoiler shield.

183M06-: Lower the car.

184M98: If a temperature sensor or fog lights are fitted they should be connected.

M99-: Connect the bumper wiring harness and fit the battery cover.



185 Where applicable refit the engine block-heater plug to the bumper.

186-**M05**: Fit the front spoiler shield.

187-**M01**: Fit the left-hand headlamp wiper motor, headlamps, any spacer washer, indicator lights, the grille and the headlamp surrounds. Ensure that the plastic guides are correctly located in the main headlamps and check that each headlamp drain tube is hanging straight down and is free of kinks.

M02-05: Fit the headlamps, indicator lights, the outer grille sections and the headlamp washer covers.

188 Check that the headlamp washers are functioning correctly.

189 **M02-**: Mark out the splash guard as illustrated and drill a 10 mm hole.

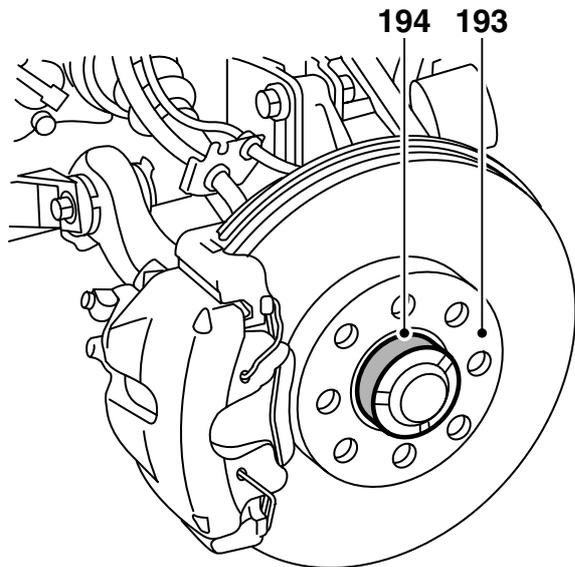
190 Fit a clip nut on the heater bracket's mounting and three clip nuts on the splash guard (marked positions).

191 Fit the splash guard with a screw to the bracket (A= -M01. B=M02-05, C=M06-). Adjust the positioning against the bumper shell or alternatively the bottom spoiler flange. Mark the position of the holes, remove the splash guard and drill with a 4 mm bit.

192 Screw the splash guard in place using four screws.

WARNING

Check that the splash guard is not touching the heater silencer. Adjust if necessary.



193 Clean all dirt and rust from the contact surfaces of the wheel and brake disc.

194 Apply white high-pressure grease (part no. 30 06 442) to the hub.

Important

Make sure that no grease gets onto the contact surfaces of the wheel and brake disc.

195 **Aluminium wheels:** Oil the screw threads and the conical surface of the screws.

196 Position the wheel, fit the screws and tighten these in sequence by hand to centre the wheel.

197 Tighten the screws in sequence twice.

Important

The wheel should be freely suspended during tightening.

Tightening torque 110 Nm (81 lbf ft)

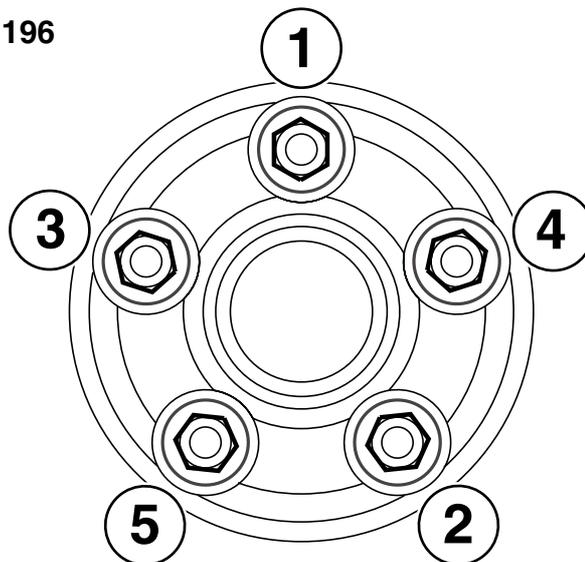
198 Lower the car.

199 Where applicable programme the radio code and the clock, including the date.

ACC: Calibrate the ACC system also.

200 Fill up with washer fluid.

196



201 Clean an area in the centre of the inside of the fuel filler hatch with white spirit. Take out the warning label from the kit, adapt the size of the label and affix it to the cleaned area.

Important

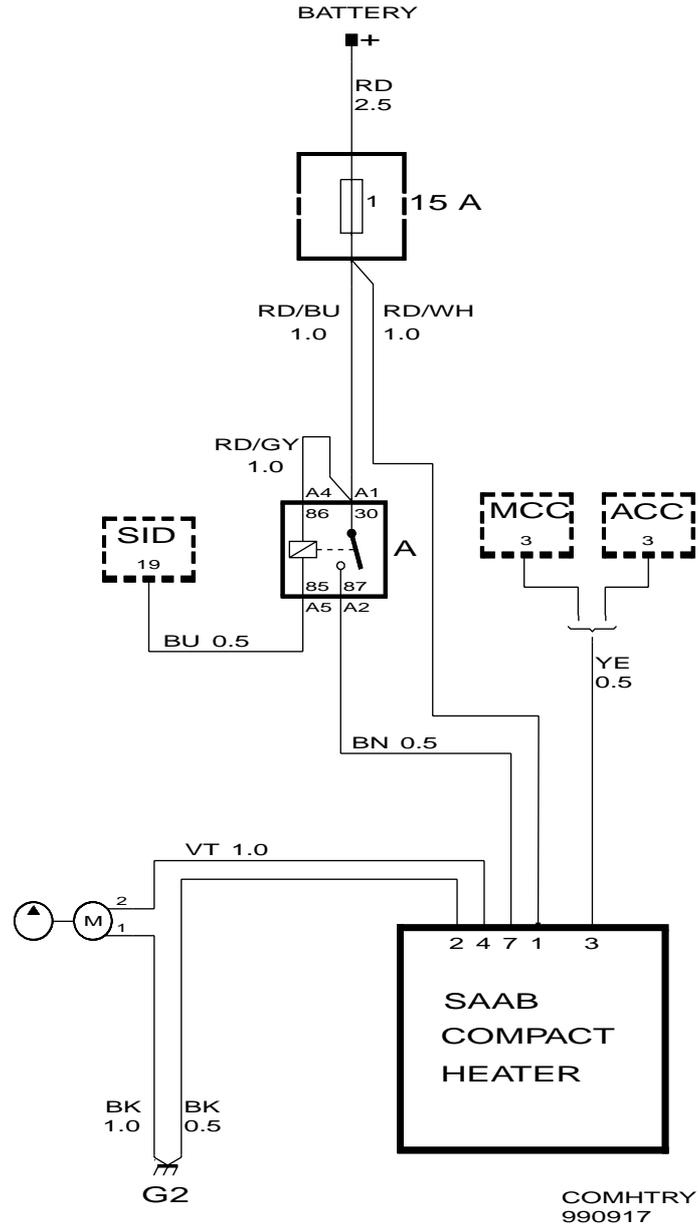
Under no circumstances may this label conceal any part of another label.

202 Place the installation instructions in the car and inform the customer about the safety instructions. Draw attention also to the user section in the instruction manual.

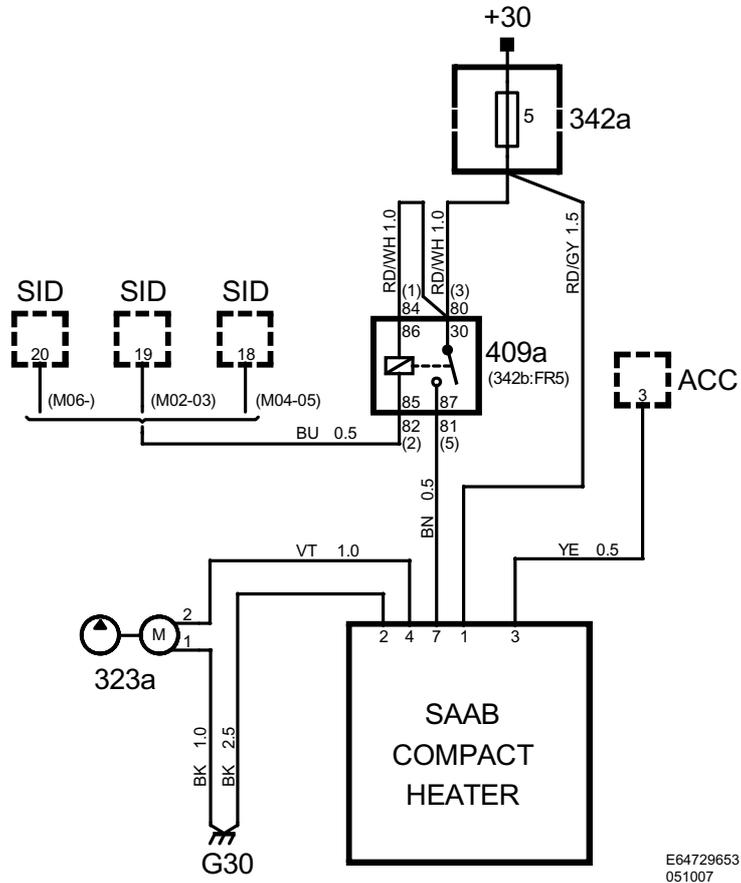
ACC: Inform the customer that the ACC system can be programmed to operate differently when the heater is activated compared with the original program. Refer the customer to the ACC section in the user's manual but point out that increasing the fan speed will increase the load on the battery.

E980A564

Electrical circuit diagram (-M01)



Electrical circuit diagram (M02-)



E64729653
051007