

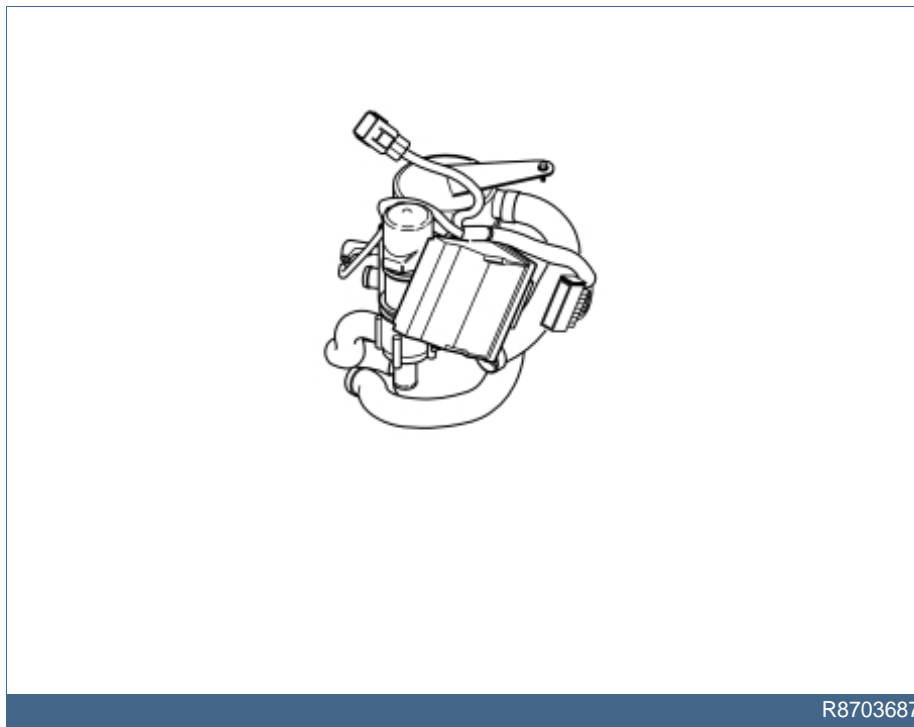


## XC90

Section	Group	Weight(Kg/Pounds)	Year	Month
8	87		2002	10

XC90 2003 D5244T, XC90 2004 D5244T, XC90 2005 D5244T AW50/51 AWD, XC90 2006 D5244T, XC90 2006 D5244T AW50/51 AWD

D5244T



# Installation instructions, accessories - Fuel driven heater 912-D

Volvo Car Corporation Göteborg, Sweden



## Required tools



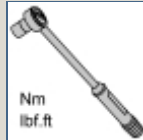
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A0000163

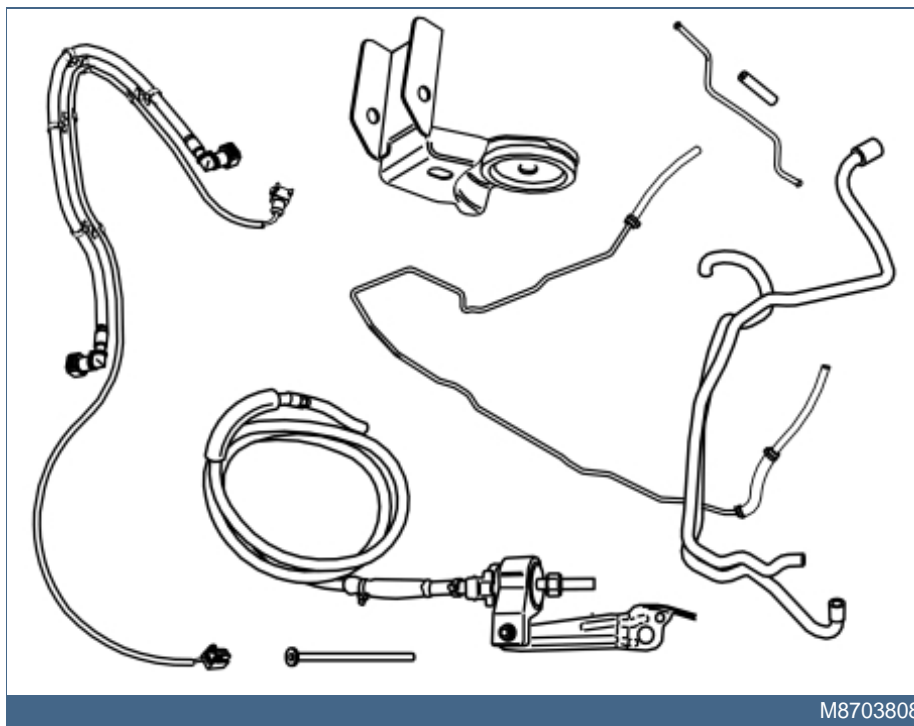
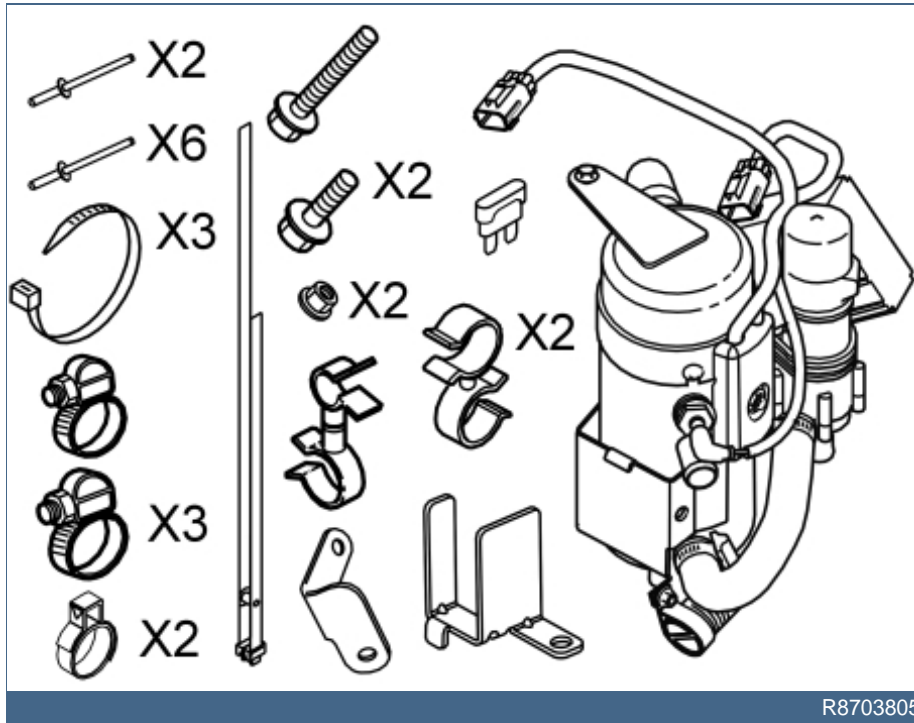


A0801450



Nm  
lbf.ft

A0000161





Any comments on this publication? Please contact your nearest dealer. Thank you!

Publication no: MA 8671001, Issue: 2002-10
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Address:.....
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## INTRODUCTION

- **NOTE! Read through the entire text before carrying out any work.**
- The front page gives the date of this edition and the edition it replaces
- The second page shows the tools needed for the installation and the contents of the installation kit
- The illustrations display the procedure in order of operation. The order of operation is repeated in the text section
- Cut out the text page in order to follow the illustrations and text at the same time.

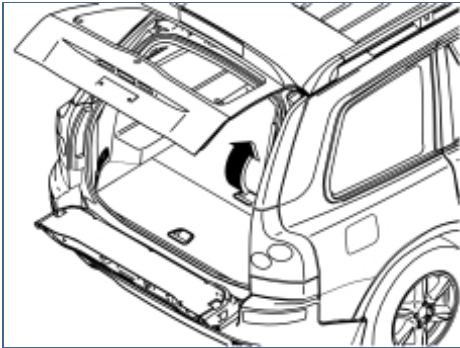
## Fuel driven heater 912-D

### Note!

This accessory requires software unique to the car.



1

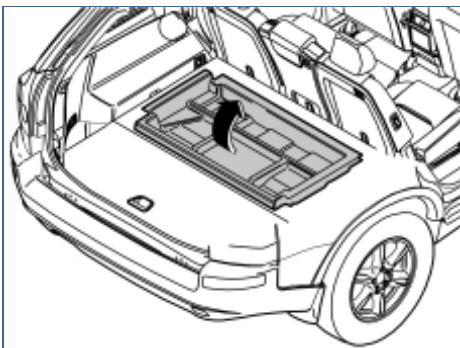


R8504235

**Applies to cars with two rows of seats**

- Remove the front floor hatch. First lift up slightly and then pull the hatch loose from its mountings at the front edge.

2

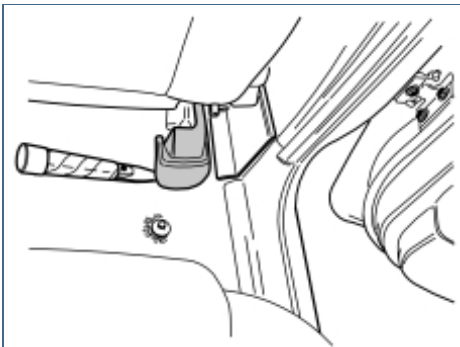


R8504236

**Applies to cars with two rows of seats**

- Lift out the front storage compartment.

3



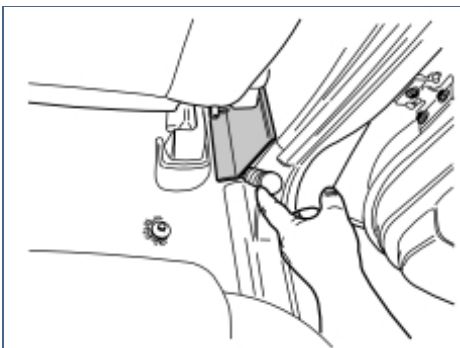
R8504241

**Note!**

Removing the right-hand seat in the second row of seats (steps 3-8) applies to all cars. For cars with three rows of seats, the left-hand and centre seats in the middle row must also be removed. See step 9.

- Remove the panel on the right rear mounting on the right-hand front seat. Pry up the rear edge of the panel slightly and then pull backwards and upwards.

4

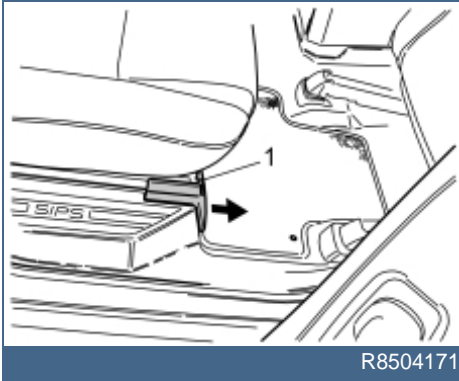


R8504169

- Slide the seats in the first row as far forwards as possible
- Carefully pry off and remove the panel over the joint between the door sills on the right-hand side.

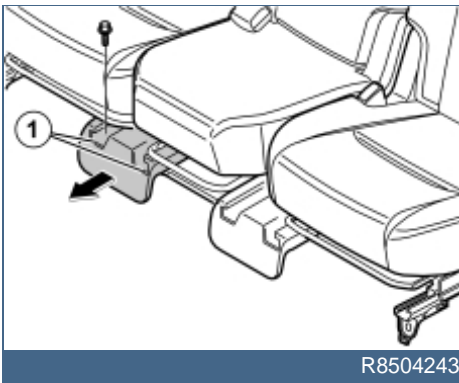


5



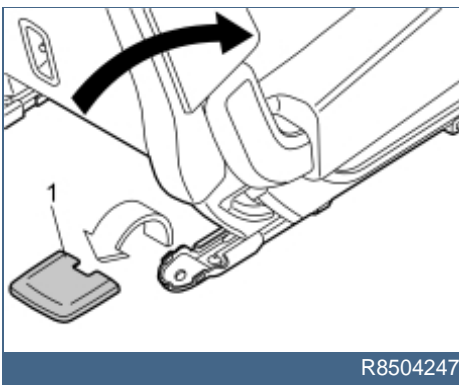
- Remove the panel for the front right seat mounting on the right-hand seat in the second row. Press down the catch (1) on top and detach the panel by pulling it forward. Remove the screw underneath.

6



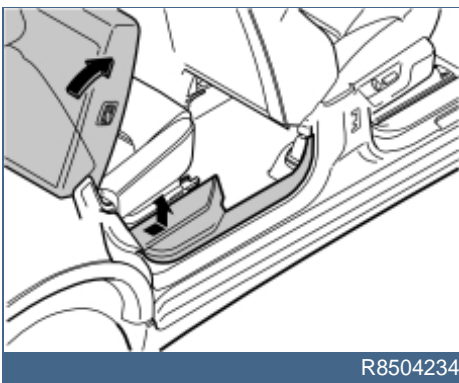
- Remove the panel for the front seat mountings for the right-hand seat/middle seat in the second row. Press down the catches (1) on top and detach the panel by pulling it forward. Remove the screw for the right-hand seat.

7



- Fold the backrest on the right-hand seat in the second row of seats forwards
- Remove the covers (1) for the rear seat mountings on the right-hand seat by prying them off the rear edge. Remove the screws.

8



- Remove the sill trim panel for the right-hand rear door. Pull off the rear edge until the clips release. Continue forwards until the remaining clips have released
- Unhook the sill trim panel from the B-post panel. Place the sill trim panel in the cargo compartment
- Remove the seat.

**Caution!**

Lift the seats out of the passenger compartment carefully. Ensure that the mountings do not damage the door panels.

9

**Applies to cars with three rows of seats**

- Remove the corresponding panels and screws as in steps 3-8, on the left-hand



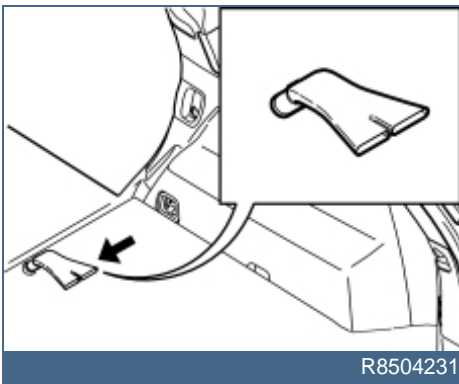
side, and for the left-hand and middle seats in the second row

- Remove the left-hand and centre seats.

### Caution!

Lift the seats out of the passenger compartment carefully. Ensure that the mountings do not damage the door panels.

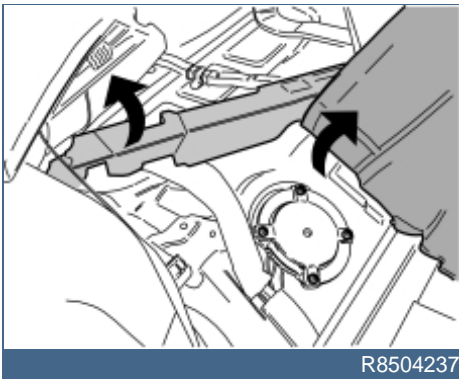
10



#### Applies to cars with three rows of seats

- Remove the vents on the right and left-hand sides.

11A



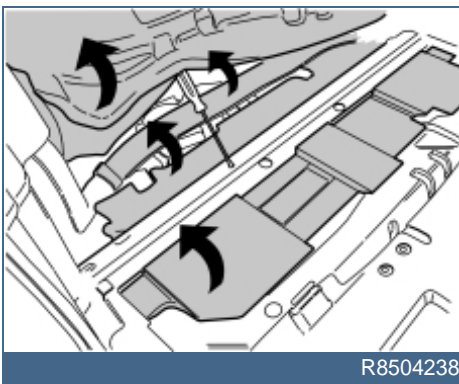
#### Illustration A applies to cars with two rows of seats

- Push the carpet to one side. Secure the carpet using the seat belt on the left-hand side
- Carefully push the insulation to one side so that the cover for the fuel tank unit is accessible.

### Caution!

Take care with the insulation. It will break off easily.

11B

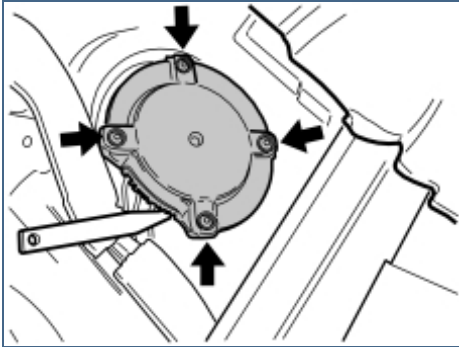


#### Illustration B applies to cars with three rows of seats

- Push the floor carpet and insulation panel to one side
- Position a screwdriver or similar to hold the carpet in place
- Remove the air duct
- Remove both insulation panels.



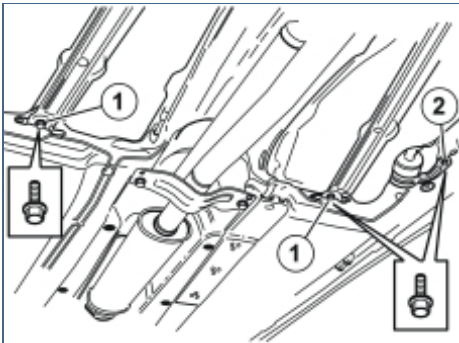
12



R8504239

- Remove the four screws in the cover for the fuel tank unit
- Carefully pry off the cover. Use a weatherstrip tool.

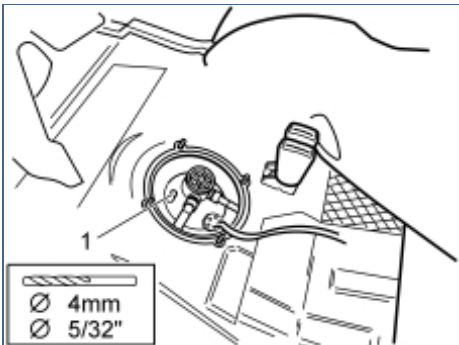
13



R2501320

- Remove the four screws (1) in the front and rear mountings for the fuel tank so that the fuel tank lowers slightly. This allows the suction pipe for the fuel tank to be installed. If necessary, remove the screw (2) for the fuel filter to lower the fuel tank further.

14



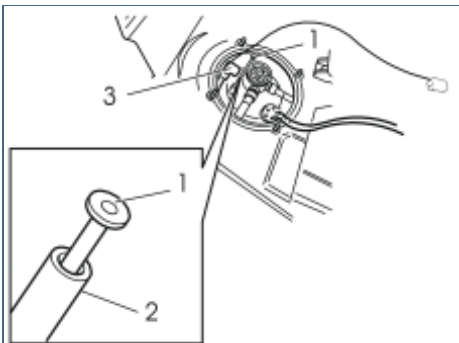
R2302950

- Drill out the terminal (1) in the fuel tank unit. Use a **4 mm (5/32")** diameter drill bit.

**Note!**

Use a compressed air power drill with a greased bit.

15



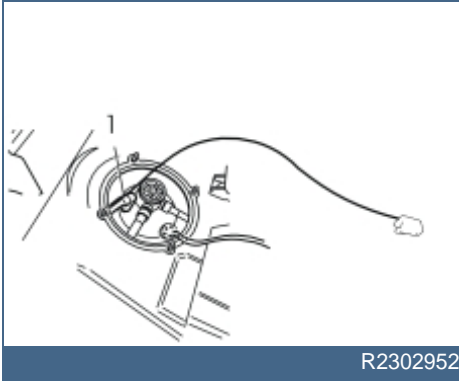
R2302951

- Insert the pipe (1) from the kit into the connection (2). Press the pipe down until it is against the connection
- Take the fuel line and electrical cable from the kit. Apply masking tape on the end of the part of the fuel line that is to be inserted down through the hole in the floor (the end with the short free cable end)
- Insert the entire cable assembly (3) between the floor and the fuel tank out to the right.



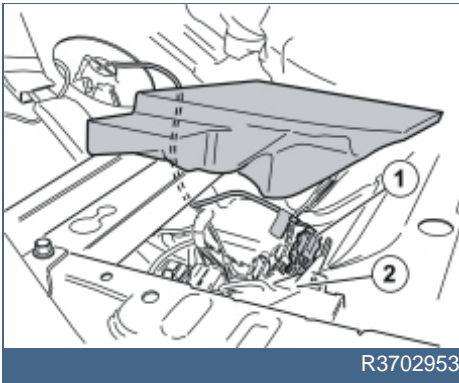


16



- Press the quick-release connector (1) onto the connection until a click is heard. Check that the quick-release connector is secure.

17



- **Applies to cars with two rows of seats**
  - Carefully push up the end of the insulation.
  - Position a spacer underneath.
- **Applies to all models**
  - Route the cable that was previously routed along with the fuel line under the seat member. Connect the cable to the front connector (1) in the connector bridge (2)
- **Applies to cars with two rows of seats:** Remove the spacer and fold down the insulation
- Position the cable in the holder in the fuel tank unit cover
- Reinstall the cover for the fuel tank unit. Secure the cover using the four screws.

18

- Reinstall the insulation panels
- **Applies to cars with three rows of seats:** Reinstall the air duct
- Fold back the carpet
- **Applies to cars with three rows of seats:** Reinstall the vents under the outer seats
- Reinstall the seats.

### Caution!

Be careful when lifting the seats into the passenger compartment. Ensure that the mountings do not damage the door panels.

- Secure the seats. Tighten the screws. Tighten to **48 Nm (35 lbf.ft.)**
- Reinstall the panels and covers over the seat mountings

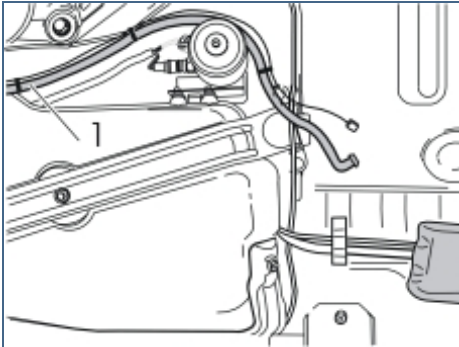


- Reinstall the panels over the joint between the door sills.

**Applies to cars with two rows of seats**

- Reinstall the front storage compartment
- Reinstall the front floor hatch.

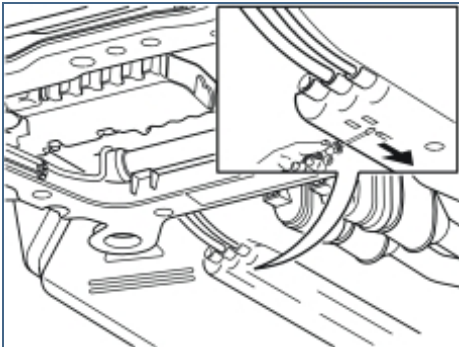
19



D2302957

- Route the fuel hose and cable harness (1) at the rear edge of the fuel tank. Route it along the right-hand side of the fuel tank and forwards. Let it hang down.

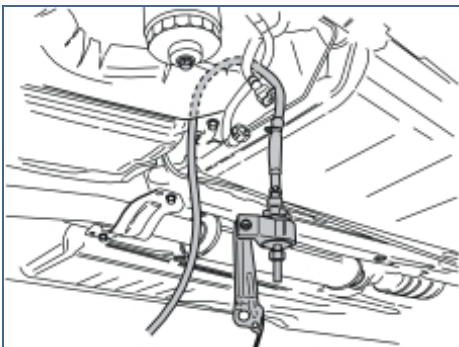
20



R2303046

- Disconnect the rail for the fuel line. Insert a small screwdriver in the small hole between the rail and the yellow clip. Slide the clip in the same direction as the oval hole in the rail. The rear black clip has a small collar on the clip. Position the screwdriver against the collar and slide it forwards.

21

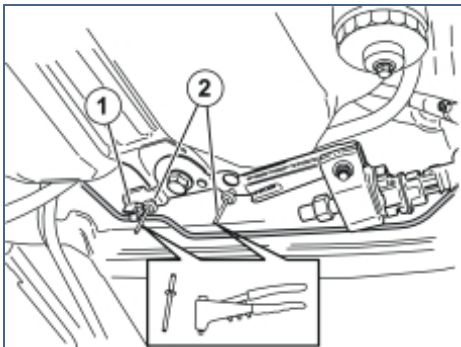


D2302958

- Take the fuel pump (FP) and cable from the kit. Slide the cable up at the front edge on the right-hand side of the fuel tank
- Route the cable so that it is next to the existing cable in the cut-out on top of the fuel tank. Then position the cable on the right-hand side of the wiring which runs to the engine compartment
- Pull up the wiring so that the fuel pump (FP) is positioned as approximately as illustrated.



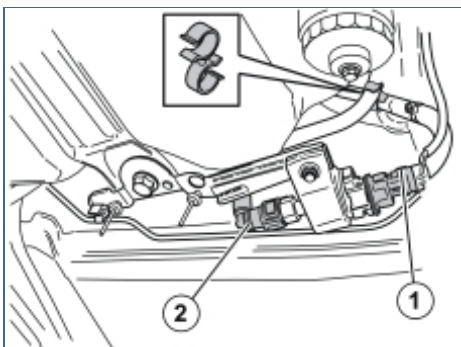
22



D2302959

- Remove the brake pipe (1) from the clamp
- Take the fuel pump (FP) and bracket. Position the bracket on top of the bracket for the fuel tank mounting, aligned with the small holes for the rivets
- Take two metal rivets (2) from the kit. Rivet the fuel pump bracket to the bracket for the fuel tank mounting.

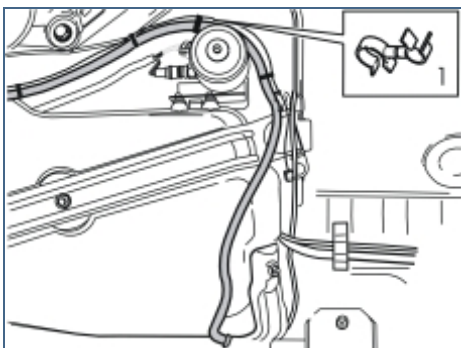
23



D2302960

- Take the double clamp from the kit. Secure the two fuel lines from the fuel pump (FP) to each other, opposite the two blue markings on the fuel lines
- Press the brake pipe back into the clamp
- Tighten the four screws securing the fuel tank. Tighten the screw for the fuel filter if it was loosened. Tighten the screws. Tighten to **24 Nm (18 lbf.ft)**
- Connect the connector (1) from the pre-routed power cable to the fuel pump (FP)
- Connect the quick-release connector (2) on the pre-routed fuel line to the fuel pump (FP).

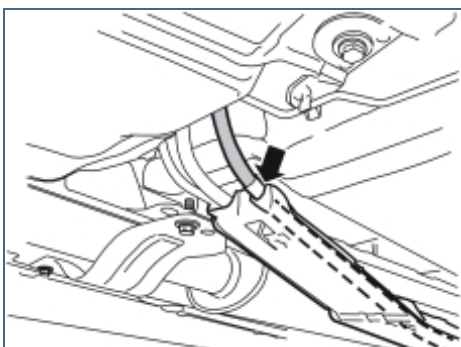
24



D2302977

- Take a double clamp from the kit. Clamp the fuel line to the brake pipe at point (1).

25A



R2303048

- Press into place the fuel hose from the recently installed fuel pump (FP). Press into place in the bottom of the rail and forwards, in the cut-out furthest to the right.

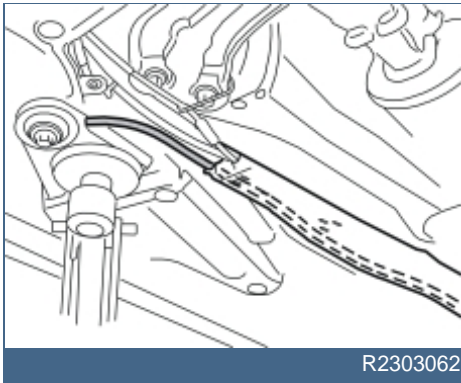
**Note!**

The marking on the fuel hose must be opposite the point where the fuel hose goes into the rail.

- Slide back the retaining clip for the rail. Press the rail against the car body.



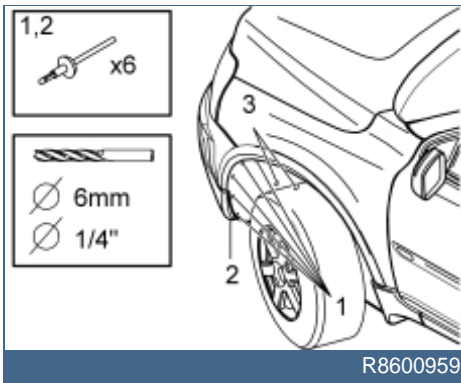
25B



R2303062

Ensure that the rail is securely installed.

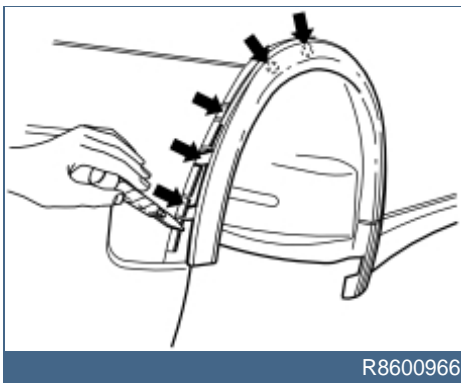
26



R8600959

- Remove the left front wheel
  - Drill out the five rivets (1) holding the wheel arch lining and the rivets (2) in the lower edge of the bumper. Use a **6 mm (1/4")** diameter drill bit.
- Remove:**
- any rivet remains
  - the plastic nuts (3) holding the wheel arch lining in place
  - the small protective panel.

27



R8600966

**Applies to cars with accessory side trim**

**Note!**

- The side trim on the front wing must not be removed.

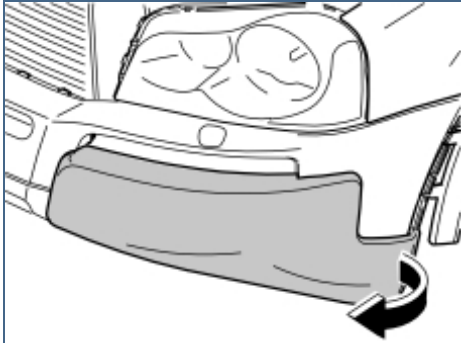
Only move the mounting lugs on the front wing side trim to one side so that the edge of the wheel arch lining can be exposed.

**Applies to cars without accessory side trim**

- Detach the wheel arch extension. Carefully pry off the wheel arch extension using a weatherstrip tool
- Pull the wheel arch extension up to the highest point until the three catches at the lower edge and the two clips slightly higher up have released.



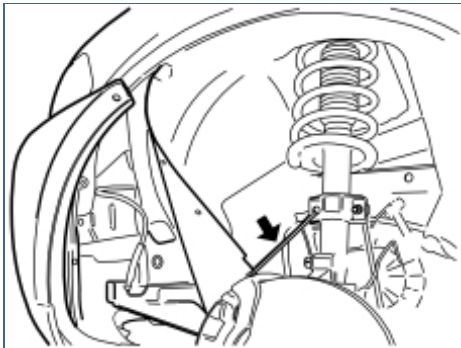
28



R8600961

- Remove the left-hand panel on the bumper by carefully pull off the left-hand lower edge until the clip at the bottom on the inside releases. Continue pulling until the clips around the panel release.

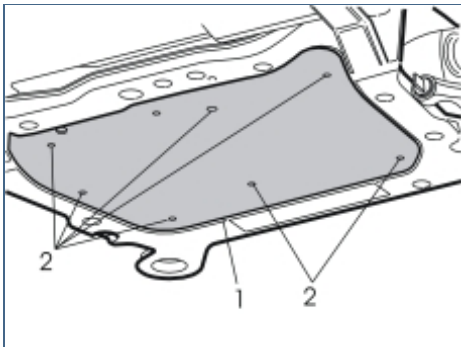
29



R8600965

- Push the wheel arch lining to one side. Secure with a tie strap or similar.

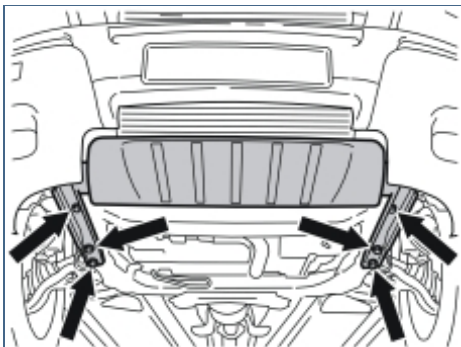
30



R2000348

- Remove the engine splash guard (1) by removing the screws (2).

31

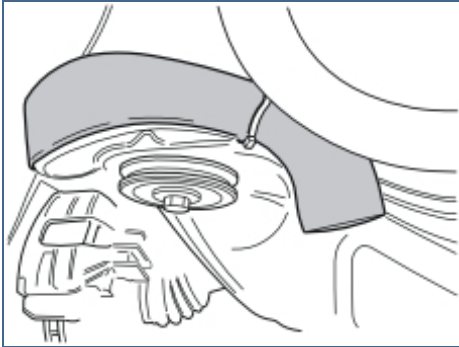


R2102465

- Remove the front skid plate. First remove the six screws (1) on the underneath
- With the assistance of a colleague, pull the skid plate forwards. Pull one of the corners until the mounting lug on that side of the skid plate releases from the sub-frame. Then pull off the other corner. The underside of the bumper cover may need to be carefully pushed down at the same time
- Open the cover for the radiator expansion tank
- Thread a hose onto the engine coolant drain nipple
- Open the drain nipple. Drain off the coolant.



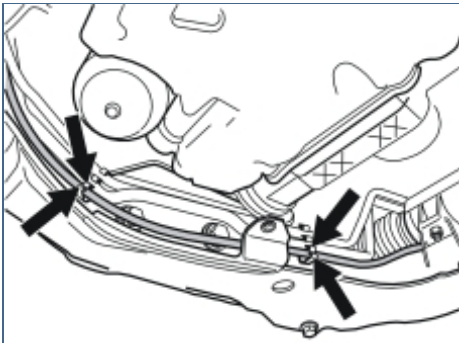
32



R2303064

- Pull off and push the pipe elbow to one side so that the fuel pipe can be positioned.

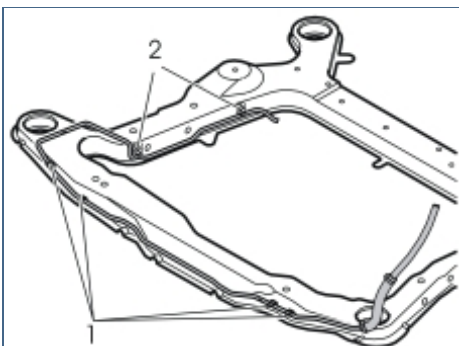
33



R2303065

- Remove the power steering pipes and the plastic hose from their clips to make installing the fuel pipe easier. In order to push the upper power steering pipe to one side, the rubber coated clamp on the upper side of the front edge of the sub-frame may need to be removed.

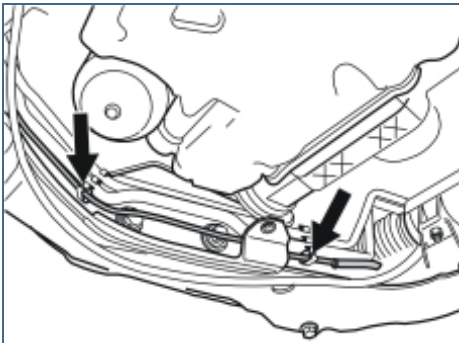
34A



R2303047

- Install the fuel pipe using the four pre-installed clips (1) (from the kit) on the sub-frame. Insert the fuel pipe between the disconnected pipes and the sub-frame. Press the fuel pipe into place using the clips in the front edge of the sub-frame and in the bottom in the clips (2) that secured the plastic hose. Due to limited space, the fuel pipe needs to be worked slightly in order to position it.
- Reinstall the power steering pipes. Press the plastic hose into place on the outside of the fuel pipe. Reinstall the rubber coated clamp if this has been removed

34B



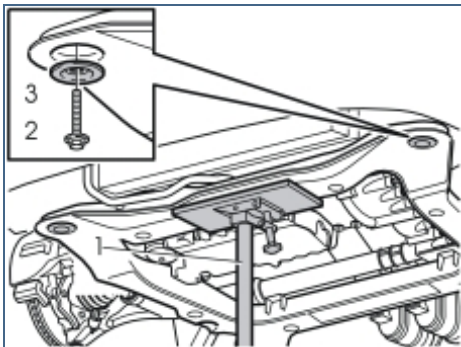
R2303066

- Check that the fuel pipe does not catch on the sub-frame. Check that the fuel pipe does not rub against pipes or screw heads for the suspension.





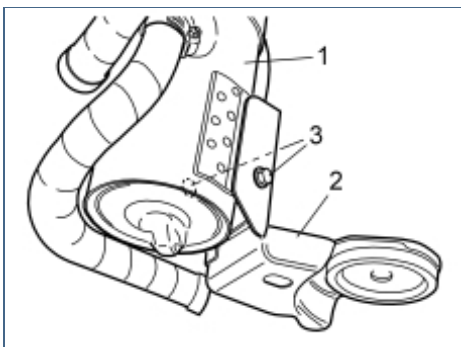
35



R6400811

- Reinstall the pipe elbow
- Install the jack (1) under the front edge of the sub-frame
- Take the weight off the sub-frame
- Remove the screw (2) and the washer (3) from the left front mounting on the sub-frame.

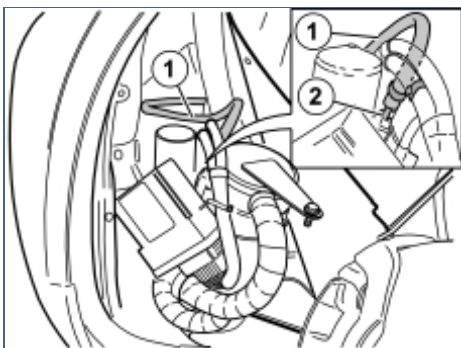
36



R8703683

- Install the heater (1) on the bracket (2.) Use the screws (3) from the kit. Tighten.

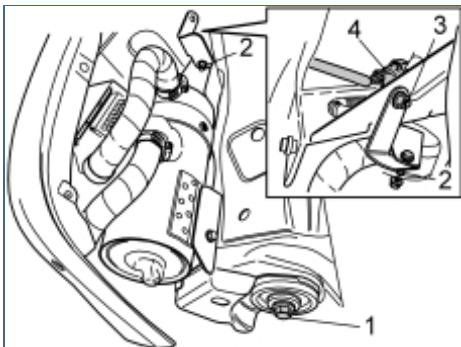
37



R8703684

- Slide the heater up to the installation position
- Take a small hose clamp for the fuel line from the kit. Install the hose clamp on the fuel hose (1) from the fuel pipe on the sub-frame
- Press the fuel line on the inlet (2) on the fuel pump (FP). Tighten.

38



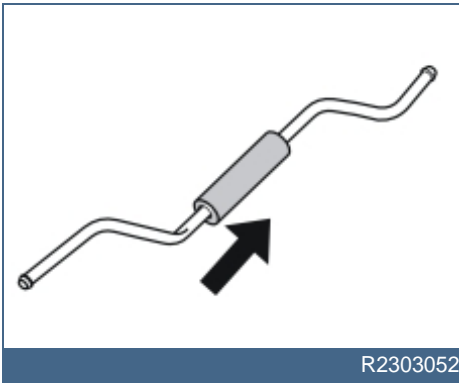
R8703685

- Take a new screw (1) from the kit. Secure the heater to the left-hand front corner of the sub-frame. Do not tighten fully yet
- Take the metal bracket and two nuts from the kit
- Install one of the mounting lugs for the metal bracket on the stud (2) on the heater. Install the nut. Finger tighten
- Install the other mounting lug for the bracket on the stud (3). Install the nut
- Tighten the heater to the sub-frame and the bracket. Tighten the screw (1). Tighten to **105 Nm (78 lbf.ft.)**. Angle-tighten to 120° or **max. 280 Nm (206 lbf.ft.)**
- Remove the protective cover from the pre-routed connector (4). Press in the catch on the top. Pull off the cover



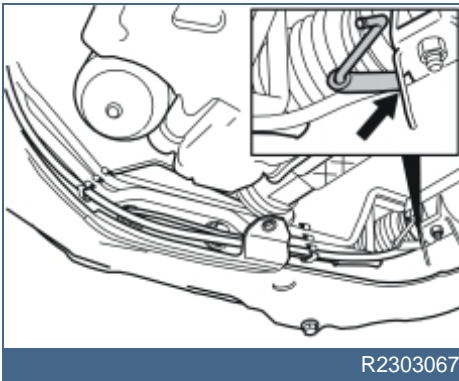
- Connect the cable from the heater to the connector.

39



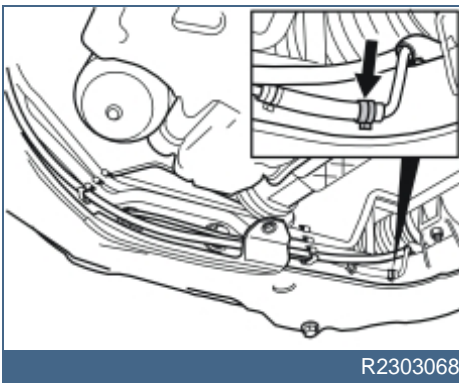
- Take the chafe protection and the short fuel pipe from the kit. Install the chafe protection on the pipe.

40



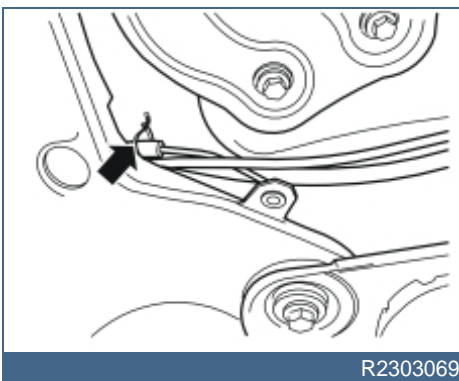
- Insert the end of the fuel line, which is kinked in two places, under the power steering and the anti-roll bar, on top of the rear right corner on the sub-frame.

41



- Take a hose clamp from the kit. Thread the hose clamp onto the short fuel line on the fuel pipe on the sub-frame
- Connect the short fuel pipe to the fuel line. Slide the pipe into the fuel line so that both pipes are opposite each other to prevent air pockets from forming
- Squeeze the hose clamp together.

42A



#### Illustration A

- Take a tie strap from the kit. Clamp the protective tube at the fuel pipe so that it is securely installed.

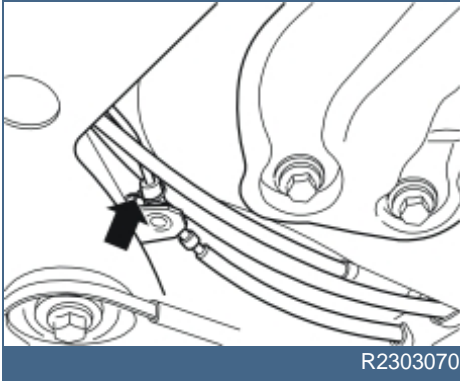
#### Illustration B

- Take a hose clamp from the kit. Thread the hose clamp onto the fuel line up to the fuel pump (FP) that was routed previously. Connect the fuel line to the short fuel pipe. Slide the pipe into the fuel line. Slide the pipe so far in that the two pipes are in contact with each other. This prevents air pockets from forming





42B



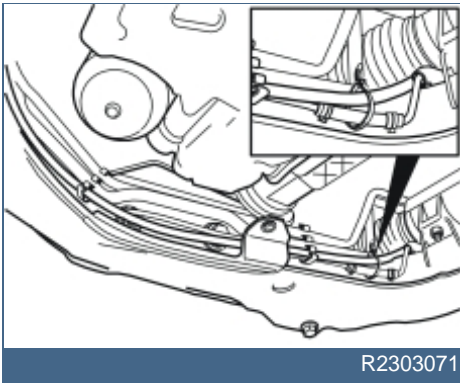
R2303070

- Ensure that the fuel line is routed correctly and does not obstruct the plastic hose or rub against the sub-frame or other components
- Squeeze the hose clamp together.

**Note!**

The fuel lines and fuel pipes must be at least 15 mm (19/32") from the brake pipe.

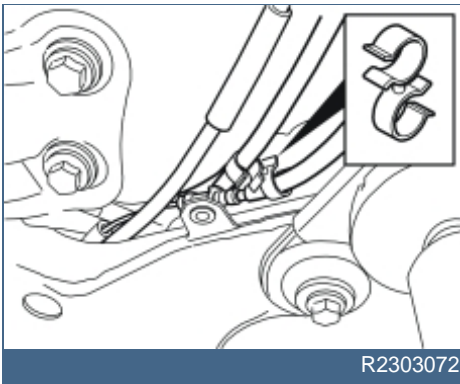
43



R2303071

- Take a tie strap from the kit and clamp the fuel pipe at the plastic hose.

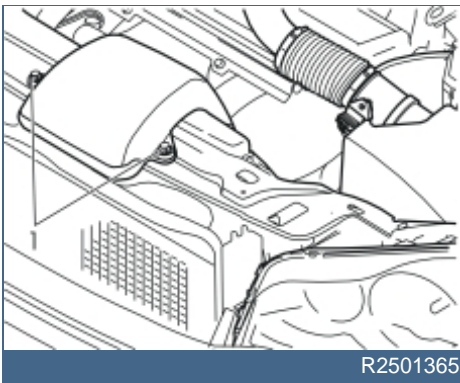
44



R2303072

- Take a double clamp from the kit and clamp the fuel line for the parking heater at the ordinary fuel line.

45

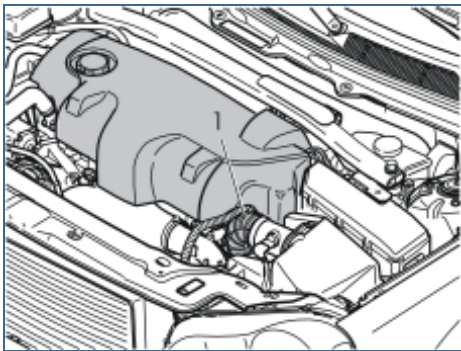


R2501365

- Remove the two screws (1) from the intake manifold for the air cleaner (ACL)
- Remove the intake pipe. Place the intake manifold to one side.



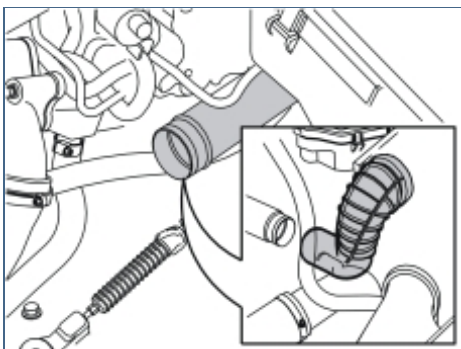
46



R2000398

- Remove the engine cover by pulling it straight upwards. It is secured by two holders at the front edge and two at the rear edge
- Remove the hose (1) from the air cleaner (ACL)
- Pull off the air cleaner (ACL) from its mounting in the left-hand front member
- Move the air cleaner (ACL) away from the gearbox by tying it up with a chord or similar. Depending on the version, more than one hose or connector may need to be detached from around the air cleaner (ACL).

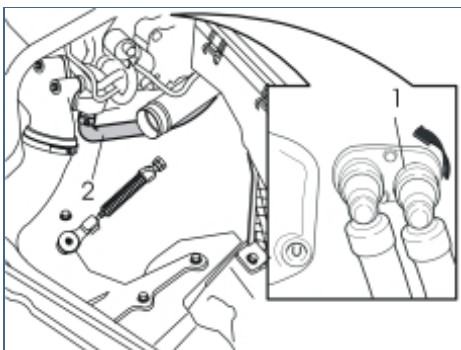
47



M2102179

- Remove the hose from the turbocharger (TC) intake manifold.

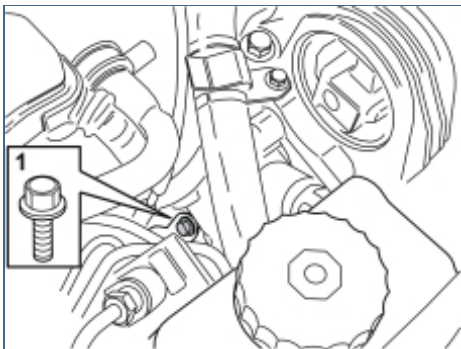
48



M2102177

- Release the quick-release connector on the left heater hose (1) for the passenger compartment heater. Press in the circlip on the quick-release connector opposite the two arrow heads. At the same time, turn the circlip in the direction indicated by the arrow. Turn the quick-release connector slightly and pull it out
- Detach the heater hose (2) on the radiator pipe at the left-hand side of the front edge of the cylinder head
- Remove the heater hose. It will not be reused.

49

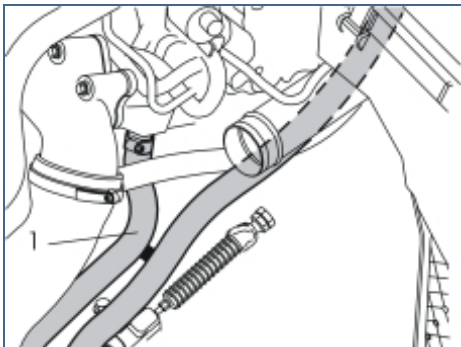


M2302969

- Remove the screw (1). Detach the pipe on the turbocharger (TC) so that the quick-release connector can be installed on the new hose assembly at the cowl panel.



50A

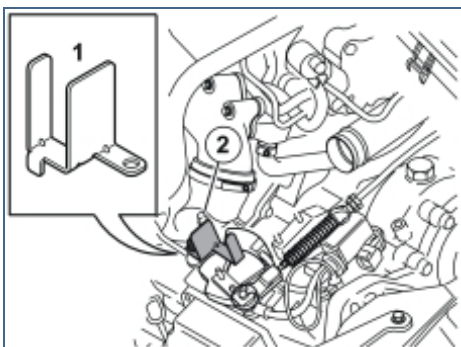


M2102178

## Illustration A

- Insert the heater hoses (from the kit) down into the front edge of the gearbox. Continue out to the front edge of the left-hand wheel arch. On cars with automatic gearboxes, route both heater hoses between the two oil hoses from the automatic gearbox
- Connect the shorter of the heater hoses to the radiator pipe (1) at the left-hand side of the front edge of the cylinder head. Tighten using a new hose clamp from the kit
- Route the longer of the heater hoses under the intake manifold to the turbocharger (TC), following the same routing as the old heater hose. Connect it where the old heater hose was removed
- Reinstall the screw in the pipe for the turbocharger (TC).

50B



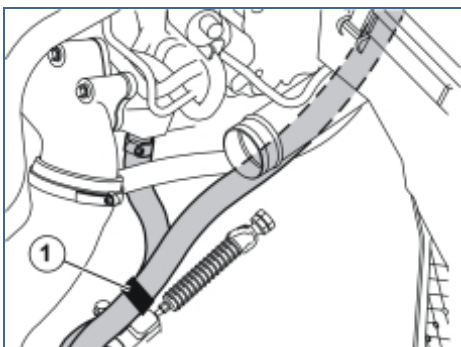
R4303090

## Illustration B

### Applies to cars with automatic gearboxes

- Take the bracket for hoses and the nut from the kit. Tighten the bracket for hoses (1) on the stud (2) on the right-hand side of the gear selector.

50C



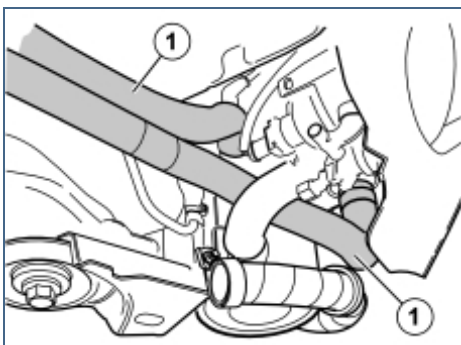
R2102527

## Illustration C

### Applies to cars with automatic gearboxes

- Position the hoses in the bracket for hoses (1).

51



R8703686

- Connect the two heater hoses (1) to the heater using the hose clamps from the kit. Tighten the hoses.

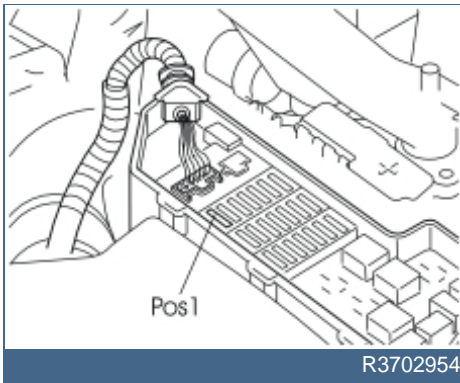
52

- Tighten the drain nipple on the radiator. Remove the hose
- Reinstall the engine splash guard. Tighten to **25 Nm (18 lbf.ft.)**



- Reinstall the front skid plate. Tighten to **50 Nm (37 lbf.ft.)**
- Bend back the wheel arch lining. Install the small plate. Install the nuts. Tighten
- Press the wheel arch extension into place
- Take rivets from the kit. Rivet the front edge/lower edge of the wheel arch lining
- Reinstall the bumper panel
- Reinstall the wheel. Tighten the screws. Tighten to **140 Nm (103 lbf.ft.)**

53



- Open the cover on the fuse holder in the engine compartment. Install a 25A fuse in position 1
- Reinstall the cover.

54

- Fill with coolant. Reinstall the expansion tank cap
- Reinstall the air cleaner (ACL). Connect any disconnected lines or hoses
- Reinstall the intake manifold on the front cover plate between the headlamps. Tighten the screws. Tighten to **10 Nm (7 lbf.ft)**
- Start the engine and bleed the cooling system
- Reinstall the engine cover
- Programme the software. See the service information in VIDA
- Test the function of the heater according to separate instructions.