

OPV - 483



Retailer Technical Journal 22721
Recall 220
Fuel pump inspection/replacement

Date 04-22-2010

Volvo Cars of North America, LLC
Technical Engineering

Reference: VIDA

Note! If using a printed copy of this Retailer Technical Journal, first check for the latest online version.

NOTE! THIS DOCUMENT SUPERSEDES THE PREVIOUS RETAILER TECHNICAL JOURNAL RTJ 22721 DATED 04-01-2010. PLEASE UPDATE YOUR FILES.

AFFECTED VEHICLES:

Model	Type	Model year	Chassis range
S80	184	2001-2005	0176255-0406781
V70	285	2001-2004	0064306-0459385 0071747-0459095
S60	384	2001-2004	0006099-0422140
XC70	295	2001-2004	0012318-0173074
XC90	275	2003-2005	0000690-*0188345

* Corrected chassis range

DESCRIPTION: Volvo Cars of North America, LLC. (Volvo) has determined that a defect related to motor vehicle safety exists in the fuel pump of certain model year 2001-2005 S80, 2001-2004 S60, V70, V70XC/XC70 and 2003-2005 XC90 vehicles that were sold, or are registered in the states of Alabama, Arizona, Arkansas, California, Florida, Georgia, Hawaii, Kentucky, Louisiana, Mississippi, Nevada, New Mexico, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Utah, Virginia, District of Columbia and U.S. Territories.

Volvo investigations has identified that a specific version of the fuel pump can when exposed to certain environmental conditions (hot climate and temperature cycling) over time and in combination of varying fuel quality, develop cracks in the fuel pump flange. If the condition occurs you may notice fuel smell and/or fuel seepage.

SERVICE: The corrective action will be to inspect the version of the fuel pump installed in the vehicle, and if necessary replace the fuel pump with a part of a modified design as described in this document.

TOOLS:

Description	Quantity	Part number
Fuel tank caddy	1	9814070*
Adapter	1	9995480
Adapter	1	9995484
Adapter	1	9995721
Wrench	1	9995720
Wrench	1	9997314

*Or equivalent equipment.

MATERIALS:

Description	Quantity	Part number
Pump unit	1	30761742*
Pump unit	1	30761743*
Pump unit	1	30761744*
Pump unit	1	31273510*
O-ring	2	9183708
Flange screw (XC90)	12	985719
Flange lock nut (non XC90)	1	987891
Washer (non XC90)	1	986503
Flange screw (non XC90)	1	985055
Flange screw (non XC90)	1	985047

*Chassis and model specific see VIDA

NOTE! Be sure to read this entire document before you begin!!

1.

Preparations

Remove the key from the ignition.

Note! Ensure no one can insert the ignition key during work.

Note! In order to carry out this action in the most efficient way, the fuel pump check should start with draining the fuel tank in accordance with the stated procedure, parallel with the fuel pump checking procedure.

2.

Safety precautions for handling fuel

Warning! Avoid ignition sources.

Use breathing protection, type A/brown (organic substances) filter mask when there is a risk of breathing in fuel vapors.

Use protective gloves to avoid skin contact with fuel.

Ensure that there is good ventilation when draining and filling fuel.



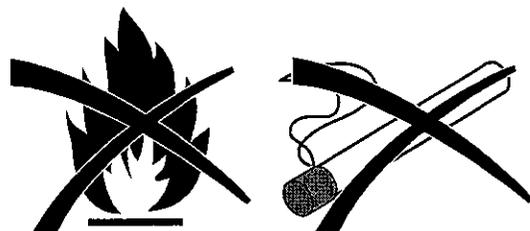
3.

Draining the fuel tank

Insert the heavy duty hose 1.3 m/4 ft. into the fuel filler pipe, measured from the edge of the opening of the filler pipe.

Connect to the relevant draining equipment. Pump until air comes out.

Warning! Ensure that ventilation is good when draining the fuel.



4.

Draining the fuel lines

Remove the protection on the valve located on the fuel rail.

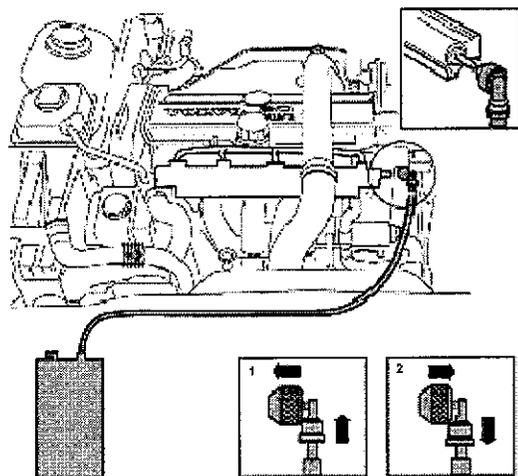
Connect adapter 9995484 to the draining equipment 9814070 (or similar specification).

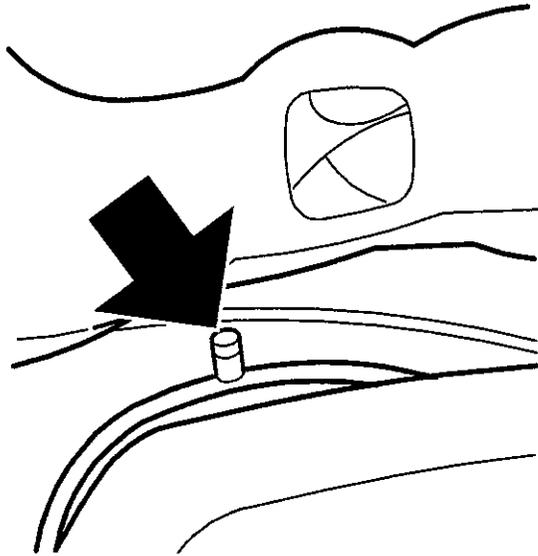
Connect the adapter to the valve on the fuel rail in the locked position (image 1 = valve closed).

Start the draining equipment.

Release the adapter (image 2 = valve open).

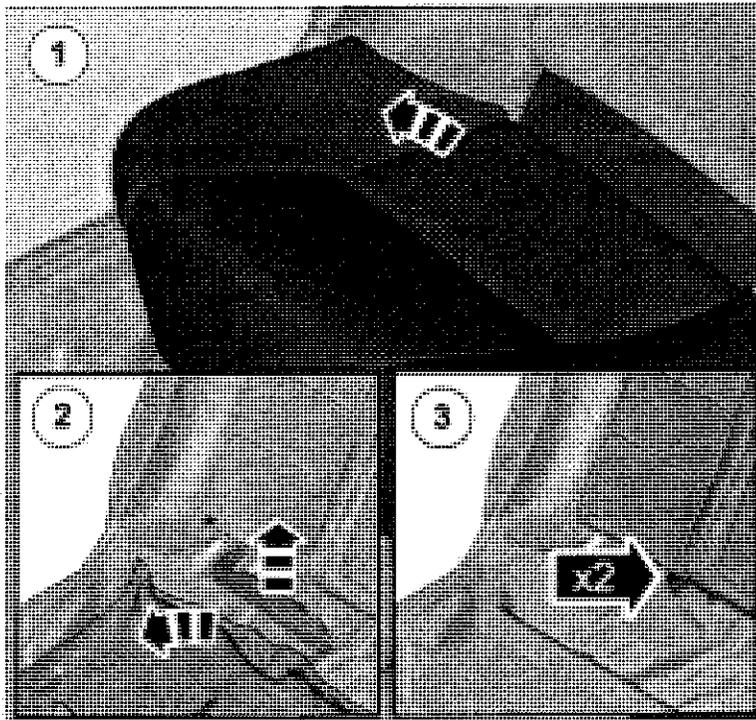
Raise the vehicle.





5.

Remove the protection on the valve located on the fuel filter.
 For easier access, remove the right-hand rear wheel.
 Connect bleed hose 9995480 to the valve before the fuel filter.
 It takes approximately 2 minutes to drain the lines.



**Exposing for checking
S60/S80**

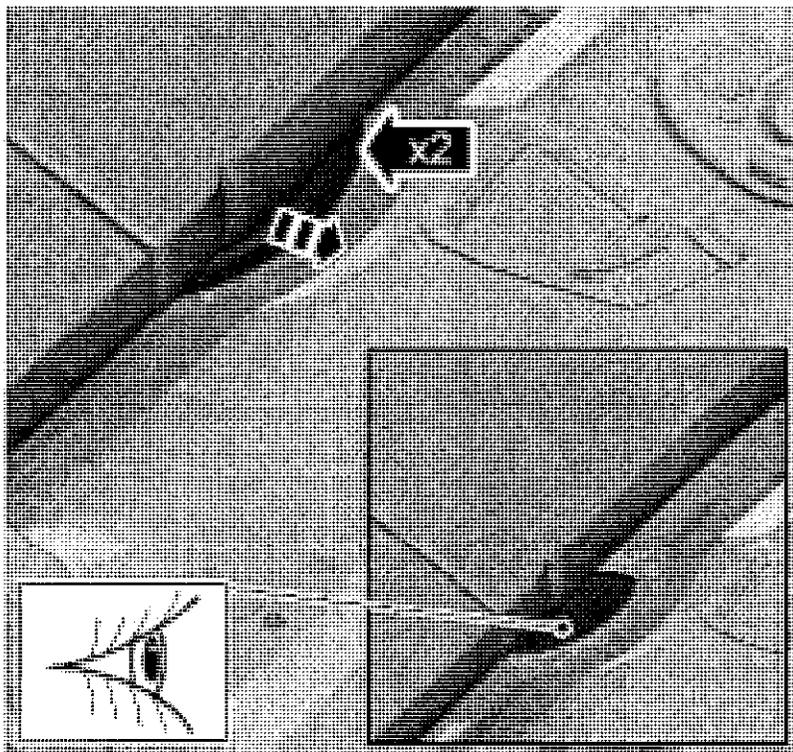
Remove the seat cushion

Fold the front section of the cargo compartment to one side.

Remove the mounting for the child seat.

Screw M12. Torque 40Nm/29 ft-lb.

Nut M10. Torque 30Nm/22 ft-lb.



Fold the insulation mat to one side

Remove the cover from above the fuel pump.

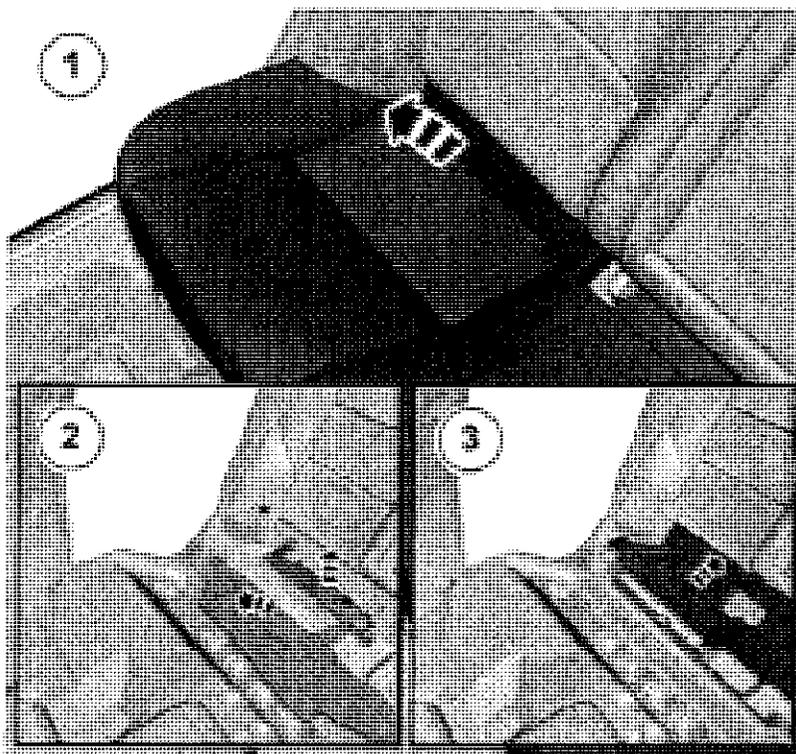
Nut M6. Torque 6 Nm/53 in-lb.

Check the fuel pump version.
Check pics. On pg. 9

If the check reveals that the pump is the correct version, reassemble in reverse order.

Caution! Make sure that new screws and nuts are installed

If the check reveals that the fuel pump must be replaced, carry out work according to procedure starting on pg.8



Exposing for checking

V70/XC70

Fold the seat cushion forward.

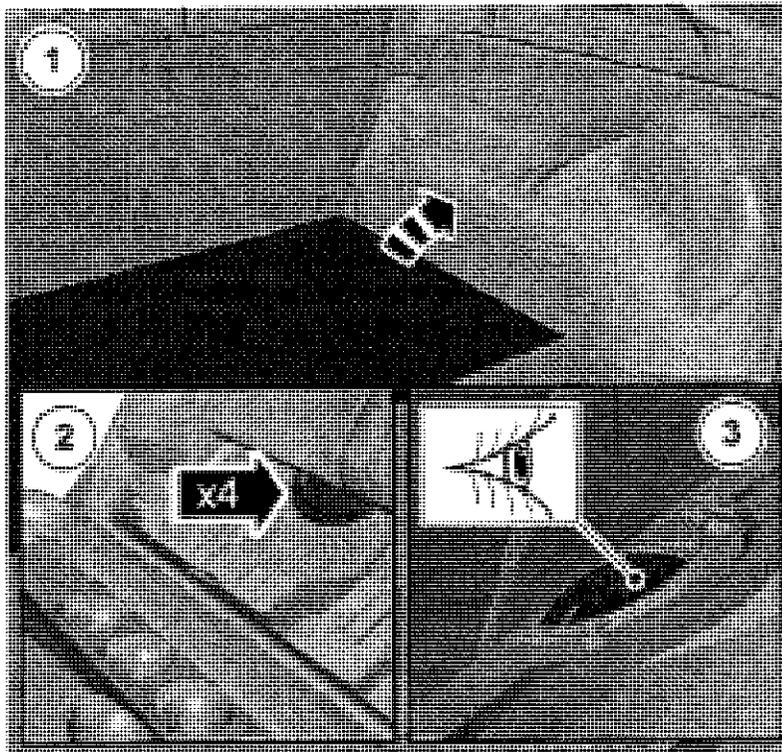
Remove the cargo compartment floor.
Applies to vehicles (5 seats).

Only applies to vehicles with extra seat, remove the front section of the floor in the cargo compartment.

Remove the mounting for the child seat.

Screw M12. Torque 40 Nm/29 ft-lb.

Nut M10. Torque 30Nm/22 ft-lb.



Fold the insulation mat to one side.

Remove the cover from above the fuel pump.

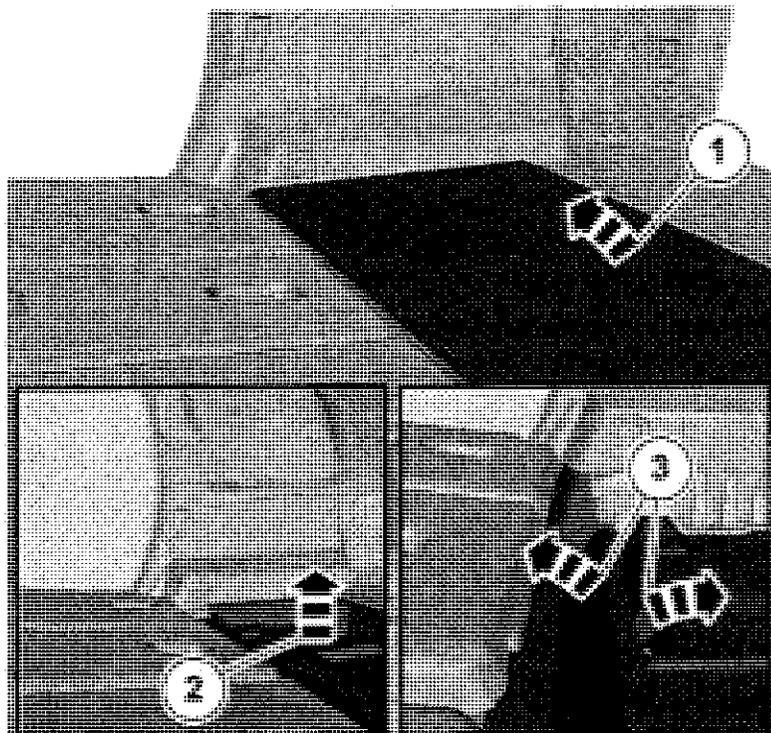
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Check the fuel pump version.
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If the check reveals that the pump is the correct version, reassemble in reverse order.

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**Exposing for checking
XC90 5 seats**

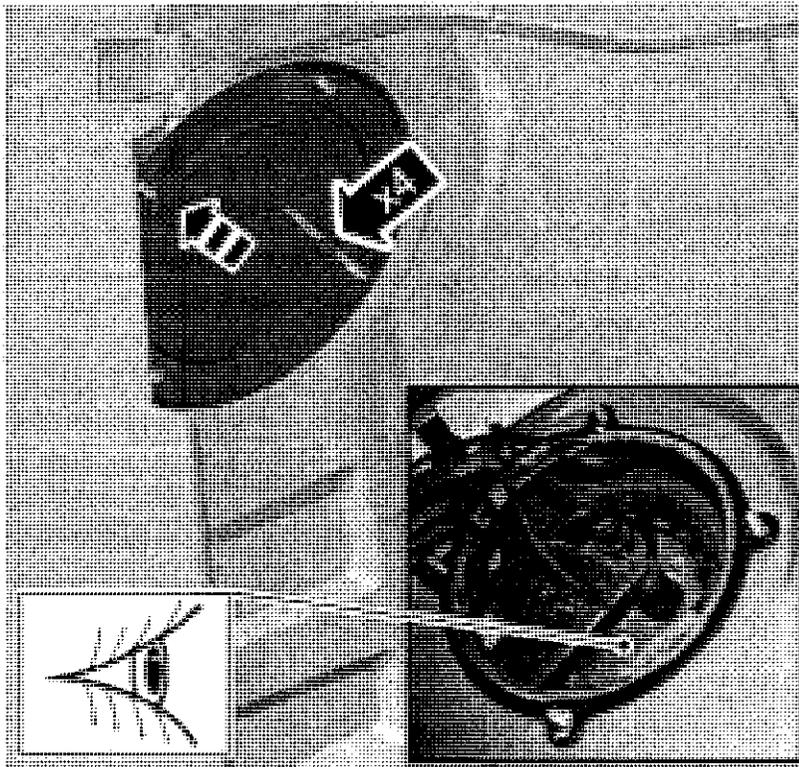
Fold the right rear backrest forward.

Remove the front part of the cargo compartment floor.

Fold the mat to one side at the front of the cargo compartment.

Note: Do not remove 2nd row seat for checking fuel pump .

2nd row will only be removed if fuel pump must be replaced.



Remove the cover from above the fuel pump.

Nut M6. Torque 6 Nm/53 in-lb.

Check the fuel pump version.
Check pics. On pg. 9

If the check reveals that the pump is the correct version, start resetting by refilling with fuel.

Perform general resetting in reverse order.

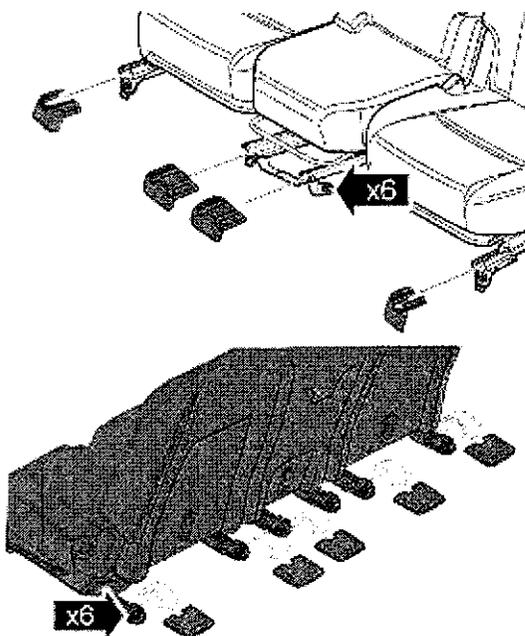
If the check reveals that the fuel pump must be replaced, carry out work according to these instructions.

Exposing for checking XC90 7 seats

Fold up the backrest for the third row of seats.

Remove the second row of seats.
Screw M10. Torque 50 Nm/36 ft-lb.

Note: These instructions also cover the removal of the fuel pump in a 5 seat XC90.

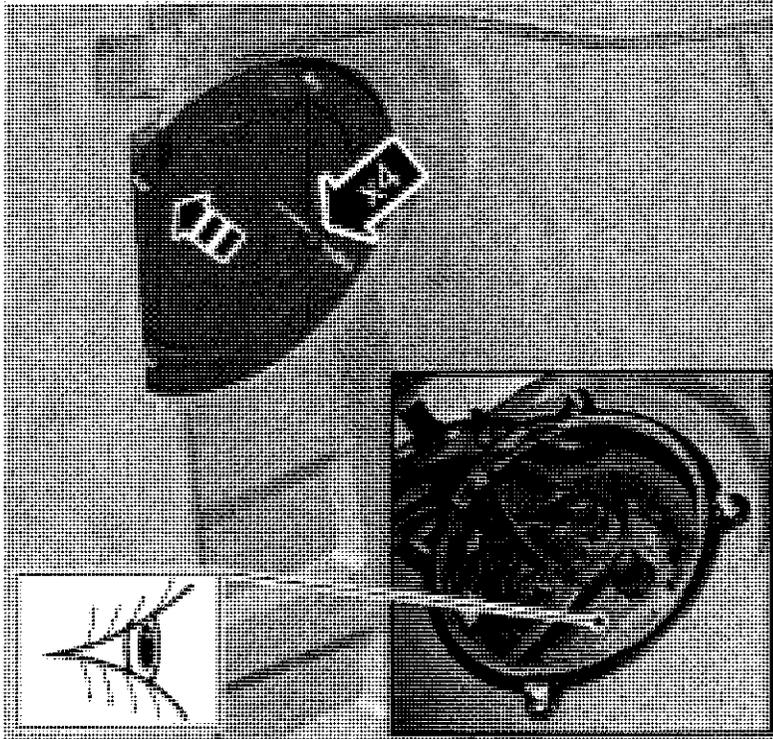
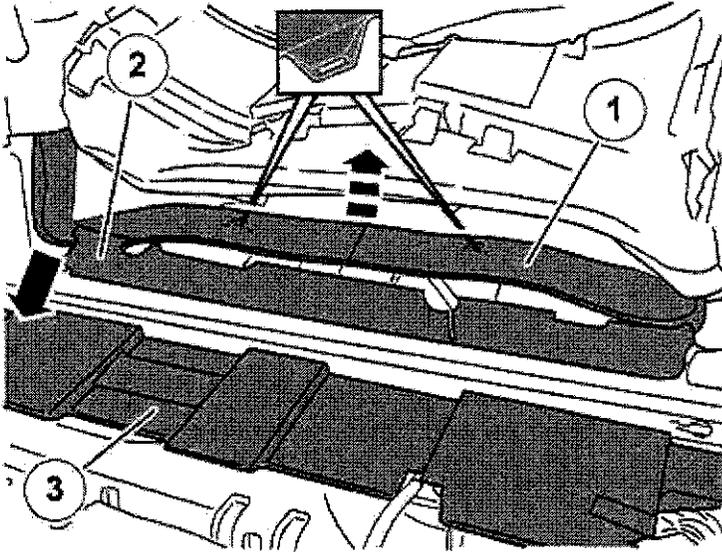


Exposing for checking

Fold aside the floor mat.

Remove the insulation block.

Remove the air duct.



Remove the cover from above the fuel pump.

Nut M6. Torque 6Nm/53 in-lb.

Check the fuel pump version.

Check pics. On pg. 9

If the check reveals that the pump is the correct version, start resetting by refilling with fuel

Perform general resetting in reverse order.

Caution! Make sure that new screws are installed

If the check reveals that the fuel pump must be replaced, carry out work according to these instructions.

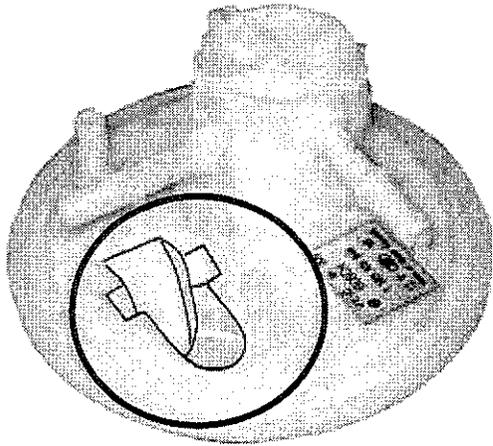
Identifying:

The fuel pumps in the following pictures are the only correct pumps to remain in the vehicle. Any other pump color or configuration must be replaced.

Pic.1

The pump flange is **white** with a cavity cast in the flange.

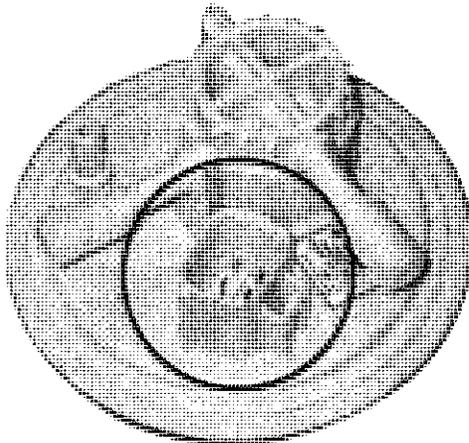
This pump is correct.



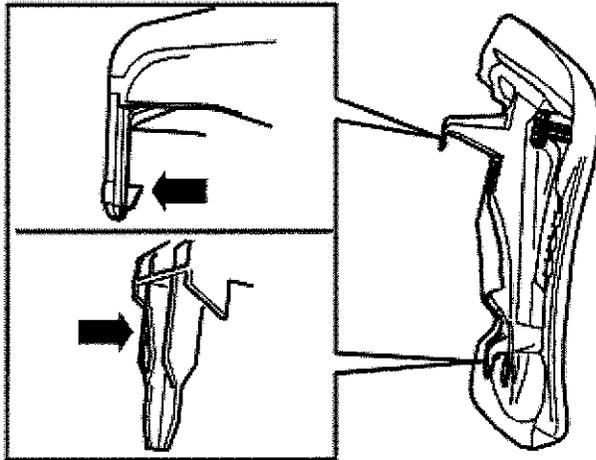
Pic.2

The pump flange is **yellow with electrical connector.**

This pump is correct.

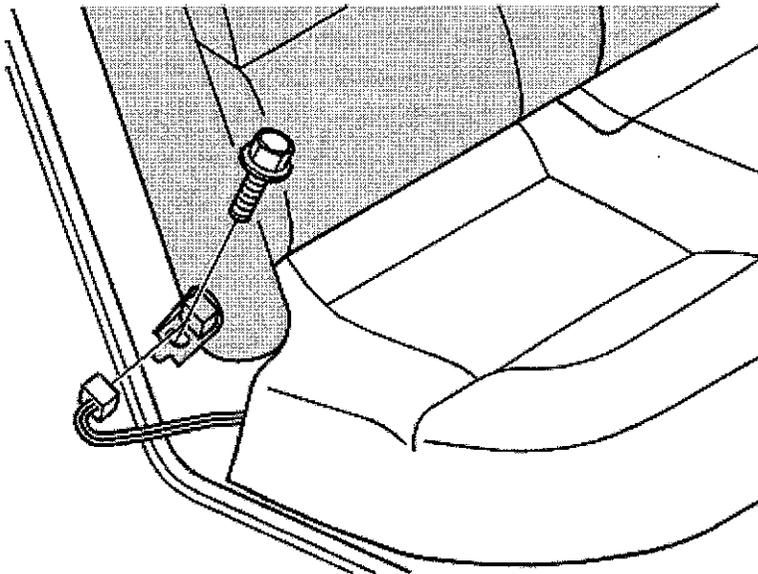


Fuel pump removal if necessary:

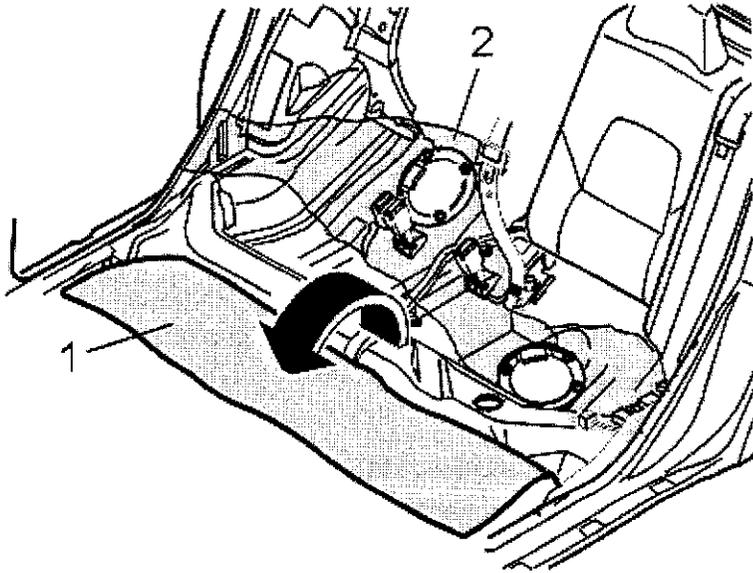


Remove the right-hand side cushion, see illustration.

Insert a hand between the mounting and the wheel arch panel and press in the catch. With the other hand, press in the upper mounting's catch towards the panel and press the bolster upwards.

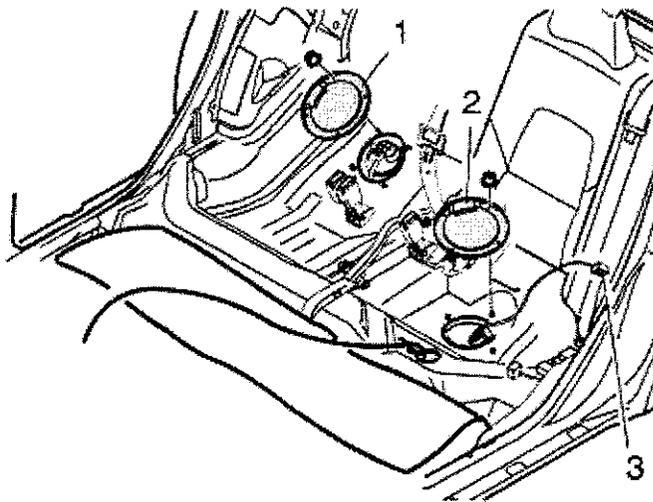


Disconnect the connector at the hinge on the right-hand side. Remove the screw on the mounting for the hinge on the right-hand side. Lift the backrests out.



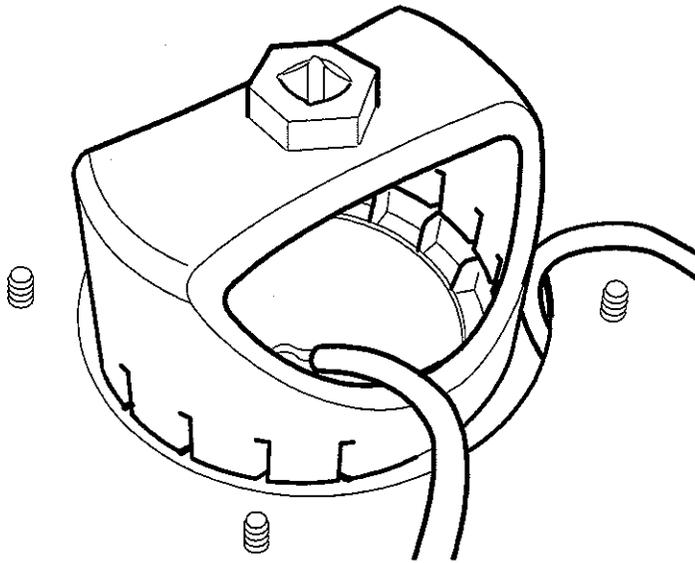
Push the carpet (1) to one side.
Remove the insulation panel.
Cover the area (2) around the cover
and between the doors with
absorbent material.

Caution! Ensure that dirt does not enter the tank.



Remove the cover (2) from over the
tank units.
Detach the left-hand fuel tank unit's
connector (3). (Certain models only)
Detach the right-hand fuel tank
unit's connector. (Certain models
only)

Remove the hoses from the right-
hand fuel tank unit.



Draining the fuel tank

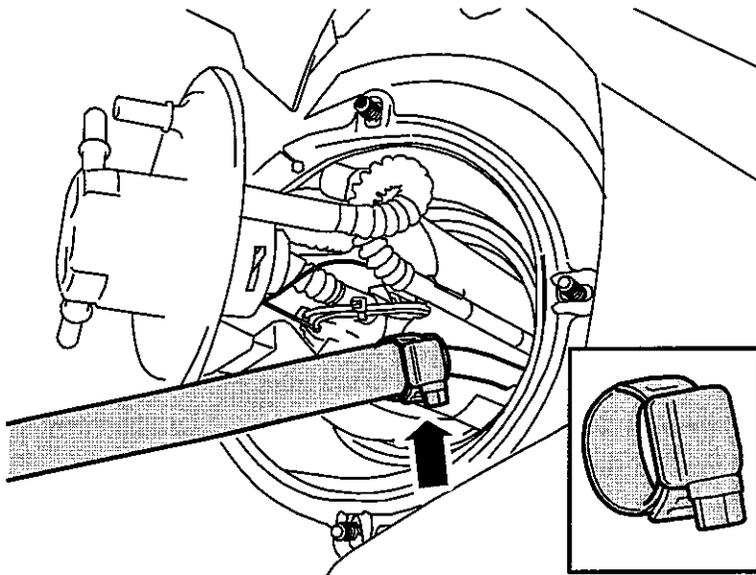
Use wrench 9995720.

Clean and remove all dirt at the right and left-hand fuel tank units.

Open the right-hand fuel tank unit. Insert the thick hose, see image, and draw up the remaining fuel from the bottom of the right-hand side of the tank.

Connect hose 9995721 to the heavy duty hose. Suck out the remaining fuel from the bottom of fuel tank unit reservoir.

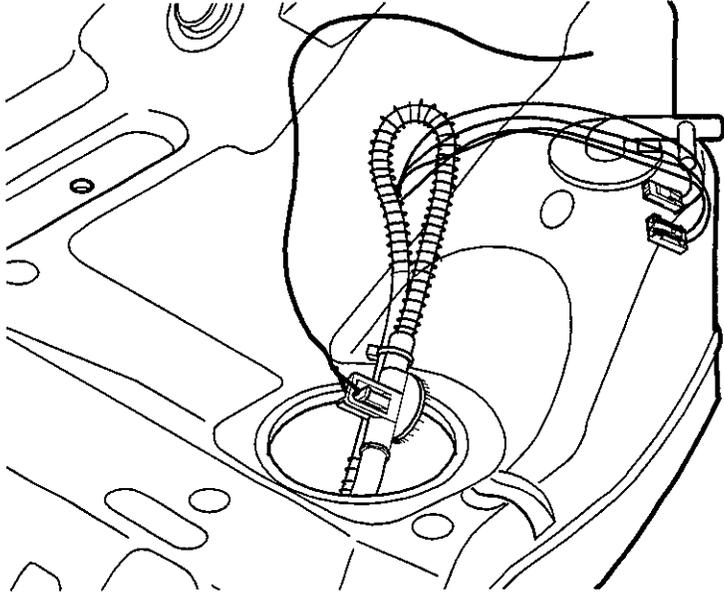
Warning! Ensure that ventilation is good when draining the fuel.



Carefully detach the overflow pipe from the reservoir.

Connect the hose from the draining - unit to the overflow pipe using a hose clamp.

Pump until air comes out.



Fuel pump replacement

Use wrench 9995720.

NOTE: Use wrench 9997314 for XC90.

Open the left-hand fuel tank unit.

Remove:

- the two connectors from the underside of the left-hand level sensor
- left-hand level sensor from its underlying ejector

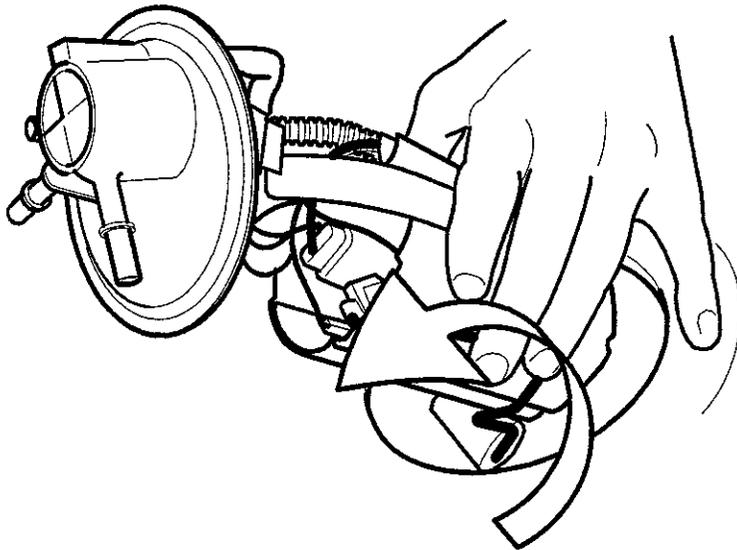
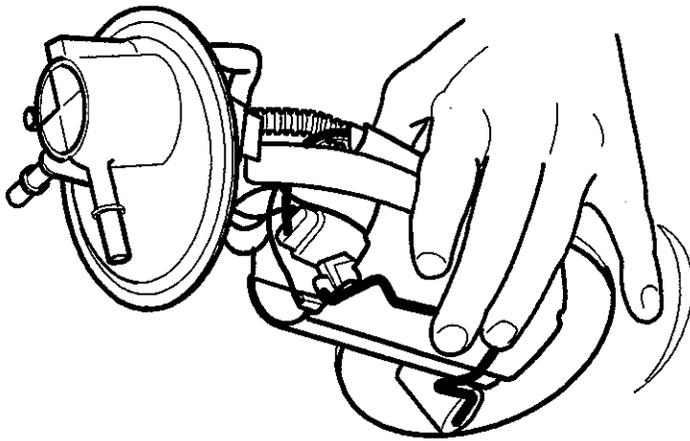
Note! Secure a wire in the area of the ejector.

The wire must be sufficiently long that it reaches over to the opposite side of the tank with some excess remaining to ensure that it does not slide into the tank.

The wire is needed to pull the hoses and wiring back to the left-hand side of the tank after the fuel tank unit has been replaced.

Removal of the right-hand fuel pump and level sensor

Grip the holder to the right of the fuel pump and level sensor. Pinch the float in its lowest position.



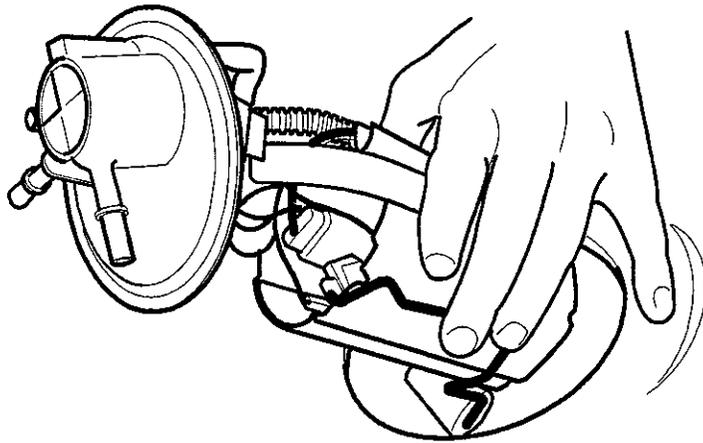
Warning! Take care with fuel spillage.

Carefully and slowly pull up the reservoir. Carefully work it out. Pull the hoses out from the tank without pulling up the entire wire from the right-hand hole in the tank.

Caution! It is important that the float arm is not broken or bent.

Remove the wire from the ejector for the old fuel pump and level sensor.

Remove the o-rings for the left and right fuel pump and level sensor. Remove any debris from the seats of the level sensor.



Install the right-hand fuel pump and level sensor and left-hand level sensor in the tank.

Lubricate the new O-rings with lubricant (see the materials list) and install them.

Install the wire on the new fuel pump and level sensor's ejector. Insert the hoses and lines into the tank via the right tank hole.

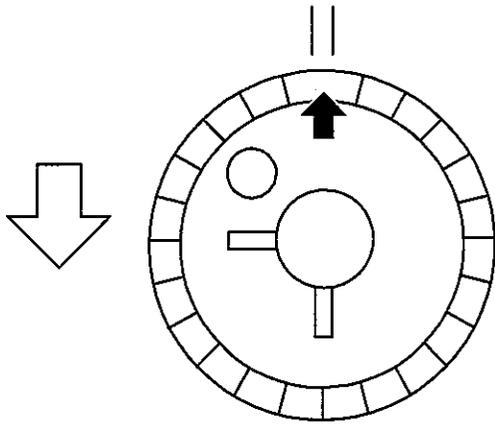
Grip the right-hand level sensor and fuel pump holder and pinch the float in its lowest position. Carefully and slowly lower the reservoir. Carefully work the reservoir into place.

Pull the wire so that the hoses and wiring end up on the left side of the tank.

Install the:

- left-hand level sensor on the ejector
- the connectors on the underneath of the left-hand level sensor

Remove the wire from the ejector.



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Install the right-hand fuel pump and level sensor

Check that the O-ring is correctly positioned.

Press down the right-hand tank unit so that the fuel line connections are pointing forward and to the right.

Tighten the screw. Tighten to 60 Nm/44 ft-lb.

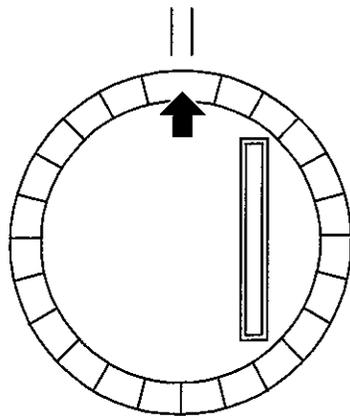
Install the hoses on the fuel tank unit.

Wipe up any fuel spillage.

Position the wiring in the cut-out in the rubber ring.

Note! Check that the arrow on the cover is between the markings on the tank. If the arrow is outside the markings the fuel gauge sensor will give an incorrect value and the float may catch against the inner wall of the tank.

If the arrow on the cover is outside the markings: Slacken off the screw and adjust the position of the fuel tank unit. Tighten as above.



Install the left-hand level sensor

Check that the O-ring is correctly positioned.

Press the left fuel tank unit down so that the row of protruding cables runs along the vehicle.

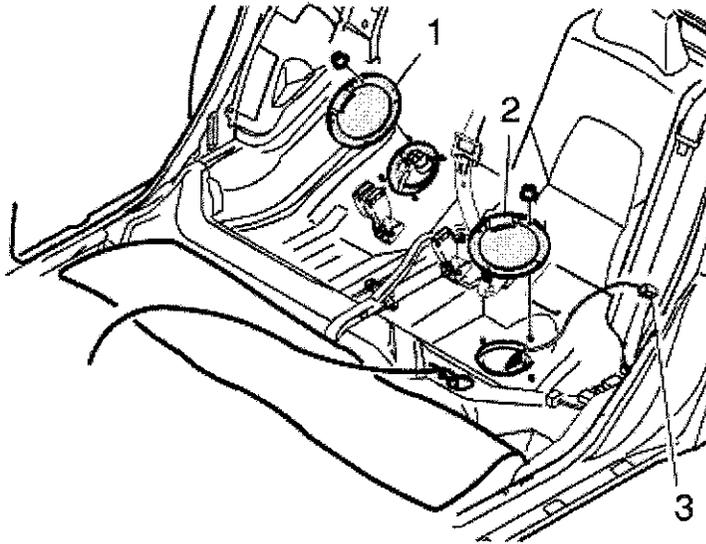
Tighten the screw. Tighten to 60 Nm/44 ft-lb.

Wipe up any fuel spillage.

Position the wiring in the cut-out in the rubber ring.

Note! Check that the arrow on the cover is between the markings on the tank. If the arrow is outside the markings the fuel gauge sensor will give an incorrect value and the float may catch against the inner wall of the tank.

If the arrow on the cover is outside the markings: Slacken off the screw and adjust the position of the fuel tank unit. Tighten as above.

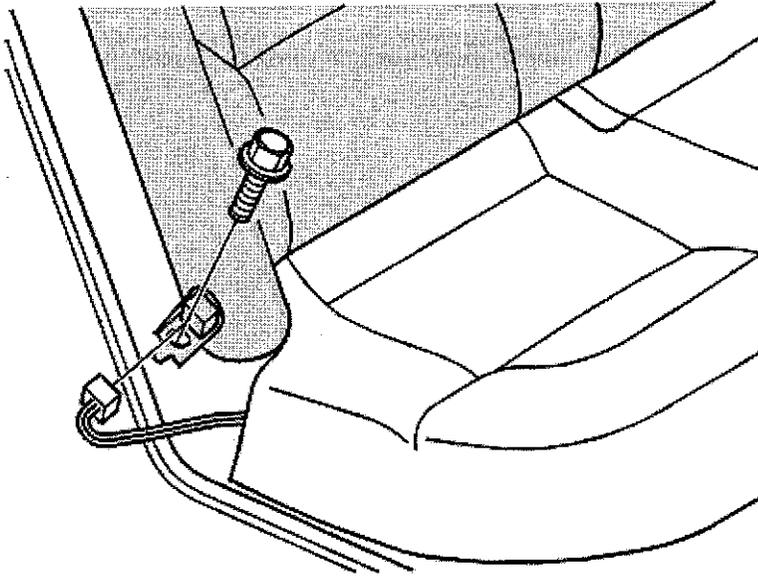


Install the cover

Connect the wiring and connectors (3) to the fuel pump and the level sensor.

Install the cover (1 and 2) over the fuel tank units. Tighten the nuts.

Install the insulation panel.



Install the cushion

Install:

- The mounting to the child seat. Tighten the nut to 30 Nm/22 ft-lb and the screw to 40 Nm/29 ft-lb. Use new nut, washer and screw.
- Backrests. Use new screw. Tighten to 50 Nm/36 ft-lb.
- the connector
- the side cushion
- the seat cushion

Refilling with fuel

Start refilling the fuel that was drained from the tank.

Warning! Ensure that ventilation is good when filling the fuel.

Follow-up work

Test drive the vehicle.
Check for leaks.

VOLVO for life,
Volvo Cars of North America, LLC
Technical Engineering