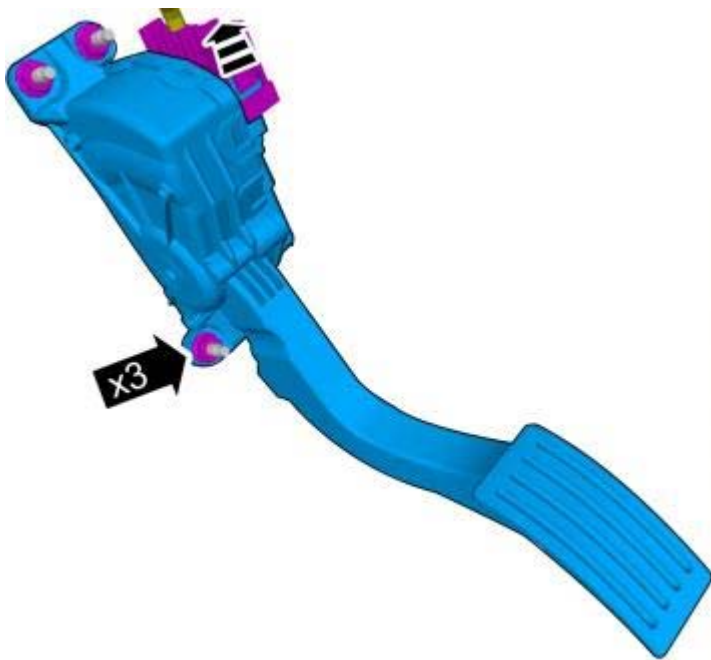


## **ENGINE**

### **Engine Control - Removal, Replacement And Installation**

## **ACCELERATOR PEDAL**

### **REMOVAL AND INSTALLATION**



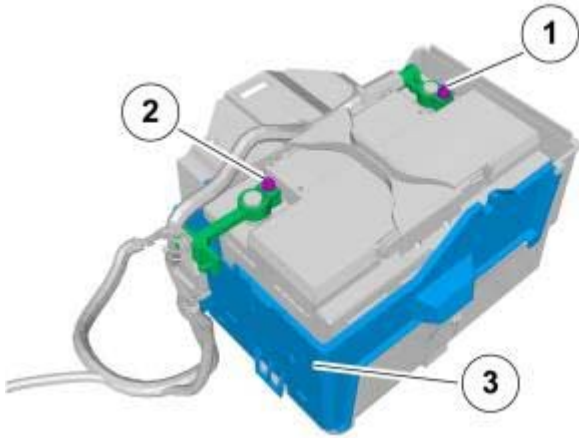
**Fig. 1: Identifying Accelerator Pedal**  
Courtesy of VOLVO CARS CORPORATION

**Torque: M6**

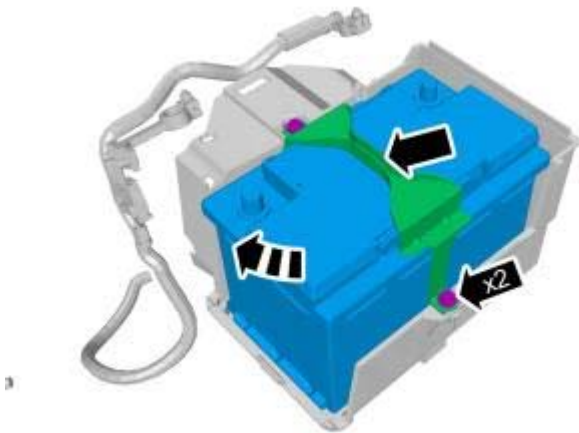
10 Nm

**Courtesy of VOLVO CARS CORPORATION**

Perform battery disconnecting and connecting, see **BATTERY DISCONNECTING AND CONNECTING**



**Fig. 3: Locating Battery Box And Terminal Connector Bolts**  
Courtesy of VOLVO CARS CORPORATION



**Fig. 4: Identifying Battery, Holder And Bolts**  
Courtesy of VOLVO CARS CORPORATION

**Torque: M6**

10 Nm

**INSTALLATION**

To install, reverse the removal procedure.

**VEHICLES WITH BATTERY MONITORING SENSOR (BMS)**

Reset according to DIAGNOSTICS/VEHICLE COMMUNICATION/CEM/Advanced/Resetting information

## ACCESSORIES AND BODY, CAB

### Body Frame - Removal, replacement and installation

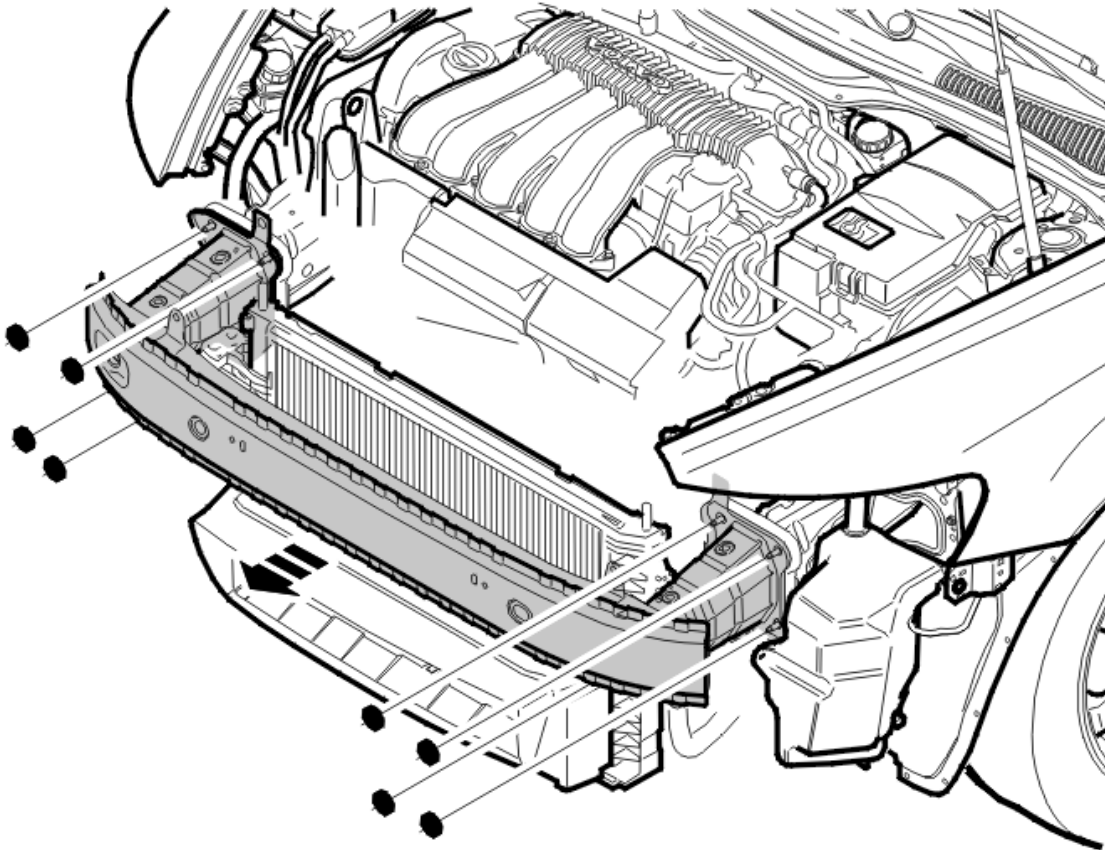
## FLOOR, FRAME SECTION, WHEEL HOUSING, BULKHEAD

### BUMPER RAIL, FRONT

**NOTE:** The illustrations in this service information are used for different model years and/or models. Some variation may occur. However, the essential information in the illustrations is always correct.

### REMOVAL

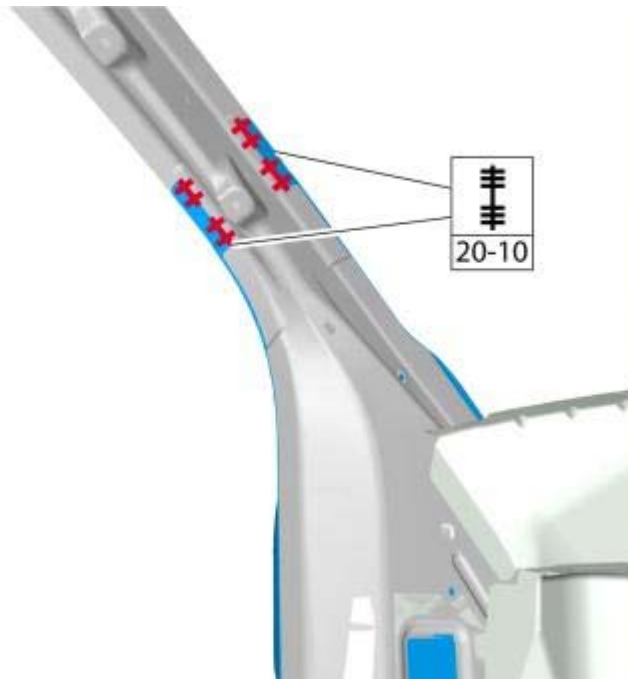
#### REMOVING THE FRONT BUMPER RAIL



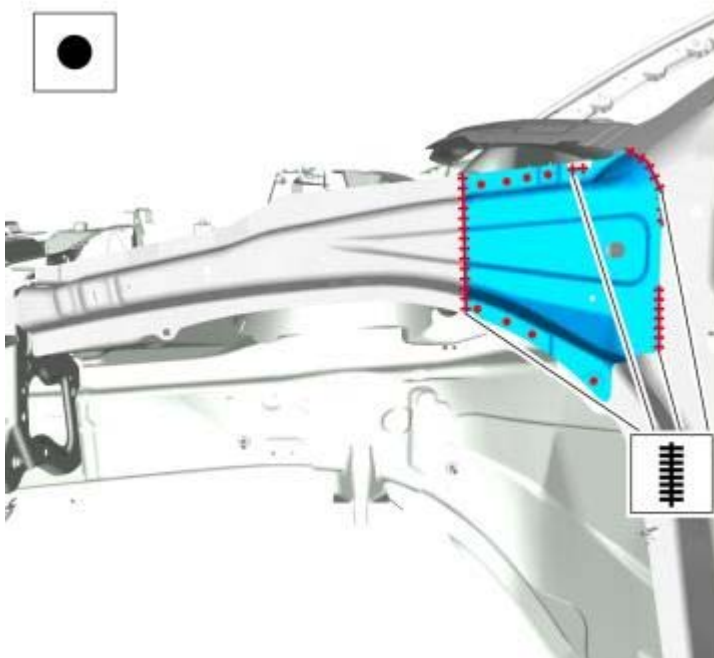
**Fig. 1: Removing Front Bumper Rail**  
Courtesy of VOLVO CARS CORPORATION

Remove the front section. See: **FRONT END** .

Remove the bracket for the power steering. It is secured using 4 M8 screws.



**Fig. 42: Removing/Installing A-Pillar (4 Of 8)**  
Courtesy of VOLVO CARS CORPORATION



**Fig. 43: Removing/Installing A-Pillar (5 Of 8)**  
Courtesy of VOLVO CARS CORPORATION

**CAUTION:** If the welding must be carried out in the immediate vicinity of an electronic unit then this must be removed.

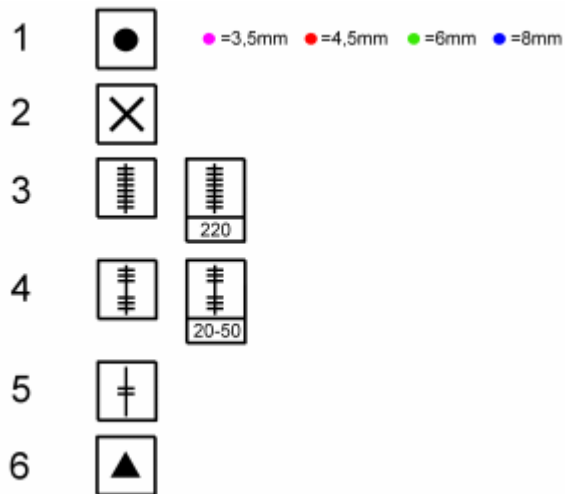
## ASSEMBLY

Spot welding is mainly used when the bodies are manufactured, and use of this method should always be aimed for with a repair.

**CAUTION:** Gas welding must not be used on Volvo bodywork.

**WARNING:** Use ventilation / extraction equipment.

Unless otherwise specified in the method, the distance between the welds must be the same as the original design.

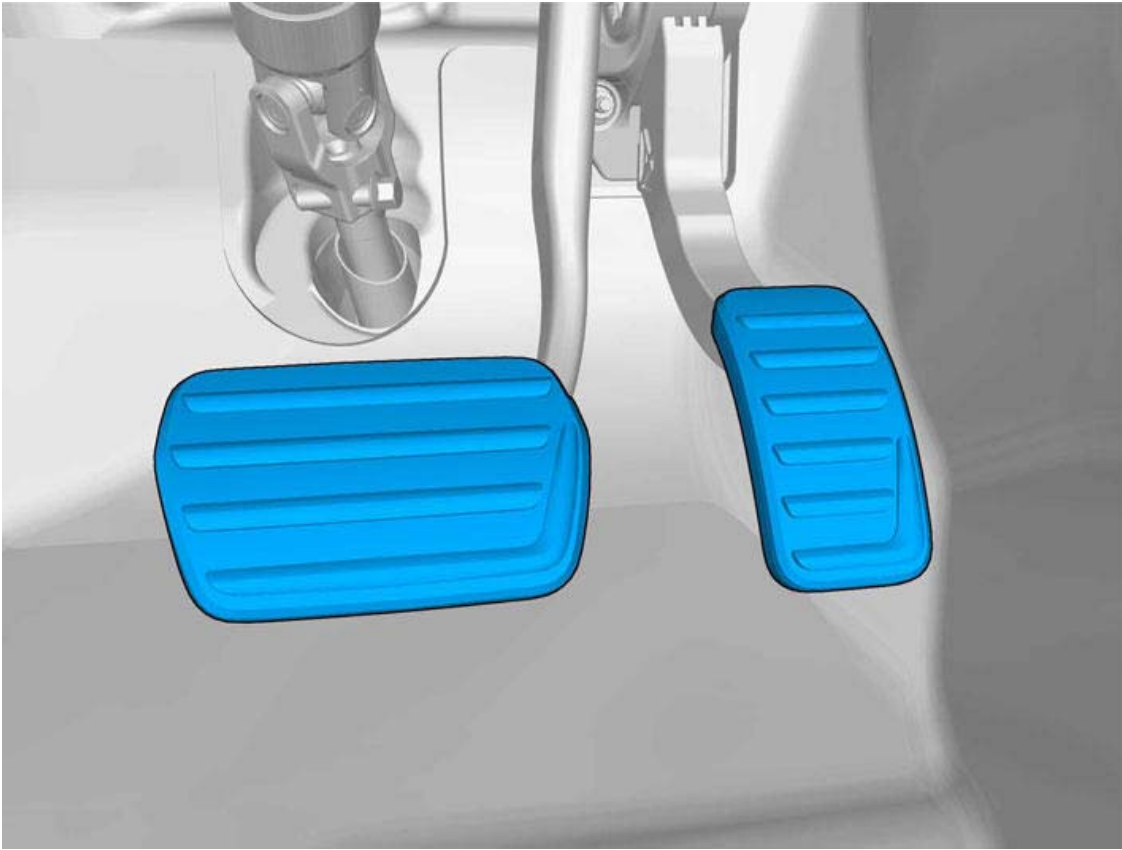


**Fig. 16: Identifying Welding Symbols**

Courtesy of VOLVO CARS CORPORATION

There are a number of other assembly methods that are illustrated with the following symbols:

1. Spot weld/spot weld with the location of the weld and lens diameter specified with color (may be replaced with 2)
2. Plug weld (may be replaced with 1)
3. Seam weld/Seam weld with weld length specified in mm
4. Step weld/Step weld with weld length followed by length between welds specified in mm. Always start and finish with the weld.
5. Tack weld



**Fig. 17: Identifying The Pedals**

**Courtesy of VOLVO CARS CORPORATION**

**Sport pedals**

**Equipment**

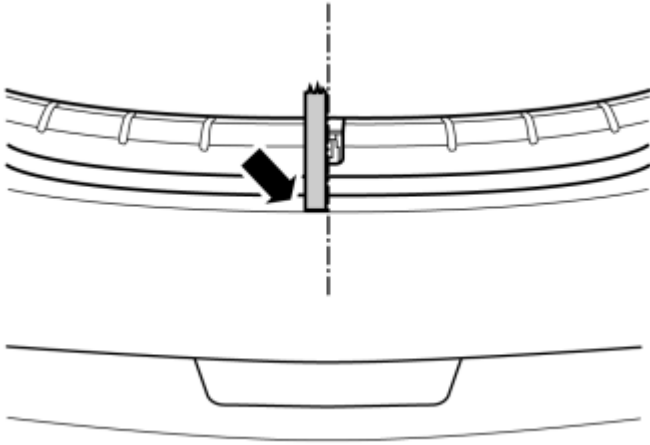


**Fig. 18: Weatherstrip Tool**

**Courtesy of VOLVO CARS CORPORATION**

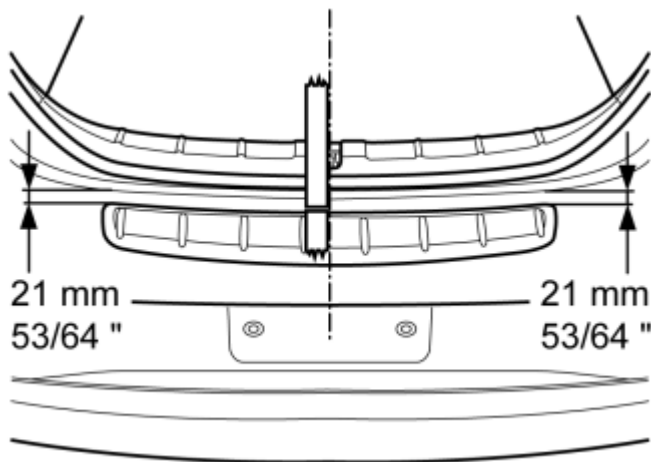
**Kit contents**

- Take the bumper cover from the kit. Mark the center between the middle ribs using a piece of tape.



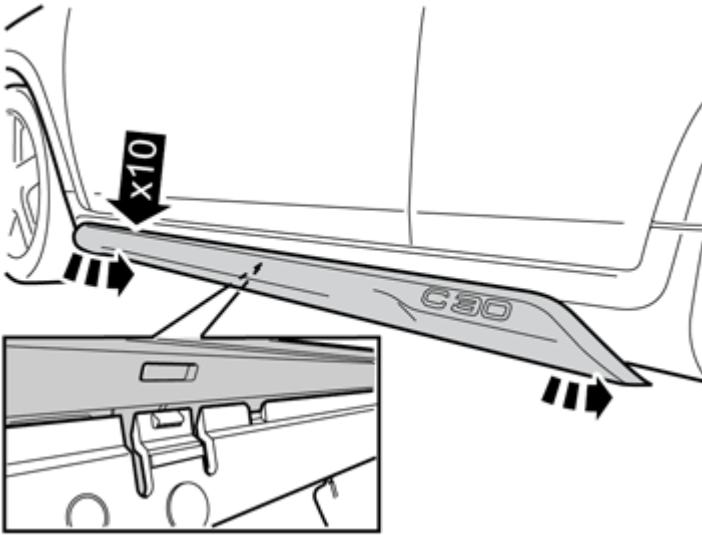
**Fig. 36: Applying Tape And Marking Center Of Bumper Casing**  
Courtesy of VOLVO CARS CORPORATION

- Apply a piece of tape and mark the center of the bumper casing as shown.



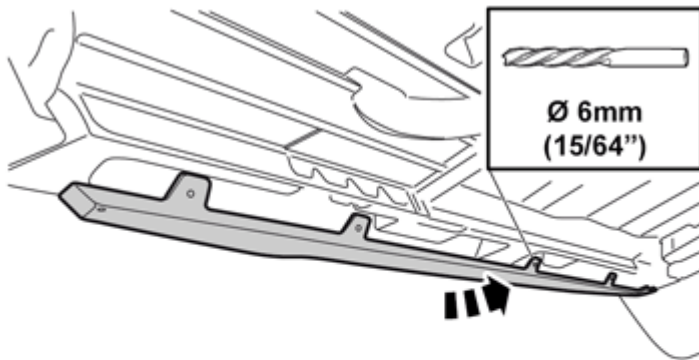
**Fig. 37: Identifying Bumper Cover Centering**  
Courtesy of VOLVO CARS CORPORATION

- Center the bumper cover according to the pieces of tape and measure the dimensions as shown.



**Fig. 102: Hooking Sill Decor Onto Cradle**  
Courtesy of VOLVO CARS CORPORATION

- Hook the sill decor onto the cradle. Align the holes in the panel with the hooks in the cradles.
- Press the decor strip into position securely so that all hooks engage.



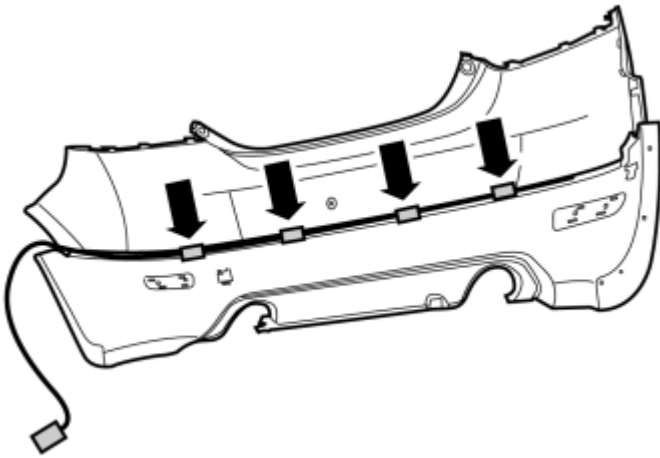
**Fig. 103: Drilling Out Hole**  
Courtesy of VOLVO CARS CORPORATION

- Press the sill decor opposite the mounting lug for the center hole against the underneath of the door sill panel. Drill out the hole using a **6 mm (15/64")** drill bit. Remove the drill shavings.

Get help from a colleague for this procedure.

- Take the rear spoiler from the kit and press the upper part into it.
- Make sure that all catches engage.

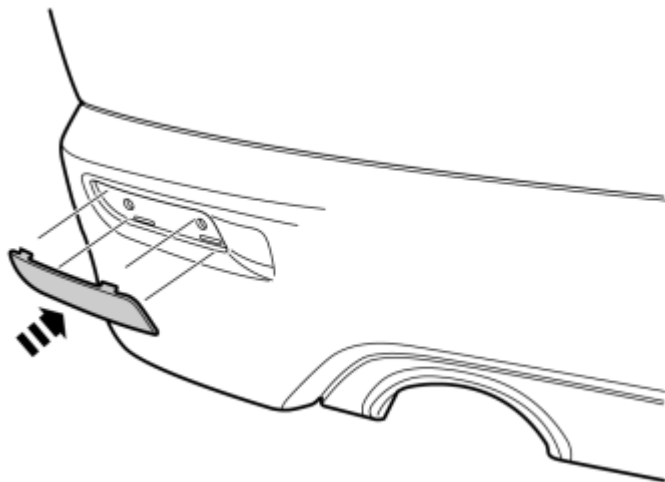
**NOTE:** Do not damage the painted surface on the upper part.



**Fig. 220: Pressing In Clips For Cable Harness For Reverse Warning In Spoiler's Catches**  
Courtesy of VOLVO CARS CORPORATION

**Applies to cars with reverse warning**

- Press in the clips for the cable harness for the reverse warning in the spoiler's catches.



**Fig. 221: Identifying Reflector**  
Courtesy of VOLVO CARS CORPORATION

Press on the reflectors from the kit on the spoiler's ends



**Fig. 29: Identifying Underbody Air Deflector Attachment Screws**  
Courtesy of VOLVO CARS CORPORATION

ALL VEHICLES

Remove the following items:

- radiator grille, see **RADIATOR GRILLE**
- Front fog lights, see **FRONT FOG LIGHTS**



**Fig. 30: Identifying Lower Front Bumper Fasteners**  
Courtesy of VOLVO CARS CORPORATION

INSTALLATION

To install, reverse the removal procedure.

**COVER BUMPER REAR (2007 - 2011 EARLY)**

REMOVAL

- Connect OBDII-Box (**951 3015**) to the diagnostics socket.

For general information about CAN-troubleshooting:

- see **GENERAL INFORMATION ABOUT FAULT-TRACING IN THE CAN NETWORK**

### **Checking for a short-circuit to ground**

Measure resistance between the following connections on the OBDII-box/diagnostics socket.

- #3 and #4 (ground). Measurement is shown in **Fig. 11**. The resistance should be above 1 kohms.
- #11 and #4 (ground). The resistance should be above 1 kohms.

If resistance is below 1 kohms this indicates short-circuiting between the CAN-line and ground.

### **Checking for a short-circuit to voltage**

Measure resistance between the following connections on the OBDII-box/diagnostics socket.

- #3 and #16 (voltage). Measurement is shown in **Fig. 11**. The resistance should be above 1 kohms.
- #11 and #16 (voltage). The resistance should be above 1 kohms.

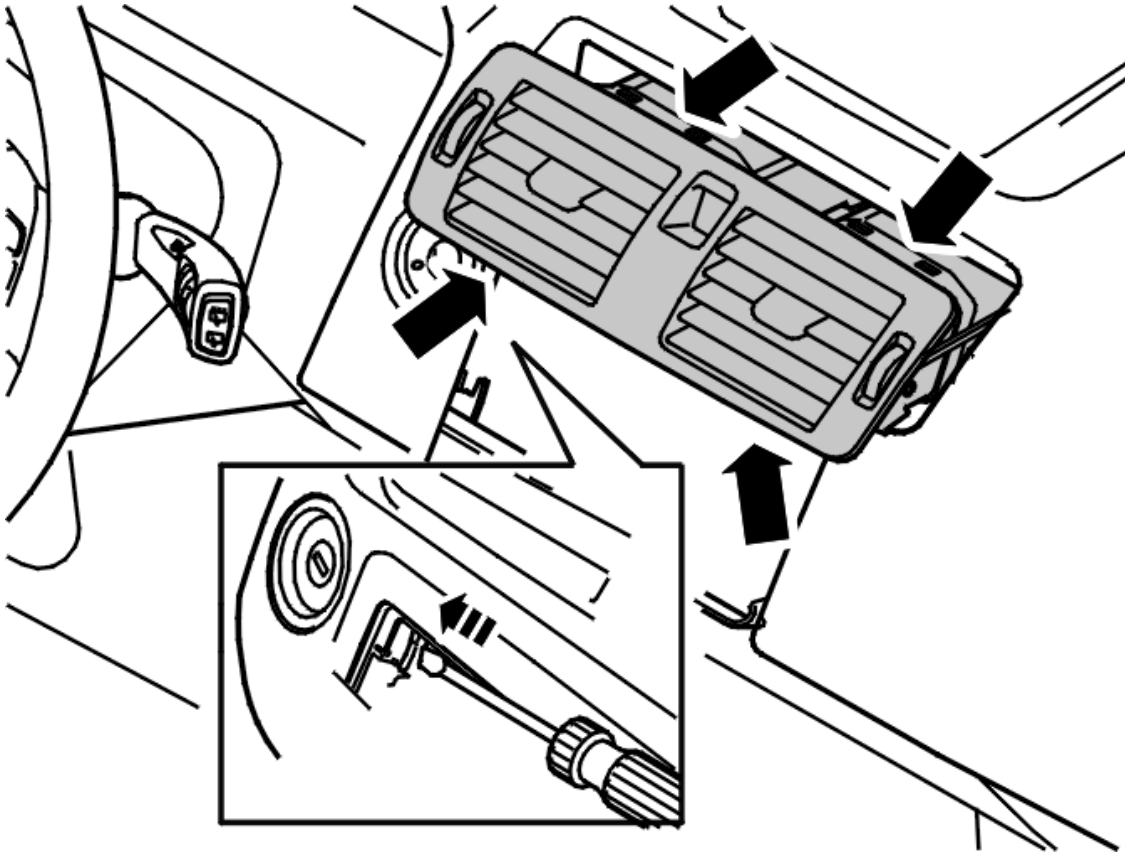
If resistance is below 1 kohms this indicates short-circuiting between the CAN-line and voltage cable.

Twist the cable harness and wiggle connectors where they can be accessed along the cable harness during every measurement, and note if the resistance changes to detect intermittent short-circuits or open circuit.

**HINT:** Part the CAN-net at suitable points to decide where a short-circuit may be found.

**NOTE:** After fault with control modules that interfere with communication, other control modules may remain in Limp-Home (that is, they work with reduced functionality) even when the ignition has been turned off and on a few times. For certain faults in the CAN-net where control modules have stopped communicating, it may help to disconnect/reconnect the battery to "restart" the control module/CAN-net.

Remedy wiring as necessary.



**Fig. 8: Identifying Ventilation Grilles And Vent Housing**  
Courtesy of VOLVO CARS CORPORATION

**Remove:**

- the ventilation grilles. Pry off the grilles from inside
- the vent housing by prying up the hooks. See the illustration
- the connector for the switch.

**TRANSFERRING COMPONENTS**

Transfer the switch for the hazard warning signal flashers to the new ventilation vent housing.

**INSTALLING THE CENTER VENTILATION VENT****Install:**

- the connector
- the vent housing. Ensure that the hooks engage properly.

First locate the ventilation grilles in the outer mountings. Then press the grilles into place.

**OUTER VENTILATION VENTS. REPLACING**

- the 3 connectors
- the cable harness on the mounting bracket using the 2 clips
- the right-hand mounting bracket using the 4 screws (of which 3 M8). Tighten.

**FINISHING****INSTALLING COMPONENTS**

Install the center console. See: **INSTALLING CENTER CONSOLE**.

**FUNCTION TESTING THE ELECTRICAL PREHEATER**

Test the function of the electrical preheater. First read the information below and ensure that the conditions for the function test are correct.

The electrical preheater comprises 3 separate heater elements assembled in a housing. The preheater is regulated by the central electronic module (CEM), and regulation depends on the following factors:

- The electrical preheater is only activated at ambient temperatures lower than 10 °C
- When the coolant temperature reaches 70 °C, the preheater is disconnected. It is subsequently only activated when the coolant temperature drops below 60 °C
- The electrical preheater is activated depending on the capacity of the generator (GEN).

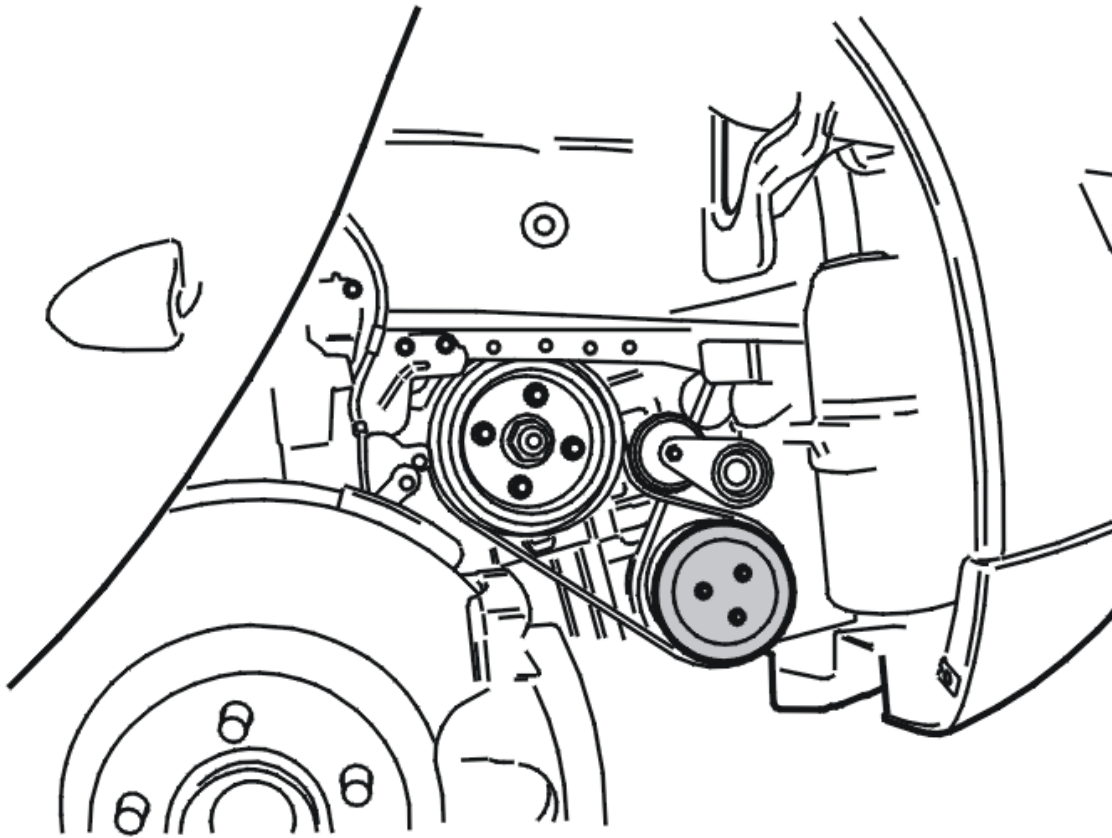
**ELECTRIC BOOSTER HEATER (2008-2012)**

**NOTE:**        **The illustrations in this service information are used for different model years and/or models. Some variation may occur. However, the essential information in the illustrations is always correct.**

**PREPARATORY WORK****REMOVING COMPONENTS**

Remove center console. See: **REMOVING CENTER CONSOLE**.

**REMOVAL****REMOVING THE ELECTRICAL PREHEATER**

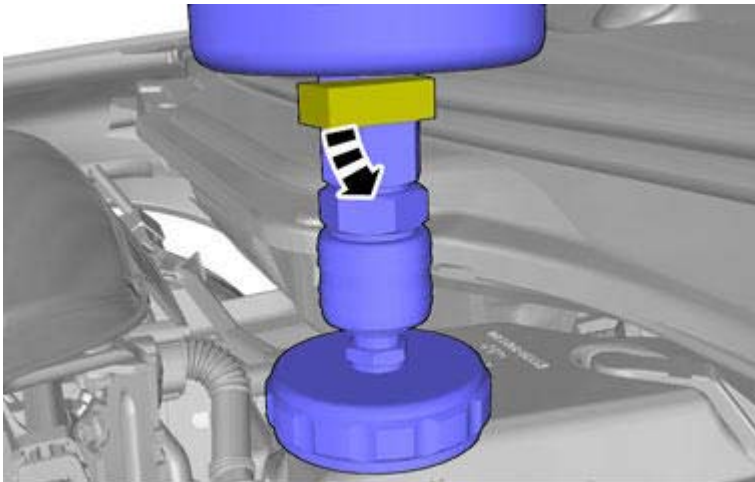


**Fig. 79: Identifying Right-Hand Screw Securing Air Baffle**  
Courtesy of VOLVO CARS CORPORATION

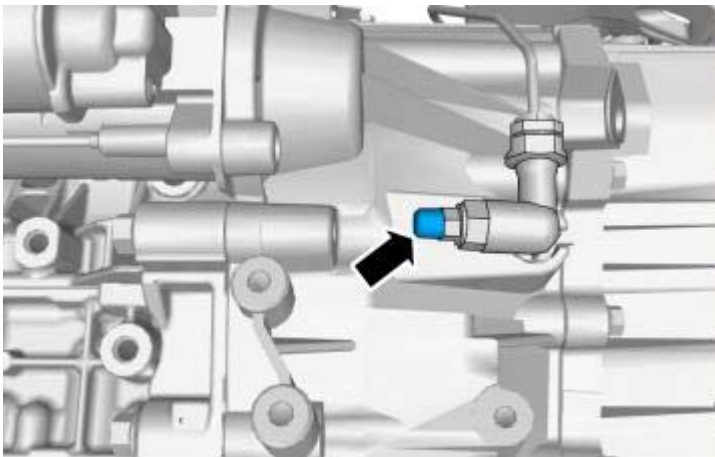
- the 5 screws and the plastic nut. Detach the front edge of the right-hand fender liner. Fold the fender backwards. See the illustration
- the right-hand screw securing the air baffle
- the auxiliary unit belts acc. to. See **ACCESSORY DRIVE BELT TENSIONER** .

## **REMOVAL**

### **REMOVING THE MAGNETIC CLUTCH COMPRESSOR**



**Fig. 3: Clutch Bleeding Procedure (1 Of 11)**  
Courtesy of VOLVO CARS CORPORATION



**Fig. 4: Clutch Bleeding Procedure (2 Of 11)**  
Courtesy of VOLVO CARS CORPORATION

