Vehicle: Description and Operation
Symbols in Service Information

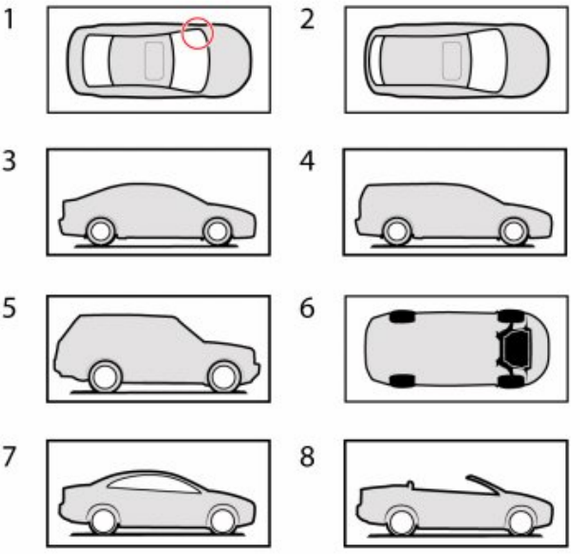
Symbols

Symbols

Symbols are used to supplement or provide further details about the procedure.
Symbols contribute to reducing the amount of text. These are designed to be easy to understand and prevent misunderstandings.
In order to clarify the meaning of the symbols an explanation is also provided.

Localization symbols

Localization symbols are used to simplify localization in the procedure.
As the images are reused, the silhouette may not correspond with the selected vehicle model.



1. Sedan/coupe/convertible view from above. A red circle or a line indicates a focused area.
2. Station wagon, SUV, view from above
3. Sedan, view from side
4. Station wagon, view from side
5. SUV, view from side
6. View from below
7. Coupe/convertible, view from the side (roof closed)
8. Convertible, view from the side (roof open)

Tools

The symbols denote that a specific measurement instrument or tool is recommended for the working procedure.

Vehicle: Description and Operation
Service Information Notes

Manual

About this manual

The instructions in this manual are designed as support for mechanics with basic training as per Volvo's competence standard.
It is extremely important that the user of the instructions first read through the general safety instructions tied to most function groups.

Writer philosophy

As of 2006, a new writer philosophy has been introduced to the instructions in the mechanic section. In previous instructions, detailed text was written and supplemented with figures. In the new method, we do the opposite.
From 2006, the instruction focuses on the figure and text is only used when it is impossible to show the complete work method in figures.
Warning texts indicate any hazards applicable to a procedure. Warnings mean risk of personal injury if the instructions are not followed.
Caution texts indicate that there is a risk of damage to the vehicle or equipment if the instructions are not followed.
Note texts provide important additional information that is required in order to carry out a repair.

Environment

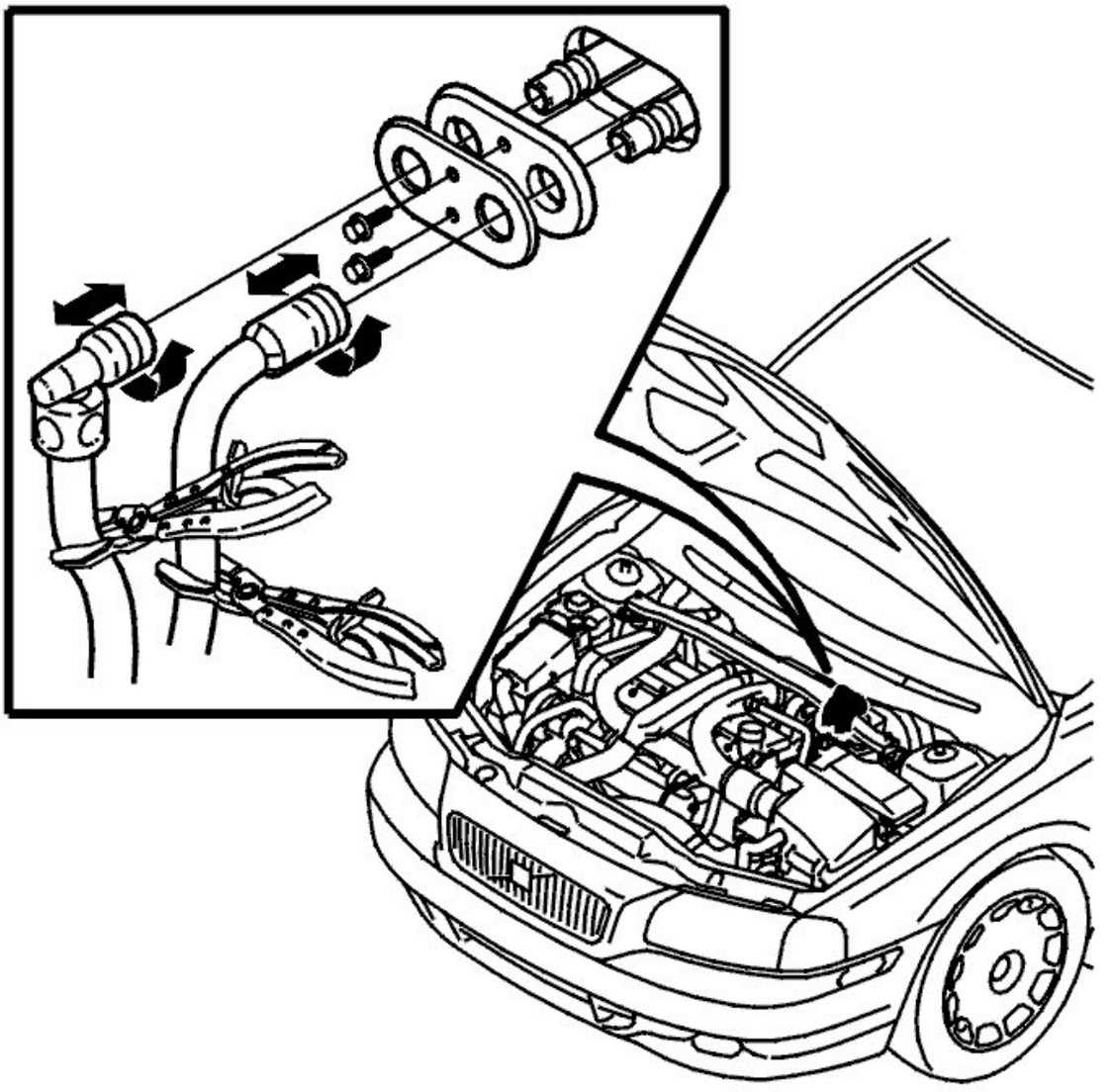
Always follow local safety regulations when disposing of environmentally hazardous waste or pyrotechnic (SRS) components.

Technical content

Illustrations in the information may be reused from previous models and may therefore deviate as regards the background's motif. The technical content relevant to the operation is, however, always correct.
Screws coated with friction-generating or sealing elements as well as lock nuts are screws used with lock nuts shall always be replaced unless the instructions specify reuse of the original screw or nut.
Screws or nuts that have been angle-tightened shall always be replaced with a new one.
Gaskets and O-rings shall always be replaced unless the instructions specify reuse of the original gasket or O-ring.
A new decal shall always be affixed after replacement of a component with safety decal. No decals may be painted or permanently covered in any other way.
All tools and equipment used in the instructions are in Volvo's aftermarket standard (A10 - Tools, Equipment & Information). (E10=English, A10=Swedish).
The instruction shall contain links to or all necessary information to perform the operation in a manner that ensures quality and personal safety.
If the spare part is a repair kit, the entire contents of the kit shall be used.

Links

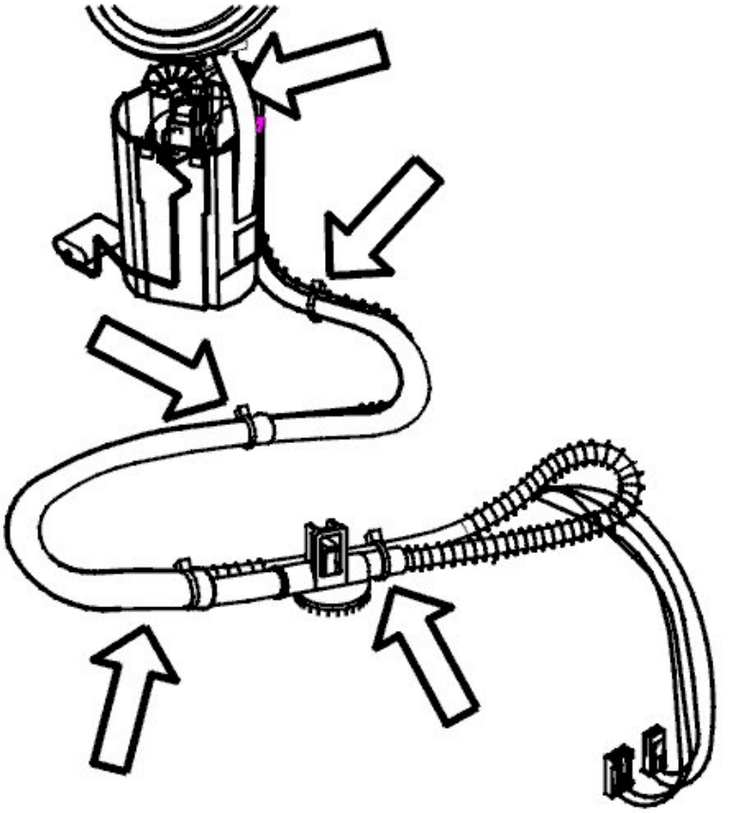
The philosophy is to avoid having information on a specific component in more than one spot in the system. To do so, the instructions often use links that take the user directly to the correct information for the component to which the link refers.
After having followed one or more links and carried out the respective measure, the user can always return to the previous method by using VIDA's "Back" function.



Remove:

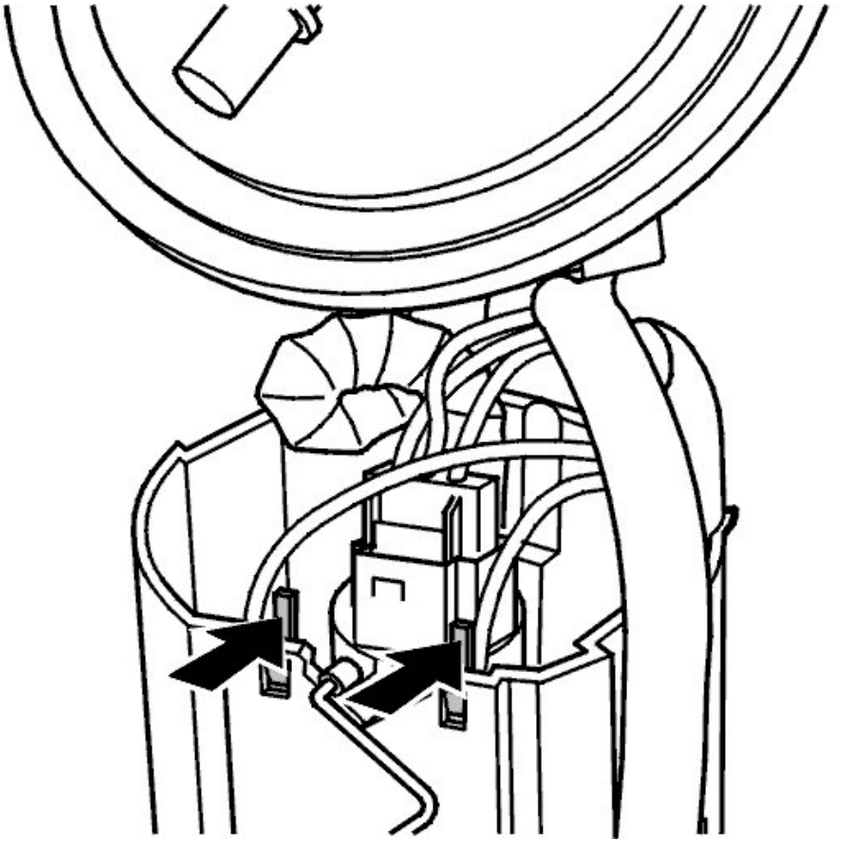
- the heater hoses in the engine compartment, use special pliers: 115 8957 HOSE PLIERS See: Tools and Equipment/115 8957 Hose Pliers
- the seal and the plate.
- the brake light switch according to: Stop lamp switch, replacing See: Lighting and Horns/Brake Light Switch/Service and Repair

Removing the right-hand level sensor



Remove:

- the tie straps around the protective sheath, hoses and wiring
- the net protective sheath by carefully threading it off the hoses and wiring
- the tie strap under the protective sheath.



Remove:

- the tie strap around the wiring above the pump

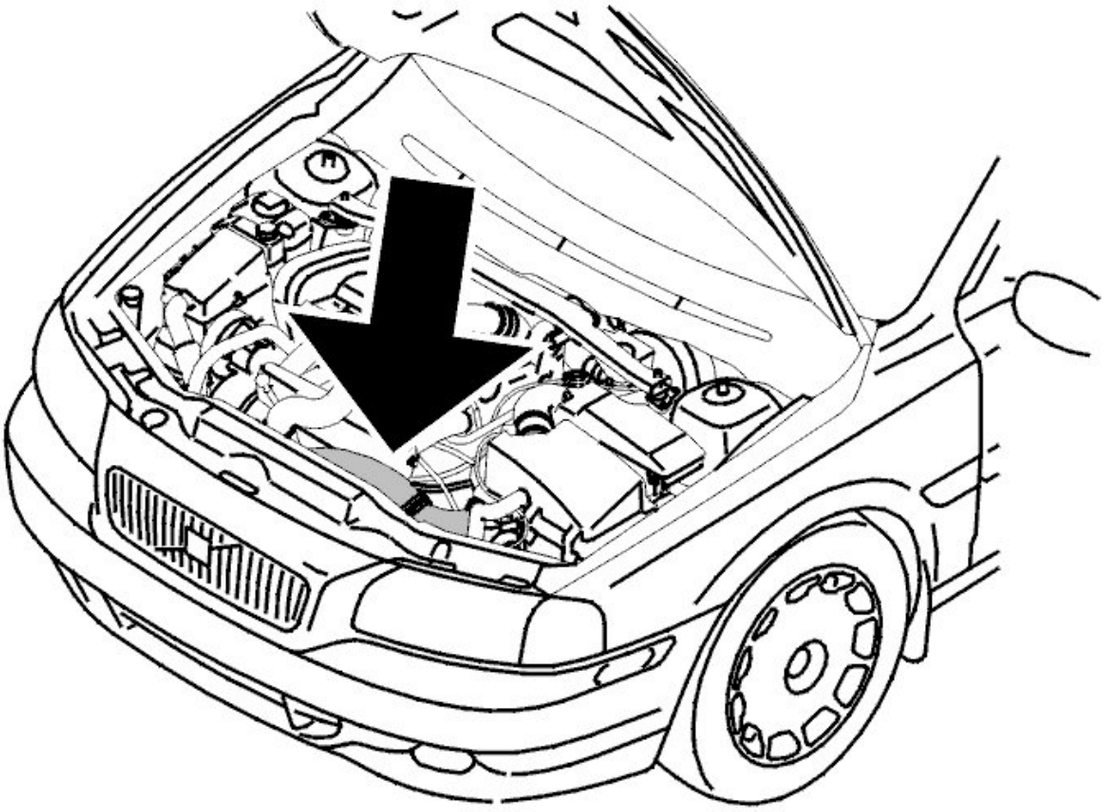
Throttle Body: Removal and Replacement

Throttle body (electronic throttle module (ETM)), replacing

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

Preparation



Remove:

- the air intake between the front cover plate and the air cleaner (ACL) housing
- the charge air pipe between the charge air cooler (CAC) and the electronic throttle module (ETM).

Removing the electronic throttle module (ETM)



Disconnect the connector for the electronic throttle module.
Remove the 4 x screws for the electronic throttle module (ETM). Lift out the electronic throttle module (ETM). Discard the gasket.

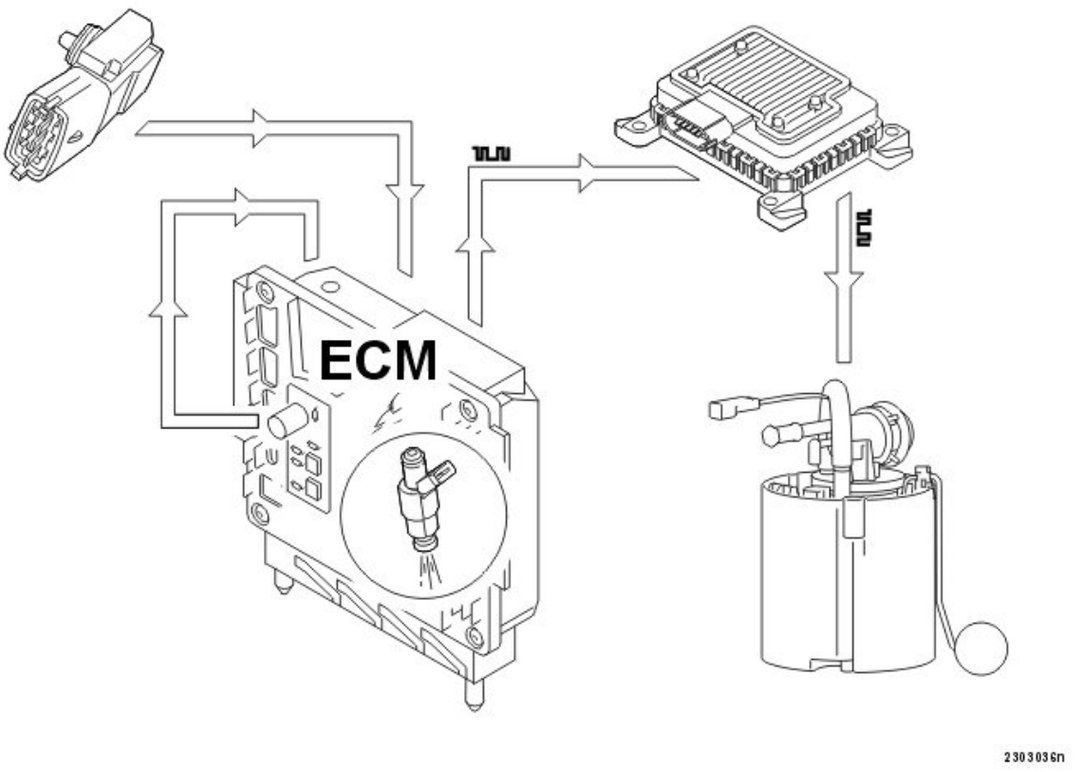
Installation

Note! For tightening torques, see: Tightening torque See: Engine, Cooling and Exhaust/Engine/Specifications/Tightening Torque.

Replacing the electronic throttle module (ETM)

Cruise control is disengaged:
- when the driver presses the clutch pedal or brake pedal
- when the driver presses the "CRUISE" button on the steering wheel
- when the driver depresses the "0" button on the steering wheel
- if the "P" or "N" positions are transmitted on the controller area network (CAN) (applies to automatic transmissions)
- if the speed deviates too much from the set value
- when certain diagnostic trouble codes (DTCs) are stored which do not allow continued activation (For further information see diagnostic trouble code (DTC) information).

Fuel pressure regulation (only vehicles with demand controlled fuel pumps)

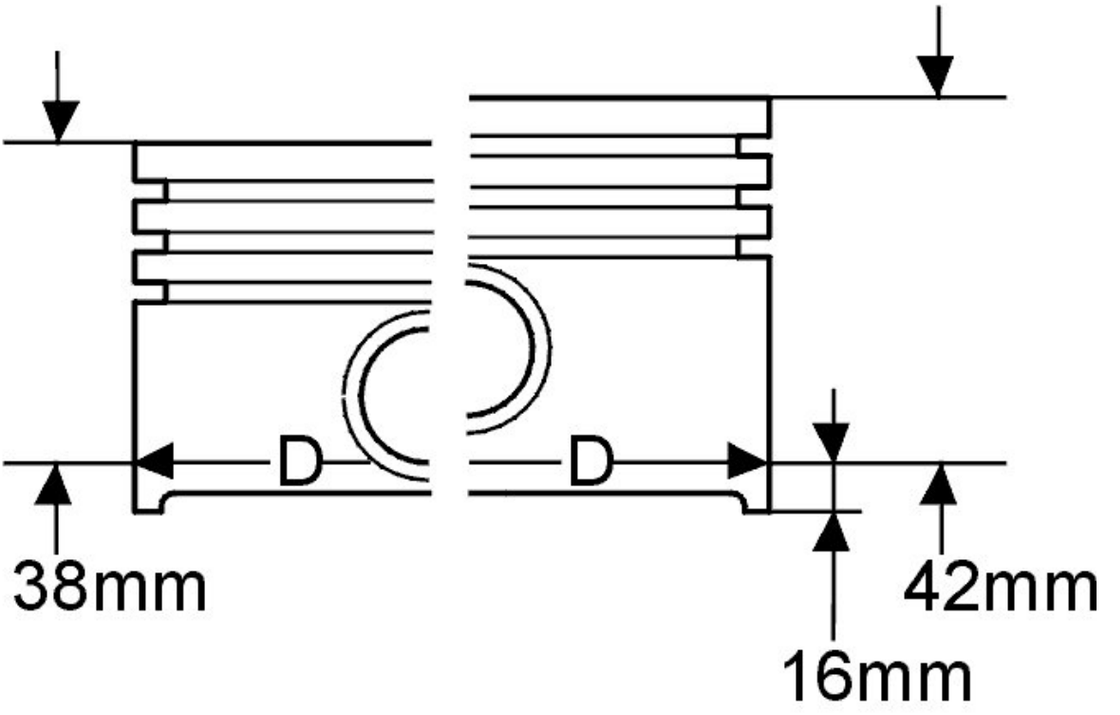


General
Fuel pressure regulation for demand controlled fuel pumps (DECOS - DEmand COntrolled fuel Supply) means that the fuel pressure is controlled steplessly by varying the output of the fuel pump. The design of the system allows a greater maximum pressure (approximately 6.5 bar) in the fuel pump. This pressure is used in extreme situations, such as heavy engine load for example.
The following components are used for fuel pressure regulation:
- engine control module (ECM)
- the fuel pump control module
- a fuel pressure sensor with a fuel temperature sensor
- a fuel pump (FP) with a by-pass valve.

The time taken for the engine start procedure can be reduced by rapidly increasing the pressure in the fuel rail when the engine control module (ECM) receives a signal about the position of the ignition switch from the central electronic module (CEM).
The engine control module (ECM) is better able to calculate the injection period because the signal from the fuel pressure sensor gives information about the fuel pressure. This particular improves the cold starting characteristics of the engine.
The advantages of varying the output of the fuel pump so that it is not always at full power are:
- the total power consumption of the fuel pump (FP) is reduced, reducing the load on the power supply system
- the service life of the fuel pump (FP) is increased
- fuel pump noise is reduced.

Control

The engine control module (ECM) calculates the desired fuel pressure. A signal is then transmitted to the fuel pump control module indicating the desired fuel pressure. Serial communication between the engine control module (ECM) and the fuel pump control module is used to carry the signal. The fuel pump control module then operates the fuel pump unit to obtain the desired pressure using a pulse width modulation voltage on the ground lead. The fuel pump (FP) can be controlled steplessly by changing the pulse width modulation (PWM) signal. Only that pressure which is required at that specific time will then be released to the fuel rail/injectors. The value of the pulse width modulation (PWM) signal is a measurement of the operational load of the fuel pump (FP) (% duty, 100% = maximum pressure).
The engine control module (ECM) continuously monitors the fuel pressure using the signal from the fuel pressure sensor. This allows the desired fuel pressure to be reached, and if necessary a signal is transmitted to the fuel pump control module requesting that the fuel pressure is adjusted.



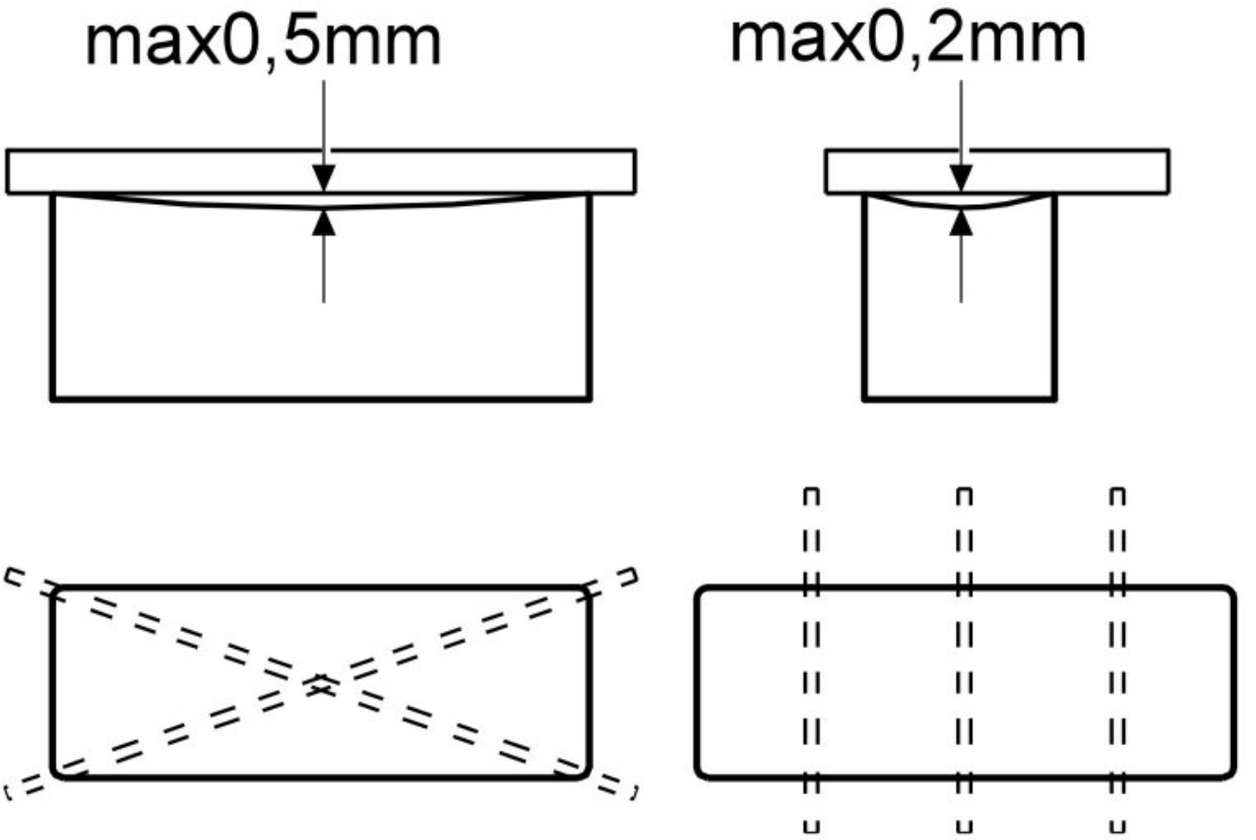
Bore (D) in mm

Standard	**B5204T5** Measured 16 mm from the bottom of the piston	**B5234T3** Measured 42 mm from the top of the piston	**B5244T2** Measured 42 mm from the top of the piston	**B5244T3** Measured 38 mm from the top of the piston
C-markedÂ¹	80.980-80.990	80.980-80.990	82.980-82.990	82.980-82.990
D-markedÂ¹	80.990-81.000	80.990-81.000	82.990-83.000	82.990-83.000
E-markedÂ¹	81.000-81.010	81.000-81.010	83.000-83.010	83.000-83.010

Classification is marked on the top of the piston.

Inlet camshaft	Part number	Maximum lift height (mm)	Exhaust camshaft	Part number	Maximum lift height (mm)
B5204Tx excluding T4	9207943	8.40	**B5204Tx**	9207944	9.05
B5204T4	9207941	8.15			
B5234Tx	9207943	8.40	**B5234Tx**	9207944	9.05
B5244Tx excluding T2, T3	9207942	8.40	**B5244Tx** excluding T3	9207944	9.05
B5244T2	9497231	8.40	**B5244T3**	9497822	9.05
B5244T3	9497823	8.45	**B5254Tx**	9207944	9.05
B5254Tx	9207942	8.40			

Cylinder head

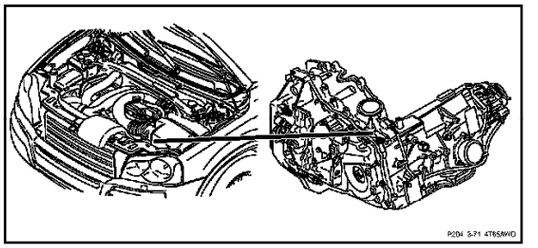


Front-rear.0.50 mm
Lateral.0.20 mm
Cylinder head height.129.00± 0.05 mm
Maximum machining.0.30 mm

Caution! Scratches and corrosion to the cylinder head gasket face should only be machined on a flat cylinder head.

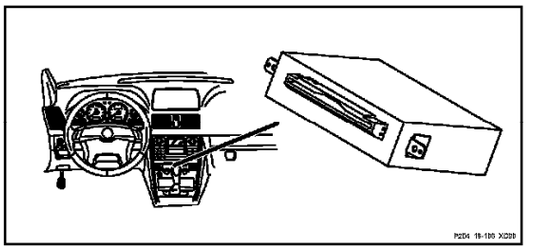
Crank mechanism

3/71 Contacts gear selector 4T65AWD



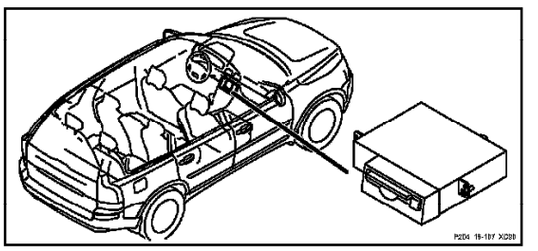
3/71 Contacts Gear Selector

16/106 Control module, CD player (MP2)



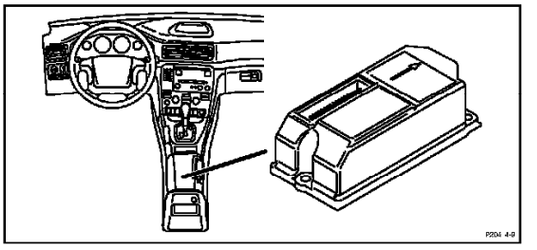
16/106 Control Module, CD Player (MP2)

16/107 Control module, MD player (MP1)



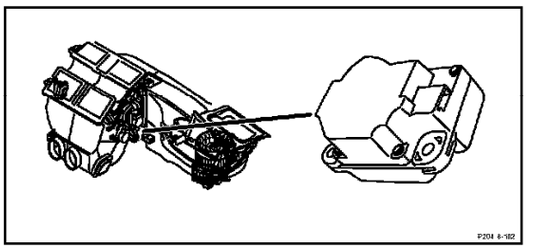
16/107 Control Module, MD Player (MP1)

4/9 Control module, Supplementary Restraint System (SRS)



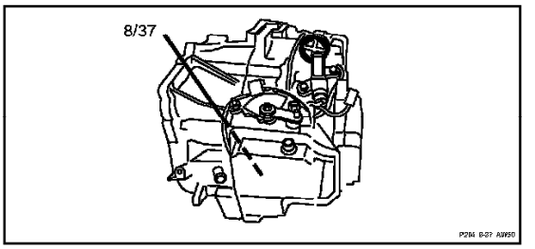
4/9 Control Module, Supplementary Restraint System (SRS)

6/102 Damper Motor Module (DMM), defroster



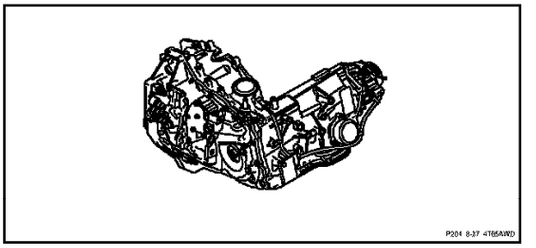
6/102 Damper Motor Module (DMM), Defroster

8/37 Automatic transmission AW50



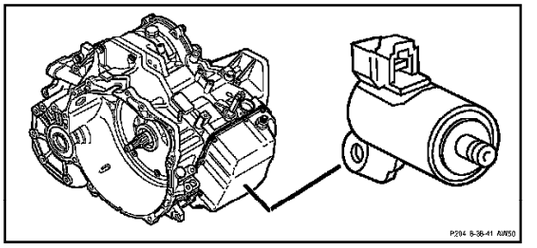
8/37 Automatic Transmission

8/37 Automatic transmission 4T65AWD



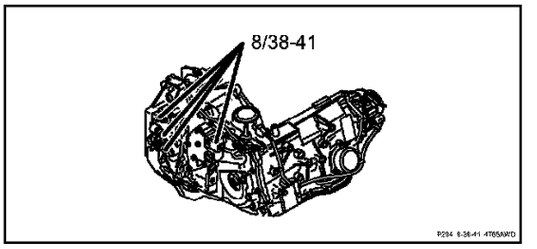
8/37 Automatic Transmission

8/38 Gearshifting solenoid 1 AW50



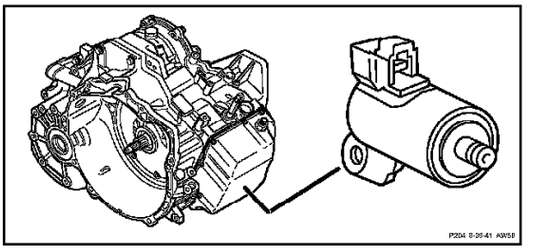
8/38 Gearshifting Solenoid 1

8/38 Gearshifting solenoid 1 4T65AWD



8/38 Gearshifting Solenoid 1

8/39 Gearshifting solenoid 2 AW50



8/38 Gearshifting Solenoid 2

MODEL:
S60 (01-)/V70 (01-)/V70XC and XC70 (01-)/S80 (99-)/XC90 (03-)

SUBJECT:
Mechanical front seats, adjusting seat slide rail locking position.

DESCRIPTION:

This TNN describes the method for proper front seat slide rail adjustment after replacing or removing a seat from the vehicle. If this is not properly done, front seat movement under acceleration or deceleration might be experienced.

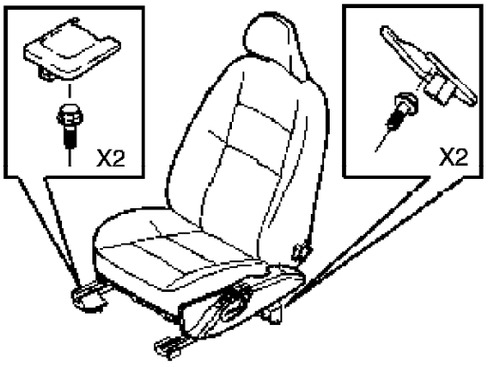
CHECKING PARALLELISM:

Verify that each adjustment mechanism can be locked individually to ensure that there is no problem with the slide rail lock mechanism (due to damage or foreign objects).

Sit on the seat. Lock one side and move the other side of the seat forward and rearward to determine if the seat adjustment mechanism must be moved forward or rearward in relation to the slide rails.

ADJUSTING THE SLIDE RAILS:

Step 1:



Remove the four cover panels for the slide rail bolts.

Unscrew front and rear slide rail bolts a couple of turns but do not remove them.

Step 2

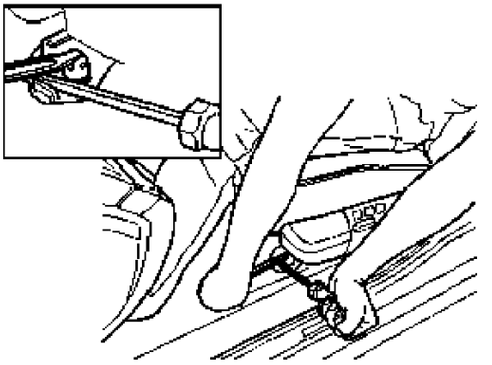
Check if both adjustment mechanisms can lock at the same time in each slide rail now that the slide rail bolts are loosened.

If both slide rails can be locked at the same time, tighten all bolts to 29.50 Lb ft (40 Nm).

Start with the front bolts, then rear bolts and proceed with step 4.

If the slide rails cannot be aligned, proceed with step 3.

Step 3:



Press one slide rail forward/rearward based on the result of step 1. While doing so, tighten the front bolt. Then tighten the rear bolt of the same rail. Make sure that the slide rail is locked when this is done.



^ Use cotton or latex gloves during handling of complete KIR assembly and battery to prevent cosmetic damage to the KIR and depositing oils on the battery and its contacts.

^ The tool to be used for removal of the KIR battery cover and for adjusting the battery spring clip shall be a bone tool or a similarly blunt edged soft tool.

^ When battery is replaced it must be possible to read "Panasonic" on top of battery, i.e. the + pole is upwards.

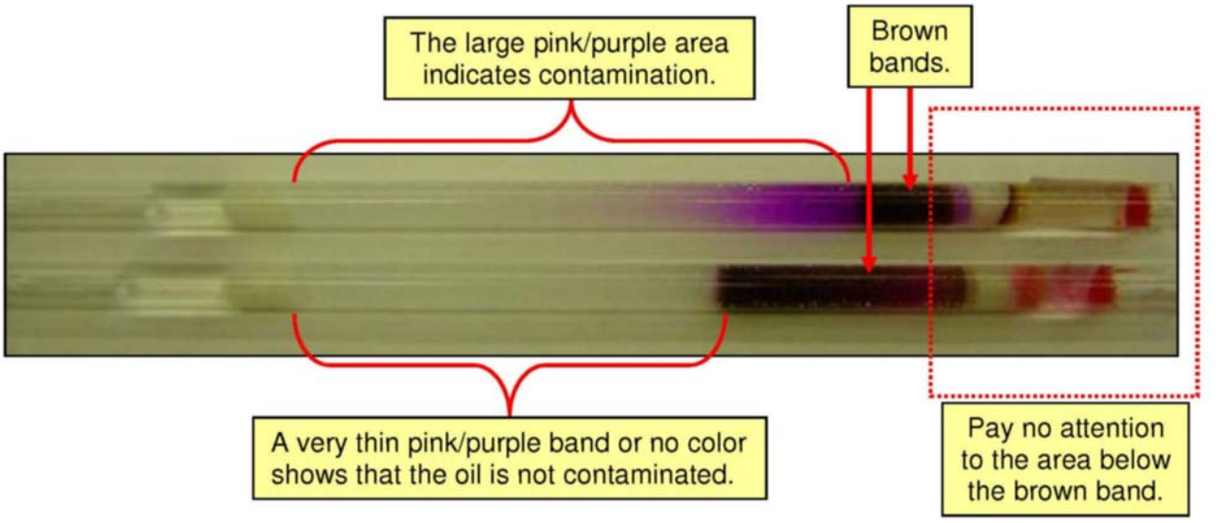
^ Function test must be performed after battery check. Lock and unlock the car by using KIR buttons.

Step 1



12. Immediately lay the tube down flat and let it sit for exactly 15 minutes.

ANALYZING THE RESULTS:



After the tube has been laying flat for 15 minutes a brown band will have formed in the crystals above the bottom felt plug. A large pink/purple area above this brown band indicates the presence of glycol. A very thin pink/purple band or no color above this brown band shows that the oil is not contaminated.

MATERIAL PART NUMBER	MATERIAL DESCRIPTION	COST
16	Test Kit	1/10th of kit cost ($7)

Claims may be submitted under the new car warranty when there is a documented customer complaint using claim type: 01

INFORMATION FOR NELCO GLY-TEK KIT Technical Service Bulletin # **TJ20057** Date: **081112**

Cell Phone - Bluetooth(R) Software Upgrade Information

Retailer Technical Journal 20057
Accessory Bluetooth Software Upgrade information and procedures

Date 11-12-2008

REFERENCE:
VRC2/ Bluetooth SW compatibility matrix
Note! If using a printed copy of this Retailer Technical Journal, first check for the latest online version.

AFFECTED VEHICLES:
All with accessory installed Bluetooth hands free telephone system

Background:
To be able to upgrade the Accessory Bluetooth hand free system with improved compatibility and functions, a new SW download procedure has been developed. By identifying the version of the present Accessory Bluetooth hand free control unit and its SW version, it may be possible to upgrade the Bluetooth system without replacing the control unit.

SW upgrade of the Bluetooth control module is not possible for all systems. See instruction at "SERVICE"

REASONS FOR UPGRADING THE CONTROL MODULE:

1. Customer has bought a new mobile phone that does not work together with the Accessory Bluetooth hand free system. (It did function with previous mobile phone) Please check that the new mobile phone is compatible with the Accessory Bluetooth hand free system before

The diagnostic monitor for the evaporative emission system small leak from model year 2003 to present, has used a software function that calculates leakage based on a pressure inferred from the current consumed by an electric pump that pumps air into the fuel tank system. Our analysis has shown that the current consumption characteristic of the pumps electric motor which is part of the DM-TL (Diagnostic Mode-Tank Leakage) can change as the pump ages. This can cause a small leak to be falsely detected and the Malfunction Indicator Lamp (Check Engine Light) to illuminate with one of the following DTCs: ECM - 4308, ECM - 434C or ECM - P044200.

Solution

A new functionality has been developed which uses a new method to accurately diagnose the leakage status of the tank system, independent of any fluctuations or aging in the DMTL or other components. This new method calculates the pressure in the tank and the mass air flow through the fixed displacement pump and uses these values together with the common gas law to make an accurate calculation of the actual leak size.

Service:

The quick test won't work properly unless the improved ECM software is installed. Therefore, the first step with the new quick test is to check if the ECM software includes the improved leakage detection functionality software.

Note:
All model year 2009 and UD vehicles have the improved functionality from production.

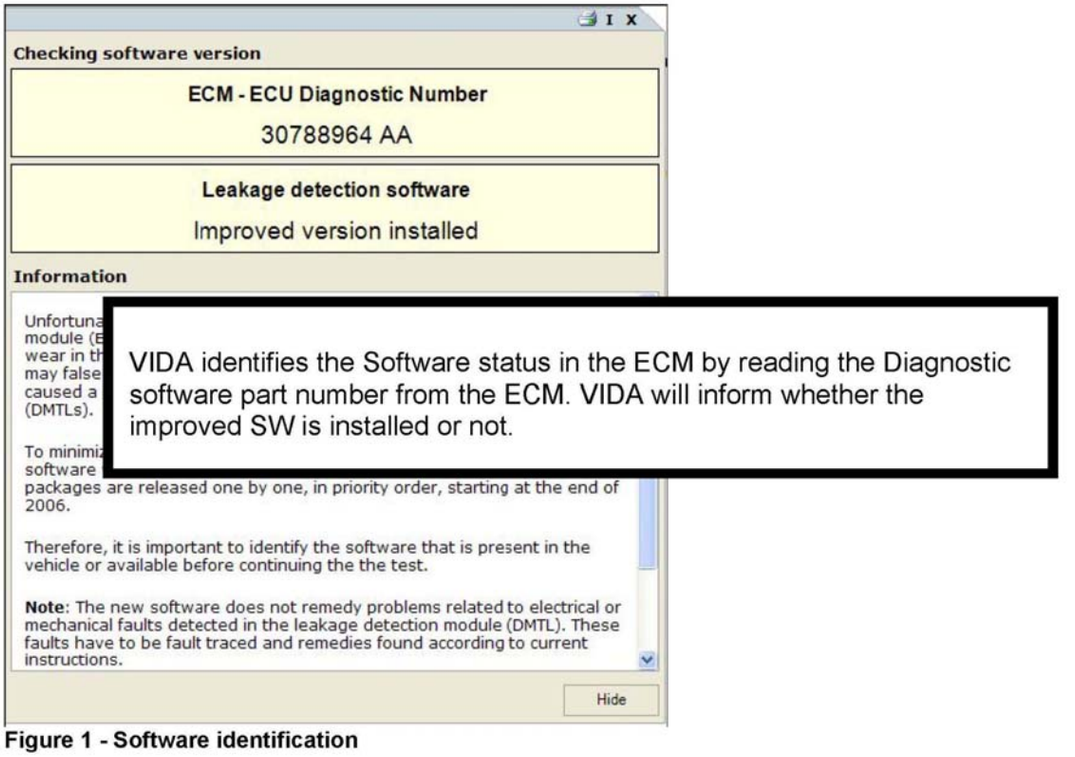


Figure 1 - Software identification

