



Tech-Note

The following TSB from Volvo doesn't mention catalytic converter failure anywhere, however the related subject matter is VERY pertinent to both false catalyst codes and real catalyst damage.

The Electronic Throttle Module (ETM) problems can be a source of unmetered (or improperly metered) air entry which is a major cause of recurring, false catalytic converter codes. Furthermore, depending upon how the lean condition manifests itself, another danger is unequal fuel distribution which will cause an overall rich condition.

This will certainly lead to converter failure.

The crankcase ventilation problems can cause oil blow by and other problems which will quickly cause converter damage.

NO: 25-149-D
DATE: 2-20-2006
MODEL/YEAR:
C70 1999-2002
S70 1999-2000
S60 2001-2002
V70 1999-2002
V70XC 1999-2001
S80 1999-2001

SUBJECT:
Cleaning the Crankcase Ventilation and Electronic Throttle Module (ETM)
REFERENCE: VIDA TNN 25-149-A TNN 25-149-B

This TNN supersedes the previous TNN 25-149-D dated 12-06-2005. Please update your files.

DESCRIPTION:

S60 2001 V70 2001 V70XC 2001 5-cyl Turbo			
Material			
Description	Quantity	Part Number	
Gasket	2	947282	
Gasket	1	8636753	
O-ring	1	969092	
Cable tie	1	983750	
Cable tie	2	983662	
Cable tie	3	983614	
Cleaner	.5	1161828	
C70 1999-2002 S70/V70 1999-2000 V70XC 1999-2000 5-cyl Turbo			
Material			
Description	Quantity	Part Number	
Gasket	2	947282	
Gasket	1	8636753	
Cable tie	1	983750	
Cleaner	.5	1161828	
S70 1999-2000 S60 2001-2002 V70 1999-2002 5-cyl Non-turbo			
Material			

Description	Quantity	Part Number
Gasket	1	8636753
Cable tie	1	983750
Cleaner	.5	1161828
6-cyl Turbo		
Material		
Description	Quantity	Part Number
Gasket	2	947282
Gasket	1	8636753
Cleaner	.5	1161828
6-cyl Non-turbo		
Material		
Description	Quantity	Part Number
Gasket	1	9440982
Gasket	1	8636753
Cleaner	.5	1161828
Special tool		
Description		Part Number
Wrench (B5T) See Special Tool Bulletin 143		999 7109
Manifold Protective Cover (B6S), See STB 114		999 5723

This TNN describes the method for cleaning the Crankcase Ventilation and Electronic Throttle Module (ETM). Cleaning must always be preceded by fault-tracing according to VIDA and TNN 25-149-A.

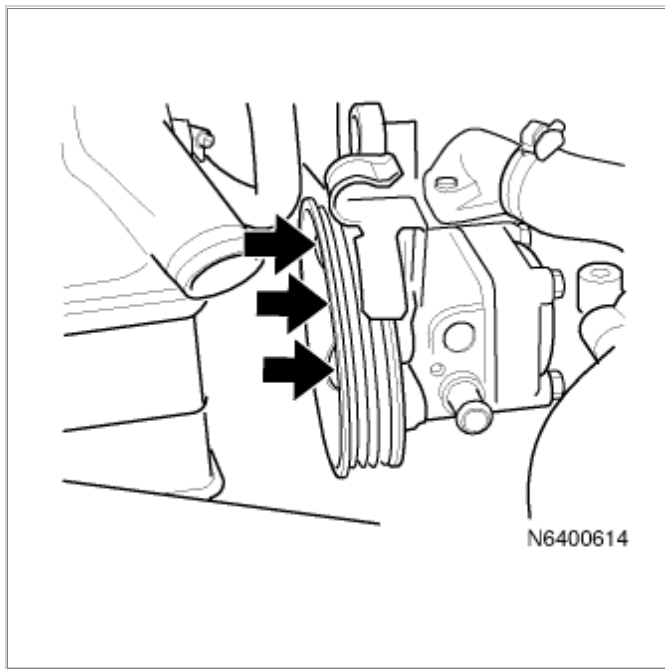
Please scroll down to read bulletin

Cleaning crankcase ventilation, C70 1999-2002 S70/V70 1999-2000 V70XC 1999-2000

5-cyl Turbo

Remove:

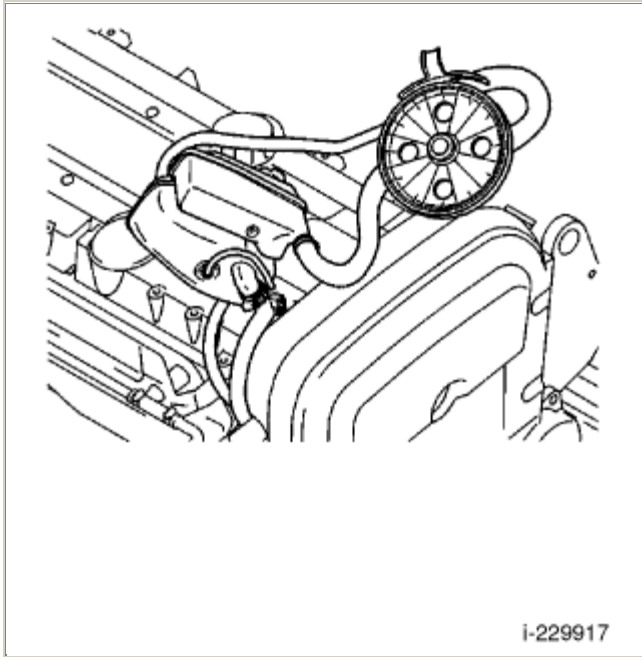
- the battery negative lead from the battery
- the auxiliaries belt. Use wrench 999 7109
- the cold air inlet hose to the control module
- oil dipstick pipe.



Removing the power steering pump

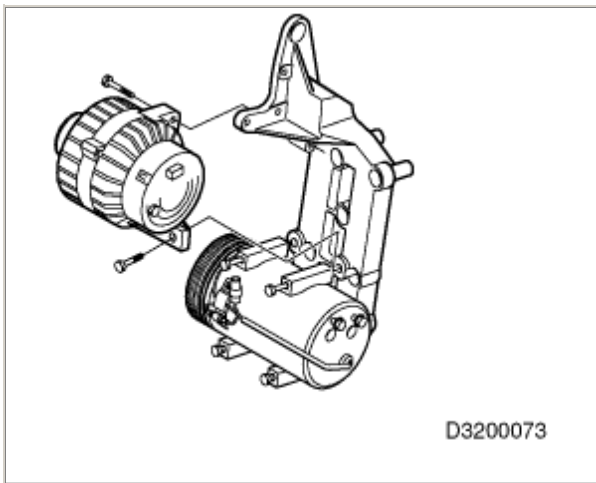
Remove the power steering pump's three mounting screws through the pulley hole. Remove the connector with holder from the power steering pump.

Remove:



- power steering hoses and coolant hoses from their holders/clips). Remove the tie strap for the power steering hose by the suspension turret.
- the coolant expansion tank and the power steering reservoir from the mounting on the spring strut turret
- the connector and place the reservoirs on the engine.

Place the power steering pump up on the engine.



Removing the alternator

Remove:

- the upper screw for the alternator

- the screws common to the alternator and compressor.

Loosen the lower screws for the compressor (so that there is some clearance).

Position the alternator so that it rests against the radiator and on the air conditioning (A/C) compressor.

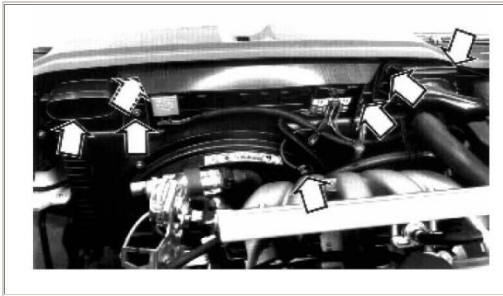
Loosen the hose clamp for the charge air pipe on the electronic throttle module (ETM). Remove the charge air pipe from the electronic throttle module (ETM).

Remove:

- the air duct for the air cleaner (ACL) housing.
- the four screws holding the engine cooling fan's shroud.

Move the shroud to one side, pull up the relay holder and pull the connectors for the fan apart.

Remove:

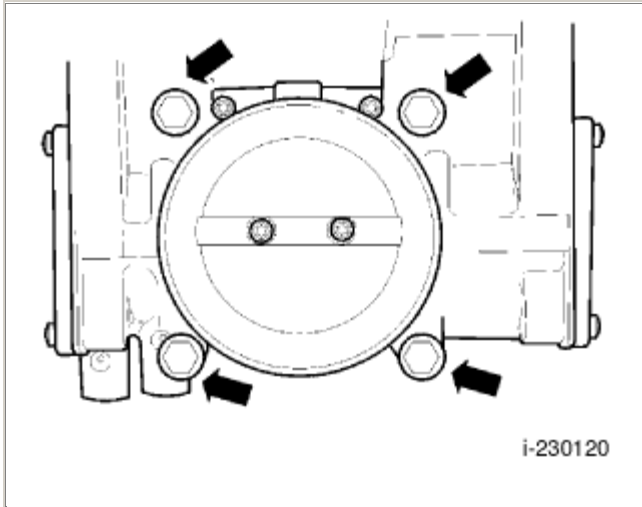


- the charge air hose from the charge air cooler (CAC)
- hoses and wiring from their holders
- both engine cooling fan relay's from the fan shroud by bending the relays inwards towards the engine compartment and pulling upwards.

Open the tie strap for the wiring.

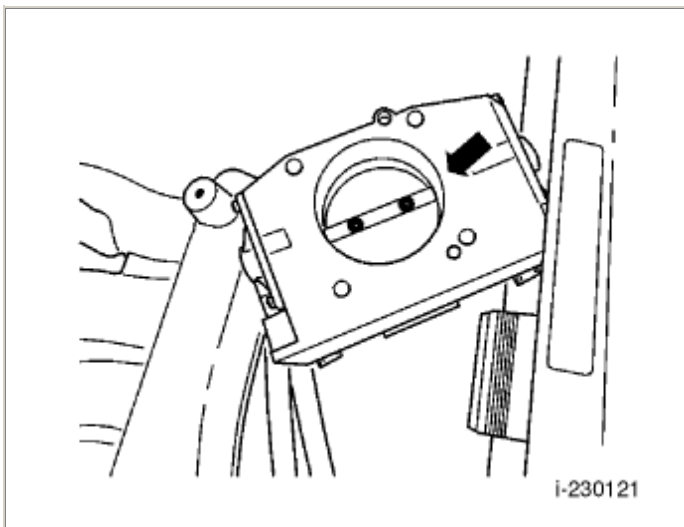
Remove:

- the connectors with holder on both sides of the fan shroud
- the canister purge (CP) valve from the fan shroud
- fan with shroud.



Remove the 4 x screws for the electronic throttle module (ETM).

Cleaning the electronic throttle module (ETM)



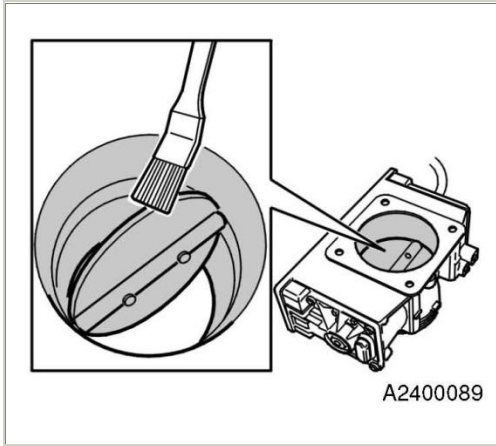
Raise the electronic throttle module (ETM) and place it between the radiator and the intake manifold.

Place paper under the electronic throttle module (ETM).

Clean the throttle and bore as follows.

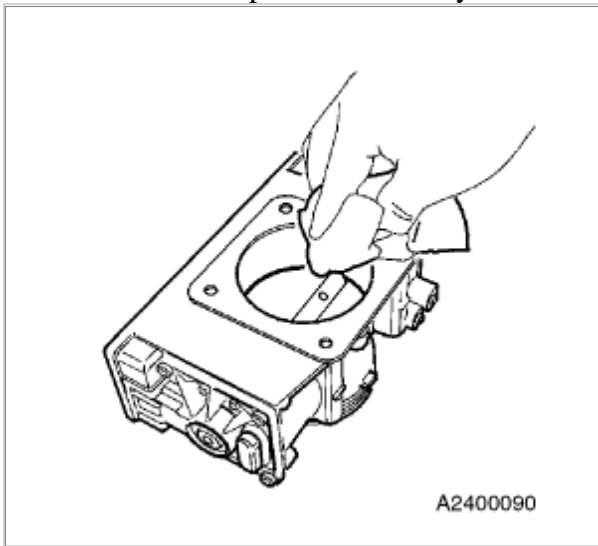
Note! Do not use compressed air when cleaning the electronic throttle module (ETM).

Cleaning the ETM



Warning! DO NOT submerge throttle unit in cleaning solvent. ONLY use cleaning solvent recommended in this TNN.

Important! Do not scrape or use a rotary wire brush to clean the unit.

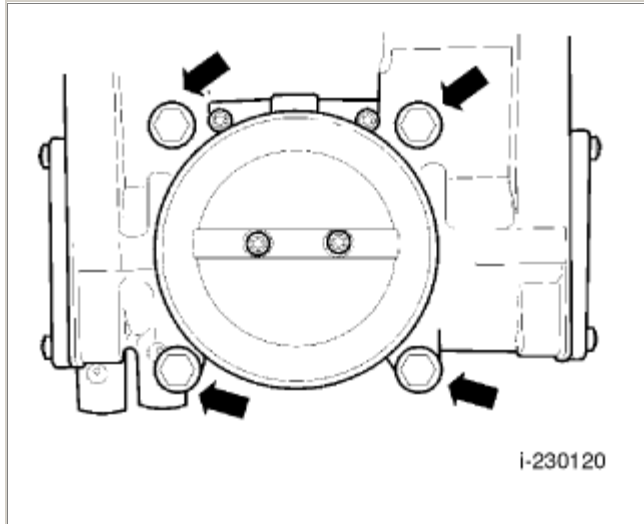


Clean the ETM bore using cleaner (P/N 11 61 828) and a soft bristle brush. Ensure that all the residue is removed from the shaded surfaces shown in the illustration.

Carefully wipe the inside of the bore clean on both sides of the throttle disc. Wipe clean the edge of the throttle disc.

Do not use compressed air to dry the throttle module.

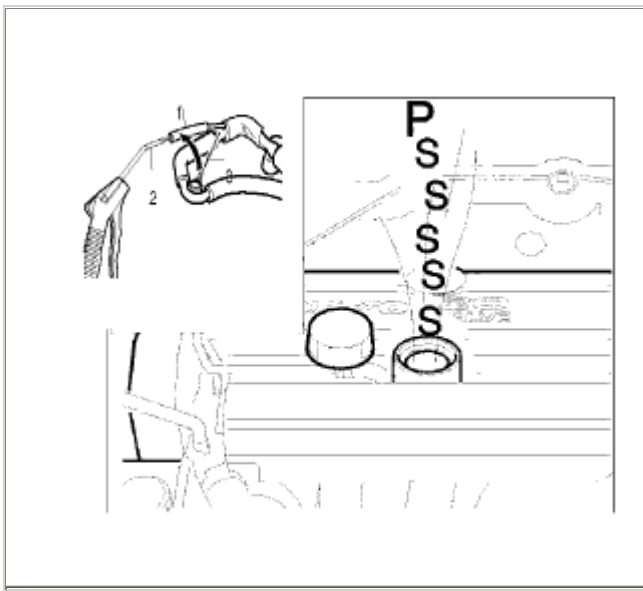
Installing the electronic throttle module (ETM)



Install:

- the electronic throttle module (ETM) with a new gasket
- the 4 x screws flush against mating surface.

Cleaning the crankcase ventilation



Remove the banjo bolt from the intake manifold.

Remove the hose (1) from the banjo nipple. Remove the oil filler cap.

Blow the hose clean (1) using compressed air (2) to verify that the system is open. If the hose is blocked clean the hose using 2.0 mm diameter wire.

If air travels through to the oil filler the breather is good, no further verification or repairs are necessary.

Note! If the hose is blocked, use a welding rod (maximum diameter 2.0 mm, approximately 250 mm long) to unblock the hose.

Clean the banjo nipple using a diameter 2.0 mm drill bit (3).

Install:

- the hose on the banjo nipple
- the banjo bolt with new gaskets
- the oil filler cap.

Raise the car.

Remove the splashguard under the engine

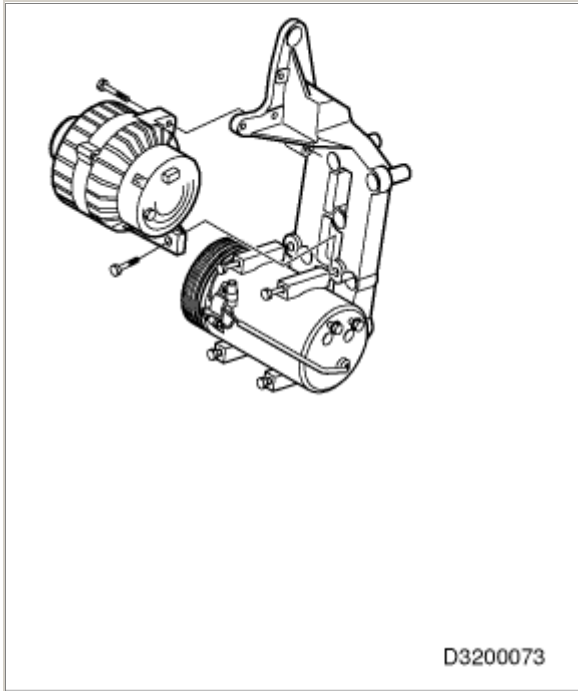
Tighten the banjo bolt. Tighten to 24 Nm.

Tighten the 4 x screws for the electronic throttle module (ETM). Tighten to 10 Nm.

Install the cover under the engine.

Lower the car.

Installing the alternator



Install:

- the alternator in the correct position
- the upper screw but do not tighten
- both the screws common to the alternator and the air condition (A/C) compressor. Do not tighten.

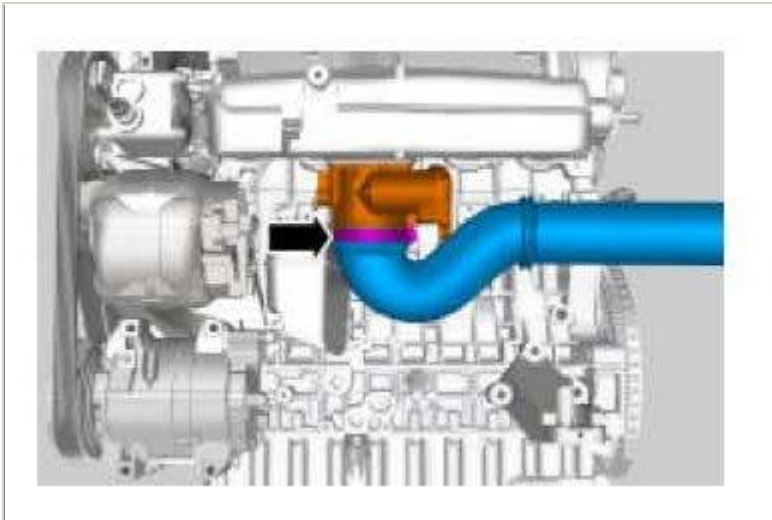
Tighten:

- the upper screw. Tighten to 24 Nm
- the lower screws for the air conditioning (A/C) compressor. Tighten to 24 Nm
- the screws common to the alternator and the air conditioning (A/C) compressor. Tighten to 24 Nm.

Install:



- fan shroud with its 4 x screws
- the holder for the connector before installing the lower screw on the fan shroud's (car's) left side. Tighten both the lower screws. Thread the 2 x uppermost screws
- the fan connectors
- the engine cooling fan's relay in the holder
- the canister purge (CP) valve to the fan shroud
- the connector with holder, fan shroud's right side
- the tie strap around the wiring
- hoses and wiring in their holders/clips the charge air hose to the charge air cooler (CAC)
- the relay holder. Tighten the upper screws.



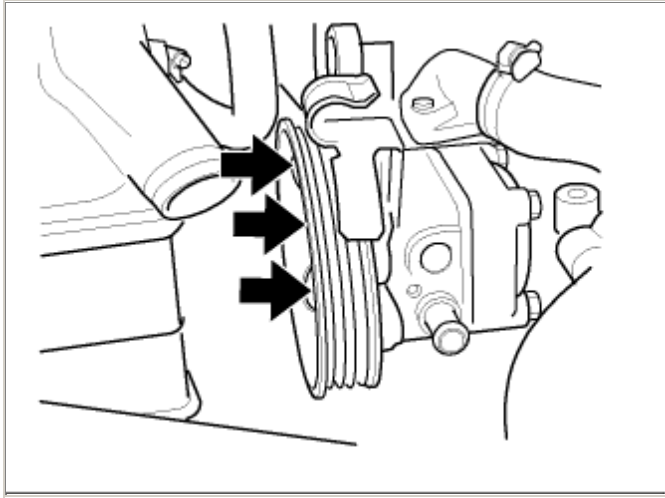
Installing the charge air pipe

Install the charge air pipe to the electronic throttle module (ETM)

Tighten the hose clamp for the charge air pipe on the electronic throttle module (ETM).

Installing the power steering pump

Install:



- the power steering pump
- the three screws. Tighten to 24 Nm
- the expansion tank and the power steering reservoir in the mounting on the spring strut turret
- the tie strap around the power steering hose by the suspension turret
- power steering hose and in the holder on the belt protection on the power steering pump
- the connector with holder on the power steering pump
- the coolant hose to the holder on the control module box
- the holder with coolant hose to the power steering hose

Install:

- the auxiliaries belt. Use wrench 999 7109
- the oil dipstick pipe
- the cold air inlet hose to the control module
- the air duct for the air cleaner (ACL) housing.

Turn the ignition key to position 2

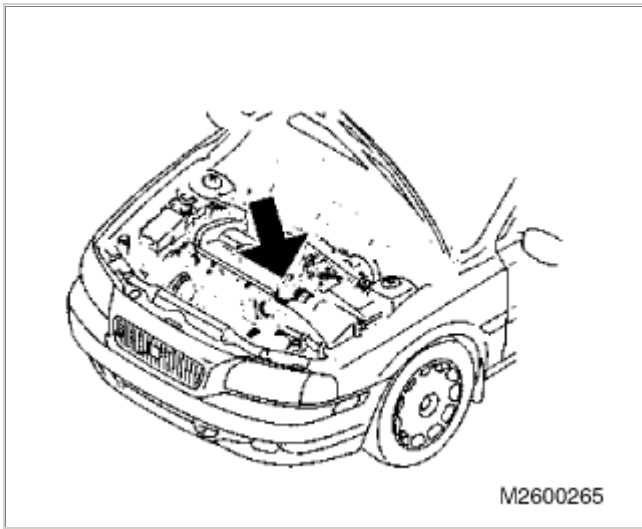
Install the battery negative lead to the battery.

Note! The method applies to only cleaning the throttle module for the S70 1999-2000 S60 2001-2002 V70 1999-2002 5-cyl Non-turbo

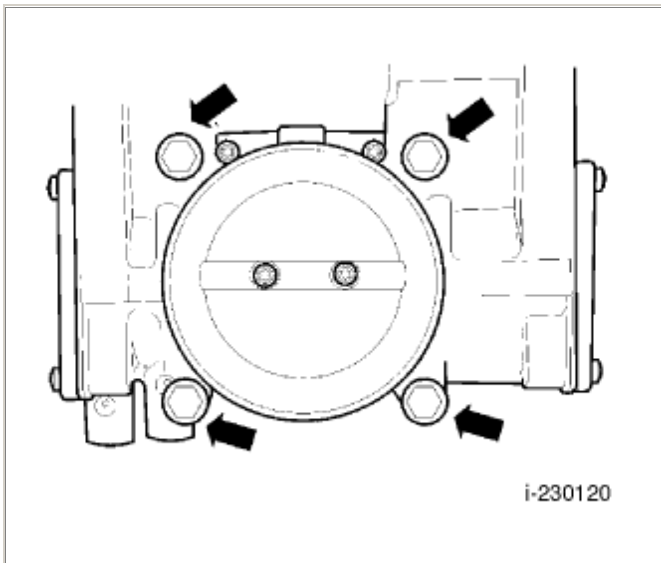
Remove:

- the battery negative lead from the battery. When removing and installing the battery leads. See: Electrical system Battery replacement

Remove:

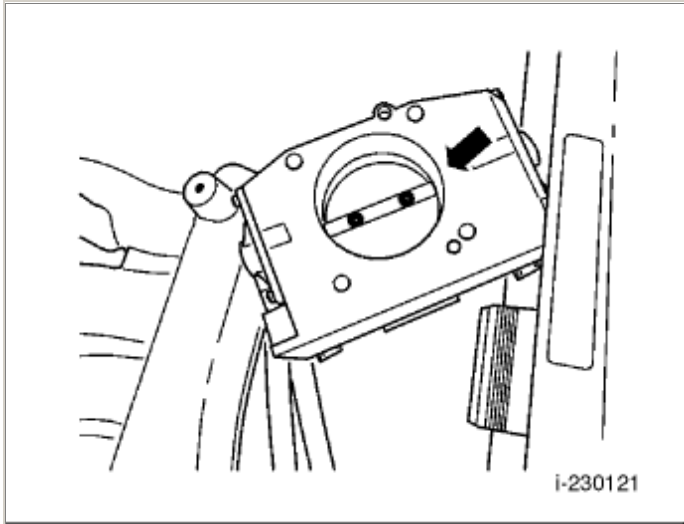


- the intake pipe between the front cover plate and the air cleaner.
- the intake pipe between the air cleaner and the electronic throttle module (ETM) and put it to one side.



Remove the 4 x screws for the electronic throttle module (ETM).

Cleaning the electronic throttle module (ETM)



Raise the electronic throttle module (ETM) and place it between the radiator and the intake manifold.

Place paper under the electronic throttle module (ETM).

Clean the throttle and bore as follows.

Note!

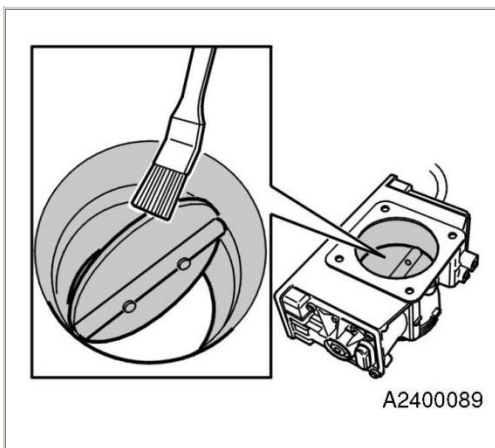
Do not use compressed air when cleaning the electronic throttle module (ETM).

Cleaning the ETM

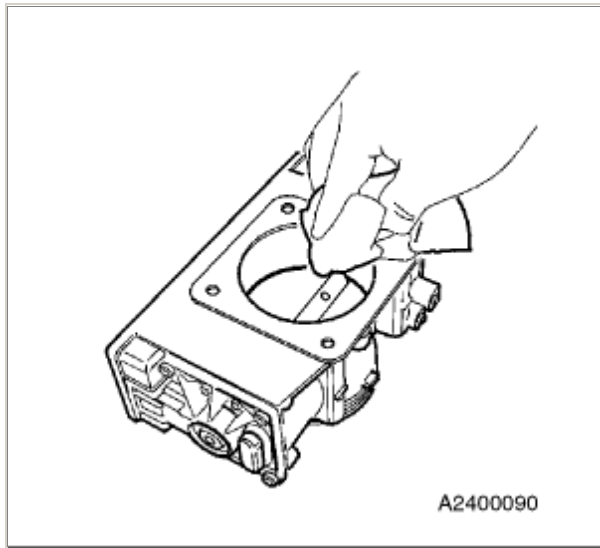
Warning! DO NOT submerge throttle unit in cleaning solvent. ONLY use cleaning solvent recommended in this TNN.

Important! Do not scrape or use a rotary wire brush to clean the unit.

Clean the ETM bore using cleaner (P/N 11 61 828) and a soft bristle brush.



Ensure that all the residue is removed from the shaded surfaces shown in the illustration.



Carefully wipe the inside of the bore clean on both sides of the throttle disc. Wipe clean the edge of the throttle disc.

Do not use compressed air to dry the throttle module.

Installing the electronic throttle module (ETM)

Install:

- the electronic throttle module (ETM) with a new gasket
- Tighten the 4 x screws to 10 Nm.

Install:

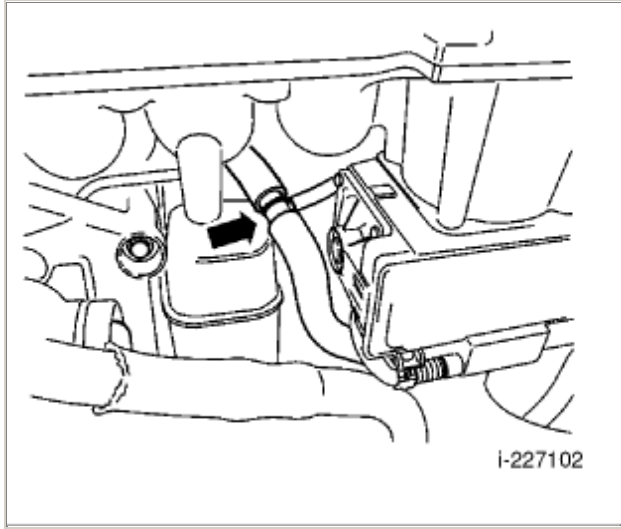
- the intake pipe between the air cleaner and the electronic throttle module (ETM).
- the intake pipe between the air cleaner and the front cover plate.

Turn the ignition key to position 2

Install the battery negative lead to the battery.

Cleaning the Crankcase Ventilation & Electronic Throttle Module (ETM), 6 Cylinder Turbo

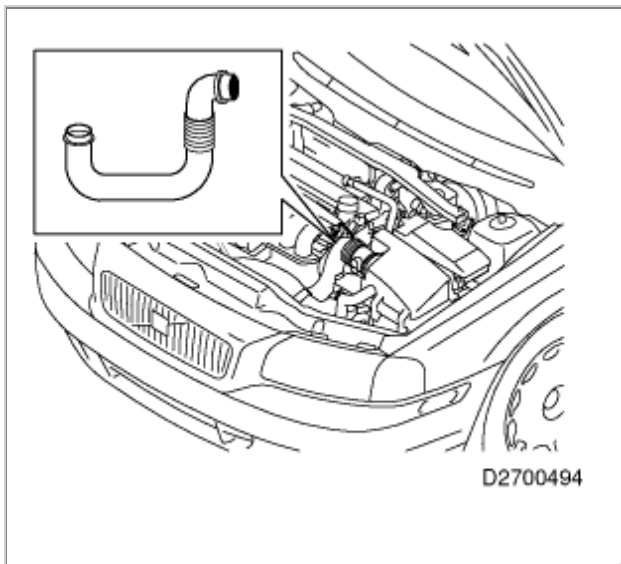
Remove:



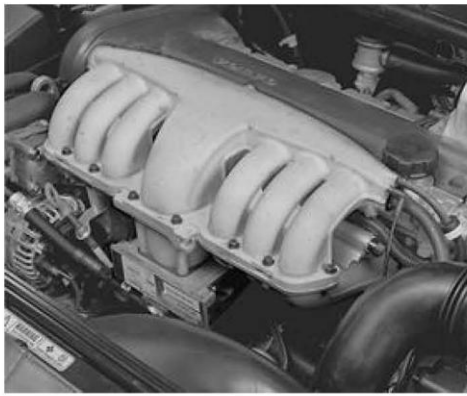
- the battery negative lead, see:

Electrical system Battery replacement

- the oil dipstick pipe
- the two thick hoses from the T-nipple.



Remove the intake manifold between the electronic throttle module (ETM) and the air cleaner.

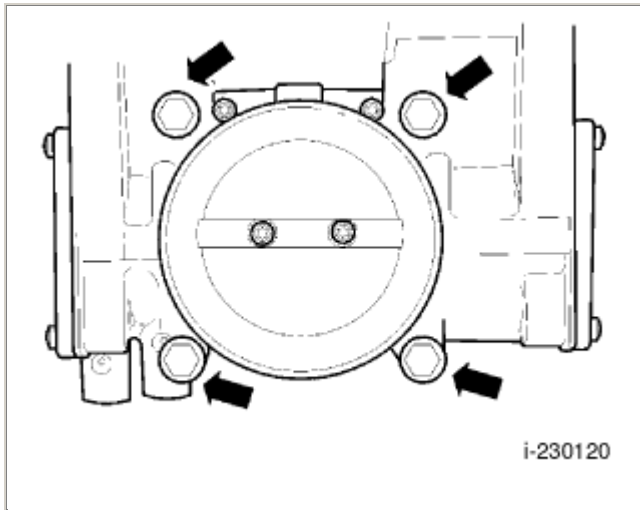


S2101328

Remove the ten screws at the intake manifold mating flange.

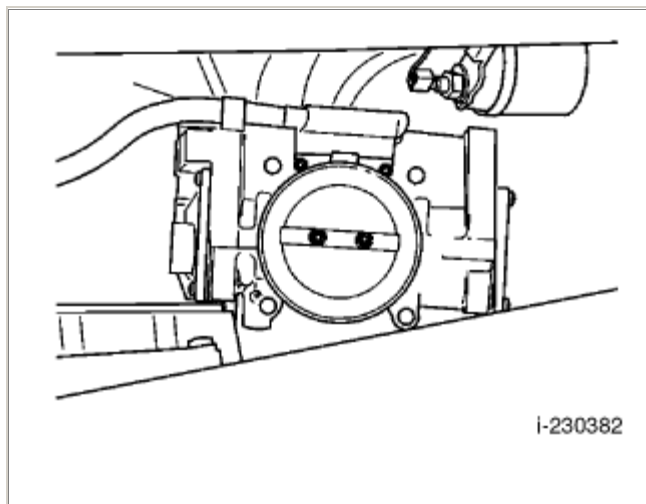
Lift off the upper section of the intake manifold.

Install the protection 999 5723.



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Remove the 4 x screws for the electronic throttle module (ETM).



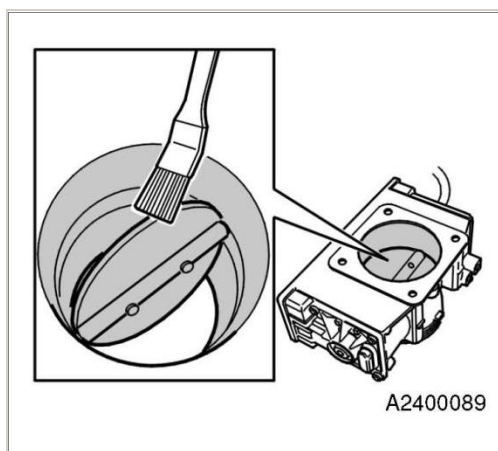
Place paper between the fan shroud and the engine block.

Place the electronic throttle module (ETM) on the paper.

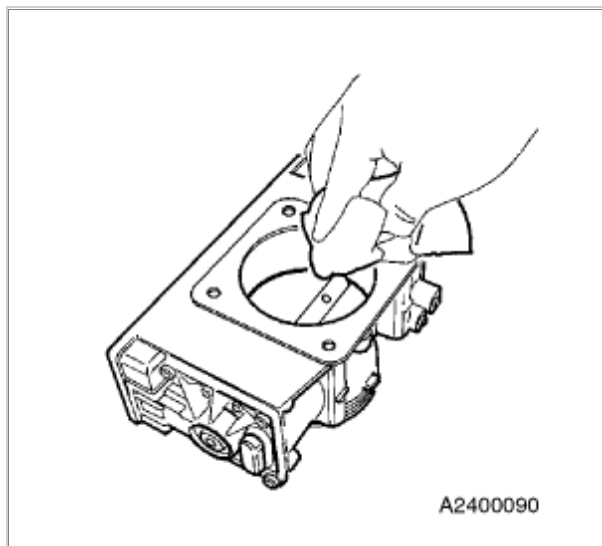
Warning! DO NOT submerge throttle unit in cleaning solvent. ONLY use cleaning solvent recommended in this TNN.

Important! Do not scrape or use a rotary wire brush to clean the unit.

Clean the ETM bore using cleaner (P/N 11 61 828) and a soft bristle brush.

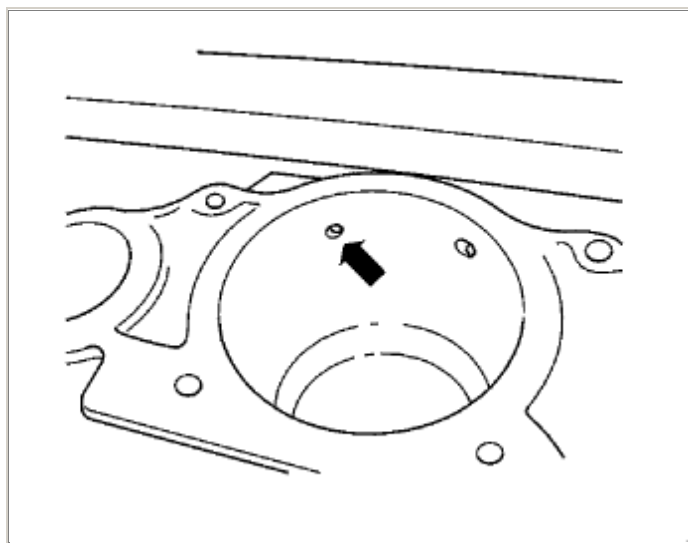


Ensure that all the residue is removed from the shaded surfaces shown in the illustration.



Carefully wipe the inside of the bore clean on both sides of the throttle disc. Wipe clean the edge of the throttle disc.

Do not use compressed air to dry the throttle module.



Remove the hose with the T-nipple from the intake manifold.

Remove the protection 999 5723.

Clean the hole in the intake manifold using a 2 mm drill bit.



S2101328

Remove the hose from the T-nipple. Clean the T-nipple. Use a 2 mm drill bit. Clean the hose using 2 mm wire and blow clean using compressed air.

Wipe clean the intake manifold's air duct. Install the hose on the T-nipple. Install the hose with the T-nipple to the intake manifold.

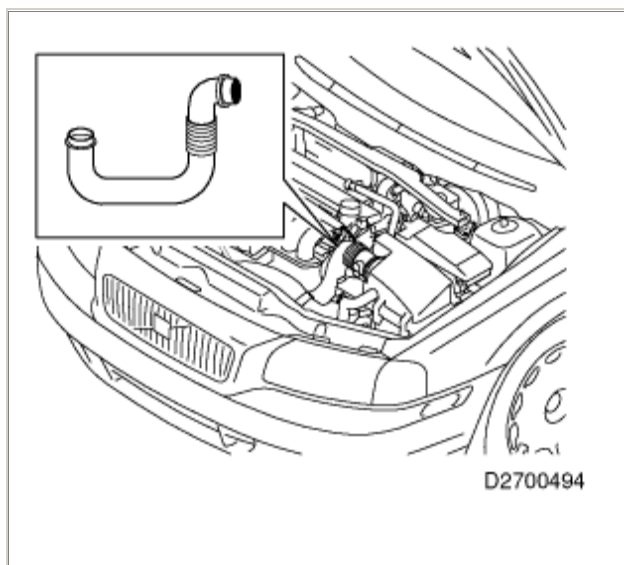
Install the protection 999 5723.

Install:

- the electronic throttle module (ETM) with a new gasket
- the 4 x screws for the electronic throttle module (ETM). Tighten to 10 Nm.

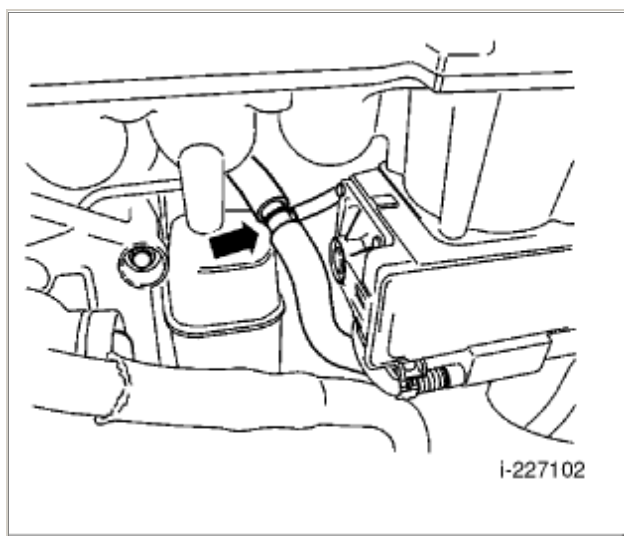
Remove the protection 999 5723. Install new gasket

Install the upper section of the intake manifold. Tighten the screws from the inside out alternately. Tighten to 17 Nm.



Install the intake manifold between the electronic throttle module (ETM) and the air cleaner.

Install:



- the two thick hoses to the T-nipple

Note! The T-nipple's thickest coupling to the flame trap.

- the oil dipstick pipe.

Finishing work

Turn the ignition key to position 2. Connect the battery cable to the negative battery terminal.