

ETM Throttle Failure Diagnostic Flow Chart for 1999-2001 Volvo C/S/V70, XC/70, S60 and S80

Connect OBDII code reader to the car and retrieve the diagnostic trouble codes (DTC). If you don't have this tool, take your car to Auto-Zone and they will scan it for you for free. Are there any codes related to the Mass Air Flow sensor?

Yes → []
No → Are there any misfire codes stored?
Yes → Diagnose and repair all misfire codes first. A malfunctioning ETM will not set misfire codes.
No → Is the following code combination stored? : P-1017, P-1019, P-1020, P-1021, P-1043 and P-1052.



Switch the ignition on but don't start the engine.
 For 99-00 C/S/V70, XC70 pull fuse #2 out (see fig.2)
 For 99-01 S80, 01 S60, V70 and XC70, fuse #6 or #21(Flip over the fuse cover lid and check for description. Look for "ETM" or "Accelerator Pedal/ETS" fuse).
 Put the fuse back in. The ETM should click on and whine for 6 sec before shutting off.
 Does the ETM switch on when the fuse is re-installed?

Are there any ETM TPS sensor codes stored?

No → []
Yes → Replace the ETM



Yes

No

Yes, but it clicks on and off repeatedly → []
Yes → []

Is the problem intermediate?

Yes → []
No → []

Measure voltage across pins 5 and 6 on the engine side of the ETM plug (Fig.1)
 Is the voltage equal to the battery voltage?

No voltage at all or voltage is lower → []

Connect one lead to pin 5 and the other to the positive (+) battery terminal.
 Is the voltage equal to the battery voltage?

Yes → []
No → []

Inspect all plastic and rubber intake hoses especially the plastic elbow pipe that connects to the ETM (Turbo models). Touch the pipe on the bottom side, see if it feels soft and replace it if necessary. Check upper intercooler rubber hose for splits on the bottom side. Tip: To find a vacuum leak, start the engine and spray some brake cleaner around all intake connections. Engine will stumble if a leak is found.

I could not find any vacuum leaks

Is your car turbocharged?

Yes → []
No → []

Replace the ETM unit

Connect one lead to the fuse#2 (for 99-00 C/S/V70, XC70) Fuse #6 or 21 (On 99-01 S80, 01 S60, V70 and XC70) and the other lead to the battery negative (-) post.
 Is the voltage equal to the battery voltage?

Yes → []
No → []

Check the ETM ground connection located on the middle of the engine block, next to oil pressure switch right above the oil pan.

Replace the Engine Management Relay

Check Mass Air Flow (MAF). A defective MAF can produce very similar symptoms as the ETM. Connect the OBDII scanner and check for codes. If there are any MAF related codes, replace the MAF sensor. In the monitoring function of the scanner select MAF signal and observe the MAF value. The reading should be around 14 Kg/Hr at idle.

There is an open circuit within power supply wire (green/white) from fuse#2 to pin #6 on the connector plug. To remedy the problem either open up engine harness and locate the crimped wire splice close to the fuse box, or run your own wire between the fuse and the plug.

