

AfterSales Diagnostic Sheet



MAS002832
(BOL 21-28)

From: Aftersales - TSO
To: Maserati Network
Auburn Hills, MI.
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NOTE: The below in depth diagnostic procedures are to be used along with the procedures listed in the Workshop Manuals if a more comprehensive diagnosis is required.

Evap high load purge diagnosis with pressure sensor

Issue: Engine Warning Light On

Models: M157/M156/M161 Gasoline engine equipped with Evap pressure sensor from MY21

Issue description: Engine light switches ON in Cluster, with no effect or symptoms affecting the drivability.

Conditions: The Engine Warning Light may switch ON when running or at standstill. Engine Temperature will not affect the symptom (warm or cold engine has no influence).

Possible Engine ECU errors:

DTC in ECM module:

DFC_TESPL -> P04F0 (EVAP System High Load Purge Line "A" Performance-)
DFC_PSSPEmax -> P0453 (EVAP System Pressure Sensor/Switch "B" Circuit High-)
DFC_PSSPEmin -> P0452 (EVAP System Pressure Sensor/Switch "B" Circuit Low-)
DFC_PSSPMAX -> P0451 (Plausibility check pressure signal venturi tube: High)
DFC_PSSPMIN -> P0451 (Plausibility check pressure signal venturi tube: Low)

All the above DTC's are related to the new pressure sensor used by the ECM to monitor the high load purge line from the purge valve to the ejector tee and to the right intercooler (Figure 2, Figure 3). The new pressure sensor is located on the connection pipe from the purge valve to ejector tee (Figure 4, Figure 5).

Troubleshooting:

1. Save a FIRST ECM scan report (Parameters + DTCs) using MD/MD EVO and attach it to a BOL report.
2. **Only for V8 engines-** in order to understand if the purge valve connectors are correctly fitted and connected to the correct purge valves (3 way purge valve and 2 way purge valve connectors could be switched – Figure 1, Figure 3, Figure 5) , perform the following electrical checks on wiring harness:



Figure 1: - High load purge line on V8 engine.

- a. Check the integrity of the **3 way purge valve** connector and related ECM connector, make sure there is no oxidation and that pin tightness is secure.
- b. Check the **3 way purge valve** wiring harness integrity and the correct pin-out (Figure 2): Ensure there are no short circuits to power supply or ground and it's securely plugged in. Perform these checks with the KIN in the OFF position, disconnected battery power supply and disconnected connectors from the ECM and sensor, in order to isolate the wiring.

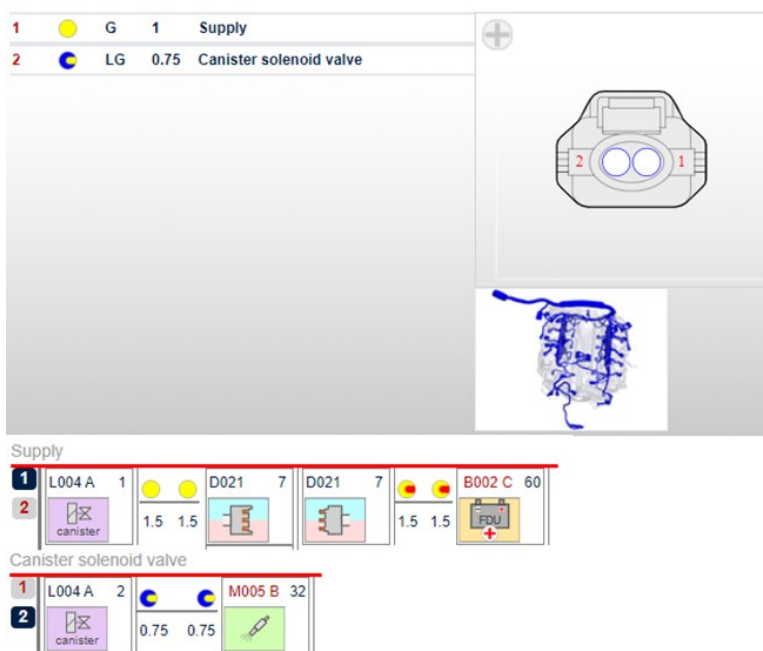


Figure 2: 3 way purge valve wiring diagram.

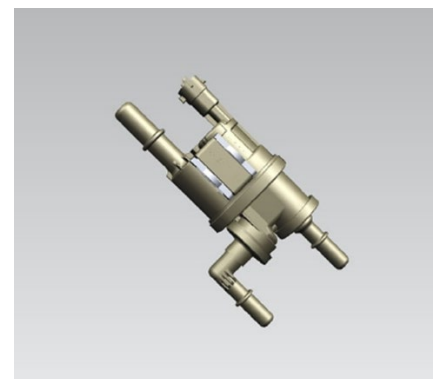


Figure 3: 3 way purge valve.

- c. Check the integrity of the **2 way purge valve** connector and related ECM connector, make sure there is no oxidation and that pin tightness is secure.
- d. Check the **2 way purge valve** wiring harness integrity and the correct pin-out (Figure 4): Ensure there are no short circuits to power supply or ground and no open circuits. Perform these checks with the KIN in the OFF position, disconnected battery power supply and disconnected connectors from ECM and sensor, in order to isolate the wiring.

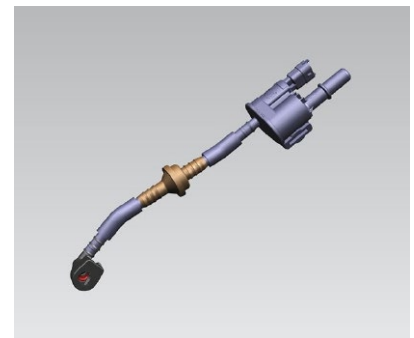
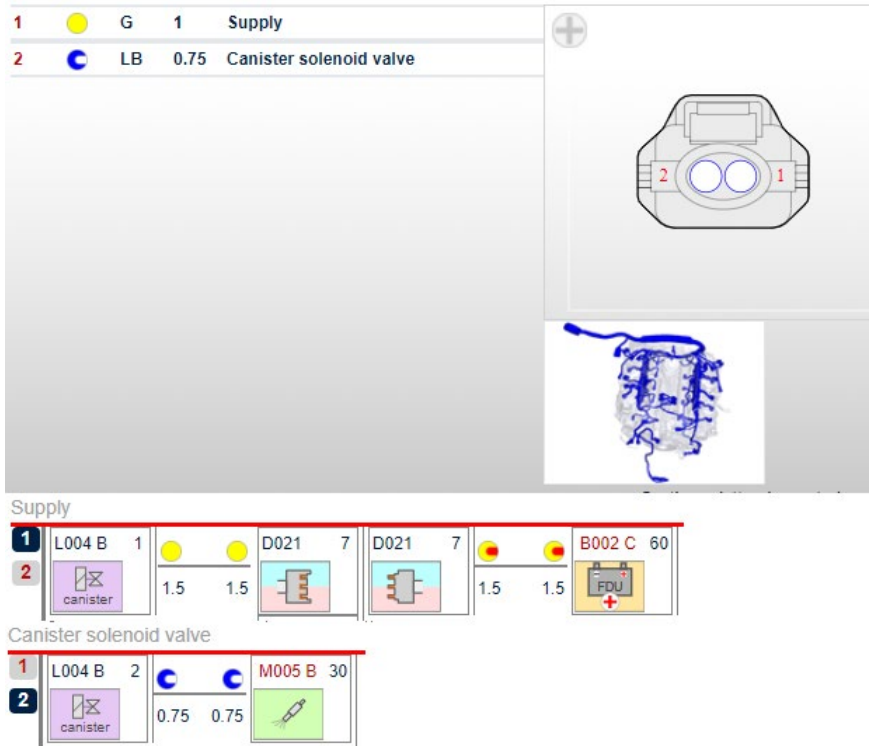


Figure 5: 2 way purge valve.

Figure 4: 2 way purge valve wiring diagram.

3. Perform the following electrical checks on the wiring harness:
 - a. Check the integrity of the pressure sensor connector and related ECM connector, make sure there is no oxidation and that pin tightness is secure.
 - b. Check the wiring harness integrity (Figure 6): Ensure there are no short circuits to power supply or ground and no open circuits. Perform these checks with the KIN in the OFF position, disconnected battery power supply and disconnected connectors from ECM and sensor, in order to isolate the wiring.
 - c. Check at pin 1 (Figure 6) of the pressure sensor connector to ensure the power supply of 5V is present, with the KIN in RUN position.

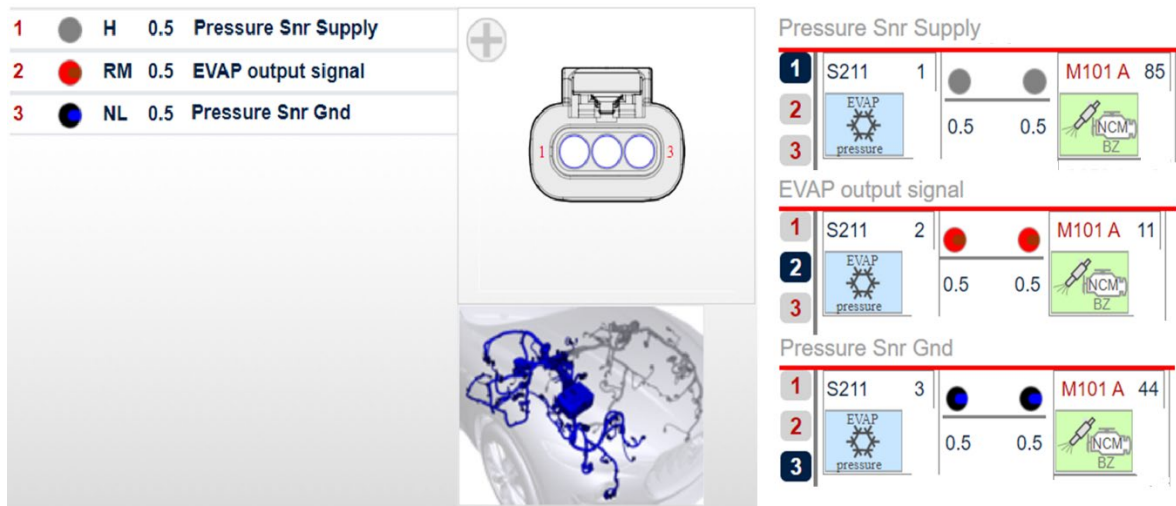


Figure 6: Fuel vapor pressure sensor on high load purge line.

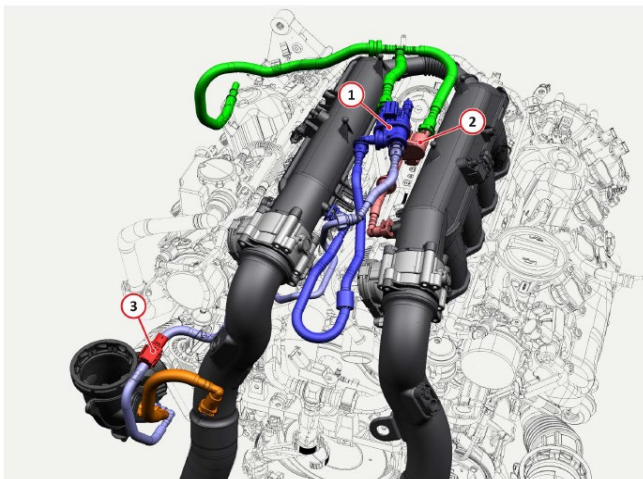


Figure 7: - High load purge line on V8 engine.

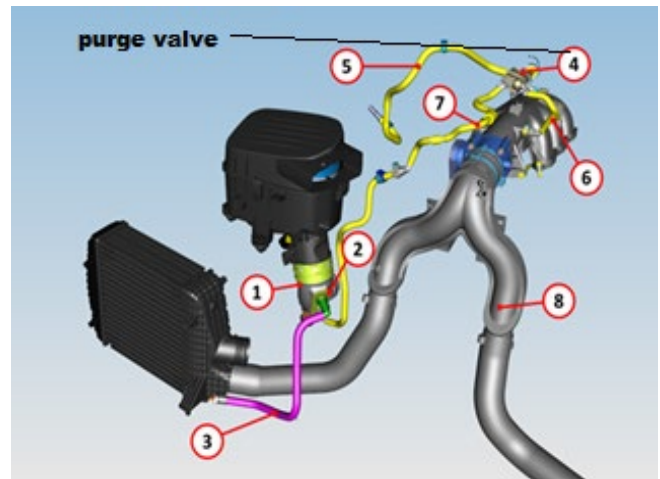


Figure 8: - High load purge line on V6 Levante.

4. If there are issues at the previous steps, repair as necessary or proceed replacing defective components and then go to next step.
5. Perform, on ECM module, active diagnosis "Canister purge valve 1" via MD/MD EVO and check if the **3 way purge valve** is working properly (opening and closing when modifying the duty cycle) with the key on and the engine off.
6. Verify that all the components of the High load purge line system are properly installed and connected (Figure 7, Figure 8). These include connection pipes (from purge valve to manifold, to ejector tee and to the intercooler), make sure there are no leaks or obstruction of all the system components.
7. Collect all the information and measurements requested and open a BOL as a Support Request.

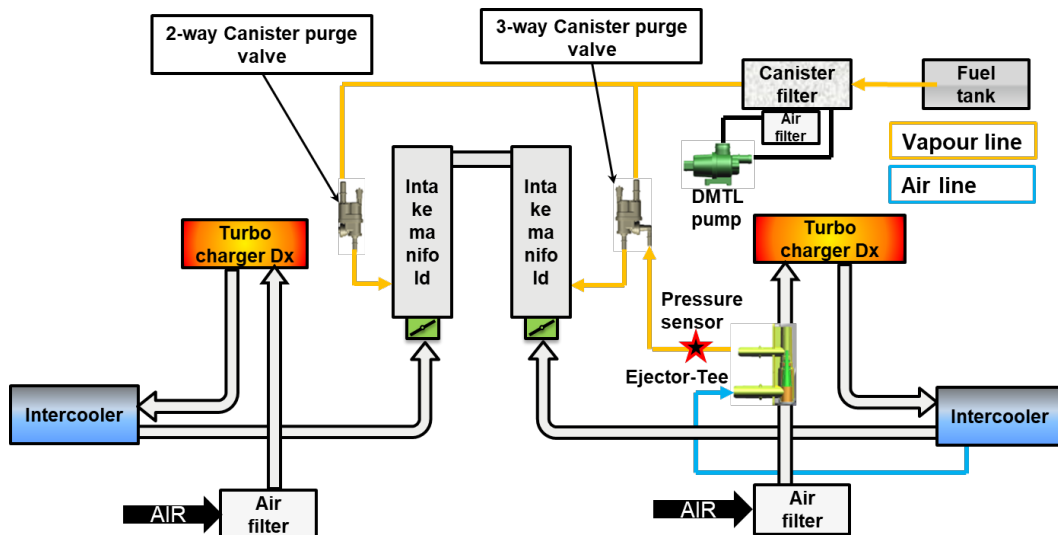


Figure 9: - High load purge line on V8 engine.

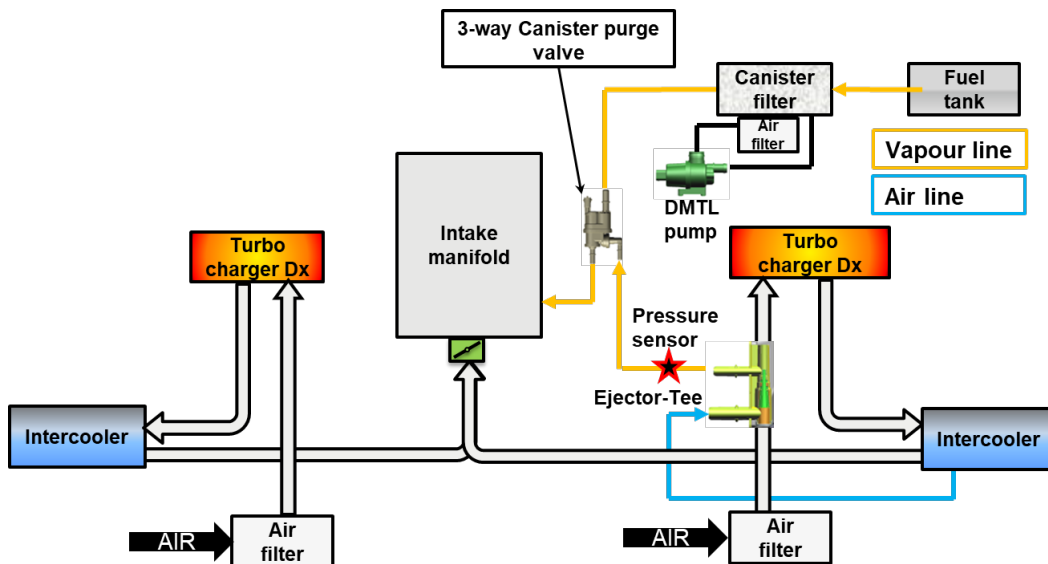


Figure 10: - High load purge line on V6 engine Levante.

If you have any questions, please contact the Technical Support Helpdesk.