AfterSales Diagnostic Sheet

MAS002203

From: Aftersales - TSO
To: Maserati Network
Modena, Italy | 20th May 2020

DMTL doesn’t work- Engine Warning Light (MIL, Malfunction Indicator Light) ON on Cluster.

Issue: DMTL doesn’t work- Engine Warning Light (MIL, Malfunction Indicator Light) ON on Cluster

Models: M157/M156/M161 Gasoline starting from MY17, DMTL-equipped..

Reference BOL:

- BOL 1726561
- BOL 1779716
- BOL 1732942.

Issue description: Engine light switches ON on Cluster, neither effect nor 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).

Engine ECU errors:

DTC in ECM module:

P043E - EVAP System Leak Detection Reference Orifice Low Flow
P1405 - EVAP System Leak Detection Pump Control plausibility check
P240C - EVAP System Leak Detection Pump Heater Control Circuit High
P240B - EVAP System Leak Detection Pump Heater Control Circuit Low

P240A - EVAP System Leak Detection Pump Heater Control Circuit/Open
P2400 - EVAP System Leak Detection Pump Control Circuit/Open
P2401 - EVAP System Leak Detection Pump Control Circuit Low
P2402 - EVAP System Leak Detection Pump Control Circuit High
P2404 - EVAP System Leak Detection Pump Sense Circuit Range/Performance
P2405 - EVAP System Leak Detection Pump Sense Circuit Low
P2406 - EVAP System Leak Detection Pump Sense Circuit High
P2407 - EVAP System Leak Detection Pump Sense Circuit Intermittent/Erratic
P0442 - EVAP System Leak Detected (small leak) => to find a leak in the EVAP system
P0455 - EVAP System Leak Detected (large leak) => to find a leak in the evap system
P0496 - EVAP System High Purge Flow – stuck open
P0497 - EVAP System Low Purge Flow – stuck closed

Almost all the DMTL diagnosis run in Key position OFF, some others in Key position ON.

Troubleshooting:

1. Try to get the information below from the Customer:

    - Fuel refuelling habits: does the Customer overfills o trickle-fills (Customer refuelling modulation can cause tank overfilling)?
    - Possible Fuel Station Fuel pump issue (i.e. not delivering in a smooth way) or irregular refuelling.
    - Car washing habits: running engine during washing operations, high-pressure jet used close to the DMTL area.
    - Does the Customer use the Vehicle to trail a Boat or Trailer? In this concern, check if the car is equipped with Tow Hook.

2. Save first ECM scan report (Parameters + DTCs) through the MD/MD EVO tool and attach it in BOL.

3. If either or both the DTC P0496 or P0497, those related to a Purge valve malfunction (Figure 4; Figure5), are not stored on ECM go to step 9.

4. If either or both the DTC P0496 or P0497 are stored , regardless of whether other DTCs at the same time, perform the following electrical checks on wiring harness:

    - Check the Purge connector integrity (Figure 4; Figure5), make sure there is no mark of oxidation and that pin tightness is secure and good.
    - Check the fuse F39 integrity in FDU box and Purge valve wiring harness integrity (Figure 3): absence of short circuits to Power Supply or Ground and absence of open circuits. Perform these checks with KIN in OFF position and disconnected battery power supply.

- Check at pin 1 (Figure 3) of the Purge Connector the power supply of 12V is present, with KIN in RUN position.

5. Repair as necessary possible electrical issues.

6. Perform, on ECM module, the Active Diagnosis “Canister purge valve 1” via MD/MD EVO and check if the Purge valve is working properly, opening and closing when modifying the duty cycle.

7. If there still is mechanical issues at previous step proceed with Purge valve replacement and again perform the Active Diagnosis “Canister purge valve 1” via MD/MD EVO in order to check if the new Purge valve is working properly.

8. Anyway:

    - go to next step 9 in case, in the first ECM scan report, there were other DMTL related DTC.
    - go to step 20 in case, in the first ECM scan report, there were only P0496 or P0497 .

9. Erase all ECM DTCs using MD/MD EVO.

10. Start the engine and wait for it to warm up.

11. Perform ECM Procedure “DMTL tank leak detection” via MD/MD EVO and check the presence of DTCs in ECM module at the end of such routine.

12. Save a second ECM scan report (Parameters + DTCs) using MD/MD EVO and attach it to BOL report. Perform the next steps even if no DMTL related DTC are again stored on ECM module.

13. Check the canister area and wheelhouse eventually notifying anomalies, crashes, dirt or components not properly fitted, especially the rear wheelhouse guard on the Canister side. Take pictures of the observed anomalies, if any.

14. Verify that all the components of the Fuel vapour recirculation system are properly fitted and well connected. These include connection pipes, DMTL, Canister, air filter, tank, fuel filler neck (Figure 1, Figure 2) or possible leakage/ obstruction of all system (a smoke test is advisable for this purpose). Take pictures of the observed anomalies, if any.

15. Check if DMTL or canister are contaminated by remarkable amount of water or liquid fuel and eventually replace it.

16. Perform the following electrical checks on wiring harness:

    - Check the DMTL connector integrity, make sure there is no mark of oxidation and that pin tightness is secure and good.

    - Check the fuse F39 integrity in FDU box and wiring harness integrity

(Figure 3): absence of short circuits to Power Supply or Ground and absence of open circuits. Perform these checks with KIN in OFF position and disconnected battery power supply.

- Check at pin 4 (Figure 3) of the DMTL connector the power supply of 12V is present, with KIN in RUN position.

17. If there is issues at previous steps repair as necessary or proceed replacing defected components and then go to step 19.

18. If there is no issue at previous steps proceed with the replacement of the DMTL pump:

    - In order to avoid any kind of contamination, check and clean the canister area during the component replacement.

    - Check the integrity and cleanliness of the connection pipes from DTML to Canister and eventually replace them. Make some pictures of the possible anomalies.

19. Quickly seal all the replaced components in order to avoid any external contamination.

20. Weigh the canister (excluding DMTL and pipes) and report the measured value on BOL in grams. If the value exceed the threshold of fully saturated filter (2180 g/76.89 oz) proceed even to replace the canister.

21. Delete ECM DTCs with MD/MD EVO.

22. Start the engine and warm it up.

23. Perform ECM Procedure “DMTL tank leak detection” via MD/MD EVO and check the presence of DTCs in ECM module at the end of such routine.

24. Save a third ECM scan report (parameters + DTCs) and attach it to BOL.

25. Seal and properly package all the replaced components to make them ready for possible return request.

26. Collect all the information and measurements requested and open a BOL as Support Request type through the service Entry website.

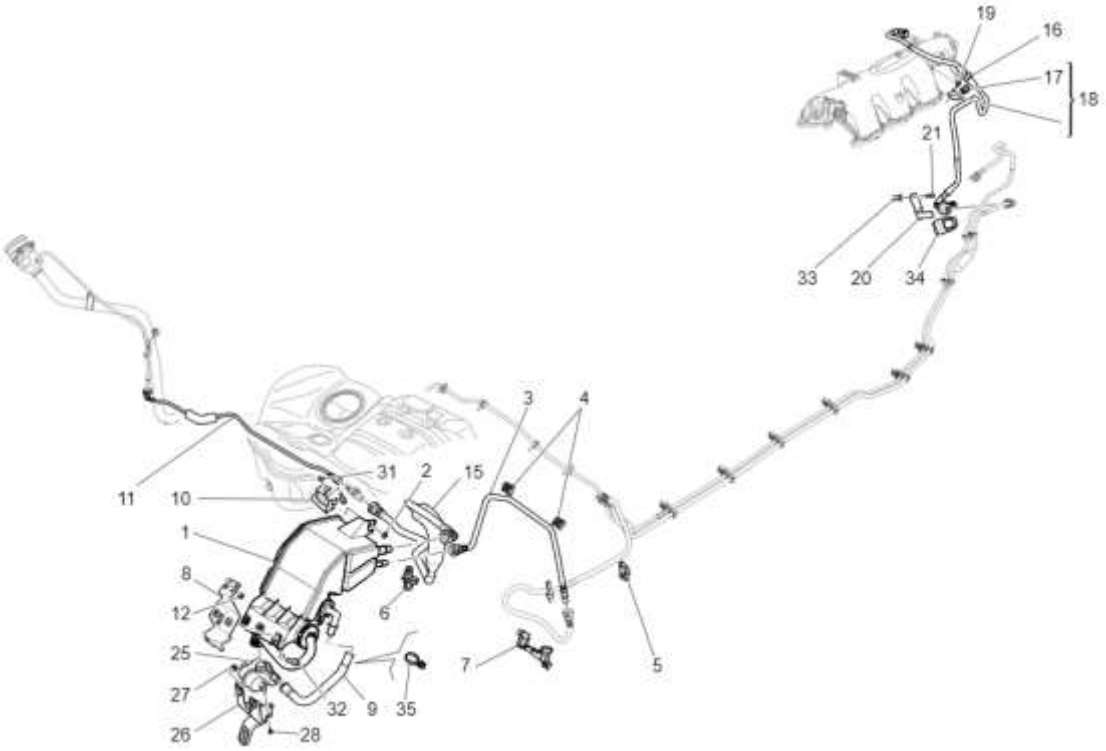

Figure 1: Fuel vapour recirculation system on Sedan models.

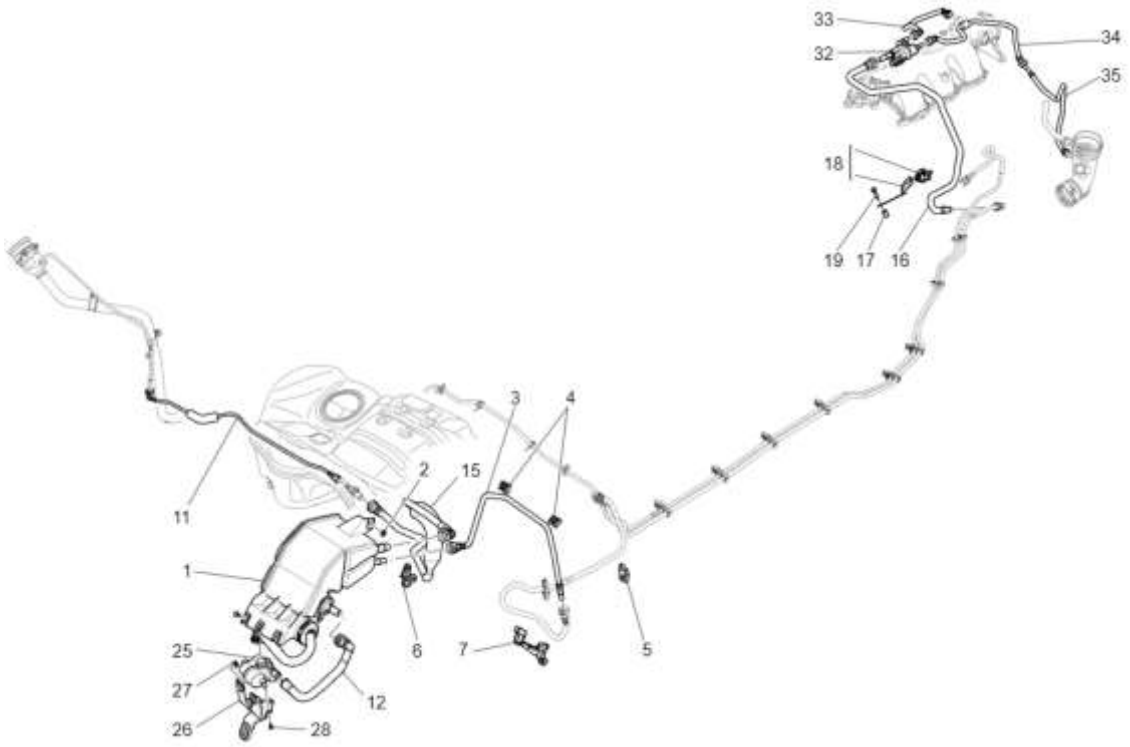

Figure 2: Fuel vapour recirculation system on Levante.

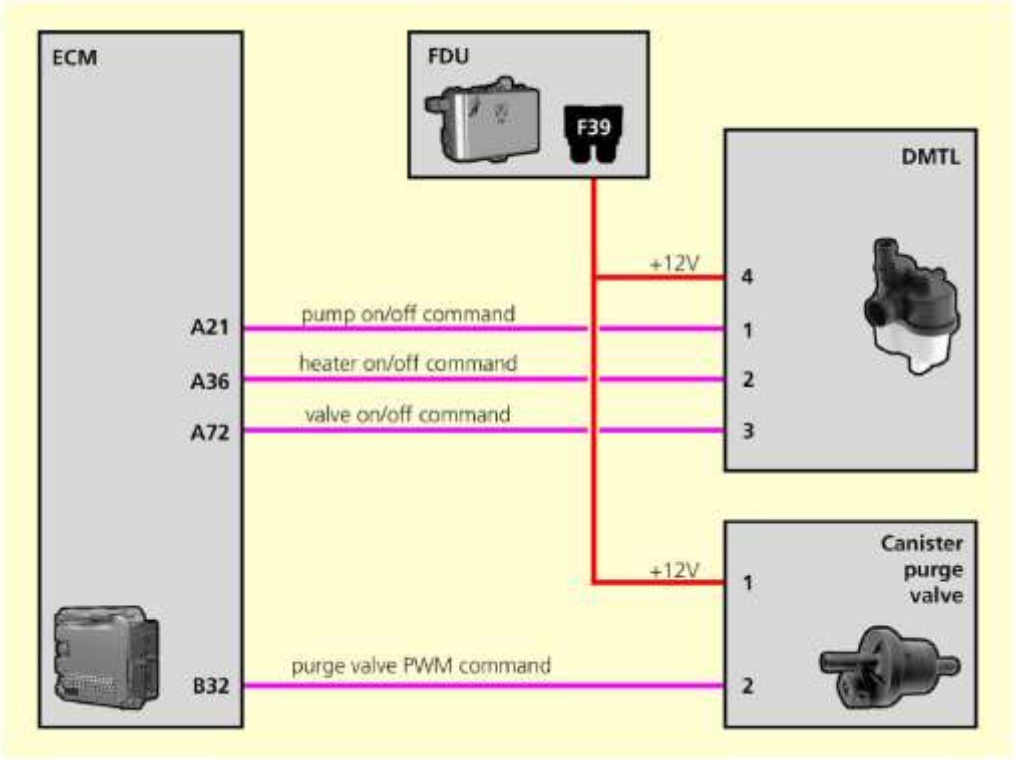

Figure 3: - Connection diagram of the evaporative emissions control system.

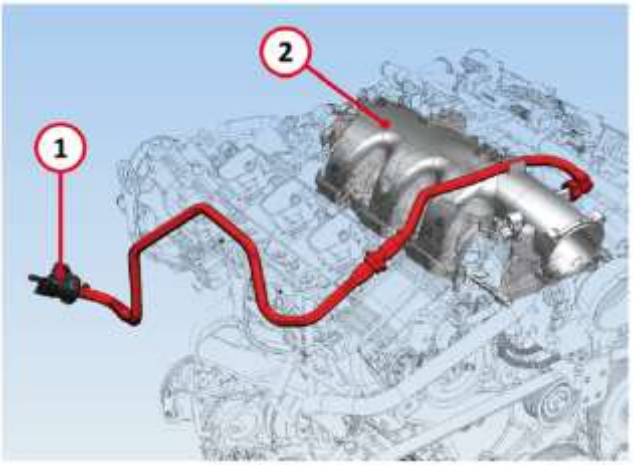

Figure 4: - Canister Purge valve on Sedan Models.

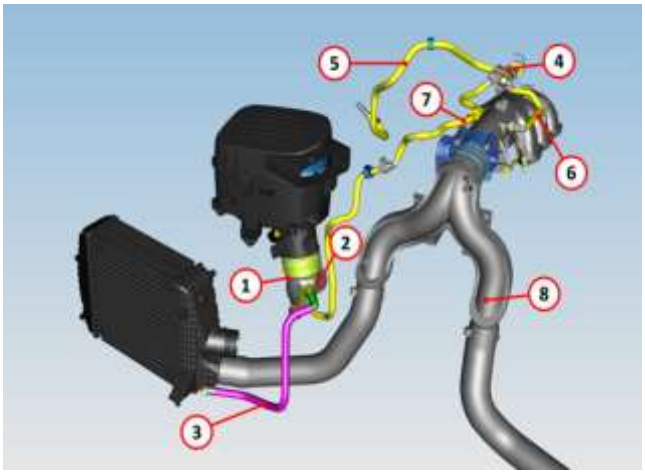

Figure 5: - Canister Purge valve on Levante.

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