Maserati

PERSONAL SERVICE LAB

MASTERS OF CARE

MAS002969/A – Blow-by pressure sensor faults

DATE: MAY 26 2022

This document replaces MAS002969 (BOL 22-05), please discard any paper copy of the previous bulletin

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.

The purpose of this diagnostic sheet is to provide diagnostic guidance for the DTCs related to the blow-by pressure sensor (also named as "crankcase pressure sensor").

MODELS: M156, M157, M161

ENGINE TYPES: F160 (V6), F154 (V8)

MODEL YEAR: MY21

SECTION: 01.90 – 2 (V6)/5 (V8) - BLOW-BY PRESSURE SENSOR

ISSUE: MIL warning light on.

CONDITIONS: No specific driving conditions. Cold ambient temperatures could have an influence.

DTC in ECU: possible DTCs in ECM:

- P2C33 - Crankcase Pressure Sensor "B" Circuit Range/Performance
- P2C34 - Crankcase Pressure Sensor "B" Circuit Low
- P2C35 - Crankcase Pressure Sensor "B" Circuit High
- P051B - Crankcase Pressure Sensor Circuit Range/Performance
- P051C - Crankcase Pressure Sensor Circuit Low
- P051D - Crankcase Pressure Sensor Circuit High

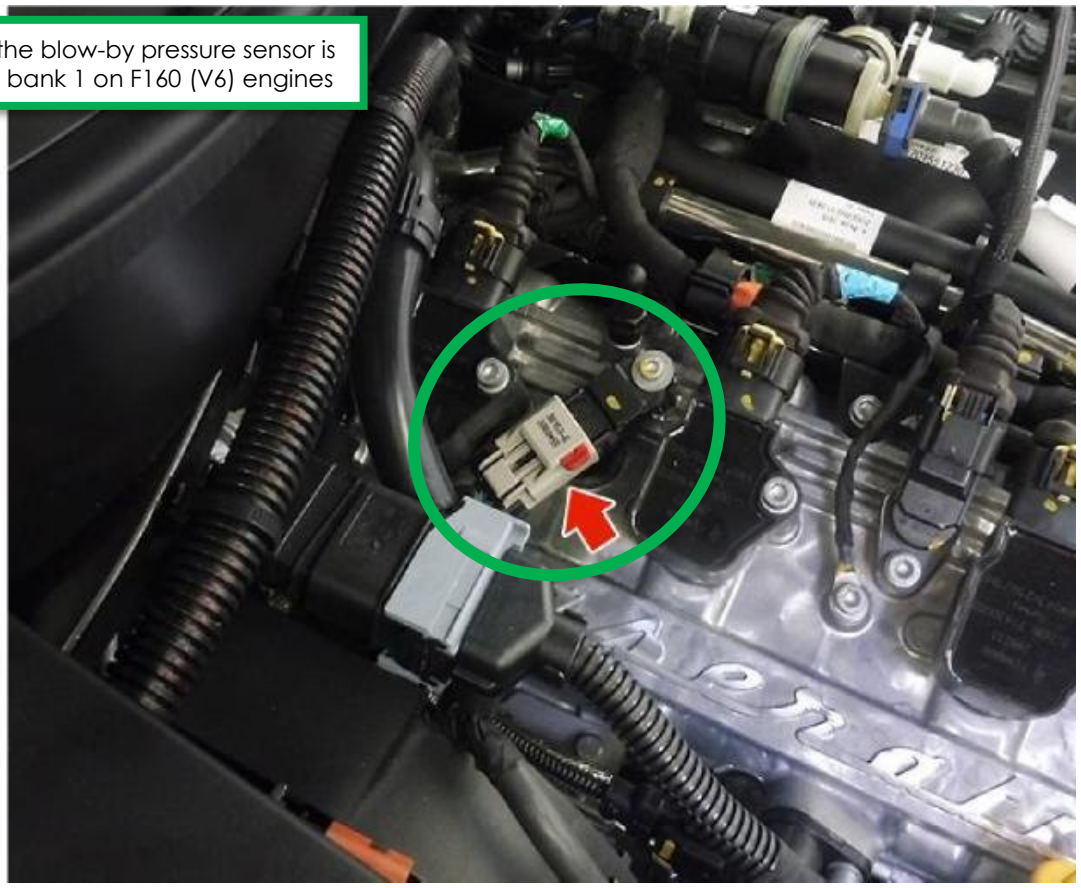
TROUBLESHOOTING: The DTCs listed above are set when the ECM reads unexpected values of the crankcase
pressure through the dedicated sensor.
This issue can be due to one or more of the following causes:

- Blow-by pressure sensor faulty
- Harness damaged/poor electrical connections
- Blow-by valve faulty
- ECM SW is out of date
- ECM corrupted

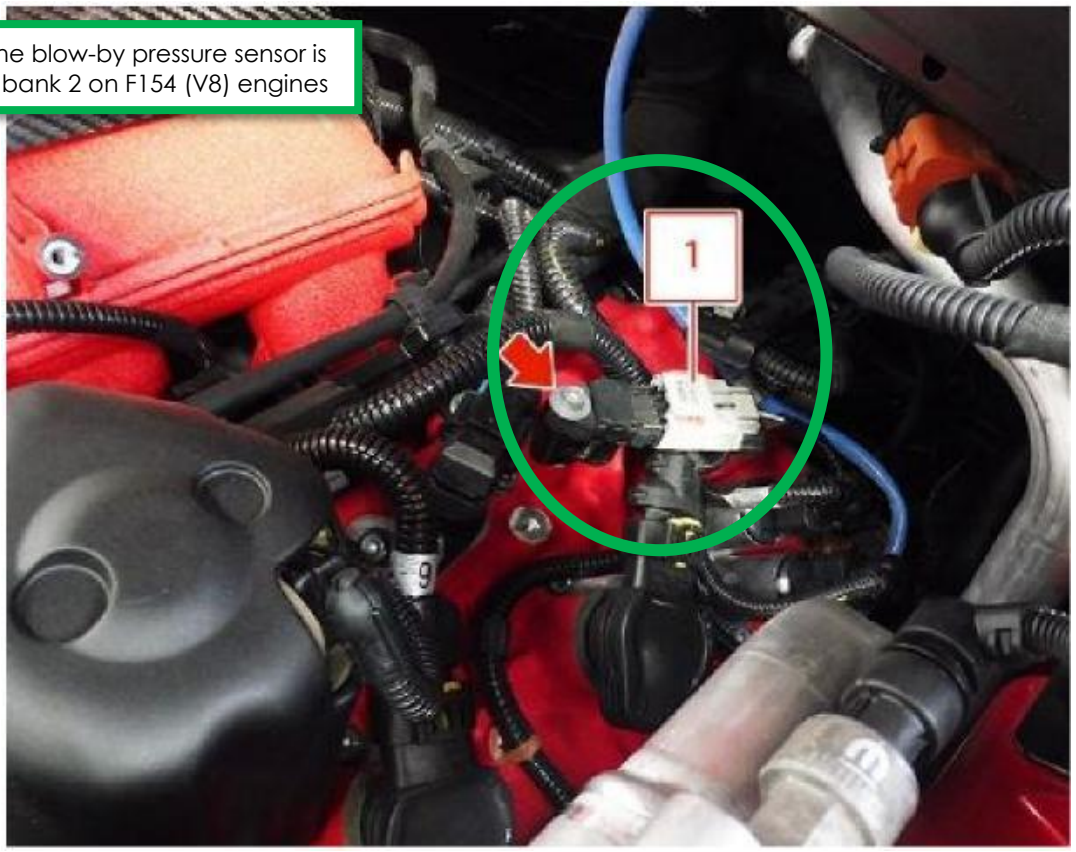
Operational Procedure

Please refer to the images below to locate the blow-by pressure sensor on F160 (V6) and F154 (V8) engines.

Picture 1 – the blow-by pressure sensor is located on bank 1 on F160 (V6) engines



Picture 2 - the blow-by pressure sensor is located on bank 2 on F154 (V8) engines



It is required to open a BOL as "Support Request" and reporting the outcome of the checks listed in this bulletin.

Checklist:

1) Take notes about driving and boundary conditions in which the customer has experienced this issue. Additional information about the frequency and/or the mileage of the latest occurrence might help with the diagnosis.

2) Perform a preliminary scan of all the ECUs with MD EVO and save the complete report (DTC + parameters) in pdf format. -> ►Attach to the BOL.

3) Clear all DTCs inside the ECUs and verify the repeatability of the issue. Take notes of driving and boundary conditions in which the issue is possibly duplicated (e.g. while driving at constant speed, warm engine, ambient temperature -10°C, etc.)

4) If the involved vehicle is a MY21 with P2C33 only, continue with diagnosis from Step 5.
In any other case, skip to Step 6.

5) Check whether the ECM is already updated to one of the SW versions listed in the table below. If not, reprogram the ECM to the indicated SW (or newer) and check if the problem is solved. If the problem persists, proceed with the next diagnostic steps.

   NOTE: If an error message (*"Contact Technical Service"*) appears on "ECU programming" button, please open a BOL requesting support to solve this problem before proceeding with the next steps.

MY	Models	Markets	SW Part Number
21	M15X 430HP RWD	North America	673013894
21	M161 350HP	North America	673013897
21	M15X 350HP	North America	673013895
21	M161 430HP	North America	673013896
21	M15X 430HP AWD	North America	673013893
21	M161 530HP	North America – Korea	673013162
21	M161 580HP	North America – Korea	673012373
21	M15X 580HP	North America – Korea	673012374

6) Disconnect the 12V battery and both connectors of the blow-by pressure sensor and ECM. Refer to TechDoc wiring diagram section FE0802, check the continuity of the harness between the blow-by pressure sensor and the ECM. ⚠ Use of the Break Out Box (BOB)and a DVOM (with suitable back probes) is recommended. Front Probing female pins may cause damage.⚠

   - Verify the insulation of each wire is not damaged (either to the chassis ground or to each other).
   - Inspect the intermediate connection of the signal line (D021) for any loose or corroded pins.
   - Check the male pins on the blow-by pressure sensor and ECM for any bent/corroded pins.

7) Re-connect the blow-by pressure sensor and ECM connectors. Re-connect the 12V battery. With the ignition ON (KOEO), back probe and measure the voltage across pin 1 and pin 2 of the blow-by pressure sensor connector (approximately 5V should be measured).

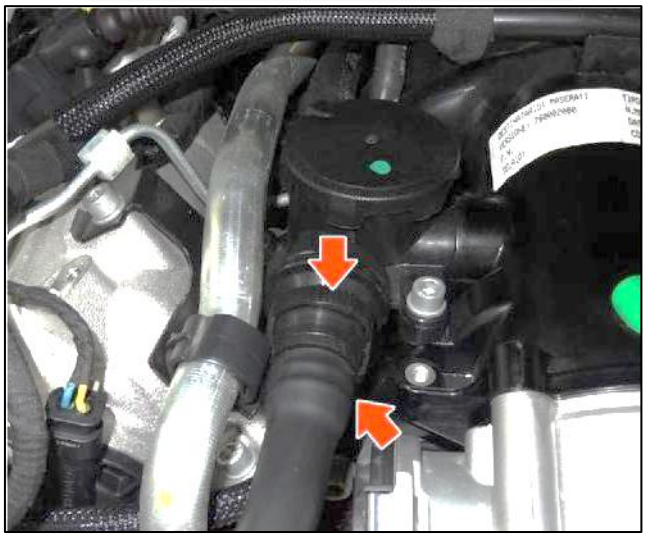
8) If the above checks do not highlight any issues, remove the blow-by pressure sensor from its seat and take two pictures of both the front and back sides of the sensors (see **Picture 3** below for example).

9) Disconnect the pipe between the blow-by valve and the RH turbocharger in correspondence to the area indicated in **Picture 4** (V6) and **Picture 5** (V8) below. Take pictures of the blow-by valve (see example shown in **Picture 6** as a comparison).

10) Open a BOL as "support request" and attach and report all the information collected throughout all above checks.

Picture 3 – blow-by pressure sensor

Picture 4 - V6 blow-by valve location



Picture 5 - V8 blow-by valve location

Picture 6 - blow-by valve contanmination check