

PERSONAL SERVICE LAB

MASTERS OF CARE

## MC20 Misfire or Engine Irregularities

**ATTENTION! This bulletin supersedes MAS003156 A BOL 24-07 released on February 27, 2024, Please discard/remove all copies of the previous bulletin.**

DATE: MAY 14, 2024

This Diagnostic Sheet serves as a guide and provides additional diagnostic info on how to diagnose possible engine misfires or irregularities, highlighting the importance of refraining from disassembling the Central (Pre-Chamber) spark plugs unless instructed to do so.

**MODELS:** M240 MC20 V6 RWD (coupé/Cielo), M182 Grecale V6 AWD, M189 V6 AWD (GranTurismo/GranCabrio) (All MY)

**ISSUE:** Engine malfunctions and irregularities, e.g. misfire and irregular engine speed at idle.

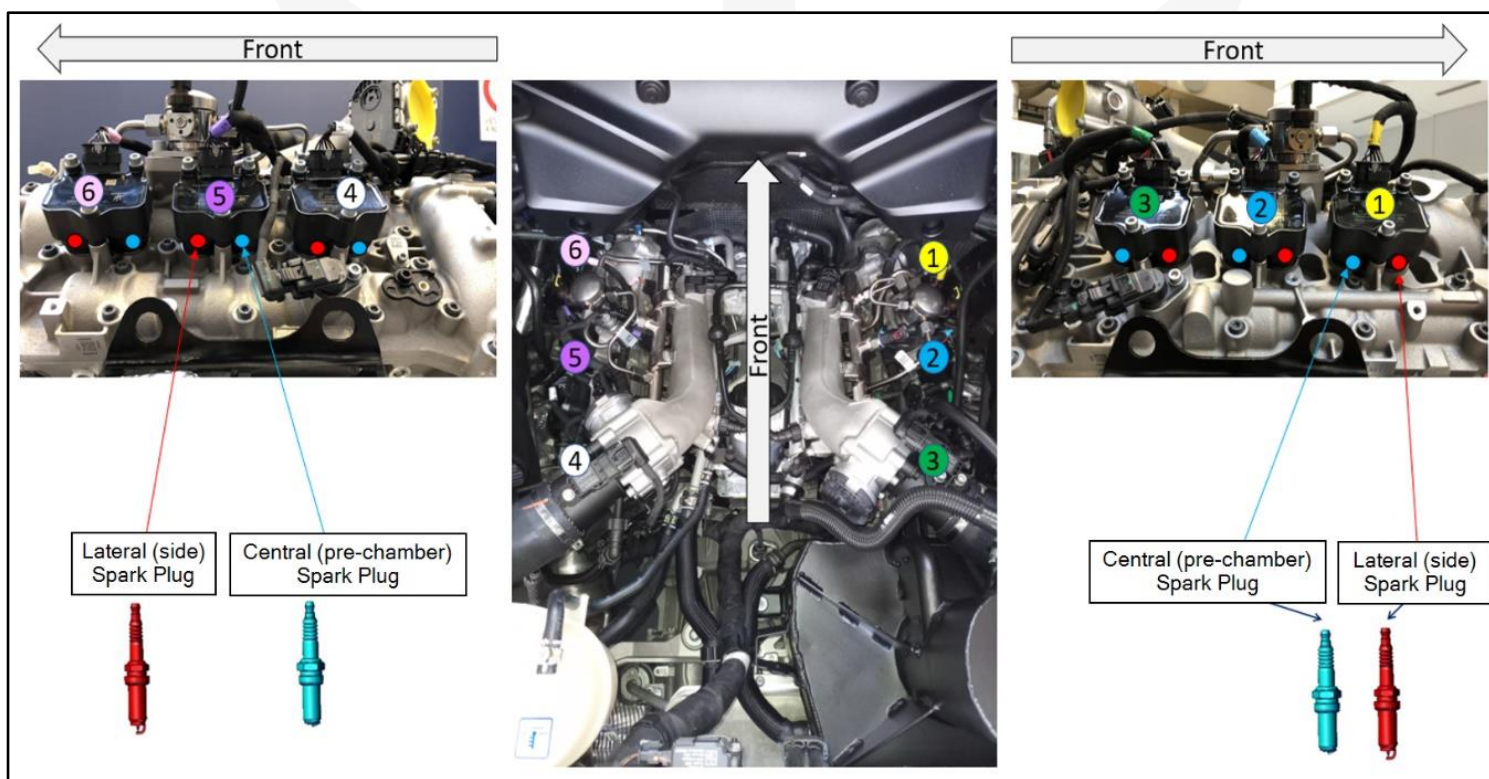
**DTCs in ECUs:** possible DTCs in ECM:

P13D1-00 (\$13D100) Fuse on Ion-current module bank1 broken  
P13D0-00 (\$13D000) Fuse on Ion-current module bank2 broken  
P0301-00 (\$030100) Cylinder 1 Misfire Detected  
P0306-00 (\$030600) Cylinder 6 Misfire Detected  
P0303-00 (\$030300) Cylinder 6 Misfire Detected  
P0304-00 (\$030400) Cylinder 4 Misfire Detected  
P0302-00 (\$030200) Cylinder 2 Misfire Detected  
P0305-00 (\$030500) Cylinder 5 Misfire Detected  
P0300-00 (\$030000) Multiple Cylinder Misfire  
P0350-00 (\$035000) Ignition coil primary/secondary circuit  
P2F23-00 (\$2F2300) DFC for misfire detection lateral miss spark  
P2F2D-00 (\$2F2D00) DFC for misfire detection lateral miss spark  
P2F27-00 (\$2F2700) DFC for misfire detection lateral miss spark  
P2F29-00 (\$2F2900) DFC for misfire detection lateral miss spark  
P2F25-00 (\$2F2500) DFC for misfire detection lateral miss spark  
P2F2B-00 (\$2F2B00) DFC for misfire detection lateral miss spark  
P2F22-00 (\$2F2200) DFC for misfire detection prechamber miss spark  
P2F2C-00 (\$2F2C00) DFC for misfire detection prechamber miss spark  
P2F26-00 (\$2F2600) DFC for misfire detection prechamber miss spark  
P2F28-00 (\$2F2800) DFC for misfire detection prechamber miss spark  
P2F24-00 (\$2F2400) DFC for misfire detection prechamber miss spark  
P2F2A-00 (\$2F2A00) DFC for misfire detection prechamber miss spark

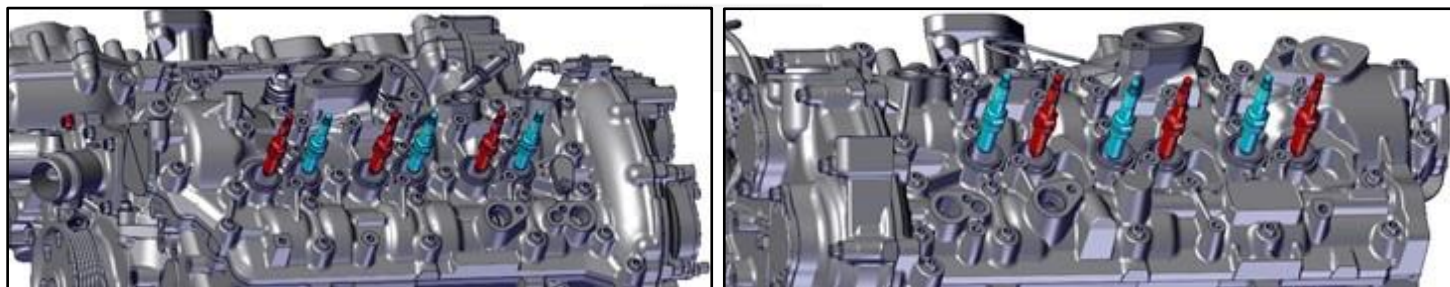
## TROUBLESHOOTING:

1. If any of the DTCs in the section **DTCs in ECUs** are set in ECM ECU, save the ECM DTCs+Parameters in PDF format, then clear ECM DTCs.
2. Perform a Road Test at high engine loads/RPM, to verify if the anomaly can be duplicated again. Save a new ECM DTCs+Parameters Scan Report in PDF format. If any engine malfunction occurs during the Road Test, please verify the condition of the lateral spark plugs.

**Note:** See illustration below **Figure 1**. lateral spark plugs are highlighted with the ● symbol. Do not disassemble the central (Pre-Chamber) spark plugs, highlighted with the ● symbol.

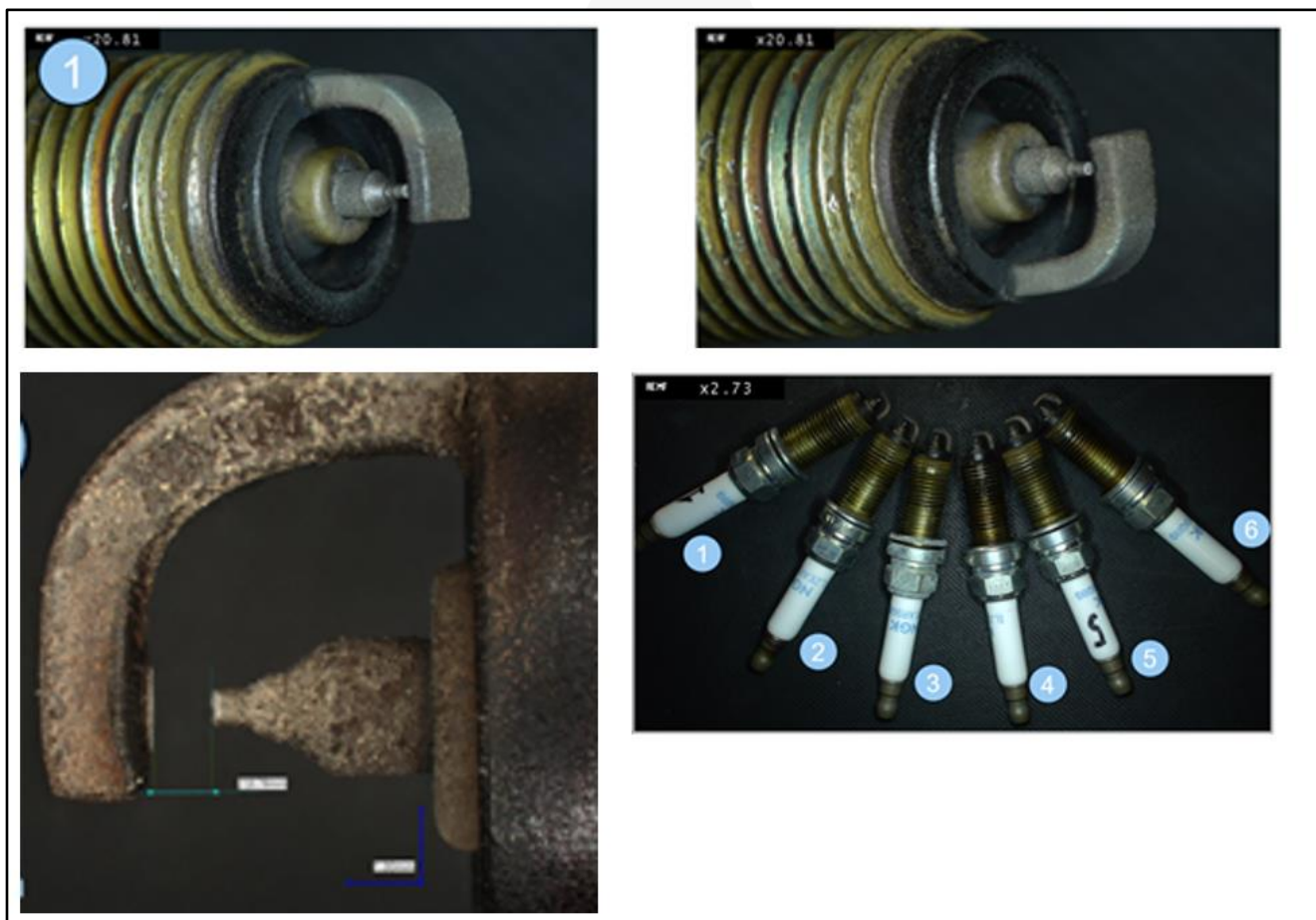


**Figure 1:** cylinders numbering and identification of Lateral (side) Spark Plugs vs Central (Pre-Chamber) Spark Plugs.



**Figure 2:** Below is an overview of the Left-Hand Cylinder Bank and the Right-Hand Cylinder Bank.

3. Disassemble the Lateral (side) Spark Plugs only, as described in Procedure **01.90.005-15**
4. Mark the cylinder number on the Lateral (side) Spark Plugs using an inked marker
5. Visually inspect all the Lateral (side) Spark Plugs, for fouling or breakage.
6. Take 3 detailed photos of each Spark Plug. (See examples of detailed pictures in **Figure 3** below)



**Figure 3:** Examples of detailed pictures of all the Lateral Spark Plugs (bottom right) and detailed pictures (top and bottom left).

7. Open a BOL as "SUPPORT REQUEST" and attach, and report all the information collected throughout all the above checks (including all vehicle scan reports) and await further instructions.