

STAR ONLINE PUBLICATION

Case Number: S2018000002

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Symptom/Vehicle Issue: Malfunction Indicator Lamp (MIL) Illuminated. Fuel Injection Quantity Diagnostic Trouble Codes (DTCs) Set.

Discussion: A small number of customers may experience a MIL Illumination. Upon inspection, a technician may find one or more of the following DTCs:

- P020A-00 Cylinder 1 Injection Timing-
- P020D-00 Cylinder 4 Injection Timing-
- P020B-00 Cylinder 2 Injection Timing-
- P020E-00 Cylinder 5 Injection Timing-
- P020C-00 Cylinder 3 Injection Timing-
- P020F-00 Cylinder 6 Injection Timing-
- P01CC-00 Cylinder 1 Injection Timing Performance - Over Advanced-
- P01D2-00 Cylinder 4 Injection Timing Performance - Over Advanced-
- P01CE-00 Cylinder 2 Injection Timing Performance - Over Advanced-
- P01D4-00 Cylinder 5 Injection Timing Performance - Over Advanced-
- P01D0-00 Cylinder 3 Injection Timing Performance - Over Advanced-
- P01D6-00 Cylinder 6 Injection Timing Performance - Over Advanced-
- P01CB-00 Cylinder 1 Injection Timing Performance - Over Retarded-
- P01D1-00 Cylinder 4 Injection Timing Performance - Over Retarded-
- P01CD-00 Cylinder 2 Injection Timing Performance - Over Retarded-
- P01D3-00 Cylinder 5 Injection Timing Performance - Over Retarded-
- P01CF-00 Cylinder 3 Injection Timing Performance - Over Retarded-
- P01D5-00 Cylinder 6 Injection Timing Performance - Over Retarded-

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If you receive a vehicle with any of the above DTCs, please follow the repair steps below.

Repair Steps:

Prior to clearing any fault codes, perform the following steps:

1. Using Wi-Tech, obtain a current Vehicle Scan Report
2. Using Wi-Tech, navigate to the PCM “Systems Tests” and perform the “Engineering Data Report” routine. The routine will prompt you to enter an email address to send the report to. Enter email address Michael.russell1@fcagroup.com.
3. Using Wi-Tech, navigate to the PCM “Misc Functions” and initiate the “Injector Quantity Adjustment” routine. At the beginning of the routine, Wi-Tech will give you the option to email a copy of the current codes programmed into the PCM. Email a copy of the injector codes to Michael.russell1@fcagroup.com as well as to yourself for later use. Once a copy of the codes has been sent, you may exit out of the routine.

NOTE: 3.0L diesel engine cylinder identification is different than other FCA engine applications. The passenger side (right) cylinder bank on this engine is numbered 1, 2, and 3. The driver’s side (left) cylinder bank is numbered 4, 5, and 6.

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4. Refer to the copy of the injector quantity codes you emailed to yourself earlier. Compare the injector quantity code currently programmed into the PCM to the code stamped on the top of the injector, and ensure the correct code is programmed in the PCM.
5. Closely inspect the CAC system for any loose connections or boost leaks. Pressure test the CAC system per the steps outlined in Service Library, Service Information Section 09 – Engine, 3.0L Turbo Diesel >> Diagnosis and Testing >> Intake Air System Leak Detection.
6. Inspect the injector hold down clamp/bolt for proper torque. If found to be loose, remove the injector, and inspect the nozzle nut to verify it has not also come loose. If found loose, replace the injector per published replacement procedures, and perform the drive cycle verification.
7. Inspect the fuel system for signs of contamination per normal published diagnostics, and repair as necessary under current warranty repair guidelines.
8. Perform the normal published diagnostics for the DTC(s) you have. When prompted to clear the DTCs, and drive the vehicle to duplicate the code, perform the **Drive Cycle Verification** steps outlined below

Drive Cycle Verification:

1. Ensure all DTCs are cleared.
2. PCM “Misc Functions” and perform the “Reset Zero Fuel Quantity Calibration” routine.
3. Turn off the ignition for 5 minutes to allow the system to time out.
4. Start the vehicle, and allow it to reach full operating temperature.
5. Drive the vehicle at a steady 55 mph (88 kph)
6. Perform a 0 throttle deceleration by completely releasing the throttle for 10-15 seconds.
7. Accelerate back up to steady 55 mph, and drive for approximately 30-60 seconds.
8. Repeat steps 5, and 6 for a total of 20-25 times.

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9. Navigate to the PCM “Systems Tests” and perform another “Engineering Data Report routine. This time, email the copy of the report to yourself.
10. Open the new Engineering Data report, and locate the data lines labeled “*Learning Cycle Counter For Rail Pressure Calibration Points 1-3*”, and note the values. See (Figure 1).

Learning cycle counter for rail pressure calibration point of 1	61
Learning cycle counter for rail pressure calibration point of 2	150
Learning cycle counter for rail pressure calibration point of 3	62

Figure 1

11. After the drive, these numbers should have increased from 0. This is the indication that the drive cycle was successful in running the monitors.
12. Did the counters increase as they should, but the MIL illuminated with the DTC reset?
 - a. Yes>>> Replace the affected injector, and perform the drive cycle steps 2-7 to verify the repair.
 - b. No>>> The DTC was a false failure, go ahead and release the vehicle to the customer as the code should not reset. Engineering is investigating a possible software update to address this condition.

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