Dodge 5.9L Basic Problem Diagnosis Information

DIPACO DIESEL PARTS U S A

Below are common problems and basic diagnostic tips for the Dodge 5.9L engine fuel system. Refer to appropriate service bulletins / information for more details.

Misfire

1. The cylinder balance test is not supported on the Cummins 5.9L engine and its use will produce incorrect results. Use the scan tool injector kill test function to determine if there is a problem with the cylinder or injector.
2. Check for 20 amps on the injector wiring. If there is less than 20 amps present there is an electrical problem.
3. A leaking or stuck open nozzle in the injector will cause a misfire and fuel can be found in the engine oil.

Rail Pressure

1. A minimum rail pressure of 5,000 PSI (345 bar) is required to start the engine.
2. The rail pressure during normal idle should be 5,600 – 6,500 PSI (386 – 448 bar).
3. If checking a drivability issue the desired fuel rail pressure set point and actual fuel rail pressure should be checked to see if they remain close to each other.

Low Power

1. Check for a lift pump volume in 10 seconds of 560 mL for 2003-early 2004 vehicles and 590 mL for late 2004 – 2007 vehicles.

Starting Problem

1. Check engine oil level to see if there is fuel present in the oil which is a sign of a possible stuck nozzle.
2. Minimum cranking RPM is 150.
3. If you have a cold start issue check the intake air heaters by measuring the amperage draw. Check with a cold engine KOEO or command them on with a scan tool.
4. Use a scan tool to check that the actual rail pressure is the same as the set desired rail pressure. Minimum rail pressure is 5,000 PSI (345 bar).
5. Check the lift pump supply pressure for 8 – 12 PSI. You can also check the flow volume.
6. Remove the MPROP electrical connector from the high-pressure fuel pump to see if there is an increase in rail pressure at cranking RPM. An increase in rail pressure indicates an electrical or ECM problem.
7. Check for a high injector return flow. Measure the flow at the injector return line connection at the rear of the cylinder head. Maximum allowable values are 90 mL at cranking and 160 mL at 1200 RPM with 1400 bar rail pressure. High return is commonly caused by loose connector tube retaining nuts. Recheck the return flow after tightening the nuts to the correct torque or you can temporally tighten them with a wrench, you will be able to feel if the nut is loose.

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8. High return flows or connector tube / injector problems can be pin pointed to the specific cylinder by blocking off one injector line at a time at the rail. Rechecking the return flow rate, rail pressure, or trying to start the engine can identify a leaking connector tube or injector.
9. Check the rail pressure limiter valve for leakage.
10. Check for a high-pressure pump output volume of more than 70 mL after cranking the engine for 3 10-second intervals; pausing between each crank to let the starter cool.
11. If the engine can be started check the high-pressure pump return flow at 750 RPM for a maximum return of 1000 mL.