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Service Information Bulletin

SUBJECT	DATE
Fuel System Integrity Check Routine - Two-Filter Fuel System	June 2017

Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0191	GHG17 DD Platform	Fuel System Integrity Check Routine Operation Overview - Two-Filter Fuel System	Update procedure information.
		How to Run a Fuel System Integrity Check Routine - Two-Filter Fuel System	



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2 Fuel System Integrity Check Routine Operation Overview - Two-Filter Fuel System

NOTICE: During the Fuel System Integrity Check (FSIC) routine, if at any time unusual sounds or anything that may indicate engine damage or unsafe conditions, abort the FSIC routine immediately by turning the ignition OFF and contact the Detroit™ Customer Support Center for further assistance at 800-445-1980.

Using DiagnosticLink® 8.06 or newer, the Automatic FSIC routine runs the engine through a routine that starts at 600 rpm, then goes to 850 rpm, 950 rpm, 1100 rpm, 1500 rpm and 1800 rpm. After 1800 rpm the engine will:

- return to 600 rpm
- ramp the rail pressure to 800 bar for 60 seconds
- request the ignition be turned off and back on
- perform a Fuel System Leak Detection routine

On occasion, the Motor Control Module (MCM) may not allow the rail pressure to ramp to 800 bar, at this point the routine will substitute the rail pressure ramp with an idle speed adjustment to 1400 rpm.



WARNING: PERSONAL INJURY

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

- Always start and operate an engine in a well ventilated area.
- If operating an engine in an enclosed area, vent the exhaust to the outside.
- Do not modify or tamper with the exhaust system or emission control system.



WARNING: PERSONAL INJURY

To avoid injury before starting and running the engine, ensure the vehicle is parked on a level surface, parking brake is set, and the wheels are blocked.



WARNING: ENGINE EXHAUST

To avoid injury from inhaling engine exhaust, always operate the engine in a well-ventilated area. Engine exhaust is toxic.


NOTE: If the fuel mass is over 50 mg/st at 600 RPM (engine at operating temperature), abort the FSIC routine and contact the Detroit™ Customer Support Center for further assistance at (800-445-1980).

1. Once the engine is rotating and there is sufficient low fuel pressure supplied to the high pressure pump, the high pressure pump will start to pressurize the fuel rail. Once the fuel rail pressure sensor reads sufficient rail pressure (around 150 bar), the MCM will command the fuel injectors to release atomized fuel into the cylinders. At this point, the fuel mass should go above 0 mg/st indicating the MCM is commanding the fuel injectors to inject fuel into the cylinders.
2. Once the engine starts, monitor the low pressure fuel sensor and the fuel compensation pressure at 600 rpm. The fuel pressure will be stable and will increase with engine speed.
3. As the engine increases rpm to the different set points, monitor the quantity control valve current and the rail pressure. They will both be stable at all rpm points.
4. The second set point in the FSIC test is 850 rpm; after the 850 rpm point, the rpm increases to 950 rpm. This rpm change is enough to activate fuel amplification. The fuel amplification has little to no effect on the low pressure fuel supply.

5. At the end of the log, the MCM will command the rail pressure to go to 800 bar. At this time the automatic rail pressure bleed-off test is performed. The FSIC test will request the ignition be turned off and then back on once the modules have all disconnected from the tool. When the ignition is turned back on, the panel reads multiple parameters related to the high pressure leak rate and displays in the panel box if the system is leaking or not leaking.
6. Throughout the log, fuel filter loading can be identified by calculating the difference between the low pressure fuel sensor and the fuel compensation pressure sensor. Refer to section "Normal Fuel System Pressures - Two-Filter System".

3 How to Run a Fuel System Integrity Check Routine - Two-Filter Fuel System

Table 1.

Service Tools Used in the Procedure		
Tool Number	Description	Graphic
W470589099100	Fuel Pressure Test Plug	
DiagnosticLink® 8.06 or later		

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WARNING: PERSONAL INJURY

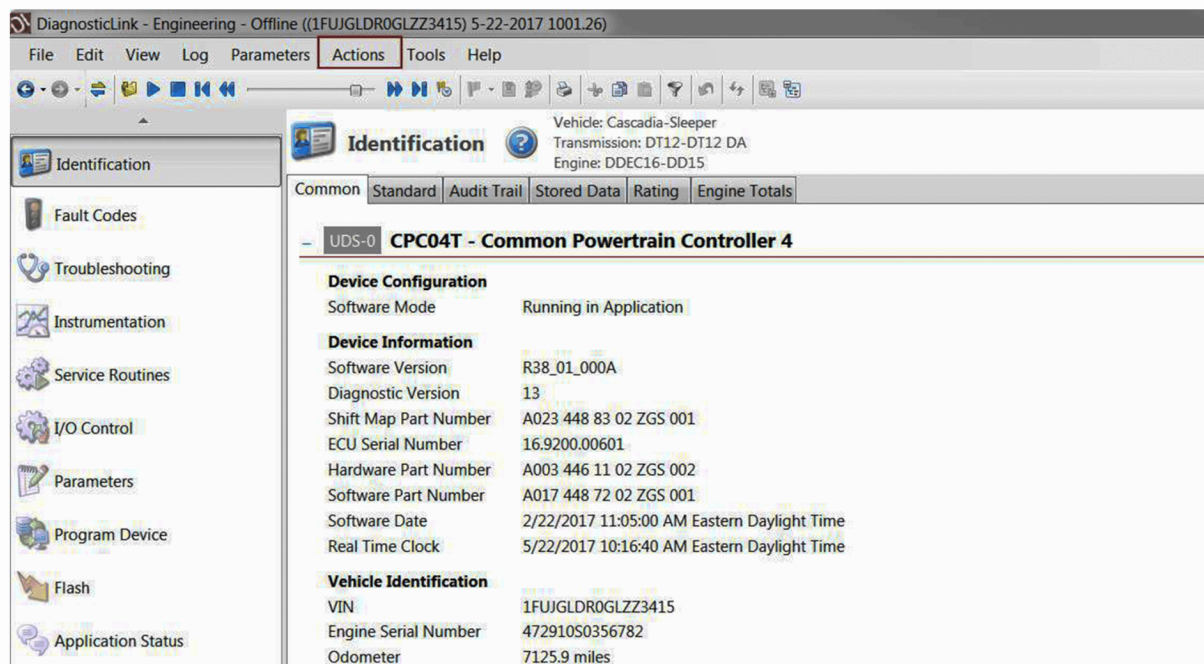
To avoid injury before starting and running the engine, ensure the vehicle is parked on a level surface, parking brake is set, and the wheels are blocked.



WARNING: ENGINE EXHAUST

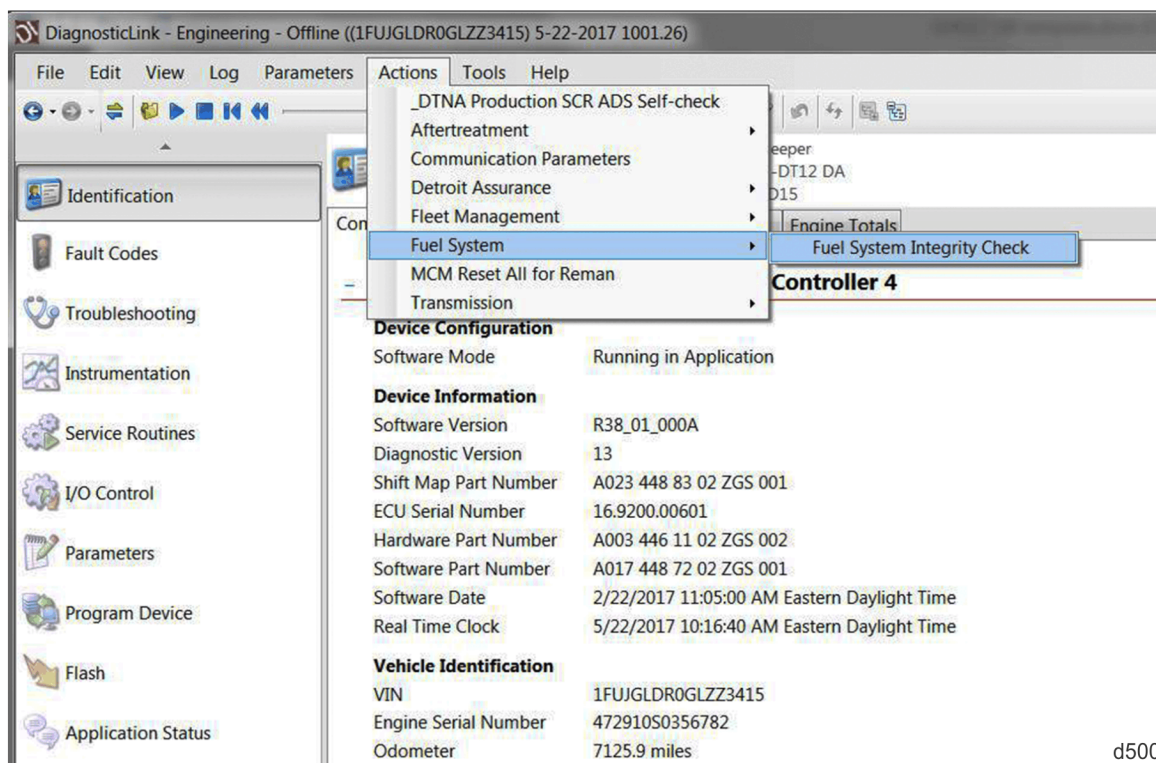
To avoid injury from inhaling engine exhaust, always operate the engine in a well-ventilated area. Engine exhaust is toxic.

1. Connect to the vehicle with DiagnosticLink® 8.06 or later.
2. Navigate in DiagnosticLink to “Actions.”



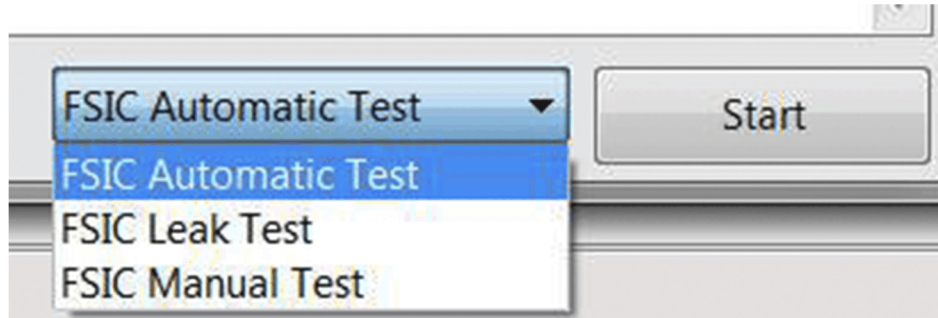
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3. Select "Fuel System" and then "Fuel System Integrity Check" in the drop-down menu.



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4. Select "FSIC Automatic Test" from the drop-down menu.



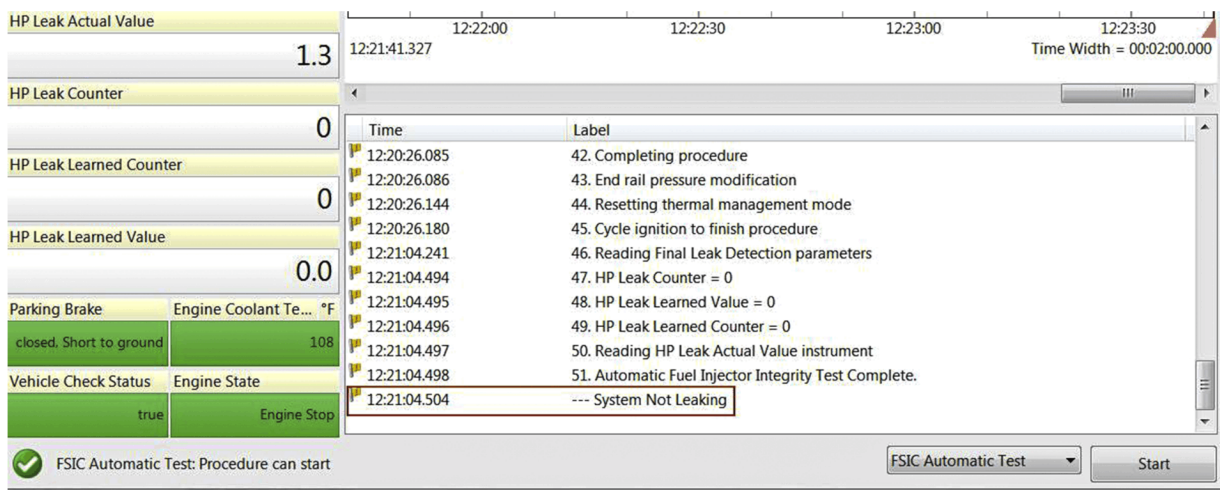
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5. Follow the instructions on screen. Allow the routine to complete.



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6. Once the routine completes, review the dialog box for the high pressure leak test results.



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7. Return to the initial diagnostics that directed you to the FSIC Routine.