



## DD15™ Fuel System Technician's Guide

**NUMBER:** 08 FSTG-10   **S.M. REF.:** 5.7   **ENGINE:** DD15   **DATE:** October 2008

**SUBJECT:** RAIL PRESSURE BLEED OFF

**PUBLICATION:** DDC-SVC-MAN-0037

Rail Pressure Bleed Off and RPBO Test Using DDDL have been updated.

### RAIL PRESSURE BLEED OFF

This procedure, the Rail Pressure Bleed Off (RPBO) test, will allow a technician to identify a leak in the high pressure system. A leak in one of the following locations will show a fast bleed down rate over time.

- High pressure pump (pumping elements)
- Fuel lines from the high pressure pump to fuel rail
- Fuel lines to each injector
- Leak at the Fuel Rail Pressure Sensor
- Leaking pressure limiting valve
- Internal amplifier or needle leakage to the return
- Internal amplifier or needle leakage to the cylinder

### RPBO TEST USING DDDL

Test as follows:

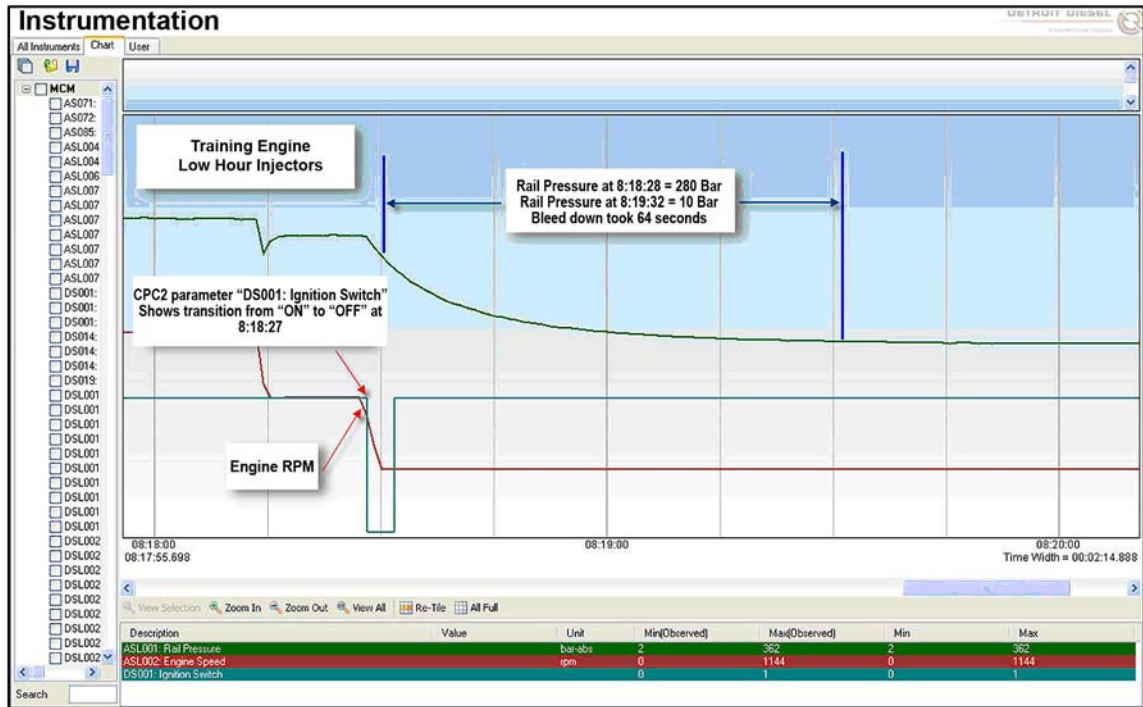
1. Install DDDL hardware.
2. Start DDDL software.
3. Go to "Instrumentation", "Chart", and select the parameter "Rail Pressure."
4. Start engine and bring to operating temperature (over 140°F/60°C).
5. Turn engine OFF.
6. When the engine has stopped, turn ignition ON (key ON, engine OFF). Do not start.

#### **NOTE:**

Failure to turn the ignition back ON will cause the MCM to power down before completing the test.

7. Monitor rail pressure trace over time.

8. A normal sealed system should show the characteristics shown in the following illustration.



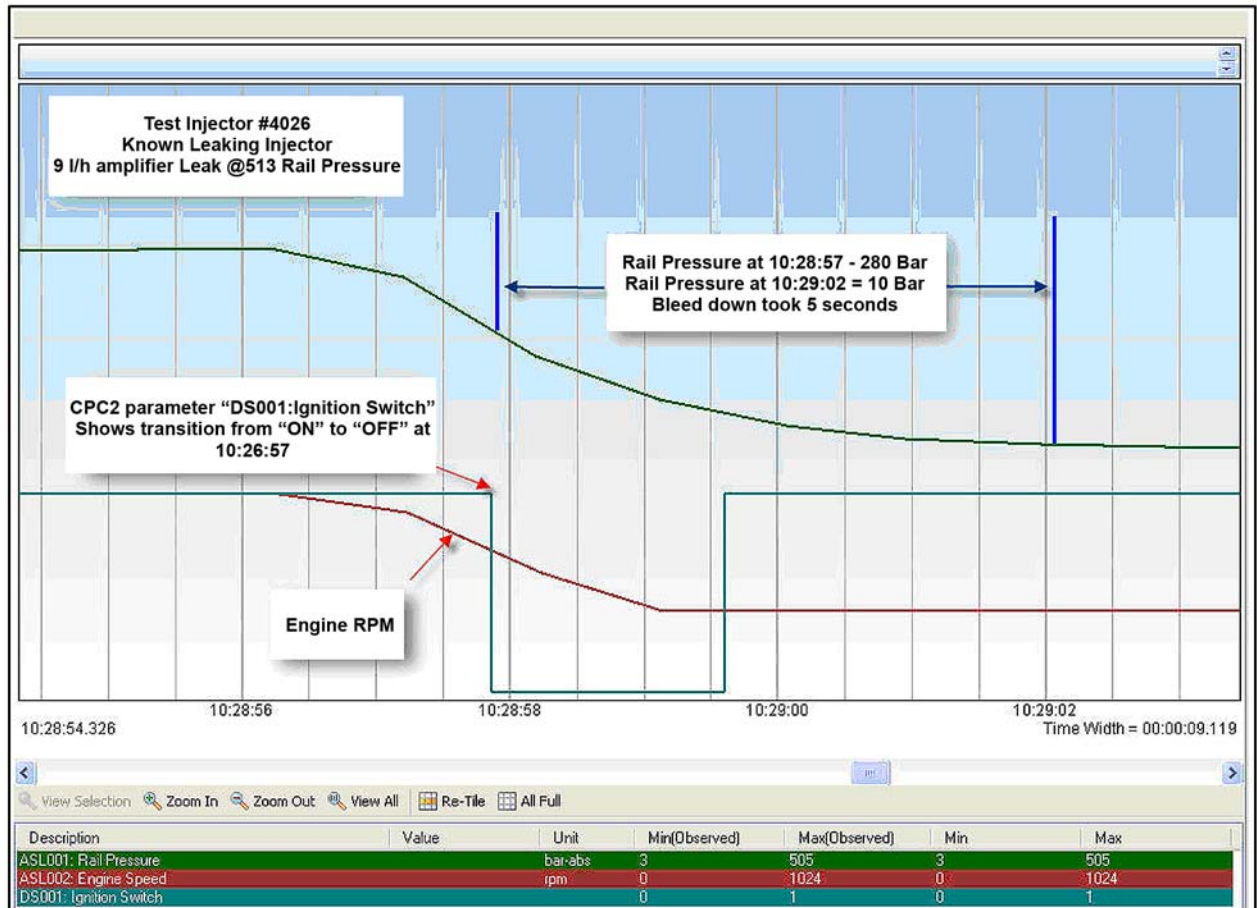
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- [a] Note the time at which rail pressure reaches 280 bar.
- [b] Note the time at which rail pressure reaches 10 bar.
- [c] Subtract the start time (280 bar) from the end time (10 bar). Use the following worksheet.

Time noted when rail pressure reads 280 bar _____	
Time noted when rail pressure reads 10 bar _____	
Bleed down rate _____	
<b>Example:</b>	
Time at 280 bar=8:18.28	8:19.32 – 8:18.28 = 0:01.04
Time at 10 bar=8:19.32	One minute four seconds or 64 seconds.
This engine passes a Rail Pressure Bleed Off Test.	

**Table 1 Rail Pressure Bleed Off Worksheet**

9. A system that developed a leak in the high pressure system will show the following characteristics.



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10. Return to symptom-based diagnostic routine.

## **ADDITIONAL SERVICE INFORMATION**

Additional service information is available in the Detroit Diesel *DD15 Fuel System Technicians Guide*, (DDC-SVC-MAN-0037). The next revision to this manual will include the revised information.

**DETROIT DIESEL**  
CORPORATION



13400 Outer Drive, West / Detroit, Michigan 48239-4001  
Telephone: 313-592-5000  
[www.detroitdiesel.com](http://www.detroitdiesel.com)