DD15™ Fuel System Technician's Guide

NUMBER: 08 **FSTG**–3 **S.M. REF.:** 5.5.3 **ENGINE:** DD15 **DATE:** June 2008

SUBJECT: RETURN FLOW TEST

PUBLICATION: DDC-SVC-MAN-0037

A worksheet has been added to the Return Flow Test section of the High Amplifier/Needle Return Flow (Version 5 Fuel System) test.

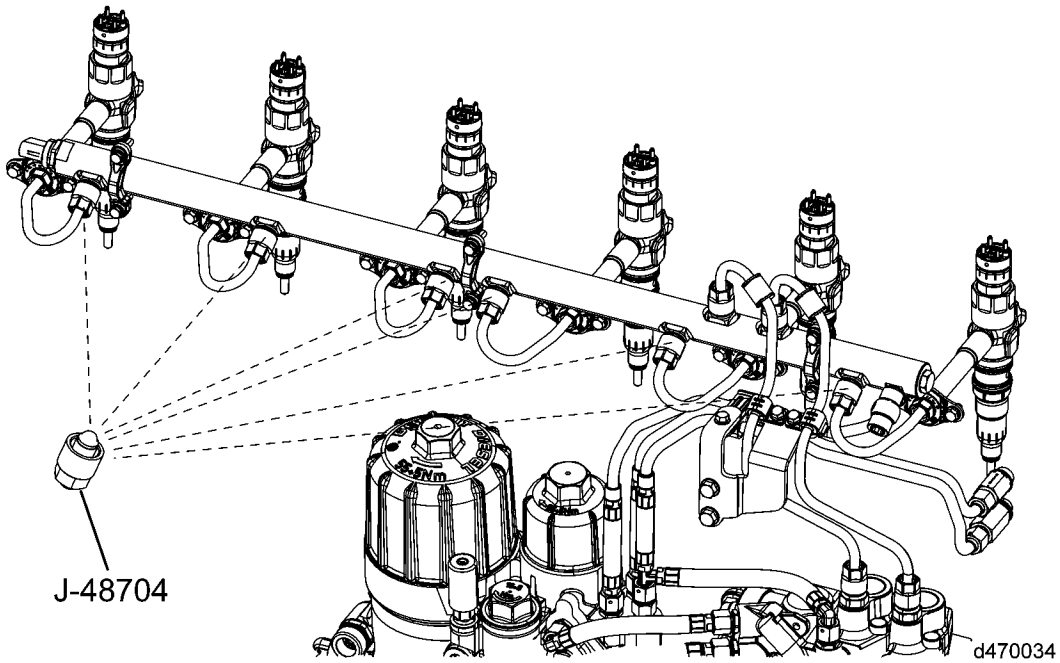
5.5.3 RETURN FLOW TEST

Test as follows:

1. Prime fuel system.
2. Start engine.
3. Measure the amplifier return flow from the clear return line (J-48707) to the container (J-48708).
4. The maximum allowable amplifier leakage rate at idle is 15 liters per hour (250 mL per one minute).
   [a] If the volume is within specifications the system passed, return system to original condition.
   [b] If the volume is out of specification, go to next step.
5. Using DDDL 7.0 read parameters "Idle Speed Balance Values" under "Instrumentation" section for all six cylinders. Refer to section 5.10.1 "Checking ISC Values."
6. Turn engine OFF and wait five minutes to service any components of the high pressure circuit.

NOTE:
System may contain residual high pressure when engine is turned off. Allow the residual pressure to bleed off for five minutes.

7. Disconnect #1 (or next one in sequence) injector high pressure line.



8. Install J-48704 rail plug on to the fuel rail and torque to 40 N·m (30 ft·lb).
9. Start engine.

10. Measure the flow from the clear return line to J-48708 container during a one minute time frame and note the flow rate in the following chart.

Leakage Rate Worksheet			
Total Leakage Rate(from step 4)	_____ ML per minute _____ Ounces per minute		
	Capped Cylinder Leakage Rate	Was a drop of more than 50 ML (1.7 ounces) compared to the Total Leakage Rate noted?	
Cylinder #1	_____ ML per minute _____ Ounces per minute	YES	NO
Cylinder #2	_____ ML per minute _____ Ounces per minute	YES	NO
Cylinder #3	_____ ML per minute _____ Ounces per minute	YES	NO
Cylinder #4	_____ ML per minute _____ Ounces per minute	YES	NO
Cylinder #5	_____ ML per minute _____ Ounces per minute	YES	NO
Cylinder #6	_____ ML per minute _____ Ounces per minute	YES	NO

11. Have all the cylinder flow measurements been recorded?

    [a] If Yes, go to next step.

    [b] If No, go to step 7.

12. Replace suspect injector causing a drop of more than 50 ML (1.7 ounces) compared to the "Total Leakage Rate" value. Once the injector is replaced, go to step 4 to recheck the system and verify repairs.

ADDITIONAL SERVICE INFORMATION

Additional service information is available in the Detroit Diesel *EPA07 DD15 Fuel System Technician's Guide*, (DDC-SVC-MAN-0037). The next revision to this manual will include the revised information.

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