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Title: Under the Valve Cover (UVC) ICP Leak Testing

Applies To: EPA 2004-2006 DT466 / 570 / 570HT, 2007-2009 MaxxForce DT / 9 / 10, and 2010 & HD OBD MaxxForce DT / 9 / 10 Engines

DESCRIPTION

The Leak Detection Pump Tool (12-452-01) is used in conjunction with the Hard Start and No Start diagnostics to detect excessive high pressure oil leaks under the valve cover. This tool allows high pressure oil leaks to be detected without cranking the engine or using the IPR valve breakout harness. The tool uses an electric motor and oil pump to supply high pressure oil to the oil rail through an adapter hose.

This tool should only be used AFTER testing the engine with the CPA HPOP tool (all 4 steps). If the CPA HPOP test concludes that there is a leak under the valve cover and the Oil Rail Inlet Adapters have been replaced, continue with the Leak Detection Pump procedure. CPA HPOP iKNow

For the 2007 and 2010 emissions model year engines the Leak Detection Pump Tool is used in place of cranking the engine during the High Pressure Oil Leak Test portion of the Hard Start and No Start Diagnostic Forms EGED-375 and EGED-460.

For the 2004 emissions model year engines the Leak Detection Pump Tool is used in place of the Under Valve Cover (UVC) Leak Test in EGED-290-1's Low ICP System Pressure test.

INITIAL DIAGNOSTICS

• Check vehicle history & health reports for similar repairs or incomplete repairs.

• Check for any open campaigns.

SYMPTOMS

- ICP faults
- Hard Start / No Start

Emissions Model Year	Fault Name	Fault DTC	SPN	FMI
2004	Injection Control Pressure above/below desired level	333	164	10
2007	ICP below desired level	3334	8492	1
2010	ICP below desired level		164	18
	ICP unable to build during cranking	2335	164	1
	ICP unable to build during test	3374	164	17
	ICP adaptation	2242	1443	2
	ICP adaptation		164	13

NOTE: If the **High Pressure Oil Rail Leak Test** (included in Special Test Procedures) is required, substitute the **Leak Detection Pump Tool Test**. Use **Leak Detection Tool Instructions** to perform this test.

Test Procedure

- Use the CPA HPOP tool (tests 1-4) BEFORE connecting the Leak Detection Tool
  - Select "No WAC" mode and complete all 4 steps
  - If the CPA HPOP tool concludes that the HPOP is fine and the leak is under the valve cover, replace all 6 Oil Rail Inlet Adapters.
  - Perform CPA HPOP Test #3 again to confirm the repair.
  - If test #3 still fails, use leak detection pump to determine location of the leak (Figure 1).
  - If the leak is determined to be from one or more Injectors create an IApprove case and include any information (including CPA and ServiceMaxx recordings) about the results from the diagnostic steps completed. Otherwise replace parts as necessary.
  - After repairs are complete, rerun Test #3 in the HPOP software to confirm repairs.

Links Related to Diagnosing ICP System

IK1200991 -Diagnosing Hard Start / No Start complaints or ICP pressure concerns with the CPA Tool
IK1201043 -ICP Adaptation

- 12-452-01 - Leak Detection Tool Instructions
- TSI 051228 - New High-pressure Oil Rails
- TSI 081210 - Hard Start and No Start Diagnostics – New Injection Control Pressure (ICP) Test
- TSI 081222 - I6 High-pressure Oil System Design Changes

Leak Point Examples

High Pressure Oil Rail Possible Leak Points:

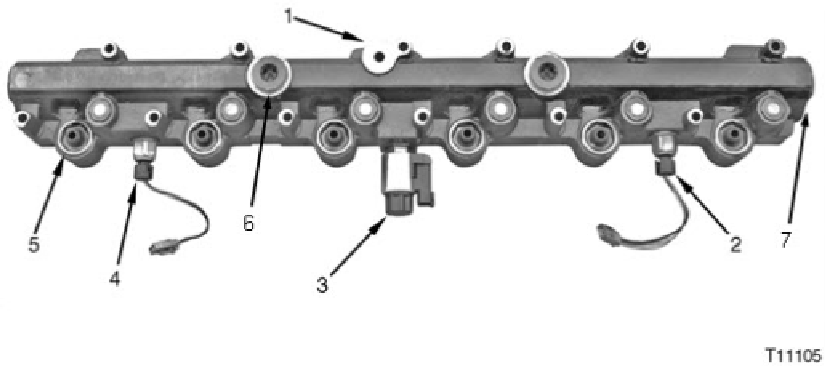


Figure 1

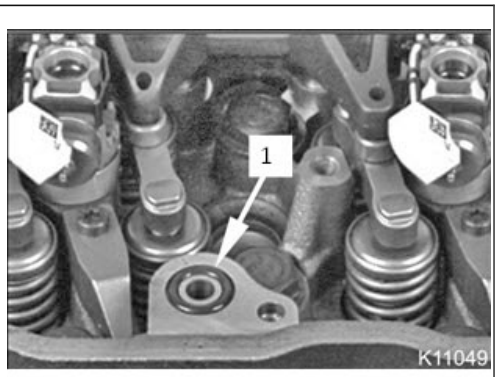


Figure 2

1. Rail to cylinder head o-ring location.
2. Injection Control Sensor (ICP)
3. Engine Compression Brake Valve (ECB); if equipped
4. Engine Compression Brake Pressure Sensor (ECBP); if equipped
5. Injector Oil Inlet Adapter Assembly
6. Oil Rail Plug
7. Rail End Plug

Warranty Information / SRT

- Examples (not all)
  - G12-2234K-20 High pressure oil rail leak test with Leak Detection Tool (.6 hrs.)
  - K12-2234K-20 High pressure oil rail leak test with Leak Detection Tool (.6 hrs.)
  - A12-7562K-11 2 or more Oil Rail Inlet Adapter (Injector Puck) Replacement (.4 hrs.)

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