

Diamond Diesel Service, Inc. Technical Bulletin

1994-2003 Ford 7.3L Powerstroke

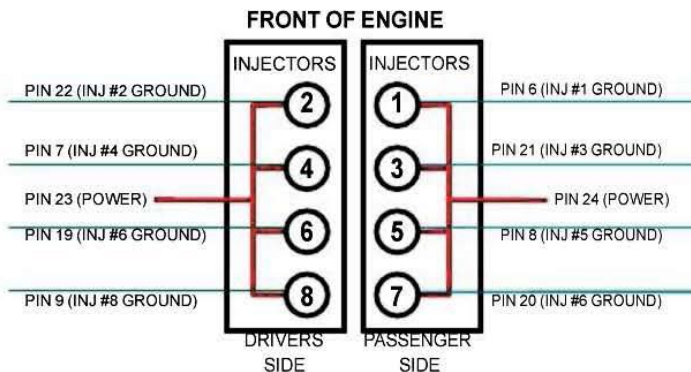
NOTICE: PLEASE READ PRIOR TO INSTALLING IDM

Ford Injector Driver Module (IDM) Replacement

The IDM module can fail as a result of an internal failure or be damaged by other malfunctioning components on the vehicle. In order to assist in the diagnosis of the IDM module and ensure the replacement module is not damaged when installed, the following tests and procedures should be performed.

Injector Resistance and Wiring Test

A common failure found on the Powerstroke 7.3L injection system is faulty electrical wiring between the IDM module and the fuel injectors. The wiring passes through connectors which are molded into the valve cover gaskets (see illustration on back). The following test ensures the wiring between the IDM module and injectors are within specification. This procedure will also test for defective injector solenoid(s). By measuring the resistance (ohms) between each injector's power-feed and ground circuit, the total circuit and wiring resistance can be verified. This ensures that there are no shorted or open circuits to the injectors.



TESTING PROCEDURE

The following tests should be performed with the key off, the IDM harness disconnected from the module and all other harness connectors plugged in (connectors to valve covers, etc.). Measurements are taken by probing the female terminals from the connector face (where it would normally plug into the IDM module).

TEST 1

Use an multi-meter to measure the resistance between each power feed and each injector's ground circuit at the IDM harness connector. There is one power feed for each cylinderbank.

WARNING: The wires to the injectors are shielded wire, DO NOT pierce injector wires, doing so will permanently damage the harness.

Nominal solenoid resistance for Powerstroke injectors is 2.9 Ohms. This test measures entire circuit resistance which includes wire and valve cover connector resistance. All readings for the vehicle should be consistent between each circuit.

TEST 2

This test checks for injector circuits that are shorted to ground, which will cause immediate and permanent damage to the IDM module. The resistance between these pins should be open (infinity), indicating no path to ground. Measure the resistance between each power feed and ground. This should indicate an open circuit. If resistance is present check for damaged valve cover gasket connectors and the wiring beneath the valve cover gaskets (see back page for illustrations).

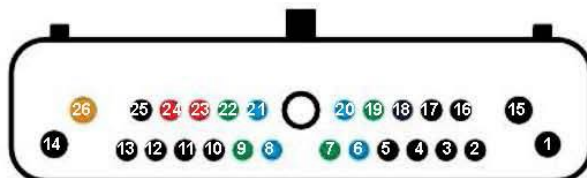
TEST 3

Check for damaged injector wiring harness; Measure the resistance between the each injector power feed and the ground shield for the injector wires. This should indicate an open circuit. If resistance is present inspect the wiring harness for damage.

NOTE

Always consult vehicle specific service and diagnostic information.

	PINS	CIRCUIT TEST	VALUE
TEST 1	23 & 22	Left Bank Power Feed to Inj. #2 Ground Circuit	All Circuits 2.8-3.6 Ohms
	23 & 7	Left Bank Power Feed to Inj. #4 Ground Circuit	
	23 & 19	Left Bank Power Feed to Inj. #6 Ground Circuit	
	23 & 9	Left Bank Power Feed to Inj. #8 Ground Circuit	
	24 & 6	Right Bank Power Feed to Inj. #1 Ground Circuit	
TEST 2	24 & 21	Right Bank Power Feed to Inj. #3 Ground Circuit	Open "OL"
	24 & 8	Right Bank Power Feed to Inj. #5 Ground Circuit	
	24 & 20	Right Bank Power Feed to Inj. #7 Ground Circuit	
TEST 3	23 & 26	Left Bank Power Feed to IDM Ground Circuit (26)	Open "OL"
	24 & 26	Right Bank Power Feed to IDM Ground Circuit (26)	
TEST 3	23 & 18	Left Bank Power Feed to Injector Ground Shield (18)	Open "OL"
	24 & 18	Right Bank Power Feed to Injector Ground Shield (18)	



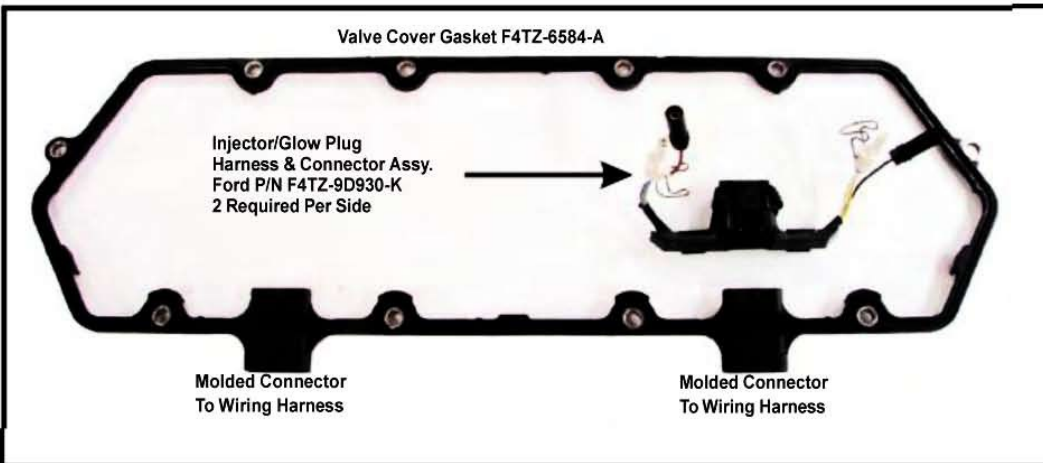
IDM MODULE HARNESS CONNECTOR
VIEWED FROM TERMINAL SIDE

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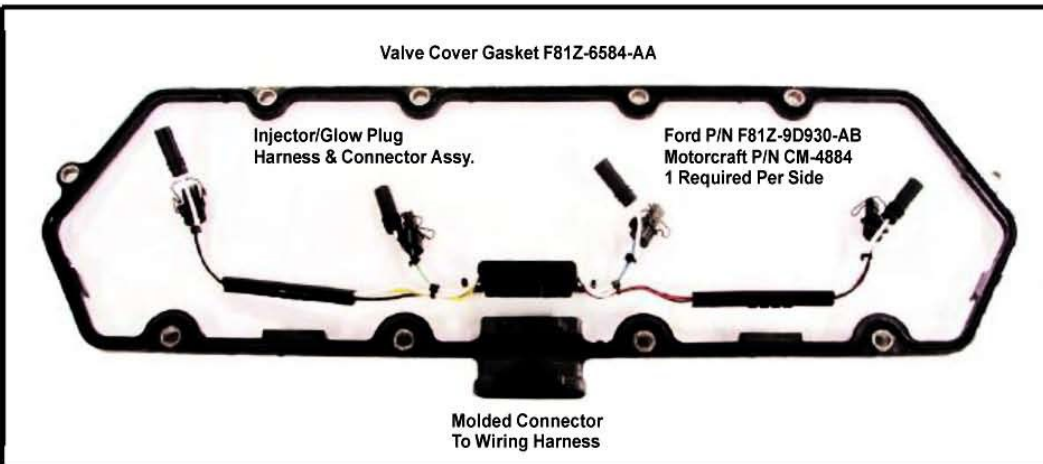
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Visual Inspection - Wiring Harness & Connectors

Inspect the connectors at the valve cover gaskets for damage and proper fit. Over time the connectors can become brittle and crack. Wiggling the connectors while performing the tests on the previous page can help detect intermittent connections. If the electrical tests on the previous page indicate there is a problem remove the valve cover and inspect the Injector harnesses.



1994-1998 Valve Cover Gasket & Injector Harness Detail



1999-2003 Valve Cover Gasket & Injector Harness Detail

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