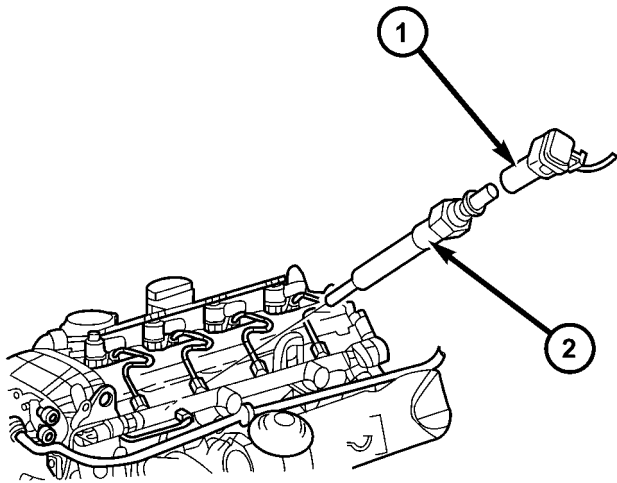


GLOW PLUG (Continued)



80e1b0a5

Fig. 2 GLOW PLUG LOCATION - TYPICAL

- 1 - GLOW PLUG ELECTRICAL CONNECTOR
2 - GLOW PLUG

WARNING: NO SPARKS, OPEN FLAMES OR SMOKING. RISK OF POISONING FROM INHALING OR SWALLOWING FUEL. RISK OF INJURY TO SKIN AND EYES EXPOSED TO FUEL. POUR FUELS ONLY INTO SUITABLE AND APPROPRIATELY MARKED CONTAINERS. WEAR PROTECTIVE CLOTHING.

NOTE: Press in on fuel line locking tab to release fuel line. Pull back on locking tab to return to lock position.

- (3) Install fuel return flow line to high pressure pump.
(4) Install engine cover (Refer to 9 - ENGINE - INSTALLATION).
(5) Connect negative battery cable.

WARNING: USE EXTREME CAUTION WHEN ENGINE IS OPERATING. DO NOT STAND IN DIRECT LINE WITH FAN. DO NOT PUT YOUR HANDS NEAR PULLEYS, BELTS OR FAN. DO NOT WEAR LOOSE CLOTHES.

- (6) Start engine and inspect for leaks.

GLOW PLUG RELAY

DESCRIPTION

There are two glow plug relays. These relays are located in the Power Distribution Center (PDC) in the engine compartment.

OPERATION

When the ignition (key) switch is placed in the ON position, a signal is sent to the ECM relating current engine coolant temperature. This signal is sent from the engine coolant temperature sensor.

After receiving this signal, the ECM will determine if, when and for how long of a period the glow plug relays should be activated. This is done before, during and after the engine is started. Whenever the glow plug relays are activated, it will control the 12 volt 100 amp circuit for the operation of the four glow plugs. Each relay controls two glow plugs.

The Glow Plug lamp is tied to this circuit. Lamp operation is also controlled by the ECM.

With a cold engine, the glow plug relays and glow plugs may be activated for a maximum time of 200 seconds. Refer to the following Glow Plug Control chart for a temperature/time comparison of the glow plug relay operation.

In this chart, Pre-Heat and Post-Heat times are mentioned. Pre-Heat is the amount of time the glow plug relay control circuit is activated when the ignition (key) is switched ON, without the engine running. Post-Heat is the amount of time the glow plug relay control circuit is activated after the engine is operated. The Glow Plug lamp will not be activated during the post-heat cycle.

Engine Coolant Temperature "Key ON"	Wait-To Start Lamp "ON" (Seconds)	Pre-Heat Cycle (Glow Plugs On Seconds)	Post-Heat Cycle (Seconds)
-30C	20 SEC.	35 SEC.	200 SEC.
-10C	8 SEC.	23 SEC.	180 SEC.
+10C	6 SEC.	21 SEC.	160 SEC.
+30C	5 SEC.	20 SEC.	140 SEC.
+40C	4 SEC.	19 SEC.	70 SEC.
+70C	1 SEC.	16 SEC.	20 SEC.

DIAGNOSIS AND TESTING - GLOW PLUG RELAYS

Refer to the appropriate Diesel Powertrain Diagnosis Manual for information on diagnosing the glow plug relays.