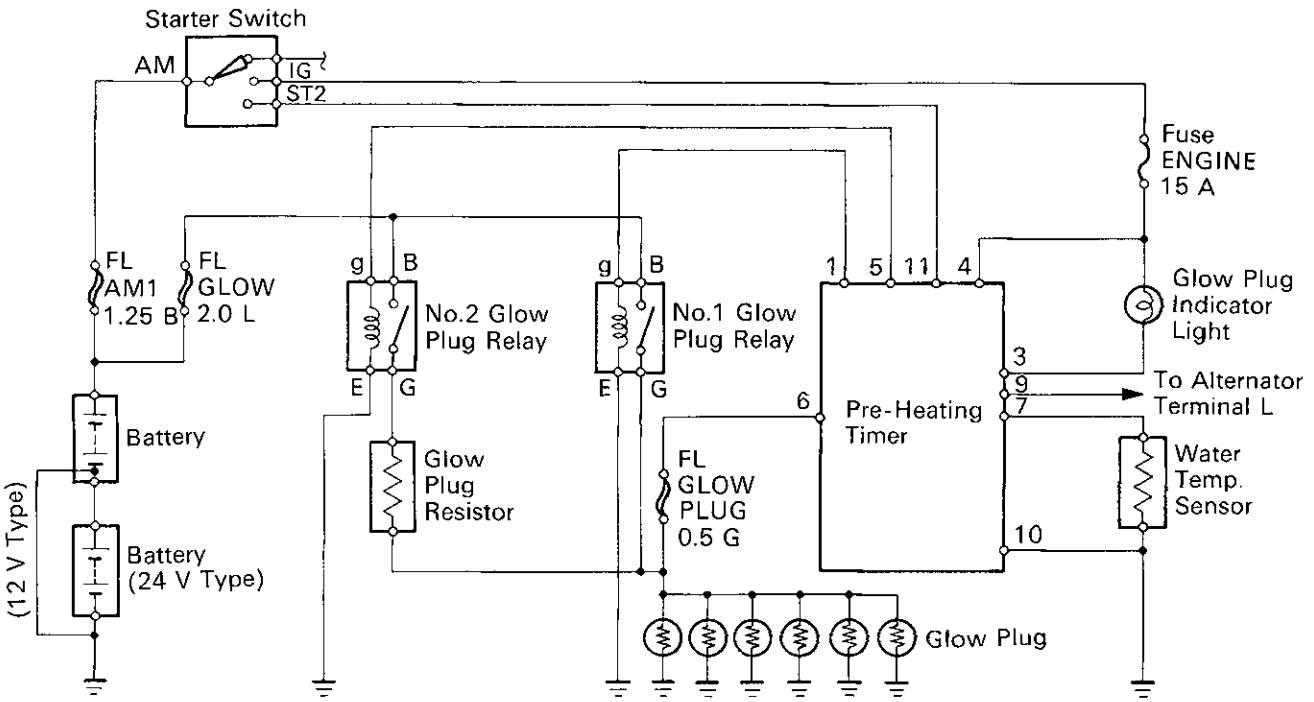
PRE-HEATING SYSTEM

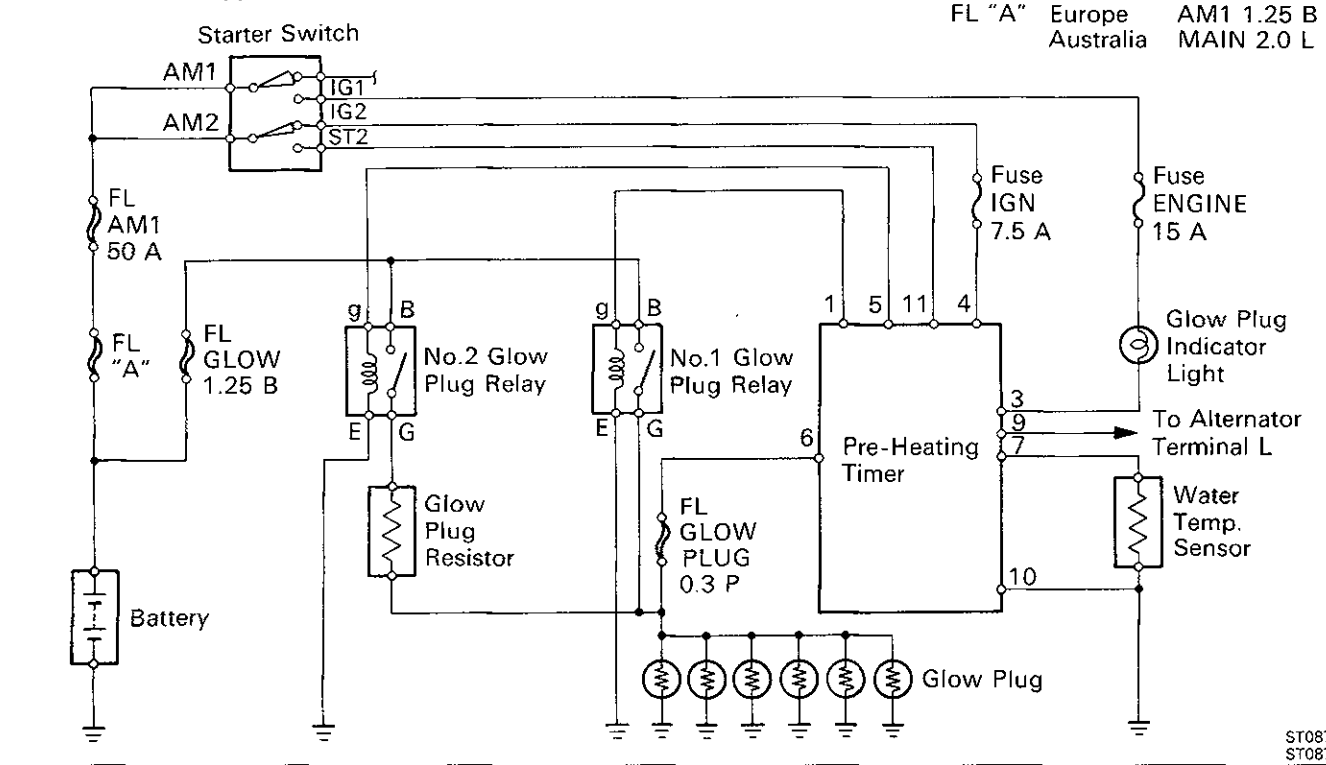
Super Glow Type (Europe and Australia)

SYSTEM CIRCUIT

PZJ 70, 73, 75 and HZJ 70, 73, 75



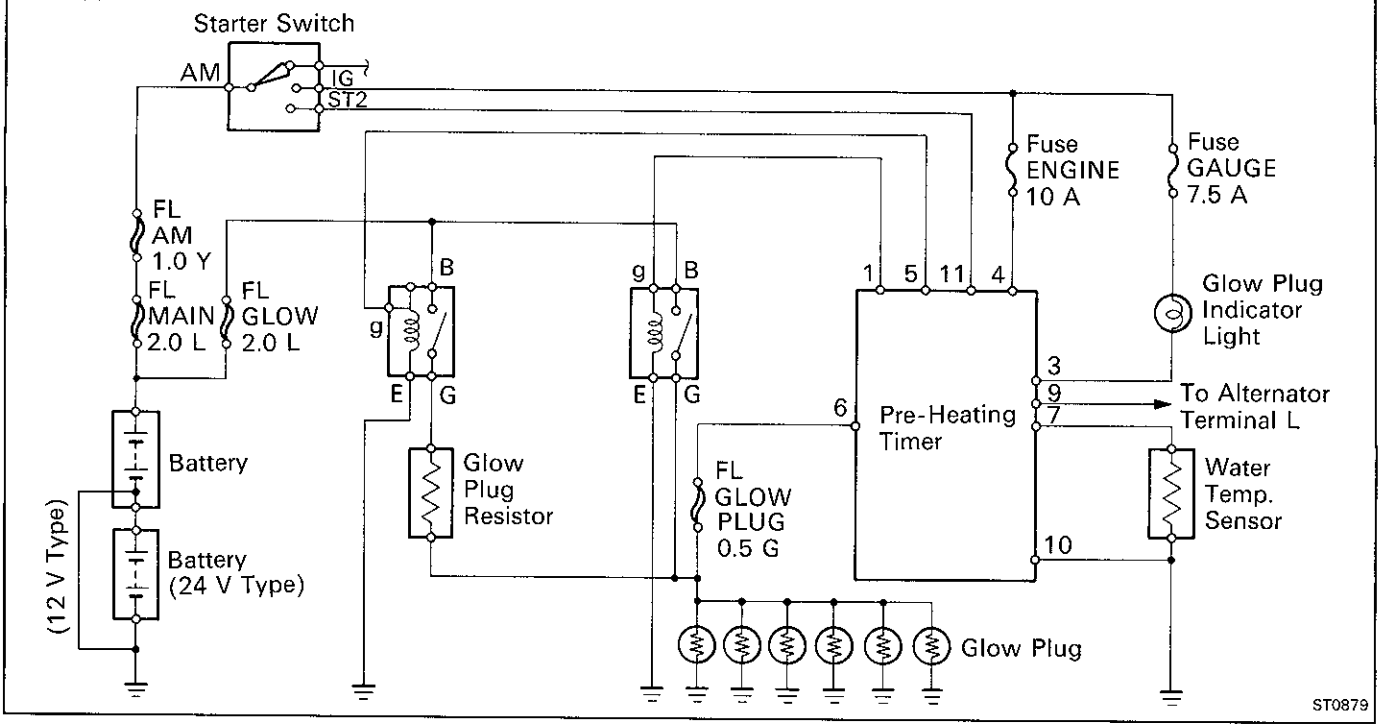
HZJ 80 and HDJ 80



ST0878
ST0875

SYSTEM CIRCUIT (Cont'd)

HZB 30 and HDB 30

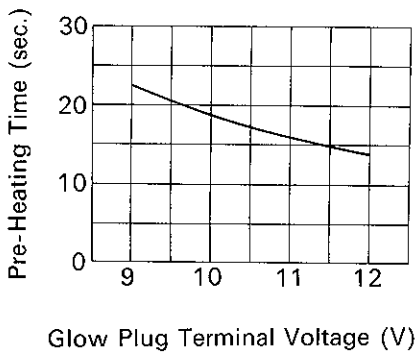


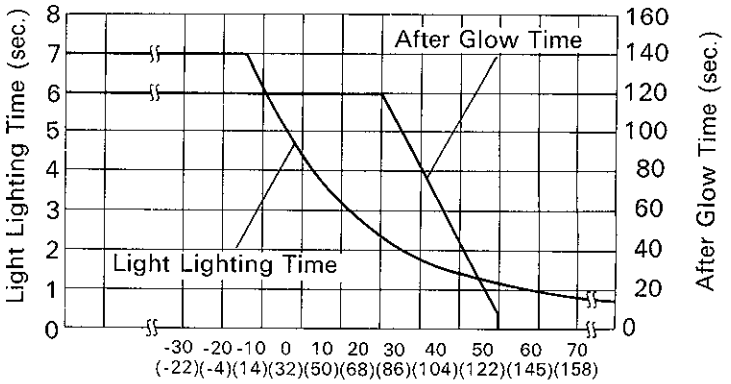
INSPECTION OF PRE-HEATING SYSTEM

HINT: Refer to Diesel Electrical System Diagnosis for inspection procedures. (See page EM-14)

TIMER CHARACTERISTIC DIAGRAM

12 V Type
(1PZ, 1HZ and 1HD-T for Australia)

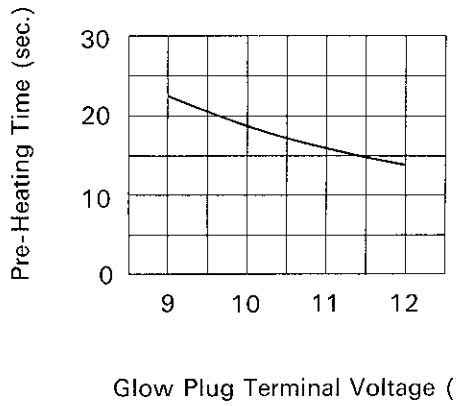


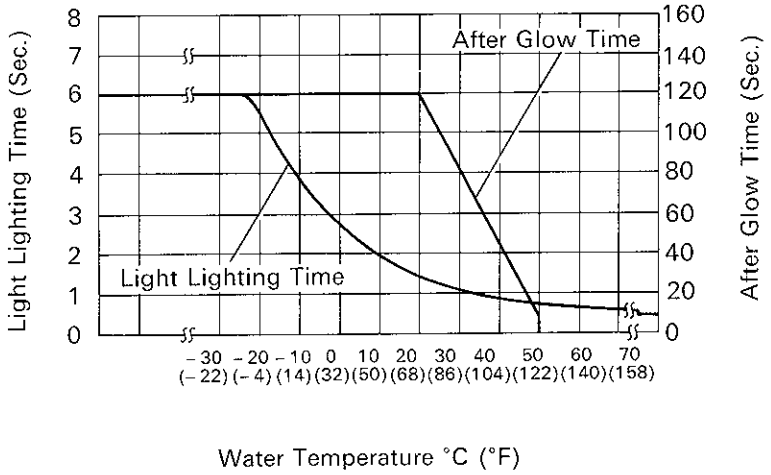


ST0867 ST0868

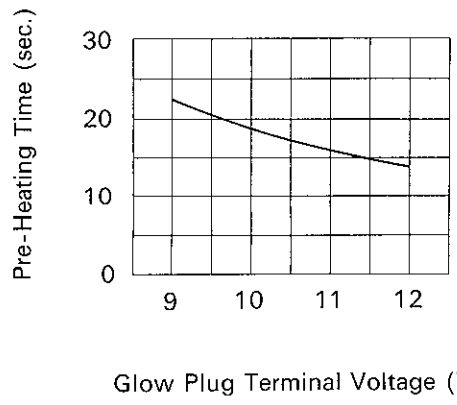
TIMER CHARACTERISTIC DIAGRAM (Cont'd)

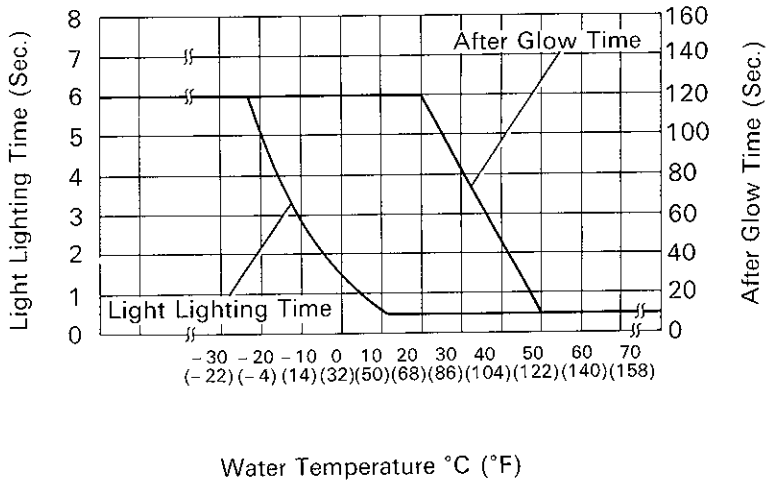
(1HZ for Europe)



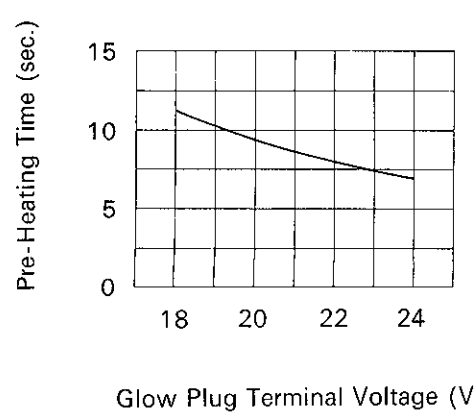


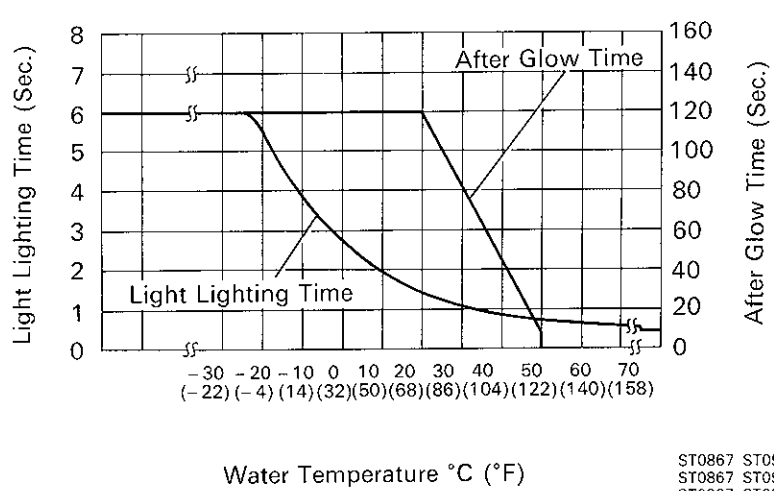
(1HD-T for Europe)



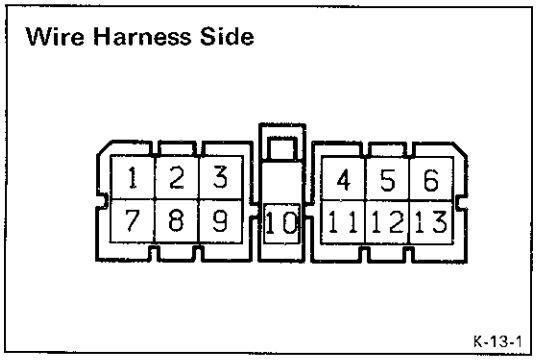


24 V Type





ST0867 ST0900
ST0867 ST0901
ST0867 ST0900



INSPECTION OF COMPONENTS

Pre-Heating Timer

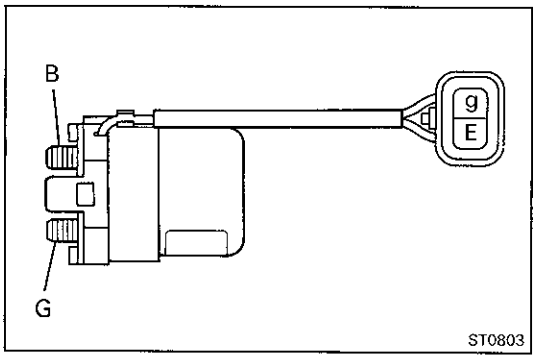
LOCATION:

PZJ, HZJ, HDJ	Under the instrument panel on the passenger side.
HZB, HDB	Under the instrument panel center.

INSPECT PRE-HEATING TIMER CIRCUIT

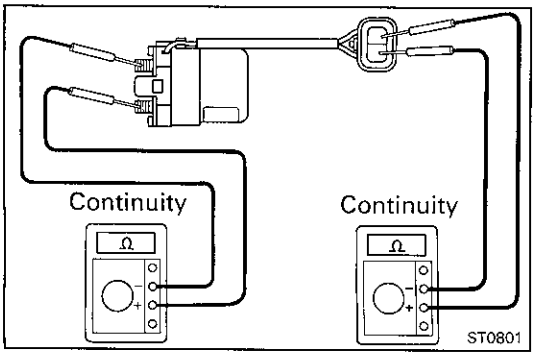
Disconnect the connector from the pre-heating timer, and check the connector on the wire harness side as shown in the following chart.

Check for	Tester connection	Condition	Specified value
Continuity	1 – Ground	–	Continuity
Voltage	3 – Ground	Turn starter switch OFF	No voltage
		Turn starter switch ON	Battery voltage
Voltage	4 – Ground	Turn starter switch OFF	No voltage
		Turn starter switch ON	Battery voltage
Continuity	5 – Ground	–	Continuity
Continuity	6 – Ground	–	Continuity
Continuity	7 – Ground	–	Continuity
Continuity	10 – Ground	–	Continuity
Voltage	11 – Ground	Turn starter switch OFF	No voltage
		Turn starter switch START	Battery voltage



No. 1 Glow Plug Relay

LOCATION: In the engine compartment on the left side.

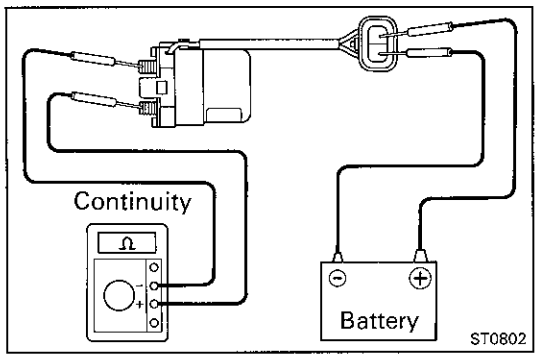


1. **INSPECT RELAY CONTINUITY**

   (a) Using an ohmmeter, check that there is continuity between terminals E and g.

   (b) Check that there is no continuity between terminals B and G.

   If continuity is not as specified, replace the relay.



2. INSPECT RELAY OPERATION

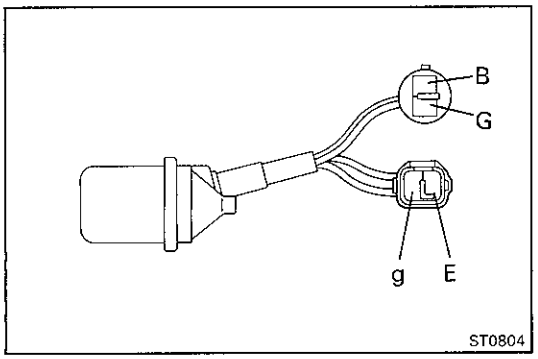
(a) Apply battery voltage across terminals E and g.

(b) Using an ohmmeter, check that there is continuity between terminals B and G.

If operation is not as specified, replace the relay.

No.2 Glow Plug Relay (PZJ, HZJ and HDJ)

LOCATION: In the engine compartment on the left side.

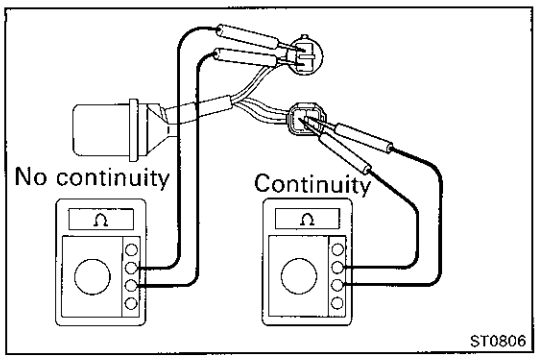


1. INSPECT RELAY CONTINUITY

(a) Using an ohmmeter, check that there is continuity between terminals E and g.

(b) Check that there is no continuity between terminals B and G.

If continuity is not as specified, replace the relay.

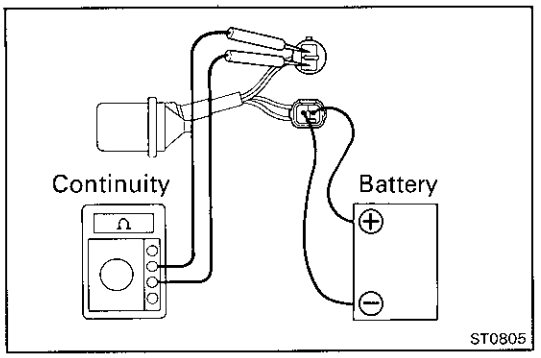


2. INSPECT RELAY OPERATION

(a) Apply battery voltage across terminals E and g.

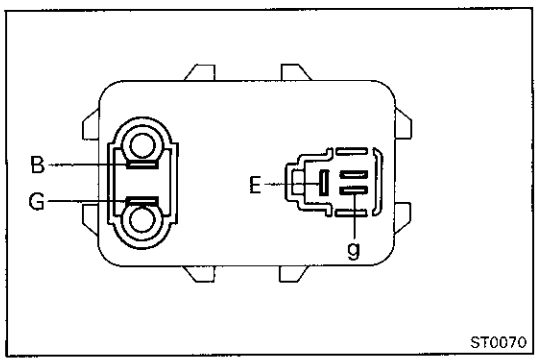
(b) Using an ohmmeter, check that there is continuity between terminals B and G.

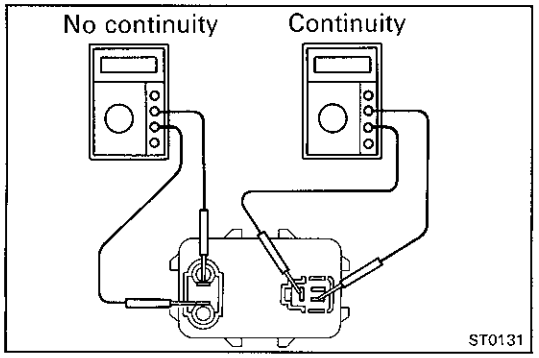
If operation is not as specified, replace the relay.



No.2 Glow Plug Relay (HZB and HDB)

LOCATION: Inside wall adjacent to center door.



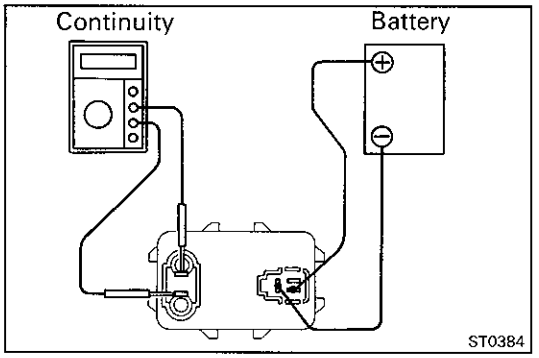


1. INSPECT RELAY CONTINUITY

(a) Using an ohmmeter, check that there is continuity between terminals E and g.

(b) Check that there is no continuity between terminals B and G.

If continuity is not as specified, replace the relay.

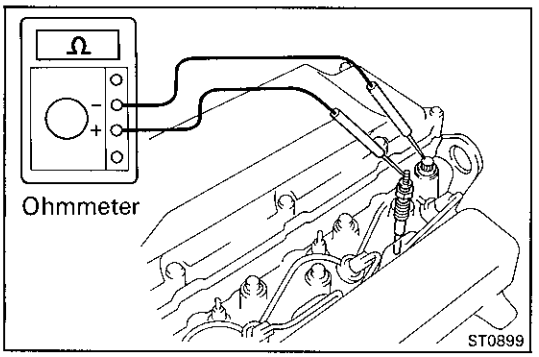


2. INSPECT RELAY OPERATION

(a) Apply battery voltage across terminals E and g.

(b) Using an ohmmeter, check that there is continuity between terminals B and G.

If operation is not as specified, replace the relay.

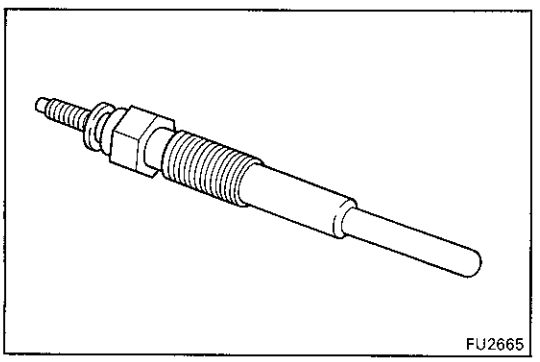


Glow Plug

INSPECT GLOW PLUG

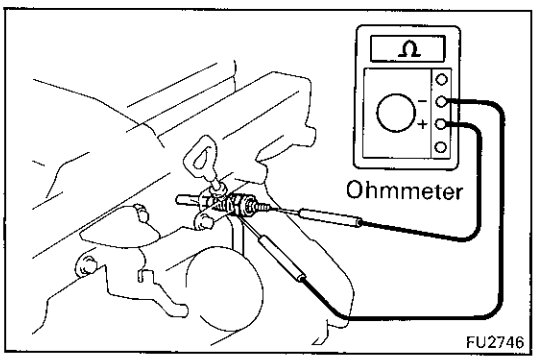
Using an ohmmeter, check that there is continuity between the glow plug terminal and ground.

If there is no continuity, replace the glow plug.



HINT:

- Be careful not to damage the glow plug pipes as it could cause an open circuit or shorten life of the plugs.
- Avoid getting oil and gasoline on the glow plug when cleaning.
- During inspection, be sure to wipe any oil off the glow plug terminal and bakelite washer with a dry cloth.
- Be careful not to apply more than 11 volts (12 V type) or 22 volts (24 v type) to the glow plug as it could cause an open circuit.

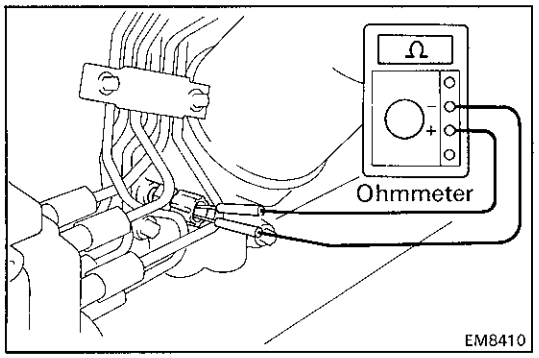


Glow Plug Resistor

INSPECT GLOW PLUG RESISTOR

Using an ohmmeter, check that there is continuity between the resistor terminals.

If there is no continuity, replace the resistor.



Water Temperature Sensor

INSPECT TEMPERATURE SENSOR

Using an ohmmeter, measure the resistance between the sensor terminals.

Resistance: Refer to chart

If the resistance is not as specified, replace the sensor.

