

Glow Controller

1. Turn the main switch off.
2. Disconnect the connector from glow controller (1).
3. Check the following using the **6P** connector of the wire harness.
4. In cases where all the inspection results are correct but the glow controller does not operate normally, replace the glow controller.

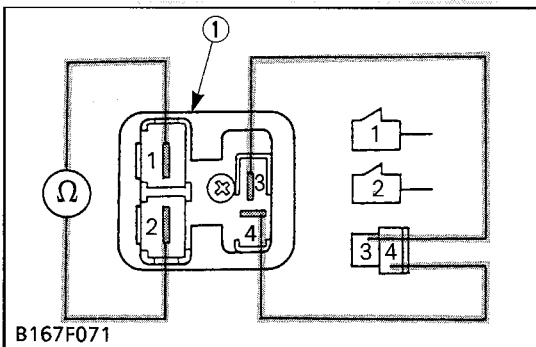
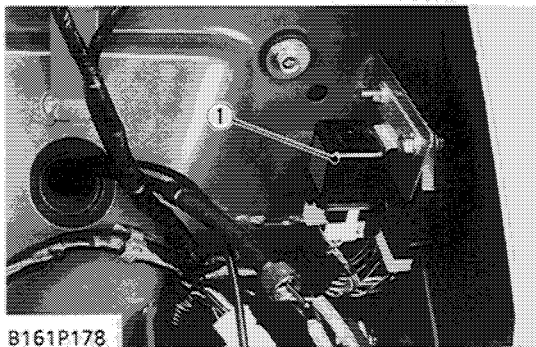
1) Main Switch ON Position

1. Turn the main switch on.
2. Measure the voltage across the terminal 4 and terminal 5 of the wiring harness or the terminal 2 and chassis.
3. The battery is normal if the voltage is 11 to 14 volts. If faulty, inspect the main switch, easy checker, glow relay, and wiring harness.

2) Main Switch Starting Position

1. Hold the main switch at the starting position.
2. Measure the voltage across the terminal 6 and chassis.
3. The battery is normal if the voltage is 11 to 14 volts. If the voltage is not in this range, inspect the main switch and wiring harness.

(1) Glow Controller



(1) Glow Relay

Glow Relay

1) Connector Voltage

1. Turn the main switch off.
2. Disconnect the **1P** connectors and **2P** connector from glow relay (1).
3. Measure the voltage with a voltmeter across the **1P** connector **R** terminal (Positive) and chassis (Negative).
4. If the voltage differs from the battery voltage, the wiring harness is faulty.
5. Turn the main switch on.
6. Measure the voltage with a voltmeter across the **2P** connector **RW** terminal (Positive) and chassis (Negative).
7. If the voltage differs from the battery voltage, the wiring harness is faulty.

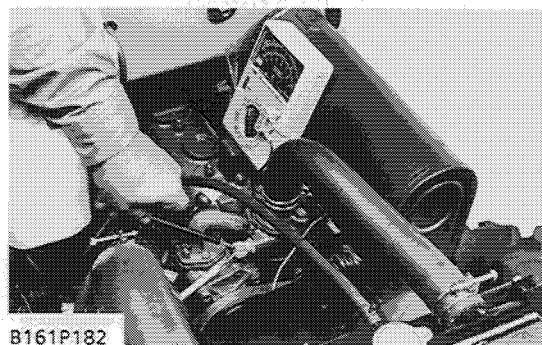
2) Glow Relay Test

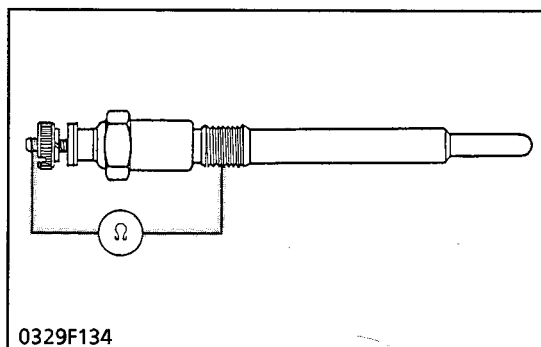
1. Turn the main switch **OFF**.
2. Remove the glow relay (1) and then disconnect the connectors from it.
3. Connect the jumper leads across terminals 3 of the glow relay and 2P connector, and across terminals 4 of the glow relay and 2P connector.
4. Turn the main switch **ON**.
5. Check for continuity across terminals 1 and 2 of glow relay.
6. If continuity is not established across terminals 1 and 2, replace the glow relay (1).

Water Temperature Sensor Continuity

1. Disconnect the connector from the water temperature sensor.
2. Measure the resistance with an ohmmeter.
3. If the measurement is not indicated, the sensor is faulty.

Resistance	Reference value	Approx. 16.2 kΩ at -20 °C (-4 °F) Approx. 3.88 kΩ at 0 °C (32 °F) Approx. 2.45 kΩ at 20 °C (68 °F) Approx. 1.14 kΩ at 40 °C (104 °F) Approx. 0.58 kΩ at 60 °C (140 °F) Approx. 0.32 kΩ at 80 °C (176 °F)
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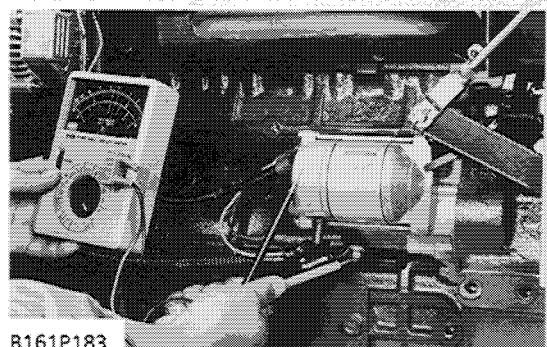




Glow Plug

1. Disconnect the leads from the glow plugs.
2. Measure the resistance with an ohmmeter across the glow plug terminal and chassis.
3. If 0 ohm is indicated, the screw at the tip of the glow plug and the housing are short-circuited.
4. If the factory specification is not indicated, the glow plug is faulty.

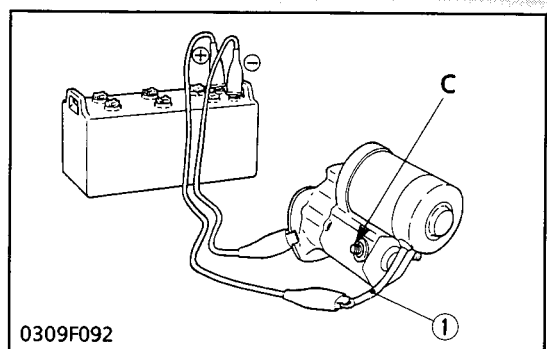
Glow plug resistance	Factory spec.	Approx. 0.5 ohms
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Starter Motor B Terminal Voltage

1. Measure the voltage with a voltmeter across the B terminal and chassis.
2. If the voltage differs from the battery voltage, the battery's positive cable or the battery negative cable is faulty.

Voltage	B terminal – chassis	Approx. battery voltage
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(1) Connecting Lead

Motor Test

⚠ CAUTION

- Secure the starter in a vise to prevent it from jumping up and down while testing the motor.

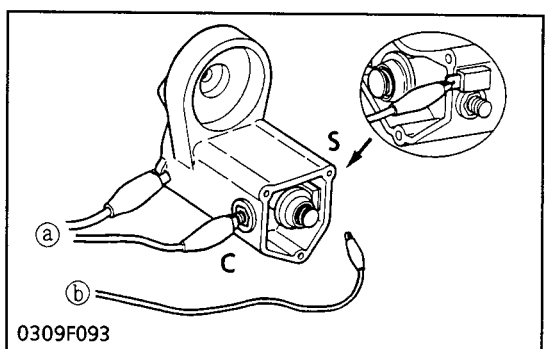
1. Disconnect the ground cable clamp from the battery negative terminal post.
2. Disconnect the battery positive cable and the leads from the starter.
3. Remove the starter motor from the engine.
4. Disconnect the connecting lead (1) from the starter C terminal.
5. Connect a jumper lead from the connecting lead (1) to the battery positive terminal post.
6. Connect a jumper lead momentarily between the starter motor housing and the battery negative terminal post.
7. If the motor does not run, check the motor.

Magnet Switch Test (Pull-in, Holding Coils)

1. Remove the motor from the starter housing.
2. Prepare a 6 V battery for the test.
3. Connect jumper leads from the battery negative terminal to the housing and the starter C terminal.
4. The plunger should be attached and the pinion gear should pop out when a jumper lead is connected from the battery positive terminal to the S terminal. It's a correct.
5. Disconnect the jumper lead to the starter C terminal. Then the pinion gear should remain popped out. It's a correct.

■ IMPORTANT

- Testing time must be 3 to 5 sec.



(a) To Negative Terminal (b) To Positive Terminal