

[2] STARTING SYSTEM

CHECKING

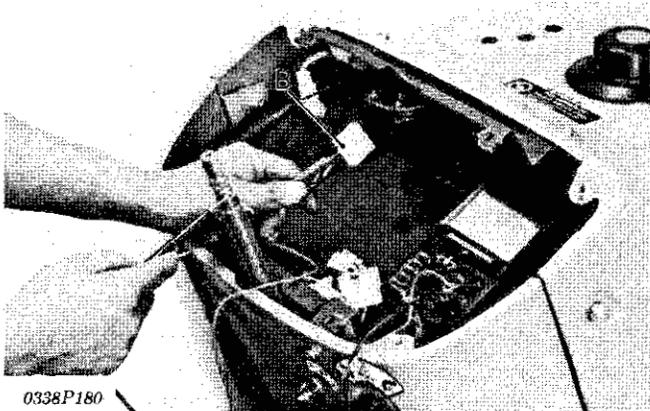
Main Switch

■ NOTE

- Be sure to turn the main switch off before disconnecting the main switch connectors.

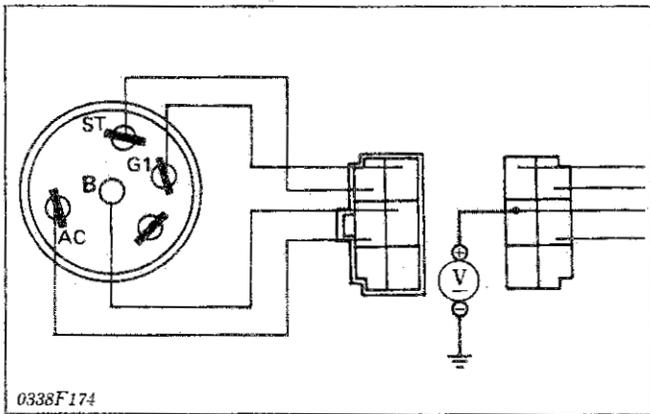
1) Connector Voltage

1. Remove the steering wheel and panel board. (See page S.5-15)
2. Disconnect the main switch connector.
3. Measure the voltage with a voltmeter across the connector B terminal and chassis.
4. If the voltage differs from the battery voltage, the wiring harness is faulty.

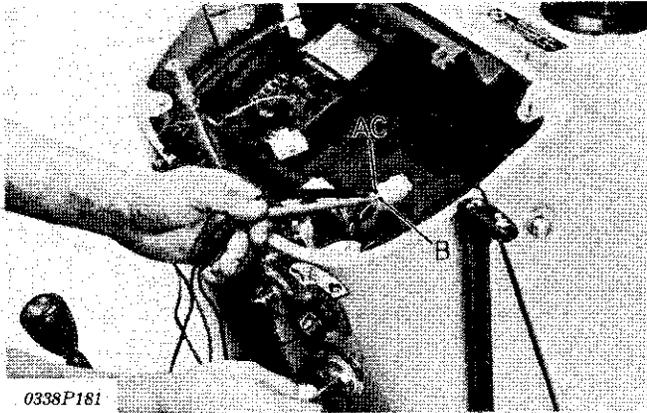


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Voltage	Connector B terminal - Chassis	Approx. battery voltage
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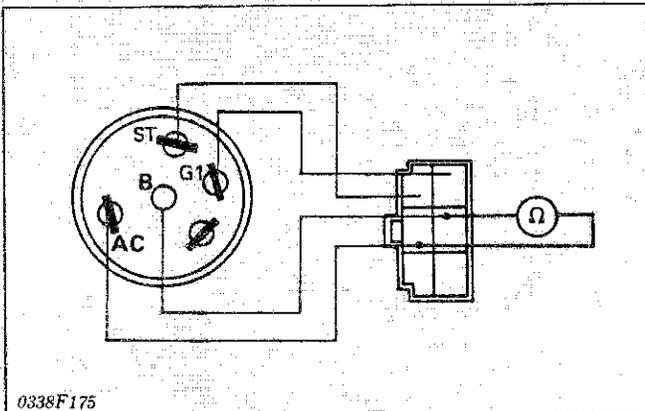


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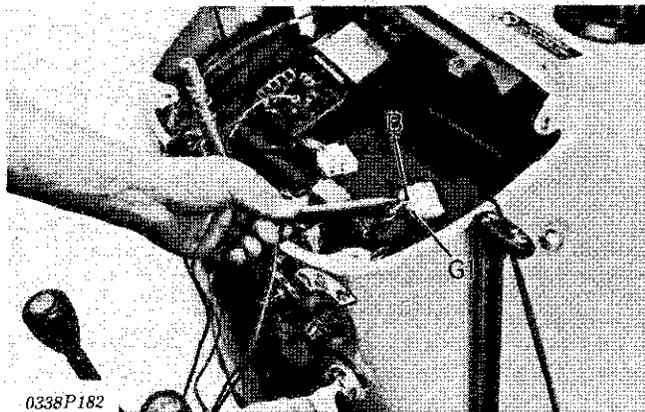
2) Main Switch Key at ON Position

1. Turn the main switch on.
2. Measure the resistance with an ohmmeter across the B terminal and the AC terminal.
3. If 0 ohm is not indicated, the B - AC contacts of the main switch are faulty.

Resistance	B - AC	0 ohm
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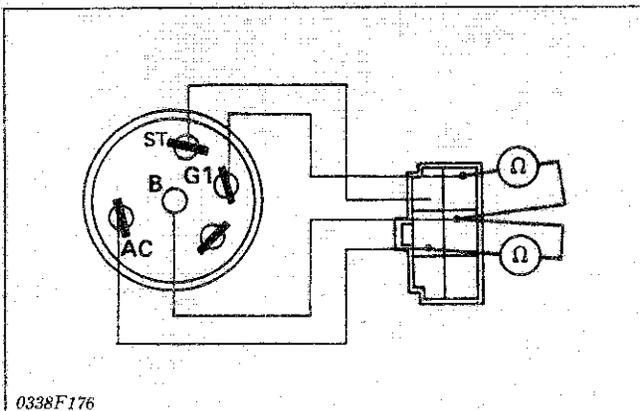


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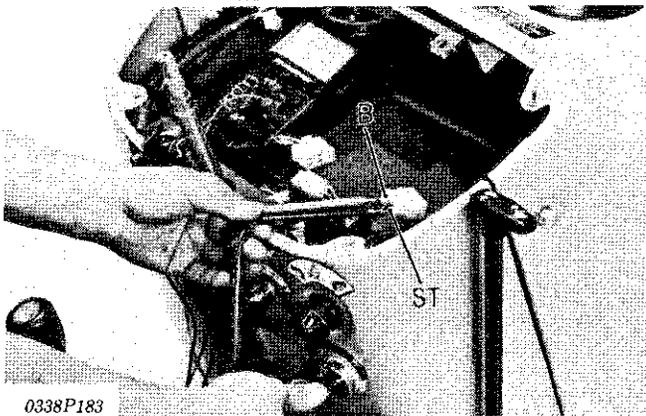
3) Main Switch Key at PREHEAT Position

1. Turn and hold the main switch key at the PREHEAT position.
2. Measure the resistances with an ohmmeter across the B terminal and the G1 terminal, and measure the resistance across the B terminal and the AC terminal.
3. If 0 ohm is not indicated, these contacts of the main switch are faulty.

Resistance	B - G1	0 ohm
	B - AC	



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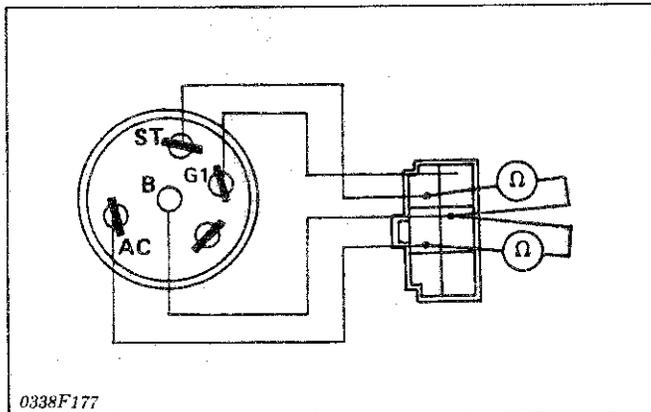


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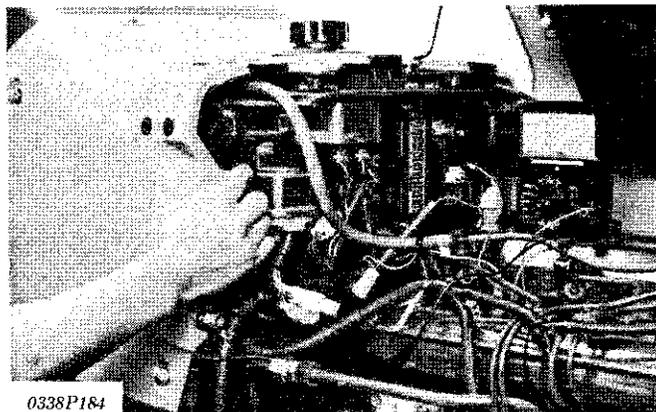
4) Main Switch Key at START Position

1. Turn and hold the main switch key at the **START** position.
2. Measure the resistances with an ohmmeter across the **B** terminal and the **ST** terminal, and across the **B** terminal and the **AC** terminal.
3. If 0 ohm is not indicated, these contacts of the main switch are faulty.

Resistance	B - ST	0 ohm
	B - AC	



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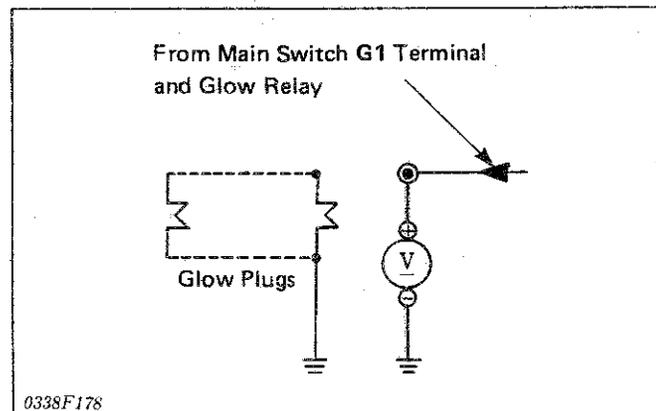
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Pre-heating

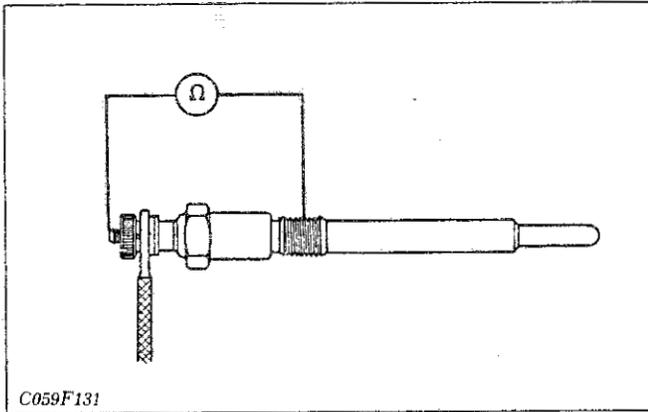
1) Lead Terminal Voltage

1. Disconnect the wiring lead from the glow plug terminal after turning the main switch off.
2. Turn the main switch key to the **PREHEAT** position, and measure the voltage across the lead terminal and the chassis.
3. Make sure that the main gear shift lever is in the neutral position and engage the auxiliary speed change lever to Hi or Lo position.
4. Turn the main switch key to the **START** position, and measure the voltage with a voltmeter across the lead terminal and the chassis.
5. If the voltage at either position differs from the battery voltage, the wiring harness or main switch is faulty.

Voltage (Lead terminal) - chassis	Main switch key at PREHEAT	Approx. battery voltage
	Main switch key at START	



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2) Glow Plug

1. Disconnect the leads from the glow plugs.
2. Measure the resistance with an ohmmeter across the glow plug terminal and the chassis.
3. If 0 ohm is indicated, the screw at the tip of the glow plug and the housing are short-circuited. In this case, the fusible link should also be checked for defect which may result from the short circuit.
4. If the reference value is not indicated, the glow plug is faulty.

Glow plug resistance	Factory spec.	M4030 M5030	Approx. 0.5 ohms
		M6030 M7030 M8030	Approx. 0.8 ohms

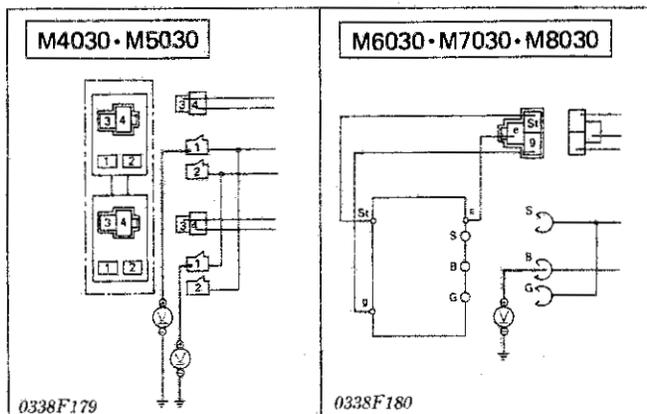
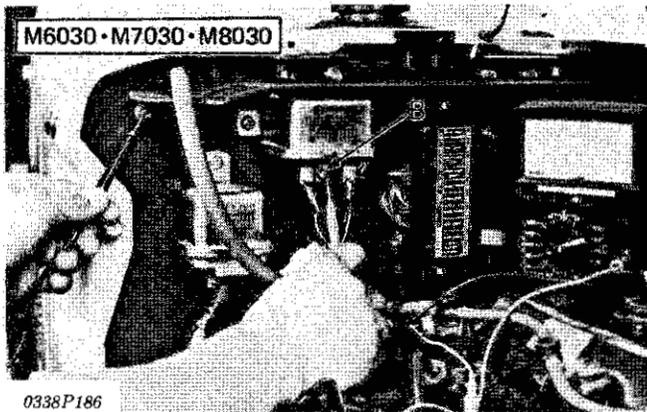


Glow Relay

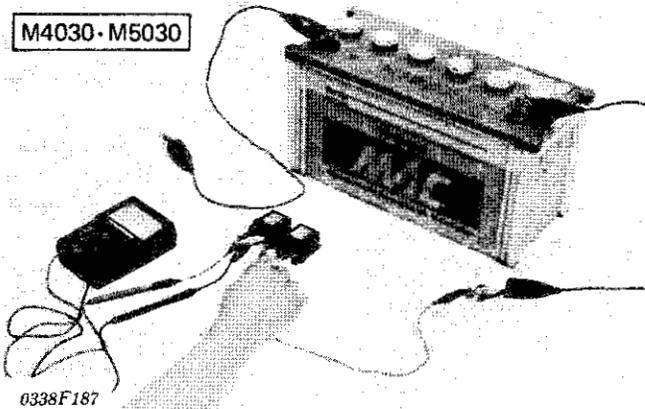
1) Lead Terminal Voltage

1. Disconnect the glow relay connector after turning the main switch off. [M4030-M5030]
2. Measure the voltage with a voltmeter across the connector B or 1 terminals and chassis.
3. If the voltage differ from the battery voltage. The wiring harness is faulty.

Voltage	Connector B or 1 terminal - chassis	Approx. Battery voltage
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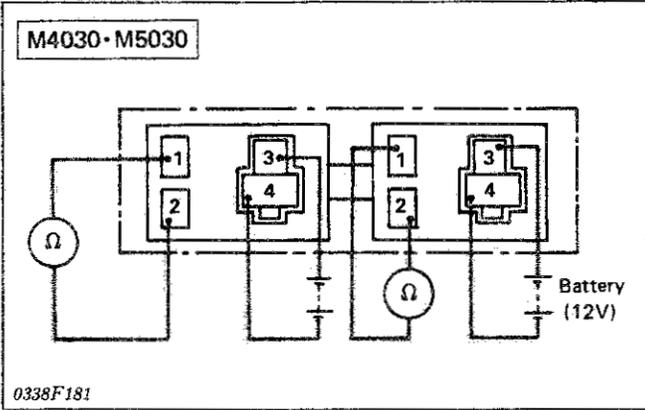
M4030-M5030



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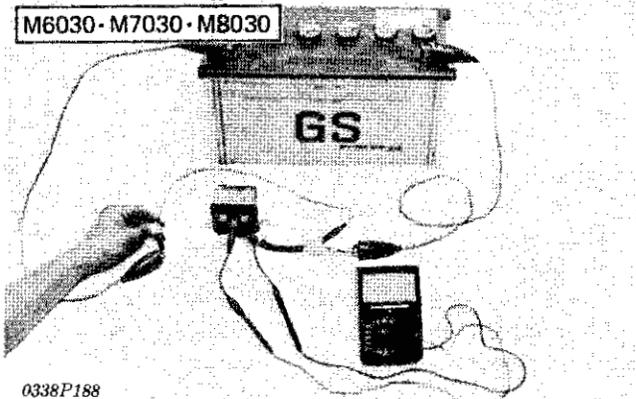
2) Test of Glow Relay
[M4030-M5030]

1. Remove the glow relay from the tractor.
2. Connect jumper lead from the 3 terminal to the battery positive terminal.
3. Connect jumper lead from the 4 terminal to the battery negative terminal.
4. Measure the resistance with an ohmmeter across the 1 terminal and 2 terminal.
5. If 0 ohm is not indicated, the glow relay is faulty.
6. If infinity is not indicated, when the battery negative terminal is disconnected, the relay is faulty.
7. Do the same check for other one.

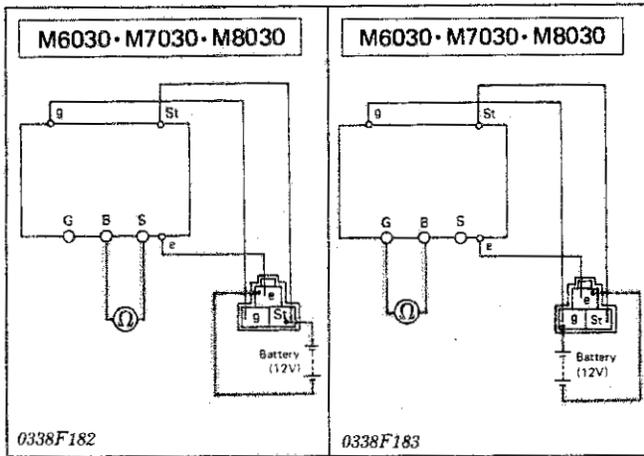


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Resistance	1 - 2	When jumper leads are connected	0 ohm
		When jumper leads are disconnected	Infinity



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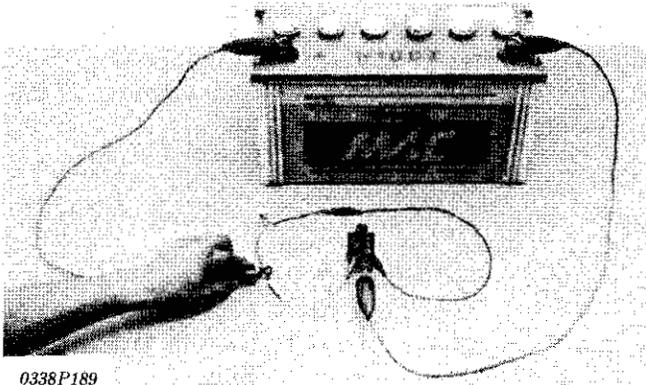
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3) Test of glow Relay
[M6030-M7030-M8030]

1. Remove the glow relay from the tractor.
2. Connect jumper lead from the St terminal to the battery positive terminal.
3. Connect jumper lead from the e terminal to the battery negative terminal.
4. Measure the resistance with an ohmmeter across the B terminal and S terminal.
5. If 0 ohm is not indicated, the glow relay is faulty, and if infinity is not indicated, when jumper lead is disconnected from the battery negative terminal, the glow relay is faulty.
6. Connect jumper lead from the g terminal to the battery positive terminal.
7. Connect jumper lead from the e terminal to the battery negative terminal.
8. Measure the resistance with an ohmmeter across the B terminal and G terminal.
9. If 0 ohm is not indicated, the glow relay is faulty, and if infinity is not indicated, when jumper lead is disconnected from the battery negative terminal, the glow relay is faulty.

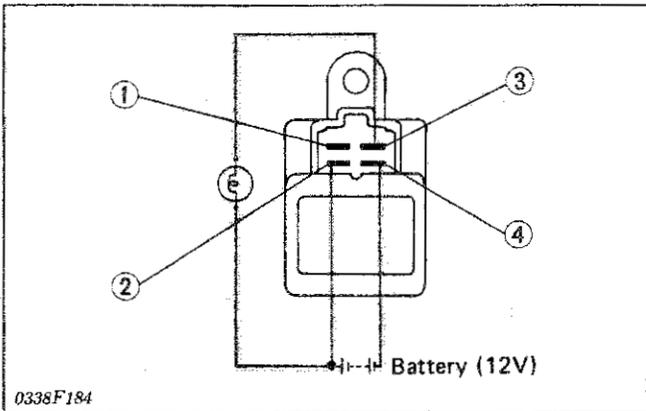
Resistance	B - S	When jumper leads are connected (St - e)	0 ohm
		When jumper leads are disconnected (St - e)	Infinity
	B - G	When jumper leads are connected (g - e)	0 ohm
		When jumper leads are disconnected (g - e)	infinity



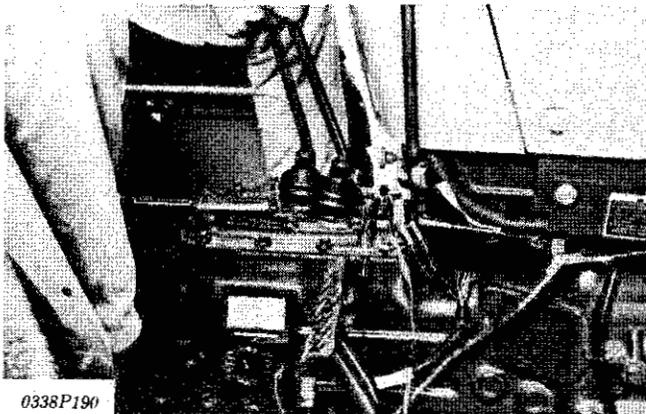
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Test of Glow Timer

1. Remove the glow timer from the tractor.
2. Connect jumper leads across the battery positive terminal and the glow timer 2 terminal, and across the battery positive terminal and the bulb terminal.
3. Connect jumper lead across the glow timer 3 terminal and the bulb terminal.
4. The bulb lights up when connecting jumper lead across the battery negative terminal and the glow timer 4 terminal, and goes off a certain seconds late, the glow lamp timer is proper.



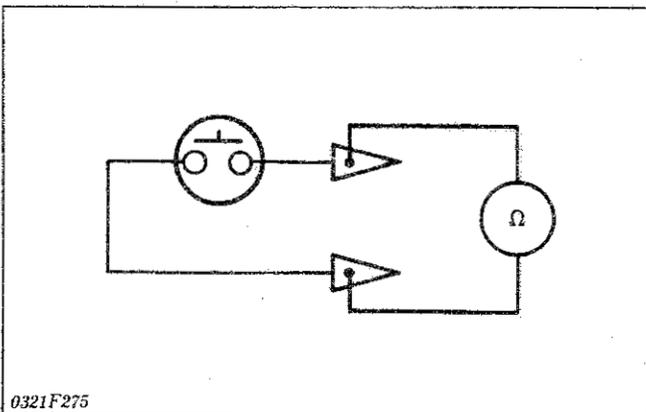
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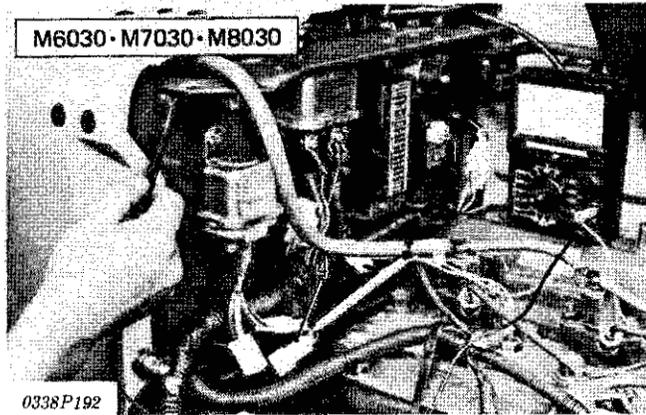
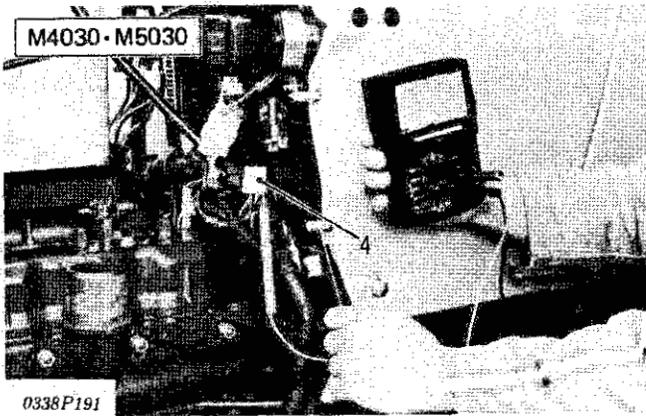
Safety Starter Switch

1. Disconnect the safety starter switch leads.
2. Connect the leads of an ohmmeter to the safety starter switch lead terminals.
3. Measure the resistance while engaging the auxiliary speed change lever to Hi and Lo positions.
4. If infinity is not indicated, the safety starter switch is faulty or improperly mounted.
5. Measure the resistance while the auxiliary speed change lever is in the neutral position.
6. If 0 ohm is not indicated, the safety starter switch is faulty.



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Resistance across switch terminals	When auxiliary speed change lever is engaged	Infinity
	When auxiliary speed change lever is in the neutral position	0 ohm

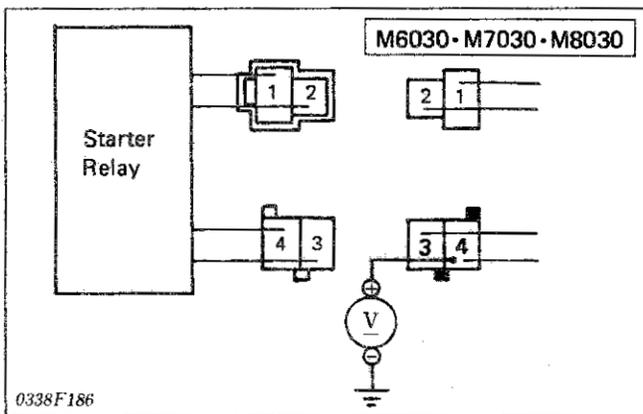
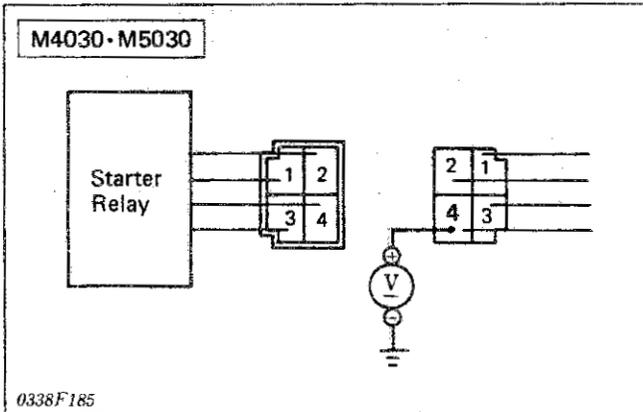


Starter Relay

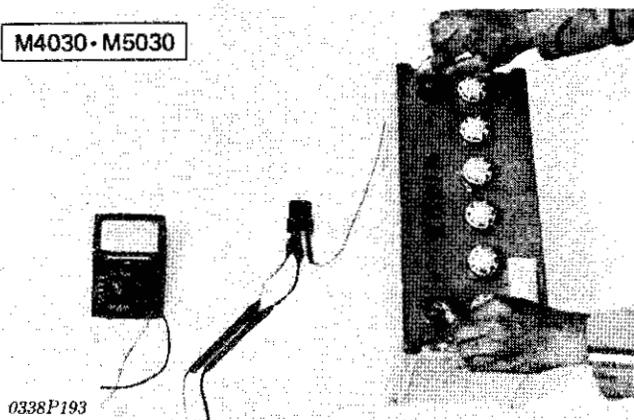
1) Connector Voltage

1. Disconnect the connector from the starter relay.
2. Measure the voltage across the 4 terminal and chassis.
3. If the voltage differs from the battery voltage, the wiring harness is faulty.

Voltage	4 - chassis	Battery voltage
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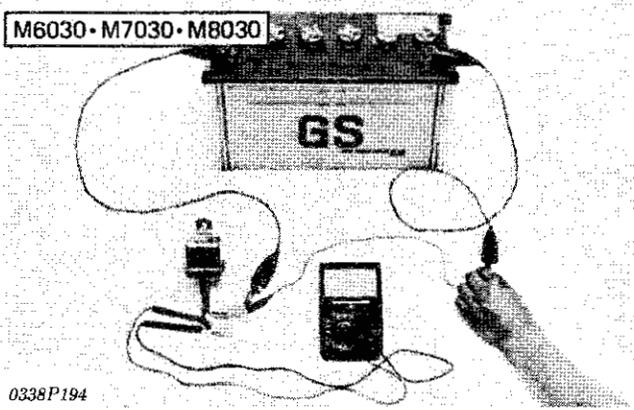


M4030-M5030



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M6030-M7030-M8030



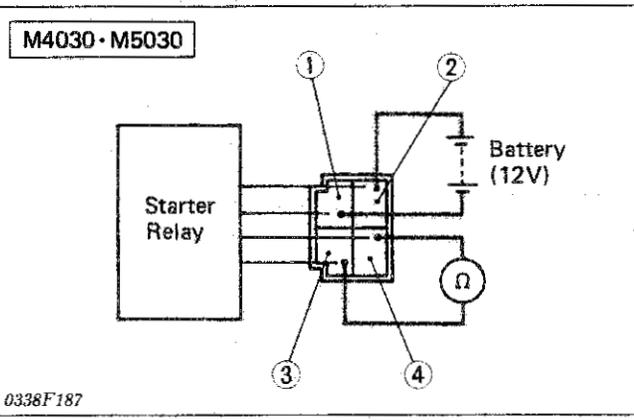
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2) Test of Starter Relay

1. Remove the starter relay from the tractor.
2. Connect jumper lead from the connector 1 terminal to the battery positive terminal.
3. Connect jumper lead from the connector 2 terminal to the battery negative terminal.
4. Measure the resistance with an ohmmeter, across the connector 3 terminal and 4 terminal.
5. If 0 ohm is not indicated, the starter relay is faulty.
6. If infinity is not indicated, when jumper load is disconnected from the battery negative terminal, the starter relay is faulty.

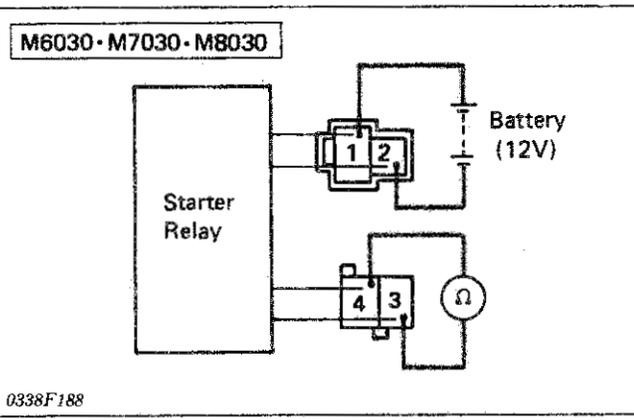
Resistance	3 - 4	When jumper leads are connected (1-2)	0 ohm
		When jumper lead is disconnected	Infinity

M4030-M5030



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M6030-M7030-M8030



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