

RELAYS

Description

Relays are used on the TC30 tractor to automatically complete (close) a circuit. There are two relays used on the TC30 tractor. Both relays use the same part number and are interchangeable. A relay contains two parts of a circuit. One part, the control circuit, uses current to energize a coil. The other part, the function circuit, is a switch. When energized, the coil of the relay becomes an electromagnet opening or closing the function circuit.

SAFETY START RELAY

Description

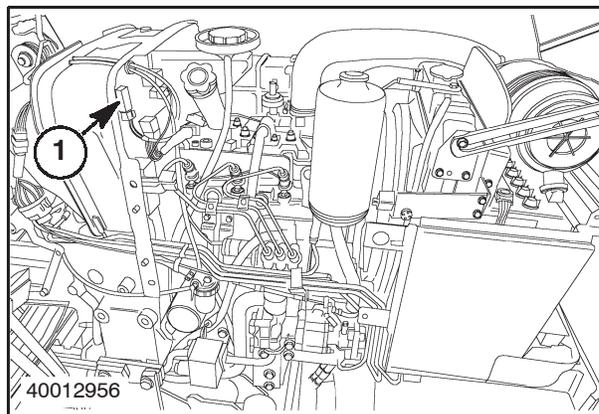
The safety start relay, 1, is located in the engine compartment on the right side of the tractor firewall. The start relay controls current flowing to the fuel shutoff solenoid. When the key switch is turned to the START position, current flows to the control circuit of the safety start relay. The safety switches (Rear PTO, Mid PTO, Transmission Range Switch, and the Seat Safety Switch) control the ground path to the start relay. If the ground path to the start relay is interrupted by one of the safety switches, the relay will not energize. When the ground circuit to the start relay is complete, the start relay energizes and powers the starter motor.

Removal

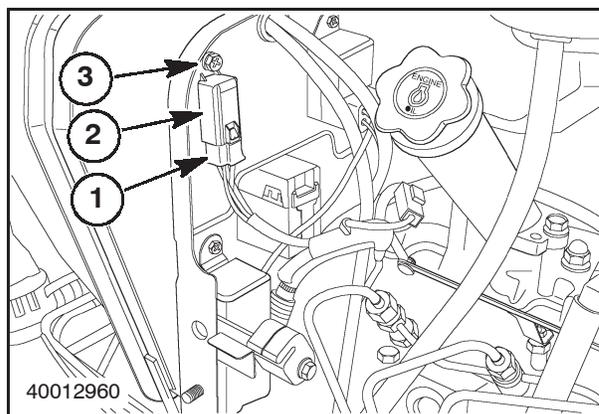
1. Disconnect the negative (-) battery cable from the negative (-) battery terminal.
2. Unplug the connector, 1, from the safety start relay, 2.
3. Remove the retaining bolt, 3, to remove the relay, 2, from the tractor.

Testing

Use a 12-volt power source and an ohmmeter to verify that the relay is functioning properly.



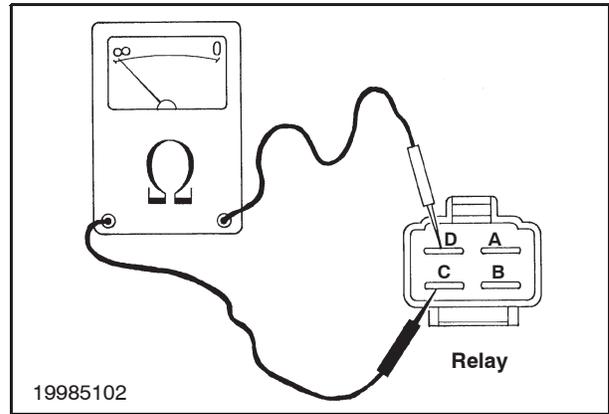
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NON-ENERGIZED

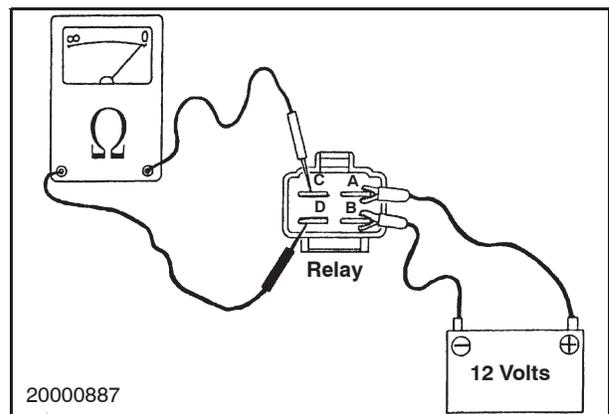
1. Connect the ohmmeter test probes to terminals "C" and "D" of the relay. Observe the ohmmeter reading.
2. There should be no continuity between the terminals "C" and "D" when the relay is not energized. If continuity exists between terminals "C" and "D" when the relay is not energized, the relay is defective and requires replacement.



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ENERGIZED

1. Connect a jumper wire from the positive (+) terminal of the 12-volt power source to the "A" terminal of the relay.
2. Connect the negative (-) terminal of the 12-volt power source to the "B" terminal of the relay.
3. Connect the ohmmeter test probes to terminals "C" and "D" on the relay. Observe the ohmmeter reading.
4. There should be little or no resistance between the "C" and "D" terminals of the relay when energized, indicating that continuity exists between terminals "C" and "D". If continuity does not exist between terminal "C" and "D" when the relay is energized, the relay is defective and requires replacement.



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Installation

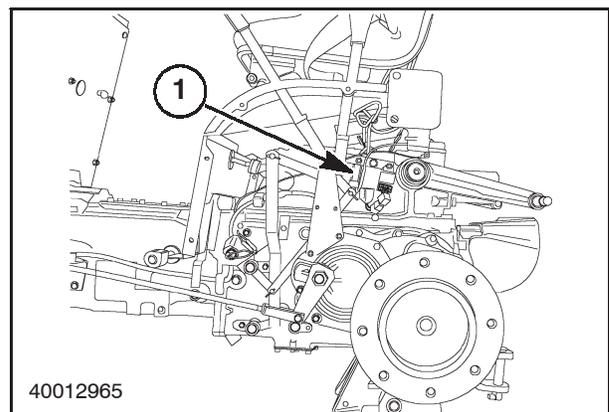
1. Plug the relay into the connector on the tractor wire harness.
2. Install the relay onto the tractor by using the retaining bolt.
3. Connect the negative (-) battery cable to the negative (-) battery terminal.

KILL RELAY

Description

NOTE: The left rear wheel and the left rear fender were removed to better show the location of the safety start relay.

The kill relay, 1, is located on the left side of the lift cover behind the left rear fender. The kill relay controls current flowing to the fuel shutoff solenoid. If the ground circuit to the kill relay is interrupted by one of the safety switches, the kill relay becomes de-energized and no longer delivers current to the fuel shutoff solenoid. This causes the fuel shutoff solenoid to extend, stopping fuel from flowing into the engine.



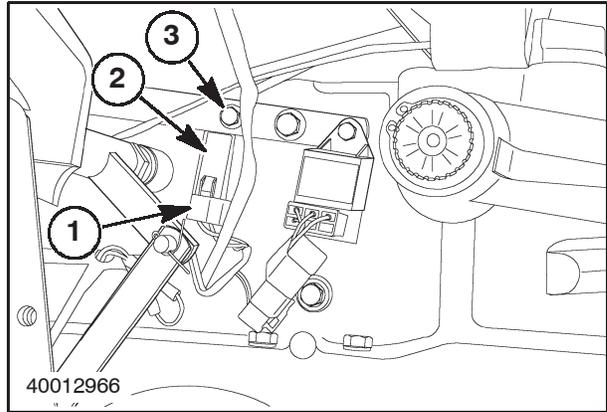
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Removal

1. Disconnect the negative (-) battery cable from the negative (-) battery terminal.
2. Unplug the connector, 1, from the kill relay, 2.
3. Remove the retaining bolt, 3, to remove the relay, 2, from the tractor.

Testing

Use a 12-volt power source and an ohmmeter to verify that the relay is functioning properly.

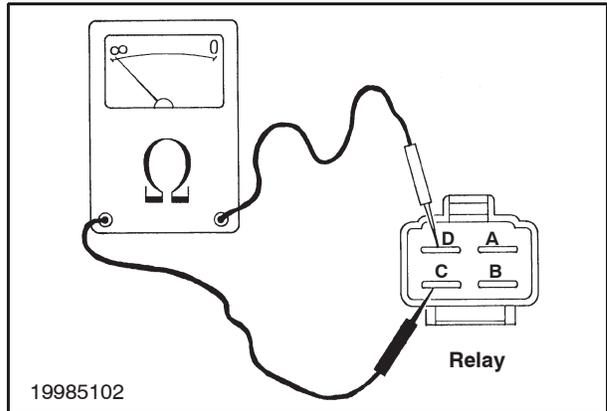


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NON-ENERGIZED

1. Connect the ohmmeter test probes to terminals "C" and "D" on the relay. Observe the ohmmeter reading.
2. There should be no continuity between the terminals "C" and "D" when the relay is not energized. If continuity exists between terminals "C" and "D" when the relay is not energized, the relay is defective and requires replacement.

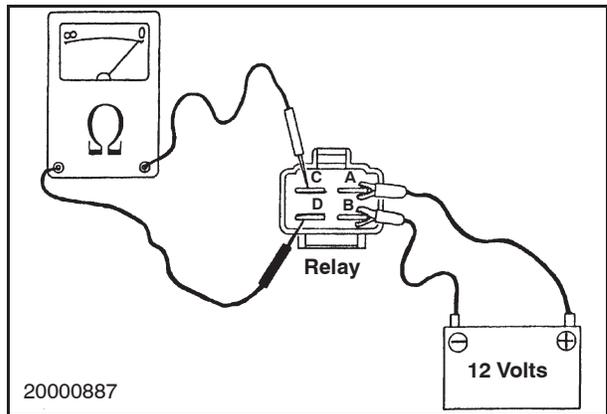


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ENERGIZED

1. Connect a jumper wire from the positive (+) terminal of the 12-volt power source to the "A" terminal of the relay.
2. Connect the negative (-) terminal of the 12-volt power source to the "B" terminal of the relay.
3. Connect the ohmmeter test probes to terminals "C" and "D" on the relay. Observe the ohmmeter reading.
4. There should be little or no resistance between the "C" and "D" terminals of the relay when energized, indicating that continuity exists between terminals "C" and "D". If continuity does not exist between terminal "C" and "D" when the relay is energized, the relay is defective and requires replacement.



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Installation

1. Plug the relay into the connector on the tractor wire harness.
2. Install the relay onto the tractor by using the retaining bolt.
3. Connect the negative (-) battery cable to the negative (-) battery terminal.