Service Information System

Sunday, February 28, 2016

5:08 PM

**Troubleshooting**

**247B, 257B, 267B, 277B and 287B Multi Terrain Loaders and 216B, 226B, 232B, 236B, 242B, 246B, 248B, 252B, 262B and 268B Skid Steer Loaders Interlock Electronic Control System**

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**Work Tool Does Not Function**

**SMCS -** 6700-038; 7630-038

**System Operation Description:**

The Interlock ECM will NOT engage the work tool pilot solenoid if problems exist with the parking brake switch or the work tool pilot solenoid.

**Note:** Use a jumper wire on machines that do NOT use a lockout switch for the work tool. The jumper wire is **165-0312** Wire Assembly . This jumper wire is fastened to the harness in place of the switch. The jumper must be connected in order to allow both the primary work tool and the auxiliary work tool to operate.

**Test Step 1. CHECK THE FAULT INDICATORS**

1. Occupy the seat.
2. Lower the armrest.
3. Turn the key start switch to the ON position.
4. Press and release the parking brake switch.

**Expected Result:**

The armrest indicator and the parking brake indicator should be off.

**Results:**

* **OK -** The armrest indicator and the parking brake indicator are off. Proceed to Test Step 2.
* **NOT OK -** The parking brake indicator remains on.   
  **Repair:** See Troubleshooting, "Switch (Parking Brake)".  
  **STOP**

**Test Step 2. CHECK THE CIRCUIT OF THE WORK TOOL PILOT SOLENOID**

1. Turn the key start switch to the OFF position.
2. Raise the cab. See Operation and Maintenance Manual, "Cab Tilting".
3. Locate the interlock ECM. The interlock ECM is located on the left side of the machine beneath the access cover on the floor of the machine.
4. Remove the wire harness from the ECM.
5. Measure the resistance from contact 24 to contact 68 (wire P988-OR to wire 975-WH) of the wire harness connector.

**Expected Result:**

The resistance should be approximately 6 Ohms.

**Results:**

* **OK -** The resistance is approximately 6 Ohms.  
  **Repair:** ECM failure is unlikely. Reconnect all connections and visually inspect the wire harness. Verify that the diagnostic code still exists. If the diagnostic code still exists perform the Test Steps again.Prior to replacing an ECM, contact the Technical Communicator (TC) at your dealership for possible consultation with Caterpillar. This consultation may greatly reduce repair time and expense.   
  If the ECM must be replaced, refer to Testing and Adjusting, "Electronic Control Module (ECM) - Replace".   
  **STOP**
* **NOT OK -** The resistance is not approximately 6 Ohms. Proceed to Test Step 3.

**Test Step 3. CHECK THE RESISTANCE OF THE WORK TOOL PILOT SOLENOID**

1. Locate the work tool pilot solenoid.
2. Disconnect the wire harness from the work tool pilot solenoid.
3. Measure the resistance of the two wires on the work tool pilot solenoid.

**Expected Result:**

The resistance should be approximately 10.5 Ohms.

**Results:**

* **OK -** The resistance is approximately 10.5 Ohms. Proceed to Test Step 4.
* **NOT OK -** The resistance is not approximately 10.5 Ohms.   
  **Repair:** The solenoid has failed. Replace the coil.  
  **STOP**

**Test Step 4. CHECK THE RESISTANCE OF THE WORK TOOL DETENT COIL**

1. Locate the work tool detent coil. The detent coil is located beneath the right-hand joystick. Remove the access panel in order to get to the connector.
2. Disconnect the wire harness from the work tool detent coil .
3. Measure the resistance of the two wires on the work tool detent coil.

**Expected Result:**

The nominal resistance for the work tool detent coil, at a temperature of 25° C (77° F), is 29 Ohms. (Approximately 54 to 60 Ohms is typical)

**Results:**

* **OK -** The coil resistance is within specification.  
  **Repair:** The wire harness has failed. Repair the wire harness and/or the connector or replace the wire harness and/or the connector.   
  **STOP**
* **NOT OK -** The coil resistance is Not within specification.  
  **Repair:** The work tool detent coil has failed. Replace the work tool detent coil.   
  **STOP**

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