

<b>DTC</b>	<b>C2304</b>	<b>OPEN OR SHORT CIRCUIT IN U PHASE</b>
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<b>DTC</b>	<b>C2305</b>	<b>OPEN OR SHORT CIRCUIT IN V PHASE</b>
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<b>DTC</b>	<b>C2306</b>	<b>OPEN OR SHORT CIRCUIT IN W PHASE</b>
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## CIRCUIT DESCRIPTION

The shift control actuator assy consists of the parking lock motor and the rotation angle sensor. The transmission control ECU receives a P position switch signal from the hybrid vehicle control ECU and activates the parking lock motor by controlling current, causing the parking lock mechanism to switch. The transmission control ECU outputs this DTC when it detects a malfunction in the parking lock motor system.

DTC No.	DTC detecting condition	Trouble area
C2304	<ul style="list-style-type: none"> <li>• Power switch on (IG). (Battery voltage is 8 V or more)</li> <li>• Voltage of transmission control ECU terminal MUA is 6 V or less for 1 sec. or more.</li> </ul>	<ul style="list-style-type: none"> <li>• Shift control actuator assy</li> <li>• Transmission control ECU assy</li> <li>• Transaxle parking lock control relay</li> <li>• Wire harness or connector</li> </ul>
C2305	<ul style="list-style-type: none"> <li>• Power switch on (IG). (Battery voltage is 8 V or more)</li> <li>• Voltage of transmission control ECU terminal MVA is 6 V or less for 1 sec. or more.</li> </ul>	<ul style="list-style-type: none"> <li>• Shift control actuator assy</li> <li>• Transmission control ECU assy</li> <li>• Transaxle parking lock control relay</li> <li>• Wire harness or connector</li> </ul>
C2306	<ul style="list-style-type: none"> <li>• Power switch on (IG). (Battery voltage is 8 V or more)</li> <li>• Voltage of transmission control ECU terminal MWA is 6 V or less for 1 sec. or more.</li> </ul>	<ul style="list-style-type: none"> <li>• Shift control actuator assy</li> <li>• Transmission control ECU assy</li> <li>• Transaxle parking lock control relay</li> <li>• Wire harness or connector</li> </ul>



## INSPECTION PROCEDURE

### 1 CHECK DTC

- (a) Connect the hand-held tester to the DLC3.
- (b) Turn the power switch on (IG).
- (c) Turn the hand-held tester on.
- (d) Read the DTCs.

**Result:**

Display (DTC output)	Proceed to
C2304, C2305, and C2306 are detected simultaneously	A
C2304, C2305, and C2306 are not detected simultaneously	B

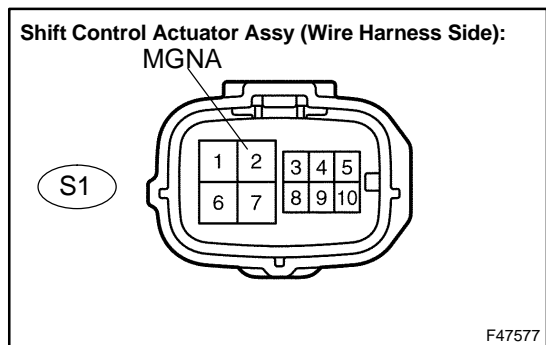
**HINT:**

- When DTCs C2304, C2305, and C2306 are detected simultaneously, there may be an open or short circuit between the shift control actuator and the battery.
- When DTCs C2304, C2305, and C2306 are not detected simultaneously, there may be an open or short circuit in the shift control actuator or between the actuator and the ECU.

**B** Go to step 7

**A**

### 2 INSPECT SHIFT CONTROL ACTUATOR ASSY(MGNA TERMINAL)



- (a) Disconnect the S1 connector from the shift control actuator assy.
- (b) Measure the voltage according to the value(s) in the table below.

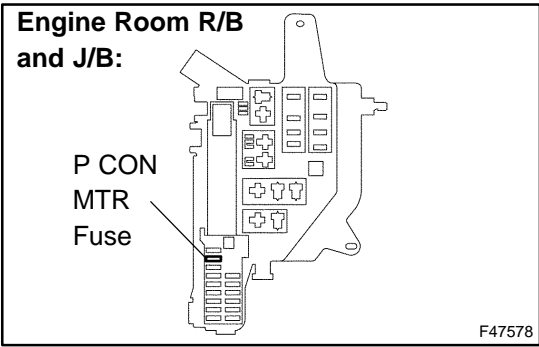
**Standard:**

Tester connection (Symbols)	Condition	Specified condition
S1-2 (MGNA) – Body ground	Power switch on (IG)	9 to 14 V

**OK** Go to step 7

**NG**

**3 INSPECT FUSE(P CON MTR FUSE)**

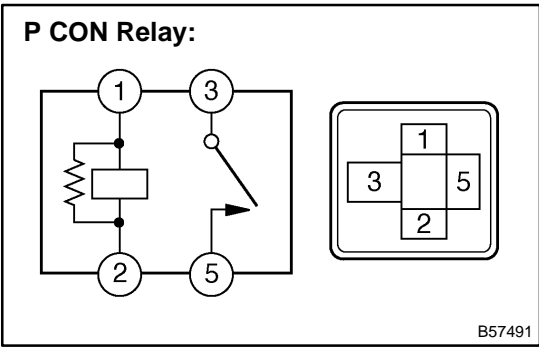


- (a) Remove the P CON MTR fuse from the engine room R/B and J/B.
  - (b) Check for continuity of the P CON MTR fuse.
- Standard: Continuity**

**NG** INSPECT FOR SHORT IN ALL COMPONENTS CONNECTED TO FUSE AND REPAIR OR REPLACE THEM IF NEEDED, AND REPLACE FUSE

**OK**

**4 INSPECT TRANSAXLE PARKING LOCK CONTROL RELAY(P CON RELAY)**



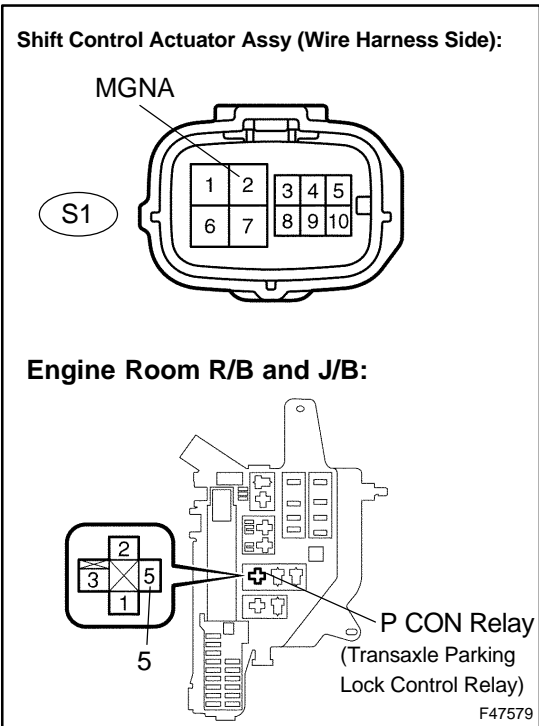
- (a) Remove the P CON relay from the engine room R/B and J/B.
  - (b) Measure the resistance according to the value(s) in the table below.
- Standard:**

Tester Connection	Specified Condition
3 – 5	10 kΩ or higher
3 – 5	Below 1 Ω (When battery voltage is applied to terminals 1 and 2)

**NG** REPLACE TRANSAXLE PARKING LOCK CONTROL RELAY

**OK**

**5 CHECK HARNESS AND CONNECTOR(SHIFT CONTROL ACTUATOR ASSY – TRANSAXLE PARKING LOCK CONTROL RELAY)**



(a) Measure the resistance according to the value(s) in the table below.

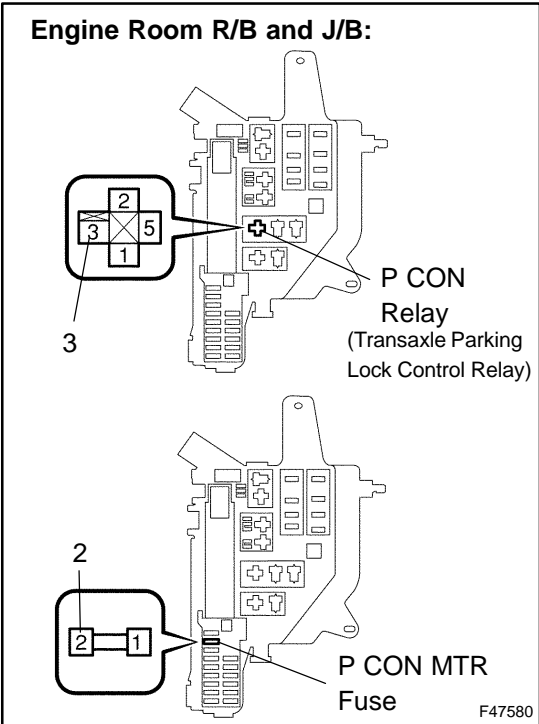
**Standard:**

Tester connection (Symbols)	Condition	Specified condition
S1-2 (MGNA) – 5 (P CON Relay)	Always	Below 1 Ω
S1-2 (MGNA) – Body ground	Always	10 kΩ or higher

**NG REPAIR OR REPLACE HARNESS OR CONNECTOR**

**OK**

**6 CHECK HARNESS AND CONNECTOR(TRANSAXLE PARKING LOCK CONTROL RELAY – P CON MTR FUSE)**



(a) Measure the resistance according to the value(s) in the table below.

**Standard:**

Tester connection (Symbols)	Condition	Specified condition
3 (P CON Relay) – 2 (P CON MTR Fuse)	Always	Below 1 Ω
3 (P CON Relay) – Body ground	Always	10 kΩ or higher

**NG** REPAIR OR REPLACE HARNESS OR CONNECTOR

**OK**

**REPAIR OR REPLACE HARNESS OR CONNECTOR(P CON MTR FUSE – BATTERY)**

**7 READ VALUE ON HAND-HELD TESTER**

- (a) Connect the S1 connector to the shift control actuator assy.
- (b) Connect the hand-held tester to the DLC3.
- (c) Turn the power switch on (IG).
- (d) Turn the hand-held tester on.
- (e) Select the item below in the DATA LIST, and read its value displayed on the hand-held tester.

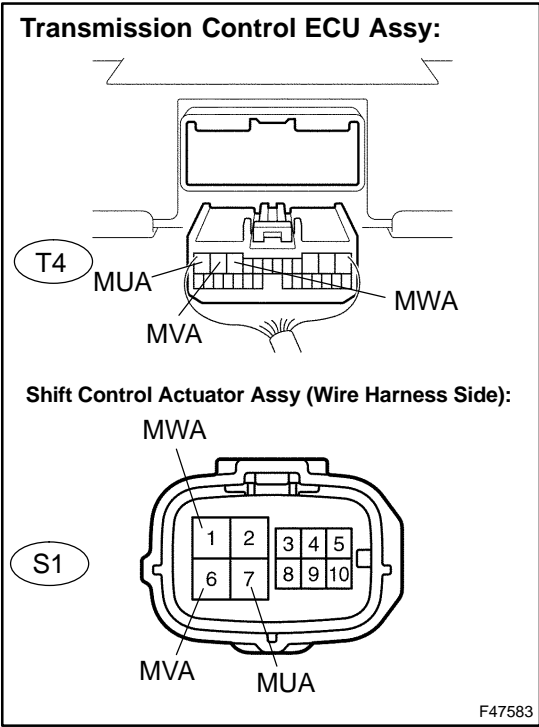
Item	Measurement Item/Range (Display)	Normal Condition
U VOL VAL	U phase voltage value/min: 0 V, max: 20 V	Actual U phase voltage 9 to 14 V
V VOL VAL	V phase voltage value/min: 0 V, max: 20 V	Actual V phase voltage 9 to 14 V
W VOL VAL	W phase voltage value/min: 0 V, max: 20 V	Actual W phase voltage 9 to 14 V

**Standard:**  
**Voltage: 9 to 14 V**

**OK** REPLACE TRANSMISSION CONTROL ECU ASSY

**NG**

**8 CHECK HARNESS AND CONNECTOR(TRANSMISSION CONTROL ECU ASSY – SHIFT CONTROL ACTUATOR ASSY)**



- (a) Disconnect the T4 connector from the transmission control ECU Assy.
- (b) Disconnect the S1 connector from the shift control actuator Assy.
- (c) Measure the resistance according to the value(s) in the table below.

**Standard:**

Tester connection (Symbols)	Condition	Specified condition
T4-10 (MWA) – S1-1 (MWA)	Always	Below 1 Ω
T4-11 (MVA) – S1-6 (MVA)	Always	Below 1 Ω
T4-12 (MUA) – S1-7 (MUA)	Always	Below 1 Ω
T4-10 (MWA) – Body ground	Always	10 kΩ or higher
T4-11 (MVA) – Body ground	Always	10 kΩ or higher
T4-12 (MUA) – Body ground	Always	10 kΩ or higher

**NG REPAIR OR REPLACE HARNESS OR CONNECTOR**

**OK**

**REPLACE SHIFT CONTROL ACTUATOR ASSY (SEE PAGE 22-6)**