DTC	C2304	OPEN OR SHORT CIRCUIT IN U PHASE

DTC	C2305	OPEN OR SHORT CIRCUIT IN V PHASE

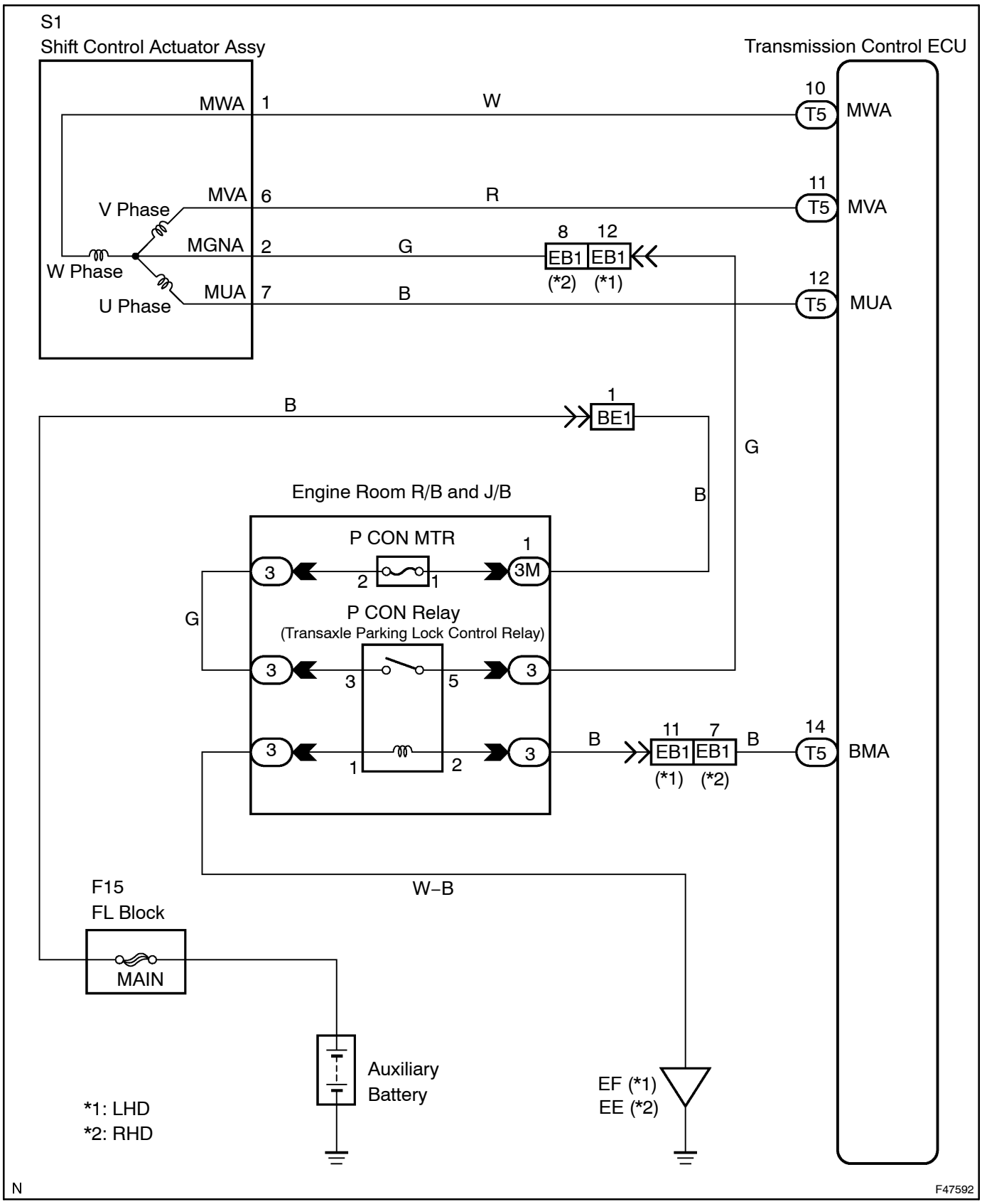
DTC	C2306	OPEN OR SHORT CIRCUIT IN W PHASE

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	• Power switch on (IG). (Battery voltage is 8 V or more) • Voltage of transmission control ECU terminal MUA is 6 V or less for 1 sec. or more.	• Shift control actuator assy • Transmission control ECU assy • Transaxle parking lock control relay • Wire harness or connector
C2305	• Power switch on (IG). (Battery voltage is 8 V or more) • Voltage of transmission control ECU terminal MVA is 6 V or less for 1 sec. or more.	• Shift control actuator assy • Transmission control ECU assy • Transaxle parking lock control relay • Wire harness or connector
C2306	• Power switch on (IG). (Battery voltage is 8 V or more) • Voltage of transmission control ECU terminal MWA is 6 V or less for 1 sec. or more.	• Shift control actuator assy • Transmission control ECU assy • Transaxle parking lock control relay • Wire harness or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

1 CHECK DTC

(a) Connect the intelligent tester II to the DLC3.
(b) Turn the power switch on (IG).
(c) Turn the intelligent tester II 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

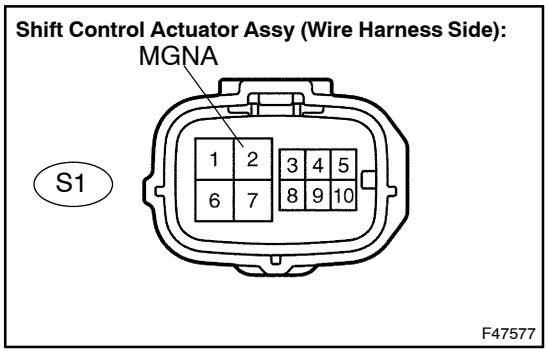
HINT:

- 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.

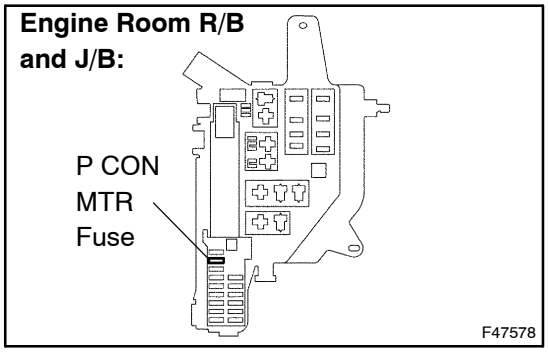
Standard:

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.

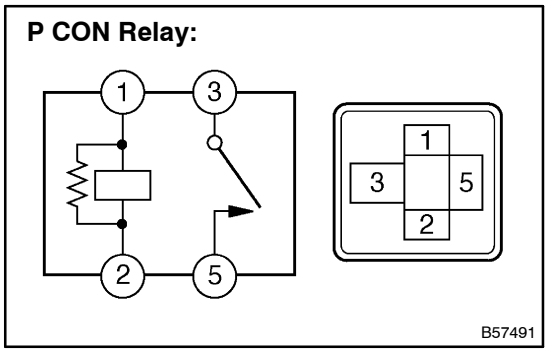
(b) Check for continuity of the P CON MTR fuse.

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:

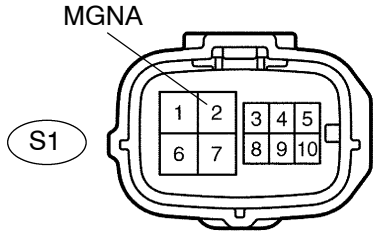
Tester Connection	Specified Condition
3 – 5	10 kΩ or higher
3 – 5	Below 1 Ω (When battery voltage is applied to terminals 1 and 2)

NG → **REPLACE TRANSAXLE PARKING LOCK CONTROL RELAY**

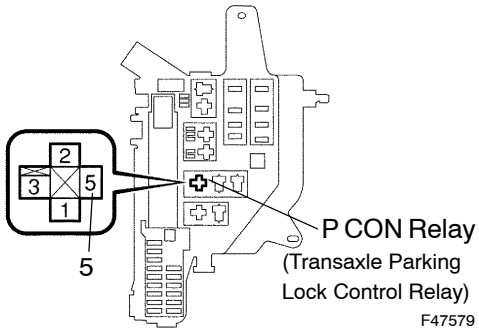
OK

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

Shift Control Actuator Assy (Wire Harness Side):



Engine Room R/B and J/B:



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

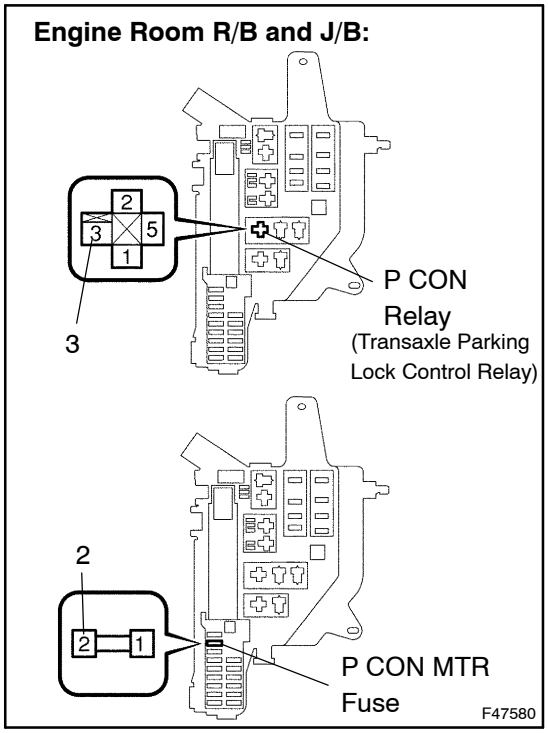
Standard:

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 INTELLIGENT TESTER II

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

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

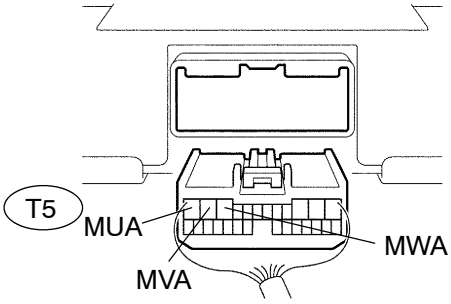
Standard:
Voltage: 9 to 14 V

OK → **REPLACE TRANSMISSION CONTROL ECU ASSY**

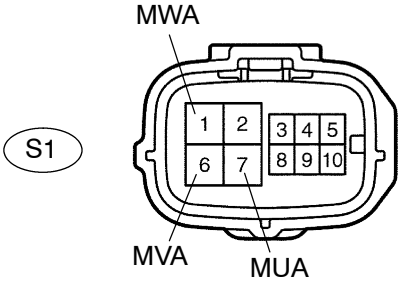
NG

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

Transmission Control ECU Assy:



Shift Control Actuator Assy (Wire Harness Side):



F47583

(a) Disconnect the T5 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
T5–10 (MWA) – S1–1 (MWA)	Always	Below 1 Ω
T5–11 (MVA) – S1–6 (MVA)	Always	Below 1 Ω
T5–12 (MUA) – S1–7 (MUA)	Always	Below 1 Ω
T5–10 (MWA) – Body ground	Always	10 kΩ or higher
T5–11 (MVA) – Body ground	Always	10 kΩ or higher
T5–12 (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)