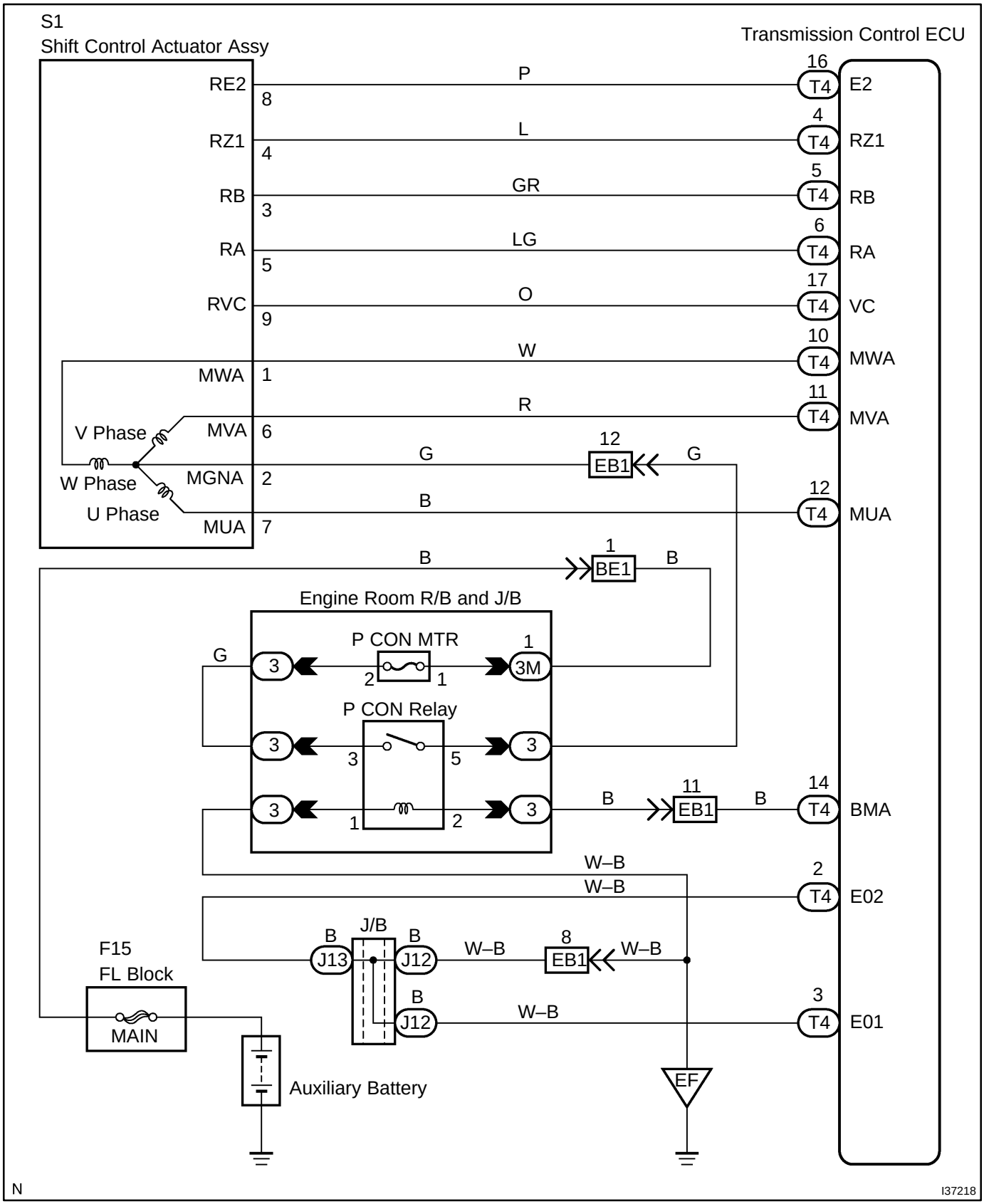
DTC C2300 ACT SYSTEM MALFUNCTION

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 also detects the rotor rotation angle through the rotation angle sensor to control timing of current application to the coils. The transmission control ECU outputs this DTC when it detects a malfunction in the shift control actuator assy system.

DTC No.	DTC detecting condition	Trouble area
C2300	• Power switch on (IG). • There is an open or short circuit in the transaxle parking lock control relay and/or shift control actuator assy, or an internal abnormality in the shift control actuator assy.	• Shift control actuator assy • Transaxle parking lock control relay • Transmission control ECU assy • Wire harness or connector

WIRING DIAGRAM



INSPECTION PROCEDURE

1 CHECK OTHER DTC OUTPUT(BESIDES DTC C2300)

(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
No output	A
C2304, C2305, C2306 and C2318	B

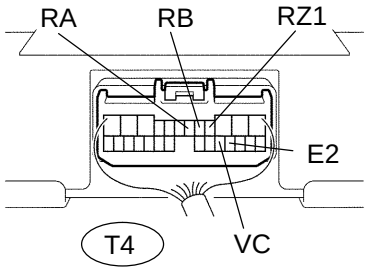
HINT:
If any other codes besides C2300 are output, perform the troubleshooting for those DTCs first.

B → **REPAIR CIRCUIT INDICATED BY OUTPUT CODE**

A

2 INSPECT TRANSMISSION CONTROL ECU ASSY(VC, RA, RB, RZ1, E2 TERMINAL)

Transmission Control ECU Assy:



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

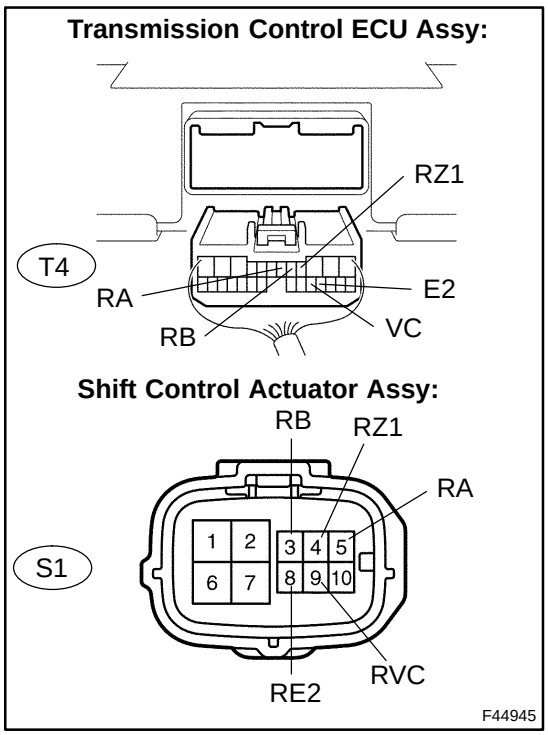
Standard:

Tester connection (Symbols)	Condition	Specified condition
T4–4 (RZ1) – T4–16 (E2)	Power switch on (IG)	4 to 5.5 V
T4–5 (RB) – T4–16 (E2)	Power switch on (IG)	4 to 5.5 V
T4–6 (RA) – T4–16 (E2)	Power switch on (IG)	4 to 5.5 V
T4–17 (VC) – T4–16 (E2)	Power switch on (IG)	4 to 5.5 V

OK → **Go to step 5**

NG

3 CHECK HARNESS AND CONNECTOR(SHIFT CONTROL ACTUATOR ASSY – TRANSMISSION CONTROL ECU 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.

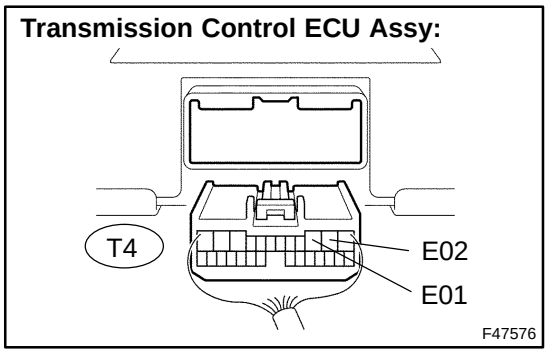
Standard:

Tester connection (Symbols)	Condition	Specified condition
T4–17 (VC) – S1–9 (RVC)	Always	Below 1 Ω
T4–5 (RB) – S1–3 (RB)	Always	Below 1 Ω
T4–6 (RA) – S1–5 (RA)	Always	Below 1 Ω
T4–4 (RZ1) – S1–4 (RZ1)	Always	Below 1 Ω
T4–16 (E2) – S1–8 (RE2)	Always	Below 1 Ω
T4–4 (RZ1) – Body ground	Always	10 kΩ or higher
T4–5 (RB) – Body ground	Always	10 kΩ or higher
T4–6 (RA) – Body ground	Always	10 kΩ or higher
T4–17 (VC) – Body ground	Always	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

4 INSPECT TRANSMISSION CONTROL ECU ASSY(E01, E02 TERMINAL)



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

Standard:

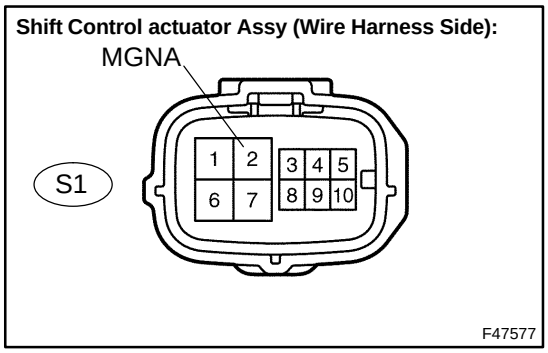
Tester connection (Symbols)	Condition	Specified condition
T4–2 (E02) – Body ground	Always	Below 1 Ω
T4–3 (E01) – Body ground	Always	Below 1 Ω

OK → **Go to step 14**

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

5 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

NG → **Go to step 7**

OK

6 READ VALUE ON HAND–HELD TESTER

(a) Connect the hand–held tester to the DLC3.

(b) Turn the power switch on (IG).

(c) Turn the hand–held tester on.

(d) 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:

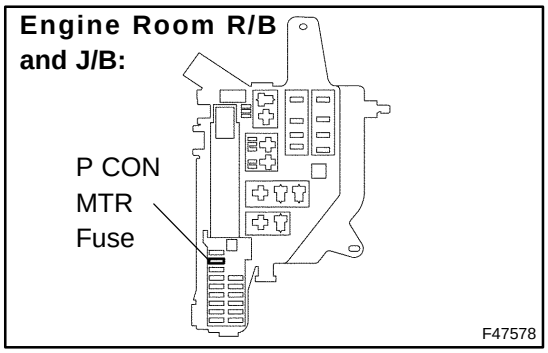
Voltage: 9 to 14 V

NG → **Go to step 13**

OK

REPLACE TRANSMISSION CONTROL ECU ASSY

7 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.

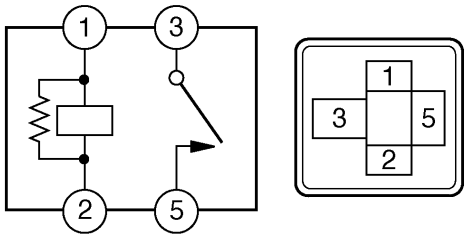
Standard: Continuity

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

OK

8 INSPECT TRANSAXLE PARKING LOCK CONTROL RELAY

P CON Relay:



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(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:

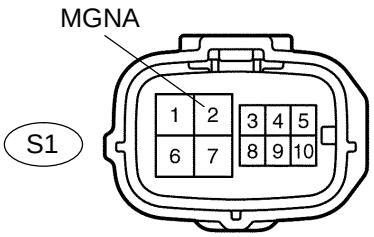
Tester Connection	Specified Condition
3 – 5	10 kΩ or higher
3 – 5	Below 1 Ω (When battery voltage is applied to terminals 1 and 2)

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

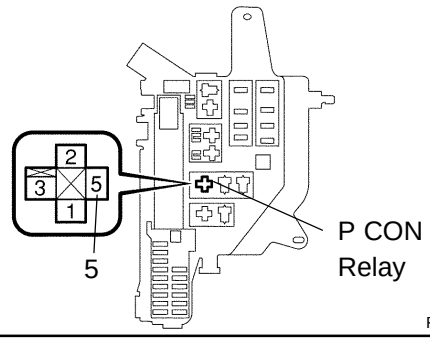
OK

9 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:



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

Standard:

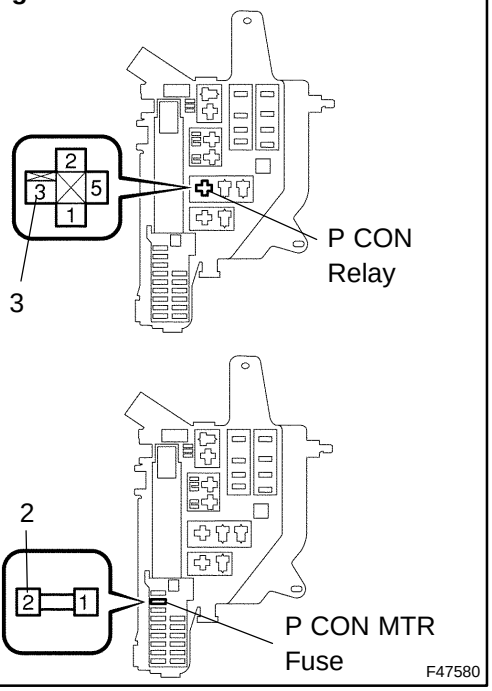
Tester connection (Symbols)	Condition	Specified condition
S1–2 (MGNA) – 5 (P CON Relay)	Always	Below 1 Ω
S1–2 (MGNA) – Body ground	Always	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

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

Engine Room R/B and J/B:



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

Standard:

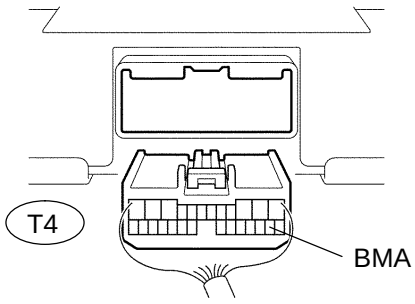
Tester connection (Symbols)	Condition	Specified condition
3 (P CON Relay) – 2 (P CON MTR Fuse)	Always	Below 1 Ω
3 (P CON Relay) – Body ground	Always	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

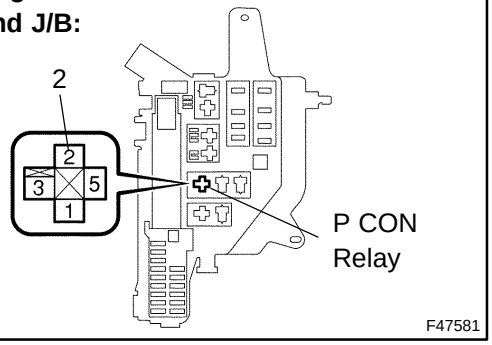
OK

11	CHECK HARNESS AND CONNECTOR(TRANSMISSION CONTROL ECU ASSY – TRANSAXLE PARKING LOCK CONTROL RELAY)

Transmission Control ECU Assy:



Engine Room R/B and J/B:



(a) Disconnect the T4 connector from the transmission control ECU assy.

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

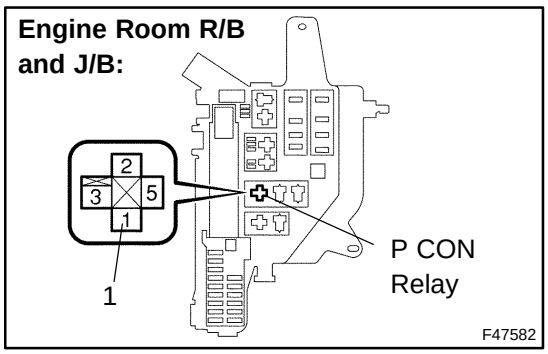
Standard:

Tester connection (Symbols)	Condition	Specified condition
T4–14 (BMA) – 2 (P CON MTR Fuse)	Always	Below 1 Ω
T4–14 (BMA) – Body ground	Always	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

12	CHECK HARNESS AND CONNECTOR(TRANSAXLE PARKING LOCK CONTROL RELAY – BODY GROUND)



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

Standard:

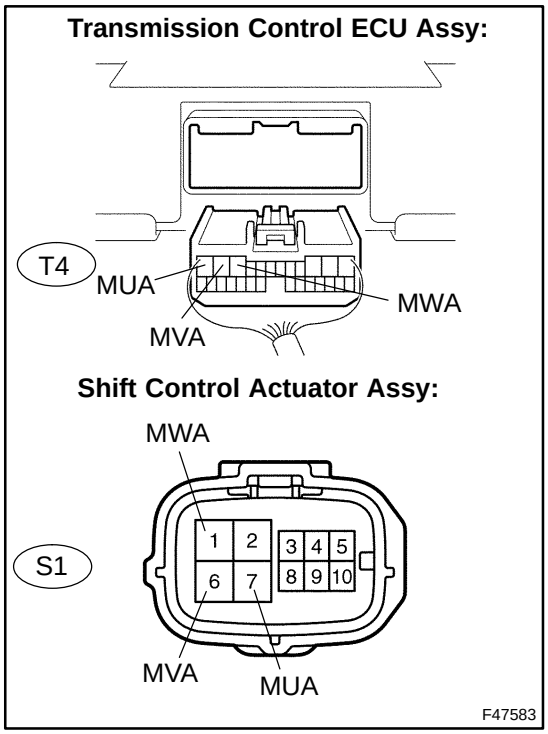
Tester connection (Symbols)	Condition	Specified condition
1 (P CON Relay) – Body ground	Always	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

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

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



(a) Disconnect the T4 connector from the transmission control ECU assy.

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

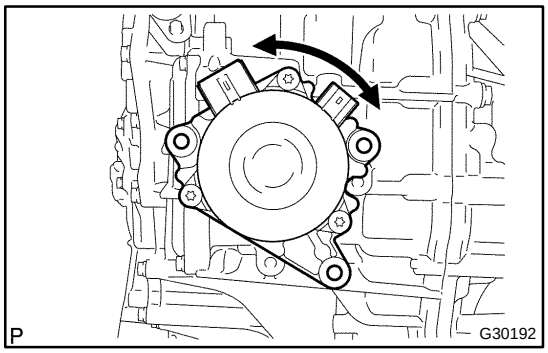
Standard:

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

14	INSPECT SHIFT CONTROL ACTUATOR ASSY



(a) Remove the 3 bolts and transmission case cover.
(b) Remove the 3 bolts.
(c) Slightly pull the shift control actuator assy from the hybrid vehicle transaxle so that the shift control actuator assy can be turned.
(d) Turn the shift control actuator assy.
OK: The shift control actuator turns smoothly.

HINT:
There may be an internal actuator abnormality if the actuator does not turn smoothly.

NG → **REPLACE SHIFT CONTROL ACTUATOR ASSY (SEE PAGE 22–6)**

OK

REPLACE TRANSMISSION CONTROL ECU ASSY