Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM100000002BHUO
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [03/2023 -]
Title: HYBRID / BATTERY CONTROL: HYBRID BATTERY SYSTEM (for PHEV Model): P0ABF11,P0ABF15,P0B0E11,P0B0E15,P1CBB12,P1CBB14,P2BE411,P2BE415; Hybrid/EV Battery Current Sensor "A" Circuit Short to Ground; 2023 - 2024 MY Prius Prime [03/2023 -]		

DTC	**P0ABF11**	**Hybrid/EV Battery Current Sensor "A" Circuit Short to Ground**

DTC	**P0ABF15**	**Hybrid/EV Battery Current Sensor "A" Circuit Short to Auxiliary Battery or Open**

DTC	**P0B0E11**	**Hybrid/EV Battery Current Sensor "B" Circuit Short to Ground**

DTC	**P0B0E15**	**Hybrid/EV Battery Current Sensor "B" Circuit Short to Auxiliary Battery or Open**

DTC	**P1CBB12**	**Hybrid/EV Battery Current Sensor Power Supply Circuit Short to Auxiliary Battery**

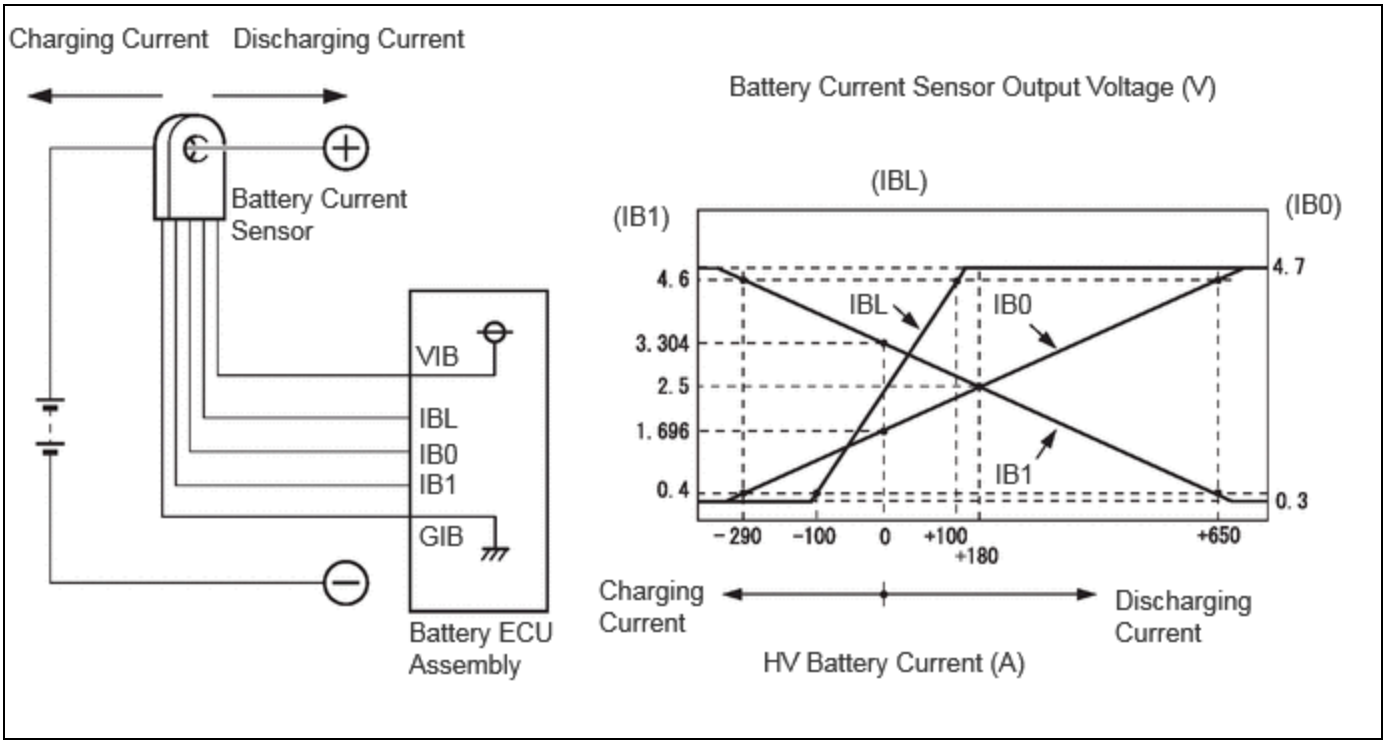
DTC	**P1CBB14**	**Hybrid/EV Battery Current Sensor Power Supply Circuit Short to Ground or Open**

DTC	**P2BE411**	**Hybrid/EV Battery Pack Current Sensor "C" Low Circuit Short to Ground**

DTC	**P2BE415**	**Hybrid/EV Battery Pack Current Sensor "C" High Circuit Short to Auxiliary Battery or Open**

DESCRIPTION

A battery current sensor, which is mounted on the positive cable side of each No. 2 traction battery device box assembly, detects the current flowing to or from the battery pack. The battery current sensor sends a voltage, which varies between 0 and 5 V in proportion to the amperage, to the IB0 terminal of the battery ECU assembly. Similarly, it sends a voltage, which varies between 0 and 5 V in inverse proportion to the amperage, to the IB1 terminal of the battery ECU assembly. When the voltage at the IB0 terminal is above 1.696 V and the voltage at the IB1 terminal is below 3.304 V, this indicates that the HV battery is being discharged. Additionally, Meanwhile, when the voltage at of the IB0 terminal is below 1.696 V and the voltage at of the IB1 terminal is above 3.304 V, this indicates that the HV battery is being charged. The battery ECU assembly determines the charging and discharging amount of the HV battery based on the voltages input to the IB0 terminal and IB1 terminal and calculates the SOC of the HV battery through the accumulated amperage.



DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	WARNING INDICATE	DTC OUTPUT FROM	PRIORITY	NOTE
P0ABF11	Hybrid/EV Battery Current Sensor "A" Circuit Short to Ground	The battery current sensor output voltage (IB0) is excessively low. (1 trip detection logic)	• No. 1 traction battery device box assembly • Battery ECU assembly • Wire harness or connector	Comes on	Master Warning: Comes on	HV Battery	A	SAE Code: P0AC1
P0ABF15	Hybrid/EV Battery Current Sensor "A" Circuit Short to Auxiliary Battery or Open	The battery current sensor output voltage (IB0) is excessively high. (1 trip detection logic)	• No. 1 traction battery device box assembly • Battery ECU assembly • Wire harness or connector	Comes on	Master Warning: Comes on	HV Battery	A	SAE Code: P0AC2
P0B0E11	Hybrid/EV Battery Current Sensor "B"	The battery current sensor output voltage	• No. 1 traction battery	Comes on	Master Warning:	HV Battery	A	SAE Code:

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	WARNING INDICATE	DTC OUTPUT FROM	PRIORITY	NOTE
	Circuit Short to Ground	(IB1) is excessively low. (1 trip detection logic)	device box assembly • Battery ECU assembly • Wire harness or connector		Comes on			P0B10
P0B0E15	Hybrid/EV Battery Current Sensor "B" Circuit Short to Auxiliary Battery or Open	The battery current sensor output voltage (IB1) is excessively high. (1 trip detection logic)	• No. 1 traction battery device box assembly • Battery ECU assembly • Wire harness or connector	Comes on	Master Warning: Comes on	HV Battery	A	SAE Code: P0B11
P1CBB12	Hybrid/EV Battery Current Sensor Power Supply Circuit Short to Auxiliary Battery	Power source voltage (VIB) of the battery current sensor is excessively high. (1 trip detection logic)	• No. 1 traction battery device box assembly • Battery ECU assembly • Wire harness or connector	Comes on	Master Warning: Comes on	HV Battery	A	SAE Code: P1CBD
P1CBB14	Hybrid/EV Battery Current Sensor Power Supply Circuit Short to Ground or Open	Power source voltage (VIB) of the battery current sensor is excessively low. (1 trip detection logic)	• No. 1 traction battery device box assembly • Battery ECU assembly • Wire harness or connector	Comes on	Master Warning: Comes on	HV Battery	A	SAE Code: P1CBC
P2BE411	Hybrid/EV Battery Pack Current Sensor	The battery current sensor output voltage (IBL) is	• No. 1 traction battery	Comes on	Master Warning: Comes on	HV Battery	A	SAE Code: P2BE6

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	WARNING INDICATE	DTC OUTPUT FROM	PRIORITY	NOTE
	"C" Low Circuit Short to Ground	excessively low. (1 trip detection logic)	device box assembly • Battery ECU assembly • Wire harness or connector					
P2BE415	Hybrid/EV Battery Pack Current Sensor "C" High Circuit Short to Auxiliary Battery or Open	The battery current sensor output voltage (IBL) is excessively high. (1 trip detection logic)	• No. 1 traction battery device box assembly • Battery ECU assembly • Wire harness or connector	Comes on	Master Warning: Comes on	HV Battery	A	SAE Code: P2BE7

MONITOR DESCRIPTION

If the battery ECU assembly detects a malfunction in the battery current sensor, the battery ECU assembly illuminates the MIL and stores a DTC.

MONITOR STRATEGY

Related DTCs	P0AC1 (INF P0ABF11): Hybrid/EV Battery Pack Current Sensor "A" Circuit Low P0AC2 (INF P0ABF15): Hybrid/EV Battery Pack Current Sensor "A" Circuit High P0B10 (INF P0B0E11): Hybrid/EV Battery Pack Current Sensor "B" Circuit Low P0B11 (INF P0B0E15): Hybrid/EV Battery Pack Current Sensor "B" Circuit High P1CBD (INF P1CBB12): Hybrid/EV Battery Pack Current Sensor "A" Power Supply Circuit High P1CBC (INF P1CBB14): Hybrid/EV Battery Pack Current Sensor "A" Power Supply Circuit Low P2BE6 (INF P2BE411): Hybrid/EV Battery Pack Current Sensor "C" Circuit Low P2BE7 (INF P2BE415): Hybrid/EV Battery Pack Current Sensor "C" Circuit High
Required sensors/components	Battery current sensor
Frequency of operation	Continuous
Duration	TMC's intellectual property
MIL operation	1 driving cycle
Sequence of operation	None

TYPICAL ENABLING CONDITIONS

The monitor will run whenever the following DTCs are not stored	TMC's intellectual property
Other conditions belong to TMC's intellectual property	-

TYPICAL MALFUNCTION THRESHOLDS

TMC's intellectual property	-

COMPONENT OPERATING RANGE

Battery ECU assembly	DTC P0AC1 (INF P0ABF11) is not detected DTC P0AC2 (INF P0ABF15) is not detected DTC P0B10 (INF P0B0E11) is not detected DTC P0B11 (INF P0B0E15) is not detected DTC P1CBD (INF P1CBB12) is not detected DTC P1CBC (INF P1CBB14) is not detected DTC P2BE6 (INF P2BE411) is not detected DTC P2BE7 (INF P2BE415) is not detected

CONFIRMATION DRIVING PATTERN

HINT:

- After repair has been completed, clear the DTC and then check that the vehicle has returned to normal by performing the following All Readiness check procedure.

  Click here INFO
- When clearing the permanent DTCs, refer to the "CLEAR PERMANENT DTC" procedure.

  Click here INFO

1. Clear the DTCs (even if no DTCs are stored, perform the clear DTC procedure).
2. Turn the ignition switch off and wait for 2 minutes or more.
3. Turn the ignition switch to ON and wait for 5 seconds or more.[*1]

HINT:

[*1]: Normal judgment procedure.

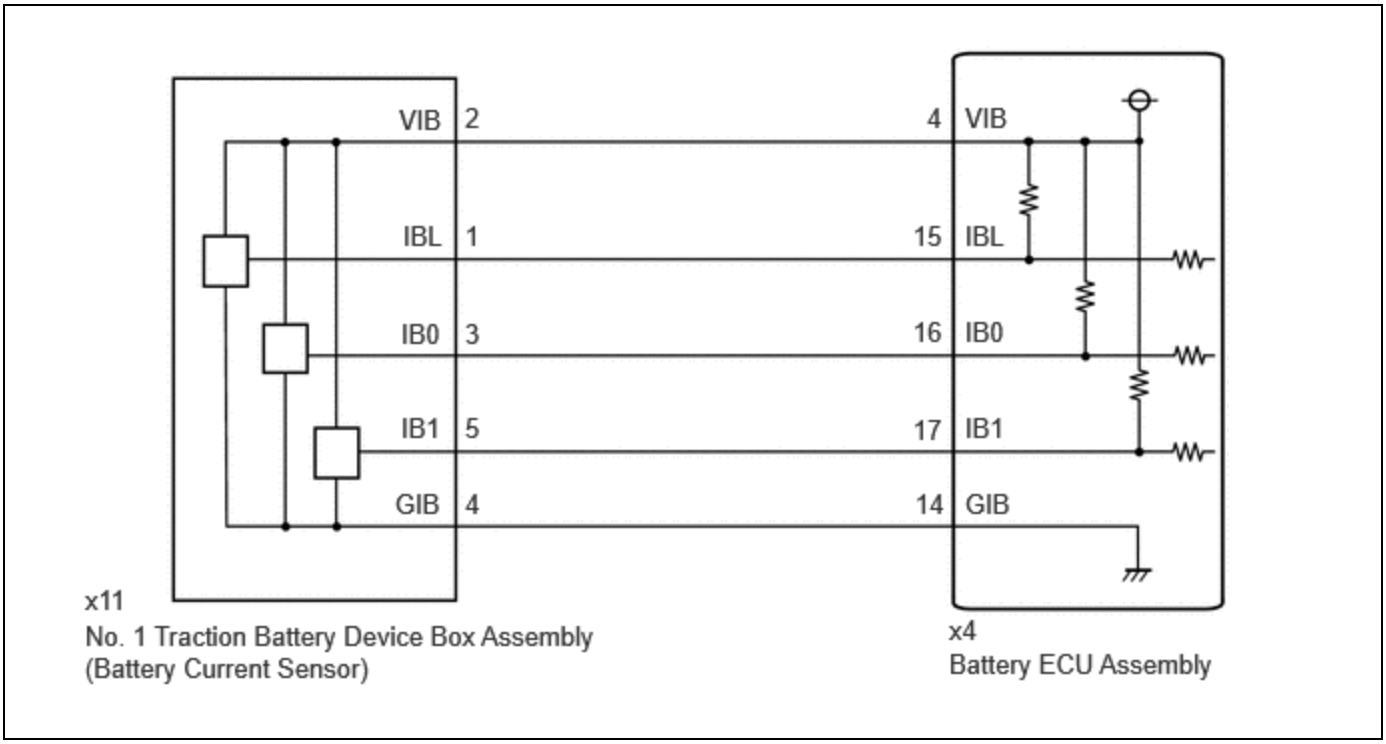
The normal judgment procedure is used to complete DTC judgment and also used when clearing permanent DTCs.

4. Enter the following menus: Powertrain / HV Battery / Utility / All Readiness.
5. Check the DTC judgment result.

HINT:

- If the judgment result shows NORMAL, the system is normal.
- If the judgment result shows ABNORMAL, the system has a malfunction.
- If the judgment result shows INCOMPLETE or N/A, perform the normal judgment procedure again.

WIRING DIAGRAM



Refer to the wiring diagram for ECU Power Source Circuit.

Click here INFO

CAUTION / NOTICE / HINT

CAUTION:

Refer to the precautions before inspecting high voltage circuit.

Click here INFO

NOTICE:

- After the ignition switch is turned off, there may be a waiting time before disconnecting the auxiliary negative (-) battery terminal.

  Click here INFO
- When disconnecting and reconnecting the auxiliary battery.

HINT:

When disconnecting and reconnecting the auxiliary battery, there is an automatic learning function that completes learning when the respective system is used.

Click here INFO

PROCEDURE

1.	**CHECK DTC OUTPUT (HV BATTERY, HYBRID CONTROL)**

Pre-procedure1

(a) None

Procedure1

(b) Check for DTCs.

Powertrain > HV Battery > Trouble Codes
Powertrain > Hybrid Control > Trouble Codes

RESULT	PROCEED TO
"P0ABF11, P0ABF15, P0B0E11, P0B0E15, P1CBB12, P1CBB14, P2BE411 or P2BE415" only is output, or DTCs except the ones in the table below are also output.	A
DTCs of hybrid battery system in the table below are output.	B
DTCs of hybrid control system in the table below are output.	C

SYSTEM	RELEVANT DTC	
Hybrid battery system	P060A47	Hybrid/EV Battery Energy Control Module Monitoring Processor Watchdog / Safety MCU Failure
	P060B49	Hybrid/EV Battery Energy Control Module A/D Processing Internal Electronic Failure
	P060687	Hybrid/EV Battery Energy Control Module Processor to Monitoring Processor Missing Message
Hybrid control system	P0A1F94	Hybrid/EV Battery Energy Control Module Unexpected Operation

Post-procedure1

(c) Turn the ignition switch off.

B ▶ **GO TO DTC CHART (HYBRID BATTERY SYSTEM)**

C ▶ **GO TO DTC CHART (HYBRID CONTROL SYSTEM)**

A

2.	**CHECK BATTERY ECU ASSEMBLY (IGCT VOLTAGE)**

CAUTION:

Be sure to wear insulated gloves and protective goggles.

Pre-procedure1

(a) Check that the service plug grip is not installed.

NOTICE:

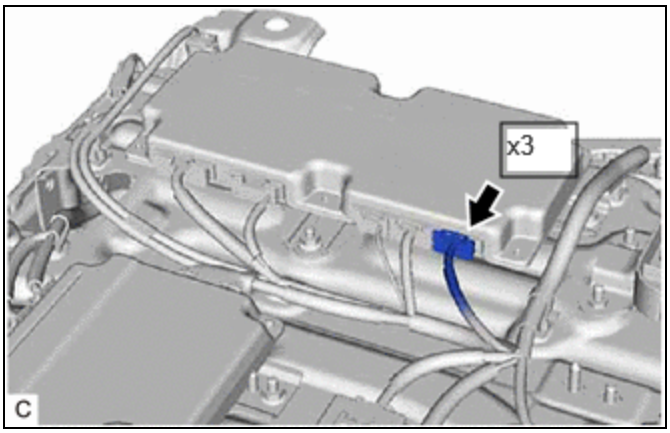
After removing the service plug grip, do not turn the ignition switch to ON (READY), unless instructed by the repair manual because this may cause a malfunction.

(b) Connect the SST.

HINT:

Click here INFO

(c) Disconnect the battery ECU assembly connector.



NOTICE:

Before disconnecting the connector, check that it is not loose or disconnected.

(d) Connect the cable to the negative (-) auxiliary battery terminal.

(e) Turn the ignition switch to ON.

Procedure1

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

Standard Voltage:

EWD INFO

Click Location & Routing(x3)
Click Connector(x3)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
x3-5 (IGCT) - x3-25 (GND)	Ignition switch ON	11 to 14 V

NOTICE:

- Turning the ignition switch to ON with the service plug grip removed causes other DTCs to be stored. Clear the DTCs after performing this inspection.
- If the ignition switch is turned to ON with the connectors disconnected, other DTCs will be stored. Be sure to clear the DTCs after the inspection.

HINT:

As there might be an intermittent malfunction in the battery ECU assembly power source circuit, inspect the following even if the measured voltage is as specified:

- Installation condition of fuse(s) (before removing fuse(s)) (IGCT circuit)
- Fuse condition (before and after removing fuse(s)) (IGCT circuit)
- Connection condition of connectors (IGCT circuit)
- Wire harness condition (IGCT circuit)
- Wire harness condition (GND circuit)

Post-procedure1

(g) Turn the ignition switch off.

(h) Disconnect the cable from the negative (-) auxiliary battery terminal.

(i) Reconnect the battery ECU assembly connector.

(j) Disconnect the SST.

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR (BATTERY ECU ASSEMBLY POWER SOURCE CIRCUIT)**

OK ▼

3.	**CHECK HARNESS AND CONNECTOR (BATTERY ECU ASSEMBLY - NO. 1 TRACTION BATTERY DEVICE BOX ASSEMBLY)**

CAUTION:

Be sure to wear insulated gloves and protective goggles.

Pre-procedure1

(a) Check that the service plug grip is not installed.

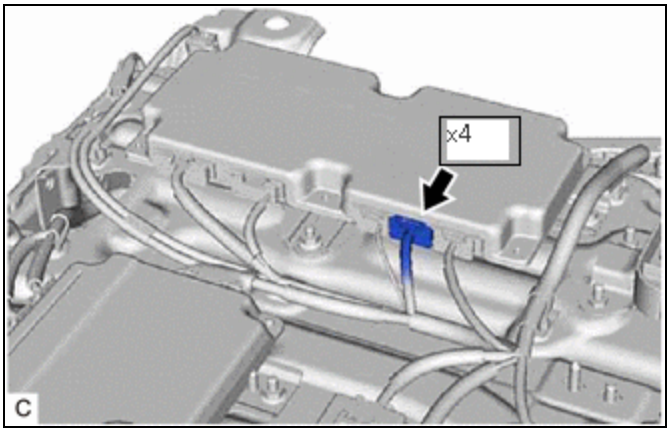
NOTICE:

After removing the service plug grip, do not turn the ignition switch to ON (READY), unless instructed by the repair manual because this may cause a malfunction.

(b) Disconnect the battery ECU assembly connector.

NOTICE:

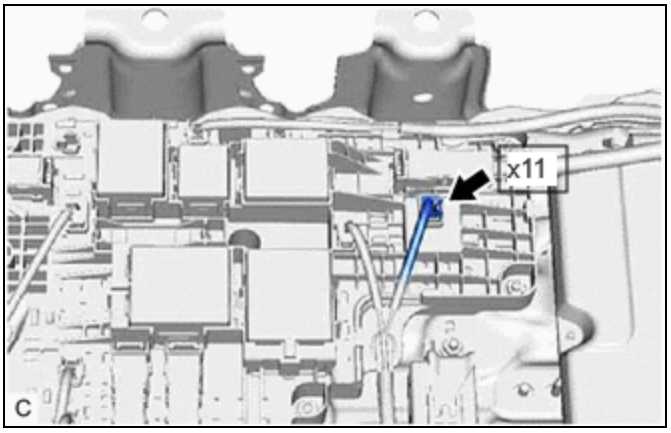
Before disconnecting the connector, check that it is not loose or disconnected.



(c) Disconnect the No. 1 traction battery device box assembly connector.

NOTICE:

Before disconnecting the connector, check that it is not loose or disconnected.



Procedure1

(d) Measure the resistance according to the value(s) in the tables below.

Standard Resistance (Check for Open):

EWD INFO

Click Location & Routing(x11,x4)
Click Connector(x11)
Click Connector(x4)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
x11-1 (IBL) - x4-15 (IBL)	Ignition switch off	Below 1 Ω
x11-5 (IB1) - x4-17 (IB1)	Ignition switch off	Below 1 Ω
x11-4 (GIB) - x4-14 (GIB)	Ignition switch off	Below 1 Ω
x11-3 (IB0) - x4-16 (IB0)	Ignition switch off	Below 1 Ω
x11-2 (VIB) - x4-4 (VIB)	Ignition switch off	Below 1 Ω

Standard Resistance (Check for Short):

EWD INFO

Click Location & Routing(x11,x4)
Click Connector(x11)
Click Connector(x4)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
x11-1 (IBL) or x4-15 (IBL) - Body ground and other terminals	Ignition switch off	10 kΩ or higher
x11-5 (IB1) or x4-17 (IB1) - Body ground and other terminals	Ignition switch off	10 kΩ or higher
x11-4 (GIB) or x4-14 (GIB) - Body ground and other terminals	Ignition switch off	10 kΩ or higher
x11-3 (IB0) or x4-16 (IB0) - Body ground and other terminals	Ignition switch off	10 kΩ or higher
x11-2 (VIB) or x4-4 (VIB) - Body ground and other terminals	Ignition switch off	10 kΩ or higher

Post-procedure1

(e) Reconnect the No. 1 traction battery device box assembly connector.

(f) Reconnect the battery ECU assembly connector.

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▼

4.	**CHECK BATTERY ECU ASSEMBLY (VIB VOLTAGE)**

CAUTION:

Be sure to wear insulated gloves and protective goggles.

Pre-procedure1

(a) Check that the service plug grip is not installed.

NOTICE:

After removing the service plug grip, do not turn the ignition switch to ON (READY), unless instructed by the repair manual because this may cause a malfunction.

(b) Connect the SST.

HINT:

Click here INFO

(c) Connect the cable to the negative (-) auxiliary battery terminal.

(d) Turn the ignition switch to ON.

Procedure1

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

Standard Voltage:

EWD INFO

Click Location & Routing(x4)
Click Connector(x4)

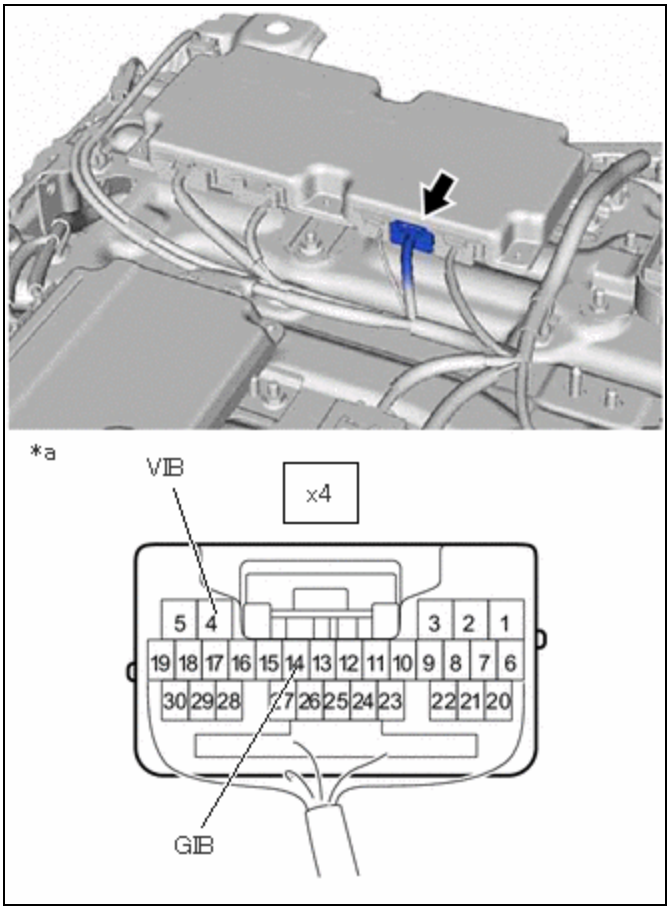
TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
x4-4 (VIB) - x4-14 (GIB)	Ignition switch ON	4.6 to 5.4 V

NOTICE:

Turning the ignition switch to ON with the service plug grip removed causes other DTCs to be stored. Clear the DTCs after performing this inspection.

Result:

PROCEED TO
OK
NG



*a	Component with harness connected (Battery ECU Assembly)

Post-procedure1

(f) Turn the ignition switch off.

(g) Disconnect the cable from the negative (-) auxiliary battery terminal.

(h) Disconnect the SST.

NG ▶ **GO TO STEP 17**

OK ▼

5.	CHECK BATTERY ECU ASSEMBLY (GIB - GND)

Pre-procedure1

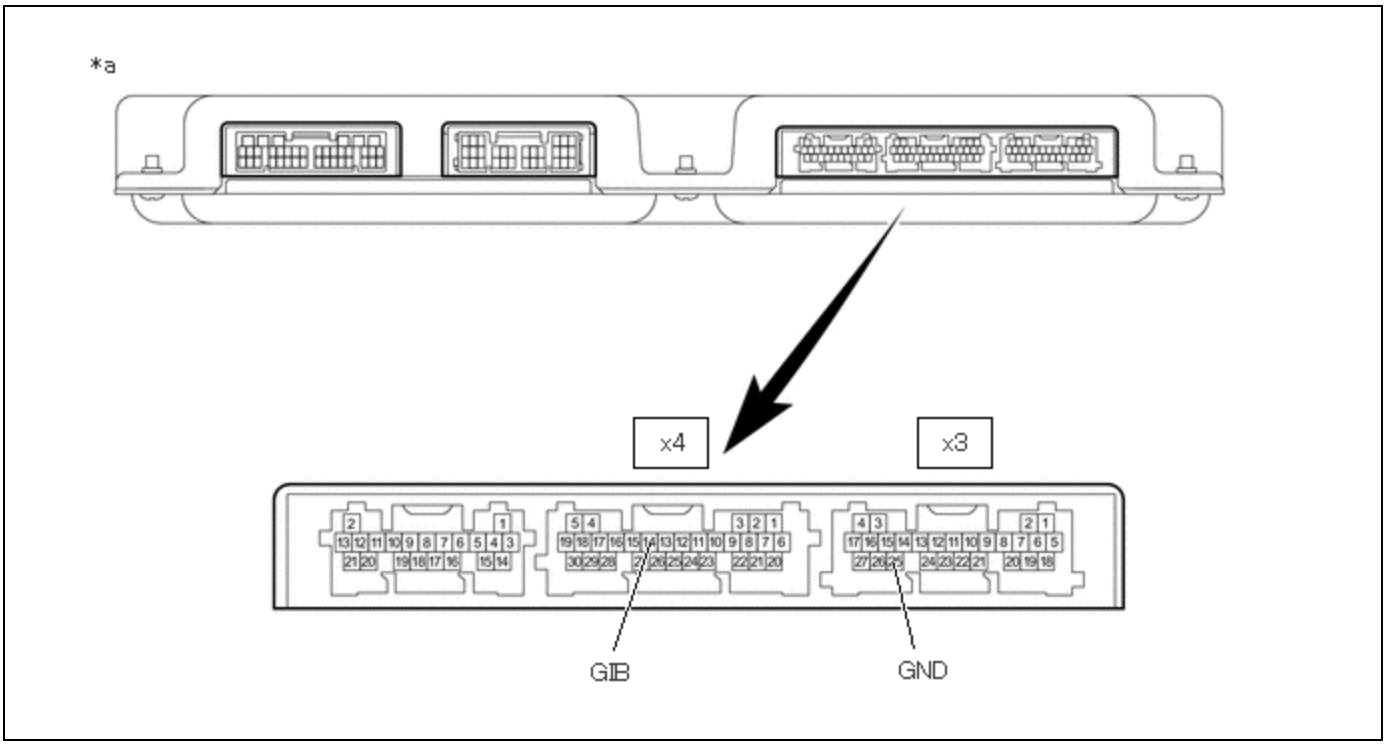
(a) Remove the battery ECU assembly.

HINT:

Click here INFO

Procedure1

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



*a	Component without harness connected (Battery ECU Assembly)	-	-

Standard Resistance:

EWD INFO

Click Location & Routing(x3,x4)
Click Connector(x3)
Click Connector(x4)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
x3-25 (GND) - x4-14 (GIB)	Ignition switch off	Below 1 Ω

Post-procedure1

(c) Install the battery ECU assembly.

NG ▶ **REPLACE BATTERY ECU ASSEMBLY**

OK ▼

6.	CHECK BATTERY ECU ASSEMBLY (BATTERY CURRENT SENSOR OUTPUT VOLTAGE (IB1))

CAUTION:

Be sure to wear insulated gloves and protective goggles.

Pre-procedure1

(a) Check that the service plug grip is not installed.

NOTICE:

After removing the service plug grip, do not turn the ignition switch to ON (READY), unless instructed by the repair manual because this may cause a malfunction.

(b) Connect the SST.

HINT:

Click here INFO

(c) Connect the cable to the negative (-) auxiliary battery terminal.

(d) Turn the ignition switch to ON.

Procedure1

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

Standard Voltage:

EWD INFO

Click Location & Routing(x4)
Click Connector(x4)

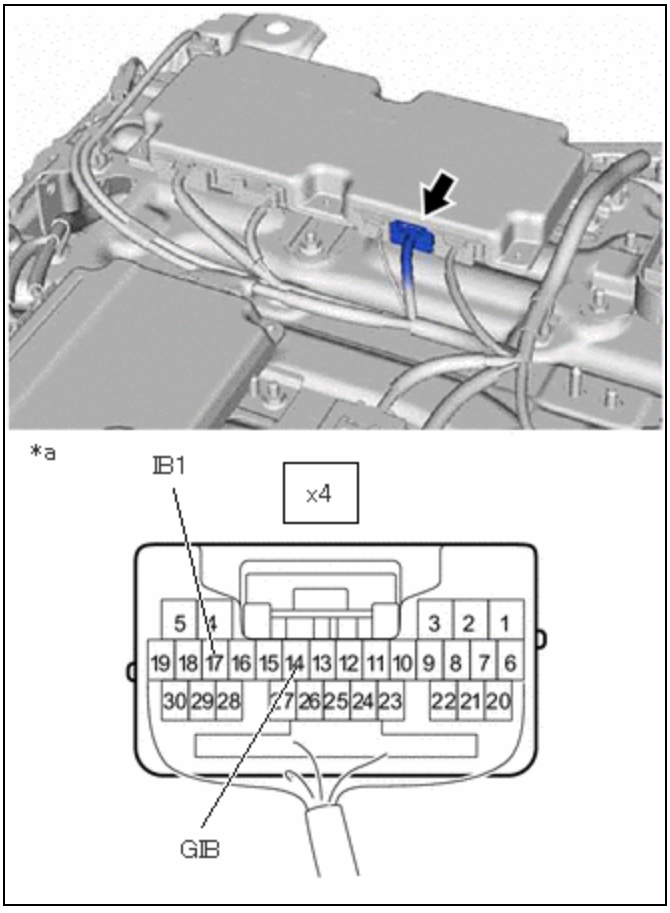
TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
x4-17 (IB1) - x4-14 (GIB)	Ignition switch ON	3.25 to 3.35 V

NOTICE:

Turning the ignition switch to ON with the service plug grip removed causes other DTCs to be stored. Clear the DTCs after performing this inspection.

Result:

PROCEED TO
OK
NG



*a	Component with harness connected (Battery ECU Assembly)

Post-procedure1

(f) Turn the ignition switch off.

(g) Disconnect the cable from the negative (-) auxiliary battery terminal.

(h) Disconnect the SST.

NG ▶ **GO TO STEP 15**

OK ▼

7.	CHECK BATTERY ECU ASSEMBLY (BATTERY CURRENT SENSOR OUTPUT VOLTAGE (IB0))

CAUTION:

Be sure to wear insulated gloves and protective goggles.

Pre-procedure1

(a) Check that the service plug grip is not installed.

NOTICE:

After removing the service plug grip, do not turn the ignition switch to ON (READY), unless instructed by the repair manual because this may cause a malfunction.

(b) Connect the SST.

HINT:

Click here INFO

(c) Connect the cable to the negative (-) auxiliary battery terminal.

(d) Turn the ignition switch to ON.

Procedure1

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

Standard Voltage:

EWD INFO

Click Location & Routing(x4)
Click Connector(x4)

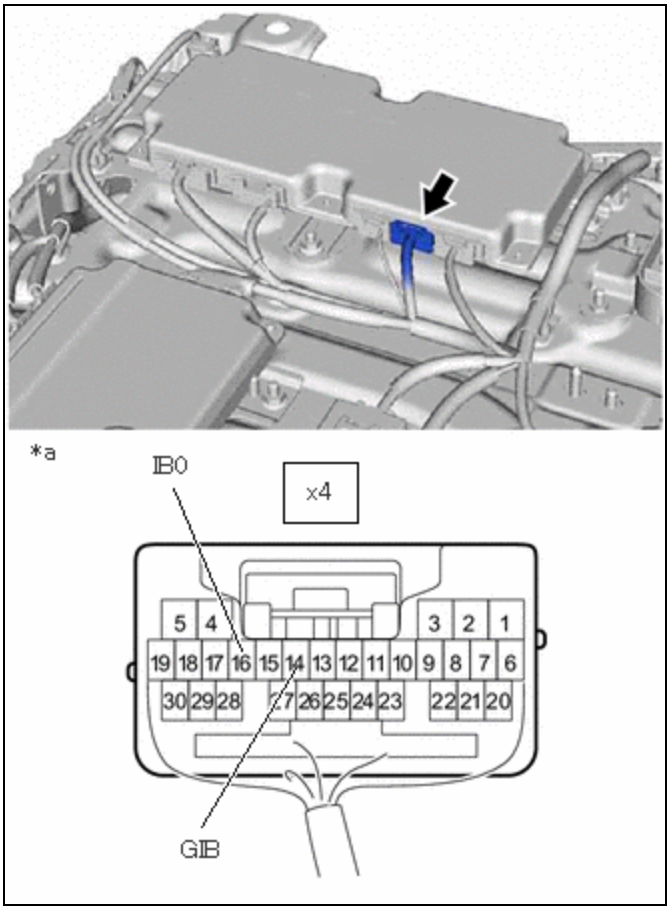
TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
x4-16 (IB0) - x4-14 (GIB)	Ignition switch ON	1.65 to 1.75 V

NOTICE:

Turning the ignition switch to ON with the service plug grip removed causes other DTCs to be stored. Clear the DTCs after performing this inspection.

Result:

PROCEED TO
OK
NG



*a	Component with harness connected (Battery ECU Assembly)

Post-procedure1

(f) Turn the ignition switch off.

(g) Disconnect the cable from the negative (-) auxiliary battery terminal.

(h) Disconnect the SST.

NG ▶ **GO TO STEP 12**

OK ▼

8.	CHECK BATTERY ECU ASSEMBLY (BATTERY CURRENT SENSOR OUTPUT VOLTAGE (IBL))

CAUTION:

Be sure to wear insulated gloves and protective goggles.

Pre-procedure1

(a) Check that the service plug grip is not installed.

NOTICE:

After removing the service plug grip, do not turn the ignition switch to ON (READY), unless instructed by the repair manual because this may cause a malfunction.

(b) Connect the SST.

HINT:

Click here INFO

(c) Connect the cable to the negative (-) auxiliary battery terminal.

(d) Turn the ignition switch to ON.

Procedure1

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

Standard Voltage:

EWD INFO

Click Location & Routing(x4)
Click Connector(x4)

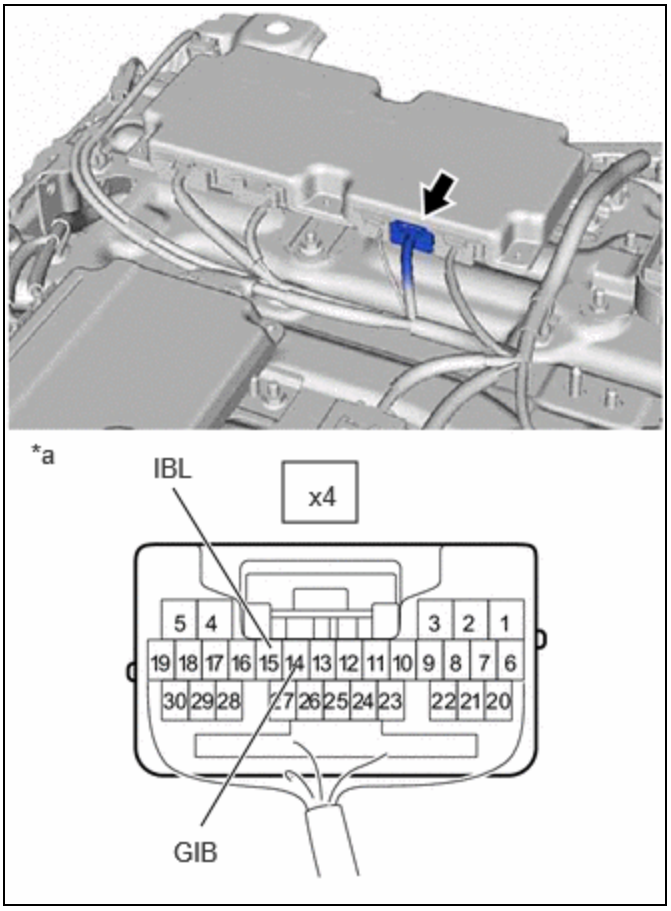
TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
x4-15 (IBL) - x4-14 (GIB)	Ignition switch ON	2.45 to 2.55 V

NOTICE:

Turning the ignition switch to ON with the service plug grip removed causes other DTCs to be stored. Clear the DTCs after performing this inspection.

Result:

PROCEED TO
OK
NG



*a	Component with harness connected (Battery ECU Assembly)

Post-procedure1

(f) Turn the ignition switch off.

(g) Disconnect the cable from the negative (-) auxiliary battery terminal.

(h) Disconnect the SST.

OK ▶ **REPLACE BATTERY ECU ASSEMBLY**

NG ▼

9.	**CHECK BATTERY ECU ASSEMBLY (BATTERY CURRENT SENSOR OUTPUT VOLTAGE (IBL))**

CAUTION:

Be sure to wear insulated gloves and protective goggles.

Pre-procedure1

(a) Check that the service plug grip is not installed.

NOTICE:

After removing the service plug grip, do not turn the ignition switch to ON (READY), unless instructed by the repair manual because this may cause a malfunction.

(b) Connect the SST.

HINT:

Click here INFO

(c) Connect the cable to the negative (-) auxiliary battery terminal.

(d) Turn the ignition switch to ON.

Procedure1

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

EWD INFO

Click Location & Routing(x4)
Click Connector(x4)

TESTER CONNECTION	CONDITION
x4-15 (IBL) - x4-14 (GIB)	Ignition switch ON

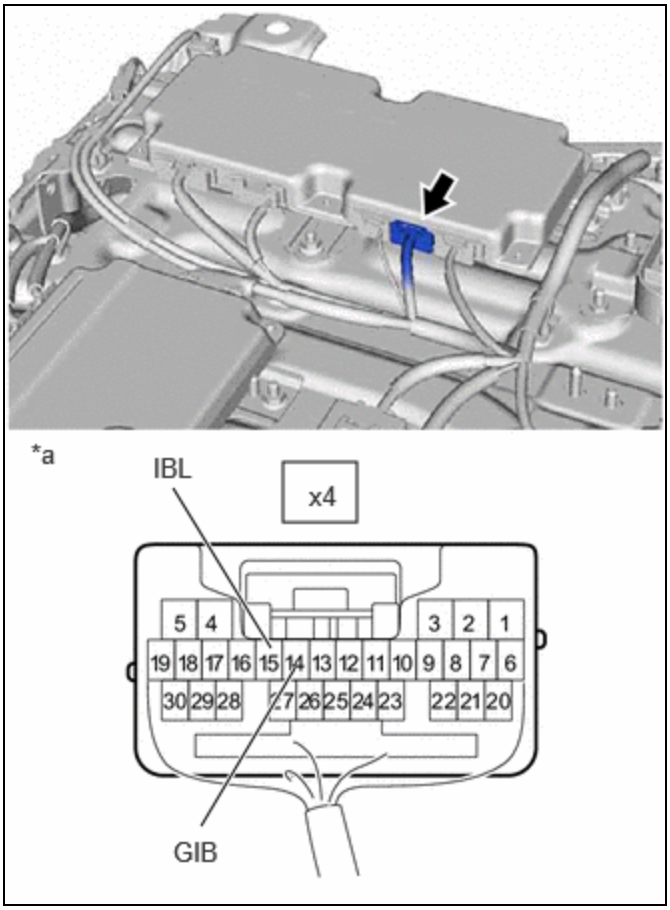
NOTICE:

Turning the ignition switch to ON with the service plug grip removed causes other DTCs to be stored. Clear the DTCs after performing this inspection.

Result:

RESULT	PROCEED TO
0.15 to 4.9 V	A

RESULT	PROCEED TO
Below 0.15 V	B
4.9 V or higher	C



*a	Component with harness connected (Battery ECU Assembly)

Post-procedure1

(f) Turn the ignition switch off.

(g) Disconnect the cable from the negative (-) auxiliary battery terminal.

(h) Disconnect the SST.

A ▶ **REPLACE NO. 1 TRACTION BATTERY DEVICE BOX ASSEMBLY**

C ▶ **GO TO STEP 11**

B ▼

10.	**CHECK BATTERY ECU ASSEMBLY (BATTERY CURRENT SENSOR OUTPUT VOLTAGE (IBL))**

CAUTION:

Be sure to wear insulated gloves and protective goggles.

Pre-procedure1

(a) Check that the service plug grip is not installed.

NOTICE:

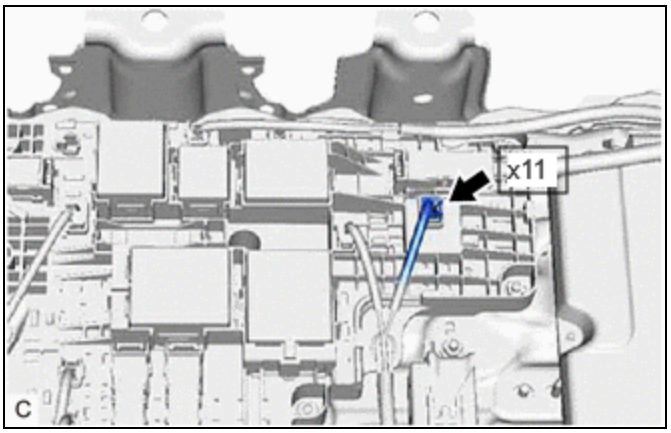
After removing the service plug grip, do not turn the ignition switch to ON (READY), unless instructed by the repair manual because this may cause a malfunction.

(b) Connect the SST.

HINT:

Click here INFO

(c) Disconnect the No. 1 traction battery device box assembly connector.



NOTICE:

Before disconnecting the connector, check that it is not loose or disconnected.

(d) Connect the cable to the negative (-) auxiliary battery terminal.

(e) Turn the ignition switch to ON.

Procedure1

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

Standard Voltage:

EWD INFO

Click Location & Routing(x4)
Click Connector(x4)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
x4-15 (IBL) - x4-14 (GIB)	Ignition switch ON	4.6 to 5.4 V

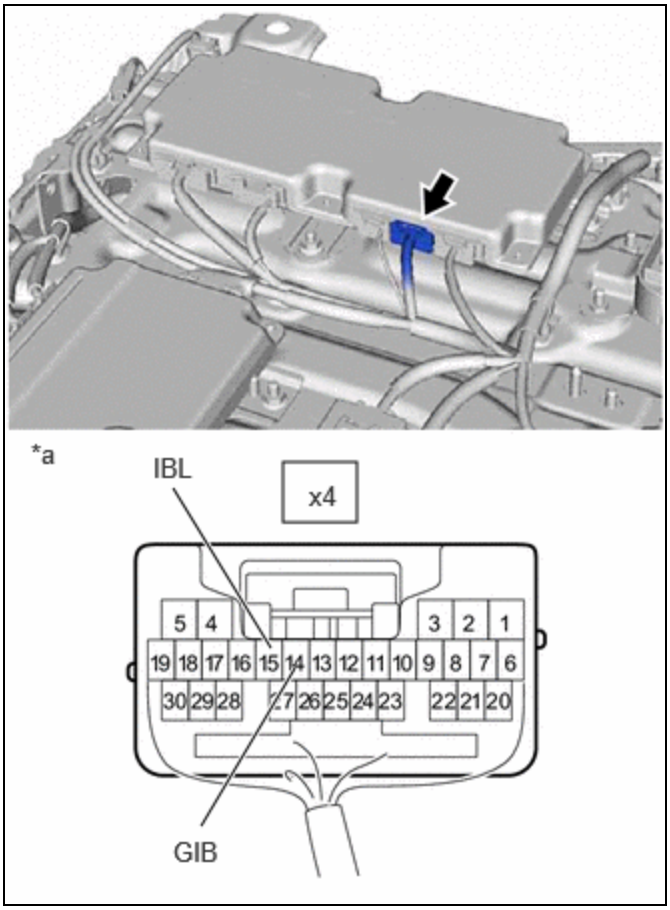
NOTICE:

- Turning the ignition switch to ON with the service plug grip removed causes other DTCs to be stored. Clear the DTCs after performing this inspection.

- If the ignition switch is turned to ON with the connectors disconnected, other DTCs will be stored. Be sure to clear the DTCs after the inspection.

Result:

PROCEED TO
OK
NG



*a	Component with harness connected (Battery ECU Assembly)

Post-procedure1

(g) Turn the ignition switch off.

(h) Disconnect the cable from the negative (-) auxiliary battery terminal.

(i) Reconnect the No. 1 traction battery device box assembly connector.

(j) Disconnect the SST.

OK ▶ **REPLACE NO. 1 TRACTION BATTERY DEVICE BOX ASSEMBLY**

NG ▶ **REPLACE BATTERY ECU ASSEMBLY**

11.	CHECK BATTERY ECU ASSEMBLY (VIB - IBL)

CAUTION:

Be sure to wear insulated gloves and protective goggles.

Pre-procedure1

(a) Check that the service plug grip is not installed.

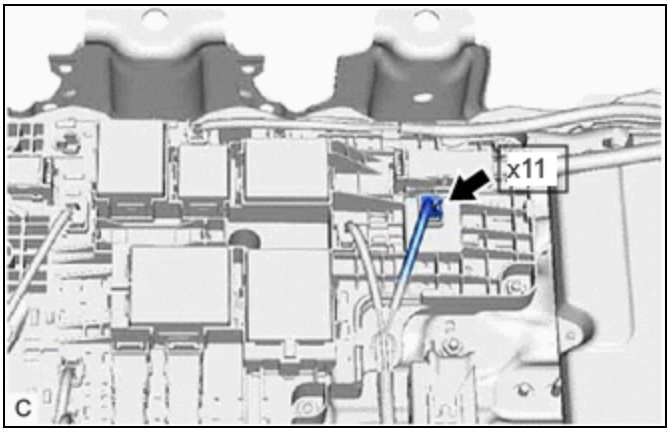
NOTICE:

After removing the service plug grip, do not turn the ignition switch to ON (READY), unless instructed by the repair manual because this may cause a malfunction.

(b) Disconnect the No. 1 traction battery device box assembly connector.

NOTICE:

Before disconnecting the connector, check that it is not loose or disconnected.



(c) Reconnect the battery ECU assembly connector.

Procedure1

(d) Measure the resistance according to the value(s) in the tables below.

Standard Resistance:

EWD INFO

Click Location & Routing(x11)
Click Connector(x11)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
x11-2 (VIB) - x11-1 (IBL)	Ignition switch off	10 kΩ or higher

Post-procedure1

(e) Reconnect the No. 1 traction battery device box assembly connector.

OK ▶ **REPLACE NO. 1 TRACTION BATTERY DEVICE BOX ASSEMBLY**

NG ▶ **REPLACE BATTERY ECU ASSEMBLY**

12.	**CHECK BATTERY ECU ASSEMBLY (BATTERY CURRENT SENSOR OUTPUT VOLTAGE (IB0))**

CAUTION:

Be sure to wear insulated gloves and protective goggles.

Pre-procedure1

(a) Check that the service plug grip is not installed.

NOTICE:

After removing the service plug grip, do not turn the ignition switch to ON (READY), unless instructed by the repair manual because this may cause a malfunction.

(b) Connect the SST.

HINT:

Click here INFO

(c) Connect the cable to the negative (-) auxiliary battery terminal.

(d) Turn the ignition switch to ON.

Procedure1

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

EWD INFO

Click Location & Routing(x4)
Click Connector(x4)

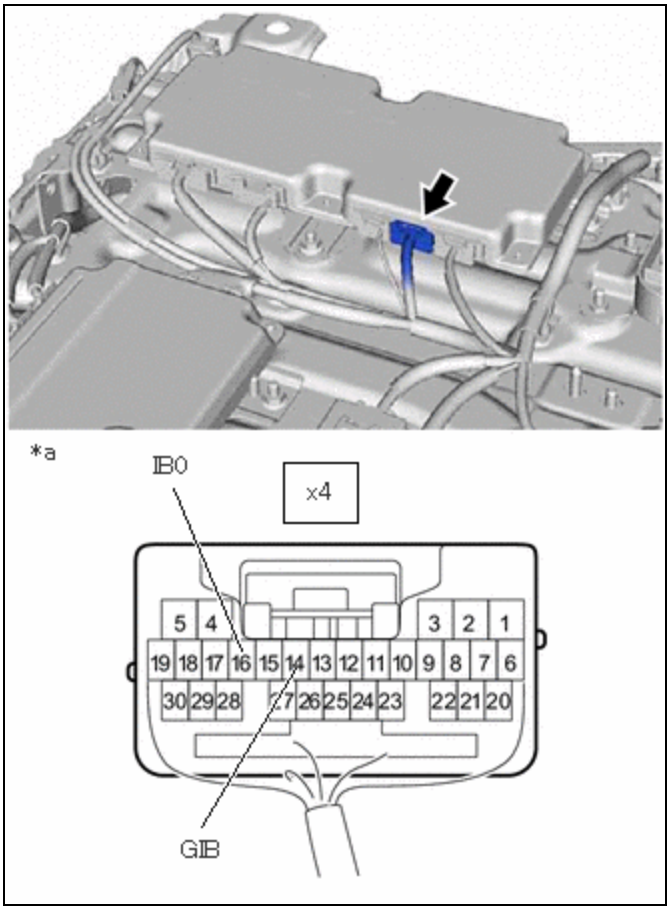
TESTER CONNECTION	CONDITION
x4-16 (IB0) - x4-14 (GIB)	Ignition switch ON

NOTICE:

Turning the ignition switch to ON with the service plug grip removed causes other DTCs to be stored. Clear the DTCs after performing this inspection.

Result:

RESULT	PROCEED TO
0.15 to 4.9 V	A
Below 0.15 V	B
4.9 V or higher	C



*a	Component with harness connected (Battery ECU Assembly)

Post-procedure1

(f) Turn the ignition switch off.

(g) Disconnect the cable from the negative (-) auxiliary battery terminal.

(h) Disconnect the SST.

A ▶ **REPLACE NO. 1 TRACTION BATTERY DEVICE BOX ASSEMBLY**

C ▶ **GO TO STEP 14**

B

13.	CHECK BATTERY ECU ASSEMBLY (BATTERY CURRENT SENSOR OUTPUT VOLTAGE (IB0))

CAUTION:

Be sure to wear insulated gloves and protective goggles.

Pre-procedure1

(a) Check that the service plug grip is not installed.

NOTICE:

After removing the service plug grip, do not turn the ignition switch to ON (READY), unless instructed by the repair manual because this may cause a malfunction.

(b) Connect the SST.

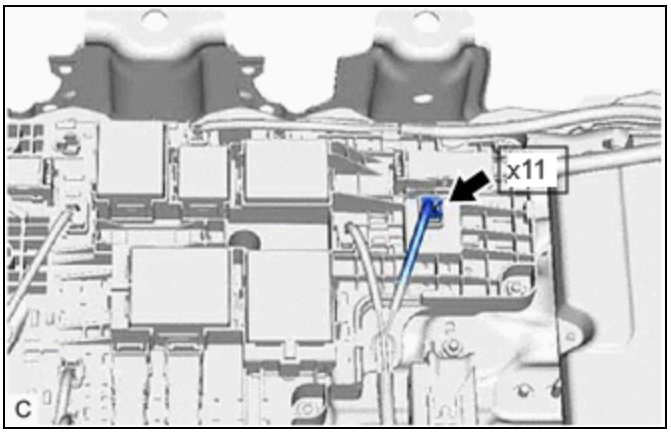
HINT:

Click here INFO

(c) Disconnect the No. 1 traction battery device box assembly connector.

NOTICE:

Before disconnecting the connector, check that it is not loose or disconnected.



(d) Connect the cable to the negative (-) auxiliary battery terminal.

(e) Turn the ignition switch to ON.

Procedure1

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

Standard Voltage:

EWD INFO

Click Location & Routing(x4)
Click Connector(x4)

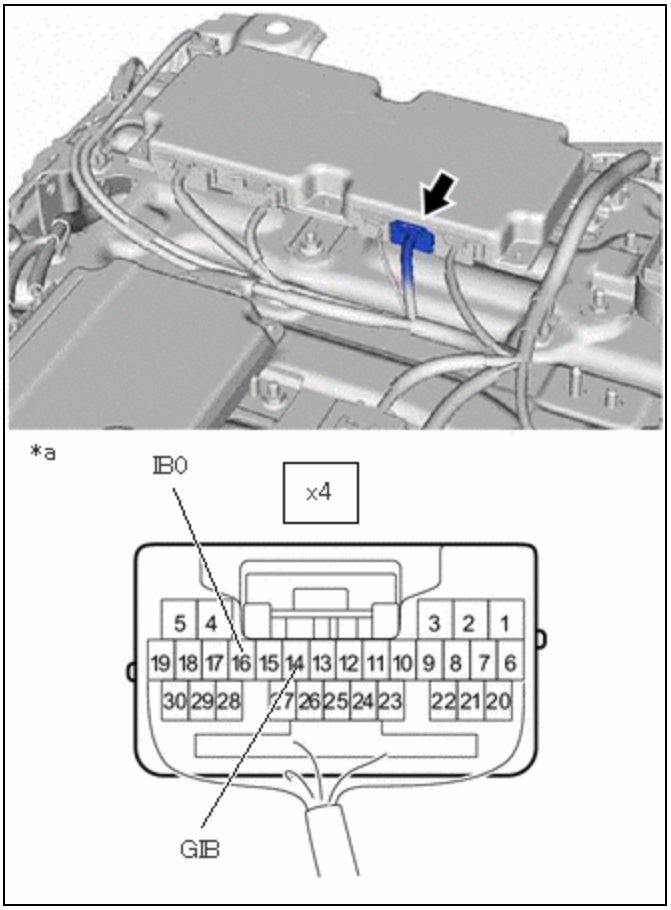
TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
x4-16 (IB0) - x4-14 (GIB)	Ignition switch ON	4.6 to 5.4 V

NOTICE:

- Turning the ignition switch to ON with the service plug grip removed causes other DTCs to be stored. Clear the DTCs after performing this inspection.
- If the ignition switch is turned to ON with the connectors disconnected, other DTCs will be stored. Be sure to clear the DTCs after the inspection.

Result:

PROCEED TO
OK
NG



*a	Component with harness connected (Battery ECU Assembly)

Post-procedure1

(g) Turn the ignition switch off.

(h) Disconnect the cable from the negative (-) auxiliary battery terminal.

(i) Reconnect the No. 1 traction battery device box assembly connector.

(j) Disconnect the SST.

OK ▶ **REPLACE NO. 1 TRACTION BATTERY DEVICE BOX ASSEMBLY**

NG ▶ **REPLACE BATTERY ECU ASSEMBLY**

14.	**CHECK BATTERY ECU ASSEMBLY (VIB - IB0)**

CAUTION:

Be sure to wear insulated gloves and protective goggles.

Pre-procedure1

(a) Check that the service plug grip is not installed.

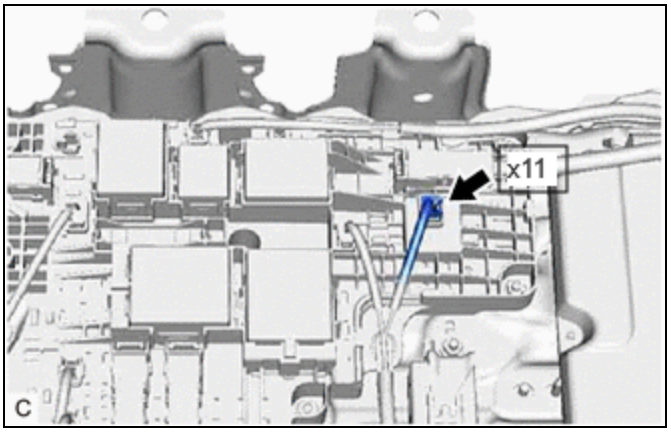
NOTICE:

After removing the service plug grip, do not turn the ignition switch to ON (READY), unless instructed by the repair manual because this may cause a malfunction.

(b) Disconnect the No. 1 traction battery device box assembly connector.

NOTICE:

Before disconnecting the connector, check that it is not loose or disconnected.



(c) Reconnect the battery ECU assembly connector.

Procedure1

(d) Measure the resistance according to the value(s) in the tables below.

Standard Resistance:

EWD INFO

Click Location & Routing(x11)
Click Connector(x11)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
x11-2 (VIB) - x11-3 (IB0)	Ignition switch off	10 kΩ or higher

Post-procedure1

(e) Reconnect the No. 1 traction battery device box assembly connector.

OK ▶ **REPLACE NO. 1 TRACTION BATTERY DEVICE BOX ASSEMBLY**

NG ▶ **REPLACE BATTERY ECU ASSEMBLY**

15.	**CHECK BATTERY ECU ASSEMBLY (BATTERY CURRENT SENSOR OUTPUT VOLTAGE (IB1))**

CAUTION:

Be sure to wear insulated gloves and protective goggles.

Pre-procedure1

(a) Check that the service plug grip is not installed.

NOTICE:

After removing the service plug grip, do not turn the ignition switch to ON (READY), unless instructed by the repair manual because this may cause a malfunction.

(b) Connect the SST.

HINT:

Click here INFO

(c) Connect the cable to the negative (-) auxiliary battery terminal.

(d) Turn the ignition switch to ON.

Procedure1

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

EWD INFO

Click Location & Routing(x4)
Click Connector(x4)

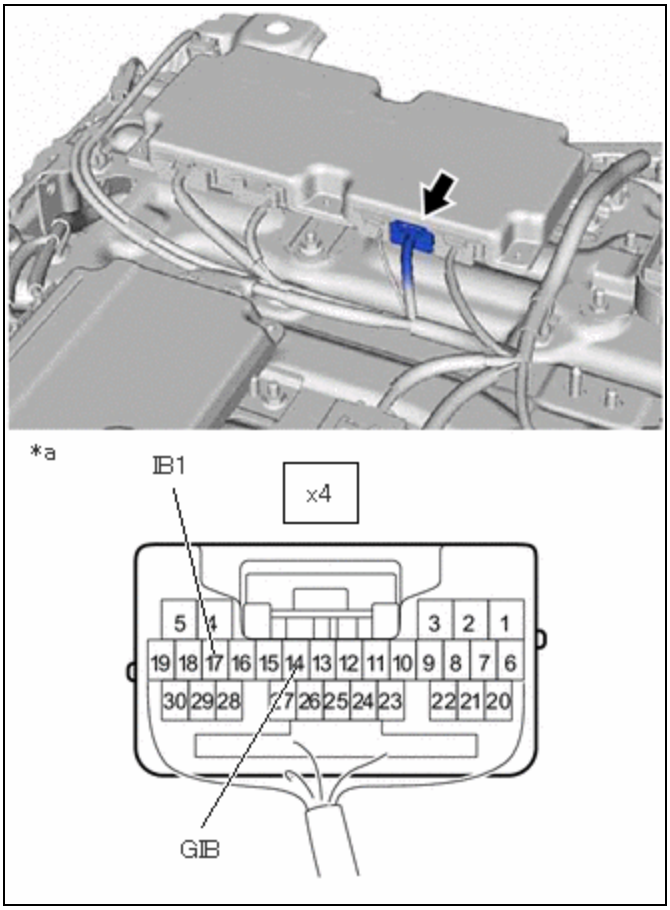
TESTER CONNECTION	CONDITION
x4-17 (IB1) - x4-14 (GIB)	Ignition switch ON

NOTICE:

Turning the ignition switch to ON with the service plug grip removed causes other DTCs to be stored. Clear the DTCs after performing this inspection.

Result:

RESULT	PROCEED TO
0.15 to 4.9 V	A
Below 0.15 V	B
4.9 V or higher	C



*a	Component with harness connected (Battery ECU Assembly)

Post-procedure1

(f) Turn the ignition switch off.

(g) Disconnect the cable from the negative (-) auxiliary battery terminal.

(h) Disconnect the SST.

A ▶ **REPLACE NO. 1 TRACTION BATTERY DEVICE BOX ASSEMBLY**

C ▶ **GO TO STEP 18**

B

16.	CHECK BATTERY ECU ASSEMBLY (BATTERY CURRENT SENSOR OUTPUT VOLTAGE (IB1))

CAUTION:

Be sure to wear insulated gloves and protective goggles.

Pre-procedure1

(a) Check that the service plug grip is not installed.

NOTICE:

After removing the service plug grip, do not turn the ignition switch to ON (READY), unless instructed by the repair manual because this may cause a malfunction.

(b) Connect the SST.

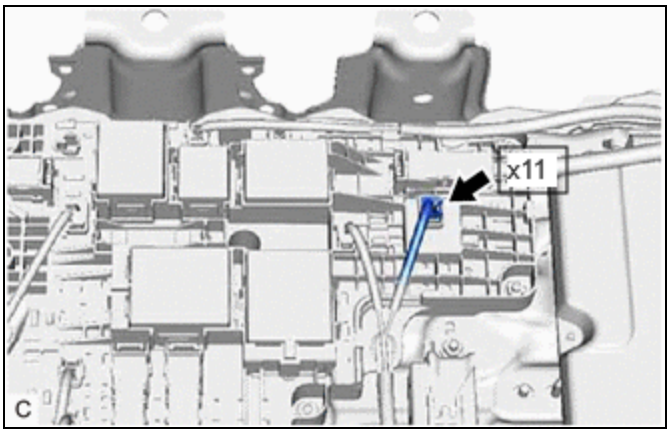
HINT:

Click here INFO

(c) Disconnect the No. 1 traction battery device box assembly connector.

NOTICE:

Before disconnecting the connector, check that it is not loose or disconnected.



(d) Connect the cable to the negative (-) auxiliary battery terminal.

(e) Turn the ignition switch to ON.

Procedure1

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

Standard Voltage:

EWD INFO

Click Location & Routing(x4)
Click Connector(x4)

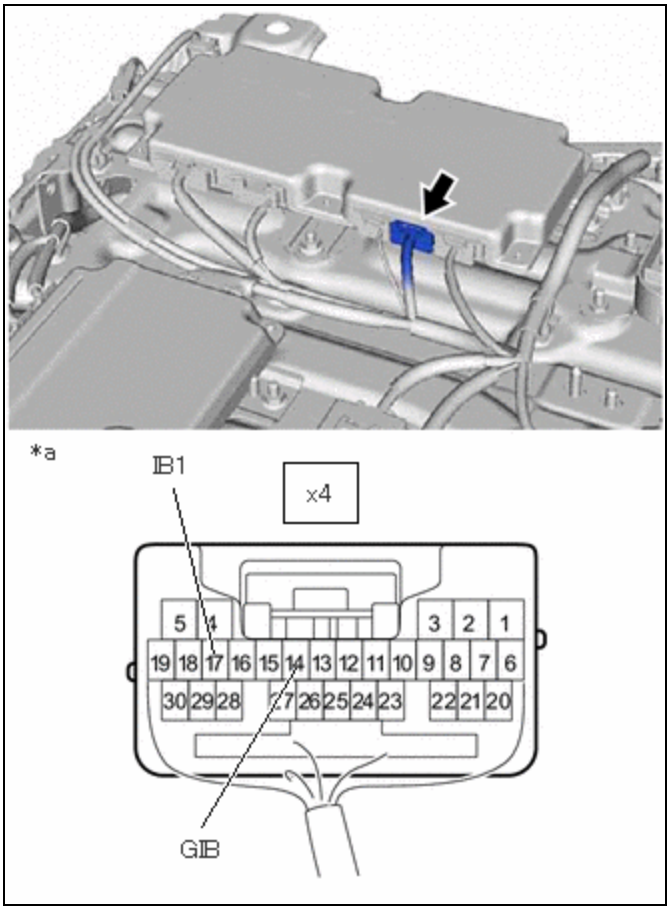
TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
x4-17 (IB1) - x4-14 (GIB)	Ignition switch ON	4.6 to 5.4 V

NOTICE:

- Turning the ignition switch to ON with the service plug grip removed causes other DTCs to be stored. Clear the DTCs after performing this inspection.
- If the ignition switch is turned to ON with the connectors disconnected, other DTCs will be stored. Be sure to clear the DTCs after the inspection.

Result:

PROCEED TO
OK
NG



*a	Component with harness connected (Battery ECU Assembly)

Post-procedure1

(g) Turn the ignition switch off.

(h) Disconnect the cable from the negative (-) auxiliary battery terminal.

(i) Reconnect the No. 1 traction battery device box assembly connector.

(j) Disconnect the SST.

OK ▶ **REPLACE NO. 1 TRACTION BATTERY DEVICE BOX ASSEMBLY**

NG ▶ **REPLACE BATTERY ECU ASSEMBLY**

17.	**CHECK BATTERY ECU ASSEMBLY (VIB VOLTAGE)**

CAUTION:

Be sure to wear insulated gloves and protective goggles.

Pre-procedure1

(a) Check that the service plug grip is not installed.

NOTICE:

After removing the service plug grip, do not turn the ignition switch to ON (READY), unless instructed by the repair manual because this may cause a malfunction.

(b) Connect the SST.

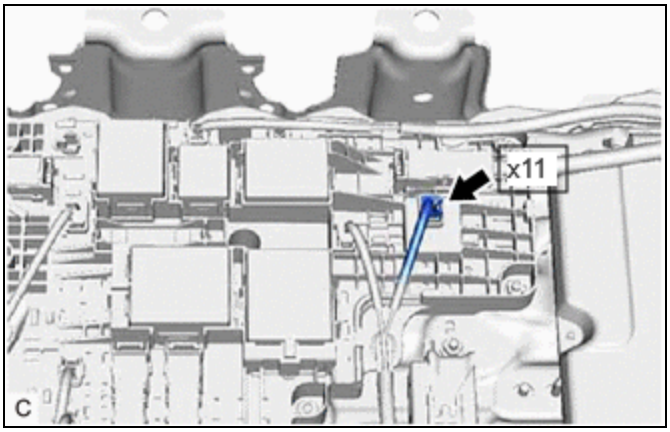
HINT:

Click here INFO

(c) Disconnect the No. 1 traction battery device box assembly connector.

NOTICE:

Before disconnecting the connector, check that it is not loose or disconnected.



(d) Connect the cable to the negative (-) auxiliary battery terminal.

(e) Turn the ignition switch to ON.

Procedure1

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

Standard Voltage:

EWD INFO

Click Location & Routing(x4)
Click Connector(x4)

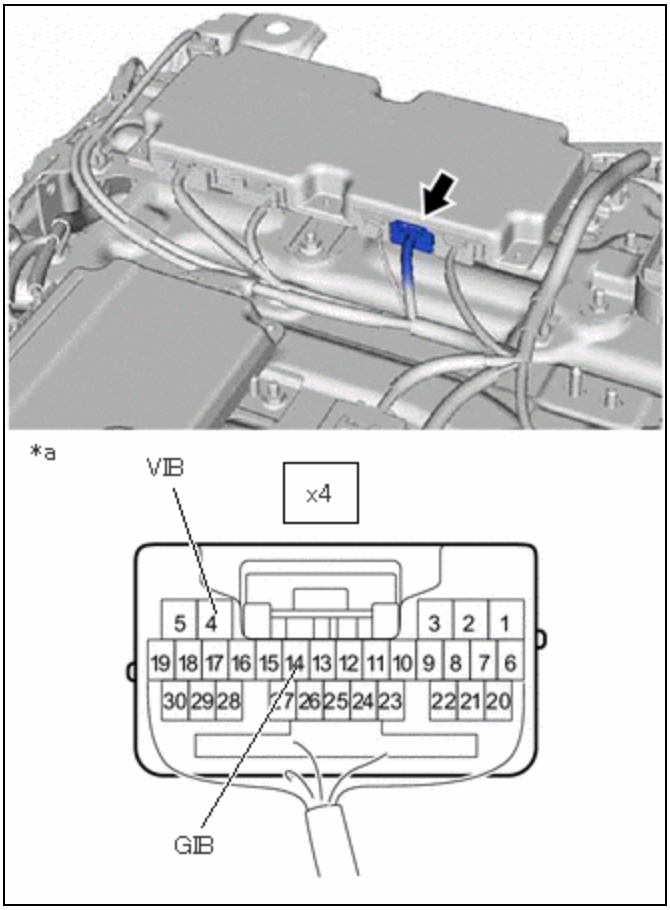
TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
x4-4 (VIB) - x4-14 (GIB)	Ignition switch ON	4.6 to 5.4 V

NOTICE:

- Turning the ignition switch to ON with the service plug grip removed causes other DTCs to be stored. Clear the DTCs after performing this inspection.
- If the ignition switch is turned to ON with the connectors disconnected, other DTCs will be stored. Be sure to clear the DTCs after the inspection.

Result:

PROCEED TO
OK
NG



*a	Component with harness connected (Battery ECU Assembly)

Post-procedure1

(g) Turn the ignition switch off.

(h) Disconnect the cable from the negative (-) auxiliary battery terminal.

(i) Reconnect the No. 1 traction battery device box assembly connector.

(j) Disconnect the SST.

OK ▶ **REPLACE NO. 1 TRACTION BATTERY DEVICE BOX ASSEMBLY**

NG ▶ **REPLACE BATTERY ECU ASSEMBLY**

18.	CHECK BATTERY ECU ASSEMBLY (VIB - IB1)

CAUTION:

Be sure to wear insulated gloves and protective goggles.

Pre-procedure1

(a) Check that the service plug grip is not installed.

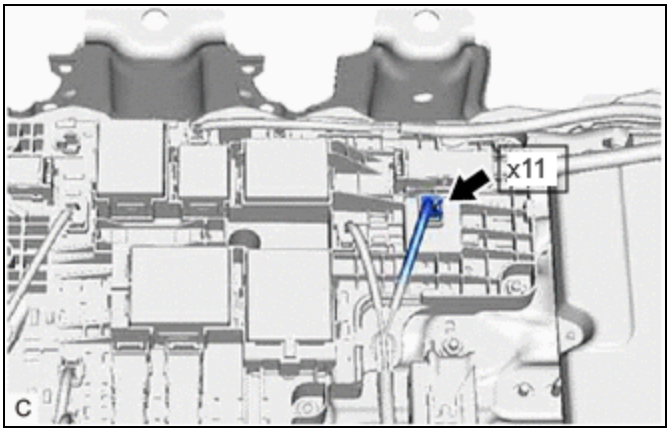
NOTICE:

After removing the service plug grip, do not turn the ignition switch to ON (READY), unless instructed by the repair manual because this may cause a malfunction.

(b) Disconnect the No. 1 traction battery device box assembly connector.

NOTICE:

Before disconnecting the connector, check that it is not loose or disconnected.



(c) Reconnect the battery ECU assembly connector.

Procedure1

(d) Measure the resistance according to the value(s) in the tables below.

Standard Resistance:

EWD INFO

Click Location & Routing(x11)
Click Connector(x11)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
x11-2 (VIB) - x11-5 (IB1)	Ignition switch off	10 kΩ or higher

Post-procedure1

(e) Reconnect the No. 1 traction battery device box assembly connector.

OK ▶ **REPLACE NO. 1 TRACTION BATTERY DEVICE BOX ASSEMBLY**

NG ▶ **REPLACE BATTERY ECU ASSEMBLY**