

DTC P0867-876 Transmission Fluid Pressure

DTC P0867-878 Transmission Fluid Pressure

DTC P0867-882 Transmission Fluid Pressure

for Preparation [Click here](#)

DESCRIPTION

For a description of the hybrid vehicle transmission assembly, ([Click here](#)).

DTC No.	INF Code	DTC Detection Condition	Trouble Area
P0867	876	Even if the oil pressure was applied after the ST-on state occurred, the hybrid vehicle control ECU was not able to confirm that the line pressure entered within the specified time.	<ul style="list-style-type: none">• Wire harness and connector• Hybrid vehicle transmission assembly• Transmission wire• Hybrid vehicle control ECU
P0867	878	After shifting is completed, the hybrid vehicle control ECU cannot confirm that the line pressure was applied within the specified time.	<ul style="list-style-type: none">• Wire harness and connector• Hybrid vehicle transmission assembly• Transmission wire• Hybrid vehicle control ECU
P0867	882	<ul style="list-style-type: none">• The hybrid vehicle control ECU cannot confirm that the line pressure is high even though the high line pressure is requested.• The hybrid vehicle control ECU cannot confirm that the line pressure is low even though the low line pressure is requested.	<ul style="list-style-type: none">• Wire harness or connector• Hybrid vehicle transmission assembly• Transmission wire• Hybrid vehicle control ECU

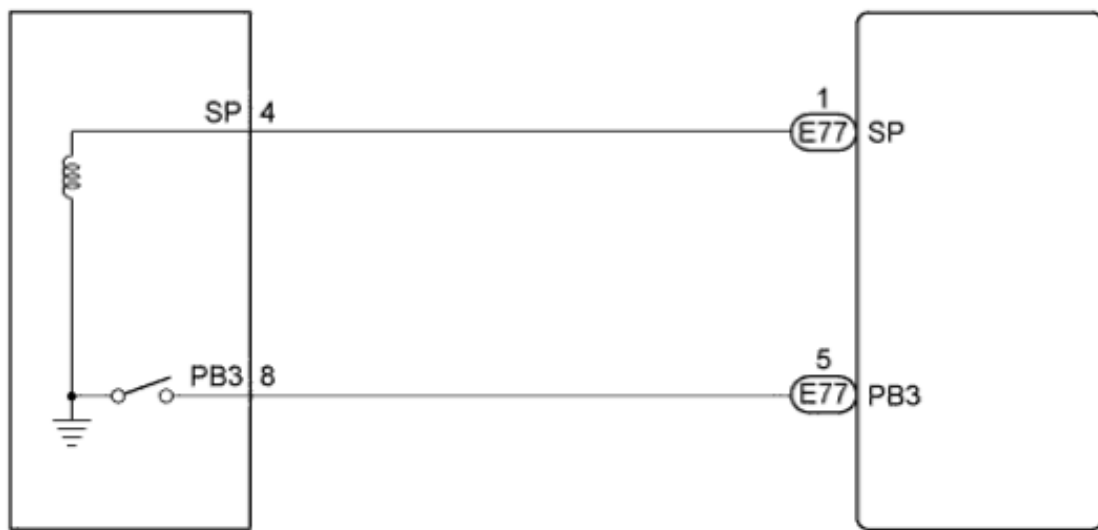
HINT:

The ST-on state is a state which occurs briefly as the power switch is pressed to enter the READY-on state.

WIRING DIAGRAM

E83
Hybrid Vehicle Transmission Assembly
(Transmission Wire)

Hybrid Vehicle Control ECU



HINT:

Refer to oil pump motor circuit ([Click here](#)).

INSPECTION PROCEDURE

CAUTION:

- Before inspecting the high-voltage system or disconnecting the low voltage connector of the inverter with converter assembly, take safety precautions such as wearing insulated gloves and removing the service plug grip to prevent electrical shocks. After removing the service plug grip, put it in your pocket to prevent other technicians from accidentally reconnecting it while you are working on the high-voltage system.
- After disconnecting the service plug grip, wait for at least 10 minutes before touching any of the high-voltage connectors or terminals. After waiting, check the voltage at the inspection point in the inverter with converter assembly. The voltage should be 0 V before beginning work.

HINT:

Waiting for at least 10 minutes is required to discharge the high-voltage capacitor inside the inverter with converter assembly.

1.CHECK DTC OUTPUT (HV)

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

c. Select the following menu items: Powertrain / Hybrid Control / DTC.

d. Check if DTCs are output.

Result:

DTC No.	Relevant Diagnosis
P2720-852, P2721-853	SP circuit
P2797-865, P2797-881, P2797-888, P2797-889, P2797-895, P2798-858, P2799-859	Oil pump circuit

YES

GO TO DTC CHART

NO

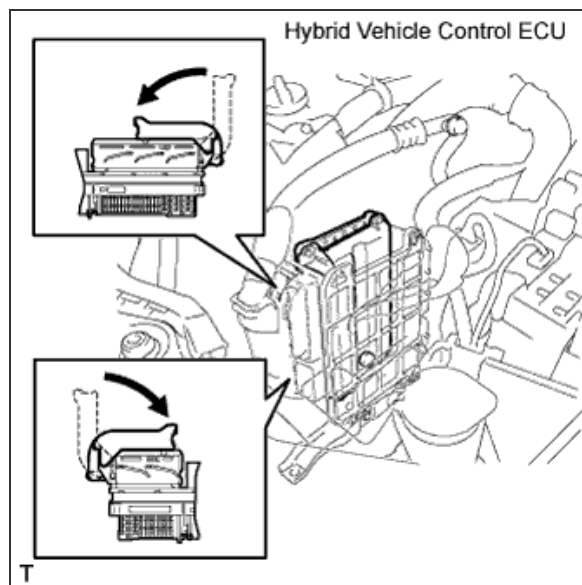
2.CHECK CONNECTOR CONNECTION CONDITION (HYBRID VEHICLE CONTROL ECU CONNECTOR)

a. Turn the power switch off.

b. Check the connections of the hybrid vehicle control ECU connectors.

Result:

The connectors are connected securely and there are no contact problems.



NG

CONNECT SECURELY

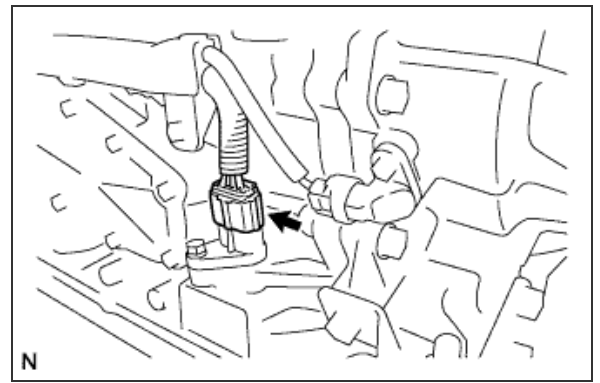
OK

3.CHECK CONNECTOR CONNECTION CONDITION (TRANSMISSION WIRE CONNECTOR)

a. Check the connection of the transmission wire connector.

Result:

The connector is connected securely and there are no contact problems.



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CONNECT SECURELY

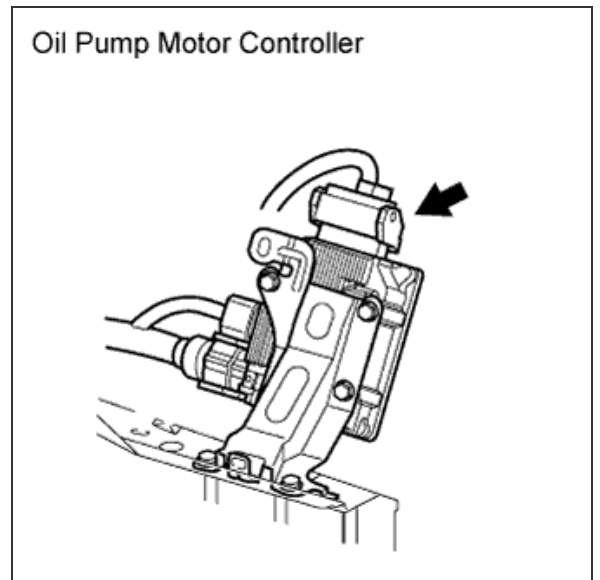
OK

4.CHECK CONNECTOR CONNECTION CONDITION (OIL PUMP MOTOR CONTROLLER CONNECTOR)

- a. Check the connections of the oil pump motor controller connectors.

Result:

The connectors are connected securely and there are no contact problems.



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CONNECT SECURELY

OK

5.CHECK HYBRID VEHICLE TRANSMISSION ASSEMBLY (SP SOLENOID VALVE, PB3 OIL PRESSURE SWITCH)

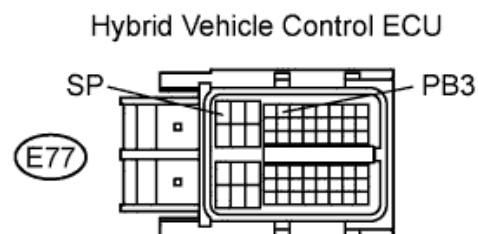
- a. Disconnect connector E77 from the hybrid vehicle control ECU.
- b. Measure the resistance according to the value(s) in the table below.

Standard resistance:

Tester Connection	Specified Condition
SP (E77-1) - Body ground	11 to 15 Ω at 20°C (68°F)
PB3 (E77-5) - Body ground	10 k Ω or more

Result:

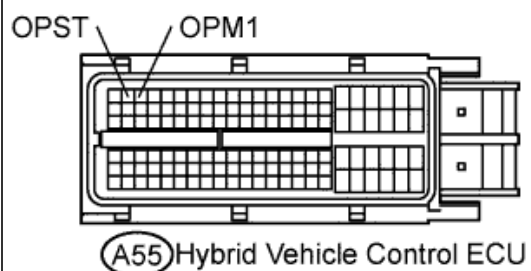
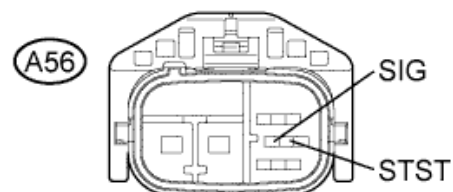
Result	Proceed to
Normal	A
Oil pressure switch (PB3) result not as specified	B
Solenoid valve (SP) result not as specified	C

Wire Harness Side:**B**[Go to step 20](#)**C**[Go to step 23](#)**A****6.CHECK HARNESS AND CONNECTOR (HV CONTROL ECU - OIL PUMP MOTOR CONTROLLER)**

- Turn the power switch off.
- Disconnect connector A55 from the hybrid vehicle control ECU.
- Disconnect connector A56 from the oil pump motor controller.
- Turn the power switch on (IG).
- Measure the voltage according to the value(s) in the table below.

Standard voltage:

Tester Connection	Specified Condition
OPM1 (A55-3) - Body ground	Below 1 V
OPST (A55-2) - Body ground	Below 1 V

NOTICE:**Wire Harness Side:****Oil Pump Motor Controller**

Turning the power switch on (IG) with the hybrid vehicle control ECU and oil pump motor controller connectors disconnected causes other DTCs to be stored. Clear the DTCs after performing this inspection.

- f. Turn the power switch off.
- g. Measure the resistance according to the value(s) in the table below.

Standard resistance:

Tester Connection	Specified Condition
OPM1 (A55-3) - SIG (A56-6)	Below 1 Ω
OPST (A55-2) - STST (A56-7)	Below 1 Ω

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

Standard resistance:

Tester Connection	Specified Condition
OPM1 (A55-3) or SIG (A56-6) - Body ground and other terminals	10 k Ω or more
OPST (A55-2) or STST (A56-7) - Body ground and other terminals	10 k Ω or more

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REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

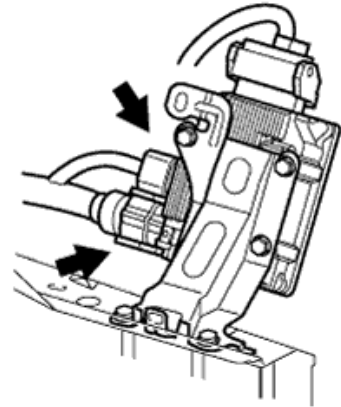
7.CHECK CONNECTOR CONNECTION CONDITION (OIL PUMP MOTOR CONTROLLER CONNECTOR)

- a. Check the connections of the oil pump motor controller connectors.

Result:

The connectors are connected securely and there are no contact problems.

Oil Pump Motor Controller



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CONNECT SECURELY

OK

8.CHECK FUSIBLE LINK (OIL PMP)

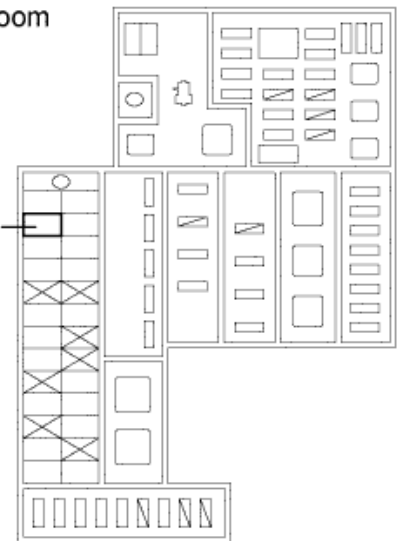
- a. Check that there is no open circuit in the fusible link (OIL PUMP) in the engine room R/B No. 1.

OK:

There is no open circuit in the fusible link.

Engine Room R/B No. 1

Oil Pump



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REPLACE FUSIBLE LINK

OK

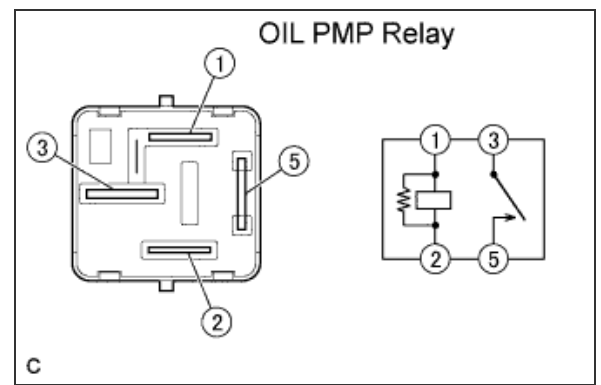
9.CHECK RELAY (OIL PUMP)

- a. Remove the OIL PUMP relay from the engine room R/B No. 1.

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

Standard resistance:

Tester Connection	Specified Condition
1 - 2	151 to 203 Ω
3 - 5	10 k Ω or more
3 - 5	Below 1 Ω (Apply battery voltage between 1 and 2)



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REPLACE RELAY

OK

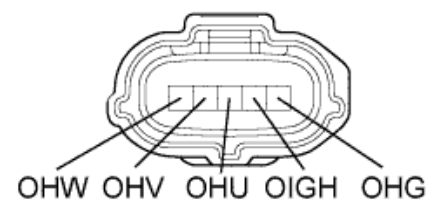
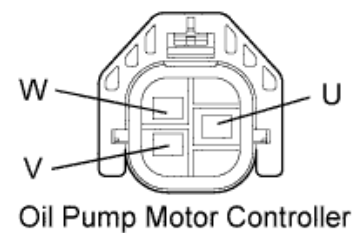
10.CHECK HYBRID VEHICLE TRANSMISSION ASSEMBLY (OIL PUMP MOTOR CONTROLLER)

- a. Disconnect connectors from the oil pump motor controller.
- b. Turn the power switch on (IG).
- c. Measure the voltage according to the value(s) in the table below.

Standard voltage:

Tester Connection	Specified Condition
W - Body ground	Below 1 V
U - Body ground	Below 1 V
V - Body ground	Below 1 V
OHV - Body ground	Below 1 V
OHU - Body ground	Below 1 V
OIGH - Body ground	Below 1 V
OHG - Body ground	Below 1 V

Wire Harness Side:



c

NOTICE:

Turning the power switch on (IG) with the oil pump motor controller connector disconnected causes other DTCs to be stored. Clear the DTCs after performing this inspection.

- d. Turn the power switch off.
- e. Measure the resistance according to the value(s) in the table below.

Standard resistance:

Tester Connection	Specified
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	Condition
W - U	Below 1 Ω
W - V	Below 1 Ω

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

Standard resistance:

Tester Connection	Specified Condition
W - Body ground	10 k Ω or more
U - Body ground	10 k Ω or more
V - Body ground	10 k Ω or more
OHW - Body ground	10 k Ω or more
OHV - Body ground	10 k Ω or more
OHU - Body ground	10 k Ω or more
OIGH - Body ground	10 k Ω or more
OHG - Body ground	10 k Ω or more

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REPLACE HYBRID VEHICLE TRANSMISSION ASSEMBLY ([Click here](#))

OK

11.CHECK OIL PUMP MOTOR CONTROLLER (POWER SOURCE CIRCUIT)

- Turn the power switch off.
- Disconnect connector A56 from the oil pump motor controller.
- Turn the power switch on (IG).
- Measure the voltage according to the value(s) in the table below.

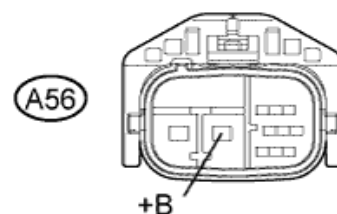
Standard voltage:

Tester Connection	Specified Condition
+B (A56-5) - Body ground	11 to 14 V

NOTICE:

Wire Harness Side:

Oil Pump Motor Controller



Turning the power switch on (IG) with the oil pump motor controller connector disconnected causes other DTCs to be stored. Clear the DTCs after performing this inspection.

- e. Turn the power switch off.
- f. Remove the OIL PUMP relay from the engine room R/B No. 1.
- g. Measure the resistance according to the value(s) in the table below.

Standard resistance:

Tester Connection	Specified Condition
Engine room R/B No. 1 OIL PUMP relay terminal 3 - +B (A56-5)	Below 1 Ω

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

Standard resistance:

Tester Connection	Specified Condition
Engine room R/B No. 1 OIL PUMP relay terminal 2 - Body ground	Below 1 Ω
Engine room R/B No. 1 OIL PUMP relay terminal 3 - Body ground	10 k Ω or more

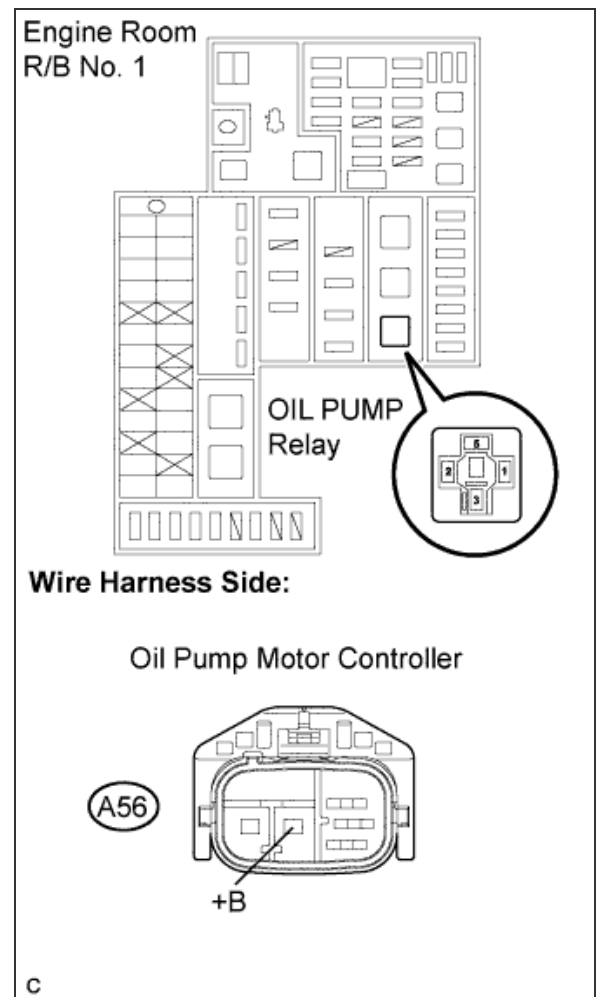
- i. Turn the power switch off.
- j. Disconnect connector A55 from the hybrid vehicle control ECU.
- k. Measure the resistance according to the value(s) in the table below.

Standard resistance (Check for open):

Tester Connection	Specified Condition
OPM2 (A55-58) - Engine room R/B No. 1 OIL PUMP relay terminal 1	Below 1 Ω

Standard resistance (Check for short):

Tester Connection	Specified Condition
OPM2 (A55-58) or Engine room R/B No. 1 OIL PUMP	10 k Ω or



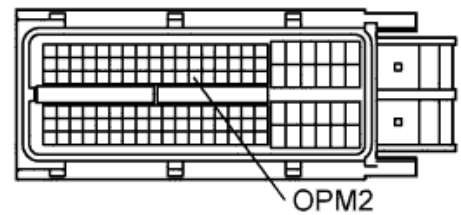
c

relay terminal 1 - Body
ground

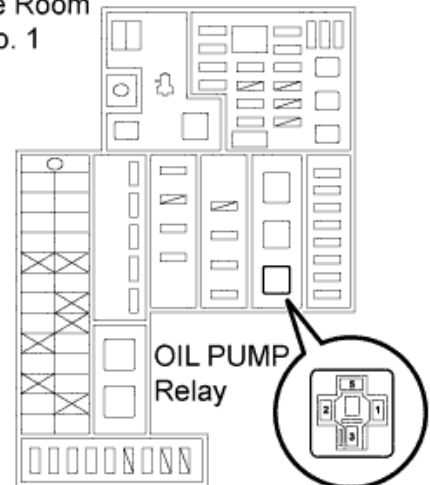
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Wire Harness Side:

(A55) Hybrid Vehicle Control ECU



Engine Room
R/B No. 1



c

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REPAIR OR REPLACE HARNESS OR
CONNECTOR

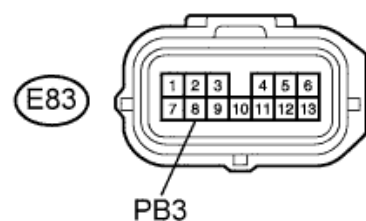
OK

12.READ VALUE USING INTELLIGENT TESTER (LINE PRESSURE)

- Connect the hybrid vehicle control ECU connector.
- Disconnect connector E83 from the transmission wire.
- Connect the intelligent tester to the DLC3.
- Turn the power switch on (IG).
- Select the following menu items: Powertrain / Hybrid Control / Data List / Line Pressure.

Wire Harness Side:

Transmission Wire



- Check "Line Pressure" when terminal 8 (PB3) of the transmission wire vehicle side connector is connected to body ground, and when terminal 8 (PB3) is not connected to body ground.

Result:

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Transmission wire vehicle side connector terminal	Data List
PB3 (E83-8)	Line Pressure
Connected to body ground	ON
Not connected to body ground	OFF

NOTICE:

Turning the power switch on (IG) with the transmission wire connector disconnected causes other DTCs to be stored. Clear the DTCs after performing this inspection.

NG

[Go to step 24](#)

OK

13.CLEAR DTC

- Connect connector E83 to the transmission wire.
- Connect the intelligent tester to the DLC3.
- Turn the power switch on (IG).
- Read and record the DTCs and freeze frame data.
- Select the following menu items: Powertrain / Hybrid Control / DTC / Clear.
- Clear the DTCs.

NEXT

14.CHECK DATA LIST (LINE PRESSURE SOLENOID, B2 OIL PRESSURE, LINE PRESSURE)

- Connect the intelligent tester to the DLC3.
- Turn the power switch on (IG).
- Select the following menu items: Powertrain / Hybrid Control / Data List / Line Pressure Solenoid, B2 Oil Pressure, Line Pressure.
- Check the data list items (Line Press, B2 Oil Press, and Line Press SOL) for approximately 8 seconds after pressing the power switch with the brake pedal depressed.

Result:

Line Pressure Solenoid	B2 Oil Pressure	Line Pressure	Malfunction Condition
OFF	ON	OFF	PB3 oil pressure switch malfunction
OFF	OFF	OFF	Hybrid vehicle transmission assembly malfunction

Result:

Result	Proceed to
Result not as specified (READY indicator comes on within 8 seconds after pressing the power switch)	A
PB3 oil pressure switch malfunction	B
Hybrid vehicle transmission assembly malfunction	C

B[Go to step 25](#)**C****REPLACE HYBRID VEHICLE TRANSMISSION ASSEMBLY** ([Click here](#))**A****15.SIMULATION TEST****HINT:**

If the result of any of the following inspections is not acceptable, replace the hybrid vehicle transmission assembly.

- Turn the power switch on (READY).
- Select the following menu items: Powertrain / Hybrid Control / Data List / Line Pressure Solenoid, Line Pressure.
- When "Line Pressure Solenoid" is ON, check that "Line Pressure" is OFF.

Result:

No malfunction occurs after "Line Pressure Solenoid" is ON for 10 seconds successively.

- Select the following menu items: Powertrain / Hybrid Control / Active Test / Control the Shift Position.
- Select the following menu items: User Data / B1 Oil Pressure, B2 Oil Pressure, Line Pressure, Line Pressure Solenoid.
- Perform the "Control the Shift Position" active test.
- Read the user data.

Result:

ACTIVE TEST	Data List			
Control the				Line Pressure

Shift Position	B1 Oil Pressure	B2 Oil Pressure	Line Pressure	Solenoid
Lo	OFF	ON	ON	OFF
Hi	ON	OFF	ON	OFF

- h. Switch the shift position between "Lo" and "Hi" several times using the "Control the Shift Position" active test. Make sure that there is no abnormal data in the data list.

Result:

There is no abnormal data in the data list.

NOTICE:

Transmission system DTCs may be set if the "Control the Shift Position" active test is cancelled before it is completed.

- i. Turn the power switch on (IG).
- j. Select the following menu items: Powertrain / Hybrid Control / Active Test / Activate the Oil Pump (500rpm), Activate the Oil Pump (1000rpm).
- k. Select the following menu items: User Data / OPM Target Revolution, OPM Revolution.
- l. Perform the "Activate the Oil Pump (500rpm)" and "Activate the Oil Pump (1000rpm)" active tests.
- m. Read the User Data.

Result:

"OPM Target Revolution" and "OPM Revolution" values are almost the same.

NOTICE:

Make sure that the auxiliary battery is not discharged.

NG

REPLACE HYBRID VEHICLE TRANSMISSION ASSEMBLY ([Click here](#))

OK

16.CHECK FOR INTERMITTENT PROBLEMS

- a. Check for intermittent problems ([Click here](#)).

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REPAIR OR REPLACE MALFUNCTIONING PARTS, COMPONENT AND AREA

OK

17.CHECK FOR FLUID LEAK

- a. Check for fluid leaks from the hybrid vehicle transmission assembly.

OK:

There are no fluid leaks.

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REPAIR OR REPLACE HYBRID VEHICLE
TRANSMISSION ASSEMBLY ([Click here](#))

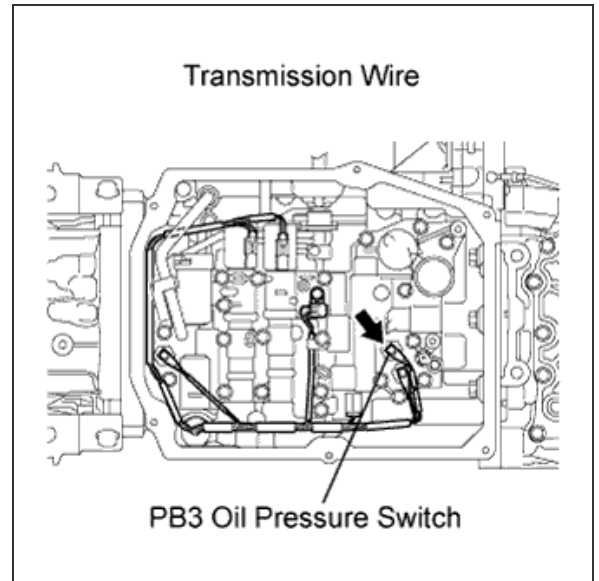
OK

18.CHECK CONNECTOR CONNECTION CONDITION (PB3 OIL PRESSURE SWITCH)

- a. Remove the oil strainer assembly ([Click here](#)).
- b. Check the connection of the PB3 oil pressure switch connector.

Result:

The connector is connected securely and there are no contact problems.



NG

CONNECT SECURELY

OK

19.CHECK HARNESS AND CONNECTOR (TRANSMISSION WIRE)

- a. Disconnect connector E83 from the transmission wire.
- b. Disconnect connector from the PB3 oil pressure switch.
- c. Turn the power switch on (IG).
- d. Measure the voltage according to the value(s) in the table below.

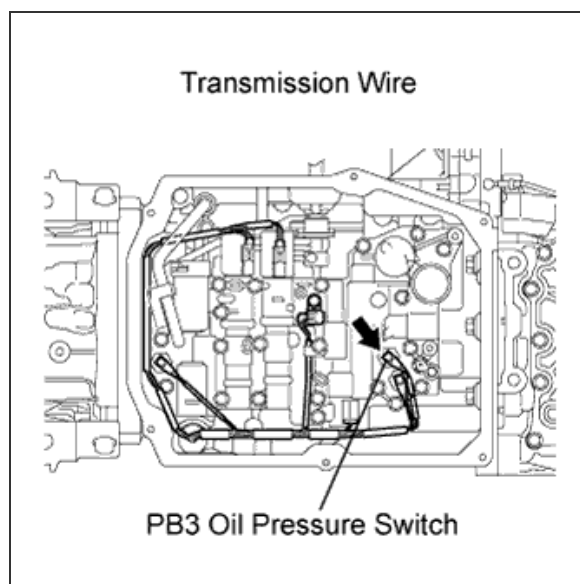
Standard voltage:

Tester Connection	Specified Condition
Transmission wire PB3 oil pressure switch side - Body ground	Below 1 V

NOTICE:

Turning the power switch on (IG) with the transmission wire connector disconnected causes other DTCs to be stored. Clear the DTCs after performing this inspection.

- e. Turn the power switch off.



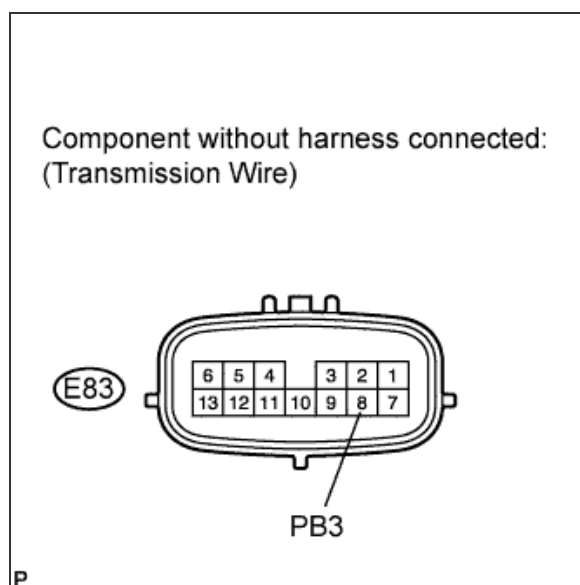
- f. Measure the resistance according to the value(s) in the table below.

Standard resistance (Check for open):

Tester Connection	Specified Condition
Transmission wire PB3 oil pressure switch side - PB3 (E83-8)	Below 1 Ω

Standard resistance (Check for short):

Tester Connection	Specified Condition
Transmission wire PB3 oil pressure switch side or PB3 (E83-8) - Body ground and other terminals	10 k Ω or more



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REPLACE TRANSMISSION WIRE ([Click here](#))

OK

REPLACE PB3 OIL PRESSURE SWITCH ([Click here](#))

20.CHECK HARNESS AND CONNECTOR (HV CONTROL ECU - TRANSMISSION WIRE)

- a. Disconnect connector E83 from the transmission wire.
- b. Turn the power switch on (IG).

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

Standard voltage:

Tester Connection	Specified Condition
PB3 (E77-5) - Body ground	Below 1 V

NOTICE:

Turning the power switch on (IG) with the hybrid vehicle control ECU connectors disconnected causes other DTCs to be stored. Clear the DTCs after performing this inspection.

- d. Turn the power switch off.
- e. Measure the resistance according to the value(s) in the table below.

Standard resistance (Check for short):

Tester Connection	Specified Condition
PB3 (E77-5) or PB3 (E83-8) - Body ground and other terminals	10 kΩ or more

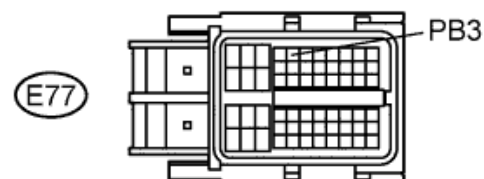
Wire Harness Side:

Transmission Wire



PB3

Hybrid Vehicle Control ECU



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REPAIR OR REPLACE HARNESS OR CONNECTOR

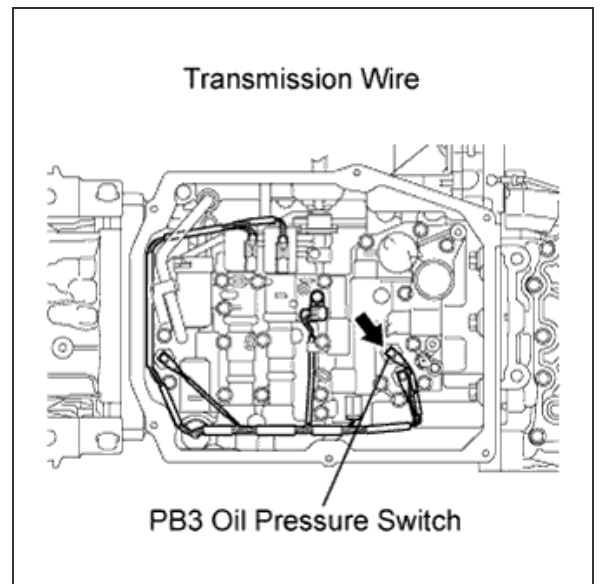
OK

21.CHECK CONNECTOR CONNECTION CONDITION (PB3 OIL PRESSURE SWITCH)

- a. Remove the oil strainer assembly ([Click here](#)).
- b. Check the connection of the PB3 oil pressure switch connector.

Result:

The connector is connected securely and there are no contact problems.



NG

CONNECT SECURELY

OK

22.CHECK HARNESS AND CONNECTOR (TRANSMISSION WIRE)

a. Disconnect connector E83 from the transmission wire.

b. Disconnect connector from the PB3 oil pressure switch.

c. Turn the power switch on (IG).

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

Standard voltage:

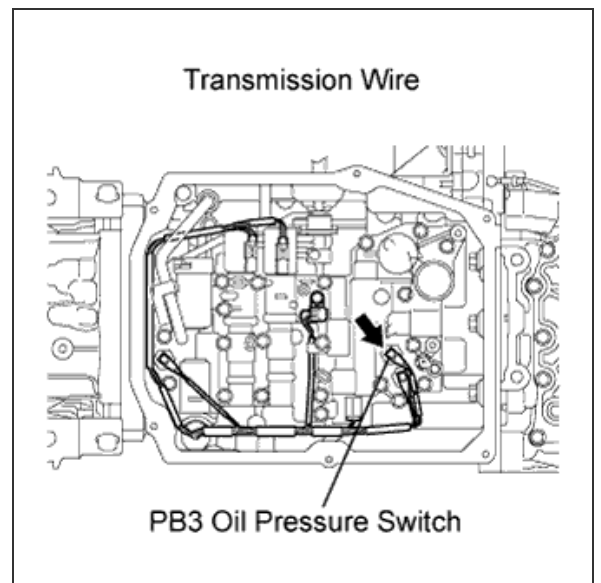
Tester Connection	Specified Condition
Transmission wire PB3 oil pressure switch side - Body ground	Below 1 V

NOTICE:

Turning the power switch on (IG) with the hybrid vehicle control ECU connectors disconnected causes other DTCs to be stored. Clear the DTCs after performing this inspection.

e. Turn the power switch off.

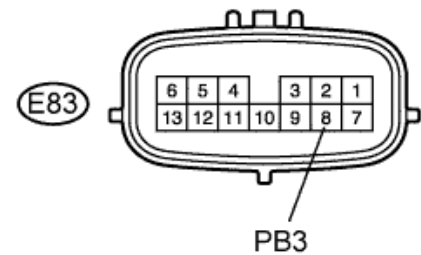
f. Measure the resistance according to the value(s) in the table below.



Standard resistance (Check for short):

Tester Connection	Specified Condition
Transmission wire PB3 oil pressure switch side or PB3 (E83-8) - Body ground and other terminals	10 kΩ or more

Component without harness connected:
(Transmission Wire)



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REPLACE TRANSMISSION WIRE ([Click here](#))

OK

REPLACE PB3 OIL PRESSURE SWITCH ([Click here](#))

23.CHECK HARNESS AND CONNECTOR (HV CONTROL ECU - TRANSMISSION WIRE)

- Disconnect connector E83 from the transmission wire.
- Turn the power switch on (IG).
- Measure the voltage according to the value(s) in the table below.

Standard voltage:

Tester Connection	Specified Condition
SP (E77-1) - Body ground	Below 1 V

NOTICE:

Turning the power switch on (IG) with the hybrid vehicle control ECU connectors disconnected causes other DTCs to be stored. Clear the DTCs after performing this inspection.

- Turn the power switch off.
- Measure the resistance according to the value(s) in the table below.

Standard resistance (Check for open):

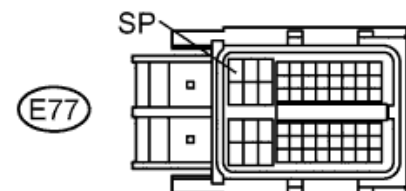
Tester Connection	Specified Condition
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Wire Harness Side:

Transmission Wire



Hybrid Vehicle Control ECU



SP (E77-1) - SP (E83-4)	Below 1 Ω
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Standard resistance (Check for short):

Tester Connection	Specified Condition
SP (E77-1) or SP (E83-4) - Body ground and other terminals	10 k Ω or more

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE HYBRID VEHICLE TRANSMISSION ASSEMBLY ([Click here](#))

24.CHECK HARNESS AND CONNECTOR (HV CONTROL ECU - TRANSMISSION WIRE)

- a. Disconnect connector E77 from the hybrid vehicle control ECU.

- b. Disconnect connector E83 from the transmission wire.
- c. Turn the power switch on (IG).
- d. Measure the voltage according to the value(s) in the table below.

Standard voltage:

Tester Connection	Specified Condition
PB3 (E77-5) - Body ground	Below 1 V

NOTICE:

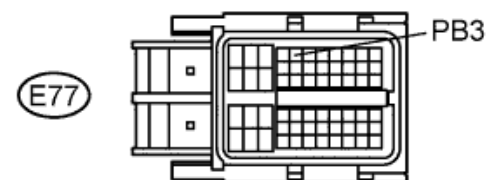
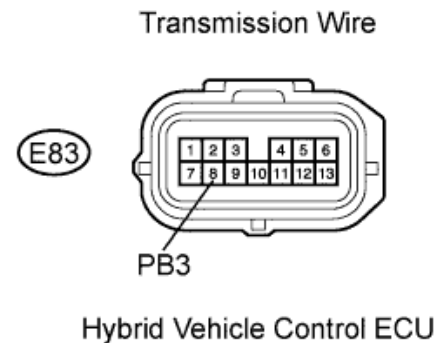
Turning the power switch on (IG) with the hybrid vehicle control ECU connectors disconnected causes other DTCs to be stored. Clear the DTCs after performing this inspection.

- e. Turn the power switch off.
- f. Measure the resistance according to the value(s) in the table below.

Standard resistance (Check for open):

Tester Connection	Specified Condition
PB3 (E77-5) - PB3 (E83-8)	Below 1 Ω

Wire Harness Side:



Standard resistance (Check for short):

Tester Connection	Specified Condition
PB3 (E77-5) or PB3 (E83-8) - Body ground and other terminals	10 kΩ or more

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REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

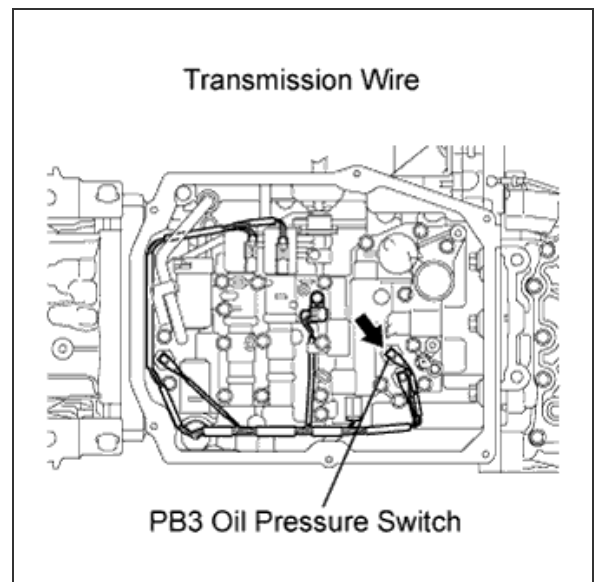
REPLACE HYBRID VEHICLE CONTROL ECU ([Click here](#))

25.CHECK CONNECTOR CONNECTION CONDITION (PB3 OIL PRESSURE SWITCH)

- Remove the oil strainer assembly ([Click here](#)).
- Check the connection of the PB3 oil pressure switch connector.

Result:

The connector is connected securely and there are no contact problems.



NG

CONNECT SECURELY

OK

26.CHECK HARNESS AND CONNECTOR (TRANSMISSION WIRE)

- Disconnect connector E83 from the transmission wire.
- Disconnect connector from the PB3 oil pressure switch.
- Turn the power switch on (IG).

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

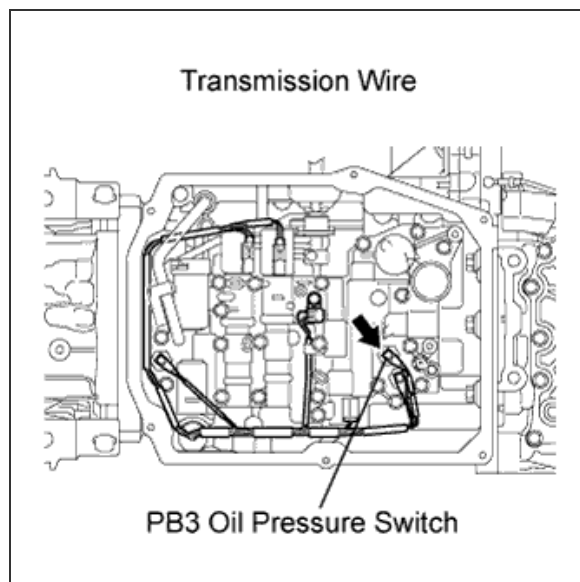
Standard voltage:

Tester Connection	Specified Condition
Transmission wire PB3 oil pressure switch side - Body ground	Below 1 V

NOTICE:

Turning the power switch on (IG) with the transmission wire connectors disconnected causes other DTCs to be stored. Clear the DTCs after performing this inspection.

- e. Turn the power switch off.



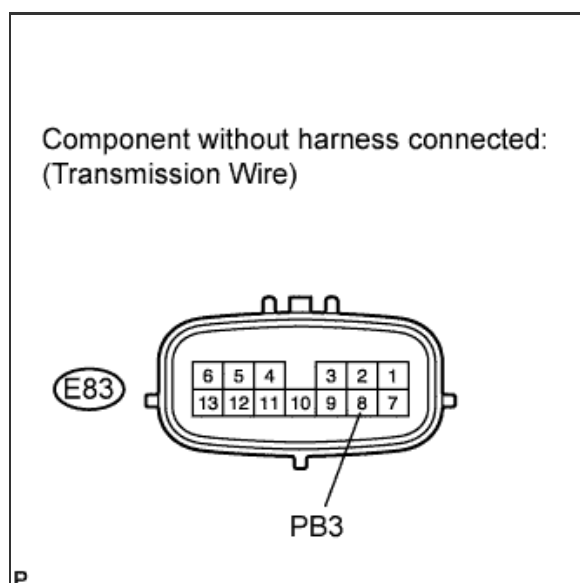
- f. Measure the resistance according to the value(s) in the table below.

Standard resistance (Check for open):

Tester Connection	Specified Condition
Transmission wire PB3 oil pressure switch side - PB3 (E83-8)	Below 1 Ω

Standard resistance (Check for short):

Tester Connection	Specified Condition
Transmission wire PB3 oil pressure switch side or PB3 (E83-8) - Body ground and other terminals	10 k Ω or more



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REPLACE TRANSMISSION WIRE ([Click here](#))

OK

REPLACE PB3 OIL PRESSURE SWITCH ([Click here](#))

