

# SERVICE MANUAL INFORMATION

Group:	SERVICE MANUAL UPDATE
Bulletin No:	SB-15-034
Issue Date:	8-12-2015

## Subject: CORRECTION OF WORKSHOP MANUAL FOR HINO COE Revision of Troubleshooting Procedure for the DTC P0A84 (TC66)

**RELEVANT MODEL:** 14MY-15MY Hino 155, 195, 155h, 195h

The following is to inform you of the above caption. This service data should be attached to the relevant pages of the workshop manuals for maintenance and to use for servicing.

### OVERVIEW:

Troubleshooting information and inspection procedure of the DTC P0A84 (TC66) were revised.

### RELEVANT MANUALS:

MODEL	MANUAL No.	CHAPTER	DTC
2014 MY	S7-LXJE03C	HYBRID	P0A84 (TC66)
2015 MY	S7-LXJE05A	HYBRID	P0A84 (TC66)



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Group:	SERVICE MANUAL UPDATE
Bulletin No:	SB-15-034
Issue Date:	8-12-2015

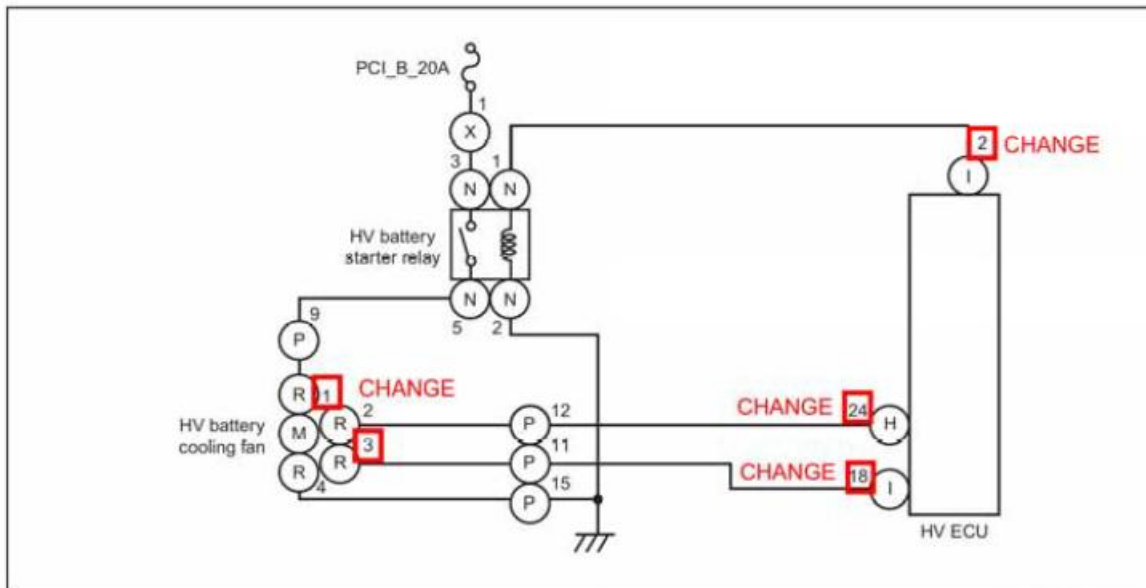
3-128

HYBRID/TROUBLE SHOOTING

## DTC: P0A84 (TC66)

EN01H03ZZ030602003026

### DTC: P0A84 (TC66) Abnormality in HV battery cooling fan drive signal Low INFORMATION



SHTS03ZZ0300112

#### 1. Technical description

- 

#### <Description of malfunction>

- Detected a disconnection or GND short circuit in the HV battery cooling fan drive signal circuit.

#### 2. DTC set condition

##### (1) DTC detection condition

- The starter key is set to the ON position.
- The control power supply voltage is 10 V or more.
- The output of HV battery ECU start relay is ON.

##### (2) Judgement criteria

- The following conditions are met continuously for 0.5 second or more:  
Input signal for monitoring HV battery cooling fan drive signal is 0 Hz.  
Input signal for monitoring HV battery cooling fan drive signal is less than 0.2V.

#### 3. Reset condition

- Input signal for monitoring HV battery cooling fan drive signal remains at 1 Hz or more for 5 seconds or more.

#### 4. Indication, warning or system control regulation when the DTC is set.

- MIL: ON
- HV warning light: ON



A Toyota Group Company

# SERVICE MANUAL INFORMATION

Group:	SERVICE MANUAL UPDATE
Bulletin No:	SB-15-034
Issue Date:	8-12-2015

## HYBRID/TROUBLE SHOOTING

3-129

### 5. Symptoms on the vehicle when the DTC is set

<Symptoms on the vehicle due to backup control (fail safe)>

- -

<Symptoms on the vehicle due to malfunction>

- -

### 6. Pre-inspection work

- Check the battery voltage to make sure that there is no abnormality.

### 7. After-inspection work

- Clear the recorded DTC.
- Check that no DTC is detected after test-driving the vehicle.

### 8. Estimated failure factors

- Disconnection or short circuit of harness
- Improper connector connection or fitting
- Malfunction of HV battery cooling fan
- Malfunction of HV ECU

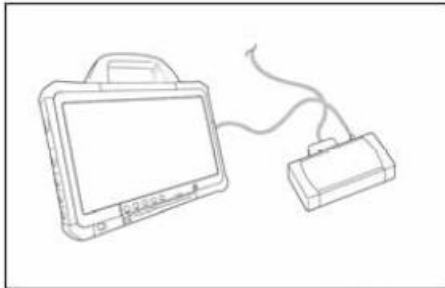


A Toyota Group Company

Group:	SERVICE MANUAL UPDATE
Bulletin No:	SB-15-034
Issue Date:	8-12-2015

## INSPECTION PROCEDURE: P0A84 (TC66)

### 1 Reading the DTC [HINO DX II]



SHTS03ZZZ0300113

1. Set the starter key to the "LOCK" position.
2. Connect the diagnosis tool (HINO DX II) to the vehicle.
3. Set the starter key to the "ON" position.
4. On the diagnosis tool screen, check if any of the following DTC related to malfunction of HV battery start relay is detected.
  - P33B1-64, P33B2-63

Is any DTC other than P0A84-66 detected?

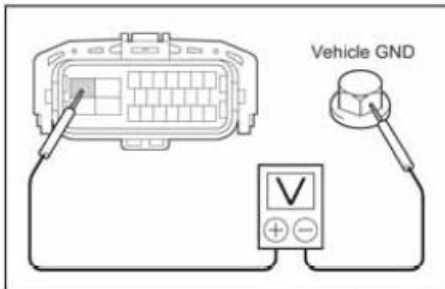
YES

Perform troubleshooting for each of related DTC.

NO

Go to step 2.

### 2 Inspecting the voltage of vehicle wire harness



SHTS03ZZZ0300114

1. Set the starter key to the "LOCK" position.
2. Disconnect the PCU harness (24P) connector.
3. Set the starter key to the "ON" position.
4. Using the electrical tester, measure the voltage between the 1st terminal of PCU harness (24P) vehicle-side connector and the ground.

Measurement conditions	Tester connections	Standard values
Starter key: ON	PCU harness (24P) vehicle-side connector 1st terminal - GND	9 V or more

Is the measured value within the range of standard value?

YES

Go to step 3.

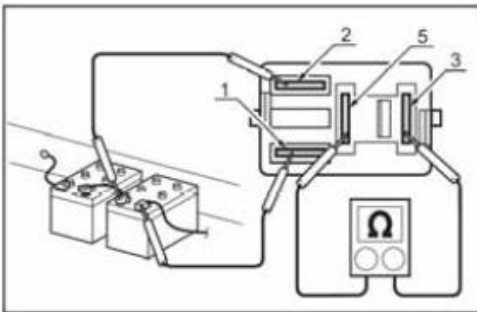
NO

Inspect the power supply circuit ([PCI-B 20A] fuse and wire harness).



Group:	SERVICE MANUAL UPDATE
Bulletin No:	SB-15-034
Issue Date:	8-12-2015

**3 Inspecting the HV battery start relay**



SHTS03ZZZ0300115

1. Set the starter key to the "LOCK" position.
2. Remove the HV battery start relay.
3. Using the electrical tester, measure the resistance between the 3rd and 5th terminals of HV battery start relay. (With no voltage applied)
4. Apply the voltage of 12 V between the 1st and 2nd terminals of HV battery start relay and measure the resistance between the 3rd and 5th terminals. (With voltage applied)

Measurement conditions	Tester connections	Standard values
Starter key: LOCK	HV battery start relay 3rd terminal – 5th terminal	Without voltage: 10 k $\Omega$ or more With voltage: less than 1 $\Omega$

Is the measured value within the range of standard value?

YES

NO

Go to step 4.

Replace the HV battery start relay.

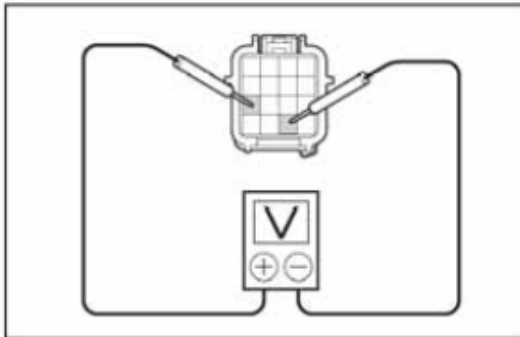


Group:	SERVICE MANUAL UPDATE
Bulletin No:	SB-15-034
Issue Date:	8-12-2015

3-132

HYBRID/TROUBLE SHOOTING

#### 4 Inspecting the voltage of PCU wire harness (lower side)



SHTS03ZZZ0300116

1. Connect the PCU harness (24P) connector and the HV battery start relay.
2. Disconnect the PCU harness (16P) connector.
3. Set the starter key to the "ON" position.
4. Using the electrical tester, measure the voltage between the lower-side connector terminals of PCU harness (16P).

Measurement conditions	Tester connections	Standard values
Starter key: ON	PCU harness (16P) lower-side connector 9th terminal – 15th terminal	9 V or more

Is the measured value within the range of standard value?

YES

NO

Go to step 5.

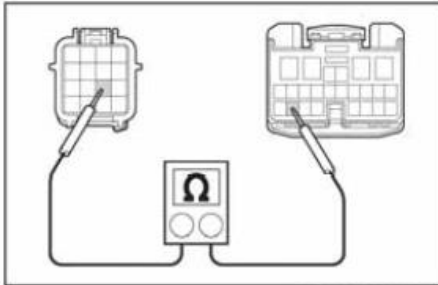
Replace the PCU wire harness (lower side).



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Group:	SERVICE MANUAL UPDATE
Bulletin No:	SB-15-034
Issue Date:	8-12-2015

## 5 Inspecting the continuity of PCU wire harness (lower side)



SHTS03ZZZ0300117

1. Set the starter key to the "LOCK" position.
2. Disconnect the HV ECU2 connector.
3. Using the electrical tester, measure the resistance between the lower-side connector terminal of PCU harness (16P) and the HV ECU2 connector terminal.

Measurement conditions	Tester connections	Standard values
Starter key: LOCK	PCU harness (16P) lower-side connector – HV ECU2 connector 11th terminal – 18th terminal	Less than 1 $\Omega$

Is the measured value within the range of standard value?

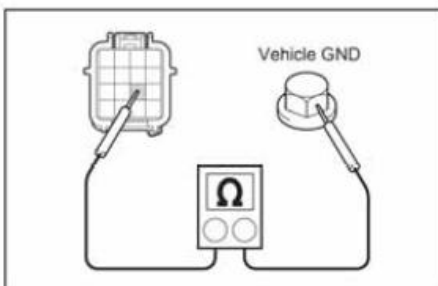
YES

NO

Go to step 6.

Replace the PCU wire harness (lower side).

## 6 Inspecting the PCU wire harness (lower side) for short circuit



SHTS03ZZZ0300118

1. Using the electrical tester, measure the resistance between the lower-side connector 11th terminal of PCU harness (16P) and the ground.

Measurement conditions	Tester connections	Standard values
Starter key: LOCK	PCU harness (16P) lower-side connector 11th terminal – GND	10 k $\Omega$ or more

Is the measured value within the range of standard value?

YES

NO

Go to step 7.

Replace the PCU wire harness (lower side).



Group:	SERVICE MANUAL UPDATE
Bulletin No:	SB-15-034
Issue Date:	8-12-2015

3-134

HYBRID/TROUBLE SHOOTING

## 7 Inspecting the signal line of PCU wire harness (lower side) for short circuit

- For the 11th terminal of PCU harness (16P) lower-side connector, inspect the signal line of PCU wire harness (lower side) for short circuit. (See "Inspecting the PCU harness signal line for short circuit.")

Measurement conditions	Tester connections	Standard values
Starter key: LOCK	PCU harness (16P) lower-side connector 11th terminal – Each signal line	10 kΩ or more

Is any defect found?

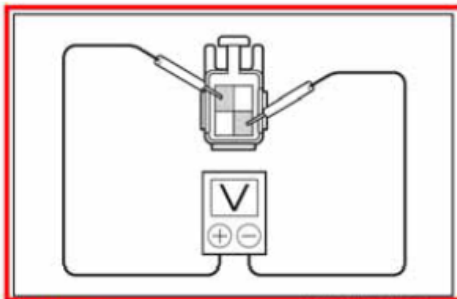
YES

NO

Replace the PCU wire harness (lower side).

Go to step 8.

## 8 Inspecting the voltage of PCU wire harness (upper side)



CHANGE

SHTS03ZZZ0300119

- Set the starter key to the "LOCK" position.
- Connect all the connectors that have been disconnected.
- Disconnect the connector of HV battery cooling fan.
- Set the starter key to the "ON" position.
- Using the electrical tester, measure the voltage between the connector terminals of HV battery cooling fan.

Measurement conditions	Tester connections	Standard values
Starter key: ON CHANGE	HV battery cooling fan connector 1st terminal – 4th terminal	9 V or more

Is the measured value within the range of standard value?

YES

NO

Go to step 9.

Replace the PCU wire harness (upper side).



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# SERVICE MANUAL INFORMATION

Group:	SERVICE MANUAL UPDATE
Bulletin No:	SB-15-034
Issue Date:	8-12-2015

## 9 Inspecting the signal line of PCU wire harness (upper side) for short circuit

1. Set the starter key to the "LOCK" position.
2. Disconnect the PCU harness (16P) connector.
3. For the 11th terminal of PCU upper-side wire harness connector, inspect the signal line of PCU wire harness (upper side) for short circuit. (See "Inspecting the PCU harness signal line for short circuit.")

Measurement conditions	Tester connections	Standard values
Starter key: LOCK	PCU harness (16P) upper-side connector 11th terminal – Each signal line	10 k $\Omega$ or more

Is any defect found?

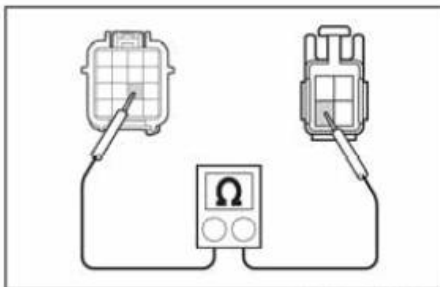
YES

NO

Replace the PCU wire harness (upper side).

Go to step 10.

## 10 Inspecting the PCU harness



SHTS03ZZZ0300120

1. Using the electrical tester, measure the resistance between the lower-side connector terminal of PCU harness (16P) and HV battery cooling for connector terminal.

Measurement conditions	Tester connections	Standard values
Starter key: LOCK	PCU harness (16P) lower-side connector – HV battery cooling for connector 11th terminal – 3rd terminal	1 $\Omega$ or less

Is any defect found?

YES

NO

Replace the PCU wire harness (upper side).

Replace the HV battery cooling fan.  
After replacement, go to step 11.



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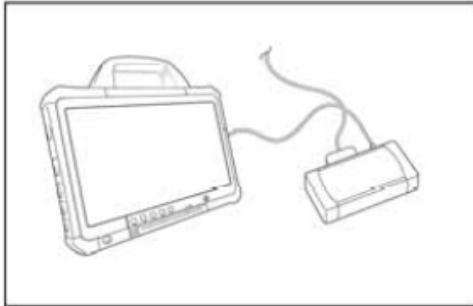
# SERVICE MANUAL INFORMATION

Group:	SERVICE MANUAL UPDATE
Bulletin No:	SB-15-034
Issue Date:	8-12-2015

3-136

HYBRID/TROUBLE SHOOTING

## 11 Reproduction check [HINO DX II ]



SHTS03ZZZ0300121

1. Connect all the connectors that have been disconnected to restore the system.
2. Set the starter key to the "LOCK" position.
3. Connect the diagnosis tool (HINO DX II ) to the vehicle.
4. Set the starter key to the "ON" position.
5. Clear the malfunction history.
6. Set the starter key to the "LOCK" position and wait for 1 minute.
7. Set the starter key to the "ON" position.
8. On the diagnosis tool screen, check if P0A84-66 is detected.

Is DTC P0A84-66 detected?

YES

Replace the HV ECU.

NO

The inspection is completed.



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