

Group:	Service Manual Update
Bulletin No.:	SB-15-020
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S E R V I C E I N F O R M A T I O N B U L L E T I N

**Subject: CORRECTION OF WORKSHOP MANUAL FOR HINO 155, 195, 155h, 195h
(REVISION OF TROUBLESHOOTING PROCEDURE FOR THE DTC P0A78 (TC15))**

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.

RELEVANT MODEL:

Hino 155, 195, 155h, 195h

CONTENTS:

Correction of troubleshooting information and inspection procedure of the DTC P0A78 (TC15)

RELEVANT MANUALS:

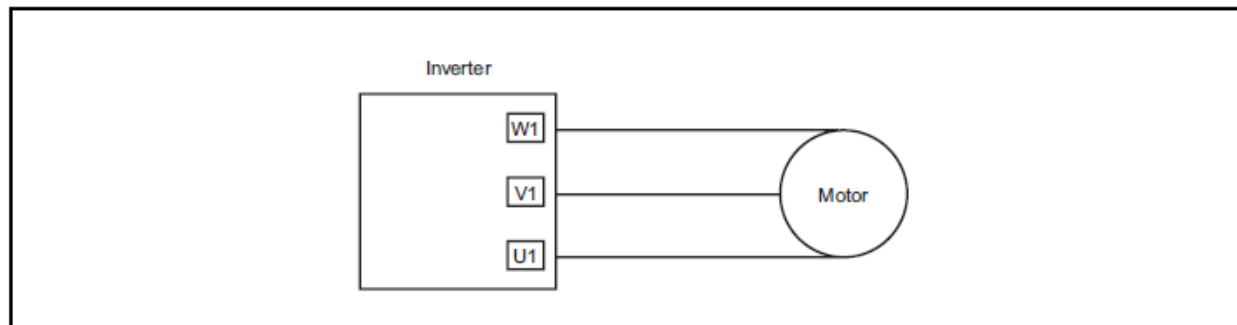
Model Year	MANUAL No.	CHAPTER	DTC
2013	S7-LXJE01B,C,D	Hybrid/Troubleshooting	P0A78 (TC15)
2014	S7-LXJE03A,B,C	Hybrid/Troubleshooting	P0A78 (TC15)
2015	S7-LXJE05A	Hybrid/Troubleshooting	P0A78 (TC15)
2016	S7-LXJE08A	Hybrid/Troubleshooting	P0A78 (TC15)

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DTC: P0A78 (TC15)

EN01H03ZZZ030602004052

DTC: P0A78 (TC15) Abnormality in inverter system INFORMATION



SHTSG3ZZZ0300438

1. Technical description

- –

<Description of malfunction>

- Detected an abnormality in the inverter (motor overcurrent).

2. DTC set condition

(1) DTC detection condition

- Control power supply voltage is 8 V or more.
- Inverter start signal is ON.
- Three-phase ON control request flag = OFF
- The motor speed is 375 r/min or more.

(2) Judgement criteria

- The state in which the phase currents monitored in control cycles are higher than 415 A is detected continuously for 0.08 seconds.

3. Reset condition

- The state in which the phase currents monitored in control cycles are 415 A or less is detected continuously for 0.16 seconds.

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

- MIL: ON
- HV warning light: ON

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>

- The engine may become unable to start. (Note, however, that vehicles equipped with a starter will be started with the starter.)
- Idling stop is not available.
- The regeneration function stops, reducing the feeling of deceleration during deceleration.

6. Pre-inspection work

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

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7. After-inspection work

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

8. Estimated failure factors

- Malfunction of HV motor
- Malfunction of three-phase cable
- Malfunction of SMR#1
- Malfunction of SMR#2
- Malfunction of SMR#3
- Blown fuse
- Disconnection of DC high-voltage cable

INSPECTION PROCEDURE: P0A78 (TC15)

1 Inspecting the three-phase cable 1

1. Check the three-phase cable connector (inverter-side) for failing connection (looseness, wear, or melting damage).

Is any defect found?

YES

Retighten the terminals.
Replace the terminals if abnormal wear or melting damage is detected.

NO

Go to step 2.

2 Inspecting the three-phase cable 2

1. Check the terminals of three-phase cable (motor side) for failing connection (looseness, wear, or melting damage).

Is any defect found?

YES

Retighten the terminals.
Replace the terminals if abnormal wear or melting damage is detected.

NO

Go to step 3.

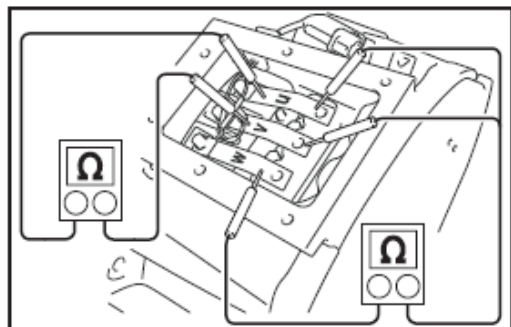
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CHANGE

3 Inspection of rotor insulation and inter-phase resistance



SHTS03ZZZ0300439

1. Set the starter key to the "LOCK" position.
2. Disconnect the three-phase cable (U, V, and W terminals) from the HV motor.
3. Using the megohm tester (500 V range), measure the insulation resistance between the HV motor terminals and the housing. (For the measurement procedure, see "INSULATION RESISTANCE MEASUREMENT PROCEDURE FOR HYBRID MOTOR [ROTATION MACHINE]" (Page 3-313))
4. Using the electrical tester, measure the resistance between the HV motor terminals.

ADD

HINT

If the motor temperature is too high, the resistance largely varies. Therefore, measure the resistance at least 8 hours after the vehicle has stopped.

Measurement conditions	Tester connections	Standard values
CHANGE Starter key: LOCK (8 hours after the vehicle has stopped)	Interphase resistance U-phase terminal – V-phase terminal U-phase terminal – W-phase terminal V-phase terminal – W-phase terminal	Interphase resistance: 38.2 – 40.5 mΩ (30 – 15°C {86 – 59°F})

ADD

Is the measured value within the range of standard value?

YES

NO

Go to step 4.

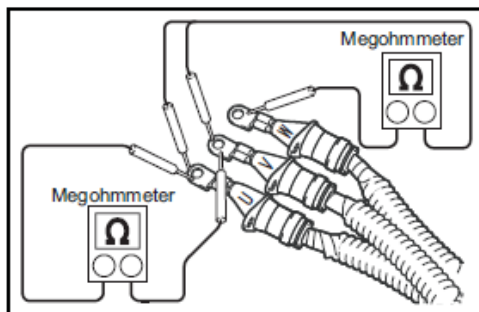
Replace the HV motor.

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4 Inspecting the three-phase cable 3



1. Disconnect the three-phase cable (U, V, and W terminals) from the inverter.
2. Using the megohm tester (500 V range), measure the insulation resistance between the terminals of three-phase cable.

CAUTION

Terminals must be insulated to avoid contact.

Measurement conditions	Tester connections	Standard values
Starter key: LOCK	Three-phase cable U terminal – V terminal V terminal – W terminal W terminal – U terminal	10 MΩ or more

Is the measured value within the range of standard value?

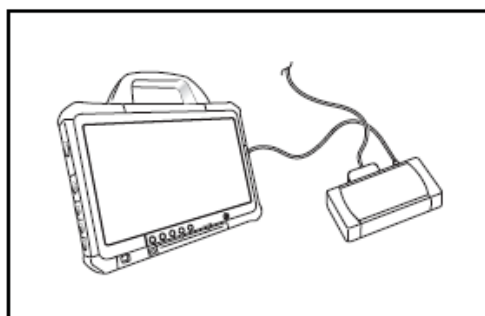
YES

NO

Go to step 5.

Replace the three-phase cable.

5 Reproduction check [HINO DX II]



1. Connect all the connectors that have been disconnected to restore the system.
2. Connect the diagnosis tool (HINO DX II) to the vehicle.
3. Set the starter key to the "ON" position.
4. Clear the malfunction history.
5. Perform a test run. (accelerate and decelerate running for approximately 1 hour).
6. On the diagnosis tool screen, check if P0A78-15 is detected.

Is DTC P0A78-15 detected?

YES

NO

Replace the inverter.

The inspection is completed.