Group:	Service Manual Update
Bulletin No.:	SB-15-001
Issue Date:	1/8/2015

SERVICE INFORMATION BULLETIN

Subject: CORRECTION OF WORKSHOP MANUAL FOR HINO 155, 195,155h, 195h
(REVISION OF TROUBLESHOOTING PROCEDURE FOR THE DTC P0705)

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:
Troubleshooting information and Inspection procedure of the DTC/ P0705 were revised.

RELEVANT MANUALS:

MODEL	MANUAL No.	CHAPTER	DTC
USA 2013MY	S7-LXJE01A,B,C,D	TRANSMISSION	P0705
USA 2014MY	S7-LXJE03A,B,C	TRANSMISSION	
USA 2015MY	S7-LXJE05A	TRANSMISSION	

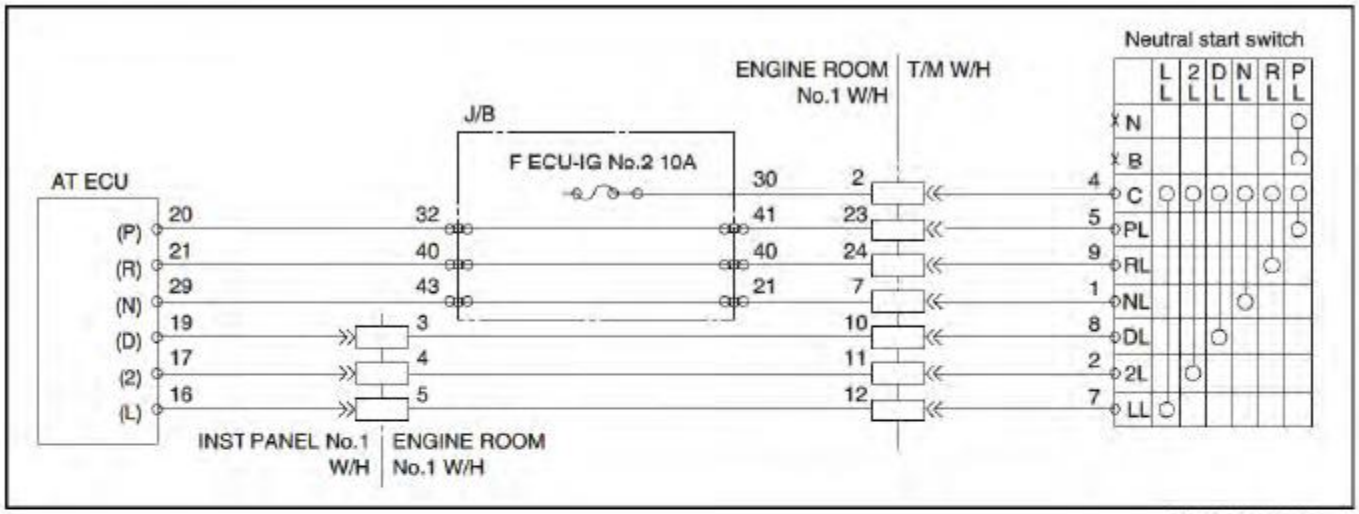
Vendor Ref.:	SB-A-33-020

DTC: P0705/DIAGNOSIS MONITOR CODE: 43

EN01H04256030602010009

DTC: P0705/DIAGNOSIS MONITOR CODE: 43 Shift position switch system failure

INFORMATION



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1. Technical description

- –

<Description of malfunction>

- The shift position signal is not detected normally.

2. DTC set condition

(1) DTC detection condition

- Starter key: ON

(2) Judgement criteria

- All shift position switch contacts OFF are detected.
- Two or more contacts ON are detected.
- The N contact or R contact is not detected even when the shift lever is operated.

3. Reset condition

- Any of the contacts is detected.
- Within 50 msec after the starter key is turned "LOCK" and "ON", the "N contact" or "P contact" is detected and the "R contact," "D contact," "4th contact," and "3rd contact" are not detected
- The "N contact" or "R contact" is detected.

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

- Check AT indicator light: Blink

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>

- Shifting gears is not possible, and the forward gear is fixed at 3rd.
- Idling stop does not start. (For hybrid vehicles only)

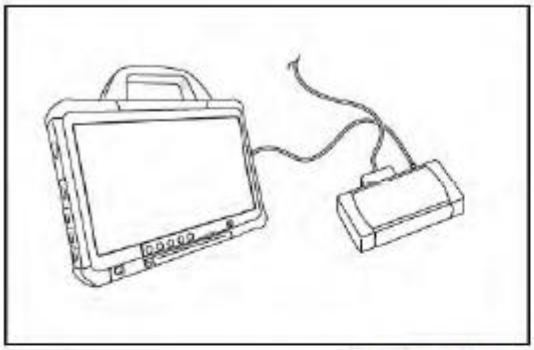
6. **Pre-inspection work**
   - Check the battery voltage to check if it is normal.

7. **After-inspection work**
   - Clear the stored DTC.
   - Check that no DTC is detected after test-driving the vehicle.

8. **Estimated failure factors**
   - The shift lever was out of position or slowly shifted. CHANGE
   - Improperly adjusted shift lever and wire
   - Abnormality in the shift lever
   - Wire harness disconnection or short circuit
   - Improper connector connection or fitting
   - Abnormality in the AT neutral start switch
   - Abnormality in the AT ECU

INSPECTION PROCEDURE: P0705/43

1	Inspecting the neutral switch (shift position switch) [HINO DX II]



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1. Turn the starter key to the "LOCK" position.
2. Connect the diagnostic tester (HINO DX II) to the vehicle.
3. Turn the starter key to the "ON" position.
4. On the diagnostic tester, select [Transmission].
5. From [Data monitor and Active test], select the following to inspect the shift position switch.

Measurement conditions	Measured item	Standard values
Starter key: ON	Shift position SW R [R]	Shifting operation N → R : OFF → ON
	Shift position SW 3 [3]	Shifting operation N → L3 : OFF → ON
	Shift position SW D4 [4]	Shifting operation N → 4 : OFF → ON
	Shift position SW D (5) [D]	Shifting operation N → D : OFF → ON
	Shift position SW N [N]	Shifting operation D → N : OFF → ON
	Shift position SW P [P]	Shifting operation R → P : OFF → ON

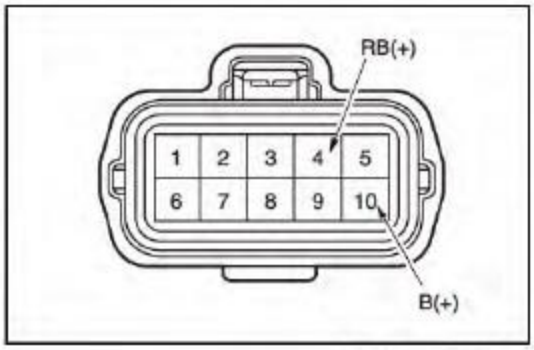
Is the measured value within the standard range?

YES → **Go to step 5.**

NO → **Go to step 2.**

CHANGE

2	Inspecting power supply to the neutral switch



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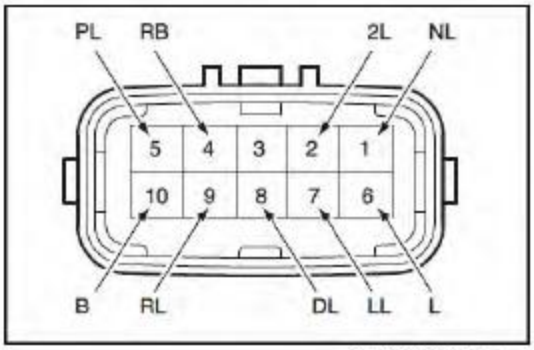
1. Turn the starter key to the "LOCK" position.
2. Disconnect the neutral switch connector.
3. Turn the starter key to the "ON" position.
4. Using the electrical tester, measure the voltage between the vehicle-side neutral switch connector terminals and GND.

Measurement conditions	Tester connections	Standard values
Starter key: ON	Vehicle-side neutral switch connector RB (4) terminal – GND B (10) terminal – GND	10 – 16 V

Is the measured value within the standard range?

YES	NO
Go to step 3.	Inspect the neutral switch power supply circuit.

3	Inspecting neutral switch (single unit inspection)



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1. Turn the starter key to the "LOCK" position.
2. Operate the shift lever and using the electrical tester, measure the resistance between the neutral switch connector terminals.

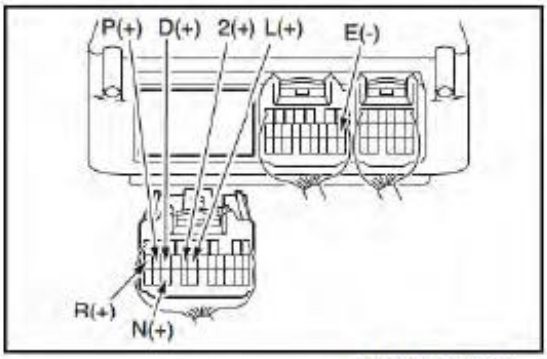
Measurement conditions	Tester connections	Standard values
Starter key: LOCK (Operate the shift lever and measure the resistance in each shift lever position.)	Neutral switch connector P position : RB (4) terminal – PL (5) terminal : L (6) terminal – B (10) terminal R position : RB (4) terminal – RL (9) terminal N position : RB (4) terminal – NL (1) terminal : L (6) terminal – B (10) terminal D position : RB (4) terminal – DL (8) terminal 4 position : RB (4) terminal – 2L (2) terminal L3 position : RB (4) terminal – LL (7) terminal	1 Ω or less

Is the measured value within the standard range?

YES → **Go to step 4.**

NO → **Replace the neutral switch.**

4	Inspecting the neutral switch wire harness



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1. Disconnect the AT ECU connector (A).
2. Connect the neutral switch connector.
3. Turn the starter key to the "ON" position.
4. Operate the shift lever and using the electrical tester, measure the voltage between the vehicle-side AT ECU connector terminals.

Measurement conditions	Tester connections	Standard values
Starter key: ON	Vehicle-side AT ECU connectors (A) and (B)	(i): 10 – 16 V (ii): 0 – 3 V
	P (A20) terminal – E (B8) terminal : P position (i) : Position other than P position (ii)	
	R (A21) terminal – E (B8) terminal : R position (i) : Position other than R position (ii)	
	N (A29) terminal – E (B8) terminal : N position (i) : Position other than N position (ii)	
	D (A19) terminal – E (B8) terminal : D position (i) : Position other than D position (ii) (for reference)	
	2 (A17) terminal – E (B8) terminal : 4th position (i) : Position other than 4th position (ii) (for reference)	
	L (A16) terminal – E (B8) terminal : L3 position (i) : Position other than L3 position (ii) (for reference)	

Is the measured value within the standard range?

YES → **Go to step 5.**

NO → **Replace or repair the wire harness.**

CHANGE

5	Inspecting shift lever

1. Clear the DTCs and hold at each shift position for 60 seconds with the engine ON and the vehicle stationary.

Does P0705 turn ON again?

YES

AT ECU replacement.

NO

DTC ON when the shift lever is held at the midpoint.