

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description (NHPC)

INFOID:000000004651024

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent malfunction detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control unit is connected with 2 communication lines (CAN-H and CAN-L) allowing a high rate of information transmission with less wiring. Each control unit communicates data but selectively reads required data only.

DTC Logic (NHPC)

INFOID:000000004651025

DTC DETECTION LOGIC

DTC	Self-diagnosis name	DTC detecting condition	Possible cause
U1000	CAN communication line	When TCM is not transmitting or receiving CAN communication signal for 2 seconds or more.	Harness or connectors (CAN communication line is open or shorted.)

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

With CONSULT-III

1. Start the engine and wait for 2 seconds or more.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC detected?

YES >> Go to [TM-45, "Diagnosis Procedure \(NHPC\)".](#)
 NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:000000004651026

1. CHECK DTC WITH TRANSMISSION

With CONSULT-III

1. Start the engine and wait for at least 2 seconds.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC detected?

YES >> Go to [LAN-19, "Trouble Diagnosis Flow Chart".](#)
 NO >> GO TO 2.

2. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident".](#)

>> INSPECTION END

P0700 TRANSMISSION CONTROL

Description (NHPC)

INFOID:0000000004651027

- TCM consists of the microcomputer and input/output connectors for signal and power supply.
- TCM controls the transmission by performing the following functions: power supply to the devices connected to the transmission, operation control for each solenoid valve and actuator, data receiving from each sensor, receiving of signals from the range sensors, paddle shifter, auto/manual range change switch and communication (CAN or hard wire) to C/U controlling other devices.
- TCM uses 3 different power supply routes to distribute power supply to each sensor.

Sensor power supply 1	Sensor power supply 2	Sensor power supply 3
<ul style="list-style-type: none"> • Output shaft speed sensor • Line pressure sensor 	<ul style="list-style-type: none"> • Clutch A pressure sensor • Clutch A speed sensor • 6th-Neutral position sensor • 2nd-4th position sensor • Range sensor power supply 1 (Range sensor No. 0, 1, 3, 5) 	<ul style="list-style-type: none"> • Clutch B pressure sensor • Clutch B speed sensor • 1st-Reverse position sensor 1 • 1st-Reverse position sensor 2 • 3rd-5th position sensor • Range sensor power supply 2 (Range sensor No. 2, 4)

DTC Logic (NHPC)

INFOID:0000000004651028

DTC DETECTION LOGIC

CAUTION:

- Before TCM is replaced, the IP characteristics must be extracted, based on the information read out from the malfunctioning TCM. For reading out the IP characteristic data, refer to “CONSULT-III GT-R TCM CONFIGURATION MANUAL”.
- If no IP characteristic data can be extracted TCM and the transmission assembly must be replaced as a set.

DTC	Self-diagnosis name	DTC detection condition		Possible cause
P0700	ECM receiving malfunction	A	A DTC is set if TCM cannot receive the CAN communication signals from ECM for 2 seconds or more.	<ul style="list-style-type: none"> • ECM • Harness or connector (CAN communication line is open or shorted)
	Receiving of malfunctioning engine torque signal	B	A DTC is set if abnormal engine torque signal is received from ECM.	
	Receiving of malfunctioning engine speed signal	C	A DTC is set if abnormal engine speed signal is received from ECM.	
	Sensor power supply voltage	D	A DTC is set if TCM detects DTC P0720 and DTC P0872.	<ul style="list-style-type: none"> • TCM • Harness or connector (Open in the TCM ground circuit)
	TCM internal*	E	A DTC is set if TCM computing unit does not operate normally.	TCM
		F	A DTC is set if TCM monitor unit does not operate normally.	
		G	A DTC is set if TCM function unit does not operate normally.	
		H	A DTC is set if TCM self-shutoff does not operate normally.	

*: A DTC is displayed when E, F, G or H in the DTC detection conditions is detected.

DTC CONFIRMATION PROCEDURE

1. PREPARATION BEFORE OPERATION

If another “DTC CONFIRMATION PROCEDURE” is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION A, B

With CONSULT-III

Perform "DTC CONFIRMATION PROCEDURE" for the engine DTCs P0605, P0102, P0103, P010C, and P010D.

Without CONSULT-III

Perform "DTC CONFIRMATION PROCEDURE" for the engine DTCs P0605, P0102, P0103, P010C, and P010D.

Is the DTC detected?

YES >> Go to [TM-48, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION C

With CONSULT-III

1. Start the engine.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

Without CONSULT-III

1. Start the engine.
2. Check self-diagnosis.

Is DTC P0700 detected?

YES >> Go to [TM-48, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 4.

4. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION D

With CONSULT-III

Check "Self Diagnostic Result" of "TRANSMISSION".

Without CONSULT-III

Check self-diagnosis.

Are DTCs P0700, P0720 and P0872 detected?

YES >> Go to [TM-48, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 5.

5. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION E

With CONSULT-III

1. Turn ignition switch ON, and wait for 10 seconds or more.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

Without CONSULT-III

1. Turn ignition switch ON, and wait for 10 seconds or more.
2. Check self-diagnosis.

Is DTC P0700 detected?

YES >> Go to [TM-48, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 6.

6. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION F

With CONSULT-III

1. Turn ignition switch ON, and wait for 1 second or more.
2. Turn the ignition switch OFF and wait for 5 seconds or more, then turn it ON again.
3. Repeat the procedure shown in 2 above 5 times.
4. Check "Self Diagnostic Result" of "TRANSMISSION".

Without CONSULT-III

1. Turn ignition switch ON, and wait for 1 second or more.
2. Turn the ignition switch OFF and wait for 5 seconds or more, then turn it ON again.
3. Repeat the procedure shown in 2 above 5 times.
4. Check self-diagnosis.

Is DTC P0700 detected?

YES >> Go to [TM-48, "Diagnosis Procedure \(NHPC\)".](#)

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P0700 TRANSMISSION CONTROL

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

NO >> GO TO 7.

7. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION G

With CONSULT-III

1. Shift the shift lever as per the following: P→R→N→A→M positions (Keep the shift lever for 5 seconds or more at each position).
2. Check "Self Diagnostic Result" of "TRANSMISSION".

Without CONSULT-III

1. Shift the shift lever as per the following: P→R→N→A→M positions (Keep the shift lever for 5 seconds or more at each position).
2. Check self-diagnosis.

Is DTC P0700 detected?

YES >> Go to [TM-48, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 8.

8. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION H

With CONSULT-III

1. Turn ignition switch OFF, and wait for 5 seconds or more.
2. Turn the ignition switch ON and wait for 5 seconds or more, then turn it OFF again.
3. Repeat the procedure shown in 2 above 32 times.
4. Turn the ignition switch ON.
5. Check "Self Diagnostic Result" of "TRANSMISSION".

Without CONSULT-III

1. Turn ignition switch OFF, and wait for 5 seconds or more.
2. Turn the ignition switch ON and wait for 5 seconds or more, then turn it OFF again.
3. Repeat the procedure shown in 2 above 32 times.
4. Turn the ignition switch ON.
5. Check self-diagnosis.

Is DTC P0700 detected?

YES >> Go to [TM-48, "Diagnosis Procedure \(NHPC\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:0000000004651029

1. CHECK CAN COMMUNICATION CIRCUIT

Refer to [TM-45, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK DTC WITH ECM

With CONSULT-III

1. Turn ignition switch ON.
2. Check "Self Diagnostic Result" of "ENGINE".

Without CONSULT-III

1. Turn ignition switch ON.
2. Check self-diagnosis.

Is DTC detected?

YES >> Check DTC Detected Item. Refer to [EC-569, "DTC Index"](#) (TYPE 1*), [EC-1105, "DTC Index"](#) (TYPE 2*) or [EC-1544, "DTC Index"](#) (TYPE 3*).

*: Refer to [EC-20, "How to Check Vehicle Type".](#)

NO >> GO TO 3.

3. CHECK ENGINE SPEED

With CONSULT-III

1. Start the engine.
2. Select "ENGINE SPEED" in "Data Monitor".

Is the engine speed value 8191?

YES >> Replace ECM.
NO >> GO TO 4.

4. CHECK OUTPUT SHAFT SPEED SENSOR CIRCUIT

Refer to [TM-72, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace damaged parts.

5. CHECK LINE PRESSURE SENSOR CIRCUIT

Refer to [TM-157, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace damaged parts.

6. CHECK HARNESS BETWEEN TCM AND GROUND

1. Turn ignition switch OFF.
2. Disconnect TCM harness connectors.
3. Check continuity between TCM vehicle side harness connector terminal and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B45	3	Ground	Existed
	4		
	7		
	8		

Is the inspection result normal?

YES >> GO TO 7.
NO >> Repair or replace damaged parts.

7. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident".](#)

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-266, "Exploded View \(NHPC\)".](#)
NO >> Repair or replace damaged parts.

P0705 TRANSMISSION RANGE SWITCH A

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

P0705 TRANSMISSION RANGE SWITCH A

Description (NHPC)

INFOID:0000000004651030

- There are 2 different power supply systems for the range sensors; the range sensor power supply 1 system distributes power supply to 4 range sensors (No. 0, No. 1, No. 3, and No. 5) used for the range position recognition, and the auto/manual range change switch changing between M range and A range. The range sensor power supply 2 system distributes power supply to 2 range sensors (No. 2 and No. 4) used for the range position recognition.
- TCM recognizes the shift lever position by combining signals from 6 range sensors used for the range position recognition and park position switch.

TCM recognized position	Shift lever position	Park position switch	Range sensor					
			No. 0	No. 1	No. 2	No. 3	No. 4	No. 5
P	P	ON	ON	OFF	OFF	OFF	OFF	OFF
R	R	OFF	OFF	ON	ON	OFF	OFF	OFF
N	N	OFF	OFF	OFF	ON	ON	ON	OFF
A/M	A/M	OFF	OFF	OFF	OFF	OFF	ON	ON

DTC Logic (NHPC)

INFOID:0000000004651031

DTC DETECTION LOGIC

DTC	Self-diagnosis name	DTC detection condition	Possible cause
P0705	Range sensor power supply 1 system malfunction	<p>A DTC is set if either of the following statuses is detected consecutively.</p> <ol style="list-style-type: none"> Any of the range sensors No. 0, No. 1, No. 3, or No. 5 is stuck to OFF. Any of the range sensors other than those detected in 1 above is stuck to OFF. 	<ul style="list-style-type: none"> Range sensor Harness or connector (Open or shorted in the range sensor circuit)
	Range sensor power supply 2 system malfunction	<p>A DTC is set if either of the following statuses is detected consecutively.</p> <ol style="list-style-type: none"> Either of the range sensors No. 2 or No. 4 is stuck to OFF. Any of the range sensors other than those detected in 1 above is/are stuck to OFF. 	
	A/T shift selector malfunction	<p>A DTC is set if 2 or more of the following sensors and switch are stuck to ON or OFF consecutively: Range sensors No. 0, No. 1, No. 2, No. 3, No. 4 or No. 5, and park position switch.</p>	<ul style="list-style-type: none"> Range sensor Park position switch Harness or connector (Open or shorted in the range sensor circuit) (Open or shorted in the park position switch circuit)

DTC CONFIRMATION PROCEDURE

1. PREPARATION BEFORE OPERATION

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT-III

- Start the engine.
- Shift the shift lever as per the following: P→R→N→A positions (Keep the shift lever for 5 seconds or more at each position).

P0705 TRANSMISSION RANGE SWITCH A

[TRANSMISSION: GR6Z30A]

< DTC/CIRCUIT DIAGNOSIS >

3. Shift the shift lever as per the following: A→N→R→P positions (Keep the shift lever for 5 seconds or more at each position).
4. Repeat the procedure shown in 2 and 3 above 2 times.
5. Check "Self Diagnostic Result" of "TRANSMISSION".

Without CONSULT-III

1. Start the engine.
2. Shift the shift lever as per the following: P→R→N→A positions (Keep the shift lever for 5 seconds or more at each position).
3. Shift the shift lever as per the following: A→N→R→P positions (Keep the shift lever for 5 seconds or more at each position).
4. Repeat the procedure shown in 2 and 3 above 2 times.
5. Check self-diagnosis.

Is DTC P0705 detected?

YES >> Go to [TM-51, "Diagnosis Procedure \(NHPC\)".](#)

NO >> INSPECTION END

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INFOID:000000004651032

Diagnosis Procedure (NHPC)

F

GI-42, "Circuit Inspection".

G

Is the inspection result normal?

H

YES >> GO TO 2.

I

NO >> Repair or replace damaged parts.

J

2.CHECK TCM OUTPUT SIGNAL CIRCUIT (PART 1)

K

Check voltage between TCM vehicle side harness connector terminals.

L

TCM vehicle side harness connector		Condition	Voltage (Approx.)
Connector	Terminal		
B45	25	Ignition switch ON	5 V
			0 V
	26	Ignition switch ON	5 V
			0 V

M

Is the inspection result normal?

N

YES >> GO TO 3.

O

NO >> Go to [TM-183, "Diagnosis Procedure \(NHPC\)".](#)

P

3.CHECK TCM INPUT SIGNAL CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between TCM vehicle side harness connector terminals.

P0705 TRANSMISSION RANGE SWITCH A

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

TCM vehicle side harness connector		Condition	Voltage (Approx.)
Connector	Terminal		
B45	27 33 35 38 43 44	Shift lever: P position	0 V
		Other than the above	5 V
		Shift lever: R position	0 V
		Other than the above	5 V
		Shift lever: N position	0 V
		Other than the above	5 V
		Shift lever: R, N position	0 V
		Other than the above	5 V
		Shift lever: N, A, M position	0 V
		Other than the above	5 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 5.

4.CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair or replace damaged parts.

5.CHECK HARNESS BETWEEN TCM AND A/T SHIFT SELECTOR (RANGE SENSOR) (PART 1)

1. Turn ignition switch OFF.
2. Disconnect TCM harness connectors and A/T shift selector harness connector.
3. Check continuity between TCM vehicle side harness connector terminals and A/T shift selector vehicle side harness connector terminals.

TCM vehicle side harness connector		A/T shift selector vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B45	25	B20	16	Existed
	26		15	
	27		5	
	33		8	
	35		10	
	38		23	
	43		21	
	44		12	

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6.CHECK HARNESS BETWEEN TCM AND A/T SHIFT SELECTOR (RANGE SENSOR) (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

P0705 TRANSMISSION RANGE SWITCH A

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B45	25	Ground	Not existed
	26		
	27		
	33		
	35		
	38		
	43		
	44		

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace damaged parts.

7. CHECK HARNESS BETWEEN A/T SHIFT SELECTOR (RANGE SENSOR) AND GROUND

Check continuity between A/T shift selector vehicle side harness connector terminals and ground.

A/T shift selector vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B20	3	Ground	Existed
	6		

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair or replace damaged parts.

8. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> Replace A/T shift selector assembly. Refer to [TM-268, "Exploded View"](#).

NO >> Repair or replace damaged parts.

9. CHECK TCM OUTPUT SIGNAL CIRCUIT (PART 2)

1. Connect TCM harness connectors.
2. Check voltage between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector				Condition		Voltage (Ap-prox.)	
Connector	Terminal	Connector	Terminal	Ignition switch ON	Shift lever: P position	0 V	
B46	89	B45	4		Other than the above	5 V	

Is the inspection result normal?

YES >> GO TO 10.

NO >> Go to [TM-183, "Diagnosis Procedure \(NHPC\)"](#).

10. CHECK PARK POSITION SWITCH CIRCUIT

1. Disconnect TCM harness connectors.
2. Check continuity between TCM vehicle side harness connector terminal and ground.

P0705 TRANSMISSION RANGE SWITCH A

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

TCM vehicle side harness connector		Ground	Condition	Continuity
Connector	Terminal			
B46	89	Ground	Shift lever: P position	Existed
			Other than the above	Not existed

Is the inspection result normal?

YES >> GO TO 16.

NO >> GO TO 11.

11.CHECK PARK POSITION SWITCH

1. Disconnect park position switch harness connector.
2. Check park position switch. Refer to [TM-55, "Component Inspection \(Park Position Switch\) \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 12.

NO >> Repair or replace damaged parts.

12.CHECK HARNESS BETWEEN TCM AND PARK POSITION SWITCH (PART 1)

Check continuity between TCM vehicle side harness connector terminal and park position switch vehicle side harness connector terminal.

TCM vehicle side harness connector		Park position switch vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B46	89	B122	1	Existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace damaged parts.

13.CHECK HARNESS BETWEEN TCM AND PARK POSITION SWITCH (PART 2)

Check continuity between TCM vehicle side harness connector terminal and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B46	89	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 14.

NO >> Repair or replace damaged parts.

14.CHECK HARNESS BETWEEN PARK POSITION SWITCH AND GROUND

Check continuity between park position switch vehicle side harness connector terminal and ground.

Park position switch vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B122	2	Ground	Existed

Is the inspection result normal?

YES >> GO TO 15.

NO >> Repair or replace damaged parts.

15.CHECK SHIFT POSITION

Check shift position. Refer to "INSPECTION" in [TM-264, "Inspection and Adjustment".](#)

Is the inspection result normal?

YES >> GO TO 16.

NO >> Adjust shift position. Refer to "ADJUSTMENT" in [TM-264, "Inspection and Adjustment".](#)

16.CHECK INTERMITTENT INCIDENT

P0705 TRANSMISSION RANGE SWITCH A

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

Refer to [GI-40, "Intermittent Incident".](#)

>> INSPECTION END

Component Inspection (Park Position Switch) (NHPC)

INFOID:000000004651033

1.CHECK PARK POSITION SWITCH (PART 1)

Check continuity between park position switch connector terminals.

Park position switch connector			Condition	Continuity
Connector	Terminal			
B122	1	2	Parking lever: P position.	Existed
			Other than the above positions.	Not existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2.CHECK PARK POSITION SWITCH (PART 2)

Check continuity between park position switch connector terminal and ground.

Park position switch connector		Ground	Continuity
Connector	Terminal		
B122	1	Ground	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace damaged parts.

P0706 TRANSMISSION RANGE SENSOR A

Description (NHPC)

INFOID:0000000004651034

- The range sensors are installed on the A/T shift selector and the park position switch on the transmission, detecting the shift lever position.
- TCM recognizes the shift lever position by combining signals from 6 range sensors used for the range position recognition and park position switch.

TCM recognized position	Shift lever position	Park position switch	Range sensor					
			No. 0	No. 1	No. 2	No. 3	No. 4	No. 5
P	P	ON	ON	OFF	OFF	OFF	OFF	OFF
R	R	OFF	OFF	ON	ON	OFF	OFF	OFF
N	N	OFF	OFF	OFF	ON	ON	ON	OFF
A/M	A/M	OFF	OFF	OFF	OFF	OFF	ON	ON

DTC Logic (NHPC)

INFOID:0000000004651035

DTC DETECTION LOGIC

DTC	Self-diagnosis name	DTC detection condition	Possible cause
P0706	Range sensors / park position switch malfunction	A DTC is set if any of the following sensors and switch is/are stuck to ON or OFF consecutively: Range sensors No. 0, No. 1, No. 2, No. 3, No. 4 or No. 5, and park position switch.	<ul style="list-style-type: none"> Range sensor Park position switch Harness or connector (Open or shorted in the range sensor circuit) (Open or shorted in the park position switch circuit)

DTC CONFIRMATION PROCEDURE

1. PREPARATION BEFORE OPERATION

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

 With CONSULT-III

- Start the engine.
- Shift the shift lever as per the following: P→R→N→A positions (Keep the shift lever for 5 seconds or more at each position).
- Shift the shift lever as per the following: A→N→R→P positions (Keep the shift lever for 5 seconds or more at each position).
- Repeat the procedure shown in 2 and 3 above 2 times.
- Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0706 detected?

YES >> Go to [TM-56, "Diagnosis Procedure \(NHPC\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:0000000004651036

1. CHECK GROUND CONNECTION

- Turn ignition switch OFF.
- Check ground connections B14 and B31 and ground cable connections. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection".](#)

Is the inspection result normal?

P0706 TRANSMISSION RANGE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK TCM OUTPUT SIGNAL CIRCUIT (PART 1)

Check voltage between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector		Condition	Voltage (Approx.)
Connector	Terminal		
B45	25	Ignition switch ON Ignition switch OFF Ignition switch ON Ignition switch OFF	5 V
	26		0 V
	4		5 V
			0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Go to [TM-183. "Diagnosis Procedure \(NHPC\)".](#)

3. CHECK TCM INPUT SIGNAL CIRCUIT

1. Turn ignition switch ON.

2. Check voltage between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector		Condition	Voltage (Approx.)
Connector	Terminal		
B45	27	Shift lever: P position Other than the above Shift lever: R position Other than the above Shift lever: N position Other than the above Shift lever: R, N position Other than the above Shift lever: N, A, M position Other than the above Shift lever: A, M position Other than the above	0 V
	33		5 V
	35		0 V
	38		5 V
	43		0 V
	44		5 V
			5 V
			0 V
			5 V
			0 V
			5 V
			0 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 5.

4. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident".](#)

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair or replace damaged parts.

5. CHECK HARNESS BETWEEN TCM AND A/T SHIFT SELECTOR (RANGE SENSOR) (PART 1)

1. Turn ignition switch OFF.

2. Disconnect TCM harness connectors and A/T shift selector harness connector.

3. Check continuity between TCM vehicle side harness connector terminals and A/T shift selector vehicle side harness connector terminals.

P0706 TRANSMISSION RANGE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

TCM vehicle side harness connector		A/T shift selector vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B45	25	B20	16	Existed
	26		15	
	27		5	
	33		8	
	35		10	
	38		23	
	43		21	
	44		12	

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6. CHECK HARNESS BETWEEN TCM AND A/T SHIFT SELECTOR (RANGE SENSOR) (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B45	25	Ground	Not existed
	26		
	27		
	33		
	35		
	38		
	43		
	44		

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace damaged parts.

7. CHECK HARNESS BETWEEN A/T SHIFT SELECTOR (RANGE SENSOR) AND GROUND

Check continuity between A/T shift selector vehicle side harness connector terminals and ground.

A/T shift selector vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B20	3	Ground	Existed
	6		

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair or replace damaged parts.

8. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> Replace A/T shift selector assembly. Refer to [TM-268, "Exploded View"](#).

NO >> Repair or replace damaged parts.

9. CHECK TCM OUTPUT SIGNAL CIRCUIT (PART 2)

1. Connect TCM harness connectors.

P0706 TRANSMISSION RANGE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

- Check voltage between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector				Condition		Voltage (Ap-prox.)
Connector	Terminal	Connector	Terminal	Ignition switch ON	Shift lever: P position	0 V
B46	89	B45	4		Other than the above	5 V

Is the inspection result normal?

YES >> GO TO 10.

NO >> Go to [TM-183. "Diagnosis Procedure \(NHPC\)".](#)

10. CHECK PARK POSITION SWITCH CIRCUIT

- Disconnect TCM harness connectors.
- Check continuity between TCM vehicle side harness connector terminal and ground.

TCM vehicle side harness connector		Ground	Condition	Continuity
Connector	Terminal			
B46	89	Ground	Shift lever: P position	Existed
			Other than the above	Not existed

Is the inspection result normal?

YES >> GO TO 16.

NO >> GO TO 11.

11. CHECK PARK POSITION SWITCH

- Disconnect park position switch harness connector.
- Check park position switch. Refer to [TM-55. "Component Inspection \(Park Position Switch\) \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 12.

NO >> Repair or replace damaged parts.

12. CHECK HARNESS BETWEEN TCM AND PARK POSITION SWITCH (PART 1)

Check continuity between TCM vehicle side harness connector terminal and park position switch vehicle side harness connector terminal.

TCM vehicle side harness connector		Park position switch vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B46	89	B122	1	Existed

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace damaged parts.

13. CHECK HARNESS BETWEEN TCM AND PARK POSITION SWITCH (PART 2)

Check continuity between TCM vehicle side harness connector terminal and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B46	89	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 14.

NO >> Repair or replace damaged parts.

14. CHECK HARNESS BETWEEN PARK POSITION SWITCH AND GROUND

Check continuity between park position switch vehicle side harness connector terminal and ground.

P0706 TRANSMISSION RANGE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

Park position switch vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B122	2	Ground	Existed

Is the inspection result normal?

YES >> GO TO 15.

NO >> Repair or replace damaged parts.

15. CHECK SHIFT POSITION

Check shift position. Refer to "INSPECTION" in [TM-264, "Inspection and Adjustment"](#).

Is the inspection result normal?

YES >> GO TO 16.

NO >> Adjust shift position. Refer to "ADJUSTMENT" in [TM-264, "Inspection and Adjustment"](#).

16. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (Park Position Switch) (NHPC)

INFOID:000000004651037

1. CHECK PARK POSITION SWITCH (PART 1)

Check continuity between park position switch connector terminals.

Park position switch connector		Condition	Continuity
Connector	Terminal		
B122	1	Parking lever: P position.	Existed
		Other than the above positions.	Not existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK PARK POSITION SWITCH (PART 2)

Check continuity between park position switch connector terminal and ground.

Park position switch connector		Ground	Continuity
Connector	Terminal		
B122	1	Ground	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace damaged parts.

P0710 TRANSMISSION FLUID TEMPERATURE SENSOR A

Description (NHPC)

INFOID:0000000004651038

- The fluid temperature sensor detects the transmission oil temperature in the oil pan.
- The fluid temperature sensor converts the transmission oil temperature into output voltage and transmits the signal to TCM.
- The fluid temperature sensor uses a thermistor and its electrical resistance varies as the temperature varies. The electrical resistance decreases as the temperature increases.

DTC Logic (NHPC)

INFOID:0000000004651039

DTC DETECTION LOGIC

NOTE:

If DTC P0700 is detected, first diagnose the DTC P0700. Refer to [TM-46, "DTC Logic \(NHPC\)".](#)

DTC	Self-diagnosis name	DTC detection condition	Possible cause
P0710	Fluid temperature sensor system voltage	<ul style="list-style-type: none">• A DTC is set if the fluid temperature sensor voltage value received by TCM is more than 2,654 mV.• A DTC is set if the fluid temperature sensor voltage value received by TCM is less than 39 mV.	<ul style="list-style-type: none">• Fluid temperature sensor• Harness or connector (Open or shorted in the fluid temperature sensor circuit)

DTC CONFIRMATION PROCEDURE

1. PREPARATION BEFORE OPERATION

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT-III

1. Start the engine and run at idle for 5 seconds or more.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

Without CONSULT-III

1. Start the engine and run at idle for 5 seconds or more.
2. Check self-diagnosis.

Is DTC P0710 detected?

YES >> Go to [TM-61, "Diagnosis Procedure \(NHPC\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:0000000004651040

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connections B31 and ground cable connections. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection".](#)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK FLUID TEMPERATURE SENSOR CIRCUIT (PART 1)

1. Disconnect TCM harness connectors.
2. Check resistance between TCM vehicle side harness connector terminals.

P0710 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

TCM vehicle side harness connector		Condition	Resistance (Ap-prox.)
Connector	Terminal		
B46	87	Transmission oil temperature: 20°C (68°F)	6.36 – 6.68 kΩ
		Transmission oil temperature: 50°C (122°F)	2.17 – 2.23 kΩ
		Transmission oil temperature: 80°C (176°F)	0.86 – 0.89 kΩ

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 4.

3. CHECK FLUID TEMPERATURE SENSOR CIRCUIT (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B46	87	Ground	Not existed
	91		

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 4.

4. CHECK FLUID TEMPERATURE SENSOR

1. Disconnect transmission unit harness connectors.
2. Check fluid temperature sensor. Refer to [TM-63, "Component Inspection \(Fluid Temperature Sensor\) \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5. CHECK HARNESS BETWEEN TCM AND TRANSMISSION (FLUID TEMPERATURE SENSOR) (PART 1)

Check continuity between TCM vehicle side harness connector terminals and transmission unit vehicle side harness connector terminals.

TCM vehicle side harness connector		Transmission unit vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B46	87	B50	45	Existed
	91		46	

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6. CHECK HARNESS BETWEEN TCM AND TRANSMISSION (FLUID TEMPERATURE SENSOR) (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B46	87	Ground	Not existed
	91		

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace damaged parts.

7. CHECK INTERMITTENT INCIDENT

P0710 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

Refer to [GI-40, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (Fluid Temperature Sensor) (NHPC)

INFOID:000000004651041

1.CHECK FLUID TEMPERATURE SENSOR (PART 1)

Check resistance between transmission unit harness connector terminals.

Transmission unit harness connector			Condition	Resistance (Ap-prox.)
Connector	Terminal			
B50	45	46	Transmission oil temperature: 20°C (68°F)	6.36 – 6.68 kΩ
			Transmission oil temperature: 50°C (122°F)	2.17 – 2.23 kΩ
			Transmission oil temperature: 80°C (176°F)	0.86 – 0.89 kΩ

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2.CHECK FLUID TEMPERATURE SENSOR (PART 2)

Check continuity between transmission unit harness connector terminal and ground.

Transmission unit harness connector			Ground	Continuity
Connector	Terminal			
B50	45	46	Ground	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace damaged parts.

P0711 TRANSMISSION FLUID TEMPERATURE SENSOR A

Description (NHPC)

INFOID:0000000004651042

- The fluid temperature sensor detects the transmission oil temperature in the oil pan.
- The fluid temperature sensor converts the transmission oil temperature into output voltage and transmits the signal to TCM.
- The fluid temperature sensor uses a thermistor and its electrical resistance varies as the temperature varies. The electrical resistance decreases as the temperature increases.

DTC Logic (NHPC)

INFOID:0000000004651043

DTC DETECTION LOGIC

NOTE:

If DTC P0710 is detected, first diagnose the DTC P0710. Refer to [TM-61, "DTC Logic \(NHPC\)".](#)

DTC	Self-diagnosis name	DTC detection condition	Possible cause
P0711	Fluid temperature sensor malfunction judgment	<ul style="list-style-type: none"> • A DTC is set if TCM detects the fluid temperature sensor value of 160°C (320°F) or more for a certain period of time. • A DTC is set if TCM detects the fluid temperature sensor value of 0°C (32°F) or more and less than 20°C (68°F) for a certain period of time. • A DTC is set if TCM detects the fluid temperature sensor value of -20°C (-4°F) or more, or less than 0°C (32°F) for a certain period of time. • A DTC is set if TCM detects the fluid temperature sensor value of less than -20°C (-4°F) for a certain period of time. 	<ul style="list-style-type: none"> • Fluid temperature sensor • Harness or connector (Open or shorted in the fluid temperature sensor circuit)

DTC CONFIRMATION PROCEDURE

1. PREPARATION BEFORE OPERATION

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT-III

1. Start the engine and run at idle for 8 minutes or more.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

Without CONSULT-III

1. Start the engine and run at idle for 8 minutes or more.
2. Check self-diagnosis.

Is DTC P0711 detected?

YES >> Go to [TM-64, "Diagnosis Procedure \(NHPC\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:0000000004651044

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connections B31 and ground cable connections. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection".](#)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

P0711 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

2. CHECK FLUID TEMPERATURE SENSOR CIRCUIT (PART 1)

1. Disconnect TCM harness connectors.
2. Check resistance between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector		Condition	Resistance (Ap-prox.)
Connector	Terminal		
B46	87	Transmission oil temperature: 20°C (68°F)	6.36 – 6.68 kΩ
		Transmission oil temperature: 50°C (122°F)	2.17 – 2.23 kΩ
		Transmission oil temperature: 80°C (176°F)	0.86 – 0.89 kΩ

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 4.

3. CHECK FLUID TEMPERATURE SENSOR CIRCUIT (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B46	87	Ground	Not existed
	91		

Is the inspection result normal?

YES >> GO TO 7.
NO >> GO TO 4.

4. CHECK FLUID TEMPERATURE SENSOR

1. Disconnect transmission unit harness connectors.
2. Check fluid temperature sensor. Refer to [TM-66, "Component Inspection \(Fluid Temperature Sensor \(NHPC\)\)"](#).

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace damaged parts.

5. CHECK HARNESS BETWEEN TCM AND TRANSMISSION (FLUID TEMPERATURE SENSOR) (PART 1)

Check continuity between TCM vehicle side harness connector terminals and transmission unit vehicle side harness connector terminals.

TCM vehicle side harness connector		Transmission unit vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B46	87	B50	45	Existed
	91		46	

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace damaged parts.

6. CHECK HARNESS BETWEEN TCM AND TRANSMISSION (FLUID TEMPERATURE SENSOR) (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B46	87	Ground	Not existed
	91		

Is the inspection result normal?

P0711 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

YES >> GO TO 7.

NO >> Repair or replace damaged parts.

7.CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> Replace transmission assembly. Refer to [TM-287, "Exploded View \(SpecV NHPC\)"](#).

NO >> Repair or replace damaged parts.

Component Inspection (Fluid Temperature Sensor) (NHPC)

INFOID:000000004651045

1.CHECK FLUID TEMPERATURE SENSOR (PART 1)

Check resistance between transmission unit harness connector terminals.

Transmission unit harness connector		Condition	Resistance (Ap- prox.)
Connector	Terminal		
B50	45	Transmission oil temperature: 20°C (68°F)	6.36 – 6.68 kΩ
		Transmission oil temperature: 50°C (122°F)	2.17 – 2.23 kΩ
		Transmission oil temperature: 80°C (176°F)	0.86 – 0.89 kΩ

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2.CHECK FLUID TEMPERATURE SENSOR (PART 2)

Check continuity between transmission unit harness connector terminal and ground.

Transmission unit harness connector		Ground	Continuity
Connector	Terminal		
B50	45	Ground	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace damaged parts.

P0715 INPUT SPEED SENSOR A**Description (NHPC)**

INFOID:0000000004651046

- The clutch A speed sensor detects the 2nd counter gear speed. The clutch A speed sensor converts the 2nd counter gear speed into pulse signal and transmits the signal to TCM.
- TCM calculates the revolution speed or the clutch A (even gear) based on the signal from the clutch A speed sensor.

DTC Logic (NHPC)

INFOID:0000000004651047

DTC DETECTION LOGIC

TM

DTC	Self-diagnosis name	DTC detection condition	Possible cause
P0715	Clutch A speed pulse signal compatibility	<p>A DTC is set if the status 1 or 2 below is detected with sleeve A1 or A2 engaged in an even gear.</p> <ol style="list-style-type: none"> 1. The difference between the actual output shaft speed and the output shaft speed converted from the clutch A speed is 1,000 rpm or more. 2. The difference between the vehicle speed signal (meter) (CAN signal) and the output shaft speed converted from the clutch A speed is 1,000 rpm or more. 	<ul style="list-style-type: none"> • Clutch A speed sensor • Sleeve A1 related part • Sleeve A2 related part • Harness or connector (Open or short in the clutch A speed sensor circuit)

DTC CONFIRMATION PROCEDURE**CAUTION:****Be careful of the driving speed.****1. PREPARATION BEFORE OPERATION**

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE (PART 1) With CONSULT-III

1. Start the engine.
2. Select "RANGE", "GEAR" and "ENGINE SPEED" in "Data Monitor".
3. Run the vehicle and maintain the following conditions for 5 seconds or more.

RANGE	: M
GEAR	: 4
ENGINE SPEED	: 1,500 rpm or more

4. Check "Self Diagnostic Result" of "TRANSMISSION".

 Without CONSULT-III

1. Start the engine.
2. Run the vehicle and maintain the following conditions for 5 seconds or more.

Shift lever	: M range
Gear	: 4
Engine speed	: 1,500 rpm or more

3. Check self-diagnosis.

Is DTC P0715 detected?

YES >> Go to [TM-68, "Diagnosis Procedure \(NHPC\)".](#)
 NO >> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE (PART 2) With CONSULT-III

1. Select "RANGE", "GEAR" and "VEHICLE SPEED" in "Data Monitor".
2. Run the vehicle and maintain the following conditions for 5 seconds or more.

RANGE : M
 GEAR : 6
 VEHICLE SPEED : 36 – 44 km/h (23 – 27 MPH)

3. Check "Self Diagnostic Result" of "TRANSMISSION".

 Without CONSULT-III

1. Start the engine.
2. Run the vehicle and maintain the following conditions for 5 seconds or more.

Shift lever : M range
 Gear : 6
 Vehicle speed : 36 – 44 km/h (23 – 27 MPH)

3. Check self-diagnosis.

Is DTC P0715 detected?

YES >> Go to [TM-68, "Diagnosis Procedure \(NHPC\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:000000004651048

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connections B31 and ground cable connections. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection".](#)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK TCM OUTPUT SIGNAL CIRCUIT

Check voltage between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector				Condition	Voltage (Approx.)
Connector	Terminal	Connector	Terminal		
B46	76	B45	4	Ignition switch ON	5 V
				Ignition switch OFF	0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Go to [TM-183, "Diagnosis Procedure \(NHPC\)".](#)

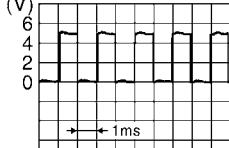
3. CHECK TCM INPUT SIGNAL CIRCUIT

1. Start engine.
2. Check voltage between TCM vehicle side harness connector terminals.

P0715 INPUT SPEED SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

TCM vehicle side harness connector				Condition	Voltage (Approx.)
Connector	Terminal	Connector	Terminal		
B46	72	B45	4	<ul style="list-style-type: none"> • M range, 2nd gear • Engine speed: 2,000 rpm 	 NNDA0061ZZ

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 5.

4.CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

>> INSPECTION END

5.CHECK HARNESS BETWEEN TCM AND TRANSMISSION (CLUTCH A SPEED SENSOR) (PART 1)

Check continuity between TCM vehicle side harness connector terminals and transmission unit vehicle side harness connector terminals.

TCM vehicle side harness connector		Transmission unit vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B46	68	B49	29	Existed
	72		34	
	76		28	

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6.CHECK HARNESS BETWEEN TCM AND TRANSMISSION (CLUTCH A SPEED SENSOR) (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B46	68	Ground	Not existed
	72		
	76		

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace damaged parts.

7.CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> Replace transmission assembly. Refer to [TM-287, "Exploded View \(SpecV NHPC\)"](#).

NO >> Repair or replace damaged parts.

P0720 OUTPUT SPEED SENSOR

Description (NHPC)

INFOID:0000000004651049

- The output shaft speed sensor detects the front reduction gear speed. The output shaft speed sensor converts the front reduction gear speed into pulse signal and transmits the signal to TCM.
- The vehicle speed signal (meter) is transmitted via the CAN communication from the ABS actuator and electric unit (control unit) through the combination meter to TCM. TCM calculates the output shaft speed based on the vehicle speed signal (meter) and uses it for the diagnosis of each speed sensor and as a backup signal.

DTC Logic (NHPC)

INFOID:0000000004651050

DTCT DETECTION LOGIC

NOTE:

If DTC U1000 is detected, first diagnose the DTC U1000. Refer to [TM-45, "DTC Logic \(NHPC\)".](#)

P0720 OUTPUT SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

DTC	Self-diagnosis name	DTC detection condition		Possible cause
P0720	Output shaft speed CAN signal compatibility *1	A	A DTC is set if the status 1 or 2 below is detected with an even gear engaged. 1. The difference between the output shaft speed sensor value and the output shaft speed converted from the vehicle speed signal (meter) (CAN signal) is 1,000 rpm or more. 2. The difference between the output shaft speed converted from the vehicle speed signal (meter) (CAN signal) and the output shaft speed converted from the clutch A speed is 1,000 rpm or more.	<ul style="list-style-type: none"> Combination meter ABS actuator and electric unit (control unit) Wheel sensor Harness or connector (CAN communication line is open or shorted) (Open or short in the wheel speed sensor circuit)
			A DTC is set if the status 1 or 2 below is detected with an odd gear engaged. 1. The difference between the output shaft speed sensor value and the output shaft speed converted from the vehicle speed signal (meter) (CAN signal) is 1,000 rpm or more. 2. The difference between the output shaft speed converted from the vehicle speed signal (meter) (CAN signal) and the output shaft speed converted from the clutch B speed is 1,000 rpm or more.	
	Output shaft speed pulse signal compatibility *2	C	A DTC is set if the status 1 or 2 below is detected with an even gear engaged. 1. The difference between the output shaft speed sensor value and the output shaft speed converted from the vehicle speed signal (meter) (CAN signal) is 1,000 rpm or more. 2. The difference between the output shaft speed sensor value and the output shaft speed converted from the clutch A speed is 1,000 rpm or more.	<ul style="list-style-type: none"> Output shaft speed sensor Harness or connector (Open or shorted in the output shaft speed sensor circuit)
			A DTC is set if the status 1 or 2 below is detected with an odd gear engaged. 1. The difference between the output shaft speed sensor value and the output shaft speed converted from the vehicle speed signal (meter) (CAN signal) is 1,000 rpm or more. 2. The difference between the output shaft speed sensor value and the output shaft speed converted from the clutch B speed is 1,000 rpm or more.	

• *1: A DTC is displayed when A or B in the DTC detection conditions is detected.

• *2: A DTC is displayed when C or D in the DTC detection conditions is detected.

DTC CONFIRMATION PROCEDURE

CAUTION:

Be careful of the driving speed.

1. PREPARATION BEFORE OPERATION

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

P0720 OUTPUT SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION A, B

With CONSULT-III

1. Start the engine.
2. Select "RANGE", "GEAR" or "ENGINE SPEED" in "Data Monitor".
3. Run the vehicle and maintain the following status for 5 seconds or more.

RANGE	: M
GEAR	: 3
ENGINE SPEED	: 2,000 rpm or more

4. Check "Self Diagnostic Result" of "TRANSMISSION".

Without CONSULT-III

1. Start the engine.
2. Run the vehicle and maintain the following status for 5 seconds or more.

Shift lever	: M range
Gear	: 3
Engine speed	: 2,000 rpm or more

3. Check self-diagnosis.

Is DTC P0720 detected?

YES >> Go to [TM-72, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION C, D

With CONSULT-III

1. Select "RANGE", "GEAR" or "ENGINE SPEED" in "Data Monitor".
2. Run the vehicle and maintain the following status for 5 seconds or more.

RANGE	: M
GEAR	: 4
ENGINE SPEED	: 1,500 rpm or more

3. Check "Self Diagnostic Result" of "TRANSMISSION".

Without CONSULT-III

1. Run the vehicle and maintain the following status for 5 seconds or more.

Shift lever	: M range
Gear	: 4
Engine speed	: 1,500 rpm or more

2. Check self-diagnosis.

Is DTC P0720 detected?

YES >> Go to [TM-72, "Diagnosis Procedure \(NHPC\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:0000000004651051

1. CHECK CAN COMMUNICATION CIRCUIT

Refer to [TM-45, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK DTC WITH COMBINATION METER

With CONSULT-III

1. Turn ignition switch ON.

P0720 OUTPUT SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

2. Check "Self Diagnostic Result" of "METER/M&A".

Is DTC detected?

YES >> Check DTC Detected Item. Refer to [MWI-111, "DTC Index"](#).

NO >> GO TO 3.

3. CHECK DTC WITH ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

With CONSULT-III

1. Turn ignition switch ON.
2. Check "Self Diagnostic Result" of "ABS".

Is DTC detected?

YES >> Check DTC Detected Item. Refer to [BRC-124, "DTC No. Index"](#).

NO >> GO TO 4.

4. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.

2. Check ground connections B31 and ground cable connections. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5. CHECK TCM OUTPUT SIGNAL CIRCUIT

Check voltage between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector				Condition	Voltage (Approx.)
Connector	Terminal	Connector	Terminal		
B47	105	B45	4	Ignition switch ON	5 V
				Ignition switch OFF	0 V

Is the inspection result normal?

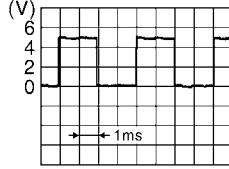
YES >> GO TO 6.

NO >> Go to [TM-183, "Diagnosis Procedure \(NHPC\)"](#).

6. CHECK TCM INPUT SIGNAL CIRCUIT

1. Start engine.

2. Check voltage between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector				Condition	Voltage (Approx.)
Connector	Terminal	Connector	Terminal		
B47	106	B45	4	• M range, 1st gear • Engine speed: 2,000 rpm	 NNDIA0055ZZ

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 8.

7. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

>> INSPECTION END

8. CHECK HARNESS BETWEEN TCM AND TRANSMISSION (OUTPUT SHAFT SPEED SENSOR) (PART 1)

P0720 OUTPUT SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

Check continuity between TCM vehicle side harness connector terminals and transmission unit vehicle side harness connector terminals.

TCM vehicle side harness connector		Transmission unit vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B47	105	B49	1	Existed
	106		2	
	107		8	

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair or replace damaged parts.

9.CHECK HARNESS BETWEEN TCM AND TRANSMISSION (OUTPUT SHAFT SPEED SENSOR) (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B47	105	Ground	Not existed
	106		
	107		

Is the inspection result normal?

YES >> GO TO 10.

NO >> Repair or replace damaged parts.

10.CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> Replace transmission assembly. Refer to [TM-287, "Exploded View \(SpecV NHPC\)"](#).

NO >> Repair or replace damaged parts.

P0725 ENGINE SPEED**Description (NHPC)**

INFOID:0000000004651052

- The engine speed signal (CAN signal) is transmitted from ECM to TCM via CAN communication.
- The engine speed signal (pulse signal) is transmitted from ECM to TCM via the hard wire. TCM uses the engine speed signal (pulse signal) for the diagnosis of each speed signal and as a backup signal.

DTC Logic (NHPC)

INFOID:0000000004651053

DTC DETECTION LOGIC**NOTE:**

If DTC P0700 is detected, first diagnose the DTC P0700. Refer to [TM-46, "DTC Logic \(NHPC\)".](#)

DTC	Self-diagnosis name	DTC detection condition		Possible cause
P0725	Engine speed CAN signal compatibility*	A	A DTC is set if the engine speed (CAN signal) is less than 200 rpm when the engine speed (pulse signal) is 700 rpm or more.	Harness or connector (CAN communication line is open or shorted)
		B	A DTC is set if the difference between the engine speed (CAN signal) and clutch A speed sensor value is 1,000 rpm or more with clutch A engaged.	<ul style="list-style-type: none"> • Clutch A speed sensor • Harness or connector (Open or short in the clutch A speed sensor circuit) (CAN communication line is open or shorted)
		C	A DTC is set if the difference between the engine speed (CAN signal) and clutch B speed sensor value is 1,000 rpm or more with clutch B engaged.	<ul style="list-style-type: none"> • Clutch B speed sensor • Harness or connector (Open or short in the clutch B speed sensor circuit) (CAN communication line is open or shorted)
	Engine speed pulse signal compatibility	D	A DTC is set if the engine speed (pulse signal) is less than 500 rpm when the engine speed (CAN signal) is 1,000 rpm or more.	Harness or connector (Open or short in the circuit between ECM and TCM)

*: A DTC is displayed when A, B or C in the DTC detection conditions is detected.

DTC CONFIRMATION PROCEDURE**CAUTION:**

Be careful of the driving speed.

1. PREPARATION BEFORE OPERATION

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION A

With CONSULT-III

1. Start the engine and run at idle for 5 seconds or more.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0725 detected?

YES >> Go to [TM-76, "Diagnosis Procedure \(NHPC\)".](#)
NO >> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION D

With CONSULT-III

1. Select "RANGE" and "ENGINE SPEED" in "Data Monitor".
2. Maintain the following conditions for 5 seconds or more.

RANGE : P
 ENGINE SPEED : 1,000 rpm or more

3. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0725 detected?

YES >> Go to [TM-76, "Diagnosis Procedure \(NHPC\)".](#)
 NO >> GO TO 4.

4. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION C

With CONSULT-III

1. Select "RANGE", "GEAR", "ACCEL POSI SEN 1" and "VEHICLE SPEED" in "Data Monitor".
2. Run the vehicle and maintain the following conditions for 5 seconds or more.

RANGE : M
 GEAR : 1
 ACCEL POSI SEN 1 : 0.0/8
 VEHICLE SPEED : 20 km/h (13 MPH) or more

3. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0725 detected?

YES >> Go to [TM-76, "Diagnosis Procedure \(NHPC\)".](#)
 NO >> GO TO 5.

5. DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION B

With CONSULT-III

1. Select "RANGE", "GEAR", "ACCEL POSI SEN 1" and "VEHICLE SPEED" in "Data Monitor".
2. Run the vehicle and maintain the following conditions for 5 seconds or more.

RANGE : M
 GEAR : 2
 ACCEL POSI SEN 1 : 0.0/8
 VEHICLE SPEED : 35 km/h (22 MPH) or more

3. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0725 detected?

YES >> Go to [TM-76, "Diagnosis Procedure \(NHPC\)".](#)
 NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:000000004651054

1. CHECK CAN COMMUNICATION CIRCUIT

Refer to [TM-45, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 2.
 NO >> Repair or replace damaged parts.

2. CHECK CLUTCH A SPEED SENSOR CIRCUIT

Refer to [TM-68, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 3.
 NO >> Repair or replace damaged parts.

3. CHECK CLUTCH B SPEED SENSOR CIRCUIT

Refer to [TM-177, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 4.
 NO >> Repair or replace damaged parts.

< DTC/CIRCUIT DIAGNOSIS >

4. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connections B31 and ground cable connections. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection"](#).

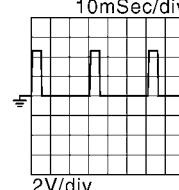
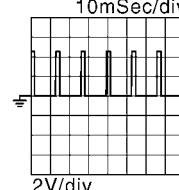
Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5. CHECK TCM INPUT SIGNAL CIRCUIT

1. Start engine.
2. Check voltage between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector			Condition	Voltage (Approx.)
Connector	Terminal			
B45	31	4	At idle NOTE: The pulse period changes depending on the idle speed.	1 V*  2V/div 10mSec/div JMBIA0076GB
			After engine warming up Engine speed: 2,000 rpm	1 V*  2V/div 10mSec/div JMBIA0077GB

*: Average voltage value of pulse waveform (The correct waveform is measured with an oscilloscope)

Is the inspection result normal?

YES >> GO TO 8.

NO >> GO TO 6.

6. CHECK HARNESS BETWEEN TCM AND ECM (PART 1)

1. Turn ignition switch OFF.
2. Disconnect TCM harness connectors and ECM harness connectors.
3. Check continuity between TCM vehicle side harness connector terminals and transmission unit vehicle side harness connector terminals.

TCM vehicle side harness connector		ECM vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B45	31	M107	113	Existed

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace damaged parts.

7. CHECK HARNESS BETWEEN TCM AND ECM (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B45	31	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair or replace damaged parts.

8. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident".](#)

>> INSPECTION END

P0729 6GR INCORRECT RATIO

Description (NHPC)

INFOID:0000000004651055

- The 6th-Neutral position sensor is installed on the actuator control valve and detects the sleeve A1 position.
- The 6th-Neutral position sensor converts the sleeve A1 position into output voltage and transmits the signal to TCM.
- The sleeve A1 has its oil passage secured by the shift solenoid valve 1 and shift solenoid valve 2 when the sequence solenoid valve is ON and is driven by the axis A feed pressure solenoid valve. The 6th gear is selected or deselected depending on the operation of the sleeve A1.

DTC Logic (NHPC)

INFOID:0000000004651056

TM

DTC DETECTION LOGIC

NOTE:

- If DTC P0700 is detected, first diagnose the DTC P0700. Refer to [TM-46, "DTC Logic \(NHPC\)"](#).
- If DTC P0715 is detected, first diagnose the DTC P0715. Refer to [TM-67, "DTC Logic \(NHPC\)"](#).

DTC	Self-diagnosis name	DTC Detection Condition		Possible causes
P0729	6th-Neutral position sensor voltage	A	<ul style="list-style-type: none"> • A DTC is set if the 6th-Neutral position sensor voltage value received by TCM is more than 4,700 mV. • A DTC is set if the 6th-Neutral position sensor voltage value received by TCM is less than 300 mV. 	<ul style="list-style-type: none"> • 6th-Neutral position sensor • TCM • Harness or connector (Open or short in the 6th-Neutral position sensor circuit)
	Sleeve A1 function (long time release)	B	A DTC is set if the status of the sleeve A1 position of more than 1.3 mm (0.051 in) is detected for a certain period when the sleeve A1 position target is neutral.	<ul style="list-style-type: none"> • 6th-Neutral position sensor • Shift solenoid valve 1 • Shift solenoid valve 2 • Sequence solenoid valve • Axis A feed pressure solenoid valve • Harness or connector (Open or short in the 6th-Neutral position sensor circuit)
	Sleeve A1 function (long time engagement)	C	A DTC is set if the status of the sleeve A1 position of less than 1.8 mm (0.071 in) is detected for a certain period of time when the sleeve A1 position target is on the 6th gear side.	<ul style="list-style-type: none"> • Harness or connector (Open or short in the shift solenoid valve 1 circuit) • Harness or connector (Open or short in the shift solenoid valve 2 circuit) • Harness or connector (Open or short in the sequence solenoid valve circuit) • Harness or connector (Open or short in the axis A feed pressure solenoid valve circuit)

P0729 6GR INCORRECT RATIO

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

DTC	Self-diagnosis name	DTC Detection Condition		Possible causes
P0729	Sleeve A1 function (poor neutral hold)	D	A DTC is set if the status of the sleeve A1 position of more than 1.7 mm (0.067 in) or less than -1.6 mm (-0.063 in) is detected for a certain period of time when the sleeve A1 position target is neutral with the sleeve A2 engaged in the 2nd or 4th gear.	<ul style="list-style-type: none"> 6th-Neutral position sensor Shift solenoid valve 1 Shift solenoid valve 2 Sequence solenoid valve Harness or connector (Open or short in the 6th-Neutral position sensor circuit) (Open or short in the shift solenoid valve 1 circuit) (Open or short in the shift solenoid valve 2 circuit) (Open or short in the sequence solenoid valve circuit)
	Sleeve A1 function (poor engaged gear)	E	A DTC is set if the sleeve A1 position is 7.1 mm (0.28 in) or less and 1.7 mm (0.067 in) or more when the sleeve A1 position target is on the 6th gear side.	<ul style="list-style-type: none"> Shift solenoid valve 1 Shift solenoid valve 2 Axis A feed pressure solenoid valve Sleeve A1 related part Harness or connector (Open or short in the shift solenoid valve 1 circuit) (Open or short in the shift solenoid valve 2 circuit) (Open or short in the axis A feed pressure solenoid valve circuit)
	Sleeve A1 function (gear release)*	F	<p>A DTC is set if the status 1 or 2 below is detected with the sleeve A1 engaged in the 6th gear.</p> <ol style="list-style-type: none"> The difference between the clutch A speed calculated from the output shaft speed sensor value and clutch A speed sensor value is 1,000 rpm or more. The difference between the clutch A speed calculated from the vehicle speed signal (meter) (CAN signal) and clutch A speed sensor value is 1,000 rpm or more. 	<ul style="list-style-type: none"> Clutch A speed sensor Sleeve A1 related part Harness or connector (Open or short in the clutch A speed sensor circuit)
		G	A DTC is set if the sleeve A1 and A2 positions are not in 6th gear during driving in the 6th gear.	<ul style="list-style-type: none"> Shift solenoid valve 1 Sleeve A1 related part Harness or connector (Open or short in the shift solenoid valve 1 circuit)

*: A DTC is displayed when F or G in the DTC detection conditions is detected.

DTC CONFIRMATION PROCEDURE

CAUTION:

- If CONSULT-III is not available, "[TM-84, "Diagnosis Procedure \(NHPC\)"](#)" must be performed before starting "DTC CONFIRMATION PROCEDURE".
- If CONSULT-III is not available, never perform "DTC CONFIRMATION PROCEDURE" before completing the repair, which may cause secondary malfunction.
- Be careful of the driving speed.

1. PREPARATION BEFORE OPERATION (PART 1)

Is CONSULT-III available?

YES >> GO TO 2.

NO >> GO TO 13.

2. PREPARATION BEFORE OPERATION (PART 2)

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 3.

3. PREPARATION BEFORE OPERATION (PART 3)

With CONSULT-III

1. Turn the ignition switch ON.
2. Select "FLUID TEMP" in "Data Monitor".

Is the oil temperature -20°C (-4°F) or more?

YES >> GO TO 4.

NO >> Warm up the transmission.

4. PREPARATION BEFORE OPERATION (PART 4)

With CONSULT-III

Select "READ CLUTCH GEAR LEARNING DATA" in "Work support".

Is the "6-N learning experienced" YES?

YES >> GO TO 5.

NO >> Perform "CLUTCH GEAR LEARNING".

5. CONFIRMATION BEFORE OPERATION (PART 1)

With CONSULT-III

Select "SLEEVE A1 POSI" in "Data Monitor".

Is the numeral value of the "SLEEVE A1 POSI" in the range between -1.7 and 1.8 mm (-0.067 and 0.071 in)?

YES >> GO TO 6.

NO >> GO TO 7.

6. CONFIRMATION BEFORE OPERATION (PART 2)

With CONSULT-III

1. Shift the shift lever to N position.
2. Start the engine.
3. Select "GEAR POSITION TEST" in "Work support".
4. Select "GEAR6".

CAUTION:

Never select "GEAR2", "GEAR4" or "GEAR N".

Does the sleeve A1 operate?

YES >> GO TO 11.

NO >> Go to [TM-84, "Diagnosis Procedure \(NHPC\)".](#)

7. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION A

With CONSULT-III

1. Turn ignition switch ON, and wait for 5 seconds or more.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0729 detected?

YES >> Go to [TM-84, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 8.

8. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION B

With CONSULT-III

1. Shift the shift lever to the N position.
2. Start the engine and run at idle for 10 seconds or more.
3. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0729 or DTC P0795 detected?

YES-1 (DTC P0729 is detected).>>Go to [TM-84, "Diagnosis Procedure \(NHPC\)".](#)

YES-2 (DTC P0795 is detected).>>Go to [TM-143, "DTC Logic \(NHPC\)".](#)

NO >> GO TO 9.

9. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT-III

1. Shift the shift lever to the P position and run at idle for 1 minute or more.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0795 or DTC P0797 detected?

YES-1 (DTC P0795 is detected).>>Go to [TM-143, "DTC Logic \(NHPC\)".](#)

YES-2 (DTC P0797 is detected).>>Go to [TM-146, "DTC Logic \(NHPC\)".](#)

NO >> GO TO 10.

10. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION D

With CONSULT-III

1. Select "RANGE" and "GEAR" in "Data Monitor".
2. With the vehicle stationary, maintain the following conditions for 2 seconds or more.

RANGE : M

GEAR : 1

3. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0729 detected?

YES >> Go to [TM-84, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 11.

11. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION C AND E

With CONSULT-III

1. Select "RANGE", "GEAR" and "VEHICLE SPEED" in "Data Monitor".
2. Run the vehicle and maintain the following conditions for 10 seconds or more.

RANGE : M

GEAR : 5

VEHICLE SPEED : 40 km/h (25 MPH) or more

3. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0729 detected?

YES >> Go to [TM-84, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 12.

12. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION F AND G

With CONSULT-III

1. Select "RANGE", "GEAR", "ENGINE SPEED" and "VEHICLE SPEED" in "Data Monitor".
2. Run the vehicle and maintain the following conditions for 10 seconds or more.

RANGE : M

GEAR : 6

ENGINE SPEED : 1,000 rpm or more

VEHICLE SPEED : 40 km/h (25 MPH) or more

3. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0729 detected?

YES >> Go to [TM-84, "Diagnosis Procedure \(NHPC\)".](#)

NO >> INSPECTION END

13. PREPARATION BEFORE OPERATION (PART 2)

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 14.

14. PREPARATION BEFORE OPERATION (PART 3)

Without CONSULT-III

1. Turn the ignition switch ON.
2. Check "TRANS OIL TEMP" on multi-function display.

Is the oil temperature -20°C (-4°F) or more?

YES >> GO TO 15.

NO >> Warm up the transmission.

A

15. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION A

Without CONSULT-III

1. Turn ignition switch ON, and wait for 5 seconds or more.
2. Check self-diagnosis.

B

Is DTC P0729 detected?

YES >> Go to [TM-84, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 16.

TM

16. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION B

Without CONSULT-III

1. Shift the shift lever to the N position.
2. Start the engine and run at idle for 10 seconds or more.
3. Check self-diagnosis.

E

Is DTC P0729 or DTC P0795 detected?

YES-1 (DTC P0729 is detected).>>Go to [TM-84, "Diagnosis Procedure \(NHPC\)".](#)

YES-2 (DTC P0795 is detected).>>Go to [TM-143, "DTC Logic \(NHPC\)".](#)

NO >> GO TO 17.

F

17. PERFORM DTC CONFIRMATION PROCEDURE

Without CONSULT-III

1. Shift the shift lever to the P position and run at idle for 1 minute or more.
2. Check self-diagnosis.

G

Is DTC P0795 or DTC P0797 detected?

YES-1 (DTC P0795 is detected).>>Go to [TM-143, "DTC Logic \(NHPC\)".](#)

YES-2 (DTC P0797 is detected).>>Go to [TM-146, "DTC Logic \(NHPC\)".](#)

H

NO >> GO TO 18.

I

18. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION D

Without CONSULT-III

1. With the vehicle stationary, maintain the following conditions for 2 seconds or more.

J

Shift lever : M range

Gear : 1

K

2. Check self-diagnosis.

L

Is DTC P0729 detected?

M

YES >> Go to [TM-84, "Diagnosis Procedure \(NHPC\)".](#)

N

NO >> GO TO 19.

O

19. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION C AND E

Without CONSULT-III

1. Run the vehicle and maintain the following conditions for 10 seconds or more.

P

Shift lever : M range

Gear : 5

Vehicle speed : 40 km/h (25 MPH) or more

2. Check self-diagnosis.

Q

Is DTC P0729 detected?

R

YES >> Go to [TM-84, "Diagnosis Procedure \(NHPC\)".](#)

S

NO >> GO TO 20.

T

20. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION F AND G

Without CONSULT-III

1. Run the vehicle and maintain the following conditions for 10 seconds or more.

Shift lever	: M range
Gear	: 6
Engine speed	: 1,000 rpm or more
Vehicle speed	: 40 km/h (25 MPH) or more

2. Check self-diagnosis.

Is DTC P0729 detected?

YES >> Go to [TM-84, "Diagnosis Procedure \(NHPC\)".](#)
NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:000000004651057

1. CHECK SHIFT SOLENOID VALVE 1 CIRCUIT

Refer to [TM-120, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace damaged parts.

2. CHECK SHIFT SOLENOID VALVE 2 CIRCUIT

Refer to [TM-123, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace damaged parts.

3. CHECK SEQUENCE SOLENOID VALVE CIRCUIT

Refer to [TM-133, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace damaged parts.

4. CHECK AXIS A FEED PRESSURE SOLENOID VALVE CIRCUIT

Refer to [TM-143, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace damaged parts.

5. CHECK CLUTCH A SPEED SENSOR CIRCUIT

Refer to [TM-68, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace damaged parts.

6. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connections B31 and ground cable connections. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection".](#)

Is the inspection result normal?

YES >> GO TO 7.
NO >> Repair or replace damaged parts.

7. CHECK TCM OUTPUT SIGNAL CIRCUIT

Check voltage between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector				Condition	Voltage (Approx.)
Connector	Terminal	Connector	Terminal		
B46	74	B45	4	Ignition switch ON	5 V
				Ignition switch OFF	0 V

Is the inspection result normal?

YES >> GO TO 9.
NO >> GO TO 8.

8.CHECK TCM POWER SUPPLY

Refer to [TM-160, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-266, "Exploded View \(NHPC\)".](#)
NO >> Repair or replace damaged parts.

9.CHECK TCM INPUT SIGNAL CIRCUIT

1. Start engine.
2. Check voltage between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector				Condition		Voltage (Ap-prox.)
Connector	Terminal	Connector	Terminal			
B46	70	B45	4	Engine running	Shift lever: P, R, N position	2.19 – 2.88 V
				While driving	1st gear, 2nd gear, 3rd gear, 4th gear	
					5th gear, 6th gear (Other than M range, R mode)	0.68 – 1.76 V

Is the inspection result normal?

YES >> GO TO 10.
NO >> GO TO 11.

10.CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident".](#)

>> INSPECTION END

11.CHECK HARNESS BETWEEN TCM AND TRANSMISSION (6TH-NEUTRAL POSITION SENSOR) (PART 1)

1. Turn ignition switch OFF.
2. Disconnect TCM harness connectors and transmission unit harness connectors.
3. Check continuity between TCM vehicle side harness connector terminals and transmission unit vehicle side harness connector terminals.

TCM vehicle side harness connector		Transmission unit vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B46	66	B49	25	Existed
	70		24	
	74		23	

Is the inspection result normal?

YES >> GO TO 12.
NO >> Repair or replace damaged parts.

12.CHECK HARNESS BETWEEN TCM AND TRANSMISSION (6TH-NEUTRAL POSITION SENSOR) (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B46	66	Ground	Not existed
	70		
	74		

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace damaged parts.

13. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> Replace transmission assembly. Refer to [TM-287, "Exploded View \(SpecV NHPC\)"](#).

NO >> Repair or replace damaged parts.

P0731 1GR INCORRECT RATIO

Description (NHPC)

INFOID:0000000004651058

- The 1st-Reverse position sensor 1 and 1st-Reverse position sensor 2 are installed on the actuator control valve and detect the sleeve B1 position.
- The 1st-Reverse position sensor 1 and 1st-Reverse position sensor 2 convert the sleeve B1 position into output voltage and transmit the signal to TCM.
- The sleeve B1 has its oil passage secured by the shift solenoid valve 3 and shift solenoid valve 2 when the sequence solenoid valve is OFF and is driven by the axis B feed pressure solenoid valve. The 1st gear and reverse gear are selected or deselected depending on the operation of the sleeve B1.

DTC Logic (NHPC)

INFOID:0000000004651059

DTC DETECTION LOGIC

NOTE:

- If DTC P0700 is detected, first diagnose the DTC P0700. Refer to [TM-46, "DTC Logic \(NHPC\)"](#).
- If DTC P2765 is detected, first diagnose the DTC P2765. Refer to [TM-176, "DTC Logic \(NHPC\)"](#).

DTC	Self-diagnosis name	DTC detection condition		Possible cause
P0731	1st-Reverse position sensor voltage	A	<ul style="list-style-type: none"> A DTC is set if the 1st-Reverse position sensor 1 or 1st-Reverse position sensor 2 voltage value received by TCM is more than 4,700 mV. A DTC is set if the 1st-Reverse position sensor 1 or 1st-Reverse position sensor 2 voltage value received by TCM is less than 300 mV. 	<ul style="list-style-type: none"> 1st-Reverse position sensor 1 1st-Reverse position sensor 2 TCM Harness or connector (Open or short in the 1st-Reverse position sensor 1 circuit) (Open or short in the 1st-Reverse position sensor 2 circuit)
	Sleeve B1 function (long time release)	B	<ul style="list-style-type: none"> A DTC is set if the status of the sleeve B1 position of more than 1.3 mm (0.051 in) is detected for a certain period of time when the sleeve B1 position target is neutral. A DTC is set if the status of the sleeve B1 position of less than -1.3 mm (-0.051 in) is detected for a certain period of time when the sleeve B1 position target is neutral. 	<ul style="list-style-type: none"> 1st-Reverse position sensor 1 Shift solenoid valve 3 Shift solenoid valve 4 Sequence solenoid valve Axis B feed pressure solenoid valve Harness or connector (Open or short in the 1st-Reverse position sensor 1 circuit)
	Sleeve B1 function (long time engagement) ^{*1}	C	<ul style="list-style-type: none"> A DTC is set if the status of the sleeve B1 position of less than 1.8 mm (0.071 in) is detected for a certain period of time when the sleeve B1 position target is on the 1st gear side. 	<ul style="list-style-type: none"> (Open or short in the shift solenoid valve 3 circuit) (Open or short in the shift solenoid valve 4 circuit) (Open or short in the sequence solenoid valve circuit) (Open or short in the axis B feed pressure solenoid valve circuit)
		D	<ul style="list-style-type: none"> A DTC is set if the status of the sleeve B1 position of more than 1.8 mm (0.071 in) is detected for a certain period of time when the sleeve B1 position target is on the reverse gear side. 	

DTC	Self-diagnosis name	DTC detection condition		Possible cause
P0731	Sleeve B1 function (poor neutral hold)	E	A DTC is set if the status of the sleeve B1 position of more than 1.7 mm (0.067 in) or less than -1.7 mm (-0.067 in) is detected for a certain period of time when the sleeve B1 position target is neutral with sleeve B2 engaged in the 3rd or 5th gear.	<ul style="list-style-type: none"> 1st-Reverse position sensor 1 Shift solenoid valve 3 Shift solenoid valve 4 Sequence solenoid valve Harness or connector (Open or short in the 1st-Reverse position sensor 1 circuit) (Open or short in the shift solenoid valve 3 circuit) (Open or short in the shift solenoid valve 4 circuit) (Open or short in the sequence solenoid valve circuit)
	Sleeve B1 function (poor gear engagement) ^{*2}	F	A DTC is set if the sleeve B1 position is 7.1 mm (0.28 in) or less and 1.7 mm (0.067 in) or more when the sleeve B1 position target is on the 1st gear side.	<ul style="list-style-type: none"> Shift solenoid valve 3 Shift solenoid valve 4 Axis B feed pressure solenoid valve Sleeve B1 related part Harness or connector (Open or short in the shift solenoid valve 3 circuit) (Open or short in the shift solenoid valve 4 circuit) (Open or short in the sequence solenoid valve circuit)
	Sleeve B1 function (gear release) ^{*3}	H	A DTC is set if the following statuses 1 and 2 are detected. <ol style="list-style-type: none"> The difference between the clutch B speed calculated from the output shaft speed sensor value and clutch B speed sensor value is 1,000 rpm or more. The difference between the clutch B speed calculated from the vehicle speed signal (meter) (CAN signal) and clutch B speed sensor value is 1,000 rpm or more. 	<ul style="list-style-type: none"> Clutch B speed sensor Sleeve B1 related part Harness or connector (Open or short in the clutch B speed sensor circuit)
			I A DTC is set if the sleeve B1 and B2 positions are not in 1st gear during driving in the 1st gear.	<ul style="list-style-type: none"> Shift solenoid valve 3 Shift solenoid valve 4 Sleeve B1 related part Harness or connector (Open or short in the shift solenoid valve 3 circuit) (Open or short in the shift solenoid valve 4 circuit)
		J	A DTC is set if the sleeve B1 and B2 positions are not in reverse during driving in the reverse gear.	<ul style="list-style-type: none"> Shift solenoid valve 3 Shift solenoid valve 4 Sleeve B1 related part Harness or connector (Open or short in the shift solenoid valve 3 circuit) (Open or short in the shift solenoid valve 4 circuit)
	1st-Reverse position sensor compatibility	K	A DTC is set if the difference between the sleeve B1 position calculated from the 1st-Reverse position sensor 1 value and the sleeve B1 position calculated from the 1st-Reverse position sensor 2 is 6 mm or more.	

- *1: A DTC is displayed when C or D in the DTC detection conditions is detected.

- *2: A DTC is displayed when F or G in the DTC detection conditions is detected.

- *3: A DTC is displayed when H, I, or J in the DTC detection conditions is detected.

DTC CONFIRMATION PROCEDURE

CAUTION:

- If CONSULT-III is not available, “[TM-92, "Diagnosis Procedure \(NHPC\)"](#)” must be performed before starting “DTC CONFIRMATION PROCEDURE”.
- If CONSULT-III is not available, never perform “DTC CONFIRMATION PROCEDURE” before completing the repair, which may cause secondary malfunction.
- Be careful of the driving speed.

1. PREPARATION BEFORE OPERATION (PART 1)

Is CONSULT-III available?

YES >> GO TO 2.
NO >> GO TO 15.

2. PREPARATION BEFORE OPERATION (PART 2)

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 3.

3. PREPARATION BEFORE OPERATION (PART 3)

With CONSULT-III

1. Turn the ignition switch ON.
2. Select "FLUID TEMP" in "Data Monitor".

Is the oil temperature -20°C (-4°F) or more?

YES >> GO TO 4.
NO >> Warm up the transmission.

4. PREPARATION BEFORE OPERATION (PART 4)

With CONSULT-III

Select "READ CLUTCH GEAR LEARNING DATA" in "Work support".

Is the "1-R learning experienced" YES?

YES >> GO TO 5.
NO >> Perform "CLUTCH GEAR LEARNING".

5. CONFIRMATION BEFORE OPERATION (PART 1)

With CONSULT-III

Select "SLEEVE B1 POSI 1" and "SLEEVE B1 POSI 2" in "Data Monitor".

Is the numeral value of the "SLEEVE B1 POSI 1" and "SLEEVE B1 POSI 2" in the range between -1.8 and 1.8 mm (-0.071 and 0.071 in)?

YES >> GO TO 6.
NO >> GO TO 8.

6. CONFIRMATION BEFORE OPERATION (PART 2)

With CONSULT-III

1. Shift the shift lever to the N position.
2. Start the engine.
3. Select "GEAR POSITION TEST" in "Work support".
4. Select "GEAR R".

CAUTION:

Never select "GEAR3", "GEAR5" or "GEAR N".

Does the sleeve B1 operate?

YES >> GO TO 7.
NO >> Go to [TM-92, "Diagnosis Procedure \(NHPC\)".](#)

7. CONFIRMATION BEFORE OPERATION (PART 3)

With CONSULT-III

1. Select "GEAR POSITION TEST" in "Work support".
2. Select "GEAR1".

CAUTION:

Never select "GEAR3", "GEAR5" or "GEAR N".

Does the sleeve B1 operate?

YES >> GO TO 12.
NO >> Go to [TM-92, "Diagnosis Procedure \(NHPC\)".](#)

A

B

C

TM

E

F

G

H

I

J

K

L

M

N

O

P

8. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION A AND K

With CONSULT-III

1. Turn ignition switch ON, and wait for 5 seconds or more.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0731 detected?

YES >> Go to [TM-92, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 9.

9. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION B

With CONSULT-III

1. Shift the shift lever to the N position.
2. Start the engine and run at idle for 10 seconds or more.
3. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0731 or DTC P2713 detected?

YES-1 (DTC P0731 is detected)>>Go to [TM-92, "Diagnosis Procedure \(NHPC\)".](#)

YES-2 (DTC P2713 is detected)>>Go to [TM-165, "DTC Logic \(NHPC\)".](#)

NO >> GO TO 10.

10. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT-III

1. Shift the shift lever to the P position and run at idle for 1 minute or more.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P2713 or DTC P2714 detected?

YES-1 (DTC P2713 is detected)>>Go to [TM-165, "DTC Logic \(NHPC\)".](#)

YES-2 (DTC P2714 is detected)>>Go to [TM-168, "DTC Logic \(NHPC\)".](#)

NO >> GO TO 11.

11. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION E

With CONSULT-III

1. Run the vehicle in 2nd gear of M range for 2 seconds or more.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0731 detected?

YES >> Go to [TM-92, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 12.

12. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION D, G AND J

With CONSULT-III

1. Shift the shift lever to the R position and wait for 10 seconds or more.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0731 detected?

YES >> Go to [TM-92, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 13.

13. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION C, F AND I

With CONSULT-III

1. Shift the shift lever to the A position and wait for 10 seconds or more.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0731 detected?

YES >> Go to [TM-92, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 14.

14. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION H

With CONSULT-III

1. Select "RANGE", "GEAR", "ENGINE SPEED" and "VEHICLE SPEED" in "Data Monitor".
2. Run the vehicle and maintain the following conditions for 10 seconds or more.

RANGE	: M
GEAR	: 1
ENGINE SPEED	: 4,500 rpm or more
VEHICLE SPEED	: 40 km/h (25 MPH) or more

A

B

3. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0731 detected?

C

YES >> Go to [TM-92, "Diagnosis Procedure \(NHPC\)".](#)
NO >> INSPECTION END.

15. PREPARATION BEFORE OPERATION (PART 2)

TM

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

E

>> GO TO 16.

16. PREPARATION BEFORE OPERATION (PART 3)

F

Without CONSULT-III

1. Turn the ignition switch ON.
2. Check "TRANS OIL TEMP" on multi-function display.

G

Is the oil temperature -20°C (-4°F) or more?

H

YES >> GO TO 17.

I

NO >> Warm up the transmission.

17. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION A AND K

J

Without CONSULT-III

1. Turn ignition switch ON, and wait for 5 seconds or more.
2. Check self-diagnosis.

K

Is DTC P0731 detected?

L

YES >> Go to [TM-92, "Diagnosis Procedure \(NHPC\)".](#)

M

NO >> GO TO 18.

N

18. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION B

O

Without CONSULT-III

1. Shift the shift lever to the N position.
2. Start the engine and run at idle for 10 seconds or more.
3. Check self-diagnosis.

P

Is DTC P0731 or DTC P2713 detected?

Q

YES-1 (DTC P0731 is detected)>>Go to [TM-92, "Diagnosis Procedure \(NHPC\)".](#)

R

YES-2 (DTC P2713 is detected)>>Go to [TM-165, "DTC Logic \(NHPC\)".](#)

S

NO >> GO TO 19.

T

19. PERFORM DTC CONFIRMATION PROCEDURE

U

Without CONSULT-III

1. Shift the shift lever to the P position and run at idle for 1 minute or more.
2. Check self-diagnosis.

V

Is DTC P2713 or DTC P2714 detected?

W

YES-1 (DTC P2713 is detected)>>Go to [TM-165, "DTC Logic \(NHPC\)".](#)

X

YES-2 (DTC P2714 is detected)>>Go to [TM-168, "DTC Logic \(NHPC\)".](#)

Y

NO >> GO TO 20.

Z

20. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION E

Without CONSULT-III

1. Run the vehicle in 2nd gear of M range for 2 seconds or more.
2. Check self-diagnosis.

Is DTC P0731 detected?

YES >> Go to [TM-92, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 21.

21. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION D, G AND J

Without CONSULT-III

1. Shift the shift lever to the R position and wait for 10 seconds or more.
2. Check self-diagnosis.

Is DTC P0731 detected?

YES >> Go to [TM-92, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 22.

22. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION C, F AND I

Without CONSULT-III

1. Shift the shift lever to the A position and wait for 10 seconds or more.
2. Check self-diagnosis.

Is DTC P0731 detected?

YES >> Go to [TM-92, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 23.

23. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION H

Without CONSULT-III

1. Run the vehicle and maintain the following conditions for 10 seconds or more.

Shift lever	: M range
Gear	: 1
Engine speed	: 4,500 rpm or more
Vehicle speed	: 40 km/h (25 MPH) or more

2. Check self-diagnosis.

Is DTC P0731 detected?

YES >> Go to [TM-92, "Diagnosis Procedure \(NHPC\)".](#)

NO >> INSPECTION END.

Diagnosis Procedure (NHPC)

INFOID:000000004651060

1. CHECK SHIFT SOLENOID VALVE 3 CIRCUIT

Refer to [TM-126, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK SHIFT SOLENOID VALVE 4 CIRCUIT

Refer to [TM-129, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

3. CHECK SEQUENCE SOLENOID VALVE CIRCUIT

Refer to [TM-133, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4. CHECK AXIS B FEED PRESSURE SOLENOID VALVE CIRCUIT

Refer to [TM-165, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 5.

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair or replace damaged parts.

5. CHECK CLUTCH B SPEED SENSOR CIRCUITRefer to [TM-165, "Diagnosis Procedure \(NHPC\)".](#)Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connections B31 and ground cable connections. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection".](#)

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace damaged parts.

7. CHECK TCM OUTPUT SIGNAL CIRCUIT

Check voltage between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector				Condition	Voltage (Approx.)		
Connector	Terminal	Connector	Terminal				
B46	71	B45	4	Ignition switch ON	5 V		
				Ignition switch OFF	0 V		
	75			Ignition switch ON	5 V		
				Ignition switch OFF	0 V		

Is the inspection result normal?

YES >> GO TO 9.

NO >> GO TO 8.

8. CHECK TCM POWER SUPPLYRefer to [TM-160, "Diagnosis Procedure \(NHPC\)".](#)Is the inspection result normal?YES >> Replace TCM. Refer to [TM-266, "Exploded View \(NHPC\)".](#)

NO >> Repair or replace damaged parts.

9. CHECK TCM INPUT SIGNAL CIRCUIT (1ST-REVERSE POSITION SENSOR 1)

1. Start engine.
2. Check voltage between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector				Condition	Voltage (Approx.)		
Connector	Terminal	Connector	Terminal				
B46	67	B45	4	Engine running	Shift lever: P, N position		
					Shift lever: R position		
	While driving			1st gear	3.34 – 4.41 V		
				2nd gear, 3rd gear, 4th gear, 5th gear, 6th gear (Other than M range, R mode)	2.19 – 2.88 V		

Is the inspection result normal?

YES >> GO TO 10.

NO >> GO TO 11.

10. CHECK INTERMITTENT INCIDENTRefer to [GI-40, "Intermittent Incident".](#)

>> INSPECTION END

11. CHECK HARNESS BETWEEN TCM AND TRANSMISSION (1ST-REVERSE POSITION SENSOR 1) (PART 1)

1. Turn ignition switch OFF.
2. Disconnect TCM harness connectors and transmission unit harness connectors.
3. Check continuity between TCM vehicle side harness connector terminals and transmission unit vehicle side harness connector terminals.

TCM vehicle side harness connector		Transmission unit vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B46	67	B49	4	Existed
	71		3	
	94		5	

Is the inspection result normal?

YES >> GO TO 12.

NO >> Repair or replace damaged parts.

12. CHECK HARNESS BETWEEN TCM AND TRANSMISSION (1ST-REVERSE POSITION SENSOR 1) (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B46	67	Ground	Not existed
	71		
	94		

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace damaged parts.

13. CHECK TCM INPUT SIGNAL CIRCUIT (1ST-REVERSE POSITION SENSOR 2)

1. Connect TCM harness connectors and transmission unit harness connectors.
2. Start engine.
3. Check voltage between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector				Condition		Voltage (Ap- prox.)	
Connector	Terminal	Connector	Terminal	Engine running	Shift lever: P, N position	2.19 – 2.88 V	
B46	79	B45	4		Shift lever: R position	3.34 – 4.41 V	
					1st gear	0.68 – 1.76 V	
While driving		2nd gear, 3rd gear, 4th gear, 5th gear, 6th gear (Other than M range, R mode)			2.19 – 2.88 V		

Is the inspection result normal?

YES >> GO TO 10.

NO >> GO TO 14.

14. CHECK HARNESS BETWEEN TCM AND TRANSMISSION (1ST-REVERSE POSITION SENSOR 2) (PART 1)

1. Turn ignition switch OFF.
2. Disconnect TCM harness connectors and transmission unit harness connectors.
3. Check continuity between TCM vehicle side harness connector terminals and transmission unit vehicle side harness connector terminals.

TCM vehicle side harness connector		Transmission unit vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B46	69	B49	32	Existed
	75		30	
	79		31	

Is the inspection result normal?

YES >> GO TO 15.

NO >> Repair or replace damaged parts.

15. CHECK HARNESS BETWEEN TCM AND TRANSMISSION (1ST-REVERSE POSITION SENSOR 2) (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B46	69	Ground	Not existed
	75		
	79		

Is the inspection result normal?

YES >> GO TO 16.

NO >> Repair or replace damaged parts.

16. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> Replace transmission assembly. Refer to [TM-287, "Exploded View \(SpecV NHPC\)"](#).

NO >> Repair or replace damaged parts.

P0732 2GR INCORRECT RATIO

Description (NHPC)

INFOID:0000000004651061

- The 2nd-4th position sensor is installed on the actuator control valve and detects the sleeve A2 position.
- The 2nd-4th position sensor converts the sleeve A2 position into output voltage and transmits the signal to TCM.
- The sleeve A2 has its oil passage secured by the shift solenoid valve 1 and shift solenoid valve 2 when the sequence solenoid valve is OFF and is driven by the axis A feed pressure solenoid valve. The 2nd gear and 4th gear are selected or deselected depending on the operation of the sleeve A2.

DTC Logic (NHPC)

INFOID:0000000004651062

DTC DETECTION LOGIC

NOTE:

- If DTC P0700 is detected, first diagnose the DTC P0700. Refer to [TM-46, "DTC Logic \(NHPC\)".](#)
- If DTC P0715 is detected, first diagnose the DTC P0715. Refer to [TM-67, "DTC Logic \(NHPC\)".](#)

DTC	Self-diagnosis name	DTC detection condition		Possible cause
P0732	2nd-4th position sensor voltage	A	<ul style="list-style-type: none"> • A DTC is set if the 2nd-4th position sensor voltage value received by TCM is more than 4,700 mV. • A DTC is set if the 2nd-4th position sensor voltage value received by TCM is less than 300 mV. 	<ul style="list-style-type: none"> • 2nd-4th position sensor • TCM • Harness or connector (Open or short in the 2nd-4th position sensor circuit)
	Sleeve A2 function (long time release)	B	<ul style="list-style-type: none"> • A DTC is set if the status of the sleeve A2 position of more than 1.3 mm (0.051 in) is detected for a certain period of time when the sleeve A2 position target is neutral. • A DTC is set if the status of the sleeve A2 position of less than -1.3 mm (-0.051 in) is detected for a certain period of time when the sleeve A2 position target is neutral. 	<ul style="list-style-type: none"> • 2nd-4th position sensor • Shift solenoid valve 1 • Shift solenoid valve 2 • Sequence solenoid valve • Harness or connector (Open or short in the 2nd-4th position sensor circuit)
	Sleeve A2 function (long time engagement)*1	C	<ul style="list-style-type: none"> • A DTC is set if the status of the sleeve A2 position of less than 1.8 mm (0.071 in) is detected for a certain period of time when the sleeve A2 position target is on the 2nd gear side. 	<ul style="list-style-type: none"> • 2nd-4th position sensor • Shift solenoid valve 1 • Shift solenoid valve 2 • Sequence solenoid valve • Harness or connector (Open or short in the shift solenoid valve 1 circuit) • Harness or connector (Open or short in the shift solenoid valve 2 circuit) • Harness or connector (Open or short in the sequence solenoid valve circuit)
		D	<ul style="list-style-type: none"> • A DTC is set if the status of the sleeve A2 position of more than -1.8 mm (-0.071 in) is detected for a certain period of time when the sleeve A2 position target is on the 4th gear side. 	

< DTC/CIRCUIT DIAGNOSIS >

DTC	Self-diagnosis name	DTC detection condition		Possible cause
P0732	Sleeve A2 function (poor neutral hold)	E	A DTC is set if the status of the sleeve A2 position of more than 1.7 mm (0.067 in) or less than -1.7 mm (-0.067 in) is detected for a certain period of time when the sleeve A2 position target is neutral with the sleeve A1 engaged in the 6th gear.	<ul style="list-style-type: none"> 2nd-4th position sensor Shift solenoid valve 1 Shift solenoid valve 2 Sequence solenoid valve Harness or connector (Open or short in the 2nd-4th position sensor circuit) (Open or short in the shift solenoid valve 1 circuit) (Open or short in the shift solenoid valve 2 circuit) (Open or short in the sequence solenoid valve circuit)
	Sleeve A2 function (poor gear engagement) ^{*2}			
	F	A DTC is set if the sleeve A2 position is 7.0 mm (0.276 in) or less and 1.7 mm (0.067 in) or more when the sleeve A2 position target is on the 2nd gear side.	<ul style="list-style-type: none"> Shift solenoid valve 1 Shift solenoid valve 2 Axis A feed pressure solenoid valve Sleeve A2 related part Harness or connector (Open or short in the shift solenoid valve 1 circuit) (Open or short in the shift solenoid valve 2 circuit) (Open or short in the axis A feed pressure solenoid valve circuit) 	
	G	A DTC is set if the sleeve A2 position is -1.7 mm (-0.067 in) or less and -7.1 mm (-0.28 in) or more when the sleeve A2 position target is on the 4th gear side.	<ul style="list-style-type: none"> Shift solenoid valve 1 Shift solenoid valve 2 Axis A feed pressure solenoid valve Sleeve A2 related part Harness or connector (Open or short in the shift solenoid valve 1 circuit) (Open or short in the shift solenoid valve 2 circuit) (Open or short in the axis A feed pressure solenoid valve circuit) 	
	Sleeve A2 function (gear release) ^{*3}	H	<p>A DTC is set if the following statuses 1 and 2 are detected.</p> <ol style="list-style-type: none"> The difference between the clutch A speed calculated from the output shaft speed sensor value and clutch A speed sensor value is 1,000 rpm or more. The difference between the clutch A speed calculated from the vehicle speed signal (meter) (CAN signal) and clutch A speed sensor value is 1,000 rpm or more. 	<ul style="list-style-type: none"> Clutch A speed sensor Sleeve A2 related part Harness or connector (Open or short in the clutch A speed sensor circuit)
	I	A DTC is set if the sleeve A1 and A2 positions are not in 2nd gear during driving in the 2nd gear.	<ul style="list-style-type: none"> Shift solenoid valve 1 Shift solenoid valve 2 Sleeve A2 related part Harness or connector (Open or short in the shift solenoid valve 1 circuit) (Open or short in the shift solenoid valve 2 circuit) 	
	J	A DTC is set if the sleeve A1 and A2 positions are not in 4th gear during driving in the 4th gear.		

- *1: A DTC is displayed when C or D in the DTC detection conditions is detected.

- *2: A DTC is displayed when F or G in the DTC detection conditions is detected.

- *3: A DTC is displayed when H, I, or J in the DTC detection conditions is detected.

DT CONFIRMATION PROCEDURE

CAUTION:

- If CONSULT-III is not available, "[TM-102, "Diagnosis Procedure \(NHPC\)"](#)" must be performed before starting "DT CONFIRMATION PROCEDURE".
- If CONSULT-III is not available, never perform "DT CONFIRMATION PROCEDURE" before completing the repair, which may cause secondary malfunction.
- Be careful of the driving speed.

1. PREPARATION BEFORE OPERATION (PART 1)

Is CONSULT-III available?

YES >> GO TO 2.

NO >> GO TO 16.

2. PREPARATION BEFORE OPERATION (PART 1)

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 3.

3. PREPARATION BEFORE OPERATION (PART 2)

 With CONSULT-III

1. Turn the ignition switch ON.
2. Select "FLUID TEMP" in "Data Monitor".

Is the oil temperature -20°C (-4°F) or more?

YES >> GO TO 4.

NO >> Warm up the transmission.

4. PREPARATION BEFORE OPERATION (PART 3)

 With CONSULT-III

Select "READ CLUTCH GEAR LEARNING DATA" in "Work support".

Is the "2-4 learning experienced" YES?

YES >> GO TO 5.

NO >> Perform "CLUTCH GEAR LEARNING".

5. CONFIRMATION BEFORE OPERATION (PART 1)

 With CONSULT-III

Select "SLEEVE A2 POSI" in "Data Monitor".

Is the numeral value of the "SLEEVE A2 POSI" in the range between -1.8 and 1.8 mm (-0.071 and 0.071 in)?

YES >> GO TO 6.

NO >> GO TO 8.

6. CONFIRMATION BEFORE OPERATION (PART 2)

 With CONSULT-III

1. Shift the shift lever to the N position.
2. Start the engine.
3. Select "GEAR POSITION TEST" in "Work support".
4. Select "GEAR2".

CAUTION:

Never select "GEAR6" or "GEAR N".

Does the sleeve A2 operate?

YES >> GO TO 7.

NO >> Go to [TM-102, "Diagnosis Procedure \(NHPC\)".](#)

7. CONFIRMATION BEFORE OPERATION (PART 3)

 With CONSULT-III

1. Select "GEAR POSITION TEST" in "Work support".
2. Select "GEAR4".

CAUTION:

Never select "GEAR6" or "GEAR N".

Does the sleeve A2 operate?

YES >> GO TO 12.

NO >> Go to [TM-102, "Diagnosis Procedure \(NHPC\)".](#)

8. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION A

 With CONSULT-III

1. Turn ignition switch ON, and wait for 5 seconds or more.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0732 detected?

YES >> Go to [TM-102, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 9.

9. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION B

With CONSULT-III

1. Shift the shift lever to the N position.
2. Start the engine and run at idle for 10 seconds or more.
3. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0732 or DTC P0795 detected?

YES-1 (DTC P0732 is detected)>>Go to [TM-102, "Diagnosis Procedure \(NHPC\)".](#)

YES-2 (DTC P0795 is detected)>>Go to [TM-143, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 10.

10. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT-III

1. Shift the shift lever to the P position and run at idle for 1 minute or more.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0795 or DTC P0797 detected?

YES-1 (DTC P0795 is detected)>>Go to [TM-143, "Diagnosis Procedure \(NHPC\)".](#)

YES-2 (DTC P0797 is detected)>>Go to [TM-146, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 11.

11. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION E

With CONSULT-III

1. Run the vehicle in 5th gear of M range for 2 seconds or more.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0732 detected?

YES >> Go to [TM-102, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 12.

12. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION C AND F

With CONSULT-III

1. Select "RANGE", "GEAR" and "VEHICLE SPEED" in "Data Monitor".
2. Run the vehicle and maintain the following conditions for 10 second.

RANGE	: M
GEAR	: 1
ENGINE SPEED	: 40 km/h (25 MPH) or more

3. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0732 detected?

YES >> Go to [TM-102, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 13.

13. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION H AND I

With CONSULT-III

1. Select "RANGE", "GEAR", "ENGINE SPEED" and "VEHICLE SPEED" in "Data Monitor".
2. Run the vehicle and maintain the following conditions for 10 seconds or more.

RANGE	: M
GEAR	: 2
ENGINE SPEED	: 3,000 rpm or more
VEHICLE SPEED	: 40 km/h (25 MPH) or more

3. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0732 detected?

YES >> Go to [TM-102, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 14.

14. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION D AND G

With CONSULT-III

1. Select "RANGE", "GEAR", and "VEHICLE SPEED" in "Data Monitor".
2. Run the vehicle and maintain the following conditions for 10 seconds or more.

RANGE : M
GEAR : 3
VEHICLE SPEED : 40 km/h (25 MPH) or more

3. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0732 detected?

YES >> Go to [TM-102, "Diagnosis Procedure \(NHPC\)".](#)
NO >> GO TO 15.

15. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION J

With CONSULT-III

1. Select "RANGE", "GEAR" and "VEHICLE SPEED" in "Data Monitor".
2. Run the vehicle and maintain the following conditions for 10 seconds or more.

RANGE : M
GEAR : 4
VEHICLE SPEED : 40 km/h (25 MPH) or more

3. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0732 detected?

YES >> Go to [TM-102, "Diagnosis Procedure \(NHPC\)".](#)
NO >> INSPECTION END

16. PREPARATION BEFORE OPERATION (PART 2)

Without CONSULT-III

1. Turn the ignition switch ON.
2. Check "TRANS OIL TEMP" on multi-function display.

Is the oil temperature -20°C (-4°F) or more?

YES >> GO TO 17.
NO >> Warm up the transmission.

17. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION A

Without CONSULT-III

1. Turn ignition switch ON, and wait for 5 seconds or more.
2. Check self-diagnosis.

Is DTC P0732 detected?

YES >> Go to [TM-102, "Diagnosis Procedure \(NHPC\)".](#)
NO >> GO TO 18.

18. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION B

Without CONSULT-III

1. Shift the shift lever to the N position.
2. Start the engine and run at idle for 10 seconds or more.
3. Check self-diagnosis.

Is DTC P0732 or DTC P0795 detected?

YES-1 (DTC P0732 is detected)>>Go to [TM-102, "Diagnosis Procedure \(NHPC\)".](#)
YES-2 (DTC P0795 is detected)>>Go to [TM-143, "Diagnosis Procedure \(NHPC\)".](#)
NO >> GO TO 19.

19. PERFORM DTC CONFIRMATION PROCEDURE

Without CONSULT-III

1. Shift the shift lever to the P position and run at idle for 1 minute or more.

2. Check self-diagnosis.

Is DTC P0795 or DTC P0797 detected?

YES-1 (DTC P0795 is detected) >> Go to [TM-143, "Diagnosis Procedure \(NHPC\)".](#)

YES-2 (DTC P0797 is detected) >> Go to [TM-146, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 20.

20. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION E

Without CONSULT-III

1. Run the vehicle in 5th gear of M range for 2 seconds or more.

2. Check self-diagnosis.

Is DTC P0732 detected?

YES >> Go to [TM-102, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 21.

21. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION C AND F

Without CONSULT-III

1. Run the vehicle and maintain the following conditions for 10 second.

Shift lever : M range

Gear : 1

Engine speed : 40 km/h (25 MPH) or more

2. Check self-diagnosis.

Is DTC P0732 detected?

YES >> Go to [TM-102, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 22.

22. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION H AND I

Without CONSULT-III

1. Run the vehicle and maintain the following conditions for 10 seconds or more.

Shift lever : M range

Gear : 2

Engine speed : 3,000 rpm or more

Vehicle speed : 40 km/h (25 MPH) or more

2. Check self-diagnosis.

Is DTC P0732 detected?

YES >> Go to [TM-102, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 23.

23. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION D AND G

Without CONSULT-III

1. Run the vehicle and maintain the following conditions for 10 seconds or more.

Shift lever : M range

Gear : 3

Vehicle speed : 40 km/h (25 MPH) or more

2. Check self-diagnosis.

Is DTC P0732 detected?

YES >> Go to [TM-102, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 24.

24. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION J

Without CONSULT-III

1. Run the vehicle and maintain the following conditions for 10 seconds or more.

Shift lever	: M range
Gear	: 4
Vehicle speed	: 40 km/h (25 MPH) or more

2. Check self-diagnosis.

Is DTC P0732 detected?

YES >> Go to [TM-102, "Diagnosis Procedure \(NHPC\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:000000004651063

1. CHECK SHIFT SOLENOID VALVE 1 CIRCUIT

Refer to [TM-120, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK SHIFT SOLENOID VALVE 2 CIRCUIT

Refer to [TM-123, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

3. CHECK SEQUENCE SOLENOID VALVE CIRCUIT

Refer to [TM-133, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4. CHECK AXIS A FEED PRESSURE SOLENOID VALVE CIRCUIT

Refer to [TM-143, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5. CHECK CLUTCH A SPEED SENSOR CIRCUIT

Refer to [TM-68, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.

2. Check ground connections B31 and ground cable connections. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection".](#)

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace damaged parts.

7. CHECK TCM OUTPUT SIGNAL CIRCUIT

Check voltage between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector				Condition	Voltage (Ap-prox.)
Connector	Terminal	Connector	Terminal		
B46	81	B45	4	Ignition switch ON	5 V
				Ignition switch OFF	0 V

Is the inspection result normal?

YES >> GO TO 9.

NO >> GO TO 8.

8.CHECK TCM POWER SUPPLY

Refer to [TM-160, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-266, "Exploded View \(NHPC\)".](#)

NO >> Repair or replace damaged parts.

9.CHECK TCM INPUT SIGNAL CIRCUIT

1. Start engine.
2. Check voltage between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector				Condition	Voltage (Ap-prox.)
Connector	Terminal	Connector	Terminal		
B46	85	B45	4	Engine running	Shift lever: P, R, N position 2.19 – 2.88 V
				1st gear, 2nd gear	0.68 – 1.76 V
				3rd gear, 4th gear (Other than M range, R mode)	3.34 – 4.41 V
				5th gear, 6th gear (Other than M range, R mode)	2.19 – 2.88 V

Is the inspection result normal?

YES >> GO TO 10.

NO >> GO TO 11.

10.CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident".](#)

>> INSPECTION END

11.CHECK HARNESS BETWEEN TCM AND TRANSMISSION (2ND-4TH POSITION SENSOR) (PART 1)

1. Turn ignition switch OFF.
2. Disconnect TCM harness connectors and transmission unit harness connectors.
3. Check continuity between TCM vehicle side harness connector terminals and transmission unit vehicle side harness connector terminals.

TCM vehicle side harness connector		Transmission unit vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B46	81	B49	16	Existed
	83		18	
	85		17	

Is the inspection result normal?

YES >> GO TO 12.

NO >> Repair or replace damaged parts.

12.CHECK HARNESS BETWEEN TCM AND TRANSMISSION (2ND-4TH POSITION SENSOR) (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B46	81	Ground	Not existed
	83		
	85		

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace damaged parts.

13. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> Replace transmission assembly. Refer to [TM-287, "Exploded View \(SpecV NHPC\)"](#).

NO >> Repair or replace damaged parts.

P0733 3GR INCORRECT RATIO

Description (NHPC)

INFOID:0000000004651064

- The 3rd-5th position sensor is installed on the actuator control valve and detects the sleeve B2 position.
- The 3rd-5th position sensor converts the sleeve B2 position into output voltage and transmits the signal to TCM.
- The sleeve B2 has its oil passage secured by the shift solenoid valve 3 and shift solenoid valve 2 when the sequence solenoid valve is ON and is driven by the axis B feed pressure solenoid valve. The 3rd gear and 5th gear are selected or deselected depending on the operation of the sleeve B2.

DTC Logic (NHPC)

INFOID:0000000004651065

TM

DTC DETECTION LOGIC

NOTE:

- If DTC P0700 is detected, first diagnose the DTC P0700. Refer to [TM-46, "DTC Logic \(NHPC\)".](#)
- If DTC P2765 is detected, first diagnose the DTC P2765. Refer to [TM-176, "DTC Logic \(NHPC\)".](#)

DTC	Self-diagnosis name	DTC detection condition		Possible cause
P0733	3rd-5th position sensor voltage	A	<ul style="list-style-type: none"> • A DTC is set if the 3rd-5th position sensor voltage value received by TCM is more than 4,700 mV. • A DTC is set if the 3rd-5th position sensor voltage value received by TCM is less than 300 mV. 	<ul style="list-style-type: none"> • 3rd-5th position sensor • TCM • Harness or connector (Open or short in the 3rd-5th position sensor circuit)
	Sleeve B2 function (long time release)	B	<ul style="list-style-type: none"> • A DTC is set if the status of the sleeve B2 position of more than 1.3 mm (0.051 in) is detected for a certain period of time when the sleeve B2 position target is neutral. • A DTC is set if the status of the sleeve B2 position of less than -1.3 mm (-0.051 in) is detected for a certain period of time when the sleeve B2 position target is neutral. 	<ul style="list-style-type: none"> • 3rd-5th position sensor • Shift solenoid valve 3 • Shift solenoid valve 4 • Sequence solenoid valve • Axis B feed pressure solenoid valve • Harness or connector (Open or short in the 3rd-5th position sensor circuit)
	Sleeve B2 function (long time engagement) ^{*1}	C	<ul style="list-style-type: none"> • A DTC is set if the status of the sleeve B2 position of less than 2.0 mm (0.079 in) is detected for a certain period of time when the sleeve B2 position target is on the 3rd gear side. 	<ul style="list-style-type: none"> • Open or short in the shift solenoid valve 3 circuit • Open or short in the shift solenoid valve 4 circuit • Open or short in the sequence solenoid valve circuit • Open or short in the axis B feed pressure solenoid valve circuit
		D	<ul style="list-style-type: none"> • A DTC is set if the status of the sleeve B2 position of more than -2.0 mm (-0.079 in) is detected for a certain period of time when the sleeve B2 position target is on the 5th gear side. 	

DTC	Self-diagnosis name	DTC detection condition		Possible cause
P0733	Sleeve B2 function (poor neutral hold)	E	A DTC is set if the status of the sleeve B2 position of more than 1.9 mm (0.075 in) or less than -1.9 mm (-0.075 in) is detected for a certain period of time when the sleeve B2 position target is neutral with the sleeve B1 engaged in the 1st or reverse gear.	<ul style="list-style-type: none"> 3rd-5th position sensor Shift solenoid valve 3 Shift solenoid valve 4 Sequence solenoid valve Harness or connector (Open or short in the 3rd-5th position sensor circuit) (Open or short in the shift solenoid valve 3 circuit) (Open or short in the shift solenoid valve 4 circuit) (Open or short in the sequence solenoid valve circuit)
	Sleeve B2 function (poor gear engagement) ^{*2}			
	F	A DTC is set if the sleeve B2 position is 7.2 mm (0.283 in) or less and 1.9 mm (0.075 in) or more when the sleeve B2 position target is on the 3rd gear side.	<ul style="list-style-type: none"> Shift solenoid valve 3 Shift solenoid valve 4 Axis B feed pressure solenoid valve Sleeve B2 related part Harness or connector (Open or short in the shift solenoid valve 3 circuit) (Open or short in the shift solenoid valve 4 circuit) (Open or short in the axis B feed pressure solenoid valve circuit) 	
	Sleeve B2 function (gear release) ^{*3}	G	A DTC is set if the sleeve B2 position is -1.9 mm (-0.075 in) or less and -7.5 mm (-0.295 in) or more when the sleeve B2 position target is on the 5th gear side.	<ul style="list-style-type: none"> Shift solenoid valve 3 Shift solenoid valve 4 Axis B feed pressure solenoid valve Sleeve B2 related part Harness or connector (Open or short in the shift solenoid valve 3 circuit) (Open or short in the shift solenoid valve 4 circuit) (Open or short in the axis B feed pressure solenoid valve circuit)
		H	<p>A DTC is set if the following statuses 1 and 2 are detected.</p> <ol style="list-style-type: none"> 1. The difference between the clutch B speed calculated from the output shaft speed sensor value and clutch B speed sensor value is 1,000 rpm or more. 2. The difference between the clutch B speed calculated from the vehicle speed signal (meter) (CAN signal) and clutch B speed sensor value is 1,000 rpm or more. 	<ul style="list-style-type: none"> Clutch B speed sensor Sleeve B2 related part Harness or connector (Open or short in the clutch B speed sensor circuit)
		I	A DTC is set if the sleeve B2 position is not in 3rd gear during driving in the 3rd gear.	<ul style="list-style-type: none"> Shift solenoid valve 3 Shift solenoid valve 4 Sleeve B2 related part Harness or connector (Open or short in the shift solenoid valve 3 circuit) (Open or short in the shift solenoid valve 4 circuit)
		J	A DTC is set if the sleeve B2 position is not in 5th gear during driving in the 5th gear.	<ul style="list-style-type: none"> Shift solenoid valve 3 Shift solenoid valve 4 Sleeve B2 related part Harness or connector (Open or short in the shift solenoid valve 3 circuit) (Open or short in the shift solenoid valve 4 circuit)

• *1: A DTC is displayed when C or D in the DTC detection conditions is detected.

• *2: A DTC is displayed when F or G in the DTC detection conditions is detected.

• *3: A DTC is displayed when H, I or J in the DTC detection conditions is detected.

DTC CONFIRMATION PROCEDURE

CAUTION:

- If CONSULT-III is not available, “[TM-111, "Diagnosis Procedure \(NHPC\)"](#)” must be performed before starting “DTC CONFIRMATION PROCEDURE”.
- If CONSULT-III is not available, never perform “DTC CONFIRMATION PROCEDURE” before completing the repair, which may cause secondary malfunction.
- Be careful of the driving speed.

1. PREPARATION BEFORE OPERATION (PART 1)

Is CONSULT-III available?

YES >> GO TO 2.

NO >> GO TO 16.

2. PREPARATION BEFORE OPERATION (PART 1)

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 3.

3. PREPARATION BEFORE OPERATION (PART 2)

() With CONSULT-III

1. Turn the ignition switch ON.
2. Select "FLUID TEMP" in "Data Monitor".

Is the oil temperature -20°C (-4°F) or more?

YES >> GO TO 4.

NO >> Warm up the transmission.

4. PREPARATION BEFORE OPERATION (PART 3)

() With CONSULT-III

Select "READ CLUTCH GEAR LEARNING DATA" in "Work support".

Is the "3-5 learning experienced" YES?

YES >> GO TO 5.

NO >> Perform "CLUTCH GEAR LEARNING".

5. CONFIRMATION BEFORE OPERATION (PART 1)

() With CONSULT-III

Select "SLEEVE B2 POSI" in "Data Monitor".

Is the numerical value of the "SLEEVE B2 POSI" in the range between -2.0 and 2.0 mm (-0.079 and 0.079 in)?

YES >> GO TO 6.

NO >> GO TO 8.

6. CONFIRMATION BEFORE OPERATION (PART 2)

() With CONSULT-III

1. Shift the shift lever to the N position.
2. Start the engine.
3. Select "GEAR POSITION TEST" in "Work support".
4. Select "GEAR3".

CAUTION:

Never select "GEAR1", "GEAR R" or "GEAR N".

Does the sleeve B2 operate?

YES >> GO TO 7.

NO >> Go to [TM-111, "Diagnosis Procedure \(NHPC\)".](#)

7. CONFIRMATION BEFORE OPERATION (PART 3)

() With CONSULT-III

1. Select "GEAR POSITION TEST" in "Work support".
2. Select "GEAR5".

CAUTION:

Never select "GEAR1", "GEAR R" or "GEAR N".

Does the sleeve B2 operate?

YES >> GO TO 12.

NO >> Go to [TM-111, "Diagnosis Procedure \(NHPC\)".](#)

8. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION A

() With CONSULT-III

1. Turn ignition switch ON, and wait for 5 seconds or more.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0733 detected?

YES >> Go to [TM-111, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 9.

9. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION B

With CONSULT-III

1. Shift the shift lever to the N position.
2. Start the engine and run at idle for 10 seconds or more.
3. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0733 or DTC P2713 detected?

YES-1 (DTC P0733 is detected)>>Go to [TM-111, "Diagnosis Procedure \(NHPC\)".](#)

YES-2 (DTC P2713 is detected)>>Go to [TM-165, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 10.

10. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT-III

1. Shift the shift lever to the P position and run at idle for 1 minute or more.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P2713 or DTC P2714 detected?

YES-1 (DTC P2713 is detected)>>Go to [TM-165, "Diagnosis Procedure \(NHPC\)".](#)

YES-2 (DTC P2714 is detected)>>Go to [TM-168, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 11.

11. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION C AND F

With CONSULT-III

1. Select "RANGE", "GEAR", or "VEHICLE SPEED" in "Data Monitor".
2. Run the vehicle and maintain the following conditions for 10 seconds or more.

RANGE	: M
GEAR	: 2
VEHICLE SPEED	: 40 km/h (25 MPH) or more

3. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0733 detected?

YES >> Go to [TM-111, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 12.

12. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION E

With CONSULT-III

1. Run the vehicle in 1st gear of M range for 2 seconds or more.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0733 detected?

YES >> Go to [TM-111, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 13.

13. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION H AND I

With CONSULT-III

1. Select "RANGE", "GEAR", "ENGINE SPEED" and "VEHICLE SPEED" in "Data Monitor".
2. Run the vehicle and maintain the following conditions for 10 seconds or more.

RANGE	: M
GEAR	: 3
ENGINE SPEED	: 2,000 rpm or more
VEHICLE SPEED	: 40 km/h (25 MPH) or more

3. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0733 detected?

YES >> Go to [TM-111, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 14.

14. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION D AND G

With CONSULT-III

1. Select "RANGE", "GEAR" or "VEHICLE SPEED" in "Data Monitor".
2. Run the vehicle and maintain the following conditions for 10 seconds or more.

RANGE	: M
GEAR	: 4
VEHICLE SPEED	: 40 km/h (25 MPH) or more

3. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0733 detected?

YES >> Go to [TM-111, "Diagnosis Procedure \(NHPC\)".](#)
NO >> GO TO 15.

15. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION J

With CONSULT-III

1. Select "RANGE", "GEAR" or "VEHICLE SPEED" in "Data Monitor".
2. Run the vehicle and maintain the following conditions for 10 seconds or more.

RANGE	: M
GEAR	: 5
VEHICLE SPEED	: 40 km/h (25 MPH) or more

3. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0733 detected?

YES >> Go to [TM-111, "Diagnosis Procedure \(NHPC\)".](#)
NO >> INSPECTION END

16. PREPARATION BEFORE OPERATION (PART 1)

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 17.

17. PREPARATION BEFORE OPERATION (PART 2)

Without CONSULT-III

1. Turn the ignition switch ON.
2. Check "TRANS OIL TEMP" on multi-function display.

Is the oil temperature -20°C (-4°F) or more?

YES >> GO TO 18.
NO >> Warm up the transmission.

18. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION A

Without CONSULT-III

1. Turn ignition switch ON, and wait for 5 seconds or more.
2. Check self-diagnosis.

Is DTC P0733 detected?

YES >> Go to [TM-111, "Diagnosis Procedure \(NHPC\)".](#)
NO >> GO TO 19.

19. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION B

Without CONSULT-III

1. Shift the shift lever to the N position.
2. Start the engine and run at idle for 10 seconds or more.
3. Check self-diagnosis.

Is DTC P0733 or DTC P2713 detected?

YES-1 (DTC P0733 is detected)>>Go to [TM-111, "Diagnosis Procedure \(NHPC\)".](#)

YES-2 (DTC P2713 is detected) >> Go to [TM-165, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 20.

20. PERFORM DTC CONFIRMATION PROCEDURE

Without CONSULT-III

1. Shift the shift lever to the P position and run at idle for 1 minute or more.
2. Check self-diagnosis.

Is DTC P2713 or DTC P2714 detected?

YES-1 (DTC P2713 is detected) >> Go to [TM-165, "Diagnosis Procedure \(NHPC\)".](#)

YES-2 (DTC P2714 is detected) >> Go to [TM-168, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 21.

21. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION C AND F

Without CONSULT-III

1. Run the vehicle and maintain the following conditions for 10 seconds or more.

Shift lever	: M range
Gear	: 2
Vehicle speed	: 40 km/h (25 MPH) or more

2. Check self-diagnosis.

Is DTC P0733 detected?

YES >> Go to [TM-111, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 22.

22. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION E

Without CONSULT-III

1. Run the vehicle in 1st gear of M range for 2 seconds or more.
2. Check self-diagnosis.

Is DTC P0733 detected?

YES >> Go to [TM-111, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 23.

23. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION H AND I

Without CONSULT-III

1. Run the vehicle and maintain the following conditions for 10 seconds or more.

Shift lever	: M range
Gear	: 3
Engine speed	: 2,000 rpm or more
Vehicle speed	: 40 km/h (25 MPH) or more

2. Check self-diagnosis.

Is DTC P0733 detected?

YES >> Go to [TM-111, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 24.

24. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION D AND G

Without CONSULT-III

1. Run the vehicle and maintain the following conditions for 10 seconds or more.

Shift lever	: M range
Gear	: 4
Vehicle speed	: 40 km/h (25 MPH) or more

2. Check self-diagnosis.

Is DTC P0733 detected?

YES >> Go to [TM-111, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 25.

25. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION J

Without CONSULT-III

1. Run the vehicle and maintain the following conditions for 10 seconds or more.

Shift lever	: M range
Gear	: 5
Vehicle speed	: 40 km/h (25 MPH) or more

2. Check self-diagnosis.

Is DTC P0733 detected?

YES >> Go to [TM-111, "Diagnosis Procedure \(NHPC\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:000000004651066

1. CHECK SHIFT SOLENOID VALVE 3 CIRCUIT

Refer to [TM-126, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK SHIFT SOLENOID VALVE 4 CIRCUIT

Refer to [TM-129, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

3. CHECK SEQUENCE SOLENOID VALVE CIRCUIT

Refer to [TM-133, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4. CHECK AXIS B FEED PRESSURE SOLENOID VALVE CIRCUIT

Refer to [TM-165, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5. CHECK CLUTCH B SPEED SENSOR CIRCUIT

Refer to [TM-177, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.

2. Check ground connections B31 and ground cable connections. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection".](#)

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace damaged parts.

7. CHECK TCM OUTPUT SIGNAL CIRCUIT

Check voltage between TCM vehicle side harness connector terminals.

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P0733 3GR INCORRECT RATIO

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

TCM vehicle side harness connector				Condition	Voltage (Ap-prox.)
Connector	Terminal	Connector	Terminal		
B46	88	B46	4	Ignition switch ON	5 V
				Ignition switch OFF	0 V

Is the inspection result normal?

YES >> GO TO 9.

NO >> GO TO 8.

8.CHECK TCM POWER SUPPLY

Refer to [TM-160, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-266, "Exploded View \(NHPC\)".](#)

NO >> Repair or replace damaged parts.

9.CHECK TCM INPUT SIGNAL CIRCUIT

1. Start engine.
2. Check voltage between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector				Condition	Voltage (Ap-prox.)
Connector	Terminal	Connector	Terminal		
B46	92	B45	4	Engine running	Shift lever: P, R, N position
				1st gear	2.19 – 2.88 V
				2nd gear, 3rd gear (Other than M range, R mode)	
				4th gear, 5th gear, 6th gear (Other than M range, R mode)	0.68 – 1.76 V
					3.34 – 4.41 V

Is the inspection result normal?

YES >> GO TO 10.

NO >> GO TO 11.

10.CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident".](#)

>> INSPECTION END

11.CHECK HARNESS BETWEEN TCM AND TRANSMISSION (3RD-5TH POSITION SENSOR) (PART 1)

1. Turn ignition switch OFF.
2. Disconnect TCM harness connectors and transmission unit harness connectors.
3. Check continuity between TCM vehicle side harness connector terminals and transmission unit vehicle side harness connector terminals.

TCM vehicle side harness connector		Transmission unit vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B46	84	B49	11	Existed
	88		9	
	92		10	

Is the inspection result normal?

YES >> GO TO 12.

NO >> Repair or replace damaged parts.

12.CHECK HARNESS BETWEEN TCM AND TRANSMISSION (3RD-5TH POSITION SENSOR) (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B46	84	Ground	Not existed
	88		
	92		

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace damaged parts.

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13. CHECK INTERMITTENT INCIDENT

TM

Refer to [GI-40, "Intermittent Incident"](#).

E

Is the inspection result normal?

YES >> Replace transmission assembly. Refer to [TM-287, "Exploded View \(SpecV NHPC\)"](#).

NO >> Repair or replace damaged parts.

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P0745 PRESSURE CONTROL SOLENOID A

Description (NHPC)

INFOID:0000000004651067

- The clutch A solenoid valve is installed on the front control module and controls the clutch A (a clutch for even number gears) with the current signal from TCM.
- The clutch A solenoid valve is a N/L type (normal low) in which no control oil pressure is built up when no current flows through the coil.

DTC Logic (NHPC)

INFOID:0000000004651068

DTC DETECTION LOGIC

NOTE:

If DTC P0700 is detected, first diagnose the DTC P0700. Refer to [TM-46, "DTC Logic \(NHPC\)".](#)

DTC	Self-diagnosis name	DTC Detection Condition	Possible causes
P0745	Clutch A solenoid valve current	A DTC is set if the clutch A solenoid valve monitor current value is less than 0.05 A when the clutch A solenoid valve target current value is more than 0.2 A.	<ul style="list-style-type: none"> • Clutch A solenoid valve • Harness or connector (Open or short in the clutch A solenoid valve circuit)

DTC CONFIRMATION PROCEDURE

1. PREPARATION BEFORE OPERATION

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT-III

1. Turn the ignition switch ON.
2. Shift the shift lever to the N position.
3. Start the engine.
4. Select "RANGE" and "GEAR" in "Data Monitor".
5. With the vehicle stationary, maintain the following conditions for 5 seconds or more.

RANGE : M
GEAR : 2

6. Check "Self Diagnostic Result" of "TRANSMISSION".

Without CONSULT-III

1. Turn the ignition switch ON.
2. Shift the shift lever to the N position.
3. Start the engine.
4. With the vehicle stationary, maintain the following conditions for 5 seconds or more.

Shift lever : M range
Gear : 2

5. Check self-diagnosis.

Is DTC P0745 detected?

YES >> Go to [TM-114, "Diagnosis Procedure \(NHPC\)".](#)
NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:0000000004651069

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.

P0745 PRESSURE CONTROL SOLENOID A

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

2. Check ground connections B31 and ground cable connections. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2.CHECK CLUTCH A SOLENOID VALVE CIRCUIT (PART 1)

1. Disconnect TCM harness connectors.
2. Check resistance between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector		Condition	Resistance (Ap-prox.)
Connector	Terminal		
B47	121	Transmission oil temperature: 20°C (68°F)	4.6 – 5.0 Ω
		Transmission oil temperature: 50°C (122°F)	5.1 – 5.6 Ω
		Transmission oil temperature: 80°C (176°F)	5.6 – 6.2 Ω

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 4.

3.CHECK CLUTCH A SOLENOID VALVE CIRCUIT (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B47	121	Ground	Not existed
	126		

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 4.

4.CHECK CLUTCH A SOLENOID VALVE

1. Disconnect transmission unit harness connectors.
2. Check clutch A solenoid valve. Refer to [TM-116, "Component Inspection \(Clutch A Solenoid Valve\) \(NHPC\)"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5.CHECK HARNESS BETWEEN TCM AND TRANSMISSION (CLUTCH A SOLENOID VALVE) (PART 1)

Check continuity between TCM vehicle side harness connector terminals and transmission unit vehicle side harness connector terminals.

TCM vehicle side harness connector		Transmission unit vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B47	121	B50	37	Existed
	126		38	

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6.CHECK HARNESS BETWEEN TCM AND TRANSMISSION (CLUTCH A SOLENOID VALVE) (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

P0745 PRESSURE CONTROL SOLENOID A

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B47	121	Ground	Not existed
	126		

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace damaged parts.

7.CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (Clutch A Solenoid Valve) (NHPC)

INFOID:000000004651070

1.CHECK CLUTCH A SOLENOID VALVE (PART 1)

Check the resistance between transmission unit harness connector terminals.

Transmission unit harness connector		Condition	Resistance (Ap- prox.)
Connector	Terminal		
B50	37	Transmission oil temperature: 20°C (68°F)	4.6 – 5.0 Ω
		Transmission oil temperature: 50°C (122°F)	5.1 – 5.6 Ω
		Transmission oil temperature: 80°C (176°F)	5.6 – 6.2 Ω

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2.CHECK CLUTCH A SOLENOID VALVE (PART 2)

Check continuity between transmission unit harness connector terminal and ground.

Transmission unit harness connector		Ground	Continuity
Connector	Terminal		
B50	37	Ground	Not existed
	38		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace damaged parts.

P0746 PRESSURE CONTROL SOLENOID A

Description (NHPC)

INFOID:0000000004651071

The current signal from TCM controls the oil pressure to be applied to the clutch A (a clutch for even number gears) engaging or releasing of the clutch A.

DTC Logic (NHPC)

INFOID:0000000004651072

DTC DETECTION LOGIC

NOTE:

If DTC P0840 is detected, first diagnose the DTC P0840. Refer to [TM-151, "DTC Logic \(NHPC\)".](#)

TM

DTC	Self-diagnosis item	DTC detection condition		Possible cause
P0746	Monitor clutch A solenoid valve oil pressure difference	A	A DTC is set if the clutch A pressure sensor value is higher than the clutch A pressure target value by 0.2 MPa (2.04 kg/cm ² , 29 psi) or more.	<ul style="list-style-type: none"> • Clutch A solenoid valve • Clutch A pressure sensor • Clutch A oil passage • Harness or connector (Open or short in the clutch A solenoid valve circuit) • (Open or short in the clutch A pressure sensor circuit)
	Clutch A solenoid valve oil pressure output low	B	A DTC is set if the difference between the engine speed (CAN signal) and clutch A speed sensor value is 1,000 rpm or more with clutch A.	<ul style="list-style-type: none"> • Clutch A solenoid valve • Clutch A pressure sensor • Axis A feed pressure solenoid valve • Line pressure solenoid valve • Oil passage between line pressure and clutch A pressure • Harness or connector (Open or short in the clutch A solenoid valve circuit) • (Open or short in the clutch A pressure sensor circuit) • (Open or short in the axis A feed pressure solenoid valve circuit) • (Open or short in the line pressure solenoid valve circuit)

DTC CONFIRMATION PROCEDURE

1. PREPARATION BEFORE OPERATION

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION A

With CONSULT-III

1. Turn the ignition switch ON.
2. Shift the shift lever to the N position.
3. Start the engine.
4. Select "RANGE" and "GEAR" in "Data Monitor".
5. With the vehicle stationary, maintain the following conditions for 5 seconds or more.

RANGE	: M
GEAR	: 2

6. Check "Self Diagnostic Result" of "TRANSMISSION".

Without CONSULT-III

1. Turn the ignition switch ON.
2. Shift the shift lever to the N position.
3. Start the engine.

P0746 PRESSURE CONTROL SOLENOID A

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

- With the vehicle stationary, maintain the following conditions for 5 seconds or more.

Shift lever	: M range
Gear	: 2

- Check self-diagnosis.

Is DTC P0746 detected?

YES >> Go to [TM-118, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION B

With CONSULT-III

- Select "RANGE", "GEAR", "ACCEL POSI SEN 1" and "VEHICLE SPEED" in "Data Monitor".
- Run the vehicle and keep the following conditions for at least 5 seconds.

RANGE	: M
GEAR	: 2
ACCEL POSI SEN 1	: 0.0/8
VEHICLE SPEED	: 35 km/h (22 MPH) or more

- Check "Self Diagnostic Result" of "TRANSMISSION".

Without CONSULT-III

- Run the vehicle and keep the following conditions for at least 5 seconds.

Shift lever	: M range
Gear	: 2
Accelerator opening	: 0.0/8
Vehicle speed	: 35 km/h (22 MPH) or more

- Check self-diagnosis.

Is DTC P0746 detected?

YES >> Go to [TM-118, "Diagnosis Procedure \(NHPC\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:0000000004651073

1. CHECK CLUTCH A SOLENOID VALVE CIRCUIT

Refer to [TM-114, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK CLUTCH A PRESSURE SENSOR CIRCUIT

Refer to [TM-152, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

3. CHECK AXIS A FEED PRESSURE SOLENOID VALVE CIRCUIT

Refer to [TM-143, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4. CHECK LINE PRESSURE SOLENOID VALVE CIRCUIT

Refer to [TM-174, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 5.

P0746 PRESSURE CONTROL SOLENOID A

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

NO >> Repair or replace damaged parts.

5. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connections B31 and ground cable connections. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> Replace transmission assembly. Refer to [TM-287, "Exploded View \(SpecV NHPC\)"](#).

NO >> Repair or replace damaged parts.

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P0750 SHIFT SOLENOID A

Description (NHPC)

INFOID:0000000004651074

- The shift solenoid valve 1 is installed on the actuator control module and switches the oil passages for the oil pressure that activates the 6th-Neutral shift actuator operating the sleeve A1 and the 2nd-4th shift actuator operating the sleeve A2.
- The shift solenoid valve 1 is an ON/OFF type solenoid valve.

DTC Logic (NHPC)

INFOID:0000000004651075

DTC DETECTION LOGIC

DTC	Self-diagnosis name	DTC detection condition	Possible cause
P0750	Shift solenoid valve 1 output	<ul style="list-style-type: none"> • A DTC is set if the shift solenoid valve 1 monitor value is ON when the shift solenoid valve 1 command value is OFF. • A DTC is set if the shift solenoid valve 1 monitor value is OFF when the shift solenoid valve 1 command value is ON. 	<ul style="list-style-type: none"> • Shift solenoid valve 1 • Harness or connector (Open or short in the shift solenoid valve 1 circuit)

DTC CONFIRMATION PROCEDURE

CAUTION:

Be careful of the driving speed.

1. PREPARATION BEFORE OPERATION

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE (PART 1)

 With CONSULT-III

1. Start the engine.
2. Shift the shift lever to the A position and run at idle for 5 seconds or more.
3. Check "Self Diagnostic Result" of "TRANSMISSION".

 Without CONSULT-III

1. Start the engine.
2. Shift the shift lever to the A position and run at idle for 5 seconds or more.
3. Check self-diagnosis.

Is DTC P0750 detected?

YES >> Go to [TM-120, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE (PART 2)

 With CONSULT-III

1. Run the vehicle in 3rd gear of M range for 5 seconds or more.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

 Without CONSULT-III

1. Run the vehicle in 3rd gear of M range for 5 seconds or more.
2. Check self-diagnosis.

Is DTC P0750 detected?

YES >> Go to [TM-120, "Diagnosis Procedure \(NHPC\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:0000000004651076

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.

< DTC/CIRCUIT DIAGNOSIS >

2. Check ground connection B31 and ground cable connections. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK SHIFT SOLENOID VALVE 1 CIRCUIT

1. Disconnect TCM harness connectors.
2. Check resistance between TCM vehicle side harness connector terminal and ground.

TCM vehicle side harness connector		Ground	Condition	Resistance (Ap-prox.)
Connector	Terminal			
B46	49	Ground	Transmission oil temperature: 20°C (68°F)	6.6 – 7.4 Ω
			Transmission oil temperature: 50°C (122°F)	7.3 – 8.3 Ω
			Transmission oil temperature: 80°C (176°F)	8.1 – 9.2 Ω

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 3.

3. CHECK SHIFT SOLENOID VALVE 1

1. Disconnect transmission unit harness connectors.
2. Check shift solenoid valve 1. Refer to [TM-122, "Component Inspection \(Shift Solenoid Valve 1\) \(NHPC\)"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4. CHECK HARNESS BETWEEN TCM AND TRANSMISSION (SHIFT SOLENOID VALVE 1) (PART 1)

Check continuity between TCM vehicle side harness connector terminal and transmission unit vehicle side harness connector terminal.

TCM vehicle side harness connector		Transmission unit vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B46	49	B49	13	Existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5. CHECK HARNESS BETWEEN TCM AND TRANSMISSION (SHIFT SOLENOID VALVE 1) (PART 2)

Check continuity between TCM vehicle side harness connector terminal and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B46	49	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (Shift Solenoid Valve 1) (NHPC)

INFOID:000000004651077

1. CHECK SHIFT SOLENOID VALVE 1

Check the resistance between transmission unit harness connector terminal and ground.

Transmission unit harness connector		Ground	Condition	Resistance (Ap- prox.)
Connector	Terminal			
B49	13	Ground	Transmission oil temperature: 20°C (68°F)	6.6 – 7.4 Ω
			Transmission oil temperature: 50°C (122°F)	7.3 – 8.3 Ω
			Transmission oil temperature: 80°C (176°F)	8.1 – 9.2 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace damaged parts.

P0755 SHIFT SOLENOID B**Description (NHPC)**

INFOID:0000000004651078

- The shift solenoid valve 2 is installed on the actuator control module and switches the oil passages for the oil pressure that activates the 6th-Neutral shift actuator operating the sleeve A1 and the 2nd-4th shift actuator operating the sleeve A2.
- The shift solenoid valve 2 is a ON/OFF type solenoid valve.

DTC Logic (NHPC)

INFOID:0000000004651079

DTC DETECTION LOGIC

TM

DTC	Self-diagnosis name	DTC detection condition	Possible cause
P0755	Shift solenoid valve 2 output	<ul style="list-style-type: none"> • A DTC is set if the shift solenoid valve 2 monitor value is ON when the shift solenoid valve 2 command value is OFF. • A DTC is set if the shift solenoid valve 2 monitor value is OFF when the shift solenoid valve 2 command value is ON. 	<ul style="list-style-type: none"> • Shift solenoid valve 2 • Harness or connector (Open or short in the shift solenoid valve 2 circuit)

DTC CONFIRMATION PROCEDURE**CAUTION:****Be careful of the driving speed.****1. PREPARATION BEFORE OPERATION**

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE (PART 1) With CONSULT-III

1. Start the engine.
2. Shift the shift lever to the A position and run at idle for 5 seconds or more.
3. Check "Self Diagnostic Result" of "TRANSMISSION".

 Without CONSULT-III

1. Start the engine.
2. Shift the shift lever to the A position and run at idle for 5 seconds or more.
3. Check self-diagnosis.

Is DTC P0755 detected?YES >> Go to [TM-123. "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE (PART 2) With CONSULT-III

1. Run the vehicle in 3rd gear of M range for 5 seconds or more.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

 Without CONSULT-III

1. Run the vehicle in 3rd gear of M range for 5 seconds or more.
2. Check self-diagnosis.

Is DTC P0755 detected?YES >> Go to [TM-123. "Diagnosis Procedure \(NHPC\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:0000000004651080

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.

< DTC/CIRCUIT DIAGNOSIS >

2. Check ground connection B31 and ground cable connections. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2.CHECK SHIFT SOLENOID VALVE 2 CIRCUIT

1. Disconnect TCM harness connectors.
2. Check resistance between TCM vehicle side harness connector terminal and ground.

TCM vehicle side harness connector		Ground	Condition	Resistance (Ap-prox.)
Connector	Terminal			
B46	54	Ground	Transmission oil temperature: 20°C (68°F)	6.6 – 7.4 Ω
			Transmission oil temperature: 50°C (122°F)	7.3 – 8.3 Ω
			Transmission oil temperature: 80°C (176°F)	8.1 – 9.2 Ω

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 3.

3.CHECK SHIFT SOLENOID VALVE 2

1. Disconnect transmission unit harness connectors.
2. Check shift solenoid valve 2. Refer to [TM-125, "Component Inspection \(Shift Solenoid Valve 2\) \(NHPC\)"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4.CHECK HARNESS BETWEEN TCM AND TRANSMISSION (SHIFT SOLENOID VALVE 2) (PART 1)

Check continuity between TCM vehicle side harness connector terminal and transmission unit vehicle side harness connector terminal.

TCM vehicle side harness connector		Transmission unit vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B46	54	B49	20	Existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5.CHECK HARNESS BETWEEN TCM AND TRANSMISSION (SHIFT SOLENOID VALVE 2) (PART 2)

Check continuity between TCM vehicle side harness connector terminal and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B46	54	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6.CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (Shift Solenoid Valve 2) (NHPC)

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1. CHECK SHIFT SOLENOID VALVE 2

Check the resistance between transmission unit harness connector terminal and ground.

Transmission unit harness connector		Ground	Condition	Resistance (Ap-prox.)
Connector	Terminal			
B49	20	Ground	Transmission oil temperature: 20°C (68°F)	6.6 – 7.4 Ω
			Transmission oil temperature: 50°C (122°F)	7.3 – 8.3 Ω
			Transmission oil temperature: 80°C (176°F)	8.1 – 9.2 Ω

Is the inspection result normal?

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YES >> INSPECTION END

NO >> Repair or replace damaged parts.

P0760 SHIFT SOLENOID C**Description (NHPC)**

INFOID:0000000004651082

- The shift solenoid valve 3 is installed on the actuator control module and switches the oil passages for the oil pressure that activates the 1st-Reverse shift actuator operating the sleeve B1 and the 3rd-5th shift actuator operating the sleeve B2.
- The shift solenoid valve 3 is a ON/OFF type solenoid valve.

DTC Logic (NHPC)

INFOID:0000000004651083

DTC DETECTION LOGIC

DTC	Self-diagnosis name	DTC detection condition	Possible cause
P0760	Shift solenoid valve 3 output	<ul style="list-style-type: none"> • A DTC is set if the shift solenoid valve 3 monitor value is ON when the shift solenoid valve 3 command value is OFF. • A DTC is set if the shift solenoid valve 3 monitor value is OFF when the shift solenoid valve 3 command value is ON. 	<ul style="list-style-type: none"> • Shift solenoid valve 3 • Harness or connector (Open or short in the shift solenoid valve 3 circuit)

DTC CONFIRMATION PROCEDURE**1. PREPARATION BEFORE OPERATION**

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE (PART 1) With CONSULT-III

1. Start the engine.
2. Shift the shift lever to the R position and run at idle for 5 seconds or more.
3. Check "Self Diagnostic Result" of "TRANSMISSION".

 Without CONSULT-III

1. Start the engine.
2. Shift the shift lever to the R position and run at idle for 5 seconds or more.
3. Check self-diagnosis.

Is DTC P0760 detected?YES >> Go to [TM-126, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE (PART 2) With CONSULT-III

1. Shift the shift lever to the A position and run at idle for 5 seconds or more.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

 Without CONSULT-III

1. Shift the shift lever to the A position and run at idle for 5 seconds or more.
2. Check self-diagnosis.

Is DTC P0760 detected?YES >> Go to [TM-126, "Diagnosis Procedure \(NHPC\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:0000000004651084

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.

< DTC/CIRCUIT DIAGNOSIS >

2. Check ground connection B31 and ground cable connections. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2.CHECK SHIFT SOLENOID VALVE 3 CIRCUIT

1. Disconnect TCM harness connectors.
2. Check resistance between TCM vehicle side harness connector terminal and ground.

TCM vehicle side harness connector		Ground	Condition	Resistance (Ap-prox.)
Connector	Terminal			
B46	51	Ground	Transmission oil temperature: 20°C (68°F)	6.6 – 7.4 Ω
			Transmission oil temperature: 50°C (122°F)	7.3 – 8.3 Ω
			Transmission oil temperature: 80°C (176°F)	8.1 – 9.2 Ω

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 3.

3.CHECK SHIFT SOLENOID VALVE 3

1. Disconnect transmission unit harness connectors.
2. Check shift solenoid valve 3. Refer to [TM-128, "Component Inspection \(Shift Solenoid Valve 3\) \(NHPC\)"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4.CHECK HARNESS BETWEEN TCM AND TRANSMISSION (SHIFT SOLENOID VALVE 3) (PART 1)

Check continuity between TCM vehicle side harness connector terminal and transmission unit vehicle side harness connector terminal.

TCM vehicle side harness connector		Transmission unit vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B46	51	B49	27	Existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5.CHECK HARNESS BETWEEN TCM AND TRANSMISSION (SHIFT SOLENOID VALVE 3) (PART 2)

Check continuity between TCM vehicle side harness connector terminal and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B46	51	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6.CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (Shift Solenoid Valve 3) (NHPC)

INFOID:000000004651085

1. CHECK SHIFT SOLENOID VALVE 3

Check the resistance between transmission unit harness connector terminal and ground.

Transmission unit harness connector		Ground	Condition	Resistance (Ap- prox.)
Connector	Terminal			
B49	27	Ground	Transmission oil temperature: 20°C (68°F)	6.6 – 7.4 Ω
			Transmission oil temperature: 50°C (122°F)	7.3 – 8.3 Ω
			Transmission oil temperature: 80°C (176°F)	8.1 – 9.2 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace damaged parts.

P0765 SHIFT SOLENOID D

Description (NHPC)

INFOID:0000000004651086

- The shift solenoid valve 4 is installed on the actuator control module and switches the oil passages for the oil pressure that activates the 1st-Reverse shift actuator operating the sleeve B1 and the 3rd-5th shift actuator operating the sleeve B2.
- The shift solenoid valve 4 is a ON/OFF type solenoid valve.

DTC Logic (NHPC)

INFOID:0000000004651087

DTC DETECTION LOGIC

DTC	Self-diagnosis name	DTC detection condition	Possible cause
P0765	Shift solenoid valve 4 output	<ul style="list-style-type: none"> A DTC is set if the shift solenoid valve 4 monitor value is ON when the shift solenoid valve 4 command value is OFF. A DTC is set if the shift solenoid valve 4 monitor value is OFF when the shift solenoid valve 4 command value is ON. 	<ul style="list-style-type: none"> Shift solenoid valve 4 Harness or connector (Open or short in the shift solenoid valve 4 circuit)

DTC CONFIRMATION PROCEDURE

1. PREPARATION BEFORE OPERATION

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE (PART 1)

 With CONSULT-III

- Start the engine.
- Shift the shift lever to the R position and run at idle for 5 seconds or more.
- Check "Self Diagnostic Result" of "TRANSMISSION".

 Without CONSULT-III

- Start the engine.
- Shift the shift lever to the R position and run at idle for 5 seconds or more.
- Check self-diagnosis.

Is DTC P0765 detected?YES >> Go to [TM-129, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE (PART 2)

 With CONSULT-III

- Shift the shift lever to the A position and run at idle for 5 seconds or more.
- Check "Self Diagnostic Result" of "TRANSMISSION".

 Without CONSULT-III

- Shift the shift lever to the A position and run at idle for 5 seconds or more.
- Check self-diagnosis.

Is DTC P0765 detected?YES >> Go to [TM-129, "Diagnosis Procedure \(NHPC\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:0000000004651088

1. CHECK GROUND CONNECTION

- Turn ignition switch OFF.
- Check ground connection B31 and ground cable connections. Refer to "Ground Inspection" in [GI-40, "Intermittent Incident".](#)

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2.CHECK SHIFT SOLENOID VALVE 4 CIRCUIT

1. Disconnect TCM harness connectors.
2. Check resistance between TCM vehicle side harness connector terminal and ground.

TCM vehicle side harness connector		Ground	Condition	Resistance (Ap-prox.)
Connector	Terminal			
B46	56	Ground	Transmission oil temperature: 20°C (68°F)	6.6 – 7.4 Ω
			Transmission oil temperature: 50°C (122°F)	7.3 – 8.3 Ω
			Transmission oil temperature: 80°C (176°F)	8.1 – 9.2 Ω

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 3.

3.CHECK SHIFT SOLENOID VALVE 4

1. Disconnect transmission unit harness connectors.
2. Check shift solenoid valve 4. Refer to [TM-130, "Component Inspection \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4.CHECK HARNESS BETWEEN TCM AND TRANSMISSION (SHIFT SOLENOID VALVE 4) (PART 1)

Check continuity between TCM vehicle side harness connector terminal and transmission unit vehicle side harness connector terminal.

TCM vehicle side harness connector		Transmission unit vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B46	56	B49	7	Existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5.CHECK HARNESS BETWEEN TCM AND TRANSMISSION (SHIFT SOLENOID VALVE 4) (PART 2)

Check continuity between TCM vehicle side harness connector terminal and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B46	56	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6.CHECK INTERMITTENT INCIDENTRefer to [GI-40, "Intermittent Incident".](#)

>> INSPECTION END

Component Inspection (NHPC)

INFOID:000000004651089

1.CHECK SHIFT SOLENOID VALVE 4

Check the resistance between transmission unit harness connector terminal and ground.

P0765 SHIFT SOLENOID D

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

Transmission unit harness connector		Ground	Condition	Resistance (Ap-prox.)
Connector	Terminal			
B49	7	Ground	Transmission oil temperature: 20°C (68°F)	6.6 – 7.4 Ω
			Transmission oil temperature: 50°C (122°F)	7.3 – 8.3 Ω
			Transmission oil temperature: 80°C (176°F)	8.1 – 9.2 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace damaged parts.

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P0770 SHIFT SOLENOID E**Description (NHPC)**

INFOID:0000000004651090

- The sequence solenoid valve is installed on the actuator control module and switches the oil passages for operating the low speed gear sleeve (sleeve A2 and sleeve B1) and for operating the high speed gear sleeve (sleeve A1 and sleeve B2).
- The sequence solenoid valve is a ON/OFF type solenoid valve.

DTC Logic (NHPC)

INFOID:0000000004651091

DTC DETECTION LOGIC

DTC	Self-diagnosis name	DTC detection condition	Possible cause
P0770	Sequence solenoid valve output	<ul style="list-style-type: none"> • A DTC is set if the sequence solenoid valve monitor value is ON when the sequence solenoid valve command value is OFF. • A DTC is set if the sequence solenoid valve monitor value is OFF when the sequence solenoid valve command value is ON. 	<ul style="list-style-type: none"> • Sequence solenoid valve • Harness or connector (Open or short in the sequence solenoid valve circuit)

DTC CONFIRMATION PROCEDURE**CAUTION:****Be careful of the driving speed.****1. PREPARATION BEFORE OPERATION**

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE (PART 1) **With CONSULT-III**

1. Start the engine.
2. Shift the shift lever to the A position and run at idle for 5 seconds or more.
3. Check "Self Diagnostic Result" of "TRANSMISSION".

 Without CONSULT-III

1. Start the engine.
2. Shift the shift lever to the A position and run at idle for 5 seconds or more.
3. Check self-diagnosis.

Is DTC P0770 detected?YES >> Go to [TM-133, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE (PART 2) **With CONSULT-III**

1. Run the vehicle in 2nd gear of M range for 5 seconds or more.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

 Without CONSULT-III

1. Run the vehicle in 2nd gear of M range for 5 seconds or more.
2. Check self-diagnosis.

Is DTC P0770 detected?YES >> Go to [TM-133, "Diagnosis Procedure \(NHPC\)".](#)

NO >> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS >

INFOID:000000004651092

Diagnosis Procedure (NHPC)

A

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection B31 and ground cable connections. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

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YES >> GO TO 2.
 NO >> Repair or replace damaged parts.

2. CHECK SEQUENCE SOLENOID VALVE CIRCUIT

1. Disconnect TCM harness connectors.
2. Check resistance between TCM vehicle side harness connector terminal and ground.

TCM vehicle side harness connector		Ground	Condition	Resistance (Ap-prox.)
Connector	Terminal			
B46	53	Ground	Transmission oil temperature: 20°C (68°F)	6.6 – 7.4 Ω
			Transmission oil temperature: 50°C (122°F)	7.3 – 8.3 Ω
			Transmission oil temperature: 80°C (176°F)	8.1 – 9.2 Ω

Is the inspection result normal?

E

YES >> GO TO 6.
 NO >> GO TO 3.

3. CHECK SEQUENCE SOLENOID VALVE

1. Disconnect transmission unit harness connectors.
2. Check sequence solenoid valve. Refer to [TM-134, "Component Inspection \(Sequence Solenoid Valve\) \(NHPC\)"](#).

F

Is the inspection result normal?

G

YES >> GO TO 4.
 NO >> Repair or replace damaged parts.

H

4. CHECK HARNESS BETWEEN TCM AND TRANSMISSION (SEQUENCE SOLENOID VALVE) (PART 1)

Check continuity between TCM vehicle side harness connector terminal and transmission unit vehicle side harness connector terminal.

TCM vehicle side harness connector		Transmission unit vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B46	53	B49	6	Existed

Is the inspection result normal?

I

YES >> GO TO 5.
 NO >> Repair or replace damaged parts.

J

5. CHECK HARNESS BETWEEN TCM AND TRANSMISSION (SEQUENCE SOLENOID VALVE) (PART 2)

Check continuity between TCM vehicle side harness connector terminal and ground.

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TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B46	53	Ground	Not existed

Is the inspection result normal?

M

YES >> GO TO 6.
 NO >> Repair or replace damaged parts.

N

6. CHECK INTERMITTENT INCIDENT

O

Refer to [GI-40, "Intermittent Incident"](#).

P

>> INSPECTION END

Component Inspection (Sequence Solenoid Valve) (NHPC)

INFOID:000000004651093

1. CHECK SEQUENCE SOLENOID VALVE

Check the resistance between transmission unit harness connector terminal and ground.

Transmission unit harness connector		Ground	Condition	Resistance (Ap- prox.)
Connector	Terminal			
B49	6	Ground	Transmission oil temperature: 20°C (68°F)	6.6 – 7.4 Ω
			Transmission oil temperature: 50°C (122°F)	7.3 – 8.3 Ω
			Transmission oil temperature: 80°C (176°F)	8.1 – 9.2 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace damaged parts.

P0775 PRESSURE CONTROL SOLENOID B

Description (NHPC)

INFOID:0000000004651094

- The clutch B solenoid valve is installed on the front control module and controls the clutch B (a clutch for odd number gears and reverse) with the current signal from TCM.
- The clutch B solenoid valve is an N/L type (normal low) in which no control oil pressure is built up when no current flows through the coil.

DTC Logic (NHPC)

INFOID:0000000004651095

DTC DETECTION LOGIC

NOTE:

If DTC P0700 is detected, first diagnose the DTC P0700 first. Refer to [TM-46, "DTC Logic \(NHPC\)".](#)

DTC	Self-diagnosis name	DTC detection condition	Possible cause
P0775	Clutch B solenoid valve current	A DTC is set if the clutch B solenoid valve current value is less than 0.05 A when the clutch B solenoid valve target current value is more than 0.2 A.	<ul style="list-style-type: none"> • Clutch B solenoid valve • Harness or connector (Open or short in the clutch B solenoid valve circuit)

DTC CONFIRMATION PROCEDURE

1. PREPARATION BEFORE OPERATION

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT-III

1. Turn the ignition switch ON.
2. Shift the shift lever to the N position.
3. Start the engine.
4. Select "RANGE" and "GEAR" in "Data Monitor".
5. With the vehicle stationary, maintain the following conditions for 5 seconds or more.

RANGE	: M
GEAR	: 1

6. Check "Self Diagnostic Result" of "TRANSMISSION".

Without CONSULT-III

1. Turn the ignition switch ON.
2. Shift the shift lever to the N position.
3. Start the engine.
4. With the vehicle stationary, maintain the following conditions for 5 seconds or more.

Shift lever	: M range
Gear	: 1

5. Check self-diagnosis.

Is DTC P0775 detected?

YES >> Go to [TM-135, "Diagnosis Procedure \(NHPC\)".](#)
 NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:0000000004651096

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.

P0775 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

- Check ground connections B31 and ground cable connections. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2.CHECK CLUTCH B SOLENOID VALVE CIRCUIT (PART 1)

- Disconnect TCM harness connectors.
- Check resistance between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector		Condition	Resistance (Ap-prox.)
Connector	Terminal		
B47	123	Transmission oil temperature: 20°C (68°F)	4.6 – 5.0 Ω
		Transmission oil temperature: 50°C (122°F)	5.1 – 5.6 Ω
		Transmission oil temperature: 80°C (176°F)	5.6 – 6.2 Ω

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 4.

3.CHECK CLUTCH B SOLENOID VALVE CIRCUIT (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B47	123	Ground	Not existed
	128		

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 4.

4.CHECK CLUTCH B SOLENOID VALVE

- Disconnect transmission unit harness connectors.
- Check clutch B solenoid valve. Refer to [TM-137, "Component Inspection \(Clutch B Solenoid Valve\) \(NHPC\)"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5.CHECK HARNESS BETWEEN TCM AND TRANSMISSION (CLUTCH B SOLENOID VALVE) (PART 1)

Check continuity between TCM vehicle side harness connector terminals and transmission unit vehicle side harness connector terminals.

TCM vehicle side harness connector		Transmission unit vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B47	123	B50	42	Existed
	128		43	

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6.CHECK HARNESS BETWEEN TCM AND TRANSMISSION (CLUTCH B SOLENOID VALVE) (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

P0775 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B47	123	Ground	Not existed
	128		

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace damaged parts.

7.CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

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>> INSPECTION END

Component Inspection (Clutch B Solenoid Valve) (NHPC)

INFOID:000000004651097

1.CHECK CLUTCH B SOLENOID VALVE (PART 1)

Check the resistance between transmission unit harness connector terminals.

Transmission unit harness connector		Condition	Resistance (Ap-prox.)
Connector	Terminal		
B50	42	Transmission oil temperature: 20°C (68°F)	4.6 – 5.0 Ω
		Transmission oil temperature: 50°C (122°F)	5.1 – 5.6 Ω
		Transmission oil temperature: 80°C (176°F)	5.6 – 6.2 Ω

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2.CHECK CLUTCH B SOLENOID VALVE (PART 2)

Check continuity between transmission unit harness connector terminal and ground.

Transmission unit harness connector		Ground	Continuity
Connector	Terminal		
B50	42	Ground	Not existed
	43		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace damaged parts.

P0776 PRESSURE CONTROL SOLENOID B

Description (NHPC)

INFOID:0000000004651098

The current signal from TCM controls the oil pressure to be applied to the clutch B (a clutch for odd number gears and reverse) engaging or releasing of the clutch B.

DTC Logic (NHPC)

INFOID:0000000004651099

DTC DETECTION LOGIC

NOTE:

If DTC P0845 is detected, first diagnose the DTC P0845. Refer to [TM-154, "DTC Logic \(NHPC\)".](#)

DTC	Self-diagnosis item	DTC detection condition		Possible cause
P0776	Monitor clutch B solenoid valve oil pressure difference	A	A DTC is set if the clutch B pressure sensor value is higher than the clutch B pressure target value by 0.2 MPa (2.04 kg/cm ² , 29 psi) or more.	<ul style="list-style-type: none"> • Clutch B solenoid valve • Clutch B pressure sensor • Clutch B oil passage • Harness or connector (Open or short in the clutch B solenoid valve circuit) • (Open or short in the clutch B pressure sensor circuit)
	Clutch B solenoid valve oil pressure output low	B	A DTC is set if the difference between the engine speed (CAN signal) and clutch B speed sensor value is 1,000 rpm or more with clutch B.	<ul style="list-style-type: none"> • Clutch B solenoid valve • Clutch B pressure sensor • Axis B feed pressure solenoid valve • Line pressure solenoid valve • Oil passage between line pressure and clutch B pressure • Harness or connector (Open or short in the clutch B solenoid valve circuit) • (Open or short in the clutch B pressure sensor circuit) • (Open or short in the axis B feed pressure solenoid valve circuit) • (Open or short in the line pressure solenoid valve circuit)

DTC CONFIRMATION PROCEDURE

1. PREPARATION BEFORE OPERATION

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION A

With CONSULT-III

1. Turn the ignition switch ON.
2. Shift the shift lever to N the position.
3. Start the engine.
4. Select "RANGE" and "GEAR" in "Data Monitor".
5. With the vehicle stationary, maintain the following conditions for 5 seconds or more.

RANGE : M
GEAR : 1

6. Check "Self Diagnostic Result" of "TRANSMISSION".

Without CONSULT-III

1. Turn the ignition switch ON.
2. Shift the shift lever to N the position.
3. Start the engine.

P0776 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

- With the vehicle stationary, maintain the following conditions for 5 seconds or more.

Shift lever : M range
Gear : 1

- Check self-diagnosis.

Is DTC P0776 detected?

YES >> Go to [TM-139, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE — DTC DETECTION CONDITION B

With CONSULT-III

- Select "RANGE", "GEAR", "ACCEL POSI SEN 1" and "VEHICLE SPEED" in "Data Monitor".
- Run the vehicle and keep the following conditions for at least 5 seconds.

RANGE : M
GEAR : 1
ACCEL POSI SEN 1 : 0.0/8
VEHICLE SPEED : 20 km/h (13 MPH) or more

- Check "Self Diagnostic Result" of "TRANSMISSION".

Without CONSULT-III

- Run the vehicle and keep the following conditions for at least 5 seconds.

Shift lever : M range
Gear : 1
Accelerator opening : 0.0/8
Vehicle speed : 20 km/h (13 MPH) or more

- Check self-diagnosis.

Is DTC P0776 detected?

YES >> Go to [TM-139, "Diagnosis Procedure \(NHPC\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:0000000004651100

1. CHECK CLUTCH B SOLENOID VALVE CIRCUIT

Refer to [TM-135, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK CLUTCH B PRESSURE SENSOR CIRCUIT

Refer to [TM-155, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

3. CHECK AXIS B FEED PRESSURE SOLENOID VALVE CIRCUIT

Refer to [TM-165, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4. CHECK LINE PRESSURE SOLENOID VALVE CIRCUIT

Refer to [TM-174, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 5.

P0776 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

NO >> Repair or replace damaged parts.

5. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connections B31 and ground cable connections. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> Replace transmission assembly. Refer to [TM-287, "Exploded View \(SpecV NHPC\)"](#).

NO >> Repair or replace damaged parts.

P0790 PERFORMANCE SWITCH**Description (NHPC)**

INFOID:0000000004651101

The set-up switch (transmission) is installed on the cluster lid C and commands the driving mode transition to TCM according to a driver's request.

DTC Logic (NHPC)

INFOID:0000000004651102

DTC DETECTION LOGIC

DTC	Self-diagnosis name	DTC detection condition	Possible cause
P0790	Continuation of set-up switch (transmission) ON	A DTC is set if TCM detects the set-up switch (transmission) ON signal for a certain period of time.	<ul style="list-style-type: none"> • Set-up switch (transmission) • Harness or connector [Short in the set-up switch (transmission) circuit]

DTC CONFIRMATION PROCEDURE**1. CHECK BEFORE OPERATION**

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

 With CONSULT-III

1. Start the engine and wait for 1 minute or more.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0790 detected?

YES >> Go to [TM-76, "Diagnosis Procedure \(NHPC\)".](#)
 NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:0000000004651103

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connections B31 and M95. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection".](#)

Is the inspection result normal?

YES >> GO TO 2.
 NO >> Repair or replace damaged parts.

2. CHECK SET-UP SWITCH (TRANSMISSION)

1. Disconnect set-up switch (transmission) harness connector.
2. Check set-up switch (transmission). Refer to [TM-180, "Component Inspection \[Paddle Shifter \(Shift-up Switch\)\] \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 3.
 NO >> Repair or replace damaged parts.

3. CHECK HARNESS BETWEEN TCM AND SET-UP SWITCH (TRANSMISSION)

1. Disconnect TCM harness connectors.
2. Check continuity between TCM vehicle side harness connector terminal and ground.

P0790 PERFORMANCE SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B45	34	Ground	Not existed
	37		

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4. CHECK HARNESS BETWEEN SET-UP SWITCH (TRANSMISSION) AND GROUND

Check continuity between set-up switch (transmission) vehicle side harness connector terminal and ground.

Set-up switch (transmission) vehicle side harness connector		Ground	Continuity
Connector	Terminal		
M73	17	Ground	Existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection [Set-up Switch (Transmission)] (NHPC)

INFOID:000000004651104

1. CHECK SET-UP SWITCH (TRANSMISSION)

Check continuity between set-up switch (transmission) connector terminals.

Set-up switch (transmission) connector		Condition	Continuity
Connector	Terminal		
M73	11	With the knob of the set-up switch (transmission) pressed onto the R side	Existed
		Other than the above	Not existed
	23	With the knob of the set-up switch (transmission) pressed onto the SNOW side	Existed
		Other than the above	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace set-up switch.

P0795 PRESSURE CONTROL SOLENOID C

Description (NHPC)

INFOID:0000000004651105

- The axis A feed pressure solenoid valve is installed on the actuator control module and builds up the source pressure for the gear operation actuators for even number gears and for the clutch A pressure solenoid valve based on the signals from TCM. The solenoid valves adjust the source pressure to drive the gears and clutches.
- The axis A feed pressure solenoid valve is an N/L type (normal low) in which no control oil pressure is built up when no current flows through the coil.

DTC Logic (NHPC)

INFOID:0000000004651106

TM

DTC DETECTION LOGIC

NOTE:

If DTC P0700 is detected, first diagnose the DTC P0700. Refer to [TM-46, "DTC Logic \(NHPC\)".](#)

DTC	Self-diagnosis name	DTC detection condition	Possible cause
P0795	Axis A feed pressure solenoid valve current	A DTC is set if the axis A feed pressure solenoid valve monitor current value is less than 0.2 A when the axis A feed pressure solenoid valve target current value is more than 0.38 A.	<ul style="list-style-type: none"> Axis A feed pressure solenoid valve Harness or connector (Open or short in the axis A feed pressure solenoid valve circuit)

DTC CONFIRMATION PROCEDURE

1. PREPARATION BEFORE OPERATION

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT-III

- Turn the ignition switch ON.
- Shift the shift lever to the N position.
- Start the engine.
- Move the shift lever to the N position and run at idle for 5 seconds or more.
- Check "Self Diagnostic Result" of "TRANSMISSION".

Without CONSULT-III

- Turn the ignition switch ON.
- Shift the shift lever to the N position.
- Start the engine.
- Move the shift lever to the N position and run at idle for 5 seconds or more.
- Check self-diagnosis.

Is DTC P0795 detected?

YES >> Go to [TM-143, "Diagnosis Procedure \(NHPC\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:0000000004651107

1. CHECK GROUND CONNECTION

- Turn ignition switch OFF.
- Check ground connections B31 and ground cable connections. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection".](#)

P0795 PRESSURE CONTROL SOLENOID C

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2.CHECK AXIS A FEED PRESSURE SOLENOID VALVE CIRCUIT (PART 1)

1. Disconnect TCM harness connectors.
2. Check resistance between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector		Condition	Resistance (Ap-prox.)
Connector	Terminal		
B46	57	Transmission oil temperature: 20°C (68°F)	3.8 – 4.4 Ω
		Transmission oil temperature: 50°C (122°F)	4.3 – 5.0 Ω
		Transmission oil temperature: 80°C (176°F)	4.7 – 5.4 Ω

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 4.

3.CHECK AXIS A FEED PRESSURE SOLENOID VALVE CIRCUIT (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B46	57	Ground	Not existed
	62		

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 4.

4.CHECK AXIS A FEED PRESSURE SOLENOID VALVE

1. Disconnect transmission unit harness connectors.
2. Check axis A feed pressure solenoid valve. Refer to [TM-145, "Component Inspection \(Axis A Feed Pressure Solenoid Valve\) \(NHPC\)"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5.CHECK HARNESS BETWEEN TCM AND TRANSMISSION (AXIS A FEED PRESSURE SOLENOID VALVE) (PART 1)

Check continuity between TCM vehicle side harness connector terminals and transmission unit vehicle side harness connector terminals.

TCM vehicle side harness connector		Transmission unit vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B46	57	B49	14	Existed
	62		15	

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6.CHECK HARNESS BETWEEN TCM AND TRANSMISSION (AXIS A FEED PRESSURE SOLENOID VALVE) (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

P0795 PRESSURE CONTROL SOLENOID C

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B46	57	Ground	Not existed
	62		

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace damaged parts.

7.CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

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>> INSPECTION END

Component Inspection (Axis A Feed Pressure Solenoid Valve) (NHPC)

INFOID:000000004651108

1.CHECK AXIS A FEED PRESSURE SOLENOID VALVE (PART 1)

Check the resistance between transmission unit harness connector terminals.

Transmission unit harness connector		Condition	Resistance (Ap-prox.)
Connector	Terminal		
B49	14	Transmission oil temperature: 20°C (68°F)	3.8 – 4.4 Ω
		Transmission oil temperature: 50°C (122°F)	4.3 – 5.0 Ω
		Transmission oil temperature: 80°C (176°F)	4.7 – 5.4 Ω

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2.CHECK AXIS A FEED PRESSURE SOLENOID VALVE (PART 2)

Check continuity between transmission unit harness connector terminal and ground.

Transmission unit harness connector		Ground	Continuity
Connector	Terminal		
B49	14	Ground	Not existed
	15		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace damaged parts.

P0797 PRESSURE CONTROL SOLENOID C**Description (NHPC)**

INFOID:0000000004651109

This solenoid valve builds up the source pressure for the gear operation actuators for even number gears and for the clutch A solenoid valve based on the signals from TCM. The solenoid valves adjust the source pressure to drive the gears and clutches.

DTC Logic (NHPC)

INFOID:0000000004651110

DTC DETECTION LOGIC**NOTE:**

If DTC P0840 is detected, first diagnose the DTC P0840. Refer to [TM-151, "DTC Logic \(NHPC\)".](#)

DTC	Self-diagnosis name	DTC detection condition	Possible cause
P0797	Axis A feed pressure solenoid valve function	<ul style="list-style-type: none"> A DTC is set if the clutch A pressure sensor value is less than 0.4 MPa (4.08 kg/cm², 58 psi) when the axis A feed pressure target value is 0.4 MPa (4.08 kg/cm², 58 psi) or more. A DTC is set if the clutch A pressure sensor value is more than 0.2 MPa (2.04 kg/cm², 29 psi) when the axis A feed pressure target value is 0.1 MPa (1.02 kg/cm², 14.5 psi) or less. 	<ul style="list-style-type: none"> Axis A feed pressure solenoid valve Clutch A solenoid valve Clutch A pressure sensor Clutch A oil passage Harness or connector (Open or short in the axis A feed pressure solenoid valve circuit) (Open or short in the clutch A solenoid valve circuit) (Open or short in the clutch A pressure sensor circuit)

DTC CONFIRMATION PROCEDURE**1. PREPARATION BEFORE OPERATION**

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE **With CONSULT-III**

- Turn the ignition switch ON.
- Shift the shift lever to the P position.
- Start the engine.
- Move the shift lever in the P position, run at idle for 1 minute or more.
- Check "Self Diagnostic Result" of "TRANSMISSION".

 Without CONSULT-III

- Turn the ignition switch ON.
- Shift the shift lever to the P position.
- Start the engine.
- Move the shift lever in the P position, run at idle for 1 minute or more.
- Check self-diagnosis.

Is DTC P0797 detected?YES >> Go to [TM-146, "Diagnosis Procedure \(NHPC\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:0000000004651111

1. CHECK AXIS A FEED PRESSURE SOLENOID VALVE CIRCUIT

Refer to [TM-143, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK CLUTCH A SOLENOID VALVE CIRCUIT

Refer to [TM-114, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

3. CHECK CLUTCH A PRESSURE SENSOR CIRCUIT

Refer to [TM-152, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.

2. Check ground connections B31 and ground cable connections. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection".](#)

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident".](#)

Is the inspection result normal?

YES >> Replace transmission assembly. Refer to [TM-287, "Exploded View \(SpecV NHPC\)".](#)

NO >> Repair or replace damaged parts.

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P0827, P0828 UP AND DOWN SHIFT SW**Description (NHPC)**

INFOID:000000004651112

The auto/manual range change switch 1 and Auto/Manual range change switch 2 are installed on the A/T shift selector and commands a transition to M range or A range according to the driver's request.

DTC Logic (NHPC)

INFOID:000000004651113

DTC DETECTION LOGIC

DTC	Self-diagnosis name	DTC detection condition	Possible cause
P0827	Range switching signal compatibility Low	A DTC is set if TCM simultaneously detects the OFF signal from the auto/manual range change switch 1 and OFF signal from the auto/manual range change switch 2.	<ul style="list-style-type: none"> • Auto/manual range change switch 1 • Auto/manual range change switch 2 • Range sensor power supply 1 system • Harness or connector (Open in the auto/manual range change switch 1) (Open in the auto/manual range change switch 2)
P0828	Range switching signal compatibility High	A DTC is set if TCM simultaneously detects the ON signal from the auto/manual range change switch 1 and ON signal from the auto/manual range change switch 2.	<ul style="list-style-type: none"> • Auto/manual range change switch 1 • Auto/manual range change switch 2 • Range sensor power supply 1 system • Harness or connector (Short in the auto/manual range change switch 1) (Short in the auto/manual range change switch 2)

DTC CONFIRMATION PROCEDURE**1. PREPARATION BEFORE OPERATION**

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE (PART 1)

With CONSULT-III

1. Start the engine.
2. Shift the shift lever to the A position and run at idle for 1 minute or more.
3. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0827 or DTC P0828 detected?

YES >> Go to [TM-148, "Diagnosis Procedure \(NHPC\)".](#)

NO >> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE (PART 2)

With CONSULT-III

1. Start the engine.
2. With the shift lever pressed to the M position side, run at idle for 1 minute or more.
3. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P0827 or DTC P0828 detected?

YES >> Go to [TM-148, "Diagnosis Procedure \(NHPC\)".](#)

NO >> INSPECTION END.

Diagnosis Procedure (NHPC)

INFOID:000000004651114

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.

P0827, P0828 UP AND DOWN SHIFT SW

[TRANSMISSION: GR6Z30A]

< DTC/CIRCUIT DIAGNOSIS >

2. Check ground connection B31. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK AUTO/MANUAL RANGE CHANGE SWITCH CIRCUIT (PART 1)

1. Disconnect TCM harness connectors.

2. Check continuity between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector		Condition		Continuity
Connector	Terminal			
B45	25	23	The shift lever is pressed onto the M position side	Not existed
			Other than the above	Existed
	25	28	The shift lever is pressed onto the M position side	Existed
			Other than the above	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 4.

3. CHECK AUTO/MANUAL RANGE CHANGE SWITCH CIRCUIT (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B45	23	Ground	Not existed
	25		
	28		

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 5.

4. CHECK AUTO/MANUAL RANGE CHANGE SWITCH

1. Disconnect A/T shift selector harness connector.

2. Check auto/manual range change switch. Refer to [TM-150, "Component Inspection \(Auto/Manual Range Change Switch\) \(NHPC\)"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5. CHECK HARNESS BETWEEN TCM AND A/T SHIFT SELECTOR (AUTO/MANUAL RANGE CHANGE SWITCH) (PART 1)

Check continuity between TCM vehicle side harness connector terminals and A/T shift selector vehicle side harness connector terminals.

TCM vehicle side harness connector		A/T shift selector vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B45	23	B20	20	Existed
	25		16	
	28		24	

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6. CHECK HARNESS BETWEEN TCM AND A/T SHIFT SELECTOR (AUTO/MANUAL RANGE CHANGE

SWITCH) (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B45	23	Ground	Not existed
	25		
	28		

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace damaged parts.

7.CHECK INTERMITTENT INCIDENTRefer to [GI-40, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (Auto/Manual Range Change Switch) (NHPC)

INFOID:0000000004651115

1.CHECK AUTO/MANUAL RANGE CHANGE SWITCH

Check continuity between A/T shift selector harness connector terminals.

TCM vehicle side harness connector		Condition	Continuity
Connector	Terminal		
B20	16	The shift lever is pressed onto the M position side	Not existed
			Existed
	16	The shift lever is pressed onto the M position side	Existed
			Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace damaged parts.

P0840 TRANSMISSION FLUID PRESSURE SEN/SW A

Description (NHPC)

INFOID:0000000004651116

- The clutch A pressure sensor is installed on the front control module and detects the pressure applied to the clutch A.
- The clutch A pressure sensor converts the pressure applied to the clutch A into output voltage and transmits the signal to TCM. TCM uses this signal in calculations for control switching or other functions.
- The clutch A pressure sensor output voltage varies depending on the pressure variations. The voltage increases as the pressure increases.

DTC Logic (NHPC)

INFOID:0000000004651117

TM

DTC DETECTION LOGIC

NOTE:

If DTC P0700 is detected, first diagnose the DTC P0700. Refer to [TM-46, "DTC Logic \(NHPC\)".](#)

DTC	Self-diagnosis name	DTC detection condition	Possible cause
P0840	Clutch A pressure sensor voltage	<ul style="list-style-type: none"> • A DTC is set if the clutch A pressure sensor voltage value received by TCM is more than 4,700 mV. • A DTC is set if the clutch A pressure sensor voltage value received by TCM is less than 90 mV. 	<ul style="list-style-type: none"> • Clutch A pressure sensor • TCM • Harness or connector (Open or short in the clutch A pressure sensor circuit)

DTC CONFIRMATION PROCEDURE

1. PREPARATION BEFORE OPERATION (PART 1)

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PREPARATION BEFORE OPERATION (PART 2)

With CONSULT-III

1. Turn the ignition switch ON.
2. Select "FLUID TEMP" in "Data Monitor".

Without CONSULT-III

1. Turn the ignition switch ON.
2. Check "TRANS OIL TEMP" on multi-function display.

Is the oil temperature -10°C (14°F) or more?

YES >> GO TO 3.

NO >> Warm up the transmission.

3. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT-III

1. Turn the ignition switch ON.
2. Shift the shift lever to the N position.

CAUTION:

No shift position indicator in the combination meter blinks.

3. Start the engine.
4. With the shift lever in the N position and run at idle for 5 seconds or more.
5. Check "Self Diagnostic Result" of "TRANSMISSION".

Without CONSULT-III

1. Turn the ignition switch ON.
2. Shift the shift lever to the N position.

CAUTION:

No shift position indicator in the combination meter blinks.

3. Start the engine.
4. With the shift lever in the N position and run at idle for 5 seconds or more.

P0840 TRANSMISSION FLUID PRESSURE SEN/SW A

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

5. Check self-diagnosis.

Is DTC P0840 detected?

YES >> Go to [TM-152, "Diagnosis Procedure \(NHPC\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:000000004651118

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connections B31 and ground cable connections. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection".](#)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK TCM OUTPUT SIGNAL CIRCUIT

Check voltage between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector				Condition	Voltage (Approx.)
Connector	Terminal	Connector	Terminal		
B47	97	B45	4	Ignition switch ON	5 V
				Ignition switch OFF	0 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 3.

3. CHECK TCM POWER SUPPLY

Refer to [TM-160, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-266, "Exploded View \(NHPC\)".](#)

NO >> Repair or replace damaged parts.

4. CHECK TCM INPUT SIGNAL CIRCUIT

1. Start engine.
2. Check voltage between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector				Condition	Voltage (Approx.)
Connector	Terminal	Connector	Terminal		
B47	98	B45	4	Engine running	Shift lever: P, R, or N position
				While driving	1st gear, 3rd gear, 5th gear

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 6.

5. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident".](#)

>> INSPECTION END

6. CHECK HARNESS BETWEEN TCM AND TRANSMISSION (CLUTCH A PRESSURE SENSOR) (PART 1)

1. Turn ignition switch OFF.
2. Disconnect TCM harness connectors and transmission unit harness connectors.

P0840 TRANSMISSION FLUID PRESSURE SEN/SW A

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

3. Check continuity between TCM vehicle side harness connector terminals and transmission unit vehicle side harness connector terminals.

TCM vehicle side harness connector		Transmission unit vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B47	97	B50	40	Existed
	98		41	
	99		47	

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace damaged parts.

7. CHECK HARNESS BETWEEN TCM AND TRANSMISSION (CLUTCH A PRESSURE SENSOR) (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B47	97	Ground	Not existed
	98		
	99		

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair or replace damaged parts.

8. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> Replace transmission assembly. Refer to [TM-287, "Exploded View \(SpecV NHPC\)"](#).

NO >> Repair or replace damaged parts.

P0845 TRANSMISSION FLUID PRESSURE SEN/SW B

Description (NHPC)

INFOID:0000000004651119

- The clutch B pressure sensor is installed on the front control module and detects the pressure applied to the clutch B.
- The clutch B pressure sensor converts the pressure applied to the clutch B into output voltage and transmits the signal to TCM. TCM uses this signal in calculations for control switching or other functions.
- The clutch B pressure sensor output voltage varies depending on the pressure variations. The voltage increases as the pressure increases.

DTC Logic (NHPC)

INFOID:0000000004651120

DTC DETECTION LOGIC

NOTE:

If DTC P0700 is detected, first diagnose the DTC P0700. Refer to [TM-46, "DTC Logic \(NHPC\)".](#)

DTC	Self-diagnosis name	DTC detection condition	Possible cause
P0845	Clutch B pressure sensor voltage	<ul style="list-style-type: none"> • A DTC is set if the clutch B pressure sensor voltage value received by TCM is more than 4,700 mV. • A DTC is set if the clutch B pressure sensor voltage value received by TCM is less than 90 mV. 	<ul style="list-style-type: none"> • Clutch B pressure sensor • TCM • Harness or connector (Open or short in the clutch B pressure sensor circuit)

DTC CONFIRMATION PROCEDURE

1. PREPARATION BEFORE OPERATION (PART 1)

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PREPARATION BEFORE OPERATION (PART 2)

With CONSULT-III

1. Turn the ignition switch ON.
2. Select "FLUID TEMP" in "Data Monitor".

Without CONSULT-III

1. Turn the ignition switch ON.
2. Check "TRANS OIL TEMP" on multi-function display.

Is the oil temperature -10°C (14°F) or more?

YES >> GO TO 3.

NO >> Warm up the transmission.

3. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT-III

1. Turn the ignition switch ON.
2. Shift the shift lever to the N position.

CAUTION:

No shift position indicator in the combination meter blinks.

3. Start the engine.
4. With the shift lever in the N position and run at idle for 5 seconds or more.
5. Check "Self Diagnostic Result" of "TRANSMISSION".

Without CONSULT-III

1. Turn the ignition switch ON.
2. Shift the shift lever to the N position.

CAUTION:

No shift position indicator in the combination meter blinks.

3. Start the engine.
4. With the shift lever in the N position and run at idle for 5 seconds or more.

5. Check self-diagnosis.

Is DTC P0845 detected?

YES >> Go to [TM-155, "Diagnosis Procedure \(NHPC\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:000000004651121

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connections B31 and ground cable connections. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection".](#)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK TCM OUTPUT SIGNAL CIRCUIT

Check voltage between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector				Condition	Voltage (Approx.)
Connector	Terminal	Connector	Terminal		
B47	102	B45	4	Ignition switch ON	5 V
				Ignition switch OFF	0 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 3.

3. CHECK TCM POWER SUPPLY

Refer to [TM-160, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-266, "Exploded View \(NHPC\)".](#)

NO >> Repair or replace damaged parts.

4. CHECK TCM INPUT SIGNAL CIRCUIT

1. Start engine.
2. Check voltage between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector				Condition	Voltage (Ap- prox.)
Connector	Terminal	Connector	Terminal		
B47	103	B45	4	Engine running	Shift lever: P, R, or N position 0.38 – 0.64 V
				While driving	

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 6.

5. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident".](#)

>> INSPECTION END

6. CHECK HARNESS BETWEEN TCM AND TRANSMISSION (CLUTCH B PRESSURE SENSOR) (PART 1)

1. Turn ignition switch OFF.
2. Disconnect TCM harness connectors and transmission unit harness connectors.

P0845 TRANSMISSION FLUID PRESSURE SEN/SW B

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

3. Check continuity between TCM vehicle side harness connector terminals and transmission unit vehicle side harness connector terminals.

TCM vehicle side harness connector		Transmission unit vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B47	102	B50	51	Existed
	103		52	
	104		53	

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace damaged parts.

7. CHECK HARNESS BETWEEN TCM AND TRANSMISSION (CLUTCH B PRESSURE SENSOR) (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B47	102	Ground	Not existed
	103		
	104		

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair or replace damaged parts.

8. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> Replace transmission assembly. Refer to [TM-287, "Exploded View \(SpecV NHPC\)"](#).

NO >> Repair or replace damaged parts.

P0872, P0873 TRANSMISSION FLUID PRESSURE SEN/SW C

Description (NHPC)

INFOID:000000004651122

- The line pressure sensor is installed on the actuator control module and detects the line pressure.
- The line pressure sensor converts the line pressure into output voltage and transmits the signal to TCM. TCM uses this signal in calculations for control switching or other functions.
- The line pressure sensor output voltage varies depending on the pressure variations. The voltage increases as the pressure increases.

DTC Logic (NHPC)

INFOID:000000004651123

DTC DETECTION LOGIC

NOTE:

If DTC P0700 is detected, first diagnose the DTC P0700. Refer to [TM-46, "DTC Logic \(NHPC\)".](#)

DTC	Self-diagnosis name	DTC detection condition	Possible cause
P0872	Line pressure sensor voltage system Low	A DTC is set if the line pressure sensor voltage value received by TCM is less than 90 mV.	<ul style="list-style-type: none"> • Line pressure sensor • Harness or connector (Open in the line pressure sensor circuit)
P0873	Line pressure sensor voltage system High	A DTC is set if the line pressure sensor voltage value received by TCM is more than 4,700 mV.	<ul style="list-style-type: none"> • Line pressure sensor • Harness or connector (Short in the line pressure sensor circuit)

DTC CONFIRMATION PROCEDURE

1. PREPARATION BEFORE OPERATION (PART 1)

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PREPARATION BEFORE OPERATION (PART 2)

(a) With CONSULT-III

1. Turn the ignition switch ON.
2. Select "FLUID TEMP" in "Data Monitor".

Is the oil temperature -10°C (14°F) or more?

YES >> GO TO 3.

NO >> Warm up the transmission.

3. PERFORM DTC CONFIRMATION PROCEDURE

(b) With CONSULT-III

1. Start the engine.
2. With the shift lever in the P position, and run at idle for 5 seconds or more.
3. Check "Self Diagnostic Result" of TRANSMISSION.

Is DTC P0872 or DTC P0873 detected?

YES >> Go to [TM-157, "Diagnosis Procedure \(NHPC\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:000000004651124

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connections B31 and ground cable connections. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection".](#)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

P0872, P0873 TRANSMISSION FLUID PRESSURE SEN/SW C

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

2. CHECK TCM OUTPUT SIGNAL CIRCUIT

Check voltage between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector				Condition	Voltage (Approx.)
Connector	Terminal	Connector	Terminal		
B46	73	B45	4	Ignition switch ON	5 V
				Ignition switch OFF	0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Go to [TM-183, "Diagnosis Procedure \(NHPC\)".](#)

3. CHECK TCM INPUT SIGNAL CIRCUIT

1. Start engine.
2. Check voltage between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector				Condition	Voltage (Approx.)	
Connector	Terminal	Connector	Terminal			
B46	77	B45	4	Engine running	• Shift lever: P, N position • At idle	0.84 – 1.97 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 5.

4. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident".](#)

>> INSPECTION END

5. CHECK HARNESS BETWEEN TCM AND TRANSMISSION (LINE PRESSURE SENSOR) (PART 1)

1. Turn ignition switch OFF.
2. Disconnect TCM harness connectors and transmission unit harness connectors.
3. Check continuity between TCM vehicle side harness connector terminals and transmission unit vehicle side harness connector terminals.

TCM vehicle side harness connector		Transmission unit vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B46	73	B49	35	Existed
	77		12	
	80		19	

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6. CHECK HARNESS BETWEEN TCM AND TRANSMISSION (LINE PRESSURE SENSOR) (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B46	73	Ground	Not existed
	77		
	80		

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace damaged parts.

A

7. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

B

Is the inspection result normal?

C

YES >> Replace transmission assembly. Refer to [TM-287, "Exploded View \(SpecV NHPC\)"](#).

NO >> Repair or replace damaged parts.

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P0882 TCM POWER INPUT SIGNAL

Description (NHPC)

INFOID:000000004651125

The power supply distributes the power to the neutral signal transmitted to each solenoid, starter relay and ECM.

DTC Logic (NHPC)

INFOID:000000004651126

DTC DETECTION LOGIC

NOTE:

- If DTC P0700 is detected, first diagnose the DTC P0700. Refer to [TM-46, "DTC Logic \(NHPC\)".](#)
- If DTC P0705 is detected, first diagnose the DTC P0705. Refer to [TM-50, "DTC Logic \(NHPC\)".](#)

DTC	Self-diagnosis name	DTC detection condition	Possible cause
P0882	Power supply voltage system	A DTC is set if the power voltage input to TCM is less than 10.5 V.	<ul style="list-style-type: none">• Battery voltage drop• TCM relay• Harness or connector (Open in the power supply circuit)

DTC CONFIRMATION PROCEDURE

1. PREPARATION BEFORE OPERATION

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT-III

1. Start the engine and run at idle for 5 seconds or more.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

Without CONSULT-III

1. Start the engine and run at idle for 5 seconds or more.
2. Check self-diagnosis.

Is DTC P0882 detected?

YES >> Go to [TM-160, "Diagnosis Procedure \(NHPC\)".](#)
NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:000000004651127

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connections B31. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection".](#)

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace damaged parts.

2. CHECK TCM INPUT SIGNAL CIRCUIT

Check voltage between TCM vehicle side harness connector terminals.

P0882 TCM POWER INPUT SIGNAL

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

TCM vehicle side harness connector		Condition		Voltage (Approx.)
Connector	Terminal			
B45	1	4	Ignition switch ON	Battery voltage (11 – 14 V)
			Ignition switch OFF	0 V
	5	4	Ignition switch ON	Battery voltage (11 – 14 V)
			Ignition switch OFF	0 V
	14	4	Ignition switch ON	0 V
			Ignition switch OFF	Battery voltage (11 – 14 V)

Is the inspection result normal?

YES >> GO TO 7.
NO >> GO TO 3.

3. CHECK HARNESS BETWEEN TCM AND TCM RELAY (PART 1)

1. Disconnect TCM harness connectors and TCM relay harness connector.
2. Check continuity between TCM vehicle side harness connector terminals and TCM relay vehicle side harness connector terminals.

TCM vehicle side harness connector		TCM relay vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B45	1	B54	6	Existed
	5			
	14		1	

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace damaged parts.

4. CHECK HARNESS BETWEEN TCM AND TCM RELAY (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B45	1	Ground	Not existed
	5		
	14		

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace damaged parts.

5. CHECK TCM RELAY

Check TCM relay. Refer to [TM-162, "Component Inspection \(TCM Relay\) \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace damaged parts.

6. DETECT MALFUNCTIONING ITEM

Check the following. Refer to [PG-12, "FOR EUROPE : Wiring Diagram - BATTERY POWER SUPPLY \(LHD MODELS\) -"](#), [PG-73, "FOR EUROPE : Wiring Diagram - BATTERY POWER SUPPLY \(RHD MODELS\) -"](#) (For Europe) or [PG-133, "EXCEPT FOR EUROPE : Wiring Diagram - BATTERY POWER SUPPLY \(LHD MODELS\) -"](#), [PG-193, "EXCEPT FOR EUROPE : Wiring Diagram - BATTERY POWER SUPPLY \(RHD MODELS\) -"](#) (Except for Europe).

P0882 TCM POWER INPUT SIGNAL

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

- 20A fuse (No. 36, located in the fuse and fusible link block)
- Fuse and fusible link block
- Harness for open or short TCM relay and battery

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace damaged parts.

7. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (TCM Relay) (NHPC)

INFOID:000000004651128

1. CHECK TCM RELAY

Check continuity between TCM relay connector terminals.

CAUTION:

- When applying voltage, use a fuse.
- Never cause a short circuit.

TCM relay connector			Condition	Continuity
Connector	Terminal			
B54	3	5	Apply battery voltage between terminals 1 and 2	Existed
			Other than the above	Not existed
	6	7	Apply battery voltage between terminals 1 and 2	Existed
			Other than the above	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace TCM relay.

< DTC/CIRCUIT DIAGNOSIS >

P1705 TP SENSOR**Description (NHPC)**

INFOID:000000004651129

- The accelerator pedal position sensor is installed on the upper section of the accelerator pedal assembly and detects the depressing amount of the accelerator pedal. The accelerator pedal position sensor converts the depressing amount of the accelerator pedal into voltage signal and transmits it to ECM. ECM transmits the signal to TCM via the CAN communication.
- TCM selects the driving gear using the gear shift line and corrects the operation of the clutches and clutch actuators based on the signal.

DTC Logic (NHPC)

INFOID:000000004651130

TM

DTC DETECTION LOGIC**NOTE:**If DTC P0700 is detected, first diagnose the DTC P0700. Refer to [TM-46, "DTC Logic \(NHPC\)".](#)

DTC	Self-diagnosis name	DTC detection condition	Possible cause
P1705	Throttle position CAN signal compatibility	A DTC is set if TCM detects a difference between 2 signals of the throttle position (CAN signal).	<ul style="list-style-type: none"> Accelerator pedal position sensor ECM Harness or connector (Open or short in the accelerator pedal position sensor signal circuit)

DTC CONFIRMATION PROCEDURE**1. PREPARATION BEFORE OPERATION**

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE With CONSULT-III

- Start the engine and run at idle for 5 seconds or more.
- Check "Self Diagnostic Result" of "TRANSMISSION".

 Without CONSULT-III

- Start the engine and run at idle for 5 seconds or more.
- Check self-diagnosis.

Is DTC P1705 detected?YES >> Go to [TM-163, "Diagnosis Procedure \(NHPC\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:000000004651131

1. CHECK DTC WITH ECM With CONSULT-III

- Turn ignition switch ON.
- Check "Self Diagnostic Result" of "ENGINE".

 Without CONSULT-III

- Turn ignition switch ON.
- Check self-diagnosis.

Is DTC detected?YES >> Check DTC Detected Item. Refer to [EC-569, "DTC Index"](#) (TYPE 1*), [EC-1105, "DTC Index"](#) (TYPE 2*) or [EC-1544, "DTC Index"](#) (TYPE 3*).• *: Refer to [EC-20, "How to Check Vehicle Type".](#)

NO >> GO TO 2.

2. CHECK INTERMITTENT INCIDENT

P1705 TP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

Refer to [GI-40, "Intermittent Incident".](#)

>> INSPECTION END

P2713 PRESSURE CONTROL SOLENOID D

Description (NHPC)

INFOID:0000000004651132

- The axis B feed pressure solenoid valve is installed on the actuator control module and builds up the source pressure for the gear operation actuators for odd number gears and reverse gear and for the clutch B pressure solenoid valve based on the signals from TCM. The solenoid valves adjust the source pressure to drive the gears and clutches.
- The axis B feed pressure solenoid valve is a N/L type (normal low) in which no control oil pressure is built up when no current flows through the coil.

DTC Logic (NHPC)

INFOID:0000000004651133

TM

DTC DETECTION LOGIC

NOTE:

If DTC P0700 is displayed, perform the diagnosis of DTC P0700 first. Refer to [TM-46, "DTC Logic \(NHPC\)".](#)

DTC	Self-diagnosis name	DTC detection condition	Possible cause
P2713	Axis B feed pressure solenoid valve current	A DTC is set if the axis B feed pressure solenoid valve monitor current value is less than 0.2 A when the axis B feed pressure solenoid valve target current value is more than 0.38 A.	<ul style="list-style-type: none"> Axis B feed pressure solenoid valve Harness or connector (Open or short in the axis B feed pressure solenoid valve circuit)

DTC CONFIRMATION PROCEDURE

1. PREPARATION BEFORE OPERATION

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT-III

- Turn the ignition switch ON.
- Shift the shift lever to the N position.

CAUTION:

No shift position indicator in the combination meter blinks.

- Start the engine.
- With the shift lever in the N position, and run at idle for 5 seconds or more.
- Check "Self Diagnostic Result" of "TRANSMISSION".

Without CONSULT-III

- Turn the ignition switch ON.
- Shift the shift lever to the N position.

CAUTION:

No shift position indicator in the combination meter blinks.

- Start the engine.
- With the shift lever in the N position, and run at idle for 5 seconds or more.
- Check self-diagnosis.

Is DTC P2713 detected?

YES >> Go to [TM-165, "Diagnosis Procedure \(NHPC\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:0000000004651134

1. CHECK GROUND CONNECTION

- Turn ignition switch OFF.
- Check ground connections B31 and ground cable connections. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection".](#)

P2713 PRESSURE CONTROL SOLENOID D

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2.CHECK AXIS B FEED PRESSURE SOLENOID VALVE CIRCUIT (PART 1)

1. Disconnect TCM harness connectors.
2. Check resistance between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector		Condition	Resistance (Ap-prox.)
Connector	Terminal		
B46	59	Transmission oil temperature: 20°C (68°F)	3.8 – 4.4 Ω
		Transmission oil temperature: 50°C (122°F)	4.3 – 5.0 Ω
		Transmission oil temperature: 80°C (176°F)	4.7 – 5.4 Ω

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 4.

3.CHECK AXIS B FEED PRESSURE SOLENOID VALVE CIRCUIT (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B46	59	Ground	Not existed
	64		

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 4.

4.CHECK AXIS B FEED PRESSURE SOLENOID VALVE

1. Disconnect transmission unit harness connectors.
2. Check axis B feed pressure solenoid valve. Refer to [TM-167, "Component Inspection \(Axis B Feed Pressure Solenoid Valve\) \(NHPC\)"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5.CHECK HARNESS BETWEEN TCM AND TRANSMISSION (AXIS B FEED PRESSURE SOLENOID VALVE) (PART 1)

Check continuity between TCM vehicle side harness connector terminals and transmission unit vehicle side harness connector terminals.

TCM vehicle side harness connector		Transmission unit vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B46	59	B49	21	Existed
	64		22	

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6.CHECK HARNESS BETWEEN TCM AND TRANSMISSION (AXIS B FEED PRESSURE SOLENOID VALVE) (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B46	59	Ground	Not existed
	64		

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace damaged parts.

7.CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

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>> INSPECTION END

Component Inspection (Axis B Feed Pressure Solenoid Valve) (NHPC)

INFOID:000000004651135

1.CHECK AXIS B FEED PRESSURE SOLENOID VALVE (PART 1)

Check the resistance between transmission unit harness connector terminals.

Transmission unit harness connector		Condition	Resistance (Ap-prox.)
Connector	Terminal		
B49	21	Transmission oil temperature: 20°C (68°F)	3.8 – 4.4 Ω
		Transmission oil temperature: 50°C (122°F)	4.3 – 5.0 Ω
		Transmission oil temperature: 80°C (176°F)	4.7 – 5.4 Ω

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2.CHECK AXIS B FEED PRESSURE SOLENOID VALVE (PART 2)

Check continuity between transmission unit harness connector terminal and ground.

Transmission unit harness connector		Ground	Continuity
Connector	Terminal		
B49	21	Ground	Not existed
	22		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace damaged parts.

P2714 PRESSURE CONTROL SOLENOID D

Description (NHPC)

INFOID:000000004651136

This solenoid valve builds up the source pressure for the gear operation actuators for odd number gears and reverse gear and for the clutch B solenoid valve based on the signals from TCM. The solenoid valves adjust the source pressure to drive the gears and clutches.

DTC Logic (NHPC)

INFOID:000000004651137

DTC DETECTION LOGIC

NOTE:

If DTC P0845 is detected, first diagnose DTC P0845. Refer to [TM-154, "DTC Logic \(NHPC\)".](#)

DTC	Self-diagnosis name	DTC detection condition	Possible cause
P2714	Axis B feed pressure solenoid valve function	<ul style="list-style-type: none"> A DTC is set if the clutch B pressure sensor value is less than 0.4 MPa (4.08 kg/cm², 58 psi) when the axis B feed pressure target value is 0.4 MPa (4.08 kg/cm², 58 psi) or more. A DTC is set if the clutch B pressure sensor value is more than 0.2 MPa (2.04 kg/cm², 29 psi) when the axis B feed pressure target value is 0.1 MPa (1.02 kg/cm², 14.5 psi) or less. 	<ul style="list-style-type: none"> Axis B feed pressure solenoid valve Clutch B solenoid valve Clutch B pressure sensor Clutch B oil passage Harness or connector (Open or short in the axis B feed pressure solenoid valve circuit) (Open or short in the clutch B solenoid valve circuit) (Open or short in the clutch B pressure sensor circuit)

DTC CONFIRMATION PROCEDURE

1. PREPARATION BEFORE OPERATION

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT-III

- Turn the ignition switch ON.
- Shift the shift lever to the P position.
- Start the engine.
- With the shift lever in the P position, and run at idle for 1 minute or more.
- Check "Self Diagnostic Result" of "TRANSMISSION".

Without CONSULT-III

- Turn the ignition switch ON.
- Shift the shift lever to the P position.
- Start the engine.
- With the shift lever in the P position, and run at idle for 1 minute or more.
- Check self-diagnosis.

Is DTC P2714 detected?

YES >> Go to [TM-168, "Diagnosis Procedure \(NHPC\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:000000004651138

1. CHECK AXIS B FEED PRESSURE SOLENOID VALVE CIRCUIT

Refer to [TM-165, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK CLUTCH B SOLENOID VALVE CIRCUIT

Refer to [TM-135, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

3. CHECK CLUTCH B PRESSURE SENSOR CIRCUIT

Refer to [TM-155, "Diagnosis Procedure \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.

2. Check ground connections B31 and ground cable connections. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection".](#)

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident".](#)

Is the inspection result normal?

YES >> Replace transmission assembly. Refer to [TM-287, "Exploded View \(SpecV NHPC\)".](#)

NO >> Repair or replace damaged parts.

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P2722 PRESSURE CONTROL SOLENOID E**Description (NHPC)**

INFOID:0000000004651139

- The lubricating flow solenoid valve is installed on the front control module and controls the lubricating flow of the clutches A and B with the signals from TCM. This subsequently controls the lubricating flow of the gear train.
- The lubricating flow solenoid valve is a N/H type (normal high) in which control oil pressure is built up when no current flows through the coil.

DTC Logic (NHPC)

INFOID:0000000004651140

DTC DETECTION LOGIC**NOTE:**

If DTC P0700 is detected, first diagnose the DTC P0700. Refer to [TM-46, "DTC Logic \(NHPC\)".](#)

DTC	Self-diagnosis name	DTC detection condition	Possible cause
P2722	Lubricating flow solenoid valve system current	A DTC is set if the lubricating flow solenoid valve monitor current value is less than 0.2 A when the lubricating flow solenoid valve target current value is more than 0.38 A.	<ul style="list-style-type: none"> • Lubricating flow solenoid valve • Harness or connector (Open or short in the lubricating flow solenoid valve circuit)

DTC CONFIRMATION PROCEDURE**1. PREPARATION BEFORE OPERATION**

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT-III

1. Start the engine.
2. Shift the shift lever to the P position and run at idle for 5 seconds or more.
3. Check "Self Diagnostic Result" of "TRANSMISSION".

Without CONSULT-III

1. Start the engine.
2. Shift the shift lever to the P position and run at idle for 5 seconds or more.
3. Check self-diagnosis.

Is DTC P2722 detected?

YES >> Go to [TM-170, "Diagnosis Procedure \(NHPC\)".](#)

NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:0000000004651141

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connections B31 and ground cable connections. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection".](#)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK LUBRICATING FLOW SOLENOID VALVE CIRCUIT (PART 1)

1. Disconnect TCM harness connectors.
2. Check resistance between TCM vehicle side harness connector terminals.

P2722 PRESSURE CONTROL SOLENOID E

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

TCM vehicle side harness connector		Condition	Resistance (Approx.)
Connector	Terminal		
B47	115	Transmission oil temperature: 20°C (68°F)	3.8 – 4.4 Ω
		Transmission oil temperature: 50°C (122°F)	4.3 – 5.0 Ω
		Transmission oil temperature: 80°C (176°F)	4.7 – 5.4 Ω

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 4.

3. CHECK LUBRICATING FLOW SOLENOID VALVE CIRCUIT (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B47	115	Ground	Not existed
	120		

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 4.

4. CHECK LUBRICATING FLOW SOLENOID VALVE

1. Disconnect transmission unit harness connectors.
2. Check lubricating flow solenoid valve. Refer to [TM-172, "Component Inspection \(Lubricating Flow Solenoid Valve\) \(NHPC\)"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5. CHECK HARNESS BETWEEN TCM AND TRANSMISSION (LUBRICATING FLOW SOLENOID VALVE) (PART 1)

Check continuity between TCM vehicle side harness connector terminals and transmission unit vehicle side harness connector terminals.

TCM vehicle side harness connector		Transmission unit vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B47	115	B50	55	Existed
	120		54	

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6. CHECK HARNESS BETWEEN TCM AND TRANSMISSION (LUBRICATING FLOW SOLENOID VALVE) (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B47	115	Ground	Not existed
	120		

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace damaged parts.

7.CHECK INTERMITTENT INCIDENTRefer to [GI-40, "Intermittent Incident".](#)

>> INSPECTION END

Component Inspection (Lubricating Flow Solenoid Valve) (NHPC)

INFOID:000000004651142

1.CHECK LUBRICATING FLOW SOLENOID VALVE (PART 1)

Check the resistance between transmission unit harness connector terminals.

Transmission unit harness connector			Condition	Resistance (Ap-prox.)
Connector	Terminal			
B50	54	55	Transmission oil temperature: 20°C (68°F)	3.8 – 4.4 Ω
			Transmission oil temperature: 50°C (122°F)	4.3 – 5.0 Ω
			Transmission oil temperature: 80°C (176°F)	4.7 – 5.4 Ω

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2.CHECK LUBRICATING FLOW SOLENOID VALVE (PART 2)

Check continuity between transmission unit harness connector terminal and ground.

Transmission unit harness connector		Ground	Continuity
Connector	Terminal		
B50	54	Ground	Not existed
	55		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace damaged parts.

P2731 PRESSURE CONTROL SOLENOID F

Description (NHPC)

INFOID:000000004651143

- The line pressure solenoid valve is installed on the front control module and controls the line pressure based on the signal from TCM. This subsequently controls the lubricating flow.
- The line pressure solenoid valve is a N/H type (normal high) in which control oil pressure is built up when no current flows through the coil.

DTC Logic (NHPC)

INFOID:000000004651144

DTC DETECTION LOGIC

NOTE:

If DTC P0700 is displayed, perform the diagnosis of DTC P0700 first. Refer to [TM-46, "DTC Logic \(NHPC\)"](#).

DTC	Self-diagnosis name	DTC detection condition	Possible causes
P2731	Line pressure solenoid valve system current	A DTC is set if the line pressure solenoid valve monitor current value is less than 0.2 A when the line pressure solenoid valve target current value is more than 0.38 A.	<ul style="list-style-type: none"> Line pressure solenoid valve Harness or connector (Open or short in the line pressure solenoid valve circuit)

DTC CONFIRMATION PROCEDURE

CAUTION:

Be careful of the driving speed.

1. PREPARATION BEFORE OPERATION (PART 1)

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PREPARATION BEFORE OPERATION (PART 2)

With CONSULT-III

- Turn the ignition switch ON.
- Select "FLUID TEMP" in "Data Monitor".

Without CONSULT-III

- Turn the ignition switch ON.
- Check "TRANS OIL TEMP" on multi-function display.

Is the oil temperature 30°C (86°F) or more?

YES >> GO TO 3.

NO >> Warm up the transmission.

3. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT-III

- Shift the shift lever to the N position.
- Start the engine.
- With the shift lever in the N position, and run at idle for 5 seconds or more.
- Check "Self Diagnostic Result" of "TRANSMISSION".

Without CONSULT-III

- Shift the shift lever to the N position.

CAUTION:

No shift position indicator in the combination meter blinks.

- Start the engine.
- With the shift lever in the N position, and run at idle for 5 seconds or more.
- Check self-diagnosis.

Is DTC P2731 detected?

YES >> Go to [TM-174, "Diagnosis Procedure \(NHPC\)"](#).

NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:000000004651145

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connections B31 and ground cable connections. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection".](#)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK LINE PRESSURE SOLENOID VALVE CIRCUIT (PART 1)

1. Disconnect TCM harness connectors.
2. Check resistance between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector		Condition	Resistance (Ap-prox.)
Connector	Terminal		
B47	113	Transmission oil temperature: 20°C (68°F)	3.8 – 4.4 Ω
		Transmission oil temperature: 50°C (122°F)	4.3 – 5.0 Ω
		Transmission oil temperature: 80°C (176°F)	4.7 – 5.4 Ω

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 4.

3. CHECK LINE PRESSURE SOLENOID VALVE CIRCUIT (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B47	113	Ground	Not existed
	118		

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 4.

4. CHECK LINE PRESSURE SOLENOID VALVE

1. Disconnect transmission unit harness connectors.
2. Check line pressure solenoid valve. Refer to [TM-175, "Component Inspection \(Line Pressure Solenoid Valve\) \(NHPC\)".](#)

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5. CHECK HARNESS BETWEEN TCM AND TRANSMISSION (LINE PRESSURE SOLENOID VALVE) (PART 1)

Check continuity between TCM vehicle side harness connector terminals and transmission unit vehicle side harness connector terminals.

TCM vehicle side harness connector		Transmission unit vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B47	113	B50	49	Existed
	118		48	

Is the inspection result normal?

P2731 PRESSURE CONTROL SOLENOID F

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6. CHECK HARNESS BETWEEN TCM AND TRANSMISSION (LINE PRESSURE SOLENOID VALVE) (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B47	113	Ground	Not existed
	118		

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace damaged parts.

7. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (Line Pressure Solenoid Valve) (NHPC)

INFOID:000000004651146

1. CHECK LINE PRESSURE SOLENOID VALVE (PART 1)

Check the resistance between transmission unit harness connector terminals.

Transmission unit harness connector			Condition	Resistance (Ap- prox.)
Connector	Terminal			
B50	48	49	Transmission oil temperature: 20°C (68°F)	3.8 – 4.4 Ω
			Transmission oil temperature: 50°C (122°F)	4.3 – 5.0 Ω
			Transmission oil temperature: 80°C (176°F)	4.7 – 5.4 Ω

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK LINE PRESSURE SOLENOID VALVE (PART 2)

Check continuity between transmission unit harness connector terminal and ground.

Transmission unit harness connector			Ground	Continuity
Connector	Terminal			
B50	48	49	Ground	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace damaged parts.

P2765 INPUT SPEED SENSOR B

Description (NHPC)

INFOID:0000000004651147

- The clutch B speed sensor detects the 1st counter gear speed. The clutch B speed sensor converts the 1st counter gear speed into pulse signal and transmits the signal to TCM.
- TCM calculates the clutch B (a clutch for odd number gears and reverse) speed based on the signal from the clutch B speed sensor.

DTC Logic (NHPC)

INFOID:0000000004651148

DTC DETECTION LOGIC

DTC	Self-diagnosis name	DTC detection condition	Possible cause
P2765	Clutch B speed pulse signal compatibility	<p>A DTC is set if the status 1 or 2 below is detected with the sleeve B1 or B2 engaged in an odd number gear.</p> <ol style="list-style-type: none"> The difference between the actual output shaft speed and the output shaft speed converted from the clutch B speed is 1,000 rpm or more. The difference between the vehicle speed signal (meter) (CAN signal) and the output shaft speed converted from the clutch B speed is 1,000 rpm or more. 	<ul style="list-style-type: none"> Clutch B speed sensor Harness or connector (Open or short in the clutch B speed sensor circuit)

DTC CONFIRMATION PROCEDURE

CAUTION:**Be careful of the driving speed.****1. PREPARATION BEFORE OPERATION**

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE With CONSULT-III

- Start the engine.
- Select "RANGE", "GEAR" and "ENGINE SPEED" in "Data Monitor".
- Run the vehicle and maintain the following conditions for 5 seconds or more.

RANGE	: M
GEAR	: 3
ENGINE SPEED	: 2,000 rpm or more

- Check "Self Diagnostic Result" of "TRANSMISSION".

 Without CONSULT-III

- Start the engine.
- Run the vehicle and maintain the following conditions for 5 seconds or more.

Shift lever	: M range
Gear	: 3
Engine speed	: 2,000 rpm or more

- Check self-diagnosis.

Is DTC P2765 detected?

YES >> Go to [TM-177, "Diagnosis Procedure \(NHPC\)".](#)
 NO >> INSPECTION END

P2765 INPUT SPEED SENSOR B

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

Diagnosis Procedure (NHPC)

INFOID:000000004651149

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connections B31 and ground cable connections. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK TCM OUTPUT SIGNAL CIRCUIT

Check voltage between TCM vehicle side harness connector terminals.

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TCM vehicle side harness connector				Condition	Voltage (Approx.)
Connector	Terminal	Connector	Terminal		
B46	78	B45	4	Ignition switch ON	5 V
				Ignition switch OFF	0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Go to [TM-183, "Diagnosis Procedure \(NHPC\)"](#).

3. CHECK TCM INPUT SIGNAL CIRCUIT

1. Start engine.
2. Check voltage between TCM vehicle side harness connector terminals.

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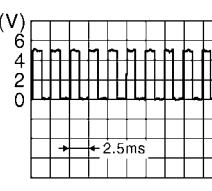
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TCM vehicle side harness connector				Condition	Voltage (Approx.)
Connector	Terminal	Connector	Terminal		
B46	82	B45	4	• M range, 1st gear • Engine speed: 2,000 rpm	(V)  NNIDIA0062ZZ

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 5.

4. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

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>> INSPECTION END

5. CHECK HARNESS BETWEEN TCM AND TRANSMISSION (CLUTCH B SPEED SENSOR) (PART 1)

Check continuity between TCM vehicle side harness connector terminals and transmission unit vehicle side harness connector terminals.

TCM vehicle side harness connector		Transmission unit vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B46	78	B49	36	Existed
	82		33	
	86		26	

Is the inspection result normal?

P2765 INPUT SPEED SENSOR B

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6. CHECK HARNESS BETWEEN TCM AND TRANSMISSION (CLUTCH B SPEED SENSOR) (PART 2)

Check continuity between TCM vehicle side harness connector terminals and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B46	78	Ground	Not existed
	82		
	86		

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace damaged parts.

7. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> Replace transmission assembly. Refer to [TM-287, "Exploded View \(SpecV NHPC\)"](#).

NO >> Repair or replace damaged parts.

< DTC/CIRCUIT DIAGNOSIS >

P2776 UPSHIFT SWITCH**Description (NHPC)**

INFOID:0000000004651150

The paddle shifter (shift-up switch) is installed on the steering column and commands TCM the transition to M range and upshift according to a driver's request.

DTC Logic (NHPC)

INFOID:0000000004651151

DTC DETECTION LOGIC**NOTE:**

- If DTC P0700 is detected, first diagnose the DTC P0700. Refer to [TM-46, "DTC Logic \(NHPC\)"](#).
- If DTC P0705 is detected, first diagnose the DTC P0705. Refer to [TM-50, "DTC Logic \(NHPC\)"](#).

DTC	Self-diagnosis name	DTC detection condition	Possible cause
P2776	Continuation of shift-up switch ON	A DTC is set if TCM detects the paddle shifter (shift-up switch) ON signal for a certain period of time.	<ul style="list-style-type: none"> • Paddle shifter (shift-up switch) • Harness or connector [Short in the paddle shifter (shift-up switch) circuit]

DTC CONFIRMATION PROCEDURE**1. PREPARATION BEFORE OPERATION**

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT-III

1. Start the engine and wait for 1 minute or more.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P2776 detected?

YES >> Go to [TM-179, "Diagnosis Procedure \(NHPC\)"](#).

NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:0000000004651152

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connections B31, M11 and M55. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK PADDLE SHIFTER (SHIFT-UP SWITCH)

1. Disconnect paddle shifter (shift-up switch) harness connector.
2. Check paddle shifter (shift-up switch). Refer to [TM-180, "Component Inspection \[Paddle Shifter \(Shift-up Switch\)\] \(NHPC\)"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

3. CHECK HARNESS BETWEEN TCM AND PADDLE SHIFTER (SHIFT-UP SWITCH)

1. Disconnect TCM harness connectors.
2. Check continuity between TCM vehicle side harness connector terminal and ground.

P2776 UPSHIFT SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B45	39	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4. CHECK HARNESS BETWEEN PADDLE SHIFTER (SHIFT-UP SWITCH) AND GROUND

Check continuity between paddle shifter (shift-up switch) vehicle side harness connector terminal and ground.

Paddle shifter (shift-up switch) vehicle side harness connector		Ground	Continuity
Connector	Terminal		
M39	1	Ground	Existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection [Paddle Shifter (Shift-up Switch)] (NHPC)

INFOID:000000004651153

1. CHECK PADDLE SHIFTER (SHIFT-UP SWITCH)

Check continuity between paddle shifter (shift-up switch) connector terminals.

Paddle shifter (shift-up switch) connector			Condition	Continuity
Connector	Terminal			
M39	1	3	The paddle shifter (shift-up switch) is pulled	Existed
			Other than the above	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace damaged parts.

P2780 DOWNSHIFT SWITCH**Description (NHPC)**

INFOID:0000000004651154

The paddle shifter (shift-down switch) is installed on the steering column and commands TCM the transition to M range and downshift according to a driver's request.

DTC Logic (NHPC)

INFOID:0000000004651155

DTC DETECTION LOGIC**NOTE:**

- If DTC P0700 is detected, first diagnose the DTC P0700. Refer to [TM-46, "DTC Logic \(NHPC\)"](#).
- If DTC P0705 is detected, first diagnose the DTC P0705. Refer to [TM-50, "DTC Logic \(NHPC\)"](#).

DTC	Self-diagnosis name	DTC detection condition	Possible cause
P2780	Continuation of shift-down switch ON	A DTC is set if TCM detects the paddle shifter (shift-down switch) ON signal for a certain period.	<ul style="list-style-type: none"> • Paddle shifter (shift-down switch) • Harness or connector [Short in the paddle shifter (shift-down switch) circuit]

DTC CONFIRMATION PROCEDURE**1. PREPARATION BEFORE OPERATION**

If another "DTC CONFIRMATION PROCEDURE" is performed just before the next test, turn the ignition switch OFF and wait for 10 seconds or more, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT-III

1. Start the engine and wait for 1 minute or more.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

Is DTC P2780 detected?

YES >> Go to [TM-181, "Diagnosis Procedure \(NHPC\)"](#).

NO >> INSPECTION END

Diagnosis Procedure (NHPC)

INFOID:0000000004651156

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connections B31, M11 and M55. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK PADDLE SHIFTER (SHIFT-DOWN SWITCH)

1. Disconnect paddle shifter (shift-down switch) harness connector.
2. Check paddle shifter (shift-down switch). Refer to [TM-182, "Component Inspection \[Paddle Shifter \(Shift-down Switch\)\] \(NHPC\)"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

3. CHECK HARNESS BETWEEN TCM AND PADDLE SHIFTER (SHIFT-DOWN SWITCH)

1. Disconnect TCM harness connectors.
2. Check continuity between TCM vehicle side harness connector terminal and ground.

P2780 DOWNSHIFT SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B45	42	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4. CHECK HARNESS BETWEEN PADDLE SHIFTER (SHIFT-DOWN SWITCH) AND GROUND

Check continuity between paddle shifter (shift-down switch) vehicle side harness connector terminal and ground.

Paddle shifter (shift-down switch) vehicle side harness connector		Ground	Continuity
Connector	Terminal		
M32	1	Ground	Existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection [Paddle Shifter (Shift-down Switch)] (NHPC)

INFOID:000000004651157

1. CHECK PADDLE SHIFTER (SHIFT-DOWN SWITCH)

Check continuity between paddle shifter (shift-down switch) connector terminals.

Paddle shifter (shift-down switch) connector		Condition	Continuity
Connector	Terminal		
M32	1	The paddle shifter (shift-down switch) is pulled	Existed
		Other than the above	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace damaged parts.

< DTC/CIRCUIT DIAGNOSIS >

MAIN POWER SUPPLY

Description (NHPC)

INFOID:0000000004651158

Supply power to TCM.

Diagnosis Procedure (NHPC)

INFOID:0000000004651159

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection B31. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK HARNESS BETWEEN TCM AND GROUND

1. Disconnect TCM harness connectors.
2. Check continuity between TCM vehicle side harness connector terminal and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B45	3	Ground	Existed
	4		
	7		
	8		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

3. CHECK TCM INPUT SIGNAL CIRCUIT (PART 1)

Check voltage between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector		Condition	Voltage (Approx.)
Connector	Terminal		
B45	9	4	Always

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 4.

4. CHECK HARNESS BETWEEN TCM AND FUSE BLOCK (J/B) (PART 1)

1. Disconnect fuse block (J/B) harness connector.
2. Check continuity between TCM vehicle side harness connector terminal and fuse block (J/B) vehicle side harness connector terminal.

TCM vehicle side harness connector		Fuse block (J/B) vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B45	9	M1	4A	Existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5. CHECK HARNESS BETWEEN TCM AND FUSE BLOCK (J/B) (PART 2)

Check continuity between TCM vehicle side harness connector terminal and ground.

MAIN POWER SUPPLY

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B45	9	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6. DETECT MALFUNCTIONING ITEM (PART 1)

Check the following. Refer to [PG-12, "FOR EUROPE : Wiring Diagram - BATTERY POWER SUPPLY \(LHD MODELS\) -"](#), [PG-73, "FOR EUROPE : Wiring Diagram - BATTERY POWER SUPPLY \(RHD MODELS\) -"](#) (For Europe) or [PG-133, "EXCEPT FOR EUROPE : Wiring Diagram - BATTERY POWER SUPPLY \(LHD MODELS\) -"](#), [PG-193, "EXCEPT FOR EUROPE : Wiring Diagram - BATTERY POWER SUPPLY \(RHD MODELS\) -"](#) (Except for Europe).

- 10A fuse [No. 9, located in the fuse block (J/B)]
- Fuse block (J/B)
- Harness for open or short between battery and fuse block

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace damaged parts.

7. CHECK TCM INPUT SIGNAL CIRCUIT (PART 2)

Check voltage between TCM vehicle side harness connector terminals.

TCM vehicle side harness connector		Condition	Voltage (Approx.)
Connector	Terminal		
B45	17	Ignition switch ON	Battery voltage (11 – 14 V)
			0 V

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 8.

8. CHECK HARNESS BETWEEN TCM AND IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) (PART 1)

1. Disconnect IPDM E/R harness connector.
2. Check continuity between TCM vehicle side harness connector terminal and IPDM E/R (intelligent power distribution module engine room) vehicle side harness connector terminal.

TCM vehicle side harness connector		IPDM E/R (intelligent power distribution module engine room) vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B45	17	E7	58	Existed

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair or replace damaged parts.

9. CHECK HARNESS BETWEEN TCM AND IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) (PART 2)

Check continuity between TCM vehicle side harness connector terminal and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B45	17	Ground	Not existed

Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

YES >> GO TO 10.

NO >> Repair or replace damaged parts.

10. DETECT MALFUNCTIONING ITEM (PART 2)

Check the following. Refer to [PG-51, "FOR EUROPE : Wiring Diagram - IGNITION POWER SUPPLY \(LHD MODELS\) -"](#), [PG-111, "FOR EUROPE : Wiring Diagram - IGNITION POWER SUPPLY \(RHD MODELS\) -"](#) (For Europe) or [PG-171, "EXCEPT FOR EUROPE : Wiring Diagram - IGNITION POWER SUPPLY \(LHD MODELS\) -"](#), [PG-230, "EXCEPT FOR EUROPE : Wiring Diagram - IGNITION POWER SUPPLY \(RHD MODELS\) -"](#) (Except for Europe).

- 10A fuse [No. 43, located in the IPDM E/R (intelligent power distribution module engine room)]
- IPDM E/R
- Harness for open or short between push-button ignition switch and IPDM E/R (intelligent power distribution module engine room)
- Push-button ignition switch

Is the inspection result normal?

YES >> GO TO 11.

NO >> Repair or replace damaged parts.

11. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

>> INSPECTION END

SET-UP SWITCH (TRANSMISSION)

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

SET-UP SWITCH (TRANSMISSION)

Description (NHPC)

INFOID:0000000004651160

If R or SNOW on the set-up switch (transmission) is selected, TCM energizes the circuit for each mode and illuminates the lamp.

Diagnosis Procedure (NHPC)

INFOID:0000000004651161

1. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connection B31. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect set-up switch harness connector.
2. Turn ignition switch ON.
3. Check voltage between set-up switch vehicle side harness connector and ground.

Set-up switch vehicle side harness connector		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
M73	18	Ground	Ignition switch ON	Battery voltage (11 – 14 V)
			Ignition switch OFF	0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 5.

3. CHECK HARNESS BETWEEN TCM AND SET-UP SWITCH (PART 1)

1. Turn ignition switch OFF.
2. Disconnect TCM harness connector.
3. Check continuity between TCM vehicle side harness connector terminals and set-up switch vehicle side harness connector terminals.

TCM vehicle side harness connector		Set-up switch vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B45	45	M73	16	Existed
	47		10	

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace the malfunctioning parts.

4. CHECK HARNESS BETWEEN TCM AND SET-UP SWITCH (PART 2)

Check continuity between TCM vehicle side harness connector terminal and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B45	45	Ground	Not existed
	47		

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair or replace damaged parts.

SET-UP SWITCH (TRANSMISSION)

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

5.CHECK HARNESS BETWEEN SET-UP SWITCH AND IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) (PART 1)

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R harness connector.
3. Check continuity between set-up switch vehicle side harness connector terminal and IPDM E/R (intelligent power distribution module engine room) vehicle side harness connector terminal.

Set-up switch vehicle side harness connector		IPDM E/R (intelligent power distribution module engine room) vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
M73	18	E5	25	Existed

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace the malfunctioning parts.

6.CHECK HARNESS BETWEEN SET-UP SWITCH AND IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) (PART 2)

Check continuity between set-up switch vehicle side harness connector terminal and ground.

Set-up switch vehicle side harness connector		Ground	Continuity
Connector	Terminal		
M73	18	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 7.
NO >> Repair or replace damaged parts.

7.DETECT MALFUNCTIONING ITEM

Check the following. Refer to [PG-51, "FOR EUROPE : Wiring Diagram - IGNITION POWER SUPPLY \(LHD MODELS\) -"](#), [PG-111, "FOR EUROPE : Wiring Diagram - IGNITION POWER SUPPLY \(RHD MODELS\) -"](#) (For Europe) or [PG-171, "EXCEPT FOR EUROPE : Wiring Diagram - IGNITION POWER SUPPLY \(LHD MODELS\) -"](#), [PG-230, "EXCEPT FOR EUROPE : Wiring Diagram - IGNITION POWER SUPPLY \(RHD MODELS\) -"](#) (Except for Europe).

- 10A fuse [No.45, located in the IPDM E/R (intelligent power distribution module engine room)]
- IPDM E/R (intelligent power distribution module engine room)
- Harness for open or short between push-button ignition switch and IPDM E/R (intelligent power distribution module engine room)
- Push-button ignition switch

Is the inspection result normal?

YES >> GO TO 8.
NO >> Repair or replace damaged parts.

8.CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

>> INSPECTION END

SHIFT POSITION INDICATOR CIRCUIT

Description (NHPC)

INFOID:0000000004651162

- TCM transmits the position indicator signals to the combination meter via CAN communication.
- The A range indicator and M range indicator are included in the shift position indicator.

Diagnosis Procedure (NHPC)

INFOID:0000000004651163

1. CHECK DTC WITH TRANSMISSION

With CONSULT-III

1. Turn ignition switch ON.
2. Check "Self Diagnostic Result" of "TRANSMISSION".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Check DTC detected item. Refer to [TM-249, "DTC Index"](#).

2. DETECT MALFUNCTIONING ITEM

Check the following harness connector pin terminals for any malfunctions on the connections, harness sheath or other areas. Refer to [GI-40, "Intermittent Incident"](#)

- Control device harness connector
- Paddle shifter (shift-up switch) harness connector
- Paddle shifter (shift-down switch) harness connector
- TCM harness connector
- Transmission harness connector
- Park position switch harness connector
- Combination meter harness connector

Is the inspection result normal?

YES >> Replace the combination meter. Refer to [MWI-123, "Exploded View"](#).

NO >> Repair or replace damaged parts.

SHIFT LOCK SYSTEM

Description (NHPC)

INFOID:000000004651164

The shift lock system mainly consists of the following components.

Component	Function
Shift lock solenoid	Activated by the ignition switch and stop lamp switch signals.
Stop lamp switch	When the brake pedal is depressed, the stop lamp switch turns ON and the transistor is energized via TCM.

Component Function Check (NHPC)

INFOID:000000004651165

1. CHECK INFORMATION DISPLAY INDICATIONS

1. Turn the ignition switch ON.
2. Check the information display indications in the combination meter.

Does the "T/M SYSTEM CHECK IN PROCESS" indication disappear?

YES >> GO TO 2.
NO >> Check "Self Diagnostic Result" of "TRANSMISSION".

2. CHECK SHIFT LOCK OPERATION (PART 1)

1. Shift the shift lever to the P position.
2. Shift the shift lever to any other position with the brake pedal released.

Can the shift lever be shifted to other positions?

YES >> Go to [TM-189, "Diagnosis Procedure \(NHPC\)".](#)
NO >> GO TO 3.

3. CHECK SHIFT LOCK OPERATION (PART 2)

Shift the shift lever to any other position with the brake pedal depressed.

Can the shift lever be shifted to other positions?

YES >> INSPECTION END
NO >> Go to [TM-189, "Diagnosis Procedure \(NHPC\)".](#)

Diagnosis Procedure (NHPC)

INFOID:000000004651166

1. CHECK SHIFT POSITION

Check the shift positions. Refer to "Inspection" in [TM-264, "Inspection and Adjustment".](#)

Is the inspection result normal?

YES >> GO TO 2.
NO >> Adjust the shift positions. Refer to "Adjustment" in [TM-264, "Inspection and Adjustment".](#)

2. CHECK GROUND CONNECTION

1. Turn ignition switch OFF.
2. Check ground connections B31 and B14. Refer to "Ground Inspection" in [GI-42, "Circuit Inspection".](#)

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace damaged parts.

3. CHECK POWER SUPPLY CIRCUIT (PART 1)

1. Disconnect the A/T shift selector harness connector.
2. Turn the ignition switch ON.
3. Check voltage between the A/T shift selector vehicle side harness connector and ground.

SHIFT LOCK SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

A/T shift selector vehicle side harness connector		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
B20	13	Ground	Ignition switch ON	Battery voltage (11 – 14 V)
			Ignition switch OFF	0 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 7.

4. CHECK TCM OUTPUT SIGNAL CIRCUIT

Check the voltage between the A/T shift selector vehicle side harness connector and ground.

A/T shift selector vehicle side harness connector		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
B20	14	Ground	• Shift lever: P position • Brake pedal depressed	Battery voltage (11 – 14 V)
			Other than the above	0 V

Is the inspection result normal?

YES >> GO TO 5.
NO >> GO TO 10.

5. CHECK HARNESS BETWEEN A/T SHIFT SELECTOR (SHIFT LOCK SOLENOID) AND GROUND

Check continuity between the A/T shift selector vehicle side harness connector terminal and ground.

A/T shift selector vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B20	18	Ground	Existed

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace damaged parts.

6. CHECK INTERMITTENT INCIDENT

Refer to [GI-42, "Circuit Inspection"](#).

Is the inspection result normal?

YES >> Replace the A/T shift selector. Refer to [TM-268, "Exploded View"](#).
NO >> Repair or replace damaged parts.

7. CHECK HARNESS BETWEEN A/T SHIFT SELECTOR (SHIFT LOCK SOLENOID) AND FUSE BLOCK (J/B) (PART 1)

1. Turn the ignition switch OFF.
2. Disconnect the fuse block (J/B) harness connector.
3. Check the continuity between the A/T shift selector vehicle side harness connector terminal and the fuse block (J/B) vehicle side harness connector terminal.

A/T shift selector vehicle side harness connector		Fuse block (J/B) vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
E20	13	M3	12C	Existed

Is the inspection result normal?

YES >> GO TO 8.
NO >> Repair or replace damaged parts.

8. CHECK HARNESS BETWEEN A/T SHIFT SELECTOR (SHIFT LOCK SOLENOID) AND FUSE BLOCK (J/B)

SHIFT LOCK SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

B) (PART 2)

Check continuity between the A/T shift selector vehicle side harness connector terminal and ground.

A/T shift selector vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B20	13	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair or replace damaged parts.

9.DETECT MALFUNCTIONING ITEM

Check the following. Refer to [PG-51, "FOR EUROPE : Wiring Diagram - IGNITION POWER SUPPLY \(LHD MODELS\) -"](#), [PG-111, "FOR EUROPE : Wiring Diagram - IGNITION POWER SUPPLY \(RHD MODELS\) -"](#) (For Europe) or [PG-171, "EXCEPT FOR EUROPE : Wiring Diagram - IGNITION POWER SUPPLY \(LHD MODELS\) -"](#), [PG-230, "EXCEPT FOR EUROPE : Wiring Diagram - IGNITION POWER SUPPLY \(RHD MODELS\) -"](#) (Except for Europe).

- 10A fuse [No.4, fuse block (J/B)]
- Fuse block (J/B)
- Harness for open or short between fuse block (J/B) and push-button ignition switch
- Push-button ignition switch

Is the inspection result normal?

YES >> GO TO 19.

NO >> Repair or replace damaged parts.

10.CHECK HARNESS BETWEEN TCM AMD A/T SHIFT SELECTOR (SHIFT LOCK SOLENOID) (PART 1)

1. Turn the ignition switch OFF.
2. Disconnect the TCM harness connector.
3. Check the continuity between the TCM vehicle side harness connector terminal and the A/T shift selector vehicle side harness connector terminal.

TCM vehicle side harness connector		A/T shift selector vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B45	46	B20	14	Existed

Is the inspection result normal?

YES >> GO TO 11.

NO >> Repair or replace damaged parts.

11.CHECK HARNESS BETWEEN TCM AMD A/T SHIFT SELECTOR (SHIFT LOCK SOLENOID) (PART 2)

Check the continuity between the TCM vehicle side harness connector terminal and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B45	46	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 12.

NO >> Repair or replace damaged parts.

12.CHECK POWER SUPPLY CIRCUIT (PART 2)

1. Disconnect the stop lamp switch harness connector.
2. Check voltage between the stop lamp switch vehicle side harness connector and ground.

SHIFT LOCK SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[TRANSMISSION: GR6Z30A]

Stop lamp switch vehicle side harness connector		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
E110	1	Ground	Always	Battery voltage (11 – 14 V)

Is the inspection result normal?

YES >> GO TO 13.
NO >> GO TO 16.

13. CHECK STOP LAMP SWITCH

Check the stop lamp switch. Refer to [TM-193, "Component Inspection \(Stop Lamp Switch\) \(NHPC\)"](#).

Is the inspection result normal?

YES >> GO TO 14.
NO >> Replace the stop lamp switch. Refer to [BR-23, "Exploded View"](#).

14. CHECK HARNESS BETWEEN TCM AND STOP LAMP SWITCH (PART 1)

Check the continuity between the TCM vehicle side harness connector terminal and the stop lamp switch vehicle side harness connector terminal.

TCM vehicle side harness connector		Stop lamp switch vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
B45	16	E110	2	Existed

Is the inspection result normal?

YES >> GO TO 15.
NO >> Repair or replace damaged parts.

15. CHECK HARNESS BETWEEN TCM AND STOP LAMP SWITCH (PART 2)

Check the continuity between the TCM vehicle side harness connector terminal and ground.

TCM vehicle side harness connector		Ground	Continuity
Connector	Terminal		
B45	16	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 19.
NO >> Repair or replace damaged parts.

16. CHECK HARNESS BETWEEN STOP LAMP SWITCH AND FUSE BLOCK (J/B) (PART 1)

1. Disconnect the fuse block (J/B) harness connector.
2. Check the continuity between the stop lamp switch vehicle side harness connector terminal and the fuse block (J/B) vehicle side harness connector terminal.

Stop lamp switch vehicle side harness connector		Fuse block (J/B) vehicle side harness connector		Continuity
Connector	Terminal	Connector	Terminal	
E110	1	E103	8F	Existed

Is the inspection result normal?

YES >> GO TO 17.
NO >> Repair or replace damaged parts.

17. CHECK HARNESS BETWEEN A/T SHIFT SELECTOR (SHIFT LOCK SOLENOID) AND FUSE BLOCK (J/B) (PART 2)

Check continuity between the stop lamp switch vehicle side harness connector terminal and ground.

Stop lamp switch vehicle side harness connector		Ground	Continuity
Connector	Terminal		
E110	1	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 18.

NO >> Repair or replace damaged parts.

18. DETECT MALFUNCTIONING ITEM

Check the following. Refer to [PG-12, "FOR EUROPE : Wiring Diagram - BATTERY POWER SUPPLY \(LHD MODELS\) -"](#), [PG-73, "FOR EUROPE : Wiring Diagram - BATTERY POWER SUPPLY \(RHD MODELS\) -"](#) (For Europe) or [PG-133, "EXCEPT FOR EUROPE : Wiring Diagram - BATTERY POWER SUPPLY \(LHD MODELS\) -"](#), [PG-193, "EXCEPT FOR EUROPE : Wiring Diagram - BATTERY POWER SUPPLY \(RHD MODELS\) -"](#) (Except for Europe).

- 10A fuse [No.7, fuse block (J/B)]
- Fuse block (J/B)
- Harness for open or short between fuse block (J/B) and battery

Is the inspection result normal?

YES >> GO TO 19.

NO >> Repair or replace damaged parts.

19. CHECK INTERMITTENT INCIDENT

Refer to [GI-40, "Intermittent Incident"](#).

>> INSPECTION END

Component Inspection (Stop Lamp Switch) (NHPC)

INFOID:000000004651167

1. CHECK STOP LAMP SWITCH

Check the continuity between stop lamp switch connector terminals.

Stop lamp switch connector			Condition	Continuity
Connector	Terminal			
E110	1	2	Brake pedal depressed	Existed
			Brake pedal not depressed	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace the stop lamp switch. Refer to [BR-23, "Exploded View"](#).