

## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORK FLOW

#### Work Flow (NHPC)

INFOID:000000004651009

##### 1. OBTAIN INFORMATION ABOUT SYMPTOM

1. Refer to [TM-6, "Diagnostic Work Sheet \(NHPC\)"](#) and interview the customer to obtain as much malfunction information (conditions and environment when the malfunction occurred) as possible when the customer brings the vehicle in.
2. Check the following:
  - Service history
  - Refer to [TM-253, "Precautions Before Performing Diagnosis"](#).
  - Harnesses and connectors malfunction. Refer to [GI-40, "Intermittent Incident"](#).

&gt;&gt; GO TO 2.

##### 2. CHECK DTC

1. Before checking the malfunction, check whether any DTC exists.
2. If DTC exists, perform the following operations.
  - Record the DTC and freeze frame data. (Print out using CONSULT-III)
  - Erase DTCs.
  - Check that the root cause clarified with DTC and malfunction information described by the customer.
3. Check the information of related "Technical Bulletin" and others also.

###### Do malfunction information and/or DTC exist?

Malfunction information and DTC exist.&gt;&gt;GO TO 3.

Malfunction information exists but no DTC.&gt;&gt;GO TO 4.

No malfunction information, but DTC exists.&gt;&gt;GO TO 5.

##### 3. REPRODUCE MALFUNCTION SYMPTOM

Check any malfunctions described by the customer, except the transmission warning lamp illuminated or blinking, on the vehicle.

Also inspect whether the symptom is a fail safe or normal operation. Refer to [TM-246, "Fail Safe \(NHPC\)"](#).

When a malfunction symptom is reproduced, the "Diagnostic Work Sheet" is effective. Refer to [TM-6, "Diagnostic Work Sheet \(NHPC\)"](#).

Check the causal relationship between the symptom and the conditions in which the malfunction described by the customer occurs.

&gt;&gt; GO TO 5.

##### 4. REPRODUCE MALFUNCTION SYMPTOM

Check the malfunction described by the customer on the vehicle.

Also whether the symptom is a fail safe or normal operation. Refer to [TM-246, "Fail Safe \(NHPC\)"](#).

When a malfunction symptom is reproduced, the "Diagnostic Work Sheet" is effective. Refer to [TM-6, "Diagnostic Work Sheet \(NHPC\)"](#).

Check the causal relationship between the symptom and the conditions in which the malfunction described by the customer occurs.

&gt;&gt; GO TO 6.

##### 5. PERFORM "DTC CONFIRMATION PROCEDURE"

Perform "DTC CONFIRMATION PROCEDURE" for the applicable DTC to check if DTC is detected again.

Refer to [TM-248, "DTC Inspection Priority Chart \(NHPC\)"](#) if multiple DTCs are detected, and then judge the order for performing the diagnosis.

**NOTE:**

If no DTC is detected, refer to the freeze frame data.

###### Is any DTC detected?

YES &gt;&gt; GO TO 7.

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NO      >> Check according to [GI-40, "Intermittent Incident"](#).

## 6. IDENTIFY MALFUNCTIONING SYSTEM

Identify the location where trouble diagnosis starts based on the possible causes and symptoms from the symptom inspection result in step 4.

>> GO TO 8.

## 7. REPAIR OR REPLACE THE MALFUNCTIONING PARTS

Repair or replace the detected malfunctioning parts.

Reconnect parts or connector after repairing or replacing, and then erase DTC if necessary.

>> GO TO 8.

## 8. FINAL CHECK

Perform "DTC CONFIRMATION PROCEDURE" again to check that the repair is correctly performed.

Check that malfunctions obtained from the customer are not reproduced, referring to the symptom inspection result in step 3 or 4.

Is DTC or malfunction symptom reproduced?

YES-1 >> DTC is reproduced: GO TO 5.

YES-2 >> Malfunction symptom is reproduced: GO TO 6.

NO      >> Before delivering the vehicle to the customer, check that DTC is erased.

## Diagnostic Work Sheet (NHPC)

INFOID:0000000004651010

### Description

There are many operating conditions that may cause a malfunction of the transmission parts. By understanding those conditions properly, a quick and exact diagnosis can be performed.

In general, customers have their own criteria for a problem. Therefore, it is important to understand the symptom and status well enough by interviewing the customer about the concerns carefully. In order to systemize all the information for the diagnosis, prepare the interview sheet referring to the interview points.

In some cases, multiple conditions that appear simultaneously make the transmission warning light blink, which causes a DTC to be detected.

### KEY POINTS

**WHAT** ..... Vehicle & engine model  
**WHEN** ..... Date, Frequencies  
**WHERE**..... Road conditions  
**HOW** ..... Operating conditions, Weather conditions, Symptoms

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## INSPECTION AND ADJUSTMENT

### TCM REPLACEMENT

#### TCM REPLACEMENT : Description (NHPC)

INFOID:000000004651011

When TCM is replaced, learning must be performed.

**CAUTION:**

- Before TCM is replaced, it is necessary to acquire the IP characteristic data based on the information read out from the malfunctioning TCM. For acquiring the IP characteristic data, refer to “CONSULT-III GT-R TCM CONFIGURATION MANUAL”.
- If no IP characteristic data can be acquired, it is necessary to replace TCM and the transmission assembly as a set.

#### TCM REPLACEMENT : Special Repair Requirement (NHPC)

INFOID:000000004651012

**CAUTION:**

- Before TCM is replaced, it is necessary to acquire the IP characteristic data based on the information read out from the malfunctioning TCM. For acquiring the IP characteristic data, refer to “CONSULT-III GT-R TCM CONFIGURATION MANUAL”.
- If no IP characteristic data can be acquired, it is necessary to replace TCM and the transmission assembly as a set.

#### 1.ACQUIRE “IP CHARACTERISTICS DATA”

Acquire the IP characteristics data. Refer to “CONSULT-III GT-R TCM CONFIGURATION MANUAL”.

>> GO TO 2.

#### 2.PERFORM “WRITE IP CHARACTERISTICS”

Perform “Write IP Chara - Replace TCM” in “Configuration”. Refer to [TM-36, “CONSULT-III Function \(NHPC\)”](#).

>> GO TO 3.

#### 3.SET LEARNING CONDITION

With CONSULT-III

1. Start the engine.
2. Select “RANGE”, “ACCEL POSI SEN 1”, and “FLUID TEMP” in “Data Monitor”.
3. Set the condition as per the following.

RANGE	: P
ACCEL POSI SEN 1	: 0.0/8
FLUID TEMP	: 50 – 85 °C (122 – 185°F)

Is the learning condition fulfilled?

YES >> GO TO 4.

NO >> Go to 4 after the learning condition is fulfilled.

#### 4.PERFORM “CLUTCH GEAR LEARNING”

With CONSULT-III

1. Perform “CLUTCH GEAR LEARNING” in “Work support”.
2. Select “Start”.

**CAUTION:**

The “CLUTCH GEAR LEARNING” must be completed at temperature within 50 – 90°C (122 – 194°F). The learning is not yet completed if the temperature condition is outside the specified value during learning.

Is “completed” displayed?

YES >> End of learning  
NO >> GO TO 5.

#### 5.CHECK THE LEARNING CONDITION

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### With CONSULT-III

1. Turn the ignition switch OFF, and wait for 15 seconds or more.
2. Start the engine.
3. Select "RANGE", "ACCEL POSI SEN 1", "FLUID TEMP", "BATTERY VOLTAGE", "ENGINE SPEED", "VEHICLE SPEED", and "LINE PRESSURE" in "Data Monitor".
4. Check that the following learning condition is fulfilled.

RANGE	: P
ACCEL POSI SEN 1	: 0.0/8
FLUID TEMP	: 50 – 85 °C (122 – 185°F)
BATTERY VOLTAGE	: 11 V or more
ENGINE SPEED	: 650 – 2,000 rpm
VEHICLE SPEED	: 3.5 km/h (2 MPH) or less
LINE PRESSURE	: 0.35 MPa (3.57 kg/cm <sup>2</sup> , 50.75 psi) or more

### Is the learning condition fulfilled?

YES >> GO TO 6.  
NO >> Go to 6 after the learning condition is fulfilled.

## 6. PERFORM "ACTIVE TEST" (CLUTCH A SOLENOID)

### With CONSULT-III

1. Select "C/L A PRESS S/V" in "Active Test".
2. Select "CLUTCH A PRESS", and "TGT CLUTCH A PRS".
3. Raise "CLUTCH A PRESS" to 1.0 MPa (10.2 kg/cm<sup>2</sup>, 145 psi), and then lower it to 0 MPa (0 kg/cm<sup>2</sup>, 0 psi).
4. Check that "CLUTCH A PRESS" and "TGT CLUTCH A PRS" follow with an equal value.

### Do "CLUTCH A PRESS" and "TGT CLUTCH A PRS" follow with an equal value?

YES >> GO TO 7.  
NO >> Check "Self Diagnostic Result" of "TRANSMISSION".

## 7. PERFORM "ACTIVE TEST" (CLUTCH B SOLENOID)

### With CONSULT-III

1. Select "C/L B PRESS S/V" in "Active Test".
2. Select "CLUTCH B PRESS", and "TGT CLUTCH B PRS".
3. Raise "CLUTCH B PRESS" to 1.0 MPa (10.2 kg/cm<sup>2</sup>, 145 psi), and then lower it to 0 MPa (0 kg/cm<sup>2</sup>, 0 psi).
4. Check that "CLUTCH B PRESS" and "TGT CLUTCH B PRS" follow with an equal value.

### Do "CLUTCH B PRESS" and "TGT CLUTCH B PRS" follow with an equal value?

YES >> GO TO 4.  
NO >> Check "Self Diagnostic Result" of "TRANSMISSION".

## TRANSMISSION ASSEMBLY REPLACEMENT

### TRANSMISSION ASSEMBLY REPLACEMENT : Description (SpecV NHPC)

INFOID:000000004651013

When the transmission assembly is replaced, the learning must be performed.

### TRANSMISSION ASSEMBLY REPLACEMENT : Special Repair Requirement (SpecV NHPC)

INFOID:000000004651014

## 1. ACQUIRE "IP CHARACTERISTICS DATA"

Acquire the IP characteristics data. Refer to "CONSULT-III GT-R TCM CONFIGURATION MANUAL".

>> GO TO 2.

## 2. PERFORM "WRITE IP CHARACTERISTICS"

Perform "Write IP Chara - Replace TM" in "Configuration". Refer to [TM-36, "CONSULT-III Function \(NHPC\)".](#)

>> GO TO 3.

## 3. PREPARE BEFORE LEARNING

With CONSULT-III

1. Turn the ignition switch ON.
2. Check the set values of "ADJUST CLUTCH A CAPACITY", "ADJUST CLUTCH B CAPACITY", "CLUTCH A TOUCH POINT", and "CLUTCH B TOUCH POINT" in "Work support".

Are the set values of all items 0?

YES >> GO TO 4.

NO >> GO TO 4 after the set values become 0.

## 4. PERFORM "DELETE GEAR POSITION LEARNING VALUE"

With CONSULT-III

1. Select "DELETE GEAR POSITION LEARNING VALUE" in "Work support".
2. Select "Start".

Can the gear position learning value be erased?

YES >> GO TO 5.

NO >> Perform again, and if it cannot be erased, check the harnesses and connectors.

## 5. PERFORM "DELETE CLUTCH A LEARNING VALUE"

With CONSULT-III

1. Select "DELETE CLUTCH A LEARNING VALUE" in "Work support".
2. Select "Start".

Can the clutch A learning value be erased?

YES >> GO TO 6.

NO >> Perform again, and if it cannot be erased, check the harnesses and connectors.

## 6. PERFORM "DELETE CLUTCH B LEARNING VALUE"

With CONSULT-III

1. Select "DELETE CLUTCH B LEARNING VALUE" in "Work support".
2. Select "Start".

Can the clutch B learning value be erased?

YES >> GO TO 7.

NO >> Perform again, and if it cannot be erased, check the harnesses and connectors.

## 7. PERFORM "ERASE CLUTCH ENGAGEMENT PRESSURE CORRECTION VALUE"

With CONSULT-III

1. Select "ERASE CLTCH ENGMNT PRSSR CRRCTN" in "Work support".
2. Select "Start".

Can the clutch engagement pressure correction value be erased?

YES >> GO TO 8.

NO >> Perform again, and if it cannot be erased, check the harnesses and connectors.

## 8. SET LEARNING CONDITION

With CONSULT-III

1. Start the engine.
2. Select "RANGE", "ACCEL POSI SEN 1", and "FLUID TEMP" in "Data Monitor".
3. Set the condition as per the following.

RANGE	: P
ACCEL POSI SEN 1	: 0.0/8
FLUID TEMP	: 50 – 85 °C (122 – 185°F)

Is the learning condition fulfilled?

YES >> GO TO 9.

NO >> GO TO 9 after the learning condition is fulfilled.

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## 9. PERFORM "CLUTCH GEAR LEARNING"

With CONSULT-III

1. Perform "CLUTCH GEAR LEARNING" in "Work support".
2. Select "Start".

**CAUTION:**

The "CLUTCH GEAR LEARNING" must be completed at temperature within 50 – 90°C (122 – 194°F). The learning is not yet completed if the temperature condition is outside the specified value during learning.

Is "completed" displayed?

YES >> End of learning

NO >> GO TO 10.

## 10. CHECK THE LEARNING CONDITION

With CONSULT-III

1. Turn the ignition switch OFF, and wait for 15 seconds or more.
2. Start the engine.
3. Select "RANGE", "ACCEL POSI SEN 1", "FLUID TEMP", "BATTERY VOLTAGE", "ENGINE SPEED", "VEHICLE SPEED", and "LINE PRESSURE" in "Data Monitor".
4. Check that the following learning condition is fulfilled.

RANGE	: P
ACCEL POSI SEN 1	: 0.0/8
FLUID TEMP	: 50 – 85 °C (122 – 185°F)
BATTERY VOLTAGE	: 11 V or more
ENGINE SPEED	: 650 – 2,000 rpm
VEHICLE SPEED	: 3.5 km/h (2 MPH) or less
LINE PRESSURE	: 0.35 MPa (3.57 kg/cm <sup>2</sup> , 50.75 psi) or more

Is the learning condition fulfilled?

YES >> GO TO 11.

NO >> GO TO 9 after the learning condition is fulfilled.

## 11. PERFORM "ACTIVE TEST" (CLUTCH A SOLENOID)

With CONSULT-III

1. Select "C/L A PRESS S/V" in "Active Test".
2. Select "CLUTCH A PRESS", and "TGT CLUTCH A PRS".
3. Raise "CLUTCH A PRESS" to 1.0 MPa (10.2 kg/cm<sup>2</sup>, 145 psi), and then lower it to 0 MPa (0 kg/cm<sup>2</sup>, 0 psi).
4. Check that "CLUTCH A PRESS" and "TGT CLUTCH A PRS" follow with an equal value.

Do "CLUTCH A PRESS" and "TGT CLUTCH A PRS" follow with an equal value?

YES >> GO TO 12.

NO >> Check "Self Diagnostic Result" of "TRANSMISSION".

## 12. PERFORM "ACTIVE TEST" (CLUTCH B SOLENOID)

With CONSULT-III

1. Select "C/L B PRESS S/V" in "Active Test".
2. Select "CLUTCH B PRESS", and "TGT CLUTCH B PRS".
3. Raise "CLUTCH B PRESS" to 1.0 MPa (10.2 kg/cm<sup>2</sup>, 145 psi), and then lower it to 0 MPa (0 kg/cm<sup>2</sup>, 0 psi).
4. Check that "CLUTCH B PRESS" and "TGT CLUTCH B PRS" follow with an equal value.

Do "CLUTCH B PRESS" and "TGT CLUTCH B PRS" follow with an equal value?

YES >> GO TO 9.

NO >> Check "Self Diagnostic Result" of "TRANSMISSION".

## MAINTENANCE

# INSPECTION AND ADJUSTMENT

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## MAINTENANCE : Description (NHPC)

INFOID:000000004651015

Maintenance that is performed for the periodical maintenance and shock occurrence (transmission malfunction).

## MAINTENANCE : Special Repair Requirement (NHPC)

INFOID:000000004651016

### 1. PREPARE BEFORE LEARNING

With CONSULT-III

1. Turn the ignition switch ON.
2. Check the set values of "ADJUST CLUTCH A CAPACITY", "ADJUST CLUTCH B CAPACITY", "CLUTCH A TOUCH POINT", and "CLUTCH B TOUCH POINT" in "Work support".

**CAUTION:**

**Never erase each learning value and the clutch engagement pressure correction value.**

Are the set values of all items 0?

YES >> GO TO 2.

NO >> Go to 2 after the set values become 0.

### 2. SET LEARNING CONDITION

With CONSULT-III

1. Start the engine.
2. Select "RANGE", "ACCEL POSI SEN 1", and "FLUID TEMP" in "Data Monitor".
3. Set the condition as per the following.

RANGE	: P
ACCEL POSI SEN 1	: 0.0/8
FLUID TEMP	: 50 – 85 °C (122 – 185°F)

Is the learning condition fulfilled?

YES >> GO TO 3.

NO >> Go to 3 after the learning condition is fulfilled.

### 3. PERFORM "CLUTCH GEAR LEARNING"

With CONSULT-III

1. Perform "CLUTCH GEAR LEARNING" in "Work support".
2. Select "Start".

**CAUTION:**

The "CLUTCH GEAR LEARNING" must be completed at temperature within 50 – 90°C (122 – 194°F). The learning is not yet completed if the temperature condition is outside the specified value during learning.

Is "completed" displayed?

YES >> End of learning

NO >> GO TO 4.

### 4. CHECK THE LEARNING CONDITION

With CONSULT-III

1. Turn the ignition switch OFF, and wait for 15 seconds or more.
2. Start the engine.
3. Select "RANGE", "ACCEL POSI SEN 1", "FLUID TEMP", "BATTERY VOLTAGE", "ENGINE SPEED", "VEHICLE SPEED", and "LINE PRESSURE" in "Data Monitor".
4. Check that the following learning condition is fulfilled.

RANGE	: P
ACCEL POSI SEN 1	: 0.0/8
FLUID TEMP	: 50 – 85 °C (122 – 185°F)
BATTERY VOLTAGE	: 11 V or more
ENGINE SPEED	: 650 – 2,000 rpm

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VEHICLE SPEED	: 3.5 km/h (2 MPH) or less
LINE PRESSURE	: 0.35 MPa (3.57 kg/cm <sup>2</sup> , 50.75 psi) or more

### Is the learning condition fulfilled?

YES    >> GO TO 5.  
NO    >> Go to 3 after the learning condition is fulfilled.

## 5. PERFORM "ACTIVE TEST" (CLUTCH A SOLENOID)

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### With CONSULT-III

1. Select "C/L A PRESS S/V" in "Active Test".
2. Select "CLUTCH A PRESS", and "TGT CLUTCH A PRS".
3. Raise "CLUTCH A PRESS" to 1.0 MPa (10.2 kg/cm<sup>2</sup>, 145 psi), and then lower it to 0 MPa (0 kg/cm<sup>2</sup>, 0 psi).
4. Check that "CLUTCH A PRESS" and "TGT CLUTCH A PRS" follow with an equal value.

### Do "CLUTCH A PRESS" and "TGT CLUTCH A PRS" follow with an equal value?

YES    >> GO TO 6.  
NO    >> Check "Self Diagnostic Result" of "TRANSMISSION".

## 6. PERFORM "ACTIVE TEST" (CLUTCH B SOLENOID)

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### With CONSULT-III

1. Select "C/L B PRESS S/V" in the "Active Test".
2. Select "CLUTCH B PRESS", and "TGT CLUTCH B PRS".
3. Raise "CLUTCH B PRESS" to 1.0 MPa (10.2 kg/cm<sup>2</sup>, 145 psi), and then lower it to 0 MPa (0 kg/cm<sup>2</sup>, 0 psi).
4. Check that "CLUTCH B PRESS" and "TGT CLUTCH B PRS" follow with an equal value.

### Do "CLUTCH B PRESS" and "TGT CLUTCH B PRS" follow with an equal value?

YES    >> GO TO 3.  
NO    >> Check "Self Diagnostic Result" of "TRANSMISSION".