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# SECTION LU

## ENGINE LUBRICATION SYSTEM

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# DESCRIPTION

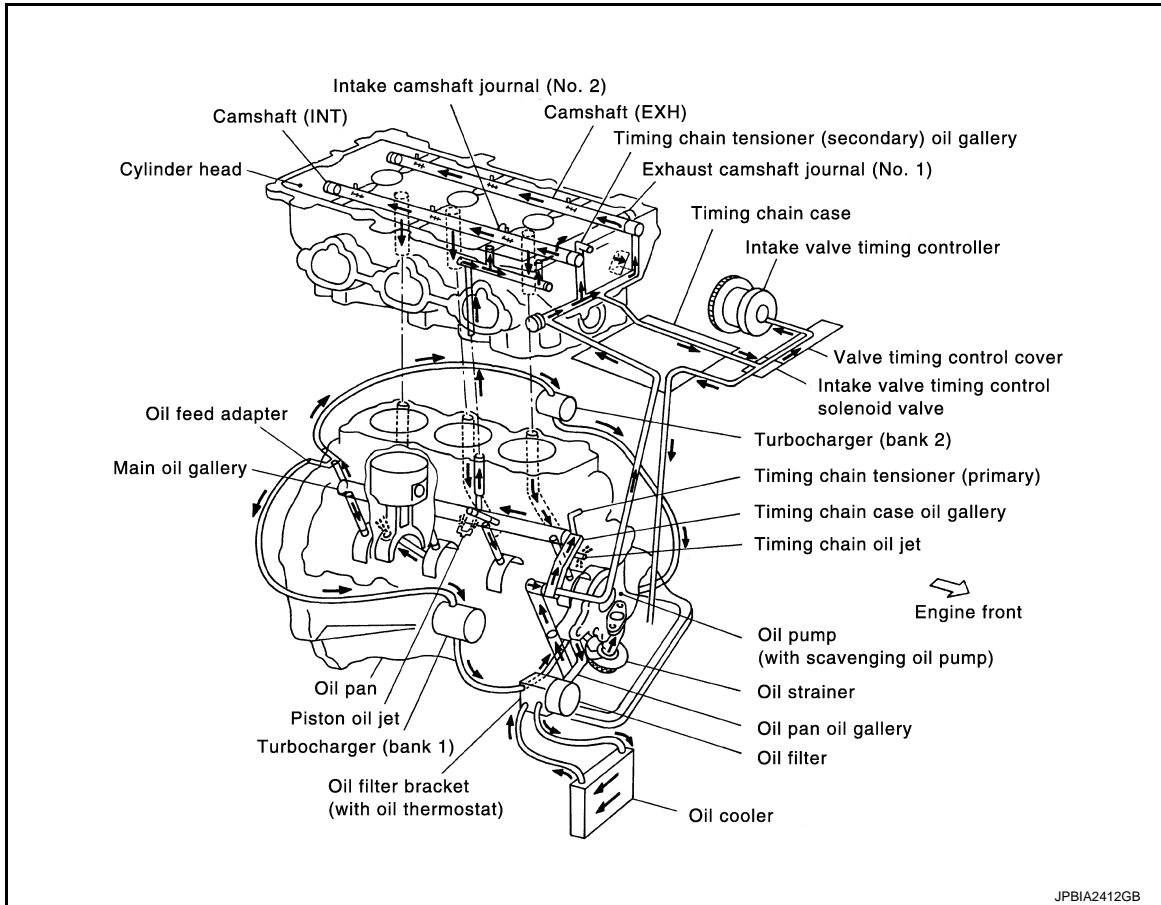
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## SYSTEM DESCRIPTION

### DESCRIPTION

Engine Lubrication System (GT-R certified NISSAN dealer)

INFOID:000000011487195

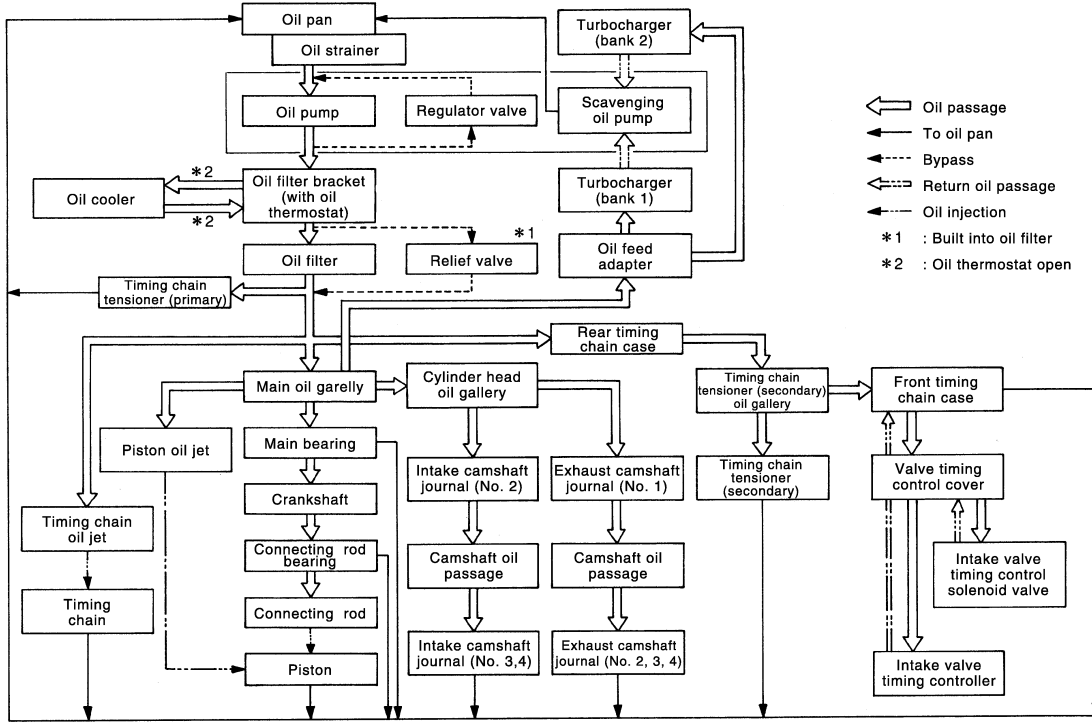


# DESCRIPTION

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## Engine Lubrication System Schematic (GT-R certified NISSAN dealer)

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# PRECAUTIONS

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## PRECAUTION

### PRECAUTIONS

#### Precaution for Battery Service

INFOID:000000011487197

Before disconnecting the battery, lower both the driver and passenger windows. This will prevent any interference between the window edge and the vehicle when the door is opened/closed. During normal operation, the window slightly raises and lowers automatically to prevent any window to vehicle interference. The automatic window function will not work with the battery disconnected.

#### Precautions for Removing Battery Terminal

INFOID:000000011487198

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.

**NOTE:**

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.

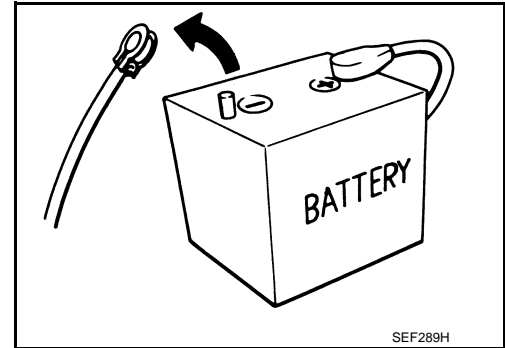
**NOTE:**

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.

- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.

**NOTE:**

The removal of 12V battery may cause a DTC detection error.



#### General Precautions

INFOID:000000011487199

**CAUTION:**

After finishing servicing, check that all the tools and waste are stored in a customary place.

#### Titanium Muffler Handling

INFOID:000000011487200

**CAUTION:**

- Never touch the titanium muffler directly with bare hands or allow oils to adhere to it during inspection, removal, and installation.
- Always wear new thick cotton gloves or working gloves. (Never use oil-adhered gloves.)
- After oil adhesion, wait until the titanium muffler cools and immediately remove oil with parts cleaner.
- Always use genuine parts cleaner (dry type) or the equivalent.
- When cleaning oil in on-board condition, apply parts cleaner to a waste to wipe out oil. By doing so, peripheral parts can be protected from parts cleaner adhesion.
- Be careful not to cut fingers with the insulator edge or the main muffler cooling fin.

#### Precautions For Engine Service (GT-R certified NISSAN dealer)

INFOID:000000011487201

##### DISCONNECTING FUEL PIPING (GT-R CERTIFIED NISSAN DEALER)

- Before starting work, check no fire or spark producing items are in the work area.
- Release fuel pressure before disconnecting and disassembly.
- After disconnecting pipes, plug openings to stop fuel leakage.

##### DRAINING ENGINE COOLANT

Drain engine coolant and engine oil when the engine is cooled.

##### INSPECTION, REPAIR AND REPLACEMENT (GT-R CERTIFIED NISSAN DEALER)

Before repairing or replacing, thoroughly inspect parts. Inspect new replacement parts in the same way, and replace if necessary.

# PRECAUTIONS

## < PRECAUTION >

### REMOVAL AND DISASSEMBLY (GT-R CERTIFIED NISSAN DEALER)

- When instructed to use SST, use specified tools. Always be careful to work safely, avoid forceful or uninstructed operations.
- Exercise maximum care to avoid damage to mating or sliding surfaces.
- Dowel pins are used for several parts alignment. When replacing and reassembling parts with dowel pins, check that dowel pins are installed in the original position.
- Must cover openings of engine system with a tape or equivalent, to seal out foreign materials.
- Mark and arrange disassembly parts in an organized way for easy troubleshooting and reassembly.
- When loosening nuts and bolts, as a basic rule, start with the one furthest outside, then the one diagonally opposite, and so on. If the order of loosening is specified, do exactly as specified. Power tools may be used in the step.

### ASSEMBLY AND INSTALLATION (GT-R CERTIFIED NISSAN DEALER)

- Use torque wrench to tighten bolts or nuts to specification.
- When tightening nuts and bolts, as a basic rule, equally tighten in several different steps starting with the ones in center, then ones on inside and outside diagonally in this order. If the order of tightening is specified, do exactly as specified.
- Replace with new gasket, packing, oil seal or O-ring.
- Thoroughly wash, clean, and air-blow each part. Carefully check engine oil or engine coolant passages for any restriction and blockage.
- Avoid damaging sliding or mating surfaces. Completely remove foreign materials such as cloth lint or dust. Before assembly, oil sliding surfaces well.
- After disassembling and opening the engine, change engine oil and replace oil filter with a new one.
- Release air within route when refilling after draining engine coolant.
- After repairing, start the engine and increase engine speed to check engine coolant, fuel, engine oil, and exhaust gases for leakage.

## Liquid Gasket

INFOID:000000011487202

### LIQUID GASKET APPLICATION PROCEDURE

1. Remove old liquid gasket adhering to the liquid gasket application surface and the mating surface.
  - Remove liquid gasket completely from the liquid gasket application surface, mounting bolts, and bolt holes.
2. Wipe the liquid gasket application surface and the mating surface with white gasoline (lighting and heating use) to remove adhering moisture, grease and foreign materials.
3. Apply liquid gasket to the liquid gasket application surface.
  - **Use Genuine RTV Silicone Sealant or equivalent. Refer to [GI-18, "Recommended Chemical Products and Sealants"](#).**
  - Within five minutes of liquid gasket application, install the mating component.
  - If liquid gasket protrudes, wipe it off immediately.
  - Do not retighten mounting bolts or nuts after the installation.
  - After 30 minutes or more have passed from the installation, fill engine oil and engine coolant.

# PREPARATION

< PREPARATION >

## PREPARATION

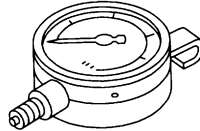
### PREPARATION

#### Special Service Tools

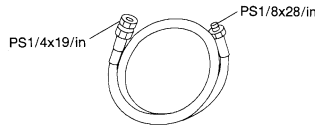
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The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

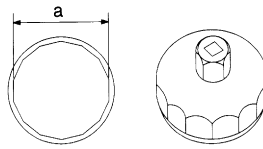
Tool number (Kent-Moore No.) Tool name	Description
ST25051001 (J-25695-1) Oil pressure gauge	Measuring oil pressure <b>Maximum measuring range: 2,452 kPa (25 kg/cm<sup>2</sup>, 356 psi)</b>
ST25052000 (J-25695-2) Hose	Adapting oil pressure gauge to oil pan (upper)
KV10115801 (J-38956) Oil filter wrench	Removing and installing oil filter <b>a: 64.3 mm (2.531 in)</b>



NT050



S-NT559

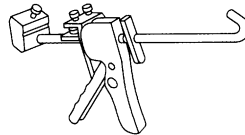


S-NT375

#### Commercial Service Tools

INFOID:000000011487204

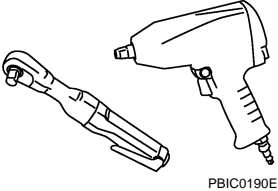
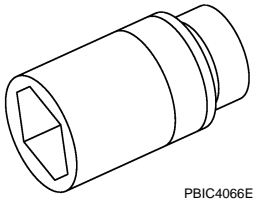
Tool name	Description
Tube presser	Pressing tube of liquid gasket



NT052

# PREPARATION

## < PREPARATION >

Tool name	Description
<p>Power tools</p>  <p>PBIC0190E</p>	<p>Loosening bolts and nuts</p>
<p>Deep socket</p>  <p>PBIC4066E</p>	<p>Removing and installing oil pressure sensor <b>27 mm (1.06 in)</b></p>

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# ENGINE OIL

< PERIODIC MAINTENANCE >

## PERIODIC MAINTENANCE

### ENGINE OIL

#### Inspection

INFOID:000000011487205

#### ENGINE OIL TEMPERATURE HISTORY

Check that engine oil temperature history is not stored in ECM. Refer to [EC-172. "CONSULT Function \(GT-R certified NISSAN dealer\)"](#).

#### ENGINE OIL LEVEL

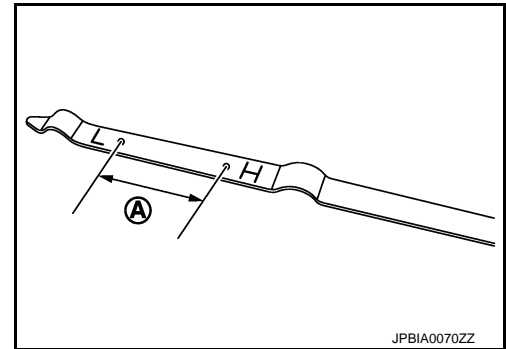
##### NOTE:

Before starting engine, put vehicle horizontally and check the engine oil level. If engine is already started, stop it and allow 5 minutes before checking.

1. Pull out oil level gauge and wipe it clean.
2. Insert oil level gauge and check the engine oil level is within the range (A) shown in the figure.
3. If it is out of range, adjust it.
  - Adjust the engine oil level 10 mm below the H level within the range A.

##### NOTE:

- Engine oil level check and oil refill must be performed constantly [at least every 3000 km (1800 miles)].
- If the customer does not drive on following condition, it can be filled up to H level:
  - Higher-RPM (approaching redline) operation
  - Frequent high pedal force braking from moderate and higher speeds
  - Frequent throttle activation
  - Fast revving throughout the RPM range
- Engine oil is consumed by driving, and engine oil consumption increases under driving conditions listed below:



**Maximum engine oil consumption : 0.5L (1/2 US qt, 1/2 Imp qt) / 1000km (621-3/8 mile)**

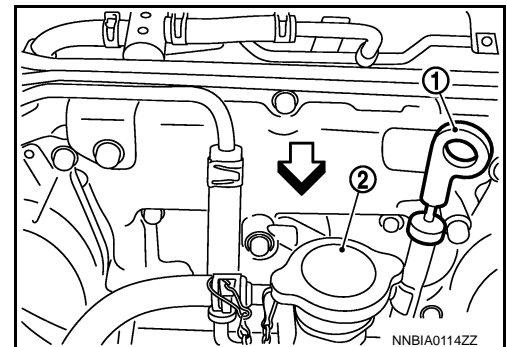
- Frequent heavy load and high rpm.
- Frequent acceleration and deceleration.
- Traveling distance per driving is 10 km or less.
- Engine starting on a slope (e.g. hill).

##### NOTE:

When checking the engine oil level, insert oil level gauge (1) with its tip aligned with oil level gauge guide.

2 : Radiator cap

⇐ : Engine front



#### ENGINE OIL APPEARANCE

- Check engine oil for white turbidity or heavy contamination.
- If engine oil becomes turbid and white, it is highly probable that it is contaminated with engine coolant. Repair or replace damaged parts.

#### ENGINE OIL LEAKAGE

Visually check engine assembly surrounding area for smears and leakage of engine oil.



# ENGINE OIL

## < PERIODIC MAINTENANCE >

Oil smears/leakage status from transmission assembly		Required operation	Reference	
Smears* <sup>1</sup>	Smears from each part on the engine assembly	<ol style="list-style-type: none"> <li>Use part cleaner or an equivalent to wipe out smeared oil.</li> <li>Check again for oil leakage.</li> </ol>	—	A
	Mating surface of oil pan (upper and lower)	<ol style="list-style-type: none"> <li>Remove oil pan (upper and/or lower).</li> <li>Remove old liquid gasket completely, and then install oil pan (upper and/or lower).</li> <li>Check for oil leakage.</li> </ol>	<a href="#">EM-97</a>	C
Leakage* <sup>2</sup>	Drain plug	Replace the drain plug washer, and then check for oil leakage.	<a href="#">EM-97</a>	D
	Oil filter	<ol style="list-style-type: none"> <li>Remove oil filter.</li> <li>Remove foreign materials adhering to oil filter installation surface.</li> <li>Install oil filter.</li> <li>Check for oil leakage.</li> </ol>	<a href="#">LU-13</a>	E
	Oil filter bracket	<ol style="list-style-type: none"> <li>Check the mounting condition of oil filter bracket, oil pressure sensor, oil cooler hose, and oil thermostat.</li> <li>Remove and reinstall above parts if there is malfunction. <b>CAUTION:</b> <b>Replace the O-ring and gasket when reinstalling the parts.</b></li> <li>Check for oil leakage.</li> </ol>	<a href="#">LU-14</a>	F
	Oil cooler, oil cooler hose, and oil cooler pipe	<ol style="list-style-type: none"> <li>Specify oil leakage point.</li> <li>If oil leakage is from connection of parts, remove foreign materials from mating surface.</li> <li>Replace with a new gasket.</li> <li>If oil leakage is from the part itself, replace with a new part.</li> <li>Check for oil leakage.</li> </ol>	<a href="#">LU-16</a>	G
	Mating surface of flywheel housing	<ol style="list-style-type: none"> <li>Remove flywheel housing assembly.</li> <li>Remove flywheel.</li> <li>Remove rear oil seal, and then check the oil seal mounting surface and crankshaft.</li> <li>Replace the rear oil seal if there is not malfunction.</li> <li>Check for oil leakage.</li> </ol>	<a href="#">TM-394</a> <a href="#">EM-113</a>	H
	Front oil seal	<ol style="list-style-type: none"> <li>Remove front oil seal, and then check the oil seal mounting surface and crankshaft.</li> <li>Replace the front oil seal if there is not malfunction.</li> <li>Check for oil leakage.</li> </ol>	<a href="#">EM-69</a>	I
	Turbocharger	<ol style="list-style-type: none"> <li>Specify oil leakage point.</li> <li>If oil leakage is from oil tube connected, remove foreign materials from mating surface.</li> <li>Replace with a new gasket.</li> <li>If oil leakage is from the part itself, replace turbocharger only.</li> <li>Check for oil leakage.</li> </ol>	<a href="#">EM-61</a>	J

• \*1: When the oil does not drop.

• \*2: When the oil drops.

### LIST OF CHECKING POINTS FOR OIL LEAKAGE

Check for engine oil leakage around the following areas:

- Oil pans (lower and upper)
- Oil pan drain plug
- Oil pressure sensor
- Oil level sensor
- Oil temperature sensor

# ENGINE OIL

## < PERIODIC MAINTENANCE >

- Oil filter
- Oil filter bracket
- Valve timing control cover
- Intake valve timing control solenoid valve
- Mating surface between cylinder head and rocker cover
- Mating surface between front timing chain case and rear timing chain case
- Mating surface between rear timing chain case and cylinder head
- Mating surface between rear timing chain case and cylinder block
- Mating surface between rear timing chain case and oil pan (upper)
- Mating surface between cylinder block and cylinder head
- Mating surface between lower cylinder block and cylinder block
- Crankshaft oil seals (front and rear)
- Camshaft position sensor (PHASE)
- Turbocharger

## OIL PRESSURE CHECK

### WARNING:

- Be careful not to get burned, as engine oil may be hot.
- Oil pressure check should be done in "Parking position".

Check with Multifunction Meter

1. Check the engine oil level. Refer to "ENGINE OIL LEVEL".
2. Start the engine and warm it up to normal operating temperature.
3. Check the engine oil pressure with multifunction meter. Refer to [AV-13, "System Description"](#).

### NOTE:

When the engine oil temperature is low, the engine oil pressure becomes high.

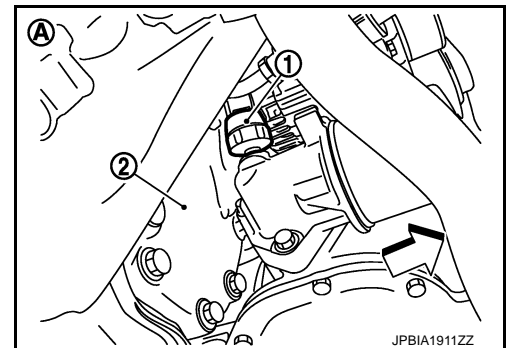
**Engine oil pressure** : Refer to [LU-21, "Engine Oil Pressure \(GT-R certified NISSAN dealer\)"](#).

**If difference is extreme, check engine oil passage and oil pump for engine oil leakage.**

Check with Oil Pressure Gauge

1. Check the engine oil level. Refer to "ENGINE OIL LEVEL".
2. Remove front undercover. Refer to [EXT-40, "FRONT UNDER COVER : Exploded View"](#).
3. Disconnect harness connector at oil pressure sensor, and remove oil pressure sensor.

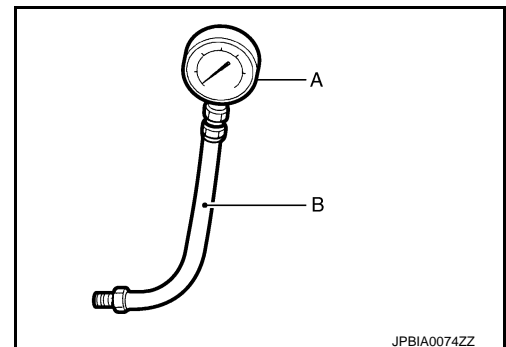
- 1 : Oil pressure sensor
- 2 : Front final drive
- A : Vehicle under view
- ⇐ : Engine front



### CAUTION:

**Never drop or shock oil pressure sensor.**

4. Install the oil pressure gauge [SST: ST25051001 (J-25695-1)] (A) and hose [SST: ST25052000 (J-25695-2)] (B).



5. Start the engine and warm it up to normal operating temperature.

# ENGINE OIL

## < PERIODIC MAINTENANCE >

6. Check the engine oil pressure with engine running under no-load.

**NOTE:**

When the engine oil temperature is low, the engine oil pressure becomes high.

**Engine oil pressure** : Refer to [LU-21, "Engine Oil Pressure \(GT-R certified NISSAN dealer\)"](#).

**If difference is extreme, check engine oil passage and oil pump for engine oil leakage.**

7. After the inspections, install oil pressure sensor as follows:

- a. Remove old liquid gasket adhering to oil pressure sensor and the mating surface.
- b. Apply liquid gasket and tighten oil pressure sensor to the specification.

**Use Genuine RTV Silicone Sealant or equivalent. Refer to [GI-18, "Recommended Chemical Products and Sealants"](#).**

**Tightening torque** : Refer to [LU-14, "Exploded View \(GT-R certified NISSAN dealer\)"](#).

- c. After warming up engine, check there is no leakage of engine oil with running engine.

## Draining

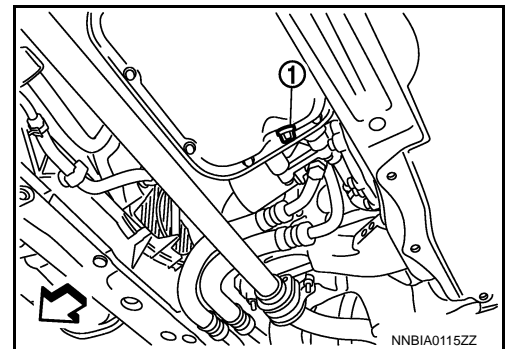
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**WARNING:**

- Be careful not to get burned, as engine oil may be hot.
- Prolonged and repeated contact with used engine oil may cause skin cancer. Try to avoid direct skin contact with used engine oil. If skin contact is made, wash thoroughly with soap or hand cleaner as soon as possible.

1. Warm up the engine, and check for engine oil leakage from engine components. Refer to [LU-8, "Inspection"](#).
2. Stop the engine and wait for 5 minutes.
3. Loosen oil filler cap.
4. Remove front undercover. Refer to [EXT-40, "FRONT UNDER COVER : Exploded View"](#).
5. Remove drain plug (1) and then drain engine oil.

↩ : Vehicle front



## Refilling

INFOID:000000011487207

1. Install drain plug with new washer. Refer to [EM-97, "Exploded View \(GT-R certified NISSAN dealer\)"](#).

**CAUTION:**

**Be sure to clean drain plug and install with new washer.**

**Tightening torque** : Refer to [EM-97, "Exploded View \(GT-R certified NISSAN dealer\)"](#).

2. Refill with new engine oil.

**Engine oil specification and viscosity:** Refer to [MA-21, "Fluids and Lubricants"](#).

**Engine oil capacity** : Refer to [LU-21, "Periodical Maintenance Specification"](#).

**CAUTION:**

- When filling engine oil, never pull out oil level gauge.
- The refill capacity depends on the engine oil temperature and drain time. Use these specifications for reference only.
- Always use oil level gauge to determine the proper amount of engine oil in engine.

## ENGINE OIL

### < PERIODIC MAINTENANCE >

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3. Warm up the engine and check area around drain plug and oil filter for engine oil leakage.
4. Stop the engine and wait for 5 minutes.
5. Check the engine oil level. Refer to [LU-8. "Inspection"](#).

# OIL FILTER

< PERIODIC MAINTENANCE >

## OIL FILTER

### Removal and Installation

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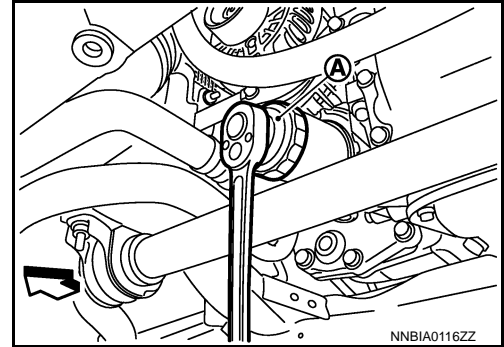
#### REMOVAL

##### CAUTION:

- Oil filter is provided with relief valve. Use genuine NISSAN oil filter or equivalent.
- Be careful not to get burned when engine and engine oil may be hot.
- When removing, prepare a shop cloth to absorb any engine oil leakage or spillage.
- Never allow engine oil to adhere to drive belt.
- Completely wipe off any engine oil that adheres to engine and vehicle.

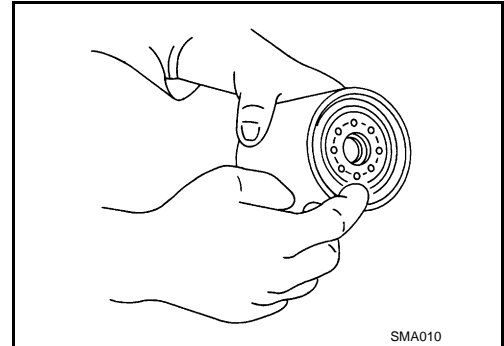
1. Remove front undercover. Refer to [EXT-40, "FRONT UNDER COVER : Exploded View"](#).
2. Using oil filter wrench [SST: KV10115801 (J-38956)] (A), remove oil filter.

← : Vehicle front



#### INSTALLATION

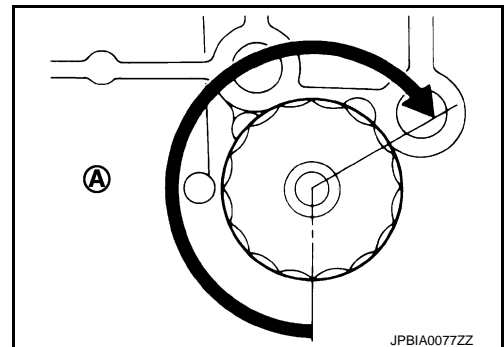
1. Remove foreign materials adhering to oil filter installation surface.
2. Apply engine oil to the oil seal contact surface of new oil filter.



3. Screw oil filter manually until it touches the installation surface, then tighten it by 2/3 turn (A). Or tighten to the specification.

##### Oil filter:

: 17.7 N·m (1.8 kg·m, 13 ft·lb)



#### Inspection

INFOID:000000011487209

#### INSPECTION AFTER INSTALLATION

1. Check the engine oil level. Refer to [LU-8, "Inspection"](#).
2. Start the engine, and check there is no leakage of engine oil.
3. Stop the engine and wait for 5 minutes.
4. Check the engine oil level, and adjust the level. Refer to [LU-8, "Inspection"](#).

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# OIL FILTER BRACKET

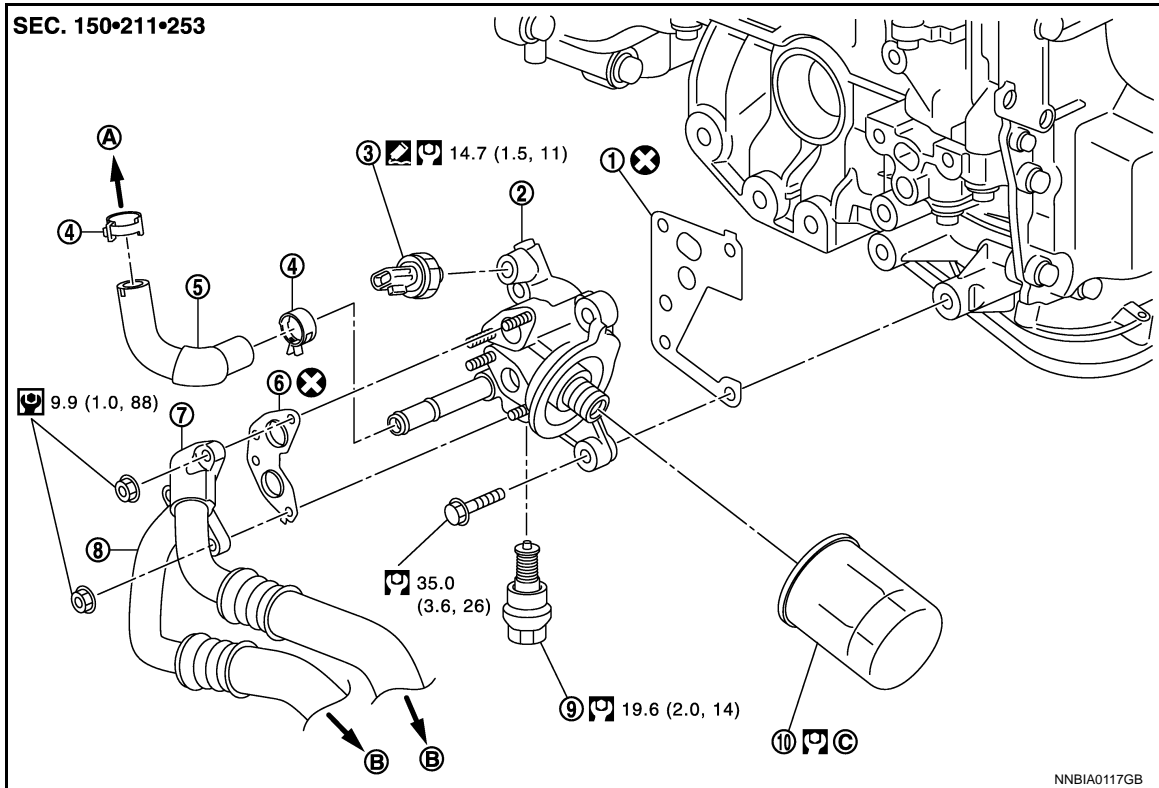
< REMOVAL AND INSTALLATION >

## REMOVAL AND INSTALLATION

### OIL FILTER BRACKET

Exploded View (GT-R certified NISSAN dealer)

INFOID:000000011487210



- |   |                           |                                   |
|---|---------------------------|-----------------------------------|
| 1. Gasket   | 2. Oil filter bracket     | 3. Oil pressure sensor            |
| 4. Clamp  | 5. Oil return hose        | 6. Gasket                         |
| 7. Oil cooler feed hose                               | 8. Oil cooler return hose | 9. Oil thermostat                 |
| 10. Oil filter  |                           |                                   |
| A. To exhaust manifold turbocharger assembly (bank 1) | B. To oil cooler          | C. Refer to <a href="#">LU-13</a> |

Refer to [GI-4, "Components"](#) for symbols in the figure.

## Removal and Installation (GT-R certified NISSAN dealer)

INFOID:000000011487211

### REMOVAL

#### **WARNING:**

**Be careful not to get burned, as engine oil may be hot.**

1. Disconnect battery cable from the negative terminal. Refer to [PG-91, "Exploded View"](#).
2. Remove drive belt. Refer to [EM-15, "Exploded View"](#).
3. Remove front undercover. Refer to [EXT-40, "FRONT UNDER COVER : Exploded View"](#).
4. Remove alternator and alternator bracket. Refer to [CHG-30, "Exploded View \(GT-R certified NISSAN dealer\)"](#).
5. Disconnect oil pressure sensor harness connector.
6. Disconnect oil cooler feed hose, oil cooler return hose, and oil return hose at oil filter bracket side.

#### **CAUTION:**

**Never spill engine oil to rubber parts such as engine mounting insulator.**

7. Using the oil filter wrench [SST: KV10115801 (J-38956)], remove oil filter. Refer to [LU-13, "Removal and Installation"](#).

# OIL FILTER BRACKET

## < REMOVAL AND INSTALLATION >

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8. Remove oil filter bracket from oil pan (upper).

**CAUTION:**

**Never spill engine oil to rubber parts such as engine mounting insulator.**

9. Remove oil pressure sensor and oil thermostat from oil filter bracket if necessary.

## INSTALLATION

Note the following, and install in the reverse order of removal.

- Install oil pressure sensor as follows:
  - Remove old liquid gasket adhering to oil filter bracket.
  - Apply liquid gasket and install oil pressure sensor.

**Use Genuine RTV Silicone Sealant or equivalent. Refer to [GI-18, "Recommended Chemical Products and Sealants"](#).**

Inspection (GT-R certified NISSAN dealer)

INFOID:000000011487212

## INSPECTION AFTER INSTALLATION

1. Check the engine oil level and add engine oil. Refer to [LU-8, "Inspection"](#).
2. Start the engine, and check there is no leakage of engine oil.
3. Stop the engine and wait for 5 minutes.
4. Check the engine oil level again. Refer to [LU-8, "Inspection"](#).

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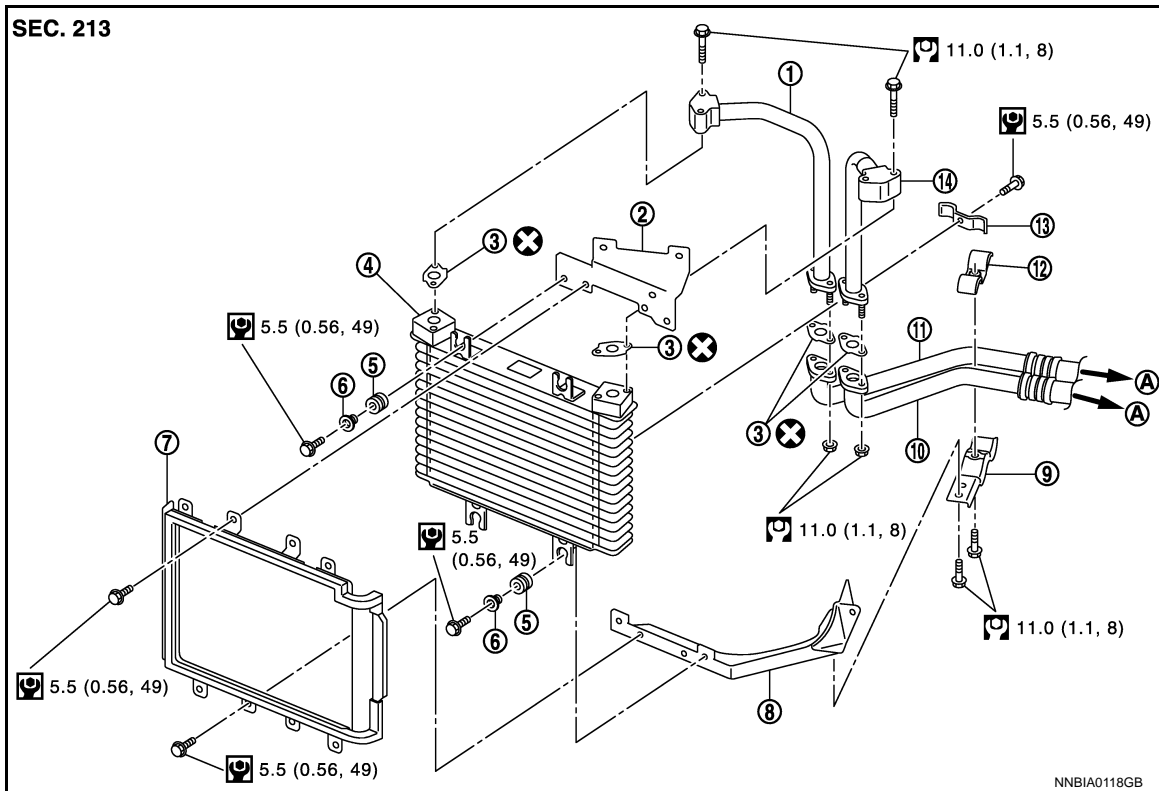
# OIL COOLER

< REMOVAL AND INSTALLATION >

## OIL COOLER

Exploded View (GT-R certified NISSAN dealer)

INFOID:000000011487213



- |                           |                            |                  |
|---------------------------|----------------------------|------------------|
| 1. Oil cooler return pipe | 2. Bracket (upper)         | 3. Gasket        |
| 4. Oil cooler             | 5. Grommet                 | 6. Color         |
| 7. Air duct bracket       | 8. Bracket (lower)         | 9. Hose bracket  |
| 10. Oil cooler feed hose  | 11. Oil cooler return hose | 12. Hose bracket |
| 13. Pipe bracket          | 14. Oil cooler feed pipe   |                  |
- A. To oil filter bracket

Refer to [GI-4. "Components"](#) for symbols in the figure.

## Removal and Installation (GT-R certified NISSAN dealer)

INFOID:000000011487214

### REMOVAL

#### **WARNING:**

**Be careful not to get burned, as engine oil may be hot.**

1. Remove engine undercover. Refer to [EXT-37. "ENGINE UNDER COVER : Exploded View"](#).
2. Remove front undercover. Refer to [EXT-40. "FRONT UNDER COVER : Exploded View"](#).
3. Remove front bumper. Refer to [EXT-14. "Exploded View"](#).
4. Remove air duct from oil cooler.
5. Remove air duct bracket.
6. Disconnect oil cooler hoses from oil cooler pipes.

#### **CAUTION:**

**When oil cooler hoses are disconnected, attach plug to prevent engine oil leakage.**

7. Remove oil cooler.

#### **CAUTION:**

- Never damage or scratch oil cooler core when removing.
- When oil cooler is removed, attach plug to prevent engine oil leakage.

8. Remove oil cooler pipes if necessary.



# OIL COOLER

## < REMOVAL AND INSTALLATION >

### INSTALLATION

Note the following, and install in the reverse order of removal.

Oil cooler pipe

If oil cooler pipes are removed, install it as follows:

1. Install oil cooler pipes and pipe bracket, and temporarily tighten the pipe bracket bolt.
2. Temporarily tighten the oil cooler pipe bolts. (oil cooler upper side)
3. Tighten pipe bracket bolt to the specified torque.
4. Tighten oil cooler pipe bolts to the specified torque. (oil cooler upper side)

Inspection (GT-R certified NISSAN dealer)

INFOID:000000011487215

### INSPECTION AFTER INSTALLATION

1. Check the engine oil level and add engine oil. Refer to [LU-8, "Inspection"](#).

**CAUTION:**

**Be sure to add engine oil before starting engine if drained engine oil from oil cooler.**

**Oil cooler engine oil capacity : Approximately 1.3 ℓ (1-3/8 us qt, 1-1/8 imp qt)\***

\*: Engine oil capacity is the reference value.

2. Start the engine, and check there is no leakage of engine oil.
3. Stop the engine and wait for 5 minutes.
4. Check the engine oil level again. Refer to [LU-8, "Inspection"](#).

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# OIL PUMP

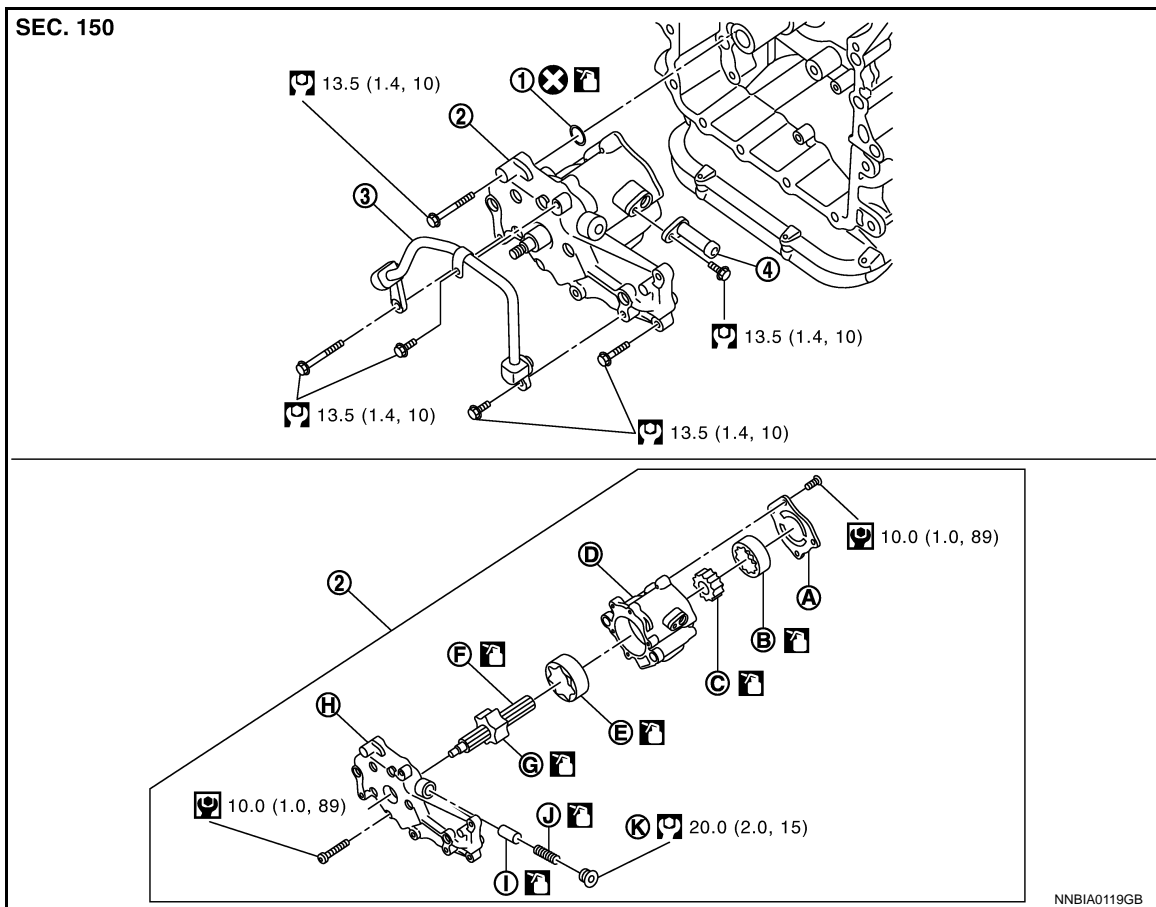
< UNIT DISASSEMBLY AND ASSEMBLY >

## UNIT DISASSEMBLY AND ASSEMBLY

### OIL PUMP

Exploded View (GT-R certified NISSAN dealer)

INFOID:000000011487216



- |                                |                                |                                |
|--------------------------------|--------------------------------|--------------------------------|
| 1. O-ring                      | 2. Oil pump assembly           | 3. Suction pipe                |
| 4. Scavenging pump outlet pipe |                                |                                |
| A. Rear cover                  | B. Scavenging pump outer rotor | C. Scavenging pump inner rotor |
| D. Oil pump housing            | E. Oil pump outer rotor        | F. Shaft                       |
| G. Oil pump inner rotor        | H. Oil pump cover              | I. Regulator valve             |
| J. Regulator valve spring      | K. Regulator valve plug        |                                |

Refer to [GI-4. "Components"](#) for symbols in the figure.

#### CAUTION:

**Never remove oil pump inner rotor from shaft.**

Disassembly and Assembly (GT-R certified NISSAN dealer)

INFOID:000000011487217

#### DISASSEMBLY

1. Remove engine assembly from vehicle. Refer to [EM-53. "Exploded View \(GT-R certified NISSAN dealer\)"](#).
2. Remove oil pan (lower) and oil strainer. Refer to [EM-97. "Exploded View \(GT-R certified NISSAN dealer\)"](#).
3. Remove front timing chain case, timing chain (primary) and oil pump drive chain. Refer to [EM-69. "Exploded View \(GT-R certified NISSAN dealer\)"](#).
4. Remove oil pump assembly.
5. Remove suction pipe.
6. Remove rear cover.

# OIL PUMP

## < UNIT DISASSEMBLY AND ASSEMBLY >

7. Remove scavenging pump inner rotor and scavenging pump outer rotor from scavenging pump rear side.  
**NOTE:**  
As a reference for the assembling direction, put a mark on each rotor with paint.
8. Remove oil pump cover.
9. Remove shaft with oil pump inner rotor from oil pump housing.  
**CAUTION:**  
**Never remove oil pump inner rotor from shaft.**
10. Remove oil pump outer rotor.  
**NOTE:**  
As a reference for the assembling direction, put a mark on the rotor with paint.
11. After removing regulator valve plug, remove regulator valve spring and regulator valve.

## ASSEMBLY

Note the following, and assemble in the reverse order of disassembly.

### **CAUTION:**

- Do not reuse O-rings.
- Before assembly, apply new engine oil to the parts as instructed in the figure.
- Install each rotor in the original direction, referring to the mark put before disassembly.

## Inspection (GT-R certified NISSAN dealer)

INFOID:000000011487218

## INSPECTION AFTER DISASSEMBLY

### Oil Pump Clearance

- Measure the clearance with feeler gauge (C).
- Clearance between oil pump outer rotor and oil pump body [position (B)]

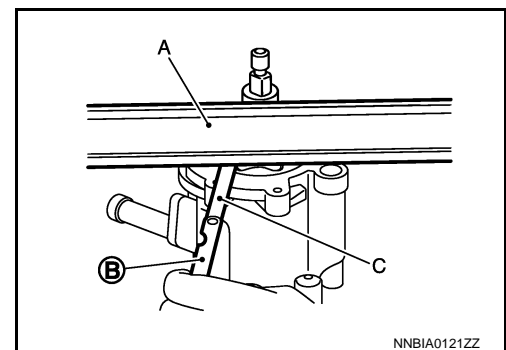
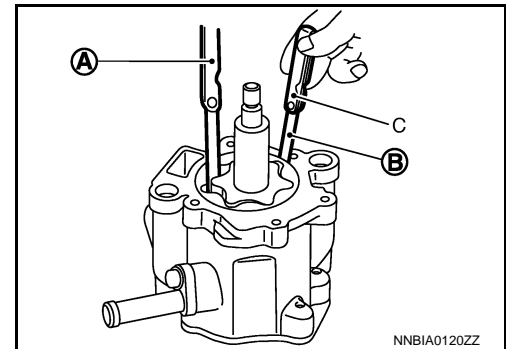
**Standard** : Refer to [LU-21, "Oil Pump \(GT-R certified NISSAN dealer\)"](#).

- Tip clearance between oil pump inner rotor and oil pump outer rotor [position (A)]

**Standard** : Refer to [LU-21, "Oil Pump \(GT-R certified NISSAN dealer\)"](#).

- Measure the clearance with feeler gauge (C) and straightedge (A).
- Side clearance between oil pump rotor and oil pump body [position (B)]

**Standard** : Refer to [LU-21, "Oil Pump \(GT-R certified NISSAN dealer\)"](#).



- If measured values are out of the standard, replace oil pump assembly.

### Regulator Valve Clearance

# OIL PUMP

## < UNIT DISASSEMBLY AND ASSEMBLY >

(Clearance) = (Regulator valve hole diameter) – (Regulator valve outer diameter)

- 1 : Regulator valve
- 2 : Oil pump cover

**Standard** : Refer to [LU-21, "Regulator Valve \(GT-R certified NISSAN dealer\)"](#).

- If the calculated value is out of the standard, replace oil pump assembly.

### CAUTION:

- Coat regulator valve with engine oil.
- Check that it falls smoothly into valve hole by its own weight.

### Scavenging Oil Pump Clearance

- Measure the clearance with feeler gauge (C).
- Clearance between scavenging oil pump outer rotor and oil pump body [position (B)]

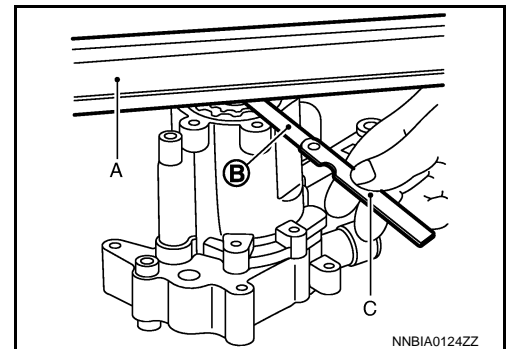
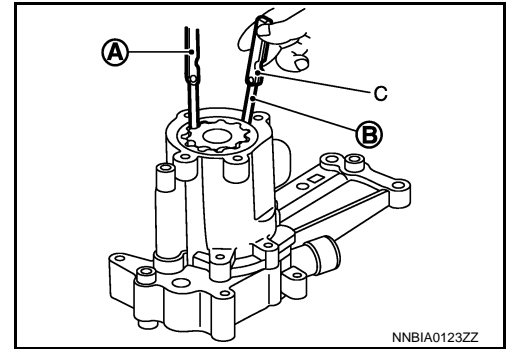
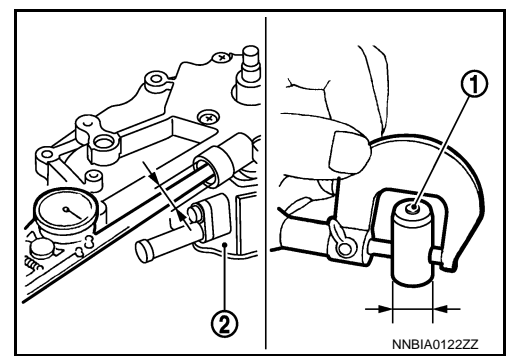
**Standard** : Refer to [LU-21, "Scavenging Oil Pump \(GT-R certified NISSAN dealer\)"](#).

- Tip clearance between scavenging oil pump inner rotor and scavenging oil pump outer rotor [position (A)]

**Standard** : Refer to [LU-21, "Scavenging Oil Pump \(GT-R certified NISSAN dealer\)"](#).

- Measure the clearance with feeler gauge (C) and straightedge (A).
- Side clearance between scavenging oil pump rotor and oil pump housing [position (B)]

**Standard** : Refer to [LU-21, "Scavenging Oil Pump \(GT-R certified NISSAN dealer\)"](#).



- If measured values are out of the standard, replace oil pump assembly.

## INSPECTION AFTER INSTALLATION

1. Check the engine oil level. Refer to [LU-8, "Inspection"](#).
2. Start the engine, and check there is no leakage of engine oil.
3. Stop the engine and wait for 5 minutes.
4. Check the engine oil level and adjust the level. Refer to [LU-8, "Inspection"](#).

# SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

## SERVICE DATA AND SPECIFICATIONS (SDS)

### SERVICE DATA AND SPECIFICATIONS (SDS)

#### Periodical Maintenance Specification

INFOID:0000000011487219

#### ENGINE OIL CAPACITY (APPROXIMATELY)

Unit: ℓ (US qt, Imp qt)

Drain and refill	With oil filter change	5.0 (5-1/4, 4-3/8)
	Without oil filter change	4.5 (4-3/4, 4)
Dry engine (Overhaul)		6.2 (6-4/8, 5-4/8)

#### Engine Oil Pressure (GT-R certified NISSAN dealer)

INFOID:0000000011487220

Unit: kPa (kg/cm<sup>2</sup>, psi)

Engine speed	Approximate discharge pressure*
750 rpm	210 (2.14, 30)
1,000 rpm	240 (2.45, 35)
4,000 rpm	540 (5.51, 78)

\*: Engine oil temperature at 80°C (176°F)

#### Oil Pump (GT-R certified NISSAN dealer)

INFOID:0000000011487221

Unit: mm (in)

Oil pump housing to oil pump outer rotor radial clearance	0.080 - 0.140 (0.0031 - 0.0055)
Oil pump inner rotor to oil pump outer rotor tip clearance	0.100 - 0.200 (0.0039 - 0.0079)
Oil pump housing to oil pump rotor axial clearance	0.025 - 0.080 (0.0010 - 0.0031)

#### Regulator Valve (GT-R certified NISSAN dealer)

INFOID:0000000011487222

Unit: mm (in)

Regulator valve to oil pump cover clearance	0.032 - 0.077 (0.0013 - 0.0030)
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#### Scavenging Oil Pump (GT-R certified NISSAN dealer)

INFOID:0000000011487223

Unit: mm (in)

Oil pump housing to scavenging oil pump outer rotor radial clearance	0.130 - 0.186 (0.0051 - 0.0073)
Scavenging oil pump inner rotor to scavenging oil pump outer rotor tip clearance	0.300 (0.0118) or less
Oil pump housing to scavenging oil pump rotor axial clearance	0.025 - 0.080 (0.0010 - 0.0031)