

SECTION

LU

ENGINE LUBRICATION SYSTEM

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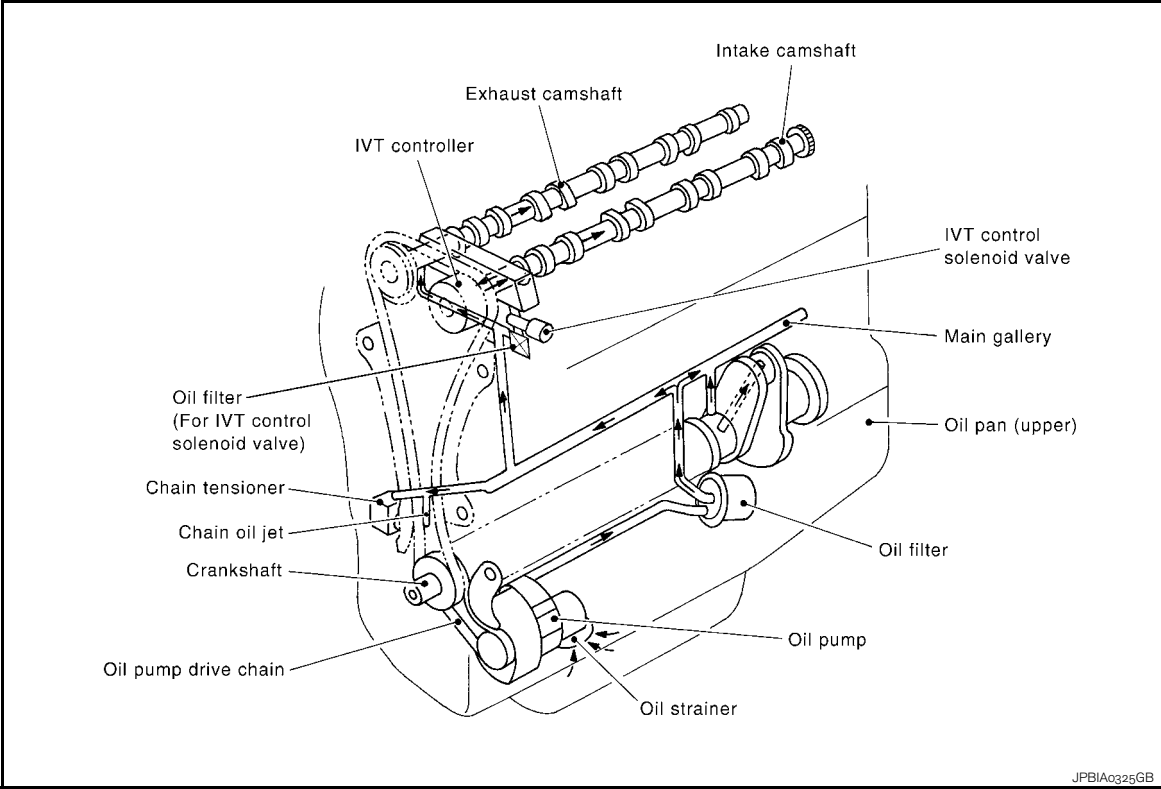
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FUNCTION DIAGNOSIS

DESCRIPTION

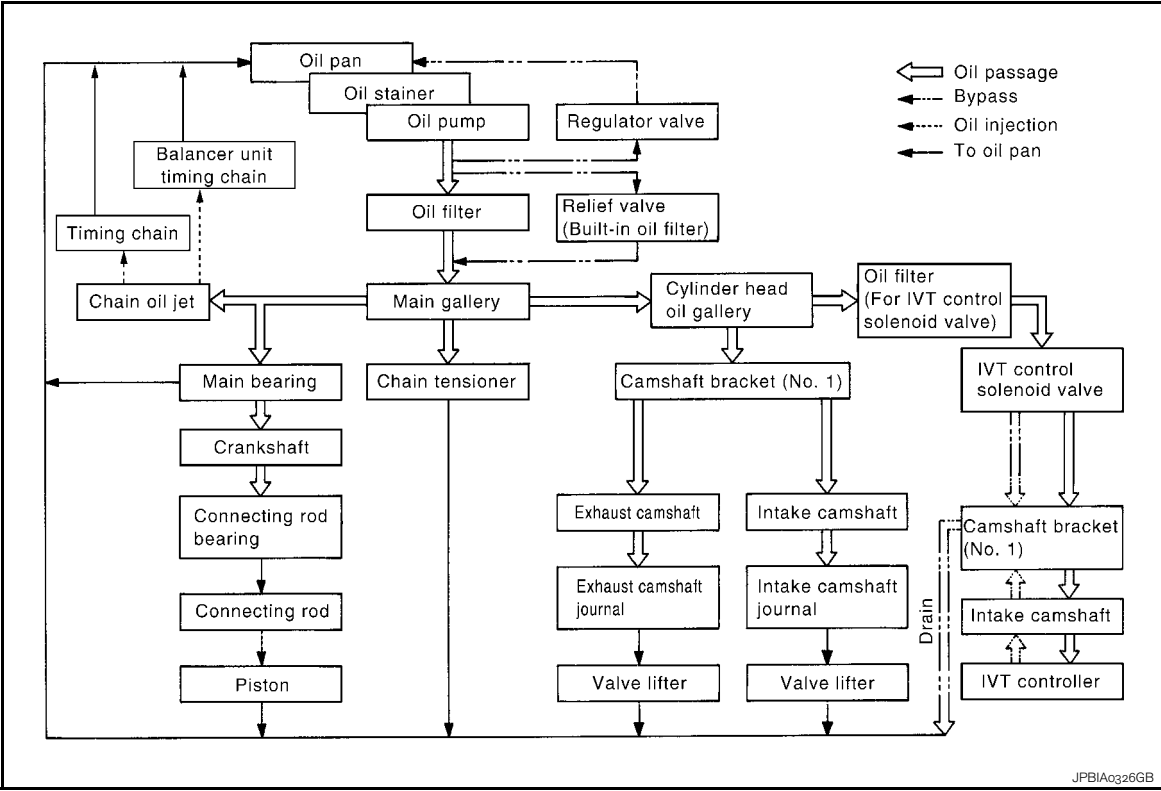
Engine Lubrication System

INFOID:000000000902409



Engine Lubrication System Schematic

INFOID:000000000902410



PRECAUTION

PRECAUTIONS

Liquid Gasket

INFOID:000000000902406

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 liquid gasket or equivalent.
 - 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 >

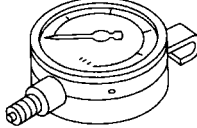
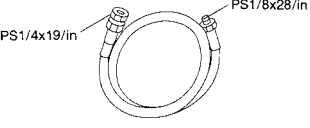
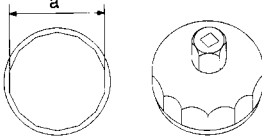
[HR16DE]

PREPARATION

PREPARATION

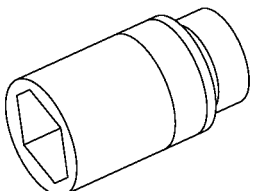
Special Service Tools

INFOID:000000000902407

Tool number Tool name	Description
ST25051001 Oil pressure gauge	Measuring oil pressure Maximum measuring range: 2,452 kPa (24.52 bar, 25 kg-cm ² , 356 psi)
 NT050	
ST25052000 Hose	Adapting oil pressure gauge to cylinder block
 S-NT559	
KV10115801 Oil filter wrench	Removing and installing oil filter a: 64.3 mm (2.531 in)
 S-NT375	

Commercial Service Tools

INFOID:000000000902408

Tool name	Description
Deep socket	Removing and installing oil pressure switch a: 27 mm (1.06 in)
 PBIC4066E	

ON-VEHICLE MAINTENANCE

ENGINE OIL

Inspection

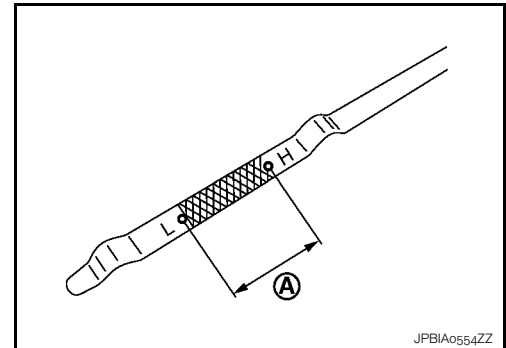
INFOID:000000000902411

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 10 minutes before checking.

1. Pull out oil level gauge and wipe it clean.
2. Insert oil level gauge and make sure the engine oil level is within the range (A) shown in the figure.
3. If it is out of range, adjust it.



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

Check for engine oil leakage around the following area.

- Oil pan (upper and lower)
- Oil pan drain plug
- Oil pressure switch
- Oil level sensor
- Oil filter
- Intake valve timing control solenoid valve
- Front cover
- Mating surface between cylinder head and camshaft bracket
- Mating surface between cylinder block and cylinder head
- Mating surface between cylinder head and rocker cover
- Crankshaft oil seals (front and rear)
- Oil filter (for intake valve timing control)

OIL PRESSURE CHECK

WARNING:

- Be careful not to get burned, as engine oil may be hot.
- When checking engine oil pressure, shift position should be "Neutral", and apply parking brake securely.

1. Check engine oil level. Refer to [LU-6. "Inspection"](#).

ENGINE OIL

< ON-VEHICLE MAINTENANCE >

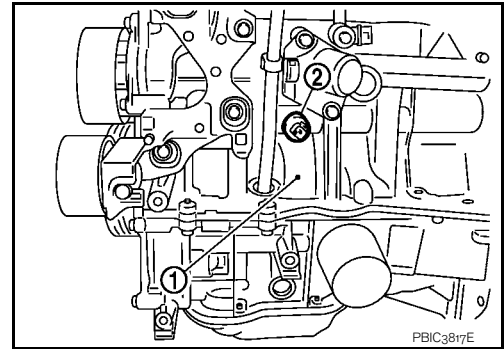
[HR16DE]

2. Disconnect harness connector at oil pressure switch (2), and remove oil pressure switch using a deep socket (commercial service tool).

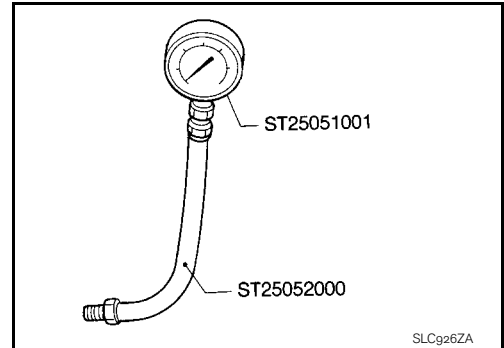
1 : Cylinder block

CAUTION:

Never drop or shock oil pressure switch.



3. Install oil pressure gauge and hose (SST).



4. Start engine and warm it up to normal operating temperature.
5. Check oil pressure with engine running under no-load.

NOTE:

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

Engine oil pressure : Refer to [LU-10, "Engine Oil Pressure"](#).

If difference is extreme, check oil passage and oil pump for oil leaks.

6. After the inspections, install oil pressure switch as follows:
 - a. Remove old liquid gasket adhering to oil pressure switch and engine.
 - b. Apply liquid gasket and tighten oil pressure switch to specification.
Use Genuine Liquid Gasket or equivalent.

Tightening torque : Refer to [EM-93, "Exploded View"](#).

- c. Check engine oil level. Refer to [LU-6, "Inspection"](#).
- d. After warming up engine, make sure there is no leaks of engine oil with running engine.

Draining

INFOID:000000000902412

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-6, "Inspection"](#).
2. Stop the engine and wait for 10 minutes.
3. Loosen oil filler cap.
4. Remove drain plug and then drain engine oil.

Refilling

INFOID:000000000902413

1. Install drain plug with new washer. Refer to [EM-40, "Exploded View"](#).

CAUTION:

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

Tightening torque : Refer to [EM-40, "Exploded View"](#).

2. Refill with new engine oil.

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

Engine oil capacity : Refer to [LU-10, "Periodical Maintenance Specification"](#).

CAUTION:

- 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 the engine.

3. Warm up engine and check area around drain plug and oil filter for engine oil leakage.
4. Stop engine and wait for 10 minutes.
5. Check the engine oil level. Refer to [LU-6, "Inspection"](#).

OIL FILTER

Removal and Installation

INFOID:000000000902504

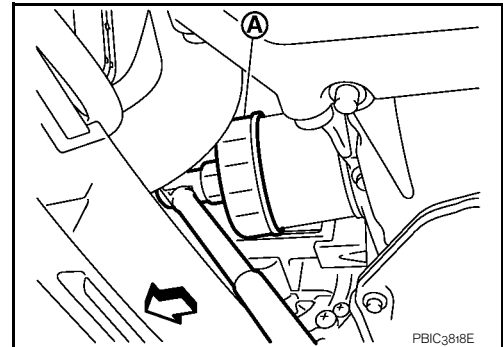
REMOVAL

- Using oil filter wrench [SST: KV10115801] (A), remove oil filter.

↶ : Vehicle front

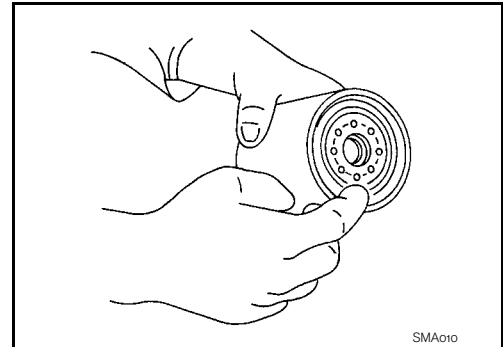
CAUTION:

- 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.
- Completely wipe off any engine oil that adheres to engine and vehicle.



INSTALLATION

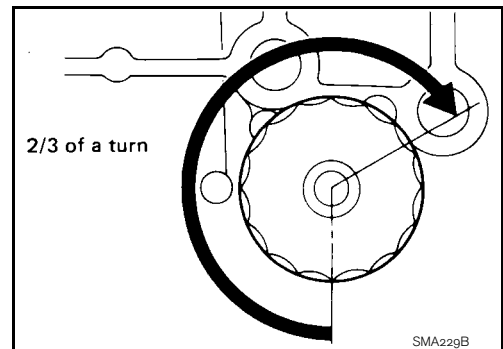
- Remove foreign materials adhering to the oil filter installation surface.
- Apply new engine oil to the oil seal contact surface of new oil filter.



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

Oil filter:

 : 17.7 N·m (1.8 kg-m, 13 ft-lb)



Inspection

INFOID:000000000902415

INSPECTION AFTER INSTALLATION

- Check the engine oil level. Refer to [LU-6. "Inspection"](#).
- Start the engine, and check there is no leak of engine oil.
- Stop the engine and wait for 10 minutes.
- Check the engine oil level, and adjust the level. Refer to [LU-6. "Inspection"](#).

SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

[HR16DE]

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Periodical Maintenance Specification

INFOID:000000000902428

ENGINE OIL CAPACITY (APPROXIMATE)

Unit: ℓ (Imp qt)

Drain and refill	With oil filter change	4.3 (3-3/4)
	Without oil filter change	4.1 (3-5/8)
Dry engine (Overhaul)		4.8 (4-1/4)

Engine Oil Pressure

INFOID:000000000902429

Engine speed (rpm)	Approximate discharge pressure* [kPa (bar, kg/cm ² , psi)]
Idle speed	More than 60 (0.60, 0.61, 9)
2,000	More than 270 (2.7, 2.8, 39)

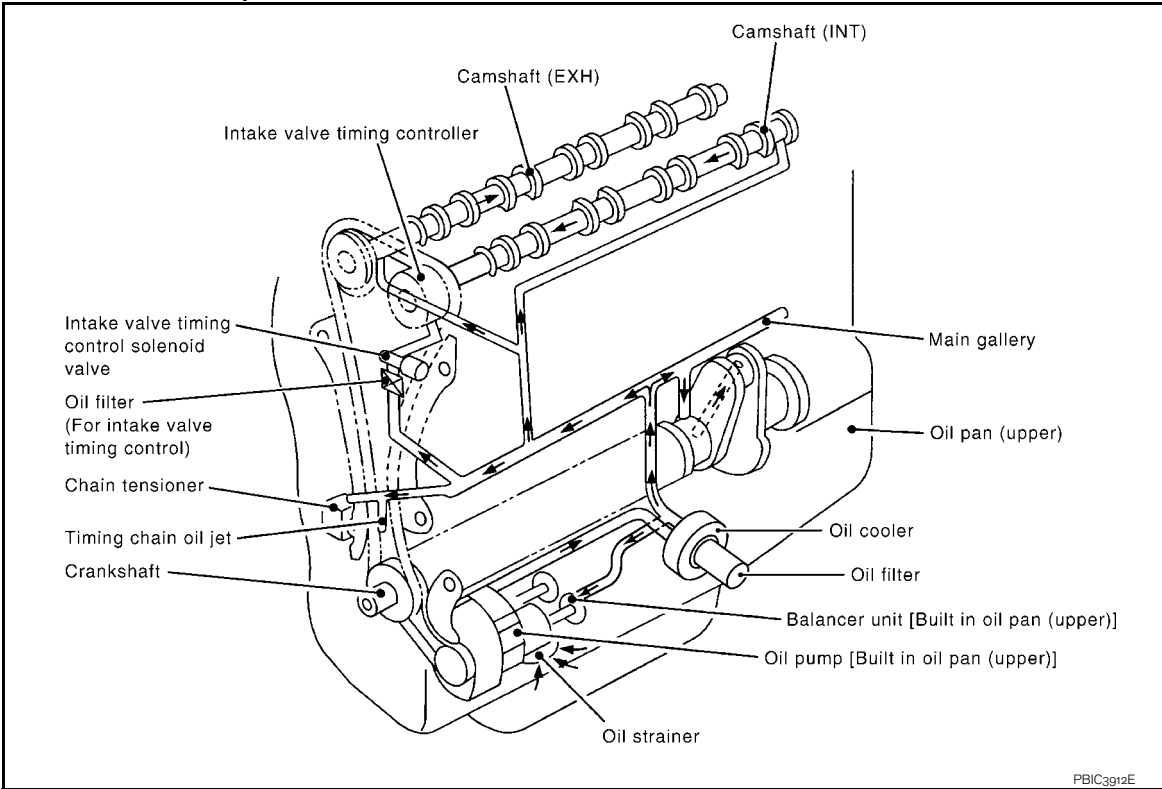
*: Engine oil temperature at 80°C (176°F)

FUNCTION DIAGNOSIS

DESCRIPTION

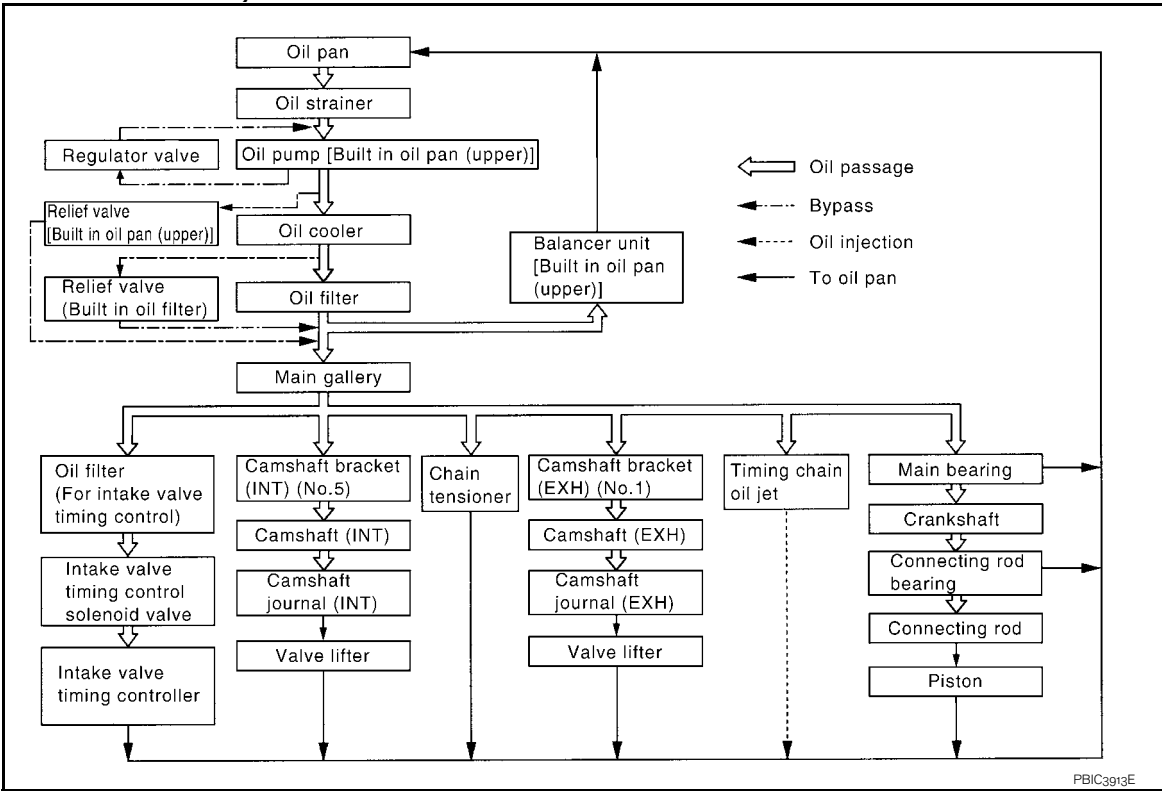
Engine Lubrication System

INFOID:000000000902583



Engine Lubrication System Schematic

INFOID:000000000902584



PRECAUTION

PRECAUTIONS

Liquid Gasket

INFOID:000000000902580

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 liquid gasket or equivalent.
 - 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 >

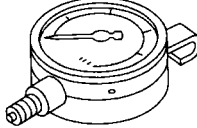
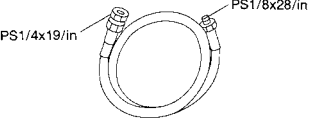
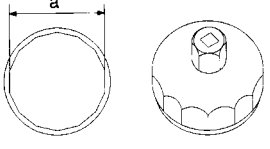
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PREPARATION

PREPARATION

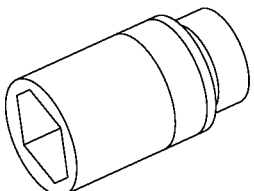
Special Service Tools

INFOID:000000000902581

Tool number Tool name	Description
ST25051001 Oil pressure gauge	Measuring oil pressure Maximum measuring range: 2,452 kPa (24.52 bar, 25 kg-cm ² , 356 psi)
 NT050	
ST25052000 Hose	Adapting oil pressure gauge to cylinder block
 S-NT559	
KV10115801 Oil filter wrench	Removing and installing oil filter a: 64.3 mm (2.531 in)
 S-NT375	

Commercial Service Tools

INFOID:000000000902582

Tool name	Description
Deep socket	Removing and installing oil pressure switch a: 27 mm (1.06 in)
 PBIC4066E	

ON-VEHICLE MAINTENANCE

ENGINE OIL

Inspection

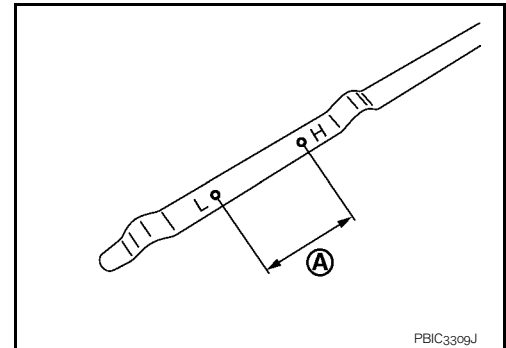
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ENGINE OIL LEVEL

NOTE:

Before starting engine, put vehicle horizontally and check the engine oil level. If engine is already started, stop it and allow 10 minutes before checking.

1. Pull out oil level gauge and wipe it clean.
2. Insert oil level gauge and make sure the engine oil level is within the range (A) shown in the figure.
3. If it is out of range, adjust it.



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

Check for engine oil leakage around the following area.

- Oil pan (upper and lower)
- Oil pan drain plug
- Oil pressure switch
- Oil level sensor
- Oil filter
- Oil cooler
- Intake valve timing control solenoid valve
- Front cover
- Mating surface between cylinder head and camshaft bracket
- Mating surface between cylinder block and cylinder head
- Mating surface between cylinder head and rocker cover
- Crankshaft oil seals (front and rear)

OIL PRESSURE CHECK

WARNING:

- Be careful not to get burned, as engine oil may be hot.
 - When checking engine oil pressure, shift position should be "Parking" (CVT models) or "Neutral" (M/T models), and apply parking brake securely.
1. Check engine oil level. Refer to [LU-14, "Inspection"](#).

ENGINE OIL

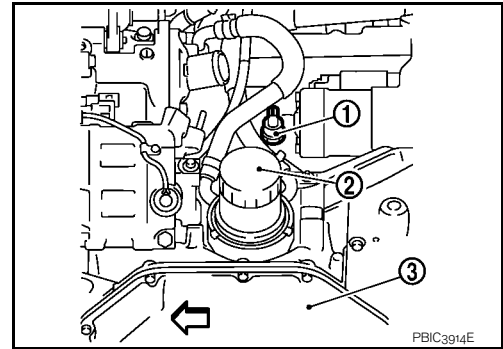
< ON-VEHICLE MAINTENANCE >

[MR20DE]

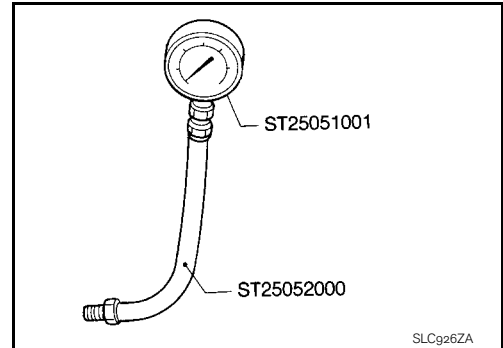
2. Disconnect harness connector at oil pressure switch (1), and remove oil pressure switch using a deep socket (commercial service tool).

- 2 : Oil filter
3 : Oil pan (lower)
⇐ : Engine front

CAUTION:
Never drop or shock oil pressure switch.



3. Install oil pressure gauge and hose (SST).



4. Start engine and warm it up to normal operating temperature.
5. Check oil pressure with engine running under no-load.

NOTE:
When engine oil temperature is low, engine oil pressure becomes high.

Engine oil pressure : Refer to [LU-20, "Engine Oil Pressure"](#).

If difference is extreme, check oil passage and oil pump for oil leaks.

6. After the inspections, install oil pressure switch as follows:
 - a. Remove old liquid gasket adhering to oil pressure switch and engine.
 - b. Apply liquid gasket and tighten oil pressure switch to specification.
Use Genuine Liquid Gasket or equivalent.

Tightening torque : Refer to [EM-210, "Exploded View"](#).

- c. Check engine oil level. Refer to [LU-14, "Inspection"](#).
- d. After warming up engine, make sure there is no leaks of engine oil with running engine.

Draining

INFOID:000000000902587

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-14, "Inspection"](#).
2. Stop the engine and wait for 10 minutes.
3. Loosen oil filler cap.
4. Remove drain plug and then drain engine oil.

Refilling

INFOID:000000000902588

1. Install drain plug with new washer. Refer to [EM-152, "Exploded View"](#).

CAUTION:

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

Tightening torque : Refer to [EM-152, "Exploded View"](#).

2. Refill with new engine oil.

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

Engine oil capacity : Refer to [LU-20, "Periodical Maintenance Specification"](#).

CAUTION:

- 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 the engine.

3. Warm up engine and check area around drain plug and oil filter for engine oil leakage.
4. Stop engine and wait for 10 minutes.
5. Check the engine oil level. Refer to [LU-14, "Inspection"](#).

OIL FILTER

< ON-VEHICLE MAINTENANCE >

[MR20DE]

OIL FILTER

Removal and Installation

INFOID:000000000902591

REMOVAL

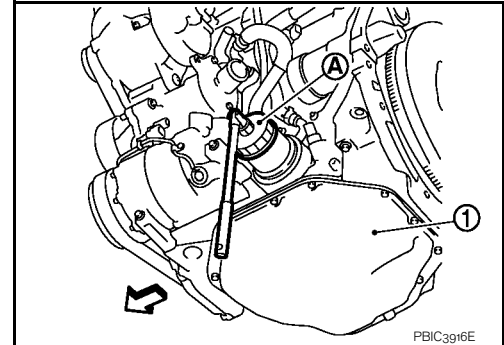
- Using oil filter wrench [SST: KV10115801] (A), remove oil filter.

1 : Oil pan (lower)

↩ : Vehicle front

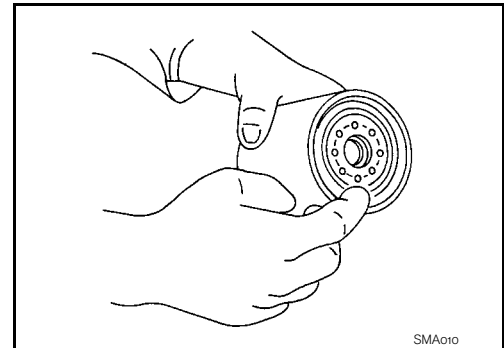
CAUTION:

- 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.
- Completely wipe off any engine oil that adheres to engine and vehicle.



INSTALLATION

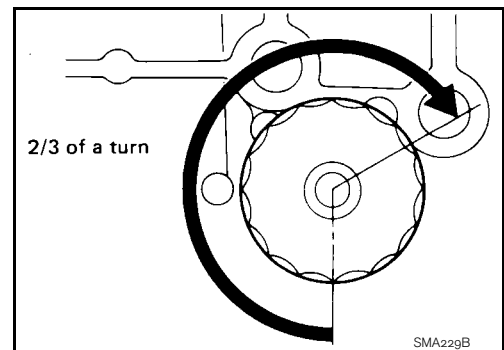
- Remove foreign materials adhering to the oil filter installation surface.
- Apply new engine oil to the oil seal contact surface of new oil filter.



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

Oil filter:

: 17.7 N·m (1.8 kg-m, 13 ft-lb)



Inspection

INFOID:000000000902593

INSPECTION AFTER INSTALLATION

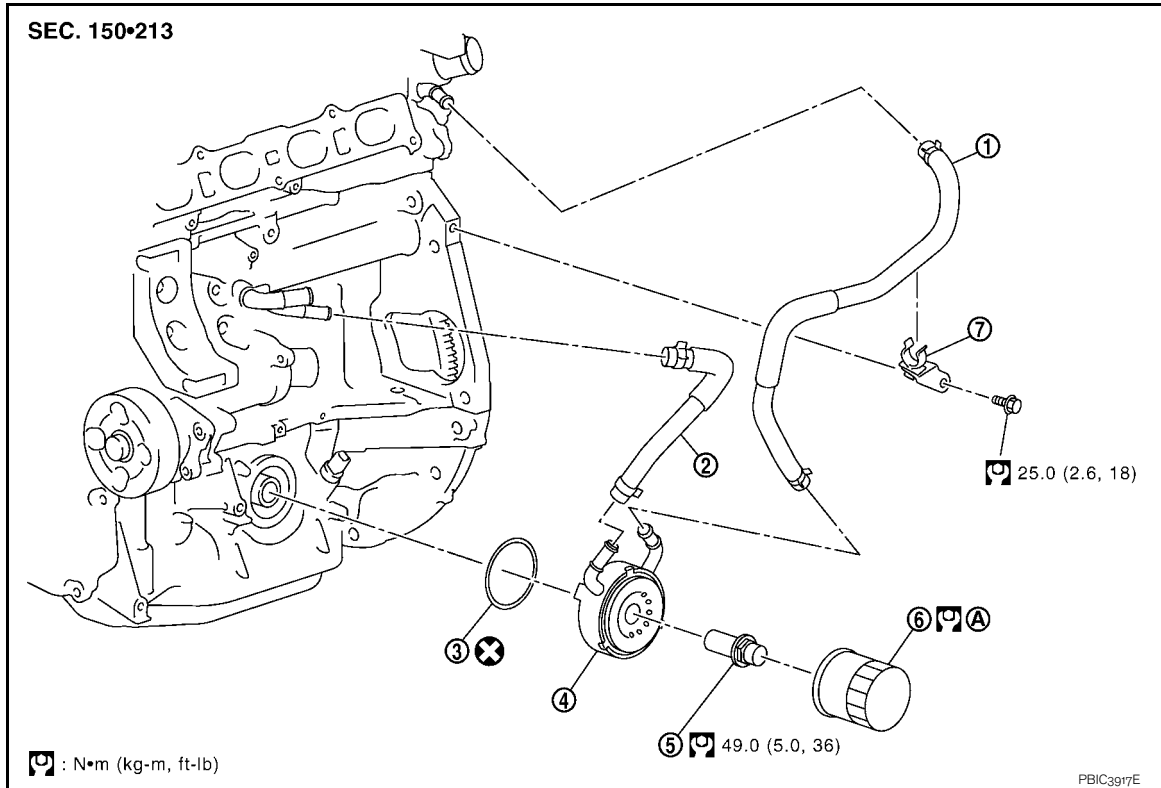
- Check the engine oil level. Refer to [LU-14, "Inspection"](#).
- Start the engine, and check there is no leak of engine oil.
- Stop the engine and wait for 10 minutes.
- Check the engine oil level, and adjust the level. Refer to [LU-14, "Inspection"](#).

ON-VEHICLE REPAIR

OIL COOLER

Exploded View

INFOID:000000000902598



- | | | |
|-----------------------------------|-------------------|---------------|
| 1. Water hose | 2. Water hose | 3. O-ring |
| 4. Oil cooler | 5. Connector bolt | 6. Oil filter |
| 7. Bracket | | |
| A. Refer to LU-17 | | |

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

Removal and Installation

INFOID:000000000902599

REMOVAL

WARNING:

Be careful not to get burn yourself, as engine oil and engine coolant may be hot.

1. Drain engine coolant from radiator and cylinder block. Refer to [CO-30, "Draining"](#) and [EM-210, "Exploded View"](#).
2. Using oil filter wrench [SST: KV10115801], remove oil filter. Refer to [LU-17, "Removal and Installation"](#).
3. Disconnect water hoses from oil cooler.
 - When removing oil cooler only, pinching water hoses near oil cooler to prevent engine coolant from spilling out.
 - Remaining engine coolant in piping will come out. Use a tray to collect it.

CAUTION:

Perform this step when the engine is cold.

4. Remove connector bolt, and remove oil cooler.

NOTE:

For reference when installing, put a matching mark on oil cooler and oil pan (upper).

INSTALLATION

OIL COOLER

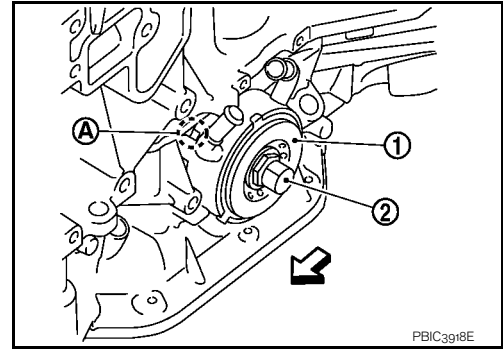
< ON-VEHICLE REPAIR >

[MR20DE]

Installation in the reverse order of removal.

- Tighten the connecting bolt (2) after aligning the stopper (A) on the oil pan (upper) side with protrusion of oil cooler (1).

⇐ : Engine front



INFOID:000000000902600

Inspection

INSPECTION AFTER REMOVAL

Oil Cooler

Check oil cooler for cracks. Check oil cooler for clogging by blowing through engine coolant inlet. If necessary, replace oil cooler.

INSPECTION AFTER INSTALLATION

1. Check the engine oil level and the engine coolant level and add engine oil and engine coolant. Refer to [LU-14, "Inspection"](#) and [CO-30, "Inspection"](#).
2. Start the engine, and check there is no leaks of engine oil or engine coolant.
3. Stop the engine and wait for 10 minutes.
4. Check the engine oil level and the engine coolant level again. Refer to [LU-14, "Inspection"](#) and [CO-30, "Inspection"](#).

SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

[MR20DE]

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Periodical Maintenance Specification

INFOID:000000000902604

ENGINE OIL CAPACITY (APPROXIMATE)

Unit: ℓ (Imp qt)

Drain and refill	With oil filter change	4.4 (3-7/8)
	Without oil filter change	4.2 (3-3/4)
Dry engine (Overhaul)		5.2 (4-5/8)

Engine Oil Pressure

INFOID:000000000902605

Engine speed (rpm)	Approximate discharge pressure* [kPa (bar, kg/cm ² , psi)]
Idle speed	More than 80 (0.80, 0.8, 12)
2,000	More than 450 (4.50, 4.6, 65)

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

PRECAUTION

PRECAUTIONS

Precaution for Liquid Gasket

INFOID:000000001062305

REMOVAL OF LIQUID GASKET

- After removing the mounting bolts and nuts, separate the mating surface using a seal cutter and remove the liquid gasket.

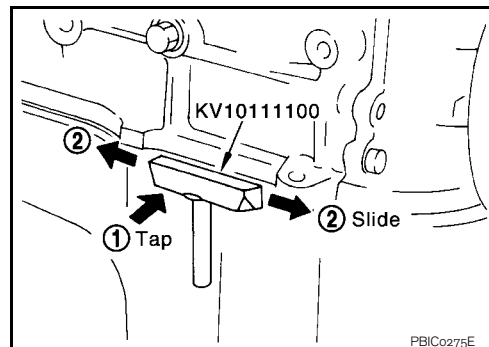
CAUTION:

Be careful not to damage the mating surfaces.

- In areas where the cutter is difficult to use, use a plastic hammer to lightly tap the gasket applied area.

CAUTION:

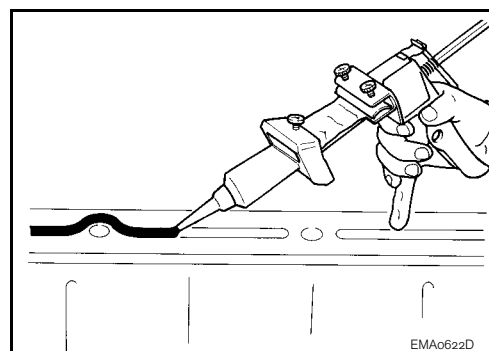
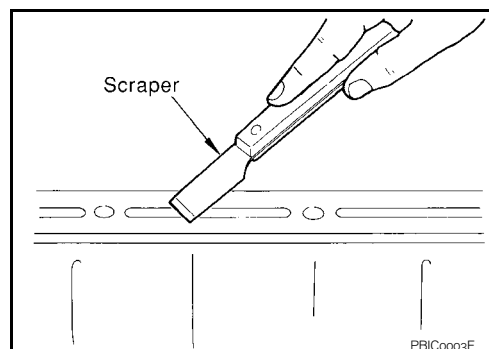
If for some unavoidable reason a tool such as a flat-bladed screwdriver is used, be careful not to damage the mating surfaces.



LIQUID GASKET APPLICATION PROCEDURE

- Using a scraper, remove the old liquid gasket adhering to the gasket application surface and the mating surface.
 - Remove the liquid gasket completely from the groove of the gasket application surface, mounting bolts and bolt holes.
- Wipe the gasket application surface and the mating surface with white gasoline (lighting and heating use) to remove adhering moisture, grease and foreign materials.
- Attach the liquid gasket to the tube presser.

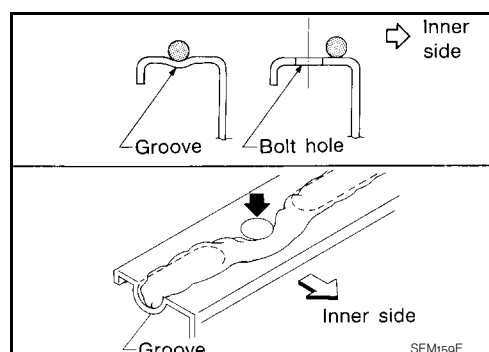
Use Genuine Liquid Gasket or equivalent.
- Apply the gasket without breaks to the specified location with the specified dimensions.
 - If there is a groove for the liquid gasket application, apply the gasket to the groove.



- As for the bolt holes, normally apply the gasket inside the holes. If specified, it should be applied outside the holes. Make sure to read the instruction in this manual.
- Within five minutes of gasket application, install the mating component.
- If the liquid gasket protrudes, wipe it off immediately.
- Do not retighten after the installation.
- After 30 minutes or more have passed from the installation, fill the engine oil and coolant.

CAUTION:

If there are instructions in this manual, observe them.



PREPARATION

< PREPARATION >

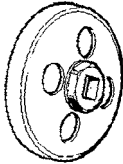
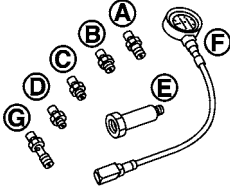
[K9K]

PREPARATION

PREPARATION

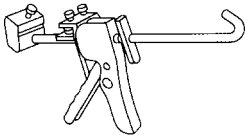
Special Service Tools

INFOID:000000001062306

NISSAN tool number (RENAULT tool number) Tool name	Description
KV113C0010 (Mot.1329) Oil filter wrench	Removing and installing oil filter
 MBIBo36gE	
KV113E0020 (Mot.836-05) Oil pressure gauge set	Measuring oil pressure Use C, E, F.
 MBIBo66gE	

Commercial Service Tools

INFOID:0000000001115769

NISSAN tool number Tool name	Description
WS39930000 Tube presser	Pressing the tube of liquid gasket
 S-NT052	

cardiagn.com

ON-VEHICLE MAINTENANCE

ENGINE OIL

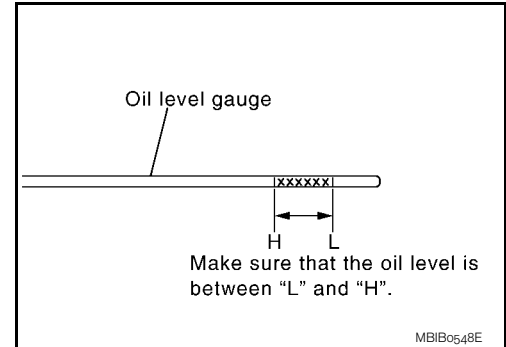
Inspection

INFOID:000000001062307

LU

OIL LEVEL AND MUDDINESS

- Before starting the engine, check the oil level placing vehicle horizontally. If the engine is already started, stop it and allow 10 minutes before checking.
- Make sure the oil level is within the range shown in the figure.
- If it is out of range, adjust it.
- Check the oil for white turbidity or remarkable contamination.
- If the oil becomes turbid and white, it is highly probable that it is contaminated with coolant. Find the cause and repair.



OIL LEAKAGE

Check for oil leakage around the following area.

- Oil pan
- Oil pan drain plug
- Oil pressure switch
- Oil filter bracket
- Vacuum pump
- Oil pump housing
- Mating surface between cylinder block and cylinder head
- Mating surface between cylinder head and rocker cover
- Oil cooler
- Crankshaft oil seals

OIL PRESSURE CHECK

WARNING:

- **Be careful not to burn yourself, as the engine oil is hot.**
- **Oil pressure check should be done in Neutral "N" position.**

1. Check the oil level.
2. Remove engine undercover.
3. Remove the oil pressure switch to connect the oil pressure gauge [SST: KV113E0020 (Mot. 836-05)].
4. After warming up the engine, make sure oil pressure corresponding to the engine speed is produced.

Idle speed : Refer to [LU-30, "Engine Oil Pressure"](#).

3000 rpm : Refer to [LU-30, "Engine Oil Pressure"](#).

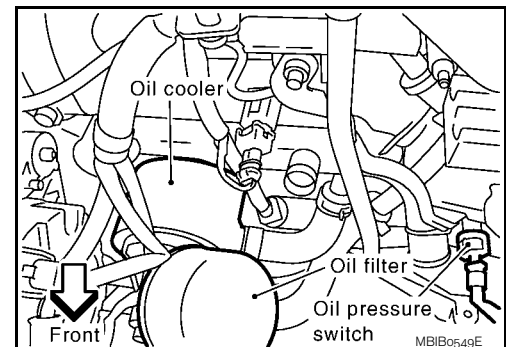
5. After checking, install the oil pressure switch as follows.
 - a. Remove old sealant adhering to the switch and engine.
 - b. Apply thread sealant.
Use Genuine Liquid Gasket or equivalent.

Oil pressure switch:

: **25 N·m (2.55 kg-m, 18.4 ft-lb)**

6. Start engine and check for oil leakage.

Draining



INFOID:000000001062308

ENGINE OIL

< ON-VEHICLE MAINTENANCE >

[K9K]

WARNING:

- Be careful not to burn yourself, as the engine oil is hot.
 - Prolonged and repeated contact with used engine oil may cause skin cancer: try to avoid direct skin contact with used oil. If skin contact is made, wash thoroughly with soap or hand cleaner as soon as possible.
1. Put vehicle horizontally.
 2. Warm up engine, and check for oil leakage from engine components.
 3. Stop engine and wait for 10 minutes.
 4. Loosen oil filler cap.
 5. Remove drain plug and then drain engine oil.

Refilling

INFOID:000000001062309

1. Refill with new engine oil.
 - Refer to [MA-21, "Fluids and Lubricants"](#).

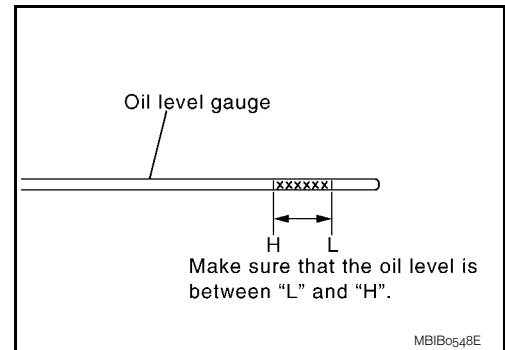
Oil capacity (Approximate)

: Refer to [LU-30, "Periodical Maintenance Specification"](#).

- The refill capacity depends on the oil temperature and drain time. Use these specifications for reference only. Always use the dipstick to determine when the proper amount of oil is in the engine.

CAUTION:

- Be sure to clean drain plug and install with new washer.
 - The refill capacity depends on the oil temperature and drain time. Use these specifications for reference only. Always use the dipstick to determine when the proper amount of oil is in the engine.
2. Warm up engine and check area around drain plug and oil filter for oil leakage.
 3. Stop engine and wait for 10 minutes.
 4. Check oil level.



OIL FILTER

Replacement

INFOID:000000001062311

1. Using an oil filter wrench [SST: KV113C0010 (Mot. 1329)], remove oil filter.

CAUTION:

- Be careful not to get burned when the engine and engine oil are hot.
- When removing, prepare a shop cloth to absorb any oil leakage or spillage.
- Do not allow engine oil to adhere to the drive belts.
- Completely wipe off any oil that adhere to the engine and the vehicle.

2. Remove foreign materials adhering to the oil filter installation surface.

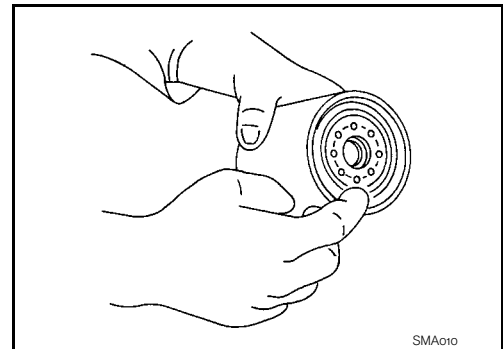
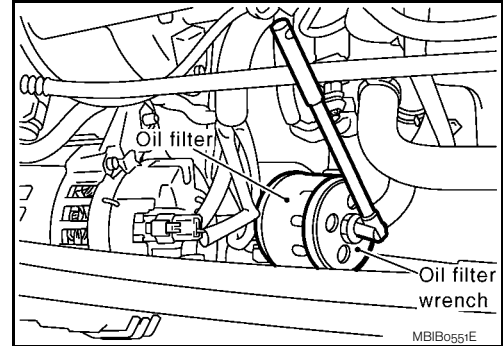
3. Install oil filter bracket to oil cooler.

CAUTION:**Install oil filter bracket, positioning lug in the hole of oil cooler.**

4. Apply engine oil to the oil seal contact surface of the new oil filter.
5. Install the oil filter until it comes into contact with the oil seal on the engine bracket.
6. Using an oil filter wrench [SST: KV113C0010 (Mot. 1329)], tighten oil filter.

 **14 N·m (1.4 kg-m, 10 ft-lb)**

7. After warming up the engine, check for engine oil leakage.
8. Check oil level and add engine oil. Refer to [LU-23](#).



OIL FILTER BRACKET

< ON-VEHICLE REPAIR >

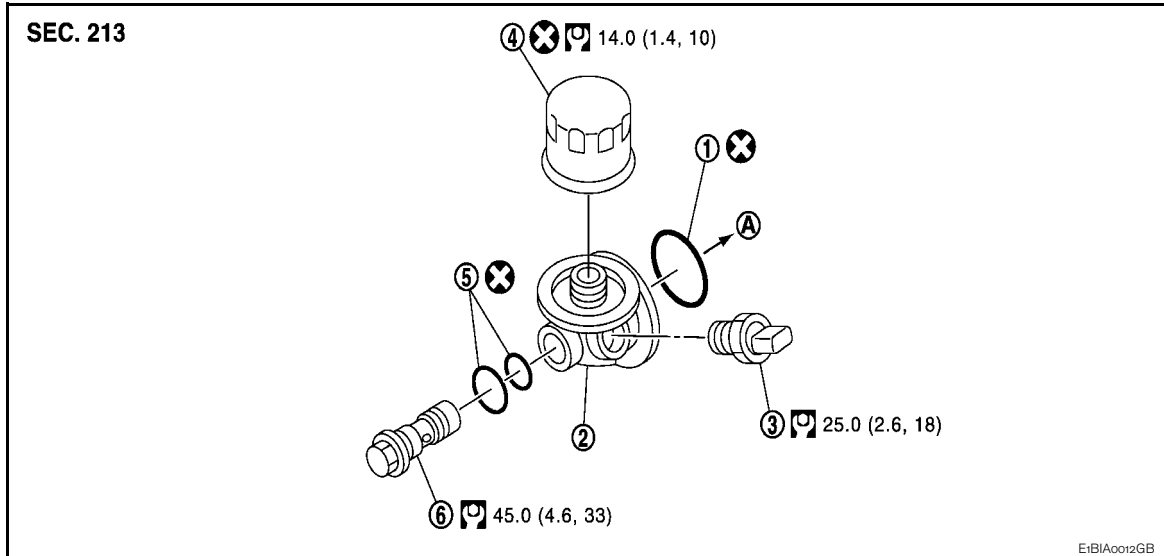
[K9K]

ON-VEHICLE REPAIR

OIL FILTER BRACKET

Exploded View

INFOID:000000001062314



- | | | |
|------------------|-----------------------|------------------------|
| 1. O-ring | 2. Oil filter bracket | 3. Oil pressure switch |
| 4. Oil filter | 5. O-ring | 6. Connecting bolt |
| A. To oil cooler | | |

Refer to [GI-4, "Components"](#) for symbols not described on the above.

Removal and Installation

INFOID:000000001062313

REMOVAL

CAUTION:

- Be careful not to get burned when the engine and engine oil are hot.
- When removing, prepare a shop cloth to absorb any oil leakage or spillage.
- Do not allow engine oil to adhere to the drive belts.
- Completely wipe off any oil that adhere to the engine and the vehicle.

1. Remove oil filter. Refer to [LU-25, "Replacement"](#).
2. Remove oil filter bracket.

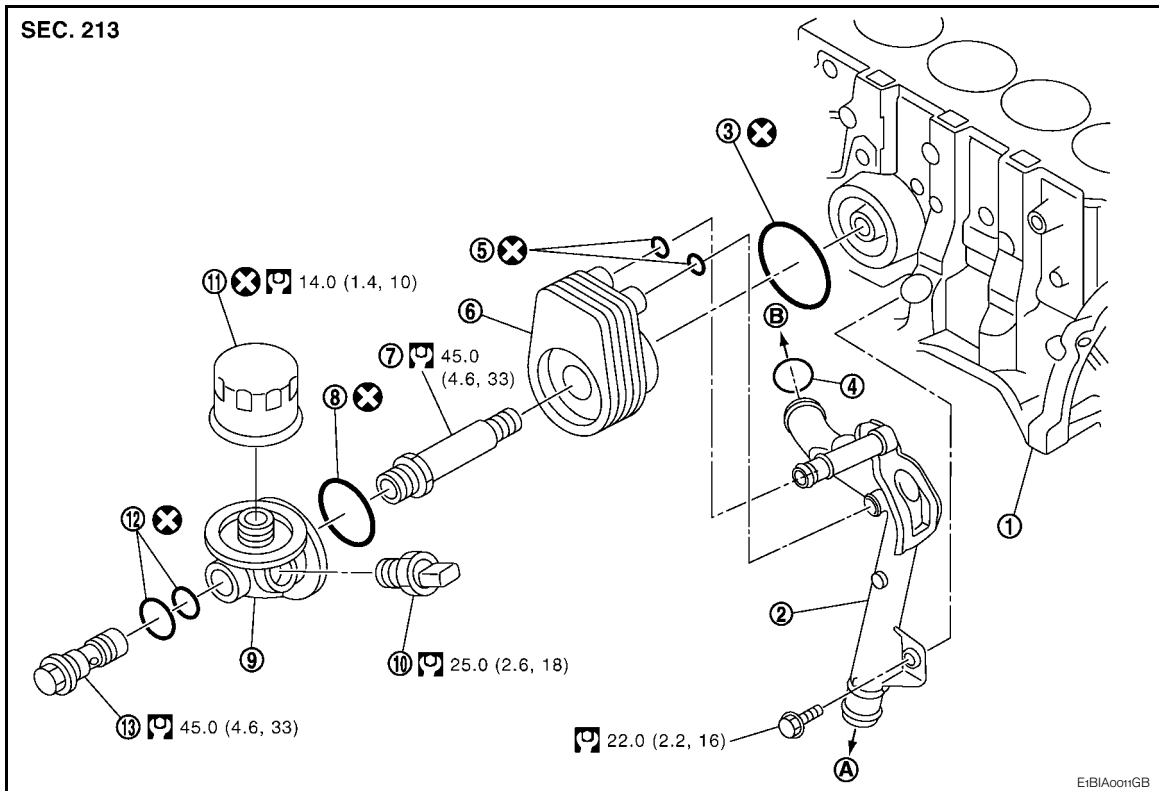
INSTALLATION

Install in the reverse order of removal.

OIL COOLER

Exploded View

INFOID:000000001062315



Removal and Installation

INFOID:000000001062316

CAUTION:

- Be careful not to get burned when the engine and engine oil are hot.
- When removing, prepare a shop cloth to absorb any oil leakage or spillage.
- Completely wipe off any oil that adhere to the engine and the vehicle.

REMOVAL

1. Drain engine coolant. Refer to [CO-52, "Draining"](#).

CAUTION:

Perform when engine is cold.

2. Remove oil filter and oil filter bracket. Refer to [LU-26, "Removal and Installation"](#).
3. Remove water hoses from oil cooler.
4. Remove oil cooler.

INSTALLATION

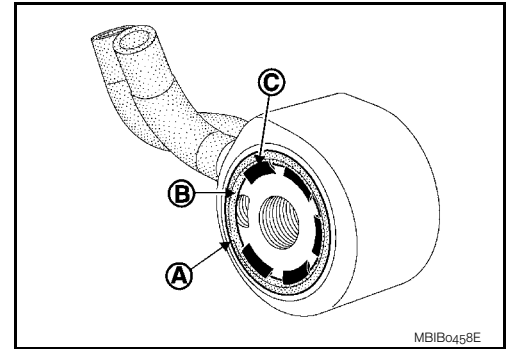
Installation is in reverse order of removal.

OIL COOLER

< ON-VEHICLE REPAIR >

[K9K]

- Replace the O-ring (A) of the oil cooler, positioning the lip (B) of the seal behind the lug (C) of the oil cooler.
- Confirm that no foreign objects are adhering to the installation planes of the oil cooler and block.



Inspection

INFOID:000000001062318

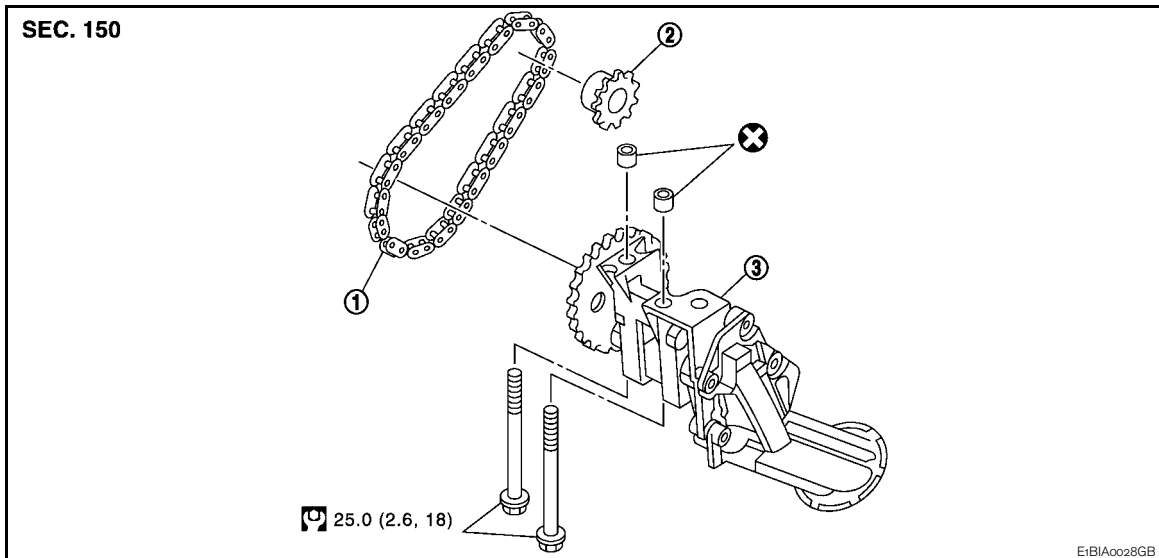
INSPECTION AFTER REMOVAL

Check oil cooler for cracks and clogging by blowing through coolant inlet. If necessary, replace oil cooler assembly.

OIL PUMP

Exploded View

INFOID:000000001062319



1. Oil pump drive chain
2. Crankshaft sprocket (oil pump drive chain)
3. Oil pump chain

Refer to [GI-4, "Components"](#) for symbols not described on the above.

Removal and Installation

INFOID:000000001062317

REMOVAL

1. Remove the following parts.
 - Battery ground cable
 - Undercover
 - RH front wheel
2. Remove right side splash cover.
3. Remove drive belt. Refer to [EM-259, "Removal and Installation"](#).
4. Remove oil pan. Refer to [EM-280, "Removal and Installation"](#).
5. Remove rear oil seal retainer. Refer to [EM-310, "Disassembly and Assembly"](#).
6. Remove oil pump drive chain. Refer to [EM-310, "Disassembly and Assembly"](#).
7. Remove oil pump assembly.

INSTALLATION

Refer to [EM-310, "Disassembly and Assembly"](#).

SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

[K9K]

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Periodical Maintenance Specification

INFOID:0000000001062322

ENGINE OIL CAPACITY (APPROXIMATE)

Unit: ℓ · (Imp qt)

With oil filter change	4.55 (4)
Without oil filter change	4.39 (3-7/8)
Dry engine (overhaul)	4.71 (4-1/8)

Engine Oil Pressure

INFOID:0000000001062323

kPa (bar, kg/cm², psi)

Engine speed	Approximate discharge pressure
Idle speed	120 (1.2, 1.22, 17.4)
3,000 rpm	350 (3.5, 5.57, 50.8)