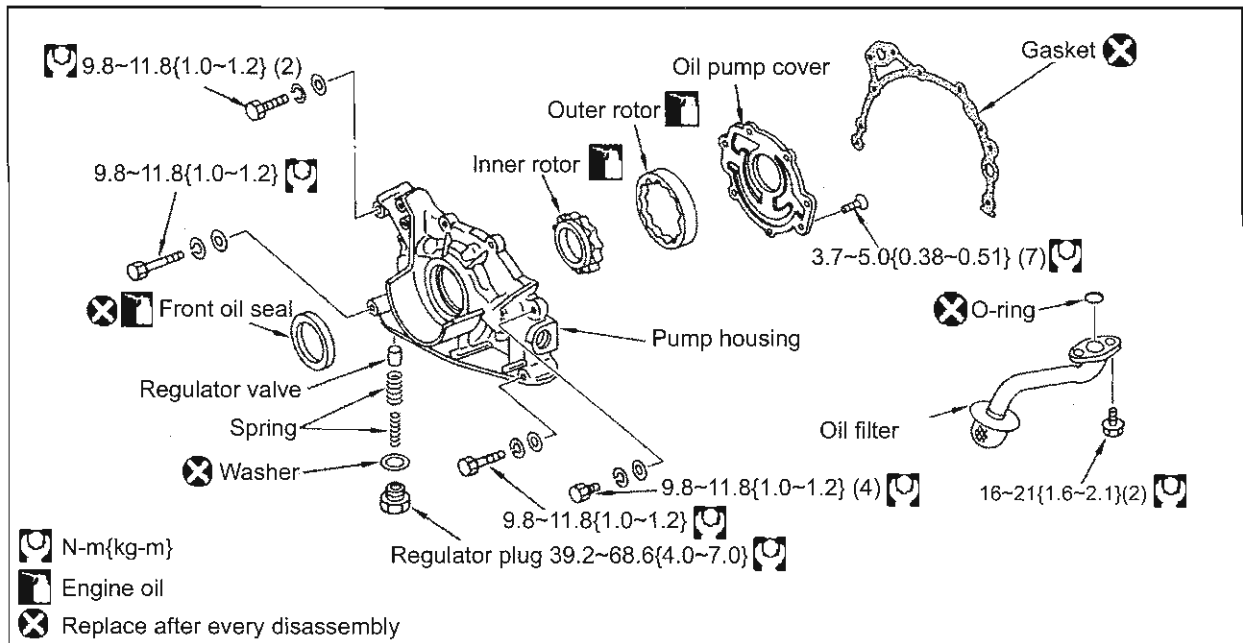


10. OIL PUMP

**Removal**

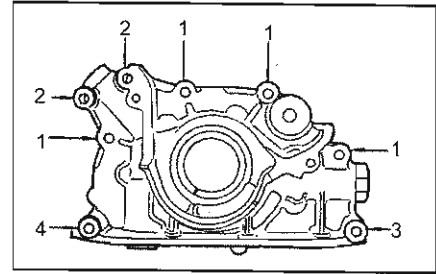
1. Remove the battery negative terminal.
 - (1) Open the boot lid.
 - (2) Remove the boot front finisher and remove the negative battery terminal.
2. Remove the under cover.
3. Drain coolant from the radiator drain plug.
4. Drain the engine oil from the oil pan.
5. Remove the air duct (external air introduction side).
6. Remove the cooling fan.
7. Remove the radiator.
8. Remove auxiliary belt.
9. Remove the timing belt.
10. Remove the crank timing pulley.
11. Remove the timing belt rear cover.
12. Remove the oil pan.
13. Remove the oil pump.

Installation

1. Install the oil pump.
 - Use a scraper to remove old gasket from the oil pump and the cylinder block.
 - Use white gasoline to remove grease, water and rubbish from the installation surface.
 - Replace the gasket with a new one.
 - Align to the knock pin on the cylinder block side to install.
 - There are four types of oil pump installation bolts. Make sure to use the correct bolts.

RB25DE / RB25DET ENGINE

Installation position	Number	Installation bolt length below head (mm)
1	4	20
2	2	35
3	1	45
4	1	55



Tightening torque (N-m{kg-m}) 9.8~11.8{1.0~1.2}

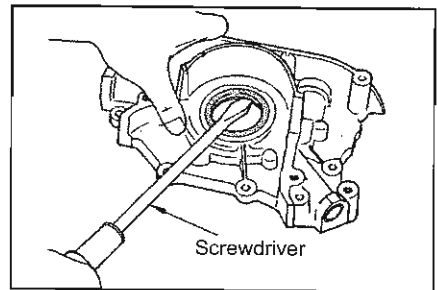
2. Install the rest in reverse order to the removal procedure.

Disassembly

1. Remove the front oil seal.
 - Use a tool such as a screwdriver to remove.

Caution:

Care must be taken not to damage the oil pump housing.



2. Remove the oil pump cover.
3. Remove the inner and outer rotor.
4. Disconnect the regulator plug and remove the spring and the regulator valve.

Inspection

Oil pump visual inspection

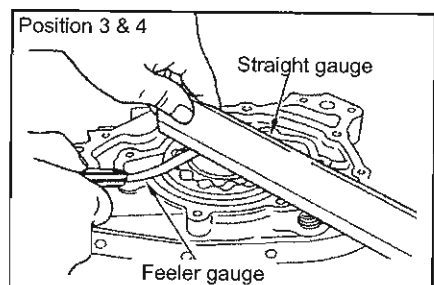
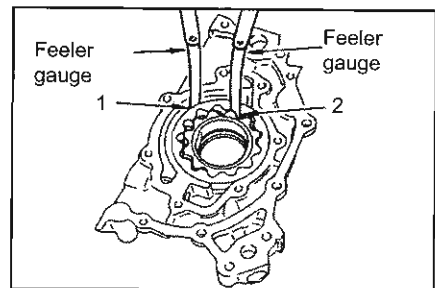
- Check for any wear or damage on the inner and outer rotor and the oil pump housing.
- Replace the oil pump ASSY if there is any abnormality.

Oil pump parts clearance inspection

- Use the feeler gauge to check the following clearance.

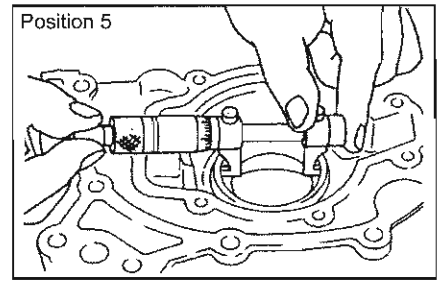
- (1) Outer rotor to oil pump housing clearance
Standard value (mm) 0.11~0.2
- (2) Outer rotor and inner rotor chip clearance.
Standard value (mm) Below 0.180
- (3) Inner rotor to oil pump housing side clearance
Standard value (mm) 0.05~0.09
- (4) Outer rotor to oil pump housing side clearance
Standard value (mm) 0.05~0.11

- Replace the oil pump ASSY if any of the measurements are out of standard value.



(5) Inner rotor to oil pump housing inlow area clearance.

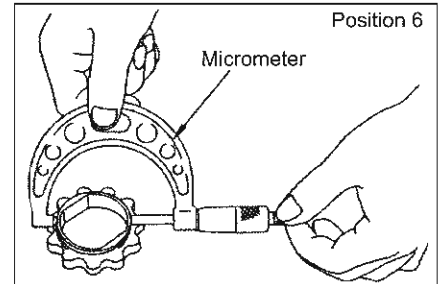
- Use method below to measure the clearance between the inner rotor and oil pump housing inlow area.
- Use a micrometer to measure the oil pump housing inlow inner diameter.



(6) Use a micrometer to measure the inner rotor inlow outer diameter.

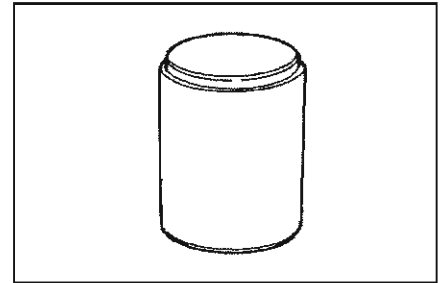
(Inner rotor to oil pump housing inlow area clearance) =
 (Oil pump housing inlow inner diameter) -
 (Oil pump housing inlow outer diameter)
 Standard value (mm) 0.045~0.091

- Replace the oil pump ASSY if the measurements are out of standard value.



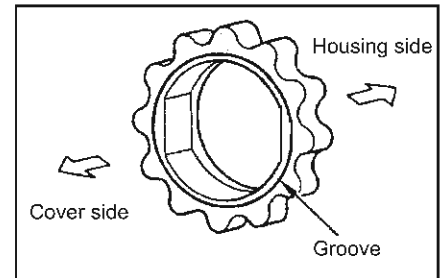
Regulator valve visual inspection

- Check for any wear or damage on the regulator valve rotational parts.
- Check the regulator spring for any abnormality.
- Replace the regulator valve or the oil pump ASSY if there is any fault.



Assembly

1. Install the inner and the outer rotor.
 - Apply engine oil to each rotational and moving parts.
 - Position the inner rotor groove to cover side.



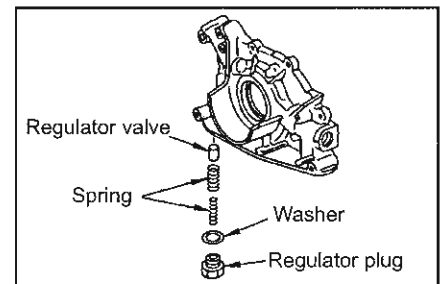
2. Tighten the oil pump cover installation screws equally.

Tightening torque (N-m{kg-m}) 3.7~5.0{0.38~0.51}

3. Install the regulator valve.

- Apply engine oil to rotational parts.
- Replace the regulator washer with a new one.
- Tighten the regulator plug.

Tightening torque (N-m{kg-m}) 39~69{4.0~7.0}



4. Install the front oil seal.

- Replace the oil seal with a new one.
- Check if there is any damage or deformation on oil seal periphery.
- Position the oil seal side with writing towards front.
- Use the oil seal drift to insert the oil seal in until level with installation surface.
- Apply engine oil or chassis grease to oil seal lip surface.

