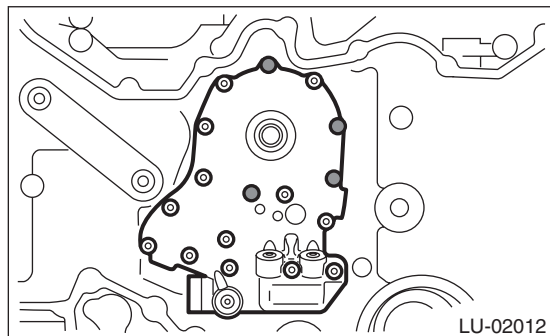


## 4. Oil Pump

### A: REMOVAL

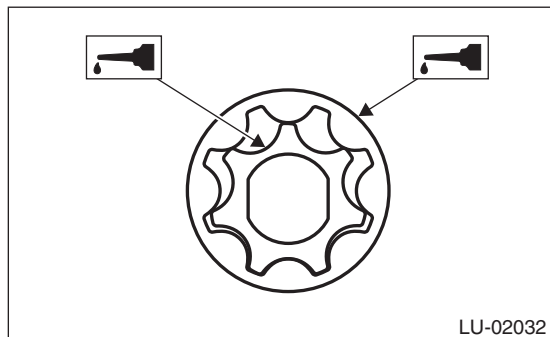
- 1) Set the vehicle on a lift.
- 2) Remove the collector cover.
- 3) Disconnect the ground cable from the battery.
- 4) Lift-up the vehicle.
- 5) Remove the under cover.
- 6) Drain engine coolant. <Ref. to CO(H6DO)-13, DRAINING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>
- 7) Lower the vehicle.
- 8) Remove the radiator. <Ref. to CO(H6DO)-18, REMOVAL, Radiator.>
- 9) Remove the V-belts. <Ref. to ME(H6DO)-40, REMOVAL, V-belt.>
- 10) Remove the front chain cover. <Ref. to ME(H6DO)-42, REMOVAL, Front Chain Cover.>
- 11) Remove the timing chain. <Ref. to ME(H6DO)-44, REMOVAL, Timing Chain Assembly.>
- 12) Remove the crank sprocket.
- 13) Remove the oil pump cover.



- 14) Remove the inner rotor and outer rotor.

### B: INSTALLATION

- 1) Apply a coat of engine oil to the whole area of inner rotor and outer rotor.



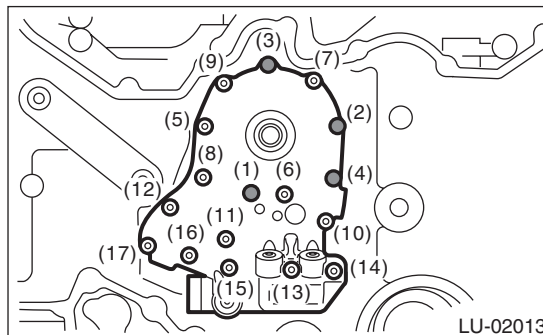
- 2) Install the inner rotor to the crank shaft, then assemble the outer rotor.
- 3) Install the oil pump cover.
- 4) Tighten the bolts in the numerical order as shown in the figure.

### CAUTION:

Make sure that the bolt is installed in correct position.

### Tightening torque:

**6.4 N·m (0.65 kgf-m, 4.7 ft-lb)**



Bolt installing position	Bolt dimension
(1) and (3)	6 × 14 × 14
(2) and (4)	6 × 35 × 18
(5), (6), (7), (8), (9), (10) and (11)	6 × 35 × 15
(12), (15), (16) and (17)	6 × 16 × 16
(13) and (14)	6 × 26 × 15

- 5) Install the crank sprocket.
- 6) Install the timing chain. <Ref. to ME(H6DO)-45, INSTALLATION, Timing Chain Assembly.>
- 7) Install the front chain cover. <Ref. to ME(H6DO)-42, INSTALLATION, Front Chain Cover.>
- 8) Install the V-belts. <Ref. to ME(H6DO)-40, INSTALLATION, V-belt.>
- 9) Install the radiator. <Ref. to CO(H6DO)-20, INSTALLATION, Radiator.>
- 10) Lift-up the vehicle.
- 11) Install the under cover.
- 12) Lower the vehicle.
- 13) Fill engine coolant. <Ref. to CO(H6DO)-13, FILLING OF ENGINE COOLANT, REPLACEMENT, Engine Coolant.>

## C: INSPECTION

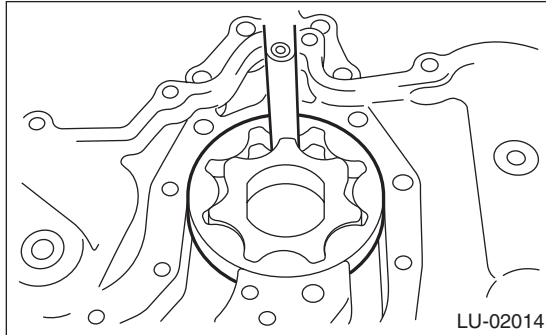
### 1. TIP CLEARANCE

Measure the tip clearance of rotors. If the clearance exceeds specification, replace the rotors as a matched set.

**Tip clearance:**

**Specification**

**0.04 — 0.14 mm (0.0016 — 0.0055 in)**



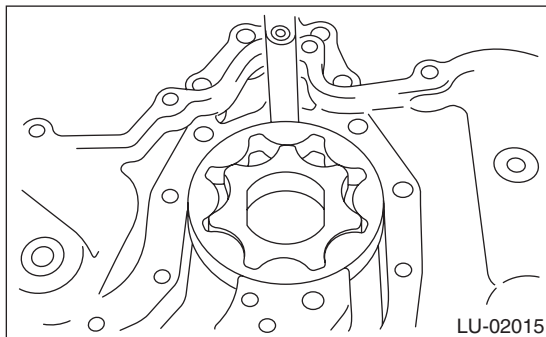
### 2. CASE CLEARANCE

Measure the clearance between the outer rotor and rear chain cover rotor housing. If the clearance exceeds the standard value, replace the outer rotor.

**Case clearance:**

**Specification**

**0.110 — 0.175 mm (0.0043 — 0.0069 in)**



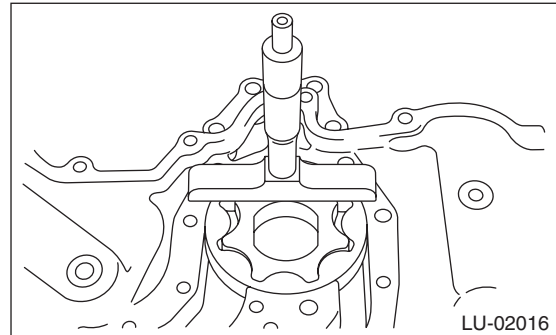
### 3. SIDE CLEARANCE

Measure the clearance between oil pump inner rotor and rear chain cover. If the clearance exceeds specification, replace the rotors as a matched set.

**Side clearance:**

**Specification**

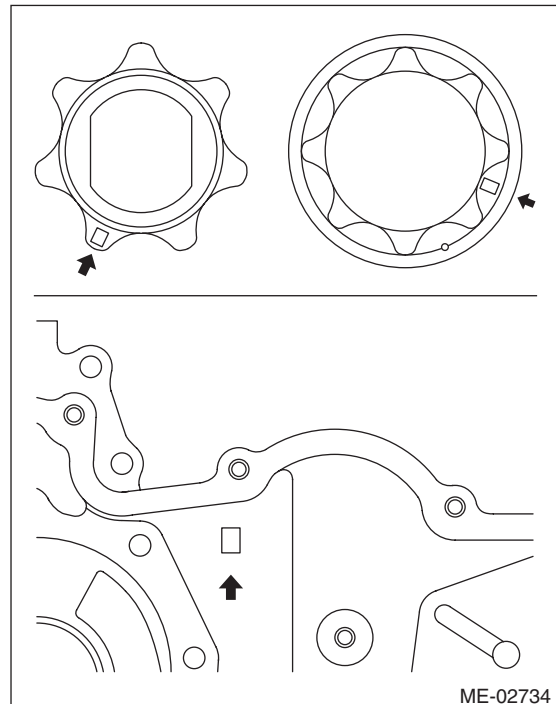
**0.020 — 0.046 mm (0.0008 — 0.0018 in)**



Perform the replacement parts selection as follows.

- When replacing all inner rotor, outer rotor and rear chain cover with new parts

On the inner rotor, outer rotor and the rear chain cover, there are identification marks in locations shown on the figure. Use the parts with the same identification marks.



# Oil Pump

## LUBRICATION

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- When replacing any one of the inner rotor, outer rotor and rear chain cover with new part, select suitable size from the following table so that side clearance meets the standard.

### Inner rotor

Classification	Part No.	Rotor thickness mm (in)
A	15015AA250	12.993 — 13.006 (0.51153 — 0.51205)
None	15015AA300	12.980 — 12.993 (0.51102 — 0.51153)
C	15015AA310	12.967 — 12.980 (0.51051 — 0.51102)

### Outer rotor

Classification	Part No.	Rotor thickness mm (in)
A	15016AA250	12.993 — 13.006 (0.51153 — 0.51205)
None	15016AA300	12.980 — 12.993 (0.51102 — 0.51153)
C	15016AA310	12.967 — 12.980 (0.51051 — 0.51102)

### Rear chain cover

Classification	Part No.	Rotor thickness mm (in)
A	13119AA020	13.026 — 13.039 (0.51295 — 0.51335)
B	13119AA050	13.013 — 13.026 (0.51232 — 0.51284)
C	13119AA060	13.000 — 13.013 (0.51181 — 0.51232)

## 4. OIL PUMP CASE

Check the worn shaft hole, clogged oil passage, crank and other parts for faults.