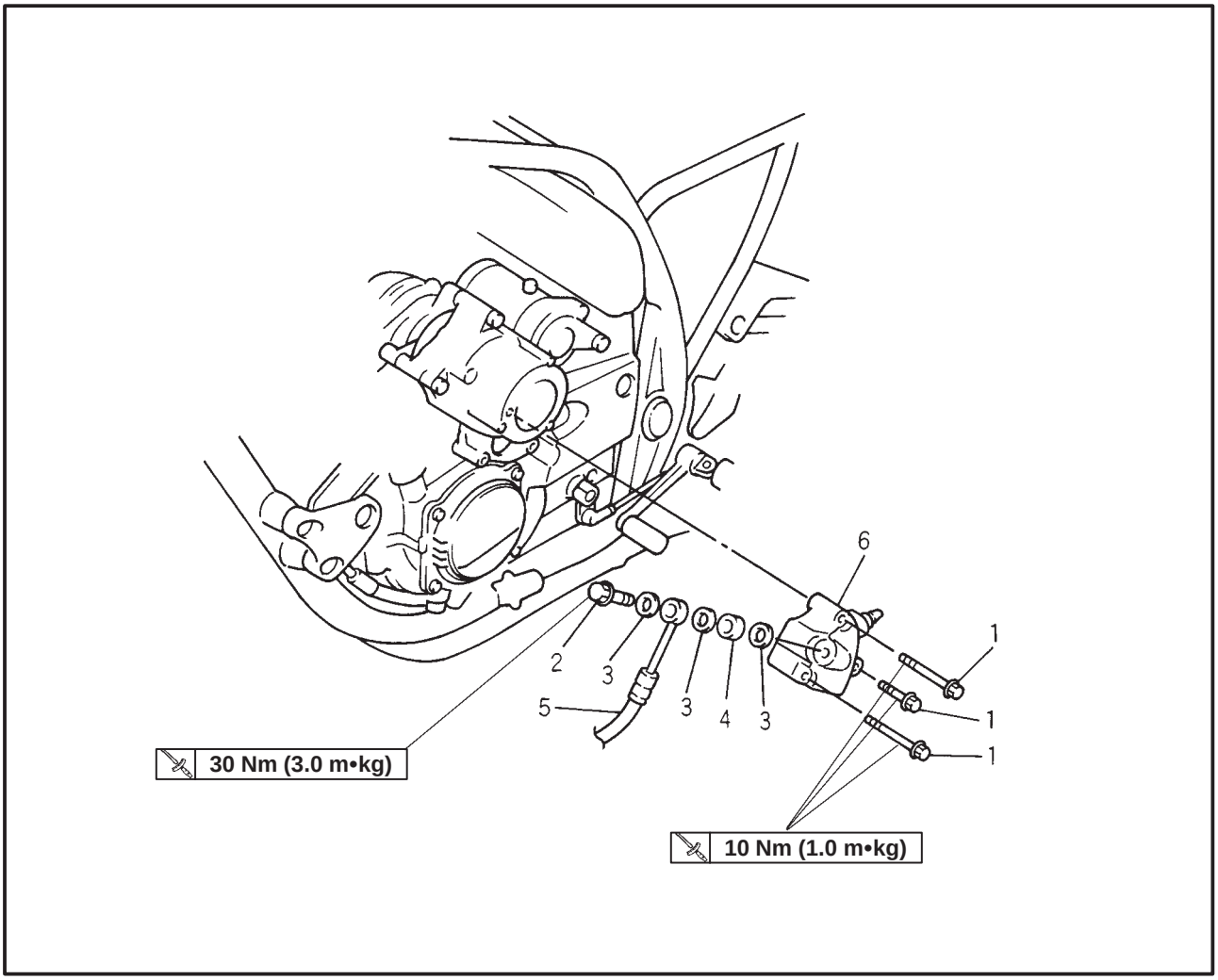
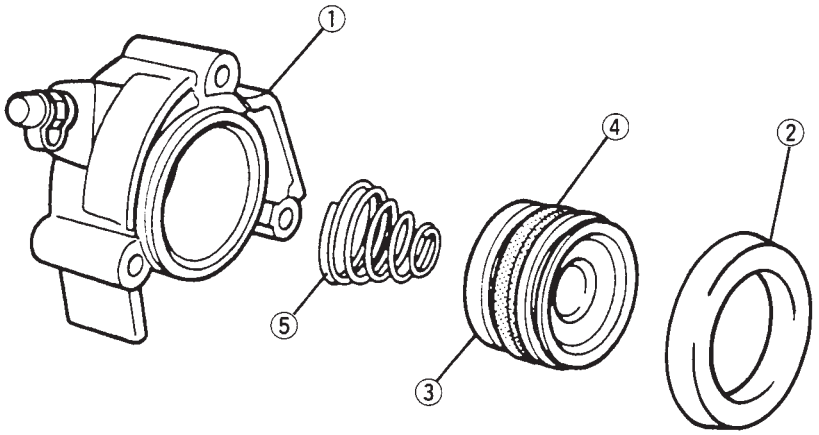
EAS00311

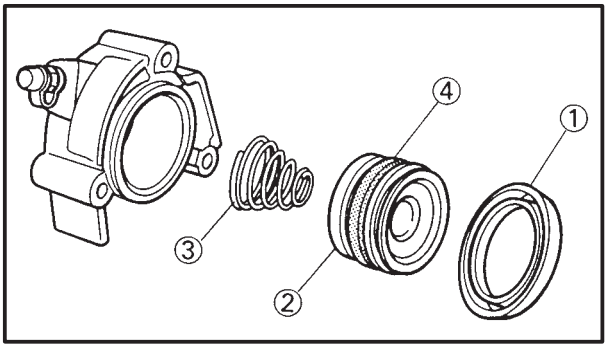
## CLUTCH RELEASE CYLINDER

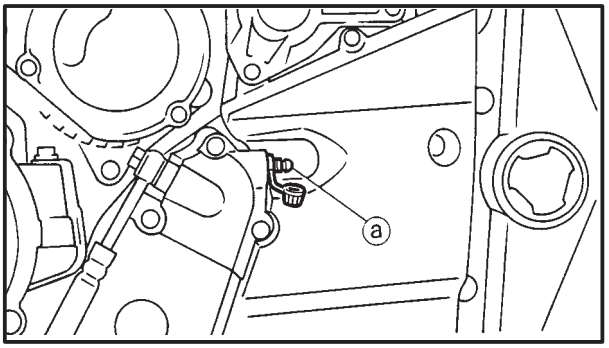


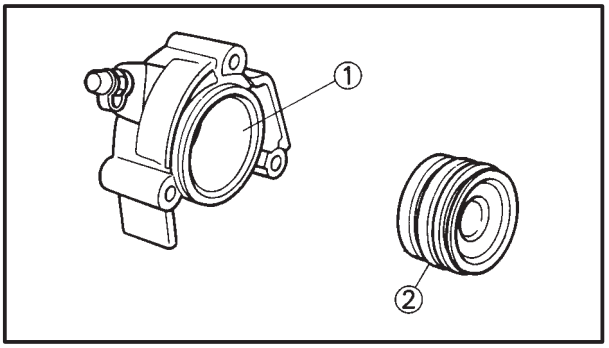

| Order | Job/Part | Q'ty | Remarks |
|---|---|---|---|
| | **Removing the clutch release cylinder** | | Remove the parts in the order listed.<br><br>Refer to "INSTALLING THE CLUTCH RELEASE CYLINDER". |
| 1 | Bolt | 3 | **NOTE:**<br>Before removing the clutch releace cylinder, drain the clutch fluid from the entire clutch system. |
| 2 | Union bolt | 1 | Refer to "INSTALLING THE CLUTCH RELEASE CYLINDER". |
| 3 | Copper washer | 3 | |
| 4 | Spacer | 1 | |
| 5 | Clutch hose | 1 | |
| 6 | Clutch release cylinder | 1 | |
| | | | For installation, reverse the removal procedure. |




| Order | Job/Part | Q'ty | Remarks |
|---|---|---|---|
| | **Disassembling the clutch release cylinder** | | Disassembly the parts in the order listed. |
| ① | Clutch release cylinder | 1 | Refer to "DISASSEMBLING THE CLUTCH RELEASE CYLINDER". |
| ② | Piston seal | 1 | |
| ③ | Clutch release cylinder piston | 1 | |
| ④ | Piston seal | 1 | |
| ⑤ | Spring | 1 | |
| | | | For assembly, reverse the disassembly procedure. |




EAS00313

**DISASSEMBLING THE CLUTCH RELEASE CYLINDER**

1. Remove:
   - piston seal ①
   - clutch release cylinder piston ②
   - spring ③
   - piston seal ④

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a. Blow compressed air into the clutch hose joint opening ⓐ to force out the piston from the clutch release cylinder.

**⚠ WARNING**

- **Cover the clutch release cylinder with a rag. Be careful not to get injured when the piston is expelled from the clutch release cylinder.**
- **Never try to pry out the clutch release cylinder piston.**

b. Remove the clutch release cylinder piston seals.

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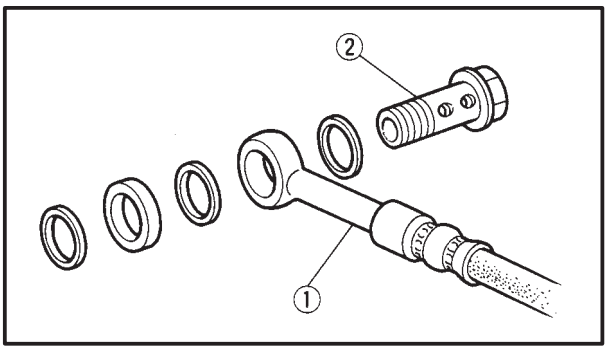
EAS00314

**CHECKING THE CLUTCH RELEASE CYLINDER**

| Recommended clutch component replacement schedule | |
|---|---|
| **Piston seals** | **Every two years** |
| **Clutch hose** | **Every two years** |
| **Clutch fluid** | **Every two years and whenever the clutch is disassembled** |

1. Check:
   - clutch release cylinder body
     Cracks/damage → Replace the clutch release cylinder.
2. Check:
   - clutch release cylinder ①
   - clutch release cylinder piston ②
     Rust/scratches/wear → Replace the clutch release cylinder and clutch release cylinder piston as a set.




EAS00315

**INSTALLING THE CLUTCH RELEASE CYLINDER**

1. Check:
   - copper washers (New)
   - clutch hose ①
   - union bolt ②

**⚠ WARNING**

**Proper clutch hose routing is essential to insure safe motorcycle operation. Refer to "CABLE ROUTING".**

**Union bolt**
**30 Nm (3.0 m•kg)**

2. Fill:
   - clutch master cylinder reservoir
     (with the specified amount of the recommended clutch fluid)

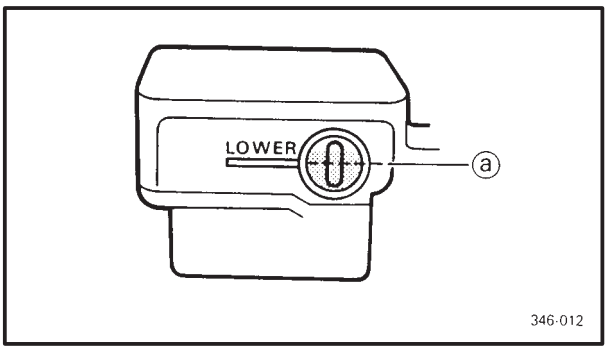
**Recommended clutch fluid**
**Brake fluid DOT 4**

**⚠ WARNING**

- **Use only the designated clutch fluid. Other clutch fluids may cause the rubber seals to deteriorate, causing leakage and poor clutch performance.**
- **Refill with the same type of clutch fluid that is already in the system. Mixing clutch fluids may result in a harmful chemical reaction, leading to poor clutch performance.**
- **When refilling, be careful that water does not enter the reservoir. Water will significantly lower the boiling point of the clutch fluid and could cause vapor lock.**

**CAUTION:**

**Clutch fluid may damage painted surfaces or plastic parts. Therefore, always clean up any spilt clutch fluid immediately.**

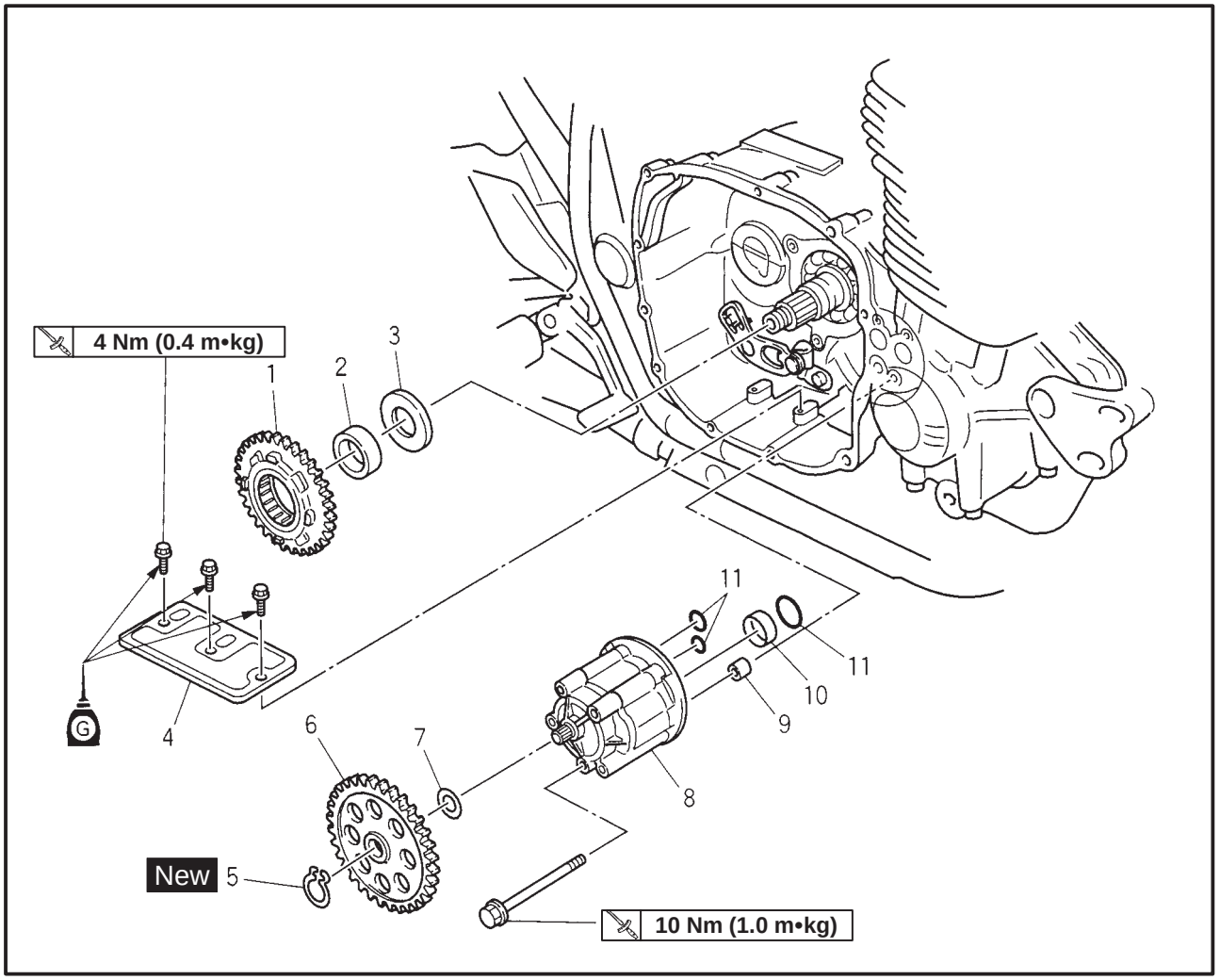



**NOTE:**

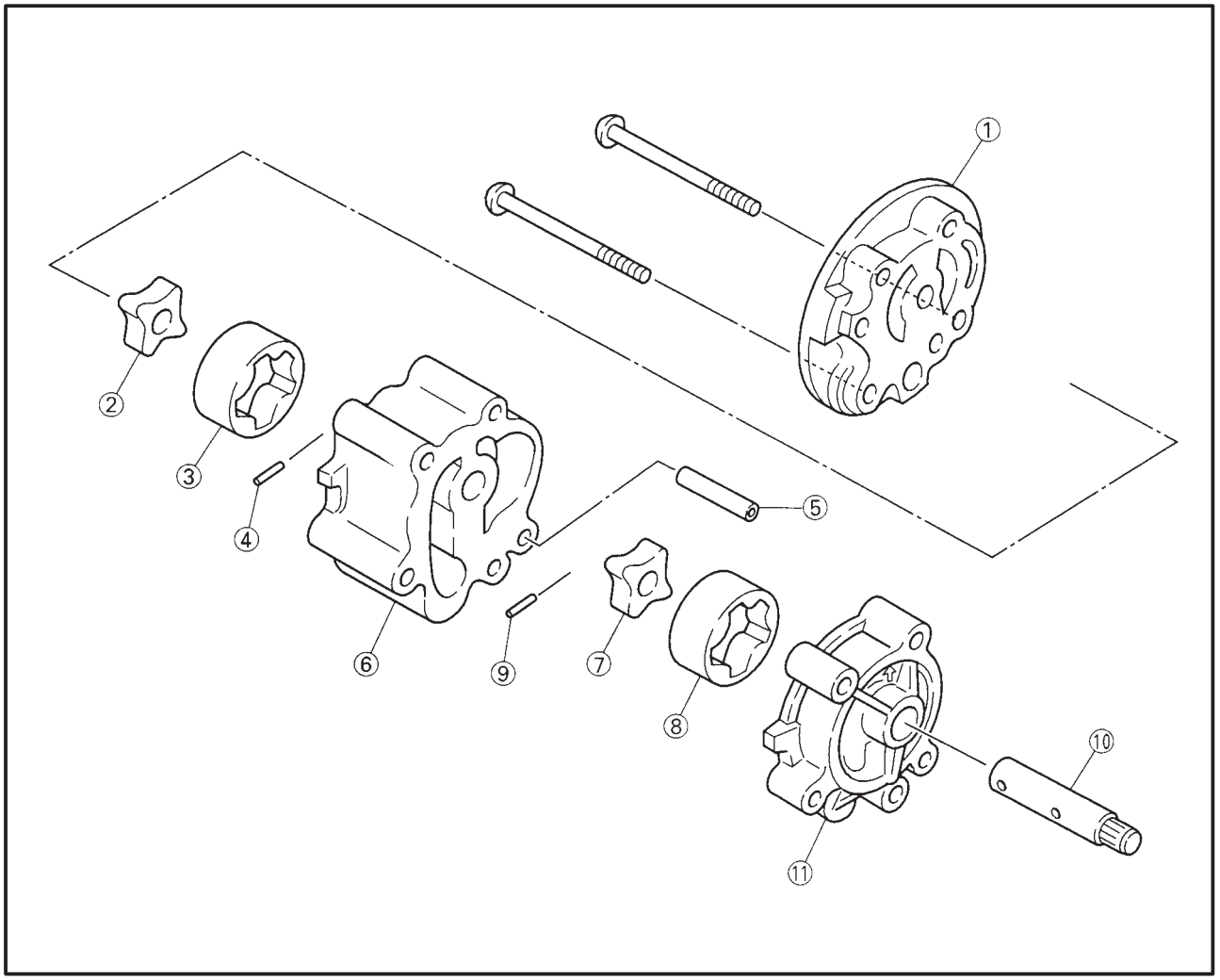
In order to ensure a correct reading of the clutch fluid level, make sure that the top of the reservoir is horizontal.

3. Bleed:
   • clutch system
   Refer to "BLEEDING THE HYDRAULIC CLUTCH SYSTEM" in chapter 3.
4. Check:
   • clutch fluid level
   Below the minimum level mark ⓐ → Add the recommended clutch fluid to the proper level.
   Refer to "CHECKING THE CLUTCH FLUID LEVEL" in chapter 3.
5. Check:
   • clutch lever operation
   Soft or spongy feeling → Bleed the clutch system.
   Refer to "BLEEDING THE HYDRAULIC CLUTCH SYSTEM" in chapter 3.

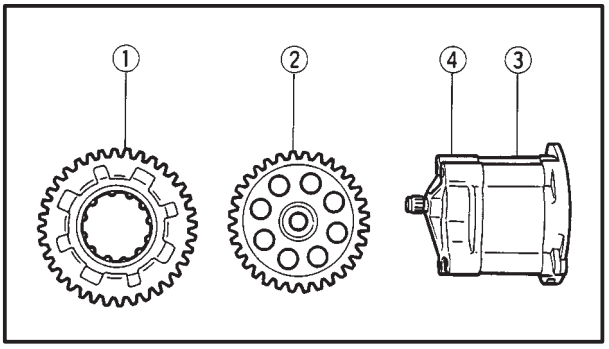
## OIL PUMP




| Order | Job/Part | Q'ty | Remarks |
|---|---|---|---|
| | **Removing the oil pump.** | | Remove the parts in the order listed. |
| | Clutch | | Refer to "INSTALLING THE CLUTCH". |
| 1 | Oil pump drive gear | 1 | |
| 2 | Collar | 1 | |
| 3 | Washer | 1 | |
| 4 | Oil buffer plate | 1 | |
| 5 | Circlip | 1 | |
| 6 | Oil pump driven gear | 1 | |
| 7 | Washer | 1 | |
| 8 | Oil pump | 1 | Refer to "INSTALLING THE OIL PUMP". |
| 9 | Dowel pin | 1 | |
| 10 | Collar | 1 | |
| 11 | O-ring | 3 | |
| | | | For installation, reverse the removal procedure. |



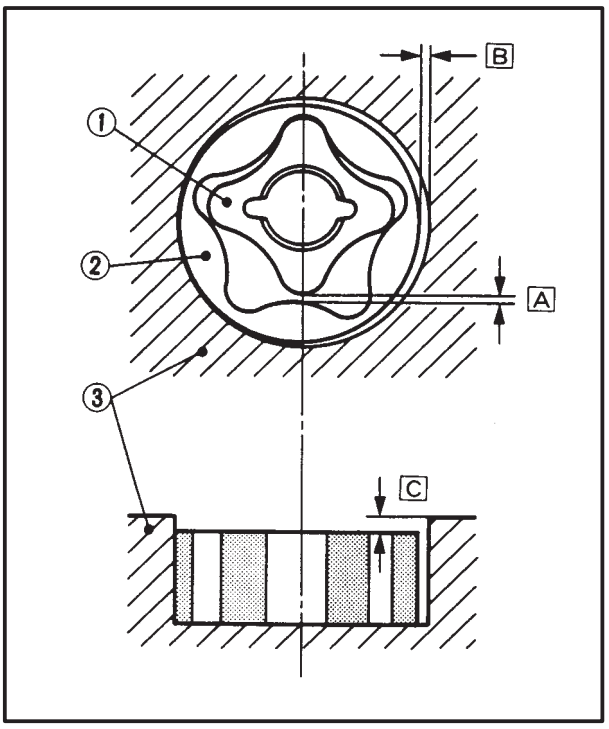

| Order | Job/Part | Q'ty | Remarks |
|---|---|---|---|
| | **Disassembling the oil pump** | | Disassembly the parts in the order listed. |
| ① | Oil pump housing | 1 | |
| ② | Inner rotor | 1 | |
| ③ | Outer rotor | 1 | |
| ④ | Pin | 1 | |
| ⑤ | Dowel pin | 1 | |
| ⑥ | Oil pump housing | 1 | Refer to "ASSEMBLING THE OIL PUMP". |
| ⑦ | Inner rotor | 1 | |
| ⑧ | Outer rotor | 1 | |
| ⑨ | Pin | 1 | |
| ⑩ | Oil pump shaft | 1 | |
| ⑪ | Oil pump cover | 1 | |
| | | | For assembly, reverse the disassembly procedure. |




EAS00364
**CHECKING THE OIL PUMP**

1. Check:
   - oil pump drive gear ①
   - oil pump driven gear ②
   - oil pump housing ③
   - oil pump housing cover ④

   Cracks/damage/wear → Replace the defective part(-s).




2. Measure:
   - inner-rotor to outer-rotor tip clearance A
   - outer-rotor to oil-pump-housing clearance B
   - oil-pump-housing to inner-rotor and outer-rotor clearance C

   Outer of specification → Replace the oil pump.

① Inner rotor
② Outer rotor
③ Oil pump housing

**Inner-rotor to outer-rotor tip clearance**
**0.12 ~ 0.17 mm <Limit 0.2 mm>**
**Outer-rotor to oil-pump-housing clearance**
**0.03 ~ 0.08 mm <Limit 0.15 mm>**
**Oil-pump-housing to inner-rotor and outer-rotor clearance**
**0.03 ~ 0.08 mm <Limit 0.15 mm>**

3. Check:
   - oil pump operation

   Unsmooth → Repeat steps (1) and (2) or replace the defective part(-s).