# **CATERPILLAR®**

## Service Repair Manual

Models

## 330D2 and 330D2 L Excavator

### **Disassembly and Assembly**

C7.1 Engines

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## **Engine Oil Pump - Install**

**SMCS -** 1304-012

## **Installation Procedure**

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	7H-1942	Dial Indicator	1
	-	Magnetic Base and Stand	1

### NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

### NOTICE

If any part of the engine oil pump is worn or damaged, the complete assembly of the engine oil pump must be replaced.

1. Ensure that all components of the engine oil pump are clean and free from wear and damage. Refer to System Operation, Testing and Adjusting, "Engine Oil Pump - Inspect"

for more information. Replace the complete assembly of the engine oil pump if any of the components are worn or damaged.

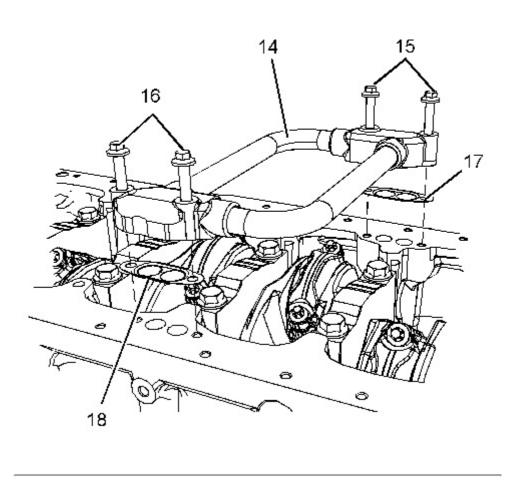
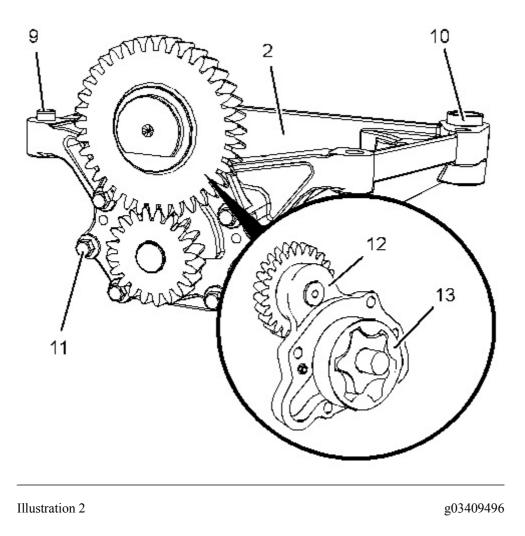


Illustration 1

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- 2. If necessary, follow Step 2.a through step 2.d to install cross over tube assembly (14).
  - a. Install new gasket (17) and new gasket (18).
  - b. Position cross over tube assembly (14) onto the cylinder block.
  - c. Install bolts (15) and bolts (16) to cross over tube assembly (14) finger tight.
  - d. Tighten bolts (15) and bolts (16) to a torque of 22 N  $\cdot$  m (195 lb in).



- 3. If necessary, follow Step 3.a through step 3.d to assemble engine oil pump assembly (2).
  - a. Lubricate the internal components for the assembly of the engine oil pump with clean engine oil.
  - b. Install outer rotor (13) to oil pump assembly (2). Ensure that the outer rotor is installed in the outer rotor original position and orientation.
  - c. Install front cover assembly (12) to engine oil pump assembly (2).
  - d. Install bolts (11) finger tight. Tighten the bolts to a torque of 22 N·m (195 lb in).
- 4. Ensure that dowel (9) and dowel (10) are correctly located in the housing of engine oil pump (2).
- 5. Install bolts (7). Tighten the bolts to a torque of  $22 \text{ N} \cdot \text{m}$  (195 lb in).
- 6. Install the assembly of engine oil pump (2) to the cylinder block. Ensure that dowel (9) and dowel (10) are correctly aligned with the holes in the cylinder block.
- 7. Install bolts (1) to assembly of engine oil pump (2). Tighten the bolts to a torque of 22 N⋅m (195 lb in).
- 8. Use Tooling (A) to check the backlash between idler gear and the crankshaft gear. Refer to Specifications, "Gear Group (Front)" for more information.

- 9. If suction pipe (5) had a support bracket, Follow Step 9.a through Step 9.e in order to install support bracket and the suction pipe.
  - a. Install a new gasket (3) (not shown) to suction pipe (5).
  - b. Install bolts (4) to suction pipe (1).
  - c. Position the assembly of suction pipe (5) onto oil pump (2). Tighten bolts (4) to a torque to 22 N⋅m (195 lb in).
  - d. Position bracket (8) onto cylinder block and retaining clip. Install bolt (7) to the bracket. Install bolt (6) to the retaining clip. Hand tighten the bolts.

Note: Ensure the correct location and orientation of the bracket and the retaining clip.

e. Tighten bolt (6) to a torque of 22 N $\cdot$ m (195 lb in).

Tighten bolt (7) to a torque of 44 N $\cdot$ m (32 lb ft).

**Note:** Ensure that the suction pipe and the bracket are not strained as the bolts are tightened.

#### End By:

a. Install the engine oil pan. Refer to Disassembly and Assembly, "Engine Oil Pan - Install" for the correct procedure.

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