Product: WHEEL SCRAPER
Model: 637D WHEEL SCRAPER 4JB
Configuration: 637D COAL SCRAPER 4JB00001-UP (MACHINE) POWERED BY 3306 ENGINE

Disassembly and Assembly 3304B and 3306B Engines for Caterpillar Built Machines Media Number -SENR5598-09 Publication Date -01/01/2013

Date Updated -25/01/2013

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# **Camshaft - Remove and Install**

SMCS - 1210-010

# **Removal Procedure**

#### **Start By:**

- A. Remove the valve lifters. Refer to Disassembly and Assembly, "Lifter Group Remove and Install".
- B. Remove the timing gear cover. Refer to Disassembly and Assembly, "Front Housing Remove".

### NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

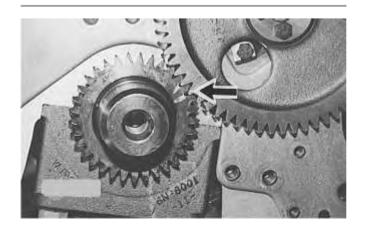


Illustration 1

1. Turn the crankshaft to top center compression stroke for the No. 1 piston. The "C" mark on the crankshaft gear will be aligned with the "C" mark on the camshaft gear.

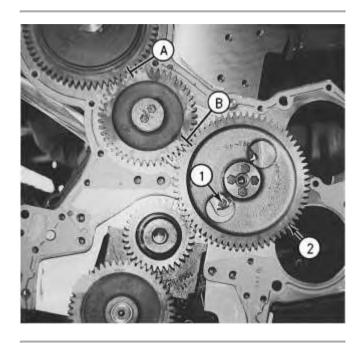
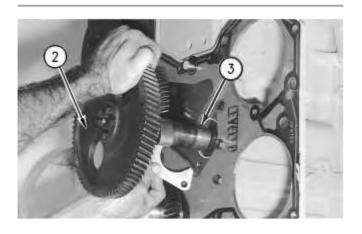


Illustration 2



**Note:** Put a mark on the teeth of the fuel injection pump drive gear and the idler gear at location (A). This will help to keep the engine timing correct during the removal and the installation of the camshaft. Put a mark on the teeth of the idler gear and camshaft gear (2) at location (B). When the camshaft is installed, the engine timing will be correct when the mark at location (A) is aligned with the mark at location (B) and the "C" mark on the crankshaft gear is aligned with the "C" mark on the camshaft gear.

2. Remove the bolts, the lock and washer (1).



### NOTICE

Do not damage the lobes or the bearings when the camshaft is removed.

- 3. Carefully remove camshaft (3) from the engine.
- 4. If necessary, remove the bolts that hold camshaft drive gear (2) to the camshaft and remove the gear.

## **Installation Procedure**

### NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

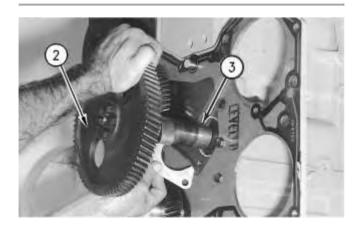


Illustration 4

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1. Put camshaft drive gear (2) in position on the end of camshaft (3). Install the bolts that hold camshaft drive gear (2) to camshaft (3). Tighten the bolts to a torque of  $55 \pm 7 \text{ N} \cdot \text{m} (41 \pm 5 \text{ lb ft})$ .

### NOTICE

Do not damage the lobes or the bearings when the camshaft is installed.

2. Put **8T-2998** Camshaft Lubricant on the camshaft lobes only and put clean engine oil on the bearing journals.

**Note:** During the installation of camshaft (3), rotate the camshaft in both directions in order to prevent binding in the camshaft bearing bores.

3. Carefully install camshaft (3) into the engine.



Illustration 5

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Illustration 6

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4. Make sure that the mark on the teeth of the fuel injection pump drive gear and the idler gear are in alignment at location (A). Make sure that the mark on the teeth of the idler gear and camshaft gear (2) are in alignment at location (B). Align the "C" marks on the crankshaft gear and camshaft gear (2). When all of the timing marks are in alignment the engine timing is correct.

5. Install washer (1), the lock and the two bolts that hold the camshaft in position in the engine.

### End By:

- a. Install the valve lifters. Refer to Disassembly and Assembly, "Lifter Group Remove and Install".
- b. Install the timing gear cover. Refer to Disassembly and Assembly, "Front Housing Install".

#### **Disassembly and Assembly**

**3304B and 3306B Engines for Caterpillar Built Machines** Media Number -SENR5598-09 Publication Date -01/01/2013

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## **Camshaft Bearings - Remove and Install**

SMCS - 1211-010

## **Removal Procedure**

Table 1 Required Tools				
Tool	Part Number	Part Description	Qty	
A	8S-2241	Camshaft Bearing Tool Group	1	
	8H-0684	Ratchet Wrench	1	

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#### **Start By:**

- A. Remove the Flywheel Housing. Refer to Disassembly and Assembly, "Flywheel Housing Remove and Install".
- B. Remove the Oil Pan Plate. Refer to Disassembly and Assembly, "Oil Pan Plate Remove and Install".
- C. Remove the Camshaft. Refer to Disassembly and Assembly, "Camshaft Remove and Install".

### NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

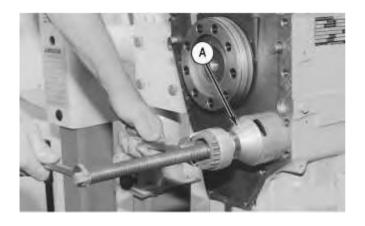


Illustration 1

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1. Use Tool (A) to remove the camshaft bearing from the cylinder block. Start with the front bearings and work to the rear bearing.

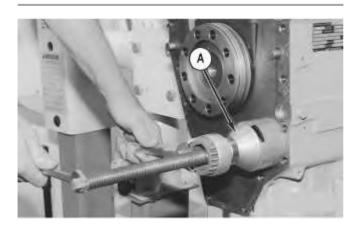
# **Installation Procedure**

Table 2					
Required Tools					
Tool	Part Number	Part Description	Qty		
A	8S-2241	Camshaft Bearing Tool Group	1		
	8H-0684	Ratchet Wrench	1		

### NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.



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