

Product: TRACK-TYPE TRACTOR

Model: D6H TRACK-TYPE TRACTOR 3YG

Configuration: D6H & D6H LGP SERIES II TRACTORS /DIFFERENTIAL STEERIN/ 3YG04000-UP (MACHINE) POWERED BY 3306 ENGINE

Disassembly and Assembly 3304B and 3306B Engines for Caterpillar Built Machines

Media Number -SEN5598-09

Publication Date -01/01/2013

Date Updated -25/01/2013

i01037991

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.

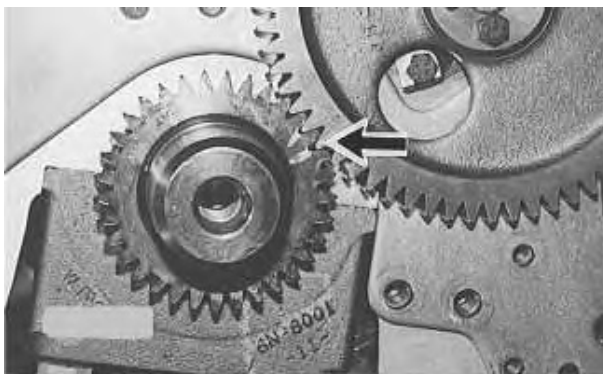


Illustration 1

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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.

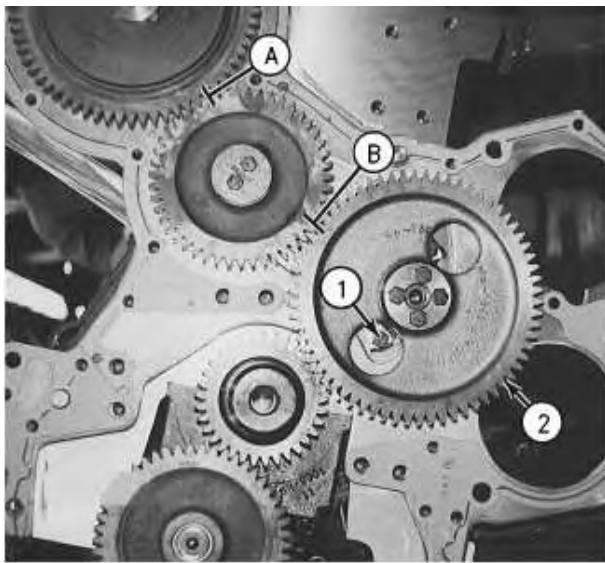


Illustration 2

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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) .

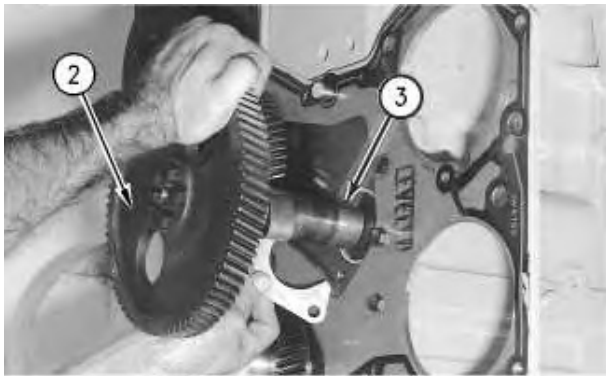


Illustration 3

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NOTICE

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

- Carefully remove camshaft (3) from the engine.
- 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.

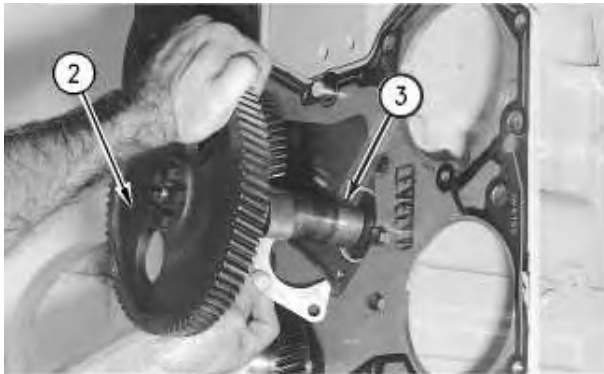


Illustration 4

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- 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 ± 7 N·m (41 ± 5 lb ft).

NOTICE

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

- 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.

- Carefully install camshaft (3) into the engine.
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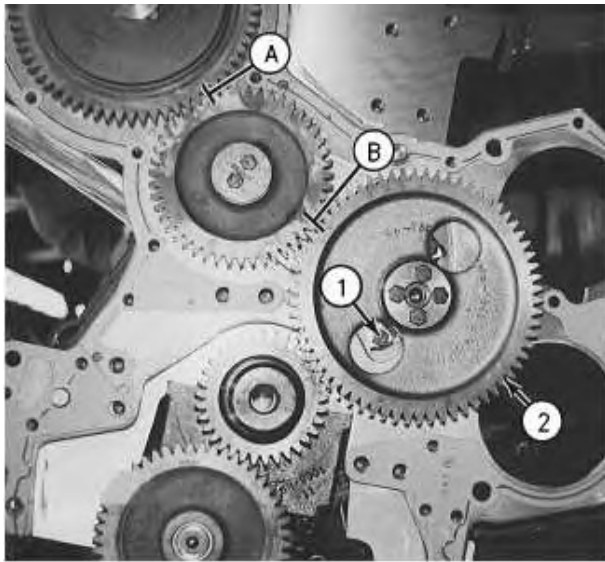


Illustration 5

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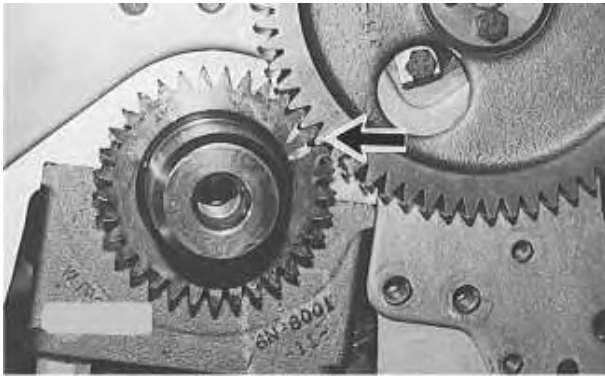


Illustration 6

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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".
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Disassembly and Assembly 3304B and 3306B Engines for Caterpillar Built Machines

Media Number -SENRS598-09

Publication Date -01/01/2013

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i02473351

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

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.

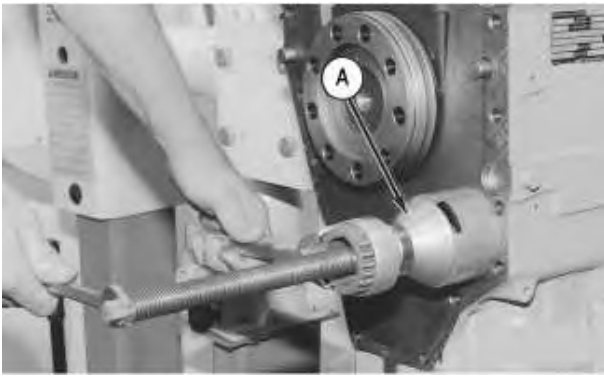


Illustration 1

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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.

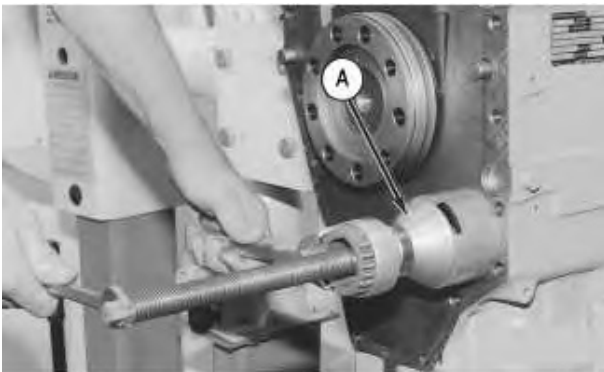


Illustration 2

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1. Use Tool (A) to install the camshaft bearings in the 3304B and 3306B cylinder block.

Note: The camshaft bearings in the 3304B have pressure lubrication. The intermediate camshaft bearings and the rear camshaft bearings in the 3306B have splash lubrication.

2. Install the camshaft bearings in the 3304B cylinder block, as follows:

(a) Install the front bearing to a depth of 0.57 ± 0.5 mm (0.022 ± 0.02 inch). Ensure that the oil holes are in a horizontal position and that the camshaft bearing joint is at the top of the engine. The camshaft bearing joint can not be more than 15° degrees from vertical in either direction.

(b) Install the center bearing to a depth of 303.2 ± 0.5 mm (11.94 ± 0.02 inch). Ensure that the oil holes in the camshaft bearing are in alignment with the oil holes in the cylinder block.

(c) Install the rear bearing to a depth of 604.9 ± 0.5 mm (23.81 ± 0.02 inch). Ensure that the oil holes in the camshaft bearing are in alignment with the oil holes in the cylinder block.

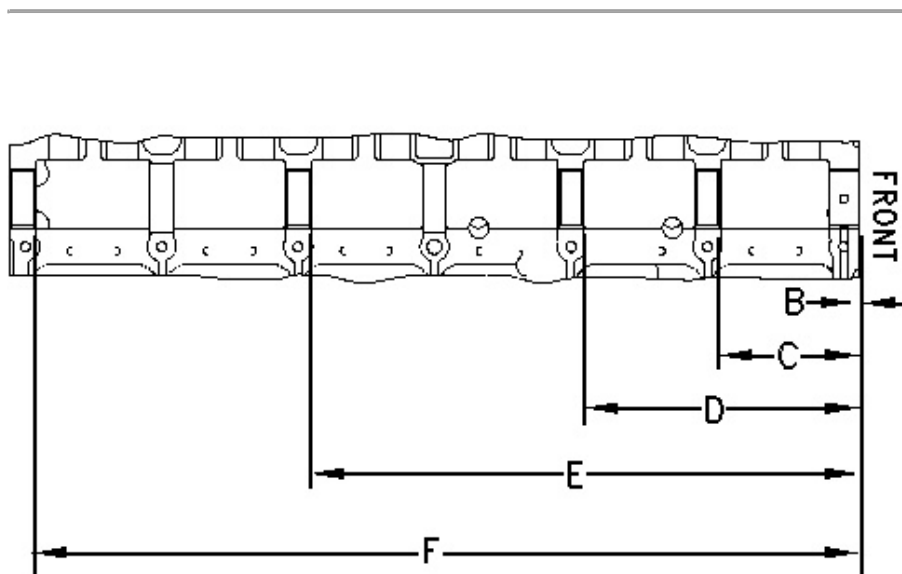


Illustration 3

g00478822

1. Install the camshaft bearings in the 3306B cylinder block, as follows:

2. Install front bearing (B) to a depth of 0.5 ± 0.5 mm ($.02 \pm .02$ inch). Ensure that the oil holes are in a horizontal position and that the camshaft bearing joint is at the top of the engine. The camshaft bearing joint cannot be more than 15 degrees from the vertical position in either direction.

3. Install the remainder of the bearings. Install the bearings to the dimensions that are given from the front face of the cylinder block: (C) 154.0 ± 0.5 mm ($6.06 \pm .02$ inch), (D) 303.2 ± 0.5 mm ($11.94 \pm .02$ inch), (E) 601.7 ± 0.5 mm ($23.69 \pm .02$ inch) and (F) 903.4 ± 0.5 mm ($35.57 \pm .02$ inch).

End By:

- Install the camshaft. Refer to Disassembly and Assembly, "Camshaft - Remove and Install".
- Install the oil pan plate. Refer to Disassembly and Assembly, "Engine Oil Pan Plate - Remove and Install".
- Install the flywheel housing. Refer to Disassembly and Assembly, "Flywheel Housing - Remove and Install".

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