

Product: WHEEL SCRAPER

Model: 639D WHEEL SCRAPER 88X

Configuration: 639D SCRAPER 88X00700-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

i01111802

Engine Balancer Shaft - Remove and Install

SMCS - 1220-010-JF

Removal Procedure

Start By:

- A. Remove the front housing cover. Refer to Disassembly and Assembly, "Front Housing Cover - Remove".
- B. Remove the engine oil pump. Refer to Disassembly and Assembly, "Engine Oil Pump - Remove".

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, NENG2500, "Caterpillar Tools and Shop Products Guide" for tools and supplies suitable to collect and contain fluids on Caterpillar products.

Dispose of all fluids according to local regulations and mandates.

Note: The oil pan plate has been removed for photo purposes only.

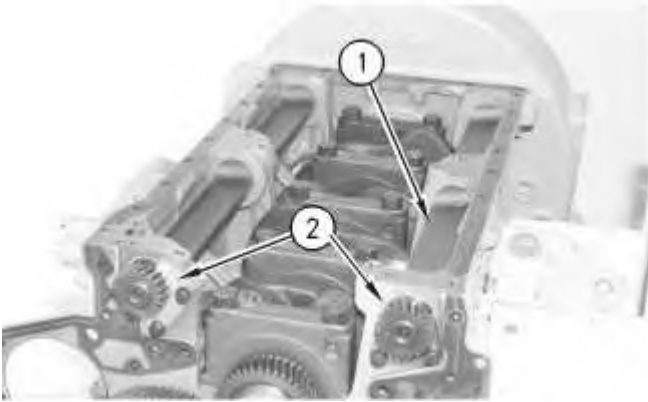


Illustration 1

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1. Remove plates (2) that hold the balancer shaft in the cylinder block.
2. Remove balancer shafts (1) from the cylinder block.

Installation Procedure

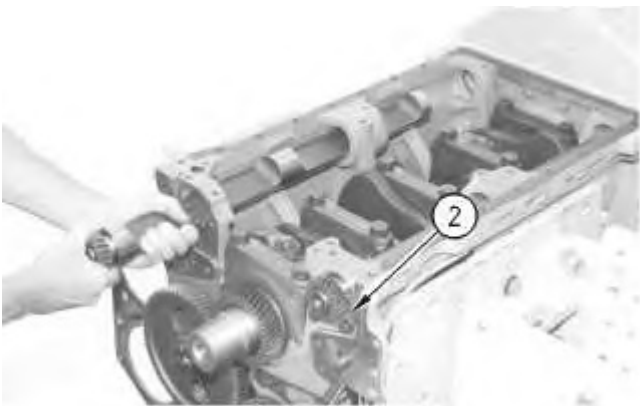


Illustration 2

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NOTICE

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1. Install the balancer shafts in each side of the cylinder block.
 2. Install plates (2) and the bolts that hold the balancer shafts in position in the cylinder block.

Note: Ensure that the balancer shafts are in time before the oil pump is installed.

End By:

- a. Install the engine oil pump. Refer to Disassembly and Assembly, "Engine Oil Pump - Install".
 - b. Install the front housing cover. Refer to Disassembly and Assembly, "Front Housing Cover - Install".
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i01135419

Engine Balancer Shaft Bearings - Remove and Install

SMCS - 1220-010-BD

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 engine oil pan. Refer to Disassembly and Assembly, "Engine Oil Pan - Remove".
- B. Remove the balancer shaft. Refer to Disassembly and Assembly, "Balancer Shaft - Remove".
- C. Remove the flywheel housing. Refer to Disassembly and Assembly, "Flywheel Housing Remove".

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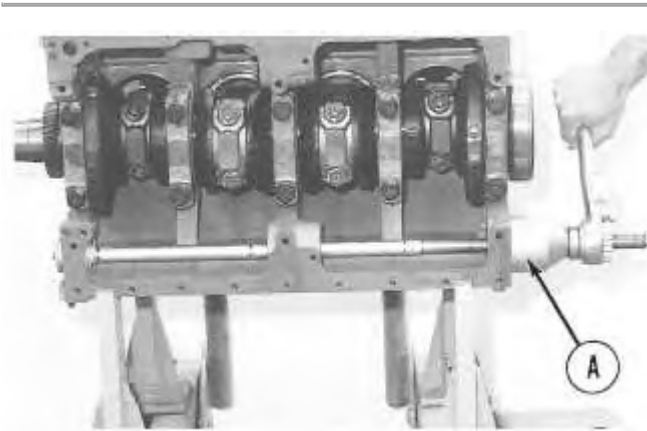


Illustration 1

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Use Tool (A) to remove the six balancer shaft bearing. Pull the balancer shaft bearings toward the flywheel end of the engine.

Installation Procedure

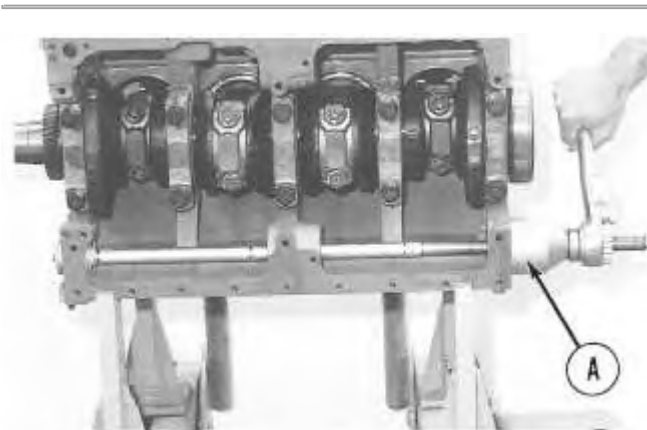


Illustration 2

g00602186

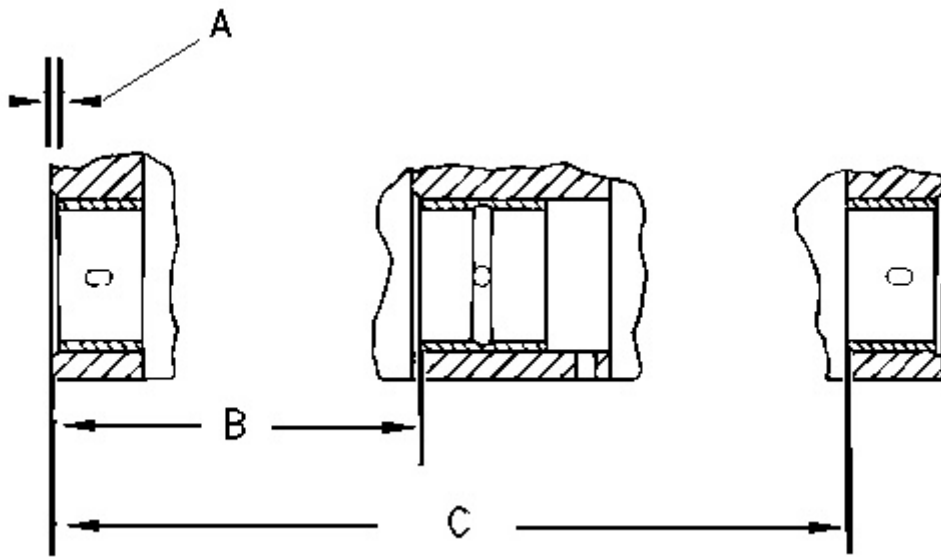


Illustration 3

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- (A) The front bearing depth is 0.8 ± 0.5 mm (0.03 ± 0.02 inch).
- (B) The center bearing depth is 290.6 ± 0.5 mm (11.44 ± 0.02 inch).
- (C) The rear bearing depth is 601.0 ± 0.5 mm (23.66 ± 0.02 inch).

NOTICE

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NOTICE

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Dispose of all fluids according to local regulations and mandates.

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1. Install the balancer shaft front bearing with Tool (A). Ensure that the holes in the bearings are aligned with the holes in the cylinder block. The bearing must be 0.8 ± 0.5 mm (0.03 ± 0.02 inch) inside the front face of the cylinder block after installation.
 2. Install the balancer shaft center bearing with Tool (A). Ensure that the holes in the bearings are aligned with the holes in the cylinder block. The bearing must be 290.6 ± 0.5 mm (11.44 ± 0.02 inch) inside the front face of the cylinder block after installation.
 3. Install the balancer shaft rear bearing with Tool (A). Ensure that the holes in the bearings are aligned with the holes in the cylinder block. The bearing must be 601.0 ± 0.5 mm (23.66 ± 0.02 inch) inside the front face of the cylinder block after installation.
 4. Check the bore of the bearings. The balancer shaft bearing bore must be 53.05 ± 0.06 mm (2.089 ± 0.002 inch) after installation.

End By:

- a. Install the flywheel housing. Refer to Disassembly and Assembly, "Flywheel Housing - Install" .
 - b. Install the balancer shaft. Refer to Disassembly and Assembly, "Balancer Shaft - Remove and Install".
 - c. Install the engine oil pan. Refer to Disassembly and Assembly, "Engine Oil Pan - Remove and Install".
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