

Product: TRACK-TYPE TRACTOR

Model: D6H TRACK-TYPE TRACTOR 4RC

Configuration: D6H & D6H LGP SERIES II TRACTORS / POWER SHIFT / 4RC04000-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

i01112752

Crankshaft - Remove

SMCS - 1202-011

Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	138-7575	Link Bracket	2
B	8B-7551	Bearing Puller	1
	8B-7549	Puller Leg	2
	3H-0465	Push-Puller Plate	4
	1B-4207	Full Nut	2
	8B-7560	Step Plate	1
	1P-0820	Hydraulic Puller	1
	9U-6600	Hand Hydraulic Pump	1

Start By:

- Remove the front housing. Refer to Disassembly and Assembly, "Front Housing - Remove".
 - Remove the flywheel housing. Refer to Disassembly and Assembly, "Flywheel Housing - Remove and Install".
 - Remove the engine oil pump. Refer to Disassembly and Assembly, "Engine Oil Pump - Remove".
 - Remove the oil pan plate. Refer to Disassembly and Assembly, "Engine Oil Pan Plate - Remove and Install".
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NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

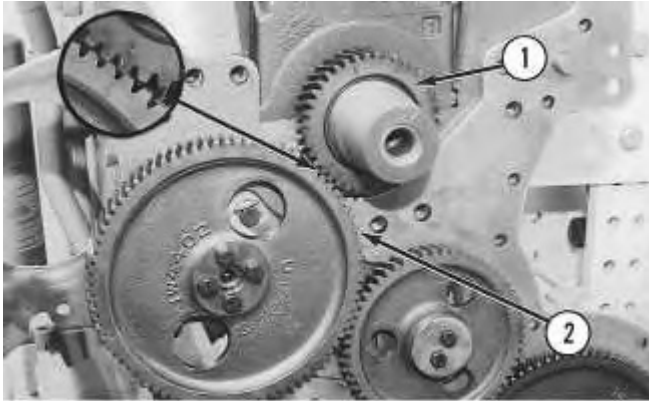


Illustration 1

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1. Turn the crankshaft until timing mark "C" on crankshaft gear (1) is aligned with timing mark "C" on camshaft gear (2) .

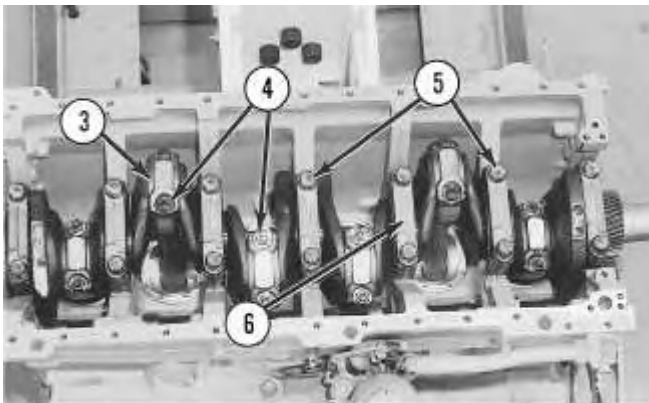


Illustration 2

g00503180

2. Remove connecting rod nuts (4) and connecting rod caps (3) from the connecting rods.
-

NOTICE

Damage may occur to the fuel injection nozzle or the piston if the piston and connecting rod are pushed too far down in the cylinder liners.

Note: The piston will be difficult to push down into the cylinder when the inlet valves and exhaust valves are closed.

3. Push down on the pistons that are not at the top center position in order to clear the crankshaft.
4. Remove main bearing cap bolts (5) and main bearing caps (6) from the cylinder block.

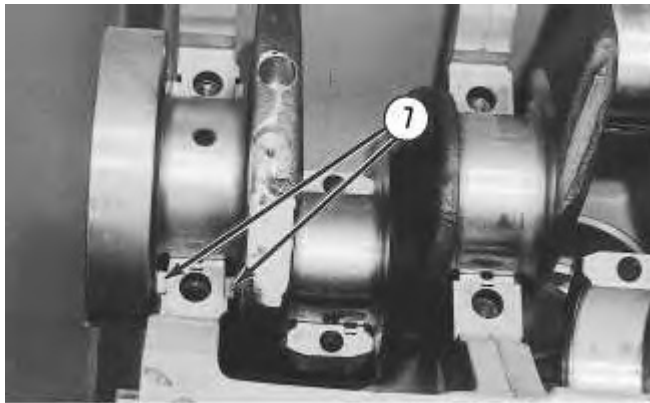


Illustration 3

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5. Remove thrust plates (7) from the rear main bearing.

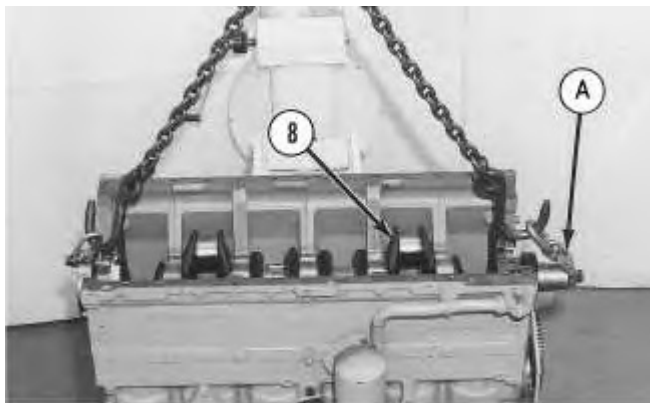


Illustration 4

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6. Install Tool (A) and a suitable lifting device on crankshaft (8), as shown. Lift the crankshaft straight up from the cylinder block. The weight of the 3304B crankshaft is 65 kg (143 lb). The weight of the 3306B crankshaft is 95 Kg (210 lb).
-

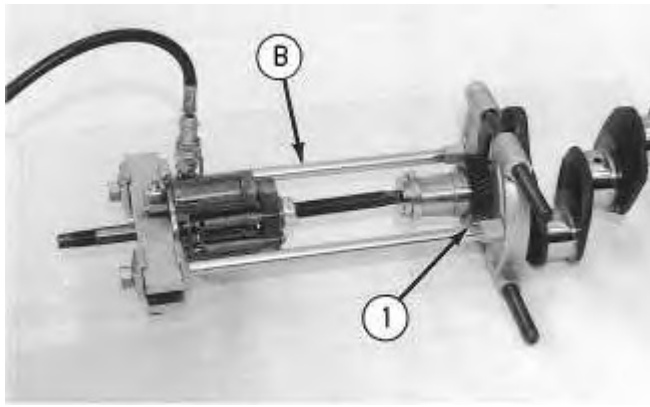


Illustration 5

g00503384

7. Use Tool (B) in order to remove the crankshaft gear and the oil seal wear sleeve from the crankshaft.

Note: Put identification marks on the bearings and on the bearing caps prior to removal.

8. Remove the main bearings from the main bearing caps and from the cylinder block. Remove the connecting rod bearings from the connecting rods and from the connecting rod caps.

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i03706543

Crankshaft - Install

SMCS - 1202-012

Installation Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	138-7575	Link Bracket	2
B	-	Plastigage	-
C	8T-5096	Dial Indicator Group	1

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

Note: Install the main bearings dry when the clearance checks are made. Put clean engine oil on the main bearings for final assembly.

Note: Ensure that the upper halves and the lower halves of the main bearings are installed so that the bearing tabs fit into the bearing tab grooves in the cylinder block and in the main bearing caps.

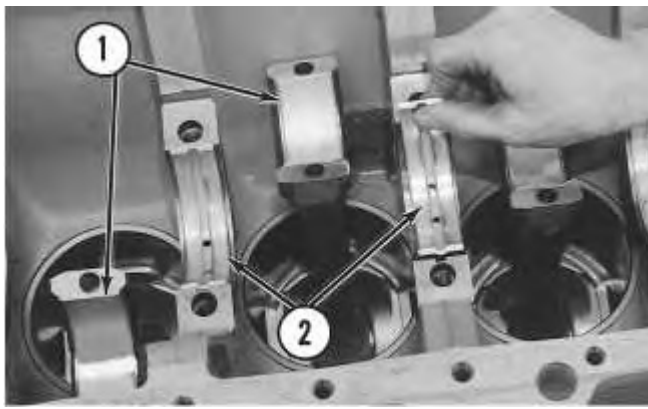


Illustration 1

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1. If the bearings were removed from the engine, clean the bearing surfaces in the cylinder block and the main bearing caps. Install the upper halves of connecting rod bearings (1) and main bearings (2) .

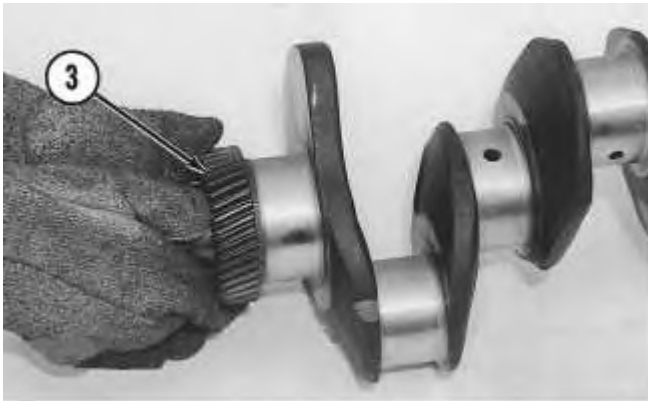


Illustration 2

g00503642



WARNING

Hot oil and hot components can cause personal injury. Do not allow hot oil or hot components to contact the skin.

2. Heat crankshaft gear (3) to a maximum temperature of 315 °C (600 °F). Install crankshaft gear (3) on the crankshaft.



Illustration 3

g00503668

3. Install Tooling (A) on the ends of the crankshaft and use a hoist to lower the crankshaft into position above the cylinder block. Align the connecting rods with the crankshaft. Align the "C" mark on crankshaft gear (3) with the "C" mark on camshaft gear (4) . Lower the crankshaft into position in the cylinder block.

Note: When the bearing clearance is checked and the engine is in an upright position or on the engine's side, the crankshaft must be supported against the upper halves of the main bearings. This is done in order to get a correct measurement with Tooling (B) . If the crankshaft is not supported, the weight of the crankshaft will cause an incorrect reading. If the engine is not in an upright position or on the engine's side, it is not necessary to support the crankshaft. Do not rotate the crankshaft when Tooling (B) is positioned.

Note: Refer to Guideline For Reusable Parts, SEBV0544, "Engine Bearings and Crankshafts" for complete details concerning the measurement of bearing clearances.

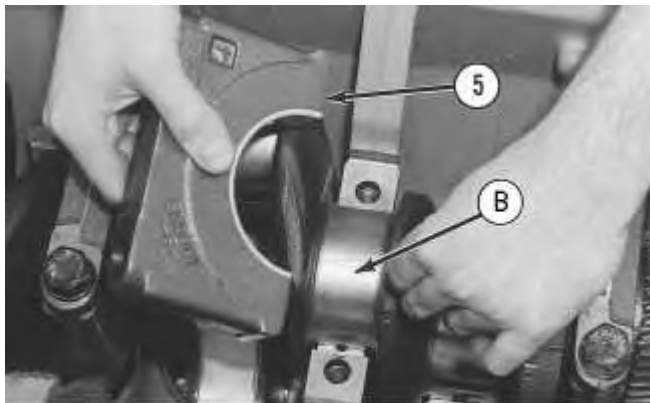


Illustration 4

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4. Check the main bearing clearance with Tooling (B) , as follows:
 - a. Put a piece of Tooling (B) on the crankshaft journal, as shown.

Note: Make sure that the part number on the main bearing cap is facing toward the front of the engine. Also, make sure that the number on the main bearing cap matches the number on the cylinder block on the left side of each main bearing cap.

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