

Illustration 1

g00503582

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

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 **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.

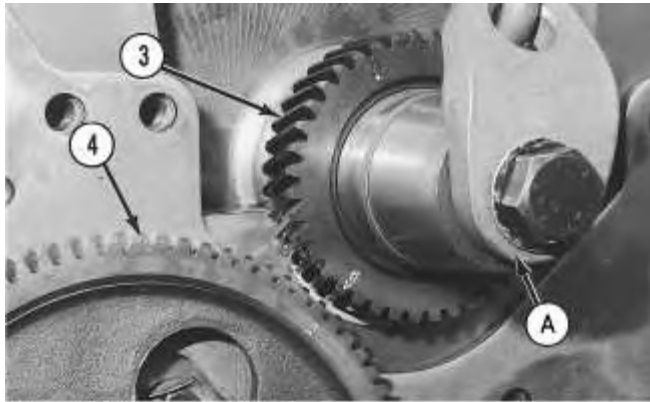


Illustration 3

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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.

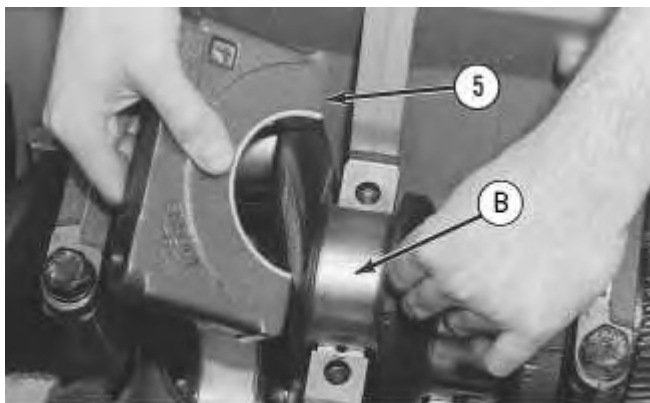


Illustration 4

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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.

- b. Put the main bearing caps in position in the engine. Put **4C-5593** Anti-Seize Compound on the bolt threads and the face of the washers. Install the bolts and tighten the bolts to a torque of 40 ± 4 N·m (30 ± 3 lb ft).
- c. Put a mark on each bolt and main bearing cap. Tighten the bolts for an additional 90 degrees ($1/4$ turn).
- d. Remove the main bearing caps and measure Tooling (B) in order to find the bearing clearance. The main bearing clearance for new bearings must be 0.076 to 0.165 mm (0.0030 to 0.0065 inch). The maximum permissible clearance with used bearings is 0.25 mm (0.010 inch).

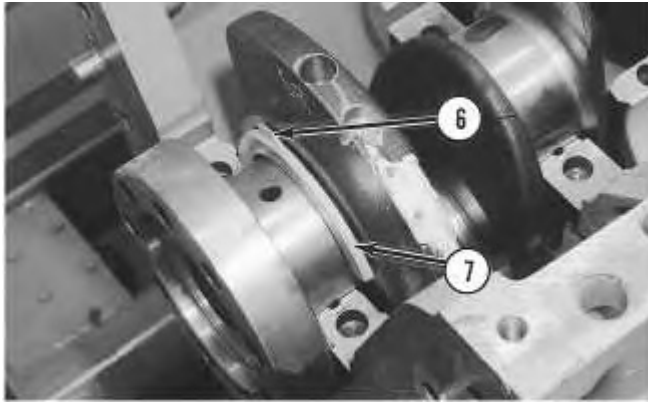


Illustration 5

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5. Put clean engine oil on thrust plate (7) for the rear main bearing. Install the new thrust plate so that the mark that is identified as the "BLOCK SIDE" faces toward the cylinder block and toward the tabs on the thrust plates in the machined area on the cylinder block. Tabs (6) will not allow thrust plate (7) to be installed backward.

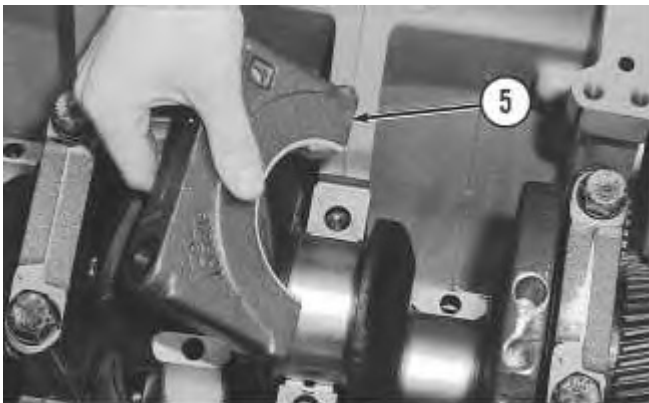


Illustration 6

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6. Install the remaining main bearing caps. Use the same procedure that is described in Step 4.b and Step 4.c.

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