

**If the crankshaft has been reground or if the crankshaft has been replaced, the height of the piston above the cylinder block must be inspected. It is necessary to remove the cylinder head in order to inspect the height of the piston above the cylinder block.**

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### **NOTICE**

**If the crankshaft has been reground or if the crankshaft has been replaced, ensure that the engine oil system is free from debris and contaminants.**

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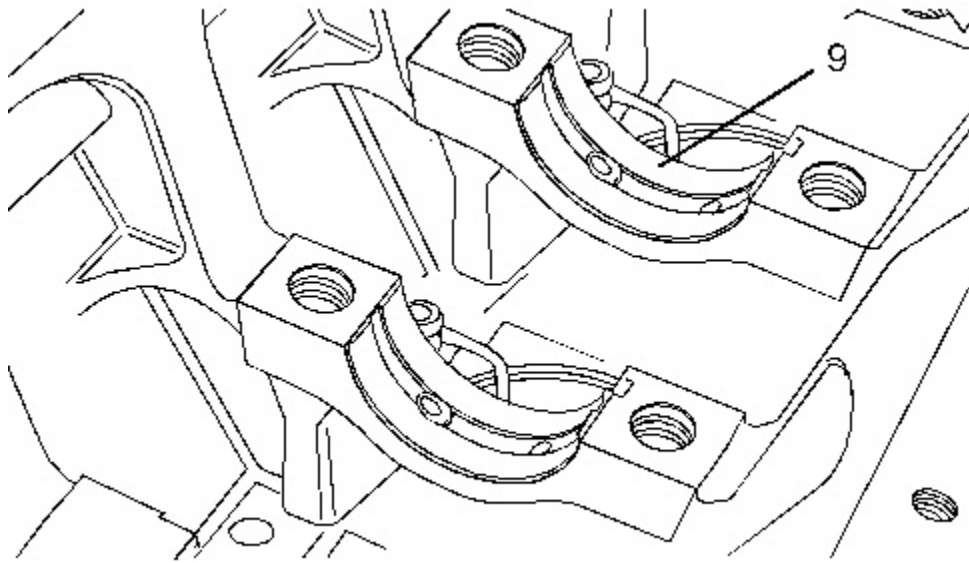
1. Clean the crankshaft and inspect the crankshaft for wear or damage. Refer to Specifications, "Crankshaft" for more information. If necessary, replace the crankshaft or recondition the crankshaft.
2. If necessary, install the crankshaft gear. Refer to Disassembly and Assembly, "Crankshaft Gear - Remove and Install".
3. If necessary, install a new crankshaft timing ring. Refer to Disassembly and Assembly, "Crankshaft Timing Ring - Remove and Install".

**Note:** The engine should be mounted on a suitable stand and placed in the inverted position.

4. Ensure that the parent bores for the crankshaft bearings in the cylinder block are clean. Ensure that the threads for the bearing bolts in the cylinder block are clean and free from damage.
5. Clean the crankshaft bearings and the thrust washers. Inspect the bearings and the thrust washers for wear or damage. If necessary, replace the bearings and the thrust washers.

**Note:** If the crankshaft bearings are replaced, check whether oversize bearings were previously installed. If the thrust washers are replaced, check whether oversize thrust washers were previously installed.

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Illustration 1

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Typical example

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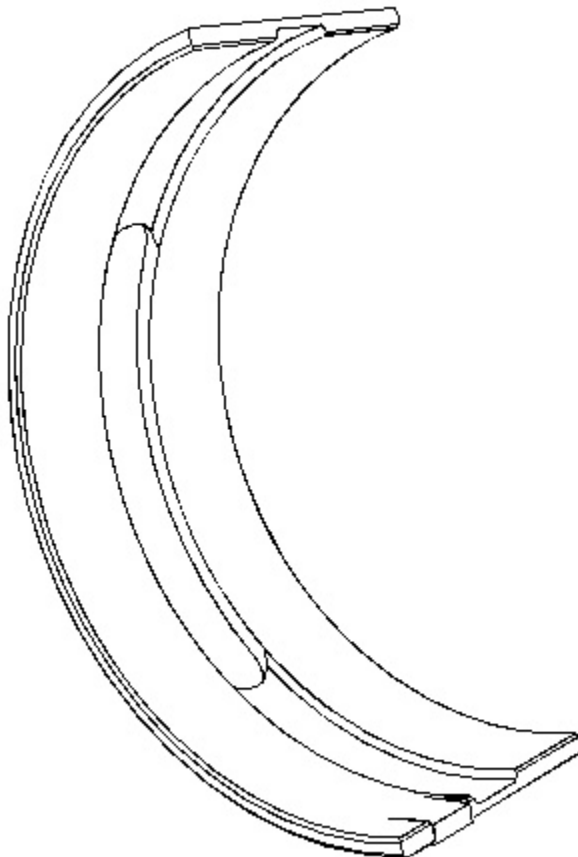


Illustration 2

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No. 1 Upper Main Bearing

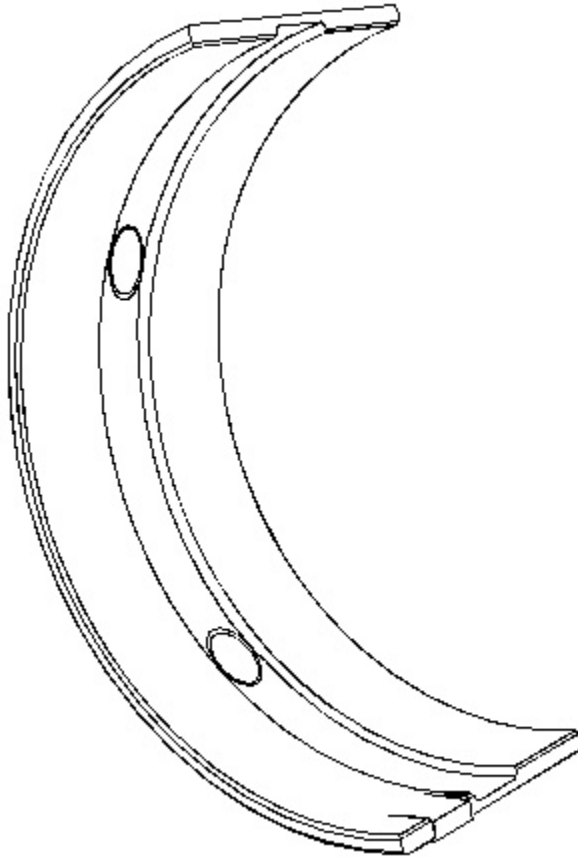


Illustration 3

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Remaining Original Upper Main Bearing

6. Install upper bearings (9) to the cylinder block. Ensure that the locating tabs for the upper bearings are seated in the slots in the cylinder block.

**Note:** Number one upper main bearing has an oil slot. See Illustration 2. If the engine is equipped with the original main bearing shells, all other upper shells except number one will have a slot and two oil holes. See Illustration 3.

If the engine has had replacement main bearing shells, the upper main bearing shells will all have a groove and an oil slot.

7. Lubricate upper bearings (9) with clean engine oil.