

## Pistons and Connecting Rods - Assemble

SMCS - 1225-016

### Assembly Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	1U-6683	Ring Expander	1
B	393-2568	Bearing Removal Tool	1
	443-9447	Support Plate	1

**Note:** Refer to Specification UENR0995 "Engine Design" for non-specified engine Torque Values.

**Note:** The C3.3B has three different piston heights that vary 0.05 mm (0.002 inch) from each. Refer to the following Table 2 to ensure that the same piston height is replaced. If the same piston height is replaced, then the same head gasket thickness can be used. If a different piston height is used, then check the piston height to determine the proper head gasket thickness. Refer to "Cylinder Head - Remove and Install" for the correct head gasket.

Table 2

Code Stamped on Standard Piston	Standard Replacement Piston	0.50 mm Oversized Piston	Code Stamped on Oversized Piston
1J751-2111	387-9833	393-2885	1J751-2190
1J751-2112	387-9834	393-2886	1J751-2191
1J751-2113	387-9835	393-2887	1J751-2192

1. Ensure that all components are clean and free from wear and damage. If necessary, replace any components that are worn or damaged.

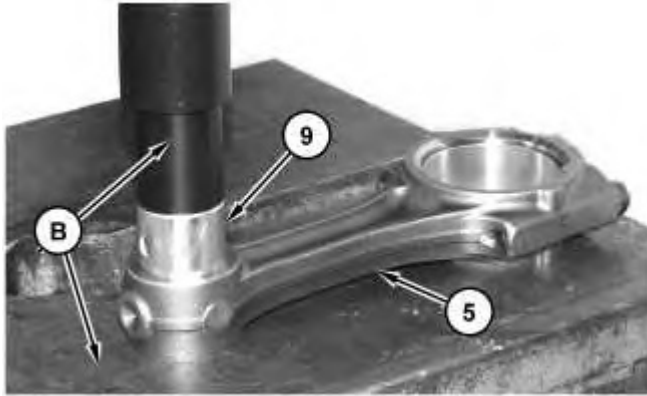


Illustration 1

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2. Inspect the connecting rod for wear and damage. If necessary, replace connecting rod (5) or replace connecting rod bushing (9) .

**Note:** If connecting rod (5) or the bushing (9) for connecting rod pin are replaced, refer to Specifications, "Connecting Rods" for the correct procedure.

3. Place the piston on a suitable surface with the crown upward. Use Tooling (B) in order to install connecting rod bushing (9) into connecting rod (5) .

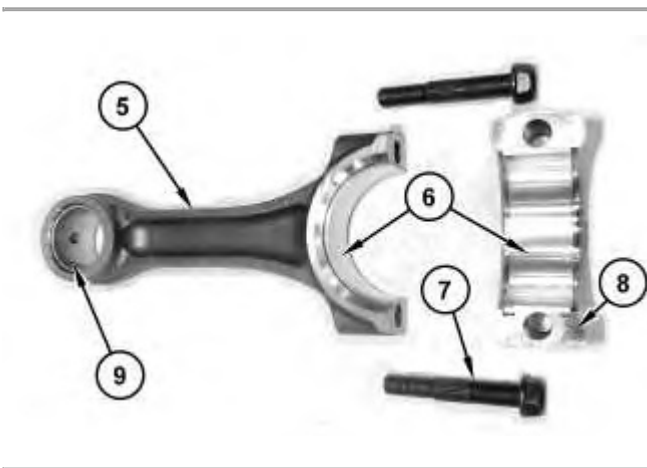


Illustration 2

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4. Check connecting rod bushing (9) . If necessary, install connecting rod bearings (6) into connecting rod (5) and connecting rod cap (8) . Inspect bolts (7) or replace with new for assembly later.
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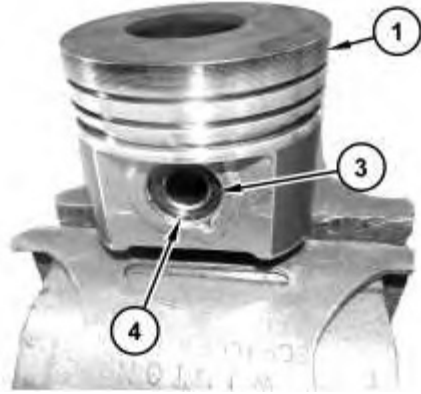


Illustration 3

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5. Lubricate the bore for the piston wrist pin (3) with clean engine oil.
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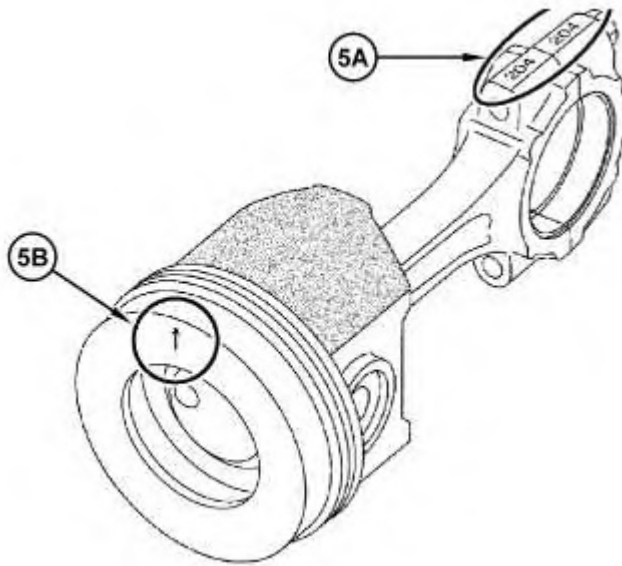


Illustration 4

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6. Place piston (1) on a suitable surface with the crown downward. Position connecting rod (5) with the markings (5A) on same side as the arrow mark (5B) on top of the piston.
  7. Install piston wrist pin (3) into piston (1) . Install retaining ring (4) .
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Illustration 5

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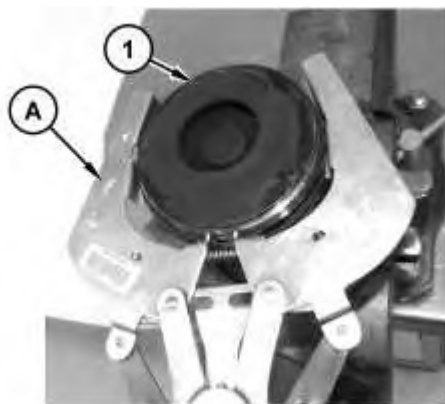


Illustration 6

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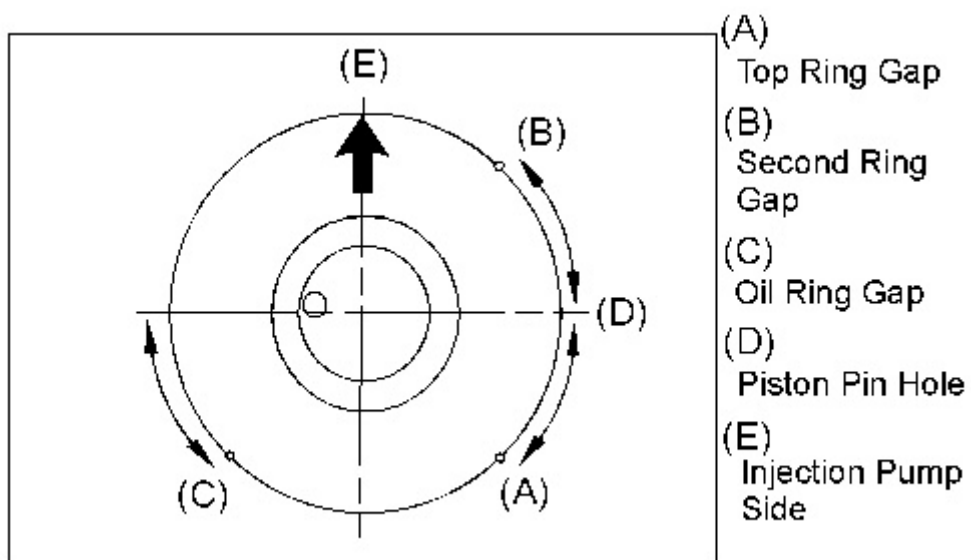


Illustration 7

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8. Position the connecting rod and piston (1) into a soft jaw vise. Use Tooling (A) in order to install three rings (2) onto piston (1) .
9. If the original piston is assembled, follow Step 9.a through Step 9.e in order to install the piston rings.
  - a. Position the spring for the oil control ring into the oil ring groove in piston (1) . The central wire must be located inside the end of the spring.
  - b. Position the oil control ring with the word "TOP" in the upward position and use Tooling (A) to install over the piston and the spring. Refer to illustration 7.

**Note:** Ensure that the central wire is 180 degrees from the ring gap.
  - c. Use Tooling (A) to install the intermediate compression ring into the second groove in piston (1) . The word "TOP" must be upward. The chamfer on the inner face must be downward. Refer to illustration 7.
  - d. Use Tooling (A) to install top the compression ring into the top groove in piston (1) . The manufacturing mark must be upward. Refer to illustration 7.
  - e. Position piston ring (2) gaps at 120 degrees away from each other.
10. Repeat Step 2 through Step 9.e for the remaining piston and connecting rod assemblies.

**End By:** Install pistons and the connecting rods.

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