



# Service Repair Manual

## **Models**

# 211B EXCAVATOR

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Product: EXCAVATOR

Model: 211B EXCAVATOR 6XG

Configuration: 211B EXCAVATOR - TRACK TYPE 6XG00001-UP (MACHINE) POWERED BY 3114 ENGINE

## **Disassembly and Assembly**

**446 and 446B Backhoe Loaders, Lexion 450 Combine, 3114 and 3116 Engines, IT18F Integrated Toolcarrier, D6M Track-Type Tractor and 928F, 950F and 950G Wheel Loaders**

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# **Pistons and Connecting Rods - Remove**

SMCS - 1225-011

## **Removal Procedure**

### **Start By:**

- a. Remove the cylinder head. Refer to Disassembly and Assembly, "Cylinder Head - Remove".
- b. Remove the engine oil pump. Refer to Disassembly and Assembly, "Engine Oil Pump - Remove".
- c. Remove the piston cooling jets. Refer to Disassembly and Assembly, "Piston Cooling Jets - Remove and Install".

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### **NOTICE**

**Keep all parts clean from contaminants.**

**Contaminants may cause rapid wear and shortened component life.**

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**Note:** For information on reusability of the pistons, refer to the following list.

- Guideline For Reusable Parts And Salvage Operations, SEBF8049, "Pistons"
- Guideline For Reusable Parts And Salvage Operations, SEBF8228, "Procedure to Clean and Inspect One and Two-Piece Pistons in 3114/3116 Engines"

- Guideline For Reusable Parts And Salvage Operations, SEBF8290, "Visual Inspection of Two-Piece Pistons"

**Note:** For information on reusability of the connecting rods, refer to the following list.

- Guideline For Reusable Parts And Salvage Operations, SEBF8206, "Specifications for Connecting Rods on 3116 Engines"
- Guideline For Reusable Parts And Salvage Operations, SEBF8063, "Visual Inspection of Connecting Rods"
- Guideline For Reusable Parts And Salvage Operations, SEBF8064, "Salvage of Non-Serrated Connecting Rods"

**Note:** For information on reusability of the piston pins, refer to the following list.

- Guideline For Reusable Parts And Salvage Operations, SEBF8051, "Piston Pins and Retaining Rings"
- Guideline For Reusable Parts And Salvage Operations, SEBF8303, "Procedure to Inspect Piston Pins"

**Note:** For information on reusability of the rod eye bushing, refer to the following list.

- Guideline For Reusable Parts And Salvage Operations, SEBF8242, "Verification of Connecting Rod Eye Bushing Retention Using 5P-8639 Connecting Rod Bushing Press Group"
- Guideline For Reusable Parts And Salvage Operations, SEBF8274, "Using Rod Eye Bushing Installation and Removal Tools"

**Note:** For information on reusability of the cylinder block and salvage procedures, refer to the following list.

- Guideline For Reusable Parts And Salvage Operations, SEBF8192, "Specifications and Salvage for Cylinder Blocks on 3114, 3116, 3126 Engines"
  - Guideline For Reusable Parts And Salvage Operations, SEBF8261, "Installing a 7C-6208 Cylinder Sleeve in 3114, 3116 Engines and a 107-7604 Cylinder Sleeve in 3126 Engines"
  - Special Instruction, GMG00981, "Using 1P-3537 Dial Bore Gauge Group to Check Cylinder Bore Size"
  - Special Instruction, SMHS7606, " Use of 1P-4000 Line Boring Tool Group"
  - Special Instruction, SEHS8841, " Using the Ironstitch Procedure for Casting Salvage"
  - Special Instruction, SEHS8919, "Salvage Weld Procedure for Cast Iron Cylinder Blocks"
  - Guideline For Reusable Parts And Salvage Operations, SEBF8076, "Specifications to Salvage Cylinder Block Contact Surfaces"
  - Special Instruction, SEHS8869, "Cylinder Block Salvage Procedure Using Belzona Ceramic R Metal"
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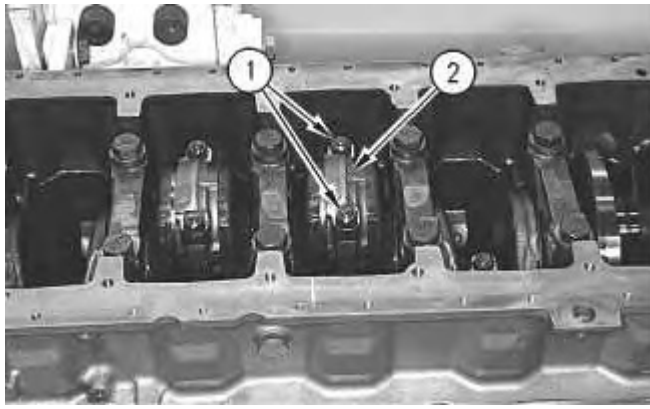


Illustration 1

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1. Inspect the connecting rod and connecting rod cap (2) for the proper identification mark. The connecting rod and connecting rod cap (2) should have an etched number on the side that is toward the right side of the engine. The number should match the cylinder number. Mark the connecting rod and connecting rod cap (2), if necessary.

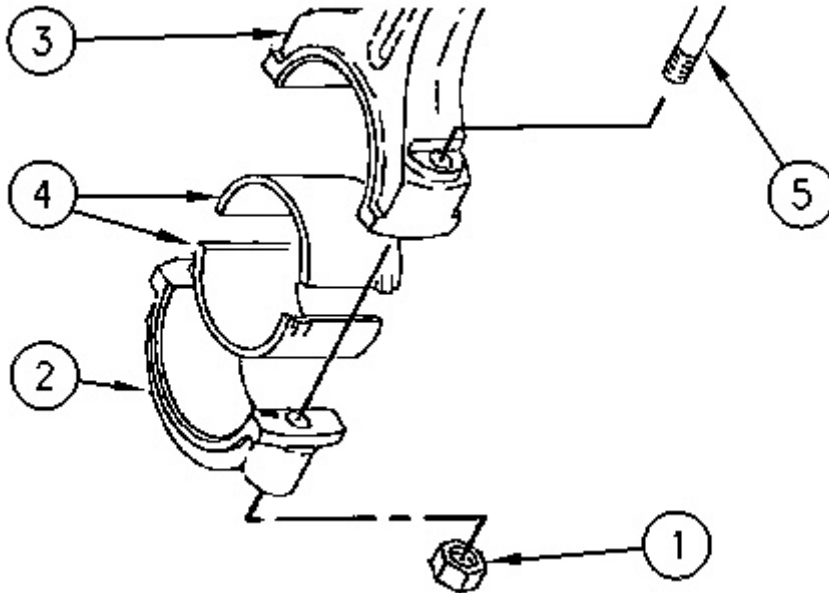


Illustration 2

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2. Remove connecting rod cap nuts (1), bolts (5), and connecting rod cap (2).
3. Remove the lower half of bearing (4) from connecting rod cap (2).

## NOTICE

**Install short pieces of rubber hose over both connecting rod bolts in order to protect the crankshaft from the threaded portion of the connecting rod bolts.**

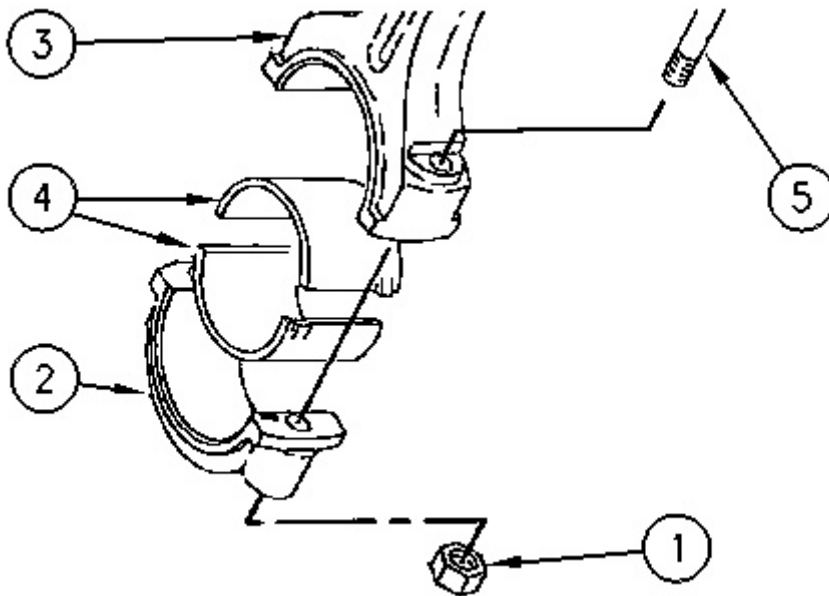


Illustration 3

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4. Push the piston and connecting rod away from the crankshaft. Remove the upper half of connecting rod bearing (4) from connecting rod (3).
5. Remove the piston and connecting rod (3) from the cylinder block.
6. Repeat Steps 1 through 5 for the remaining pistons and connecting rods.

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