



# Service Repair Manual

## **Model**

**235 EXCAVATOR**

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Product: EXCAVATOR

Model: 235 EXCAVATOR 62X

Configuration: 235 EXCAVATOR 62X00289-UP (MACHINE) POWERED BY 3306 ENGINE

## Disassembly and Assembly 3304B and 3306B Engines for Caterpillar Built Machines

Media Number -SEN5598-09

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i01138035

# Fuel Injection Pump Housing - Assemble

SMCS - 1253-016

## Assembly Procedure

Table 1

| Required Tools |             |                       |     |
|----------------|-------------|-----------------------|-----|
| Tool           | Part Number | Part Description      | Qty |
| A              | 1P-1860     | Retaining Ring Pliers | 1   |
| B              | 1P-0510     | Driver Group          | 1   |
| C              | 6V-2016     | Plate                 | 1   |
|                | 0S-1594     | Bolt                  | 2   |
|                | 6V-4818     | Driver                | 1   |

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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:** Put clean engine oil on all parts before assembly. Ensure that all of the oil passages are clear.

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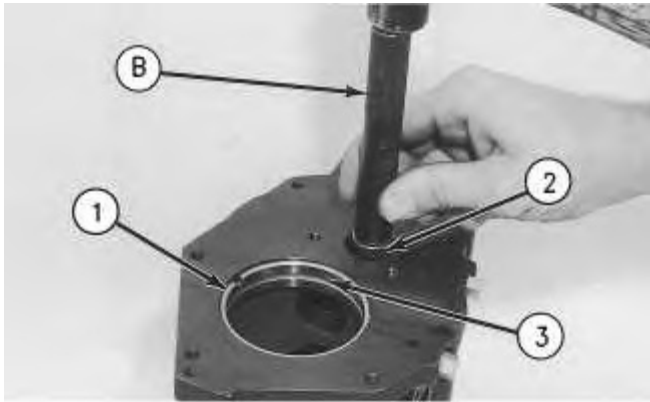


Illustration 1

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1. Use Tool (B) in order to install large bearing (1) in the governor end of the fuel injection pump housing. Bearing joint (3) should be facing toward the top of the fuel injection pump housing. Install the bearing so the bearing is  $0.25 \pm 0.20$  mm ( $.010 \pm .008$  inch) below the surface of the fuel injection pump housing.
2. Use Tool (B) in order to install small bearing (2) in the governor end of the fuel injection pump so that Tool (B) is  $7.16 \pm 0.13$  mm ( $.282 \pm .005$  inch) below the surface of the fuel injection pump housing.



Illustration 2

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3. Use Tool (B) in order to install large bearing (4) in the drive end of the fuel injection pump housing. The bearing joint should be facing toward the top of the fuel injection pump housing. Install the bearing so the bearing is  $1.00 \pm 0.25$  mm ( $.039 \pm .010$  inch) below the surface of the fuel injection pump housing.

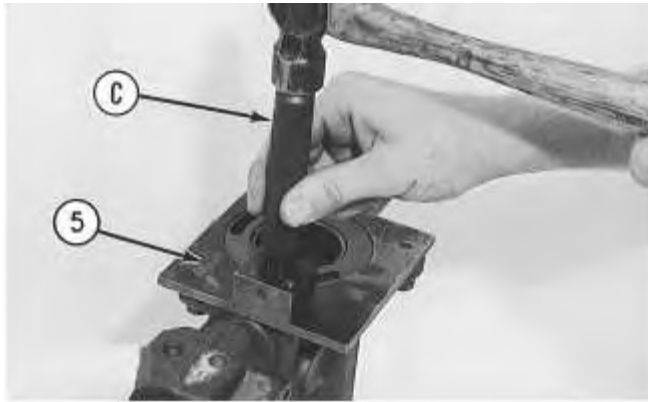


Illustration 3

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4. Install the plate of Tool (C) on the drive end of the fuel injection pump in order to install small bearing (5) for the rack. Use clean grease in order to hold the new driver for the rack bearing of Tool (C). Install the driver and the bearing in the plate. Ensure that the groove in the driver is aligned with the pin in the plate and use a hammer to push the bearing into position. The bearing will be installed to the correct depth when the shoulder of the driver is against the plate.
5. Remove Tool (C) from the fuel injection pump housing. The fuel rack bearing must be installed so that the fuel rack bearing is  $0.25 \pm 0.25$  mm ( $.010 \pm .010$  inch) below the surface of the housing.

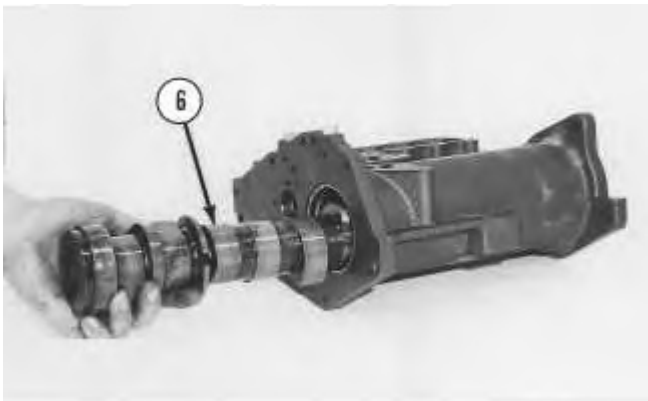


Illustration 4

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6. Install camshaft (6) .

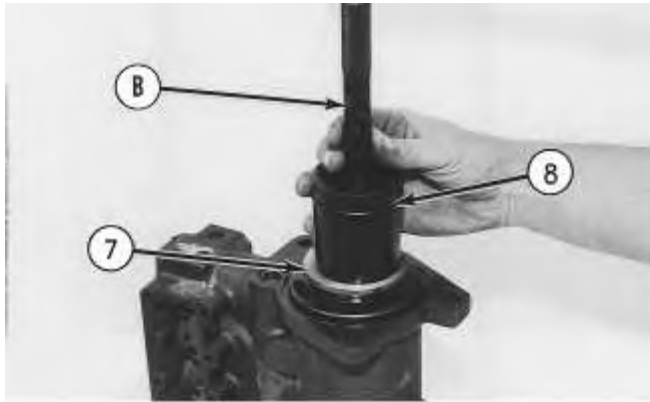


Illustration 5

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7. Put the fuel injection pump housing upright, as shown. Place a wood block under the camshaft.
8. Put washer (7) over the end of the camshaft. Use Tool (B) and spacer (8) in order to push the washer against the seat on the camshaft. Spacer (8) has an inside diameter of 38.1 mm (1.50 inch) and a length of 31.75 mm (1.250 inch). The camshaft must have an end play of  $0.18 \pm 0.08$  mm ( $.007 \pm .003$  inch) when the washer is pushed against the shoulder of the camshaft.

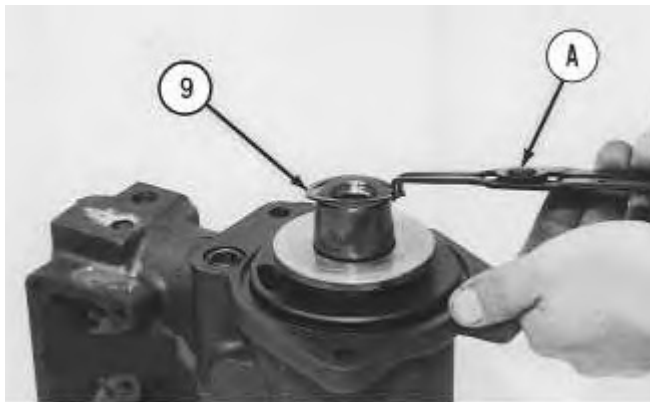


Illustration 6

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9. Use Tool (A) in order to install snap ring (9) .

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