



# Service Repair Manual

## **Model**

235 EXCAVATOR

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Product: EXCAVATOR  
Model: 235 EXCAVATOR 32K  
Configuration: 235 EXCAVATOR 32K00001-00788 (MACHINE)

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

Media Number -SEN5598-09

Publication Date -01/01/2013

Date Updated -25/01/2013

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## Crankshaft Rear Seal - Remove

SMCS - 1161-011

### Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	1U-7600	Slide Hammer Puller	1
B	5P-7313	Seal Distorter	1
C	5P-7312	Wear Sleeve Distorter Ring	1

#### Start By:

- A. Remove the flywheel. Refer to Disassembly and Assembly, "Flywheel - Remove".

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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:** When a crankshaft seal is replaced, the wear sleeve must also be replaced.

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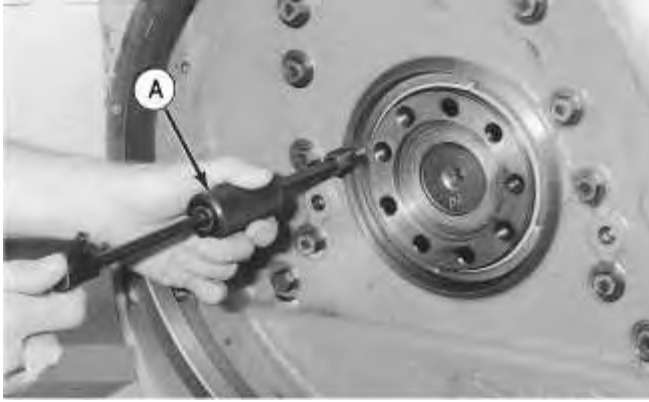


Illustration 1

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1. Use Tooling (A) in order to remove the crankshaft rear seal.

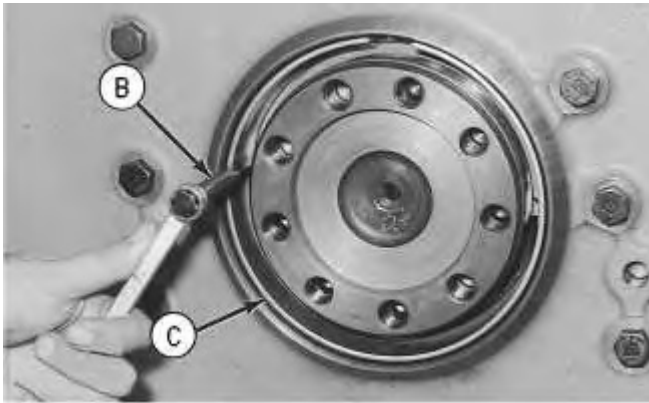


Illustration 2

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2. Install Tooling (B), as shown.

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## NOTICE

**Care should be taken to ensure that the seal distorter does not cut through the wear sleeve. Damage to the crankshaft surface may occur leading to possible oil seal leaks.**

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3. Install Tooling (B) between Tooling (C) and the wear sleeve. Turn Tooling (B) with a wrench, until the edge of the tool makes a flat crease in the wear sleeve. Repeat this process until there are enough creases in the wear sleeve in order to allow the wear sleeve to be slipped off the end of the crankshaft.
  4. Remove Tooling (B) and (C) and the wear sleeve by hand.
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Media Number -SEN5598-09

Publication Date -01/01/2013

Date Updated -25/01/2013

i07218333

# Crankshaft Rear Seal - Install

SMCS - 1161-012

## Installation Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	9S-8871	Seal Locator	1
	9S-8890	Bolt	3
	2P-1956	Bolt <sup>(1)</sup>	3
	6V-7876	Installer	1
	9S-8858	Installer Nut	1

<sup>(1)</sup> For use on engines equipped with a rear crankshaft gear

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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:** Once the seal and the wear sleeve are separated, these components cannot be used again. Refer to Special Instruction, SMHS8508 before the seal is serviced.

**Note:** Do not use any type of lubricant during the installation of the crankshaft seal and wear sleeve.

**Note:** Before installing the wear sleeve, inspect the crankshaft for scratches or any distortion on the surface of the crankshaft that may lead to an out of round condition. Use a polishing cloth to clean the imperfections on the crankshaft.

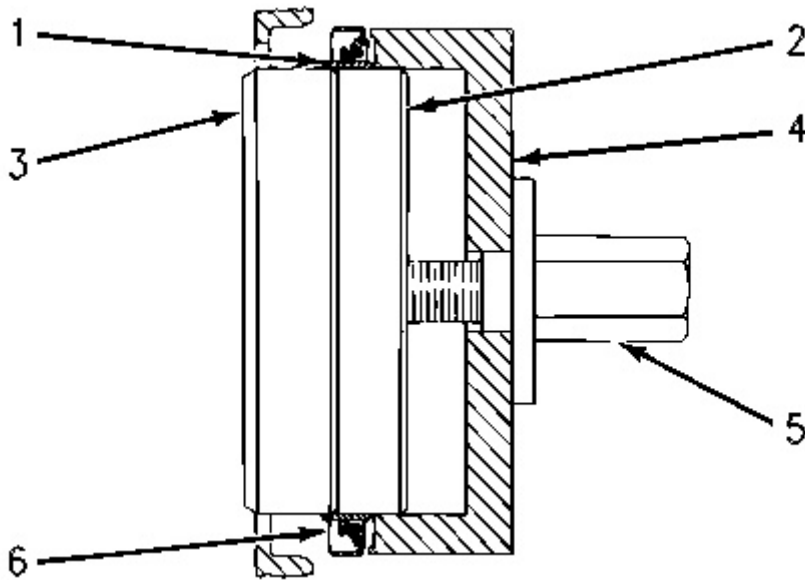


Illustration 1

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1. Install crankshaft rear seal (6) and wear sleeve (1) with Tool (A), as follows:
  - a. Use **4C-9500** Quick Cure Primer to clean the outside diameter of crankshaft (3) and the inside diameter of wear sleeve (1).
  - b. Apply **4C-9507** Retaining Compound to the outside diameter of crankshaft (3). Apply **4C-9507** Retaining Compound to the inside diameter of wear sleeve (1).
  - c. Put **9S-8871** Seal Locator (2) in position on crankshaft (3). Install three **9S-8890** Bolts that hold the seal locator in position on the crankshaft.
  - d. Install wear sleeve (1) and seal (6) on crankshaft (3). Put **6V-7876** Seal Installer (4) on **9S-8871** Seal Locator (2). Lubricate the face of **9S-8858** Installer Nut (5) and the washer. Install **9S-8858** Installer Nut (5) and the washer on **9S-8871** Seal Locator (2).
  - e. Tighten **9S-8858** Installer Nut (5) until **6V-7876** Seal Installer (4) contacts **9S-8871** Seal Locator (2).
  - f. Remove Tool (A) and check the crankshaft seal and the wear sleeve for the correct installation.

**End By:**

- a. Install the flywheel. Refer to Disassembly and Assembly, "Flywheel - Install".

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