

Product: EXCAVATOR  
Model: 312B EXCAVATOR 3ES  
Configuration: ISJ HEX COMMONALITY CHART 3ES00001-UP (MACHINE)

## Disassembly and Assembly 3064 and 3066 Engines for Caterpillar Built Machines

Media Number -SEN5553-10

Publication Date -01/05/2012

Date Updated -15/05/2012

i01615293

# Engine Oil Bypass Valve - Remove and Install

SMCS - 1306-010-BV

## Removal Procedure

### Start By:

- A. Remove the engine oil pan. Refer to Disassembly and Assembly, "Engine Oil Pan - 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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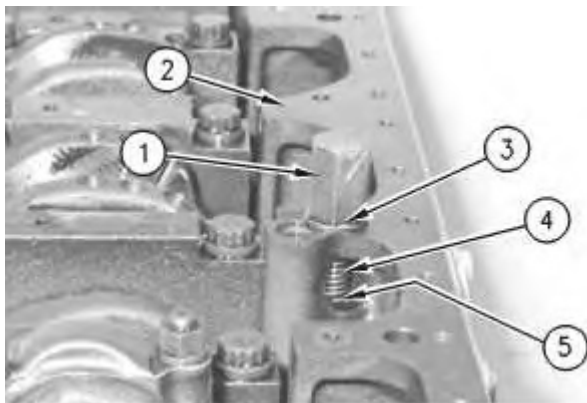


Illustration 1

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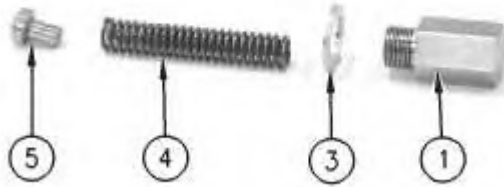


Illustration 2

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1. Remove threaded plug (1) for the engine oil bypass valve from the cylinder block (2) .
2. Remove shim (3) from the cylinder block (2) .
3. Remove spring (4) from the cylinder block (2) .
4. Remove spring seat (5) from the cylinder block (2) .

**Note:** Check the spring seat (5) and the valve seat for an abnormal contact pattern. Inspect the spring (4) for weakness or damage. If necessary, replace the engine oil bypass valve with a new part.

**Note:** Check the cylinder block (2) for oil passages that are clogged.

## Installation Procedure

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### NOTICE

**Keep all parts clean from contaminants.**

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

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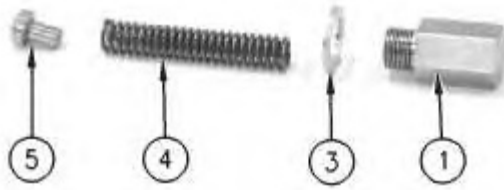


Illustration 3

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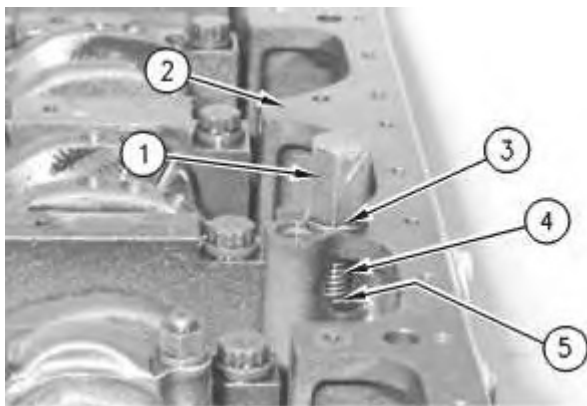


Illustration 4

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1. Install spring seat (5) (not shown) and spring (4) in the cylinder block (2) .
2. Install shim (3) and threaded plug (1) in the cylinder block (2) .
3. Tighten the threaded plug (1) to a torque of  $69 \pm 5$  N·m ( $51 \pm 4$  lb ft).

**Note:** Test the opening pressure for the engine oil relief valve. The opening pressure for the relief valve is  $981 \pm 98$  kPa ( $142 \pm 14$  psi). Make adjustments by shimming, if necessary.

For information on testing the engine oil relief valve, refer to Testing and Adjusting, "Lubrication System".

For more information, refer to Specifications, "Engine Oil Bypass Valve".

**End By:** Install the engine oil pan. Refer to Disassembly and Assembly, "Engine Oil Pan - Remove and Install".

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## Disassembly and Assembly 3064 and 3066 Engines for Caterpillar Built Machines

Media Number -SEN5553-10

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i01146335

## Engine Oil Pump - Remove

SMCS - 1304-011

### Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	1P-2320	Combination Puller	1
B	1P-0510	Driver Group	1

#### Start By:

- A. Remove the front housing. Refer to Disassembly and Assembly, "Housing (Front) - 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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#### NOTICE

**Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting and repair of the product. Be prepared to collect the fluid with suitable containers**

**before opening any compartment or disassembling any component containing fluids.**

**Refer to Special Publication, NENG2500, "Caterpillar Tools and Shop Products Guide" for tools and supplies suitable to collect and contain fluids on Caterpillar products.**

**Dispose of all fluids according to local regulations and mandates.**

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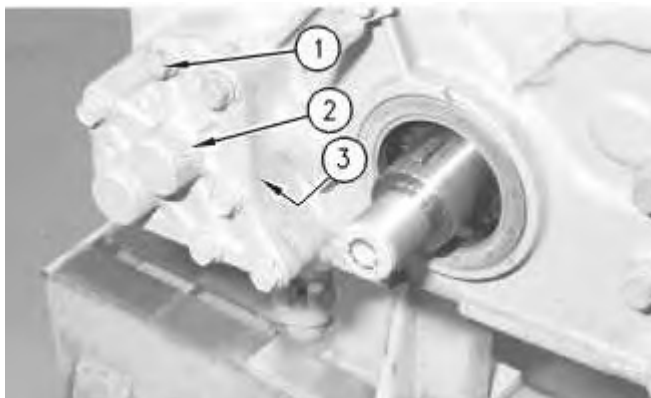


Illustration 1

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**Note:** Illustration 1 does not show that the front housing is removed from the cylinder block.

1. Remove bolt (1) from the cover (2) .
2. Remove cover (2) for the engine oil pump from the front housing. Check gasket (3) (not shown) for damage or wear. Replace the gasket, if the gasket is worn or damaged.

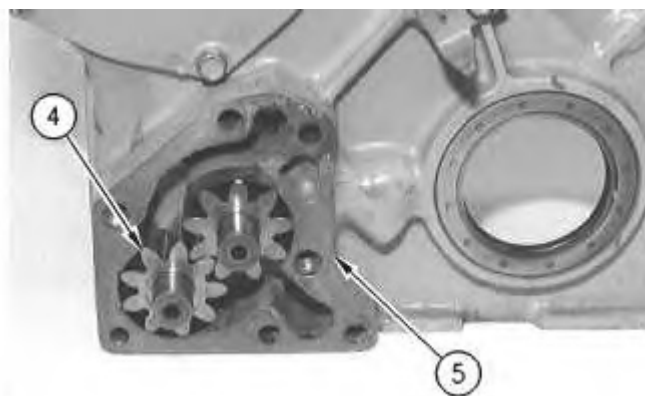


Illustration 2

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3. Remove driven gear (4) for the oil pump. Pull the gear straight out of the front housing (5) (slip fit).

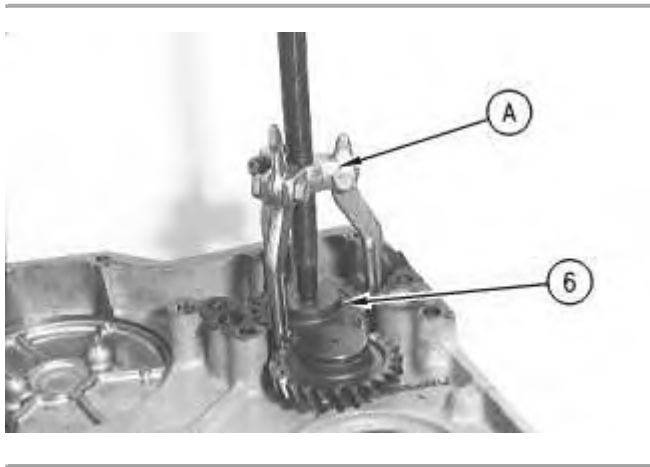


Illustration 3

g00607857

4. Position the front housing on a work bench in order to remove the oil pump gear from the rear of the housing.
5. Use Tool (A) to remove oil pump gear (6) from the front housing.

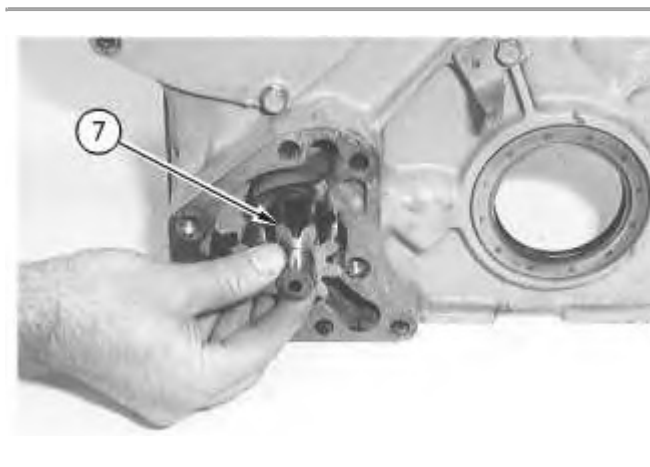


Illustration 4

g00607885

6. Position the front housing on a work bench in order to remove the drive gear from the front of the housing.
  7. Remove drive gear (7) from the front housing.
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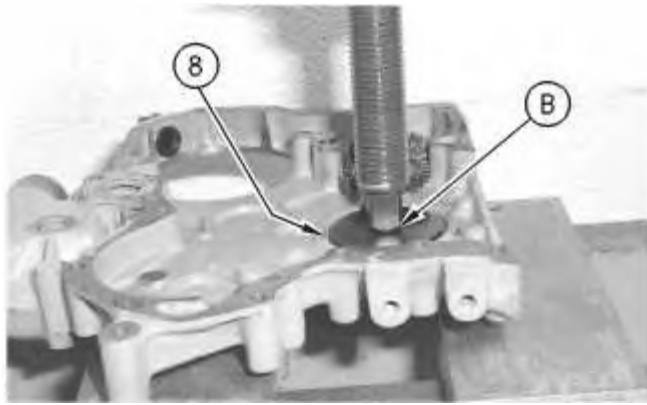


Illustration 5

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8. Use Tool (B) to remove front oil seal (8) (not shown) from the front housing.

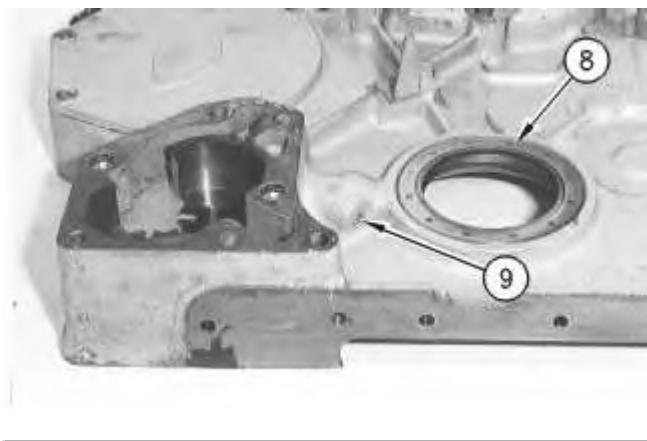


Illustration 6

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**Note:** Illustration 6 does not show that the front seal (8) is removed.

9. Remove set screw (9) from the front housing.

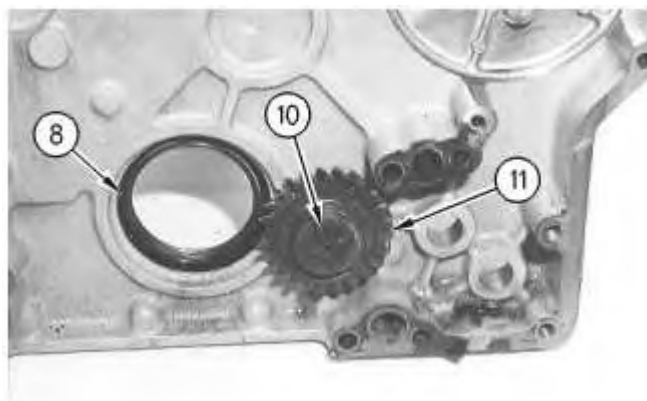


Illustration 7

g00607962



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