



# Service Repair Manual

## **Models**

320, 320L and 320N

TRACK-TYPE EXCAVATOR

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Product: EXCAVATOR

Model: 320-A EXCAVATOR 2DL

Configuration: 320, 320L & 320N TRACK-TYPE EXCAVATORS 2DL00214-UP (MACHINE) POWERED BY 3066 ENGINE

**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

i01150941

## Inlet and Exhaust Valve Seals - Remove and Install

SMCS - 1104-010-SA

### Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	5P-1720	Seal Pick	1

**Start By:**

- A. Remove the inlet and exhaust valves. Refer to Disassembly and Assembly, "Inlet and Exhaust Valves - 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

g00610601

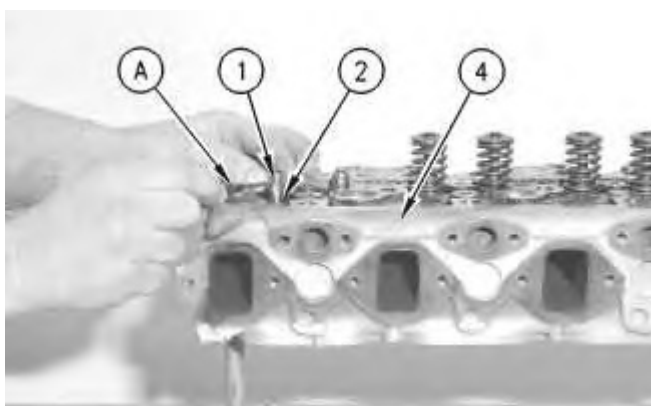


Illustration 2

g00610605

1. Use Tool (A) to remove valve stem seal (1) from the inlet and exhaust valve guide.

Illustration 1 shows the removal of the valve stem seal, when the valve guide (2) is removed from cylinder head (4) .

Illustration 2 shows the removal of the valve stem seal, while the valve guide (2) is installed in cylinder head (4) .

## Installation Procedure

Table 2

Required Tools			
Tool	Part Number	Part Description	Qty
A	5P-1720	Seal Pick	1

### NOTICE

**Keep all parts clean from contaminants.**

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

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**Note:** Do not apply any oil or sealant to the mating surface of the valve seal that comes into contact with the valve guide. When the valve seal is installed, coat the surface of the valve stem with engine oil in order to ensure initial lubrication of the seal lip.

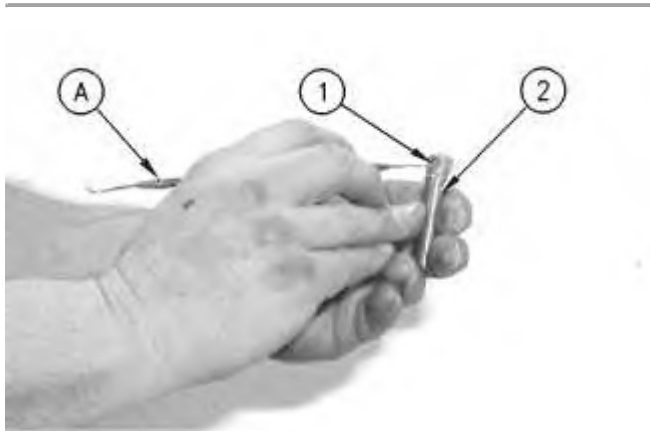


Illustration 3

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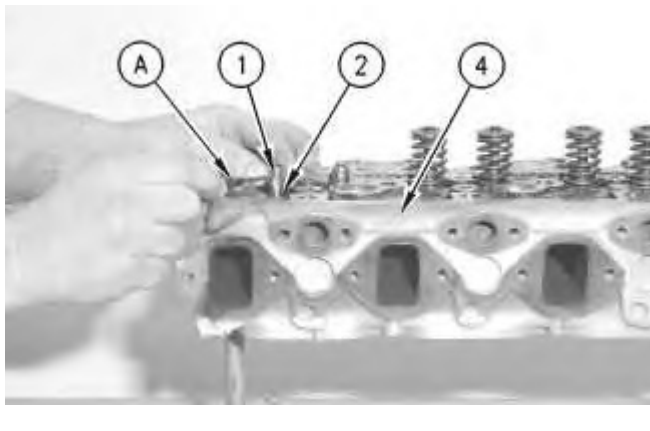


Illustration 4

g00610605

1. Place the new valve stem seal in position on the valve guide.
2. Use Tool (A) to assist in installing the new valve stem seal.

Illustration 3 shows the installation of the valve stem seal, when the valve guide (2) is removed from the cylinder head (4) .

Illustration 4 shows the installation of the valve stem seal, while the valve guide (2) is installed in the cylinder head (4) .

**Note:** After the valve stem seal is installed on the valve guide, ensure that the seal is properly installed in the groove of the valve guide.

**End By:** Install the inlet and exhaust valves. Refer to Disassembly and Assembly, "Inlet and Exhaust Valves - Remove and Install".

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Product: EXCAVATOR

Model: 320-A EXCAVATOR 2DL

Configuration: 320, 320L & 320N TRACK-TYPE EXCAVATORS 2DL00214-UP (MACHINE) POWERED BY 3066 ENGINE

**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

i01565892

## Engine Oil Filter Base - Remove

SMCS - 1306-011

### Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	185-3630	Strap Wrench Assembly	1



### WARNING

**Hot oil and components can cause personal injury.**

**Do not allow hot oil or components to contact skin.**

### NOTICE

**Keep all parts clean from contaminants.**

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

### 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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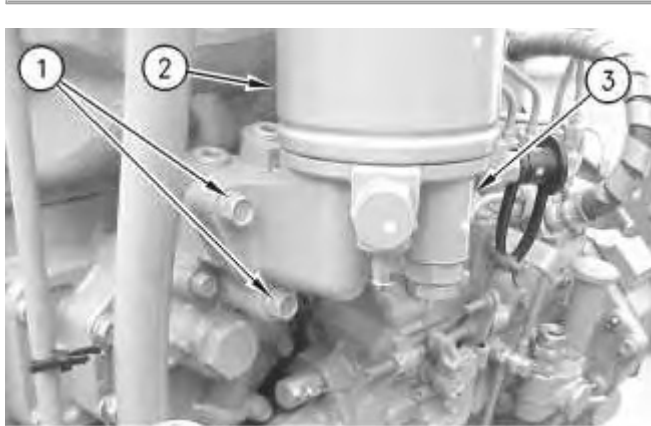


Illustration 1

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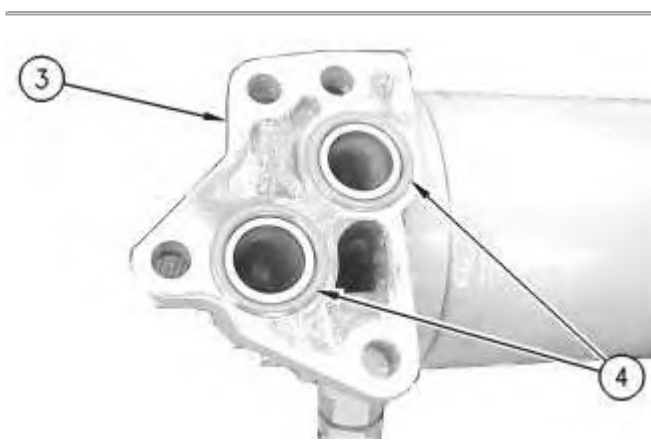


Illustration 2

g00813789

1. Use Tool (A) and remove oil filter (2) from engine oil filter base (3) .
2. Remove the bolts (1) and washers from the engine oil filter base (3) .
3. Remove engine oil filter base (3) from the engine.

4. Check the condition of O-ring seals (4). Replace the O-ring seals, if the O-ring seals are worn or damaged.

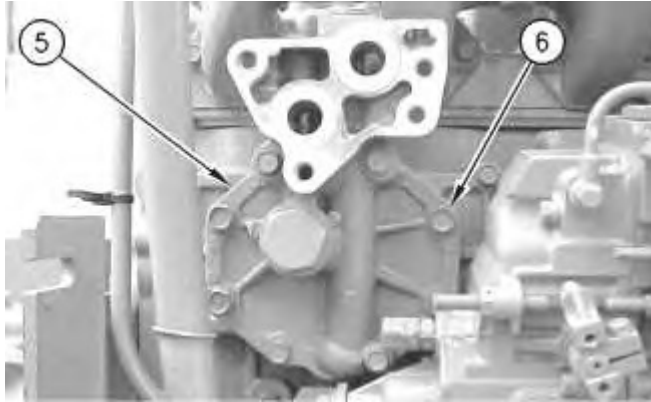


Illustration 3

g00813823

5. If necessary, remove eight bolts (6) and the washers in order to remove plate (5) from the engine.
6. Check the condition of gasket (not shown). Replace the gasket, if the gasket is worn or damaged.
7. Check engine oil filter base (3) and plate (5) for clogging and cracks. Replace damaged components with replacement parts.

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Product: EXCAVATOR

Model: 320-A EXCAVATOR 2DL

Configuration: 320, 320L &amp; 320N TRACK-TYPE EXCAVATORS 2DL00214-UP (MACHINE) POWERED BY 3066 ENGINE

## 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

i01565969

# Engine Oil Filter Base - Install

SMCS - 1306-012

## Installation Procedure

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### NOTICE

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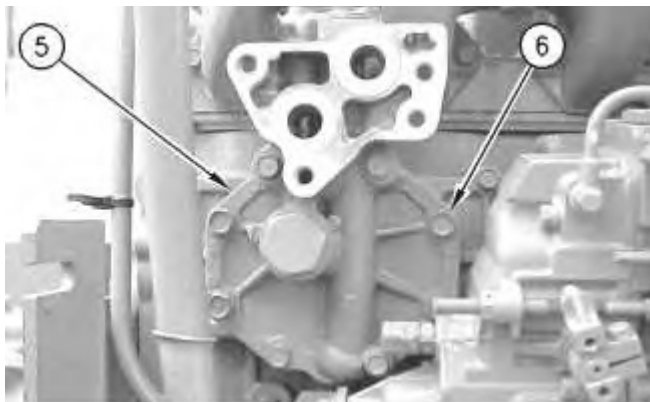


Illustration 1

g00813823

1. Secure gasket and plate (5) to the cylinder block with eight bolts (6) .
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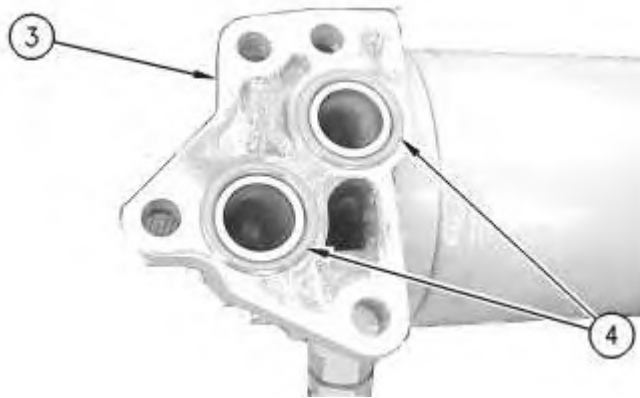


Illustration 2

g00813789

2. Check the condition of O-ring seals (4). Replace the O-ring seals, if the O-ring seals are damaged.

**Note:** Coat all of the O-ring seals with clean engine oil prior to installation.

3. Install the O-ring seals (4) on engine oil filter base (3) .

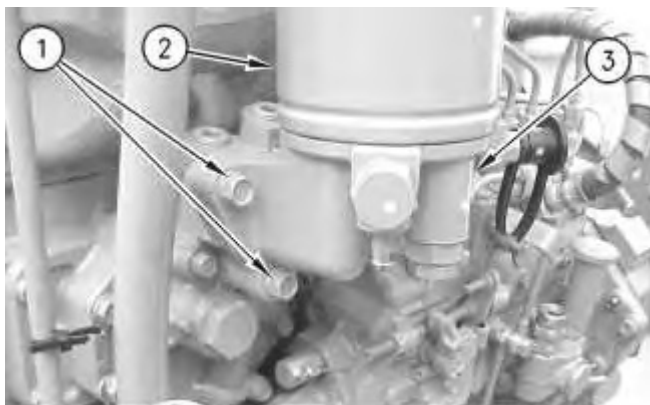


Illustration 3

g00813775

4. Secure engine oil filter base (3) to the plate (5) with four bolts (1) and the washers.
5. Install the engine oil filter (2) to the engine oil filter base (3) .

**Note:** Follow the installation procedure on the engine oil filter in order to install the engine oil filter on the engine oil filter base.

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Product: EXCAVATOR

Model: 320-A EXCAVATOR 2DL

Configuration: 320, 320L &amp; 320N TRACK-TYPE EXCAVATORS 2DL00214-UP (MACHINE) POWERED BY 3066 ENGINE

## 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

i01615275

## Engine Oil Cooler - Remove

SMCS - 1378-011

### Removal Procedure

#### Start By:

- A. Remove the fuel injection pump. Refer to Disassembly and Assembly, "Fuel Injection Pump - Remove".

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#### NOTICE

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

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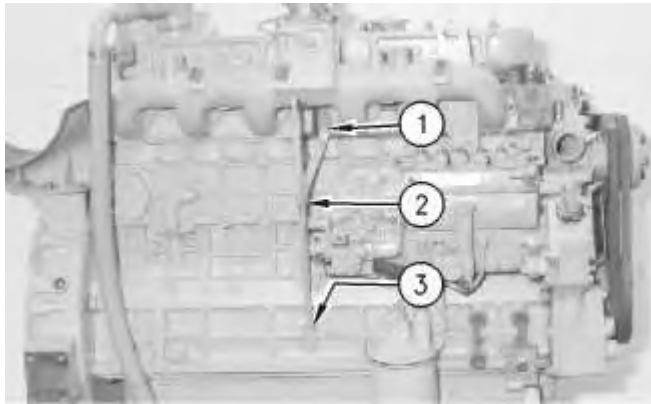


Illustration 1

g00611319

1. If necessary, remove bolt (1) and the washer from the cylinder head.
2. Remove oil tube assembly (dipstick) (2) from the cylinder block.
3. Check O-ring seal (3) (not shown) for wear or damage. Replace the O-ring seal, if the O-ring seal is worn or damaged.

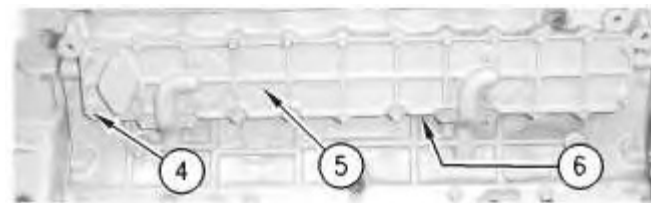


Illustration 2

g00611320

4. Remove bolts (4) and the washers that secure the oil cooler to the engine cylinder block. The 3066 Engine has 24 bolts and washers while the 3064 Engine has 16 bolts and washers.
5. Remove engine oil cooler (5) and gasket (6) (not shown) from the engine cylinder block. Check the gasket for wear or damage. Replace the gasket, if the gasket is worn or damaged.

**Note:** Check the oil cooler cover for cracks. Replace the cover, if the cover is cracked.

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Product: EXCAVATOR

Model: 320-A EXCAVATOR 2DL

Configuration: 320, 320L &amp; 320N TRACK-TYPE EXCAVATORS 2DL00214-UP (MACHINE) POWERED BY 3066 ENGINE

## 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

i01152039

# Engine Oil Cooler - Disassemble

SMCS - 1378-015

## Disassembly Procedure

### Start By:

- A. Remove the oil cooler. Refer to Disassembly and Assembly, "Engine Oil Cooler - Remove".

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### NOTICE

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### NOTICE

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

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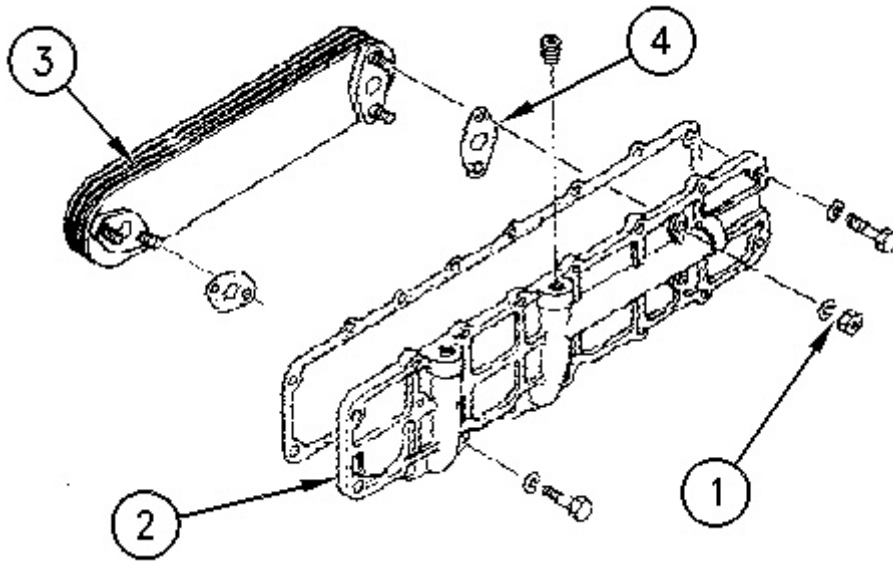


Illustration 1

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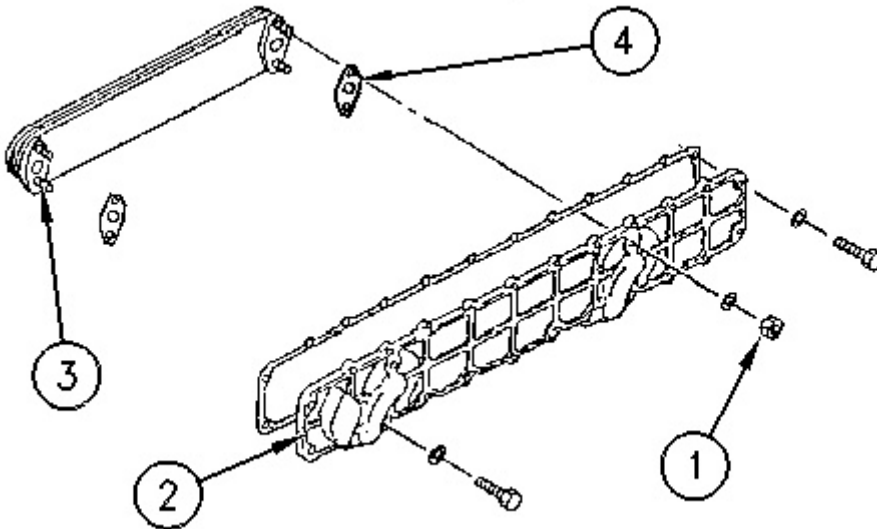


Illustration 2

g00611507

1. Remove four nuts (1) and the washers from the oil cooler core (3) .
2. Remove oil cooler core (3) from oil cooler cover (2) .

**Note:** Check the engine oil cooler core for cracks, clogging, and ruptures.

3. Remove two gaskets (4) from the oil cooler core. Check the gasket for wear or damage. Replace the gaskets, if necessary.
-

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Product: EXCAVATOR

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Configuration: 320, 320L &amp; 320N TRACK-TYPE EXCAVATORS 2DL00214-UP (MACHINE) POWERED BY 3066 ENGINE

## 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

i01152137

### Engine Oil Cooler - Assemble

SMCS - 1378-016

### Assembly Procedure

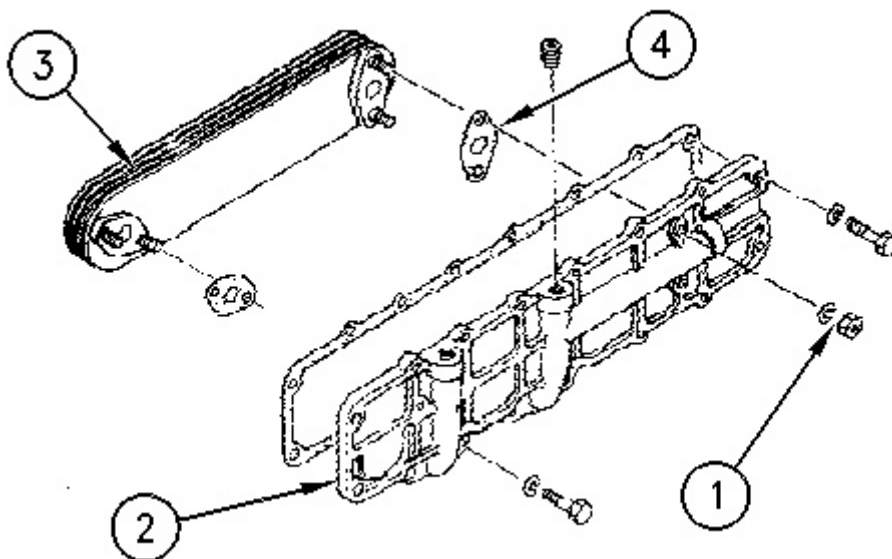
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#### NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

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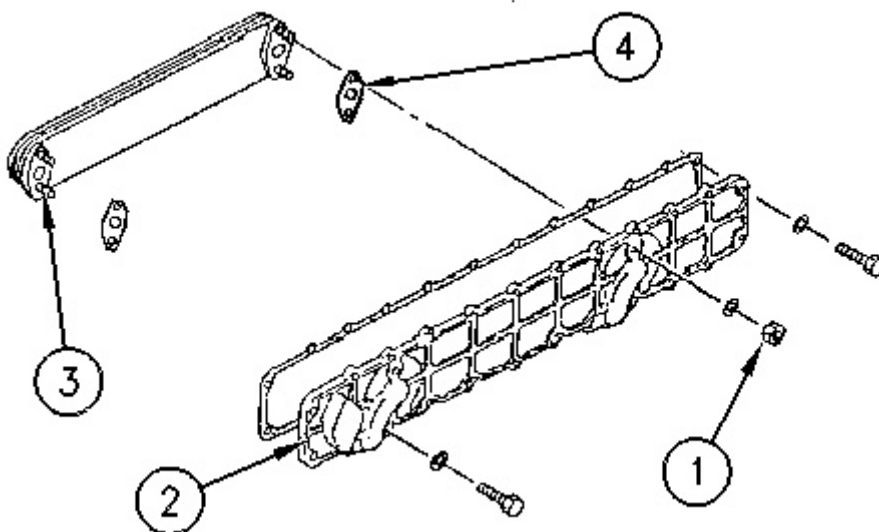


Illustration 2

1. Install two gaskets (4) onto the oil cooler core (3) .
2. Install the oil cooler cover (2) onto the oil cooler core (3) .
3. Install four nuts (1) and the washers, which secure the oil cooler core to the oil cooler cover.
4. Tighten the four nuts (1) .

**End By:** Install the oil cooler. Refer to Disassembly and Assembly, "Engine Oil Cooler - Install".

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Product: EXCAVATOR

Model: 320-A EXCAVATOR 2DL

Configuration: 320, 320L &amp; 320N TRACK-TYPE EXCAVATORS 2DL00214-UP (MACHINE) POWERED BY 3066 ENGINE

## 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

i01615279

# Engine Oil Cooler - Install

SMCS - 1378-012

## Installation Procedure

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### NOTICE

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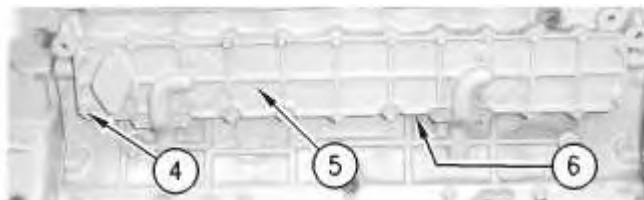
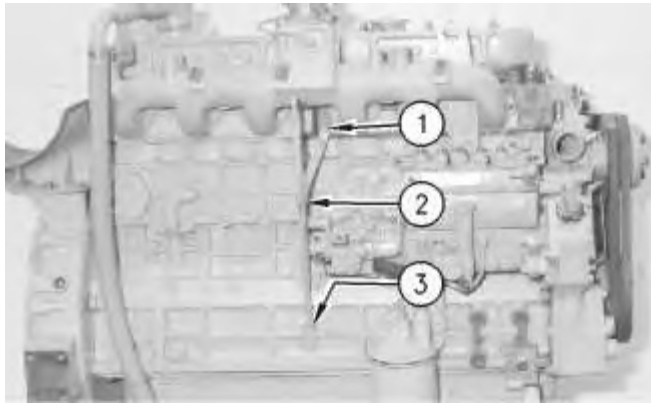


Illustration 1

g00611320

1. Install engine oil cooler (5) and new gasket (6) (not shown). Ensure that all mating surfaces are clean. Install bolts (4) and washers in order to secure the engine oil cooler to the engine cylinder block. The 3066 Engine has 24 bolts and washers while the 3064 Engine has 16 bolts and washers.
-



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Illustration 2

g00611319

2. Install oil tube assembly (dipstick) (2) into the cylinder block.

**Note:** Apply clean engine oil to the O-ring seal (3) (not shown) before installation.

3. Install bolt (1) and the washer into the cylinder head.

**End By:** Install the fuel injection pump. Refer to Disassembly and Assembly, "Fuel Injection Pump - Install".

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Product: EXCAVATOR

Model: 320-A EXCAVATOR 2DL

Configuration: 320, 320L &amp; 320N TRACK-TYPE EXCAVATORS 2DL00214-UP (MACHINE) POWERED BY 3066 ENGINE

## 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

i01615285

# Engine Oil Relief Valve - Remove and Install

SMCS - 1315-010

## Removal 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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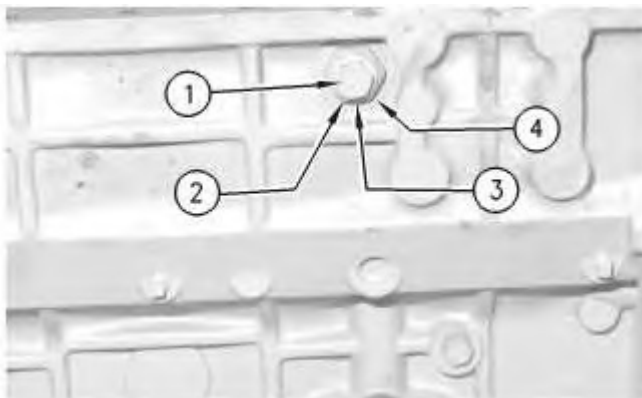


Illustration 1

g00607236

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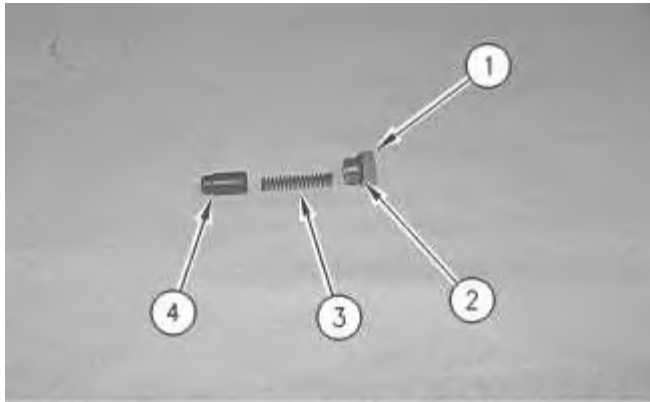


Illustration 2

g00607247

1. Remove threaded plug (1) and the shim (2) for the engine oil relief valve from the right side of the cylinder block.
2. Remove the spring (3) and spring seat (4) from the cylinder block.

**Note:** Check the spring seat (4) and the valve seat for an abnormal contact pattern. Inspect the spring (3) for weakness or damage. If necessary, replace the engine oil relief valve with a new part.

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

## Installation Procedure

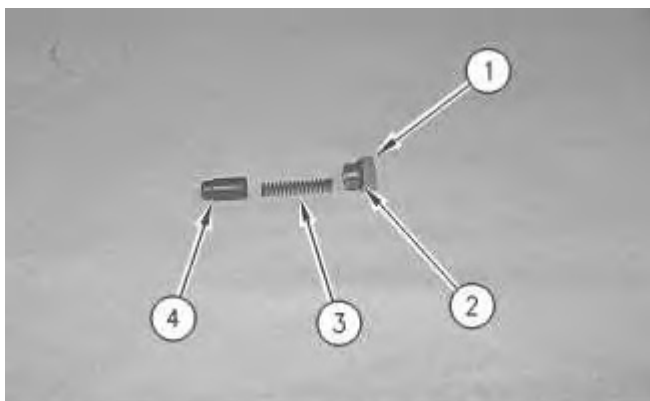
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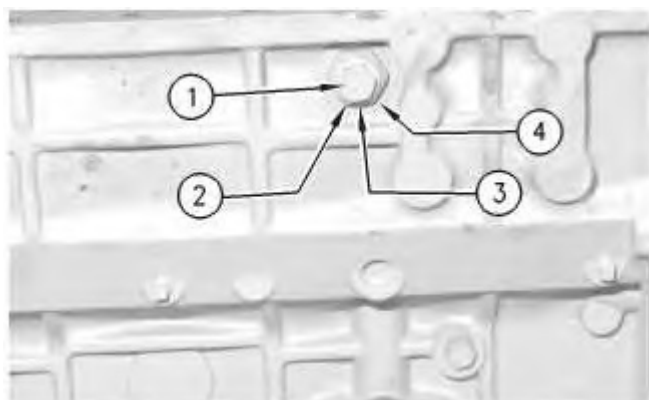


Illustration 4

1. Install spring seat (4) and spring (3) in the cylinder block.
2. Install shim (2) and threaded plug (1) in the cylinder block.
3. Tighten threaded plug (1) of the engine oil relief valve to a torque of  $49 \pm 5 \text{ N}\cdot\text{m}$  ( $36 \pm 4 \text{ lb ft}$ ).

**Note:** Test the opening pressure for the engine oil relief valve. The opening pressure for the relief valve is  $343 \pm 20 \text{ kPa}$  ( $50 \pm 3 \text{ psi}$ ). Make adjustments by shimming, if necessary.

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

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