

Product: COMPACTOR

Model: CB-32B COMPACTOR 422

Configuration: CB32B Compactor 42200001-UP (MACHINE) POWERED BY C1.5 Electric Power Generation

Disassembly and Assembly C1.1, C1.5 and C2.2 Engines for Caterpillar Built Machines

Media Number -KENR8103-03

Publication Date -01/02/2015

Date Updated -09/06/2016

i02848641

Engine Oil Line - Remove and Install

SMCS - 1307-010

Removal Procedure

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, "Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Cat products.

Dispose of all fluids according to local regulations and mandates.

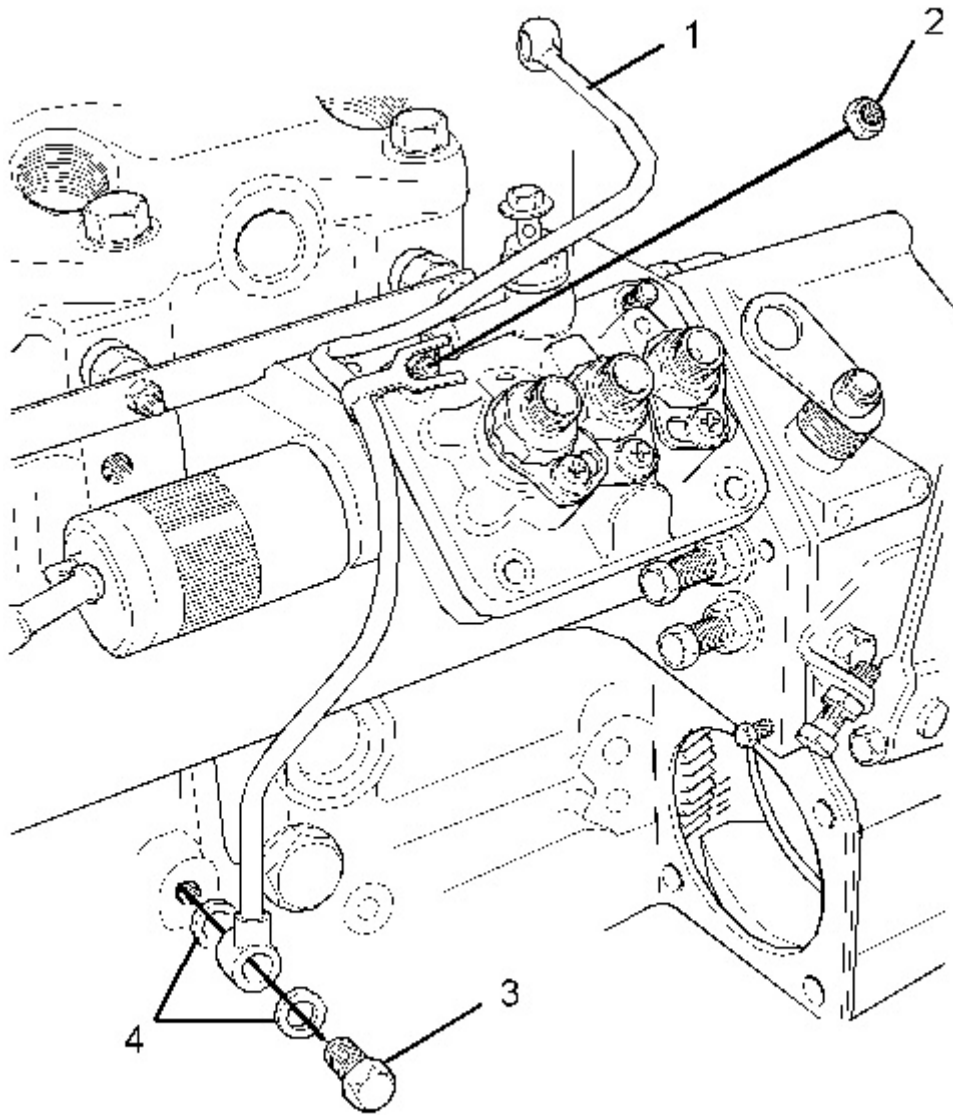


Illustration 1
Typical example

g01117696

1. Loosen the nut (2) that attaches the oil line (1) to the cylinder block.
 2. Remove the banjo bolt (3) and remove the washers (4) from the cylinder block. Discard the washers (4).
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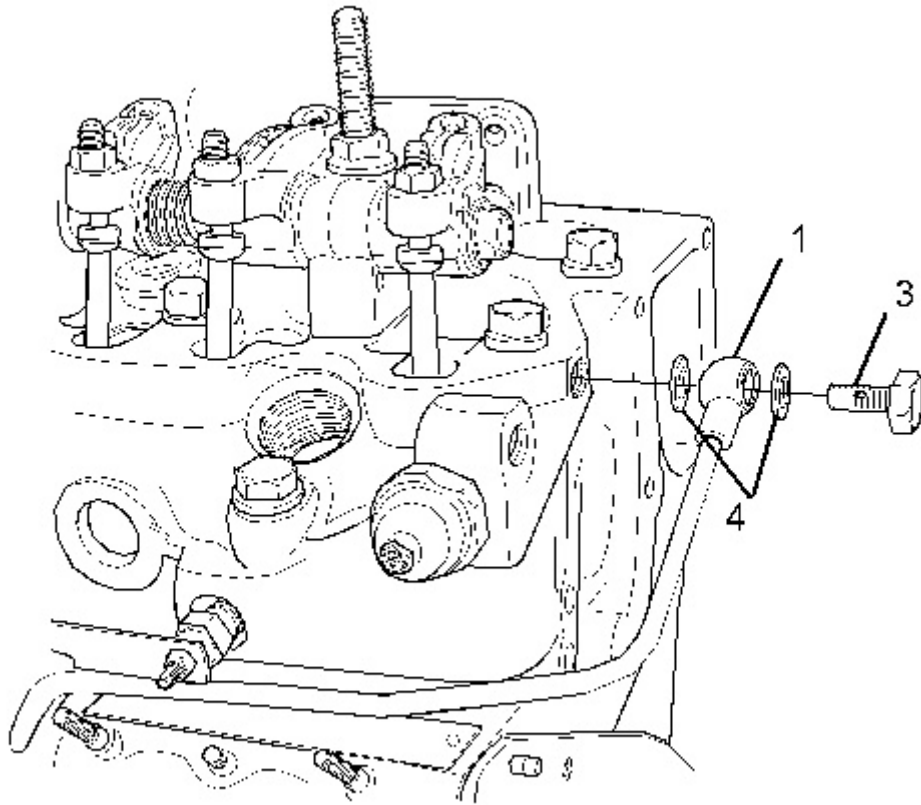


Illustration 2
Typical example

g01117697

3. Remove the banjo bolt (3) and remove the washers (4) from the cylinder head. Discard the washers (4).
4. Remove the oil line (1) from the engine.

Installation Procedure

NOTICE

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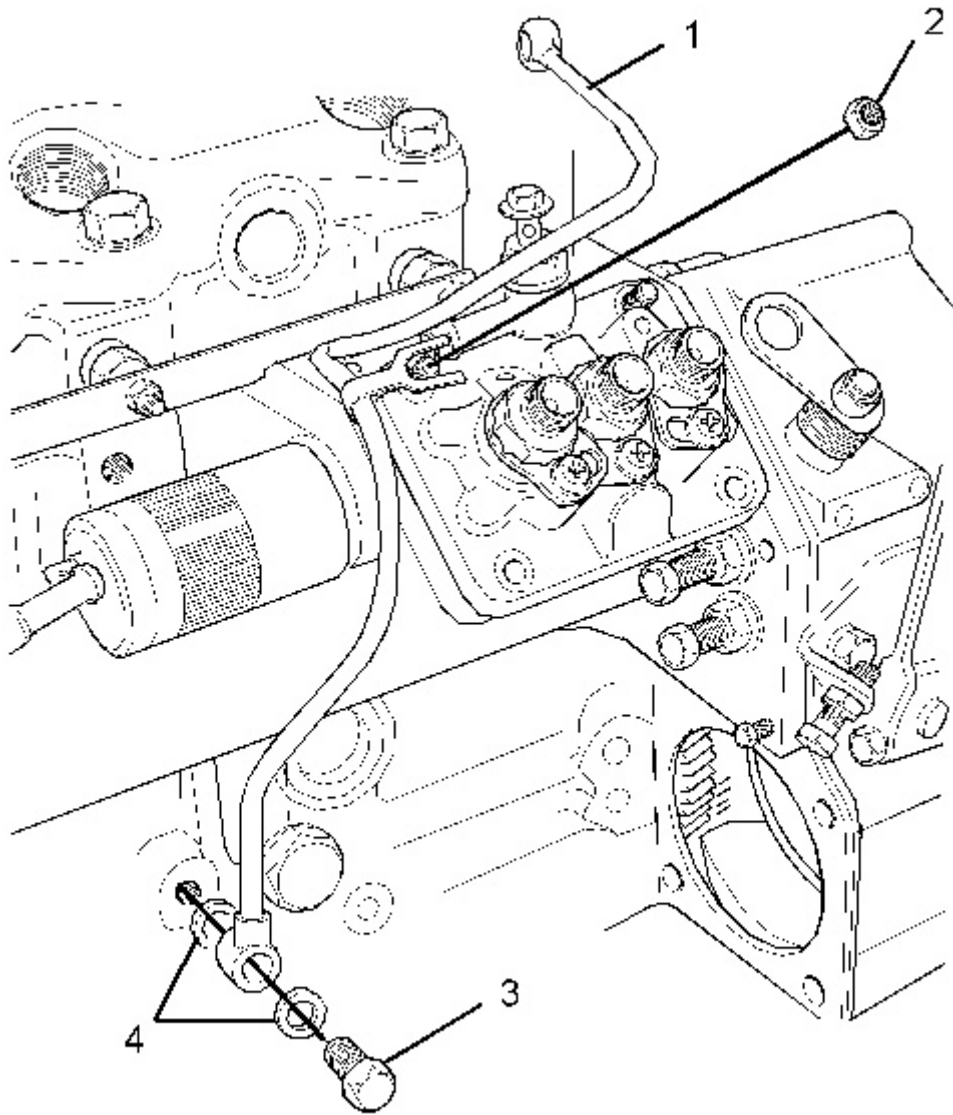


Illustration 3
Typical example

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1. Position the oil line (1) on the engine.
 2. Position the banjo bolt (3) and the new washers (4) on the oil line (1). Install the oil line to the cylinder block.
-

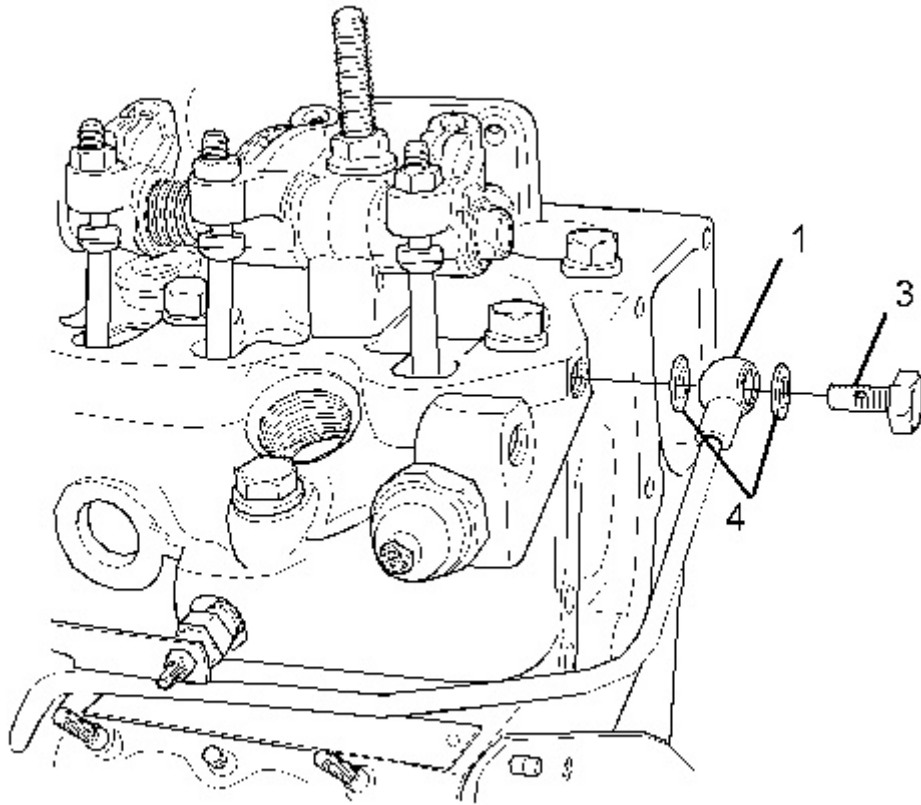


Illustration 4

g01117697

Typical example

3. Position the banjo bolt (3) and the new washers (4) to the oil line (1). Install the oil line to the cylinder head.
 4. For C1.1 engines, install the nut (2) that attaches the oil line (1) to the cylinder block. Tighten the nut (2) to a torque of 6 N·m (4.4 lb ft). For C1.5 and C2.2 engines, install the nut (2) that attaches the oil line (1) to the cylinder block. Tighten the nut (2) to a torque of 15 N·m (11 lb ft).
 5. Tighten the banjo bolts (3) to 11.5 N·m (8.5 lb ft).
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i02236297

Engine Oil Relief Valve - Remove and Install

SMCS - 1315-010

Removal Procedure

NOTICE

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NOTICE

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Dispose of all fluids according to local regulations and mandates.

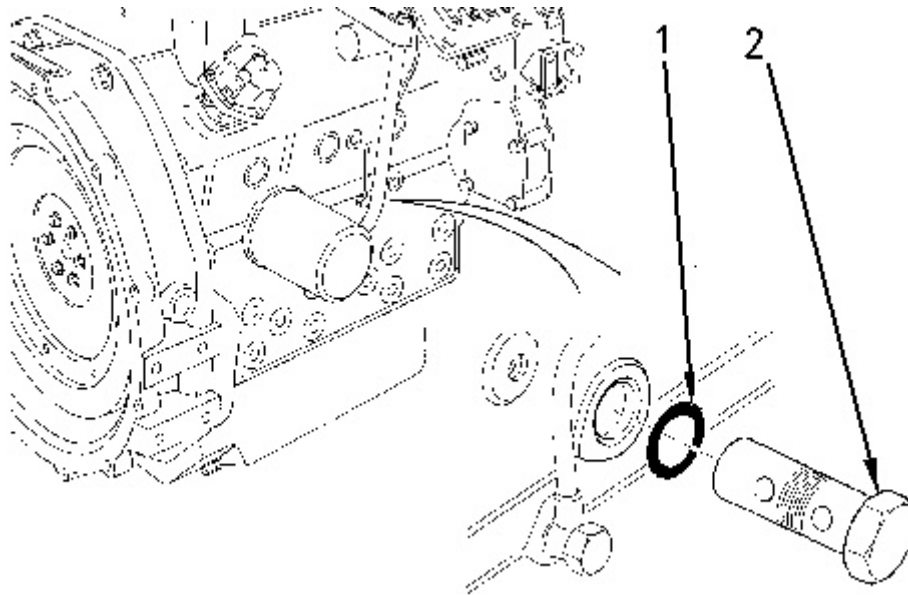


Illustration 1

g00820218

1. Remove the engine oil relief valve (2) from the cylinder block.
2. Remove the O-ring (1) from the engine oil relief valve. Discard the O-ring.

Installation Procedure

NOTICE

Keep all parts clean from contaminants.

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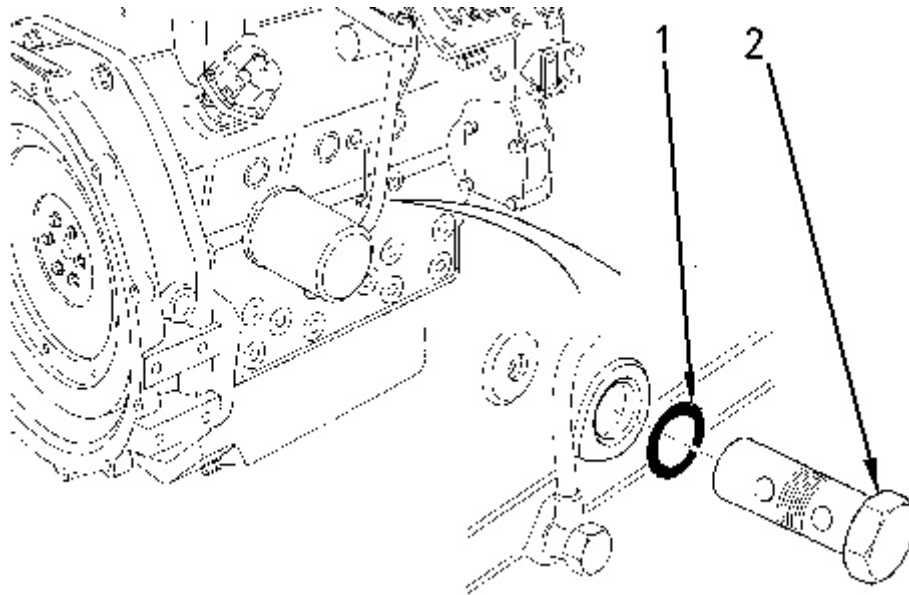


Illustration 2

g00820218

1. Install a new O-ring (1) on the engine oil relief valve (2).
 2. Lubricate the engine oil relief valve (2) with clean engine oil.
 3. Install the engine oil relief valve (2) in the cylinder block. Tighten the engine oil relief valve to a torque of 64 N·m (47 lb ft).
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i02236295

Engine Oil Pump - Remove

SMCS - 1304-011

Removal Procedure

Start By:

- a. Remove the engine oil pan. Refer to Disassembly and Assembly, "Engine Oil Pan - Remove and Install".
- b. Remove the front housing. Refer to Disassembly and Assembly, "Housing (Front) - Remove".

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

NOTICE

**If the front housing is not installed, do not turn the crankshaft.
Damage to the engine may occur.**

NOTICE

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Engine Oil Pump

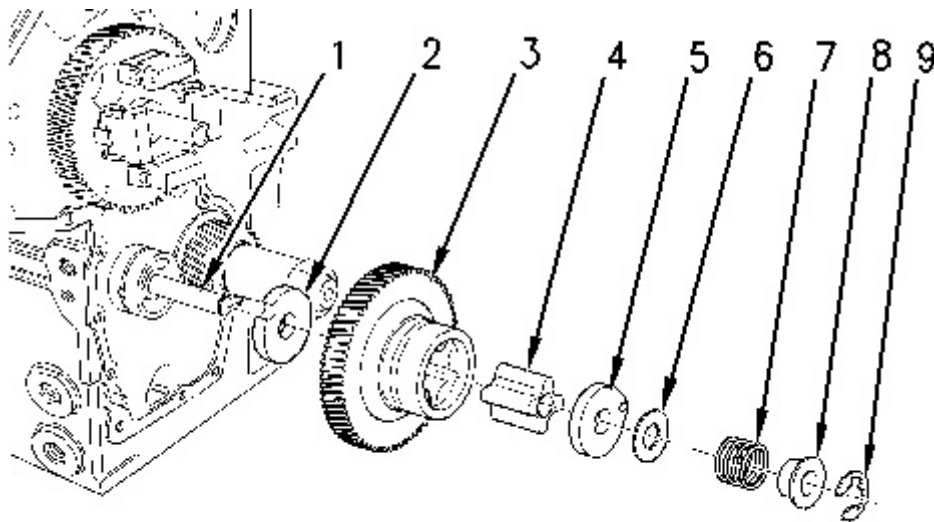


Illustration 1

g00825411

WARNING

Personal injury can result from being struck by parts propelled by a released spring force.

Make sure to wear all necessary protective equipment.

Follow the recommended procedure and use all recommended tooling to release the spring force.

-
1. Remove the C-clip (9) that retains the idler gear (3) on the idler hub (1).

2. Remove the following items from the idler hub (1):

- Collar (8)
- Spring (7)
- Shim (6)
- Oil pump cover (5)
- Inner rotor (4)

3. Remove the idler gear (3) from the idler hub (1).

4. Remove the thrust washer (2) from the idler hub (1).

5. Inspect all the components for wear or damage. If any components are worn or damaged, use new parts for replacement.

Note: Refer to Specifications, "Engine Oil Pump" for more information.

6. If the engine oil pump has excessive buildup of sludge, inspect the oil strainer. The oil strainer can be removed by using the following procedure:

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

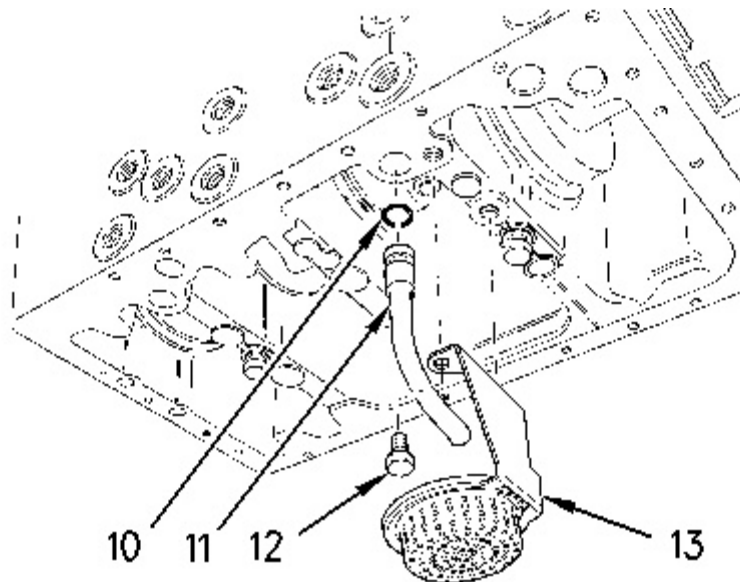


Illustration 2

g00825406

b. Remove the setscrews (12) and the oil strainer (13) from the cylinder block. Inspect the oil strainer for damage. If the oil strainer is damaged, use a new part for replacement.

c. Remove the oil tube (11) from the cylinder block.

d. Remove the O-ring (10) from the oil tube. Discard the used O-ring.

Idler Hub

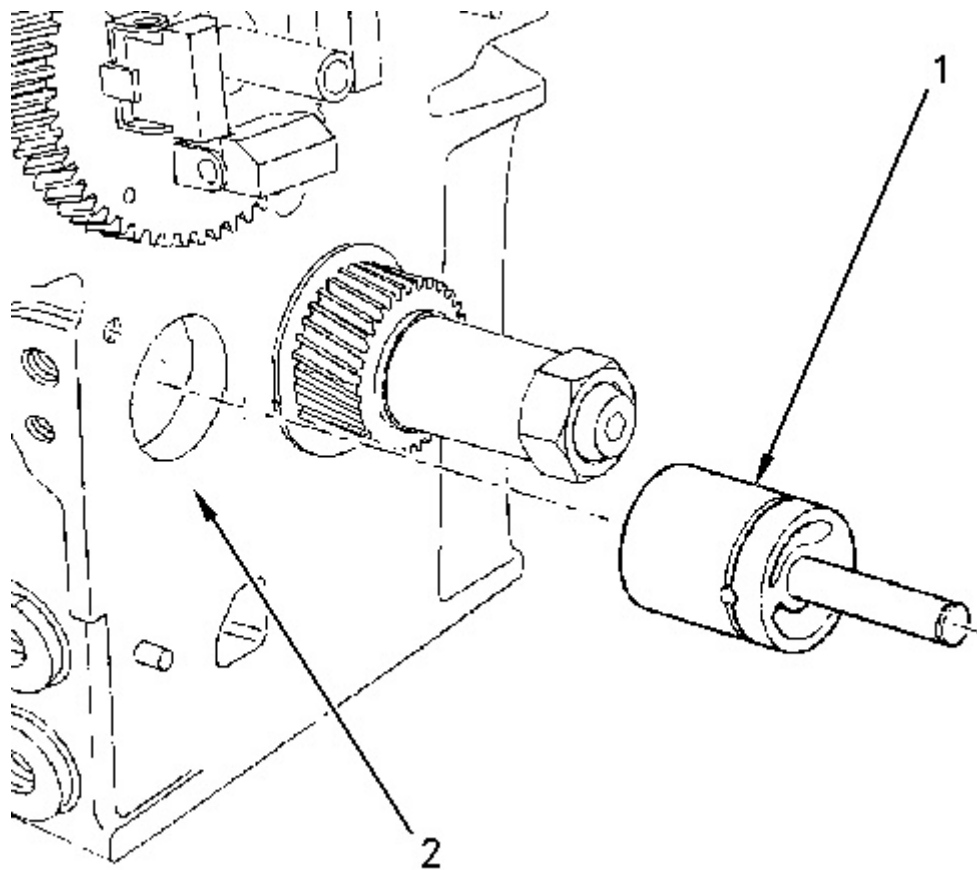


Illustration 3
Typical example

g00831103

1. Remove the crankshaft. Refer to Disassembly and Assembly, "Crankshaft - Remove".
 2. Use a hammer and use a suitable drift to remove idler hub (1) from the cylinder block (2). Align the drift to the rear face of the hub and drive the hub from the inside of the cylinder block outward.
-

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i02848643

Engine Oil Pump - Install

SMCS - 1304-012

Installation Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A ⁽¹⁾	256-4864	Alignment Tool	1
A ⁽²⁾	241-4232	Alignment Tool	1
B	1P-0808	Multipurpose Grease	1

⁽¹⁾ C1.1 engines

⁽²⁾ C1.5 and C2.2 engines

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

NOTICE

**If the front housing is not installed, do not turn the crankshaft.
Damage to the engine may occur.**

Idler Hub

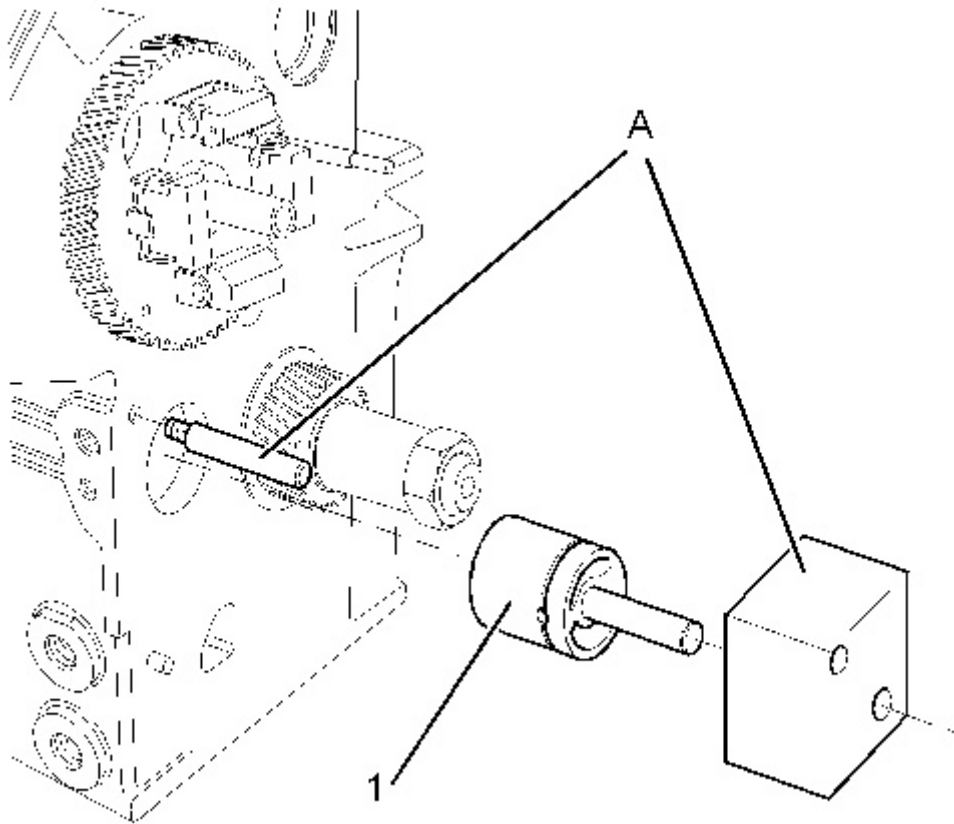


Illustration 1

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1. Install the pin of Tooling (A) to the cylinder block.
2. Position the guide plate of Tooling (A) onto idler hub (1). Align the guide plate of Tooling (A) with pin of Tooling (A).
3. Use a hammer in order to strike the guide plate of Tooling (A). This will install idler hub (1).
4. Remove Tooling (A).

Engine Oil Pump

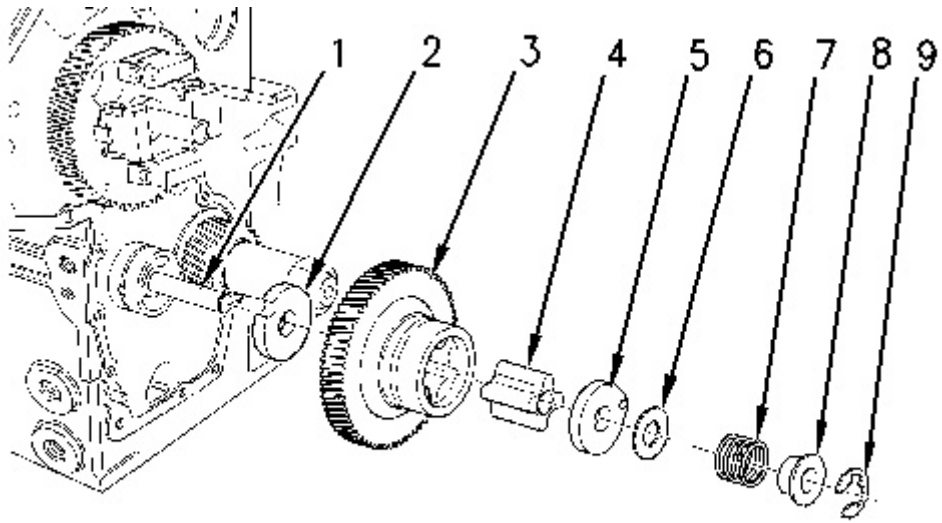


Illustration 2

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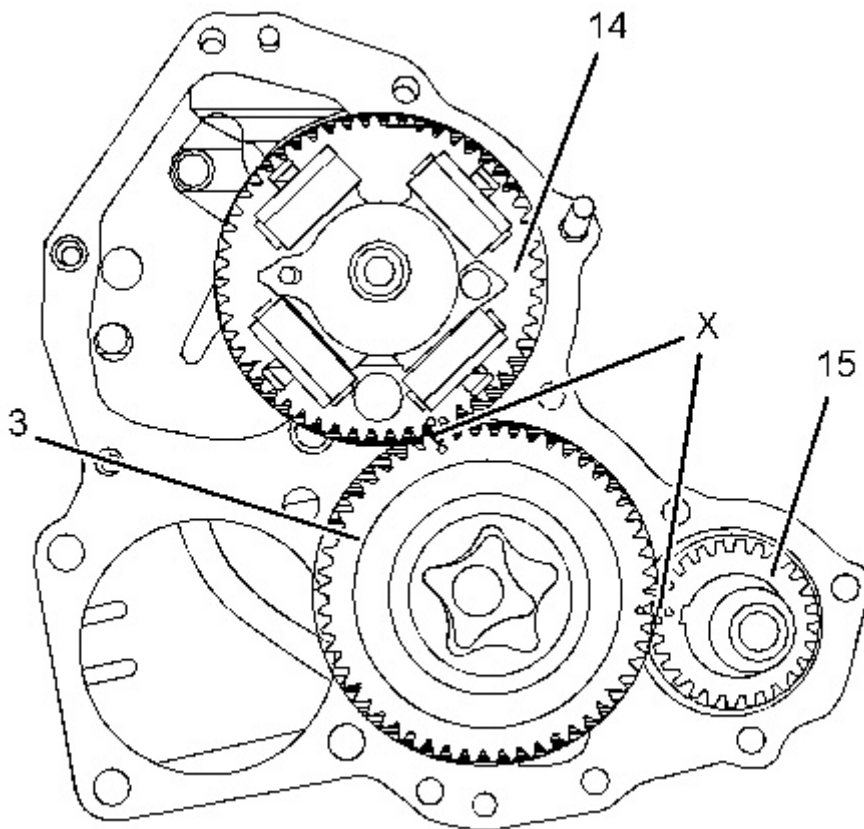


Illustration 3

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Improper assembly of parts that are spring loaded can cause bodily injury.

To prevent possible injury, follow the established assembly procedure and wear protective equipment.

1. Apply Tooling (B) to the faces of inner rotor (4) and to the vanes of idler gear (3).
2. Align timing marks (X) on idler gear (3) with the respective timing marks on gears (14) and (15). Install idler gear (3) onto idler hub (1).
3. Install inner rotor (4) to idler gear (3).



Personal injury can result from the release of the spring force.

The drive shaft, the piston, and the drive gear are under spring force.

Use a press to slowly release the spring force before the components are removed.

4. Install the following items to idler hub (1):
 - Oil pump cover (5)
 - Shim (6)
 - Spring (7)
 - Collar (8)

Refer to Illustration 2.

5. Install retaining ring (9) on idler hub (1).
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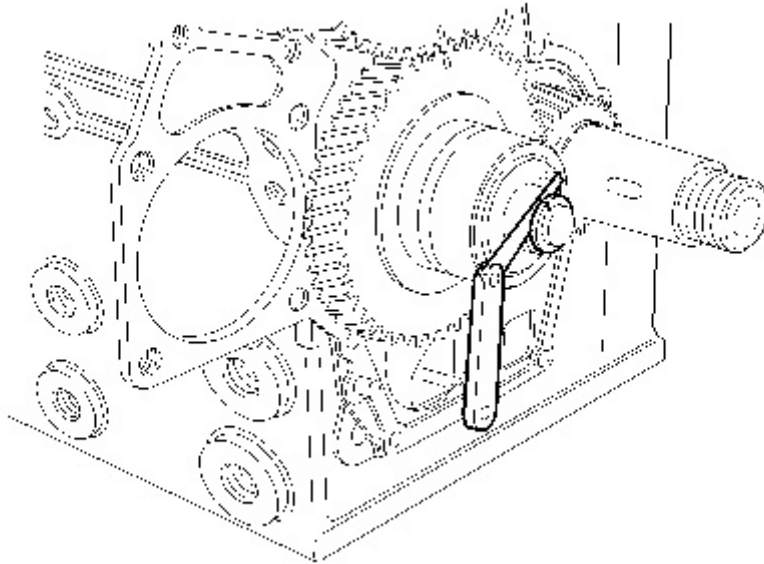


Illustration 4

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Checking end play by using a feeler gauge

6. Use a feeler gauge in order to measure the end play of engine oil pump. Refer to Specifications, "Engine Oil Pump".
7. If the oil strainer was removed, use the following procedure for installation:

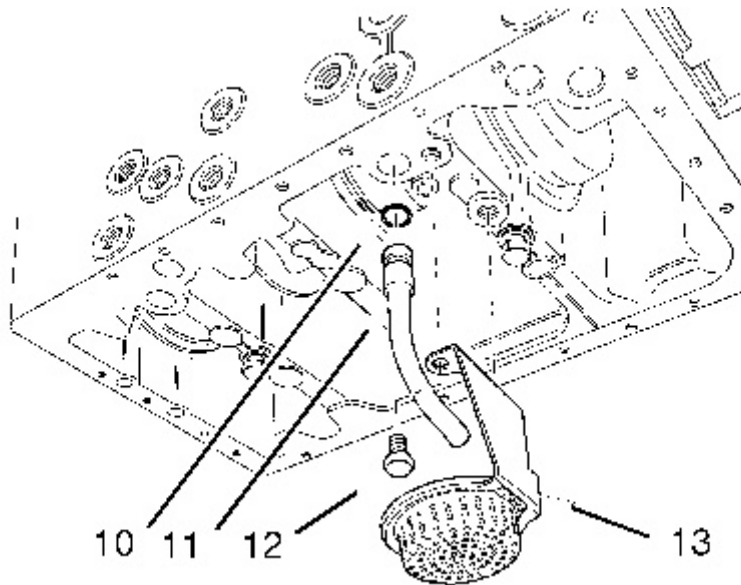


Illustration 5

g01037619

- a. Install a new O-ring seal (10) on oil tube assembly (11).
- b. Install oil tube assembly (11) in the cylinder block.
- c. Install oil strainer (13) to the cylinder block and tighten bolts (12) to a torque of 11 N·m (8 lb ft).

End By:

- a. Install the front housing. Refer to Disassembly and Assembly, "Housing (Front) - Install".
 - b. Install the engine oil pan. Refer to Disassembly and Assembly, "Engine Oil Pan - Remove and Install".
-

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i02736139

Water Pump - Remove

SMCS - 1361-011

Removal Procedure

Start By:

- a. Remove the fan. Refer to Disassembly and Assembly, "Fan - Remove and Install".
- b. Remove the alternator. Refer to Disassembly and Assembly, "Alternator - Remove and Install".

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

NOTICE

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Dispose of all fluids according to local regulations and mandates.

1. Drain the coolant from the cooling system into a suitable container for storage or disposal. Refer to Operation and Maintenance Manual, "Refill Capacities" for the approximate capacity of the cooling system.
 2. Loosen the clamps and remove the hose from the water pump inlet (not shown).
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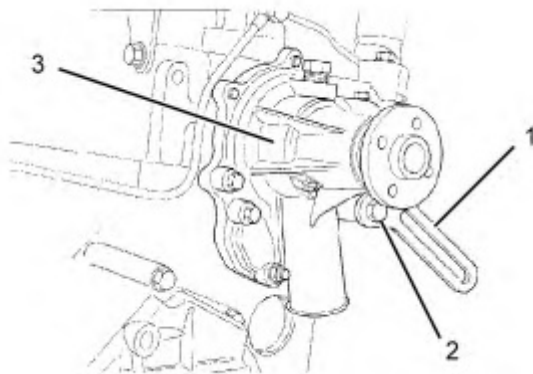
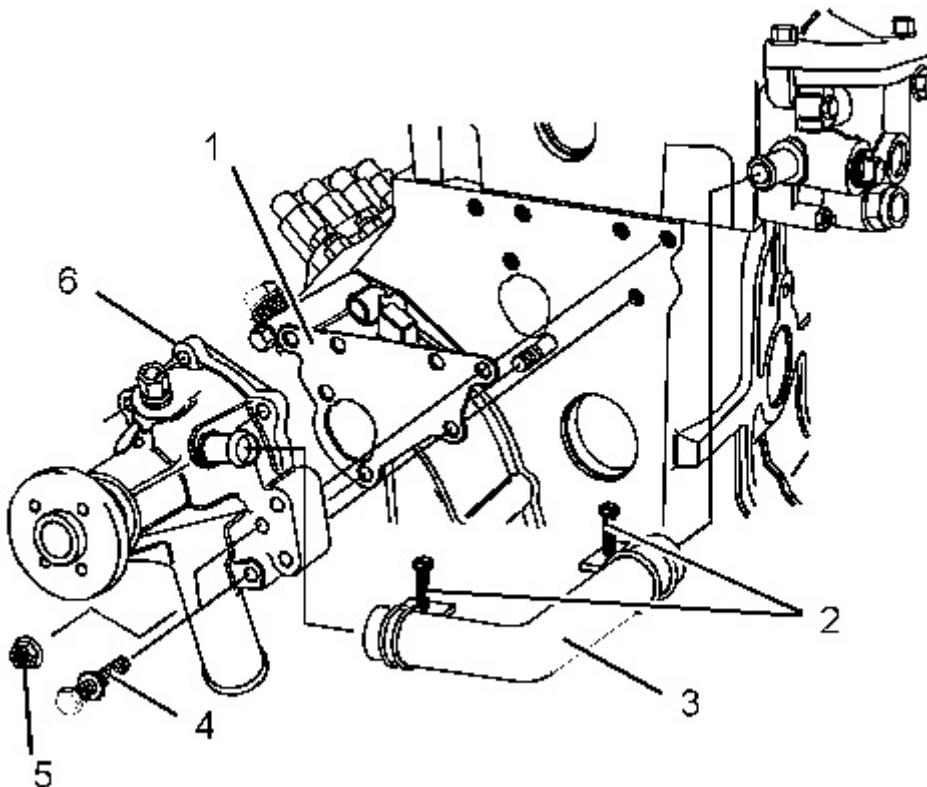


Illustration 1

g01372127

Typical example

3. Remove the fasteners (2) and the alternator bracket (1) from the water pump (3).
-



Typical example

4. Loosen the clamps (2) and remove the bypass hose (3) from the water pump (6).
 5. Remove the setscrews, the washers (4) and the nut (5).
 6. If necessary, gently tap the water pump (6) with a soft faced hammer in order to loosen the water pump (6).
 7. Remove the water pump (6). Remove the joint (1) from the cylinder block. Discard the joint (1).
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