

Product: TRACK-TYPE TRACTOR

Model: D4K2 LGP TRACK-TYPE TRACTOR KR2

Configuration: D4K2 XL & D4K2 LGP Small Track Type Tractor KR200001-UP (MACHINE) POWERED BY C4.4 Engine

Disassembly and Assembly

C4.4 Engines for Caterpillar Built Machines

Media Number -UENR4516-11

Publication Date -01/06/2015

Date Updated -29/10/2018

i05820270

Engine Oil Cooler - Remove

SMCS - 1378-011

Removal Procedure

Start By:

- a. Remove the Electronic Control Module (ECM). Refer to Disassembly and Assembly, "Electronic Control Module - Remove" for the correct procedure.

NOTICE

Ensure that all adjustments and repairs that are carried out to the fuel system are performed by authorized personnel that have the correct training.

Before beginning ANY work on the fuel system, refer to Operation and Maintenance Manual, "General Hazard Information and High Pressure Fuel Lines" for safety information.

Refer to System Operation, Testing and Adjusting, "Cleanliness of Fuel System Components" for detailed information on the standards of cleanliness that must be observed during ALL work on the fuel system.

NOTICE

Keep all parts clean from contaminants.

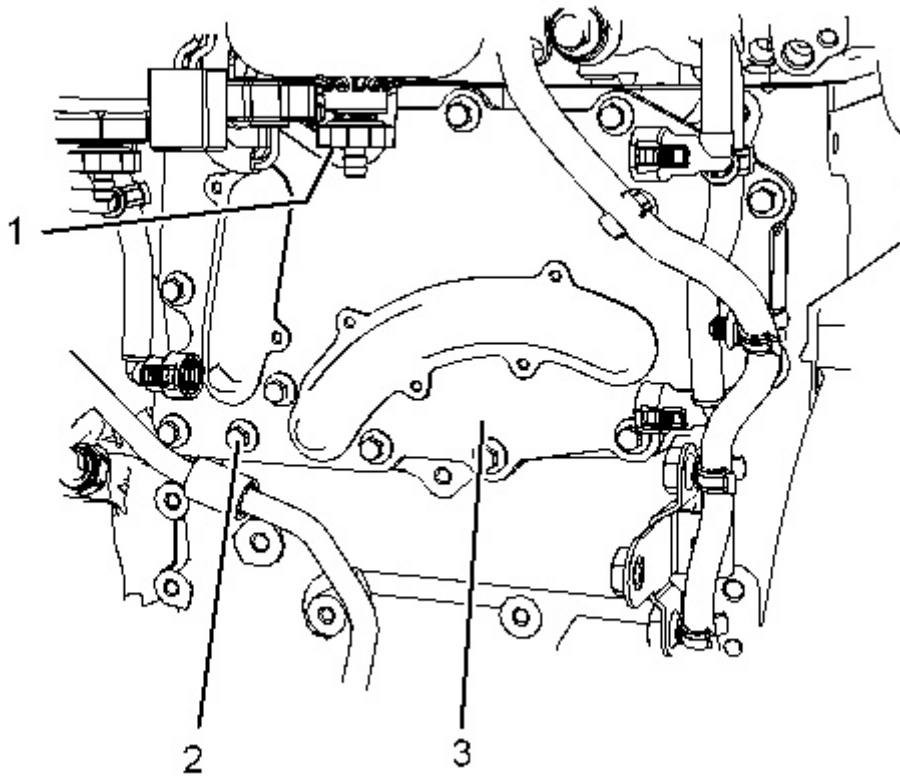
Contaminants may cause rapid wear and shortened component life.

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.

Dispose of all fluids according to local regulations and mandates.

1. Drain the coolant from the cooling system into a suitable container. Refer to Operation and Maintenance Manual, "Cooling System Coolant - Drain" for the correct procedure.
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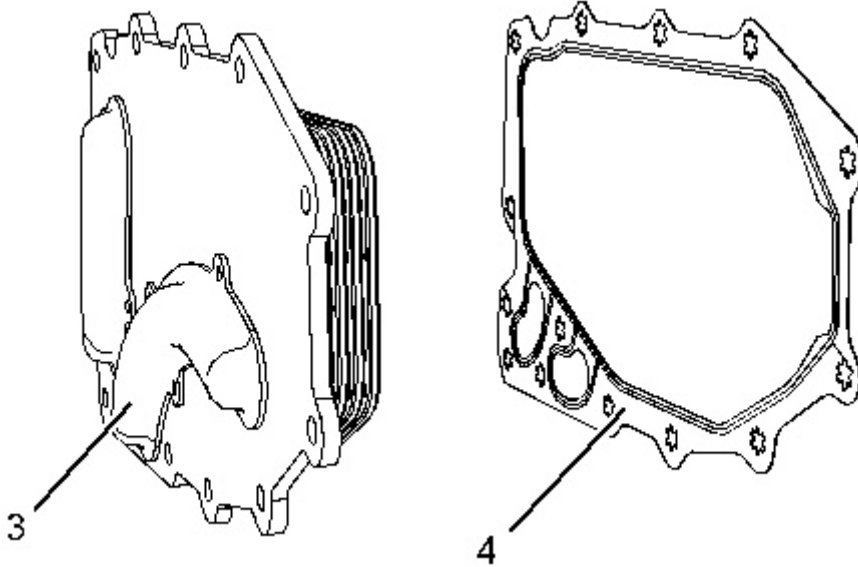


Illustration 2

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2. Remove spacer (1) (not shown) from the cylinder block.
3. Remove bolt (2) from the assembly of engine oil cooler (3).

Note: Support the engine oil cooler as the bolts are removed.

4. Remove the assembly of engine oil cooler (3) from the cylinder block.
 5. Remove gasket (4) from engine oil cooler (3).
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Disassembly and Assembly C4.4 Engines for Caterpillar Built Machines

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i05820271

Engine Oil Cooler - Install

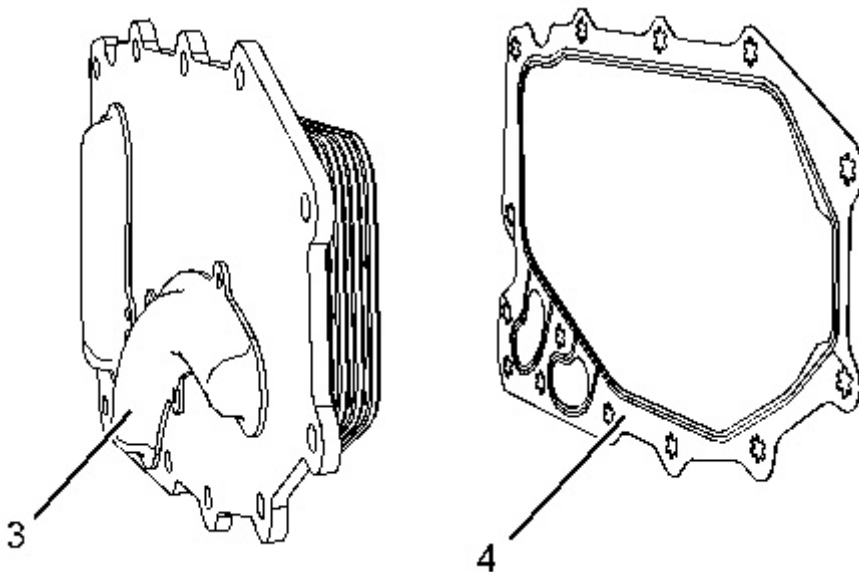
SMCS - 1378-012

Installation Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.



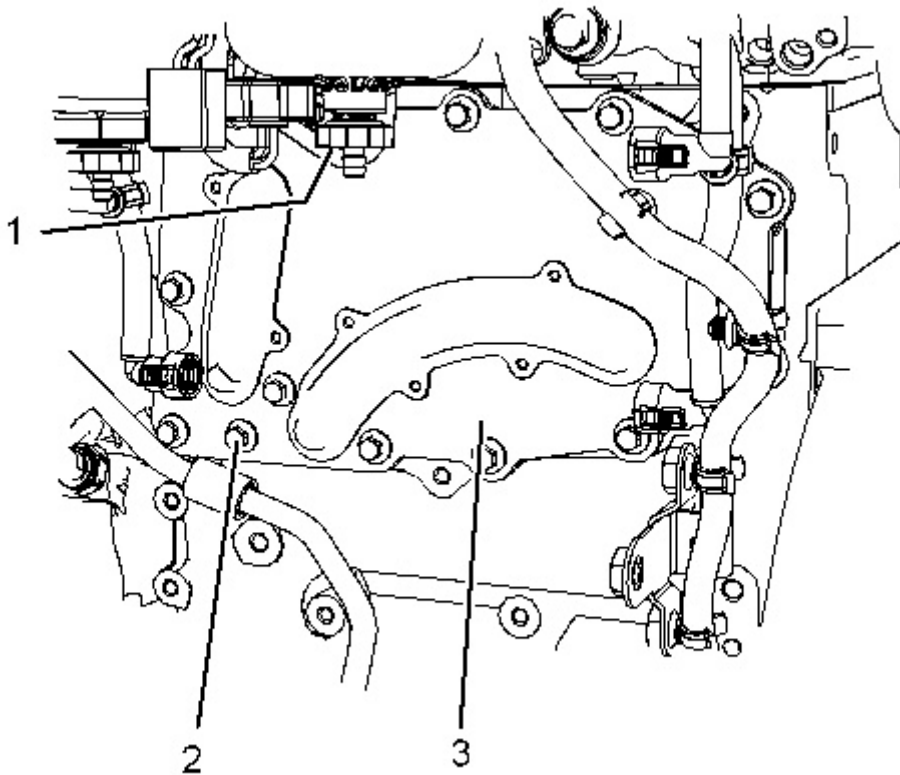


Illustration 2

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1. Ensure that engine oil cooler (3) is clean and free from damage. Ensure that the engine oil cooler is free from restriction.
2. Clean the gasket surfaces of the cylinder block.
3. Position a new gasket (4) onto engine oil cooler (3).
4. Push bolts (1) through the holes in the gasket.

Note: The holes in the gasket have serrations that hold the bolts captive.

5. Position engine oil cooler (3) onto the cylinder block. Hand tighten bolts (2). Support the engine oil cooler as the bolts are installed.
-

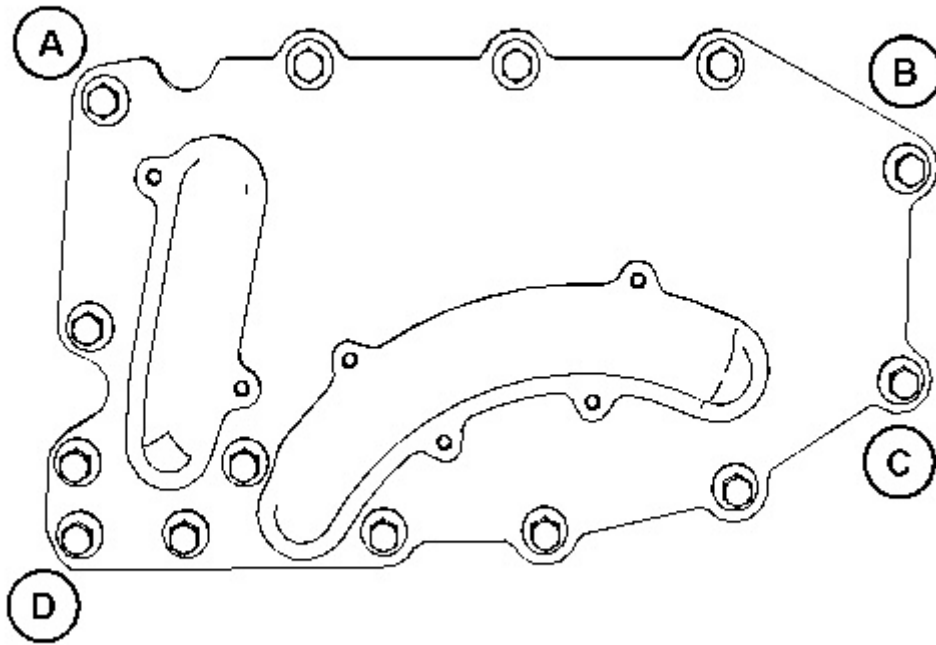


Illustration 3

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Snug torque tightening sequence for the engine oil cooler

6. Tighten the bolts to a snug torque of 7.5 N·m (66) in the sequence that is shown in Illustration 3.
-

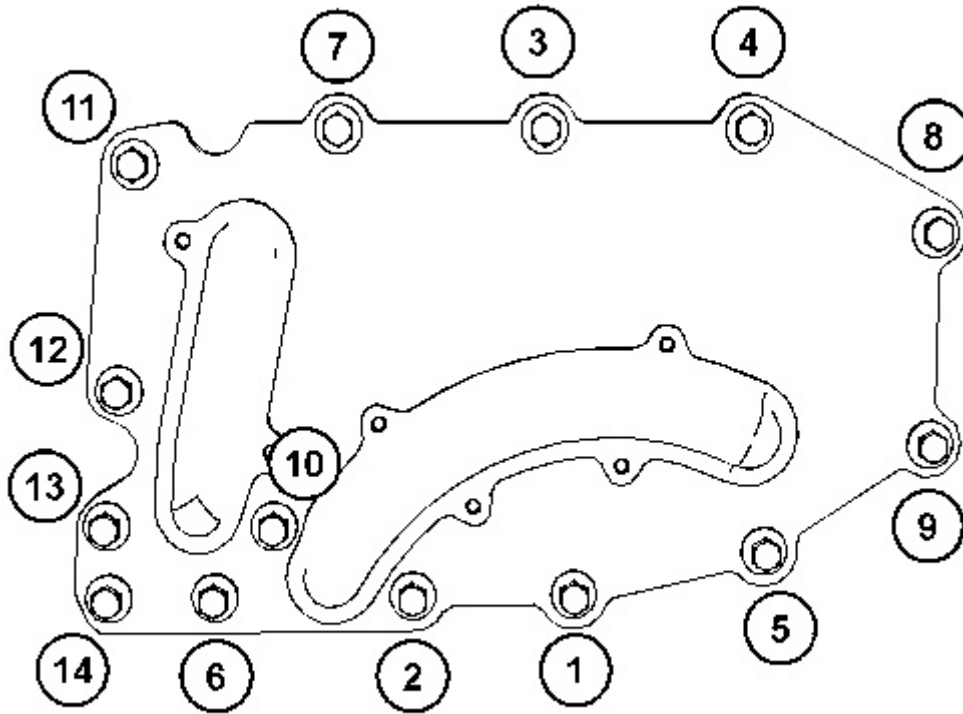


Illustration 4

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Tightening sequence for the engine oil cooler

7. Tighten the bolts to a torque of 26 N·m (230 lb in) in the sequence that is shown in Illustration 4.
8. Install spacer (1) (not shown). Tighten the bolts to a torque of 44 N·m (32 lb ft). Refer to Illustration 2

End By:

- a. Install the Electronic Control Module (ECM). Refer to Disassembly and Assembly, "Electronic Control Module - Install" for the correct procedure.
-

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i05820272

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" for the correct 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.

Dispose of all fluids according to local regulations and mandates.

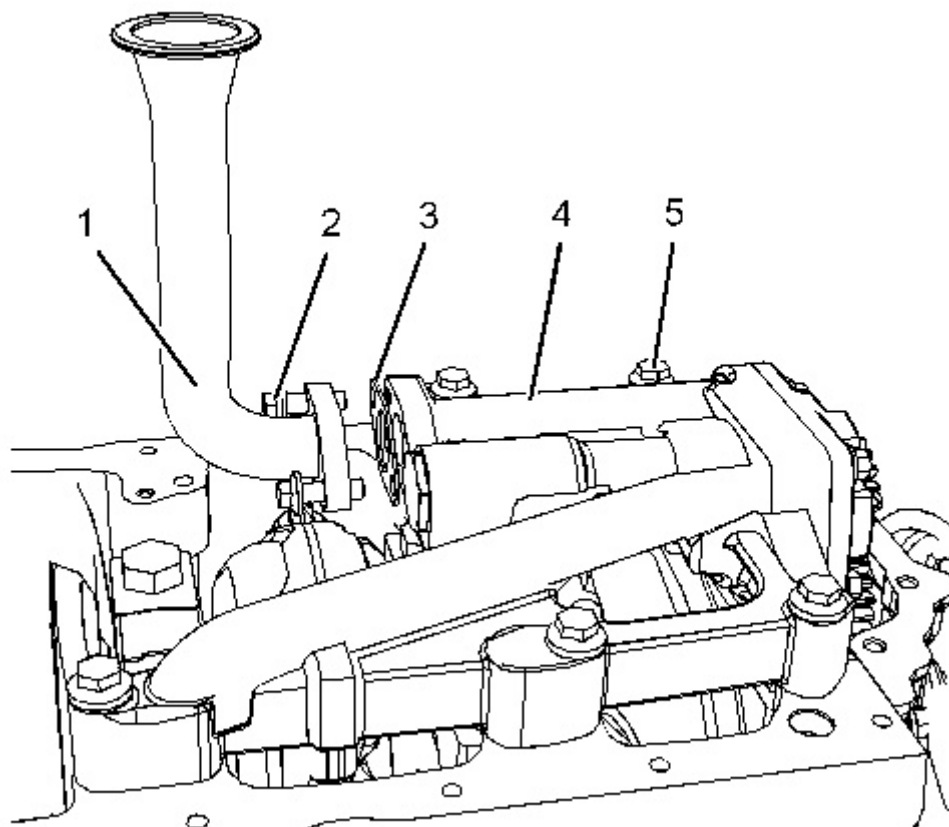


Illustration 1

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1. Remove bolts (2). Remove suction pipe (1) from engine oil pump (4).
 2. Remove gasket (3).
 3. Remove bolts (5) and remove the assembly of engine oil pump (4) from the cylinder block.
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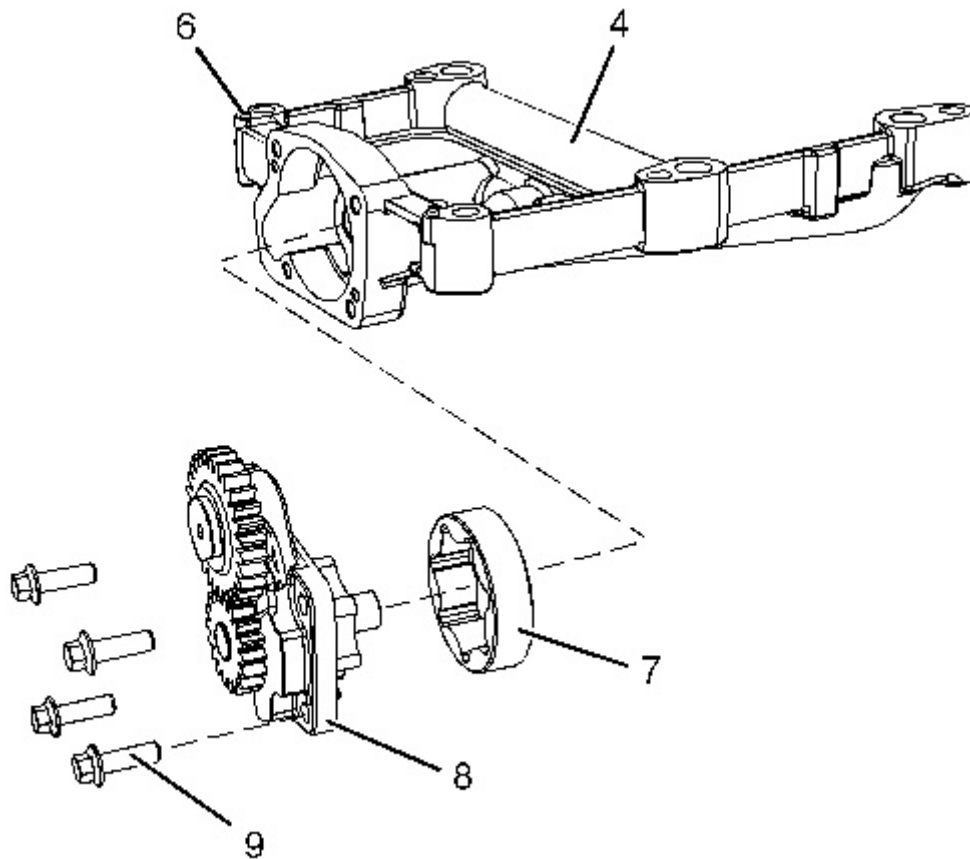


Illustration 2

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4. If necessary, follow Step 4.a through Step 4.d in order to disassembly engine oil pump (4).
 - a. Remove bolts (9) from front cover assembly (8).
 - b. Remove front cover assembly (8) from the housing of the engine oil pump (4).
 - c. Remove outer rotor (7) from the housing of engine oil pump (4).
 - d. Do not remove dowel (6) from the housing of engine oil pump (4) unless the dowels are damaged.
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i05820273

Engine Oil Pump - Install

SMCS - 1304-012

Installation Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

NOTICE

If any part of the engine oil pump is worn or damaged, the complete assembly of the engine oil pump must be replaced.

1. Ensure that all components of the engine oil pump are clean and free from wear and damage. Refer to System Operation, Testing and Adjusting, "Engine Oil Pump - Inspect" for more information. Replace the complete assembly of the engine oil pump if any of the components are worn or damaged.
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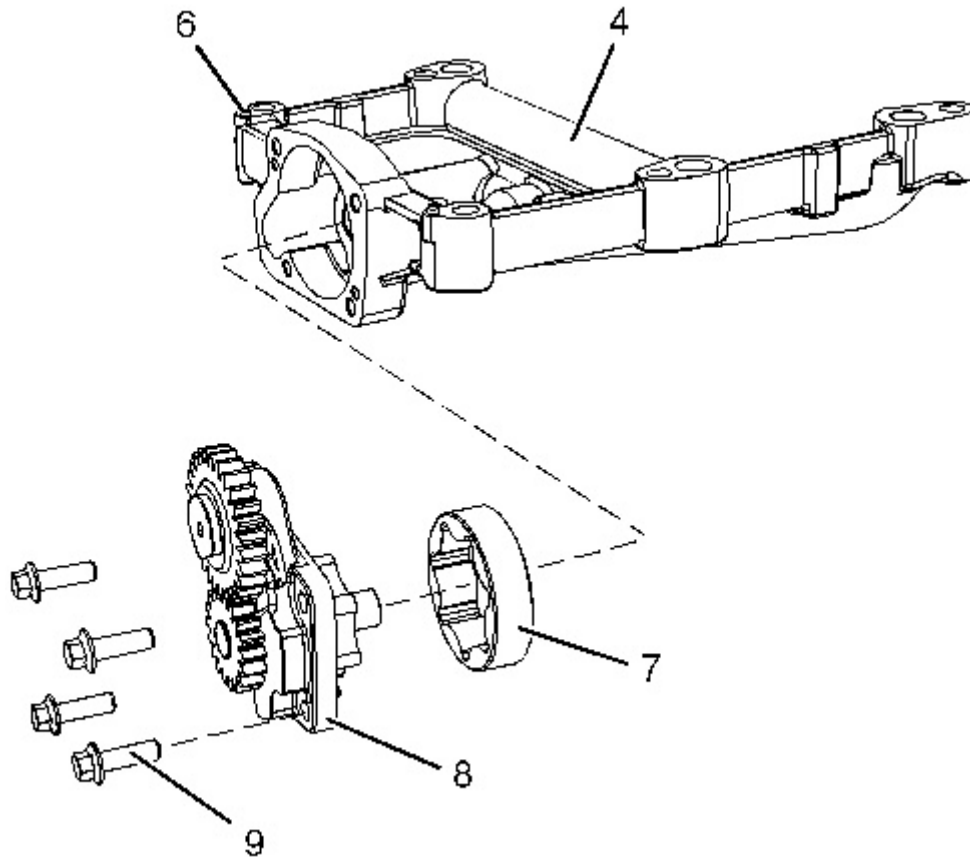


Illustration 1

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2. If necessary, follow Step 2.a through Step 2.f in order to assembly engine oil pump (4).
 - a. Lubricate the internal components for the assembly of engine oil pump (4) with clean engine oil.
 - b. Install outer rotor (7) to the housing of engine oil pump (4).
 - c. Install front cover assembly (8) to the housing of the engine oil pump (4).
 - d. Install bolts (9) to front cover assembly (8). Tighten the bolts finger tight.
 - e. Tighten bolts (9) to a torque of 24 N·m (212 lb in).
 - f. Ensure that dowels (6) are correctly located in the housing of engine oil pump (4).
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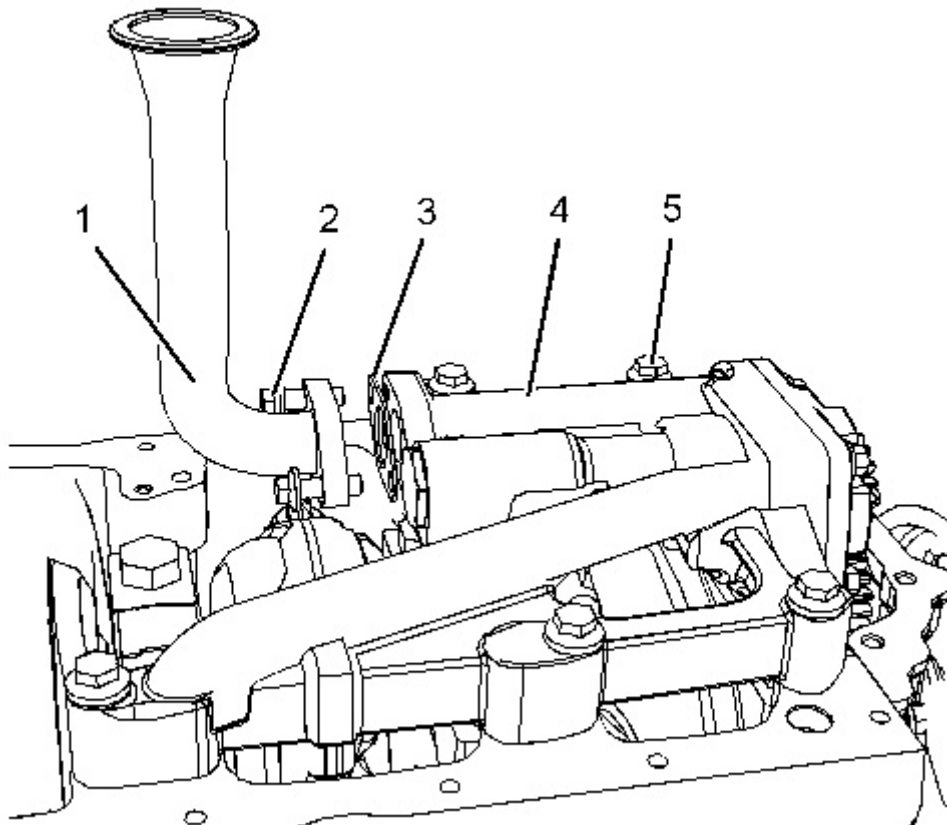


Illustration 2

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3. Position the assembly of engine oil pump (4) onto the cylinder block.

Note: Ensure that the dowels in the housing of the engine oil pump are aligned with the holes in the cylinder block.

4. Install bolts (5). Tighten the bolts to a torque of 44 N·m (32 lb ft).
5. Check the backlash between idler gear and the crankshaft gear. Refer to Specifications, "Gear Group (Front)" for further information.
6. Position a new gasket (3) onto suction pipe (1). Install the assembly of suction pipe (1) onto the assembly of engine oil pump (4).
7. Install bolts (2) finger tight. Tighten the bolts to a torque to 22 N·m (195 lb in).

End By:

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

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i05820274

Water Pump - Remove

SMCS - 1361-011

Removal Procedure

Start By:

- a. Remove the fan and the fan pulley. Refer to Disassembly and Assembly, "Fan - Remove and Install" for the correct 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.

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, "Cooling System Coolant - Change" for the correct procedure.
 2. Loosen the hose clamps and remove the hose from the water pump inlet.
-

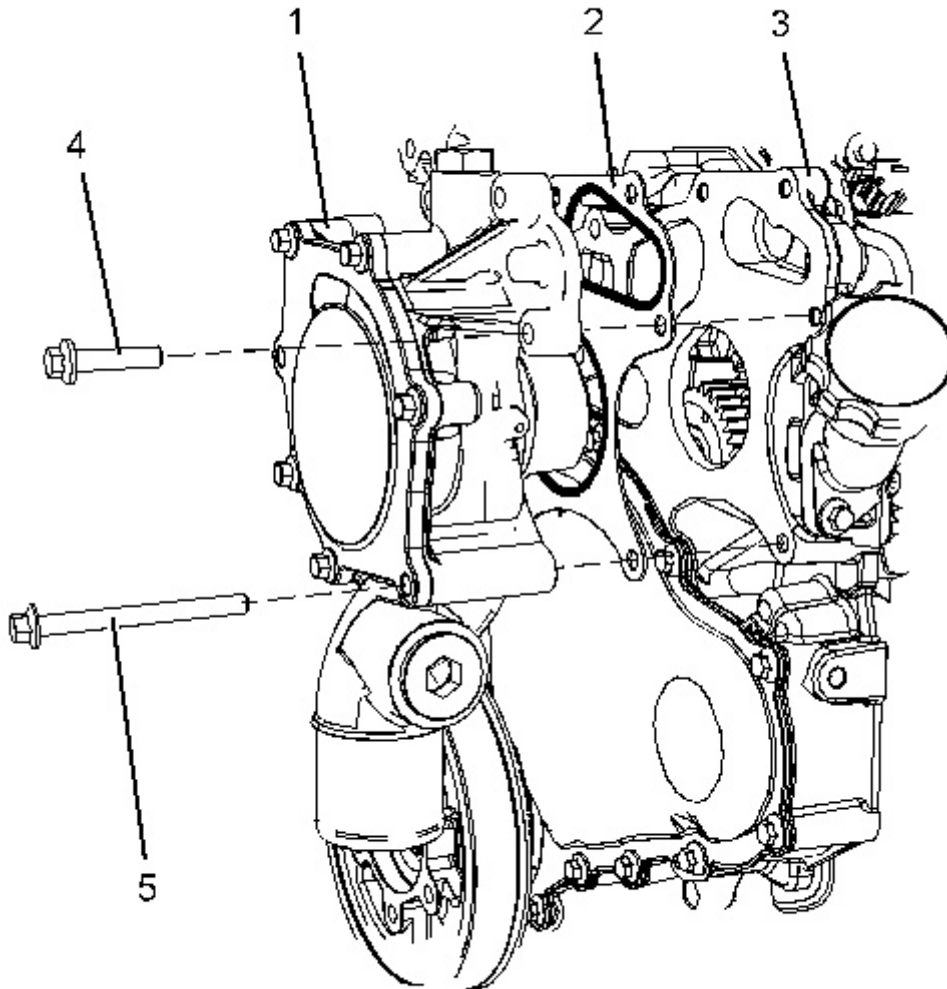


Illustration 1

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3. Remove bolts (4) and bolts (5).
4. Remove water pump (1) from housing (3).

Note: If necessary, tap the water pump with a soft faced hammer in order to loosen the water pump.

5. Remove gasket (2).
-

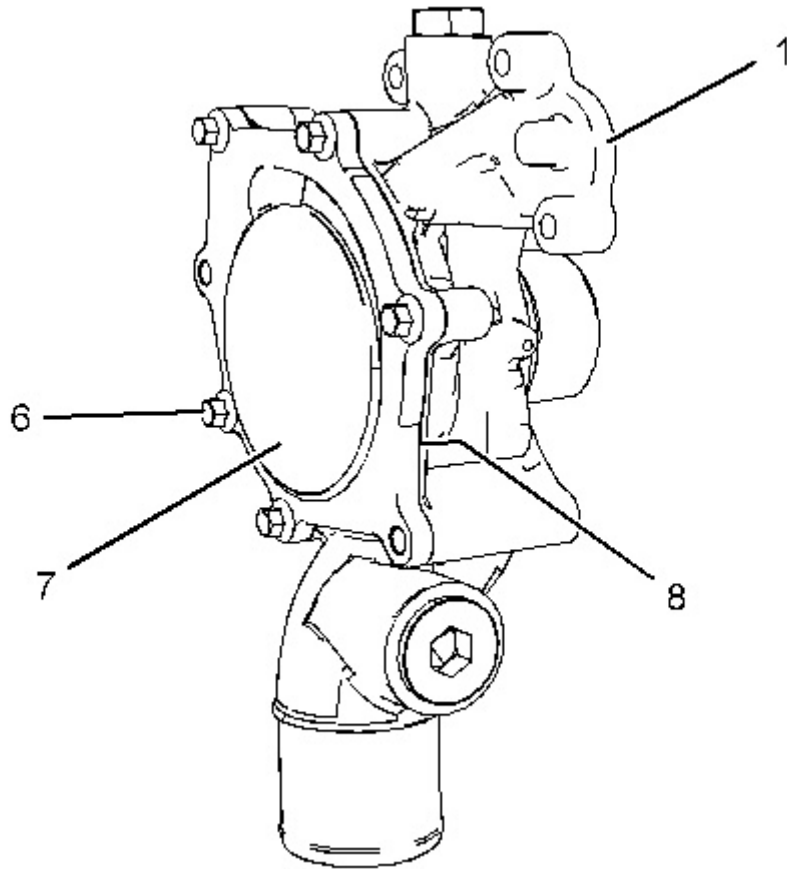


Illustration 2

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6. If necessary, remove cover (7) from the water pump. Follow Step 6.a through Step 6.c in order to remove the cover.
 - a. Remove bolts (6).
 - b. Remove cover (7).
 - c. Remove O-ring seal (8) (not shown).
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i05820275

Water Pump - Install

SMCS - 1361-012

Installation Procedure

Table 1

| Required Tools | | | |
|----------------|-------------|----------------------------|-----|
| Tool | Part Number | Part Description | Qty |
| A | - | Guide Studs M8 by 90 mm | 2 |

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. Ensure that the water pump is clean and free from wear and damage. If necessary, replace the water pump.
-

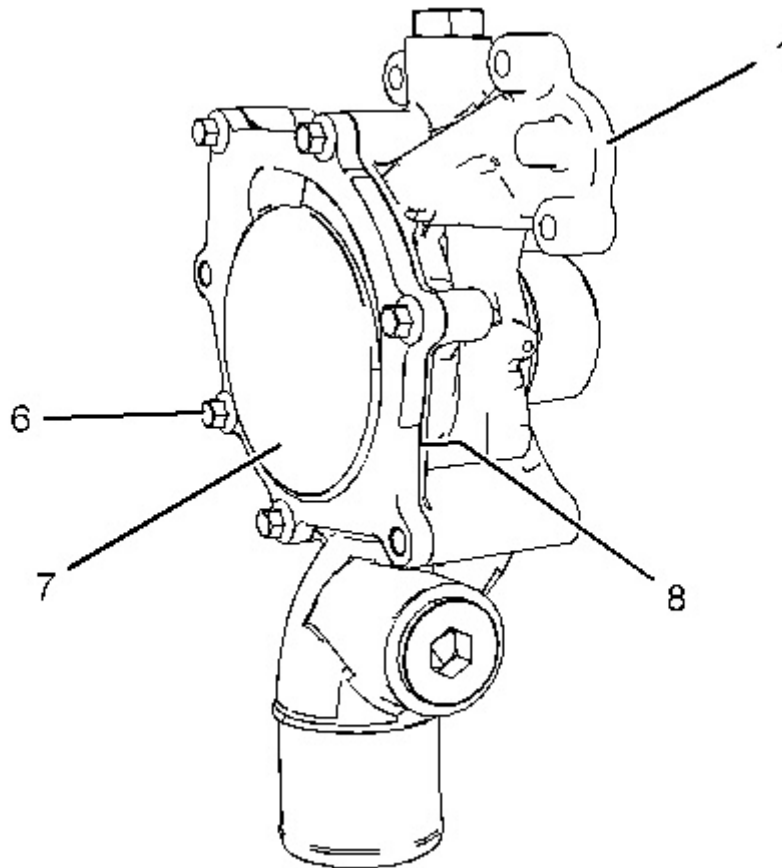


Illustration 1

g02524477

2. If necessary, install cover (7) to water pump (1). Follow Step 2.a through Step 2.d in order to install the cover.
 - a. Clean the gasket surface of cover (7).
 - b. Position a new O-ring seal (8) (not shown) onto water pump (1).
 - c. Install cover (7) to water pump (1).
 - d. Install bolts (6) to cover (7). Tighten the bolts to a torque of 22 N·m (195 lb in).
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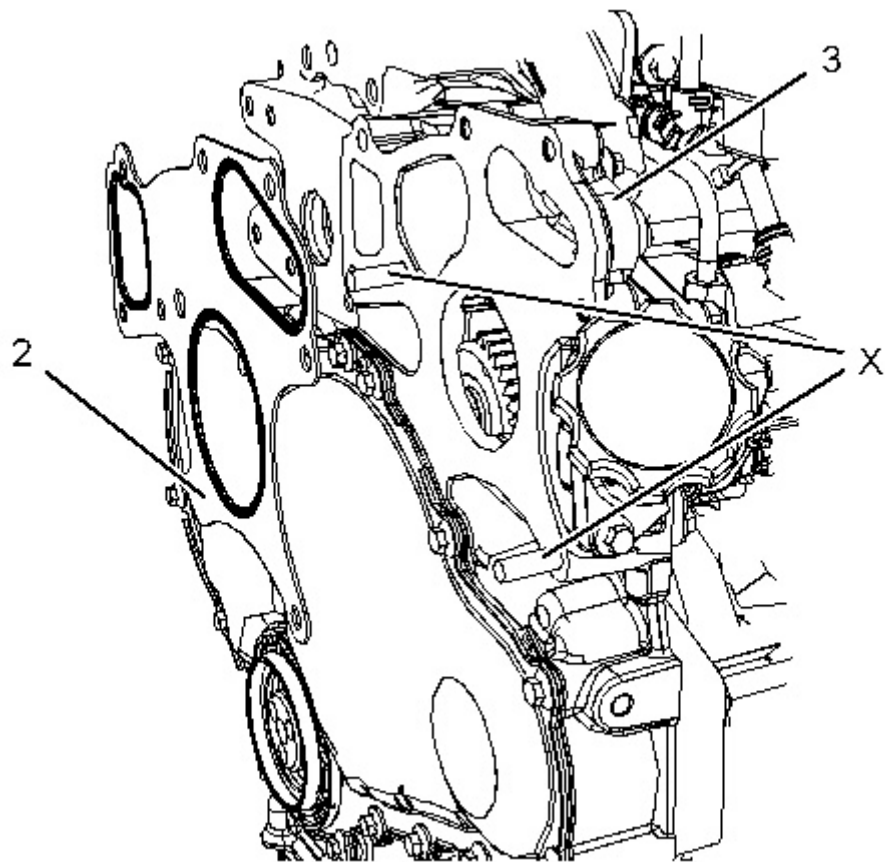


Illustration 2

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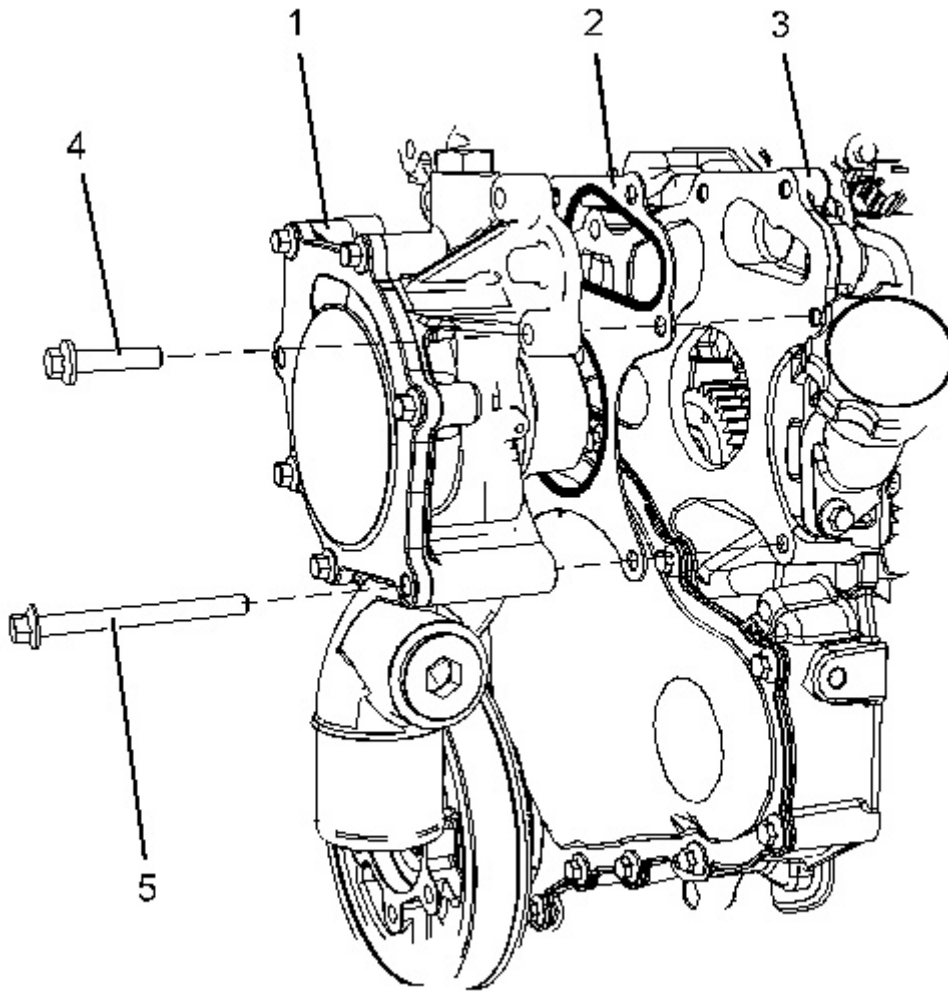


Illustration 3

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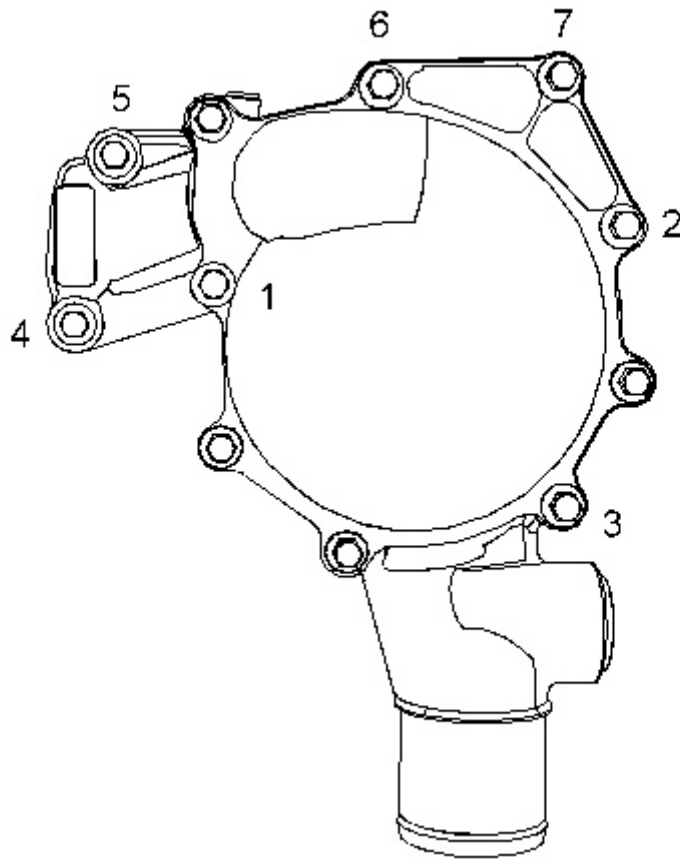


Illustration 4

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3. Clean the gasket surface of housing (3).
4. Install Tooling (A) in Position (X).
5. Use Tooling (A) in order to align new gasket (2) to housing (3). Install the gasket onto the housing.
6. Align water pump (1) to Tooling (A). Install the water pump to housing (1).
Note: Ensure that the gear of the water pump and the gear of the fuel injection pump mesh.
7. Install bolts (4) and bolts (5). Refer to Illustration 3. Tighten the bolts finger tight.
8. Remove Tooling (A) and install remaining bolts (4) and bolts (5).
9. Tighten bolts (4) and bolts (5) in the sequence that is shown in Illustration 4 to a torque of 22 N·m (195 lb in).
10. Install the hose to the water pump inlet. Tighten the hose clamps.
11. Fill the cooling system with coolant. Refer to Operation and Maintenance Manual, "Cooling System Coolant - Change" for the correct procedure.

End By:

- a. Install the fan and the fan pulley. Refer to Disassembly and Assembly, "Fan - Remove and Install" for the correct procedure.
-

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