

Product: COMPACT WHEEL LOADER

Model: 908 COMPACT WHEEL LOADER TAR

Configuration: 908 Wheel Loader TAR00001-UP (MACHINE) POWERED BY 3044C Engine

Disassembly and Assembly 3044C Industrial Engine and Engines for Caterpillar Built Machines

Media Number -REN7582-07

Publication Date -01/01/2010

Date Updated -26/02/2010

i04520110

Rocker Shaft and Pushrod - Install

SMCS - 1102-012; 1208-012

Installation Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.



Illustration 1

g01035051

1. Install pushrods (5) .

Note: Ensure that the pushrods are installed in the original location and that the pushrods are seated in the valve lifters correctly.

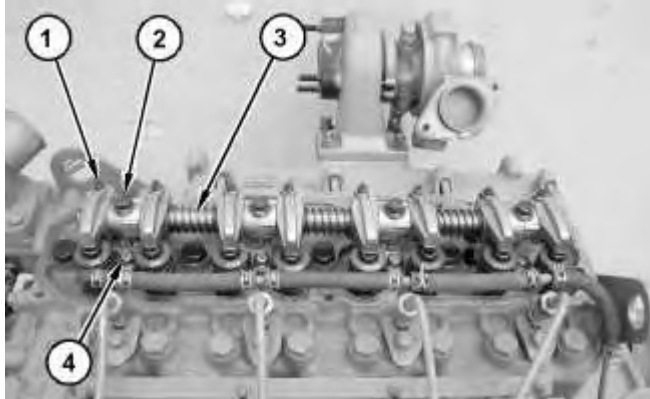


Illustration 2

g01035049

2. Loosen the nut and adjustment screw (1) on each rocker arm to prevent bending a valve or a pushrod during the installation.
3. Position rocker shaft assembly (3) .
4. Install bolts (2) and tighten to a torque of 10 to 20 N·m (89 to 177 lb in).
5. Install bolts (4) and tighten to a torque of 10 to 20 N·m (89 to 177 lb in).
6. Final torque for the nut on adjustment screw (1) is 20 N·m (177 lb in)
7. Adjust the inlet valve lash and the exhaust valve lash to 0.250 mm (0.0098 inch). Refer to Testing and Adjusting, "Engine Valve Lash - Inspect/Adjust".

End By: Install the valve mechanism cover. Refer to Disassembly and Assembly, "Valve Mechanism Cover - Remove and Install".

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i01999901

Cylinder Head - Remove

SMCS - 1100-011

Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	138-7575	Link Bracket	2
	8T-4189	Bolt	2
	8T-4121	Hard Washer	2

Start By:

- A. Remove the inlet manifold. Refer to Disassembly and Assembly, "Inlet Manifold - Remove".
- B. Remove the exhaust manifold. Refer to Disassembly and Assembly, "Exhaust Manifold - Remove and Install".
- C. Remove the water temperature regulator housing. Refer to Disassembly and Assembly, "Water Temperature Regulator Housing - Remove and Install".
- D. Remove the fuel injection nozzles. Refer to Disassembly and Assembly, "Fuel Injection Nozzles - Remove".
- E. Remove the glow plugs. Refer to Disassembly and Assembly, "Glow Plugs - Remove and Install".
- F. Remove the rocker shaft and pushrods. Refer to Disassembly and Assembly, "Rocker Shaft and Pushrod - Remove".

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.

1. Drain the coolant and the engine oil from the engine oil cooler into a suitable container for storage or disposal. Refer to Operation and Maintenance Manual for the procedure on draining the engine coolant and the engine oil.
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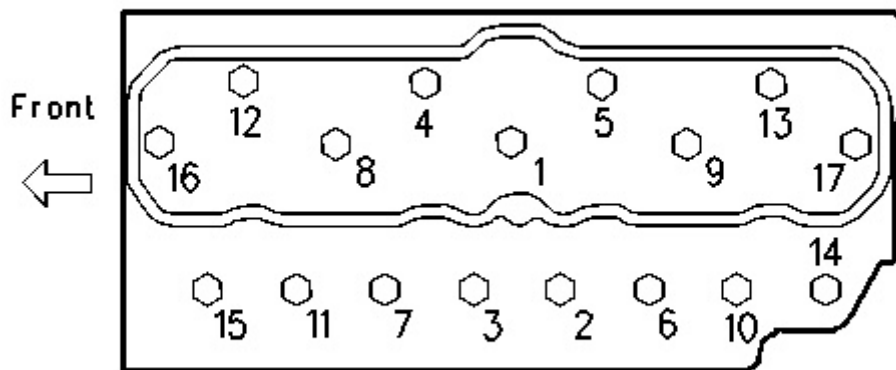


Illustration 1

g01001090

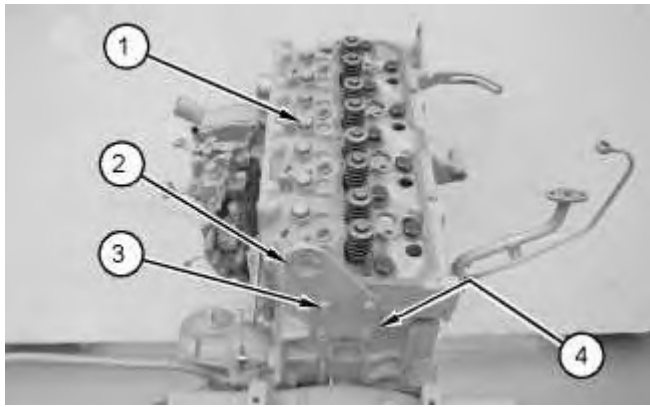


Illustration 2

g01034839

2. Gradually loosen cylinder head bolts (1) in reverse numerical order. Remove bolts (3). Remove bracket (2) and O-ring seal (4) .

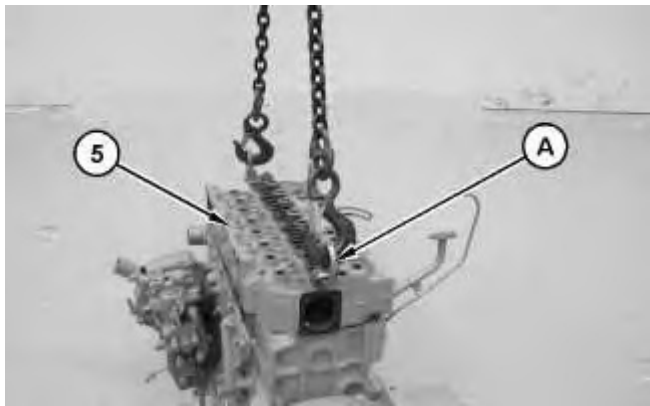


Illustration 3

g01034843

3. Attach Tooling (A) and a suitable lifting device to cylinder head (5). Remove cylinder head (5). The weight of the cylinder head is approximately 34 kg (75 lb).

NOTICE

Place the cylinder head on a surface that will not scratch the face of the cylinder head.

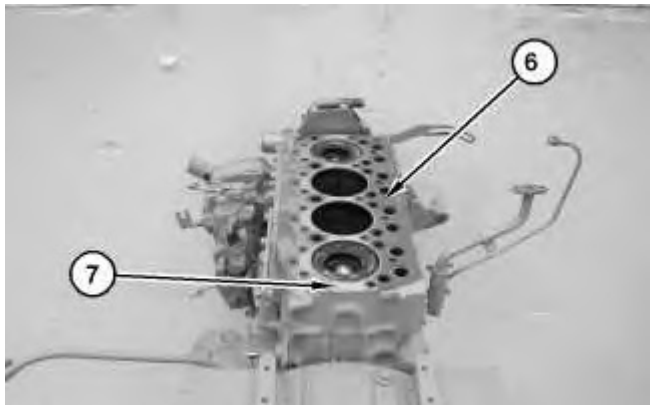


Illustration 4

g01034844

4. Remove gasket (6) .

Note: Note the location of dowels (7) .

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i01999946

Cylinder Head - Install

SMCS - 1100-012

Installation Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	138-7575	Link Bracket	2
	8T-4189	Bolt	2
	8T-4121	Hard Washer	2

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

1. Thoroughly clean the top of the cylinder block and the bottom of the cylinder head. Ensure that there is no debris in the cylinder bores.
-

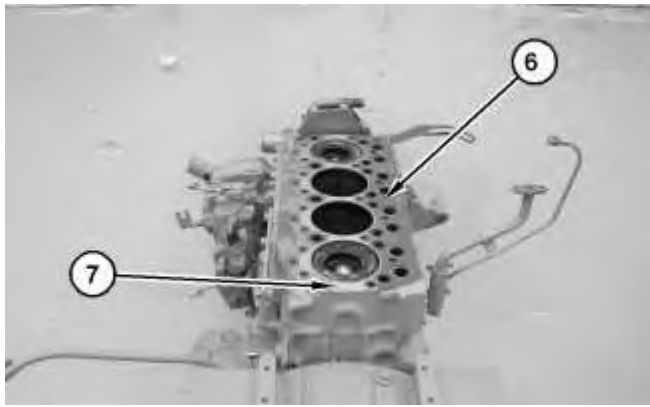


Illustration 1

g01034844

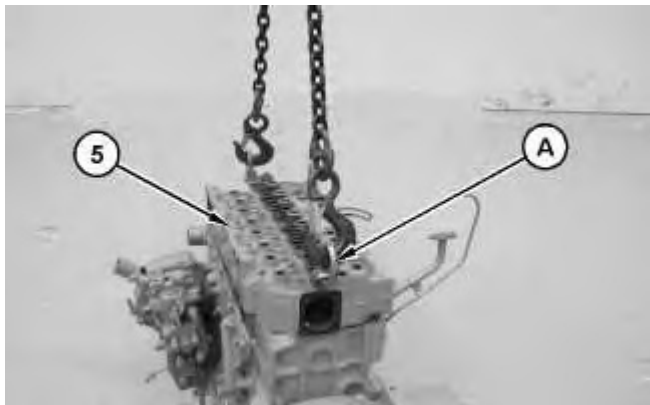


Illustration 2

g01034843

2. Install gasket (6). Use Tooling (A) and a suitable lifting device to position cylinder head (5). The weight of cylinder head (5) is approximately 34 kg (75 lb). Ensure that cylinder head (5) is positioned correctly on dowels (7). Remove Tooling (A) .
-

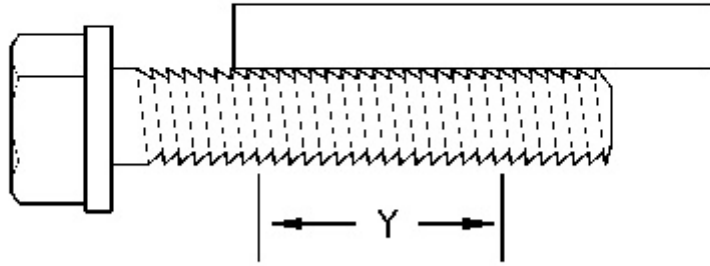


Illustration 3

g00951563

3. Clean the threads and inspect the threads of the cylinder head bolts.

Note: Do not use the bolts if there is any visual reduction in the diameter of the Threads (Y) that has not been engaged with the cylinder block. Use a straight edge to check the bolts.

4. Lubricate the threads and the shoulder of the cylinder head bolts with clean engine oil before installation.

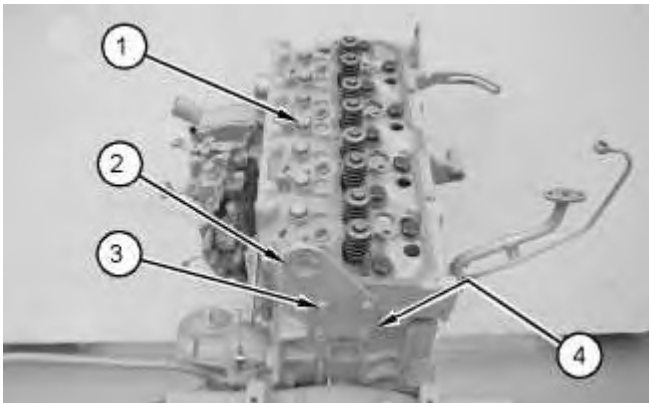


Illustration 4

g01034839

5. Install bracket (2) and O-ring seal (4). Install bolts (3) .
-

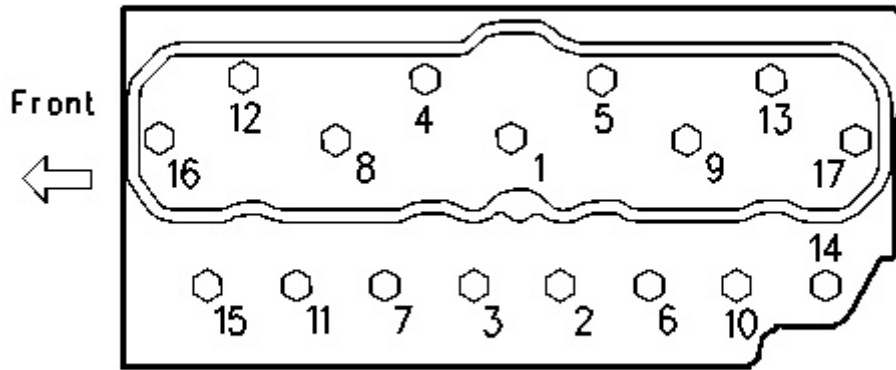


Illustration 5

g01001090

6. Install bolts (1). Tighten bolts (1) in numerical order to a torque of 113 to 123 N·m (83 to 91 lb ft).
7. Fill the cooling system with coolant. Fill the lubrication system with engine oil. Refer to Operation and Maintenance Manual, "Refill Capacities" for the cooling system capacity and the lubrication system capacity of the engine.

End By:

- a. Install the rocker shaft and pushrods. Refer to Disassembly and Assembly, "Rocker Shaft and Pushrod - Install".
 - b. Install the glow plugs. Refer to Disassembly and Assembly, "Glow Plugs - Remove and Install".
 - c. Install the fuel injection nozzles. Refer to Disassembly and Assembly, "Fuel Injection Nozzles - Install".
 - d. Install the water temperature regulator housing. Refer to Disassembly and Assembly, "Water Temperature Regulator Housing - Remove and Install".
 - e. Install the exhaust manifold. Refer to Disassembly and Assembly, "Exhaust Manifold - Remove and Install".
 - f. Install the inlet manifold. Refer to Disassembly and Assembly, "Inlet Manifold - Install".
-

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i01998877

Lifter Group - Remove and Install

SMCS - 1209-010

Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	1U-7262	Telescoping Magnet	1

Start By:

- A. Remove the camshaft. Refer to Disassembly and Assembly, "Camshaft - Remove and Install".

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

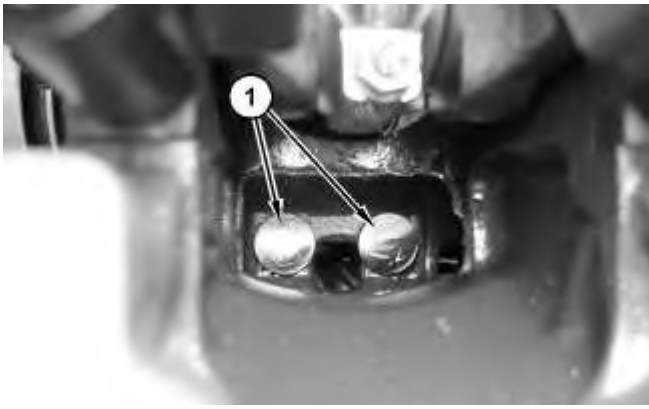


Illustration 1

g01034177

1. Use Tooling (A) to remove lifters (1) .

Note: Place an identification mark on the lifters for installation purposes.

Installation Procedure

Table 2

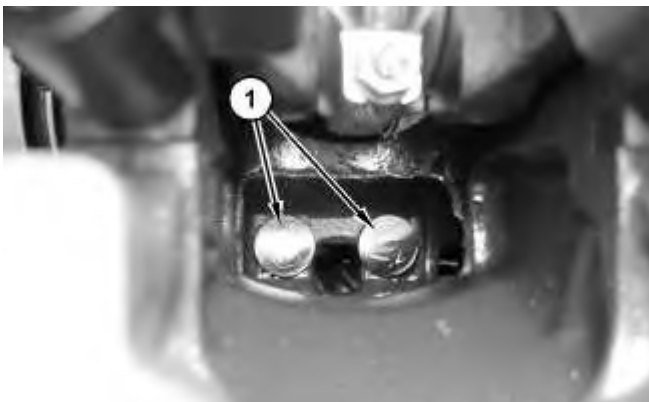
Required Tools			
Tool	Part Number	Part Description	Qty
A	1U-7262	Telescoping Magnet	1

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

1. Lubricate the lifters with clean engine oil before installing the lifters in the cylinder block.



2. Use Tooling (A) to install lifters (1) .

Note: Ensure that the lifters are installed in the original location and that the lifters are seated correctly.

End By: Install the camshaft. Refer to Disassembly and Assembly, "Camshaft - Remove and Install".

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i01998748

Camshaft - Remove and Install

SMCS - 1210-010

Removal Procedure

Start By:

- A. Remove the rocker shaft and pushrods. Refer to Disassembly and Assembly, "Rocker Shaft and Pushrod - Remove".
- 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.

1. Turn the engine upside-down so the valve lifters are held in a position away from the camshaft.
-

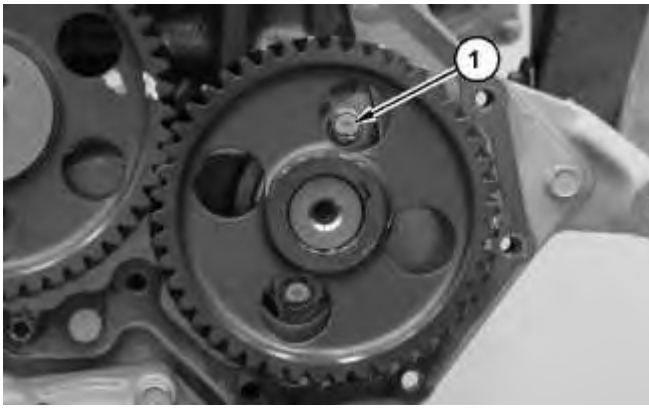


Illustration 1

g01034097

2. Remove bolts (1) .

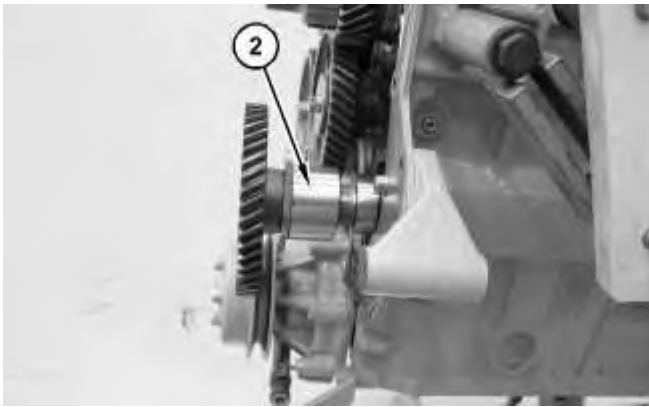


Illustration 2

g01034100

NOTICE

Do not damage the lobes or the bearings when the camshaft is removed or installed.

3. Carefully remove camshaft (2) .

Installation Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

-
1. Ensure that the camshaft is clean. Lubricate the camshaft with clean engine oil prior to installation.

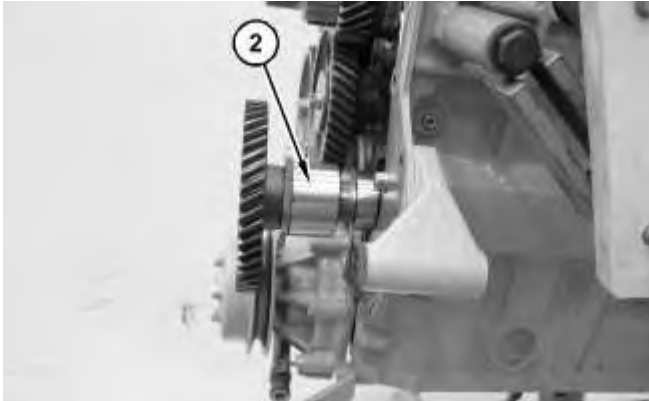


Illustration 3

g01034100

NOTICE

Do not damage the lobes or the bearings when the camshaft is removed or installed.

2. Carefully install camshaft (2) .



Illustration 4

g01034097

3. Install bolts (1). Tighten bolts (1) to a torque of 10 to 13 N·m (7 to 10 lb ft).

End By:

- a. Install the front housing. Refer to Disassembly and Assembly, "Housing (Front) - Install".
 - b. Install the rocker shaft and pushrods. Refer to Disassembly and Assembly, "Rocker Shaft and Pushrod - Install".
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i03702890

Camshaft Gear - Remove and Install

SMCS - 1210-010-GE

Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	1P-2320	Combination Puller	1

Start By:

- A. Remove the camshaft. Refer to Disassembly and Assembly, "Camshaft - Remove and Install".

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

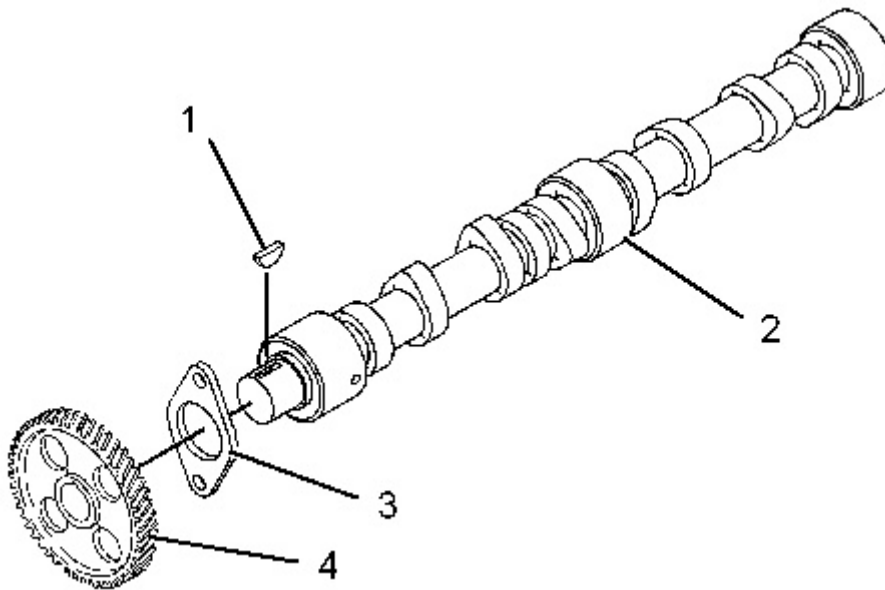


Illustration 1

g01993021

1. Use Tooling (A) to remove camshaft gear (4) from camshaft (2) . Remove key (1) and thrust plate (3) .

Note: Do not lose the key from the camshaft gear.

Installation Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

1. Inspect the camshaft gear, the key, and the thrust plate for wear or damage.
-

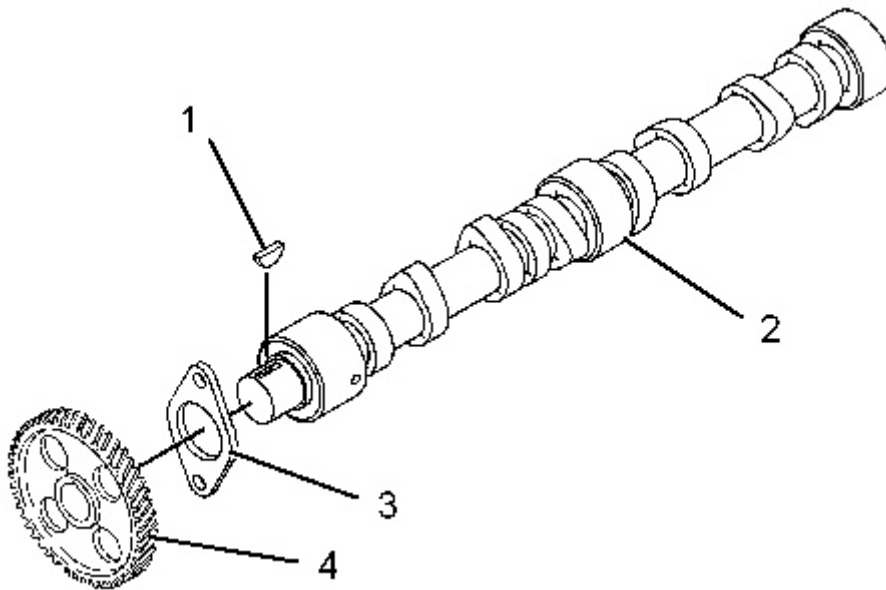


Illustration 2

g01993021

2. Install key (1) and thrust plate (3) . Raise the temperature of camshaft gear (4) and install camshaft gear (4) on camshaft (2) .

Note: Ensure that the key is installed on the camshaft. When you install the camshaft gear, ensure that the marked teeth are facing toward the front. If necessary, tap the gear with a soft hammer in order to seat the key in the keyway.

End By: Install the camshaft. Refer to Disassembly and Assembly, "Camshaft - Remove and Install".

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i05002870

Engine Oil Pan - Remove and Install

SMCS - 1302-010

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

Dispose of all fluids according to local regulations and mandates.

1. Drain the engine oil. Refer to the Operation and Maintenance Manual, "Refill Capacities and Recommendation" for the capacity of the lubrication system.

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