

Product: WHEEL LOADER

Model: 980G II WHEEL LOADER AWH

Configuration: 980G II Wheel Loader AWH00001-UP (MACHINE) POWERED BY 3406 Engine

Disassembly and Assembly 3406E and 3456 Engines for Caterpillar Built Machines

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i02110801

Camshaft - Remove

SMCS - 1210-011

Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	9U-7257	Cradle	1
B	9U-7256	Guide	1
C	9U-7225	Camshaft Pilot	2
D	9U-7240	Camshaft Hook	2

Start By:

- Remove the camshaft gear. Refer to Disassembly and Assembly, "Camshaft Gear - Remove and Install".
- Remove the rocker arms and the rocker shafts. Refer to Disassembly and Assembly, "Rocker Arm and Shaft - 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.

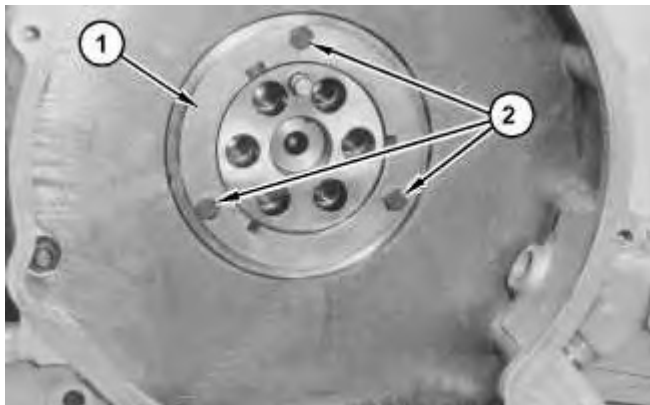


Illustration 1

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NOTICE

Do not turn the crankshaft or the camshaft while the camshaft gear is removed. If the front gear group is not correctly timed during installation, interference can occur between the pistons and the valves, resulting in damage to the engine.

1. Remove bolts (2) and thrust plate (1) .
-



Illustration 2

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2. Remove seal assembly (3) and adapter (4) .

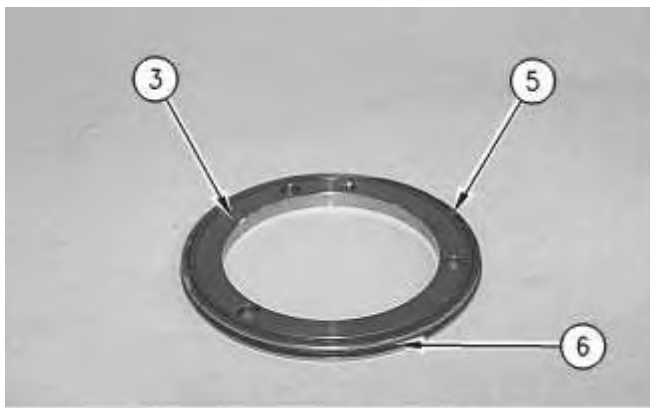


Illustration 3

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3. Remove O-ring seals (5) and (6) from seal assembly (3) .

NOTICE

Care must be used when removing the camshaft to not damage the highly finished surfaces of both the camshaft and camshaft bearings

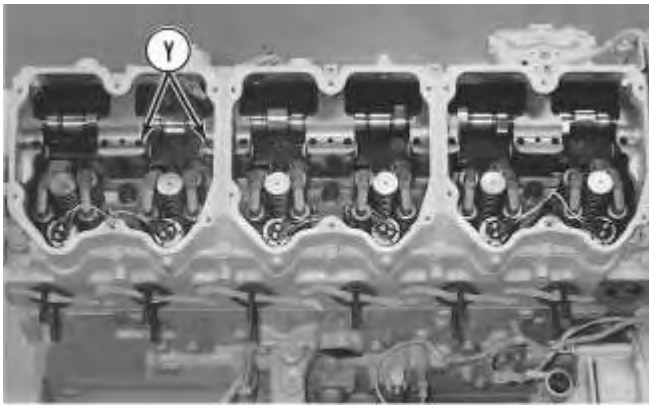


Illustration 4

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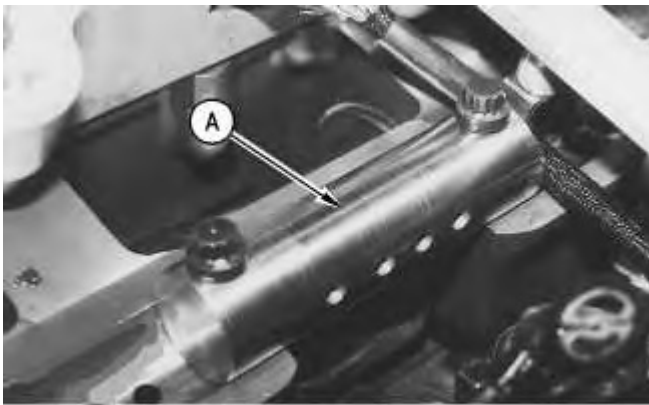


Illustration 5

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4. Use the bolts for the rocker arm shaft assembly to install Tooling (A) at Location (Y) .

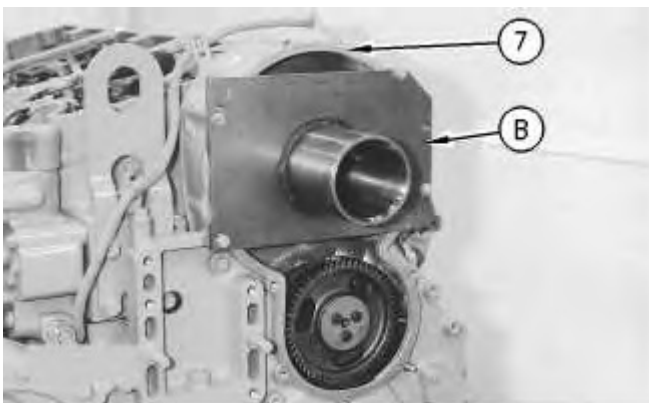


Illustration 6

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5. Install Tooling (B) on front housing (7). Do not tighten the bolts for Tooling (B) at this time.

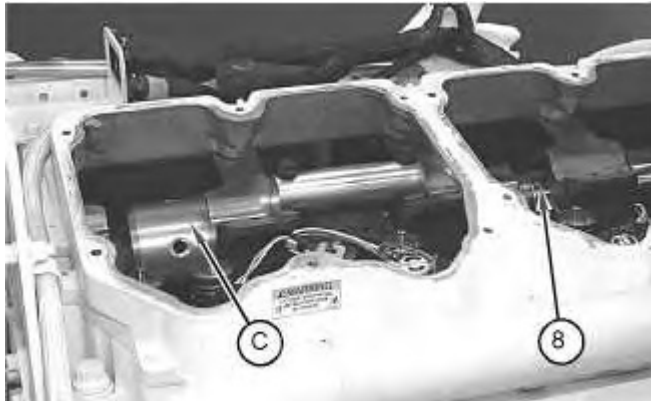


Illustration 7

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Note: It is necessary to install Tooling (C) on the camshaft. Tooling (C) will support the rear of camshaft (8) as the camshaft is moved out of the cylinder head and into Tooling (B) .

6. Move camshaft (8) forward and install one Tooling (C) in the end of camshaft (8). Again, move the camshaft forward and install remaining Tooling (C) into the back of first Tooling (C) .
7. Position camshaft (8) into the bore of Tooling (B). Tighten the bolts that hold Tooling (B) to the front housing.

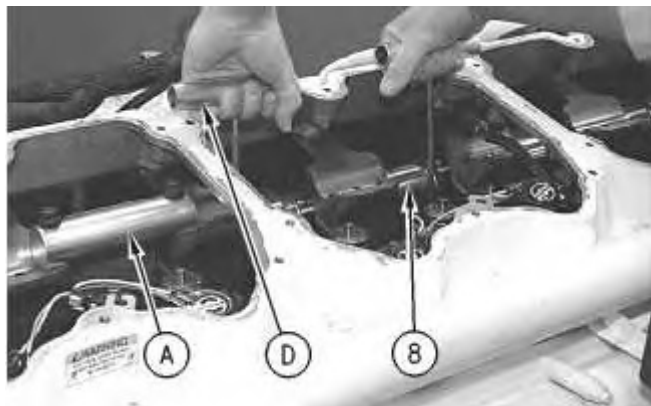


Illustration 8

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Note: Avoid lifting camshaft (8) with Tooling (D). The camshaft should rest on Tooling (A). Lifting of the camshaft can cause misalignment as the camshaft is removed, resulting in damage to the camshaft bearings.

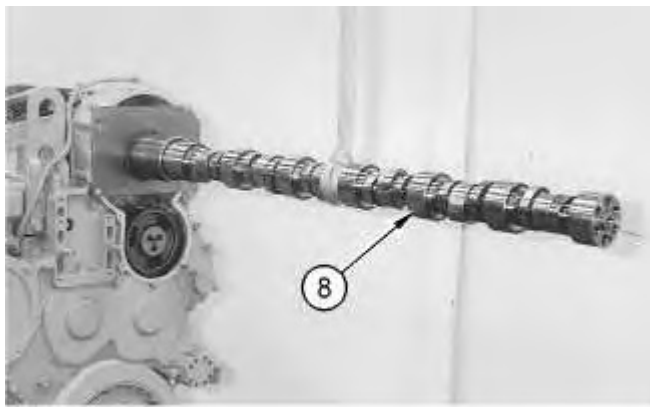


Illustration 9

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8. Remove camshaft (8), as follows:

- a. Use Tooling (D) to move camshaft (8) toward the front of the engine. Reposition Tooling (D), as needed.
- b. Move camshaft (8) far enough out of the cylinder head in order to attach a suitable lifting device.
- c. Keep the camshaft level while the camshaft is being removed from the cylinder head. The weight of the camshaft is approximately 39 kg (86 lb).

Alternative Removal Procedure

Table 2

Required Tools			
Tool	Part Number	Part Description	Qty
E ⁽¹⁾	177-8001	Sleeve	1
F	177-8002	Adapter	1
G	6L-4697	Bolts	3

⁽¹⁾ Part of **177-8003** Engine Tool Group

Start By:

- A. Remove the camshaft gear. Refer to Disassembly and Assembly, "Camshaft Gear - Remove and Install".
- B. Remove the rocker arms and the rocker shafts. Refer to Disassembly and Assembly, "Rocker Arm and Shaft - Remove".

Note: This is an optional procedure to remove the camshaft. The preceding tool list shows the required tooling for removing the camshaft from the front of the engine or the rear of the engine.

NOTICE

Keep all parts clean from contaminants.

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NOTICE

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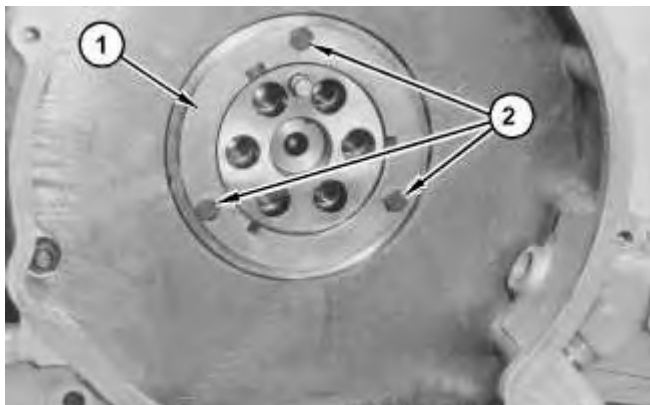


Illustration 10

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NOTICE

Do not turn the crankshaft or the camshaft while the camshaft gear is removed. If the front gear group is not correctly timed during installation, interference can occur between the pistons and the valves, resulting in damage to the engine.

1. Remove bolts (2) and thrust plate (1) .

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