

Product: EXCAVATOR

Model: 315-A EXCAVATOR 3ZM

Configuration: 315 Excavator 3ZM00001-UP (MACHINE) POWERED BY 3054 Engine

## **Disassembly and Assembly 3054 Engine for Caterpillar Built Machines**

Media Number -SEN6241-13

Publication Date -01/08/2008

Date Updated -04/08/2008

i01164529

# **Camshaft - Remove and Install**

SMCS - 1210-010

## **Removal Procedure**

### **Start By:**

- A. Remove the rocker shaft and the pushrods. Refer to Disassembly and Assembly, "Rocker Shaft and Pushrods - Remove".
- B. Remove the fuel transfer pump. Refer to Disassembly and Assembly, "Fuel Transfer Pump - Remove".
- C. Remove the front housing. Refer to Disassembly and Assembly, "Housing (Front) - Remove".
- D. Remove the camshaft gear. Refer to Disassembly and Assembly, "Camshaft Gear - 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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### **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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1. Turn the engine upside-down so the valve lifters are held in a position away from the camshaft.

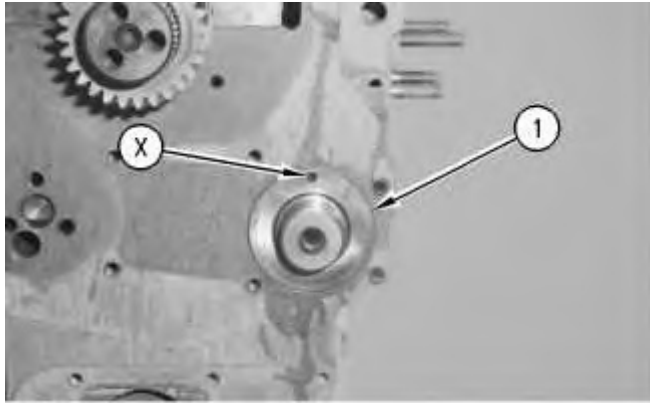


Illustration 1

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2. Remove thrust washer (1). Make a note of the location of the hollow dowel (X) for installation purposes.

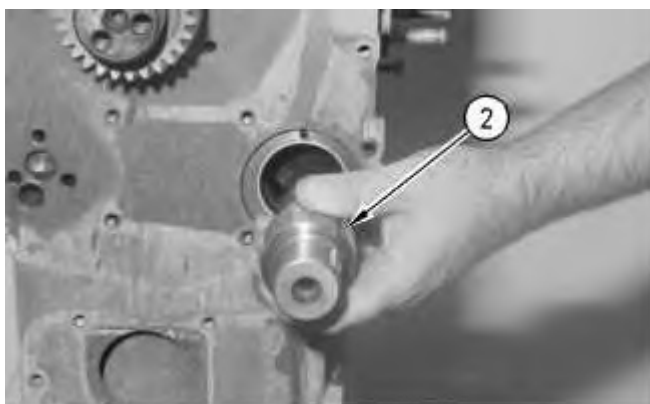


Illustration 2

g00546869

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## NOTICE

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

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- Carefully remove camshaft (2) from the engine.

## Installation Procedure

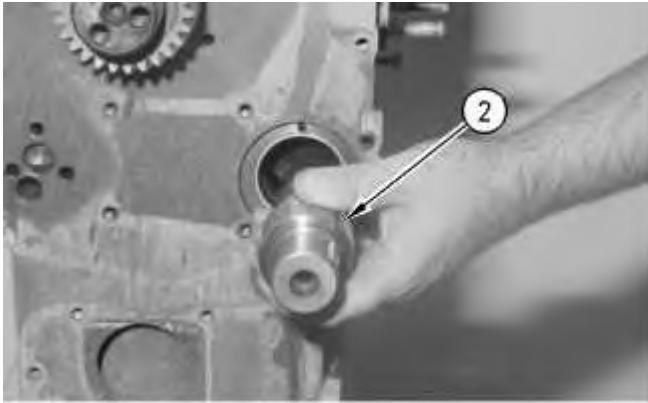
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### NOTICE

**Keep all parts clean from contaminants.**

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

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Illustration 3

g00546869

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### NOTICE

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

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**Note:** Ensure that camshaft (2) is clean. Lubricate camshaft (2) with clean engine oil prior to installation.

- Carefully install camshaft (2) in the engine.
-

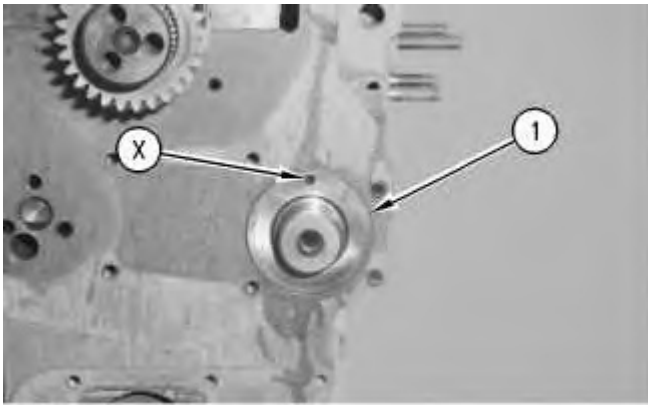


Illustration 4

g00546803

2. Put thrust washer (1) in position. Make sure that thrust washer (1) is aligned with hollow dowel (X) .

**End By:**

- a. Install the camshaft gear. Refer to Disassembly and Assembly, "Camshaft Gear - Remove and Install".
- b. Install the front housing. Refer to Disassembly and Assembly, "Housing (Front) - Install".
- c. Install the fuel transfer pump. Refer to Disassembly and Assembly, "Fuel Transfer Pump - Install".
- d. Install the rocker shaft and the pushrods. Refer to Disassembly and Assembly, "Rocker Shaft and Pushrods - Install".

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## Disassembly and Assembly 3054 Engine for Caterpillar Built Machines

Media Number -SEN6241-13

Publication Date -01/08/2008

Date Updated -04/08/2008

i03140046

# Camshaft Gear - Remove and Install

SMCS - 1210-010-GE

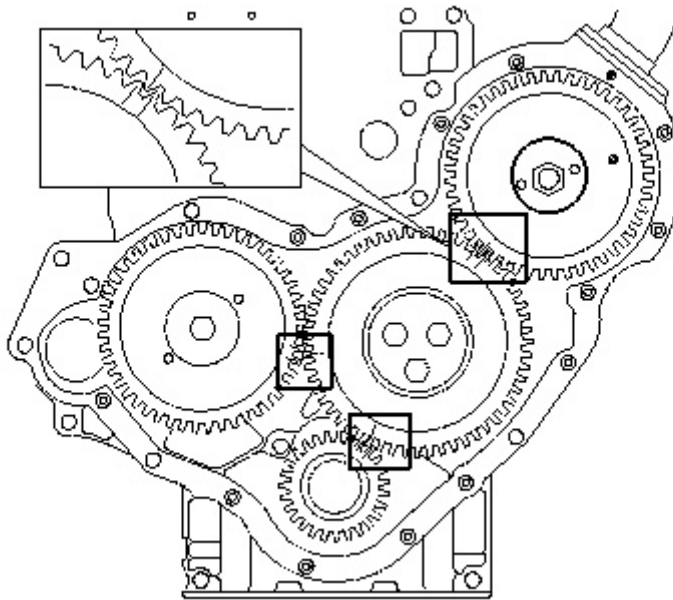
## Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Name	Qty
A	1U-6671	Puller Gp	1
	8S-4712	Bolt	2
	1P-0510	Driver Group	1

### Start By:

- a. Remove the fan. Refer to Disassembly and Assembly, "Fan - Remove and Install".
  - b. Remove the front cover. Refer to Disassembly and Assembly, "Front Cover - Remove".
-



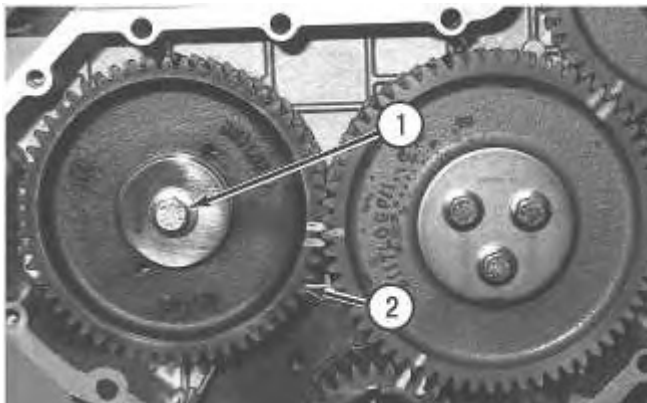
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Illustration 1

g00541128

1. Rotate the crankshaft until the timing marks on the crankshaft gear, the camshaft gear, and the fuel injection pump gear are aligned, as shown.

**Note:** The timing marks on the idler gear may not be aligned. This is caused by the difference in the speed of the rotation of the idler gear.



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Illustration 2

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2. Remove bolt (1) and the washer from the camshaft gear (2).
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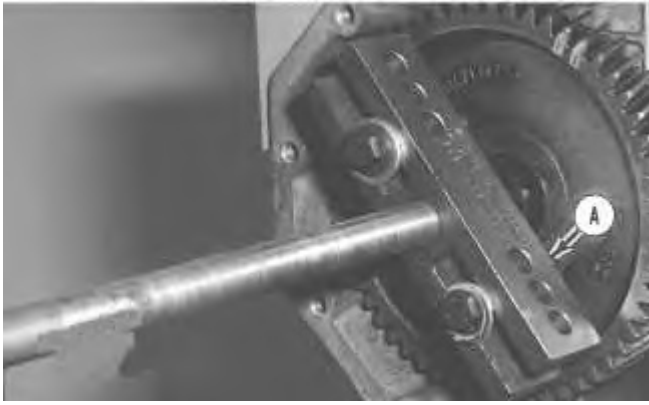


Illustration 3

g00541131

3. Install Tooling (A) and remove camshaft gear.

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

4. Inspect the camshaft gear for wear and damage. Replace the gear, if necessary.

## Installation Procedure

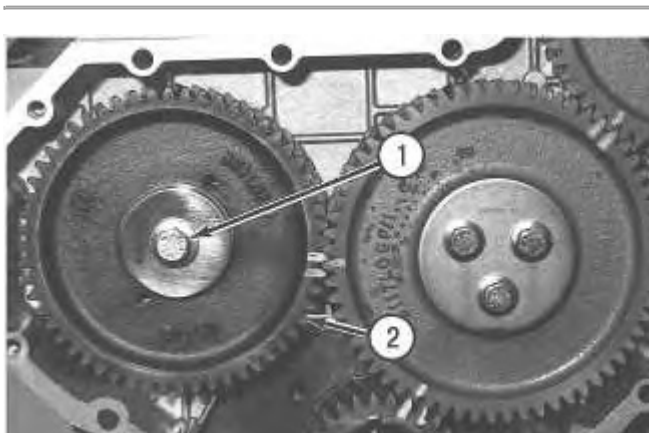


Illustration 4

g00541130

1. Install camshaft gear (2) in the front housing.

**Note:** When you install the camshaft gear, ensure that the teeth that have the timing marks are facing toward the front. Also, ensure that the key is aligned properly in the keyway. If necessary, tap the gear with a soft hammer in order to seat the key in the keyway.

2. If necessary, remove the idler gear in order to align the gear teeth correctly.
3. Install the washer and bolt (1) on the camshaft gear. Tighten bolt (1) to a torque of 95 N·m (70 lb ft).

**Note:** Ensure that the timing marks on the camshaft gear, the crankshaft gear, and the fuel injection pump gear are aligned.

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