



# Service Repair Manual

## **Models**

# 16H NA Motor Grader

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Product: MOTOR GRADER

Model: 16H NA MOTOR GRADER 6ZJ

Configuration: 16H Motor Grader 6ZJ00001-UP (MACHINE) POWERED BY 3406C Engine

## Disassembly and Assembly

### 3406C DIESEL ENGINES FOR CATERPILLAR BUILT MACHINES

Media Number -SEN6409-02

Publication Date -01/07/2006

Date Updated -19/05/2015

SEN64090038

## Timing Gears & Plate

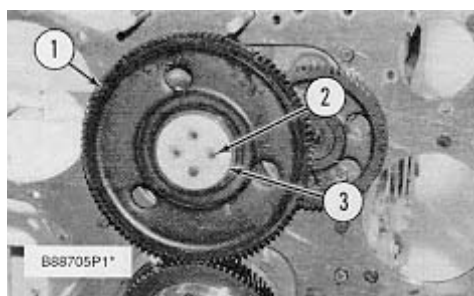
SMCS - 1162-010; 1206

### Remove & Install Timing Gears & Plate

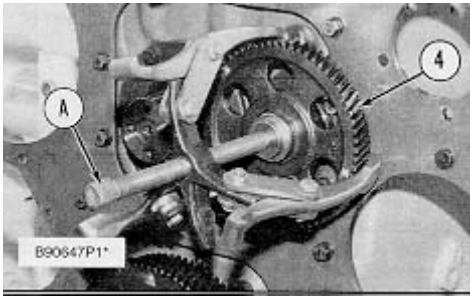
Tools Needed		A	B
1P2321	Puller Assembly	1	
1P0474	Plate*	1	
1P0510	Driver Group		1

Start By:

- a. remove timing gear cover
- b. remove fuel injection pump housing and governor



1. Remove four bolts (2), plate (3) and idler gear (1).



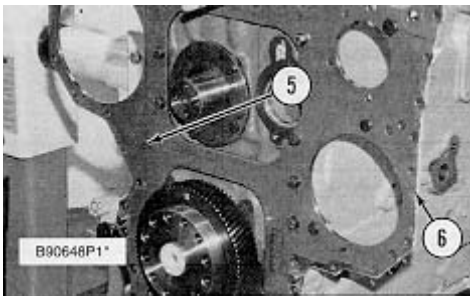
2. If the camshaft is not going to be removed, use Tool (A) to remove camshaft gear (4).

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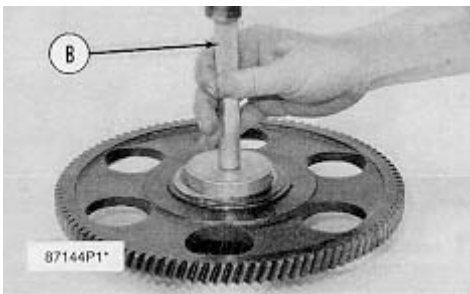
### NOTICE

**Do not turn the crankshaft with the camshaft gear removed. Damage can be caused to the pistons and valves or both.**

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3. Remove bolts (5) that hold timing gear plate (6) to the cylinder block.
4. Remove timing gear plate (6).



5. Use Tool (B) to remove the bearing from the idler gear.

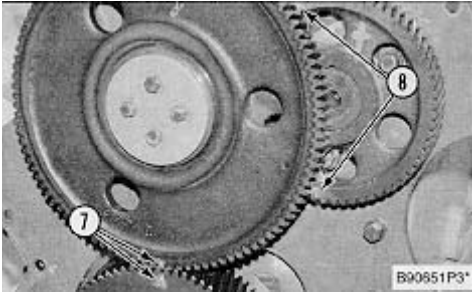
**NOTE:** The following steps are for the installation of the timing gears and plate.

6. Install a new gasket on the timing gear plate.
7. Put timing gear plate (6) in position on the cylinder block and install the bolts that hold the timing gear plate to the cylinder block.
8. Heat camshaft gear (4) to a maximum temperature of **205° C (400° F)** for no longer than three hours and install it on the camshaft.

9. Use Tool (B) and install the bearing in the idler gear.

**NOTE:** Set the gear on the front face (face with the timing marks). Drive the bearing from the rear face toward the front face of the gear. Install the bearing to a depth of **1.5 ± 0.5 mm (.06 ± .02 in)** below the rear face of the idler gear.

10. Install the idler gear, plate and bolts.



**NOTE:** Be sure No. 1 cylinder is at top center on the compression stroke. Install the idler gear so "V" mark (7) on the idler gear is in alignment with the "V" mark on the crankshaft gear. "K" marks (8) on the camshaft gear can be seen at the outer edges of the idler gear.

End By:

a. install fuel injection pump housing and governor

b. install timing gear cover

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SEN64090039

### Camshaft

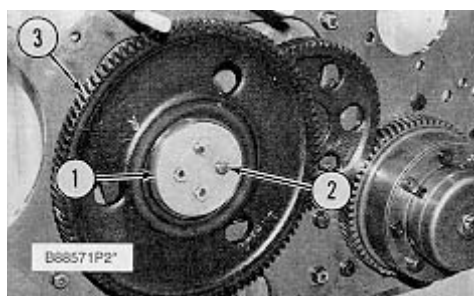
SMCS - 1210-010

## Remove & Install Camshaft

Tools Needed		A
8B7561	Step Plate	1
8B7551	Bearing Pulling Attachment	1
1P0820	Hydraulic Puller Group	1
8B7549	Leg	1
3H0465	Plate	4
1B4207	Nut	2

Start By:

- a. remove timing gear cover
- b. remove valve lifters



1. Turn the engine to top center compression stroke for the No. 1 piston.

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