



# Service Repair Manual

## **Models**

# 420D BACKHOE LOADER

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Product: BACKHOE LOADER

Model: 420D BACKHOE LOADER FDP

Configuration: 420D Backhoe Loader FDP07199-18399 (MACHINE) POWERED BY 3054 Engine

## Disassembly and Assembly 3054C Engines for Caterpillar Built Machines

Media Number -SEN5069-18

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Date Updated -19/09/2018

i01875845

# Idler Gear - Remove and Install - Delphi DP210 Fuel Injection Pump

SMCS - 1206

## Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Name	Qty
A	9U-6198	Crankshaft Turning Tool	1
B	230-6284	Timing Pin (Camshaft)	1
C	230-6283	Timing Pin (Crankshaft)	1
D	1P-2320	Combination Puller	1
E	1P-0510	Driver Group	1

### Start By:

- Remove the crankshaft pulley. Refer to Disassembly and Assembly, "Crankshaft Pulley - Remove and Install".
- Remove the front cover. Refer to Disassembly and Assembly, "Front Cover - 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, "Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Cat products.

Dispose of all fluids according to local regulations and mandates.

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1. Use Tooling (A) to ensure that the No. 1 cylinder is at the top center compression stroke. Refer to Testing and Adjusting, "Finding Top Center Position for No. 1 Piston".

**Note:** Install Tooling (B) through the camshaft gear. Install Tooling (C) into the crankshaft web.

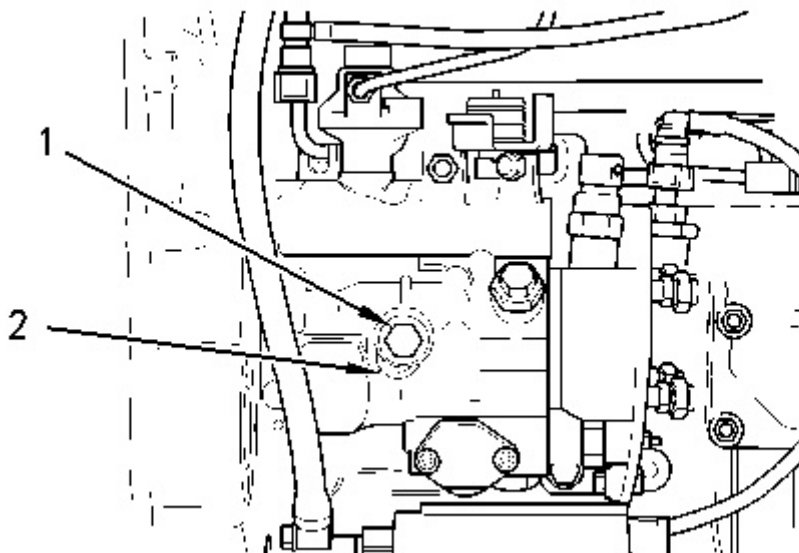
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## NOTICE

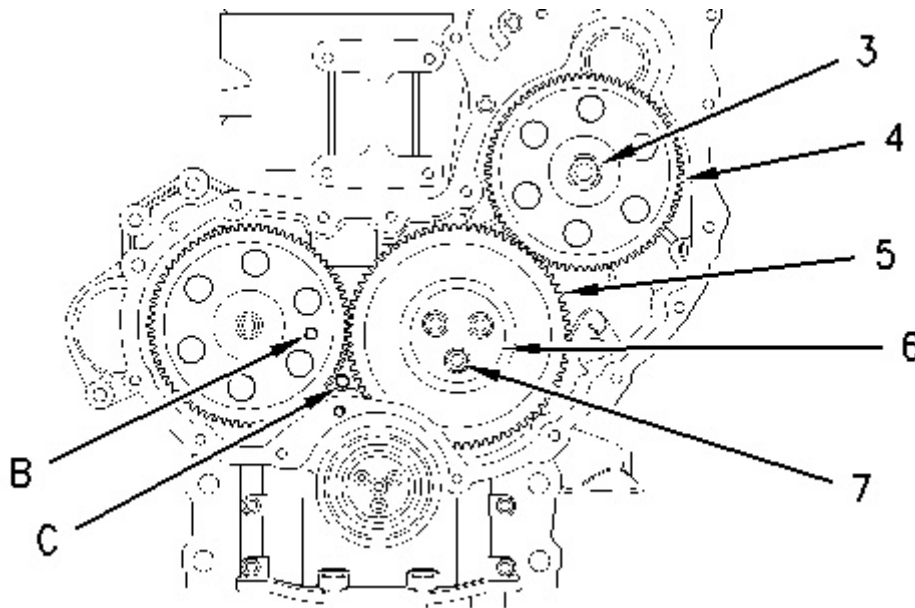
The valve timing and the fuel injection pump timing will be lost if the crankshaft is rotated when the idler gear is removed.

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2. Loosen bolt (1). Move spacer (2) in order to allow bolt (1) to tighten against the shaft of the fuel injection pump. Rotate and hold the fuel injection pump gear in a counterclockwise direction in order to remove the backlash. Tighten bolt (1) to a torque of 17 N·m (13 lb ft).

**Note:** Bolt (1) must be tightened in order to prevent the shaft of the fuel injection pump from rotating.



3. Remove nut (3) and the washer from the shaft of the fuel injection pump.
4. Install Tooling (D) and remove fuel injection pump gear (4).

**Note:** Do Not pry the fuel injection pump gear from the shaft of the fuel injection pump.

5. Remove bolts (7) and retaining plate (6).

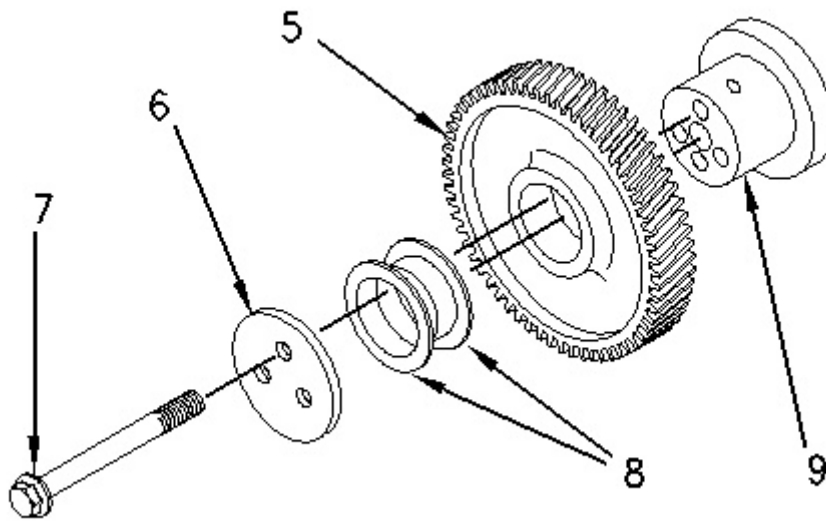


Illustration 3

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6. Remove idler gear (5) and idler gear hub (9).
7. Use Tooling (E) and remove bushings (8) from each side of the idler gear.

## Installation Procedure

Table 2

<b>A</b>	9U-6198	Crankshaft Turning Tool	1
<b>B</b>	230-6284	Timing Pin (Camshaft)	1
<b>C</b>	230-6283	Timing Pin (Crankshaft)	1
<b>E</b>	1P-0510	Driver Group	1

### NOTICE

**Keep all parts clean from contaminants.**

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

1. Use Tooling (A) to ensure that the No. 1 cylinder is at the top center compression stroke. Refer to Testing and Adjusting, "Finding Top Center Position for No. 1 Piston".

**Note:** Install Tooling (B) through the camshaft gear. Install Tooling (C) into the crankshaft web.

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