



# Service Repair Manual

## **Models**

# C13 Industrial Engine

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Product: INDUSTRIAL ENGINE  
Model: C13 INDUSTRIAL ENGINE KWJ  
Configuration: C13 Industrial Engine KWJ00001-UP

## Disassembly and Assembly C13 Engine and C13 Industrial Engine

Media Number -KENR8165-03

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## Camshaft - Install

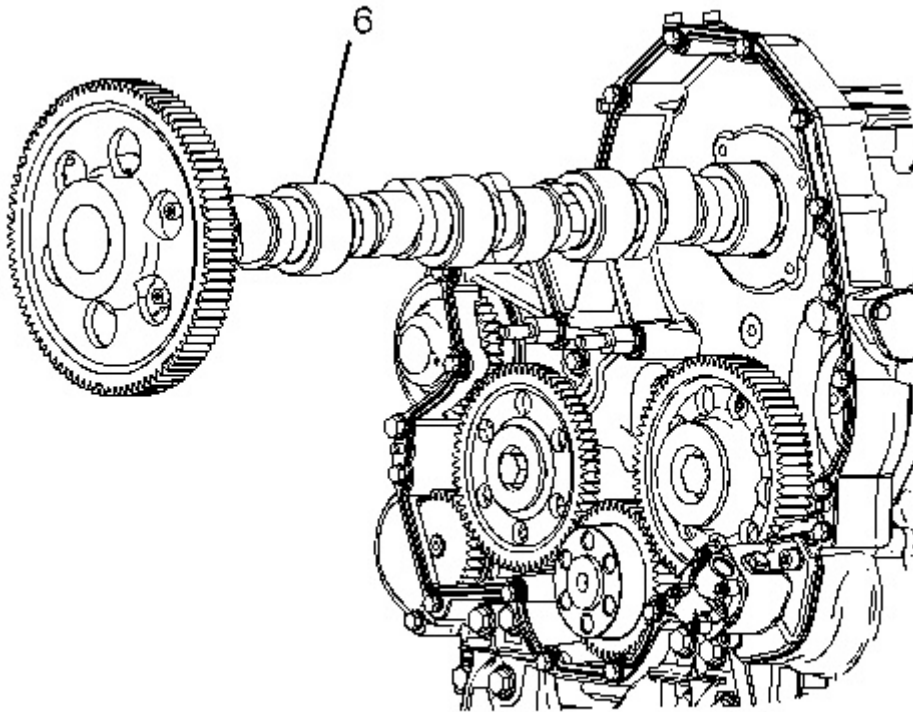
SMCS - 1210-012

## Installation Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	1U-7638	Magnetic Holding Tool	18
B	201-4211	Camshaft Pilot	1
	201-4212	Camshaft Pilot	1

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Illustration 1

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1. Install Tooling (B).

**Note:** Ensure that camshaft (6) and Tooling (B) are clean. Apply clean engine oil to the lobes and journals of camshaft (6) and Tooling (B).

**Note:** During installation of camshaft (6), rotate the camshaft in both directions in order to prevent binding in the camshaft bearing bores.

2. Carefully install camshaft (6) in the engine.

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### NOTICE

**When installing the camshaft, make sure the number one cylinder is at top center of the compression stroke with the timing bolt installed in the flywheel. The camshaft timing is very important. The timing mark on the camshaft drive gear must line up with the timing mark on the idler gear. Refer to the Specifications Manual for more information.**

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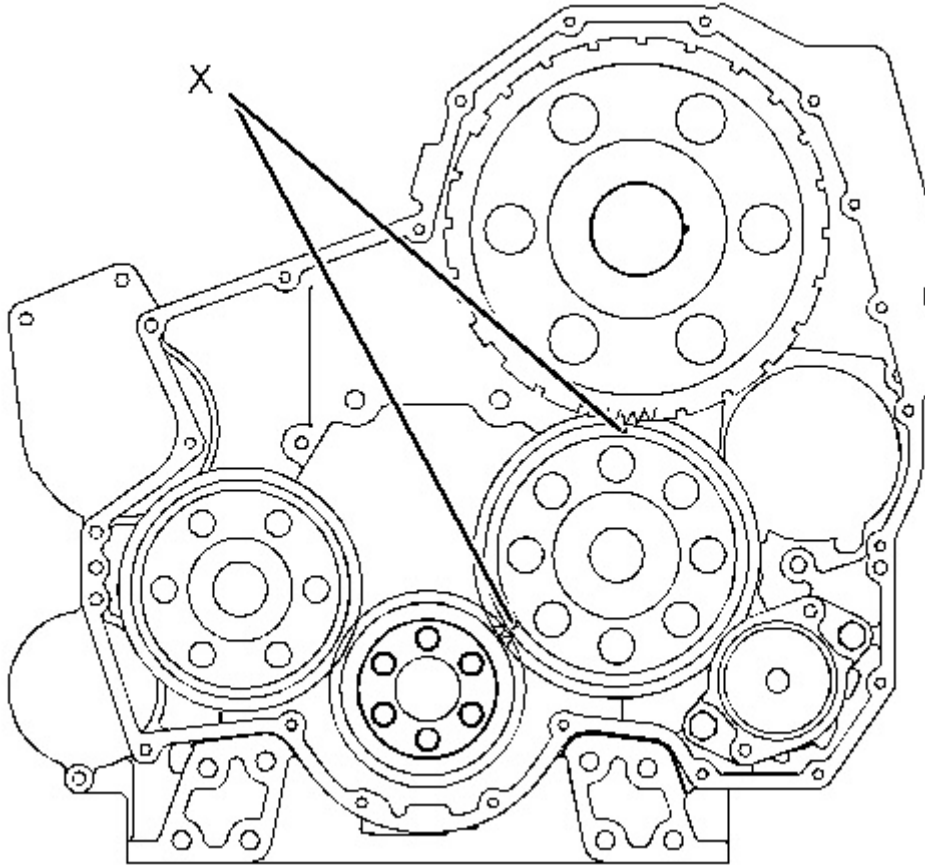


Illustration 2

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3. Ensure that the timing Marks (X) on the idler gear aligned with the timing marks on the crankshaft gear and the camshaft drive gear.
4. Remove Tooling (A) and Tooling (B).

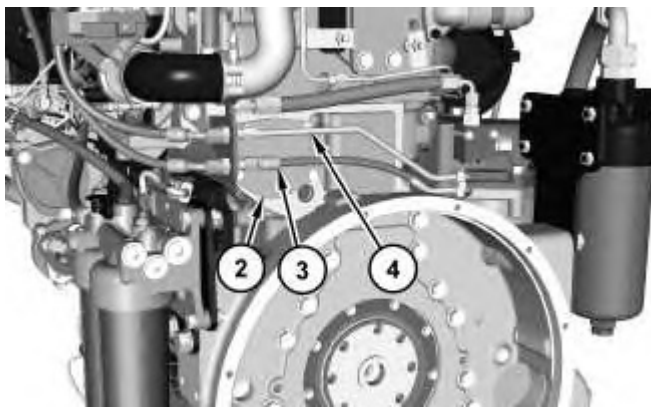
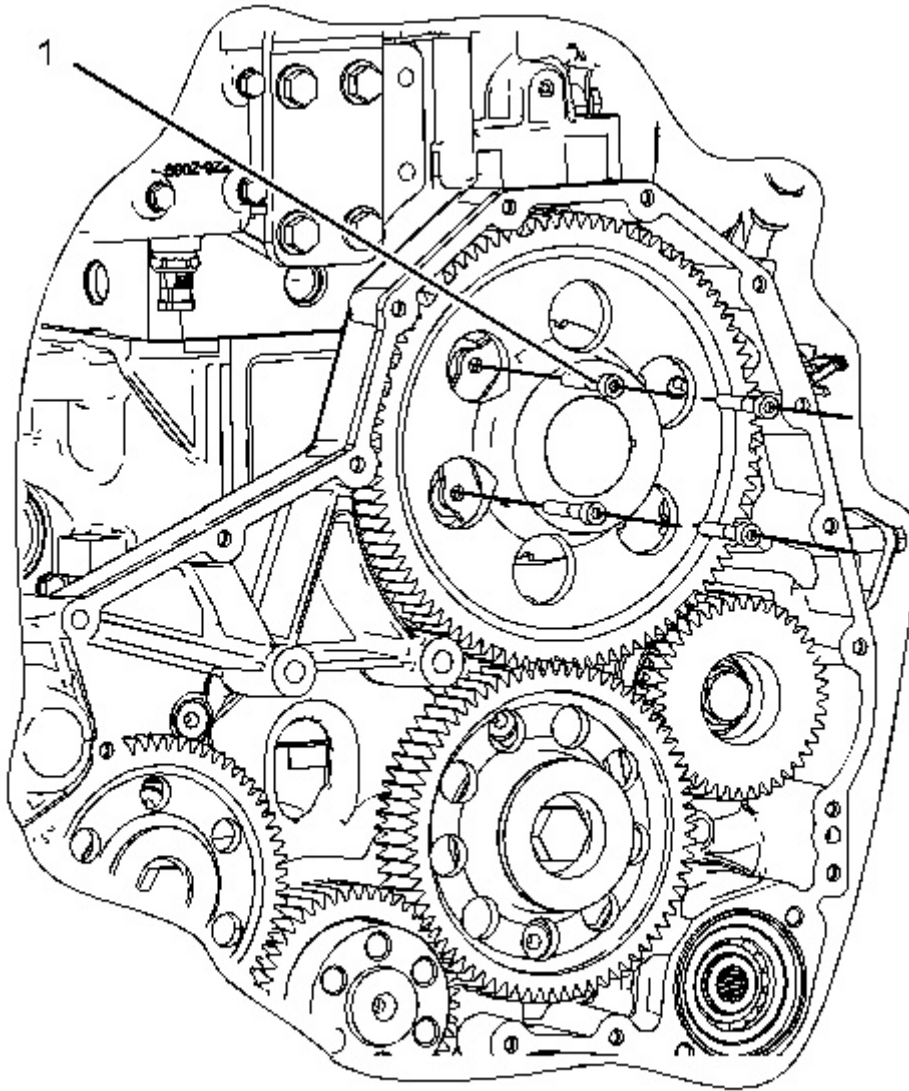


Illustration 3

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5. Install cover (2). Install hose assembly (3) and tube assembly (4).



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Illustration 4

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6. Install bolts (1).

**End By:**

- a. Install the camshaft position sensor.
- b. Install the front cover.
- c. Install the rocker arm and shaft.

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