CATERPILLAR®

Service Repair Manual

Models

335F LCR Excavator

Model: 335F LCR EXCAVATOR KNE

Configuration: 335F LCR Excavator KNE00001-UP (MACHINE) POWERED BY C7.1 Engine

Disassembly and Assembly C7.1 Engines for Caterpillar Built Machines

Media Number -UENR4468-15

Publication Date -01/06/2015

Date Updated -30/10/2018

i06731945

Rocker Shaft and Pushrod - Install

SMCS - 1102-012; 1208-012

Installation Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
$A^{(1)}$	9U-6198	Crankshaft Turning Tool	1
$A^{(2)}$	9U-7336	Housing	1
	5P-7305	Engine Turning Tool	1
В	367-8608	Engine Timing Pin	1
С	298-5564	T40 Torx Socket	1
D	227-4389	E10 Torx Socket	1
Е	370-4657	Rocker Arm Spacer	6
F	322-4113	Retainers	24

⁽¹⁾ The Crankshaft Turning Tool is used on the front pulley.

Note: Either Tooling (A) can be used. Use the Tooling that is most suitable.

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

⁽²⁾ This Tool is used in the aperture for the electric starting motor.

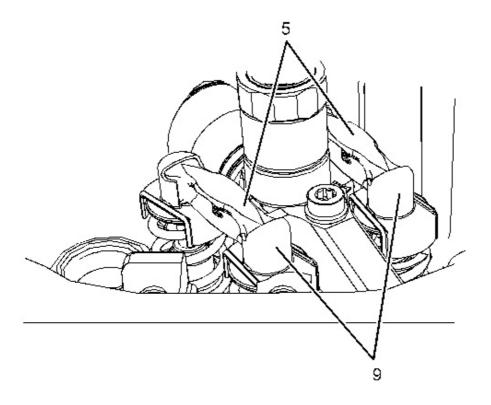


Illustration 1 g03454236

The correct location of valve bridges on valve stems is shown.

- 1. Engines that have valve bridge clips (9) originally installed on valve bridges (5). Remove the valve bridge clips from the valve bridges.
- 2. Clean valve bridges (5). Inspect the valve bridges for wear and damage. Replace any valve bridges that are worn or damaged.
- 3. Install Tooling (F) onto valve bridges (5).
- 4. Lubricate valve bridges (5) with clean engine oil.

NOTICE

Failure to ensure that ALL valve bridges are correctly seated onto the valve stems will cause interference between the pistons and the valves, resulting in damage to the engine.

5. Install valve bridges (5) to the valve stems. Ensure that valve bridge clips (9) are correctly located.

Note: Install used valve bridges in the original location and in the original orientation. Ensure that the valve bridges are correctly seated on the valves. New valve bridges may be installed in either orientation.

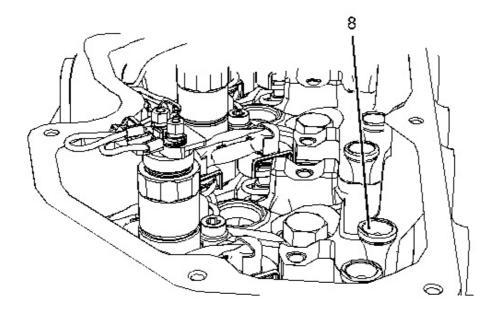


Illustration 2 g03454237

- 6. Clean the pushrods. Inspect the pushrods for wear and damage. Replace any pushrods that are worn or damaged.
- 7. Apply clean engine lubricating oil to both ends of pushrods (8). Install the pushrods to the engine with the cup upward. Ensure that when the pushrods are installed into the hydraulic lift there should be a noticeable snap when the pushrods are correctly installed.

Note: Ensure that the pushrods are installed in the original location.

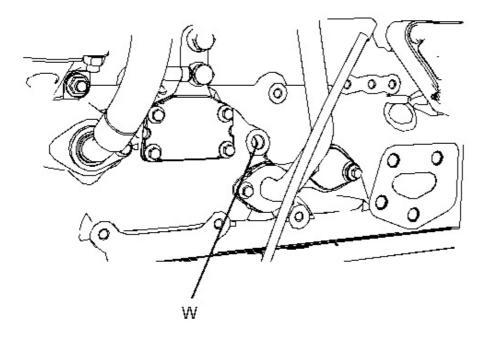


Illustration 3 g02085993

8. If necessary, use Tooling (A) to rotate the crankshaft so that number one piston is at top dead center on the compression stroke. Refer to System Operation, Testing and Adjusting, "Position the Valve Mechanism Before Maintenance Procedures" for the correct procedure. Install Tooling (B) through Hole (W) to lock the crankshaft.

Note: Do not use excessive force to install Tooling (B). Do not use Tooling (B) to hold the crankshaft during repairs.

9. Remove Tooling (B).

NOTICE

Failure to ensure that the crankshaft is positioned at 60 degrees after top dead center will result in interference between the pistons and the valves. Failure to ensure that the crankshaft is positioned at 60 degrees after top dead center will result in damage to the engine.

10. Use Tooling (A) to rotate the crankshaft in a clockwise direction and position the crankshaft at 60 degrees after top dead center.

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