

Product: EXCAVATOR

Model: 311F LRR EXCAVATOR LZF

Configuration: 311F LRR Excavator LZF00001-UP (MACHINE) POWERED BY C3.4B Engine

Disassembly and Assembly C3.4B Engines for Caterpillar Built Machines

Media Number -UENR0650-12

Publication Date -01/01/2015

Date Updated -30/04/2018

i04884980

Rocker Shaft and Pushrod - Install

SMCS - 1102-012; 1208-012

Installation Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	390-1131	Timing Pin (Crankshaft)	1

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

1. Ensure that all components are clean and free from damage. If necessary, replace any components that are worn or damaged.
 2. If Tooling (A) is not installed, install Tooling (A). Refer to Disassembly and Assembly, "Rocker Shaft and Pushrod - Remove" for the correct procedure.
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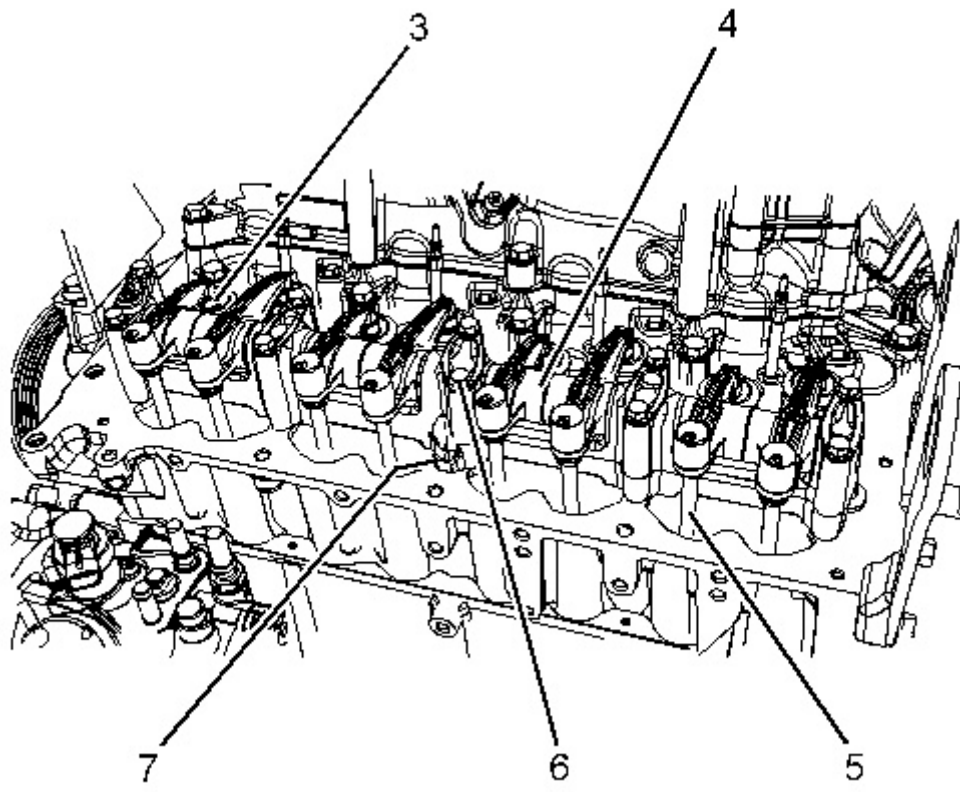


Illustration 1

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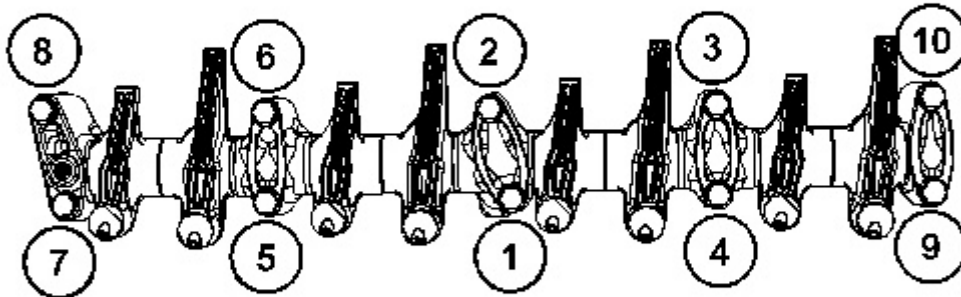


Illustration 2

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3. If necessary, install dowel (7) (not shown).
4. Apply clean engine oil to wear caps (3). Install the wear caps to the valve stems.

Note: If the wear caps were previously used, the wear caps must be installed in the original location.

5. Apply clean engine oil to both ends of push rods (5). Install the push rods into the cylinder head.

Note: If the push rods have previously been used, the push rods must be installed in the original location.

Note: Ensure that the push rods are seated in the cups of the lifters

6. Position rocker shaft assembly (4) onto the cylinder head.
7. Install bolts (6) to rocker shaft assembly (4). Tighten the bolts in the numerical sequence that is shown in Illustration 2 to a torque of 10 N·m (89 lb in).

Note: Ensure that the rocker arms are seated in the cups of the push rods.

Note: Ensure that the wear caps are not displaced from the valve stems when the rocker shaft assembly is installed.

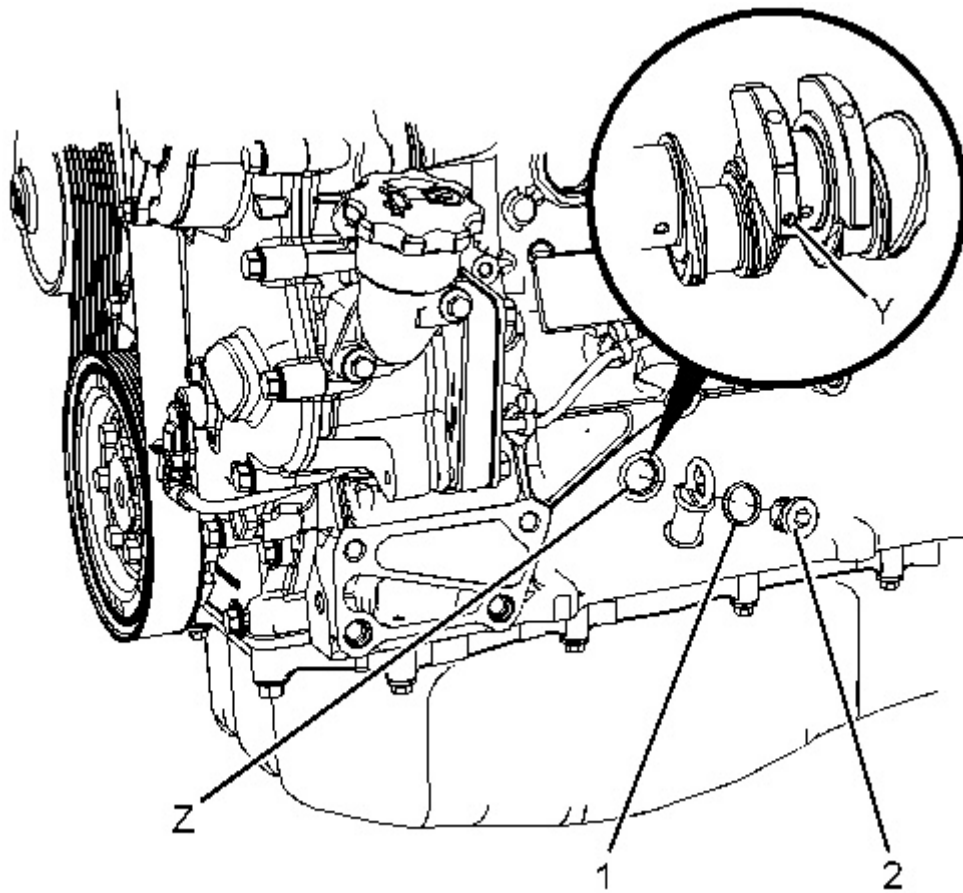


Illustration 3

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8. Remove Tooling (A) from the cylinder block.
9. Install new O-ring seal (1) onto plug (2).
10. Install plug (2) into Position (Z) in the cylinder block. Tighten the plug to a torque of 30 N·m (266 lb in).

End By:

- a. Install the valve mechanism cover. Refer to Disassembly and Assembly, "Valve Mechanism Cover - Remove and Install" for the correct procedure.
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i04887271

Cylinder Head - Remove

SMCS - 1100-011

Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	-	E14 Torx 1/2 Inch Drive Socket	1
B	227-4393	E18 Torx 1/2 Inch Drive Socket	1

Start By:

- a. Remove the exhaust manifold. Refer to Disassembly and Assembly, "Exhaust Manifold - Remove and Install".
- b. Remove the injectors. Refer to Disassembly and Assembly, "Injector - Remove".
- c. Remove the rocker shaft assembly and the pushrods. Refer to Disassembly and Assembly Manual, "Rocker Shaft and Pushrod - Remove".
- d. Remove the glow plugs. Refer to Disassembly and Assembly, "Glow Plugs - Remove and Install".

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

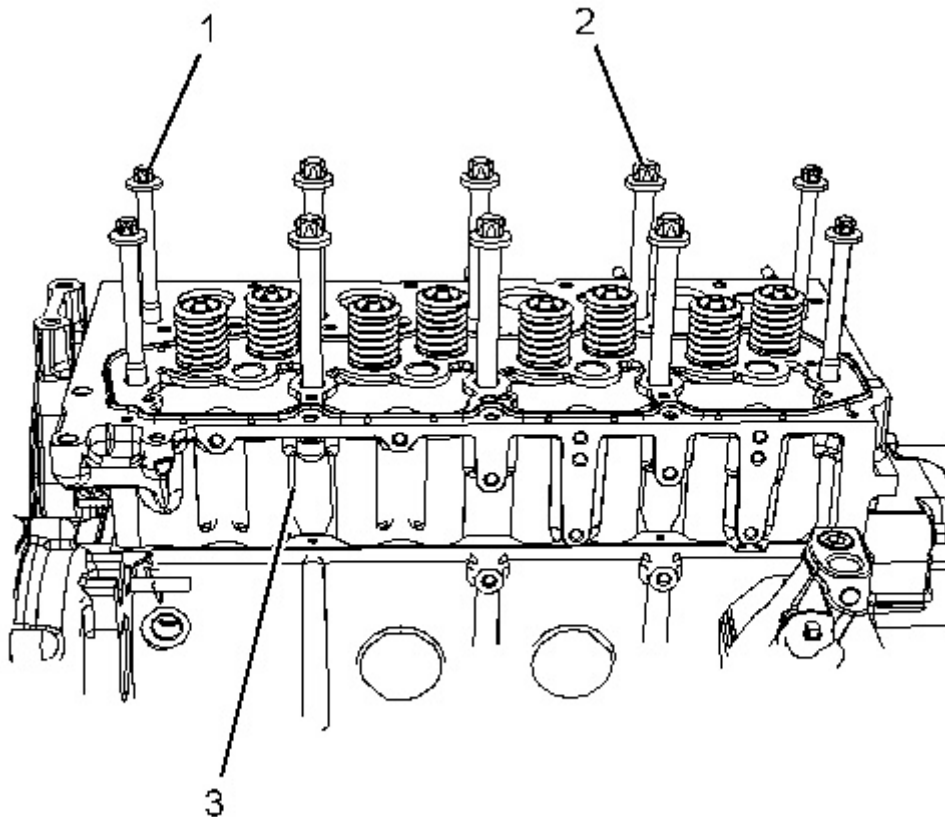
NOTICE

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.

Dispose of all fluids according to local regulations and mandates.

Note: Put identification marks on all hoses, on all hose assemblies, on wires and on all tube assemblies for installation purposes. Plug all hose assemblies and tube assemblies. Plugging all hose assemblies helps to prevent fluid loss and helps to keep contaminants from entering the system.

1. Drain the coolant from the cooling system into a suitable container for storage or for disposal. Refer to Operation and Maintenance Manual, "Cooling System Coolant - Change" for the correct draining procedure.
2. Disconnect the upper radiator hose from the water temperature regulator housing.



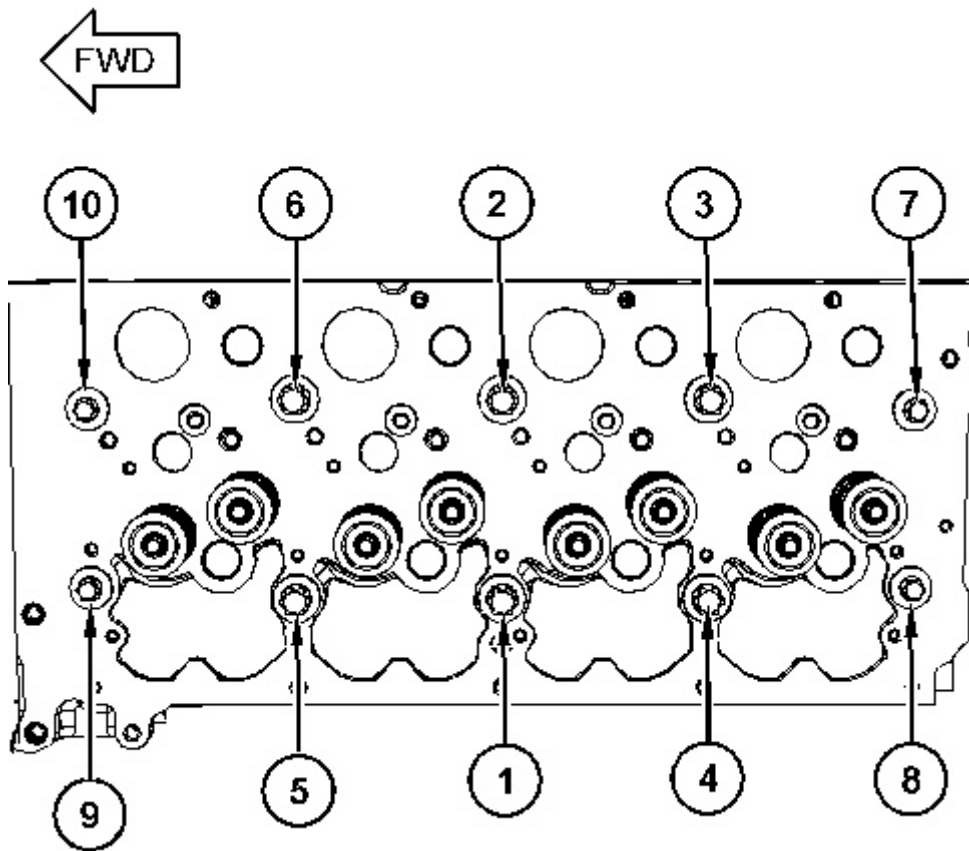


Illustration 2

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Sequence for tightening the bolts for the cylinder head

3. Use Tooling (A) and Tooling (B) in order to gradually loosen bolts (1) and bolts (2) in the reverse numerical order to the sequence that is shown in Illustration 2.

Note: Follow the correct sequence in order to help prevent distortion of the cylinder head.

4. Remove bolts (1) and bolts (2) from cylinder head (3).

Note: The bolts are two different lengths. Note the positions of the different bolts.

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