



# Service Repair Manual

## **Models**

# 329E L EXCAVATOR

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Product: EXCAVATOR

Model: 329E L EXCAVATOR WJK

Configuration: 329E & 329E L Excavators WJK00001-UP (MACHINE) POWERED BY C7.1 Engine

## Disassembly and Assembly

### C7.1 Engines for Caterpillar Built Machines

Media Number -KENR8881-05

Publication Date -01/11/2012

Date Updated -10/05/2016

i06954641

## Inlet and Exhaust Valve Springs - Remove and Install

SMCS - 1108-010

### Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	9U-6193	Valve Spring Compressor	1
	416-0288	Adapter	1
	416-0292	Head	1
B <sup>(1)</sup>	9U-6198	Crankshaft Turning Tool	1
B <sup>(2)</sup>	9U-7336	Housing	1
	5P-7305	Engine Turning Tool	1

<sup>(1)</sup> The Crankshaft Turning Tool is used on the front pulley.

<sup>(2)</sup> This Tool is used in the aperture for the electric starting motor.

#### Start By:

- Remove the rocker shaft assembly. Refer to Disassembly and Assembly, "Rocker Shaft and Pushrod - Remove" for the correct procedure.

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

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### NOTICE

**Keep all parts clean from contaminants.**

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

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**Note:** The following procedure should be adopted to remove the valve springs when the cylinder head is installed to the engine. Refer to Disassembly and Assembly, "Inlet and Exhaust Valves - Remove and Install" for the procedure to remove the valve springs from a cylinder head that has been removed from the engine.

**Note:** Ensure that the appropriate piston is at top dead center before the valve spring is removed. Failure to ensure that the piston is at top dead center may allow the valve to drop into the cylinder bore.



## **WARNING**

**Personal injury can result from being struck by parts propelled by a released spring force.**

**Make sure to wear all necessary protective equipment.**

**Follow the recommended procedure and use all recommended tooling to release the spring force.**

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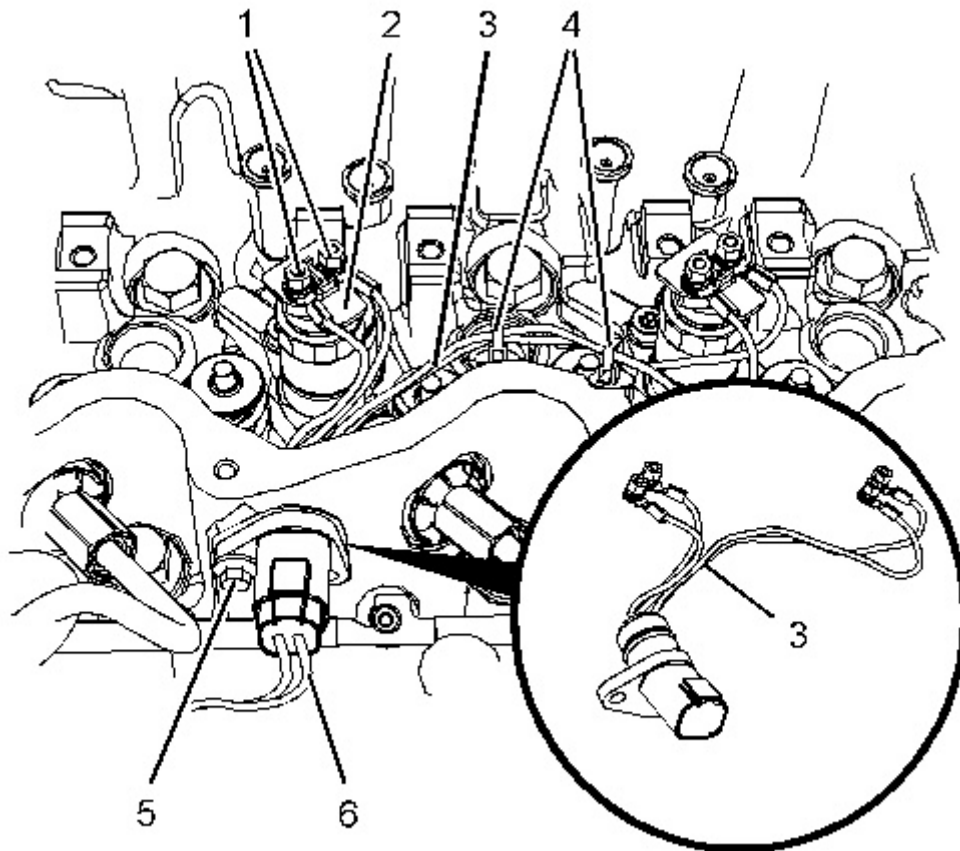
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## **NOTICE**

**Plug the apertures for the push rods in the cylinder head to prevent the entry of loose parts into the engine.**

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Illustration 1

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1. Follow Step 1.a through Step 1.f to remove the harness assembly for the electronic unit injectors.
    - a. Use a deep socket to remove connections (1) from electronic unit injectors (2).
    - b. Cut cable straps (4) and remove the remaining sections of the cable straps from the cylinder head.
    - c. Disconnect plug (6) from harness assembly (3).
    - d. Remove bolt (5) from harness assembly (3).
    - e. Withdraw harness assembly (3) from the cylinder head.
    - f. Repeat Step 1.a through Step 2 to remove the remaining harness assemblies.
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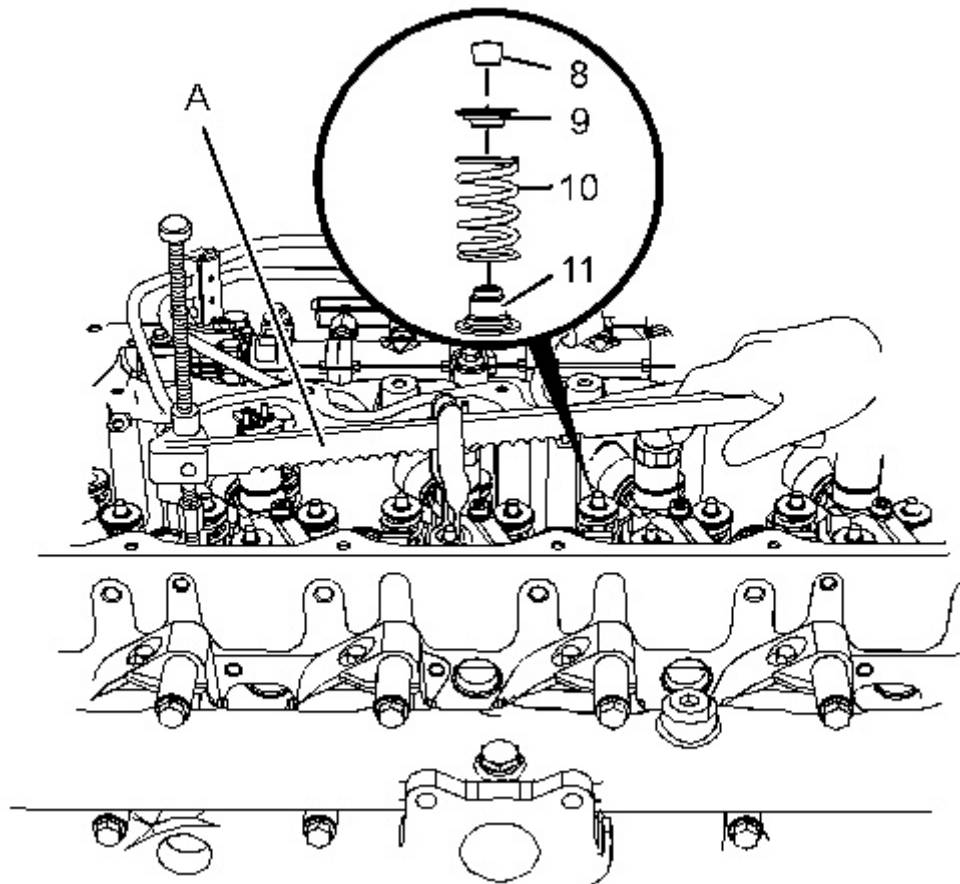


Illustration 2

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### NOTICE

**Ensure that the valve spring is compressed squarely or damage to the valve stem may occur.**

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2. Follow Step 2.a through Step 2.d to position the appropriate piston at top dead center.
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