



# Service Repair Manual

## **Models**

323D L Excavator

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Product: EXCAVATOR

Model: 323D L EXCAVATOR NZF

Configuration: 323D L Excavator NZF00001-UP (MACHINE) POWERED BY C6.6 Engine

## Disassembly and Assembly C6.6 Engines for Caterpillar Built Machines

Media Number -KENR6081-15

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# Inlet and Exhaust Valve Springs - Remove and Install

SMCS - 1108-010

## Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	1P-1860	Retaining Ring Pliers	1
B	9U-6193	Valve Spring Compressor	1
	416-0288	Adapter	1
	416-0292	Head	1
C <sup>(1)</sup>	9U-6198	Crankshaft Turning Tool	1
C <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:

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

**Note:** Either Tooling (C) 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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**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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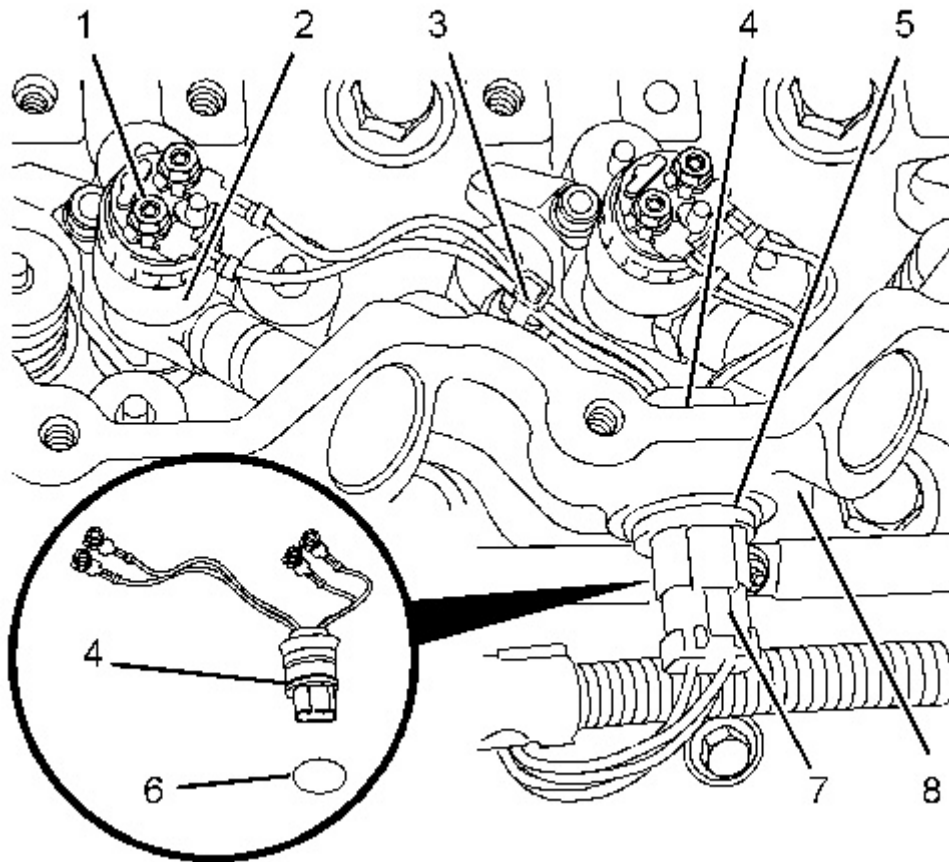


Illustration 1

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1. Follow Steps 1.a through 1.h to remove the harness assemblies for the electronic unit injectors.
  - a. Place a temporary identification mark on connections (1) for harness assembly (4) for electronic unit injectors (2).
  - b. Use a deep socket to remove connections (1) from electronic unit injectors (2).
  - c. Cut the cable straps (3).
  - d. Disconnect plug (7) from harness assembly (4).
  - e. Use Tooling (A) to remove circlip (5).
  - f. From the outside of valve mechanism cover base (8), push harness assembly (4) inward. Withdraw the harness assembly from the valve mechanism cover base.
  - g. Remove O-ring seal (6) from harness assembly (4).
  - h. Repeat Steps 1.a through 1.g to remove the remaining harness assemblies.

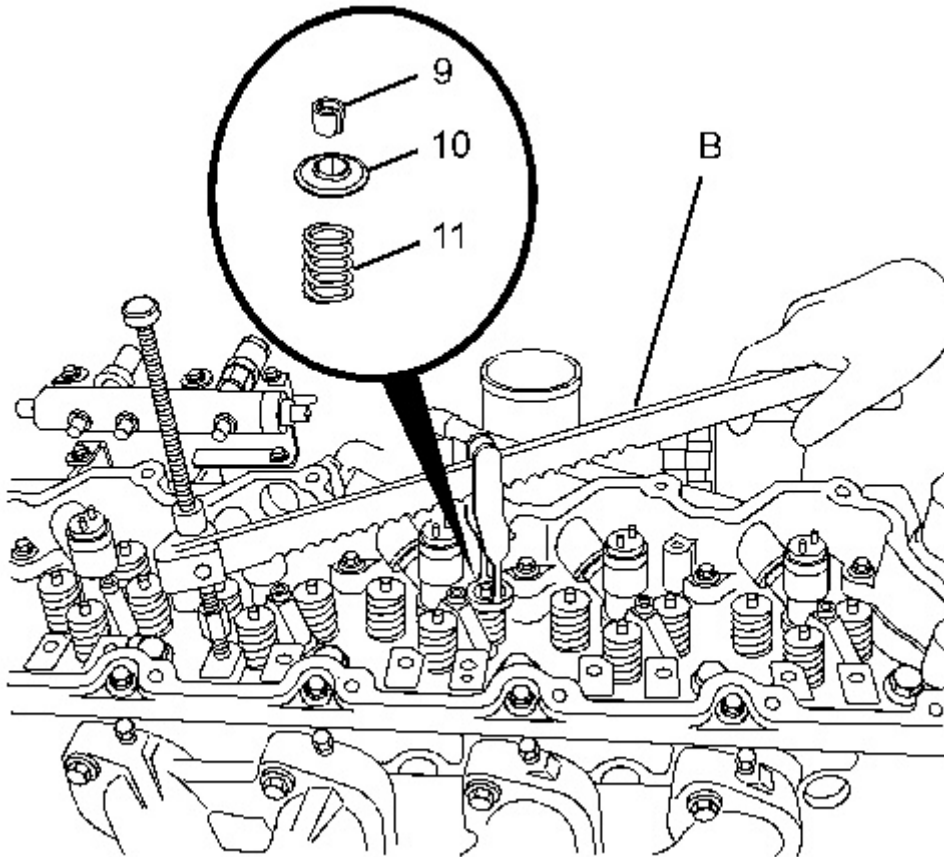


Illustration 2

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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 Steps 2.a through 2.d to position the appropriate piston at top dead center.
  - a. Install Tooling (B) in position on the cylinder head to compress a valve spring (11) for the appropriate piston.
  - b. Use Tooling (B) to compress valve spring (11) and open the valve slightly.

**Note:** Do not compress the spring so that the valve spring retainer (10) touches the valve stem seal.
  - c. Use Tooling (C) to rotate the crankshaft carefully, until the piston touches the valve.

**Note:** Not use excessive force to turn the crankshaft. The use of force can result in bent valve stems.

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