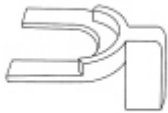




Valve Seals

Special Tool(s)

 ST1331-A	Compressor Spacer, Valve Spring 303-382 (T91P-6565-AH)
 ST1718-A	Compressor, Valve Spring 303-452 (T93P-6565-AR)
 ST1332-A	Installer, Valve Stem Oil Seal 303-383 (T91P-6571-A)

Material

Item	Specification
Motorcraft® SAE 5W-50 Full Synthetic Motor Oil XO-5W50-QGT or equivalent	WSS-M2C931-B

Removal and Installation

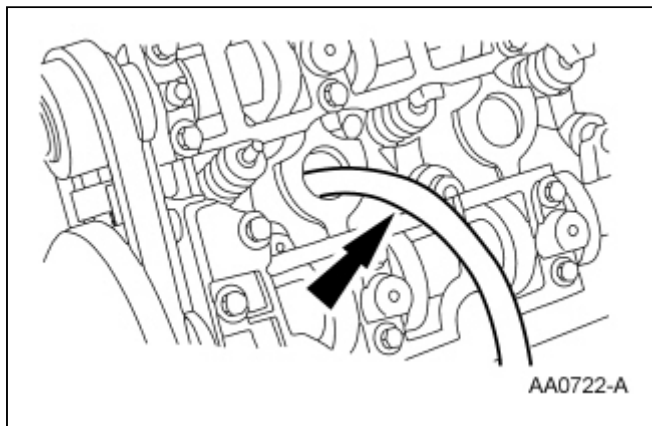
NOTICE: During engine repair procedures, cleanliness is extremely important. Any foreign material, including any material created while cleaning gasket surfaces, that enters the oil passages, coolant passages or the oil pan, can cause engine failure.

1. Depending on the valve being serviced, remove the RH or LH valve cover. For additional information, refer to [Valve Cover — RH](#) or [Valve Cover — LH](#) in this section.
2. Remove the spark plug. For additional information, refer to [Section 303-07C](#).
3. Rotate the crankshaft until the piston for the valve being serviced is at the top of its stroke with both the intake valve and the exhaust valve closed.
4. **NOTICE:** If the components are to be reinstalled, they must be installed in their original positions. Mark the components for installation into the original location. Failure to follow these instructions may result in engine damage.

Using the Valve Spring Compressor, compress the valve spring and remove the camshaft roller follower.



5. Use compressed air in the cylinder to hold the valves in position.
 - Apply a minimum of 965 kPa (140 psi) of compressed air into the cylinder.

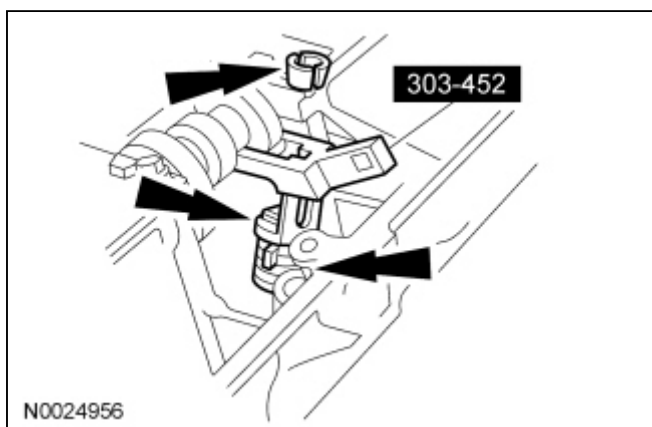


6. **NOTICE:** If the components are to be reinstalled, they must be installed in their original positions. Mark the components for installation into their original locations. Failure to follow these instructions may result in engine damage.

NOTE: If air pressure has forced the piston to the bottom of the cylinder, any loss of air pressure will allow the valve to fall into the cylinder. If air pressure must be removed, support the valve prior to removal.

NOTE: If a valve drops into the cylinder, remove the cylinder head. For additional information, refer to [Cylinder Head](#) in this section.

Using the Valve Spring Compressor, compress the valve spring and remove the valve spring retainer keys.



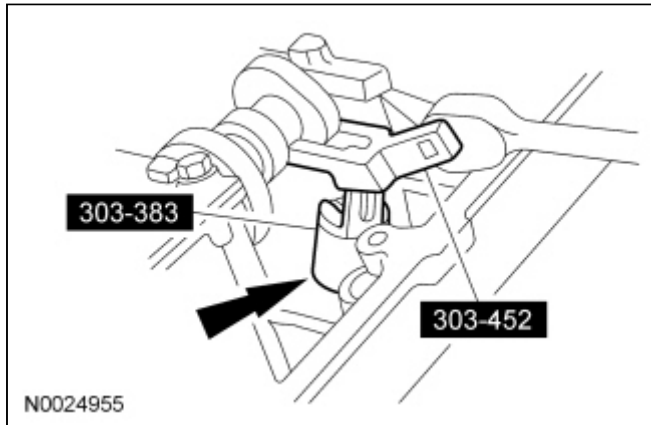
7. Remove the valve spring retainer, the valve spring and the valve seal.
 - Discard the valve seal.

8. Inspect the components. For additional information, refer to [Section 303-00](#).

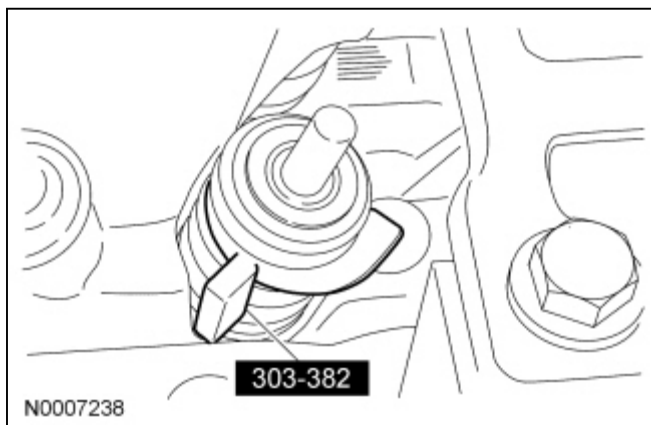
Installation

1. **NOTE:** Lubricate the valve seal and valve stem with clean engine oil prior to installation.

Using the Valve Spring Compressor and the Valve Stem Oil Seal Installer, install a new valve seal.

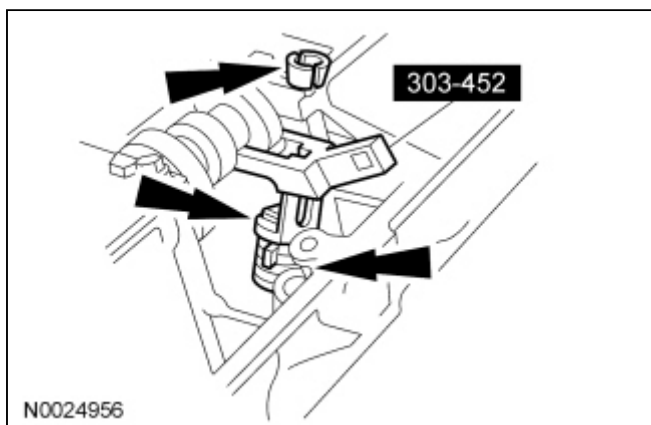


2. Install the Valve Spring Compressor Spacer between the valve spring coils to protect the valve stem seal from damage.



3. **NOTICE:** If the components are to be reinstalled, they must be installed in their original positions. Failure to follow these instructions may result in engine damage.

Using the Valve Spring Compressor, install the valve spring, the valve spring retainer and the valve spring retainer keys.



4. **NOTICE:** If the components are to be reinstalled, they must be installed in their original positions. Failure to follow these instructions may result in engine damage.

Using the Valve Spring Compressor, compress the valve spring and install the camshaft roller follower.



5. Install the spark plug. For additional information, refer to [Section 303-07C](#).
 6. Depending on the valve being serviced, install the RH or LH valve cover. For additional information, refer to [Valve Cover — RH](#) or [Valve Cover — LH](#) in this section.
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