


Valve Springs

Special Tool(s)

 ST2604-A	Compressor, Valve Spring 303-1039
---	--------------------------------------

Material

Item	Specification
Motorcraft® SAE 5W-20 Premium Synthetic Blend Motor Oil XO-5W20-QSP (US); Motorcraft® SAE 5W-20 Super Premium Motor Oil CXO-5W20-LSP12 (Canada); or equivalent	WSS-M2C930-A

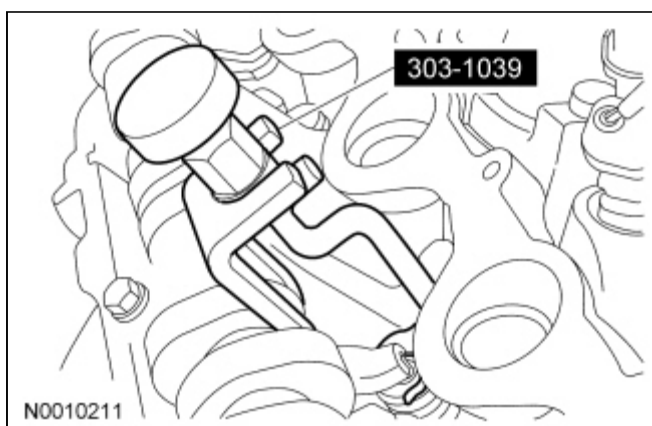
Removal

1. Depending on the valve spring being serviced, remove the LH or RH valve cover. For additional information, refer to [Valve Cover — LH](#) or [Valve Cover — RH](#) in this section.
2. Remove the spark plug. For additional information, refer to [Section 303-07B](#).
3. Rotate the crankshaft until the piston for the valve spring being serviced is at the top of its stroke with the intake valve and the exhaust valves closed.
4. **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: Do not allow the valve keepers to fall off of the valve or the valve may drop into the cylinder. If a valve drops into the cylinder, the cylinder head must be removed. For additional information, refer to [Cylinder Head](#) in this section.

NOTE: It may be necessary to push the valve down while compressing the spring.

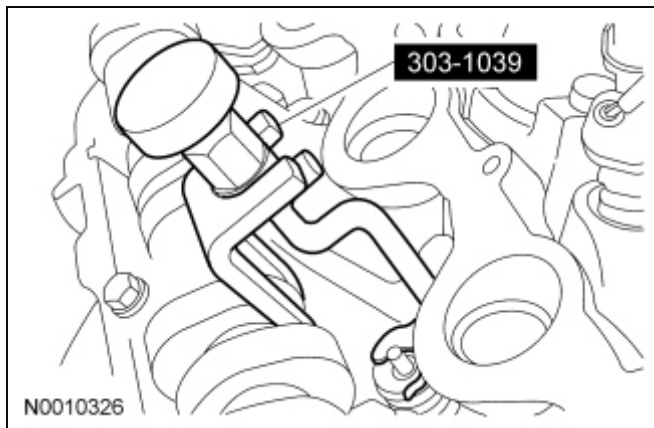
Using the Valve Spring Compressor, compress the valve spring and remove the camshaft roller follower.



5. Use compressed air in the cylinder to hold both 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. 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.

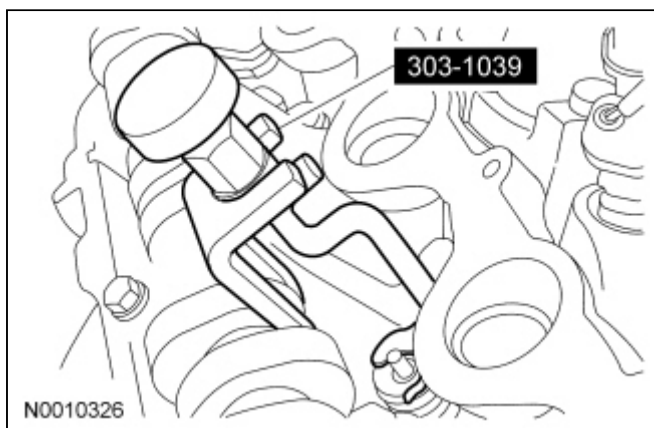


7. Remove the valve spring retainer and the valve spring.
8. Inspect the valve spring. For additional information, refer to [Section 303-00](#).

Installation

1. **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.**

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



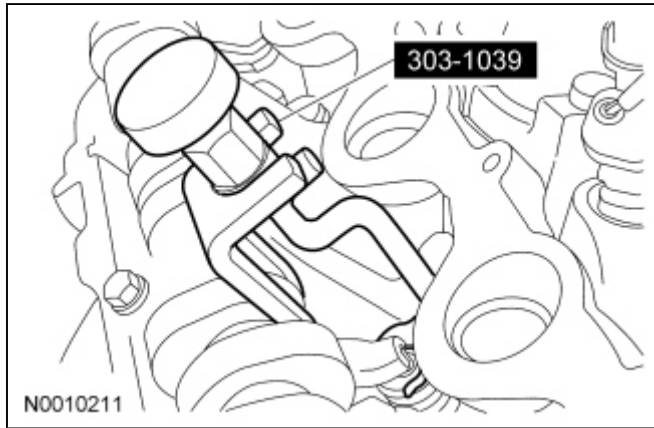
2. Relieve the air pressure from the cylinder.
3. **NOTICE: If the components are to be reinstalled, they must be installed in their original positions. Mark the components for installation into their original locations. Failure to follow these instructions may result in engine damage.**

NOTE: Do not allow the valve keepers to fall off of the valve or the valve may drop into the cylinder. If a valve drops into the cylinder, the cylinder head must be removed. For additional information, refer to [Cylinder Head](#) in this section.

NOTE: It may be necessary to push the valve down while compressing the spring.

NOTE: Lubricate the camshaft roller followers with clean engine oil prior to installation.

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



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