VALVE LASH

Introduction

Valve lash adjustment determines how far the valves enter the cylinder and how long they stay open and/or closed.

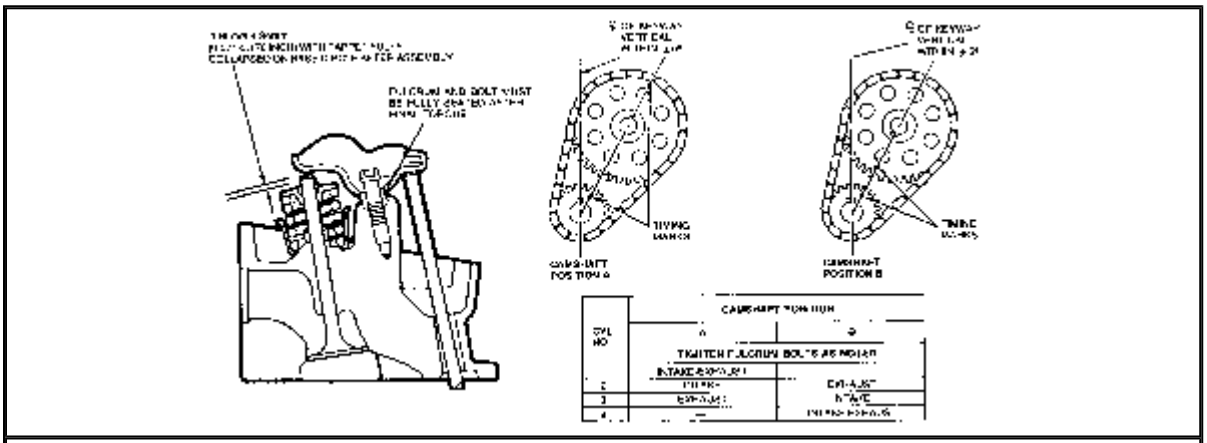
While all valve adjustments must be made as accurately as possible, it is better to have the valve adjustment slightly loose than slightly tight, as a burned valve may result from overly tight adjustments.

Checking

The valve stem-to-rocker arm clearance for all engines except the 3.0L and the 3.2L SHO should be within specification with the valve lifter completely collapsed. To determine the rocker arm-to-valve lifter clearance, make the following checks:

2.5L ENGINE

1. **Set the No. 1 piston on TDC of the compression stroke. The timing marks on the camshaft and crankshaft gears will be together. Check the clearance in the No. 1 intake, No. 1 exhaust, No. 2 intake and No. 3 exhaust valves.**
2. **Rotate the crankshaft 1 complete turn (360°), or 180° for the camshaft gear. Check the clearance on the No. 2 exhaust, No. 3 intake, No. 4 intake and No. 4 exhaust valves.**
3. **The clearance between the rocker arm and the valve stem tip should be 0.071-0.170 in. (1.80-4.34mm) with the lifter on the base circle of the cam.**



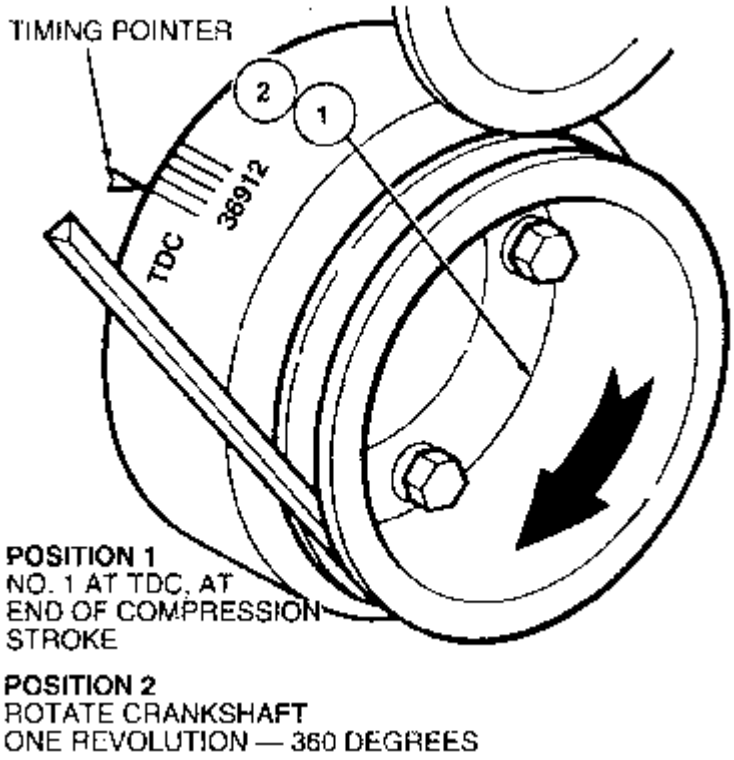
Checking the valve clearance-2.5L engine

Click to enlarge

3.0L AND 3.8L ENGINE-EXCEPT SHO

4. **Rotate the engine until the No. 1 cylinder is at TDC of its compression stroke and check the clearance between the following valves:**

1. **No. 1 intake and No. 1 exhaust valves**
2. **No. 3 intake and No. 2 exhaust valves**
3. **No. 6 intake and No. 4 exhaust valves**



Checking the valve clearance-3.0L engine, except SHO

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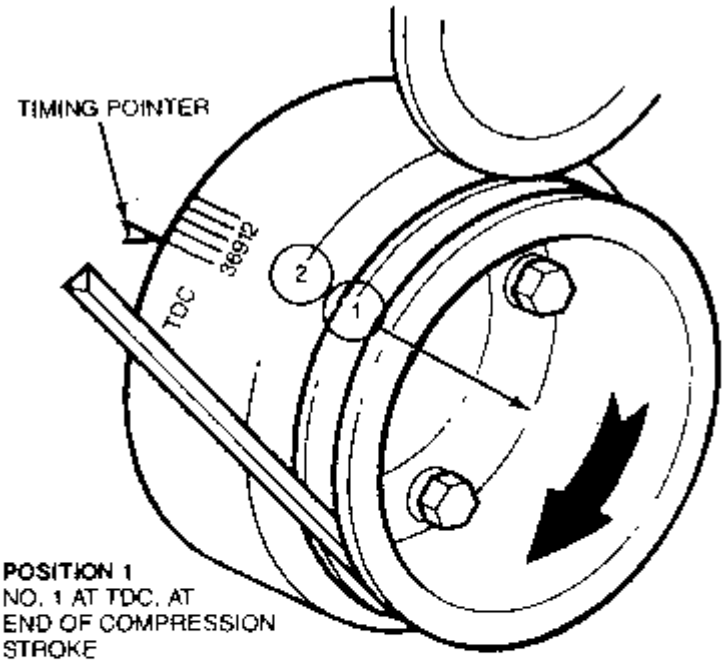

CYL. NO.	CRANKSHAFT POSITION	
	1	2
	SET GAP OF VALVES NOTED	
1	INT — EXH	NONE
2	EXH	INT
3	INT	EXH
4	EXH	INT
5	NONE	INT — EXH
6	INT	EXH

Checking the valve clearance-3.8L engine

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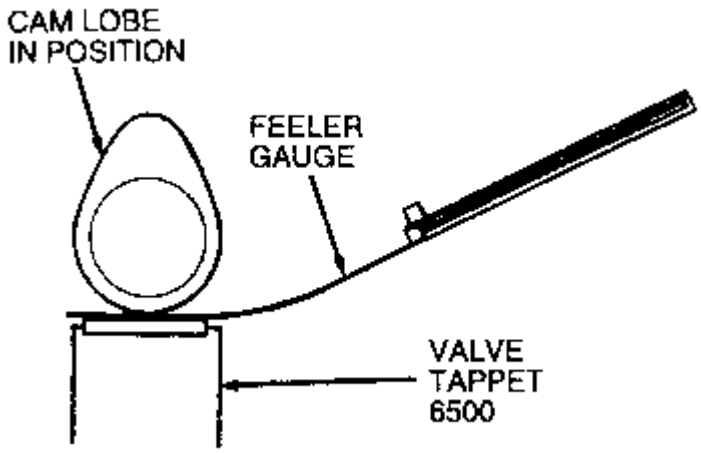
5. **Rotate the crankshaft 360° and check the clearance between the rocker arm and the following valves:**
    1. **No. 2 intake and No. 3 exhaust valves**
    2. **No. 4 intake and No. 5 exhaust valves**
    3. **No. 5 intake and No. 6 exhaust valves**
6. **The clearance should be 0.085-0.185 in. (2.15-4.69mm) for the 3.0L engine and 0.089-0.189 in. (2.25-4.79mm) for the 3.8L engine.**

3.0L AND 3.2L SHO ENGINES

1. **Disconnect the negative battery cable.**
2. **Remove the valve cover. For the 3.2L SHO engine, first remove the EGR valve-to-exhaust manifold tube to gain access to the right-hand valve cover. For details regarding these procedures, please refer to *Section 3* of this manual.**
3. **Remove the intake manifold assembly. For details regarding this procedure, please refer to *Section 3* of this manual.**



Checking the valve clearance-3.0L and 3.2L SHO engines

4. **Insert a feeler gauge under the cam lob at a 90° angle to the camshaft. Clearance for the intake valves should be 0.006-0.010 in. (0.15-0.25mm). Clearance for the exhaust valves should be 0.010-0.014 in. (0.25-0.35mm).**

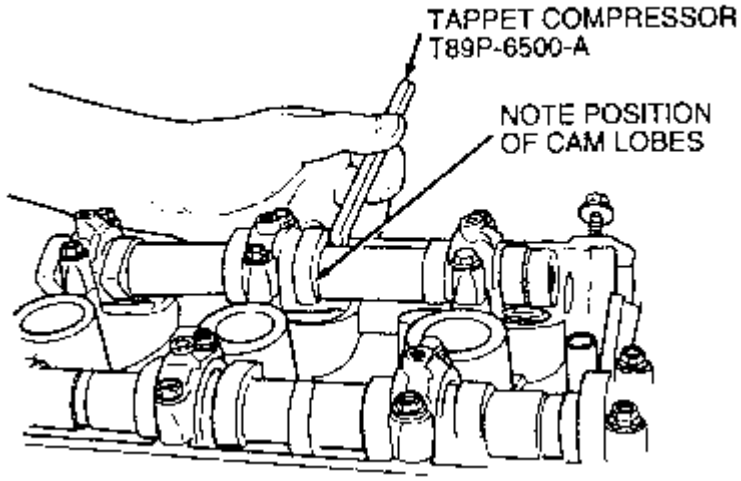
The cam lobes must be directed 90° or more away from the valve lifters/tappets.

Adjustment

For all engines covered by this manual, except the 3.0L and 3.2L SHO, the intake and exhaust valves are driven by the camshaft working through hydraulic lash adjusters. The lash adjusters eliminate the need for periodic valve lash adjustments.

3.0L AND 3.2L SHO ENGINES

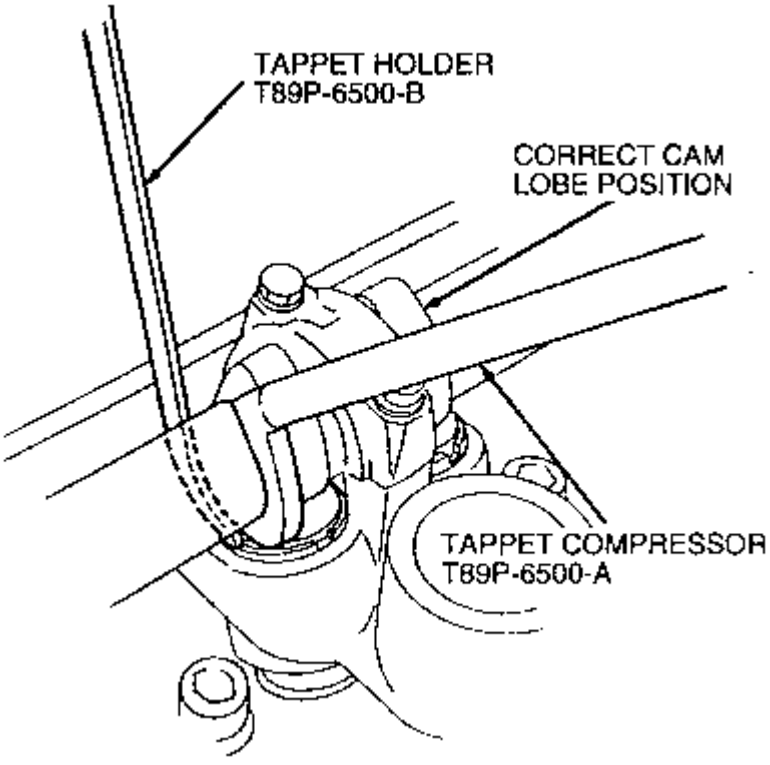
1. **Disconnect the negative battery cable.**
2. **Remove the valve covers. For the 3.2L SHO engine, remove the EGR valve-to-exhaust manifold tube to gain access to the right-hand valve cover. For details regarding these procedures, please refer to *Section 3* of this manual.**
3. **Remove the intake manifold assembly. For details regarding this procedure, please refer to *Section 3* of this manual.**
4. **Install Lifter/Tappet Compressor T89P-6500-A or equivalent under the camshaft, next to the lobe, and rotate it downward to depress the valve lifter/tappet.**



Install the compressor tool under the cam, next to the lobe, and rotate it down to depress the valve lifter/tappet

Click to enlarge

5. **Install the valve lifter/tappet holding tool T89P-6500-B or equivalent, and remove the compressor tool.**



Install the holding tool, then remove the compressor tool

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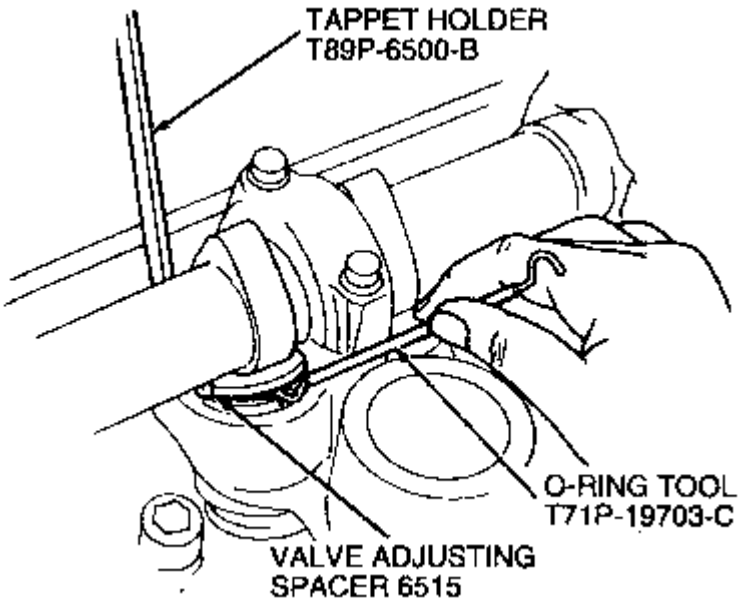
6. **Using O-ring tool T71P-19703-C or equivalent, lift the valve adjusting spacer and remove the spacer with a magnet.**



Using the O-ring tool to lift the spacer

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7. **Determine the size of the spacer by the numbers on the bottom face of the spacer, or by measuring it with a micrometer.**
8. **Install the replacement valve adjusting spacer that will permit the specified clearance. Be sure to install the spacer with the numbers down and make sure the spacer is properly seated.**
9. **Release the lifter/tappet holder by installing the compressor tool.**
10. **Repeat the procedure for each valve by rotating the crankshaft as necessary.**
11. **After all of the valve clearances are checked and/or adjusted, inspect all of the spacers to ensure that they are fully seated in their valve lifters/tappets.**
12. **Inspect the valve cover gaskets and replace, if necessary. For details regarding this procedure, please refer to *Section 3* of this manual.**
13. **Install the intake manifold and the valve covers, as described in *Section 3* of this manual**
14. **Connect the negative battery cable.**