

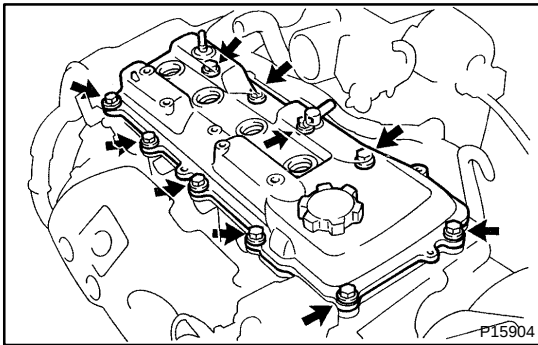
VALVE CLEARANCE INSPECTION

EM02K-06

HINT:

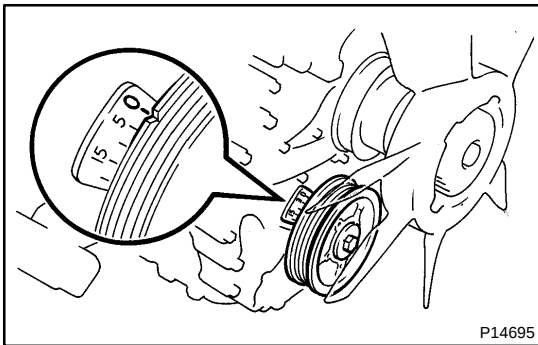
Inspect and adjust the valve clearance when the engine is cold.

1. **REMOVE INTAKE AIR CONNECTOR** (See page [EM-34](#))
2. **REMOVE PCV HOSES**
3. **REMOVE IGNITION COILS (WITH IGNITER)**
4. **DISCONNECT ENGINE WIRE**
 - (a) w/ A/C:
Disconnect the A/C compressor connector.
 - (b) Disconnect the oil pressure sensor connector.
 - (c) Disconnect the ECT sender gauge connector.
 - (d) Disconnect the 4 engine wire clamps and engine wire.



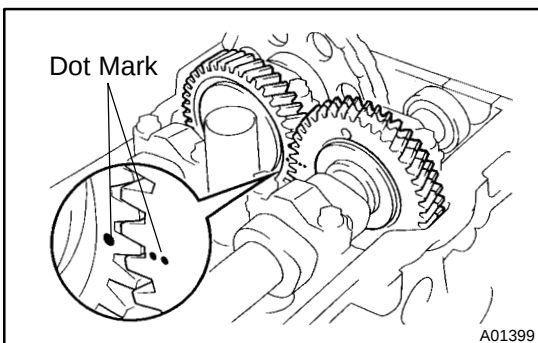
5. REMOVE CYLINDER HEAD COVER

Remove the 10 bolts, 10 seal washers, cylinder head cover and gasket.

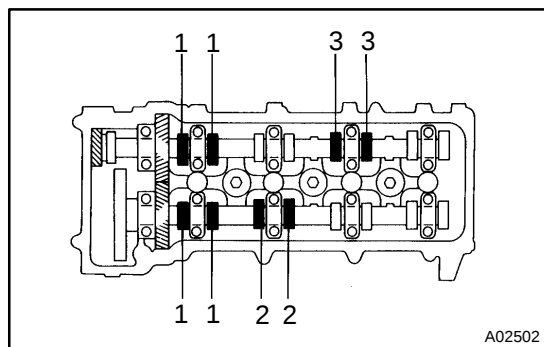


6. SET NO.1 CYLINDER TO TDC/COMPRESSION

- (a) Turn the crankshaft pulley clockwise and align its groove with the "0" mark on the timing chain cover.



- (b) Check that the timing marks (1 and 2 dots) of the camshaft drive and driven gears are in straight line on the cylinder head surface as shown in the illustration. If not, turn the crankshaft 1 revolution (360°) and align the marks as above.

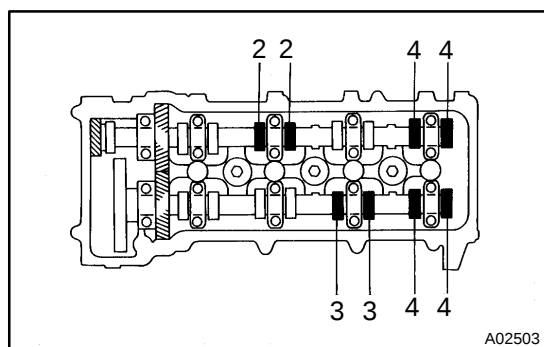


7. INSPECT VALVE CLEARANCE

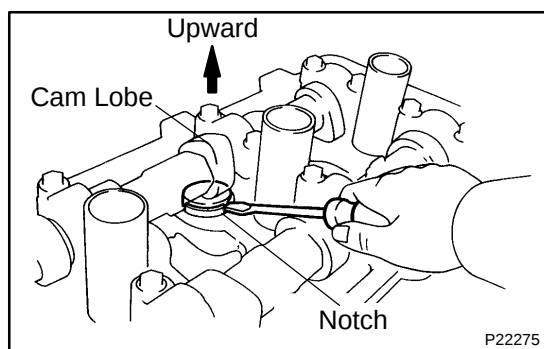
- (a) Check only the valves indicated.
- (1) Using a feeler gauge, measure the clearance between the valve lifter and camshaft.
 - (2) Record the out-of-specification valve clearance measurements. They will be used later to determine the required replacement adjusting shim.

Valve clearance (Cold):

Intake	0.15 – 0.25 mm (0.006 – 0.010 in.)
Exhaust	0.25 – 0.35 mm (0.010 – 0.014 in.)

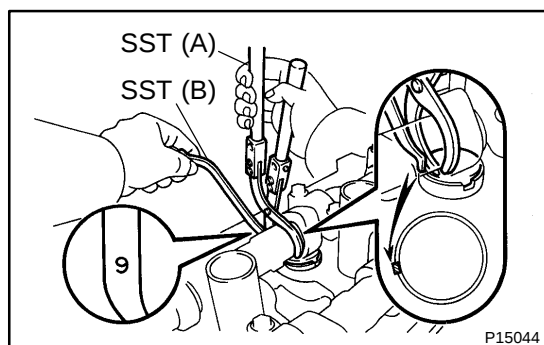


- (b) Turn the crankshaft pulley 1 revolution (360°) and align its groove with timing mark "0" of the timing chain cover.
- (c) Check only the valves indicated as shown. Measure the valve clearance (See procedure in step (a)).



8. ADJUST VALVE CLEARANCE

- (a) Remove the adjusting shim.
- (1) Turn the crankshaft to position the cam lobe of the camshaft on the adjusting valve upward.
 - (2) Position the notch of the valve lifter toward the spark plug side.

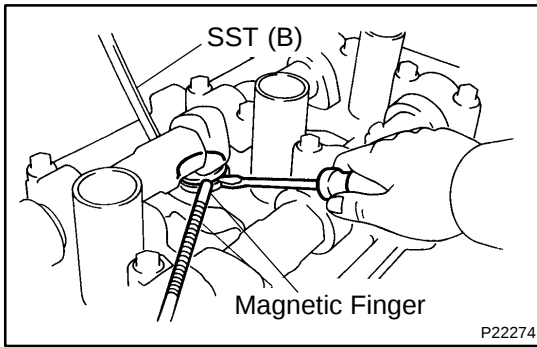


- (3) Using SST (A), press down the valve lifter and place SST (B) between the camshaft and valve lifter flange. Remove SST (A).

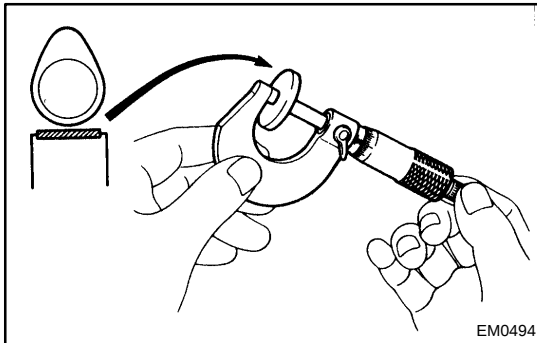
SST 09248-55040 (09248-05410, 09248-05420)

HINT:

Apply SST (B) at slight angle on the side marked with "9", at the position shown in the illustration.



- (4) Remove the adjusting shim with a small screwdriver and magnetic finger.



- (b) Determine the replacement adjusting shim size by these Formula or Charts:

- (1) Using a micrometer, measure the thickness of the removed shim.
- (2) Calculate the thickness of a new shim so that the valve clearance comes within the specified value.

T Thickness of removed shim

A Measured valve clearance

N Thickness of new shim

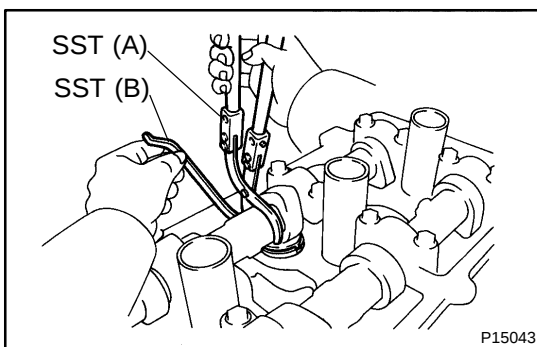
Intake: $N = T + (A - 0.20 \text{ mm (0.008 in.)})$

Exhaust: $N = T + (A - 0.30 \text{ mm (0.012 in.)})$

- (3) Select a new shim with a thickness as close as possible to the calculated value.

HINT:

Shims are available in 17 sized in increments of 0.05 mm (0.0020 in.), from 2.50 mm (0.0984 in.) to 3.30 mm (0.1299 in.).



- (c) Install a new adjusting shim.
- (1) Place a new adjusting shim on the valve lifter.
 - (2) Using SST (A), press down the valve lifter and remove SST (B).

SST 09248-55040 (09248-05410, 09248-05420)

- (d) Recheck the valve clearance.

9. REINSTALL CYLINDER HEAD COVER

10. RECONNECT ENGINE WIRE

11. REINSTALL HIGH-TENSION CORDS TO SPARK-PLUGS

12. REINSTALL PCV HOSES

13. REINSTALL INTAKE AIR CONNECTOR (See page EM-57)