

VALVE CLEARANCE INSPECTION

EM10J-01

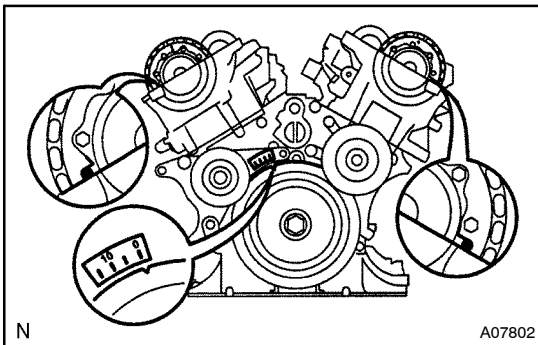
HINT:

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

1. REMOVE CYLINDER HEAD COVER LH AND RH

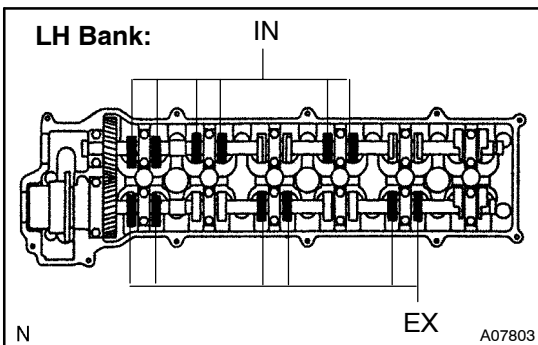
(See [page EM-1])

- (a) Remove the air cleaner inlet and V-bank cover.
- (b) Remove the air cleaner assembly LH and RH with the air flow meter.
- (c) Remove the emission control valve set.
- (d) Remove the throttle body assembly LH and RH.
- (e) Remove the intake air surge tank LH and RH with the intake air connector.
- (f) Remove the 2 ignition coil with the high-tension codes.
- (g) Disconnect the engine wire.
- (h) Remove the vacuum transmitting pipe No.1 and No.2 with the vacuum control valve set.



2. NO.1 CYLINDER SETTING AT COMPRESSION TOP DEAD CENTER

- (a) Turn the crankshaft until the crankshaft pulley notch aligns with timing mark 0.
- (b) Check if the camshaft timing gear dowel pin aligns with the cylinder head upper surface as shown in the illustration.



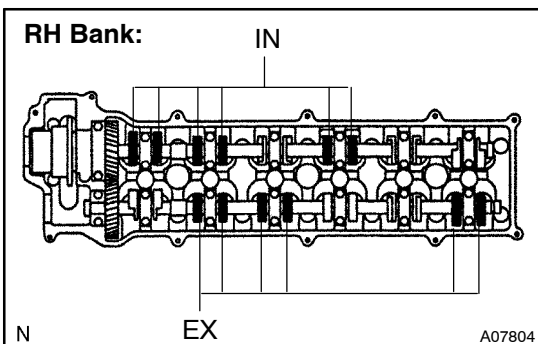
3. VALVE CLEARANCE INSPECTION

- (a) Tighten the camshaft bearing cap to the standard torque.
Torque: 16 N·m (165 kgf·cm, 12 ft·lbf)
- (b) Measure the valve clearance at the point shown in the illustration and record the result. If it is deviated from the standard, adjust the valve clearance.

Standard:

IN 0.20 - 0.26 mm (0.0078 - 0.0102 in.)

EX 0.27 - 0.33 mm (0.0106 - 0.0130 in.)

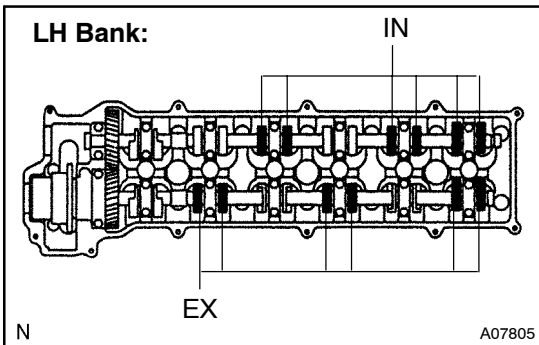


- (c) Turn the crankshaft by 60° (1/6 turn), measure the valve clearance at the point shown in the illustration and record the result. If it is deviated from the standard, adjust the valve clearance.

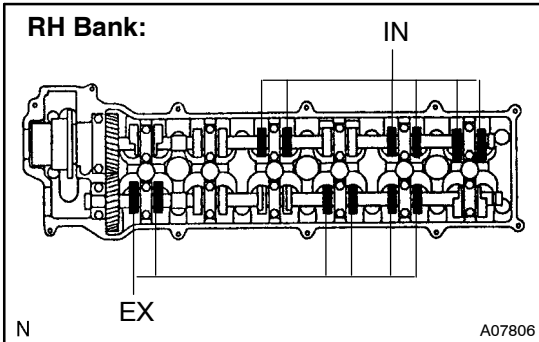
Standard:

IN 0.20 - 0.26 mm (0.0078 - 0.0102 in.)

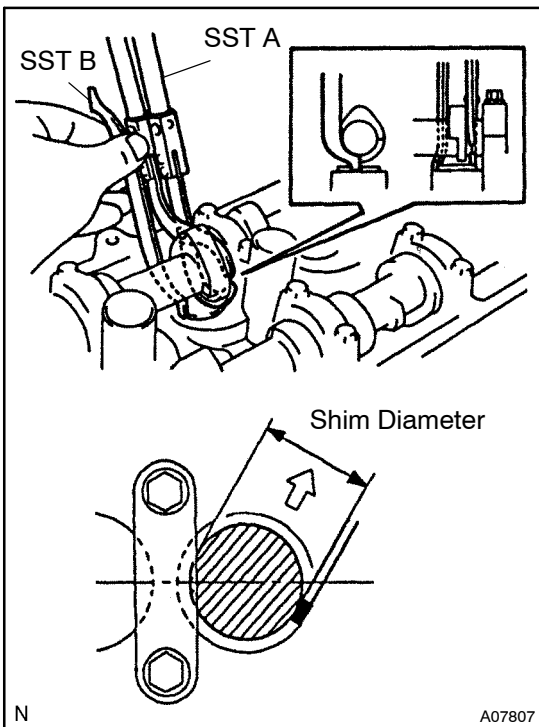
EX 0.27 - 0.33 mm (0.0106 - 0.0130 in.)



- (d) Turn the crankshaft by another 120° (5/6 turn), measure the valve clearance at the point shown in the illustration and record the result. If it is deviated from the standard, adjust the valve clearance.

Standard:**IN 0.20 – 0.26 mm (0.0078 – 0.0102 in.)****EX 0.27 – 0.33 mm (0.0106 – 0.0130 in.)**

- (e) Turn the crankshaft by another 60° (1/6 turn), measure the valve clearance at the point shown in the illustration and record the result. If it is deviated from the standard, adjust the valve clearance.

Standard:**IN 0.20 – 0.26 mm (0.0078 – 0.0102 in.)****EX 0.27 – 0.33 mm (0.0106 – 0.0130 in.)****4. VALVE CLEARANCE ADJUSTMENT****NOTICE:**

- **Block the oil hole of the cylinder head with cloth before starting the work, since the shim is removed with an air gun.**
- **To protect the side surface of the aluminum valve lifter, set SST securely.**

- (a) Push the valve lifter down using SST.

SST A: 09248-05510

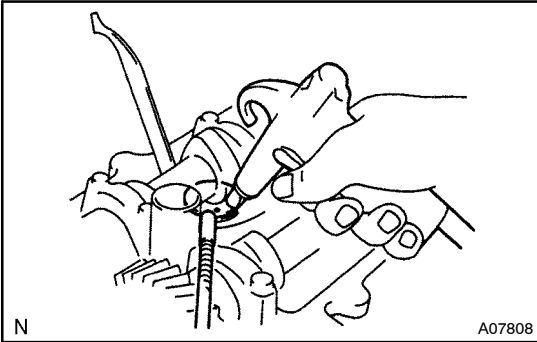
SST B: 09248-05520

NOTICE:

Use the SST B on the side where 13 is punched on the rear side of cylinder No.11 or 12, and the same on the side where 11 is punched for others.

HINT:

- The SST A setting position and SST B inserting position shall be as illustrated.
- Work carefully since the space is narrow and SST insertion is shallow.



- (b) Use an air gun and magnet hand, and take out the shim by air blowing into the adjusting shim hole.
- (c) Choose an appropriate adjusting shim. Shim selection = Removed shim thickness + (Measured valve clearance - Standard)

HINT:

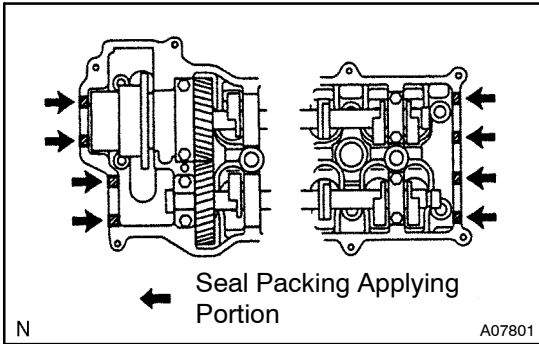
Forty one types of shims are provided below. They are arranged every 0.02 mm in the range of 2.50 to 3.30 mm in thickness.

Part No.	Thickness mm (in.)	Part No.	Thickness mm (in.)
13753 - 32020	2.500 (0.09843)	13753 - 32230	2.920 (0.11496)
13753 - 32030	2.520 (0.09921)	13753 - 32240	2.940 (0.11575)
13753 - 32040	2.540 (0.10000)	13753 - 32250	2.960 (0.11654)
13753 - 32050	2.560 (0.10079)	13753 - 32260	2.980 (0.11732)
13753 - 32060	2.580 (0.10157)	13753 - 32270	3.000 (0.11811)
13753 - 32070	2.600 (0.10236)	13753 - 32280	3.020 (0.11900)
13753 - 32080	2.620 (0.10315)	13753 - 32290	3.040 (0.11968)
13753 - 32090	2.640 (0.10394)	13753 - 32300	3.060 (0.12047)
13753 - 32100	2.660 (0.10472)	13753 - 32310	3.080 (0.12126)
13753 - 32110	2.680 (0.10551)	13753 - 32320	3.100 (0.12205)
13753 - 32120	2.700 (0.10630)	13753 - 32330	3.120 (0.12283)
13753 - 32130	2.720 (0.10709)	13753 - 32340	3.140 (0.12362)
13753 - 32140	2.740 (0.10787)	13753 - 32350	3.160 (0.12441)
13753 - 32150	2.760 (0.10866)	13753 - 32360	3.180 (0.12520)
13753 - 32160	2.780 (0.10945)	13753 - 32370	3.200 (0.12598)
13753 - 32170	2.800 (0.11024)	13753 - 32380	3.220 (0.12677)
13753 - 32180	2.820 (0.11102)	13753 - 32390	3.240 (0.12756)
13753 - 32190	2.840 (0.11181)	13753 - 32400	3.260 (0.12835)
13753 - 32200	2.860 (0.11260)	13753 - 32410	3.280 (0.12913)
13753 - 32210	2.880 (0.11339)	13753 - 32420	3.300 (0.12992)
13753 - 32220	2.900 (0.11417)		

- (d) Install the chosen shim and check the valve clearance.

NOTICE:

- Apply a sufficient amount of engine oil on the golden surface of the shim.
- Install the shim with its golden side facing the cam side.

**5. INSTALL CYLINDER HEAD COVER LH AND RH**

- (a) Degrease the surfaces for mounting the cover and cylinder head.
- (b) Apply seal packing to the points shown in the illustration, and install the cylinder head cover in five minutes.

Seal Packing: Part No. 08826-00080 or equivalent

NOTICE:

Do not start the engine for 2 hours.

6. **INSTALL VACUUM TRANSMITTING PIPE NO.1 WITH VACUUM CONTROL VALVE SET**
7. **INSTALL VACUUM TRANSMITTING PIPE NO.2 WITH VACUUM CONTROL VALVE SET**
8. **CONNECT ENGINE WIRE**
9. **INSTALL 2 IGNITION COILS WITH HIGH-TENSION CORDS**
10. **INSTALL INTAKE SURGE TANK LH AND RH WITH INTAKE AIR CONNECTOR**
11. **INSTALL THROTTLE BODY ASSEMBLY LH AND RH**
12. **INSTALL EMISSION CONTROL VALVE SET**
13. **INSTALL AIR CLEANER ASSEMBLY WITH AIR FLOW METER LH AND RH**
14. **INSTALL V-BANK COVER**
15. **INSTALL AIR CLEANER INLET**