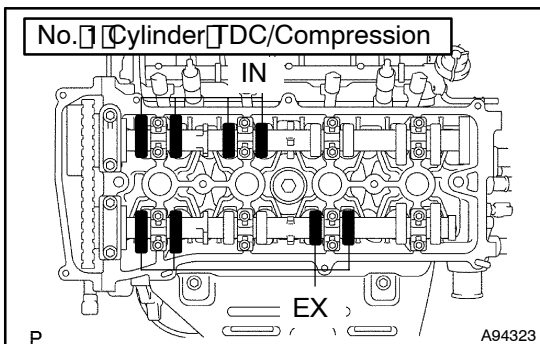


# VALVE CLEARANCE (2AZ-FE)

## ADJUSTMENT

1. REMOVE FRONT WHEEL RH
2. REMOVE ENGINE UNDER COVER RH
3. REMOVE COWL TOP VENTILATOR LOUVER CENTER NO.1 (See Pub. No. RM864E, page 66-9)
4. REMOVE FRONT WIPER ARM HEAD CAP
5. REMOVE FR WIPER ARM LH (See Pub. No. RM864E, page 66-9)
6. REMOVE FR WIPER ARM RH (See Pub. No. RM864E, page 66-9)
7. REMOVE COWL TOP VENTILATOR LOUVER SUB-ASSY (See Pub. No. RM864E, page 66-9)
8. REMOVE WIPER LINK ASSY (See Pub. No. RM864E, page 66-9)
9. REMOVE COWL TOP PANEL SUB-ASSY OUTER (See page 11-16)
10. REMOVE ENGINE COVER SUB-ASSY NO.1
  - (a) Remove the 2 nuts, then remove the engine cover No. 1.
11. REMOVE IGNITION COIL ASSY
  - (a) Disconnect the 4 connectors.
  - (b) Remove the 4 bolts, then remove the 4 ignition coils.
12. SEPARATE VENTILATION HOSE
13. SEPARATE VENTILATION HOSE NO.2
14. REMOVE CYLINDER HEAD COVER SUB-ASSY (See page 14-41)
15. SET NO. 1 CYLINDER TO TDC/COMPRESSION (See page 14-41)



## 16. INSPECT VALVE CLEARANCE

### HINT:

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

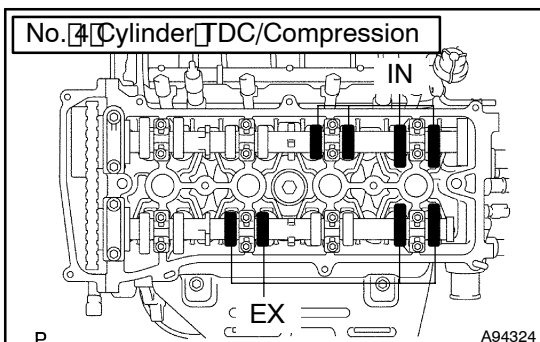
- (a) Check the valves indicated in the illustration.
  - (1) Using a feeler gauge, measure the clearance between the valve lifter and camshaft.

### Valve clearance (Cold):

**Intake 0.19 to 0.29 mm (0.0075 to 0.0114 in.)**

**Exhaust 0.30 to 0.40 mm (0.0118 to 0.0157 in.)**

- (2) Record the out-of-specification valve clearance measurements. They will be used later to determine the required replacement adjusting shim.
- (b) Turn the crankshaft clockwise 1 revolution (360°), then set No. 4 cylinder to TDC/compression.



- (c) Check the valves indicated in the illustration.
  - (1) Using a feeler gauge, measure the clearance between the valve lifter and the camshaft.

### Valve clearance (Cold):

**Intake 0.19 to 0.29 mm (0.0075 to 0.0114 in.)**

**Exhaust 0.30 to 0.40 mm (0.0118 to 0.0157 in.)**

- (2) Record the out-of-specification valve clearance measurements. They will be used later to determine the required replacement adjusting shim.

17. ADJUST VALVE CLEARANCE

NOTICE:

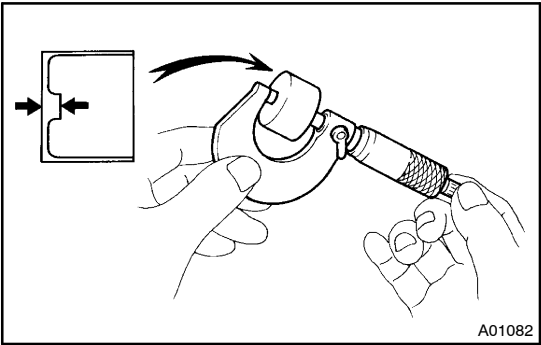
Be sure not to turn the crankshaft without the chain tensioner.

- (a) Set the No. 1 cylinder to TDC/compression (see page 4-41).
- (b) Remove the chain tensioner (see page 4-41).

NOTICE:

Be careful not to drop anything inside the timing chain cover.

- (c) Remove the camshafts (see page 4-55).
- (d) Tie the timing chain with a string.
- (e) Remove the valve lifters.



- (f) Determine the replacement valve lifter size according to these Formulas or Charts:
  - (1) Using a micrometer, measure the thickness of the removed lifter.
  - (2) Calculate the thickness of a new lifter so that the valve clearance comes within the specified valve.

A	Thickness of new lifter
B	Thickness of used lifter
C	Measured valve clearance

Valve clearance:

Intake:  $A = B + (C - 0.24 \text{ mm (0.0094 in.)})$

Exhaust:  $A = B + (C - 0.35 \text{ mm (0.0138 in.)})$

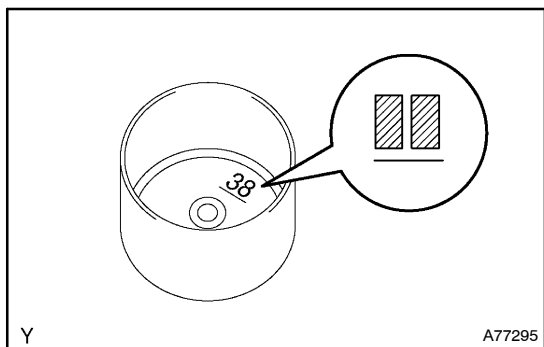
EXAMPLE: (Intake)

Measure valve clearance = 0.44 mm (0.0173 in.)  
 $0.44 \text{ mm (0.0173 in.)} - 0.24 \text{ mm (0.0094 in.)} = 0.20 \text{ mm (0.0079 in.)}$   
(Measured – Specification = Excess clearance)  
Used shim measurement = 5.30 mm (0.2087 in.)  
 $0.20 \text{ mm (0.0079 in.)} + 5.30 \text{ mm (0.2087 in.)} = 5.50 \text{ mm (0.2165 in.)}$   
(Excess clearance + Used shim = Ideal new shim)  
Closest new shim = 5.50 mm (0.2165 in.) = Shim No. 50

- (3) Select a new lifter with a thickness which is as close to the calculated valves as possible.

**HINT:**

- The lifter are available in 35 sizes in increments of 0.020 mm (0.0008 in.), from 5.060 mm (0.1992 in.) to 5.740 mm (0.2260 in.).
- Identification number inside the valve lifter shows the value of the 2 decimal places. (The illustration shows 5.380 mm (0.2118 in.))
- Refer to the New Lifter Thickness Table on the next 2 pages.



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New Lifter Thickness					mm (in.)
Lifter No.	Thickness	Lifter No.	Thickness	Lifter No.	
06	5.060 (0.1992)	30	5.300 (0.2087)	54	5.540 (0.2181)
08	5.080 (0.2000)	32	5.320 (0.2094)	56	5.560 (0.2189)
10	5.100 (0.2008)	34	5.340 (0.2102)	58	5.580 (0.2197)
12	5.120 (0.2016)	36	5.360 (0.2110)	60	5.600 (0.2205)
14	5.140 (0.2024)	38	5.380 (0.2118)	62	5.620 (0.2213)
16	5.160 (0.2031)	40	5.400 (0.2126)	64	5.640 (0.2220)
18	5.180 (0.2039)	42	5.420 (0.2134)	66	5.660 (0.2228)
20	5.200 (0.2047)	44	5.440 (0.2142)	68	5.680 (0.2236)
22	5.220 (0.2055)	46	5.460 (0.2150)	70	5.700 (0.2244)
24	5.240 (0.2063)	48	5.480 (0.2157)	72	5.720 (0.2252)
26	5.260 (0.2071)	50	5.500 (0.2165)	74	5.740 (0.2260)
28	5.280 (0.2079)	52	5.520 (0.2173)		

**0.19 to 0.29 mm (0.008 to 0.011 in.)**

The 5.250 mm (0.2067 in.) lifter is installed, and the measured clearance is 0.400 mm (0.0157 in.). Replace the 5.250 mm (0.2067 in.) lifter with a new No. 42 lifter.

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Valve Lifter Selection Chart (Exhaust)

Installed Lifter Thickness mm (in.)	Measured Clearance mm (in.)	New Lifter Thickness mm (in.)																																		
		Lifter No.	Thickness	Lifter No.	Thickness	Lifter No.	Thickness	Lifter No.	Thickness	Lifter No.	Thickness	Lifter No.	Thickness	Lifter No.	Thickness	Lifter No.	Thickness	Lifter No.	Thickness	Lifter No.	Thickness	Lifter No.	Thickness	Lifter No.	Thickness	Lifter No.	Thickness	Lifter No.	Thickness							
5.060 (0.1992)	0.000-0.030 (0.0000-0.0012)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44		
5.080 (0.2000)	0.031-0.050 (0.0012-0.0020)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	
5.100 (0.2008)	0.051-0.070 (0.0020-0.0028)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	
5.120 (0.2016)	0.071-0.090 (0.0028-0.0035)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.140 (0.2024)	0.091-0.110 (0.0036-0.0043)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.160 (0.2031)	0.111-0.130 (0.0044-0.0051)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.180 (0.2039)	0.131-0.150 (0.0052-0.0059)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.200 (0.2047)	0.151-0.170 (0.0059-0.0067)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.220 (0.2055)	0.171-0.190 (0.0067-0.0075)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.240 (0.2063)	0.191-0.210 (0.0075-0.0083)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.260 (0.2071)	0.211-0.230 (0.0083-0.0091)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.280 (0.2079)	0.231-0.250 (0.0091-0.0098)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.300 (0.2087)	0.251-0.270 (0.0099-0.0106)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.320 (0.2094)	0.271-0.290 (0.0107-0.0114)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.340 (0.2102)	0.291-0.299 (0.0115-0.0118)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.360 (0.2110)	0.300-0.400 (0.0118-0.0157)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.380 (0.2118)	0.401-0.420 (0.0158-0.0165)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.400 (0.2126)	0.421-0.440 (0.0166-0.0173)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.420 (0.2134)	0.441-0.460 (0.0174-0.0181)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.440 (0.2142)	0.461-0.480 (0.0181-0.0189)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.460 (0.2150)	0.481-0.500 (0.0189-0.0197)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.480 (0.2157)	0.501-0.520 (0.0197-0.0205)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.500 (0.2165)	0.521-0.540 (0.0205-0.0213)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.520 (0.2173)	0.541-0.560 (0.0213-0.0220)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.540 (0.2181)	0.561-0.580 (0.0221-0.0228)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.560 (0.2189)	0.581-0.600 (0.0229-0.0236)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.580 (0.2197)	0.601-0.620 (0.0237-0.0244)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.600 (0.2205)	0.621-0.640 (0.0244-0.0252)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.620 (0.2213)	0.641-0.660 (0.0252-0.0260)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.640 (0.2220)	0.661-0.680 (0.0260-0.0268)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.660 (0.2228)	0.681-0.700 (0.0268-0.0276)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.680 (0.2236)	0.701-0.720 (0.0276-0.0283)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.700 (0.2244)	0.721-0.740 (0.0284-0.0291)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.720 (0.2252)	0.741-0.760 (0.0292-0.0299)	06	06	08	08	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30	32	34	36	38	40	42	44	46	48
5.740 (0.2260)	0.761-0.780 (0.0300-0.0307)	06	06	08	08	10	10	12	12	14	14	16	16	18	18																					

(g) Install the camshafts (see page 4-55).

(h) Install the chain tensioner (see page 4-41).

18. INSTALL CYLINDER HEAD COVER SUB-ASSY (See page 4-41)

19. DISCONNECT VENTILATION HOSE NO.2

20. DISCONNECT VENTILATION HOSE

21. INSTALL IGNITION COIL ASSY

Torque: 9.0 N·m (92 kgf·cm, 80 in. lbf)

22. INSTALL ENGINE COVER SUB-ASSY NO.1

Torque: 9.0 N·m (92 kgf·cm, 80 in. lbf)

23. INSTALL COWL TOP PANEL SUB-ASSY OUTER (See page 10-16)

24. INSTALL WIPER LINK ASSY (See Pub. No. RM864E, page 66-9)

25. INSTALL COWL TOP VENTILATOR LOUVER SUB-ASSY

26. INSTALL FR WIPER ARM RH (See Pub. No. RM864E, page 66-9)

27. INSTALL FR WIPER ARM LH (See Pub. No. RM864E, page 66-9)

28. INSTALL FRONT WIPER ARM HEAD CAP

29. INSTALL COWL TOP VENTILATOR LOUVER CENTER NO.1

30. INSTALL FRONT WHEEL RH

Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)

31. CHECK FOR ENGINE OIL LEAKS

32. INSTALL ENGINE UNDER COVER RH