VALVE CLEARANCE (1KZ–TE)

1410N–01

ADJUSTMENT

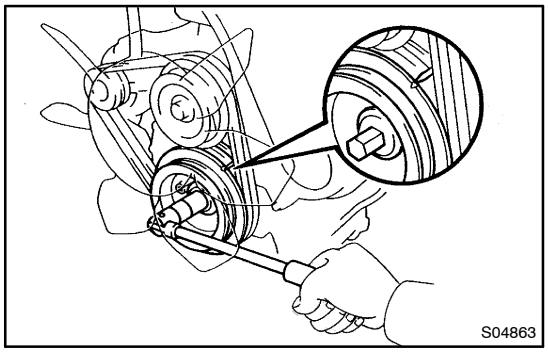
HINT:

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

1. REMOVE INTERCOOLER ASSY (See page 13–11)

2. REMOVE CYLINDER HEAD COVER SUB–ASSY

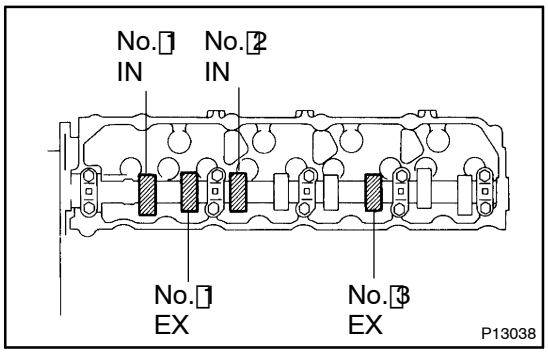
(a) Remove the 10 bolts, 2 nuts, cylinder head cover and gasket.



3. SET NO. 1 CYLINDER TO TDC/COMPRESSION

(a) Turn the crankshaft pulley and align its groove with timing pointer.

(b) Check that the valve lifters on the No.1 cylinder are loose and valve lifters on the No.4 are tight.
If not, turn the crankshaft one revolution (360°) and align the mark as above.



4. INSPECT VALVE CLEARANCE

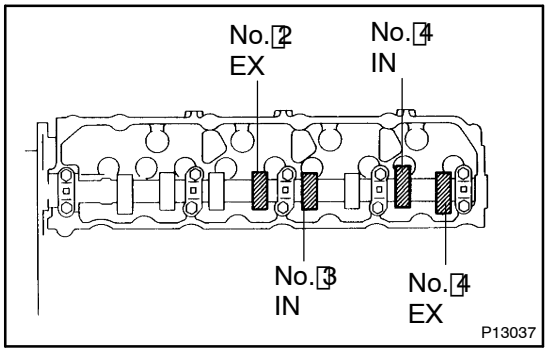
(a) Check only the valves indicated.

(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	0.20 – 0.30 mm (0.008 – 0.012 in.)
Exhaust	0.25 – 0.35 mm (0.010 – 0.014 in.)

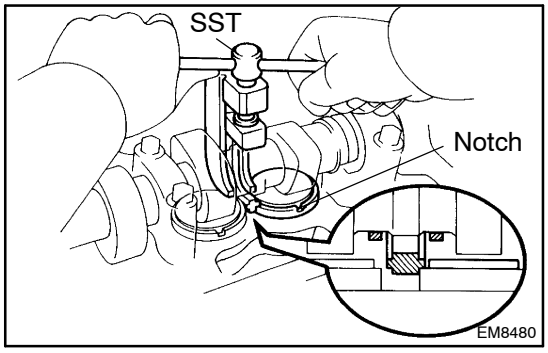


(b) Turn the crankshaft one revolution (360°) and align the mark as above. (See procedure in step 11)

(c) Check only the valves indicated as shown. Measure the valve clearance. (See procedure in step (a))

Valve clearance (Cold):

Intake	0.20 – 0.30 mm (0.008 – 0.012 in.)
Exhaust	0.25 – 0.35 mm (0.010 – 0.014 in.)



5. ADJUST VALVE CLEARANCE

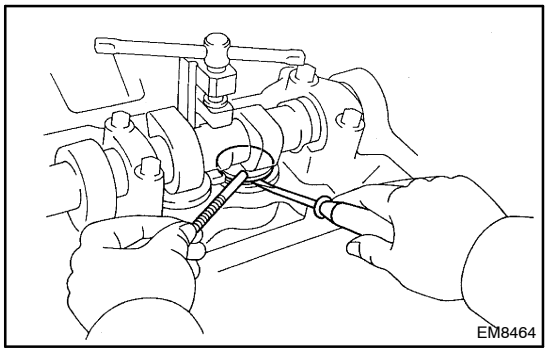
(a) Remove the adjusting shim.

(1) Turn the camshaft so that the cam lobe of the camshaft on the adjusting valve points upward.

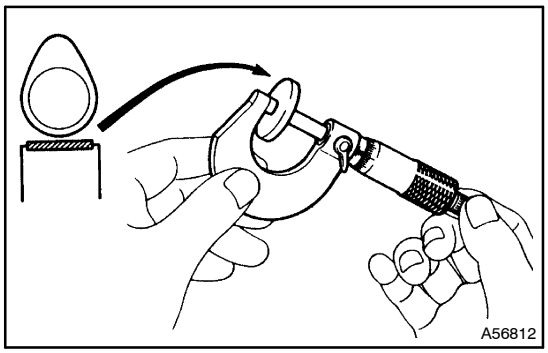
(2) Using SST, press down the valve lifter.

SST 09248–64011

(3) Position the notch of the valve lifter facing the exhaust manifold side.



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



(c) Determine the replacement adjusting shim size by following the 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 specified value.

T = Thickness of removed shim

A = Measured valve clearance

N = Thickness of new shim

Intake	N = T + (A – 0.25 mm (0.010 in.))
Exhaust	N = T + (A – 0.30 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 sizes in increments of 0.05 mm (0.0020 in.), from 2.50 mm (0.0984 in.) to 3.30 mm (0.1299 in.).

Adjusting Shim Selection Using Chart (Intake)

Measured clearance mm (in.)	Installed shim thickness mm (in.)																																																
	2.500 (0.0984)	2.520 (0.0992)	2.540 (0.1000)	2.550 (0.1004)	2.560 (0.1008)	2.580 (0.1016)	2.600 (0.1024)	2.620 (0.1031)	2.640 (0.1039)	2.650 (0.1043)	2.660 (0.1047)	2.680 (0.1055)	2.700 (0.1063)	2.720 (0.1071)	2.740 (0.1079)	2.750 (0.1083)	2.760 (0.1087)	2.780 (0.1094)	**2.800 (0.1102)**	2.820 (0.1110)	2.840 (0.1118)	2.850 (0.1122)	2.860 (0.1126)	2.880 (0.1134)	2.900 (0.1142)	2.920 (0.1150)	2.940 (0.1157)	2.950 (0.1161)	2.960 (0.1165)	2.980 (0.1173)	3.000 (0.1181)	3.020 (0.1189)	3.040 (0.1197)	3.050 (0.1201)	3.060 (0.1205)	3.080 (0.1213)	3.100 (0.1220)	3.120 (0.1228)	3.140 (0.1236)	3.150 (0.1240)	3.160 (0.1244)	3.180 (0.1252)	3.200 (0.1260)	3.220 (0.1268)	3.240 (0.1276)	3.250 (0.1280)	3.260 (0.1283)	3.280 (0.1291)	3.300 (0.1299)
0.000 - 0.020 (0.0000 - 0.0008)													01	01	01	01	01	42	42	06	06	06	06	43	43	11	11	11	11	44	44	16	16	16	16	45	45	21	21	21	21	46	46	26	26	26	26	47	47
0.021 - 0.040 (0.0008 - 0.0016)												01	01	01	01	42	42	42	06	06	06	43	43	43	11	11	11	44	44	44	16	16	16	45	45	45	21	21	21	46	46	46	26	26	26	47	47	47	31
0.041 - 0.060 (0.0016 - 0.0024)										01	01	01	01	01	42	42	42	06	06	06	43	43	43	11	11	11	44	44	44	16	16	16	45	45	45	21	21	21	46	46	46	26	26	26	47	47	47	31	31
0.061 - 0.080 (0.0024 - 0.0031)									01	01	01	01	01	42	42	42	06	06	06	43	43	43	11	11	11	44	44	44	16	16	16	45	45	45	21	21	21	46	46	46	26	26	26	47	47	47	31	31	31
0.081 - 0.100 (0.0032 - 0.0039)								01	01	01	01	01	42	42	06	06	06	06	43	43	11	11	11	11	44	44	16	16	16	16	45	45	21	21	21	21	46	46	26	26	26	26	47	47	31	31	31	31	48
0.101 - 0.120 (0.0040 - 0.0047)							01	01	01	01	01	42	42	06	06	06	06	43	43	11	11	11	11	44	44	16	16	16	16	45	45	21	21	21	21	46	46	26	26	26	26	47	47	31	31	31	31	48	48
0.121 - 0.140 (0.0048 - 0.0055)						01	01	01	01	42	42	42	06	06	06	43	43	43	11	11	11	44	44	44	16	16	16	45	45	45	21	21	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36
0.141 - 0.160 (0.0056 - 0.0063)				01	01	01	01	01	42	42	42	06	06	06	43	43	43	11	11	11	44	44	44	16	16	16	45	45	45	21	21	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36
0.161 - 0.180 (0.0063 - 0.0071)			01	01	01	01	01	42	42	42	06	06	06	43	43	43	11	11	11	44	44	44	16	16	16	45	45	45	21	21	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36
0.181 - 0.199 (0.0071 - 0.0078)		01	01	01	01	01	42	42	06	06	06	06	43	43	11	11	11	11	44	44	16	16	16	16	45	45	21	21	21	21	46	46	26	26	26	26	47	47	31	31	31	31	48	48	36	36	36	36	49
0.200 - 0.300 (0.0079 - 0.0118)																																																	
0.301 - 0.320 (0.0119 - 0.0126)	42	06	06	06	06	43	43	11	11	11	11	44	44	16	16	16	16	45	45	21	21	21	21	46	46	26	26	26	26	47	47	31	31	31	31	48	48	36	36	36	36	49	49	41	41	41	41	41	
0.321 - 0.340 (0.0126 - 0.0134)	06	06	06	43	43	43	11	11	11	44	44	44	16	16	16	45	45	45	21	21	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41	41		
0.341 - 0.360 (0.0134 - 0.0142)	06	06	43	43	43	11	11	11	44	44	44	16	16	16	45	45	45	21	**21**	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41	41			
0.361 - 0.380 (0.0142 - 0.0150)	06	43	43	43	11	11	11	44	44	44	16	16	16	45	45	45	21	21	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41					
0.381 - 0.400 (0.0150 - 0.0157)	43	43	11	11	11	11	44	44	16	16	16	16	45	45	21	21	21	21	46	46	26	26	26	26	47	47	31	31	31	31	48	48	36	36	36	36	49	49	41	41	41	41	41						
0.401 - 0.420 (0.0158 - 0.0165)	43	11	11	11	11	44	44	16	16	16	16	45	45	21	21	21	21	46	46	26	26	26	26	47	47	31	31	31	31	48	48	36	36	36	36	49	49	41	41	41	41	41							
0.421 - 0.440 (0.0166 - 0.0173)	11	11	11	44	44	44	16	16	16	45	45	45	21	21	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41	41								
0.441 - 0.460 (0.0174 - 0.0181)	11	11	44	44	44	16	16	16	45	45	45	21	21	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41	41									
0.461 - 0.480 (0.0181 - 0.0189)	11	44	44	44	16	16	16	45	45	45	21	21	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41											
0.481 - 0.500 (0.0189 - 0.0197)	44	44	16	16	16	16	45	45	21	21	21	21	46	46	26	26	26	26	47	47	31	31	31	31	48	48	36	36	36	36	49	49	41	41	41	41	41												
0.501 - 0.520 (0.0197 - 0.0205)	44	16	16	16	16	45	45	21	21	21	21	46	46	26	26	26	26	47	47	31	31	31	31	48	48	36	36	36	36	49	49	41	41	41	41	41													
0.521 - 0.540 (0.0205 - 0.0213)	16	16	16	45	45	45	21	21	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41	41														
0.541 - 0.560 (0.0213 - 0.0220)	16	16	45	45	45	21	21	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41	41															
0.561 - 0.580 (0.0221 - 0.0228)	16	45	45	45	21	21	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41																	
0.581 - 0.600 (0.0229 - 0.0236)	45	45	21	21	21	21	46	46	26	26	26	26	47	47	31	31	31	31	48	48	36	36	36	36	49	49	41	41	41	41	41																		
0.601 - 0.620 (0.0237 - 0.0244)	45	21	21	21	21	46	46	26	26	26	26	47	47	31	31	31	31	48	48	36	36	36	36	49	49	41	41	41	41	41																			
0.621 - 0.640 (0.0244 - 0.0252)	21	21	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41	41																				
0.641 - 0.660 (0.0252 - 0.0260)	21	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41	41																					
0.661 - 0.680 (0.0260 - 0.0268)	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41																							
0.681 - 0.700 (0.0268 - 0.0276)	46	46	26	26	26	26	47	47	31	31	31	31	48	48	36	36	36	36	49	49	41	41	41	41	41																								
0.701 - 0.720 (0.0276 - 0.0283)	46	26	26	26	26	47	47	31	31	31	31	48	48	36	36	36	36	49	49	41	41	41	41	41																									
0.721 - 0.740 (0.0284 - 0.0291)	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41	41																										
0.741 - 0.760 (0.0292 - 0.0299)	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41	41																											
0.761 - 0.780 (0.0300 - 0.0307)	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41																													
0.781 - 0.800 (0.0307 - 0.0315)	47	47	31	31	31	31	48	48	36	36	36	36	49	49	41	41	41	41	41																														
0.801 - 0.820 (0.0315 - 0.0323)	47	31	31	31	31	48	48	36	36	36	36	49	49	41	41	41	41	41																															
0.821 - 0.840 (0.0323 - 0.0331)	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41	41																																
0.841 - 0.860 (0.0331 - 0.0339)	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41	41																																	
0.861 - 0.880 (0.0339 - 0.0346)	31	48	48	48	36	36	36	49	49	49	41	41	41	41																																			
0.881 - 0.900 (0.0347 - 0.0354)	48	48	36	36	36	36	49	49	41	41	41	41	41																																				
0.901 - 0.920 (0.0355 - 0.0362)	48	36	36	36	36	49	49	41	41	41	41	41																																					
0.921 - 0.940 (0.0363 - 0.0370)	36	36	36	49	49	49	41	41	41	41	41																																						
0.941 - 0.960 (0.0370 - 0.0378)	36	36	49	49	49	41	41	41	41	41																																							
0.961 - 0.980 (0.0378 - 0.0386)	36	49	49	49	41	41	41	41																																									
0.981 - 1.000 (0.0386 - 0.0394)	49	49	41	41	41	41	41																																										
1.001 - 1.020 (0.0394 - 0.0402)	49	41	41	41	41	41																																											
1.021 - 1.040 (0.0402 - 0.0409)	41	41	41	41	41																																												
1.041 - 1.060 (0.0410 - 0.0417)	41	41	41	41																																													
1.061 - 1.080 (0.0418 - 0.0425)	41	41																																															
1.081 - 1.100 (0.0426 - 0.0433)	41																																																

New shim thickness mm (in.)

Shim No.	Thickness	Shim No.	Thickness
01	2.50 (0.0984)	46	2.95 (0.1161)
42	2.55 (0.1004)	26	3.00 (0.1181)
06	2.60 (0.1024)	47	3.05 (0.1201)
43	2.65 (0.1043)	31	3.10 (0.1220)
11	2.70 (0.1063)	48	3.15 (0.1240)
44	2.75 (0.1083)	36	3.20 (0.1260)
16	2.80 (0.1102)	49	3.25 (0.1280)
45	2.85 (0.1122)	41	3.30 (0.1299)
21	2.90 (0.1142)		

Intake valve clearance (Cold):
0.20 – 0.30 mm (0.008 – 0.012 in.)

EXAMPLE:
The 2.800 mm (0.1102 in.) shim is installed and the measured clearance is 0.350 mm (0.0138 in.). Replace the 2.800 mm (0.1102 in.) shim with a new No. 21 shim.

V03782

Adjusting Shim Selection Using Chart (Exhaust)

Installed shim thickness mm (in.)

Measured clearance mm (in.)	2.500 (0.0984)	2.520 (0.0992)	2.540 (0.1000)	2.550 (0.1004)	2.560 (0.1008)	2.580 (0.1016)	2.600 (0.1024)	2.620 (0.1031)	2.640 (0.1039)	2.650 (0.1043)	2.660 (0.1047)	2.680 (0.1055)	2.700 (0.1063)	2.720 (0.1071)	2.740 (0.1079)	2.750 (0.1083)	2.760 (0.1087)	2.780 (0.1094)	**2.800 (0.1102)**	2.820 (0.1110)	2.840 (0.1118)	2.850 (0.1122)	2.860 (0.1126)	2.880 (0.1134)	2.900 (0.1142)	2.920 (0.1150)	2.940 (0.1157)	2.950 (0.1161)	2.960 (0.1165)	2.980 (0.1173)	3.000 (0.1181)	3.020 (0.1189)	3.040 (0.1197)	3.050 (0.1201)	3.060 (0.1205)	3.080 (0.1213)	3.100 (0.1220)	3.120 (0.1228)	3.140 (0.1236)	3.150 (0.1240)	3.160 (0.1244)	3.180 (0.1252)	3.200 (0.1260)	3.220 (0.1268)	3.240 (0.1276)	3.250 (0.1280)	3.260 (0.1283)	3.280 (0.1291)	3.300 (0.1299)
0.000 – 0.020 (0.0000 – 0.0008)															01	01	01	01	01	42	42	42	42	06	06	43	43	43	43	11	11	44	44	44	44	16	16	45	45	45	45	21	21	46	46	46	46	26	26
0.021 – 0.040 (0.0008 – 0.0016)														01	01	01	01	01	42	42	42	06	06	06	43	43	43	11	11	11	44	44	44	16	16	16	45	45	45	21	21	21	46	46	46	26	26	26	47
0.041 – 0.060 (0.0016 – 0.0024)													01	01	01	01	01	42	42	42	06	06	06	43	43	43	11	11	11	44	44	44	16	16	16	45	45	45	21	21	21	46	46	46	26	26	26	47	47
0.061 – 0.080 (0.0024 – 0.0031)												01	01	01	01	01	42	42	42	06	06	06	43	43	43	11	11	11	44	44	44	16	16	16	45	45	45	21	21	21	46	46	46	26	26	26	47	47	47
0.081 – 0.100 (0.0032 – 0.0039)										01	01	01	01	01	42	42	42	42	06	06	43	43	43	43	11	11	44	44	44	44	16	16	45	45	45	45	21	21	46	46	46	46	26	26	47	47	47	47	31
0.101 – 0.120 (0.0040 – 0.0047)									01	01	01	01	01	42	42	42	42	06	06	43	43	43	43	11	11	44	44	44	44	16	16	45	45	45	45	21	21	46	46	46	46	26	26	47	47	47	47	31	31
0.121 – 0.140 (0.0048 – 0.0055)								01	01	01	01	01	42	42	42	06	06	06	43	43	43	11	11	11	44	44	44	16	16	16	45	45	45	21	21	21	46	46	46	26	26	26	47	47	47	31	31	31	48
0.141 – 0.160 (0.0056 – 0.0063)							01	01	01	01	01	42	42	42	06	06	06	43	43	43	11	11	11	44	44	44	16	16	16	45	45	45	21	21	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48
0.161 – 0.180 (0.0063 – 0.0071)						01	01	01	01	01	42	42	42	06	06	06	43	43	43	11	11	11	44	44	44	16	16	16	45	45	45	21	21	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48
0.181 – 0.200 (0.0071 – 0.0079)				01	01	01	01	01	42	42	42	42	06	06	43	43	43	43	11	11	44	44	44	44	16	16	45	45	45	45	21	21	46	46	46	46	26	26	47	47	47	47	31	31	48	48	48	48	36
0.201 – 0.220 (0.0079 – 0.0087)			01	01	01	01	01	42	42	42	42	06	06	43	43	43	43	11	11	44	44	44	44	16	16	45	45	45	45	21	21	46	46	46	46	26	26	47	47	47	47	31	31	48	48	48	48	36	36
0.221 – 0.240 (0.0087 – 0.0094)		01	01	01	01	01	42	42	42	06	06	06	43	43	43	11	11	11	44	44	44	16	16	16	45	45	45	21	21	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49
0.241 – 0.249 (0.0095 – 0.0098)		01	01	01	01	42	42	42	06	06	06	43	43	43	11	11	11	44	44	44	16	16	16	45	45	45	21	21	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49
0.250 – 0.350 (0.0098 – 0.0138)																																																	
0.351 – 0.360 (0.0138 – 0.0142)	42	06	06	06	06	43	43	11	11	11	11	44	44	16	16	16	16	45	45	21	21	21	21	46	46	26	26	26	26	47	47	31	31	31	31	48	48	36	36	36	36	49	49	41	41	41	41	41	
0.361 – 0.380 (0.0142 – 0.0150)	42	06	06	06	43	43	43	11	11	11	44	44	44	16	16	16	45	45	45	21	21	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41	41	
0.381 – 0.400 (0.0150 – 0.0157)	06	06	43	43	43	43	11	11	44	44	44	44	16	16	45	45	45	45	**21**	21	46	46	46	46	26	26	47	47	47	47	31	31	48	48	48	48	36	36	49	49	49	49	41	41	41	41	41		
0.401 – 0.420 (0.0158 – 0.0165)	06	43	43	43	43	11	11	44	44	44	44	16	16	45	45	45	45	21	21	46	46	46	46	26	26	47	47	47	47	31	31	48	48	48	48	36	36	49	49	49	49	41	41	41	41				
0.421 – 0.440 (0.0166 – 0.0173)	43	43	43	11	11	11	44	44	44	16	16	16	45	45	45	21	21	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41	41					
0.441 – 0.460 (0.0174 – 0.0181)	43	43	11	11	11	44	44	44	16	16	16	45	45	45	21	21	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41	41						
0.461 – 0.480 (0.0181 – 0.0189)	43	11	11	11	44	44	44	16	16	16	45	45	45	21	21	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41	41							
0.481 – 0.500 (0.0189 – 0.0197)	11	11	44	44	44	44	16	16	45	45	45	45	21	21	46	46	46	46	26	26	47	47	47	47	31	31	48	48	48	48	36	36	49	49	49	49	41	41	41	41	41								
0.501 – 0.520 (0.0197 – 0.0205)	11	44	44	44	44	16	16	45	45	45	45	21	21	46	46	46	46	26	26	47	47	47	47	31	31	48	48	48	48	36	36	49	49	49	49	41	41	41	41										
0.521 – 0.540 (0.0205 – 0.0213)	44	44	44	16	16	16	45	45	45	21	21	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41	41											
0.541 – 0.560 (0.0213 – 0.0220)	44	44	16	16	16	45	45	45	21	21	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41	41												
0.561 – 0.580 (0.0221 – 0.0228)	44	16	16	16	45	45	45	21	21	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41	41													
0.581 – 0.600 (0.0229 – 0.0236)	16	16	45	45	45	45	21	21	46	46	46	46	26	26	47	47	47	47	31	31	48	48	48	48	36	36	49	49	49	49	41	41	41	41	41														
0.601 – 0.620 (0.0237 – 0.0244)	16	45	45	45	45	21	21	46	46	46	46	26	26	47	47	47	47	31	31	48	48	48	48	36	36	49	49	49	49	41	41	41	41																
0.621 – 0.640 (0.0244 – 0.0252)	45	45	45	21	21	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41	41																	
0.641 – 0.660 (0.0252 – 0.0260)	45	45	21	21	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41	41																		
0.661 – 0.680 (0.0260 – 0.0268)	45	21	21	21	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41	41																			
0.681 – 0.700 (0.0268 – 0.0276)	21	21	46	46	46	46	26	26	47	47	47	47	31	31	48	48	48	48	36	36	49	49	49	49	41	41	41	41	41																				
0.701 – 0.720 (0.0276 – 0.0283)	21	46	46	46	46	26	26	47	47	47	47	31	31	48	48	48	48	36	36	49	49	49	49	41	41	41	41																						
0.721 – 0.740 (0.0284 – 0.0291)	46	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41	41																							
0.741 – 0.760 (0.0292 – 0.0299)	46	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41	41																								
0.761 – 0.780 (0.0300 – 0.0307)	46	26	26	26	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41	41																									
0.781 – 0.800 (0.0307 – 0.0315)	26	26	47	47	47	47	31	31	48	48	48	48	36	36	49	49	49	49	41	41	41	41	41																										
0.801 – 0.820 (0.0315 – 0.0323)	26	47	47	47	47	31	31	48	48	48	48	36	36	49	49	49	49	41	41	41	41																												
0.821 – 0.840 (0.0323 – 0.0331)	47	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41	41																													
0.841 – 0.860 (0.0331 – 0.0339)	47	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41	41																														
0.861 – 0.880 (0.0339 – 0.0346)	47	31	31	31	48	48	48	36	36	36	49	49	49	41	41	41	41	41																															
0.881 – 0.900 (0.0347 – 0.0354)	31	31	48	48	48	48	36	36	49	49	49	49	41	41	41	41	41																																
0.901 – 0.920 (0.0355 – 0.0362)	31	48	48	48	48	36	36	49	49	49	49	41	41	41	41																																		
0.921 – 0.940 (0.0363 – 0.0370)	48	48	48	36	36	36	49	49	49	41	41	41	41	41																																			
0.941 – 0.960 (0.0370 – 0.0378)	48	48	36	36	36	49	49	49	41	41	41	41	41																																				
0.961 – 0.980 (0.0378 – 0.0386)	48	36	36	36	49	49	49	41	41	41	41	41																																					
0.981 – 1.000 (0.0386 – 0.0394)	36	36	49	49	49	49	41	41	41	41	41																																						
1.001 – 1.020 (0.0394 – 0.0402)	36	49	49	49	49	41	41	41	41																																								
1.021 – 1.040 (0.0402 – 0.0409)	49	49	49	41	41	41	41	41																																									
1.041 – 1.060 (0.0410 – 0.0417)	49	49	41	41	41	41	41																																										
1.061 – 1.080 (0.0418 – 0.0425)	49	41	41	41	41	41																																											
1.081 – 1.100 (0.0426 – 0.0433)	41	41	41	41	41																																												
1.101 – 1.120 (0.0433 – 0.0441)	41	41	41																																														
1.121 – 1.140 (0.0441 – 0.0449)	41	41																																															
1.141 – 1.150 (0.0449 – 0.0453)	41																																																

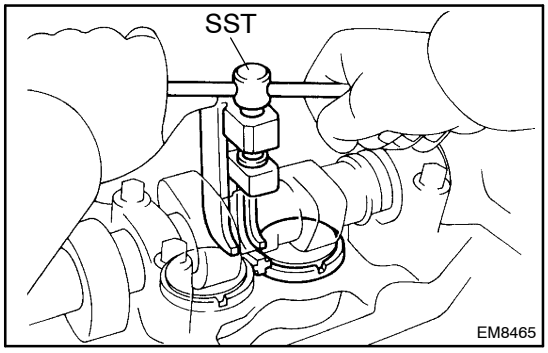
Exhaust valve clearance (Cold):
0.25 – 0.35 mm (0.010 – 0.014 in.)

EXAMPLE:
The 2.800 mm (0.1102 in.) shim is installed and the measured clearance is 0.390 mm (0.0154 in.). Replace the 2.800 mm (0.1102 in.) shim with a new No. 11 shim.

New shim thickness mm (in.)

Shim No.	Thickness	Shim No.	Thickness
01	2.50 (0.0984)	46	2.95 (0.1161)
42	2.55 (0.1004)	26	3.00 (0.1181)
06	2.60 (0.1024)	47	3.05 (0.1201)
43	2.65 (0.1043)	31	3.10 (0.1220)
11	2.70 (0.1063)	48	3.15 (0.1240)
44	2.75 (0.1083)	36	3.20 (0.1260)
16	2.80 (0.1102)	49	3.25 (0.1280)
45	2.85 (0.1122)	41	3.30 (0.1299)
21	2.90 (0.1142)		

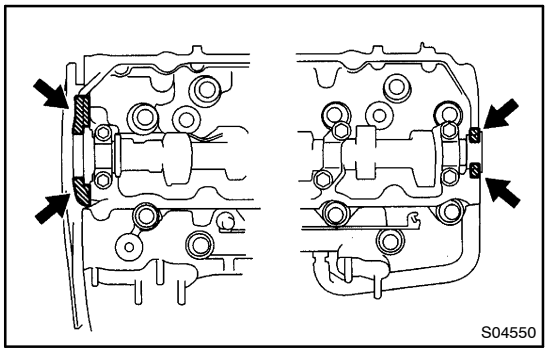
V03783



(d) Install a new adjusting shim.
- Place a new adjusting shim on the valve lifter.
- Remove the SST.

SST 09248–64011

(e) Recheck the valve clearance.



6. INSTALL CYLINDER HEAD COVER SUB–ASSY

(a) Apply seal packing to the cylinder head as shown in the illustration.

Seal packing: Part No. 08826–00080 or equivalent

(1) Parts must be assembled within 5 minutes of application. Otherwise the material must be removed and reapplied.

(2) Immediately remove nozzle from the tube and reinstall cap.

(b) Install the gasket to the cylinder head cover.

(c) Install the cylinder head cover with 10 bolts and 2 nuts. Uniformly tighten the bolts and nuts in several passes.

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

7. INSTALL INTERCOOLER ASSY (See page 13–11)