VALVE CLEARANCE

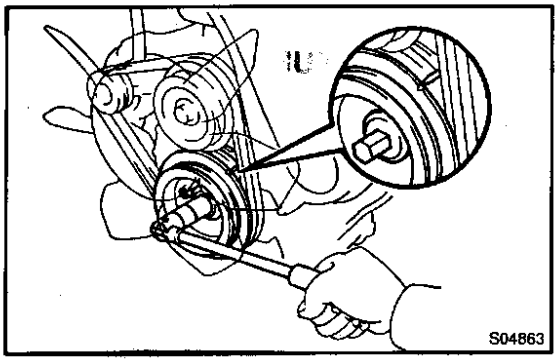
EM155-01

INSPECTION

HINT:

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

1. **REMOVE INTAKE AIR PIPE**
2. **REMOVE INTAKE PIPE (See page EM–44)**
3. **REMOVE CYLINDER HEAD COVER (See page EM–44)**

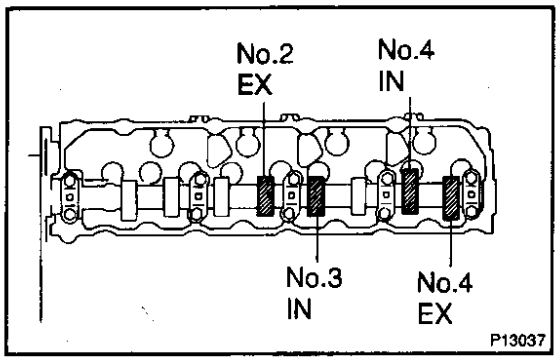


4. **SET NO.4 CYLINDER TO TDC / COMPRESSION**

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

(b) Check that the valve lifters on the No.4 cylinder are loose and valve lifters on the No.1 cylinder are tight.

If not, turn the crankshaft one revolution (360°) and align the mark as above.



5. **CHECK VALVE CLEARANCE**

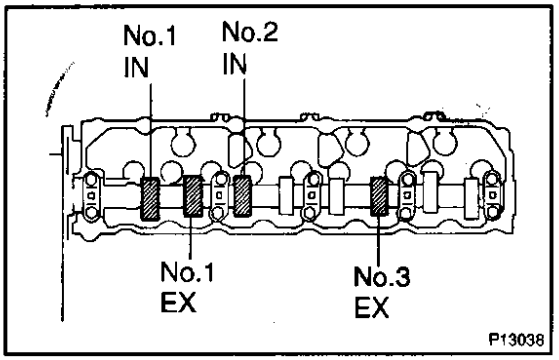
(a) Check only the valves indicated in the illustration.

(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.

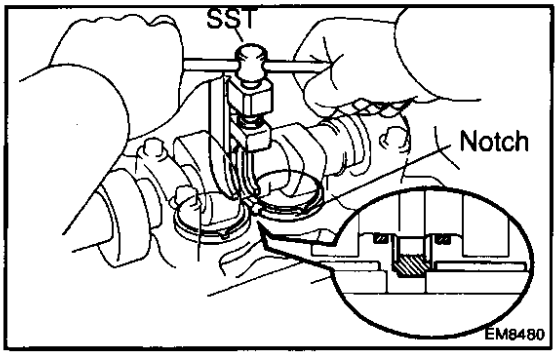
Valve clearance (Cold):

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 pulley one revolution (360°) and align the mark as above (See procedure step 4).

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



6. **ADJUST VALVE CLEARANCE**

(a) Remove the adjusting shim.

(1) Turn the crankshaft to position the cam lob of the camshaft on the adjusting valve upward.

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

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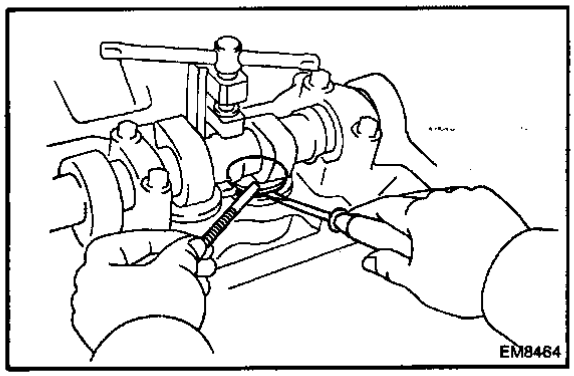
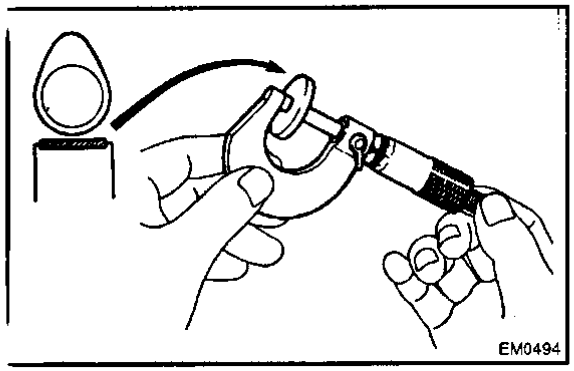
HINT:

Before pressing down the valve lifter, position the notch on the exhaust manifold side.



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



(b) Determine the replacement adjusting shim size by using following the formula or charts:

(1) Using a micrometer, measure the thickness of the shim which was removed.

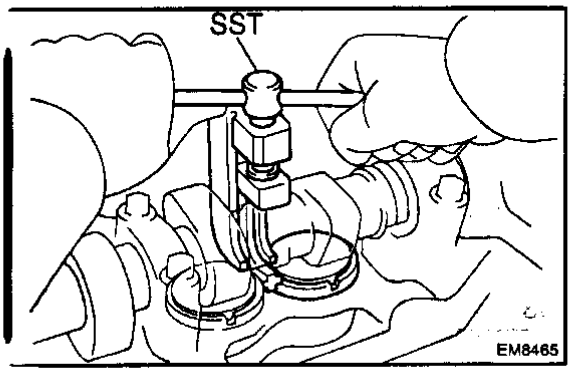
(2) Calculate the thickness of the new shim so the valve clearance comes within specified value.

T .... Thickness of removed shim
A .... Measure 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 values.

HINT:
Shims are available in 17 sized in increments of 0.050 mm (0.0020 in.), from 2.500 mm (0.0984 in.) to 3.300 mm (0.1299 in.).



(c) Install a new adjusting shim.

(1) Place a new adjusting shim on the valve lifter.

(2) Remove the SST.

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(d) Recheck the valve clearance.

7. REINSTALL CYLINDER HEAD COVER (See page EM–64)

8. REINSTALL INTAKE PIPE (See page EM–64)

9. REINSTALL INTAKE AIR PIPE

EM

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

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)
0.000 - 0.020 (0.0000 - 0.0008)															01	01	01	01	01	42	42	42	42	06	06
0.021 - 0.040 (0.0008 - 0.0016)														01	01	01	01	01	42	42	42	06	06	06	43
0.041 - 0.060 (0.0016 - 0.0024)													01	01	01	01	01	42	42	42	06	06	06	43	43
0.061 - 0.080 (0.0024 - 0.0031)												01	01	01	01	01	42	42	42	06	06	06	43	43	43
0.081 - 0.100 (0.0032 - 0.0039)										01	01	01	01	01	42	42	42	42	06	06	43	43	43	43	11
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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																								

Measured clearance mm (in.)	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)	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)	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)	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)	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)	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)	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)	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)	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)	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)	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)	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)	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)	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)	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)	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)	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)	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)	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)	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)	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)	31	48	48	48	48	36	36	49	49	49	49	41	41	41	41	41								
0.501 - 0.520 (0.0197 - 0.0205)	48	48	48	48	36	36	49	49	49	49	41	41	41	41										
0.521 - 0.540 (0.0205 - 0.0213)	48	48	36	36	36	49	49	49	41	41	41	41	41											
0.541 - 0.560 (0.0213 - 0.0220)	48	36	36	36	49	49	49	41	41	41	41	41												
0.561 - 0.580 (0.0221 - 0.0228)	36	36	36	49	49	49	41	41	41	41	41													
0.581 - 0.600 (0.0229 - 0.0236)	36	49	49	49	49	41	41	41	41	41														
0.601 - 0.620 (0.0237 - 0.0244)	49	49	49	49	41	41	41	41																
0.621 - 0.640 (0.0244 - 0.0252)	49	49	41	41	41	41	41																	
0.641 - 0.660 (0.0252 - 0.0260)	49	41	41	41	41	41																		
0.661 - 0.680 (0.0260 - 0.0268)	41	41	41	41	41																			
0.681 - 0.700 (0.0268 - 0.0276)	41	41	41	41																				
0.701 - 0.720 (0.0276 - 0.0283)	41	41																						
0.721 - 0.740 (0.0284 - 0.0291)	41																							

New Shim Thickness

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)		

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.

V03783

EM