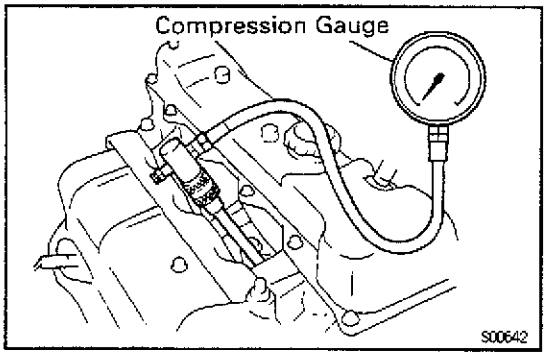


EG

5. CHECK CYLINDER COMPRESSION PRESSURE

(a) Insert a compression gauge into the spark plug hole.

(b) Fully open the throttle.

(c) While cranking the engine, measure the compression pressure.

HINT: Always use a fully charged battery to obtain engine speed of 250 rpm or more.

(d) Repeat steps (a) through (c) for each cylinder.

NOTICE: This measurement must be done in as short a time as possible.

Compression pressure:

1,230 kPa (12.5 kgf/cm², 178 psi) or more

Minimum pressure:

880 kPa (9.0 kgf/cm², 128 psi)

Difference between each cylinder:

98 kPa (1.0 kgf/cm², 14 psi) or less

(e) If the cylinder compression in one or more cylinders is low, pour a small amount of engine oil into the cylinder through the spark plug hole and repeat steps (a) through (c) for cylinders with low compression.

- If adding oil helps the compression, it is likely that the piston rings and/or cylinder bore are worn or damaged.
- If pressure stays low, a valve may be sticking or seating is improper, or there may be leakage past the gasket.

6. REINSTALL SPARK PLUGS

7. RECONNECT HIGH—TENSION CORDS TO SPARK PLUGS

8. RECONNECT IIA CONNECTORS

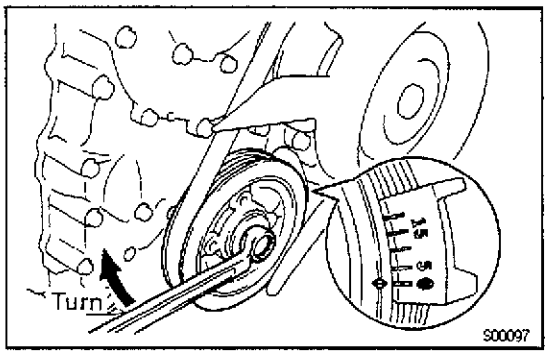
VALVE CLEARANCE INSPECTION AND ADJUSTMENT

EG8QD-01

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

1. REMOVE CYLINDER HEAD COVER

(See steps 2 and 3 in cylinder head removal)

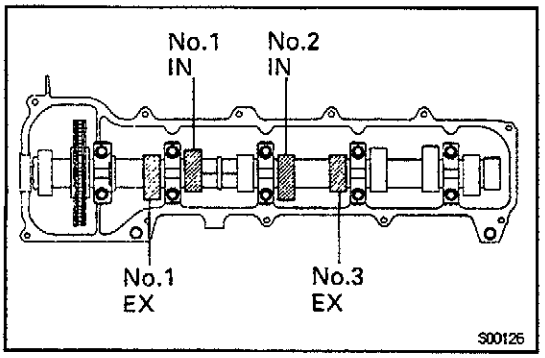


2. SET NO.1 CYLINDER TO TDC/COMPRESSION

(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.



3. INSPECT VALVE CLEARANCE

(a) Check only the valves indicated.

- Using a feeler gauge, measure the clearance between the valve lifter and camshaft.
- Record the out — of — specification valve clearance measurements. They will be used later to determine the required replacement adjusting shim.

Valve clearance (Cold):

Intake

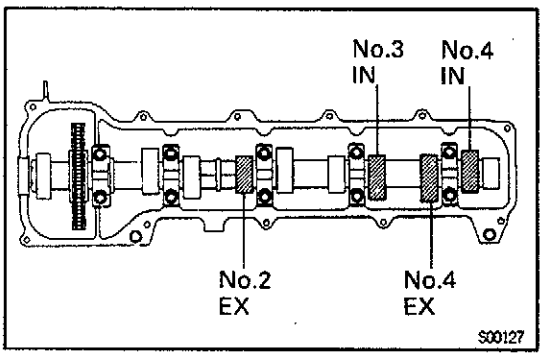
0.20 — 0.30 mm (0.008 — 0.012 in.)

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 2)

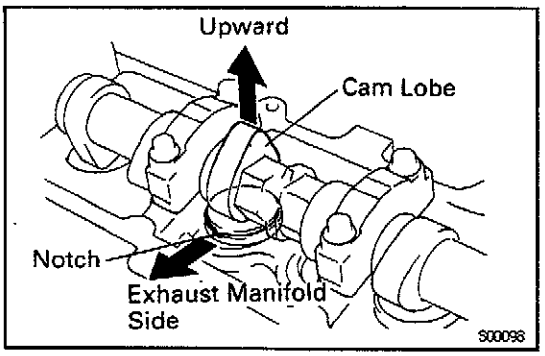
(c) Check only the valves indicated as shown. Measure the valve clearance. (See procedure in step (a))

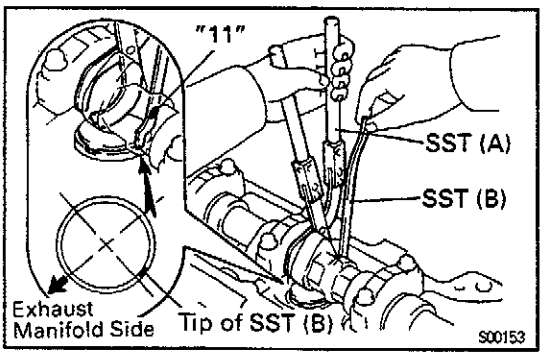


4. ADJUST VALVE CLEARANCE

(a) Remove the adjusting shim.

- Turn the crankshaft so that the cam lobe of the camshaft on the adjusting valve points upward.
- Position the notch of the valve lifter facing the exhaust manifold side.

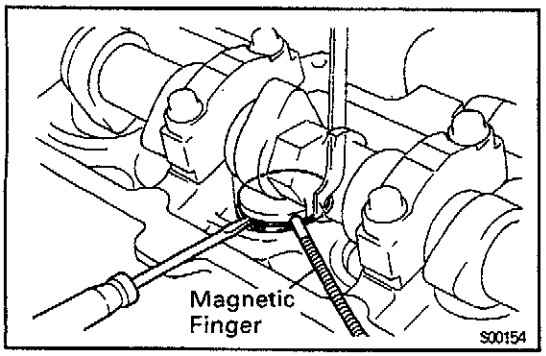




- Using SST (A), press down the valve lifter and place SST (B) between the camshaft and valve lifter. Remove SST (A).

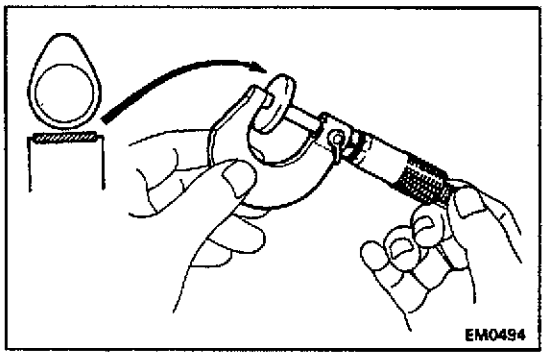
SST 09248—55050 (09248—05510, 09248—05520)

HINT: Apply SST (B) on the side marked with "11", at position shown in the illustration.



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

EG



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

- Using a micrometer, measure the thickness of the removed shim.
- 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:

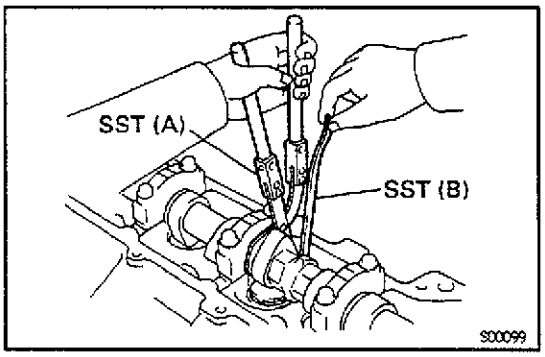
N = T + (A − 0.25 mm (0.010 in.))

Exhaust:

N = T + (A − 0.30 mm (0.012 in.))

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

HINT: Shims are available in 25 sizes in increments of 0.05 mm (0.0020 in.), from 2.20 mm (0.0866 in.) to 3.40 mm (0.1339 in.).



(c) Install a new adjusting shim.

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

SST 09248−55050 (09248−05510, 09248−05520)

(d) Recheck the valve clearance.

5. INSTALL CYLINDER HEAD COVER
(See steps 15 and 16 in cylinder head installation)

Adjusting Shim Selection Chart (Intake)

Measured clearance mm (in.) \ Installed shim thickness mm (in.)	2.200 (0.0866)	2.225 (0.0876)	2.250 (0.0886)	2.275 (0.0896)	2.300 (0.0906)	2.325 (0.0915)	2.350 (0.0925)	2.375 (0.0935)	2.400 (0.0945)	2.425 (0.0955)	2.450 (0.0965)	2.475 (0.0974)	2.500 (0.0984)	2.525 (0.0994)	2.550 (0.1004)	2.575 (0.1014)	2.600 (0.1024)	2.625 (0.1033)	2.650 (0.1043)	2.675 (0.1053)	2.700 (0.1063)	2.725 (0.1073)	2.750 (0.1083)	2.775 (0.1093)	2.800 (0.1102)	2.825 (0.1112)	2.850 (0.1122)	2.875 (0.1132)	2.900 (0.1142)	2.925 (0.1152)	2.950 (0.1161)	2.975 (0.1171)	3.000 (0.1181)	3.025 (0.1191)	3.050 (0.1201)	3.075 (0.1211)	3.100 (0.1220)	3.125 (0.1230)	3.150 (0.1240)	3.175 (0.1250)	3.200 (0.1260)	3.225 (0.1270)	3.250 (0.1280)	3.275 (0.1289)	3.300 (0.1299)	3.325 (0.1309)	3.350 (0.1319)	3.375 (0.1329)	3.400 (0.1339)
0.000 – 0.020 (0.0000 – 0.0008)									01	01	01	03	03	05	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39
0.021 – 0.040 (0.0008 – 0.0016)								01	01	01	01	03	03	05	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41
0.041 – 0.060 (0.0016 – 0.0024)							01	01	01	01	03	03	05	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41
0.061 – 0.080 (0.0024 – 0.0031)						01	01	01	01	03	03	05	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	
0.081 – 0.100 (0.0032 – 0.0039)					01	01	01	01	03	03	05	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43
0.101 – 0.120 (0.0040 – 0.0047)				01	01	01	03	03	05	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43
0.121 – 0.140 (0.0048 – 0.0055)			01	01	01	03	03	05	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	
0.141 – 0.160 (0.0056 – 0.0063)		01	01	01	03	03	05	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	
0.161 – 0.180 (0.0063 – 0.0071)		01	01	01	01	03	03	05	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	
0.181 – 0.199 (0.0071 – 0.0078)		01	01	01	03	03	05	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	
0.200 – 0.300 (0.0079 – 0.0118)																																																		
0.301 – 0.320 (0.0119 – 0.0126)	03	05	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49	
0.321 – 0.340 (0.0126 – 0.0134)	05	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49	49	
0.341 – 0.360 (0.0134 – 0.0142)	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49	49		
0.361 – 0.380 (0.0142 – 0.0150)	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49			
0.381 – 0.400 (0.0150 – 0.0157)	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49				
0.401 – 0.420 (0.0158 – 0.0165)	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49					
0.421 – 0.440 (0.0166 – 0.0173)	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49						
0.441 – 0.460 (0.0174 – 0.0181)	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49							
0.461 – 0.480 (0.0181 – 0.0189)	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49							
0.481 – 0.500 (0.0189 – 0.0197)	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49								
0.501 – 0.520 (0.0197 – 0.0205)	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49									
0.521 – 0.540 (0.0205 – 0.0213)	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49										
0.541 – 0.560 (0.0213 – 0.0220)	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49											
0.561 – 0.580 (0.0221 – 0.0228)	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49											
0.581 – 0.600 (0.0229 – 0.0236)	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49												
0.601 – 0.620 (0.0237 – 0.0244)	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49													
0.621 – 0.640 (0.0244 – 0.0252)	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49														
0.641 – 0.660 (0.0252 – 0.0260)	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49															
0.661 – 0.680 (0.0260 – 0.0268)	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49																
0.681 – 0.700 (0.0268 – 0.0276)	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																
0.701 – 0.720 (0.0276 – 0.0283)	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																	
0.721 – 0.740 (0.0284 – 0.0291)	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																		
0.741 – 0.760 (0.0292 – 0.0299)	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																			
0.761 – 0.780 (0.0300 – 0.0307)	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																			
0.781 – 0.800 (0.0307 – 0.0315)	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																				
0.801 – 0.820 (0.0315 – 0.0323)	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																					
0.821 – 0.840 (0.0323 – 0.0331)	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49	49																						
0.841 – 0.860 (0.0331 – 0.0339)	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49	49																							
0.861 – 0.880 (0.0339 – 0.0346)	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																								
0.881 – 0.900 (0.0347 – 0.0354)	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																									
0.901 – 0.920 (0.0355 – 0.0362)	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																										
0.921 – 0.940 (0.0363 – 0.0370)	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																										
0.941 – 0.960 (0.0370 – 0.0378)	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																											
0.961 – 0.980 (0.0378 – 0.0386)	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																											
0.981 – 1.000 (0.0386 – 0.0394)	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																											
1.001 – 1.020 (0.0394 – 0.0402)	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																											
1.021 – 1.040 (0.0402 – 0.0409)	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49	49																											
1.041 – 1.060 (0.0410 – 0.0417)	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49	49																											
1.061 – 1.080 (0.0418 – 0.0425)	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																											
1.081 – 1.100 (0.0426 – 0.0433)	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																											
1.101 – 1.120 (0.0433 – 0.0441)	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																											
1.121 – 1.140 (0.0441 – 0.0449)	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																											
1.141 – 1.160 (0.0449 – 0.0457)	37	39	39	41	41	43	43	45	45	47	47	49	49	49																											
1.161 – 1.180 (0.0457 – 0.0465)	37	39	39	41	41	43	43	45	45	47	47	49	49	49																											
1.181 – 1.200 (0.0465 – 0.0472)	39	39	41	41	43	43	45	45	47	47	49	49	49																											
1.201 – 1.220 (0.0473 – 0.0480)	39	41	41	43	43	45	45	47	47	49	49	49																											
1.221 – 1.240 (0.0481 – 0.0488)	41	41	43	43	45	45	47	47	49	49	49	49																											
1.241 – 1.260 (0.0489 – 0.0496)	41	43	43	45	45	47	47	49	49	49	49																												
1.261 – 1.280 (0.0496 – 0.0504)	41	43	43	45	45	47	47	49	49	49	49																												
1.281 – 1.300 (0.0504 – 0.0512)	43	43	45	45	47	47	49	49	49																														
1.301 – 1.320 (0.0512 – 0.0520)	43	45	45	47	47	49	49	49																															
1.321 – 1.340 (0.0520 – 0.0528)	45	45	47	47	49	49	49	49																															
1.341 – 1.360 (0.0528 – 0.0535)	45	47	47	49	49	49	49																																
1.361 – 1.380 (0.0536 – 0.0543)	45	47	47	49	49	49																																	
1.381 – 1.400 (0.0544 – 0.0551)	47	47	49	49	49																																		
1.401 – 1.420 (0.0552 – 0.0559)	47	49	49	49																																			
1.421 – 1.440 (0.0559 – 0.0567)	47	49	49	49																																			
1.441 – 1.460 (0.0567 – 0.0575)	49	49	49																																				
1.461 – 1.480 (0.0575 – 0.0583)	49	49																																					
1.481 – 1.500 (0.0583 – 0.0591)	49																																						

New shim thickness mm (in.)

Shim No.	Thickness	Shim No.	Thickness
01	2.20 (0.0866)	27	2.85 (0.1122)
03	2.25 (0.0886)	29	2.90 (0.1142)
05	2.30 (0.0906)	31	2.95 (0.1161)
07	2.35 (0.0925)	33	3.00 (0.1181)
09	2.40 (0.0945)	35	3.05 (0.1201)
11	2.45 (0.0965)	37	3.10 (0.1220)
13	2.50 (0.0984)	39	3.15 (0.1240)
15	2.55 (0.1004)	41	3.20 (0.1260)
17	2.60 (0.1024)	43	3.25 (0.1280)
19	2.65 (0.1043)	45	3.30 (0.1299)
21	2.70 (0.1063)	47	3.35 (0.1319)
23	2.75 (0.1083)	49	3.40 (0.1339)
25	2.80 (0.1102)		

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 0.450 mm (0.0177 in.). Replace the 2.800 mm (0.1102 in.) shim with a new No.33 shim.

EG

V07020

EG

Adjusting Shim Selection Chart (Exhaust)

Measured clearance mm (in.) \ Installed shim thickness mm (in.)	2.200 (0.0866)	2.225 (0.0876)	2.250 (0.0886)	2.275 (0.0896)	2.300 (0.0906)	2.325 (0.0915)	2.350 (0.0925)	2.375 (0.0935)	2.400 (0.0945)	2.425 (0.0956)	2.450 (0.0965)	2.475 (0.0974)	2.500 (0.0984)	2.525 (0.0994)	2.550 (0.1004)	2.575 (0.1014)	2.600 (0.1024)	2.625 (0.1033)	2.650 (0.1043)	2.675 (0.1053)	2.700 (0.1063)	2.725 (0.1073)	2.750 (0.1083)	2.775 (0.1093)	2.800 (0.1102)	2.825 (0.1112)	2.850 (0.1122)	2.875 (0.1132)	2.900 (0.1142)	2.925 (0.1152)	2.950 (0.1161)	2.975 (0.1171)	3.000 (0.1181)	3.025 (0.1191)	3.050 (0.1201)	3.075 (0.1211)	3.100 (0.1220)	3.125 (0.1230)	3.150 (0.1240)	3.175 (0.1250)	3.200 (0.1260)	3.225 (0.1270)	3.250 (0.1280)	3.275 (0.1289)	3.300 (0.1299)	3.325 (0.1309)	3.350 (0.1319)	3.375 (0.1329)	3.400 (0.1339)
0.000 – 0.020 (0.0000 – 0.0008)										01	01	01	03	03	05	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37
0.021 – 0.040 (0.0008 – 0.0016)										01	01	01	03	03	05	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39
0.041 – 0.060 (0.0016 – 0.0024)								01	01	01	03	03	05	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39
0.061 – 0.080 (0.0024 – 0.0031)							01	01	01	01	03	03	05	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39
0.081 – 0.100 (0.0032 – 0.0039)						01	01	01	01	03	03	05	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41
0.101 – 0.120 (0.0040 – 0.0047)						01	01	01	03	03	05	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41
0.121 – 0.140 (0.0048 – 0.0055)					01	01	01	03	03	05	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43
0.141 – 0.160 (0.0056 – 0.0063)					01	01	01	03	03	05	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43
0.161 – 0.180 (0.0063 – 0.0071)				01	01	01	01	03	03	05	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43
0.181 – 0.200 (0.0071 – 0.0079)			01	01	01	01	03	03	05	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45
0.201 – 0.220 (0.0079 – 0.0087)			01	01	01	03	03	05	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45
0.221 – 0.240 (0.0087 – 0.0094)		01	01	01	03	03	05	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47
0.241 – 0.249 (0.0095 – 0.0098)		01	01	01	03	03	05	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47
0.250 – 0.350 (0.0098 – 0.0138)																																																		
0.351 – 0.360 (0.0138 – 0.0142)	03	05	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49
0.361 – 0.380 (0.0142 – 0.0150)	03	05	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49
0.381 – 0.400 (0.0150 – 0.0157)	05	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49	
0.401 – 0.420 (0.0158 – 0.0165)	05	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49		
0.421 – 0.440 (0.0166 – 0.0173)	07	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49			
0.441 – 0.460 (0.0174 – 0.0181)	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49				
0.461 – 0.480 (0.0181 – 0.0189)	07	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49					
0.481 – 0.500 (0.0189 – 0.0197)	09	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49						
0.501 – 0.520 (0.0197 – 0.0205)	09	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49							
0.521 – 0.540 (0.0205 – 0.0213)	11	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49								
0.541 – 0.560 (0.0213 – 0.0220)	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49									
0.561 – 0.580 (0.0221 – 0.0228)	11	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49									
0.581 – 0.600 (0.0229 – 0.0236)	13	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49										
0.601 – 0.620 (0.0237 – 0.0244)	13	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49											
0.621 – 0.640 (0.0244 – 0.0252)	15	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49											
0.641 – 0.660 (0.0252 – 0.0260)	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49												
0.661 – 0.680 (0.0260 – 0.0268)	15	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49												
0.681 – 0.700 (0.0268 – 0.0276)	17	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49													
0.701 – 0.720 (0.0276 – 0.0283)	17	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49														
0.721 – 0.740 (0.0284 – 0.0291)	19	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49	49														
0.741 – 0.760 (0.0292 – 0.0299)	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	36	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49	49														
0.761 – 0.780 (0.0300 – 0.0307)	19	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																
0.781 – 0.800 (0.0307 – 0.0315)	21	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																	
0.801 – 0.820 (0.0315 – 0.0323)	21	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																		
0.821 – 0.840 (0.0323 – 0.0331)	23	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																			
0.841 – 0.860 (0.0331 – 0.0339)	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																				
0.861 – 0.880 (0.0339 – 0.0346)	23	25	25	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																				
0.881 – 0.900 (0.0347 – 0.0354)	25	25	27	27	29	29	31	31	33	33	35	36	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																					
0.901 – 0.920 (0.0355 – 0.0362)	25	27	27	29	29	31	31	33	33	35	36	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																						
0.921 – 0.940 (0.0363 – 0.0370)	27	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49	49																							
0.941 – 0.960 (0.0370 – 0.0378)	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49	49																								
0.961 – 0.980 (0.0378 – 0.0386)	27	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49	49																								
0.981 – 1.000 (0.0386 – 0.0394)	29	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																									
1.001 – 1.020 (0.0394 – 0.0402)	29	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																										
1.021 – 1.040 (0.0402 – 0.0409)	31	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49	49																										
1.041 – 1.060 (0.0410 – 0.0417)	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49	49																										
1.061 – 1.080 (0.0418 – 0.0425)	31	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49	49																										
1.081 – 1.100 (0.0426 – 0.0433)	33	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																												
1.101 – 1.120 (0.0433 – 0.0441)	33	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																													
1.121 – 1.140 (0.0441 – 0.0449)	35	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49	49																													
1.141 – 1.160 (0.0449 – 0.0457)	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49	49																													
1.161 – 1.180 (0.0457 – 0.0465)	35	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49	49																													
1.181 – 1.200 (0.0465 – 0.0472)	37	37	39	39	41	41	43	43	45	45	47	47	49	49	49																													
1.201 – 1.220 (0.0473 – 0.0480)	37	39	39	41	41	43	43	45	45	47	47	49	49	49																												
1.221 – 1.240 (0.0481 – 0.0488)	39	39	41	41	43	43	45	45	47	47	49	49	49	49																												
1.241 – 1.260 (0.0489 – 0.0496)	39	41	41	43	43	45	45	47	47	49	49	49	49																													
1.261 – 1.280 (0.0496 – 0.0504)	39	41	41	43	43	45	45	47	47	49	49	49																														
1.281 – 1.300 (0.0504 – 0.0512)	41	41	43	43	45	45	47	47	49	49	49																															
1.301 – 1.320 (0.0512 – 0.0520)	41	43	43	45	45	47	47	49	49	49																																
1.321 – 1.340 (0.0520 – 0.0528)	43	43	45	45	47	47	49	49	49	49																																
1.341 – 1.360 (0.0528 – 0.0535)	43	45	45	47	47	49	49	49	49																																	
1.361 – 1.380 (0.0536 – 0.0543)	43	45	45	47	47	49	49	49																																		
1.381 – 1.400 (0.0544 – 0.0551)	45	45	47	47	49	49	49																																			
1.401 – 1.420 (0.0552 – 0.0559)	45	47	47	49	49	49																																				
1.421 – 1.440 (0.0559 – 0.0567)	47	47	49	49	49	49																																				
1.441 – 1.460 (0.0567 – 0.0575)	47	49	49	49	49																																					
1.461 – 1.480 (0.0575 – 0.0583)	47	49	49	49																																						
1.481 – 1.500 (0.0583 – 0.0591)	49	49	49																																							
1.501 – 1.520 (0.0591 – 0.0598)	49	49																																								
1.521 – 1.540 (0.0599 – 0.0606)	49	49																																								
1.541 – 1.550 (0.0607 – 0.0610)	49																																									

New shim thickness mm (in.)

Shim No.	Thickness	Shim No.	Thickness
01	2.20 (0.0866)	27	2.85 (0.1122)
03	2.25 (0.0886)	29	2.90 (0.1142)
05	2.30 (0.0906)	31	2.95 (0.1161)
07	2.35 (0.0925)	33	3.00 (0.1181)
09	2.40 (0.0945)	35	3.05 (0.1201)
11	2.45 (0.0965)	37	3.10 (0.1220)
13	2.50 (0.0984)	39	3.15 (0.1240)
15	2.55 (0.1004)	41	3.20 (0.1260)
17	2.60 (0.1024)	43	3.25 (0.1280)
19	2.65 (0.1043)	45	3.30 (0.1299)
21	2.70 (0.1063)	47	3.35 (0.1319)
23	2.75 (0.1083)	49	3.40 (0.1339)
25	2.80 (0.1102)		

Intake 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 0.450 mm (0.0177 in.). Replace the 2.800 mm (0.1102 in.) shim with a new No.31 shim.

V07021