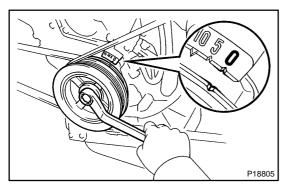
# VALVE CLEARANCE (3MZ-FE)

# ADJUSTMENT

- 1. DRAIN ENGINE COOLANT (See page 16-26)
- 2. REMOVE FR WIPER ARM LH (See page 66-7)
- 3. REMOVE FR WIPER ARM RH (See page 66-7)
- 4. REMOVE COWL TOP VENTILATOR LOUVER SUB-ASSY (See page 66-7)
- 5. REMOVE WINDSHIELD WIPER LINK ASSY (See page 66-7)
- 6. REMOVE COWL PANEL SUB-ASSY
- 7. REMOVE FRONT FENDER APRON SEAL RH
- 8. REMOVE FRONT SUSPENSION BRACE SUB-ASSY UPPER CENTER
- 9. REMOVE V-BANK COVER SUB-ASSY (See page 14-149)
- 10. REMOVE AIR CLEANER CAP SUB-ASSY
- 11. REMOVE EMISSION CONTROL VALVE SET (See page 14-149)
- 12. REMOVE INTAKE AIR SURGE TANK (See page 14-149)
- 13. REMOVE RADIATOR HOSE INLET
- 14. REMOVE IGNITION COIL ASSY
- 15. REMOVE CYLINDER HEAD COVER SUB-ASSY (See page 14-173)
- 16. REMOVE CYLINDER HEAD COVER SUB-ASSY LH (See page 14-173)



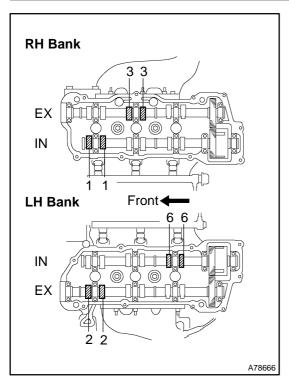
#### 17. INSPECT VALVE CLEARANCE

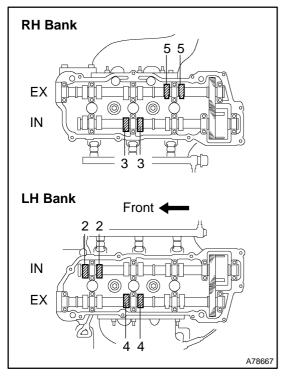
- (a) Turn the crankshaft pulley, and align the timing notch with timing mark 0 of the No. 1 timing belt cover.
- (b) Check that the valve lifters on the No. 1 (IN and EX) are both loose.

If not, turn the crankshaft 1 revolution (360°) and align the mark as above.

141PH-01

(c)





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

#### Valve clearance (Cold):

Item	Specified Condition
Intake	0.15 to 0.25 mm (0.006 to 0.010 in.)
Exhaust	0.25 to 0.35 mm (0.010 to 0.014 in.)

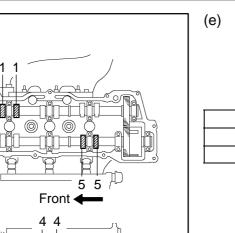
(2) Record valve clearance measurements that are out of the specified range. These measurements will be used later to determine the size of the adjustment shim to be installed.

- (d) Turn the crankshaft 2/3 of a revolution (240°), and check the valves indicated in the illustration on the left.
  - (1) Using a feeler gauge, measure the clearance between the valve lifter and camshaft.

## Valve clearance (Cold):

Item	Specified Condition
Intake	0.15 to 0.25 mm (0.006 to 0.010 in.)
Exhaust	0.25 to 0.35 mm (0.010 to 0.014 in.)

(2) Record valve clearance measurements that are out of the specified range. These measurements will be used later to determine the size of the adjustment shim to be installed.



**RH Bank** 

ΕX

IN

LH Bank

IN

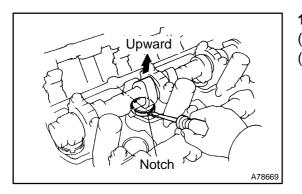
ΕX

- Turn the crankshaft 2/3 of a revolution (240°), and check the valves indicated in the illustration on the left.
  - (1) Using a feeler gauge, measure the clearance between the valve lifter and camshaft.

### Valve clearance (Cold):

Item	Specified Condition
Intake	0.15 to 0.25 mm (0.006 to 0.010 in.)
Exhaust	0.25 to 0.35 mm (0.010 to 0.014 in.)

(2) Record valve clearance measurements that are out of the specified range. These measurements will be used later to determine the size of the adjustment shim to be installed.

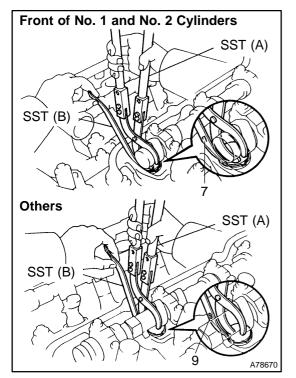


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# 18. ADJUST VALVE CLEARANCE

- (a) Turn the camshaft so that the cam lobe faces upward.
- (b) Turn the valve lifter with a screwdriver so that the notches are perpendicular to the camshaft.

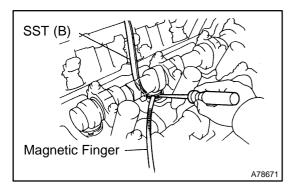


(c) Using SST (A), press down the valve lifter and place SST(B) between the camshaft and valve lifter. Remove SST(A).

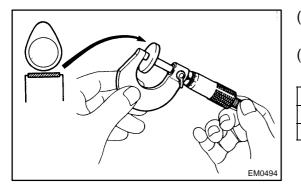
SST 09248-55040 (09248-05410, 09248-05420) HINT:

- Apply SST (B) at a slight angle on the side marked with "9" or "7" at the position shown in the illustration.
- When SST (B) is inserted too deeply, it will get pinched by the shim. To prevent it from being stuck, insert it gently from the intake side at a slight angle.

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(d) Using a small screwdriver and magnetic finger, remove the adjusting shim.



- (e) Using a micrometer, measure the thickness of the removed shim.
- (f) Calculate the thickness of a new shim so that the valve clearance comes within the specified value.

А	Thickness of new shim
В	Thickness of used shim
С	Measured valve clearance

#### Specified value (Cold):

Intake A = B + (C - 0.20 mm (0.0079 in.))

Exhaust A = B + (C - 0.30 mm (0.0118 in.))

(g) Select a new shim with a thickness as close as possible to the calculated values.

EXAMPLE (Intake):

Measured valve clearance = 0.45 mm (0.0177 in.) 0.45 mm (0.0177 in.) - 0.20 mm (0.0079 in.) = 0.25 mm (0.0098 in.)(Measured - Specification = Excess clearance) Used shim measurement = 2.80 mm (0.1102 in.) 0.25 mm (0.0098 in.) + 2.80 mm (0.1102 in.) = 3.05 mm (0.1201 in.)(Excess clearance + Used shim = Ideal new shim) Closest new shim = 3.05 mm (0.1201 in.)Select No. 12 shim

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.).
- Refer to adjusting shim selection chart on the following 2 pages.

2005 HIGHLANDER REPAIR MANUAL
(RM1144U)

Adjusting	Shim	Selection	Chart	(Intake)

				·····							.9 .															_
Installed shim thickness mm (in.)	(0.0992) (0.1000)	(0.1004)	(0.1008)	(0.1024) (0.1031)	(0.1039)	(0.1047) (0.1051)	(0.1055) (0.1059)	(0.1067)	(0.1071) (0.1075)	(0.1079) (0.1083)	(0.1091) (0.1091)	(0.1098) (0.1098) (0.1102)	(0.1106)	(0.1114) (0.1118)	(0.1126) (0.1126) (0.1130)	(0.1134) (0.1138)	(0.1142) (0.1146)	(0.1150) (0.1154)	(0.1157) (0.1161) (0.1165)	(0.1169) (0.1173) (0.1173)	(0.117/) (0.1181) (0.1185)	(0.1197) (0.1197) (0.1205)	(0.1213) (0.1220)	(0.1228) (0.1236) (0.1240) (0.1244) (0.1260) (0.1260) (0.1268)	(0.12/6) (0.1280) (0.1283) (0.1291)	(0.1299)
Measured clearance mm (in.)	2.500 2.520 2.540	2.550	2.580	2.600	2.650	2.660 2.670	2.690	2.710	2.720	2.750	2770	2.790	2.810	2.830 2.840	2.860	2.890	2.900 2.910	2.920	2.950 2.950 2.960	2.970 2.980	3.010	3.050 3.050 3.060 3.060	3.100 3.100	3.120 3.140 3.150 3.160 3.160 3.180 3.200 3.220	3.240 3.250 3.280 3.280	3300
0.000 - 0.020 (0.0000 - 0.0008)					1 1	1 1	1 1	1 1	2 2	2 2 3	2 3 3	3 3 3	3 4	4 4 4	4 4 5	5 5 5	55	66	6 6 6	5 7 7 7	7 7 7 8	88888	99	10101010111112	2 12 12 13	13
0.021 - 0.040 (0.0008 - 0.0016)		ТТ		1	1 1	1 1	1 1 :	2 2	2 2	2 3 3	3 3 3	3 3 4	4 4	4 4 5	5 5 5	5 5 5	66	6 6	6 7 7	7 7 7 3	7888	8899	9 10	10 10 11 11 11 12 12	2 13 13 13	14
0.041 - 0.060 (0.0016 - 0.0024)				1 1	1 1	1 1	2 2	2 2	2 3	3 3 3	3 3 4	1 4 4	4 4	555	5 5 5	66	66	6 7 <sup>·</sup>	7 7 7	7 7 8 8	8888	99999	1010	10 11 11 11 12 12 12	3 13 13 14	14
0.061 - 0.080 (0.0024 - 0.0031)			1	11	1 1	2 2	2 2	2 3	3 3	334	4 4 4	1 4 4	55	555	5 6 6	66	6 7	7 7	7 7 8	3 8 8 8	8899	9 9 9 10	1010	11 11 11 12 12 12 13	3131414	14
0.081 - 0.100 (0.0032 - 0.0039)		1	1 1	1 1	2 2	2 2	2 3	3 3	3 3	4 4 4	4 4 4	155	5 5	566	6 6 6	6 7	77	7 7	8 8 8	3 8 8 9	9999	9 10 10 10	1011	11 12 12 12 12 13 13	4 14 14 14	15
0.101 - 0.120 (0.0040 - 0.0047)	1	1	1 1	1 2	2 2	23	3 3	3 3	4 4	4 4 4	4 5 5	5 5 5	56	666	3 6 7	7 7	7 7	8 8	8 8 8	3999	9991	010101010	11 11	12121212131314	4 14 14 15	15
0.121 - 0.140 (0.0048 - 0.0055)	1 1	1	1 1	2 2	2 3	33	33	4 4	4 4	4 5 1	5 5 5	5 5 6	66	6 6 7	7 7 7	7 7	88	8 8	8 9 9	9999	9 10 10 1	010101111	11 12	12 12 13 13 13 14 14	4151515	16
0.141 - 0.149 (0.0056 - 0.0059)	1 1	1	1 2	2 2	3 3	33	4 4	4 4	4 5	5 5 1	5 5 6	666	66	7 7 7	7 7 7	88	88	8 9	9 9 9	9 10 1	010101	0 11 11 11 11	12 12	12 13 13 13 14 14 14	5 15 15 16	16
0.150 - 0.250 (0.0059 - 0.0098)																										
0.251 - 0.260 (0.0099 - 0.0102)	2 3 3	3 3	3 4	4 5	55	56	6 6	6 6	7 7	7 7	7 8 8	3 8 8	8 9	9 9 9	9 9 10	0 10 10	1010	11 11 1	11   11   11	1 12 12 1	212121	3 13 13 13 13	14 14	15 15 15 15 16 16 17	7 17 17 17	
0.261 - 0.280 (0.0103 - 0.0110)	2 3 3	3 4	4 4	4 5	5 5	66	6 6	6 7	7 7	7 7 8	3 8 8	3 8 8	9 9	999	9 10 10	01010	1011	11 11 1	11 11 12	212121	212131	3 13 13 13 14	14 14	15151516161617	7 17 17 17	
0.281 - 0.300 (0.0111 - 0.0118)	3 3 4	4	4 4	55	6 6	66	6 7	7 7	7 7	8 8 8	3 8 8	3 9 9	99	9 10 1	01010	01011	11 11	11 11 1	12 12 12	212121	313131	3 13 14 14 14	14 15	15 16 16 16 16 17 17	7 17 17	
0.301 - 0.320 (0.0119 - 0.0126)	3 4 4	4	4 5	56	66	6 7	7 7	7 7	8 8	8 8 8	3 9 9	99	9 10	10101	0 10 1 <sup>,</sup>	1 11 11	11 11	12 12 1	12 12 12	213131	313131	4 14 14 14 14	15 15	16 16 16 16 17 17 17	7	
0.321 - 0.340 (0.0126 - 0.0134)	4 4 4	5 !	5 5	66	6 7	77	7 7	8 8	8 8	8 9 9	9 9 9	9 10	01010	10101	1 11 1	1 11 11	12 12	12 12 1	12 13 13	313131	3 14 14 1	4 14 14 15 15	15 16	16 16 17 17 17 17 17		
0.341 - 0.360 (0.0134 - 0.0142)	4 4 5	5 !	56	66	7 7	7 7																		16 17 17 17 17 17		
0.361 - 0.380 (0.0142 - 0.0150)	4 5 5	5 (	66	6 7	7 7	88	88	89	99	991	0101	0 10 10	01111	11 11 1	1 12 1:	2 12 12	1213	13 13 1	131314	414141	4 14 15 1	5 15 15 15 16	1616	<u>17 17 17 17 17</u>		
0.381 - 0.400 (0.0150 - 0.0157)	556																					5 16 16 16 16				
0.401 - 0.420 (0.0158 - 0.0165)	566	6	6 7	78	8 8	89																6 16 16 16 16				
0.421 - 0.440 (0.0166 - 0.0173)	666	7	7 7	88	8 9	99	991	010	10 10 1	10111	1 11 1	1 11 12	2 12 12	2 12 12 1	3131:	3 13 13	1414	14 14 1	14 15 15	515151	5 16 16 1	6 16 16 17 17	1717	17		
0.441 - 0.460 (0.0174 - 0.0181)	667																					6 17 17 17 17		7		
0.461 - 0.480 (0.0181 - 0.0189)	6 7 7	7 8	8 8	89	9 9	1010	10101	011	11 11 1	11 11 1	2121	2 12 12	2 13 13	3 13 13 1	31414	4 14 14	1415	15 15 1	15 15 16	616161	6 16 17 1	7 17 17 17 17	17			
0.481 - 0.500 (0.0189 - 0.0197)	7 7 8	8 8	8 8	99	10 10	1010	10111	1 11	11 11 1	12 12 1	2121	2 13 13	3 13 13	3 13 14 1	41414	4 14 15	1515	15 15 1	16 16 16	616161	7 17 17 1	7 17 17 17 17				
0.501 - 0.520 (0.0197 - 0.0205)																					7 17 17 1					
0.521 - 0.540 (0.0205 - 0.0213)																					17 17 17 1	7				
0.541 - 0.560 (0.0213 - 0.0220)																				7 17 17 1	17 17		- N	lew shim thicl	kness	mm (in.)
0.561 - 0.580 (0.0221 - 0.0228)	899																						1		<b>.</b>	· · · ·
0.581 - 0.600 (0.0229 - 0.0236)	9 9 10																			7		Shim	1	Thickness	Shim	Thickness
0.601 - 0.620 (0.0237 - 0.0244)	9 10 10																		17			No.		THICKIESS	No.	THICKNESS
0.621 - 0.640 (0.0244 - 0.0252)	10 10 10																	17					_			
0.641 - 0.660 (0.0252 - 0.0260)	10 10 11																17					1		2.500 (0.0984)	10	2.950 (0.1161)
0.661 - 0.680 (0.0260 - 0.0268)	10 11 11	111	212	1213	13 13	14 14	14 14 1	14 15	15 15	15 15 1	6161	6 16 16	5 17 17	17 17 1	7 17 1	717							+			
0.681 - 0.700 (0.0268 - 0.0276)	11 11 12	2121	212	1313	14 14	14 14	14 15 1	15 15	15 15	6161	6161	6 17 17	7 17 17	7 17 17 1	7 17							2		2.550 (0.1004)	11	3.000 (0.1181)
0.701 - 0.720 (0.0276 - 0.0283)	11 12 12																									
0.721 - 0.740 (0.0284 - 0.0291)	12 12 12													2								3		2.600 (0.1024)	12	3.050 (0.1201)
0.741 - 0.760 (0.0292 - 0.0299)	12 12 13												<u>7</u> ]										-			
0.761 - 0.780 (0.0300 - 0.0307)	121313											7										4	12	2.650 (0.1043)	13	3.100 (0.1220)
0.781 - 0.800 (0.0307 - 0.0315)	13 13 14										/												-			
0.801 - 0.820 (0.0315 - 0.0323)	13 14 14 14 14 14	4141	415	1516	16 16	1617	17171	1717	17/17/ • -	17												5	12	2.700 (0.1063)	14	3.150 (0.1240)
0.821 - 0.840 (0.0323 - 0.0331)	14 14 12		515	1010	1017	1717	1717		17															v.		
0.841 - 0.860 (0.0331 - 0.0339) 0.861 - 0.880 (0.0339 - 0.0346)	14 14 15	151	616	1617	1717	17 17	17	<u></u>														6	12	2.750 (0.1083)	15	3.200 (0.1260)
0.861 - 0.880 (0.0339 - 0.0348) 0.881 - 0.900 (0.0347 - 0.0354)	15 15 16	101	6 16	1717	1717	17	17																			
$0.901 - 0.920 \ (0.0355 - 0.0362)$	15 16 16	161	617	1717									<b>.</b> .									7		2.800 (0.1102)	16	3.250 (0.1280)
0.901 - 0.920 (0.0355 - 0.0362)	161616						ake																		47	0.000 (0.4000)
0.921 - 0.940 (0.0303 - 0.0370) 0.941 - 0.960 (0.0370 - 0.0378)	161617	7171	717	17		0.1	5 to	0.2	25 m	nm (	(0.0	06 t	o 0.	.010	in.)							8	4	2.850 (0.1122)	17	3.300 (0.1299)
0.961 - 0.980 (0.0378 - 0.0386)	16 17 17										•				'											
0.981 - 0.980 (0.0378 - 0.0386)	171717			1			AMF															9		2.900 (0.1142)		
1.001 - 1.020 (0.0394 - 0.0402)	171717		<u> </u>			The	e 2.8	300	mm	ı (0.	110	2 in.	.) sł	nim is	sins	stalle	ed, a	ind t	the n	neas	ured	HINT				
1.021 - 1.020 (0.0334 - 0.0402) 1.021 - 1.040 (0.0402 - 0.0409)	1717					clea	aran	ce	is (	).45	0 m	nm (	0.0	177	in.).	Re	plac	e th	ne 2	.800	mm			thiologe :-		on its face in
1.041 - 1.050 (0.0410 - 0.0413)	17													No. 1											written	on its face in
	<u> </u>					(0.	1102		, 311		VILII	and		NO. 1	اد ۲							millim	nete	ers.		

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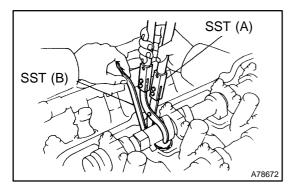


V00720

Adjusting Shim Selection Chart (Exhaust)

Installed shim thickness 🕄	2 <del>(</del> <b>)</b> <del>(<b>)</b> <del>(</del><b>)</b> <del>(</del><b>)</b> <del>(</del><b>)</b> <del>(</del><b>)</b> <del>(<b>)</b> <del>(</del><b>)</b> <del>(<b>)</b> <del>(</del><b>)</b> <del>(</del><b>)</b> <del>(<b>)</b> <del>(</del><b>)</b> <del>(</del><b>)</b> <del>(</del><b>)</b> <del>(</del><b>)</b> <del>(</del><b>)</b> <del>(</del><b>)</b> <del>(</del><b>)</b> <del>(<b>)</b> <del>(</del><b>)</b> <del>(</del><b>)</b> <del>(<b>)</b> <del>(</del><b>)</b> <del>(</del><b>)</b> <del>(<b>)</b> <del>(</del><b>)</b> <del>(<b>)</b> <del>(</del><b>)</b> <del>(<b>)</b> <del>(</del><b>)</b> <del>(<b>)</b> <del>(</del><b>)</b> <del>(</del><b>)</b> <del>(<b>)</b> <del>(</del><b>)</b> <del>(</del><b>)</b> <del>(</del><b>)</b> <del>(</del><b>)</b> <del>(</del><b>)</b> <del>(<b>)</b> <del>(</del><b>)</b> <del>(<b>)</b> <del>(</del><b>)</b> <del>(</del><b>)</b> <del>(</del><b>)</b> <del>(</del><b>)</b> <del>(<b>)</b> <del>(</del><b>)</b> <del>(</del><b>)</b> <del>(<b>)</b> <del>(</del><b>)</b> <del>(</del><b>)</b> <del>(<b>)</b> <del>(</del><b>)</b> <del>(</del><b>)</b> <del>(<b>)</b> <del>(</del><b>)</b> <del>(<b>)</b> <del>(</del><b>)</b> <del>(</del><b>)</b> <del>(<b>)</b> <del>(</del><del>)</del> <del>(</del><b>)</b> <del>(<b>)</b> <del>(</del><b>)</b> <del>(<b>)</b> <del>(<b>)</b> <del>(</del><b>)</b> <del>(<b>)</b> <del>(</del><b>)</b> <del>(<b>)</b> <del>(</del><b>)</b> <del>(<b>)</b> <del>(<b>)</b> <del>(</del><b>)</b> <del>(<b>)</b> <del>(<b>)</b> <del>(</del><b>)</b> <del>(<b>)</b> <del>(<b>)</b> <del>(</del><del>)</del> <del>(</del><del>)</del><del>(</del><del>)</del><del><del>(</del><del>)</del><del><del>(</del><del>)</del><del><del>(</del><del>)</del><del><del>(</del><del>)</del><del><del>(</del><del>)</del><del><del>(</del><del>)</del><del><del>(</del><del>)</del><del><del>(</del><del>)</del><del><del>(</del><del>)</del><del><del>(</del><del>)</del><del><del>(</del><del>)</del><del><del>)</del><del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del></del>	0 <del>(1</del> ) <del>(</del> )	<u>2</u>	( <u>6</u> )	33		() () () () () () () () () () () () () (	<u>204</u>	22)	ହ ଛି ଛି କି	38)	50) 50)	31)	65) 69)	73) 81)	85) 83)	<u>9</u> 3)	20) 36) 52) 68) 68)	() () () () () () () () () () () () () (	(cc)
mm (in.)	0100	0.100	0 (0.1043 0 (0.1047 0 (0.1051 0 (0.1055	0.106	0.10	010010	0.110	011	0.11	(0.11: (0.11: (0.11:	0.11	(0.11	0.11	(0.11	(0.11	(0.11 (0.11 (0.11	0.12	(0.12 (0.12 (0.12 (0.12 (0.12 (0.12 (0.12 (0.12)	(0.12 (0.12 (0.12	10
		8084	2.650 ( 2.650 ( 2.670 ( 2.680 (	00 (01/	730	09/02/08/	2.790		82 g	2.860 2.870 2.880	88	910 920	<b>35</b> 6	026	2.980 3.000	80 03 0 83 0 0 0	8 8 8 8	2288888888	3 3 2 2 2 3	
Measured clearance	1225	5 5 5 V	5 5 5	2.6	0000	000	6 6 6	1999	5 5	666	66	000	1010	220	000	<u> </u>		<u></u>		0
0.000 - 0.020 (0.0000 - 0.0008)					1 1 1	1 1 1 1	+			2 3 3			44					7 8 8 8 8 9 9 10		1
0.021 - 0.040 (0.0008 - 0.0016)	+++		┥┤┝┽┥	1 1 1	1 1 1 1 1	1 1 1 1 1		2 2 2 2 2 2 3									6777	8 8 8 9 9 9 1010 8 8 9 9 9 101010		2
0.041 - 0.060 (0.0016 - 0.0024) 0.061 - 0.080 (0.0024 - 0.0031)	+++	+++		1 1 1	1 1 1 1	1 2 2 2	2 2 3	3 3 3	33	4 4 4	4 4	5 5 5	5 5	66	6 6 6	777	7 7 8 8	8 9 9 9 10 10 10 11	1 11 12 12 1	2
0.081 - 0.100 (0.0032 - 0.0039)			1 1 1 1	1 1 1														9 9 10 10 10 10 11 11		
0.101 - 0.120 (0.0040 - 0.0047) 0.121 - 0.140 (0.0048 - 0.0055)	+++			1 1 1	2222													9 10 10 10 10 11 11 12 10 10 10 11 11 11 12 12		
0.121 - 0.140 (0.0048 - 0.0053)	+++		1 1 1 2	2 2 2	2333	3 3 3 4	444	4 4 5	5 5	5 5 6	66	6 6 7	7 7	7 7	8 8 8	889	9 9 9 10	01010111111121212	31313141	4
0.161 - 0.180 (0.0063 - 0.0071)		1 1 1 1	1 2 2 2	223	3 3 3 3	3 4 4 4	4 4 5	555	55	666	66	777	77	88	888	999	9 9 10 10	01011111112121213	31314141	4
0.181 – 0.200 (0.0071 – 0.0079) 0.201 – 0.220 (0.0079 – 0.0087)	1 1 1 1 1 1	1 1 1 2	2 2 2 2 2 2 3 3		3344	4 4 4 4	555	5 5 5	6 6	6 6 6	7 /	788	888	88	999	9 9 9	10101010	0 11 11 12 12 12 12 13 13 1 11 12 12 12 12 13 13 14	41414141	5
0.221 - 0.240 (0.0079 - 0.0094)	1 1 1 1	1 2 2 2	3 3 3 3	3 4 4	4 4 4 5	5 5 5 5	5 6 6	6 6 6	6 7	7 7 7	78	8 8 8	8 8 9	99	9 9 10	10 10 10	01011111	1212121313131414	4 15 15 15 1	6
0.241 - 0.249 (0.0095 - 0.0098) 1	112	2223	3 3 3 4	4 4 4	4 5 5 5	5556	666	6 7	77	7 7 8	88	889	99	991	10 10 10	10 10 11	11 11 11 11	2 12 12 13 13 13 14 14 14	5 15 15 16 1	6
0.250 - 0.350 (0.0098 - 0.0138) 0.351 - 0.360 (0.0138 - 0.0142) 2 3	2 3 3 /	4 4 5 5	5 5 6 6	6 6 6	777	7 7 8 8	888	8 9 9	99	9 10 10	01010	10 11 1	1 1 1 1 1	11 12 1	121212	121313	31313131	4 14 15 15 15 15 16 16 17	7171717	
0.361 - 0.380(0.0142 - 0.0150) 2 3	3 3 4 4	4 4 5 5	5666	6 6 7	777	7 8 8 8	888	9 9 9	99	10 10 10	01010	11 11 1	1 1 1 1 1	12 12 1	12 12 12	13 13 13	3 13 13 14 14	4 14 15 15 15 16 16 16 17	7 17 17 17	
0.381 - 0.400 (0.0150 - 0.0157) 3 3 4	1444	4 5 5 6	6666	777	7788	8888	999	9 9 9	1010	10 10 10	0 11 11	11 11 1	1 12 12	12 12	12 13 13	13 13 13	3 14 14 14 14 14	4151516161616161717	7 17 17	
0.401 - 0.420 (0.0158 - 0.0165) 3 4 4 0.0121 - 0.440 (0.0166 - 0.0173) 4 4 0	4 4 5	5 5 6 6	7777	788	8888	99999	9 9 9	01010	01011	11 11 11	11 12	12 12 1	21212	1313	13 13 14	14 14 14	14 15 15 1	5 15 16 16 16 16 17 17 17 5 16 16 16 17 17 17 17 17		
0.441 - 0.460 (0.0174 - 0.0181) 4 4	5 5 5 6	6 6 6 7	7 7 7 8	888	8999	9 9 9 10	010101	01011	11  11	11   11   12	2 12 12	12 12 1:	3 13 13	13 13	14 14 14	14 14 15	5 15 15 15 10	5 16 16 17 17 17 17 <u>17 17</u>		
0.461 - 0.480 (0.0181 - 0.0189) 4 5 9	566	6677	7888	889	9999	9 10 10 10	010101	1 11 11	11111	12 12 12	2 12 12	13 13 1	31313	14 14	14 14 14	15 15 15	51515161	6 16 17 17 17 17 17 17 6 17 17 17 17 17 17		
0.481 - 0.500 (0.0189 - 0.0197) 5 5 0 0.501 - 0.520 (0.0197 - 0.0205) 5 6	366	7788	8899	9999	1010101	010111	11111	1 12 12	21212	12 13 13	3 13 13	13 14 1	41414	14 15	15 15 15	151616	6 16 16 16 1	7 17 17 17		
0.521 - 0.540 (0.0205 - 0.0213) 6 6	6 7 7 7	7 8 8 8	9999	9 10 10	10 10 10 1	1 11 11 1	1 11 12 1	2 12 12	2 12 13	13 13 13	3 13 14	14 14 1	4 14 15	15 15	15 15 16	16 16 16	6 16 17 17 1	7 17 17		
			9 9 9 10 9 10 10 10																	
0.581 - 0.600 (0.0229 - 0.0236) 7 7	8888	8 9 9 10	010101010	011 11 11	11 11 12 1	2121212	213131	3 13 13	3 14 14	14 14 14	115 15	15 15 1	51616	16 16	16 17 17	17 17 17	7 17 17 17			<i>(</i> ; )
0.601 - 0.620 (0.0237 - 0.0244) 7 8	3885	9 9 10 10	010101111	1111111	12 12 12 1	212131	3 13 13 1	31414	41414	14 15 15	51515	15 16 1	61616	1617	171717	17 17 17	7 17	New shim thic	kness	mm (in.)
0.621 - 0.640 (0.0244 - 0.0252) 8 8 0.641 - 0.660 (0.0252 - 0.0260) 8 8	3999	0101010	0 11 11 11 11 1 11 11 11 12	2121212	1212121	3 13 13 14	4 14 14 1	41412	51515	15 15 16	51616	16 16 1	71717	17 17	171717		China		Chim	
0.661 - 0.680 (0.0260 - 0.0268) 8 9	9 9 10 1	0101111	111121212	2121213	13 13 13 1	3 14 14 14	1 14 14 1	5 15 15	5 15 15	16 16 16	6 16 16	17 17 1	71717	17 17		•	Shim	Thickness	Shim	Thickness
0.681 - 0.700 (0.0268 - 0.0276) 9 9 1	010101	0 11 11 12	2 12 12 12 12 2 12 12 13 13	2131313	13 13 14 1	4 14 14 14	4 15 15 1	5 15 15	51616	16 16 16	51717	17 17 1	7 17 17	17			No.		No.	
0.721 - 0.740 (0.0284 - 0.0291) 10101	011111	1 12 12 12	2 13 13 13 13	3131414	14 14 14 1	5 15 15 1	5 15 16 1	6 16 16	5 16 17	17 17 17	7 17 17	1717	<u>, 11 (</u>				1	2.500 (0.0984)	10	2.950 (0.1161)
0.741 - 0.760 (0.0292 - 0.0299) 10101	1 11 11 1	2121213	3 13 13 13 14	4 14 14 14	14 15 15 1	5 15 15 10	5 16 16 1	6 16 17	7 17 17	17 17 17	7 17 17	'					<u> </u>	· · · · ·		
0.761 - 0.780 (0.0300 - 0.0307) 10 11 1 0.781 - 0.800 (0.0307 - 0.0315) 11 11 1	1 11 12 1	2 12 13 13	3 13 14 14 14 4 14 14 14 14	4141415	1515151	6 16 16 1	5 16 16 1 5 17 17 1	71717	/1/1/ 71717	<u>17 17 1.</u> 17	4						2	2.550 (0.1004)	11	3.000 (0.1181)
0.801 - 0.820 (0.0315 - 0.0323) 11 12 1	212121	3 13 14 14	4 14 14 15 15	5 15 15 15	16 16 16 1	6 16 17 1	7 17 17 1	7 17 17	717								-	2 600 (0 1024)	12	2 050 (0 1 201)
0.821 - 0.840 (0.0323 - 0.0331) 12121	213131	13 14 14 14	4 15 15 15 15	5 15 16 16	16 16 16 1	7 17 17 17	7 17 17 1	717									3	2.600 (0.1024)	12	3.050 (0.1201)
0.841 - 0.860 (0.0331 - 0.0339) 12 12 1 0.861 - 0.880 (0.0339 - 0.0346) 12 13	313131	4 14 14 15	5 15 15 15 16 5 15 16 16 16	5 16 16 16	17 17 17 1	17 17 17 1	7										4	2.650 (0.1043)	13	3.100 (0.1220)
0.881 - 0.900 (0.0347 - 0.0354) 13 13			6 16 16 16 16			1717	_										-	0.700 (0.4000)		
			6 16 16 17 17 6 17 17 17 17														5	2.700 (0.1063)	14	3.150 (0.1240)
0.941 - 0.960 (0.0370 - 0.0378) 14141	5 15 15 1	16 16 16 17	7 17 17 17 17	71717													6	2.750 (0.1083)	15	3.200 (0.1260)
		16 16 17 17 16 17 17 17	7 17 17 17 17	7																
1.001 - 1.020 (0.0394 - 0.0402) 15 16 1	6 16 16 1	17 17 17 17	7														7	2.800 (0.1102)	16	3.250 (0.1280)
1.021 - 1.040 (0.0402 - 0.0409) 16 16	6 17 17 1 7 17 17 1	171717	Exhau	st va	lve cl	earan	ce (	Colo	:(k								8	2.850 (0.1122)	17	3.300 (0.1299)
	7 17 17 1	17	0.25 to	0.35						.)							9	2.900 (0.1142)		I
1.101 - 1.120 (0.0433 - 0.0441) 17 17			EXAM																_	
<u>1.121 - 1.140 (0.0441 - 0.0449)</u> <u>1717</u> <u>1.141 - 1.150 (0.0449 - 0.0453)</u> <u>17</u>			The 2.														HINT:			
			clearance is 0.450 mm (0.0177 in.). Replace the 2.800 mm									m	A shin	n's thickness is	writter	n on its face in				
			(0.110)	2 in.) :	shim v	with a	new	No.	. 10	shim	ı.						millim	eters.		

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- (h) Place a new adjusting shim on the valve lifter with the imprinted number facing down.
- (i) Press down the valve lifter with SST (A), and remove SST (B).
- SST 09248-55040 (09248-05410, 09248-05420) (j) Recheck the valve clearance.
- 19. INSTALL CYLINDER HEAD COVER SUB-ASSY (See page 14-173)
- 20. INSTALL CYLINDER HEAD COVER SUB-ASSY LH (See page 14-173)
- 21. INSTALL IGNITION COIL ASSY Torque: 8.0 N m (82 kgf cm, 71 in. lbf)
- 22. INSTALL RADIATOR HOSE INLET
- 23. INSTALL INTAKE AIR SURGE TANK (See page 14-149)
- 24. INSTALL EMISSION CONTROL VALVE SET (See page 14-149)
- 25. INSTALL AIR CLEANER CAP SUB-ASSY
- 26. CONNECT VACUUM HOSES (See page 14-149)
- 27. INSTALL V-BANK COVER SUB-ASSY (See page 14-149)
- 28. INSTALL FRONT SUSPENSION BRACE SUB-ASSY UPPER CENTER Torque: 80 N·m (816 kgf·cm, 59 ft·lbf)
- 29. INSTALL COWL PANEL SUB-ASSY
- 30. INSTALL WINDSHIELD WIPER LINK ASSY (See page 66-7)
- 31. INSTALL COWL TOP VENTILATOR LOUVER SUB-ASSY (See page 66-7)
- 32. INSTALL FR WIPER ARM LH (See page 66-7)
- 33. INSTALL FR WIPER ARM RH (See page 66-7)
- 34. ADD ENGINE COOLANT (See page 16-26)
- 35. CHECK FOR ENGINE COOLANT LEAKS (See page 16-20)