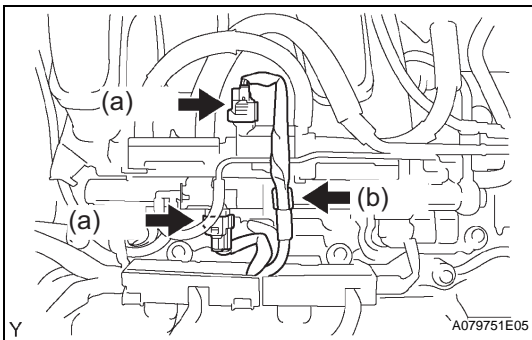
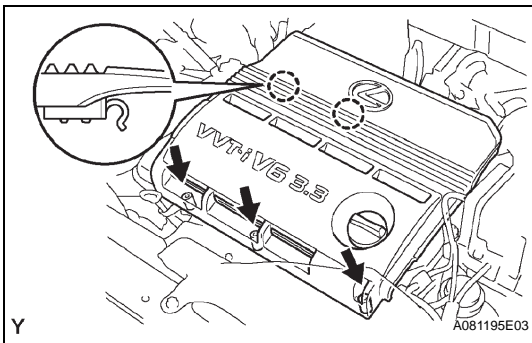


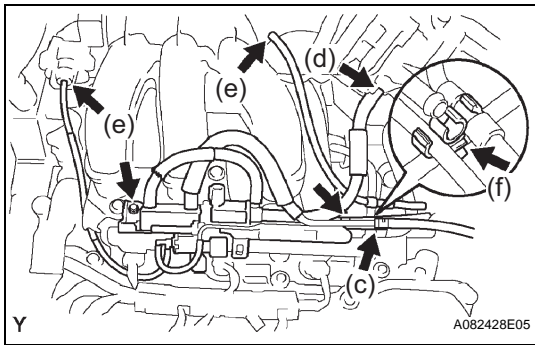
VALVE CLEARANCE

ADJUSTMENT

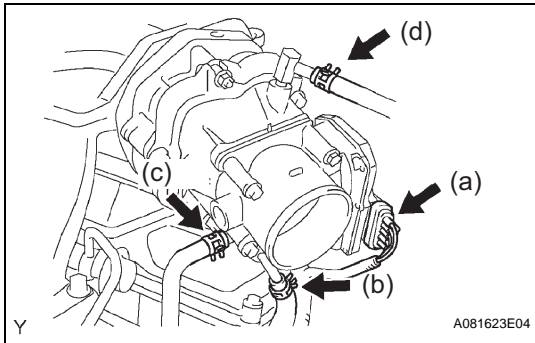
1. **DRAIN ENGINE COOLANT**
(a) Drain the engine coolant (See page [CO-7](#)).
2. **REMOVE FR WIPER ARM RH**
(a) Remove the FR wiper arm RH (See page [WW-37](#)).
3. **REMOVE FR WIPER ARM LH**
(a) Remove the FR wiper arm LH (See page [WW-37](#)).
4. **REMOVE COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY**
(a) Remove the cowl top ventilator louver sub-assembly (See page [WW-37](#)).
5. **REMOVE WINDSHIELD WIPER LINK ASSEMBLY**
(a) Remove the windshield wiper link assembly (See page [WW-37](#)).
6. **REMOVE COWL TOP PANEL SUB-ASSEMBLY OUTER**
(a) Remove the cowl top panel sub-assembly (See page [FU-10](#)).
7. **REMOVE ENGINE UNDER COVER ASSEMBLY**
(a) w/ engine under cover assembly
8. **REMOVE ENGINE UNDER COVER NO.1**
9. **REMOVE FRONT FENDER APRON SEAL RH**
(a) Remove the front fender apron seal RH (See page [ES-367](#)).
10. **REMOVE V-BANK COVER SUB-ASSEMBLY**
(a) Using socket hexagon wrench 5, remove the 3 nuts.
(b) Remove the V-bank cover.
11. **REMOVE AIR CLEANER CAP SUB-ASSEMBLY**
(a) Remove air cleaner cap sub-assembly (See page [FU-10](#)).



12. **REMOVE EMISSION CONTROL VALVE SET**
(a) Disconnect the 2 VSV connectors.
(b) Remove the wire harness clamp.

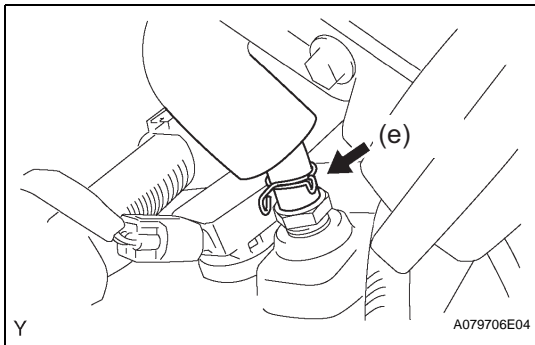


- (c) Disconnect the fuel vapor feed hose No. 1.
- (d) Disconnect the fuel vapor feed hose No. 2.
- (e) Disconnect the 2 vacuum hoses.
- (f) Remove the clamp.
- (g) Remove the 2 nuts, then remove the emission control valve set.

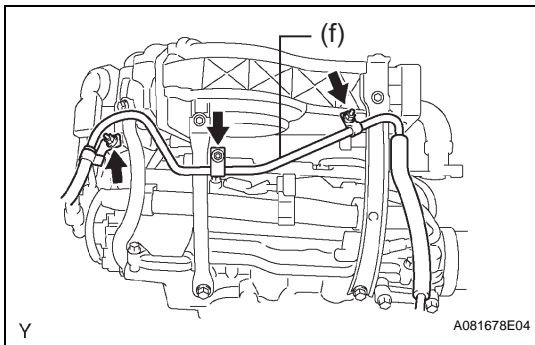


13. REMOVE INTAKE AIR SURGE TANK

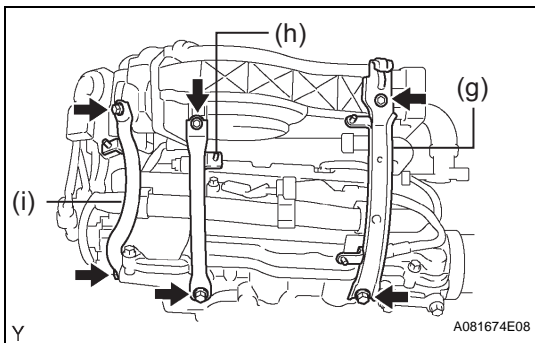
- (a) Disconnect the throttle motor connector.
- (b) Disconnect the water by-pass hose No. 3.
- (c) Disconnect the water by-pass hose No. 2.
- (d) Disconnect the union to check valve hose.



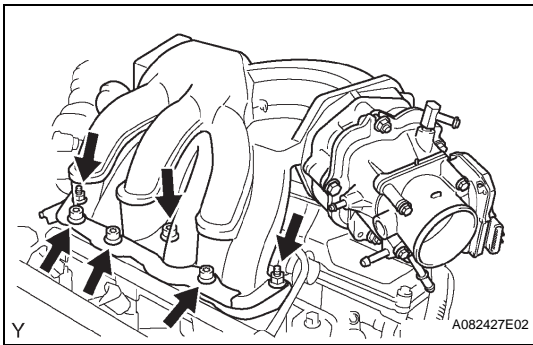
- (e) Disconnect the ventilation hose.



- (f) Remove the 3 nuts and separate the pressure feed tube.



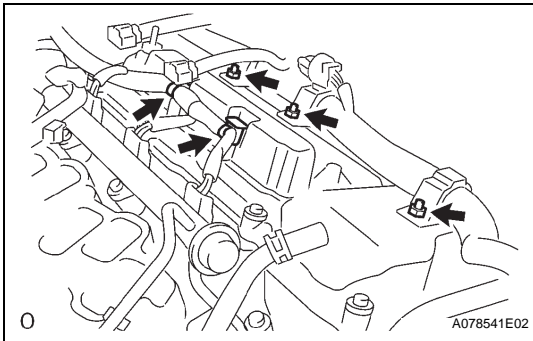
- (g) Remove the 2 bolts, then remove the engine hunger No. 1.
- (h) Remove the 2 bolts, then remove the surge tank stay No. 1.
- (i) Remove the 2 bolts, then remove the surge tank stay No. 2.



- (j) Using socket hexagon wrench 8, remove the 4 bolts.
- (k) Remove the 2 nuts, then remove the emission control valve bracket and the intake air surge tank.
- (l) Remove the gasket from the intake air surge tank.

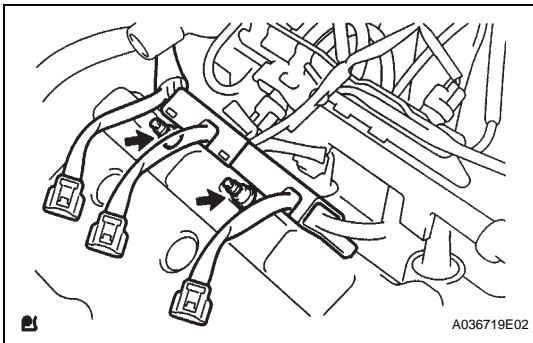
14. REMOVE RADIATOR HOSE INLET

15. REMOVE IGNITION COIL ASSEMBLY



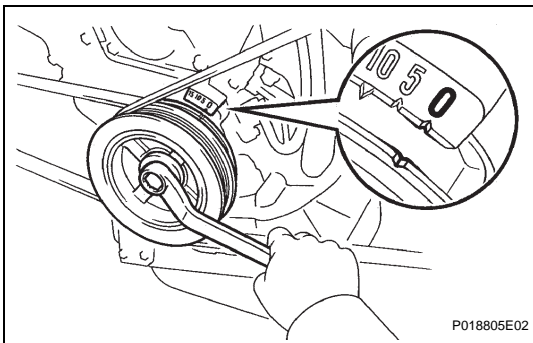
16. REMOVE CYLINDER HEAD COVER SUB-ASSEMBLY

- (a) Remove the 2 engine wire harness clamps.
- (b) Remove the 3 nuts and disconnect the engine wire harness.
- (c) Remove the 9 bolts and the cylinder head cover.



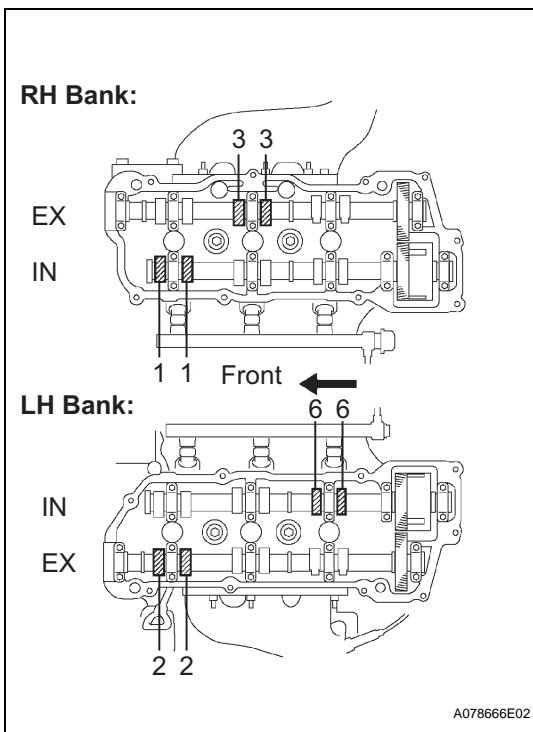
17. REMOVE CYLINDER HEAD COVER SUB-ASSEMBLY LH

- (a) Using an E6 torx socket wrench, remove the 2 bolts and disconnect the engine wire harness protector.
- (b) Remove the 9 bolts and the cylinder head cover.



18. INSPECT VALVE CLEARANCE

- (a) Turn the crankshaft pulley, and align the timing notch with the 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.



(c) Check the valves indicated in the illustration on the left.

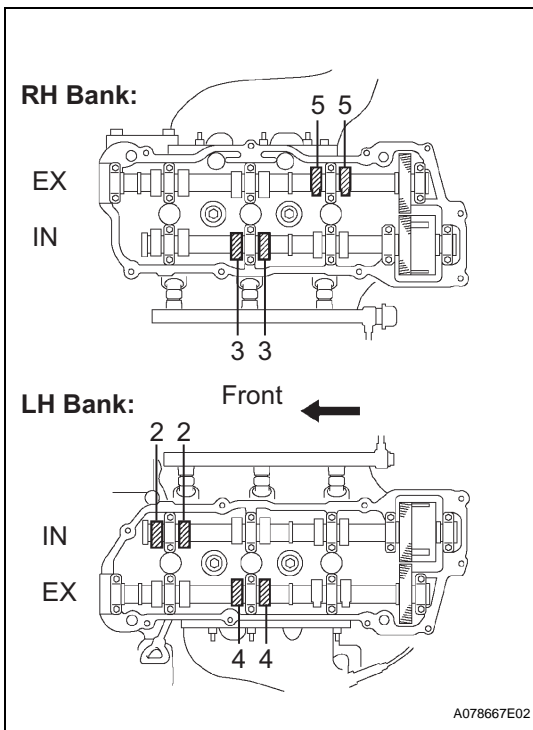
- (1) Using a feeler gauge, measure the clearance between the valve lifter and the camshaft.

Valve clearance (Cold):

Intake 0.15 to 0.25 mm (0.0059 to 0.0098 in.)

Exhaust 0.25 to 0.35 mm (0.0098 to 0.0138 in.)

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



(d) Turn the crankshaft 2/3 of a revolution (240°), and check the valves indicated in the illustration on the left.

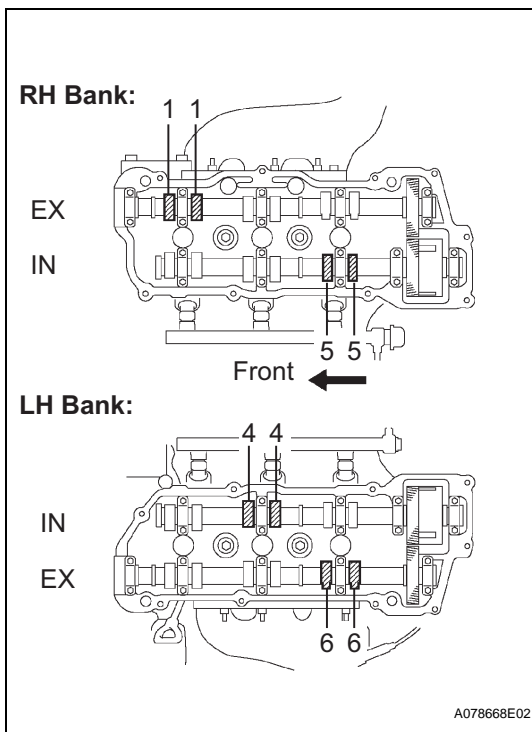
- (1) Using a feeler gauge, measure the clearance between the valve lifter and the camshaft.

Valve clearance (Cold):

Intake 0.15 to 0.25 mm (0.0059 to 0.0098 in.)

Exhaust 0.25 to 0.35 mm (0.0098 to 0.0138 in.)

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



(e) 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 the camshaft.

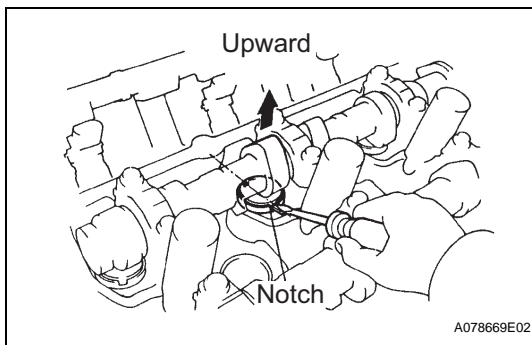
Valve clearance (Cold):

Intake 0.15 to 0.25 mm (0.0059 to 0.0098 in.)

Exhaust 0.25 to 0.35 mm (0.0098 to 0.0138 in.)

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

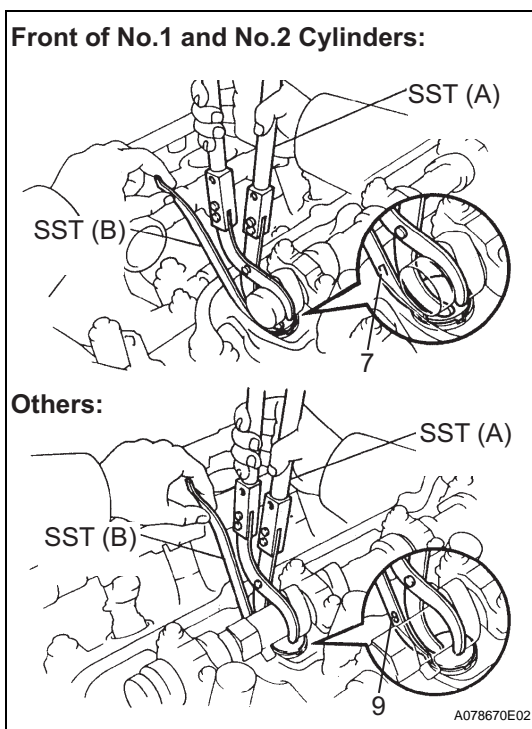
EM



19. 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.

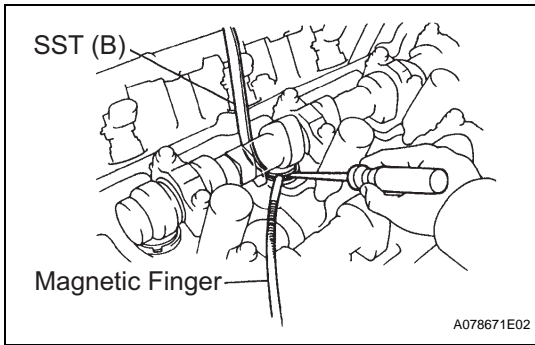
Remove SST (A).

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

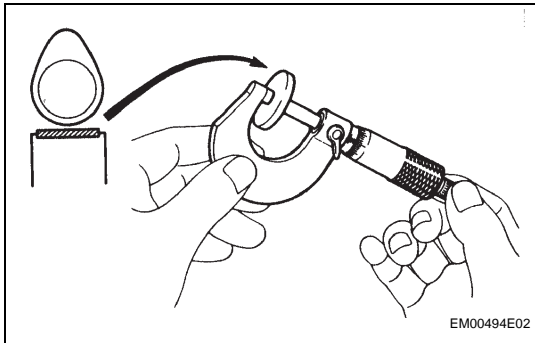
HINT:

- 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.

SST (A)	09248-05410
SST (B)	09248-05420



- (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 the valve clearance comes within the specified value.

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

Specified value (Cold):

Intake $A = B + (C - 0.20 \text{ mm (0.0079 in.)})$

Exhaust $A = B + (C - 0.30 \text{ mm (0.0118 in.)})$

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

Adjusting Shim Selection Chart (Intake)

		Measured Clearance mm (in.)	Installed Shim Thickness mm (in.)
17	17	0.000 - 0.020 (0.0000 - 0.0009)	2.500 (0.0984)
17	17	0.021 - 0.040 (0.0008 - 0.0161)	2.520 (0.0992)
17	17	0.041 - 0.060 (0.0016 - 0.0024)	2.540 (0.1000)
17	17	0.061 - 0.080 (0.0024 - 0.0031)	2.550 (0.1004)
17	17	0.081 - 0.100 (0.0032 - 0.0039)	2.560 (0.1008)
17	17	0.101 - 0.120 (0.0040 - 0.0047)	2.580 (0.1016)
17	17	0.121 - 0.140 (0.0048 - 0.0055)	2.600 (0.1024)
17	17	0.141 - 0.149 (0.0056 - 0.0059)	2.620 (0.1031)
17	17	0.150 - 0.250 (0.0059 - 0.0098)	2.640 (0.1039)
17	17	0.251 - 0.280 (0.0099 - 0.0102)	2.650 (0.1043)
17	17	0.281 - 0.280 (0.0103 - 0.0110)	2.660 (0.1047)
17	17	0.281 - 0.300 (0.0111 - 0.0118)	2.670 (0.1051)
17	17	0.301 - 0.320 (0.0119 - 0.0126)	2.680 (0.1055)
17	17	0.321 - 0.340 (0.0128 - 0.0134)	2.690 (0.1059)
17	17	0.341 - 0.360 (0.0134 - 0.0142)	2.700 (0.1063)
17	17	0.361 - 0.380 (0.0142 - 0.0150)	2.710 (0.1067)
17	17	0.381 - 0.400 (0.0150 - 0.0157)	2.720 (0.1071)
17	17	0.401 - 0.420 (0.0158 - 0.0165)	2.730 (0.1075)
17	17	0.421 - 0.440 (0.0166 - 0.0173)	2.740 (0.1079)
17	17	0.441 - 0.460 (0.0174 - 0.0181)	2.750 (0.1083)
17	17	0.461 - 0.480 (0.0181 - 0.0189)	2.760 (0.1087)
17	17	0.481 - 0.500 (0.0189 - 0.0197)	2.770 (0.1091)
17	17	0.501 - 0.520 (0.0197 - 0.0205)	2.780 (0.1094)
17	17	0.521 - 0.540 (0.0205 - 0.0213)	2.790 (0.1098)
17	17	0.541 - 0.560 (0.0213 - 0.0220)	2.800 (0.1102)
17	17	0.561 - 0.580 (0.0221 - 0.0228)	2.810 (0.1106)
17	17	0.581 - 0.600 (0.0228 - 0.0236)	2.820 (0.1110)
17	17	0.601 - 0.620 (0.0237 - 0.0244)	2.830 (0.1114)
17	17	0.621 - 0.640 (0.0244 - 0.0252)	2.840 (0.1118)
17	17	0.641 - 0.660 (0.0252 - 0.0260)	2.850 (0.1122)
17	17	0.661 - 0.680 (0.0260 - 0.0268)	2.860 (0.1126)
17	17	0.681 - 0.700 (0.0268 - 0.0276)	2.870 (0.1130)
17	17	0.701 - 0.720 (0.0276 - 0.0283)	2.880 (0.1134)
17	17	0.741 - 0.760 (0.0292 - 0.0299)	2.890 (0.1138)
17	17	0.761 - 0.780 (0.0300 - 0.0307)	2.900 (0.1142)
17	17	0.781 - 0.800 (0.0307 - 0.0315)	2.910 (0.1146)
17	17	0.801 - 0.820 (0.0315 - 0.0323)	2.920 (0.1150)
17	17	0.821 - 0.840 (0.0323 - 0.0331)	2.930 (0.1154)
17	17	0.841 - 0.860 (0.0331 - 0.0339)	2.940 (0.1157)
17	17	0.861 - 0.880 (0.0339 - 0.0346)	2.950 (0.1161)
17	17	0.881 - 0.900 (0.0347 - 0.0354)	2.960 (0.1165)
17	17	0.901 - 0.920 (0.0355 - 0.0362)	2.970 (0.1169)
17	17	0.921 - 0.940 (0.0363 - 0.0370)	2.980 (0.1173)
17	17	0.941 - 0.960 (0.0370 - 0.0378)	2.990 (0.1177)
17	17	0.961 - 0.980 (0.0378 - 0.0386)	3.000 (0.1181)
17	17	0.981 - 1.000 (0.0386 - 0.0394)	3.010 (0.1185)
17	17	1.001 - 1.020 (0.0394 - 0.0402)	3.020 (0.1189)
17	17	1.021 - 1.040 (0.0402 - 0.0409)	3.030 (0.1193)
17	17	1.041 - 1.060 (0.0410 - 0.0413)	3.040 (0.1197)
17	17		3.050 (0.1201)
17	17		3.060 (0.1205)
17	17		3.080 (0.1213)
17	17		3.100 (0.1220)
17	17		3.120 (0.1228)
17	17		3.140 (0.1236)
17	17		3.150 (0.1240)
17	17		3.160 (0.1244)
17	17		3.180 (0.1252)
17	17		3.200 (0.1260)
17	17		3.220 (0.1268)
17	17		3.240 (0.1276)
17	17		3.250 (0.1280)
17	17		3.260 (0.1283)
17	17		3.280 (0.1291)
17	17		3.300 (0.1299)



Adjusting Shim Selection Chart (Exhaust)

		Measured Clearance mm (in.)		Installed Shim Thickness mm (in.)	
17	17	0.000 - 0.020 (0.0000 - 0.0008)	2.500 (0.0984)		
17	17	0.021 - 0.040 (0.0008 - 0.0016)	2.520 (0.0992)		
17	17	0.041 - 0.060 (0.0016 - 0.0024)	2.540 (0.1000)		
17	17	0.061 - 0.080 (0.0024 - 0.0031)	2.550 (0.1004)		
17	17	0.081 - 0.100 (0.0032 - 0.0039)	2.560 (0.1008)		
17	17	0.101 - 0.120 (0.0040 - 0.0047)	2.580 (0.1016)		
17	17	0.121 - 0.140 (0.0048 - 0.0055)	2.600 (0.1024)		
17	17	0.141 - 0.160 (0.0056 - 0.0063)	2.620 (0.1031)		
17	17	0.161 - 0.180 (0.0063 - 0.0071)	2.640 (0.1039)		
17	17	0.181 - 0.200 (0.0071 - 0.0079)	2.650 (0.1043)		
17	17	0.201 - 0.220 (0.0079 - 0.0087)	2.660 (0.1047)		
17	17	0.221 - 0.240 (0.0087 - 0.0094)	2.670 (0.1051)		
17	17	0.241 - 0.249 (0.0095 - 0.0098)	2.680 (0.1055)		
17	17	0.250 - 0.350 (0.0098 - 0.0138)	2.690 (0.1059)		
17	17	0.351 - 0.380 (0.0138 - 0.0142)	2.700 (0.1063)		
17	17	0.381 - 0.390 (0.0142 - 0.0150)	2.710 (0.1067)		
17	17	0.391 - 0.400 (0.0150 - 0.0157)	2.720 (0.1071)		
17	17	0.401 - 0.420 (0.0158 - 0.0165)	2.730 (0.1075)		
17	17	0.421 - 0.440 (0.0166 - 0.0173)	2.740 (0.1079)		
17	17	0.441 - 0.460 (0.0174 - 0.0181)	2.750 (0.1083)		
17	17	0.461 - 0.480 (0.0181 - 0.0189)	2.760 (0.1087)		
17	17	0.481 - 0.500 (0.0189 - 0.0197)	2.770 (0.1091)		
17	17	0.501 - 0.520 (0.0197 - 0.0205)	2.780 (0.1094)		
17	17	0.521 - 0.540 (0.0205 - 0.0213)	2.790 (0.1098)		
17	17	0.541 - 0.560 (0.0213 - 0.0220)	2.800 (0.1102)		
17	17	0.561 - 0.580 (0.0221 - 0.0228)	2.810 (0.1106)		
17	17	0.581 - 0.600 (0.0229 - 0.0236)	2.820 (0.1110)		
17	17	0.601 - 0.620 (0.0237 - 0.0244)	2.830 (0.1114)		
17	17	0.621 - 0.640 (0.0244 - 0.0252)	2.840 (0.1118)		
17	17	0.641 - 0.660 (0.0252 - 0.0260)	2.850 (0.1122)		
17	17	0.661 - 0.680 (0.0260 - 0.0268)	2.860 (0.1126)		
17	17	0.681 - 0.700 (0.0268 - 0.0276)	2.870 (0.1130)		
17	17	0.701 - 0.720 (0.0276 - 0.0283)	2.880 (0.1134)		
17	17	0.721 - 0.740 (0.0284 - 0.0291)	2.890 (0.1138)		
17	17	0.741 - 0.760 (0.0292 - 0.0299)	2.900 (0.1142)		
17	17	0.761 - 0.780 (0.0300 - 0.0307)	2.910 (0.1146)		
17	17	0.781 - 0.800 (0.0307 - 0.0315)	2.920 (0.1150)		
17	17	0.801 - 0.820 (0.0315 - 0.0323)	2.930 (0.1154)		
17	17	0.821 - 0.840 (0.0323 - 0.0331)	2.940 (0.1157)		
17	17	0.841 - 0.860 (0.0331 - 0.0339)	2.950 (0.1161)		
17	17	0.861 - 0.880 (0.0339 - 0.0346)	2.960 (0.1165)		
17	17	0.881 - 0.900 (0.0347 - 0.0354)	2.970 (0.1169)		
17	17	0.901 - 0.920 (0.0355 - 0.0362)	2.980 (0.1173)		
17	17	0.941 - 0.960 (0.0370 - 0.0378)	2.990 (0.1177)		
17	17	0.961 - 0.980 (0.0378 - 0.0386)	3.000 (0.1181)		
17	17	0.981 - 1.000 (0.0386 - 0.0394)	3.010 (0.1185)		
17	17	1.021 - 1.040 (0.0402 - 0.0409)	3.020 (0.1189)		
17	17	1.041 - 1.060 (0.0410 - 0.0417)	3.030 (0.1193)		
17	17	1.061 - 1.080 (0.0418 - 0.0425)	3.040 (0.1197)		
17	17	1.081 - 1.100 (0.0426 - 0.0433)	3.050 (0.1201)		
17	17	1.101 - 1.120 (0.0433 - 0.0441)	3.060 (0.1205)		
17	17	1.121 - 1.140 (0.0441 - 0.0449)	3.080 (0.1213)		
17	17	1.141 - 1.150 (0.0449 - 0.0453)	3.100 (0.1220)		
17	17		3.120 (0.1228)		
17	17		3.140 (0.1236)		
17	17		3.150 (0.1240)		
17	17		3.160 (0.1244)		
17	17		3.180 (0.1252)		
17	17		3.200 (0.1260)		
17	17		3.220 (0.1268)		
17	17		3.240 (0.1276)		
17	17		3.250 (0.1280)		
17	17		3.260 (0.1283)		
17	17		3.280 (0.1291)		
17	17		3.300 (0.1299)		



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)

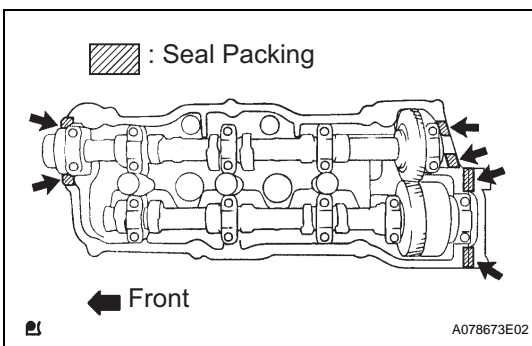
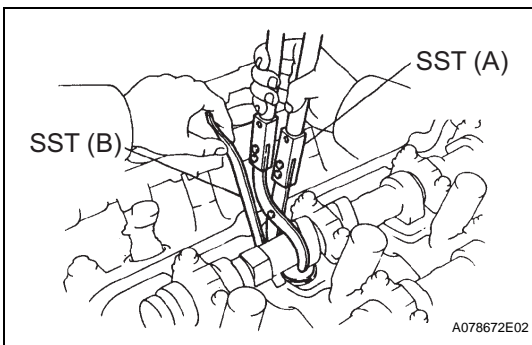
Closest new shim = 3.05 mm (0.1201 in.)

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 new shim thickness table on the next 2 pages.

- (h) Place a new adjusting shim on the valve lifter with 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.



20. INSTALL CYLINDER HEAD COVER SUB-ASSEMBLY

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

Seal packing:

Part No. 08826-00080 or equivalent

NOTICE:

- Remove any oil from the contact surface.
- Install the cylinder head cover within 3 minutes after applying seal packing.
- Do not start the engine within 2 hours after installing.

- (b) Install the cylinder head cover with the 9 bolts. Tighten the bolts uniformly in several steps.

Torque: 8.0 N*m (80 kgf*cm, 71 in.*lbf)

- (c) Install the engine wire harness with the 3 nuts.
- Torque: 8.4 N*m (85 kgf*cm, 74 in.*lbf)**

21. INSTALL CYLINDER HEAD COVER SUB-ASSEMBLY LH

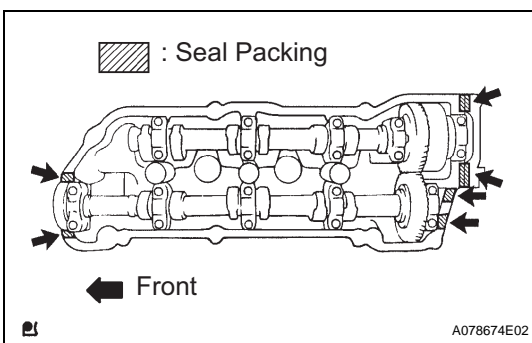
- (a) Apply seal packing to the cylinder head as shown in the illustration.

Seal packing:

Part No. 08826-00080 or equivalent

NOTICE:

- Remove any oil from the contact surface.
- Install the cylinder head cover within 3 minutes after applying seal packing.
- Do not start the engine within 2 hours after installing.



- (b) Install the cylinder head cover with the 9 bolts.
Tighten the bolts uniformly in several steps.
Torque: 8.0 N*m (80 kgf*cm, 71 in.*lbf)
- (c) Using an E6 torx socket wrench, install the engine wire harness protector with the 2 bolts.
Torque: 8.4 N*m (85 kgf*cm, 74 in.*lbf)

22. INSTALL IGNITION COIL ASSEMBLY**Torque: 8.0 N*m (80 kgf*cm, 71 in.*lbf)****23. INSTALL INTAKE AIR SURGE TANK**

- (a) Install a new gasket to the intake air surge tank.
- (b) Install the intake air surge tank and emission control valve bracket with the 2 nuts.
Torque: 28 N*m (286 kgf*cm, 21 ft.*lbf)
- (c) Using a socket hexagon wrench 8, tighten the 4 bolts.
Torque: 28 N*m (286 kgf*cm, 21 ft.*lbf)
- (d) Install the surge tank stay No. 2 with the 2 bolts.
Torque: 20 N*m (199 kgf*cm, 14 ft.*lbf)
- (e) Install the surge tank stay No. 1 with the 2 bolts.
Torque: 20 N*m (199 kgf*cm, 14 ft.*lbf)
- (f) Install the engine hunger No. 1 with the 2 bolts.
Torque: 20 N*m (199 kgf*cm, 14 ft.*lbf)
- (g) Install the pressure feed tube with the 3 nuts.
Torque: 7.8 N*m (80 kgf*cm, 69 in.*lbf)
- (h) Connect the ventilation hose.
- (i) Connect the union to check valve hose.
- (j) Connect the water by-pass hose No. 2.
- (k) Connect the water by-pass hose No. 3.
- (l) Connect the throttle motor connector.

24. INSTALL EMISSION CONTROL VALVE SET**Torque: 8.0 N*m (82 kgf*cm, 71 in.*lbf)****25. INSTALL AIR CLEANER CAP SUB-ASSEMBLY**

- (a) Install the air cleaner cap sub-assembly (See page [FU-14](#)).

26. CONNECT VACUUM HOSE

- (a) Connect the vacuum hose (See page [EM-120](#)).

27. INSTALL V-BANK COVER SUB-ASSEMBLY

- (a) Fit the 2 retainers and install the V-bank cover.
- (b) Using a socket hexagon wrench 5, tighten the 3 nuts.
Torque: 7.9 N*m (81 kgf*cm, 70 in.*lbf)

28. INSTALL COWL TOP PANEL SUB-ASSEMBLY OUTER

- (a) Install the cowl top panel sub-assembly (See page [FU-14](#)).

29. INSTALL WINDSHIELD WIPER LINK ASSEMBLY

- (a) Install the windshield wiper link assembly (See page [WW-38](#)).

30. INSTALL COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY

- (a) Install the cowl top ventilator louver sub-assembly (See page [WW-38](#)).

31. INSTALL FR WIPER ARM LH

- (a) Install the FR wiper arm LH (See page [WW-38](#)).

32. INSTALL FR WIPER ARM RH

- (a) Install FR wiper arm RH (See page [WW-38](#)).

33. ADD ENGINE COOLANT

- (a) Add engine coolant (See page [CO-7](#)).

34. CHECK FOR ENGINE COOLANT LEAKAGE

- (a) Check for engine coolant leakage (See page [CO-1](#)).