ENGINE TUNE–UP

INSPECTION OF ENGINE COOLANT

(See steps 1 and 2 on page CO–5)

INSPECTION OF ENGINE OIL

(See steps 1 and 2 on page LU–5)

INSPECTION OF BATTERY

(See steps 1 and 2 on page CH–2)

Standard specific gravity:

1.25 – 7.27 when fully charged at 20°C (68°F)

INSPECTION OF AIR FILTER

(See step 3 on page MA–4)

INSPECTION OF HIGH–TENSION CORDS

(See page IG–6)

INSPECTION OF SPARK PLUGS

(See page IG–6)

Correct electrode gap of new plug:

1.1 mm (0.043 in.)

Maximum electrode gap: 1.3 mm (0.051 in.)

NOTICE: Never attempt to adjust gap on used plug.

Recommended spark plugs:

ND PQ16R

NGK BCPR5EP11

INSPECTION OF DRIVE BELTS

(See step 2 on page MA–4)

Drive belt tension:

Alternator New belt 175 ± 5 lb

Used belt 115 ± 20 lb

PS pump New belt 160 ± 20 lb

Used belt 100 ± 20 lb

A/C New belt 160 ± 20 lb

Used belt 105 ± 10 lb

INSPECTION AND ADJUSTMENT OF VALVE CLEARANCE

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

1. REMOVE NO. 1 AIR CLEANER HOSE WITH AIR CONNECTOR PIPE

2. REMOVE PCV PIPE AND HOSES

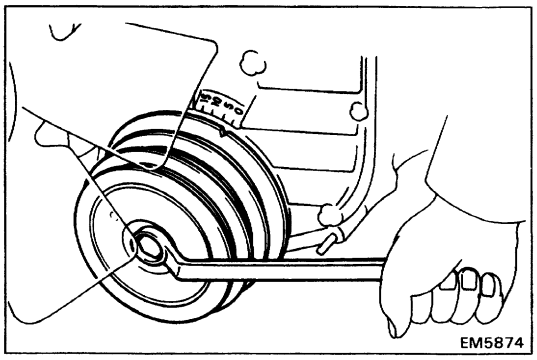
3. REMOVE ACCELERATOR LINK

4. REMOVE AIR INTAKE CONNECTOR, VACUUM TRANSMITTING PIPE AND BRACKETS

5. DISCONNECT HIGH–TENSION CORDS

6. REMOVE CYLINDER HEAD COVERS

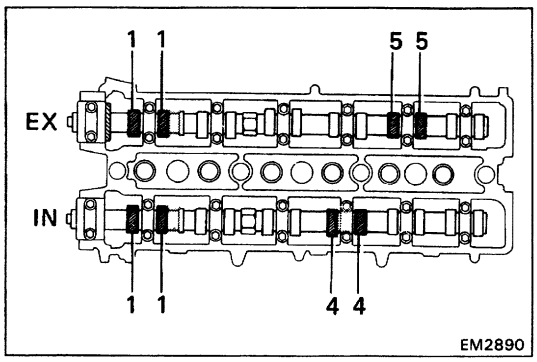
(See step 23 on page EM–31)


EM5874

7. SET NO. 1 CYLINDER TO TDC/COMPRESSION

(a) Turn the crankshaft pulley and align its groove with the ”0” mark on the No. 1 timing belt cover.

(b) Check that the valve lifters on the No. 1 cylinder are loose and valve lifters on the No.6 cylinder are tight. If not, turn the crankshaft pulley one complete revolution.



EM2890

8. INSPECT VALVE CLEARANCE

(a) Check the clearance of No. 1(IN) and No.4 (IN) and No. 1 (EX) and No. 5 (EX) valves.

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

Valve clearance (Cold):

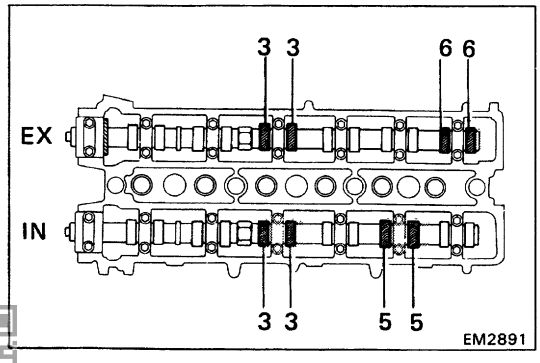
Intake 0.15 – 0.25 mm (0.006 – 0.010 in.)

Exhaust 0.20 – 0.30 mm (0.008 – 0.012 in.)

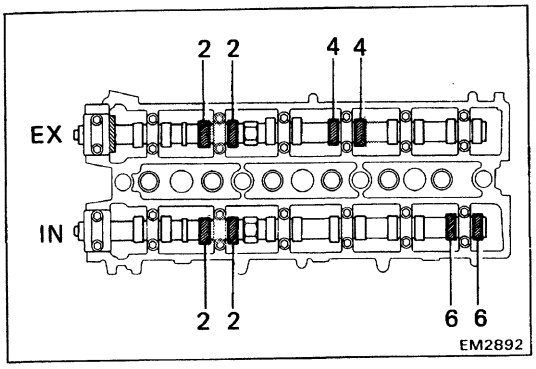
(b) Turn the crankshaft pulley 2l3 revolution (2400) and check the clearance of No.3 (IN) and No.5 (IN) and No. 3 (EX) and No. 6 (EX) valves.

HINT: Check that the valve lifters on the No.3 cylinder are loose.

- Measure the valve clearance. (See procedure in step (a))



EM2891



(c) Turn the crankshaft pulley 2l3 revolution (2400) and check the clearance of No.2 (IN) and No.6 (IN) and No. 2 (EX) and No.4 (EX) valves.

HINT: Check that the valve lifters on the No.2 cylinder are loose.

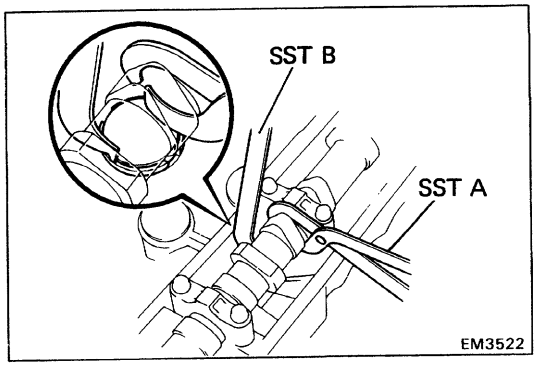
- Measure the valve clearance. [See procedure in step (a)]

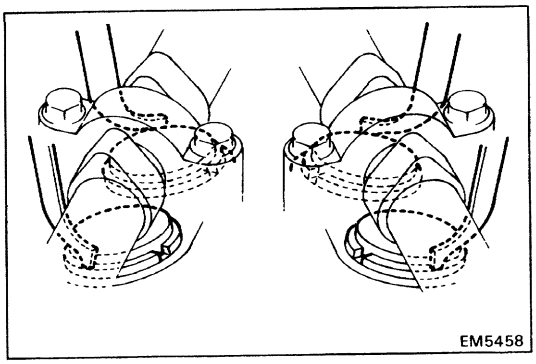
9. ADJUST VALVE CLEARANCE

(a) Remove the adjusting shim.

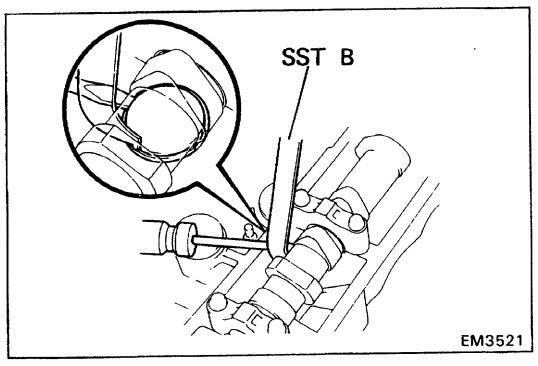
- Turn the crankshaft to position the cam lobe of the camshaft on the adjusting valve upward.
- Position the valve lifter notch so that the shim can be removed with a small screwdriver.
- Using SST (A), press down the valve lifter and place SST (B) between the camshaft and valve lifter. Remove SST (A).
  SST 09248–55010

HINT: For easy removal of the shim, when positioning SST (B), set it on the lifter so there is space enough to be able to remove the shim.



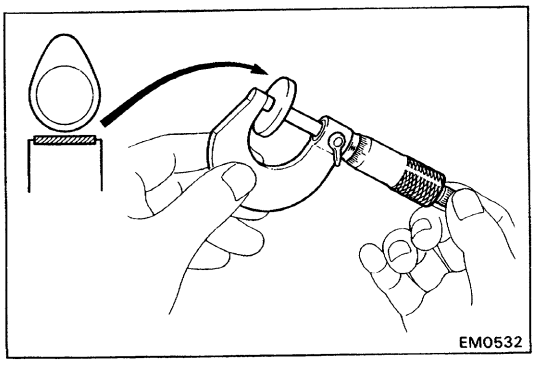


- Remove the adjusting shim with a small screw driver and magnetic finger.



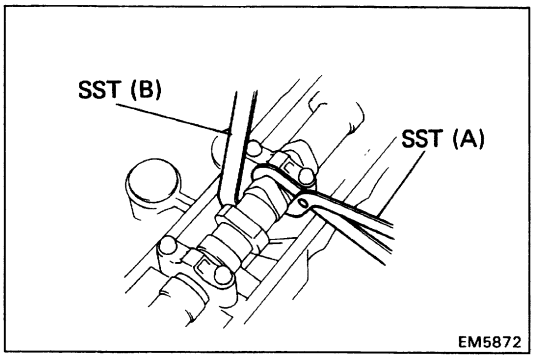
(b) Determine the replacement adjusting shim size by using the following Formula or Charts:

- Using a micrometer, measure the thickness of the shim which was removed.
- Calculate the thickness of the new shim so that the valve clearance comes within specified value
  T ..... Thickness of used shim
  A ..... Measured valve clearance
  N ..... Thickness of new shim
  Intake N = T + (A – 0.20 mm (0.0079 in.))
  Exhaust N = T + (A – 0.25 mm (0.0098 in.))



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

HINT: Shims are available in –seventeen sizes, in increments of 0.05 mm (0.0020 in.), from 2.50 mm (0.0984 in.) to 3.30 mm (0.1299 in.).



(c) Install the new adjusting shim.

- Place the new adjusting shim on the valve lifter.
- Using SST (A), press down the valve lifter and remove SST (B).
  SST 09248–55010

(d) Recheck the valve clearance.

10. INSTALL CYLINDER HEAD COVERS
(See step 4 on pages EM–47, 48)

11. CONNECT HIGH–TENSION CORDS

12. INSTALL AIR INTAKE CONNECTOR, VACUUM TRANSMITTING PIPE AND BRACKET

13. INSTALL ACCELERATOR LINK

14. INSTALL PCV PIPE AND HOSES

15. INSTALL NO. 1 AIR CLEANER HOSE WITH AIR CONNECTOR PIPE

Adjusting Shim Selection Chart
INTAKE

Measured Clearance (mm)	Installed Shim Thickness (mm)																																																								
	2.500	2.525	2.550	2.575	2.600	2.620	2.625	2.640	2.650	2.660	2.675	2.680	2.700	2.720	2.725	2.740	2.750	2.760	2.775	2.780	2.800	2.820	2.825	2.840	2.850	2.860	2.875	2.880	2.900	2.920	2.925	2.940	2.950	2.960	2.975	2.980	3.000	3.020	3.025	3.040	3.050	3.060	3.075	3.080	3.100	3.120	3.125	3.140	3.150	3.160	3.175	3.180	3.200	3.225	3.250	3.275	3.300
0.000−0.009											02	02	02	04	04	04	04	04	06	06	06	08	08	08	08	08	10	10	10	12	12	12	12	12	14	14	14	16	16	16	16	16	18	18	18	20	20	20	20	20	22	22	22	24	24	26	26
0.010−0.025										02	02	02	02	04	04	04	04	06	06	06	06	08	08	08	08	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	26	26
0.026−0.029									02	02	02	02	04	04	04	04	06	06	06	06	08	08	08	08	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	26	26	28
0.030−0.040								02	02	02	02	02	04	04	04	04	06	06	06	06	08	08	08	08	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	26	26	28
0.041−0.050								02	02	02	02	02	04	04	04	06	06	06	06	06	08	08	08	10	10	10	10	10	12	12	12	14	14	14	14	14	16	16	16	18	18	18	18	18	20	20	20	22	22	22	22	22	24	24	26	26	28
0.051−0.070						02	02	02	02	02	04	04	04	06	06	06	06	06	08	08	08	10	10	10	10	10	12	12	12	14	14	14	14	14	16	16	16	18	18	18	18	18	20	20	20	22	22	22	22	22	24	24	24	26	26	28	28
0.071−0.075					02	02	02	02	02	04	04	04	04	06	06	06	06	08	08	08	08	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	28	28
0.076−0.090					02	02	02	02	04	04	04	04	06	06	06	06	08	08	08	08	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	28	28	30
0.091−0.100					02	02	02	04	04	04	04	04	06	06	06	08	08	08	08	08	10	10	10	12	12	12	12	12	14	14	14	16	16	16	16	16	18	18	18	20	20	20	20	20	22	22	22	24	24	24	24	24	26	26	28	28	30
0.101−0.120				02	02	04	04	04	04	04	06	06	06	08	08	08	08	08	10	10	10	12	12	12	12	12	14	14	14	16	16	16	16	16	18	18	18	20	20	20	20	20	22	22	22	24	24	24	24	24	26	26	26	28	28	30	30
0.121−0.125			02	02	02	04	04	04	04	06	06	06	06	08	08	08	08	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	30	30
0.126−0.140			02	02	04	04	04	04	06	06	06	06	08	08	08	08	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	30	30	32
0.141−0.149			02	02	04	04	04	06	06	06	06	06	08	08	08	10	10	10	10	10	12	12	12	14	14	14	14	14	16	16	16	18	18	18	18	18	20	20	20	22	22	22	22	22	24	24	24	26	26	26	26	26	28	28	30	30	32
0.150−0.250																																																									
0.251−0.270	04	06	06	08	08	10	10	10	10	10	12	12	12	14	14	14	14	14	16	16	16	18	18	18	18	18	20	20	20	22	22	22	22	22	24	24	24	26	26	26	26	26	28	28	28	30	30	30	30	30	32	32	32	34	34
0.271−0.275	04	06	06	08	08	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34
0.276−0.290	06	06	08	08	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34
0.291−0.300	06	06	08	08	10	10	10	12	12	12	12	12	14	14	14	16	16	16	16	16	18	18	18	20	20	20	20	20	22	22	22	24	24	24	24	24	26	26	26	28	28	28	28	28	30	30	30	32	32	32	32	32	34	34
0.301−0.320	06	08	08	10	10	12	12	12	12	12	14	14	14	16	16	16	16	16	18	18	18	20	20	20	20	20	22	22	22	24	24	24	24	24	26	26	26	28	28	28	28	28	30	30	30	32	32	32	32	32	34	34	34
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0.326−0.340	08	08	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.341−0.350	08	08	10	10	12	12	12	14	14	14	14	14	16	16	16	18	18	18	18	18	20	20	20	22	22	22	22	22	24	24	24	26	26	26	26	26	28	28	28	30	30	30	30	30	32	32	32	34	34	34	34
0.351−0.370	08	10	10	12	12	14	14	14	14	14	16	16	16	18	18	18	18	18	20	20	20	22	22	22	22	22	24	24	24	26	26	26	26	26	28	28	28	30	30	30	30	30	32	32	32	34	34	34	34	34
0.371−0.375	08	10	10	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.376−0.390	10	10	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.391−0.400	10	10	12	12	14	14	14	16	16	16	16	16	18	18	18	20	20	20	20	20	22	22	22	24	24	24	24	24	26	26	26	28	28	28	28	28	30	30	30	32	32	32	32	32	34	34	34
0.401−0.420	10	12	12	14	14	16	16	16	16	16	18	18	18	20	20	20	20	20	22	22	22	24	24	24	24	24	26	26	26	28	28	28	28	28	30	30	30	32	32	32	32	32	34	34	34
0.421−0.425	10	12	12	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.426−0.440	12	12	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.441−0.450	12	12	14	14	16	16	16	18	18	18	18	18	20	20	20	22	22	22	22	22	24	24	24	26	26	26	26	26	28	28	28	30	30	30	30	30	32	32	32	34	34	34	34	34
0.451−0.470	12	14	14	16	16	18	18	18	18	18	20	20	20	22	22	22	22	22	24	24	24	26	26	26	26	26	28	28	28	30	30	30	30	30	32	32	32	34	34	34	34	34
0.471−0.475	12	14	14	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.476−0.490	14	14	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.491−0.500	14	14	16	16	18	18	18	20	20	20	20	20	22	22	22	24	24	24	24	24	26	26	26	28	28	28	28	28	30	30	30	32	32	32	32	32	34	34	34
0.501−0.520	14	16	16	18	18	20	20	20	20	20	22	22	22	24	24	24	24	24	26	26	26	28	28	28	28	28	30	30	30	32	32	32	32	32	34	34	34
0.521−0.525	14	16	16	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.526−0.540	16	16	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.541−0.550	16	16	18	18	20	20	20	22	22	22	22	22	24	24	24	26	26	26	26	26	28	28	28	30	30	30	30	30	32	32	32	34	34	34	34	34
0.551−0.570	16	18	18	20	20	22	22	22	22	22	24	24	24	26	26	26	26	26	28	28	28	30	30	30	30	30	32	32	32	34	34	34	34	34
0.571−0.575	16	18	18	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.576−0.590	18	18	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.591−0.600	18	18	20	20	22	22	22	24	24	24	24	24	26	26	26	28	28	28	28	28	30	30	30	32	32	32	32	32	34	34	34
0.601−0.620	18	20	20	22	22	24	24	24	24	24	26	26	26	28	28	28	28	28	30	30	30	32	32	32	32	32	34	34	34
0.621−0.625	18	20	20	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.626−0.640	20	20	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.641−0.650	20	20	22	22	24	24	24	26	26	26	26	26	28	28	28	30	30	30	30	30	32	32	32	34	34	34	34	34
0.651−0.670	20	22	22	24	24	26	26	26	26	26	28	28	28	30	30	30	30	30	32	32	32	34	34	34	34	34
0.671−0.675	20	22	22	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.676−0.690	22	22	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.691−0.700	22	22	24	24	26	26	26	28	28	28	28	28	30	30	30	32	32	32	32	32	34	34	34
0.701−0.720	22	24	24	26	26	28	28	28	28	28	30	30	30	32	32	32	32	32	34	34	34
0.721−0.725	22	24	24	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.726−0.740	24	24	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.741−0.750	24	24	26	26	28	28	28	30	30	30	30	30	32	32	32	34	34	34	34
0.751−0.770	24	26	26	28	28	30	30	30	30	30	32	32	32	34	34	34	34	34
0.771−0.775	24	26	26	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.776−0.790	26	26	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.791−0.800	26	26	28	28	30	30	30	32	32	32	32	32	34	34	34
0.801−0.820	26	28	28	30	30	32	32	32	32	32	34	34	34
0.821−0.825	26	28	28	30	30	32	32	32	32	34	34	34	34
0.826−0.840	28	28	30	30	32	32	32	32	34	34	34	34
0.841−0.850	28	28	30	30	32	32	32	34	34	34	34	34
0.851−0.870	28	30	30	32	32	34	34	34	34	34
0.871−0.875	28	30	30	32	32	34	34	34	34
0.876−0.890	30	30	32	32	34	34	34	34
0.891−0.900	30	30	32	32	34	34	34
0.901−0.925	30	32	32	34	34
0.926−0.950	32	32	34	34
0.951−0.975	32	34	34
0.976−1.000	34	34
1.001−1.025	34

Shim thickness mm (in.)

Shim No.	Thickness	Shim No.	Thickness
02	2.500 (0.0984)	20	2.950 (0.1161)
04	2.550 (0.1004)	22	3.000 (0.1181)
06	2.600 (0.1024)	24	3.050 (0.1201)
08	2.650 (0.1043)	26	3.100 (0.1220)
10	2.700 (0.1063)	28	3.150 (0.1240)
12	2.750 (0.1083)	30	3.200 (0.1260)
14	2.800 (0.1102)	32	3.250 (0.1280)
16	2.850 (0.1122)	34	3.300 (0.1299)
18	2.900 (0.1142)		

Intake valve clearance (Cold):

0.15 – 0.25 mm (0.006 – 0.010 in.)

EXAMPLE: The 2.800 mm (0.1 102 in.) shim is installed and measured clearance is 0.450 mm (0.0177 in.). Replace the 2.800 mm (0.1 102 in.) shim with No. 24 shim.

Adjusting Shim Selection Chart
EXHAUST

Measured Clearance (mm)	Installed Shim Thickness (mm)																																																							
	2.500	2.525	2.550	2.575	2.600	2.620	2.625	2.640	2.650	2.660	2.675	2.680	2.700	2.720	2.725	2.740	2.750	2.760	2.775	2.780	2.800	2.820	2.825	2.840	2.850	2.860	2.875	2.880	2.900	2.920	2.925	2.940	2.950	2.960	2.975	2.980	3.000	3.020	3.025	3.040	3.050	3.060	3.075	3.080	3.100	3.120	3.125	3.140	3.150	3.160	3.175	3.180	3.200	3.225	3.250	3.275	3.300
0.000 – 0.009														02	02	02	02	02	04	04	04	06	06	06	06	06	08	08	08	10	10	10	10	10	12	12	12	14	14	14	14	14	16	16	16	18	18	18	18	18	20	20	20	22	22	24	24
0.010 – 0.025														02	02	02	02	04	04	04	06	06	06	06	06	08	08	08	10	10	10	10	10	12	12	12	14	14	14	14	14	16	16	16	18	18	18	18	18	20	20	20	22	22	22	24	26
0.026 – 0.040													02	02	02	02	04	04	04	04	06	06	06	06	08	08	08	08	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	24	24	26
0.041 – 0.050												02	02	02	02	04	04	04	04	06	06	06	06	08	08	08	08	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	24	24	26
0.051 – 0.070											02	02	02	04	04	04	04	04	06	06	06	08	08	08	08	08	10	10	10	12	12	12	12	12	14	14	14	16	16	16	16	16	18	18	18	20	20	20	20	20	22	22	22	24	24	26	26
0.071 – 0.090									02	02	02	02	04	04	04	04	06	06	06	06	08	08	08	08	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	26	26	28
0.091 – 0.100								02	02	02	02	04	04	04	04	06	06	06	06	08	08	08	08	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	26	26	28
0.101 – 0.120						02	02	02	02	02	04	04	04	06	06	06	06	06	08	08	08	10	10	10	10	10	12	12	12	14	14	14	14	14	16	16	16	18	18	18	18	18	20	20	20	22	22	22	22	22	24	24	24	26	26	28	28
0.121 – 0.140					02	02	02	02	04	04	04	04	06	06	06	06	08	08	08	08	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	28	28	30
0.141 – 0.150					02	02	02	04	04	04	04	06	06	06	06	08	08	08	08	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	28	28	30
0.151 – 0.170				02	02	04	04	04	04	04	06	06	06	08	08	08	08	08	10	10	10	12	12	12	12	12	14	14	14	16	16	16	16	16	18	18	18	20	20	20	20	20	22	22	22	24	24	24	24	24	26	26	26	28	28	30	30
0.171 – 0.190			02	02	04	04	04	04	06	06	06	06	08	08	08	08	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	30	30	32
0.191 – 0.199			02	02	04	04	04	06	06	06	06	08	08	08	08	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	30	30	32
0.200 – 0.300																																																									
0.301 – 0.320	04	06	06	08	08	10	10	10	10	10	12	12	12	14	14	14	14	14	16	16	16	18	18	18	18	18	20	20	20	22	22	22	22	22	24	24	24	26	26	26	26	26	28	28	28	30	30	30	30	30	32	32	32	34	34
0.321 – 0.325	04	06	06	08	08	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34
0.326 – 0.340	06	06	08	08	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34
0.341 – 0.350	06	06	08	08	10	10	10	12	12	12	12	12	14	14	14	16	16	16	16	16	18	18	18	20	20	20	20	20	22	22	22	24	24	24	24	24	26	26	26	28	28	28	28	28	30	30	30	32	32	32	32	32	34	34
0.351 – 0.370	06	08	08	10	10	12	12	12	12	12	14	14	14	16	16	16	16	16	18	18	18	20	20	20	20	20	22	22	22	24	24	24	24	24	26	26	26	28	28	28	28	28	30	30	30	32	32	32	32	32	34	34	34
0.371 – 0.375	06	08	08	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.376 – 0.390	08	08	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.391 – 0.400	08	08	10	10	12	12	12	14	14	14	14	14	16	16	16	18	18	18	18	18	20	20	20	22	22	22	22	22	24	24	24	26	26	26	26	26	28	28	28	30	30	30	30	30	32	32	32	34	34	34	34	34
0.401 – 0.420	08	10	10	12	12	14	14	14	14	14	16	16	16	18	18	18	18	18	20	20	20	22	22	22	22	22	24	24	24	26	26	26	26	26	28	28	28	30	30	30	30	30	32	32	32	34	34	34	34	34
0.421 – 0.425	08	10	10	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.426 – 0.440	10	10	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.441 – 0.450	10	10	12	12	14	14	14	16	16	16	16	16	18	18	18	20	20	20	20	20	22	22	22	24	24	24	24	24	26	26	26	28	28	28	28	28	30	30	30	32	32	32	32	32	34	34	34
0.451 – 0.470	10	12	12	14	14	16	16	16	16	16	18	18	18	20	20	20	20	20	22	22	22	24	24	24	24	24	26	26	26	28	28	28	28	28	30	30	30	32	32	32	32	32	34	34	34
0.471 – 0.475	10	12	12	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.476 – 0.490	12	12	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.491 – 0.500	12	12	14	14	16	16	16	18	18	18	18	18	20	20	20	22	22	22	22	22	24	24	24	26	26	26	26	26	28	28	28	30	30	30	30	30	32	32	32	34	34	34	34	34
0.501 – 0.520	12	14	14	16	16	18	18	18	18	18	20	20	20	22	22	22	22	22	24	24	24	26	26	26	26	26	28	28	28	30	30	30	30	30	32	32	32	34	34	34	34	34
0.521 – 0.525	12	14	14	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.526 – 0.540	14	14	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.541 – 0.550	14	14	16	16	18	18	18	20	20	20	20	20	22	22	22	24	24	24	24	24	26	26	26	28	28	28	28	28	30	30	30	32	32	32	32	32	34	34	34
0.551 – 0.570	14	16	16	18	18	20	20	20	20	20	22	22	22	24	24	24	24	24	26	26	26	28	28	28	28	28	30	30	30	32	32	32	32	32	34	34	34
0.571 – 0.575	14	16	16	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.576 – 0.590	16	16	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.591 – 0.600	16	16	18	18	20	20	20	22	22	22	22	22	24	24	24	26	26	26	26	26	28	28	28	30	30	30	30	30	32	32	32	34	34	34	34	34
0.601 – 0.620	16	18	18	20	20	22	22	22	22	22	24	24	24	26	26	26	26	26	28	28	28	30	30	30	30	30	32	32	32	34	34	34	34	34
0.621 – 0.625	16	18	18	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.626 – 0.640	18	18	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.641 – 0.650	18	18	20	20	22	22	22	24	24	24	24	24	26	26	26	28	28	28	28	28	30	30	30	32	32	32	32	32	34	34	34
0.651 – 0.670	18	20	20	22	22	24	24	24	24	24	26	26	26	28	28	28	28	28	30	30	30	32	32	32	32	32	34	34	34
0.671 – 0.675	18	20	20	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.676 – 0.690	20	20	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.691 – 0.700	20	20	22	22	24	24	24	26	26	26	26	26	28	28	28	30	30	30	30	30	32	32	32	34	34	34	34	34
0.701 – 0.720	20	22	22	24	24	26	26	26	26	26	28	28	28	30	30	30	30	30	32	32	32	34	34	34	34	34
0.721 – 0.725	20	22	22	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.726 – 0.740	22	22	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.741 – 0.750	22	22	24	24	26	26	26	28	28	28	28	28	30	30	30	32	32	32	32	32	34	34	34
0.751 – 0.770	22	24	24	26	26	28	28	28	28	28	30	30	30	32	32	32	32	32	34	34	34
0.771 – 0.775	22	24	24	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.776 – 0.790	24	24	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.791 – 0.800	24	24	26	26	28	28	28	30	30	30	30	30	32	32	32	34	34	34	34	34
0.801 – 0.820	24	26	26	28	28	30	30	30	30	30	32	32	32	34	34	34	34	34
0.821 – 0.825	24	26	26	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.826 – 0.840	26	26	28	28	30	30	30	30	32	32	32	32	34	34	34	34
0.841 – 0.850	26	26	28	28	30	30	30	32	32	32	32	32	34	34	34
0.851 – 0.870	26	28	28	30	30	32	32	32	32	32	34	34	34
0.871 – 0.875	26	28	28	30	30	32	32	32	32	34	34	34	34
0.876 – 0.890	28	28	30	30	32	32	32	32	34	34	34	34
0.891 – 0.900	28	28	30	30	32	32	32	34	34	34	34	34
0.901 – 0.925	28	30	30	32	32	34	34	34	34
0.926 – 0.950	30	30	32	32	34	34	34
0.951 – 0.975	30	32	32	34	34
0.976 – 1.000	32	32	34	34
1.001 – 1.025	32	34	34
1.026 – 1.050	34	34
1.051 – 1.075	34

Shim thickness mm (in.)

Shim No.	Thickness	Shim No.	Thickness
02	2.500 (0.0984)	20	2.950 (0.1161)
04	2.550 (0.1004)	22	3.000 (0.1181)
06	2.600 (0.1024)	24	3.050 (0.1201)
08	2.650 (0.1043)	26	3.100 (0.1220)
10	2.700 (0.1063)	28	3.150 (0.1240)
12	2.750 (0.1083)	30	3.200 (0.1260)
14	2.800 (0.1102)	32	3.250 (0.1280)
16	2.850 (0.1122)	34	3.300 (0.1299)
18	2.900 (0.1142)		

Exhaust valve clearance (Cold):

0.20 – 0.30 mm (0.008 – 0.012 in.)

EXAMPLE: The 2.800 mm (0.1 102 in.) shim is installed and measured clearance is 0.450 mm (0.0177 in.). Replace the 2.800 mm (0.1 102 in.) shim with No.22 shim.

INSPECTION AND ADJUSTMENT OF IGNITION TIMING

(See steps 6 to 9 on pages IG–11, 12)

Ignition timing:

10°BTDC @ idle

(w/ Terminals TE1 and E1 connected)

IDLE AND/OR 2,500 RPM HC/CO CONCENTRATION CHECK METHOD

HINT: This check method is used only to determine whether or not the idle and/or 2,500 rpm HC/CO complies with regulations.

1. INITIAL CONDITIONS

(a) Air cleaner installed
(b) Engine at normal operating temperature
(c) All pipes and hoses of air induction system connected
(d) All accessories switched OFF
(e) All vacuum lines properly connected

HINT: All vacuum hoses for EGR system etc. should be properly connected.

(f) EFI system wiring connectors fully plugged
(g) Ignition timing set correctly
(h) Transmission in neutral range
(i) Tachometer and HC/CO meter calibrated and at hand

2. START ENGINE

3. RACE ENGINE AT 2,500 RPM FOR APPROX. 2 MINUTES

4. INSERT TESTING PROBE OF HC/CO METER INTO TAIL PIPE AT 40 cm (1.3 ft)

5. CHECK HC/CO CONCENTRATION AT IDLE AND/OR 2,500 RPM

Complete the measuring within three minutes.

HINT: When performing the 2 mode 12,500 rpm and idle) test, follow the measurement order prescribed by the regulations.

If the HC/CO concentration at 2,500 rpm does not comply with regulations, try the following procedure.

Race the engine again at 2,500 rpm for approx. 1 minute, and quickly repeat steps 4 and 5 above. This may correct the problem.