

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-4](#))

INSPECTION OF AIR FILTER

(See step 3 on page [MA-5](#))

INSPECTION OF BATTERY

(See steps 1 and 2, on page [CH-3](#))

Standard specific gravity:

1.25 – 1.27 when fully charged at 20°C (68°F)

INSPECTION OF HIGH-TENSION CORDS

(See page [IG-6](#))

Maximum resistance: 25 k Ω per cord

INSPECTION OF SPARK PLUGS

(See page [IG-6](#))

Recommended spark plug: ND W16EXR-U
NGK BPR5EY

Correct electrode gap: 0.8 mm (0.031 in.)

INSPECTION OF ALTERNATOR DRIVE BELT

(See page [CH-3](#))

Drive belt tension:

New belt 145 $\pm$ 25 lb

Used belt 100 $\pm$ 20 lb

INSPECTION AND ADJUSTMENT OF VALVE CLEARANCE

HINT: Inspect and adjust the valve clearance after engine has reached normal operating temperature.

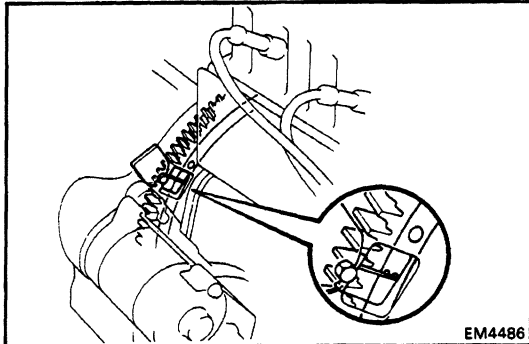
1. REMOVE AIR CLEANER HOSE

2. REMOVE CYLINDER HEAD COVER

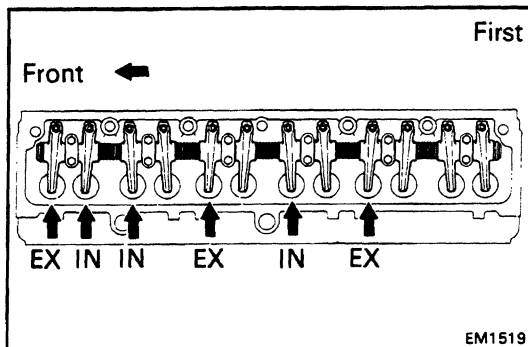
(See step 21 on page [EM-16](#))

3. SET NO.1 CYLINDER TO TDC/COMPRESSION

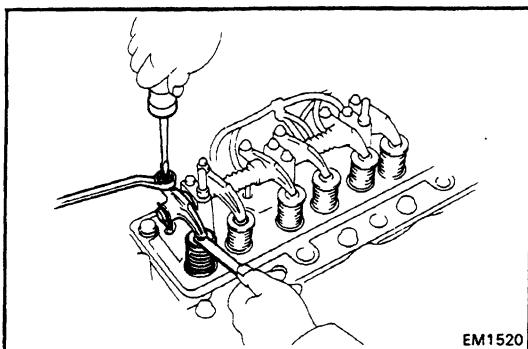
- Align the TDC mark of the drive plate with the timing pointer by turning the crankshaft clockwise with a wrench.
- Check that the rocker arms on the No. 1 cylinder are loose and rocker arms on the No. 6 are tight. If not, turn the crankshaft one revolution (360°) and align the mark as above.



EM4486



EM1519



EM1520

4. INSPECT AND ADJUST VALVE CLEARANCE

- Measure only those valves indicated by arrows.

Valve clearance (Hot):

Intake 0.20 mm (0.008 in.)

Exhaust 0.35 mm (0.014 in.)

- Using a thickness gauge, measure the valve clearance between the valve stem and rocker arm. Loosen the lock nut and turn the adjusting screw to set the proper clearance. Hold the adjusting screw in position and tighten the lock nut.
- Recheck the valve clearance. The thickness gauge should slide with a very slight drag.

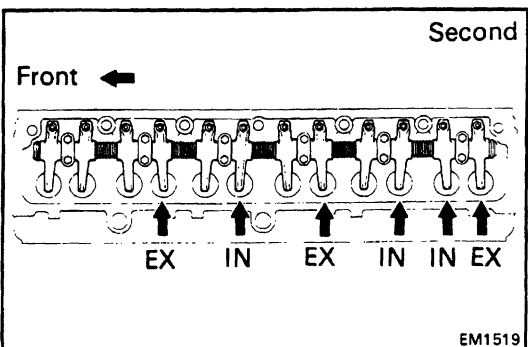
- Turn the crankshaft pulley one revolution (360°) and align the mark as above.

Adjust only the valves indicated by arrows.

5. INSTALL CYLINDER HEAD COVER

(See step 6 on page [EM-31](#))

6. INSTALL AIR CLEANER HOSE



EM1519

INSPECTION AND ADJUSTMENT OF IGNITION TIMING

(See steps 10 to 14 on page [IG-11](#))

Ignition timing:

7° BTDC @ idle

(w/Terminals TE1 and E1 connected)

IDLE AND OR 2,500 RPM HCCO CONCENTRATION CHECK METHOD

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

1. INITIAL CONDITIONS

- (a) Engine at normal operating temperature
- (b) Air cleaner installed
- (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
- (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 HC/CO METER TESTING PROBE INTO TAIL PIPE AT LEAST 40 cm (1.3ft)

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

Complete the measuring within three minutes.

HINT:

When performing the 2 mode (2,500 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 step 4 and 5 above. This may correct the problem.

Troubleshooting

If the HC/CO concentration does not comply with regulations, perform troubleshooting in the order given below.

1. Check oxygen sensor operation.

(See page [FI-80](#))

2. See the table below for possible cause, and then inspect and correct the applicable causes if necessary.

HC	CO	Symptoms	Cause
High	Normal	Rough idle	1. Faulty ignition: • Incorrect timing • Fouled, shorted or improperly gapped plugs • Open or crossed high-tension cords • Cracked distributor cap 2. Incorrect valve clearance 3. Leaky EGR valve 4. Leaky intake and exhaust valves 5. Leaky cylinder
High	Low	Rough idle (Fluctuating HC reading)	1. Vacuum leak: • PCV hose • EGR valve • Intake manifold • Air intake chamber • Throttle body • ISC valve • Brake booster line 2. Lean mixture causing misfire
High	High	Rough idle (Black smoke from exhaust)	1. Restricted air filter 2. Faulty EFI system • Faulty pressure regulator • Clogged fuel return line • Defective water temp. sensor • Defective air temp. sensor • Faulty ECU • Faulty injector • Faulty cold start injector • Faulty throttle position sensor Air flow meter