

## 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 2500 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)

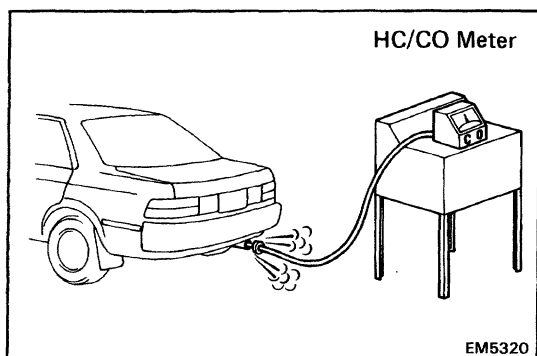
### 5. CHECK HC/CO CONCENTRATION AT IDLE AND/OR 2,500 RPM

Complete the measuring within three minutes.

HINT: When performing the 2 mode (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 steps 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-82](#))

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

HC	CO	Symptoms	Causes
High	Normal	Rough idle	<ol style="list-style-type: none"> <li>1. Faulty ignition: <ul style="list-style-type: none"> <li>• Incorrect timing</li> <li>• Fouled, shorted or improperly gapped plugs</li> <li>• Open or crossed high-tension cords</li> <li>• Cracked distributor cap</li> </ul> </li> <li>2. Incorrect valve clearance</li> <li>3. Leaky EGR valve</li> <li>4. Leaky intake and exhaust valves</li> <li>5. Leaky cylinder</li> </ol>
High	Low	Rough idle (Fluctuating HC reading)	<ol style="list-style-type: none"> <li>1. Vacuum leak: <ul style="list-style-type: none"> <li>• PCV hose</li> <li>• EGR valve</li> <li>• Intake manifold (Air intake chamber)</li> <li>• Throttle body</li> <li>• ISC valve</li> <li>• Brake booster line</li> </ul> </li> <li>2. Lean mixture causing misfire</li> </ol>
High	High	Rough idle (Black smoke from exhaust)	<ol style="list-style-type: none"> <li>1. Restricted air filter</li> <li>2. Faulty EFI system <ul style="list-style-type: none"> <li>• Faulty pressure regulator</li> <li>• Clogged fuel return line</li> <li>• Defective water temp. sensor</li> <li>• Defective air temp. sensor</li> <li>• Faulty engine and ECT ECU</li> <li>• Faulty injector</li> <li>• Faulty cold start injector</li> <li>• Faulty throttle position sensor</li> <li>• Faulty air flow meter</li> </ul> </li> </ol>