

IDLE AND OR 2500 RPM CO HC CHECK

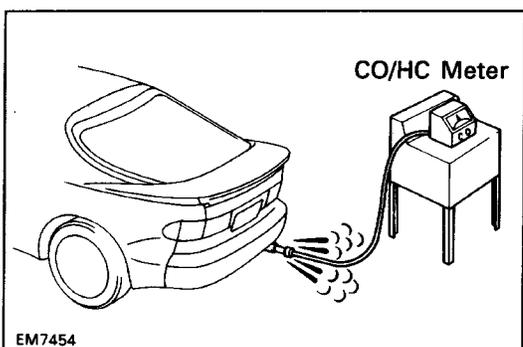
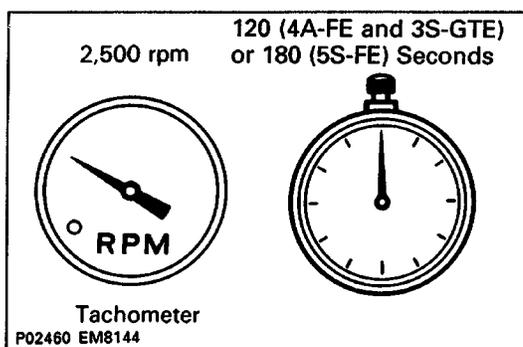
HINT: This check is used only to determine whether or not the idle CO/HC complies with regulations.

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 systems, etc. should be properly connected.
- (f) MFI and SFI systems wiring connectors fully plugged
- (g) Ignition timing set correctly
- (h) Transmission in neutral position
- (i) Tachometer and CO/HC meter calibrated by hand

2. START ENGINE

3. RACE ENGINE AT 2,500 RPM FOR APPROX. 120 (4A-FE AND 3S-GTE) OR 180 (5S-FE) SECONDS



4. INSERT CO/HC METER TESTING PROBE INTO TAILPIPE AT LEAST 40 cm (1.3 ft) DURING IDLING

5. IMMEDIATELY CHECK CO/HC 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 applicable local regulations.

(4A-FE and 3S-GTE)

If the CO/HC concentration at 2,500 rpm does not conform to 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 CO/HC concentration does not comply with regulations, perform troubleshooting in the order given below.

(a) Check oxygen sensor operation.

(See page [FI-237](#))

(b) See the table below for possible causes, and then inspect and correct the applicable causes if necessary.

CO	HC	Problems	Causes
Normal	High	Rough idle	<ol style="list-style-type: none"> Faulty ignitions: <ul style="list-style-type: none"> Incorrect timing Fouled, shorted or improperly gapped plugs 10 Open or crossed high-tension cords Cracked distributor cap Incorrect valve clearance Leaky EGR valve Leaky intake and exhaust valves Leaky cylinder
Low	High	Rough idle (Fluctuating HC reading)	<ol style="list-style-type: none"> Vacuum leaks: <ul style="list-style-type: none"> PCV hoses 10 EGR valve Intake manifold T-VIS valve (3S-GTE) Throttle body IAC valve (3S-GTE and 5S-FE) Brake booster line <ol style="list-style-type: none"> Lean mixture causing misfire
High	High	Rough idle (Black smoke from exhaust)	<ol style="list-style-type: none"> Restricted air filter Faulty MFI and SFI systems: <ul style="list-style-type: none"> Faulty pressure regulator Clogged fuel return line Defective engine coolant temp. sensor Defective air temp. sensor Faulty ECM Faulty injectors Faulty cold start injector (3S-GTE) Faulty throttle position sensor Vacuum sensor (4A-FE and 5S-FE) Volume air flow meter (3S-GTE)