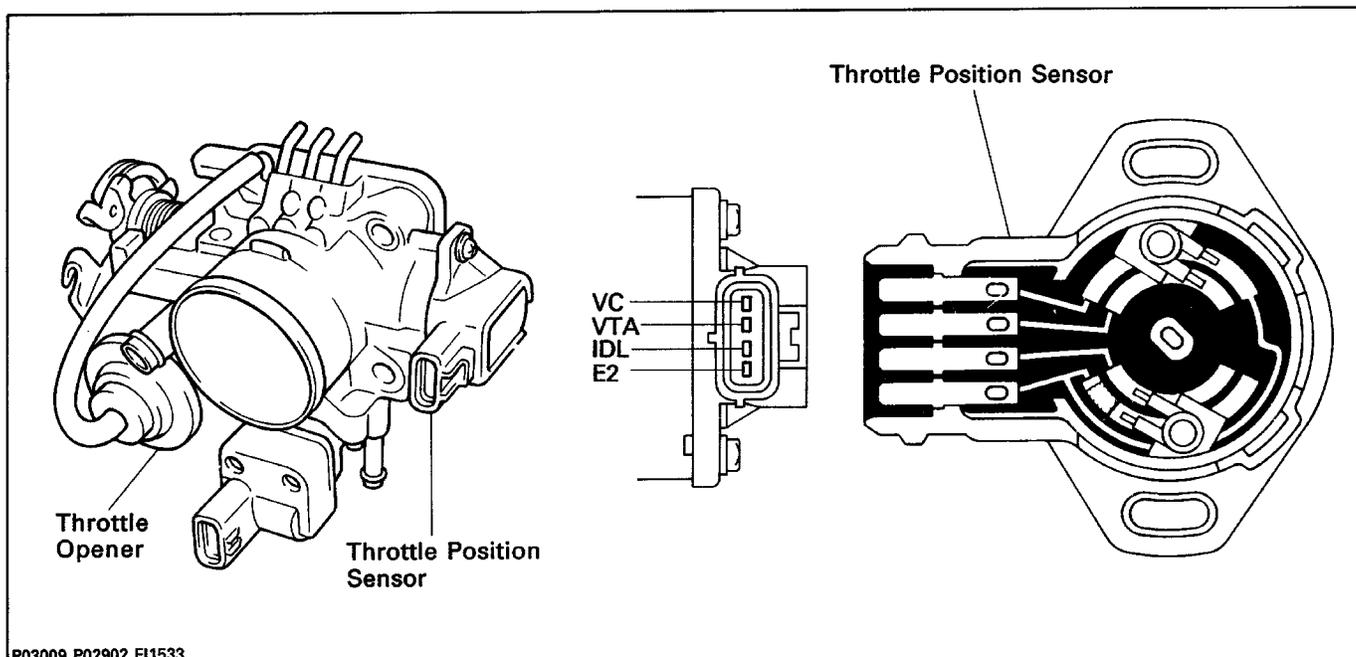


# Throttle Body (5S-FE)

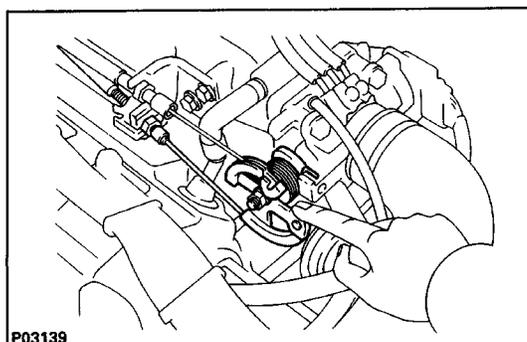


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## ON-VEHICLE INSPECTION

### 1. INSPECT THROTTLE BODY

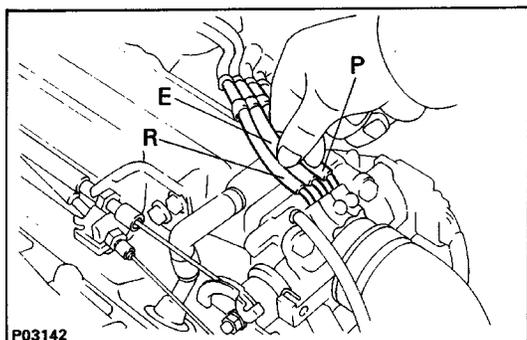
(a) Check that the throttle linkage moves smoothly.



P03139

(b) Check the vacuum at each port.

- Start the engine.
- Check the vacuum with your finger.

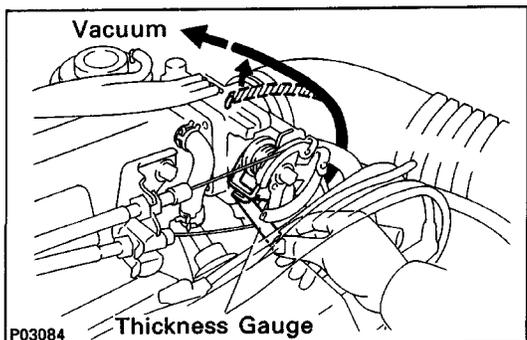


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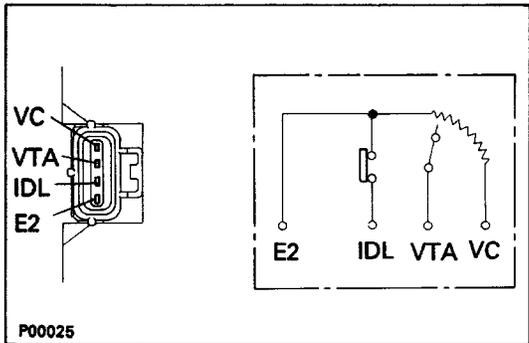
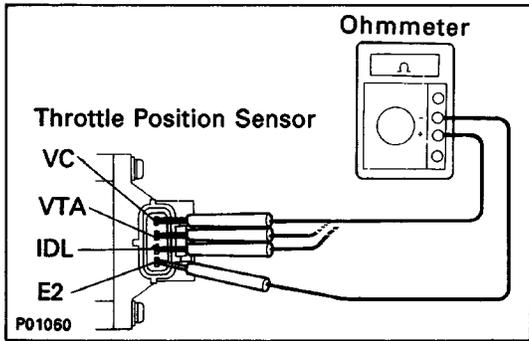
Port name	At idle	Other than idle
P	No vacuum	Vacuum
E	No vacuum	Vacuum
R	No vacuum	No vacuum

### 2. INSPECT THROTTLE POSITION SENSOR

- Apply vacuum to the throttle opener.
- Disconnect the sensor connector.
- Insert a thickness gauge between the throttle stop screw and stop lever.



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(d) Using an ohmmeter, measure the resistance between each terminal.

Clearance between lever and stop screw	Between terminals	Resistance
0 mm (0 in.)	VTA - E2	0.2 - 5.7 kΩ
0.50 mm (0.020 in.)	IDL - E2	2.3 kΩ or less
0.70 mm (0.028 in.)	IDL - E2	Infinity
Throttle valve fully open	VTA - E2	2.0 - 10.2 kΩ
-	VC - E2	2.5 - 5.9 kΩ

(e) Reconnect the sensor connector.

### 3. INSPECT AND ADJUST THROTTLE OPENER

#### A. Warm up engine

Allow the engine to warm up to normal operating temperature.

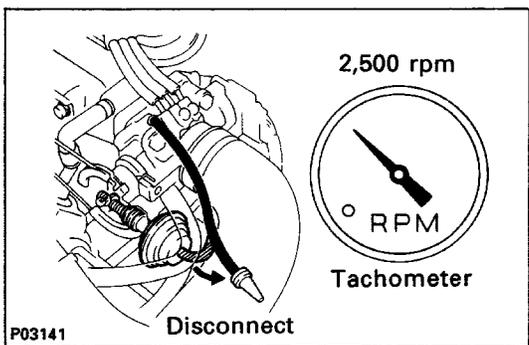
#### B. Check idle speed

Idle speed: **700 ± 50 rpm USA**

**750 ± 50 rpm CANADA**

#### C. Check and adjust throttle opener setting speed

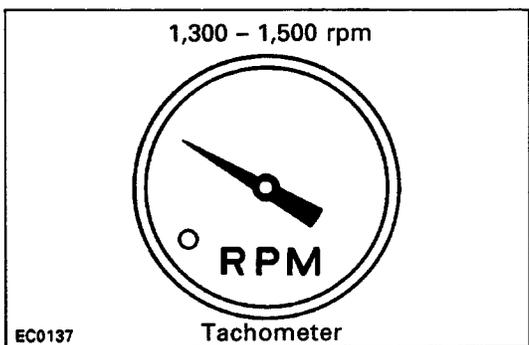
- Disconnect the vacuum hose from the throttle opener, and plug the hose end.
- Maintain the engine at 2,500 rpm.

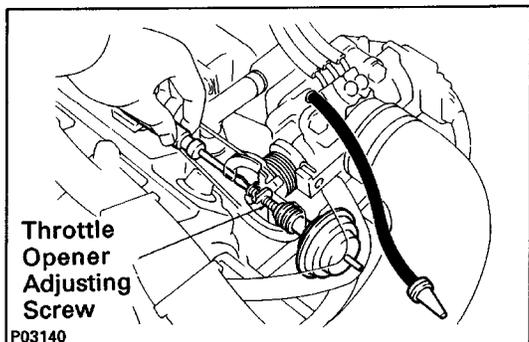


- Release the throttle valve.
- Check that the throttle opener is set.

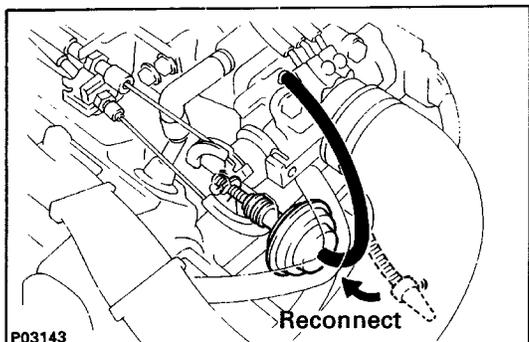
**Throttle opener setting speed:**

**1,300-1,500 rpm (w/ Cooling fan OFF)**





- (e) Adjust the throttle opener setting speed by turning the throttle opener adjusting screw.



- (f) Reconnect the vacuum hose to the throttle opener.

## REMOVAL OF THROTTLE BODY

### 1. DISCONNECT CABLE FROM NEGATIVE TERMINAL OF BATTERY

**CAUTION:** Work must be started after approx. 20 seconds or longer from the time the ignition switch is turned to the "LOCK" position and the negative (-) terminal cable is disconnected from the battery.

### 2. DRAIN ENGINE COOLANT (See page CO-6)

### 3. (A/T)

DISCONNECT THROTTLE CABLE FROM THROTTLE LINKAGE

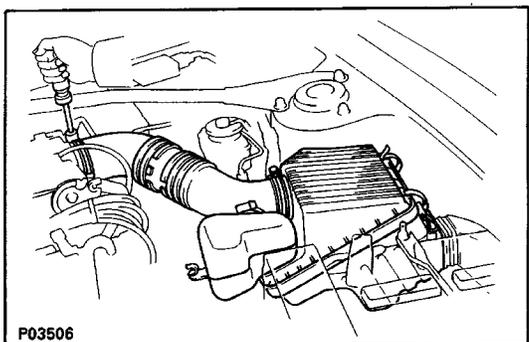
### 4. DISCONNECT ACCELERATOR CABLE FROM THROTTLE LINKAGE

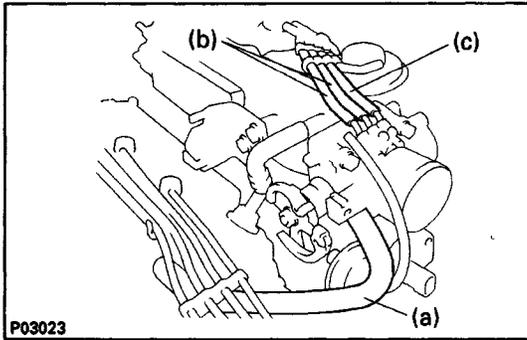
### 5. REMOVE AIR CLEANER CAP AND AIR CLEANER HOSE

- Disconnect the air intake temperature sensor connector.
- Disconnect the cruise control actuator cable from the clamp on the resonator.
- Loosen the air cleaner hose clamp bolt.
- Disconnect the four air cleaner cap clips.
- Disconnect the air cleaner hose from the throttle body, and remove the air cleaner cap together with the resonator and air cleaner hose.

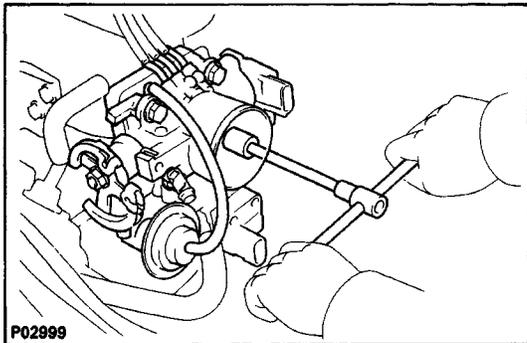
### 6. DISCONNECT THROTTLE POSITION SENSOR CONNECTOR

### 7. DISCONNECT IAC VALVE CONNECTOR

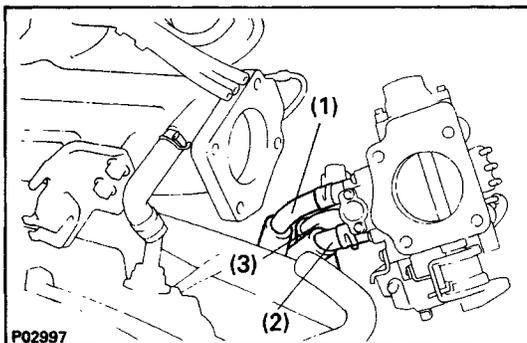


**8. DISCONNECT HOSES FROM THROTTLE BODY**

- (a) PCV hose
- (b) Two vacuum hoses from EGR vacuum modulator
- (c) Vacuum hoses from EVAP VSV

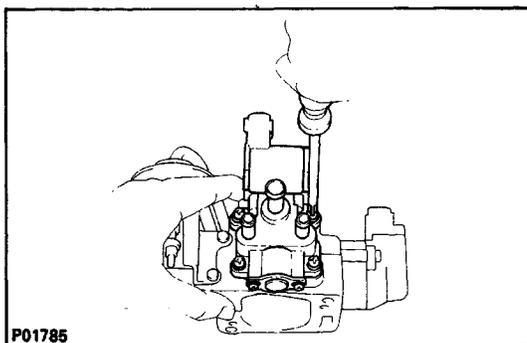
**9. REMOVE THROTTLE BODY**

- (a) Remove the four bolts, throttle body and gasket.



- (b) Disconnect the hoses from the throttle body, and remove the throttle body.

- (1) Water by-pass hose from water outlet
- (2) Water by-pass hose from water by-pass pipe
- (3) Air- hose from air tube

**10. IF NECESSARY, REMOVE IAC VALVE FROM THROTTLE BODY**

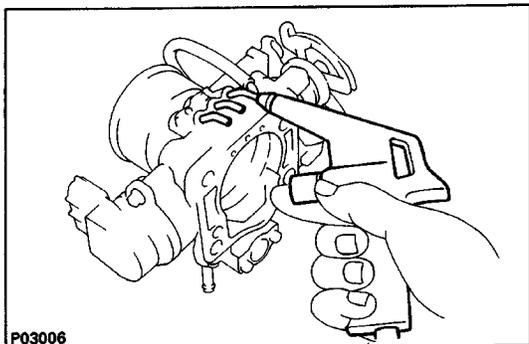
Remove the four screws, IAC valve and gasket.

## INSPECTION OF THROTTLE BODY

### 1. CLEAN THROTTLE BODY

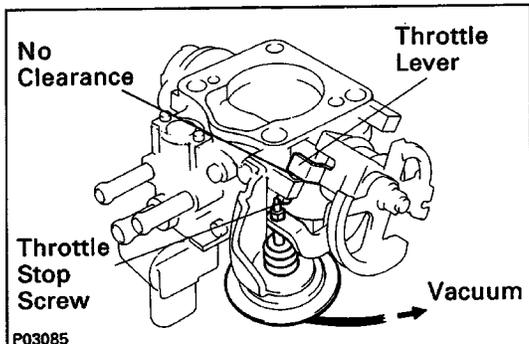
- (a) Using a soft brush and carburetor cleaner, clean the cast parts.
- (b) Using compressed air, clean all the passages and apertures.

**NOTICE:** To prevent deterioration, do not clean the throttle position sensor.



### 2. INSPECT THROTTLE VALVE

- (a) Apply vacuum to the throttle opener.
- (b) Check that there is no clearance between the throttle stop screw and throttle lever when the throttle valve is fully closed.

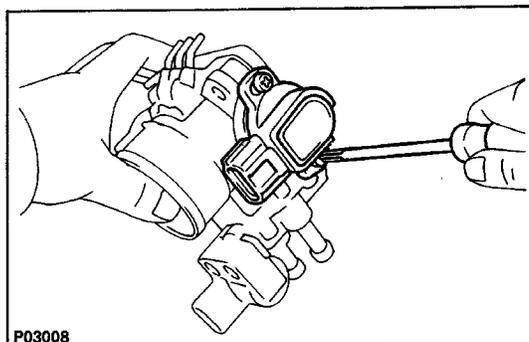


### 3. INSPECT THROTTLE POSITION SENSOR

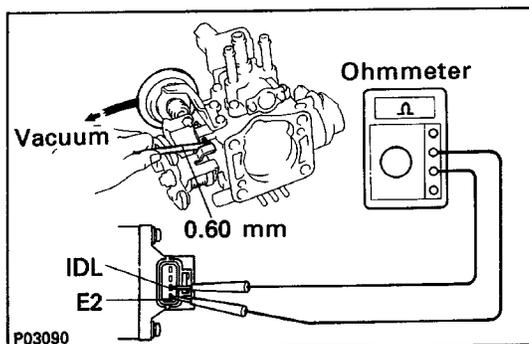
(See step 2 on page FI-199)

### 4. IF NECESSARY, ADJUST THROTTLE POSITION SENSOR

- (a) Loosen the two set screws of the sensor.

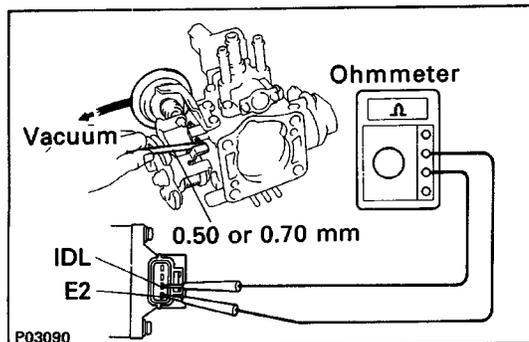


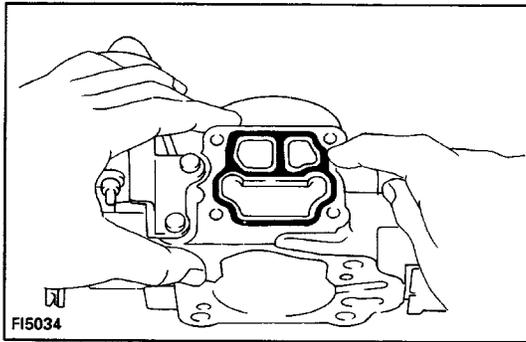
- (b) Apply vacuum to the throttle opener.
- (c) Insert a 0.60 mm (0.024 in.) thickness gauge, between the throttle stop screw and stop lever.
- (d) Connect the test probe of an ohmmeter to the terminals IDL and E2 of the sensor.
- (e) Gradually turn the sensor clockwise until the ohmmeter deflects, and secure it with the two set screws.



- (f) Recheck the continuity between terminals IDL and E2.

Clearance between lever and stop screw	Continuity (IDL - E2)
0.50 mm (0.020 in.)	Continuity
0.70 mm (0.028 in.)	No continuity

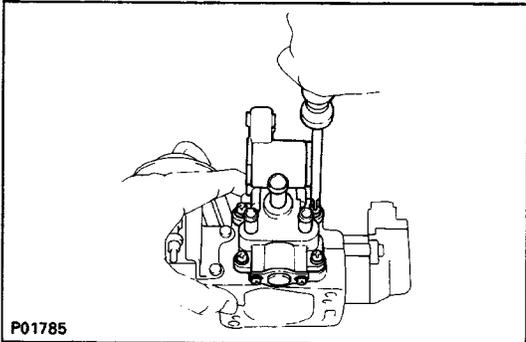




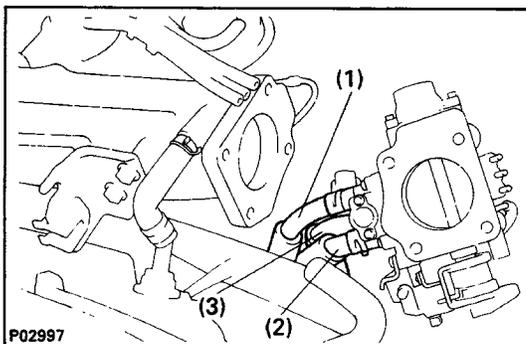
## INSTALLATION OF THROTTLE BODY

### 1. INSTALL IAC VALVE TO THROTTLE BODY

(a) Place a new gasket on the throttle body.



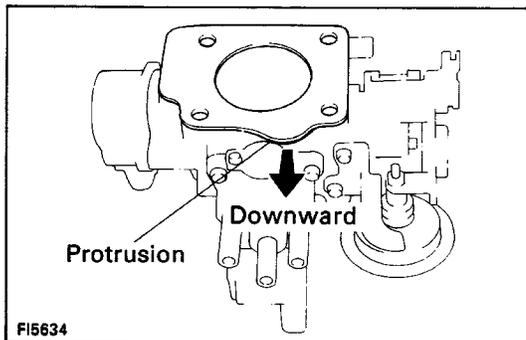
(b) Install the IAC valve with the four screws.



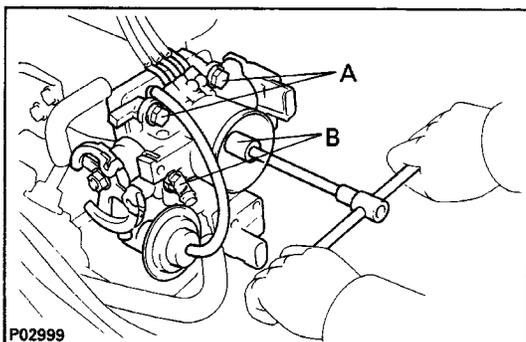
### 2. INSTALL THROTTLE BODY

(a) Connect the following hoses to the throttle body:

- (1) Water by-pass hose to water outlet
- (2) Water by-pass hose to water by-pass pipe
- (3) Air hose to air tube



(b) Place a new gasket on the throttle body, facing the protrusion downward.



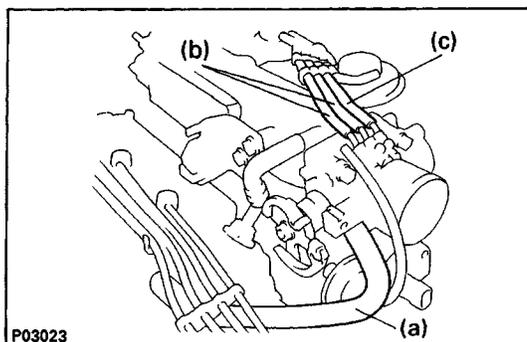
(c) Install the throttle body with the four bolts.

**Torque: 19 N-m (195 kgf-cm, 14 ft-lbf)**

HINT: Each bolt is indicated in the illustration.

Bolt length: A 45 mm (1.77 in.)

B 55 mm (2.17 in.)

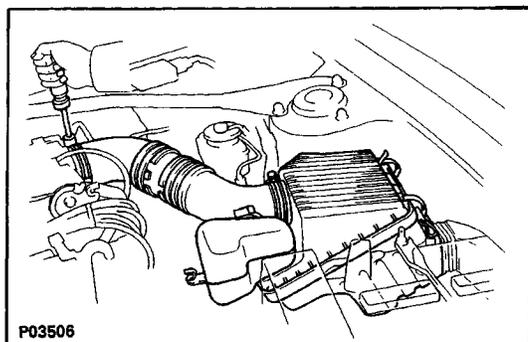


### 3. CONNECT HOSES TO THROTTLE BODY

- (a) PCV hose
- (b) Two vacuum hoses to EGR vacuum modulator
- (c) Vacuum hose to EGR VSV

### 4. CONNECT IAC VALVE CONNECTOR

### 5. CONNECT THROTTLE POSITION SENSOR CONNECTOR



### 6. INSTALL AIR CLEANER CAP AND AIR CLEANER HOSE

- (a) Connect the air- cleaner hose to the throttle body.
- (b) Install the air cleaner cap together with the resonator and air cleaner hose.
- (c) Connect the air intake temperature sensor connector.
- (d) Connect the cruise control actuator cable to the clamp on the resonator.

### 7. CONNECT ACCELERATOR CABLE, AND ADJUST IT

### 8. (A/T)

### CONNECT THROTTLE CABLE, AND ADJUST IT

### 9. FILL WITH ENGINE COOLANT (See page CO-6)

### 10. CONNECT CABLE TO NEGATIVE TERMINAL OF BATTERY