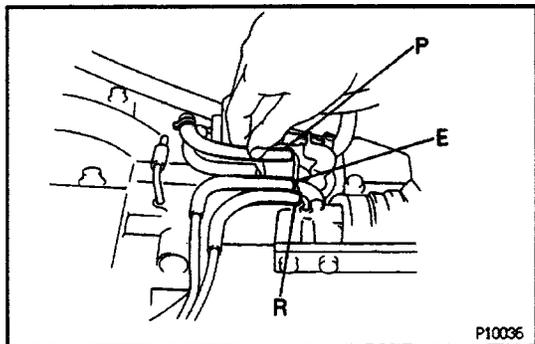


# THROTTLE BODY

## ON-VEHICLE INSPECTION

### 1. INSPECT THROTTLE BODY

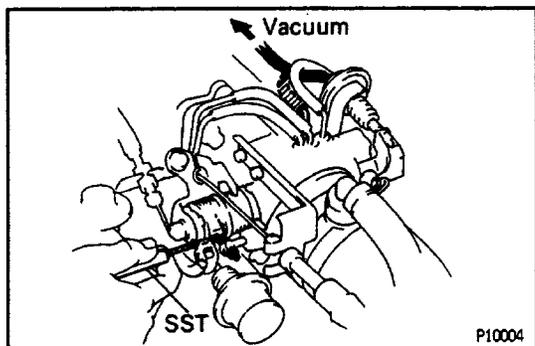
(a) Check that the throttle linkage moves smoothly.



(b) Check the vacuum at each port.

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

Port name	At idle	At 3,500 rpm
<b>E</b>	No vacuum	Vacuum
<b>R</b>	No vacuum	Vacuum
<b>P</b>	No vacuum	Vacuum

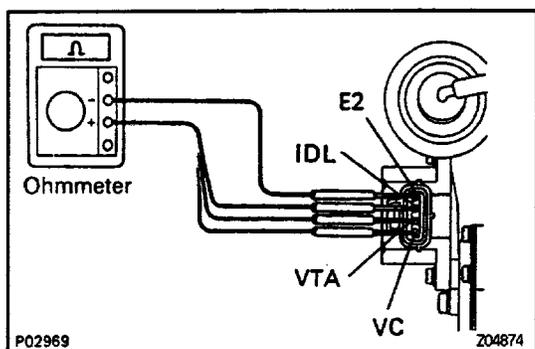


### 2. INSPECT THROTTLE POSITION SENSOR

(a) Apply vacuum to the throttle opener.

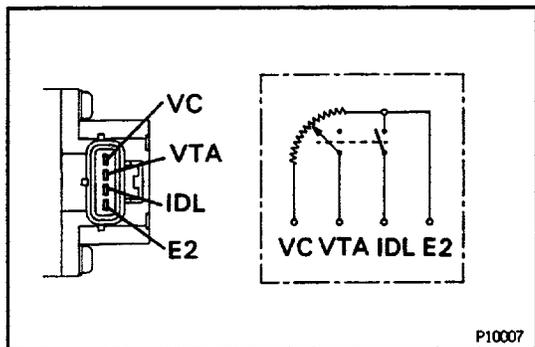
(b) Disconnect the sensor connector.

(c) Insert SST between the throttle stop screw and stop lever.  
SST 09240-00020

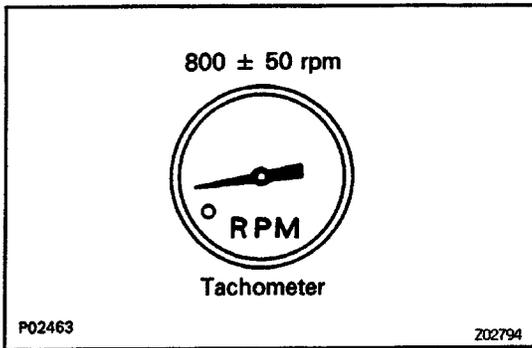


(d) Using an ohmmeter, measure the resistance between each terminal.

Clearance between lever and stop screw	Between terminals	Resistance
<b>0 mm (0 in.)</b>	<b>VTA - E2</b>	<b>0.47 - 6.1 kΩ</b>
<b>0.50 mm (0.020 in.)</b>	<b>IDL - E2</b>	<b>2.3 kΩ or less</b>
<b>0.80 mm (0.031 in.)</b>	<b>IDL - E2</b>	<b>Infinity</b>
<b>Throttle valve fully open</b>	<b>VTA - E2</b>	<b>3.1 - 12.1 kΩ</b>
<b>-</b>	<b>VC - E2</b>	<b>3.9 - 9.0 kΩ</b>



(e) Reconnect the sensor connector.



### 3. INSPECT DASHPOT (DP)

#### A. Warm up engine

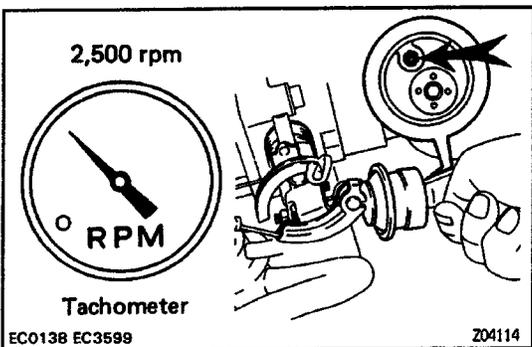
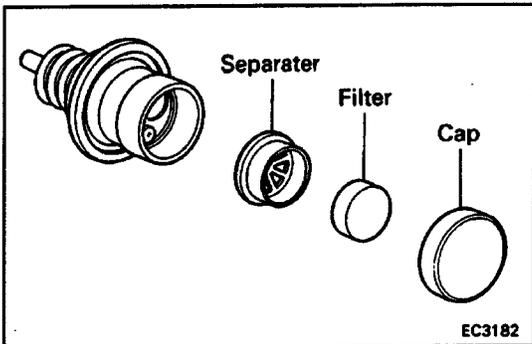
Allow the engine to warm up to normal operating temperature.

- B. Check idle speed and adjust, if necessary  
(See idle speed inspection and adjustment in **Engine Mechanical**)

Idle speed:

**800 ± 50 rpm**

#### C. Remove cap, filter and separator from DP

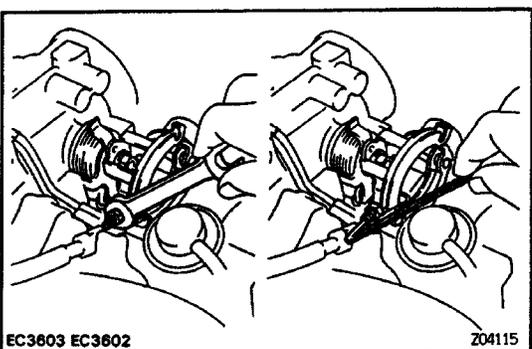


#### D. Check and adjust DP setting speed

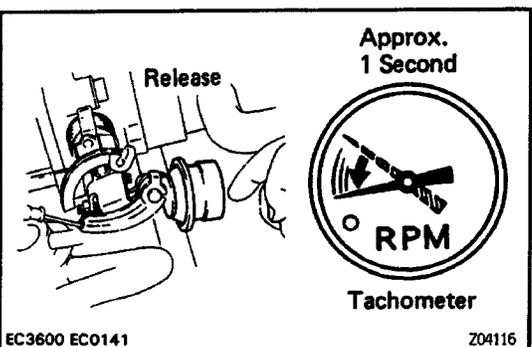
- Maintain engine speed at 2,500 rpm or more.
- Plug the VTV hole with your finger.
- Release the throttle valve.
- Check the DP is set.

DP setting speed:

**2,000 ± 200 rpm**

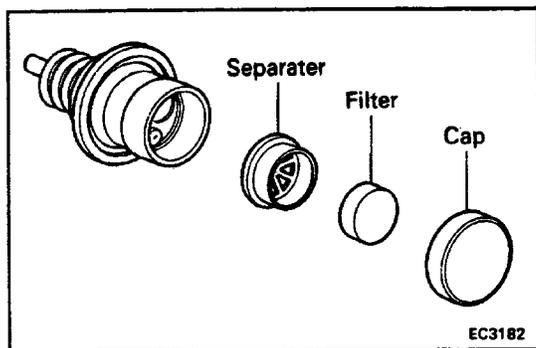


- If not as specified, adjust with the DP adjusting screw.



#### E. Check operation of VTV

- Set the DP setting speed in the same procedure as above; (a) to (c).
- Remove your finger from the hole and check that the engine returns to idle speed in approx. 1 second.



#### P. Reinstall DP separator, filter and cap

HINT: Install the filter with the coarser surface facing the atmospheric side (outward).

### 4. INSPECT THROTTLE OPENER

#### A. Warm up engine

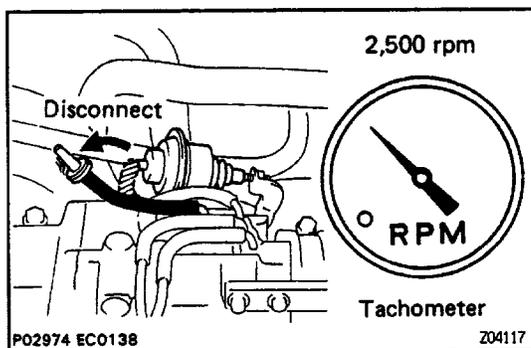
Allow the engine to warm up to normal operating temperature.

#### B. Check idle speed

(See idle speed inspection and adjustment in Engine Mechanical)

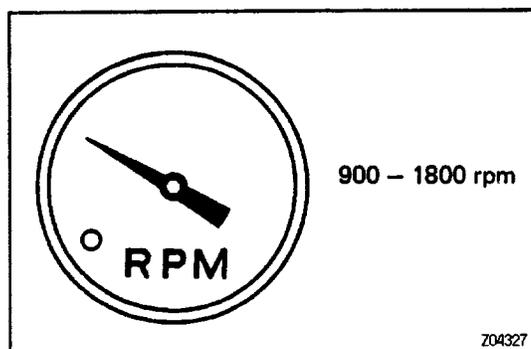
**Idle speed:**

**800 ± 50 rpm**



#### C. Check throttle opener setting speed

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

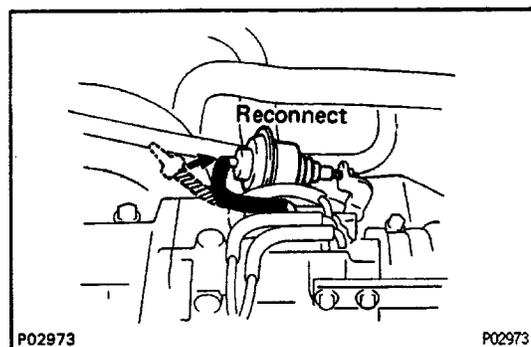


- (c) Release the throttle valve.
- (d) Check that the throttle opener is set.

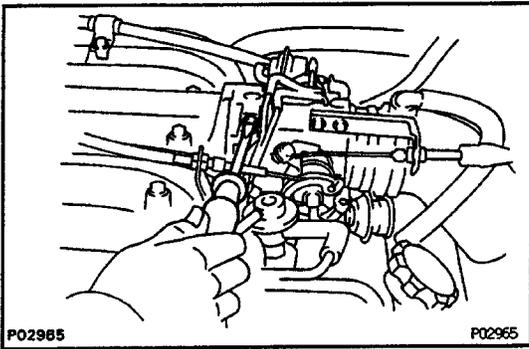
**Throttle opener setting speed:**

**900 - 1.800 rpm**

If not as specified, replace the throttle body assembly.



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



## 5. INSPECT AIR VALVE OPERATION

Check the engine speed by fully screwing in the idle speed adjusting screw.

At low temperature

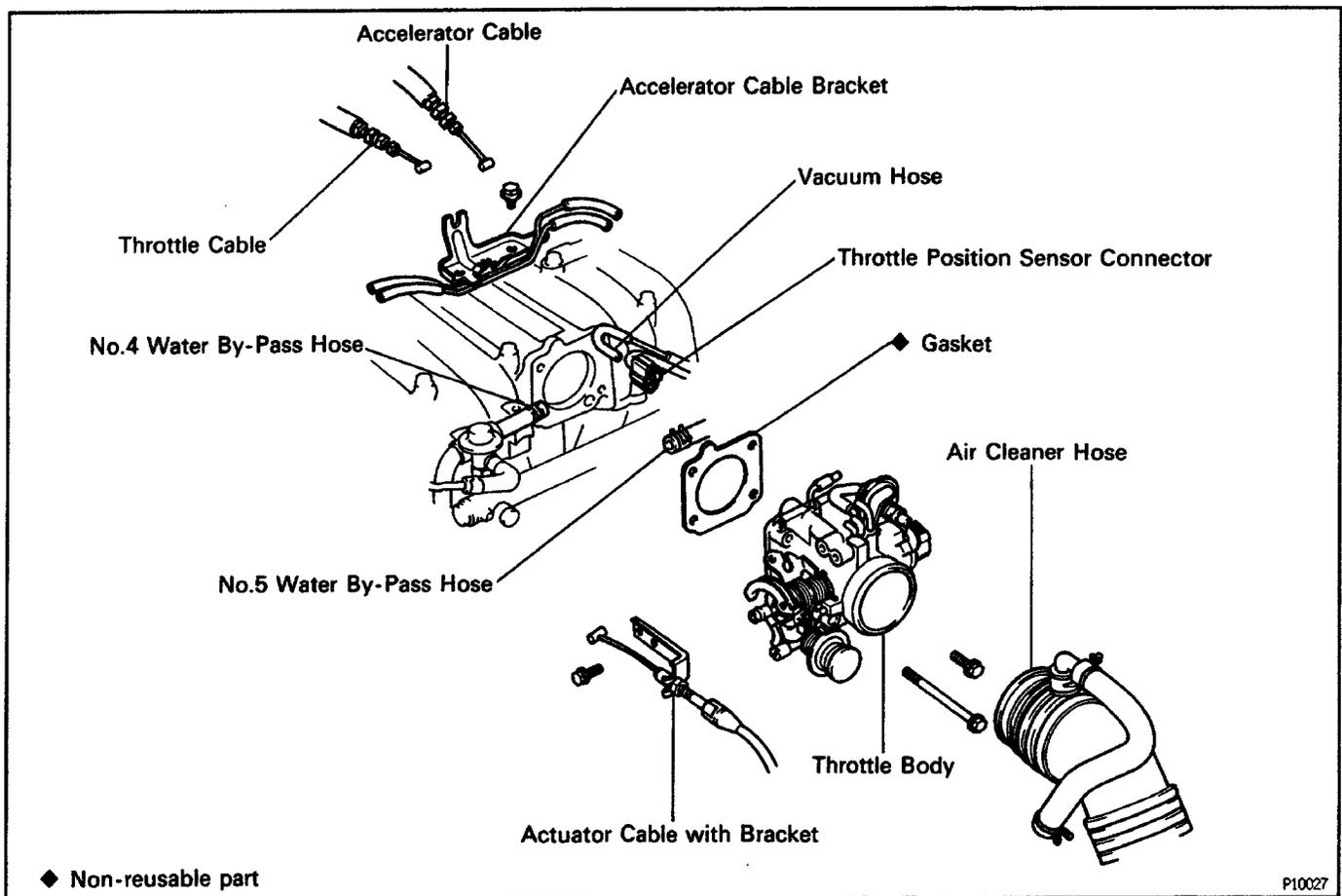
**Engine coolant temperature: below 80° C (176° F)**

When the idle speed adjusting screw is in, the engine speed should drop.

After warm-up

When the idle speed adjusting screw is in, the engine speed should drop below idle speed stop.

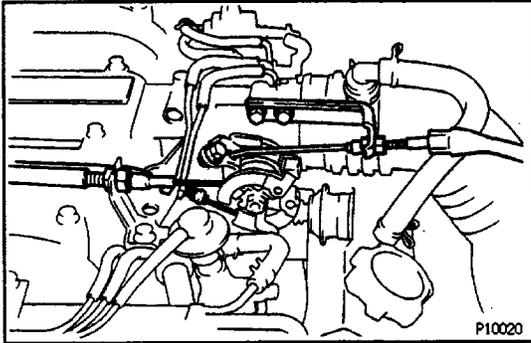
## COMPONENTS FOR REMOVAL AND INSTALLATION



## THROTTLE BODY REMOVAL

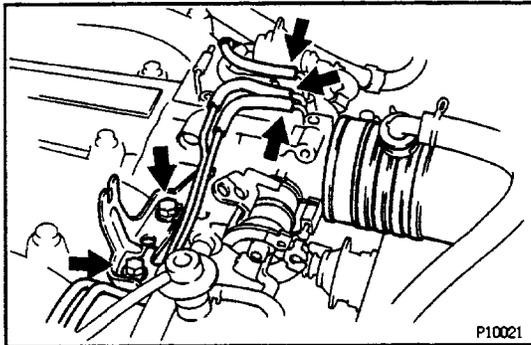
(See Components for Removal and Installation)

### 1. DRAIN ENGINE COOLANT FROM THROTTLE BODY



### 2. DISCONNECT THESE CABLES:

- (a) w/ Cruise control:  
Actuator cable with bracket
- (b) Accelerator cable
- (c) A/T:  
Throttle cable

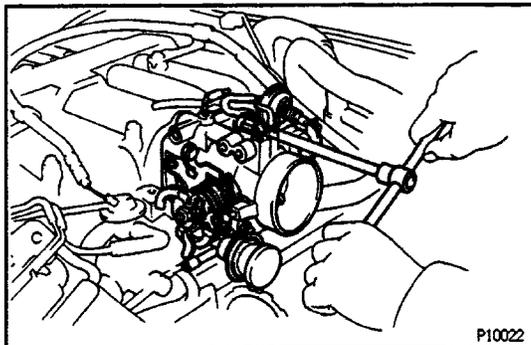


### 3. DISCONNECT AIR CLEANER HOSE

### 4. DISCONNECT VACUUM HOSES

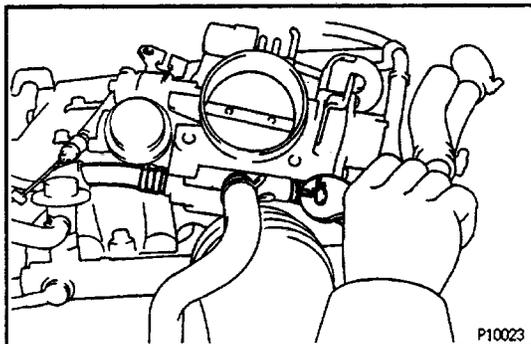
### 5. REMOVE ACCELERATOR CABLE BRACKET

### 6. DISCONNECT THROTTLE POSITION SENSOR CONNECTOR

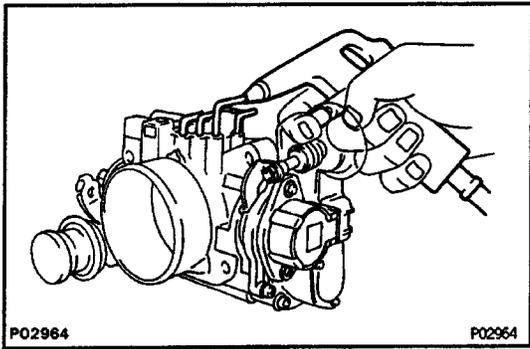


### 7. REMOVE THROTTLE BODY

- (a) Remove the 4 bolts, throttle body and the gasket.



- (b) Disconnect the No.4 and No.5 water bypass hoses from the throttle body.

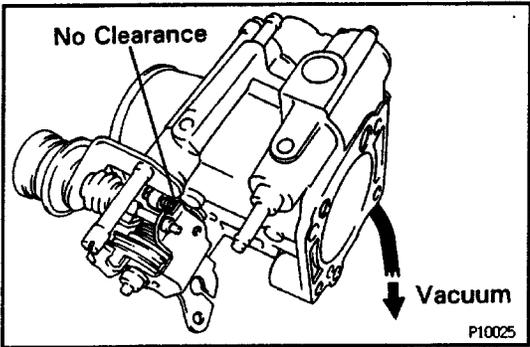


## THROTTLE BODY INSPECTION

### 1. CLEAN THROTTLE BODY BEFORE INSPECTION

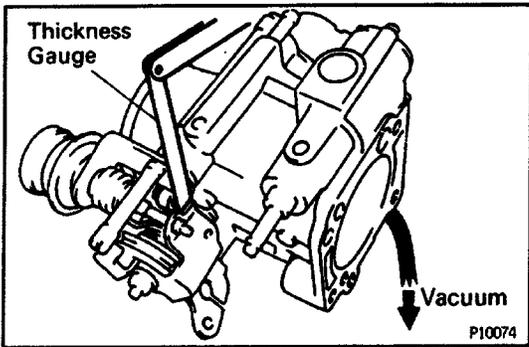
- (a) Wash and clean the cast parts with a soft brush and carburetor cleaner.
- (b) Using compressed air, clean all the passages and apertures in the throttle body.

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



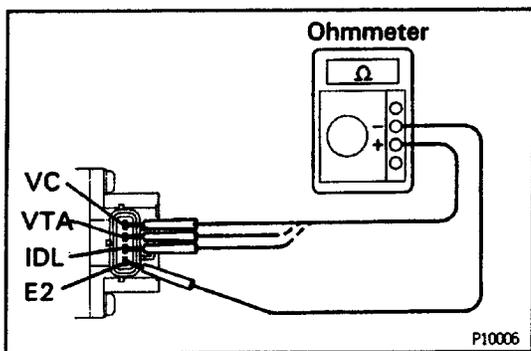
### 2. CHECK THROTTLE VALVE

- (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.



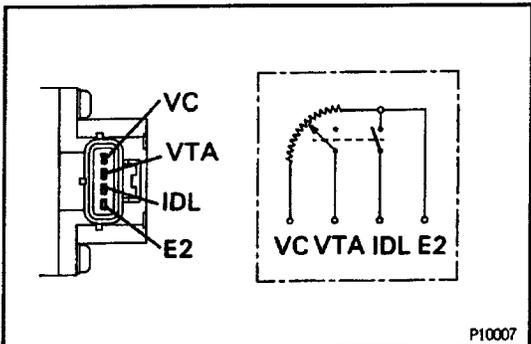
### 3. INSPECT THROTTLE POSITION SENSOR

- (a) Apply vacuum to the throttle opener.
- (b) Insert a thickness gauge between the throttle stop screw and stop lever.

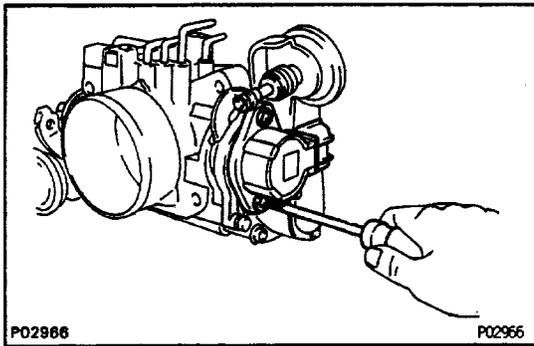


- (c) Using an ohmmeter, measure the resistance between each terminal.

Clearance between lever and stop screw	Between terminals	Resistance
0 mm (0 in.)	VTA - E2	0.47 - 6.1 kΩ
0.50 mm (0.020 in.)	IDL - E2	2.3 kΩ or less
0.80 mm (0.031 in.)	IDL - E2	Infinity
Throttle valve fully open	VTA - E2	3.1 - 12.1 kΩ
-	VC - E2	3.9 - 9.0 kΩ

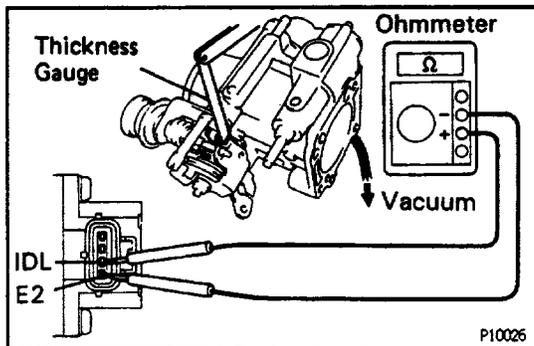


- (d) Reconnect the sensor connector.



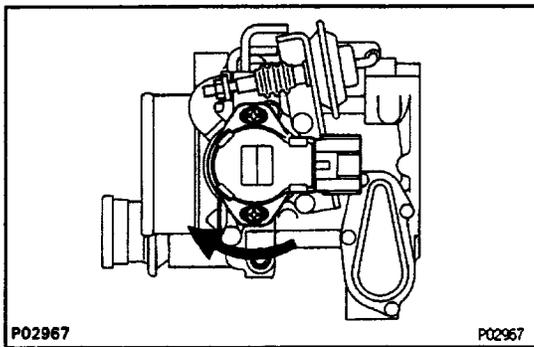
#### 4. IF NECESSARY, ADJUST THROTTLE POSITION SENSOR

(a) Loosen the 2 screws of the sensor.

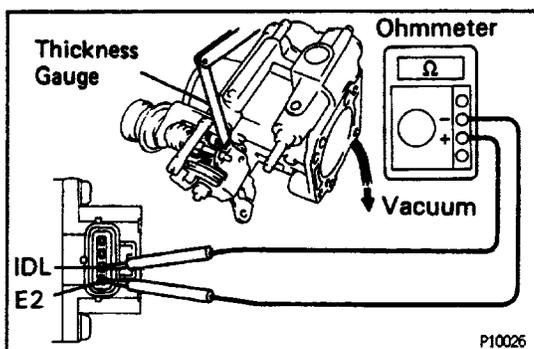


(b) Apply vacuum to the throttle opener.

(c) Insert a thickness gauge (0.60 mm or 0.024 in.) between the throttle stop screw and lever, and connect the ohmmeter to terminals IDL and E2.

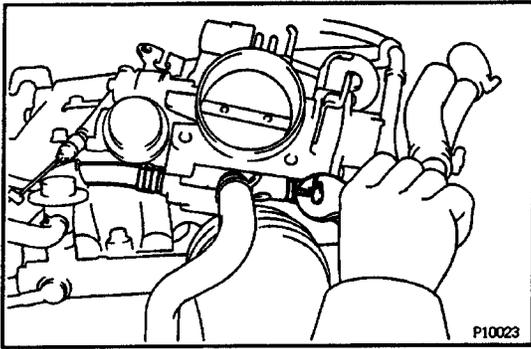


(d) Gradually turn the sensor clockwise until the ohmmeter deflects, and secure the sensor with the 2 screws.



(e) Using a thickness gauge, recheck the continuity between terminals IDL and E2.

Clearance between lever and stop screw	Continuity (IDL-E2)
0.50 mm (0.020 in.)	Continuity
0.80 mm (0.031 in.)	No continuity

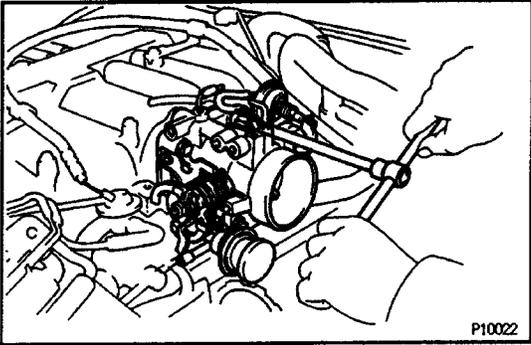


## THROTTLE BODY INSTALLATION

(See Components for Removal and Installation)

### 1. INSTALL THROTTLE BODY

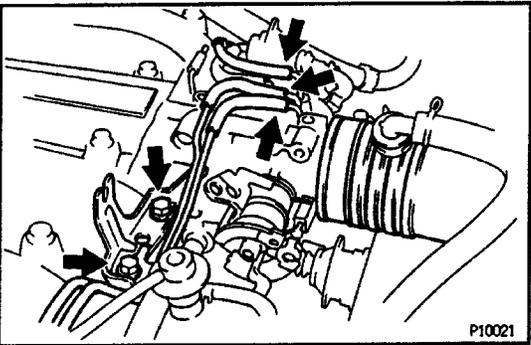
- (a) Connect the No.4 and No.5 water bypass hoses to throttle body.



- (b) Place a new gasket and install the throttle body with the 4 bolts.

**Torque: 18 N-m (185 kgf-cm, 13 ft-lbf)**

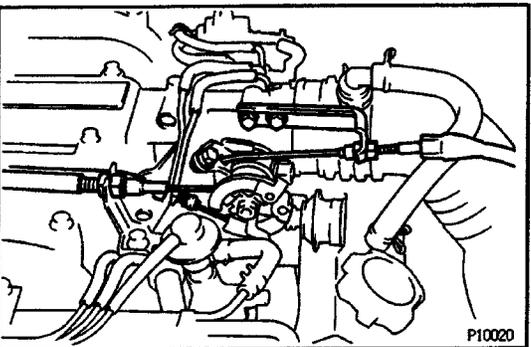
### 2. CONNECT THROTTLE POSITION SENSOR CONNECTOR



### 3. INSTALL ACCELERATOR CABLE BRACKET

### 4. CONNECT VACUUM HOSES

### 5. CONNECT AIR CLEANER HOSE



### 6. CONNECT THESE CABLES:

- (a) A/T:  
Throttle cable
- (b) Accelerator cable
- (c) w/ Cruise control:  
Actuator cable with bracket

### 7. REFILL WITH ENGINE COOLANT