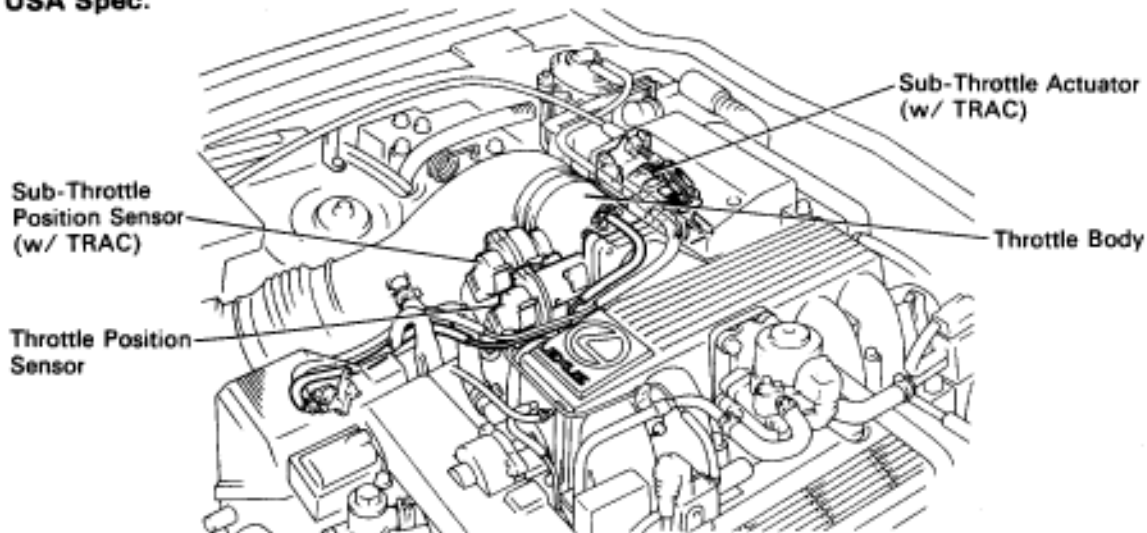
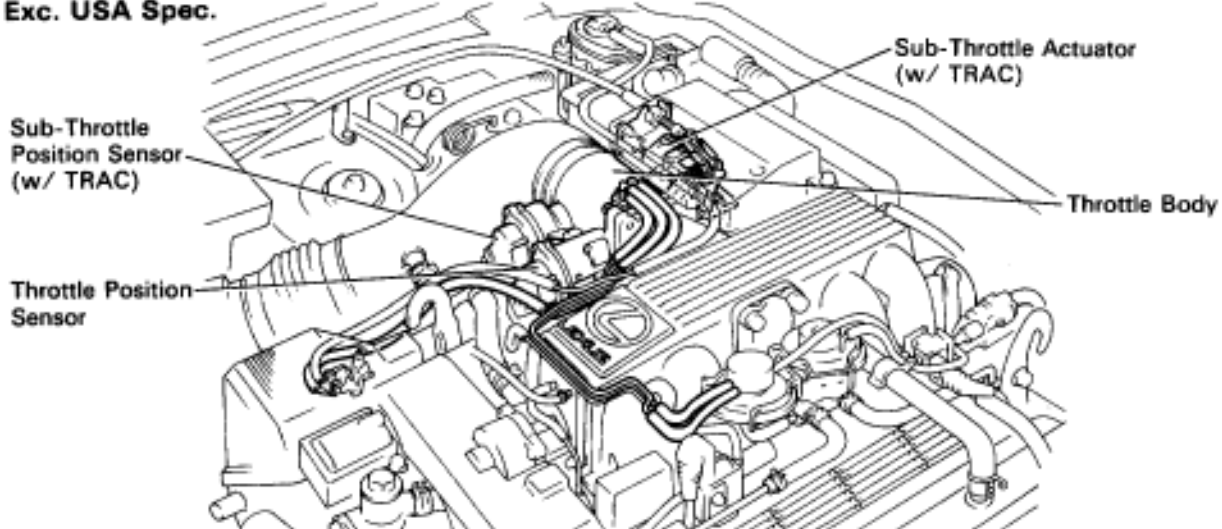


Throttle Body

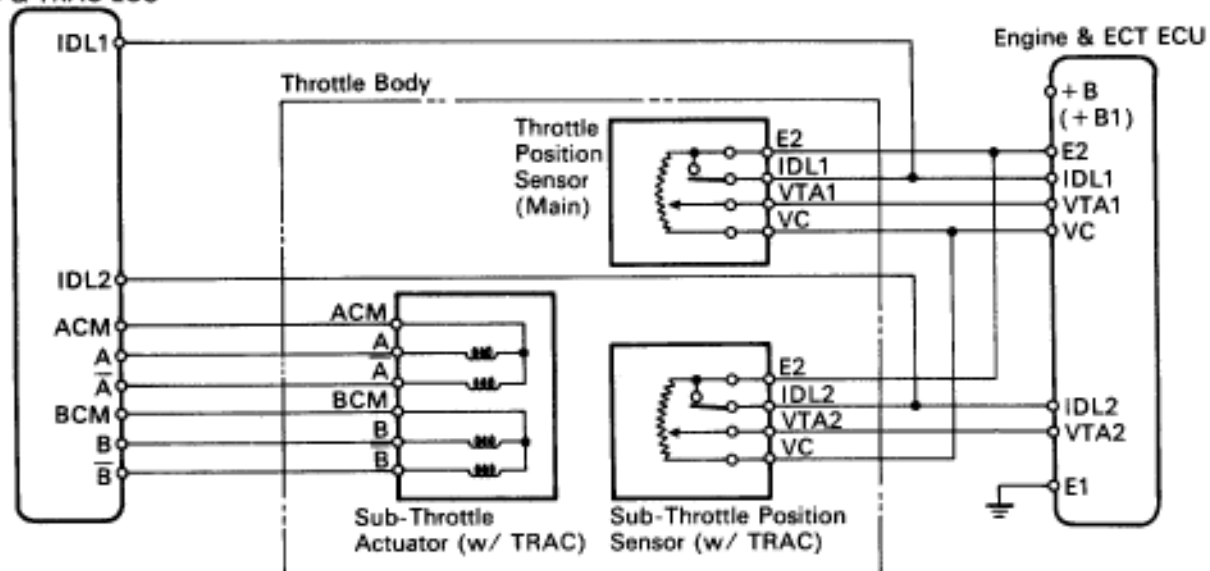
USA Spec.

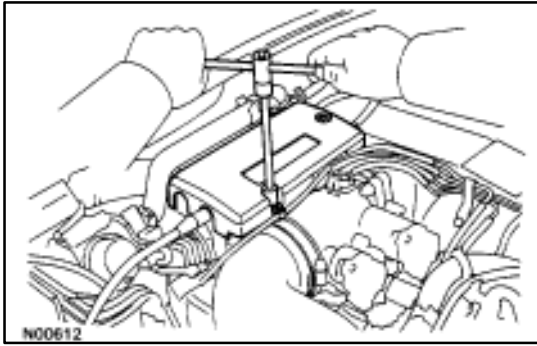


Exc. USA Spec.



ABS & TRAC ECU

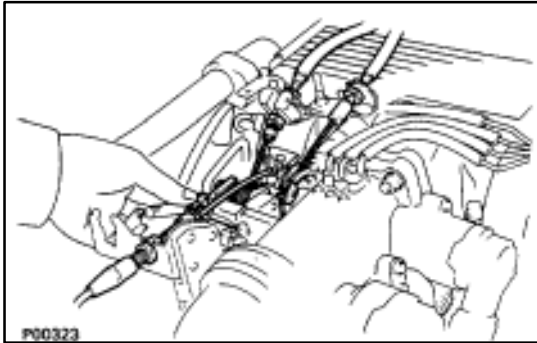




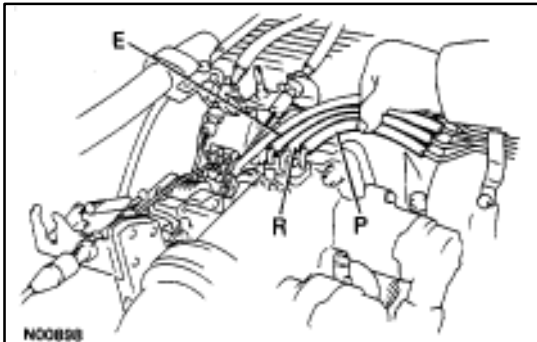
ON-VEHICLE INSPECTION

1. INSPECT THROTTLE BODY

- (a) Remove the throttle body cover.
 - Remove the mounting cap nut.
 - Loosen the two bolts, and remove the throttle body cover.



- (b) Check that the throttle linkage moves smoothly.



- (c) Check the vacuum at each port.
 - Start the engine.
 - Check the vacuum with your finger.

Port name	At idling	At 3,000 rpm
P	No vacuum	Vacuum
*E	No vacuum	Vacuum
*R	No vacuum	Vacuum

* Exc. USA Spec.

- (d) Reinstall the throttle body cover.

3. INSPECT AND ADJUST DASH POT (DP)

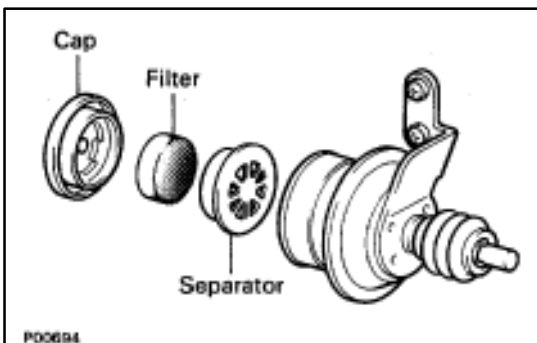
A. Warm up engine

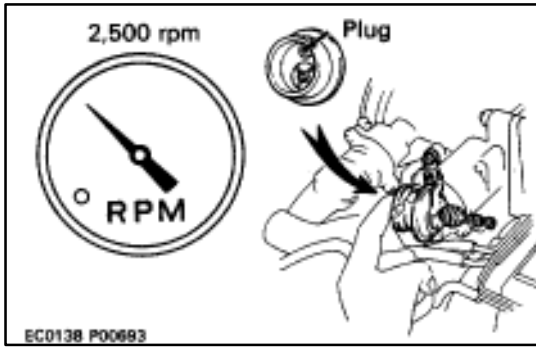
Allow the engine to warm up to normal operating temperature.

B. Check idle speed

Idle speed: 700 ± 50 rpm

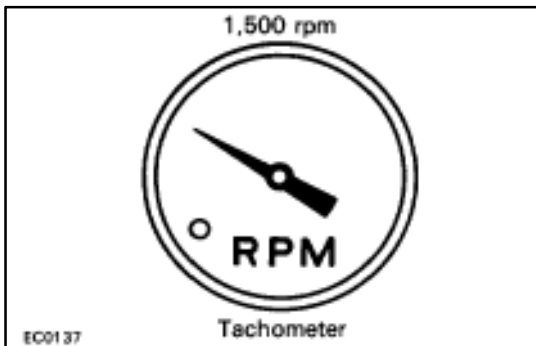
C. Remove cap, filter and separator from DP





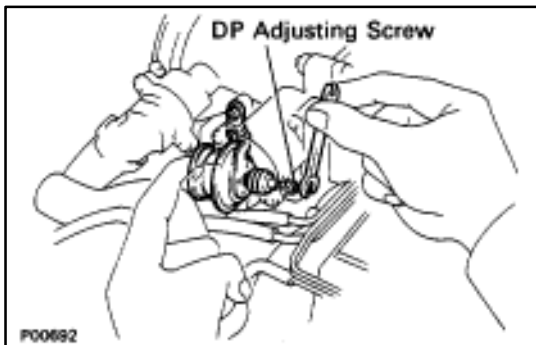
D. Check and adjust DP setting speed

- (a) Maintain the engine at 2,500 rpm.
- (b) Plug the VTV hole with your finger.

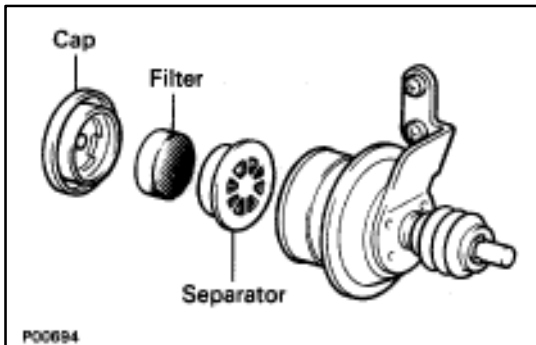


- (c) Release the throttle valve.
- (d) Check that the DP is set.

DP setting speed: 1,500 rpm

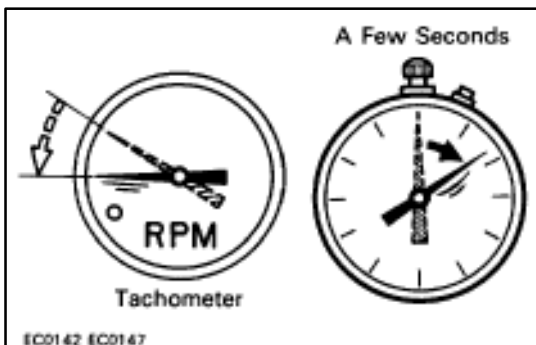


- (e) Adjust the DP setting speed by turning the DP adjusting screw.
- (f) Repeat steps from (a) to (c), and recheck the DP setting speed.



E. Reinstall separator, filter and cap to DP

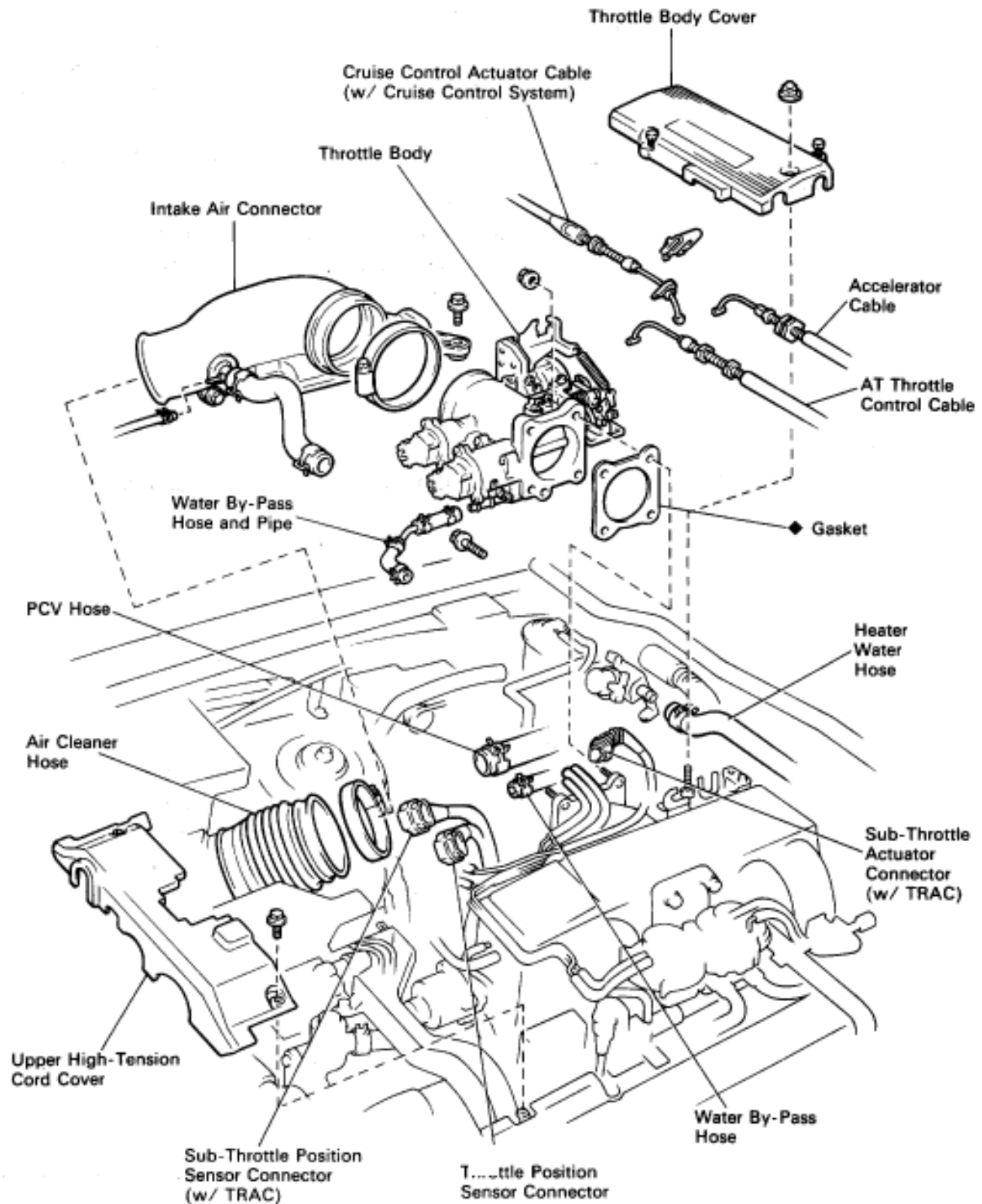
HINT: Install the filter with the coarser surface facing the atmospheric side (outward).

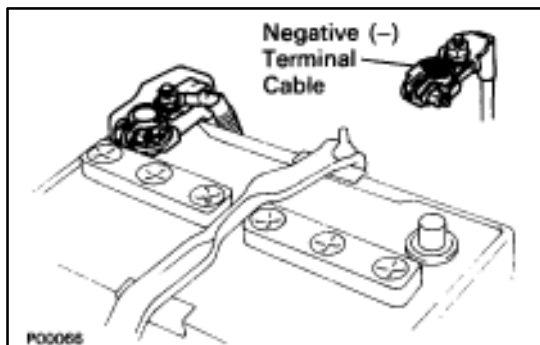


F. Check VTV operation

- (a) Maintain the engine at 2,500 rpm.
- (b) Release the throttle valve, and check that the engine returns to idle in a few seconds.

COMPONENTS





REMOVAL OF THROTTLE BODY

(See Components on page [FI-69](#))

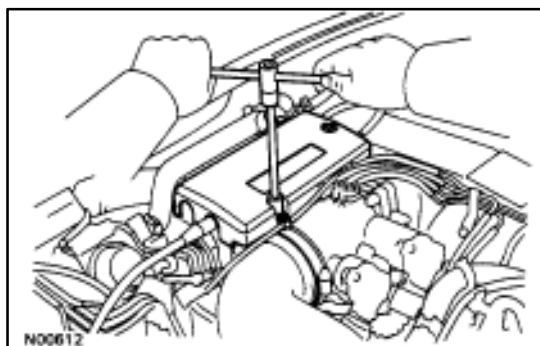
1. DISCONNECT CABLE FROM NEGATIVE TERMINAL OF BATTERY

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. REMOVE THROTTLE BODY COVER

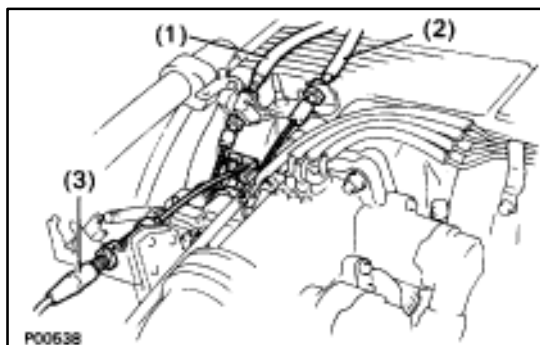
- Remove the mounting cap nut.
- Loosen the two bolts, and remove the throttle body cover.



4. DISCONNECT CONTROL CABLES FROM THROTTLE BODY

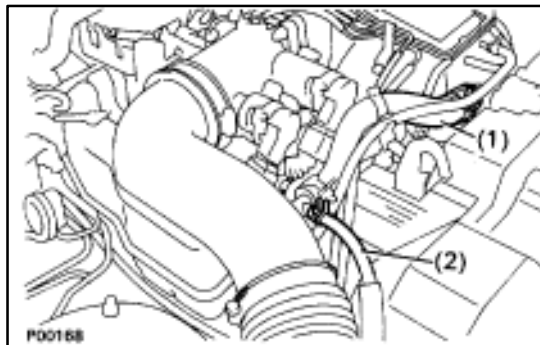
Disconnect the following cables:

- Accelerator cable
- A/T throttle control cable
- (w/ Cruise Control System)
Cruise control actuator cable

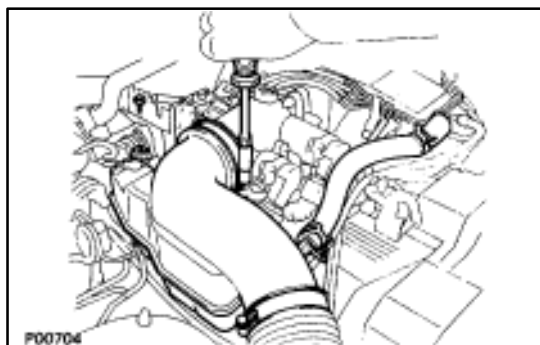


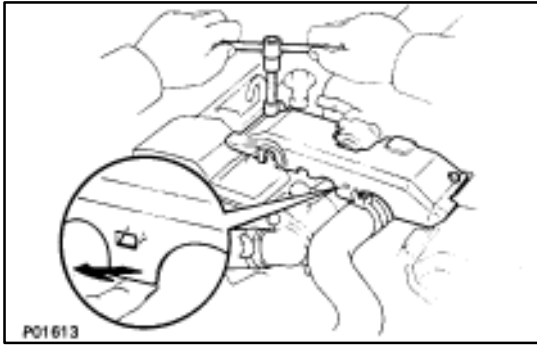
5. REMOVE INTAKE AIR CONNECTOR

- Disconnect the following hoses:
 - Air hose from ISC valve
 - Air hose (from PS air control valve) from intake air connector



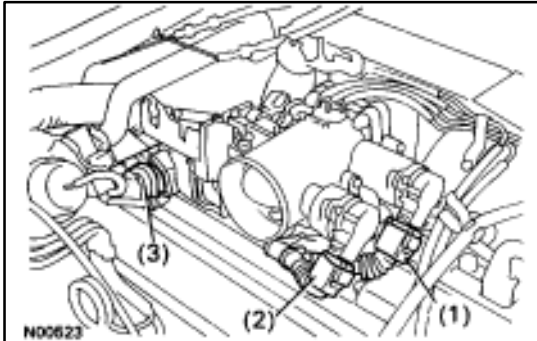
- Remove the bolt holding the intake air connector to the cylinder head cover.
- Loosen the two hose clamps.
- Disconnect the intake air connector from the throttle body and air cleaner hose, and remove the intake air connector.





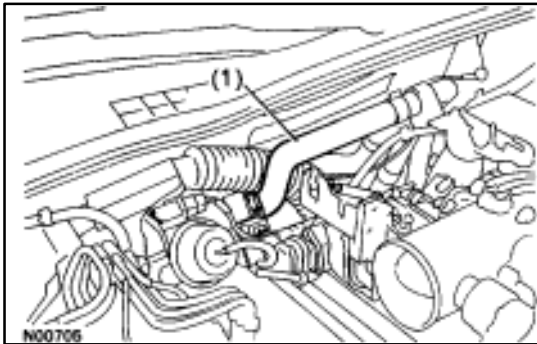
6. REMOVE UPPER HIGH-TENSION CORD COVER

- (a) Remove the two mounting bolts.
- (b) Disconnect the front side claw groove of the cord cover from the claw of the lower cover, and remove the cord cover.

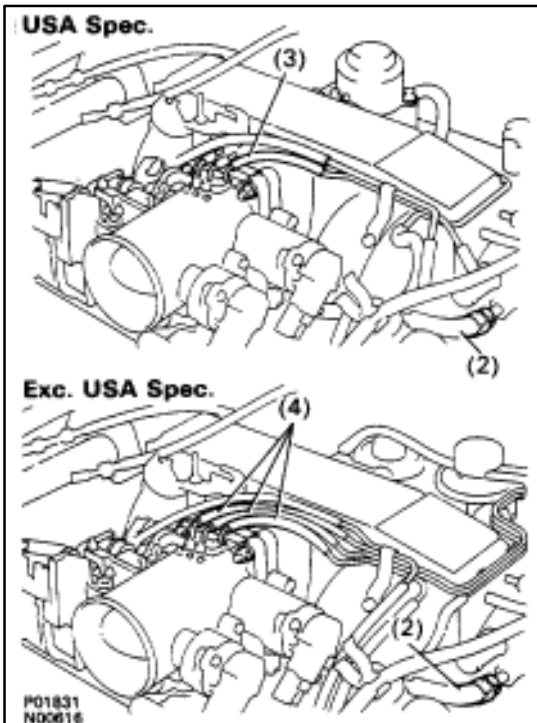


7. REMOVE THROTTLE BODY

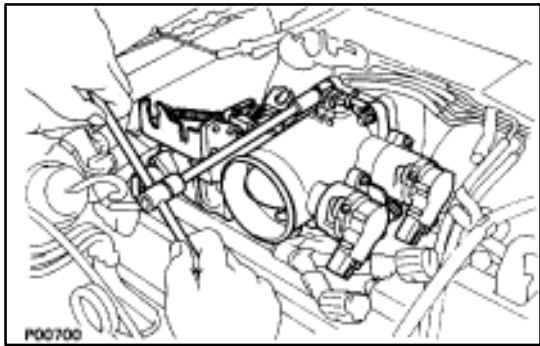
- (a) Disconnect the following connectors:
 - (1) Throttle position sensor connector
 - (2) (w/ TRAC)
Sub-throttle position sensor connector
 - (3) (w/ TRAC)
Sub-throttle actuator connector



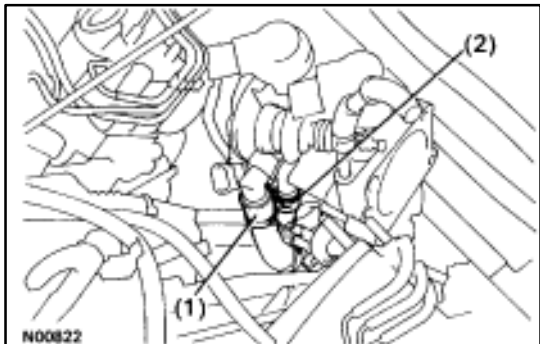
- (b) Disconnect the following hoses:
 - (1) Heater water hose from heater water valve



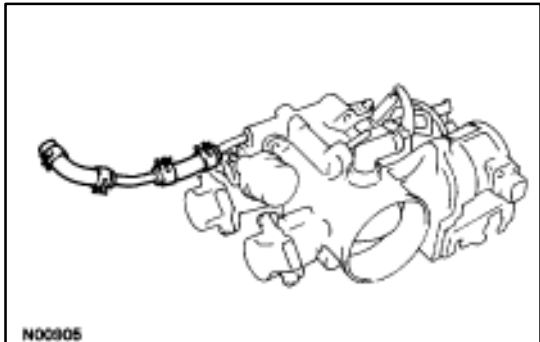
- (2) Water by-pass hose from ISC valve
- (3) (USA Spec.)
Vacuum hose from throttle body
- (4) (Exc. USA Spec.)
Three vacuum hoses from throttle body



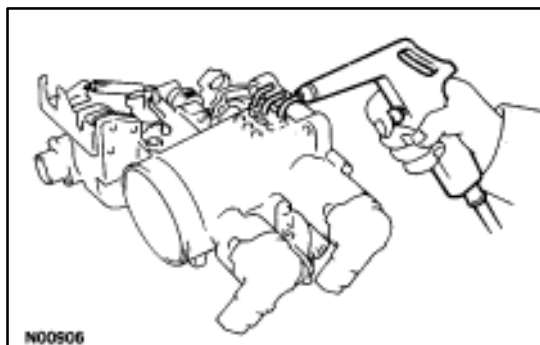
- (c) Remove the two bolts and two nuts, disconnect the throttle body from the air intake chamber.



- (d) Disconnect the following hoses, and remove the throttle body:
(1) PCV hose from throttle body
(2) Water by-pass hose from throttle body
(e) Remove the throttle body gasket.



- (f) Remove the two water by-pass hoses and pipe assembly.

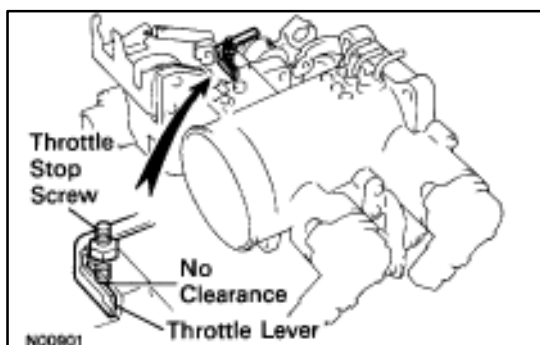


INSPECTION OF THROTTLE BODY

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.

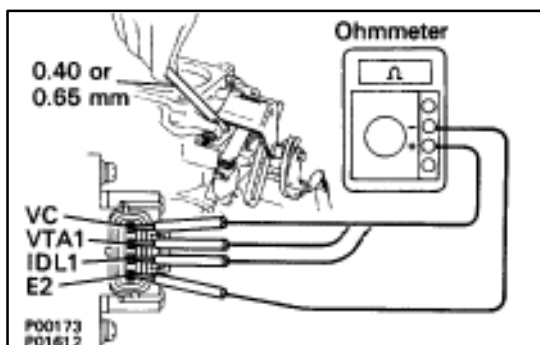
NOTICE: To prevent deterioration, do not clean the throttle position sensor and DP.



2. INSPECT THROTTLE VALVE AND THROTTLE POSITION SENSOR

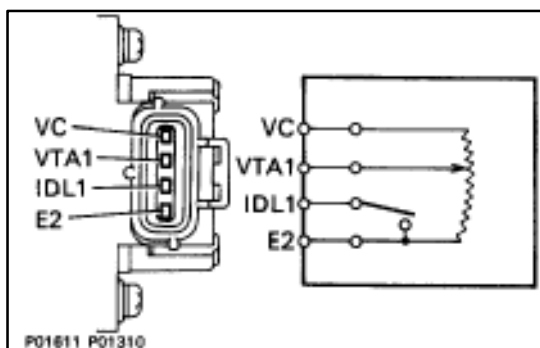
A. Inspect throttle valve

Check that there is no clearance between the throttle stop screw and throttle lever when the throttle valve is fully closed.



B. Inspect throttle position sensor

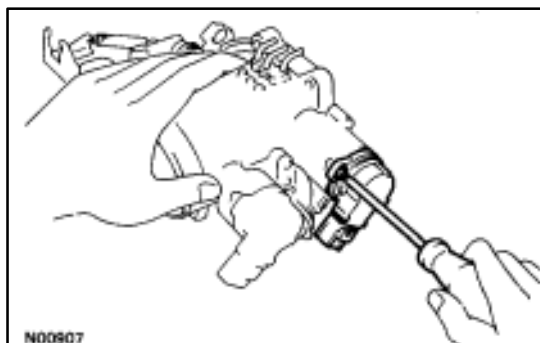
- (a) Insert a 40 mm (0.016 in.) or 0.65 mm (0.026 in.) feeler gauge between the throttle stop screw and stop lever.
- (b) Using an ohmmeter, measure the resistance between each terminal.

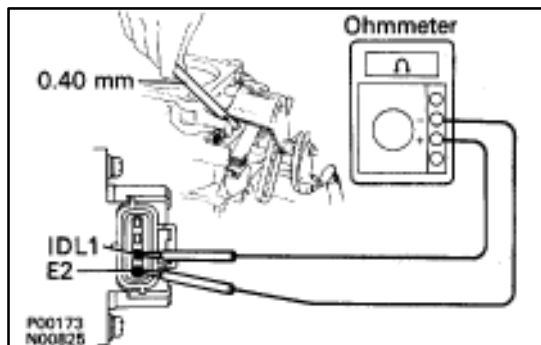


Clearance between lever and stop screw	Between terminals	Resistance
0 mm (0 in.)	VTA1–E2	0.2–0.8 Ω
0.40 mm (0.016 in.)	IDL1–E2	2.3 k Ω or less
0.65 mm (0.026 in.)	IDL1–E2	Infinity
Throttle valve fully open	VTA1–E2	3.3–10.0 k Ω
–	VC–E2	4.0–9.0 k Ω

C. If necessary, adjust throttle position sensor

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

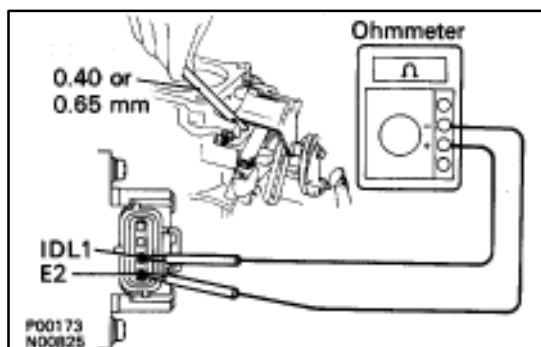




- (b) Insert a 0.40 mm (0.016 in.) feeler gauge, between the throttle stop screw and stop lever.
- (c) Connect the test probe of an ohmmeter to the terminals IDL1 and E2 of the sensor.

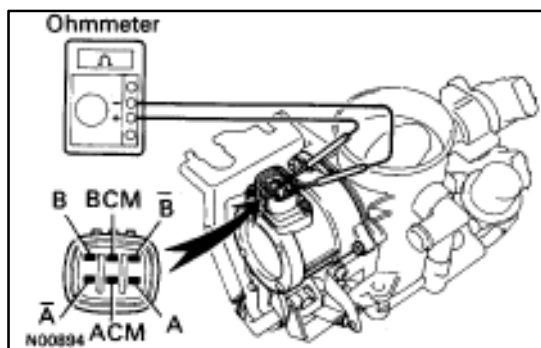


- (d) Gradually turn the sensor clockwise until the ohmmeter deflects, and secure it with the two set screws.



- (e) Recheck the continuity between terminals IDL1 and E2.

Clearance between lever and stop screw	Continuity (IDL1–E2)
0.40 mm (0.016 in.)	Continuity
0.65 mm (0.026 in.)	No continuity



3. (w/ TRAC) INSPECT SUB-THROTTLE ACTUATOR, SUBTHROTTLE VALVE AND SUB-THROTTLE POSITION SENSOR

A. Inspect sub-throttle actuator

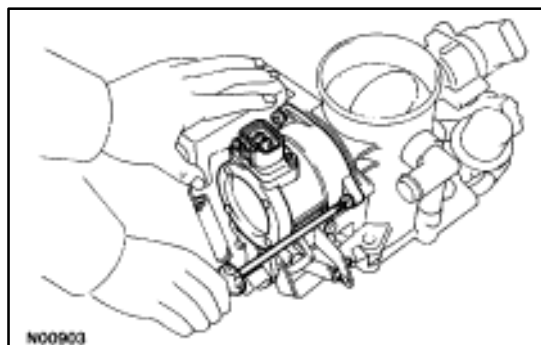
Using an ohmmeter, measure the resistance between the terminals (ACM–A and \bar{A} , BCM–B and \bar{B}).

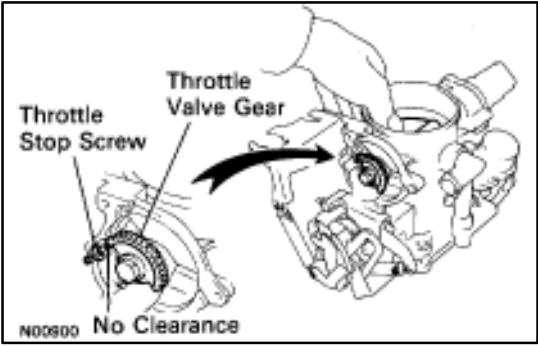
Resistance: 0.5–1.0 Ω

If the resistance is not as specified, replace the actuator valve.

B. Inspect sub-throttle actuator

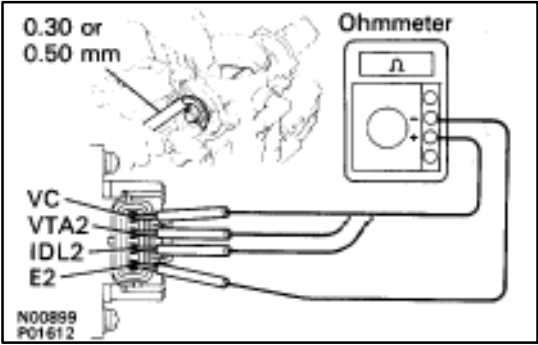
Remove the three screws and sub-throttle actuator.





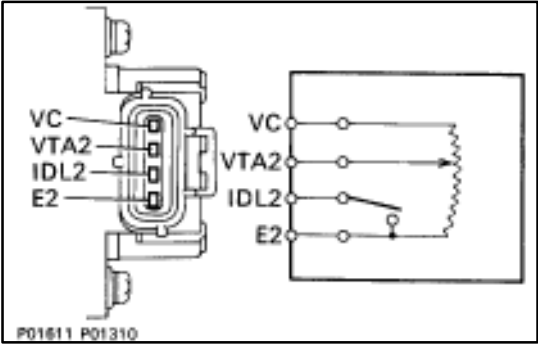
C. Inspect sub-throttle valve

Check that there is no clearance between the throttle stop screw and throttle valve gear when the sub-throttle valve is fully closed.

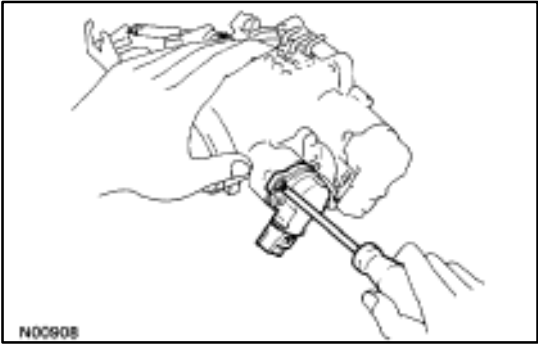


D. Inspect sub-throttle position sensor

- Insert a 0.30 mm (0.012 in.) or 0.50 mm (0.020 in.) feeler gauge between the throttle stop screw and throttle valve gear.
- Using an ohmmeter, measure the resistance between each terminal.

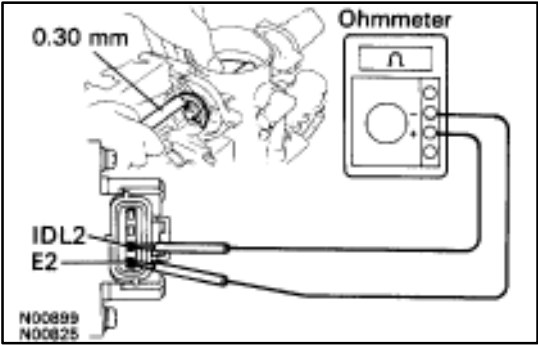


Clearance between lever and stop screw	Between terminals	Resistance
0 mm (0 in.)	VTA2–E2	0.2–0.8 Ω
0.30 mm (0.012 in.)	IDL2–E2	2.3 k Ω or less
0.50 mm (0.020 in.)	IDL2–E2	Infinity
Throttle valve fully open	VTA2–E2	3.3–10.0 k Ω
–	VC–E2	4.0–9.0 k Ω



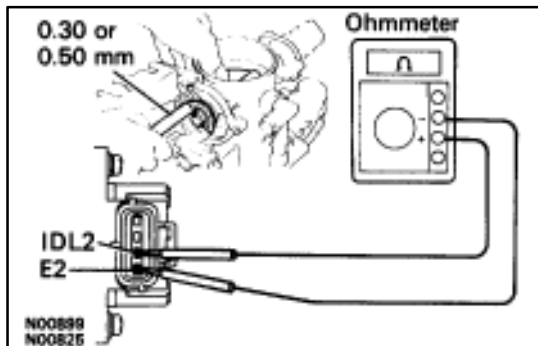
E. If necessary, adjust sub-throttle position sensor

- Loosen the two set screws of the sensor.
- Insert a 0.30 mm (0.012 in.) feeler gauge, between the throttle stop screw and throttle valve gear.
- Connect the test probe of an ohmmeter to the terminals IDL2 and E2 of the sensor.



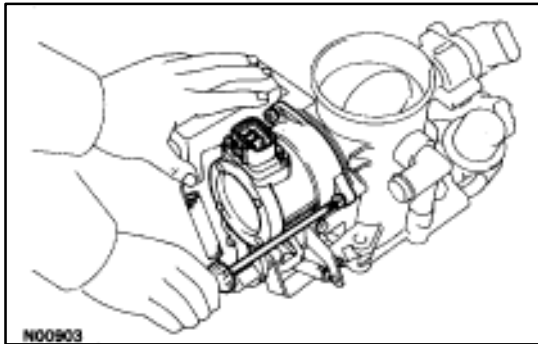


- (d) Gradually turn the sensor clockwise until the ohmmeter deflects, and secure it with the two set screws.



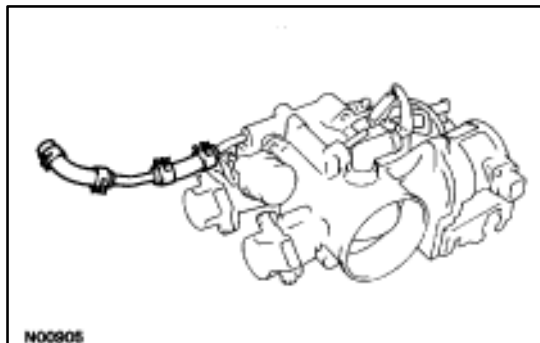
- (e) Recheck the continuity between terminals IDL2 and E2.

Clearance between lever and stop screw	Continuity (IDL2–E2)
0.30 mm (0.012 in.)	Continuity
0.50 mm (0.020 in.)	No continuity



E. Reinstall sub-throttle actuator

Install the sub-throttle actuator with the three screws.

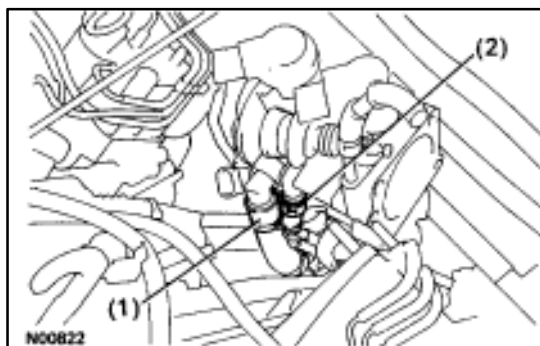


INSTALLATION OF THROTTLE BODY

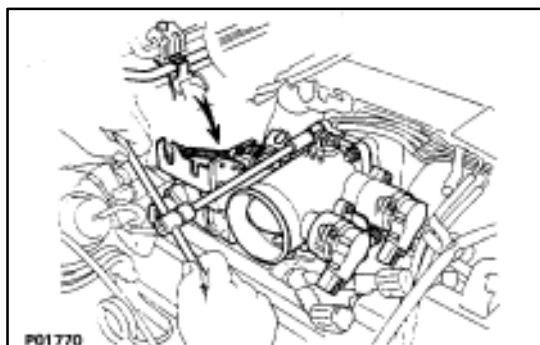
(See Components on page FI-69)

1. INSTALL THROTTLE BODY

- (a) Install the two water by-pass hoses and pipe to the throttle body.



- (b) Connect the following hoses:
 - (1) PCV hose to throttle body
 - (2) Water by-pass hose to throttle body

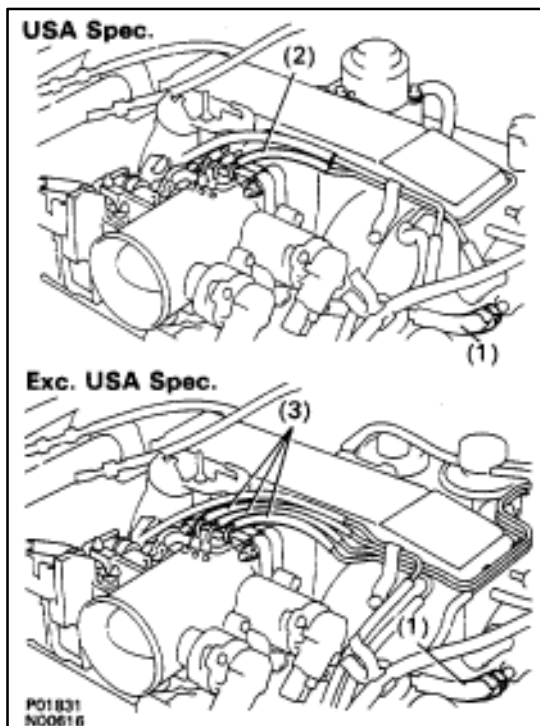


- (c) Install a new gasket and throttle body with the two bolts and two nuts.

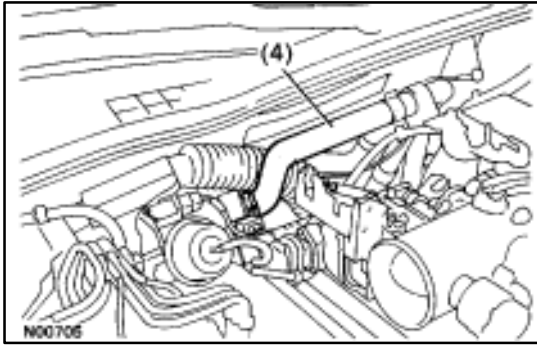
Torque: 18 N·m (185 kgf·cm, 13 ft·lbf)

HINT: Use bolts 40 mm (1.57 in.) in length.

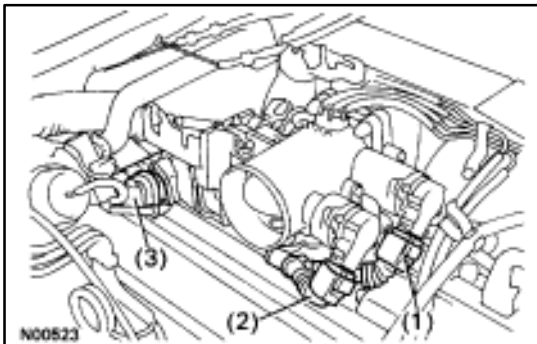
- (d) Install the water by-pass pipe (from rear water by-pass joint) to the clamp on the engine wire cover.



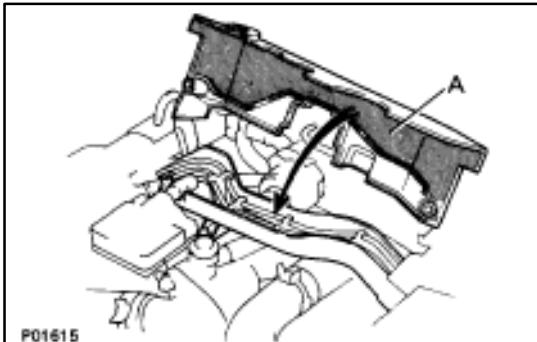
- (e) Connect the following hoses:
 - (1) Water by-pass hose to the ISC valve
 - (2) (USA Spec.)
Vacuum hose to throttle body
 - (3) (Exc. USA Spec.)
Three vacuum hoses to throttle body



(4) Heater water hose to heater water valve

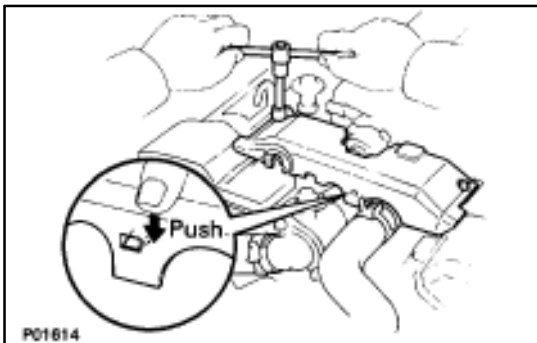


- (f) Connect the following connectors:
- (1) Throttle position sensor connector
 - (2) (w/ TRAC)
Sub-throttle position sensor connector
 - (3) (w/ TRAC)
Sub-throttle actuator connector

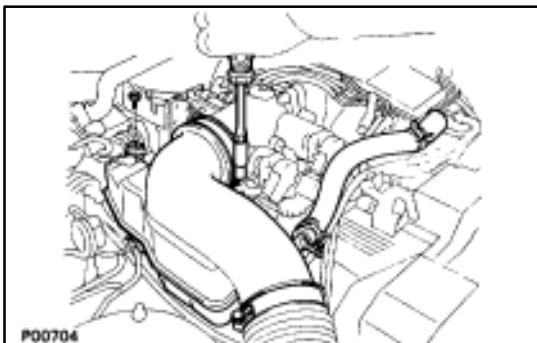


2. INSTALL UPPER HIGH-TENSION CORD COVER

- (a) Fit portion A of the upper high-tension cover, matching it with the top of the lower high-tension cord cover.

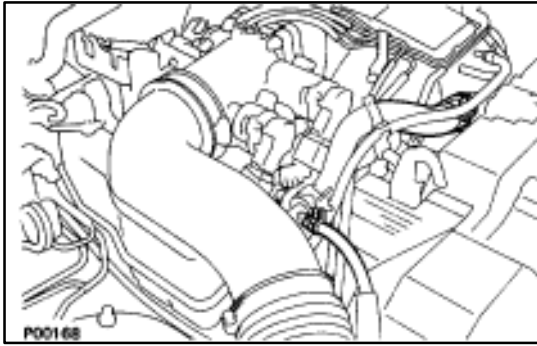


- (b) Push the front side of the high-tension cord cover, and connect the front side claw groove of the upper high-tension cord cover to the claw of the lower high-tension cord cover.
- (c) Install the upper high-tension cord cover with the two bolts.



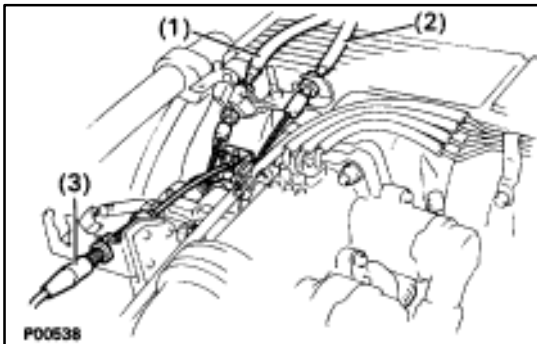
3. INSTALL INTAKE AIR CONNECTOR

- (a) Connect the end portions of the intake air connector to the throttle body and air cleaner hose.
- (b) Tighten the two hose clamps.
- (c) Install the bolt holding the intake air connector to the cylinder head cover.



(d) Connect the following hoses:

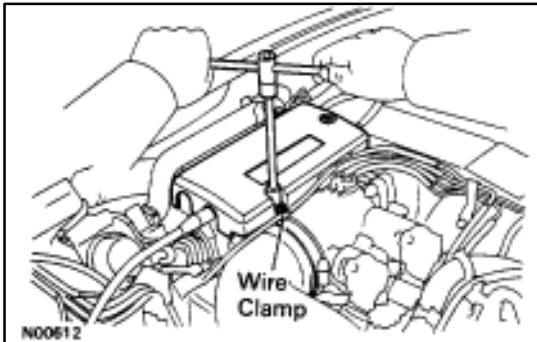
- (1) Air hose to ISC valve
- (2) Air hose (from PS air control valve) to intake air connector



4. CONNECT CONTROL CABLES TO THROTTLE BODY

Connect the following cables:

- (1) Accelerator cable
- (2) A/T throttle control cable
- (3) (w/ Cruise Control System)
Cruise control actuator cable



5. INSTALL THROTTLE BODY COVER

Install the throttle body cover and hose clamp with the two bolts and cap nut.

6. CONNECT CABLE TO NEGATIVE TERMINAL OF BATTERY

7. FILL WITH ENGINE COOLANT (See page [CO-7](#))