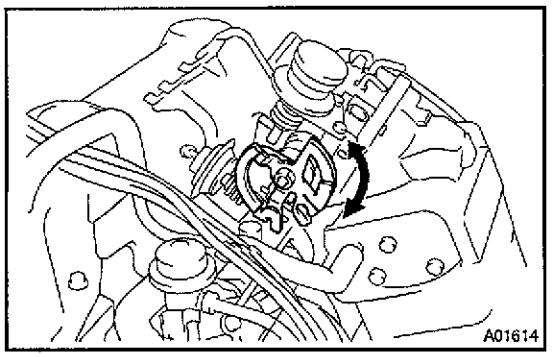


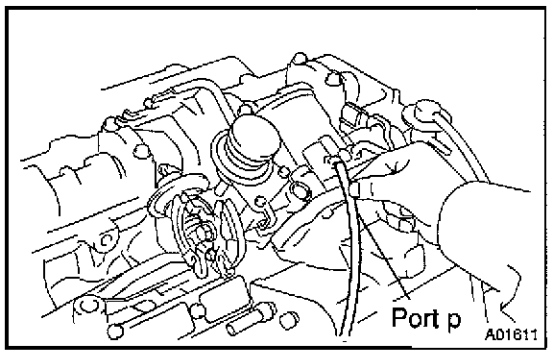
THROTTLE BODY (1RZ–E)

FI017-01

ON–VEHICLE INSPECTION

1. INSPECT THROTTLE BODY

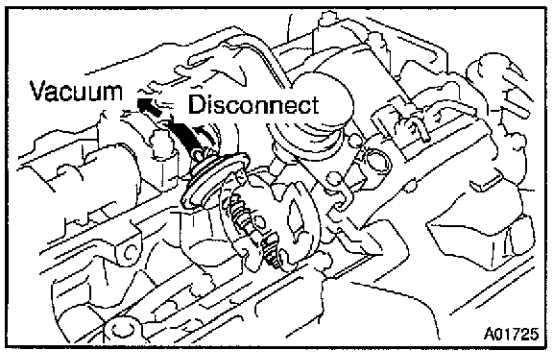
(a) Check that the throttle linkage moves smoothly.



(b) Check the vacuum at each port.

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

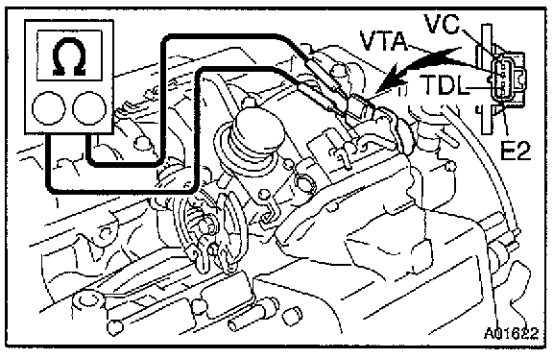
Port name	At idle	Other than idle
P	No vacuum	Vacuum



2. INSPECT THROTTLE POSITION SENSOR

(a) Disconnect the sensor connector.

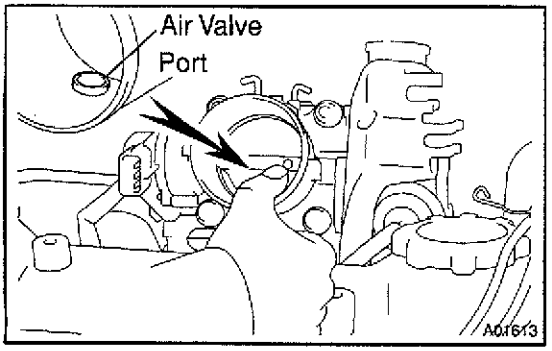
(b) Apply vacuum to the throttle opener



(c) Using an ohmmeter, check the continuity between each terminal.

Throttle valve condition	Between terminals	Resistance
Fully closed	VTA – E2	0.2 – 5.7 kΩ
Fully closed	IDL – E2	2.3 kΩ or less
Open	IDL – E2	Infinity
Fully open	VTA – E2	2.0 – 10.2 kΩ
–	VC – E2	2.5 – 5.9 kΩ

(d) Reconnect the sensor connector.



3. CHECK AIR VALVE OPERATION

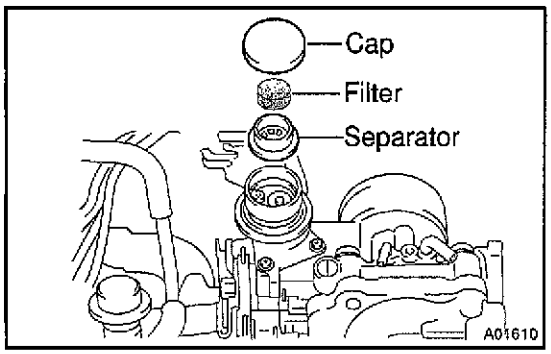
Check the engine rpm by closing the air valve port on the throttle body.

- At low temperature (Coolant temperature: below 80°C (176°F)): When the air valve port is closed, the engine speed should drop.
- After warm–up:
  When the air valve port is closed, check that the engine speed does not drop more than 100 rpm.

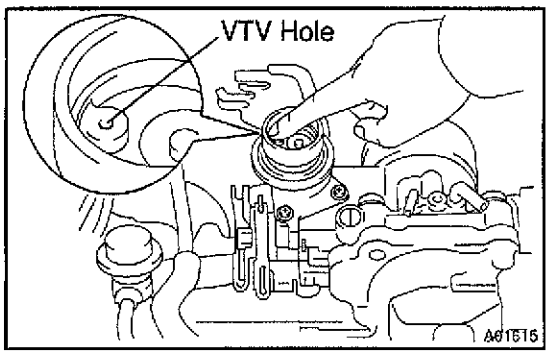
4. INSPECT AND ADJUST DASHPOT

(a) Warm up engine
Allow the engine to warm up to normal operating temperature.

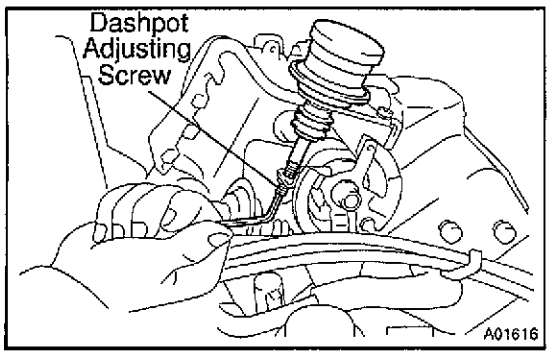
(b) Check idle speed
(See page EM–17)
Idle speed: 700 – 800 rpm



(c) Remove cap, filter and separator from dashpot.



(d) Check and adjust dashpot setting speed
(1) Maintain the engine at 4,000 rpm.
(2) Plug the VTV hole with your finger.
(3) Release the throttle valve.
(4) Check that the dashpot is set.
Dashpot setting speed: 2,000 ± 200 rpm



(5) Adjust the dashpot setting speed by turning the dashpot adjusting screw.
(6) Repeat steps from (a) to (c), and recheck the dashpot setting speed.

(e) Reinstall separator, filter and cap to dashpot.
HINT:
Install the filter with the coarser surface facing the atmospheric side (outside).

(f) Check VTV operation
(1) Maintain the engine at 2,500 rpm.
(2) Release the throttle valve, and check that the engine returns to idle in a few seconds.

5. INSPECT THROTTLE OPENER

(a) Warm up engine

(1) Allow the engine to warm up to normal operating temperature.

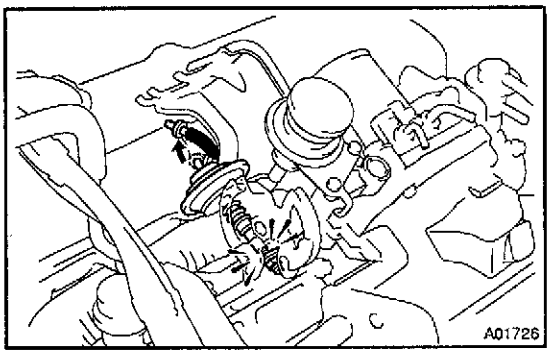
(b) Check idle speed

(See page EM–17)

Idle speed:

700 – 800 rpm

(c) Check throttle opener setting speed



(1) Disconnect the vacuum hose from the throttle opener, and plug the hose end.

(2) Check the throttle opener setting speed.

Throttle opener setting speed:

1,200 – 1,500 rpm

If the throttle opener setting is not as specified, replace the throttle body.

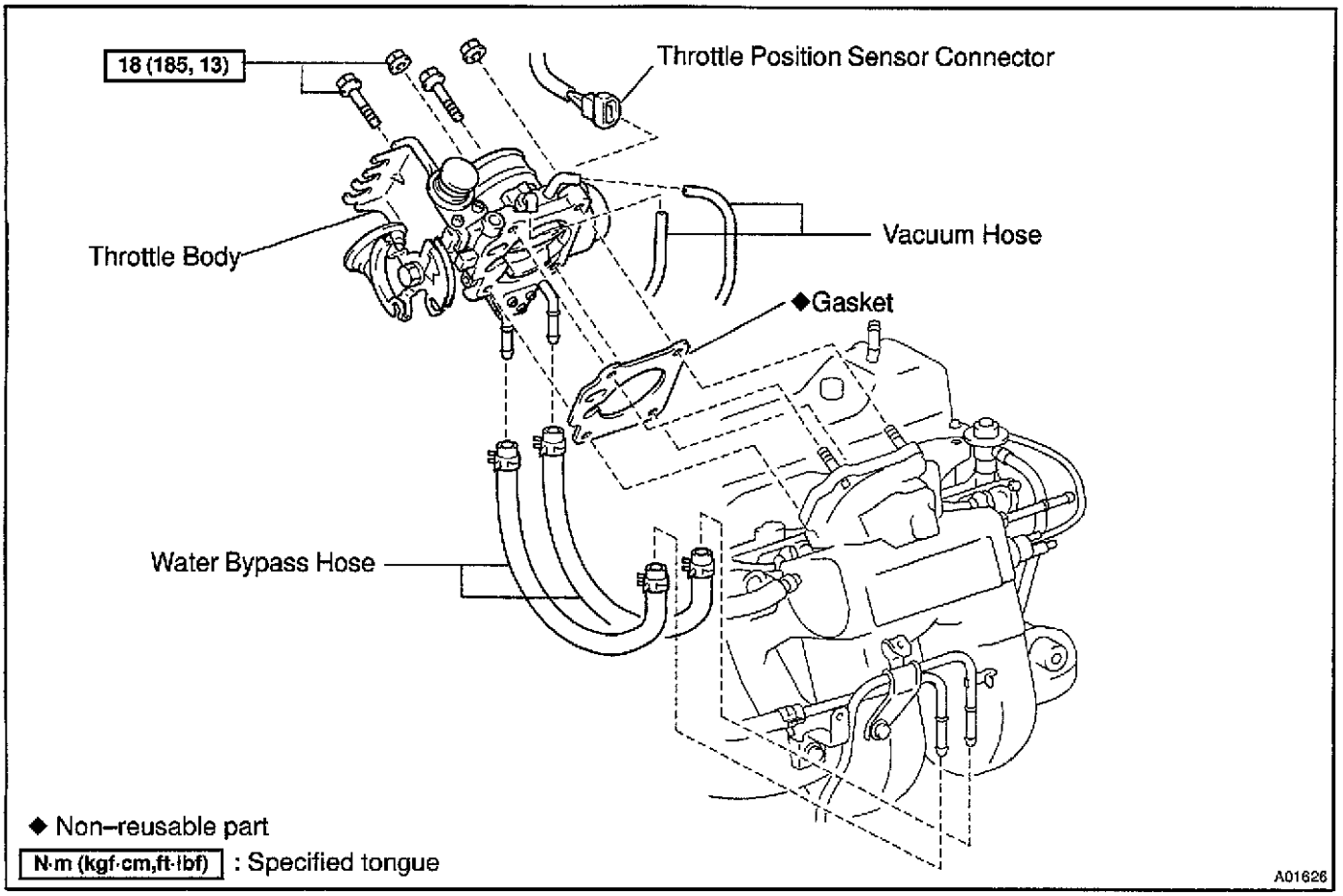
(3) Stop the engine.

(4) Reconnect the vacuum hose to the throttle opener.

(5) Start the engine, and check that the idle speed returns to the correct speed.

COMPONENTS

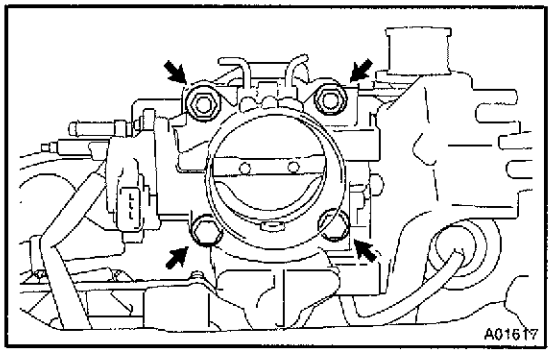
FI016-01



FI019–01

REMOVAL

1. **DRAIN ENGINE COOLANT**
2. **DISCONNECT THROTTLE POSITION SENSOR CONNECTOR**
3. **DISCONNECT VACUUM HOSES FROM THROTTLE BODY**
4. **DISCONNECT WATER BYPASS HOSES FROM NO.2 WATER BYPASS PIPE**



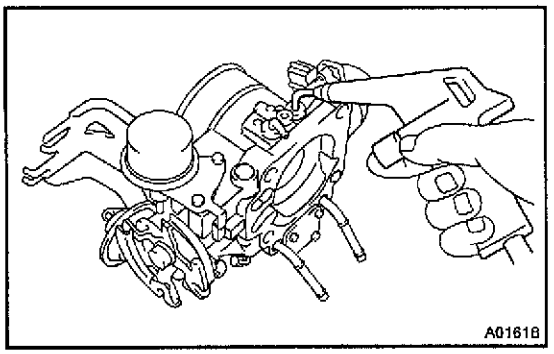
5. **REMOVE THROTTLE BODY**

(a) Remove the 2 bolts, 2 nuts, throttle body and gasket.

(b) Remove the 2 water bypass hoses from the throttle body.

FI01A–01

INSPECTION



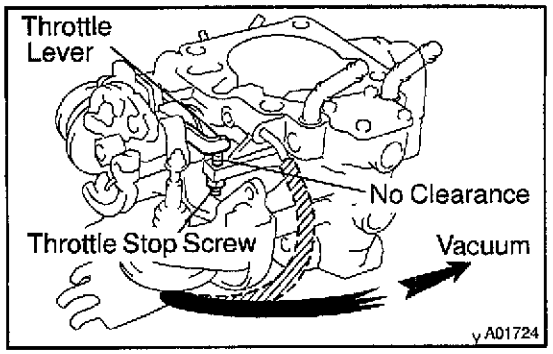
1. CLEAN THROTTLE BODY

(a) Using a soft brush and carburetor cleaner, clean the cast parts.

(b) Using compressed air, clean all the passages and apertures.

NOTICE:

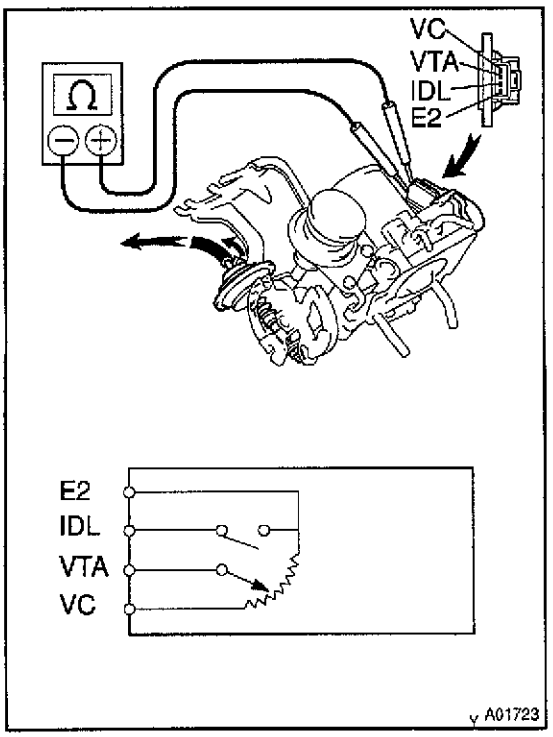
To prevent deterioration, do not clean the throttle position sensor and ISC valve.



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 closed throttle position.



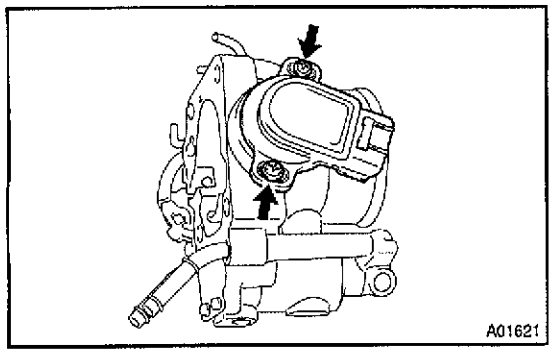
3. INSPECT THROTTLE POSITION SENSOR

(a) Apply vacuum to the throttle opener.

(b) Insert a thickness gauge between the throttle stop screw and stop lever.

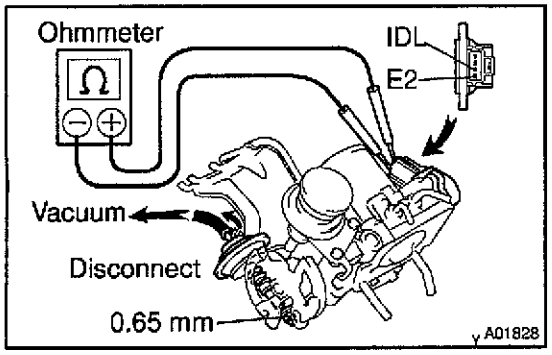
(c) Using an ohmmeter, measure the resistance between each terminal.

Clearance between lever and stop screw	Between terminals	Resistance
0 mm (0 in.)	VTA – E2	0.2 – 5.7 kΩ
0.57 mm (0.022 in.)	IDL – E2	2.3 kΩ or less
0.74 mm (0.029 in.)	IDL – E2	Infinity
Throttle valve fully open	VTA – E2	2.0 – 10.2 kΩ
–	VC – E2	2.5 – 5.9 kΩ

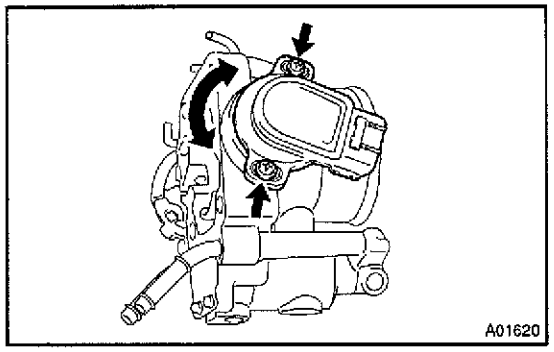


4. IF NECESSARY, ADJUST THROTTLE POSITION SENSOR

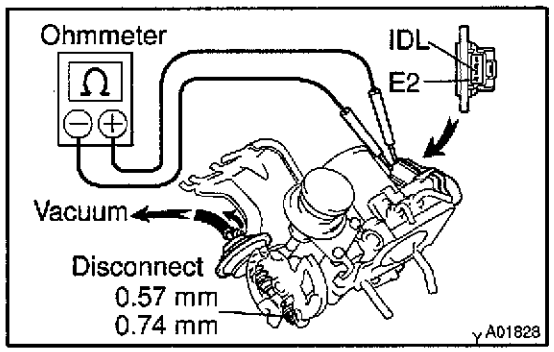
(a) Loosen the 2 set screws of the sensor



(b) Apply vacuum to the throttle opener.
(c) Insert a 0.65 mm (0.026 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 2 set screws



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

Clearance between lever and stop screw	Continuity (IDL – E2)
0.57 mm (0.022 in.)	Continuity
0.74 mm (0.029 in.)	No Continuity

FI01B-01

INSTALLATION

Installation is in the reverse order of removal.
(see page FI–42)