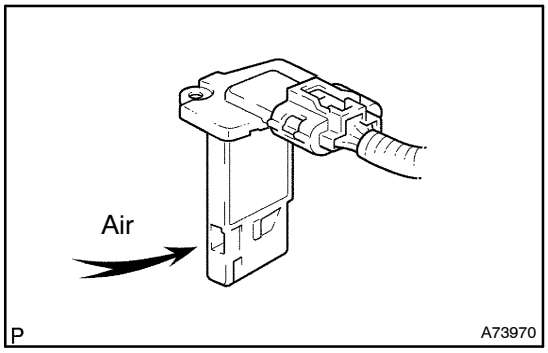
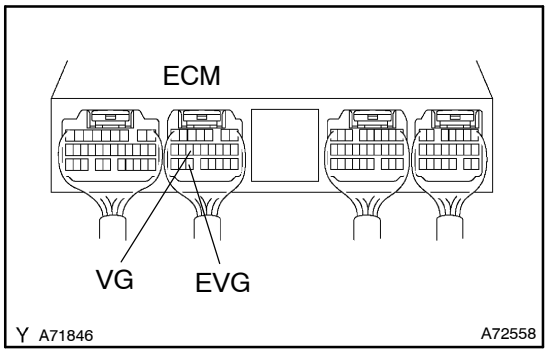
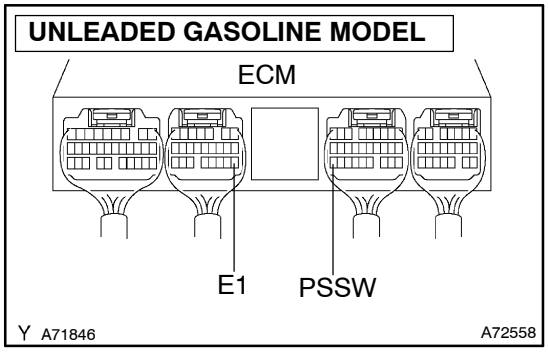
EFI SYSTEM (3RZ–FE)

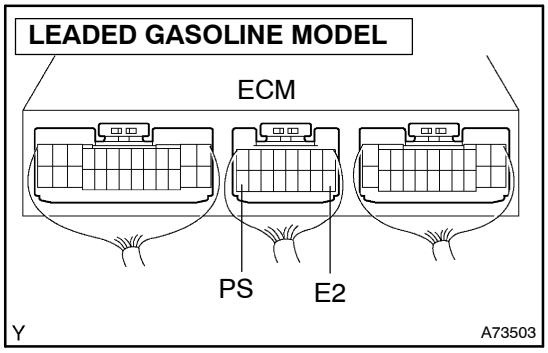
ON–VEHICLE INSPECTION

100C4–01









1. INSPECTION INTAKE MASS AIR FLOW METER (UNLEADED GASOLINE MODEL)

(a) Inspect for operation.
  (1) Connect the hand–held tester to the DLC3.
  (2) Turn the ignition switch ON.
  (3) Blow air into the MAF meter, and check that the voltage fluctuate (MAF) of the CURRENT DATA shown the standard value.

If operation is not as specified, check the MAF meter (See page 10–5), wiring and ECM.

(b) If you have no hand–held tester:
Inspect for operation
  (1) Turn the ignition switch ON.
  (2) Using a voltmeter, connect the positive (+) tester probe to terminal VG, and negative (–) tester probe to terminal E2G.
  (3) Blow air into the MAF meter, and check that the voltage fluctuates.

If operation is not as specified, check the MAF meter (See page 10–5), wiring and ECM.

2. INSPECTION POWER STEERING OIL PRESSURE SWITCH

(a) Unleaded gasoline model.
  (1) Using a voltmeter, measure the voltage between terminals PSSW and E1.

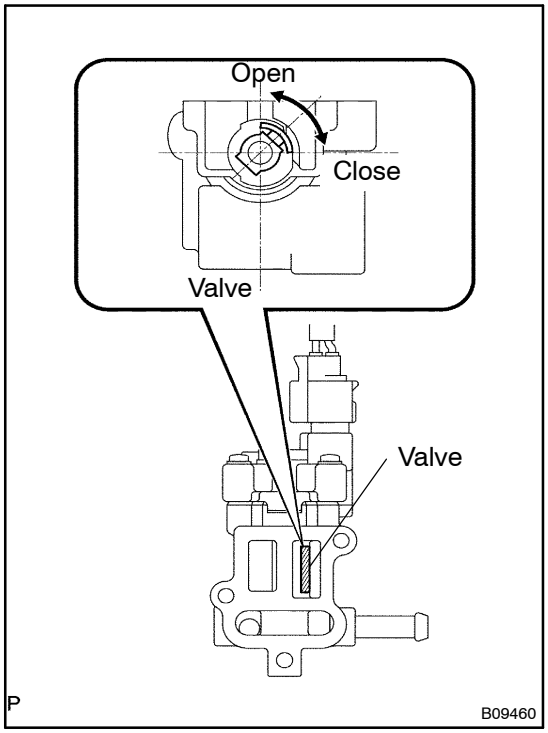
Voltage:

Condition	Voltage (V)
Not spin the steering wheel at engine idling	9 – 14
Spin the steering wheel at engine idling	0 – 3

(b) Leaded gasoline model.
  (1) Using a voltmeter, measure the voltage between terminals PS and E2.

Voltage:

Condition	Voltage (V)
Not spin the steering wheel at engine idling	9 – 14
Spin the steering wheel at engine idling	0 – 3



3. INSPECTION THROTTLE BODY IDLE SPEED CONTROL VALVE ASSY

NOTICE:

- **It is impossible to check the resister value and the operation of ISCV by itself, because the ISCV has an IC circuit inside it, which transforms the duty signal from the ECM to the derive signal.**
- **After checking, erase the DTC.**
- **Clear the DTC after inspection.**

HINT:

When the ISCV system has malfunctions except for its adherence, DTC P0505 is detected.

(a) Operation inspection.

(1) Connect the ISC connector to the ISC valve.

(2) Check the ISC valve movement when the ignition switch is turned ON.

Movement:

Half open → fully close → fully open → half open

HINT:

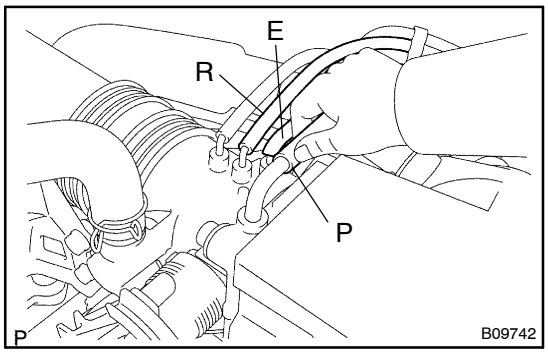
ISC valve moves within 0.5 second.

4. INSPECT THROTTLE BODY

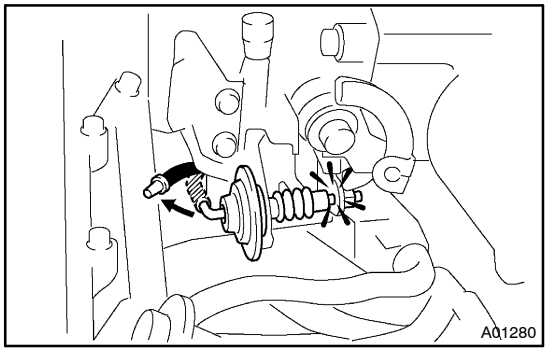
(a) Check the vacuum at each port.

(1) Start the engine .

(2) Check the vacuum with your finger.



Port name	At idle	At 3,500 rpm
P	Vacuum	Vacuum
E	No vacuum	Vacuum
R	No vacuum	Vacuum



(b) Inspect throttle opener

(1) Warm up engine.

Allow the engine to warm up to normal operating temperature.

(2) Check idle speed

Idle speed: 650 – 750 rpm

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

(4) Check the throttle opener setting speed.

Throttle opener setting speed: 1,200 – 1,500 rpm

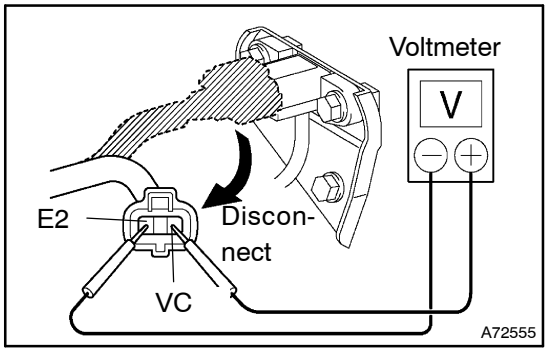
If the throttle opener setting in not as specified, replace the throttle body.

(5) Stop the engine.

(6) Connect the vacuum hose to the throttle opener.

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

(8) Disconnect hand–held tester.



5. INSPECT PRESSURE SENSOR (LEAD GASOLINE MODEL)

(a) Inspect power source voltage.

(1) Disconnect the sensor connector.

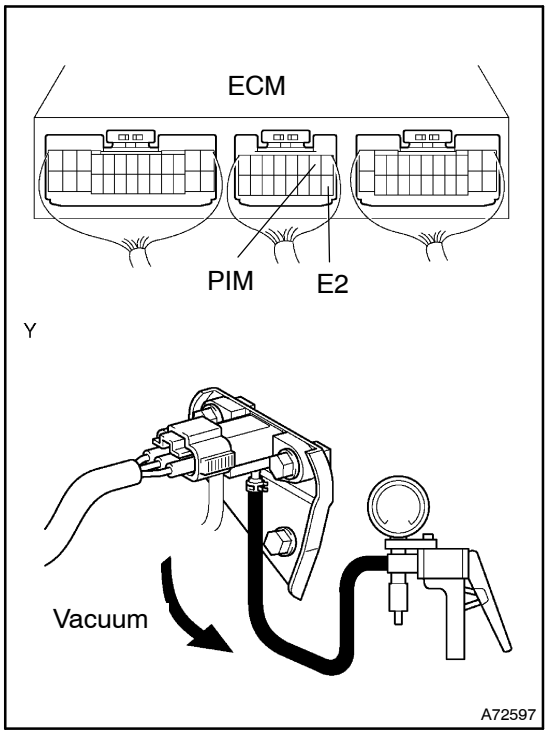
(2) Turn the ignition switch ON.

(3) Using a voltmeter, measure the voltage between connector terminals VC and E2 of the wiring harness side.

Voltage: 4.5 – 5.5 V

(4) Turn the ignition switch OFF.

(5) Reconnect the sensor connector.



(b) Inspect supply power.

(1) Turn the ignition switch ON.

(2) Disconnect the vacuum hose from the sensor.

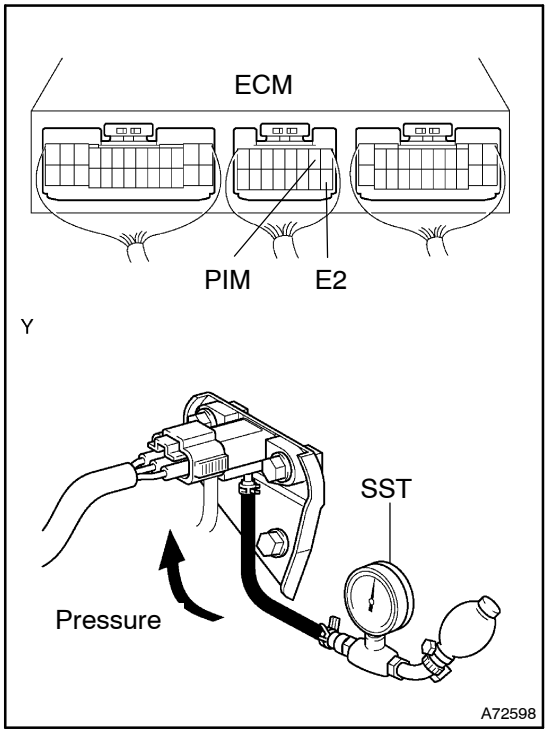
(3) Connect a voltmeter to terminals 2 (PIM) and 9 (E2) of the ECM, and measure the output voltage under ambient atmospheric pressure.

(4) Apply vacuum to the sensor in 13.3 kPa (100 mmHg, 3.94 in.Hg) segments to 40.0 kPa (300 mmHg, 11.81 in.Hg).

(5) Measure the voltage drop from step (3) above for each segment.

Voltage drop:

Applied Vacuum kPa (mmHg, in.Hg)	Voltage drop V
13.3 (100, 3.94)	0.3 – 0.5
26.7 (200, 7.87)	0.6 – 0.8
40.0 (300, 11.81)	0.95 – 1.15



(6) Using SST (turbocharger pressure gauge), apply pressure to the sensor in 19.6 kPa (0.20 kgf·cm^2, 2.84 psi) segments to 98.0 kPa (1.00 kgf·cm^2, 14.2 psi).

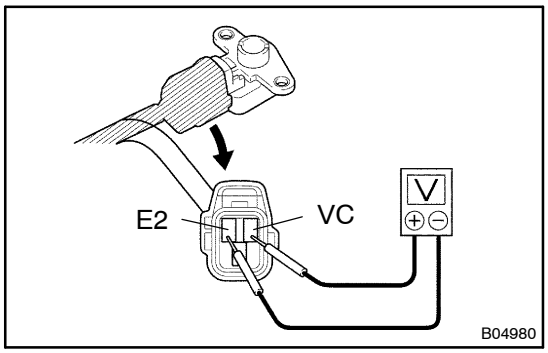
SST 09992–00242

(7) Measure the voltage up from step (3) above for each segment.

Voltage up:

Applied pressure kPa (kgf·cm^2, psi)	Voltage up V
19.6 (0.20, 2.84)	0.4 – 0.7
39.2 (0.40, 5.69)	0.9 – 1.2
58.8 (0.60, 8.53)	1.5 – 1.8
78.5 (0.80, 11.4)	2.0 – 2.3
98.0 (1.00, 14.2)	2.5 – 2.8

(8) Reconnect the vacuum hose to the sensor.



6. INSPECTION VARIABLE RESISTOR (LEAD GASOLINE MODEL)

(a) Power source voltage inspection.

(1) Disconnect the variable resistor connector.

(2) Turn the ignition switch ON.

(3) Using a voltmeter, measure the voltage between connector terminals VC and E2 of the wiring harness side.

Voltage: 4.5 – 5.5 V

(4) Reconnect the variable resistor connector.

(b) Power output inspection.

(1) Turn the ignition switch ON.

(2) Connect a voltmeter to terminals VAF and E2 of the ECM, and measure the voltage while slowly turning the idle mixture adjusting screw first fully counterclockwise, and then fully clockwise using SST.

SST 09243–00020

(3) Check that voltage changes smoothly from 0 V to approx. 5 V.

HINT:

There is no sudden jump up to 5 V or down to 0 V.

