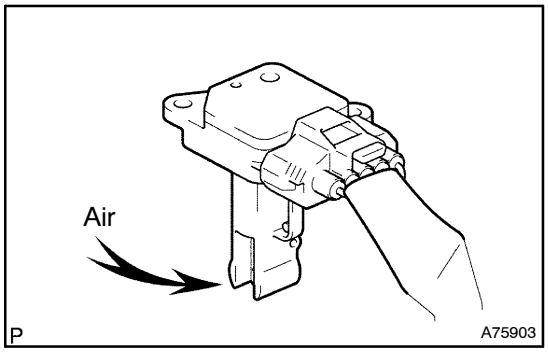
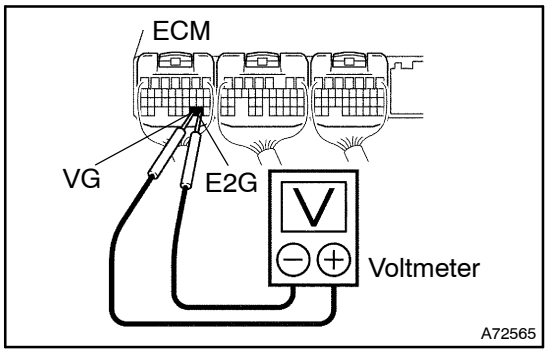
SFI SYSTEM (1GR–FE)

ON–VEHICLE INSPECTION

100DA–02





1. INSPECTION MASS AIR FLOW METER

(a) If you have the hand–held tester:

How to inspect

(1) Connect the hand–held tester to DLC3.

(2) Turn the ignition switch ON and the hand–held tester main switch ON.

(3) Select item "MAF" from "DIAGNOSIS/OBD/MOBD/DATA LIST/ALL/" on the hand–held tester.

(4) Blow air into the mass air flow (MAF) meter.

(5) Check that the air flow value on the hand–held tester fluctuates.

If operation is not as specified, check the MAF meter (See page 10–3) as well as the wiring and the ECM.

(b) If you do not have the hand–held tester:

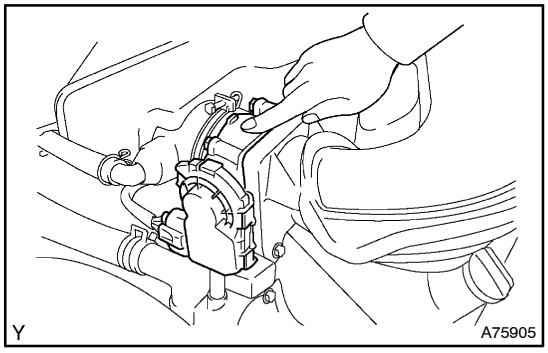
Inspect operation

(1) Turn the ignition switch ON.

(2) Connect the positive tester probe of the voltmeter to the terminal VG of the ECM and the negative tester probe to terminal E2G of the ECM.

(3) Blow air into the MAF meter and check if the voltage output fluctuates with the voltmeter.

If operation is not as specified, check the MAF meter (See page 10–3), as well as the wiring and the ECM.



2. INSPECTION THROTTLE BODY

(a) Check operating sound.

(1) Turn the ignition switch ON.

(2) Check for motor noise by turning the accelerator pedal position sensor lever.

If a friction noise can be heard, check the throttle control motor (See page 10–3).

(b) Inspect the throttle position sensor.

(1) Connect the hand–held tester to DLC3.

(2) Turn the ignition switch ON and press the ON button on the hand–held tester.

(3) Select item "THROTTLE POS" from "DIAGNOSIS/OBD/MOBD/DATA LIST/ALL/" on the hand–held tester.

(4) Check a throttle valve opening angle with the hand–held tester by turning the acclelerator pedal position sensor lever to the full–open position.

Standard throttle valve opening angle: 60 % or more

If the valve opening angle is below the standard, check the accelerator pedal position sensor (See page 05–171) as well as the wiring and the ECM.

If you do not have the hand–held tester:

Measure the voltage between the terminals of the ECM connector (VTA1 to E2 and VTA2 to E2). Refer to page (See page 05–31) for further inspectinon procedure.

(c) Inspect the air assist system.

(1) Start the engine and check that the check engine (CHK ENG) warning light does not illuminate.

(2) Warm up the engine to the normal operating temperature.

(3) Turn the A/C compressor from ON to OFF and check the idle speed.

Standard idle speed (with the gear position is neutral): 700 ± 50 rpm

NOTICE:

Perform this inspection under condition without electrical load.

(d) Perform the driving test.

3. INSPECT ACCELERATOR PEDAL POSITION SENSOR

(a) Connect the hand–held tester to DLC3.

(b) Turn the ignition switch ON and the hand–held tester main switch ON.

(c) Select item "ACCEL POS#1" from "DIAGNOSIS/OBD/MOBD/DATA LIST/ETCS/" on the hand–held tester

(d) Check if the voltage output of ACCEL POS#1 indicates the following standard value while operating the accelerator pedal.

Accelerator pedal released: 0.5 to 1.1 V

Accelerator pedal depressing: 2.6 to 4.5 V

(e) Select item "ACCEL POS#2" on the hand–held tester.

(f) Check if the voltage output of ACCEL POS#2 indicates the following standard value while operating the accelerator pedal.

Accelerator pedal released: 1.2 to 2.0 V

Accelerator pedal depressing: 3.4 to 5.3 V

If you do not have the hand–held tester:

Measure the voltage between terminals of the ECM connector (VPA to EPA and VPA2 to EPA2).

Refer to page 05–31 for further inspection procedure.

4. INSPECT CAMSHAFT TIMING OIL CONTROL VALVE ASSY

(a) Connect the hand–held tester to DLC3.

(b) Turn the ignition switch ON and the hand–held tester main switch ON.

(c) Warm up the engine.

(d) Select item "VVT CTRL B1" from "DIAGNOSIS/OBD/MOBD/ACTIVE YEST/" on the hand–held tester.

(e) Check the engine speed while operating the oil control valve (OCV) using the hand–held tester.

VVT system is OFF (OCV is OFF): Normal engine speed

VVT system is ON (OCV is ON): Rough idle or Engine stalls

(f) Select item "VVT CTRL B2" on the hand–held tester.

(g) Check the engine speed while opereating the OCV using the hand–held tester.

VVT system is OFF (OCV is OFF): Normal engine speed

VVT system is ON (OCV is ON): Rough idle or Engine stalled