

SFI SYSTEM (2AZ-FE)

ON-VEHICLE INSPECTION

1006B-06

1. CHECK THROTTLE BODY

- (a) Listen to the throttle control motor operating sounds.
 - (1) Turn the ignition switch ON.
 - (2) When pressing the accelerator pedal position sensor lever, listen to the running motor. Make sure no friction noise comes from the motor.

If friction noise exists, replace the throttle body.

- (b) Check the throttle position sensor.
 - (1) Connect the hand-held tester or OBD II scan tool to the DLC3.
 - (2) Turn the ignition switch ON.
 - (3) Check that the check engine warning light does not light up.
 - (4) Under CURRENT DATA, the throttle valve opening percentage (THROTTLE POS) should be within the standard value range below.

Standard throttle valve opening percentage: 60% or more

If the percentage is less than 60%, replace the throttle body.

NOTICE:

When checking the standard throttle valve opening percentage, the transmission should be in the neutral position.

2. CHECK ACCELERATOR PEDAL POSITION SENSOR

- (a) Turn the ignition switch ON. Under CURRENT DATA, the voltage of the throttle position sensor should be within the standard value range below.

Standard: 0.6 to 1.0 V

If the result is not as specified, replace the accelerator pedal position sensor.

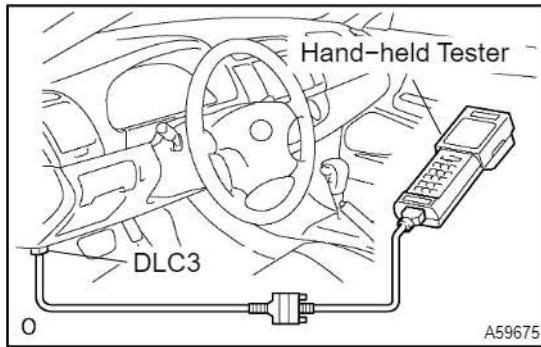
3. CHECK CAMSHAFT TIMING OIL CONTROL VALVE ASSY

- (a) Connect the hand-held tester or OBD II scan tool to the DLC3.
- (b) Turn the ignition switch ON.
- (c) Start the engine and warmed it up.
- (d) Select the VVT from the ACTIVE TEST menu.
- (e) Check the engine speed when the OCV is operated by the hand-held tester.

Standard:

Condition	Specified Condition
VVT system is OFF (OCV is OFF)	Normal engine speed
VVT system is ON (OCV is ON)	Rough idle or engine stalled

If the result is not as specified, replace the OCV assy.



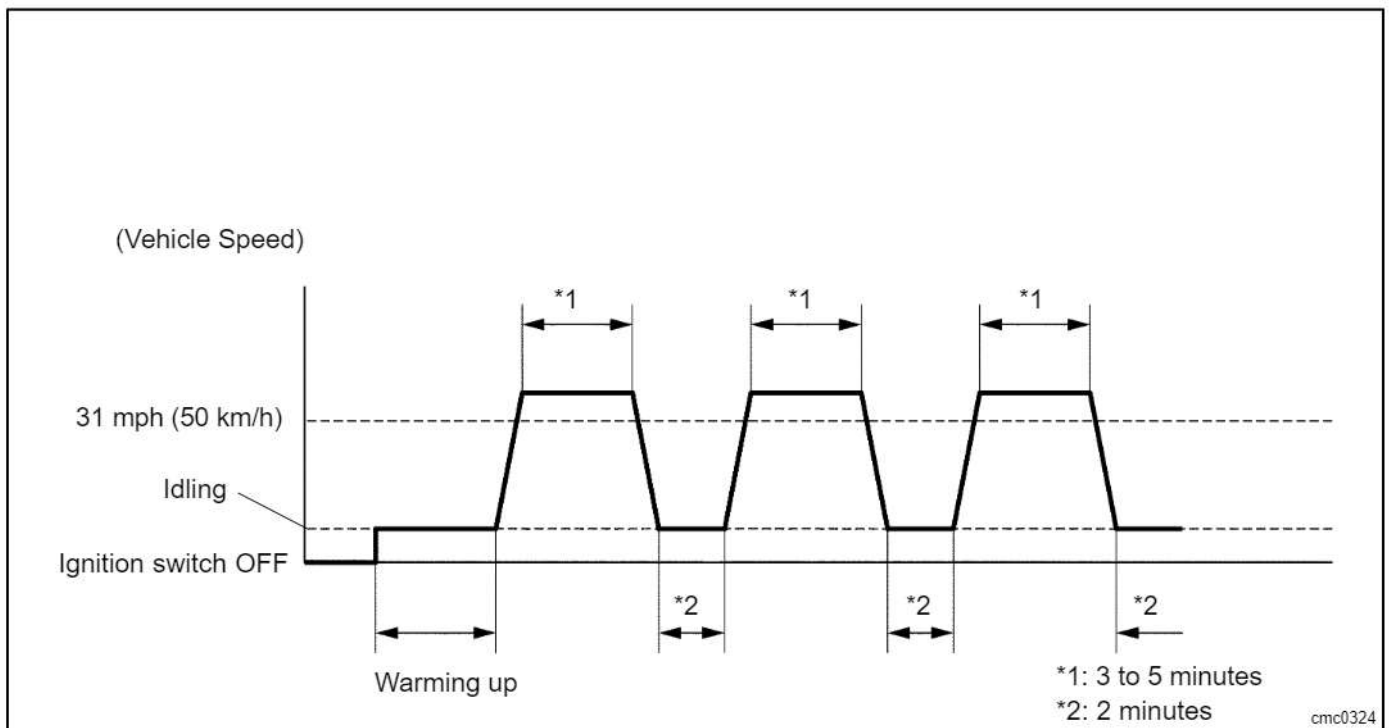
4. CHECK MASS AIR FLOW METER (MAF meter)

NOTICE:

- Perform the MAF meter inspection by following the procedures below.
- Only replace the MAF meter when both the LONG FT#1 value and MAF value in the DATA LIST (with the engine stopped) are not within the normal operating range.

(a) Perform confirmation driving pattern.

- (1) Connect the hand-held tester to the DLC3.
- (2) Turn the ignition switch ON.
- (3) Turn the tester on.
- (4) Clear the DTCs (see page 05-41).
- (5) Start the engine and warm it up with all accessory switches off (until the engine coolant temperature is 75★C (167★F) or more).
- (6) Drive the vehicle at 31 mph (50 km/h) or more for 3 to 5 minutes. *1
- (7) Allow the engine to idle for 2 minutes. *2
- (8) Perform steps *1 and *2 at least 3 times.



- (b) Read value using the hand-held tester (LONG FT#1).
- (1) Select the following menu items: DIAGNOSIS / ENHANCED OBD II / DATA LIST / PRIMARY / LONG FT#1.
 - (2) Read the values displayed on the tester.

Standard value:

Within -15 to +15 %

If the result is not within the specified range, perform the inspection below.

- (c) Read value using the hand-held tester (MAF).

NOTICE:

- Turn off the engine.
 - Perform the inspection with the vehicle indoors and on a level surface.
 - Perform the inspection of the MAF meter while it is installed to the air cleaner case (installed to the vehicle).
 - During the test, do not use the exhaust air duct to perform suction on the exhaust pipe.
- (1) Turn off the engine (do not run the engine).
 - (2) Turn the ignition switch ON.
 - (3) Turn the tester on.
 - (4) Select the following menu items: DIAGNOSIS / ENHANCED OBD II / DATA LIST / PRIMARY / PRIMARY / MAF.
 - (5) Wait 30 seconds, and read the values on the hand-held tester.

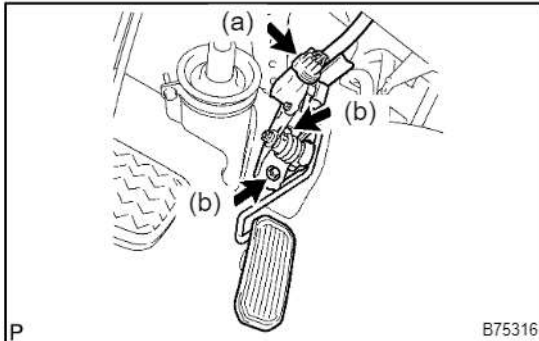
Standard condition:

Less than 0.54 g/s

- If the result is not as specified, replace the MAF meter.
- If the result is within the specified range, inspect the cause of the extremely rich or lean air fuel ratio (see page 05-138).

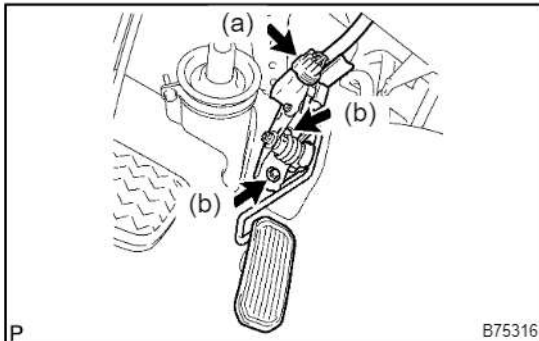
ACCELERATOR PEDAL ASSY (2AZ-FE) REPLACEMENT

100JY-02



1. REMOVE ACCELERATOR PEDAL ASSY

- (a) Disconnect the accelerator position sensor connector.
- (b) Remove the 2 bolts and the accelerator pedal.



2. INSTALL ACCELERATOR PEDAL ASSY

- (a) Connect the accelerator position sensor connector.
- (b) Install the accelerator pedal with the 2 bolts.

Torque: 7.5 N·m (76 kgf·cm, 66 in.·lbf)

SFI SYSTEM (1MZ-FE/3MZ-FE)

100FS-05

ON-VEHICLE INSPECTION

1. CHECK THROTTLE BODY

- (a) Listen to the throttle control motor operating sounds.
 - (1) Turn the ignition switch ON.
 - (2) When pressing the accelerator pedal position sensor lever, listen to the running motor. Make sure no friction noise comes from the motor.

If friction noise exists, replace the throttle body.

- (b) Inspect the throttle position sensor.
 - (1) Connect the hand-held tester or OBD II scan tool to the DLC3.
 - (2) Turn the ignition switch ON.
 - (3) Check that the MIL is off.
 - (4) Under CURRENT DATA, the throttle valve opening percentage (THROTTLE POS) should be within the standard value range below.

Standard throttle valve opening percentage: 60% or more

If the percentage is less than 60%, replace the throttle body.

NOTICE:

When checking the standard throttle valve opening percentage, the transmission should be in the neutral position.

2. CHECK ACCELERATOR PEDAL POSITION SENSOR

- (a) Turn the ignition switch ON. Under CURRENT DATA, the voltage of the throttle position sensor should be within the standard value range below.

Standard: 0.6 to 1.0 V

If the result is not as specified, replace the accelerator pedal position sensor.

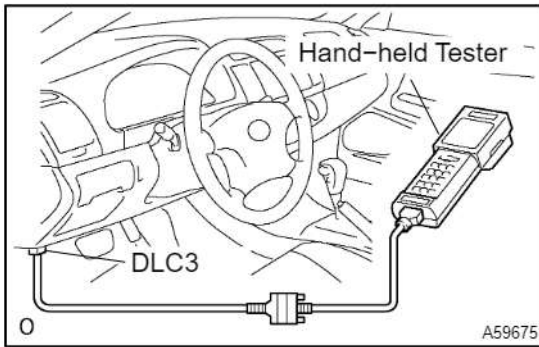
3. CHECK CAMSHAFT TIMING OIL CONTROL VALVE ASSY

- (a) Connect the hand-held tester or OBD II scan tool to the DLC3.
- (b) Turn the ignition switch ON.
- (c) Start the engine and warm it up.
- (d) Select the VVT from the ACTIVE TEST menu.
- (e) Check the engine speed when the OCV is operated by the hand-held tester.

Standard:

Condition	Specified Condition
VVT system is OFF (OCV is OFF)	Normal engine speed
VVT system is ON (OCV is ON)	Rough idle or engine stalled

If the result is not as specified, replace the OCV assy.



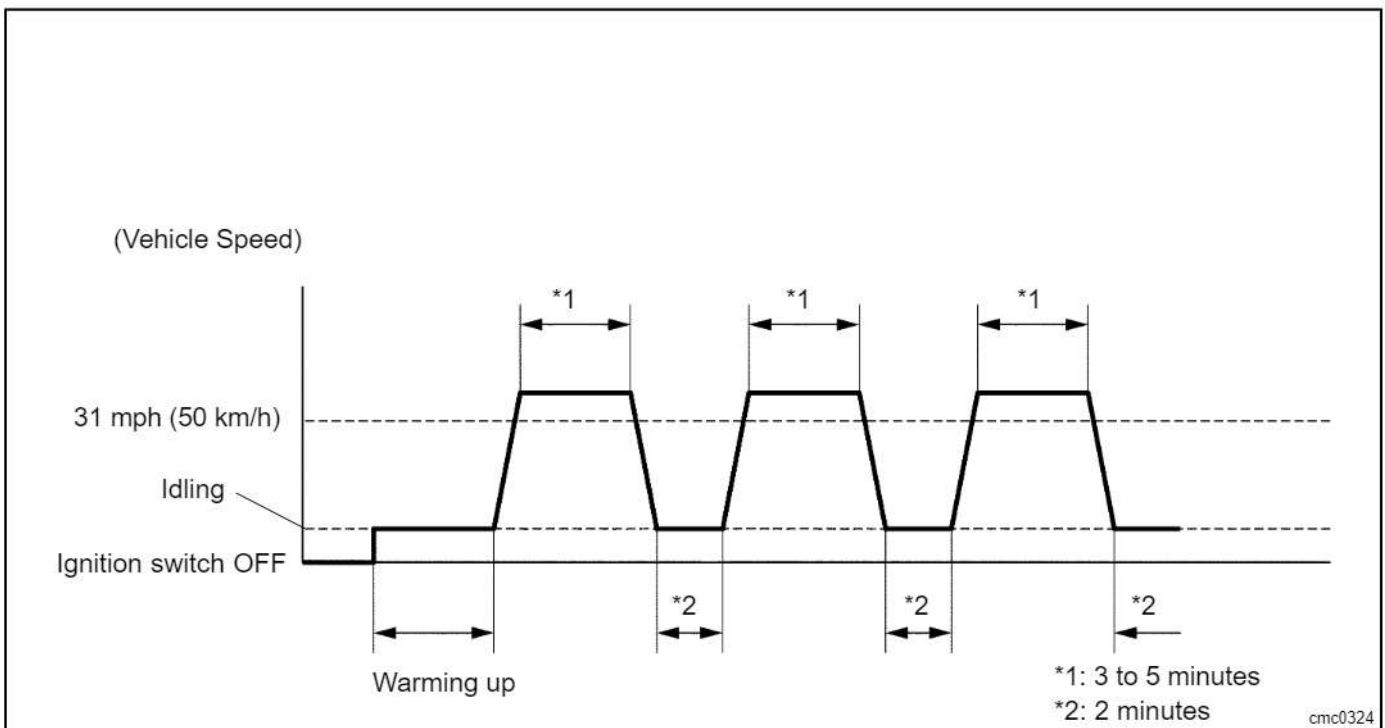
4. CHECK MASS AIR FLOW METER (MAF meter)

NOTICE:

- Perform the MAF meter inspection by following the procedures below.
- Only replace the MAF meter when both the LONG FT#1 value and MAF value in the DATA LIST (with the engine stopped) are not within the normal operating range.

(a) Perform confirmation driving pattern.

- (1) Connect the hand-held tester to the DLC3.
- (2) Turn the ignition switch ON.
- (3) Turn the tester on.
- (4) Clear the DTCs (see page 05-531).
- (5) Start the engine and warm it up with all accessory switches off (until the engine coolant temperature is 75°C (167°F) or more).
- (6) Drive the vehicle at 31 mph (50 km/h) or more for 3 to 5 minutes. *1
- (7) Allow the engine to idle for 2 minutes. *2
- (8) Perform steps *1 and *2 at least 3 times.



- (b) Read value using the hand-held tester (LONG FT#1).
- (1) Select the following menu items: DIAGNOSIS / ENHANCED OBD II / DATA LIST / PRIMARY / LONG FT#1.
 - (2) Read the values displayed on the tester.

Standard value:

Within -15 to +15 %

If the result is not within the specified range, perform the inspection below.

- (c) Read value using the hand-held tester (MAF).

NOTICE:

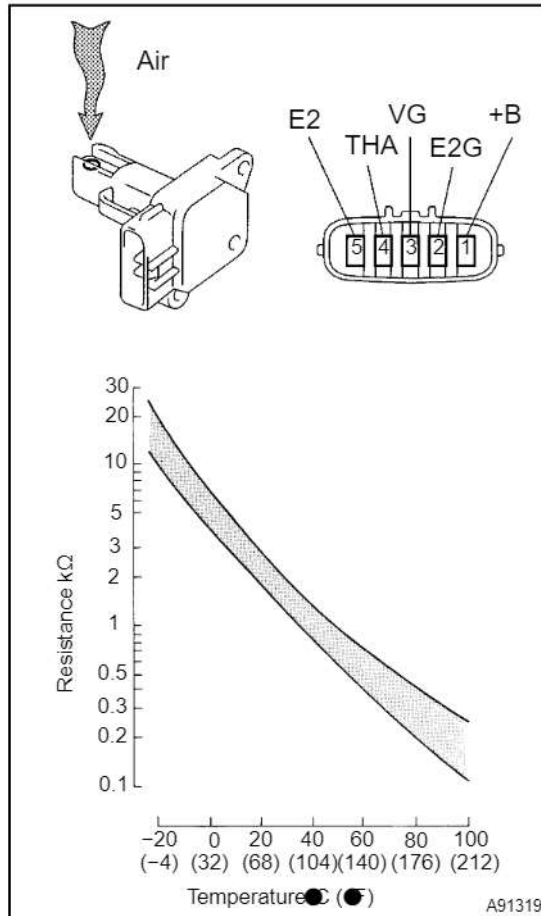
- Turn off the engine.
 - Perform the inspection with the vehicle indoors and on a level surface.
 - Perform the inspection of the MAF meter while it is installed to the air cleaner case (installed to the vehicle).
 - During the test, do not use the exhaust air duct to perform suction on the exhaust pipe.
- (1) Turn off the engine (do not run the engine).
 - (2) Turn the ignition switch ON.
 - (3) Turn the tester on.
 - (4) Select the following menu items: DIAGNOSIS / ENHANCED OBD II / DATA LIST / PRIMARY / PRIMARY / MAF.
 - (5) Wait 30 seconds, and read the values on the hand-held tester.

Standard condition:

Less than 0.54 g/s

- If the result is not as specified, replace the MAF meter.
- If the result is within the specified range, inspect the cause of the extremely rich or lean air fuel ratio (see page 05-632).

INSPECTION



1. INSPECT MASS AIR FLOW METER

- Check the output voltage.
 - Apply battery voltage across terminals 1 (+B) and 2 (E2G).
 - Using a voltmeter, connect the positive (+) tester probe to terminal VG, and negative (-) tester probe to terminal E2G.
 - Blow air into the MAF meter, and check that the voltage fluctuates.
- Measure the resistance between terminals 4 (THA) and 5 (E2).

Standard:

Condition	Specified Condition
-20°C (-4°F)	13.6 to 18.4 kΩ
20°C (68°F)	2.21 to 2.69 kΩ
60°C (140°F)	0.493 to 0.667 kΩ

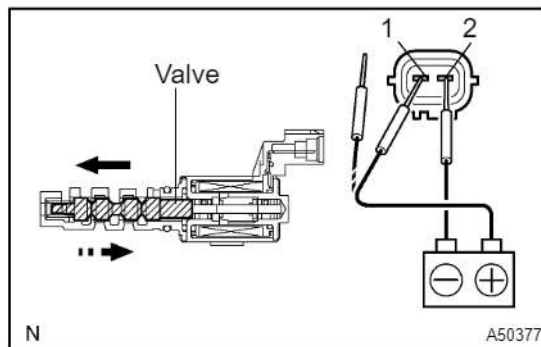
If the result is not as specified, replace the MAF meter.

2. INSPECT CAMSHAFT TIMING OIL CONTROL VALVE ASSY

- Measure the resistance between the terminals.

Standard: 6.9 to 7.9 Ω at 20°C (68°F)

If the result is not as specified, replace the OCV assy.



- Connect the battery's positive (+) lead to terminal 1 and negative (-) lead to terminal 2, and check the movement of the valve.

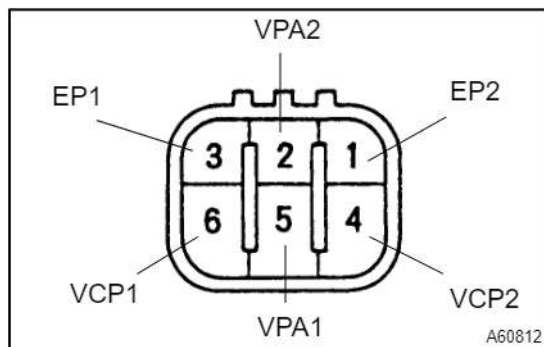
NOTICE:

Confirm that the valve moves freely and does not become stuck in any position.

If necessary, replace the OCV assy.

HINT:

If the valve cannot return properly because of foreign matter, a small pressure leak in the advanced direction may occur and a DTC will be output.



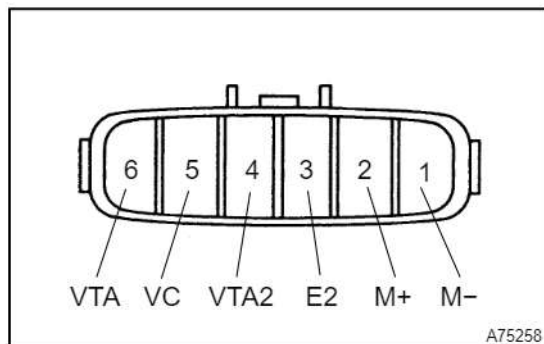
3. INSPECT ACCELERATOR PEDAL ASSY

- (a) Measure the resistance between the terminals.

Standard:

Tester Connection	Specified Condition
2 (VPA2) - 3 (EP1)	5.0 kΩ or less
5 (VPA1) - 1 (EP2)	5.0 kΩ or less
6 (VCP1) - 3 (EP1)	2.25 to 4.75 kΩ
4 (VCP2) - 1 (EP2)	2.25 to 4.75 kΩ

If the result is not as specified, replace the pedal assy.



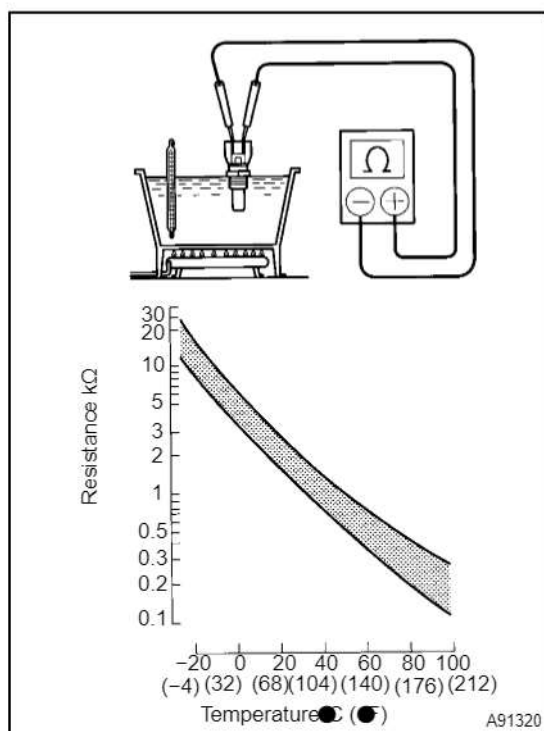
4. INSPECT THROTTLE BODY ASSY

- (a) Measure the resistance between the terminals.

Standard:

Tester Connection	Condition	Specified Condition
2 (M+) - 1 (M-)	20°C (68°F)	0.3 to 100 Ω
5 (VC) - 3 (E2)	20°C (68°F)	2.0 to 4.0 kΩ

If the result is not as specified, replace the throttle body assy.



5. INSPECT ENGINE COOLANT TEMPERATURE SENSOR

- (a) Measure the resistance between each terminal.

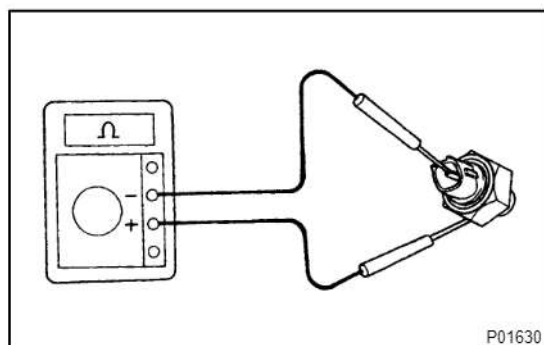
Standard:

Condition	Specified Condition
Approx. 20°C (68°F)	2.32 to 2.59 kΩ
Approx. 80°C (176°F)	0.310 to 0.326 kΩ

If the result is not as specified, replace the sensor.

NOTICE:

If checking the engine coolant temperature sensor in the water, keep the terminals dry. After the check, wipe the sensor dry.



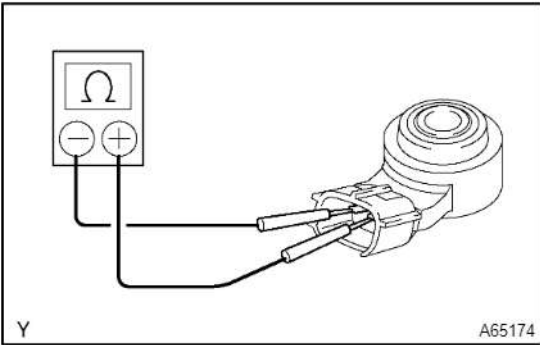
6. INSPECT KNOCK SENSOR (1MZ-FE ENGINE TYPE)

- (a) Using an ohmmeter, measure the resistance between the terminal and body.

Standard: 10 kΩ or higher

HINT:

If the result is not as specified, replace the sensor.



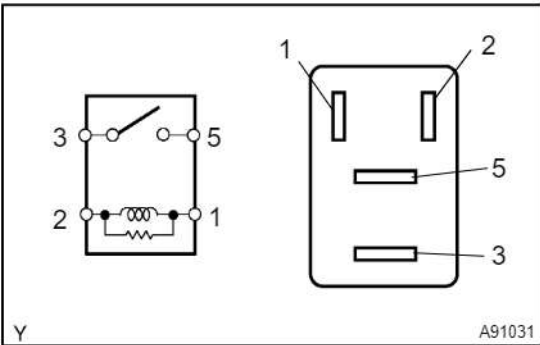
7. INSPECT KNOCK SENSOR (3MZ-FE ENGINE TYPE)

- (a) Using an ohmmeter, measure the resistance between the terminals.

Standard: 120 to 280 kΩ at 20°C (68°F)

HINT:

If the result is not as specified, replace the sensor.



8. INSPECT RELAY (Marking: EFI, C/OPN)

- (a) Using an ohmmeter, measure the resistance of the relay.

Standard:

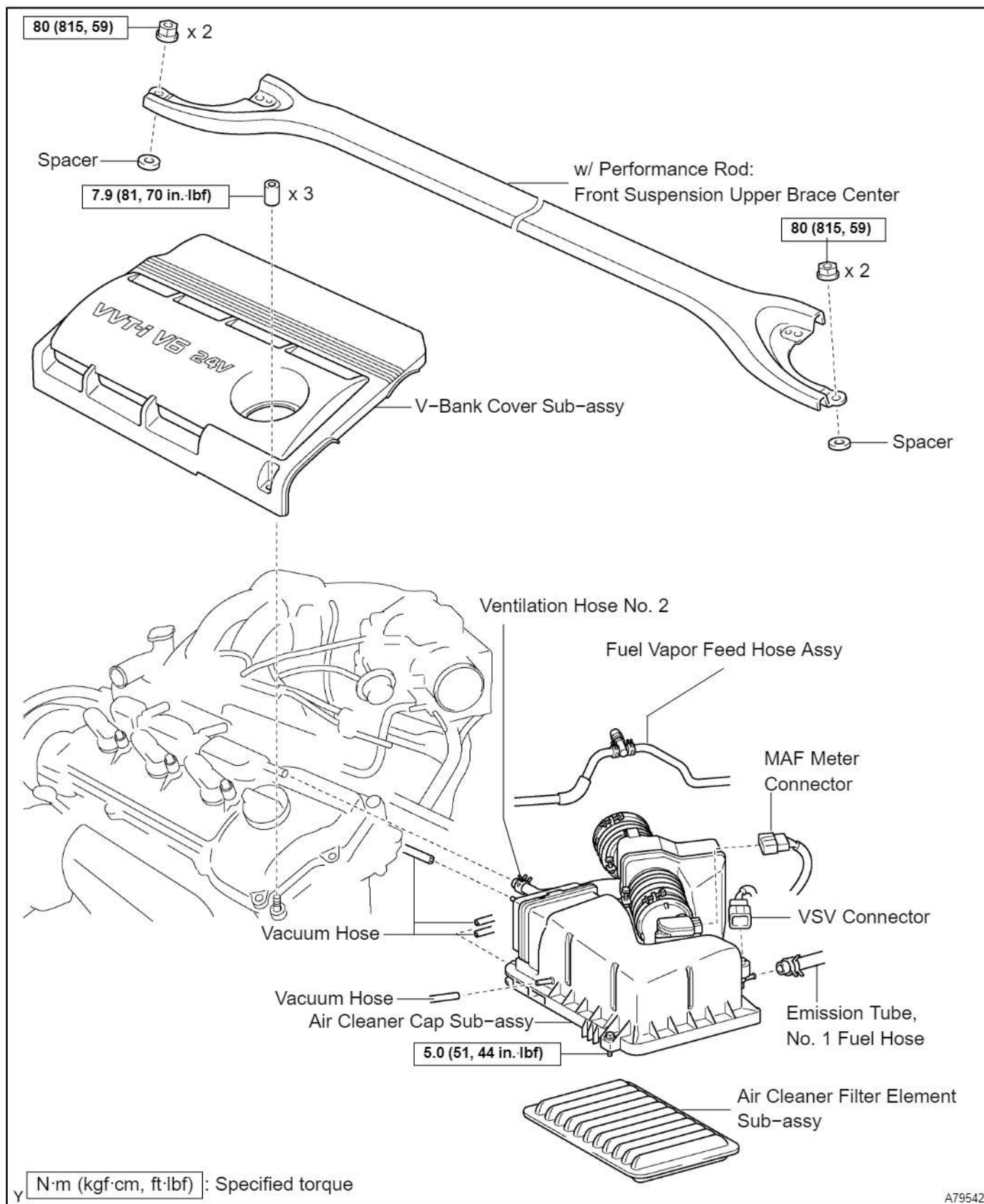
Tester Connection	Specified Condition
3 - 5	10 kΩ or higher
3 - 5	Below 1Ω (when battery voltage is applied to terminals 1 and 2)

If the result is not as specified, replace the relay.

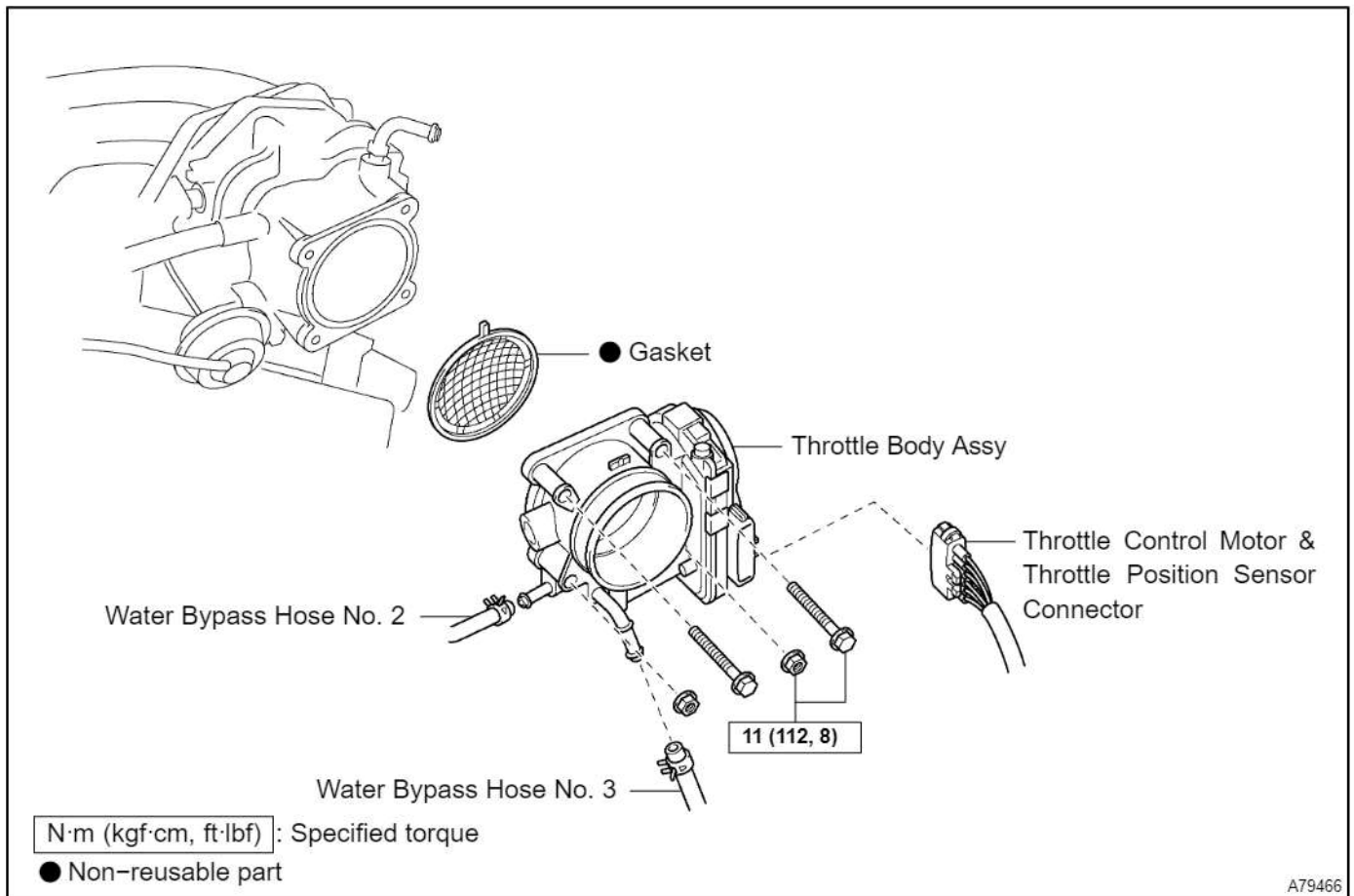
THROTTLE BODY ASSY (1MZ-FE/3MZ-FE)

COMPONENTS

100IU-04



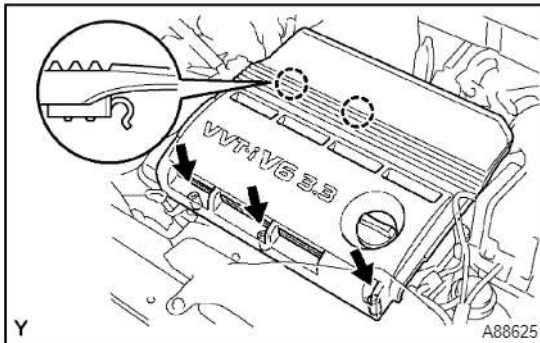
A79542



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REPLACEMENT

1. DRAIN ENGINE COOLANT (See page 16-27)
2. w/ Performance rod:
REMOVE FRONT SUSPENSION UPPER BRACE CENTER
 - (a) Remove the 2 nuts and upper brace.

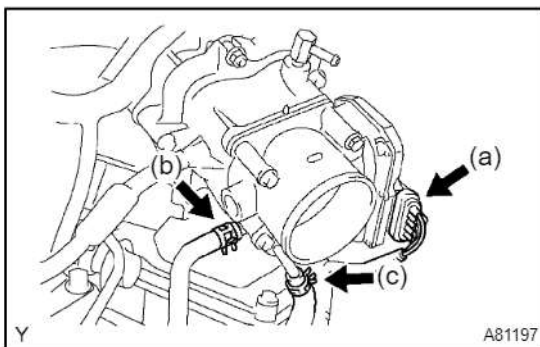


3. REMOVE V-BANK COVER SUB-ASSY

- (a) Using a socket hexagon wrench 5, remove the 3 nuts.
- (b) Remove the V-bank cover.

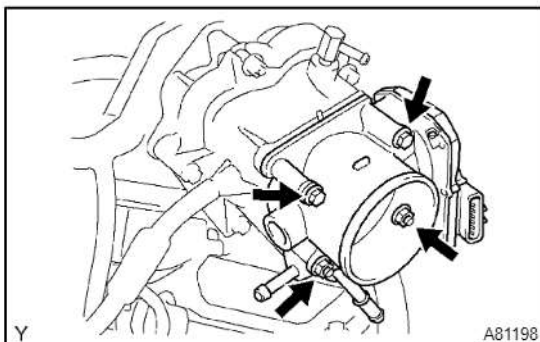
4. REMOVE AIR CLEANER CAP SUB-ASSY

- (a) Disconnect the MAF meter connector.
- (b) Disconnect the VSV connector.
- (c) Remove the ventilation hose No. 2.
- (d) Disconnect the emission tube No. 1 fuel hose.
- (e) Disconnect the vacuum hoses.
- (f) Remove the fuel vapor feed hose from the 2 hose clamps.
- (g) Loosen the air cleaner hose clamp bolt, and then remove the intake air resonator.



5. REMOVE THROTTLE BODY ASSY

- (a) Disconnect the throttle control motor & throttle position sensor connector.
- (b) Disconnect the water bypass hose No. 2.
- (c) Disconnect the water bypass hose No. 3.



- (d) Remove the 2 bolts, 2 nuts and throttle body.
- (e) Remove the gasket.

6. INSTALL THROTTLE BODY ASSY

- (a) Install a new gasket to the intake air connector.
- (b) Install the throttle body with the 2 bolts and 2 nuts.
Torque: 11 N·m (112 kgf·cm, 8 ft·lbf)
- (c) Connect the water bypass hose No. 3.
- (d) Connect the water bypass hose No. 2.
- (e) Connect the throttle control motor & throttle position sensor connector.

7. INSTALL AIR CLEANER CAP SUB-ASSY

- (a) Install the air cleaner hose (w/ air cleaner cap) to the throttle body.
- (b) Tighten the air cleaner hose clamp bolt.
- (c) Install the fuel vapor feed hose to the 2 hose clamps.
- (d) Connect the vacuum hoses.
- (e) Connect the emission tube No. 1 fuel hose.
- (f) Install the ventilation hose No. 2.
- (g) Connect the VSV connector.
- (h) Connect the MAF meter connector.

8. ADD ENGINE COOLANT (See page 16-27)**9. CHECK FOR ENGINE COOLANT LEAKS (See page 16-21)****10. INSTALL V-BANK COVER SUB-ASSY**

- (a) Fit the 2 retainers and install the V-bank cover.
- (b) Using a socket hexagon wrench 5, tighten the 3 nuts.

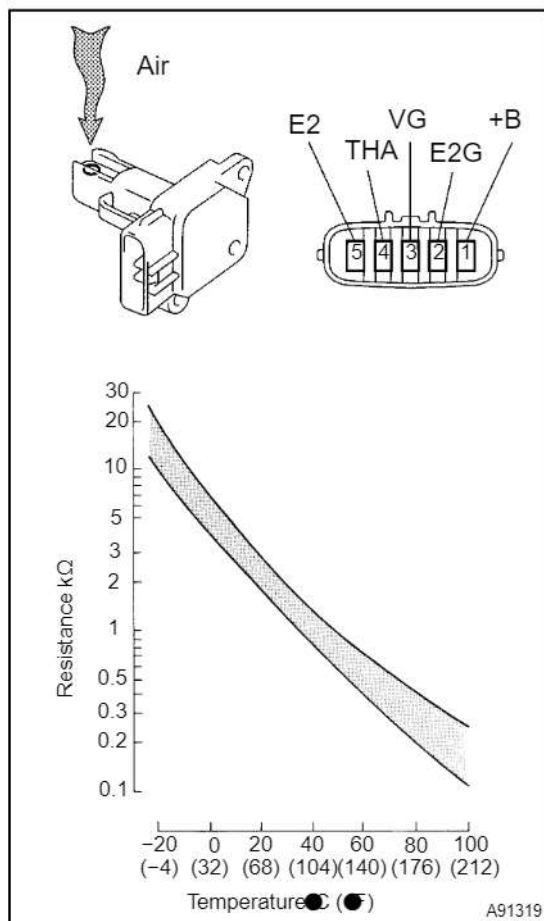
Torque: 7.9 N·m (81 kgf·cm, 70 in·lbf)

11. w/ Performance Rod:**INSTALL FRONT SUSPENSION UPPER BRACE CENTER**

- (a) Install the upper brace with the 2 nuts.

Torque: 80 N·m (815 kgf·cm, 59 ft·lbf)

INSPECTION



1. INSPECT MASS AIR FLOW METER

- Check the output voltage.
 - Apply battery voltage across terminals 1 (+B) and 2 (E2G).
 - Using a voltmeter, connect the positive (+) tester probe to terminal VG, and negative (-) tester probe to terminal E2G.
 - Blow air into the MAF meter, and check that the voltage fluctuates.
- Measure the resistance between terminals 4 (THA) and 5 (E2).

Standard:

Condition	Specified Condition
-20°C (-4°F)	13.6 to 18.4 kΩ
20°C (68°F)	2.21 to 2.69 kΩ
60°C (140°F)	0.493 to 0.667 kΩ

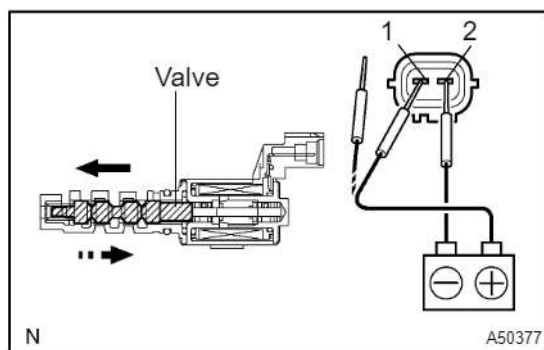
If the result is not as specified, replace the MAF meter.

2. INSPECT CAMSHAFT TIMING OIL CONTROL VALVE ASSY

- Measure the resistance between the terminals.

Standard: 6.9 to 7.9 Ω at 20°C (68°F)

If the result is not as specified, replace the OCV assy.



- Connect the battery's positive (+) lead to terminal 1 and negative (-) lead to terminal 2, and check the movement of the valve.

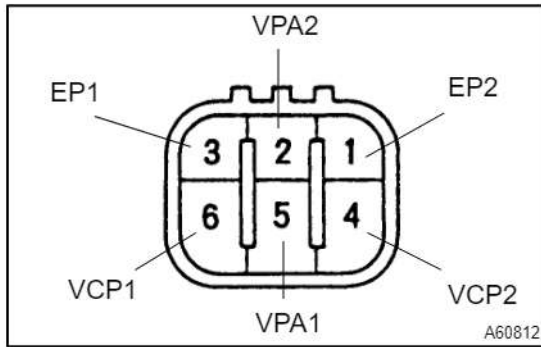
NOTICE:

Confirm that the valve moves freely and does not become stuck in any position.

If necessary, replace the OCV assy.

HINT:

If the valve cannot return properly because of foreign matter, a small pressure leak in the advanced direction may occur and a DTC will be output.



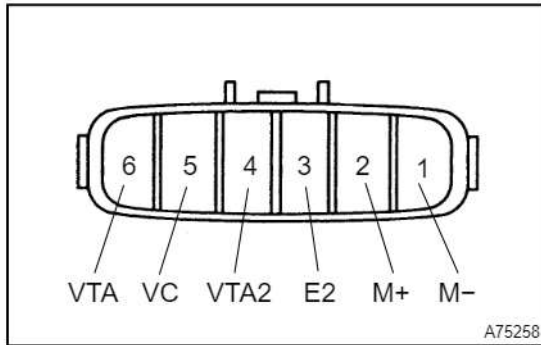
3. INSPECT ACCELERATOR PEDAL ASSY

- (a) Measure the resistance between the terminals.

Standard:

Tester Connection	Specified Condition
2 (VPA2) - 3 (EP1)	5.0 kΩ or less
5 (VPA1) - 1 (EP2)	5.0 kΩ or less
6 (VCP1) - 3 (EP1)	2.25 to 4.75 kΩ
4 (VCP2) - 1 (EP2)	2.25 to 4.75 kΩ

If the result is not as specified, replace the pedal assy.



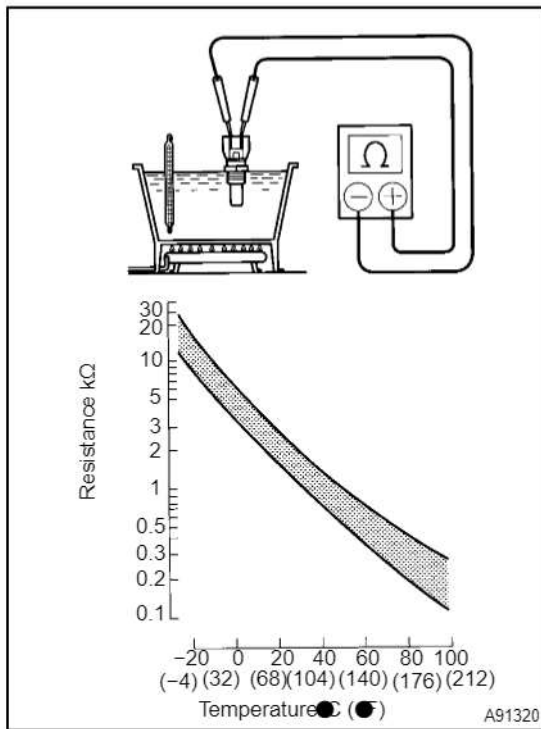
4. INSPECT THROTTLE BODY ASSY

- (a) Measure the resistance between the terminals.

Standard:

Tester Connection	Condition	Specified Condition
2 (M+) - 1 (M-)	20°C (68°F)	0.3 to 100 Ω
5 (VC) - 3 (E2)	20°C (68°F)	1.2 to 3.2 kΩ

If the result is not as specified, replace the throttle body assy.



5. INSPECT ENGINE COOLANT TEMPERATURE SENSOR

- (a) Measure the resistance between terminals 1 and 2.

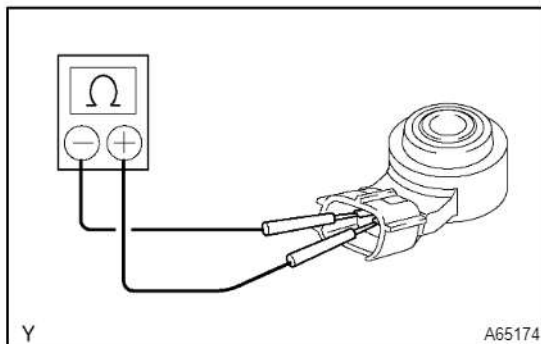
Standard:

Condition	Specified Condition
Approx. 20°C (68°F)	2.32 to 2.59 kΩ
Approx. 80°C (176°F)	0.310 to 0.326 kΩ

If the result is not as specified, replace the sensor.

NOTICE:

If checking the engine coolant temperature sensor in the water, keep the terminals dry. After the check, wipe the sensor dry.



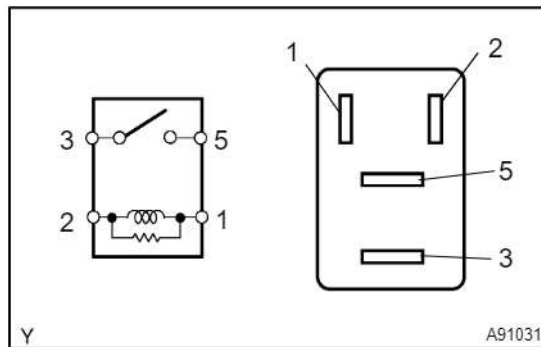
6. INSPECT KNOCK SENSOR

- (a) Using an ohmmeter, measure the resistance between the terminals.

Standard: 120 to 280 kΩ at 20°C (68°F)

HINT:

If the result is not as specified, replace the sensor.



7. INSPECT RELAY (Marking: EFI, C/OPN)

- (a) Using an ohmmeter, measure the resistance of the relay.
Standard:

Tester Connection	Specified Condition
3 - 5	10 k Ω or higher
3 - 5	Below 1 Ω (when battery voltage is applied to terminals 1 and 2)

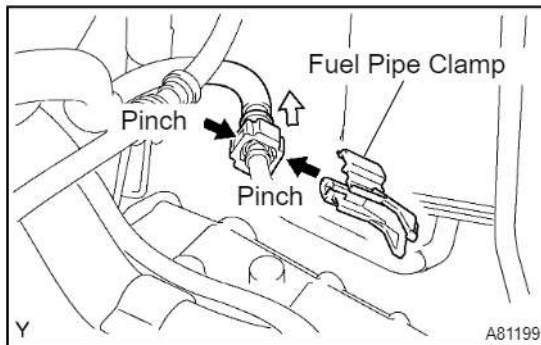
If the result is not as specified, replace the relay.

KNOCK SENSOR (1MZ-FE/3MZ-FE)

100K1-02

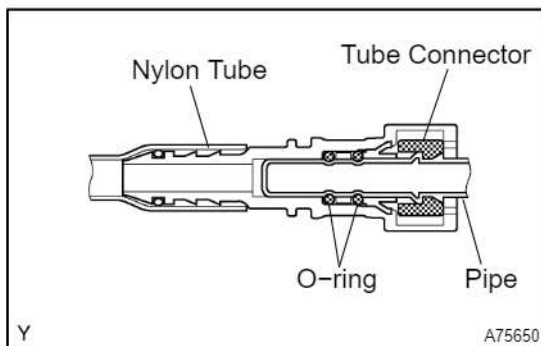
REPLACEMENT

1. DISCHARGE FUEL SYSTEM PRESSURE (See page 11-26)
2. DRAIN ENGINE COOLANT (See page 16-27)
3. REMOVE V-BANK COVER SUB-ASSY (See page 10-18)
4. REMOVE AIR CLEANER CAP SUB-ASSY (See page 10-18)
5. REMOVE EMISSION CONTROL VALVE SET (See page 11-38)
6. REMOVE INTAKE AIR SURGE TANK (See page 11-38)



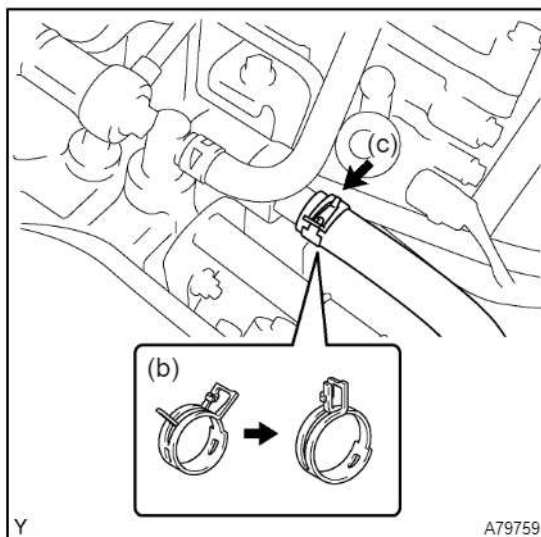
7. REMOVE INTAKE MANIFOLD

- (a) Disconnect the fuel pipe No. 1.
 - (1) Remove the fuel pipe clamp.
 - (2) Pinch the tube connector and then pull out the fuel pipe No. 1.

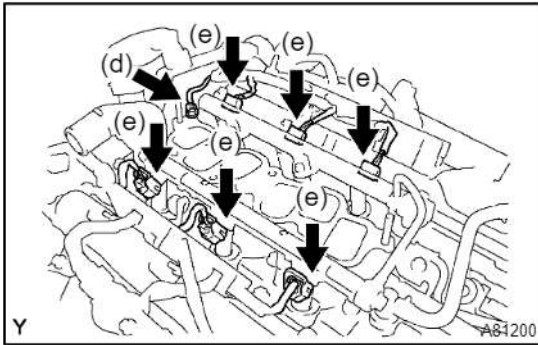


NOTICE:

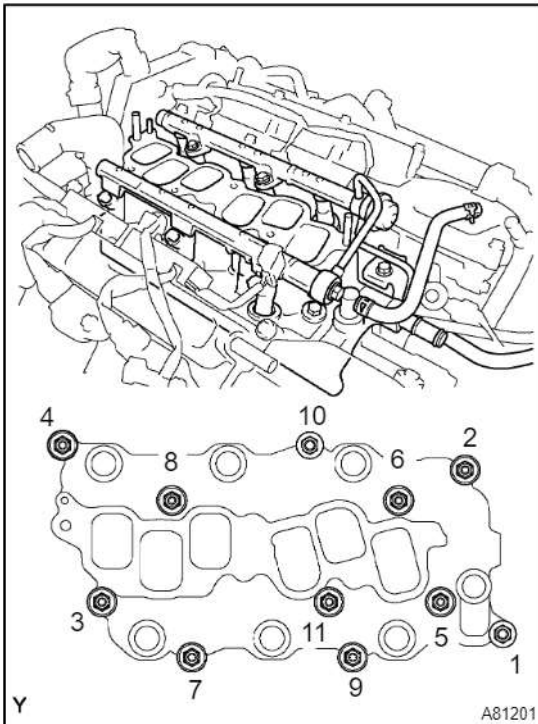
- Check the connector for dirt, mud or other contamination. Clean if necessary.
- Be sure to keep the tube connector, pipe and O-ring clean. They can become contaminated easily.
- Do not use tools when disconnecting the fuel pipe.
- Do not bend or twist the nylon tube. Protect the connector by covering it with a vinyl or plastic bag.
- When the pipe and the connector are stuck, push and pull the connector to release it. Then pull the connector out carefully.



- (b) Lock the hose clamp, as shown in the illustration.
- (c) Disconnect the heater inlet water hose.



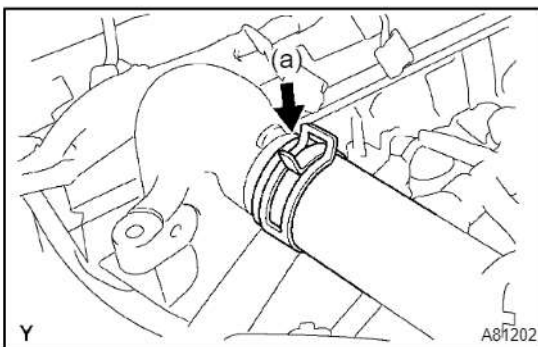
- (d) Remove the nut and disconnect the ground cable.
- (e) Disconnect the 6 fuel injector connectors.



- (f) Loosen and remove the intake manifold's 9 bolts and 2 nuts little by little in the numerical order shown in the illustration.
- (g) Remove the intake manifold.

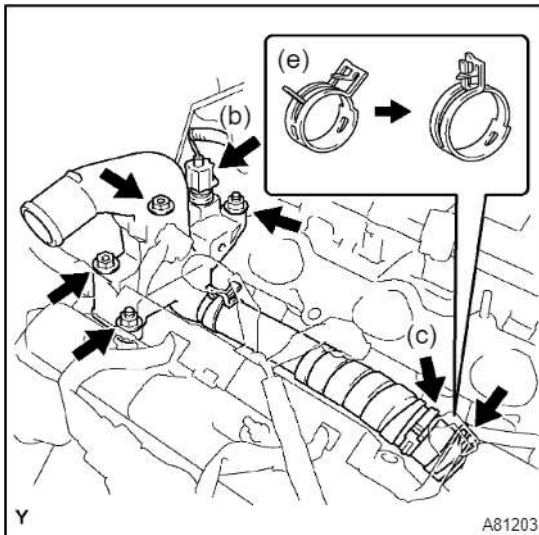
NOTICE:

Fully removing each bolt and nut one by one may damage the intake manifold, bolts and nuts.

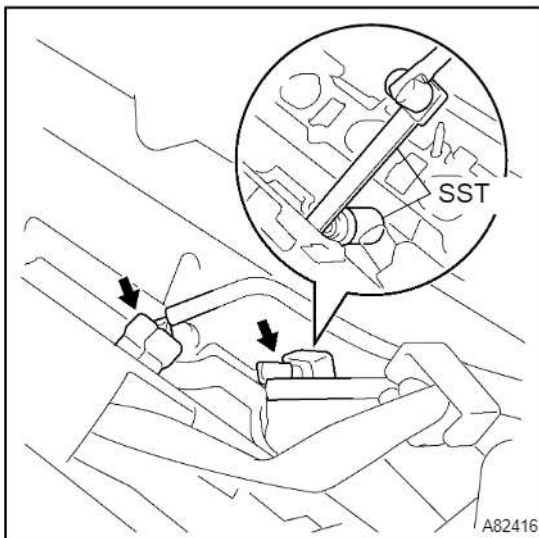


8. REMOVE WATER OUTLET

- (a) Disconnect the radiator hose inlet.

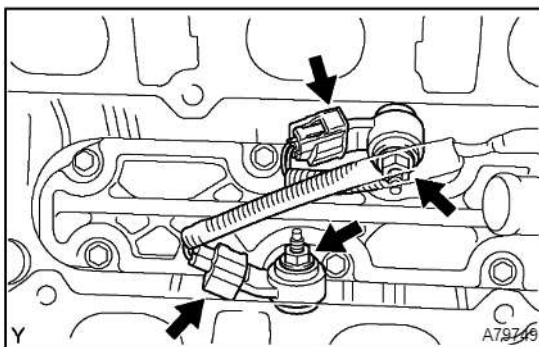


- (b) Disconnect the ECT sensor connector.
- (c) Remove the clamp.
- (d) Remove the 2 bolts, 2 nuts and 2 washers.
- (e) Lock the hose clamp as shown in the illustration. Then remove the water outlet together with the water bypass hose No. 1.
- (f) Remove the 2 gaskets from the 2 cylinder heads.



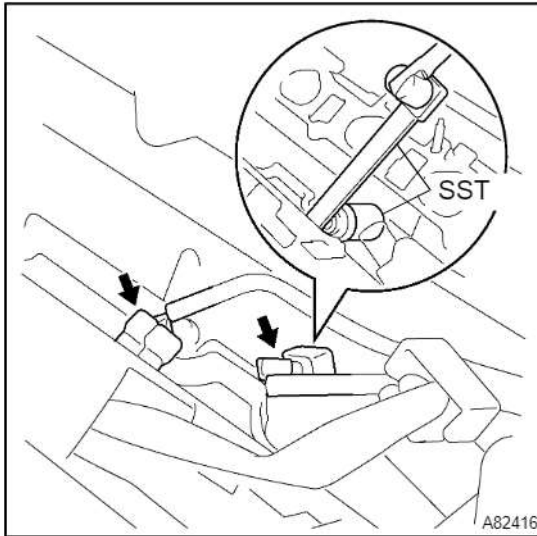
9. REMOVE KNOCK SENSOR (1MZ-FE ENGINE TYPE)

- (a) Disconnect the 2 knock sensor connectors.
- (b) Using SST, remove the 2 knock sensors.
SST 09249-63010, 09816-30010

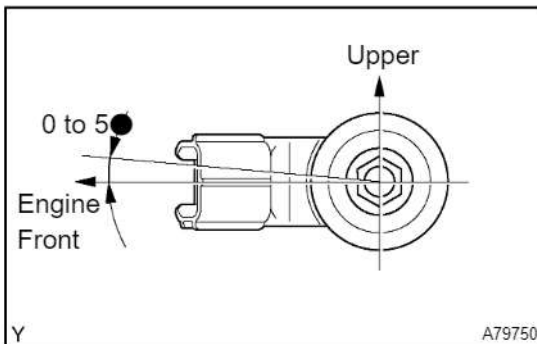


10. REMOVE KNOCK SENSOR (3MZ-FE ENGINE TYPE)

- (a) Disconnect the 2 knock sensor connectors.
- (b) Remove the 2 nuts and 2 knock sensors.

**11. INSTALL KNOCK SENSOR (1MZ-FE ENGINE TYPE)**

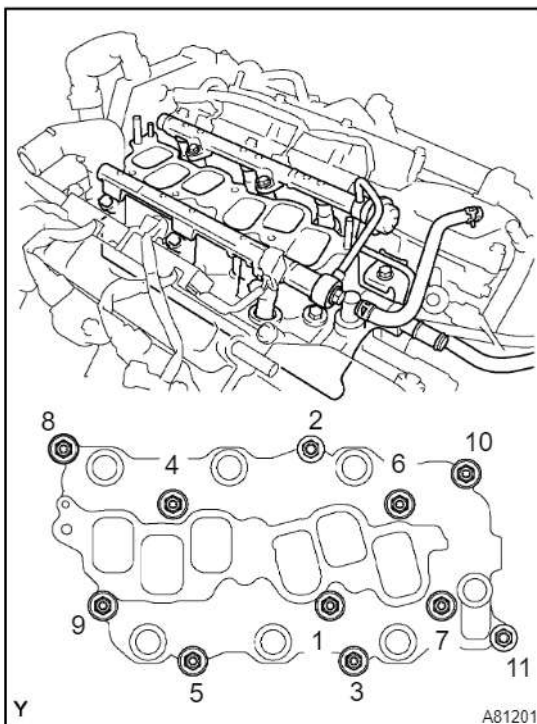
- (a) Using SST, install the 2 knock sensors.
SST 09249-63010, 09816-30010
Torque: 39 N·m (398 kgf·cm, 29 ft·lbf)
- (b) Connect the 2 knock sensors.

**12. INSTALL KNOCK SENSOR (3MZ-FE ENGINE TYPE)**

- (a) Install the 2 knock sensors with the 2 nuts, as shown in the illustration.
Torque: 20 N·m (199 kgf·cm, 14 ft·lbf)
- (b) Connect the 2 knock sensor connectors.

13. INSTALL WATER OUTLET

- (a) Install 2 new gaskets to the 2 cylinder heads.
- (b) Install the water outlet together with the water bypass hose No. 1 and unlock the hose clamp.
- (c) Tighten the 2 bolts, 2 nuts and 2 washers.
Torque: 15 N·m (153 kgf·cm, 11 ft·lbf)
- (d) Install the clamp.
- (e) Connect the ECT sensor connector.
- (f) Connect the radiator hose inlet.

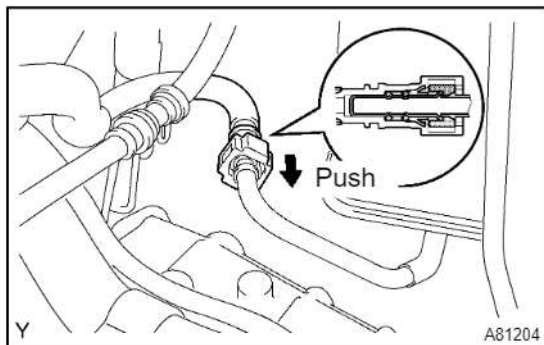
**14. INSTALL INTAKE MANIFOLD**

- (a) Tighten the intake manifold's 9 bolts and 2 nuts little by little in the numerical order shown in the illustration.
Torque: 15 N·m (153 kgf·cm, 11 ft·lbf)

NOTICE:

In this case, fully tightening one of these bolts or nuts without partially tightening the other bolts or nuts in the group may damage the intake manifold, bolts and nuts.

- (b) Retighten the water outlet mounting bolts and nuts.
Torque: 15 N·m (153 kgf·cm, 11 ft·lbf)
- (c) Install the ground cable with the nut.
Torque: 8.4 N·m (86 kgf·cm, 74 in·lbf)
- (d) Connect the heater inlet water hose.



(e) Connect the fuel pipe No. 1.

- (1) Push the quick connector into the pipe until it makes "click" sound.

NOTICE:

- Check if there is any damage or contamination on the connected part.
 - After connecting, confirm that the connector and pipe are securely connected by trying to pull them apart.
- (2) Install the fuel pipe clamp.

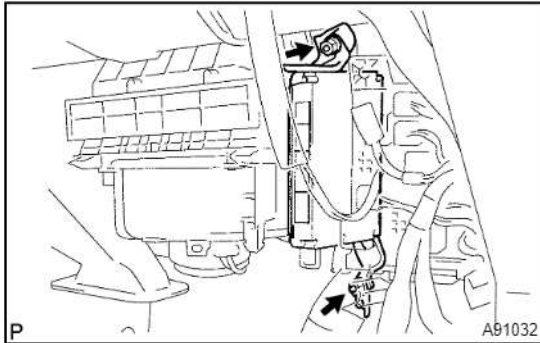
15. INSTALL INTAKE AIR SURGE TANK (See page [11-38](#))
16. INSTALL EMISSION CONTROL VALVE SET (See page [11-38](#))
17. INSTALL AIR CLEANER CAP SUB-ASSY (See page [10-18](#))
18. CHECK CONNECTION OF VACUUM HOSE
19. ADD ENGINE COOLANT (See page [16-27](#))
20. CHECK FOR ENGINE COOLANT LEAKS (See page [16-21](#))
21. CHECK FOR FUEL LEAKS (See page [11-29](#))
22. INSTALL V-BANK COVER SUB-ASSY (See page [10-18](#))

ECM (1MZ-FE/3MZ-FE)

REPLACEMENT

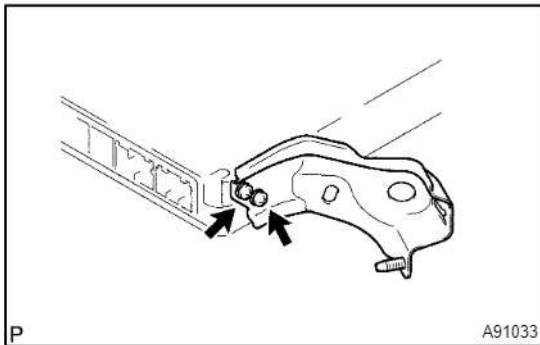
100K2-02

1. DISCONNECT BATTERY NEGATIVE TERMINAL
2. REMOVE FRONT DOOR SCUFF PLATE RH (See page 76-22)
3. REMOVE COWL SIDE TRIM SUB-ASSY RH (See page 76-22)
4. REMOVE INSTRUMENT PANEL UNDER COVER SUB-ASSY NO.1 (See page 71-16)
5. REMOVE INSTRUMENT PANEL SUB-ASSY LOWER (See page 71-16)



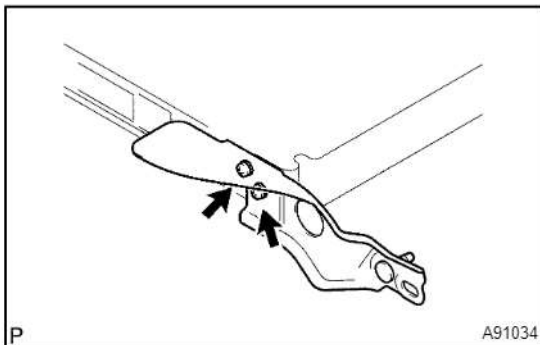
6. REMOVE ECM

- (a) Remove the 2 wire harness clamps.
- (b) Disconnect the 5 ECM connectors.
- (c) Remove the 2 nuts and ECM.



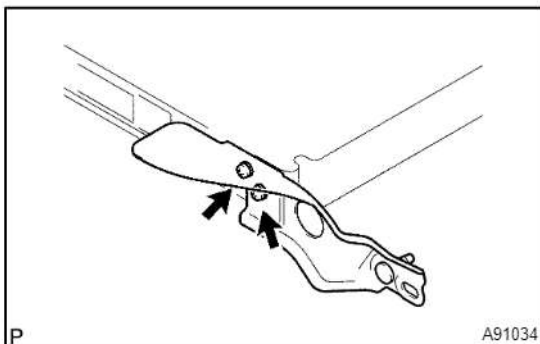
7. REMOVE ECM BRACKET

- (a) Remove the 2 screws and ECM bracket.



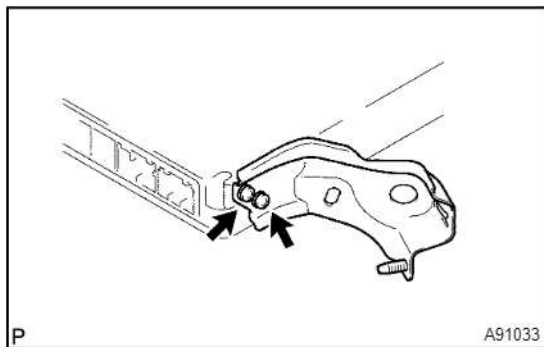
8. REMOVE ECM BRACKET NO.2

- (a) Remove the 2 screws and ECM bracket.

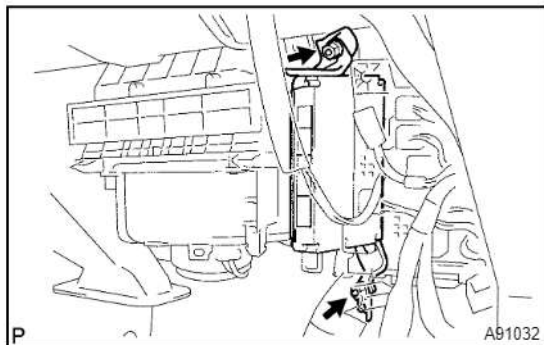


9. INSTALL ECM BRACKET NO.2

- (a) Install the ECM bracket with the 2 screws.

**10. INSTALL ECM BRACKET**

- (a) Install the ECM bracket with the 2 screws.

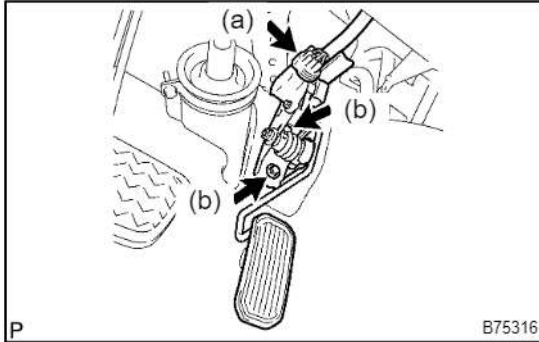
**11. INSTALL ECM**

- (a) Install the 2 wire harness clamps.
(b) Connect the 5 ECM connectors.
(c) Install the ECM with the 2 nuts.
Torque: 5.5 N·m (56 kgf·cm, 49 in·lbf)

12. **INSTALL INSTRUMENT PANEL SUB-ASSY LOWER** (See page [71-16](#))
13. **INSTALL INSTRUMENT PANEL UNDER COVER SUB-ASSY NO.1** (See page [71-16](#))
14. **INSTALL COWL SIDE TRIM SUB-ASSY RH** (See page [76-22](#))
15. **INSTALL FRONT DOOR SCUFF PLATE RH** (See page [76-22](#))
16. **CONNECT BATTERY NEGATIVE TERMINAL**

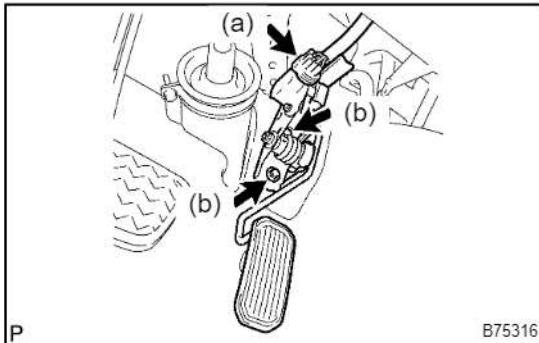
ACCELERATOR PEDAL ASSY (1MZ-FE/3MZ-FE) REPLACEMENT

100K3-02



1. REMOVE ACCELERATOR PEDAL ASSY

- (a) Disconnect the accelerator position sensor connector.
- (b) Remove the 2 bolts and the accelerator pedal.



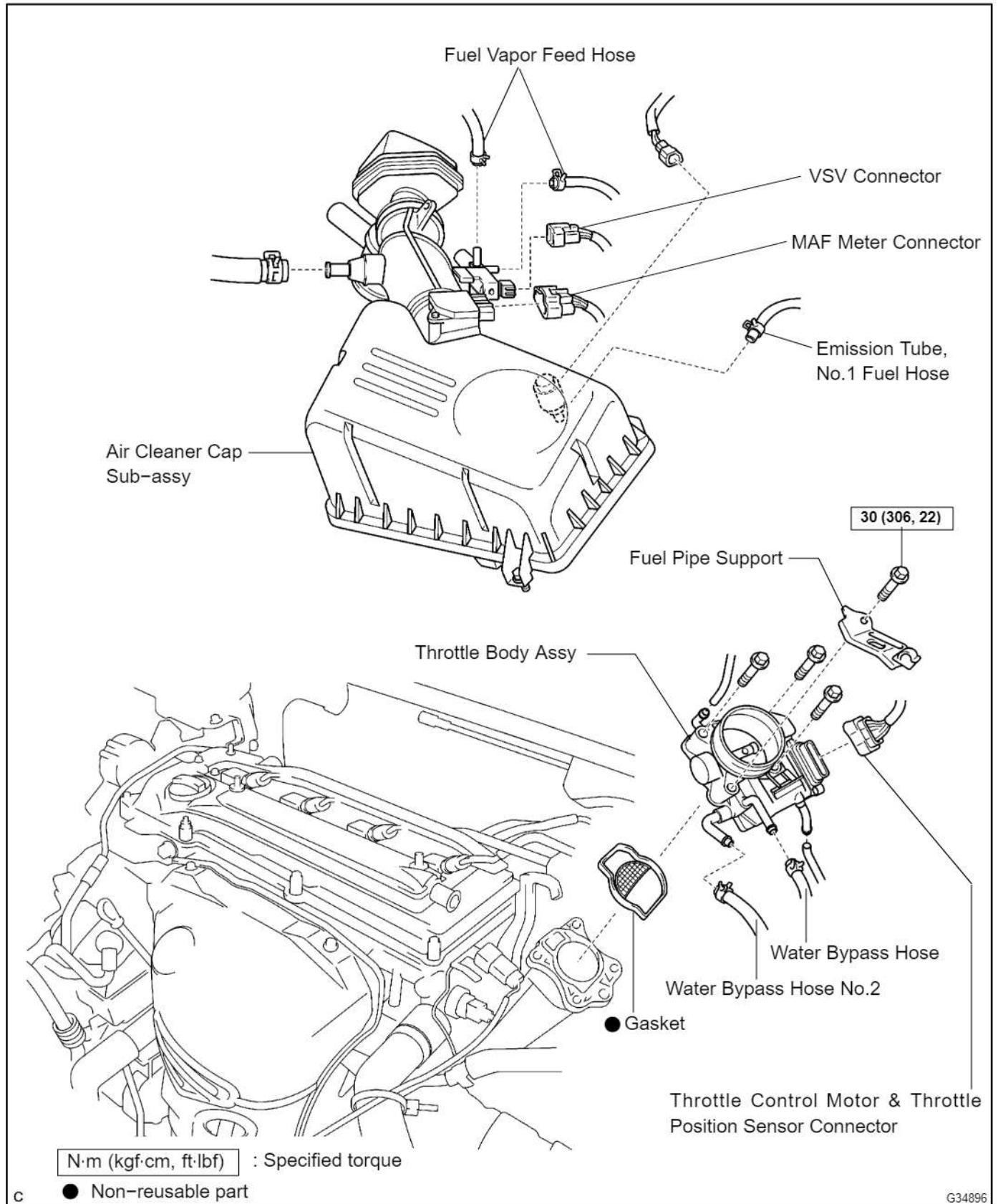
2. INSTALL ACCELERATOR PEDAL ASSY

- (a) Connect the accelerator position sensor connector.
- (b) Install the accelerator pedal with the 2 bolts.

Torque: 7.5 N·m (76 kgf·cm, 66 in.·lbf)

THROTTLE BODY ASSY (2AZ-FE) COMPONENTS

1006A-06



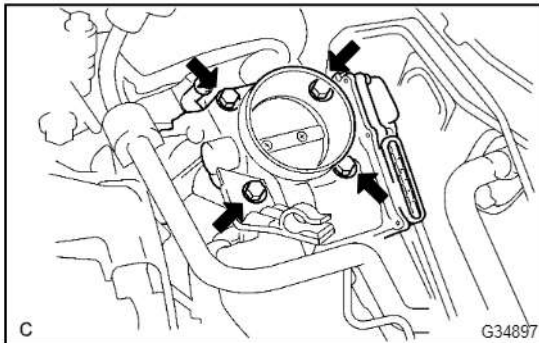
REPLACEMENT

1. DRAIN ENGINE COOLANT (See page 16-6)

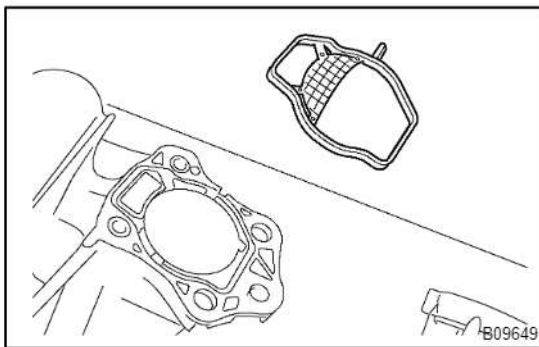
2. REMOVE AIR CLEANER CAP WITH AIR CLEANER HOSE

3. REMOVE THROTTLE BODY ASSY

- (a) Disconnect the throttle control motor & throttle position sensor connector.
- (b) Disconnect the 2 vacuum hoses from the throttle body.
- (c) Disconnect the 2 water bypass hoses.

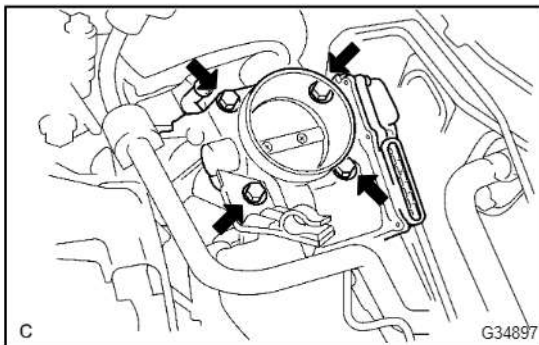


- (d) Remove the 4 bolts, fuel pipe support and throttle body.
- (e) Remove the gasket.



4. INSTALL THROTTLE BODY ASSY

- (a) Install a new gasket on the intake manifold, as shown in the illustration.



- (b) Install the throttle body and fuel pipe support with the 4 bolts.

Torque: 30 N·m (306 kgf·cm, 22 ft·lbf)

- (c) Connect the 2 water bypass hoses to the throttle body.
- (d) Connect the 2 vacuum hoses to the throttle body.
- (e) Connect the throttle control motor & throttle position sensor connector.

5. INSTALL AIR CLEANER CAP WITH AIR CLEANER HOSE

6. ADD ENGINE COOLANT (See page 16-6)

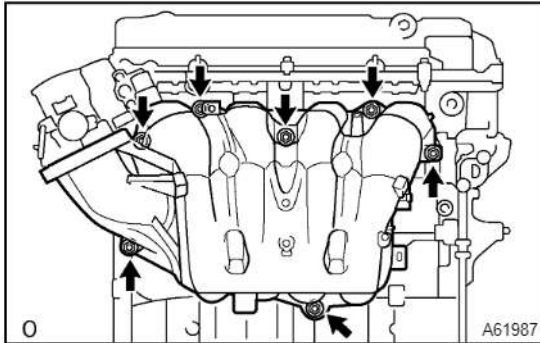
7. CHECK FOR ENGINE COOLANT LEAKS (See page 16-1)

KNOCK SENSOR (2AZ-FE)

REPLACEMENT

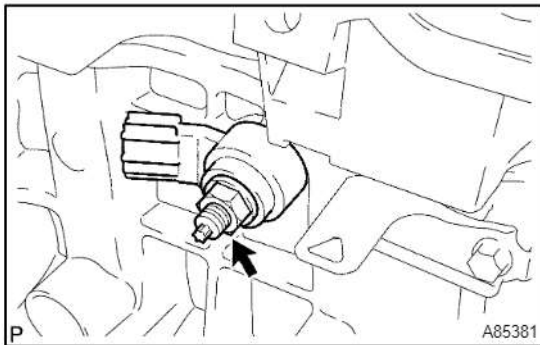
100IP-04

1. DRAIN ENGINE COOLANT (See page 16-6)
2. REMOVE AIR CLEANER CAP WITH AIR CLEANER HOSE
3. REMOVE THROTTLE BODY ASSY (See page 10-6)



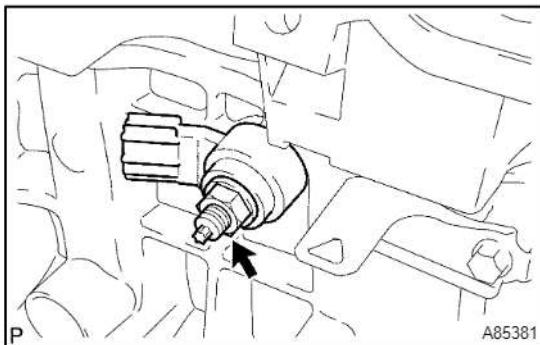
4. REMOVE INTAKE MANIFOLD

- (a) Remove the 5 bolts, 2 nuts, intake manifold and gasket.



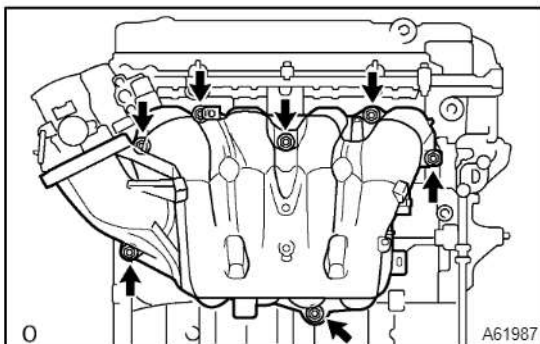
5. REMOVE KNOCK SENSOR

- (a) Disconnect the knock sensor connector.
- (b) Remove the nut and knock sensor.



6. INSTALL KNOCK SENSOR

- (a) Install the knock sensor with the nut.
Torque: 20 N·m (204 kgf·cm, 15 ft·lbf)
- (b) Connect the knock sensor connector.



7. INSTALL INTAKE MANIFOLD

- (a) Install a new gasket and the intake manifold with the 5 bolts and 2 nuts.
Torque: 30 N·m (306 kgf·cm, 22 ft·lbf)

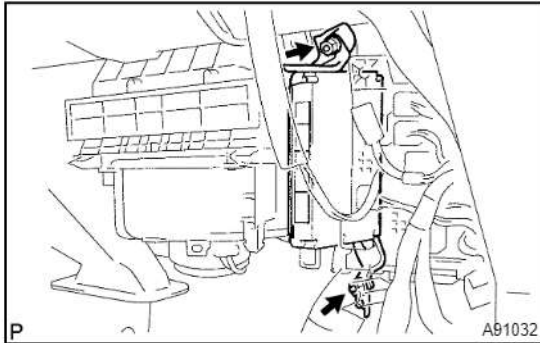
8. INSTALL THROTTLE BODY ASSY (See page [10-6](#))
9. INSTALL AIR CLEANER CAP WITH AIR CLEANER HOSE
10. CHECK CONNECTION OF VACUUM HOSE
11. ADD ENGINE COOLANT (See page [16-6](#))
12. CHECK FOR ENGINE COOLANT LEAKS (See page [16-1](#))

ECM (2AZ-FE)

REPLACEMENT

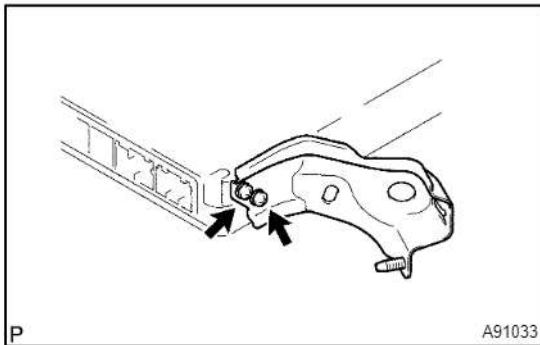
100JX-02

1. DISCONNECT BATTERY NEGATIVE TERMINAL
2. REMOVE FRONT DOOR SCUFF PLATE RH (See page 76-22)
3. REMOVE COWL SIDE TRIM SUB-ASSY RH (See page 76-22)
4. REMOVE INSTRUMENT PANEL UNDER COVER SUB-ASSY NO.1 (See page 71-16)
5. REMOVE INSTRUMENT PANEL SUB-ASSY LOWER (See page 71-16)



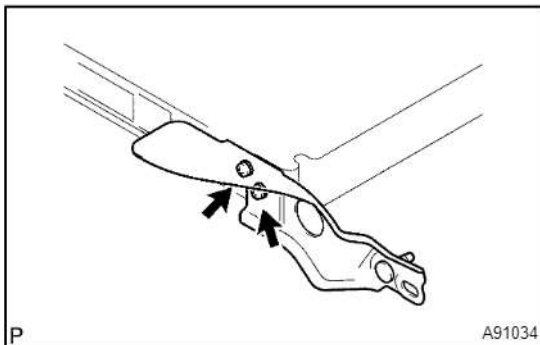
6. REMOVE ECM

- (a) Remove the 2 wire harness clamps.
- (b) Disconnect the 5 ECM connectors.
- (c) Remove the 2 nuts and ECM.



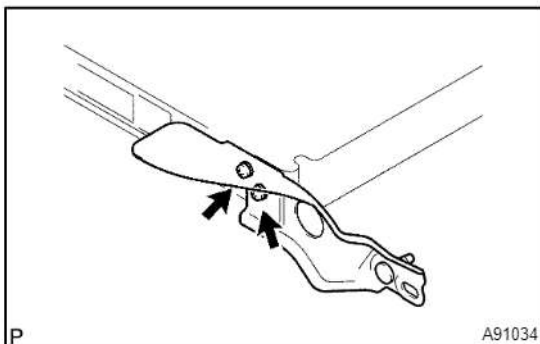
7. REMOVE ECM BRACKET

- (a) Remove the 2 screws and ECM bracket.



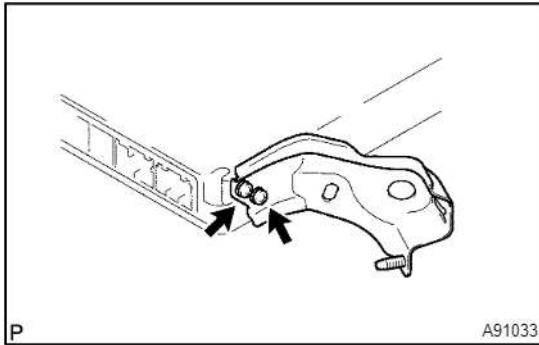
8. REMOVE ECM BRACKET NO.2

- (a) Remove the 2 screws and ECM bracket.

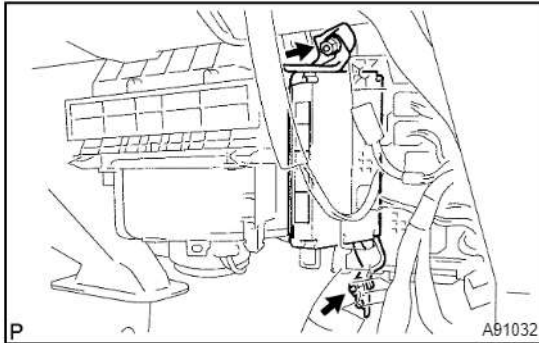


9. INSTALL ECM BRACKET NO.2

- (a) Install the ECM bracket with the 2 screws.

**10. INSTALL ECM BRACKET**

- (a) Install the ECM bracket with the 2 screws.

**11. INSTALL ECM**

- (a) Install the 2 wire harness clamps.
(b) Connect the 5 ECM connectors.
(c) Install the ECM with the 2 nuts.
Torque: 5.5 N·m (56 kgf·cm, 49 in·lbf)

12. **INSTALL INSTRUMENT PANEL SUB-ASSY LOWER** (See page [71-16](#))
13. **INSTALL INSTRUMENT PANEL UNDER COVER SUB-ASSY NO.1** (See page [71-16](#))
14. **INSTALL COWL SIDE TRIM SUB-ASSY RH** (See page [76-22](#))
15. **INSTALL FRONT DOOR SCUFF PLATE RH** (See page [76-22](#))
16. **CONNECT BATTERY NEGATIVE TERMINAL**