

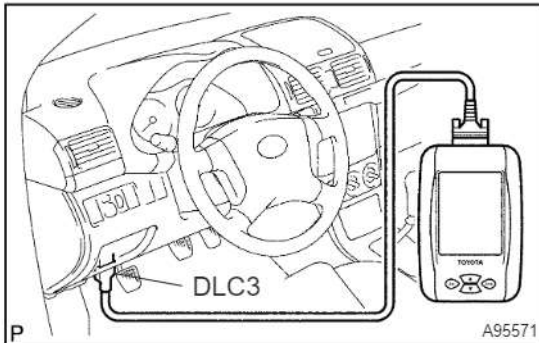
# SFI SYSTEM (1ZZ-FE/3ZZ-FE)(From February, 2004)

## ON-VEHICLE INSPECTION

100PD-01

### 1. INSPECT THROTTLE BODY ASSY

- (a) Listen to the throttle control motor operating sounds.
    - (1) Turn the ignition switch to ON.
    - (2) When pressing the accelerator pedal position sensor lever, listen to the running sound of the 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 intelligent tester II to the DLC3.
  - (2) Turn the ignition switch to ON.
  - (3) Turn the intelligent tester II ON.
  - (4) Check that the engine warning light does not light up.
  - (5) Select the item: Powertrain / Engine and ECT / Data List / Throttle POS.
  - (6) Depress the accelerator pedal. When the throttle valve is fully opened, check that the value of the "Throttle POS" is within the specification.

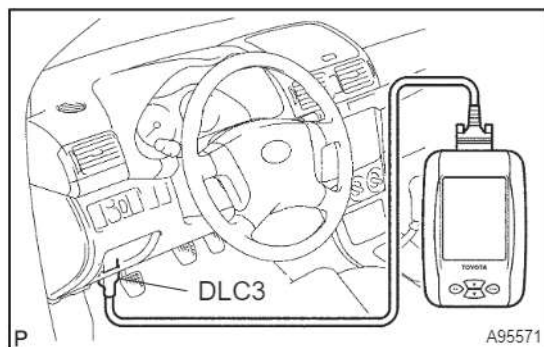
**Standard throttle valve opening percentage:**

**60 % or more**

#### NOTICE:

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

If the result is not as specified, check the throttle body, wire harness and ECM.



## 2. INSPECT ACCELERATOR PEDAL ASSY

- Connect the intelligent tester II to the DLC3.
- Turn the ignition switch to ON.
- Turn the intelligent tester II ON.
- Select the item: Powertrain / Engine and ECT / Data List / Accelerator POS No. 1, Accelerator POS No. 2.
- Operate the accelerator pedal, then check that the values of the "Accelerator POS No. 1" and "Accelerator POS No. 2" are within the specification.

### Accelerator POS No. 1:

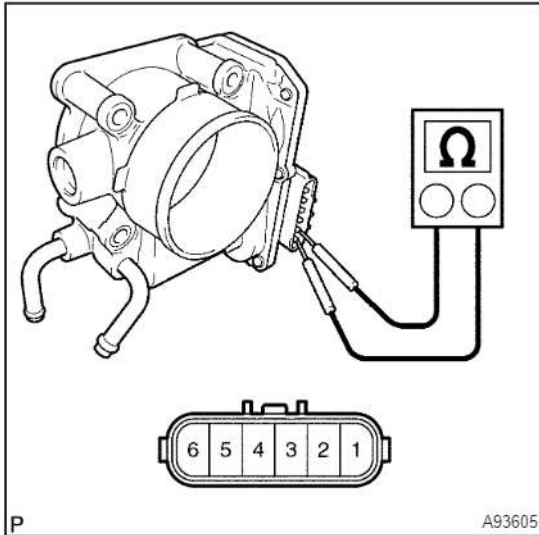
| Accelerator Pedal Condition | Specified Condition |
|-----------------------------|---------------------|
| Released                    | 0.5 to 1.1 V        |
| Depressed                   | 2.6 to 4.5 V        |

### Accelerator POS No. 2:

| Accelerator Pedal Condition | Specified Condition |
|-----------------------------|---------------------|
| Released                    | 1.2 to 2.0 V        |
| Depressed                   | 3.4 to 5.0 V        |

If the result is not as specified, check the accelerator pedal, wire harness and ECM.

# INSPECTION



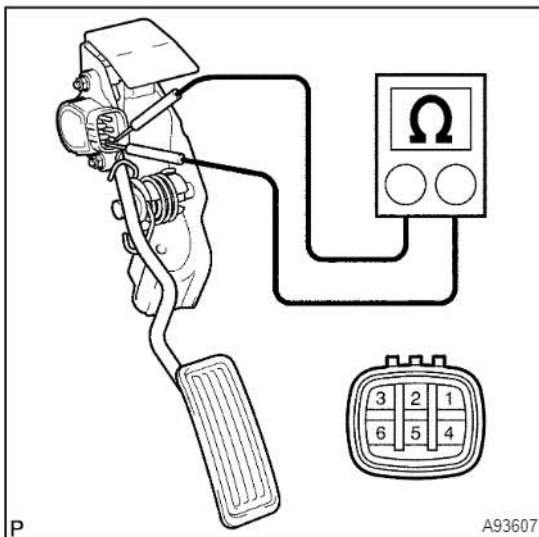
## 1. INSPECT THROTTLE BODY ASSY

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

### Standard:

| Tester Connection | Specified Condition                  |
|-------------------|--------------------------------------|
| 1 (M-) - 2 (M+)   | 0.3 to 100 $\Omega$ at 20°C (68°F)   |
| 3 (E2) - 5 (VC)   | 1.2 to 3.2 k $\Omega$ at 20°C (68°F) |

If the resistance is not as specified, replace the throttle body.



## 2. INSPECT ACCELERATOR PEDAL ASSY

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

### Standard:

#### LHD Steering Position Type:

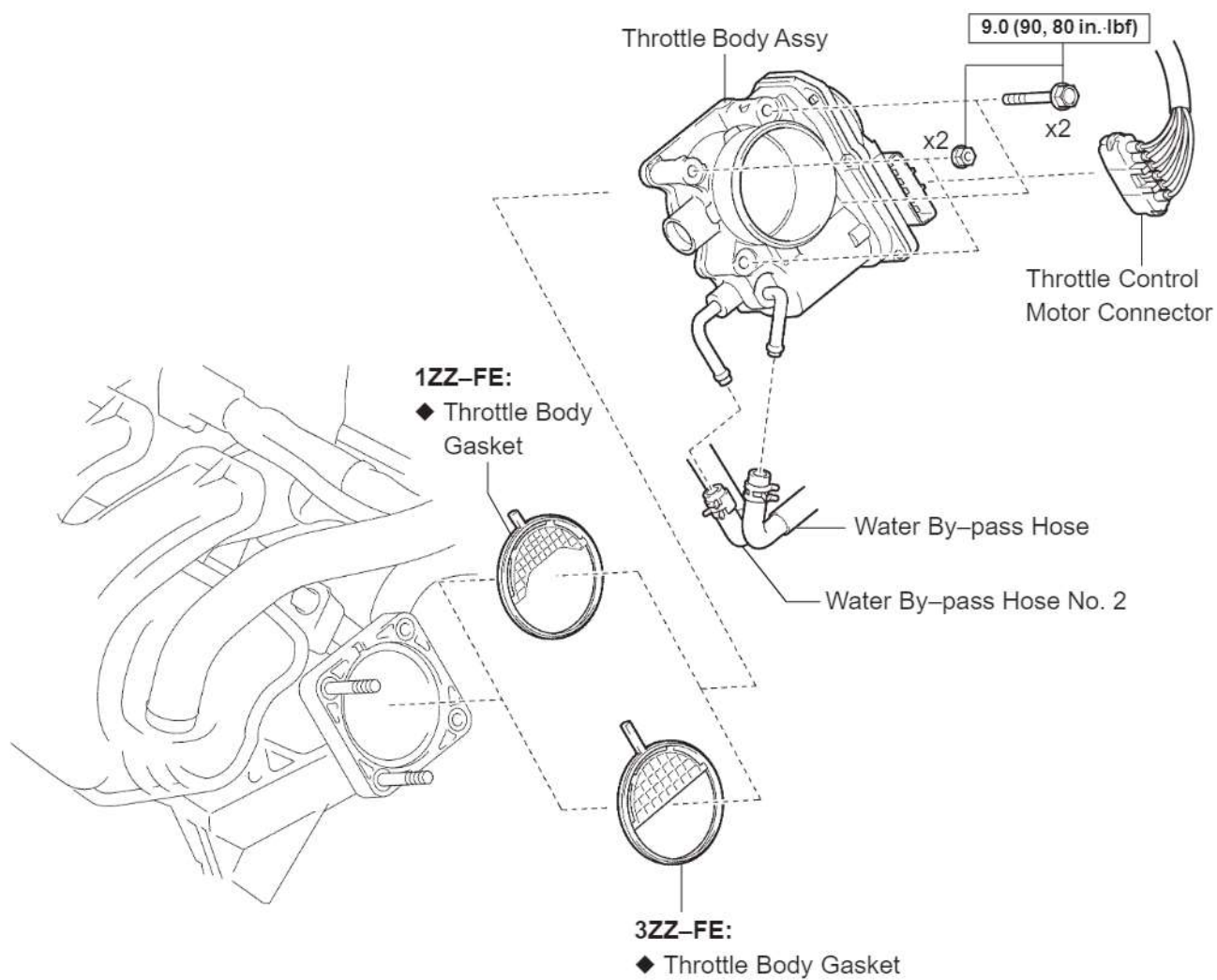
| Tester Connection  | Specified Condition   |
|--------------------|-----------------------|
| 3 (EP1) - 6 (VCP1) | 1.5 to 6.0 k $\Omega$ |
| 1 (EP2) - 4 (VCP2) | 1.5 to 6.0 k $\Omega$ |

#### RHD Steering Position Type:

| Tester Connection  | Specified Condition   |
|--------------------|-----------------------|
| 1 (EP1) - 4 (VCP1) | 1.5 to 6.0 k $\Omega$ |
| 3 (EP2) - 6 (VCP2) | 1.5 to 6.0 k $\Omega$ |

If the resistance is not as specified, replace the accelerator pedal.



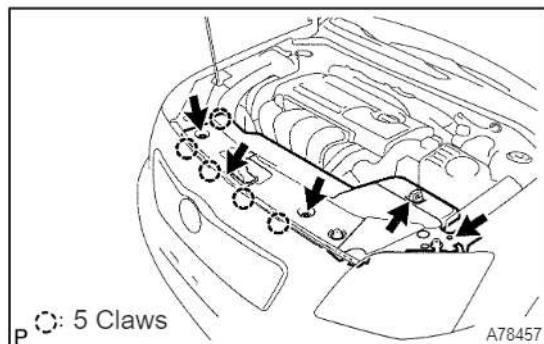


N·m (kgf·cm, ft·lbf) : Specified torque

◆ Non-reusable part

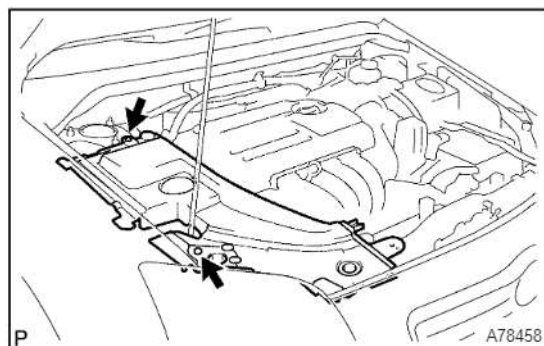
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## REPLACEMENT



### 1. REMOVE RADIATOR SUPPORT OPENING COVER

- (a) Remove the retainer and 4 clips.
- (b) Unfasten the 5 claws, then remove the radiator support opening cover.

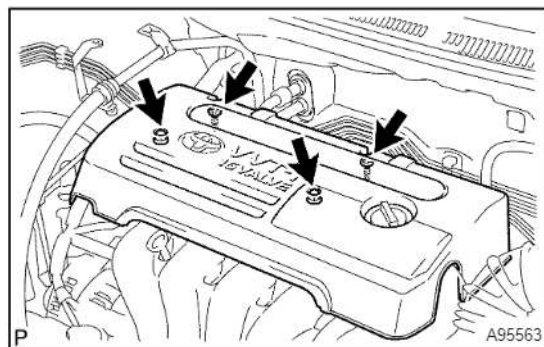


### 2. REMOVE ENGINE ROOM COVER SIDE

- (a) Remove the 2 clips and engine room cover side.

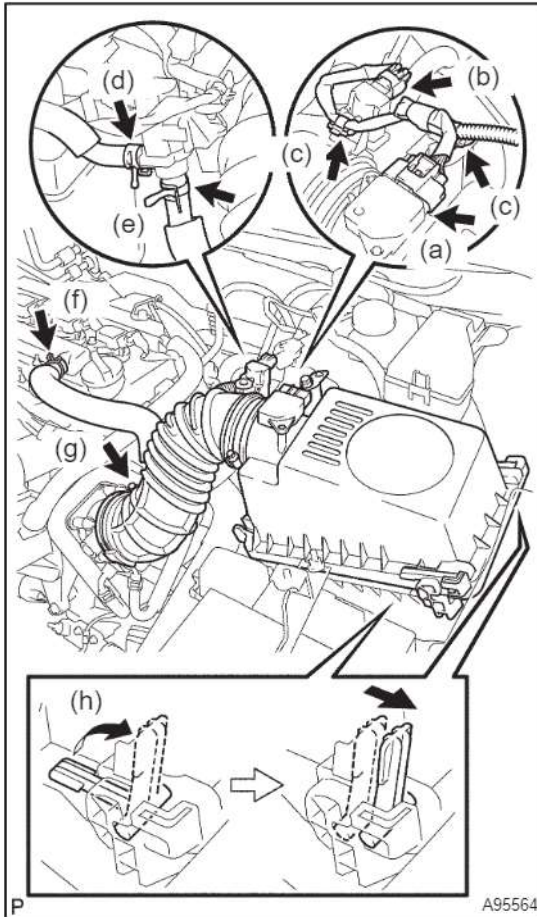
### 3. DISCONNECT BATTERY NEGATIVE TERMINAL

### 4. DRAIN ENGINE COOLANT (See page 16-5)



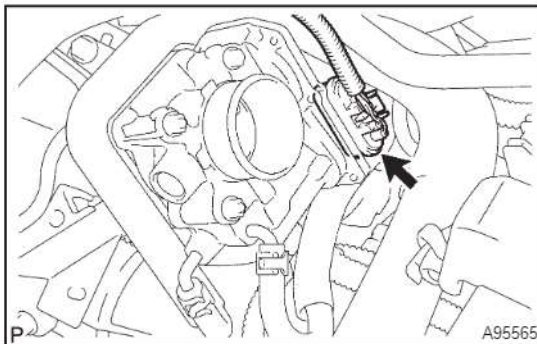
### 5. REMOVE CYLINDER HEAD COVER NO.2

- (a) Remove the 2 nuts and 2 clips, then remove cylinder head cover No. 2.



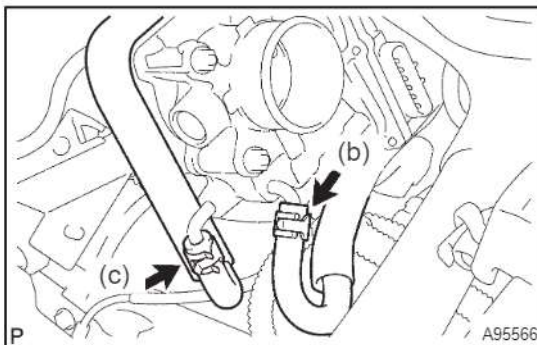
## 6. REMOVE AIR CLEANER CAP SUB-ASSY

- (a) Disconnect the mass air flow meter connector.
- (b) Disconnect the VSV connector.
- (c) Remove the 2 wire harness clamps.
- (d) Disconnect fuel vapor feed hose No. 1 from the VSV.
- (e) Disconnect fuel vapor feed hose No. 3 from the VSV.
- (f) Disconnect ventilation hose No. 1 from the cylinder head cover.
- (g) Loosen the hose clamp bolt, then disconnect the air cleaner hose.
- (h) Raise the air cleaner clamp up, then slide it to the air cleaner cap.
- (i) Remove the air cleaner cap together with the air cleaner hose.

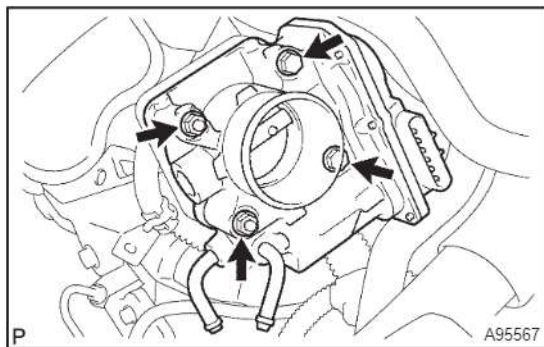


## 7. REMOVE THROTTLE BODY ASSY

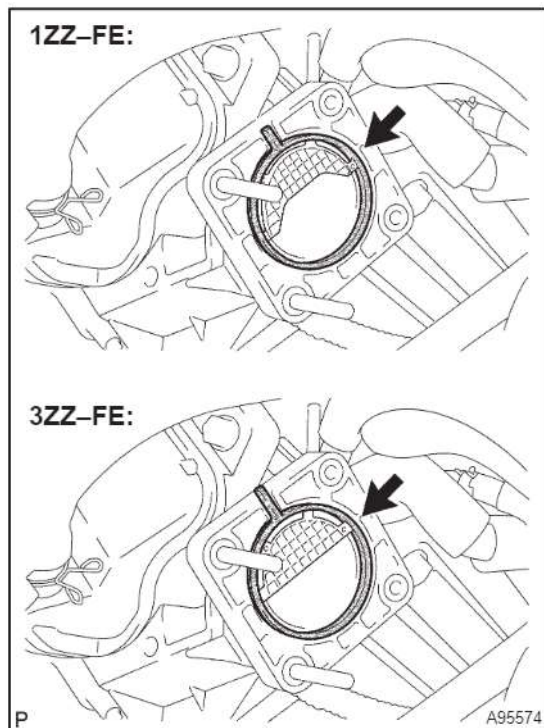
- (a) Disconnect the throttle control motor connector.



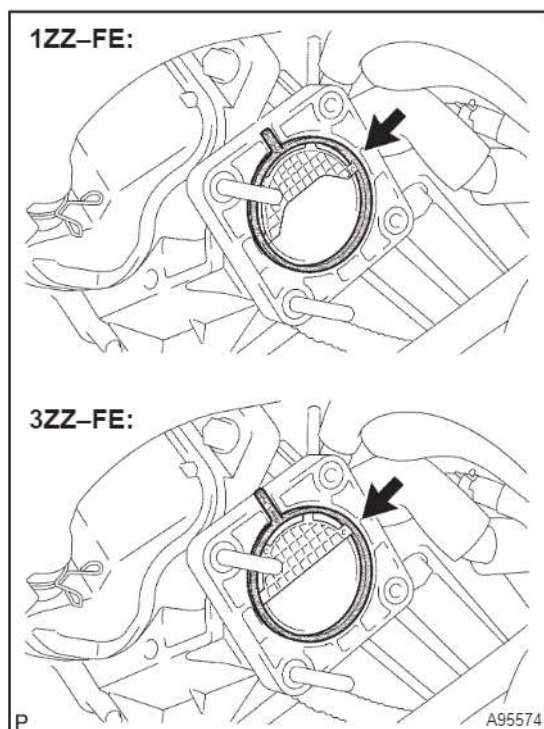
- (b) Disconnect the water by-pass hose.
- (c) Disconnect water by-pass hose No. 2.



- (d) Remove the 2 bolts and 2 nuts, then remove the throttle body.

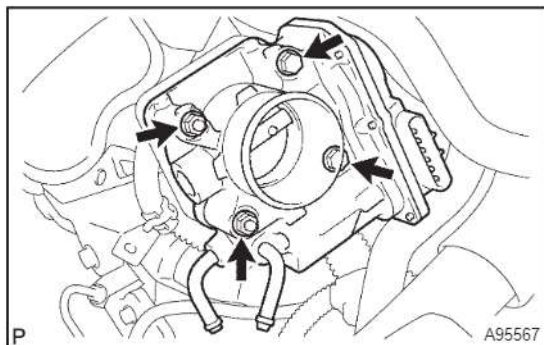


- (e) Remove the gasket from the intake manifold.

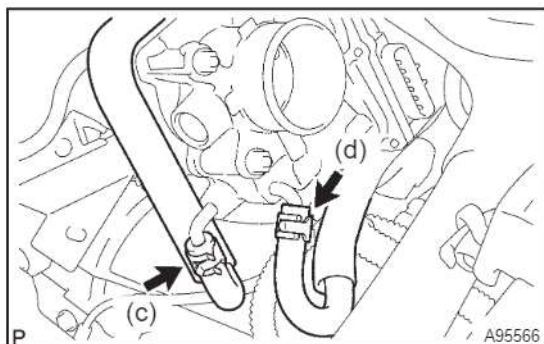


## 8. INSTALL THROTTLE BODY ASSY

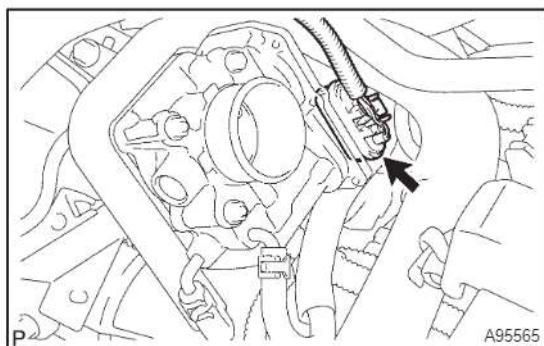
- (a) Install a new gasket onto the intake manifold.



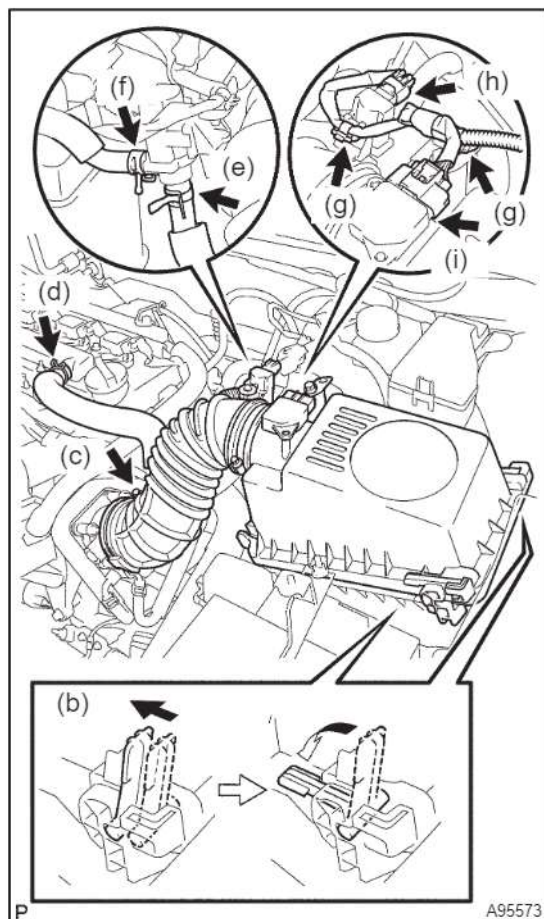
- (b) Install the throttle body with the 2 bolts and 2 nuts.  
**Torque: 9.0 N·m (90 kgf·cm, 80 in.·lbf)**



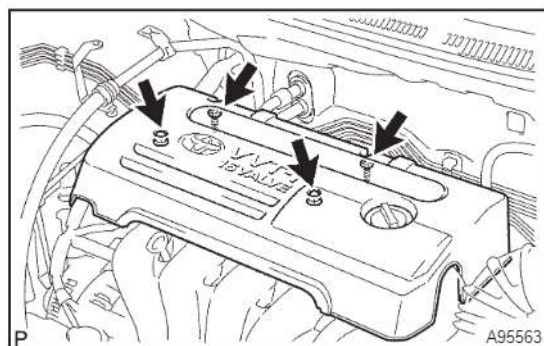
- (c) Connect water by-pass hose No. 2 to the throttle body.  
 (d) Connect the water by-pass hose to the throttle body.



- (e) Connect the throttle control motor connector.

**9. INSTALL AIR CLEANER CAP SUB-ASSY**

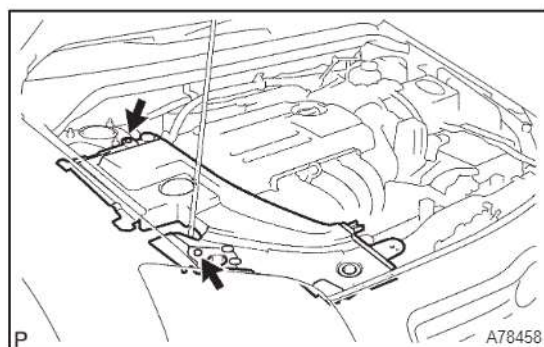
- (a) Install the air cleaner cap together with the air cleaner hose.
  - (b) Slide the air cleaner clamp to the air cleaner case, then put it down.
  - (c) Tighten the hose clamp bolt, then connect the air cleaner hose.
- Torque: 1.5 N·m (15 kgf·cm, 13 in.·lbf)**
- (d) Connect ventilation hose No. 1 to the cylinder head cover.
  - (e) Connect fuel vapor feed hose No. 3 to the VSV.
  - (f) Connect fuel vapor feed hose No. 1 to the VSV.
  - (g) Install the 2 wire harness clamps.
  - (h) Connect the VSV connector.
  - (i) Connect the mass air flow meter connector.

**10. INSTALL CYLINDER HEAD COVER NO.2**

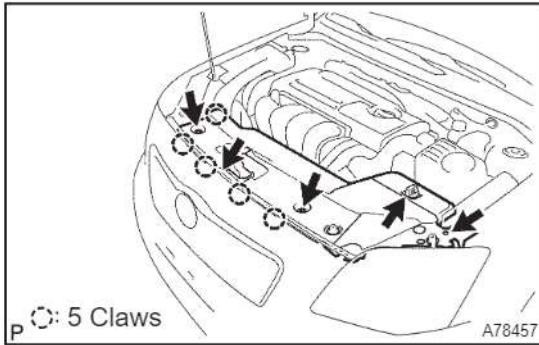
- (a) Install cylinder head cover No. 2 with the 2 nuts and 2 clips.
- Torque: 7.0 N·m (71 kgf·cm, 62 in.·lbf)**

**11. CONNECT BATTERY NEGATIVE TERMINAL**

**Torque: 5.0 N·m (51 kgf·cm, 44 in.·lbf)**

**12. ADD ENGINE COOLANT (See page 16-5)****13. CHECK FOR ENGINE COOLANT LEAKS (See page 16-1)****14. INSTALL ENGINE ROOM COVER SIDE**

- (a) Install the engine room cover side with the 2 clips.



**15. INSTALL RADIATOR SUPPORT OPENING COVER**

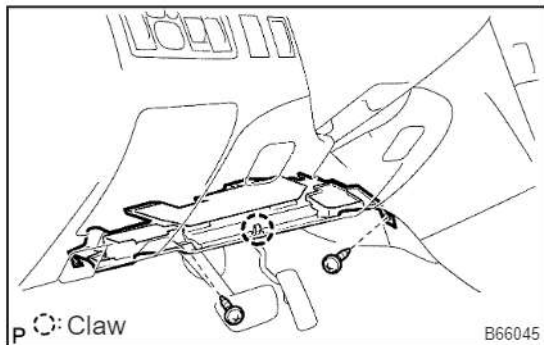
- (a) Install the radiator support opening cover with the 4 clips and retainer.

## ACCELERATOR PEDAL ASSY (1ZZ-FE/3ZZ-FE)(From February, 2004)

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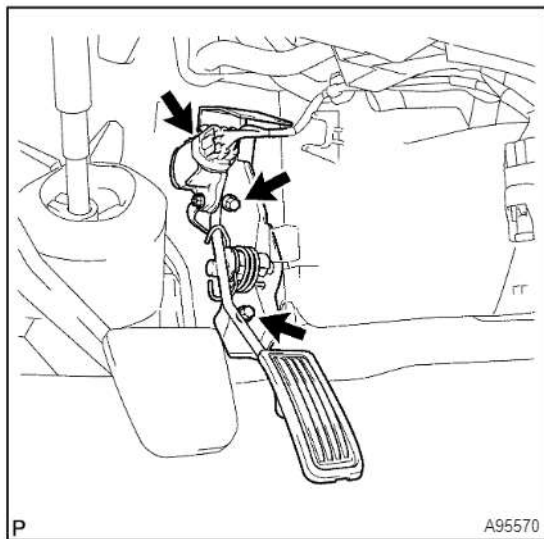
### REPLACEMENT

#### 1. DISCONNECT BATTERY NEGATIVE TERMINAL



#### 2. REMOVE INSTRUMENT PANEL UNDER COVER SUB-ASSY NO.1

- Remove the 2 screws.
- Disengage the claw and remove instrument panel under cover sub-assembly No. 1.



#### 3. REMOVE ACCELERATOR PEDAL ASSY

- Disconnect the accelerator pedal sensor connector.
- Remove the 2 bolts and accelerator pedal assembly.

#### 4. INSTALL ACCELERATOR PEDAL ASSY

Torque: 5.4 N·m (55 kgf·cm, 48 in.·lbf)

#### 5. INSTALL INSTRUMENT PANEL UNDER COVER SUB-ASSY NO.1

#### 6. CONNECT BATTERY NEGATIVE TERMINAL

Torque: 5.0 N·m (51 kgf·cm, 44 in.·lbf)