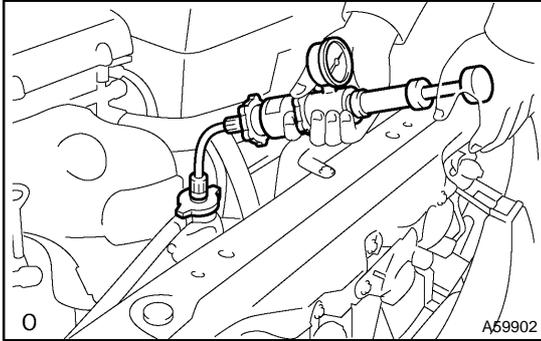


## COOLING SYSTEM (2AZ-FE) ON-VEHICLE INSPECTION

1602Y-02



### 1. INSPECT COOLING SYSTEM FOR LEAKS

#### CAUTION:

To avoid the danger of being burned, do not remove the radiator cap while the engine and radiator are still hot, as fluid and steam can be blown out under pressure.

- (a) Fill the radiator with coolant and attach a radiator cap tester.
- (b) Warm up the engine.
- (c) Pump it to 118 kPa (1.2 kgf/cm<sup>2</sup>, 17.1 psi), and check that the pressure does not drop.

If the pressure drops, check to hoses, radiator or water pump for leaks. If no external leaks are found, check the heater core, cylinder block and head.

### 2. CHECK ENGINE COOLANT LEVEL AT RESERVOIR

- (a) The engine coolant level should be between the "LOW" and "FULL" lines, when the engine is cold. If low, check for leaks and add "Toyota Long Life Coolant" or equivalent up to the "FULL" line.

### 3. CHECK ENGINE COOLANT QUALITY

- (a) Remove the radiator cap.

#### CAUTION:

To avoid the danger of being burned, do not remove the radiator cap while the engine and radiator are still hot, as fluid and steam can be blown out under pressure.

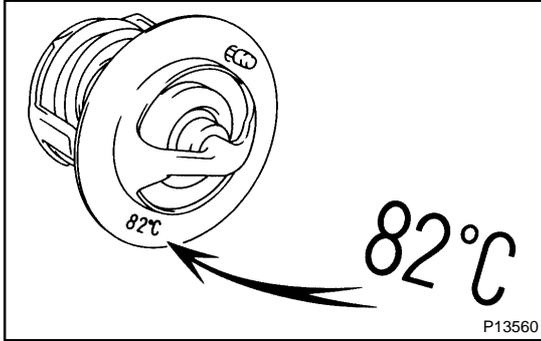
- (b) Check if there is any excessive deposits of rust or scale around the radiator cap and radiator filler hole; the coolant should be free from oil.

#### HINT:

If excessively dirty, replace the coolant.

- (c) Reinstall the radiator cap.

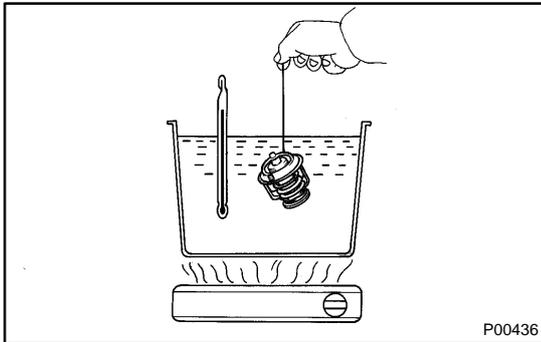
# INSPECTION



## 1. THERMOSTAT

### HINT:

The thermostat is numbered with the valve opening temperature.



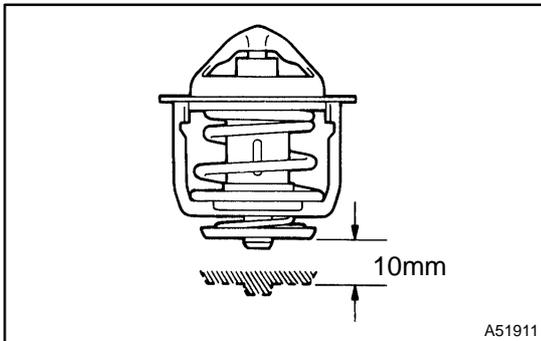
(a) Immerse the thermostat in water and gradually heat the water.

(b) Check the valve opening temperature.

### Valve opening temperature:

**80 – 84°C (176 – 183°F)**

If the valve opening temperature is not as specified, replace the thermostat.



(c) Check the valve lift.

**Valve lift: 10 mm (0.394 in.) or more at 95°C (203°F)**

If the valve lift is not as specified, replace the thermostat.

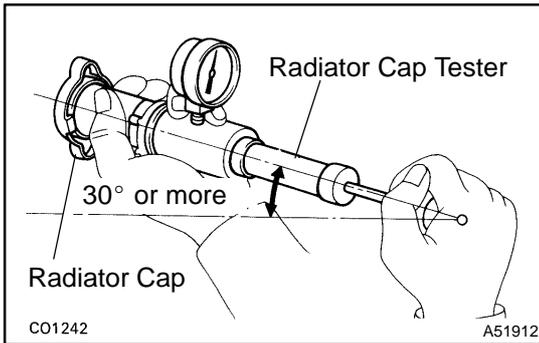
(d) Check that the valve is fully closed when the thermostat is at low temperatures (below 77°C (171°F)).

If not closed, replace the thermostat.

## 2. RADIATOR CAP SUB-ASSY

### NOTICE:

- If the reservoir cap has contaminations, always rinse it with water.
- Before using a radiator cap tester, wet the relief valve and pressure valve with engine coolant or water.



- (a) Using a radiator cap tester, slowly pump the tester and check that air is coming from the vacuum valve.

**Pump speed: 1 push / (3 seconds or more)**

**NOTICE:**

**Push the pump at a constant speed.**

If air is not coming from the vacuum valve, replace the reservoir cap.

- (b) Pump the tester and measure the relief valve opening pressure.

**Pump speed: 1 push within 1 second**

**NOTICE:**

**This pump speed is for the first pump only (in order to close the vacuum valve). After this, the pump speed can be reduced.**

**Standard opening pressure:**

**93 – 122 kPa (0.95 – 1.25 kgf/cm<sup>2</sup>, 13.4 – 17.6 psi)**

**Minimum opening pressure:**

**78 kPa (0.8 kgf/cm<sup>2</sup>, 11.2 psi)**

**HINT:**

Use the tester's maximum reading as the opening pressure.

If the opening pressure is less than minimum, replace the reservoir cap.

## COOLING FAN SYSTEM (2AZ-FE)

### ON-VEHICLE INSPECTION

16030-02

#### HINT:

It is normal that the cooling fan sometime rotates when the ignition switch is turned from ACC to ON.

#### 1. CHECK COOLING FAN OPERATION WITH LOW TEMPERATURE (Below 83°C (181°F))

- (a) Turn the ignition switch ON.
- (b) Check that the cooling fan stops.

If not, check the cooling fan relay and water temperature sensor, and check for disconnection of connectors or wire break between the cooling fan relay and water temperature sensor.

- (c) Disconnect the water temperature sensor connector.
- (d) Check that the cooling fan rotates.

If not, check the fuses, cooling fan relay, engine ECU and cooling fan, and check for a short circuit between the cooling fan relay and water temperature sensor.

- (e) Reconnect the water temperature sensor connector.

#### 2. CHECK COOLING FAN OPERATION WITH HIGH TEMPERATURE (Above 98°C (208°F))

- (a) Start the engine, and raise coolant temperature to above 98°C (208°F).
- (b) Check that the cooling fan rotates.

If not, replace the water temperature sensor.

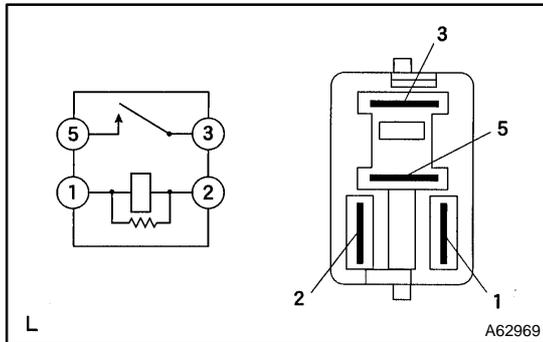
#### 3. INSPECT COOLING FAN

- (a) Disconnect the cooling fan connector.
- (b) Connect battery and ammeter to the cooling fan connector.
- (c) Check that the cooling fan rotates smoothly, and check the reading on the ammeter.

**Standard amperage: 4.9 – 8.5 A at 20°C (68°F)**

- (d) Reconnect the cooling fan connector.

# INSPECTION



## 1. COOLING FAN RELAY COOLING FAN RELAY NO.3

- (a) Inspect the cooling fan relay continuity.
  - (1) Using an ohmmeter, check that there is continuity between terminals 1 and 2.

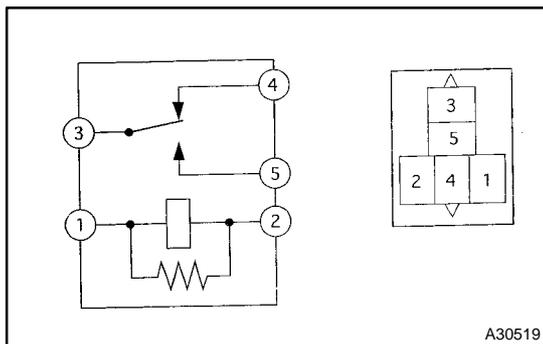
If there is no continuity, replace the relay.

  - (2) Check that there is no continuity between terminals 3 and 5.

If there is continuity, replace the relay.

  - (3) Apply battery voltage across terminals 1 and 2.
  - (4) Using an ohmmeter, check that there is continuity between terminals 3 and 5.

If there is no continuity, replace the relay.



## 2. COOLING FAN RELAY NO.2

- (a) Inspect the cooling fan relay continuity.
  - (1) Using an ohmmeter, check that there is continuity between terminals 1 and 2.

If there is no continuity, replace the relay.

  - (2) Using an ohmmeter, check that there is continuity between terminals 3 and 4.

If there is no continuity, replace the relay.

  - (3) Check that there is no continuity between terminals 3 and 5.

If there is continuity, replace the relay.

  - (4) Apply battery voltage across terminals 1 and 2.
  - (5) Using an ohmmeter, check that there is continuity between terminals 3 and 5.

If there is no continuity, replace the relay.

## COOLANT (2AZ-FE)

16032-02

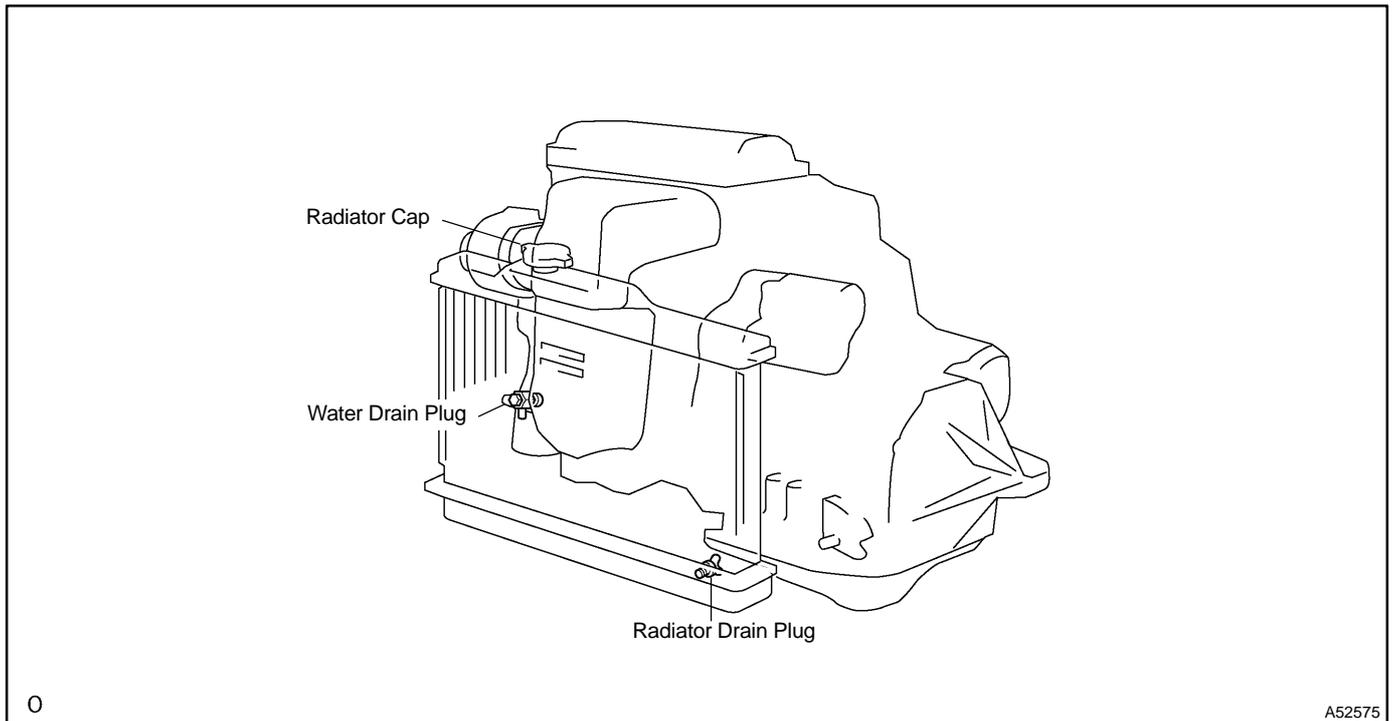
### REPLACEMENT

#### 1. DRAIN COOLANT

##### CAUTION:

To avoid the danger of being burned, do not remove the radiator cap while the engine and radiator are still hot, as fluid and steam can be blown out under pressure.

- (a) Remove the radiator cap.
- (b) Loosen the radiator plug and drain the coolant.



#### 2. ADD COOLANT

- (a) Tighten the radiator drain plug.
- (b) Add the engine coolant into the radiator until it overflows.  
**Capacity: 6.2 liters (6.6 US qts, 5.4 Imp. qts)**

##### HINT:

- Press the radiator inlet and outlet hose several times with hard.
  - If the coolant level gets lower, pour coolant.
  - Use of improper coolants may damage engine cooling system.
  - Use "Toyota Long Life Coolant" or equivalent and mix it with plain water according to the manufacturer's directions.
  - Using of coolant with includes more than 50 % (freezing protection down to  $-35^{\circ}\text{C}$  ( $-31^{\circ}\text{F}$ ) or 60 % (freezing protection down to  $-50^{\circ}\text{C}$  ( $-58^{\circ}\text{F}$ )) of ethylene-glycol is recommended but not more than 70 %.
- (c) Pour coolant into the radiator reservoir tank until it reaches full line.
  - (d) Install the radiator cap. (★ 1)
  - (e) Start the engine, and stop shortly. (★ 2)
  - (f) Remove the radiator cap after 10 seconds. Pour coolant if the coolant level is lower. (★ 3)
  - (g) Repeat (★ 1), (★ 2) and (★ 3) until the coolant level remains the same.

**HINT:**

Perform the procedures above before the engine is warm up. Warmed up engine causes the thermostat valve to open, and the air inside of the engine circulates between the radiator and the engine.

- (h) Install the radiator cap.
- (i) Warm up the engine until the thermostat valve begins to open.

**HINT:**

Press the radiator inlet and outlet hose several times with hand during the warming up.

- (j) Stop the engine and wait until the coolant temp. gets cold. Pour the coolant if the coolant level is lower.
- (k) Install the radiator cap and check the radiator reservoir tank coolant level.

**3. INSPECT CHECK ENGINE COOLANT LEAK**

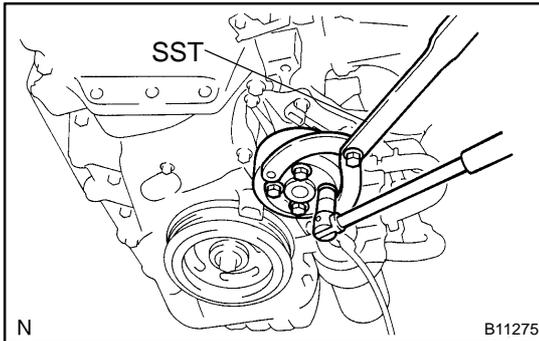
- (a) Fill the radiator with coolant and attach a radiator cap tester.
- (b) Pump it to 118 kPa (1.2 kgf/cm<sup>2</sup>), and check leakage.

# WATER PUMP ASSY (2AZ-FE)

1602V-02

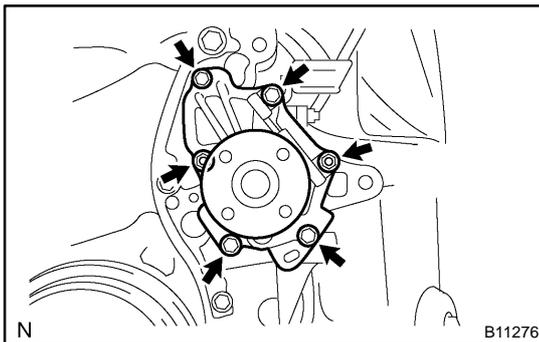
## REPLACEMENT

1. DRAIN COOLANT (See page 16-6)
2. REMOVE FAN AND GENERATOR V BELT  
(See page 14-5)  
SST 09249-63010
3. REMOVE GENERATOR ASSY  
(See page 19-13)



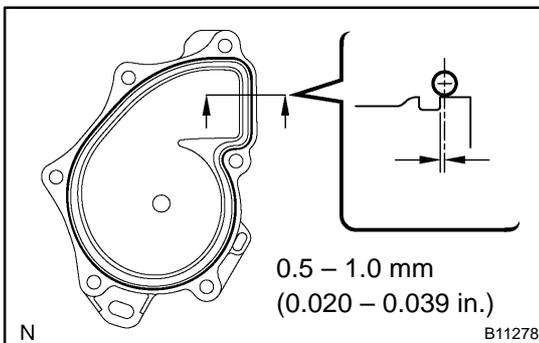
### 4. REMOVE WATER PUMP PULLEY

- (a) Using SST, remove 4 bolts and pump pulley.  
SST 09960-10010 (09962-01000, 09963-00700)
- (b) Disconnect the crankshaft position sensor wire harness clamp.



### 5. REMOVE WATER PUMP ASSY

- (a) Remove 4 bolts, 2 nuts, bracket and water pump.



### 6. INSTALL WATER PUMP ASSY

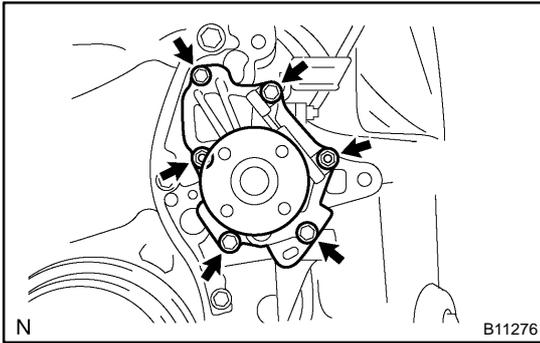
- (a) Remove any old packing(FIPG) material from the contact surface.
- (b) Apply seal packing to the water pump as shown in the illustration .

#### Seal packing:

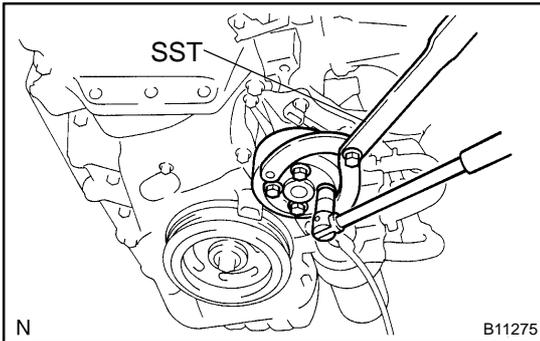
Part No. 08826-00080 or equivalent

#### NOTICE:

- Remove any oil from the contact surface.
- install the water pump within 5 minutes after applying.
- Do not put into engine oil within 2 hours after installing.



- (c) Install the water pump and bracket with 4 bolts and 2 nuts.  
**Torque: 9.0 N·m (92 kgf·cm, 80 in.-lbf)**
- (d) Connect the crankshaft position sensor wire harness clamp.



#### 7. INSTALL WATER PUMP PULLEY

- (a) Using SST, install the pump pulley with 4 bolts.  
SST 09960-10010 (09962-01000, 09963-00700)  
**Torque: 26 N·m (265 kgf·cm, 19 ft·lbf)**

#### 8. INSTALL GENERATOR ASSY

(See page 19-13)

#### 9. INSTALL FAN AND GENERATOR V BELT

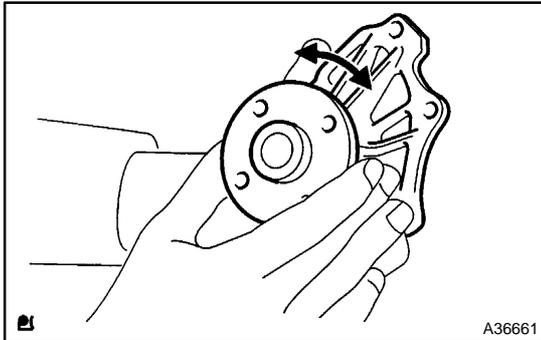
(See page 14-5)

SST 09249-63010

#### 10. ADD COOLANT (See page 16-6)

#### 11. INSPECT CHECK ENGINE COOLANT LEAK (See page 16-1)

## INSPECTION



### 1. INSPECT WATER PUMP ASSY

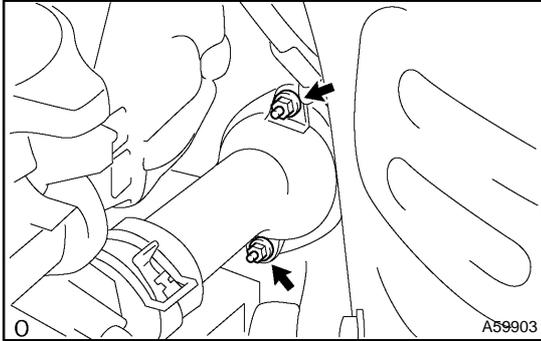
- (a) Visually check the drain hole coolant leakage.
- (b) Turn the pulley, and check that the water pump bearing moves smoothly and quietly.

# THERMOSTAT (2AZ-FE)

## REPLACEMENT

1602X-02

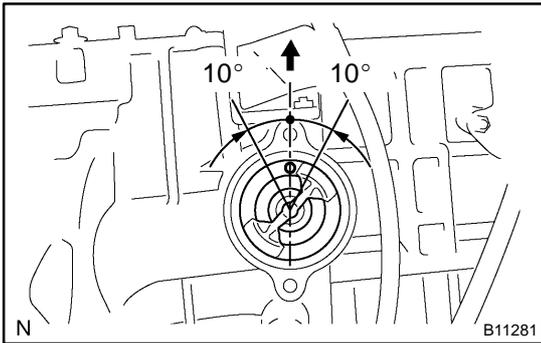
### 1. DRAIN COOLANT (See page 16-6)



### 2. REMOVE WATER INLET

- (a) Remove 2 nuts, and disconnect the water inlet from the cylinder block.

### 3. REMOVE THERMOSTAT



### 4. INSTALL THERMOSTAT

- (a) Install a new gasket to the thermostat.  
 (b) Install the thermostat with the jiggle valve upward.

#### HINT:

The jiggle valve may be set within 10° on either side of the prescribed position.

### 5. INSTALL WATER INLET

- (a) Install the water inlet with 2 nuts.  
**Torque: 9 N·m (92 kgf·cm, 80 in.·lbf)**

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

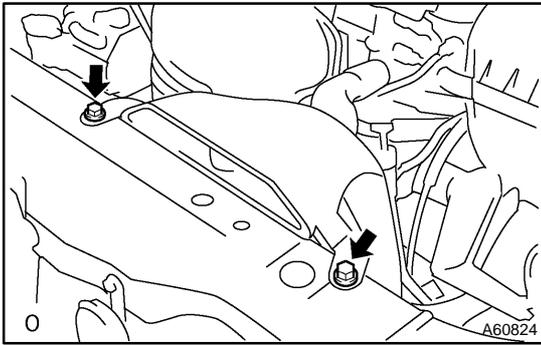
### 7. INSPECT CHECK ENGINE COOLANT LEAK (See page 16-1)

## RADIATOR ASSY (2AZ-FE)

16092-01

### Removal & Installation and Disassembly & Reassembly

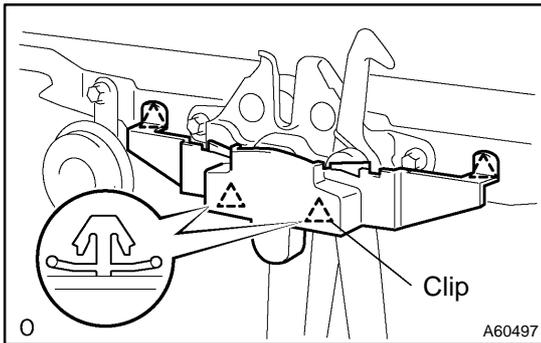
1. DRAIN COOLANT (See page 16-6)
2. DISCONNECT RADIATOR HOSE INLET
3. DISCONNECT RADIATOR HOSE OUTLET
4. DISCONNECT OIL COOLER INLET HOSE(A/T TRANSAXLE)
5. DISCONNECT OIL COOLER OUTLET HOSE(A/T TRANSAXLE)



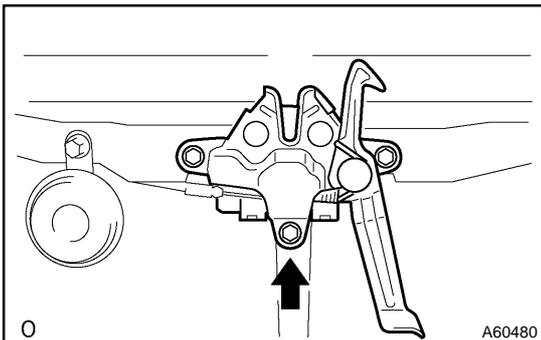
6. REMOVE AIR CLEANER INLET ASSY
  - (a) Remove the 2 bolts and the air cleaner inlet.

7. REMOVE RADIATOR SUPPORT UPPER

- (a) Disconnect the 2 horn connector.
- (b) Remove the hood lock release lever cover.



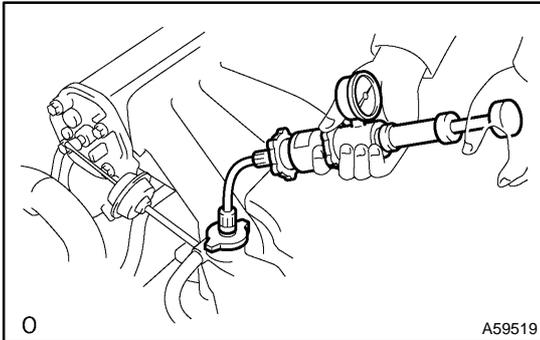
- (c) Remove the bolt shown in the illustration.
- (d) Remove the 4 bolts and radiator support upper.



8. REMOVE RADIATOR ASSY
  - (a) Disconnect the fan motor connector.
  - (b) Remove the radiator w/fan.
9. REMOVE RADIATOR SUPPORT CUSHION
10. REMOVE RADIATOR SUPPORT LOWER
11. REMOVE FAN ASSY,W/MOTOR
12. INSTALL FAN ASSY,W/MOTOR
  - (a) Install the fan assy w/motor to the radiator.  
**Torque: 5.0N·m (51 kgf·cm, 44 in.·lbf)**
13. INSTALL RADIATOR SUPPORT UPPER
  - (a) Install the radiator support upper with the 4 bolts.  
**Torque: 14 N·m (142 kgf·cm, 10 ft·lbf)**
14. ADJUST HOOD SUB-ASSY  
(See page 16-6)
15. ADD COOLANT (See page 16-6)
16. CHECK ENGINE COOLANT LEAK (See page 16-6)

## COOLING SYSTEM (1MZ-FE) ON-VEHICLE INSPECTION

16034-02



### 1. INSPECT COOLING SYSTEM FOR LEAKS

#### CAUTION:

To avoid the danger of being burned, do not remove the radiator cap while the engine and radiator are still hot, as fluid and steam can be blown out under pressure.

- (a) Fill the radiator with coolant and attach a radiator cap tester.
- (b) Warm up the engine.
- (c) Pump it to 118 kPa (1.2 kgf/cm<sup>2</sup>, 17.1 psi), and check that the pressure does not drop.

If the pressure drops, check to hoses, radiator or water pump for leaks. If no external leaks are found, check the heater core, cylinder block and head.

### 2. CHECK ENGINE COOLANT LEVEL AT RESERVOIR

- (a) The engine coolant level should be between the "LOW" and "FULL" lines, when the engine is cold. If low, check for leaks and add "Toyota Long Life Coolant" or equivalent up to the "FULL" line.

### 3. CHECK ENGINE COOLANT QUALITY

- (a) Remove the radiator cap.

#### CAUTION:

To avoid the danger of being burned, do not remove the radiator cap while the engine and radiator are still hot, as fluid and steam can be blown out under pressure.

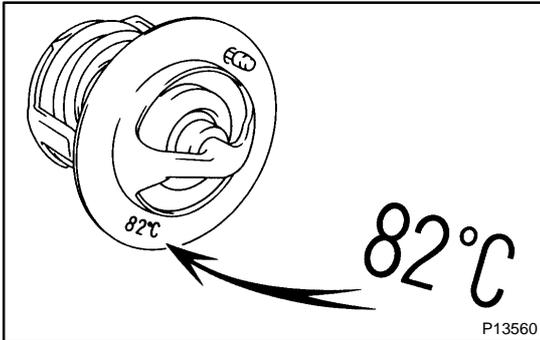
- (b) Check if there is any excessive deposits of rust or scale around the radiator cap and radiator filler hole; the coolant should be free from oil.

#### HINT:

If excessively dirty, replace the coolant.

- (c) Reinstall the radiator cap.

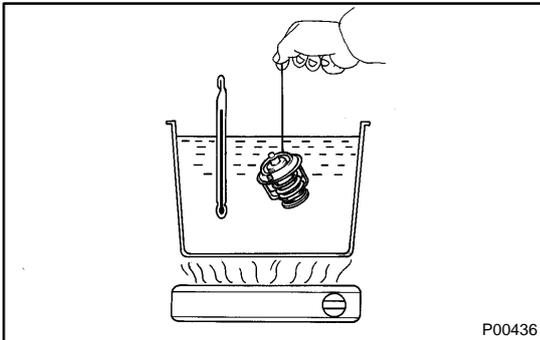
# INSPECTION



## 1. THERMOSTAT

### HINT:

The thermostat is numbered with the valve opening temperature.



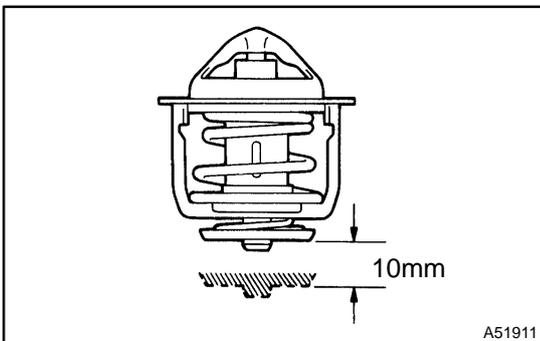
(a) Immerse the thermostat in water and gradually heat the water.

(b) Check the valve opening temperature.

### Valve opening temperature:

**80 – 84°C (176 – 183°F)**

If the valve opening temperature is not as specified, replace the thermostat.



(c) Check the valve lift.

**Valve lift: 10 mm (0.394 in.) or more at 95°C (203°F)**

If the valve lift is not as specified, replace the thermostat.

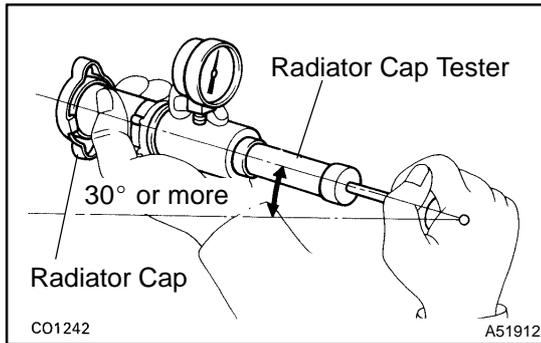
(d) Check that the valve is fully closed when the thermostat is at low temperatures (below 77°C (171°F)).

If not closed, replace the thermostat.

## 2. WATER OUTLET CAP SUB-ASSY

### NOTICE:

- If the reservoir cap has contaminations, always rinse it with water.
- Before using a radiator cap tester, wet the relief valve and pressure valve with engine coolant or water.
- When performing steps (a) and (b) below, keep the tester at an angle of over 30° above the horizontal.



- (a) Using a radiator cap tester, slowly pump the tester and check that air is coming from the vacuum valve.

**Pump speed: 1 push / (3 seconds or more)**

**NOTICE:**

**Push the pump at a constant speed.**

If air is not coming from the vacuum valve, replace the reservoir cap.

- (b) Pump the tester and measure the relief valve opening pressure.

**Pump speed: 1 push within 1 second**

**NOTICE:**

**This pump speed is for the first pump only (in order to close the vacuum valve). After this, the pump speed can be reduced.**

**Standard opening pressure:**

**83.4 – 112.8 kPa (0.85 – 1.15 kgf/cm<sup>2</sup>, 12.1 – 16.4 psi)**

**Minimum opening pressure:**

**69 kPa (0.7 kgf/cm<sup>2</sup>, 10.0 psi)**

**HINT:**

- Use the tester's maximum reading as the opening pressure.
- If the opening pressure is less than minimum, replace the reservoir cap.

# COOLING FAN SYSTEM (1MZ-FE)

## ON-VEHICLE INSPECTION

16036-02

### HINT:

It is normal that the cooling fan sometime rotates when the ignition switch is turned from ACC to ON.

#### 1. CHECK COOLING FAN OPERATION WITH LOW TEMPERATURE (Below 83°C (181°F))

- (a) Turn the ignition switch ON.
- (b) Check that the cooling fan stops.

If not, check the cooling fan relay and water temperature switches, and check for disconnection of connectors or wire break between the cooling fan relay and water temperature switches.

- (c) Disconnect the water temperature switch No.1 connector.
- (d) Connect terminals on the water temperature switch No.1 connector.
- (e) Check that the No.1 cooling fan rotates at high speed.

If not, check the No.1 cooling fan relay and No.1 cooling fan.

- (f) Reconnect the water temperature switch No.1 connector.
- (g) Disconnect the water temperature switch No.2 connector.
- (h) Ground terminal on the water temperature switch No.2 wire harness side connector.
- (i) Check that the No.1 and No.2 cooling fans rotate at low speed.

If not, check the No.2 cooling fan relay, No.3 cooling fan relay and No.2 cooling fan.

- (j) Reconnect the water temperature switch No.2 connector

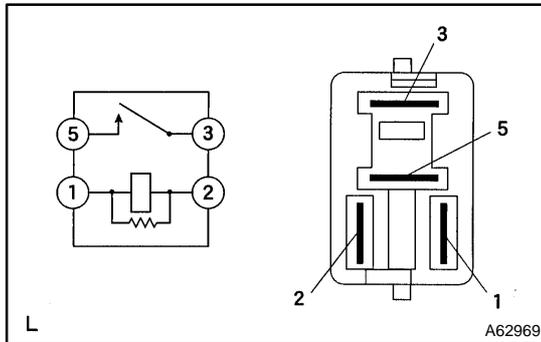
#### 2. INSPECT COOLING FAN

- (a) Disconnect the cooling fan connector.
- (b) Connect battery and ammeter to the cooling fan connector.
- (c) Check that the cooling fan rotates smoothly, and check the reading on the ammeter.

**Standard amperage: 8.0 – 12.0 A at 20°C (68°F)**

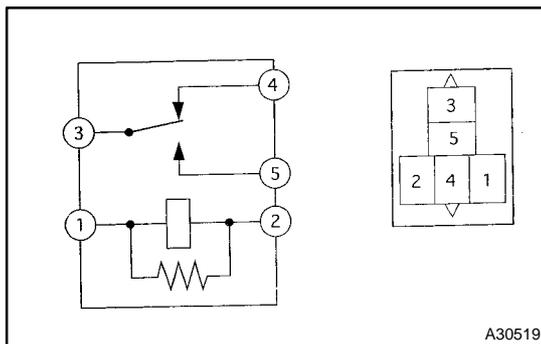
- (d) Reconnect the cooling fan connector.

## INSPECTION



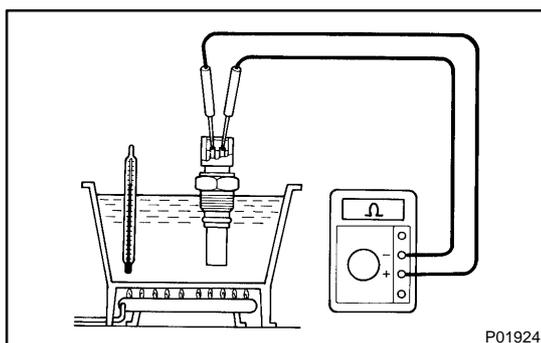
### 1. COOLING FAN RELAY COOLING FAN RELAY NO.3

- (a) Inspect the cooling fan relay continuity.
- (1) Using an ohmmeter, check that there is continuity between terminals 1 and 2.  
If there is no continuity, replace the relay.
  - (2) Check that there is no continuity between terminals 3 and 5.  
If there is continuity, replace the relay.
  - (3) Apply battery voltage across terminals 1 and 2.
  - (4) Using an ohmmeter, check that there is continuity between terminals 3 and 5.  
If there is no continuity, replace the relay.



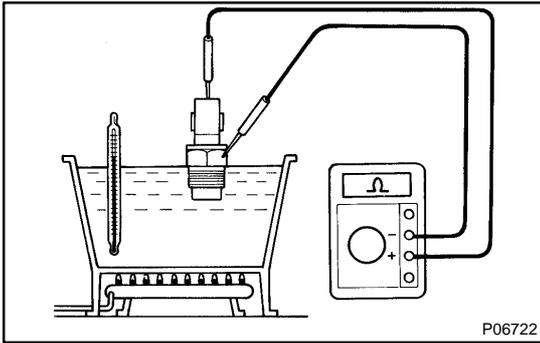
### 2. COOLING FAN RELAY NO.2

- (a) Inspect the cooling fan relay continuity.
- (1) Using an ohmmeter, check that there is continuity between terminals 1 and 2.  
If there is no continuity, replace the relay.
  - (2) Using an ohmmeter, check that there is continuity between terminals 3 and 4.  
If there is no continuity, replace the relay.
  - (3) Check that there is no continuity between terminals 3 and 5.  
If there is continuity, replace the relay.
  - (4) Apply battery voltage across terminals 1 and 2.
  - (5) Using an ohmmeter, check that there is continuity between terminals 3 and 5.  
If there is no continuity, replace the relay.



### 3. TEMPERATURE DETECT SWITCH

- (a) Using an ohmmeter, check that there is continuity between the terminals when the coolant temperature is above 98°C (208°F).  
If there is no continuity, replace the switch.
- (b) Check that there is no continuity, between terminals when the coolant temperature is below 88°C (190°F).  
If there is continuity, replace the switch.



#### 4. TEMPERATURE DETECT SWITCH NO.2

- (a) Using an ohmmeter, check that there is continuity between the terminals when the coolant temperature is above 93°C (199°F).

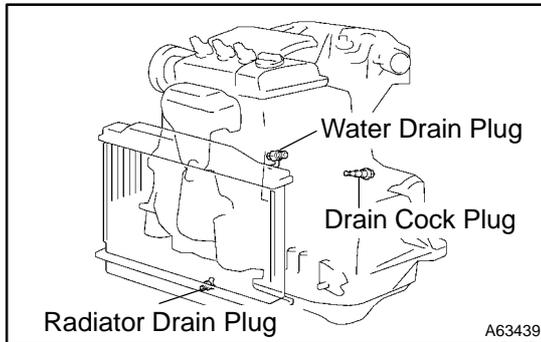
If there is no continuity, replace the switch.

- (b) Check that there is no continuity, between terminals when the coolant temperature is below 83°C (181°F).

If there is continuity, replace the switch.

# COOLANT (1MZ-FE) REPLACEMENT

16038-02



## 1. DRAIN COOLANT

- (a) Remove the radiator cap from the water outlet.

### CAUTION:

**To avoid the danger of being burned, do not remove the radiator cap while the engine and radiator are still hot, as fluid and steam can be blown out under pressure.**

- (b) Loosen the radiator drain plug and drain the coolant.

## 2. ADD COOLANT

- (a) Slowly fill the system with coolant.

### HINT:

- Use of improper coolants may damage engine cooling system.
- Use "Toyota Long Life Coolant" or equivalent and mix it with plain water according to the manufacturer's directions.
- Using of coolant with includes more than 50 % (freezing protection down to  $-35^{\circ}\text{C}$  ( $-31^{\circ}\text{F}$ ) or 60 % (freezing protection down to  $-50^{\circ}\text{C}$  ( $-58^{\circ}\text{F}$ )) of ethylene-glycol is recommended but not more than 70 %.

### NOTICE:

- **Do not use an alcohol type coolant or plain water alone.**
- **The coolant should be mixed with plain water (preferably demineralized water).**  
**Capacity: 9.2 liters (9.7 US qts, 8.1 Imp. qts)**

## 3. CHECK ENGINE COOLANT LEAK

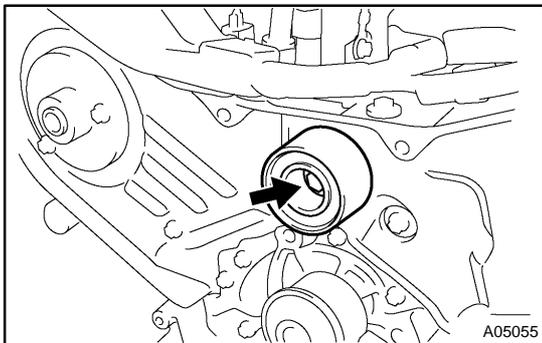
- (a) Fill the radiator with coolant and attach a radiator cap tester.  
(b) Pump it to 118 kPa (1.2 kgf/cm<sup>2</sup>), and check leakage.

# WATER PUMP ASSY (1MZ-FE)

1602G-02

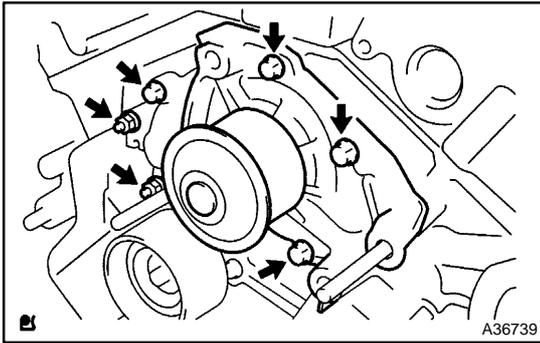
## REPLACEMENT

1. DRAIN COOLANT (See page 16-20)
2. REMOVE FRONT WHEEL RH
3. REMOVE FRONT FENDER APRON SEAL RH
4. REMOVE V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1  
(See page 14-140)
5. REMOVE VANE PUMP V BELT  
(See page 14-140)
6. REMOVE ENGINE MOVING CONTROL ROD  
(See page 14-155)
7. REMOVE ENGINE MOUNTING STAY NO.2 RH  
(See page 14-155)
8. REMOVE GENERATOR BRACKET NO.2
9. REMOVE CRANKSHAFT PULLEY  
(See page 14-206)  
SST 09213-54015 (91651-60855), 09330-00021, 09950-50013 (09951-05010, 09952-05010, 09953-05010, 09954-05030)
10. REMOVE TIMING BELT NO.1 COVER
11. REMOVE TIMING BELT NO.2 COVER  
(See page 14-206)
12. REMOVE TRANSVERSE ENGINE ENGINE MOUNTING BRACKET
13. REMOVE TIMING BELT GUIDE NO.2
14. REMOVE TIMING BELT  
(See page 14-243)



15. REMOVE TIMING BELT IDLER SUB-ASSY NO.2
  - (a) Remove the bolt and timing belt idler sub assembly No. 2.

16. REMOVE CAMSHAFT TIMING PULLEY  
(See page 14-212)  
SST 09960-10010 (09962-01000, 09963-01000), 09249-63010
17. REMOVE TIMING BELT NO.3 COVER

**18. REMOVE WATER PUMP ASSY**

- (a) Remove the 4 bolts, 2 nuts and water pump assembly.

**19. INSTALL WATER PUMP ASSY**

- (a) Install a new gasket and the water pump with the 4 bolts and 2 nuts.

**Torque: 8 N·m (82 kgf·cm, 71 in.·lbf)**

**20. INSTALL TIMING BELT NO.3 COVER**

(See page [14-212](#))

**21. INSTALL CAMSHAFT TIMING PULLEY**

(See page [14-212](#))

SST 09962-01000, 09963-01000), 09960-10010, 09249-63010

**22. INSTALL TIMING BELT IDLER SUB-ASSY NO.2**

**Torque: 43 N·m (438 kgf·cm, 32 ft.·lbf)**

**23. INSPECT TIMING BELT**

(See page [14-206](#))

**24. INSTALL TIMING BELT**

(See page [14-243](#))

SST 09960-10010 (09962-01000, 09963-01000)

**25. INSTALL CHAIN TENSIONER ASSY NO.1**

(See page [14-206](#))

**26. INSTALL TIMING BELT GUIDE NO.2**

(See page [14-206](#))

**27. INSTALL TRANSVERSE ENGINE MOUNTING BRACKET**

**Torque: 28 N·m (286 kgf·cm, 21 ft.·lbf)**

**28. INSTALL TIMING BELT NO.2 COVER**

(See page [14-206](#))

**29. INSTALL TIMING BELT NO.1 COVER**

(See page [14-206](#))

**30. INSTALL CRANKSHAFT PULLEY**

(See page [14-206](#))

SST 09213-54015 (91651-60855), 09330-00021

**31. INSTALL GENERATOR BRACKET NO.2**

**Torque: 28 N·m (286 kgf·cm, 21 ft.·lbf)**

**32. INSTALL ENGINE MOUNTING STAY NO.2 RH**

(See page [14-155](#))

**33. INSTALL ENGINE MOVING CONTROL ROD**

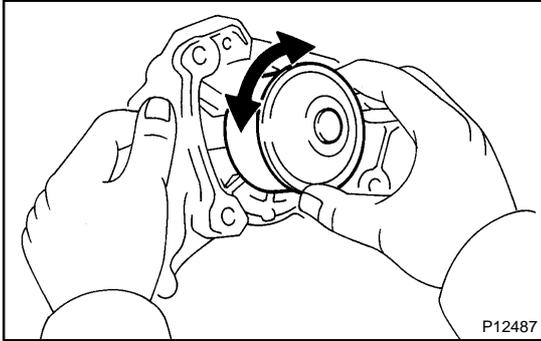
(See page [14-155](#))

**34. INSTALL VANE PUMP V BELT**

(See page [14-140](#))

35. **INSTALL V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1**  
(See page [14-140](#))
36. **INSPECT DRIVE BELT DEFLECTION AND TENSION(REFERENCE)** (See page [14-136](#))
37. **ADD COOLANT** (See page [16-20](#))
38. **CHECK ENGINE COOLANT LEAK** (See page [16-20](#))
39. **INSTALL FRONT WHEEL RH**  
Torque: 103 N·m (1051 kgf·cm, 76 ft·lbf)

## INSPECTION



### 1. INSPECT WATER PUMP ASSY

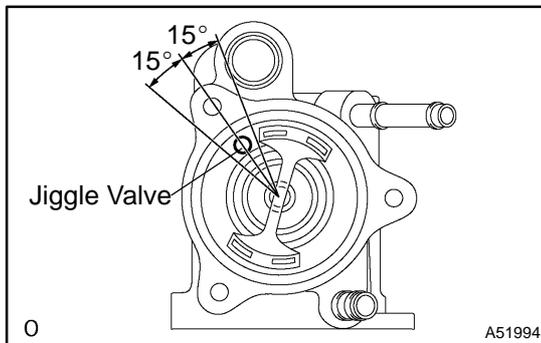
- (a) Visually check the drain hole for coolant leakage.
- (b) Turn the pulley, and check that the water pump bearing moves smoothly and quietly.

# THERMOSTAT (1MZ-FE)

## REPLACEMENT

1602F-02

1. DRAIN COOLANT (See page 16-20)
2. REMOVE BATTERY
3. REMOVE AIR CLEANER INLET ASSY
4. REMOVE AIR CLEANER ASSEMBLY WITH HOSE (See page 10-12)
5. REMOVE AIR CLEANER BRACKET
6. REMOVE AIR CLEANER INLET NO.1
7. DISCONNECT RADIATOR HOSE OUTLET
8. REMOVE WATER INLET PIPE
  - (a) Remove the bolt and water inlet pipe.
9. REMOVE WATER INLET
  - (a) Remove the 3 bolts and water inlet.
10. REMOVE THERMOSTAT



### 11. INSTALL THERMOSTAT

- (a) Install a new gasket to the thermostat.
- (b) Align the thermostat jiggle valve with the upper stud bolt, and insert the thermostat in the water inlet housing.

#### HINT:

The jiggle valve may be set within 15° of either side of the prescribed position.

### 12. INSTALL WATER INLET

**Torque: 8 N·m (82 kgf·cm, 71 in.-lbf)**

### 13. INSTALL WATER INLET PIPE

- (a) Install a new O-ring to the water inlet pipe.
- (b) Apply soapy water to the O-ring.
- (c) Connect the water inlet pipe to the water inlet.
- (d) Install the bolt holding the water inlet pipe to the cylinder head.

**Torque: 20 N·m (204 kgf·cm, 15 ft·lbf)**

### 14. INSTALL AIR CLEANER ASSEMBLY WITH HOSE (See page 10-12)

### 15. CONNECT VACUUM HOSE

### 16. ADD COOLANT (See page 16-20)

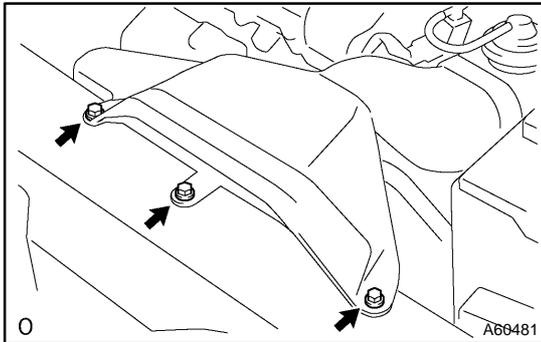
### 17. CHECK ENGINE COOLANT LEAK (See page 16-20)

## RADIATOR ASSY (1MZ-FE)

1608Y-01

### Removal & Installation and Disassembly & Reassembly

1. DRAIN COOLANT (See page 16-20)
2. DISCONNECT RADIATOR HOSE INLET
3. DISCONNECT RADIATOR HOSE OUTLET
4. DISCONNECT OIL COOLER INLET HOSE
5. DISCONNECT OIL COOLER OUTLET HOSE

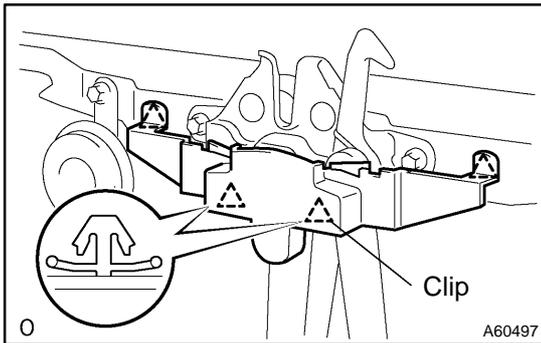


#### 6. REMOVE AIR CLEANER INLET ASSY

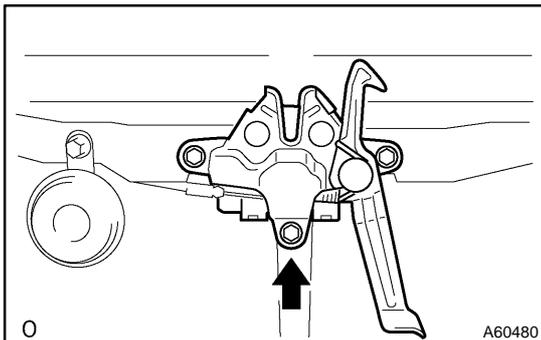
- (a) Remove the 3 bolts, the air cleaner inlet and air cleaner inlet No.1.

#### 7. REMOVE RADIATOR SUPPORT UPPER

- (a) Disconnect the 2 horn connector.
- (b) Remove the hood lock release lever cover.



- (c) Remove the bolt shown in the illustration.
- (d) Remove the 4 bolts and radiator support upper.



8. REMOVE RADIATOR ASSY
  - (a) Disconnect the fan motor connector.
  - (b) Remove the radiator w/fan.
9. REMOVE RADIATOR SUPPORT CUSHION
10. REMOVE RADIATOR SUPPORT LOWER
11. REMOVE FAN ASSY,W/MOTOR
12. INSTALL FAN ASSY,W/MOTOR
  - (a) Install the fan assy w/motor to the radiator.  
**Torque: 5.0 N·m (51 kgf·cm, 44 in·lbf)**
13. INSTALL RADIATOR SUPPORT UPPER
  - (a) Install the radiator support upper with the 4 bolts.  
**Torque: 14 N·m (142 kgf·cm,10 ft·lbf)**
14. ADJUST HOOD SUB-ASSY  
(See page 75-1)
15. ADD COOLANT (See page 16-20)
16. CHECK ENGINE COOLANT LEAK (See page 16-20)