

ON-VEHICLE INSPECTION

1. INSPECT COOLING FAN OPERATION AT LOW TEMPERATURES (Below 83°C (181°F))

- (a) Set the vehicle to inspection mode. (See page [IN-5](#))
- (b) Start the engine.
- (c) Check that the cooling fan stops.
If not, check the cooling fan relay and engine coolant temperature sensor, and check whether there is disconnection or an open circuit between them.
- (d) Disconnect the engine coolant temperature sensor connector.
- (e) Check that the cooling fan rotates.
If not, check the fuses, cooling fan relay, ECM and cooling fan, and check for a short circuit between the cooling fan relay and engine coolant temperature sensor.
- (f) Reconnect the engine coolant temperature sensor connector.

2. INSPECT COOLING FAN OPERATION AT HIGH TEMPERATURES (Above 93°C (199°F))

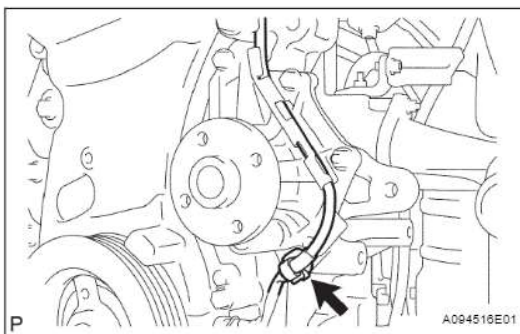
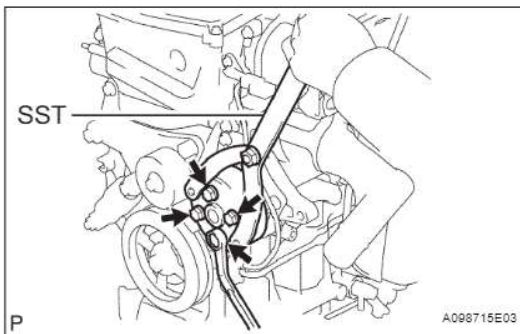
- (a) Set the vehicle to 2WD inspection mode. (See page [IN-5](#))
- (b) Start the engine, and raise the engine coolant temperature to above 93°C (199°F).
HINT:
Engine coolant temperature is detected by the engine coolant temperature sensor on the water outlet.
- (c) Check that the cooling fan rotates.
If not, replace the engine coolant temperature sensor.

REMOVAL

1. REMOVE FRONT WHEEL OPENING EXTENSION PAD RH
2. REMOVE FRONT WHEEL OPENING EXTENSION PAD LH
3. REMOVE ENGINE UNDER COVER RH
4. REMOVE ENGINE UNDER COVER LH
5. DRAIN ENGINE COOLANT (See page [CO-5](#))
6. REMOVE FRONT FENDER APRON SEAL RH
7. REMOVE NO. 2 ENGINE MOUNTING STAY RH (See page [EM-91](#))
8. REMOVE ENGINE MOVING CONTROL ROD SUB-ASSEMBLY (See page [EM-91](#))
9. REMOVE NO. 2 ENGINE MOUNTING BRACKET RH (See page [EM-91](#))
10. REMOVE V-RIBBED BELT TENSIONER COVER SUB-ASSEMBLY (See page [EM-6](#))
11. REMOVE V-RIBBED BELT (See page [EM-6](#))
12. REMOVE V-RIBBED BELT TENSIONER ASSEMBLY (See page [EM-100](#))
13. REMOVE WATER PUMP PULLEY
 - (a) Using SST, remove the 4 bolts and water pump pulley.

SST 09960-10010 (09962-01000, 09963-00700)

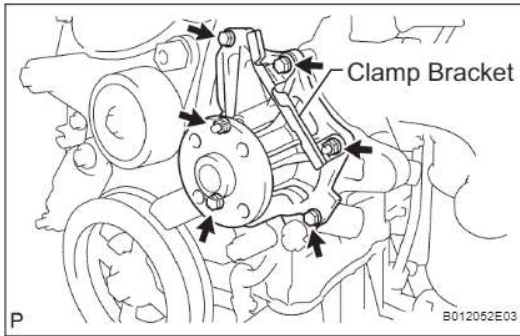
CO



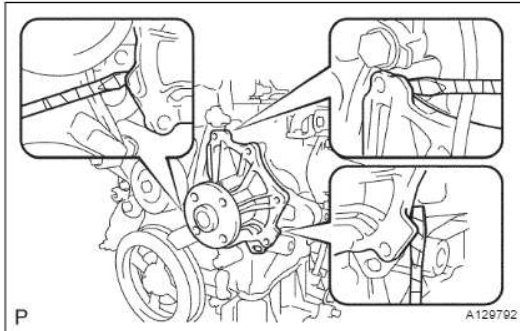
14. REMOVE WATER PUMP ASSEMBLY
 - (a) Remove the clamp of the crankshaft position sensor from the water pump.
 - (b) Disconnect the wire of the crankshaft position sensor from the clamp bracket.

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2AZ-FXE COOLING – WATER PUMP



- (c) Remove the 4 bolts, 2 nuts and clamp bracket.



- (d) Using a screwdriver, pry between the water pump and cylinder block, and then remove the water pump.

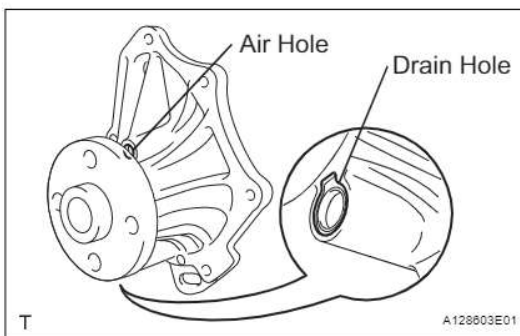
HINT:

Tape the screwdriver tip before use.

NOTICE:

Be careful not to damage the contact surfaces of the water pump and cylinder block.

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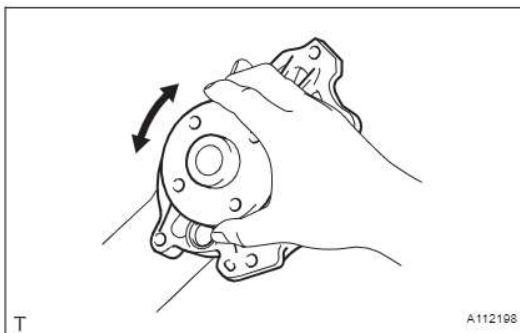


INSPECTION

1. INSPECT WATER PUMP ASSEMBLY

- (a) Visually check the drain hole and air hole for coolant leakage.

If leakage is found, replace the water pump assembly.



- (b) Turn the pulley, and then check that the water pump bearing moves smoothly without making a "click" sound.

If it does not move smoothly, replace the water pump assembly.

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INSTALLATION

1. INSTALL WATER PUMP ASSEMBLY

- (a) Remove any old seal packing material from the contact surface.
- (b) Apply a continuous line of seal packing as shown in the illustration.

Seal packing:

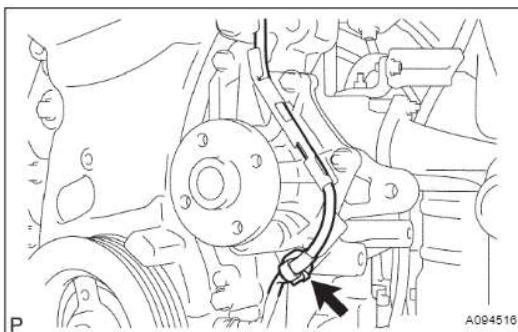
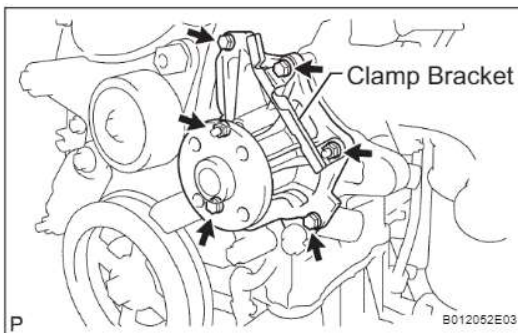
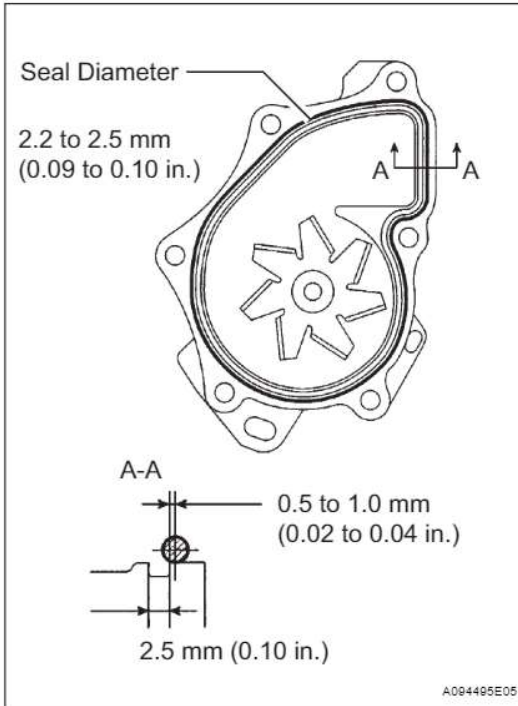
Toyota Genuine Seal Packing Black, Three Bond 1207B or equivalent

Standard seal diameter:

2.2 to 2.5 mm (0.09 to 0.10 in.)

NOTICE:

- Remove any oil from the contact surface.
- The parts must be set within 3 minutes after applying seal packing. Otherwise, the material must be removed and reapplied.



- (c) Install the water pump and clamp bracket with the 4 bolts and 2 nuts.

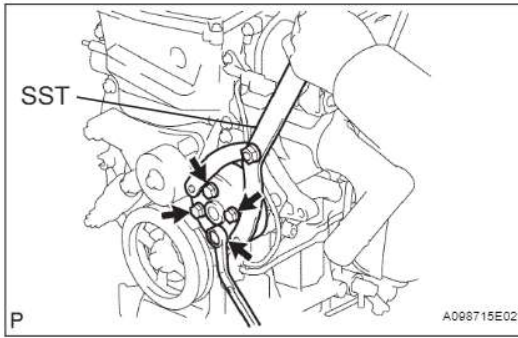
Torque: 9.0 N*m (92 kgf*cm, 80 in.*lbf)

- (d) Install the wire of the crankshaft position sensor onto the clamp bracket.
- (e) Install the clamp of the crankshaft position sensor onto the water pump.

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2. **INSTALL WATER PUMP PULLEY**
 - (a) Using SST, install the water pump pulley with the 4 bolts.
SST 09960-10010 (09962-01000, 09963-00700)
Torque: 26 N*m (265 kgf*cm, 19 ft.*lbf)
3. **INSTALL V-RIBBED BELT TENSIONER ASSEMBLY** (See page [EM-103](#))
4. **INSTALL V-RIBBED BELT** (See page [EM-6](#))
5. **INSTALL V-RIBBED BELT TENSIONER COVER SUB-ASSEMBLY** (See page [EM-7](#))
6. **INSTALL NO. 2 ENGINE MOUNTING BRACKET RH** (See page [EM-30](#))
7. **INSTALL ENGINE MOVING CONTROL ROD SUB-ASSEMBLY** (See page [EM-112](#))
8. **INSTALL NO. 2 ENGINE MOUNTING STAY RH** (See page [EM-112](#))
9. **CONNECT CABLE TO NEGATIVE BATTERY TERMINAL** (See page [EM-113](#))
10. **ADD ENGINE COOLANT** (See page [CO-5](#))
11. **INSPECT FOR ENGINE COOLANT LEAK** (See page [CO-1](#))
12. **INSTALL ENGINE UNDER COVER LH**
13. **INSTALL ENGINE UNDER COVER RH**
14. **INSTALL FRONT WHEEL OPENING EXTENSION PAD RH**
15. **INSTALL FRONT WHEEL OPENING EXTENSION PAD LH**

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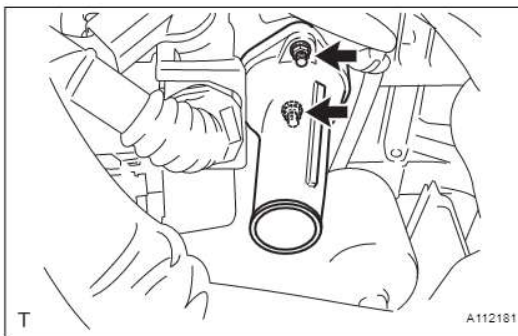
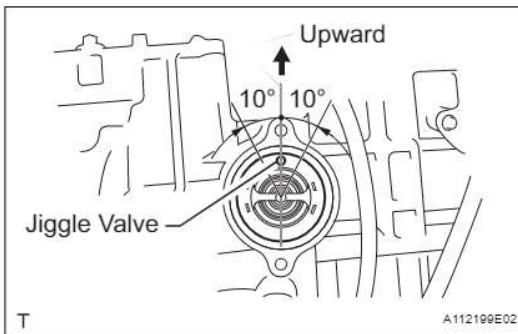
INSTALLATION

1. INSTALL THERMOSTAT

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

HINT:

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



2. INSTALL WATER INLET

- (a) Install the water inlet with the 2 nuts.

Torque: 9.0 N*m (92 kgf*cm, 80 in.*lbf)

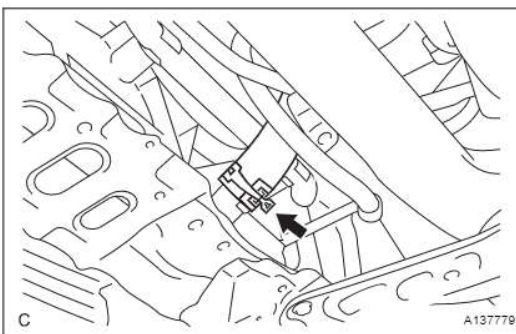
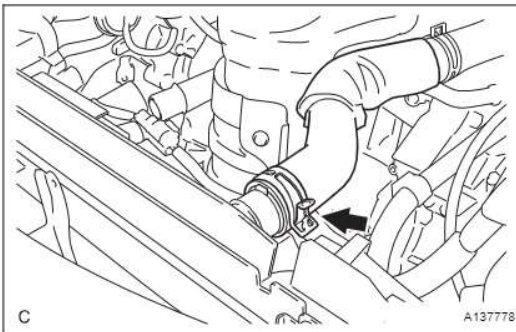
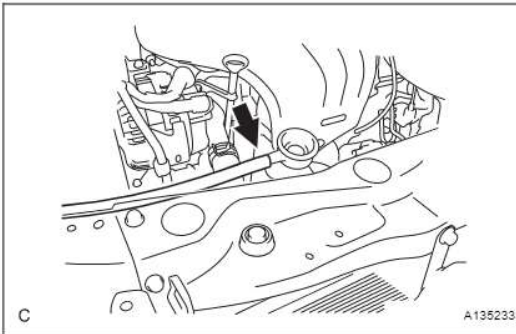
3. CONNECT RADIATOR HOSE OUTLET (See page [EM-112](#))
4. ADD ENGINE COOLANT (See page [CO-5](#))
5. INSPECT FOR ENGINE COOLANT LEAK (See page [CO-1](#))
6. INSTALL ENGINE UNDER COVER LH
7. INSTALL ENGINE UNDER COVER RH
8. INSTALL FRONT WHEEL OPENING EXTENSION PAD LH
9. INSTALL FRONT WHEEL OPENING EXTENSION PAD RH

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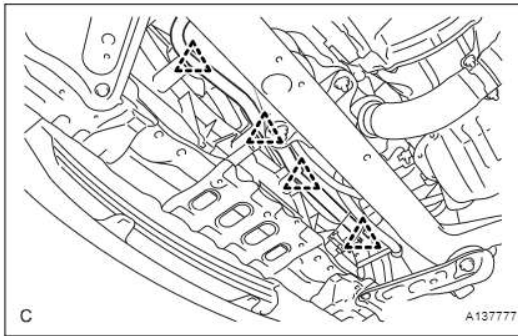
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REMOVAL

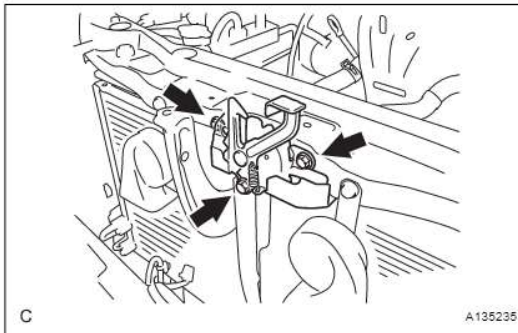
1. DRAIN ENGINE COOLANT (See page [CO-5](#))
2. REMOVE FRONT WHEEL OPENING EXTENSION PAD LH
3. REMOVE FRONT WHEEL OPENING EXTENSION PAD RH
4. REMOVE ENGINE UNDER COVER RH
5. REMOVE ENGINE UNDER COVER LH
6. REMOVE AIR CLEANER INLET ASSEMBLY (See page [EM-90](#))
7. REMOVE FRONT BUMPER ASSEMBLY (See page [ET-3](#))
8. REMOVE FRONT BUMPER ENERGY ABSORBER (See page [ET-6](#))
9. SEPARATE RADIATOR RESERVOIR TANK HOSE
 - (a) Separate the radiator reservoir tank hose from the radiator assembly.



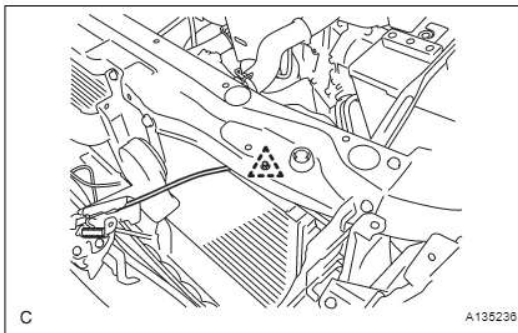
10. DISCONNECT RADIATOR HOSE INLET
 - (a) Disconnect the radiator hose inlet from the radiator assembly.
11. DISCONNECT RADIATOR HOSE OUTLET
 - (a) Disconnect the radiator hose outlet from the radiator assembly.

2AZ-FXE COOLING – RADIATOR**CO-23****12. SEPARATE WATER HOSE**

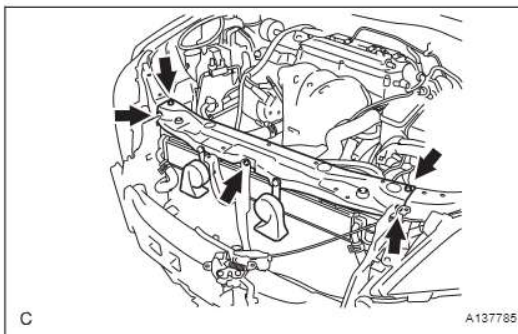
- (a) Separate the 4 clamps and water hose.

**13. REMOVE RADIATOR SUPPORT UPPER**

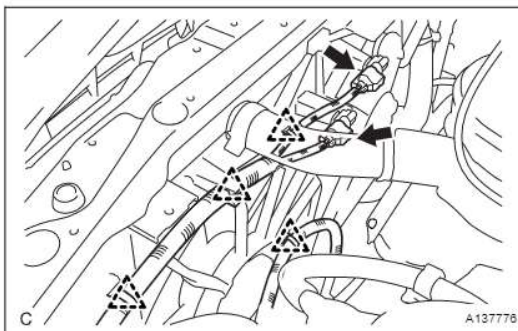
- (a) Disconnect the horn connector.
 (b) Remove the 3 bolts and separate the hood lock assembly from the radiator support upper.



- (c) Remove the clamp and separate the hood lock control cable from the radiator support upper.



- (d) Remove the 5 bolts and radiator support upper.

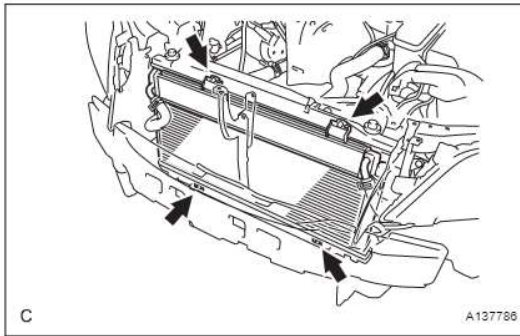
**14. REMOVE RADIATOR ASSEMBLY**

- (a) Remove the 4 clamps and 2 connectors.

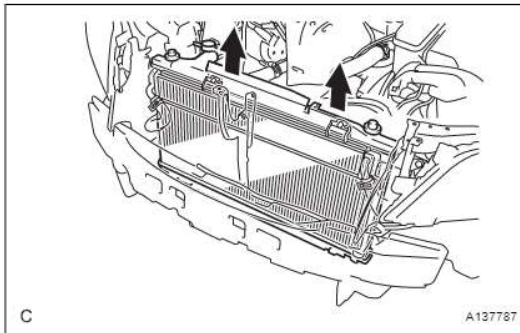
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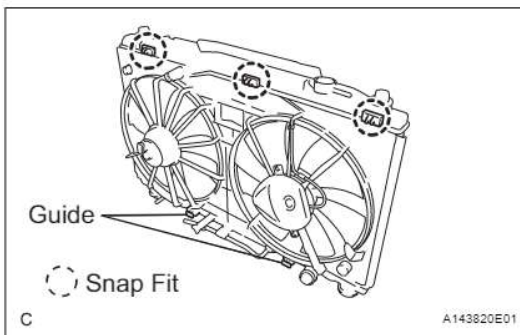
2AZ-FXE COOLING – RADIATOR



- (b) Remove the 4 bolts and separate the condenser assembly from the radiator assembly.

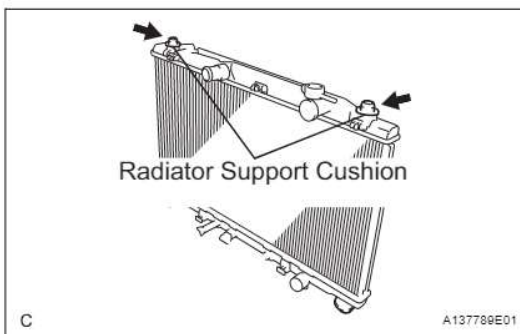


- (c) Remove the radiator assembly from the body.



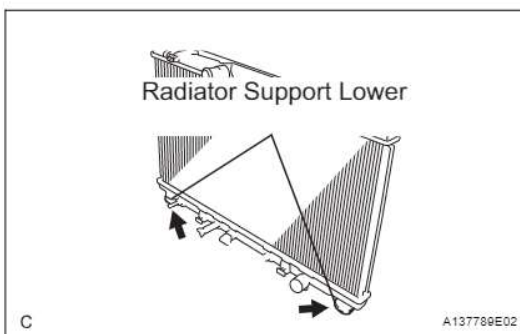
15. REMOVE FAN ASSEMBLY WITH MOTOR

- (a) Release the 3 snap fits and lift the fan assembly with motor from the radiator.



16. REMOVE RADIATOR SUPPORT CUSHION

- (a) Remove the 2 radiator support cushions from the radiator assembly.



17. REMOVE RADIATOR SUPPORT LOWER

- (a) Remove the 2 radiator support lowers from the radiator assembly.

DISASSEMBLY

1. REMOVE DRAIN PLUG

- Remove the drain plug.
- Remove the O-ring.

2. REMOVE RADIATOR TANK UPPER

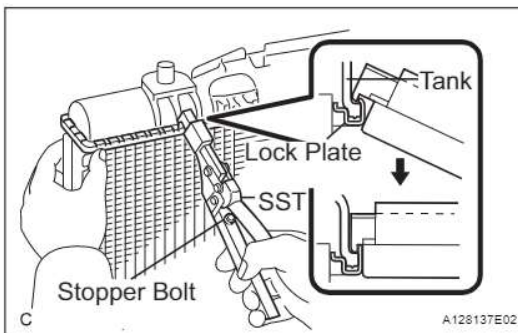
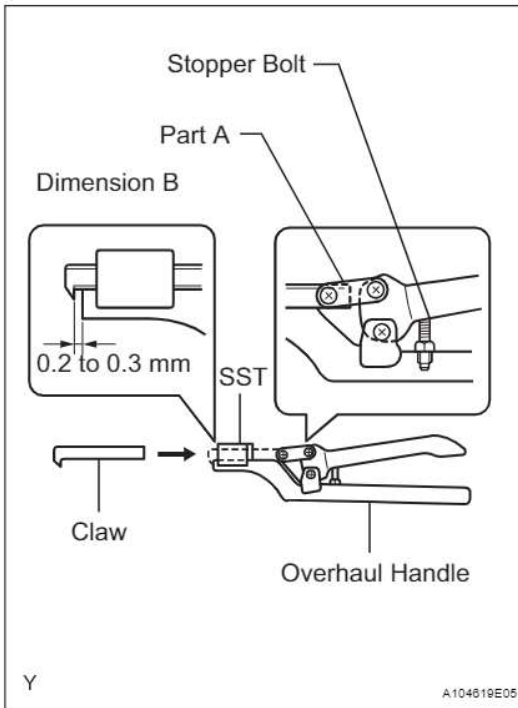
- Install the claw to the overhaul handle, inserting it in the hole in part A as shown in the illustration.
- While gripping the handle, adjust the stopper bolt so that dimension B is as shown in the illustration.

SST 09230-01010 (09231-01010, 09231-01030)

Dimension B:
0.2 to 0.3 mm (0.008 to 0.012 in.)

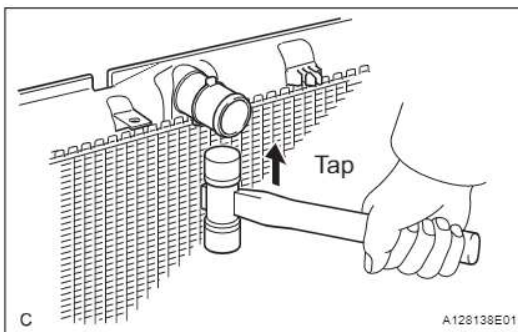
NOTICE:

If the stopper bolt is not adjusted, the claw may be damaged.



- Using SST to release the caulking, grip the handle until stopped by the stopper bolt.

SST 09230-01010 (09231-01010, 09231-01030)



- Lightly tap the bracket of the radiator (or radiator hose inlet or outlet) with a soft-faced hammer and remove the tank.

- Remove the O-ring.

3. REMOVE RADIATOR TANK LOWER

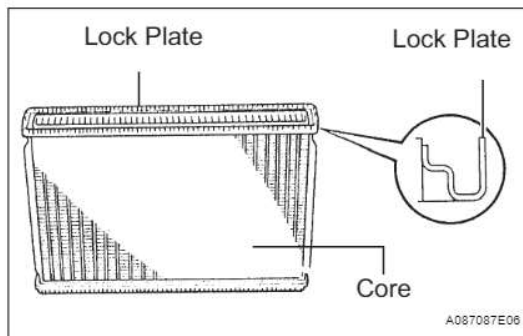
HINT:

Removal procedure of the radiator tank lower is the same as that of the radiator tank upper.

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2AZ-FXE COOLING – RADIATOR



INSPECTION

1. INSPECT LOCK PLATE

- (a) Inspect the lock plate for damage.

HINT:

- If the sides of the lock plate groove are deformed, reassembly of the tank will be impossible. Therefore, first correct the shape of the lock plate groove with pliers or a similar object, if necessary.
- Water leakage will result if the bottom of the lock plate groove is damaged or dented. Repair or replace the lock plate if necessary.

NOTICE:

The radiator can only be recaulked 2 times. After recaulking 2 times, the radiator core must be replaced.

REASSEMBLY

1. INSTALL RADIATOR TANK UPPER

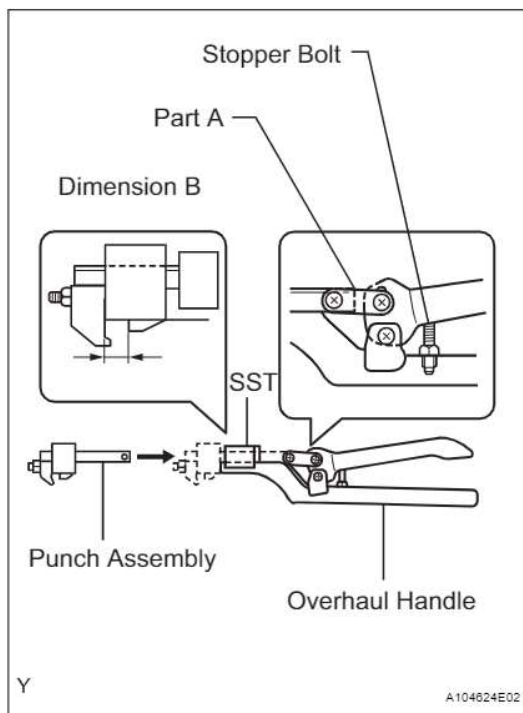
- (a) Install the punch assembly to the overhaul handle, inserting it in the hole in part A as shown in the illustration.

SST 09230-01010, 09231-14010

- (b) While gripping the handle, adjust the stopper bolt so that dimension B is as shown in the illustration.

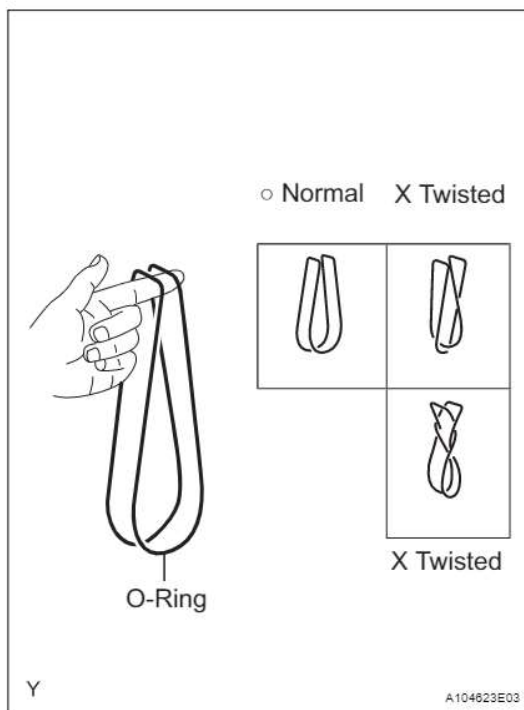
Dimension B:

8.4 mm (0.331 in.)



2AZ-FXE COOLING – RADIATOR

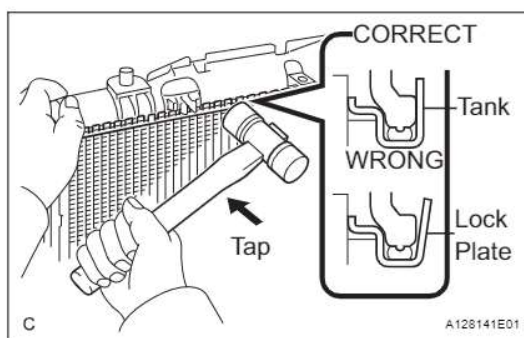
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- (c) After checking that there are no foreign objects in the lock plate groove, install a new O-ring without twisting it.

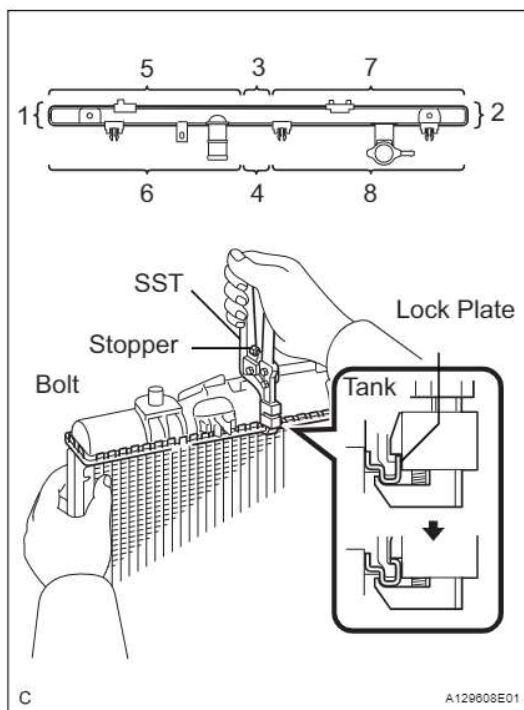
HINT:

When cleaning the lock plate groove, lightly rub it with sandpaper without scratching it.



- (d) Install the tank without damaging the O-ring.
(e) Tap the lock plate with a soft-faced hammer so that there is no gap between the lock plate and the tank.

CO



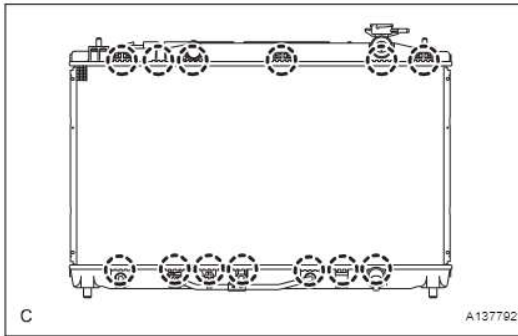
- (f) Lightly press SST against the lock plate in the order shown in the illustration. After repeating this a few times, fully caulk the lock plate by gripping the handle until stopped by the stopper plate.

HINT:

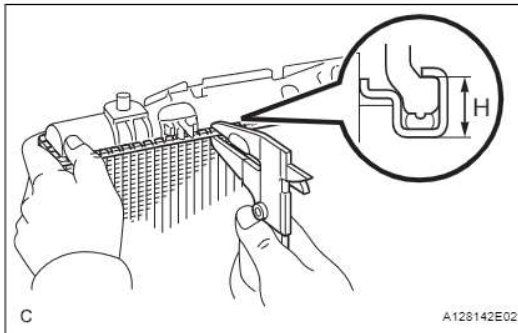
For the areas where cannot be tapped with SST, use pliers or similar objects and be careful not to damage the core plates.

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- (g) Do not tap the areas indicated by dotted circles in the illustration.



- (h) Check the lock plate height (H) after completing caulking.

Plate height (H):

7.40 to 7.80 mm (0.2913 to 0.3071 in.)

If not within the specified height range, adjust the stopper bolt of the handle and caulk again.

2. INSTALL RADIATOR TANK LOWER

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HINT:

Removal procedure of the radiator tank lower is the same as that of the upper radiator tank.

3. INSTALL DRAIN PLUG

- Install a new O-ring to the drain plug.
- Install the drain plug.

4. INSPECT FOR WATER LEAK

- Plug the inlet and outlet pipes of the radiator with SST.

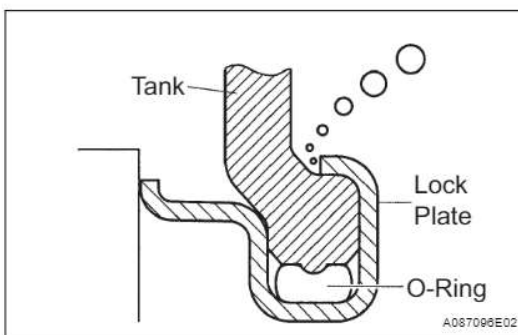
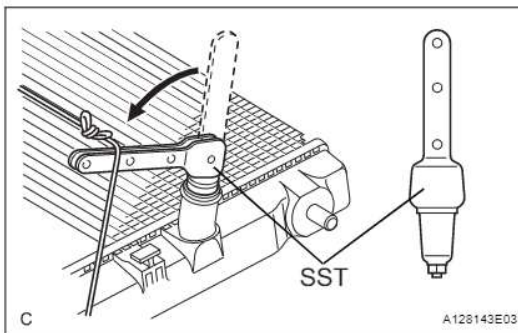
SST 09230-01010

- Using the radiator cap tester, apply pressure to the radiator.

Test pressure:

177 kPa (1.8 kgf/cm², 26 psi)

- Submerge the radiator in water.



- Inspect for leaks.

HINT:

On radiators with resin tanks, there is clearance between the tank and lock plate where a minute amount of air will remain, giving the appearance of an air leak when the radiator is submerged in water. Therefore, before doing the water leak test, first swish the radiator around in the water until all air bubbles disappear.

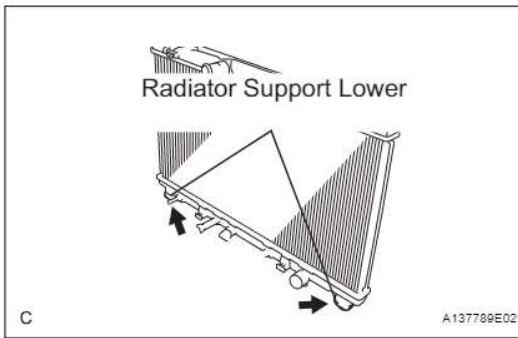
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INSTALLATION

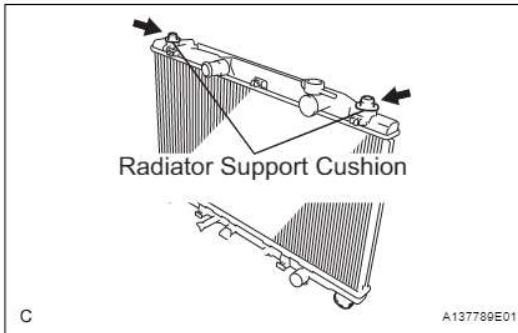
1. INSTALL RADIATOR SUPPORT LOWER

- (a) Install the 2 radiator support lowers to the radiator assembly.



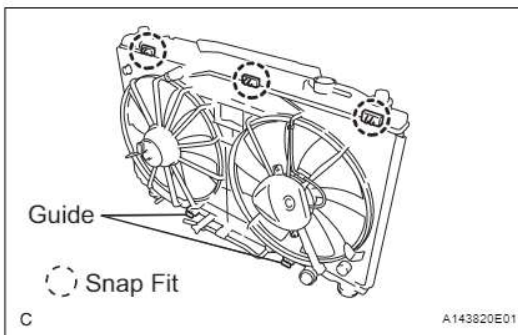
2. INSTALL RADIATOR SUPPORT CUSHION

- (a) Install the 2 radiator support cushions to the radiator assembly.



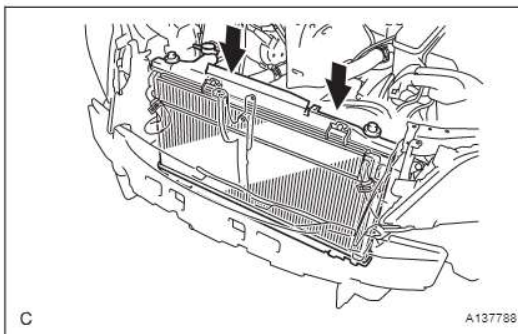
3. INSTALL FAN ASSEMBLY WITH MOTOR

- (a) Install the fan assembly with motor to the radiator with the 2 guides at the bottom and 3 snap fits on the top.

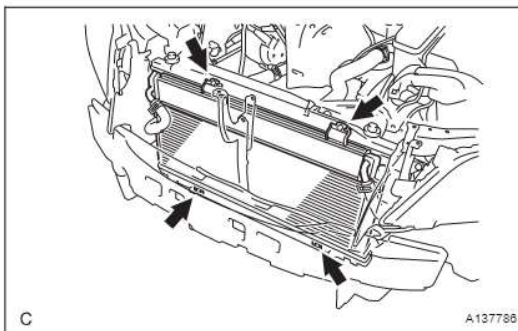


4. INSTALL RADIATOR ASSEMBLY

- (a) Install the radiator to the body.

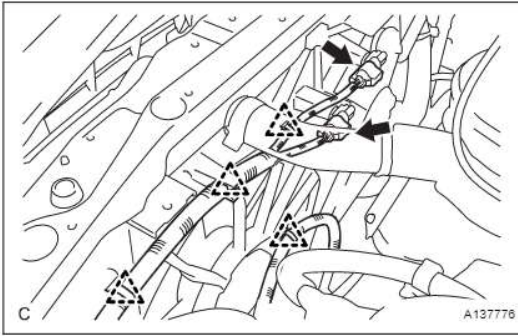


- (b) Install the condenser assembly with the 4 bolts.
Torque: 5.0 N*m (51 kgf*cm, 44 in.*lbf)

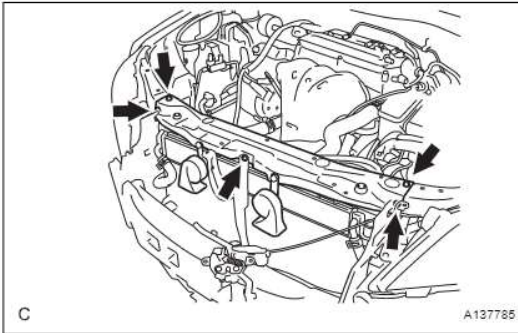


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2AZ-FXE COOLING – RADIATOR

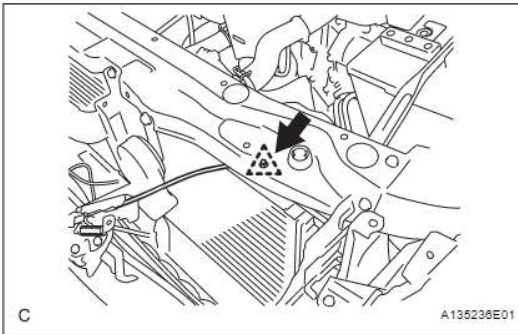


- (c) Connect the 2 fan motor connectors and the 4 clamps.

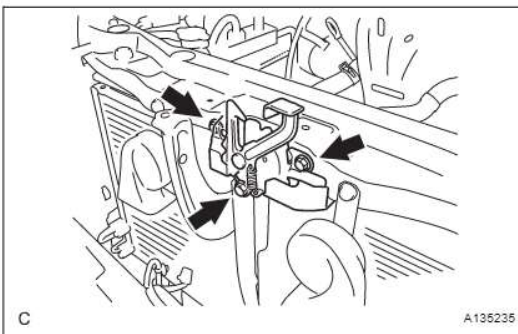


5. INSTALL RADIATOR SUPPORT UPPER

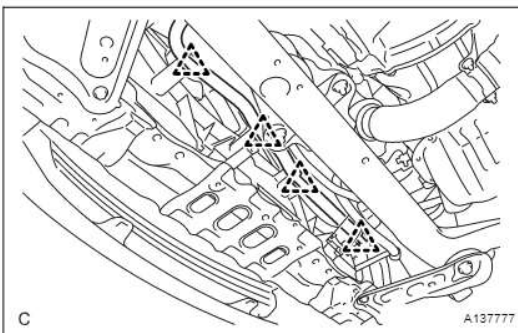
- (a) Install the radiator support upper with the 5 bolts.
Torque: 7.0 N*m (71 kgf*cm, 62 in.*lbf)



- (b) Install the hood lock control cable assembly to the radiator support upper with the clamp.



- (c) Install the hood lock assembly to the radiator support upper with the 3 bolts.
Torque: 7.5 N*m (77 kgf*cm, 66 in.*lbf)
 (d) Connect the horn connector.

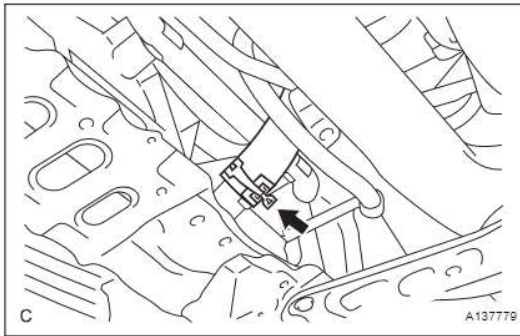


6. CONNECT WATER HOSE

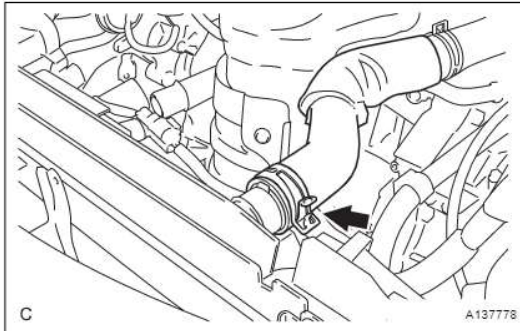
- (a) Connect the water hose with the 4 clamps.

2AZ-FXE COOLING – RADIATOR

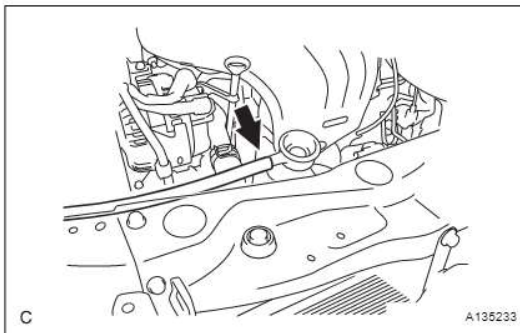
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**7. CONNECT RADIATOR HOSE OUTLET**

- (a) Connect the radiator hose outlet to the radiator assembly.

**8. CONNECT RADIATOR HOSE INLET**

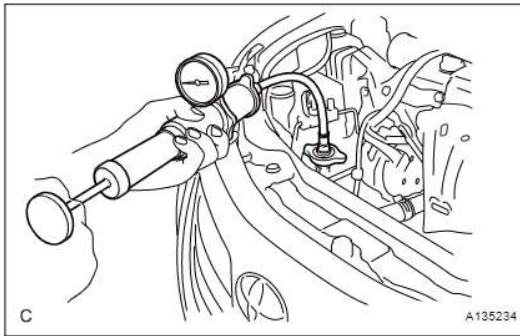
- (a) Connect the radiator hose inlet to the radiator assembly.

**9. CONNECT RADIATOR RESERVOIR TANK HOSE**

- (a) Connect the radiator reservoir tank hose to the radiator assembly.

10. INSTALL AIR CLEANER INLET ASSEMBLY (See page [EM-113](#))**11. INSTALL FRONT BUMPER ENERGY ABSORBER (See page [ET-7](#))****12. INSTALL FRONT BUMPER ASSEMBLY (See page [ET-9](#))****13. ADD ENGINE COOLANT (See page [CO-5](#))****14. INSPECT FOR ENGINE COOLANT LEAK (See page [CO-1](#))****15. INSTALL ENGINE UNDER COVER LH****16. INSTALL ENGINE UNDER COVER RH****17. INSTALL FRONT WHEEL OPENING EXTENSION PAD RH****18. INSTALL FRONT WHEEL OPENING EXTENSION PAD LH**

CO



COOLING SYSTEM

ON-VEHICLE INSPECTION

1. INSPECT FOR ENGINE COOLANT LEAK

NOTICE:

Before performing each inspection, turn the A/C switch OFF.

CAUTION:

Do not remove the radiator cap while the engine and radiator are still hot. Pressurized, hot engine coolant and steam may be released and cause serious burns.

- (a) Fill the radiator with coolant and attach a radiator cap tester.
- (b) Set the vehicle to inspection mode. (See page [IN-5](#))
- (c) Start the engine, and warm it up.
- (d) Using a radiator cap tester, increase the pressure inside the radiator to 118 kPa (1.2 kgf*cm, 17 psi), and check that the pressure does not drop. If the pressure drops, check the hoses, radiator and water pump for leaks. If no external leaks are found, check the heater core, cylinder block and cylinder head.

2. INSPECT ENGINE COOLANT LEVEL IN RESERVOIR

- (a) Check that the engine coolant level is between the LOW and FULL lines when the engine is cold. If the engine coolant level is low, check for leaks and add "TOYOTA Super Long Life Coolant" or similar high quality ethylene glycol based non-silicate, non-amine, non-nitrite and non-borate coolant with long-life hybrid organic acid technology to the FULL line.

NOTICE:

Do not substitute plain water for engine coolant.

3. INSPECT ENGINE COOLANT QUALITY

- (a) Remove the radiator cap.
CAUTION:
Do not remove the radiator cap while the engine and radiator are still hot. Pressurized, hot engine coolant and steam may be released and cause serious burns.
- (b) Check if there are any excessive deposits of rust or scales around the radiator cap and radiator filler hole. Also, the coolant should be free of oil. If excessively dirty, clean the coolant passage and replace the coolant.
- (c) Install the radiator cap.

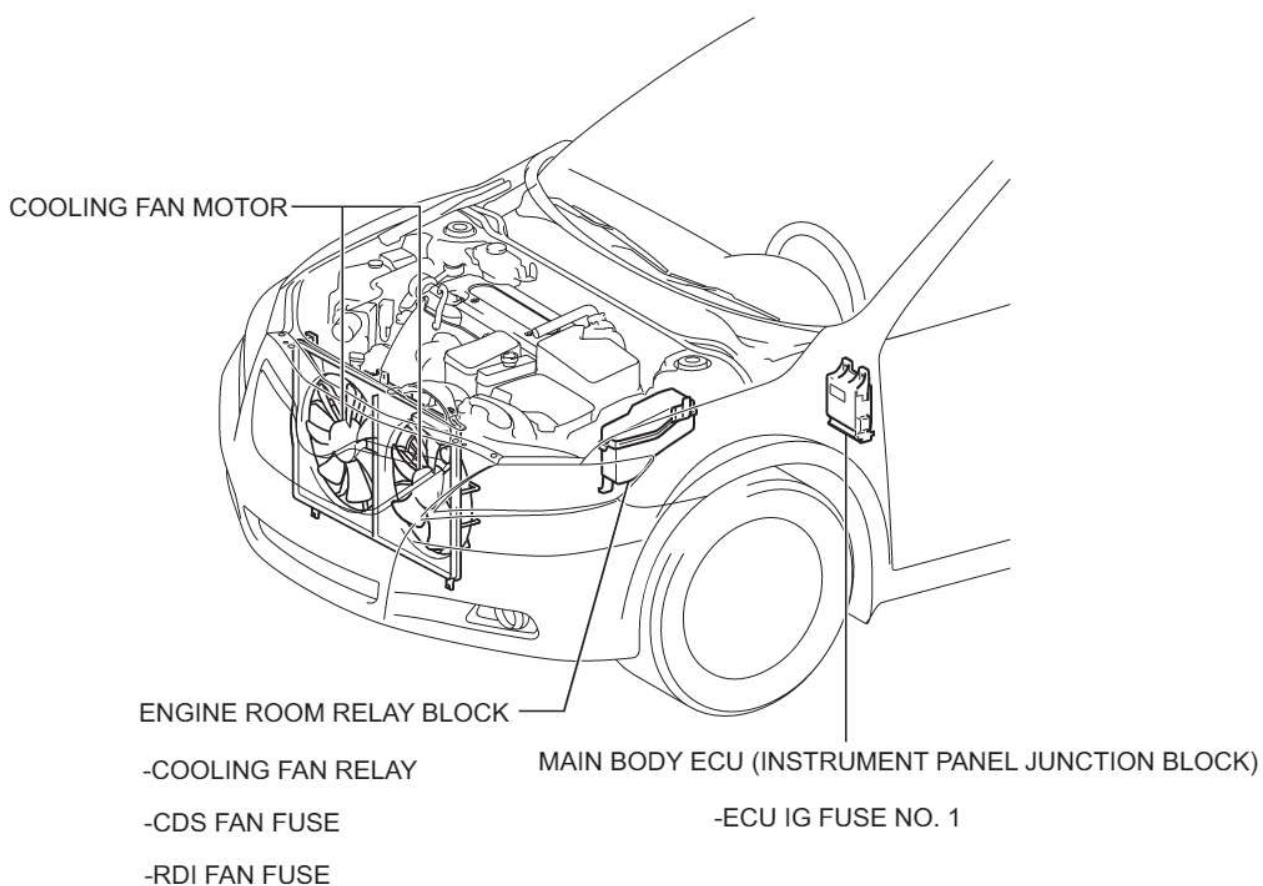
CO

CO-2

2AZ-FXE COOLING – COOLING FAN SYSTEM

COOLING FAN SYSTEM

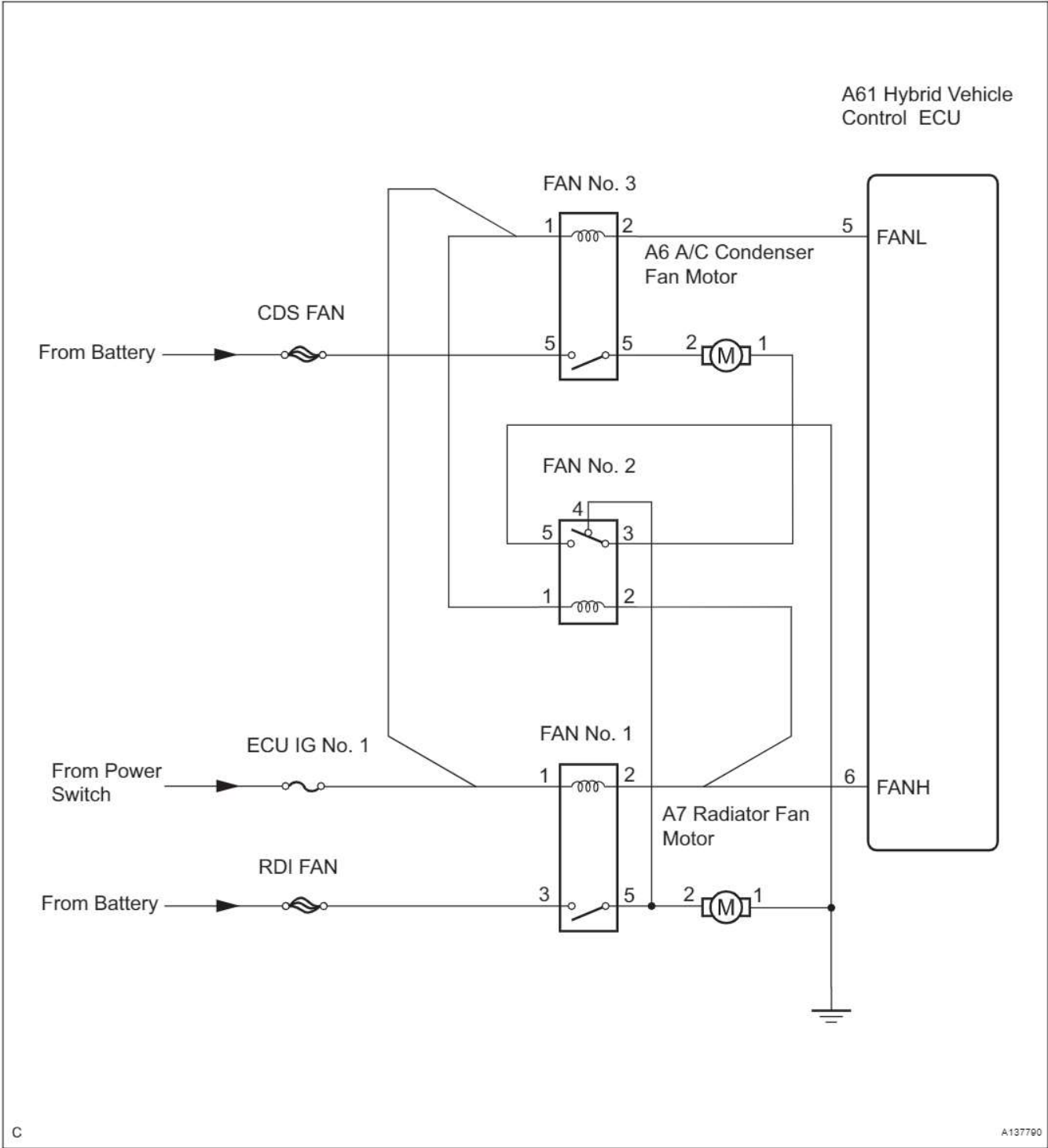
PARTS LOCATION



C

A137781E01

SYSTEM DIAGRAM



COOLANT

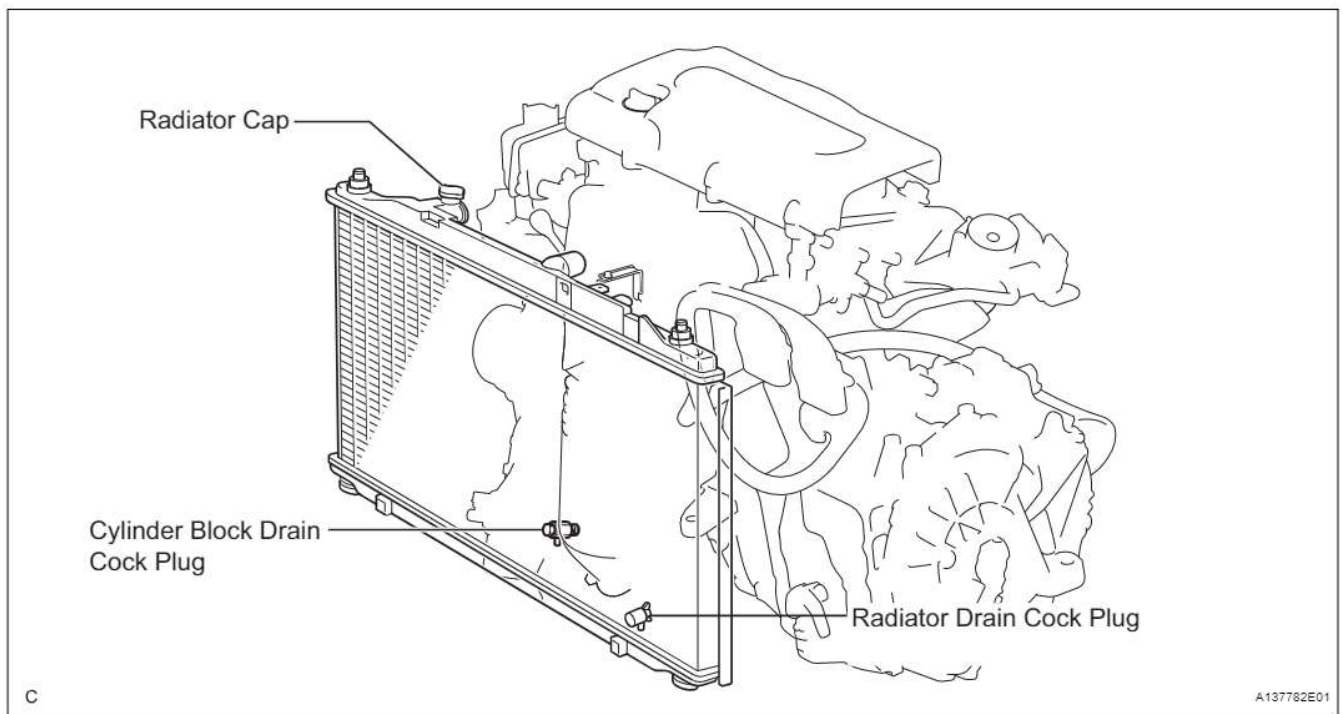
ON-VEHICLE INSPECTION

1. REMOVE FRONT WHEEL OPENING EXTENSION PAD RH
2. REMOVE FRONT WHEEL OPENING EXTENSION PAD LH
3. REMOVE ENGINE UNDER COVER LH
4. REMOVE ENGINE UNDER COVER RH
5. DRAIN ENGINE COOLANT

NOTICE:

Do not remove the radiator cap sub-assembly while the engine and radiator are still hot. Pressurized, hot engine coolant and steam may be released and cause serious burns.

- (a) Remove the radiator cap sub-assembly from the radiator assembly.
- (b) Loosen the radiator drain cock plug and cylinder block drain cock plug, then drain the coolant.



HINT:

Collect the coolant in a container and dispose of it according to the regulations in your area.

6. **ADD ENGINE COOLANT**

- (a) Close the radiator drain cock plug and 2 cylinder block drain cock plugs.

Torque: 13 N*m (130 kgf*cm, 9 ft.*lbf) for cylinder block drain cock plug

CO-6

2AZ-FXE COOLING – COOLANT

- (b) Slowly fill the radiator with TOYOTA Super Long Life Coolant (SLLC).

Specified capacity:

6.2 liters (6.6 US qts, 5.5 Imp. qts)

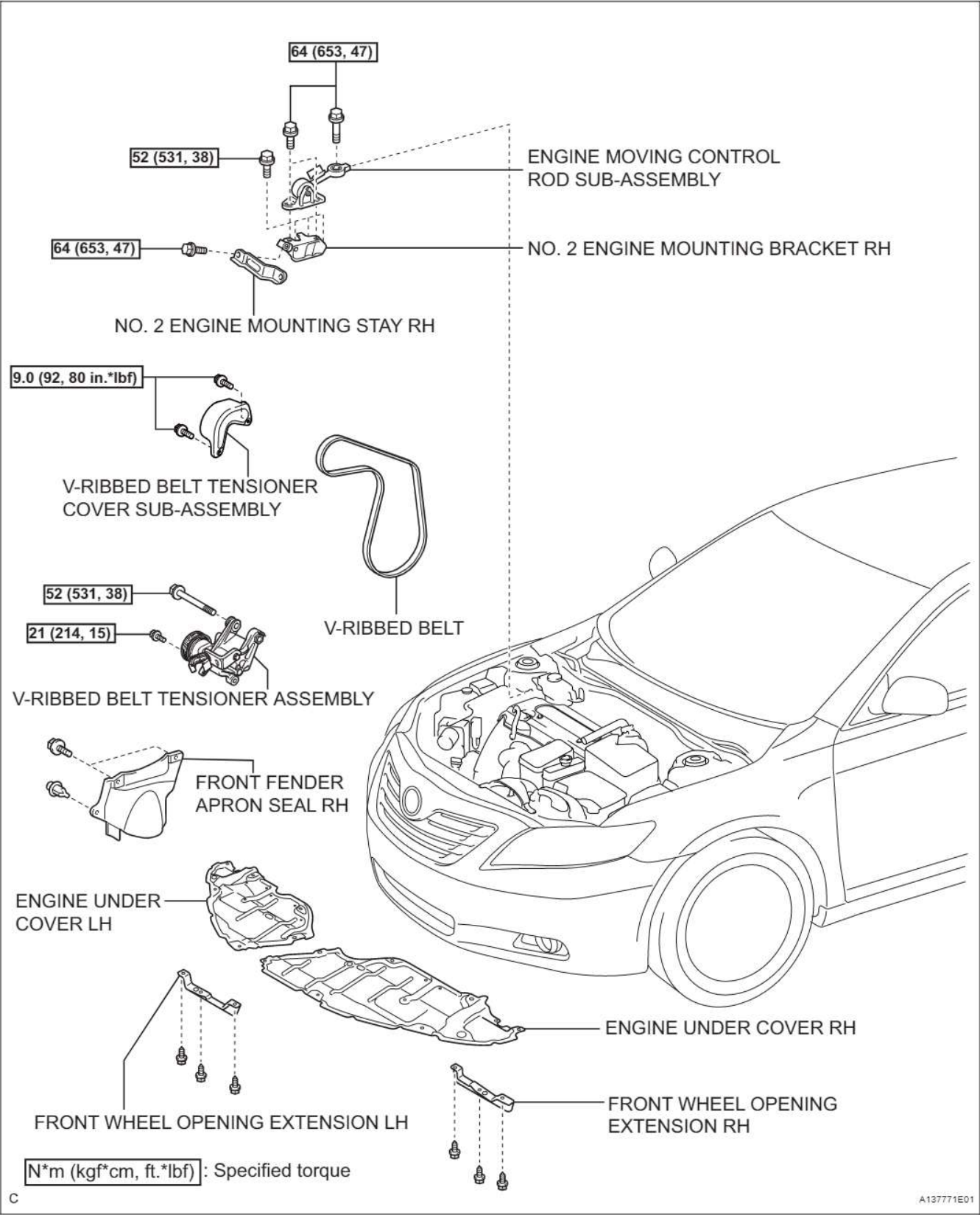
HINT:

- TOYOTA vehicles are filled with TOYOTA SLLC at the factory. In order to avoid damage to the engine cooling system and other technical problems, only use TOYOTA SLLC or similar high quality ethylene glycol based non-silicate, non-amine, non-nitrite, non-borate coolant with long-life hybrid organic acid technology (coolant with long-life hybrid organic acid technology consists of a combination of low phosphates and organic acids).
 - Contact your TOYOTA dealer for further details.
- (c) Slowly pour coolant into the radiator reservoir tank until it reaches the FULL line.
- (d) Press the inlet and outlet radiator hoses several times by hand, and then check the level of the coolant.
If the coolant level is low, add coolant.
- (e) Install the radiator cap sub-assembly and reservoir tank cap.
- (f) Set the vehicle to inspection mode. (See page [IN-5](#))
- (g) Start the engine, and warm it up.
HINT:
Adjust the air conditioner set temperature to MAX (HOT).
- (h) Stop the engine, and wait until the engine coolant cools down.
- (i) Add engine coolant to the FULL line on the radiator reservoir.

7. INSPECT FOR ENGINE COOLANT LEAK**8. INSTALL ENGINE UNDER COVER RH****9. INSTALL ENGINE UNDER COVER LH****10. INSTALL FRONT WHEEL OPENING EXTENSION PAD LH****11. INSTALL FRONT WHEEL OPENING EXTENSION PAD RH**

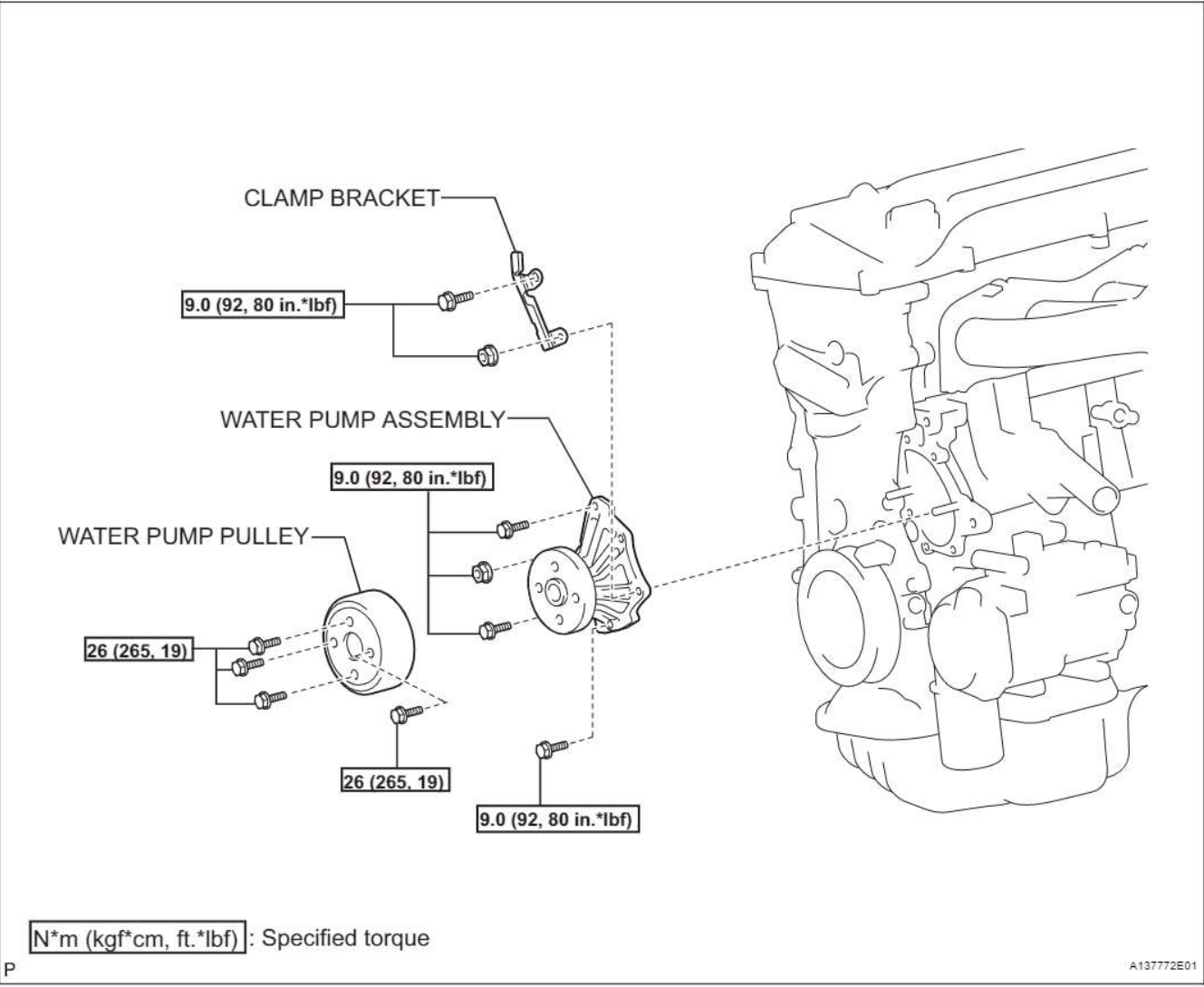
2AZ-FXE COOLING – WATER PUMP

WATER PUMP
COMPONENTS



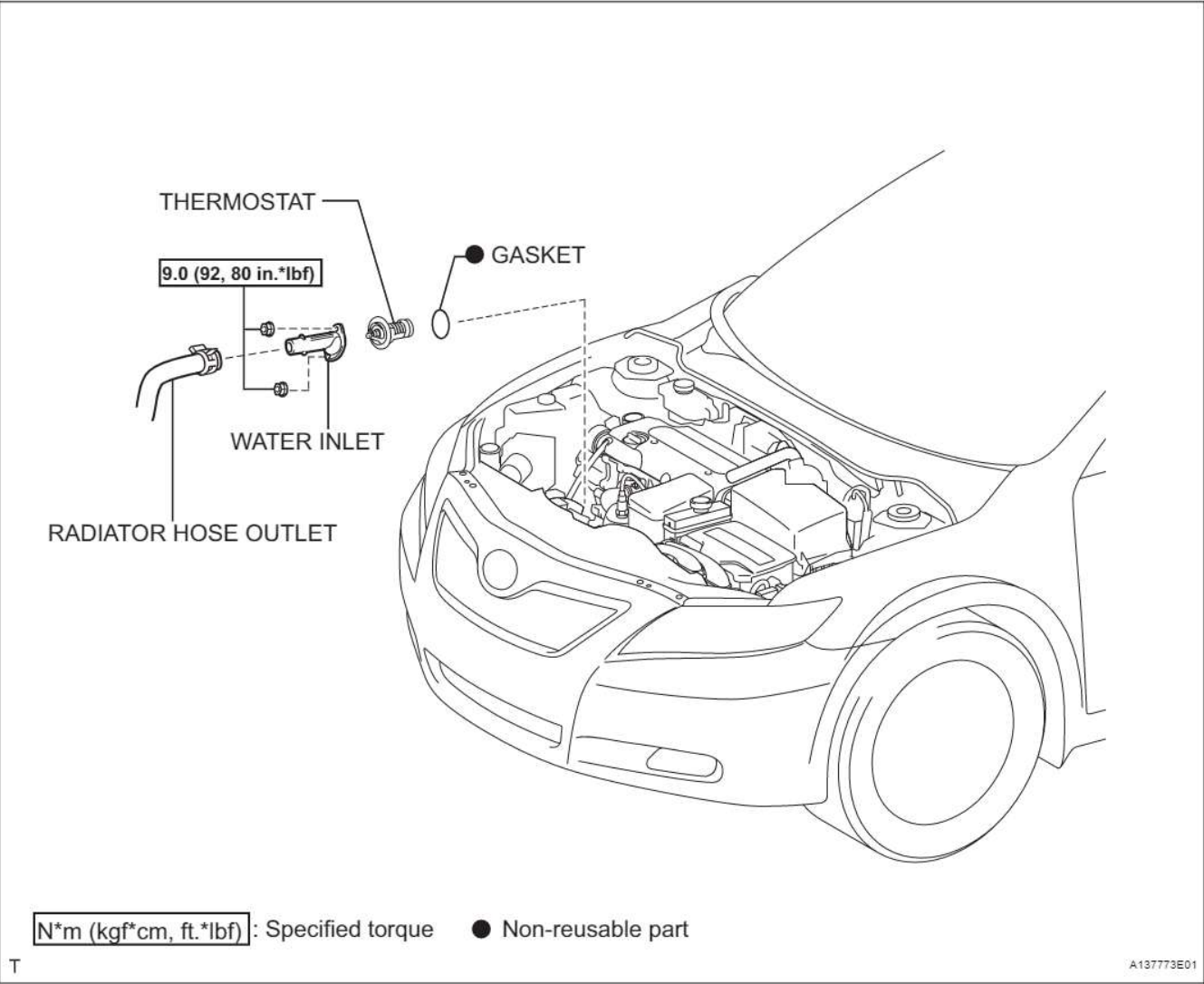
CO-8

2AZ-FXE COOLING – WATER PUMP



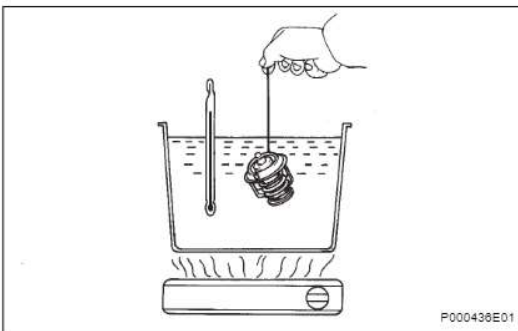
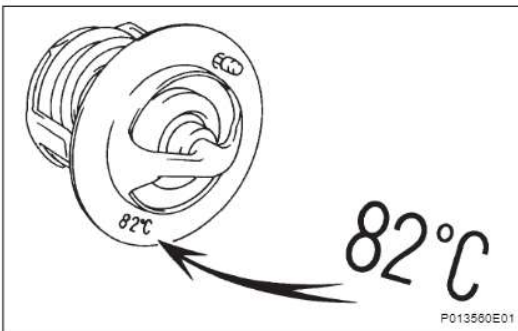
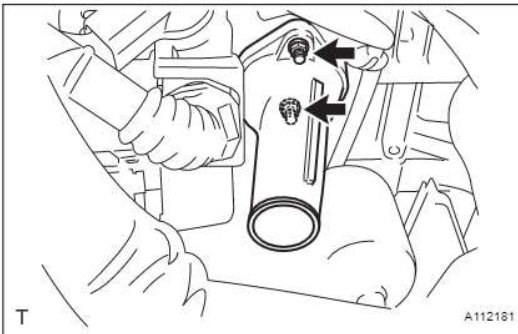
THERMOSTAT

COMPONENTS



REMOVAL

1. REMOVE FRONT WHEEL OPENING EXTENSION PAD LH
2. REMOVE FRONT WHEEL OPENING EXTENSION PAD RH
3. REMOVE ENGINE UNDER COVER LH
4. REMOVE ENGINE UNDER COVER RH
5. DRAIN ENGINE COOLANT (See page [CO-5](#))
6. DISCONNECT RADIATOR HOSE OUTLET (See page [EM-91](#))
7. REMOVE WATER INLET
 - (a) Remove the 2 nuts and the water inlet from the cylinder block.
8. REMOVE THERMOSTAT
 - (a) Remove the gasket from the thermostat.



INSPECTION

1. INSPECT THERMOSTAT
 - (a) The valve opening temperature is inscribed on the thermostat.
 - (b) Immerse the thermostat in water, and then gradually heat the water.
 - (c) Check the valve opening temperature of the thermostat.

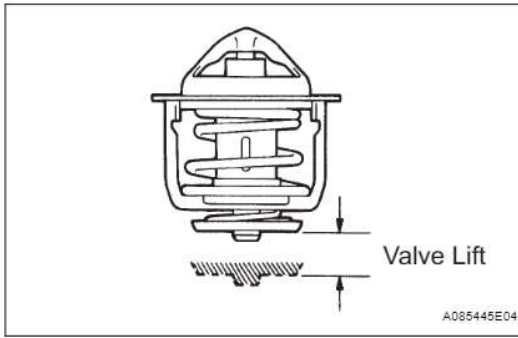
Standard valve opening temperature:
80 to 84°C (176 to 183°F)

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

CO

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2AZ-FXE COOLING – THERMOSTAT



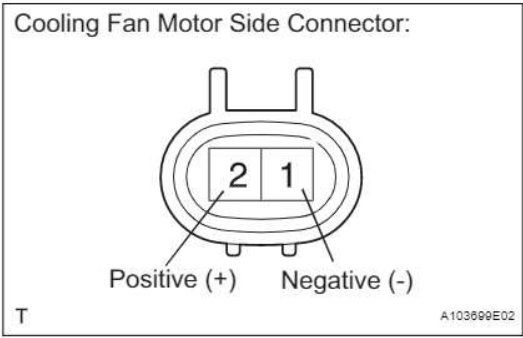
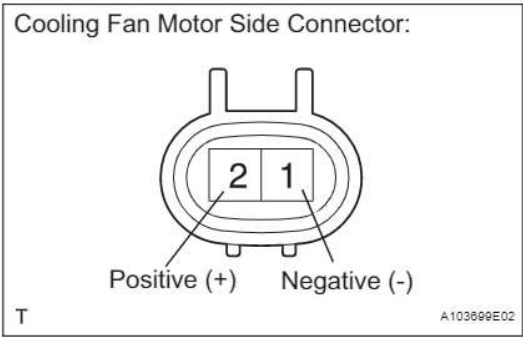
- (d) Check the valve lift.

Standard valve lift:

10 mm (0.39 in.) or more at 95°C (203°F)

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

- (e) Check that the valve is fully closed when the thermostat is at low temperatures (below 77°C (171°F)).
If it is not fully closed, replace the thermostat.

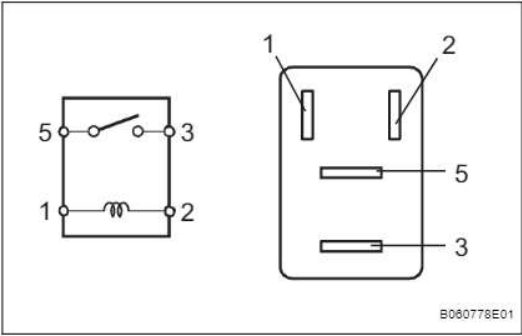


COOLING FAN MOTOR

ON-VEHICLE INSPECTION

1. **COOLING FAN MOTOR**
 - (a) Check that the motor turns smoothly when the battery is connected to the fan motor connector.
 - (b) Measure the current while the motor is turning.
Standard current:
7.4 to 10.9 A at 20°C (68°F)
If the result is not as specified, replace the cooling fan motor.
2. **NO. 2 COOLING FAN MOTOR**
 - (a) Check that the motor turns smoothly when the battery is connected to the fan motor connector.
 - (b) Measure the current while the motor is turning.
Standard current:
7.4 to 10.9 A at 20°C (68°F)
If the result is not as specified, replace the No. 2 cooling fan motor.

CO



COOLING FAN RELAY

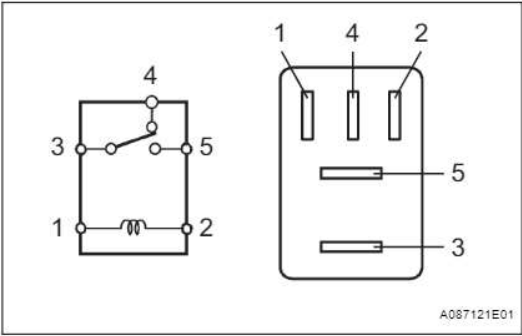
ON-VEHICLE INSPECTION

1. **COOLING FAN RELAY**
- (a) Remove the relay from the engine room No. 2 relay block.
 - (b) Measure the resistance of the relay.
- Standard resistance**

Tester Connection	Specified Condition
3 - 5	10 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.

(c) Install the relay to the engine room No. 2 relay block.

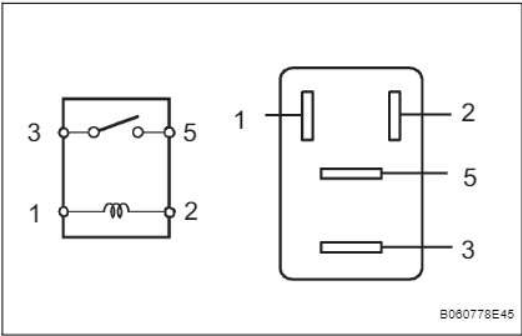


2. **COOLING FAN RELAY NO. 2**
- (a) Remove the relay from the engine room No. 2 relay block.
 - (b) Measure the resistance of the relay.
- Standard resistance**

Tester Connection	Specified Condition
3 - 4	Below 1 Ω
3 - 5	10 Ω or higher
3 - 4	10 Ω or higher (when battery voltage is applied to terminals 1 and 2)
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.

(c) Install the relay.



3. **COOLING FAN RELAY NO. 3**
- (a) Remove the relay from the engine room No. 2 relay block.
 - (b) Measure the resistance of the relay.
- Standard resistance**

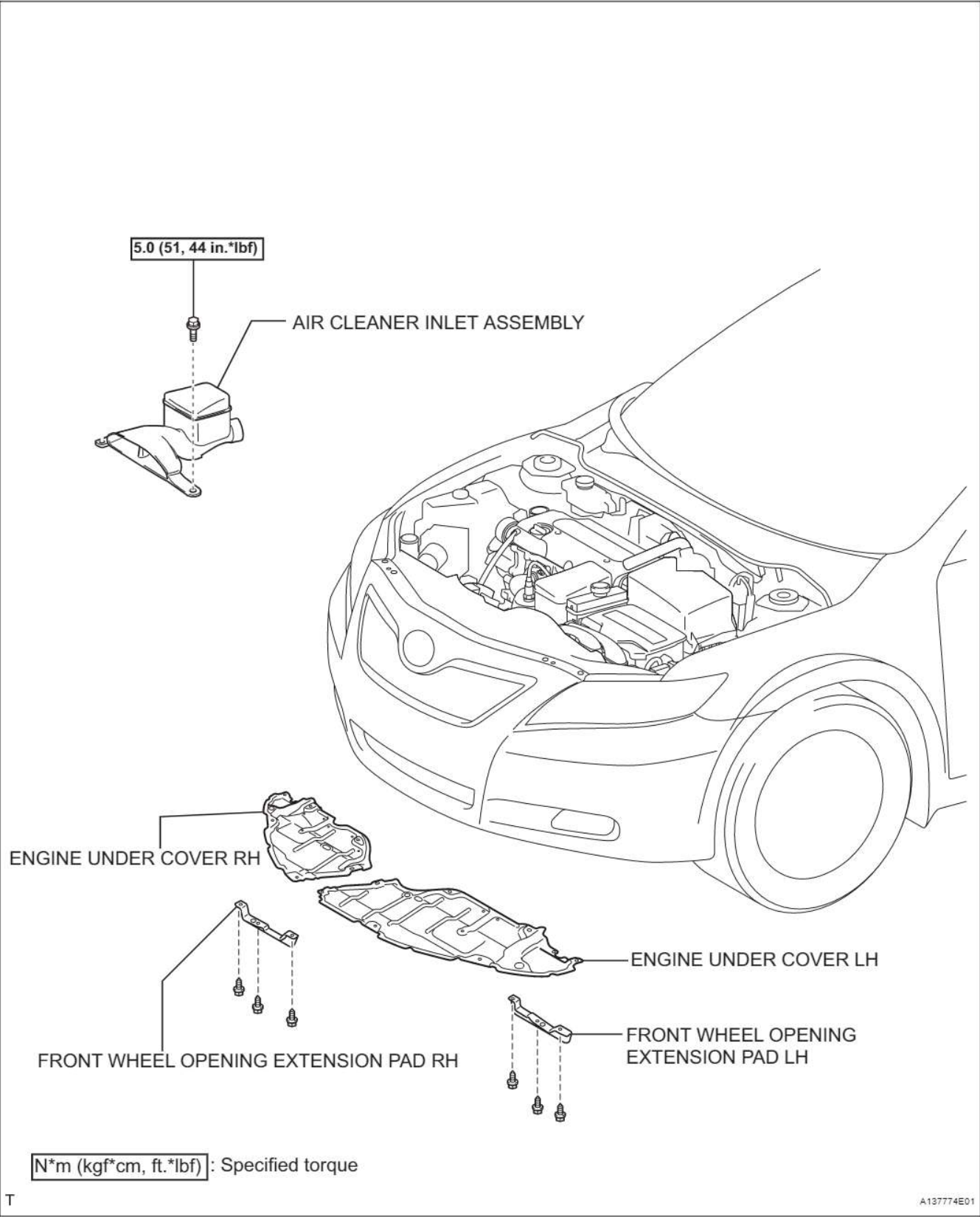
Tester Connection	Specified Condition
3 - 5	10 Ω or higher
3 - 5	Below 1 Ω (when battery voltage is applied to terminals 1 and 2)

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

(c) Install the relay.

RADIATOR

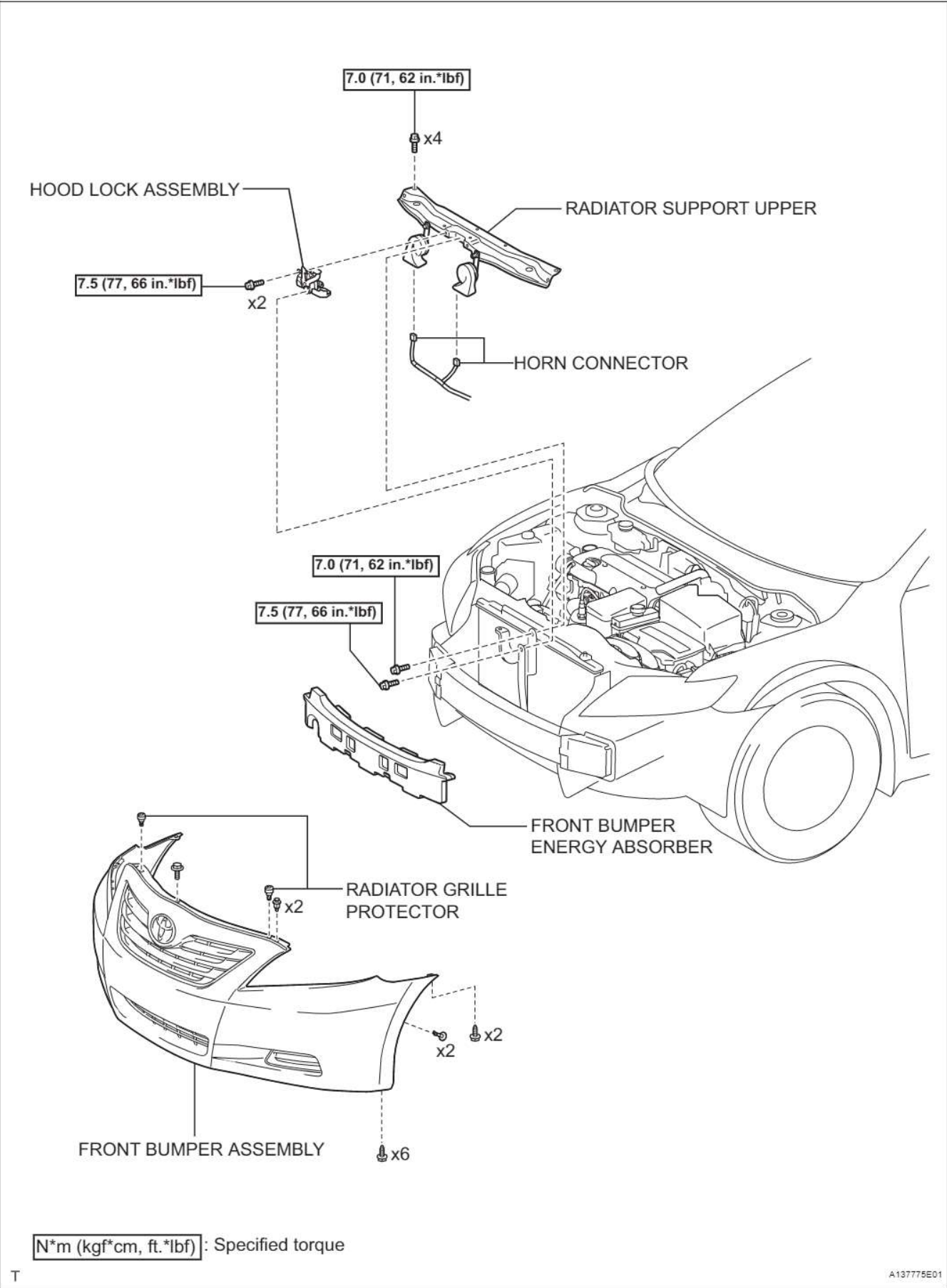
COMPONENTS

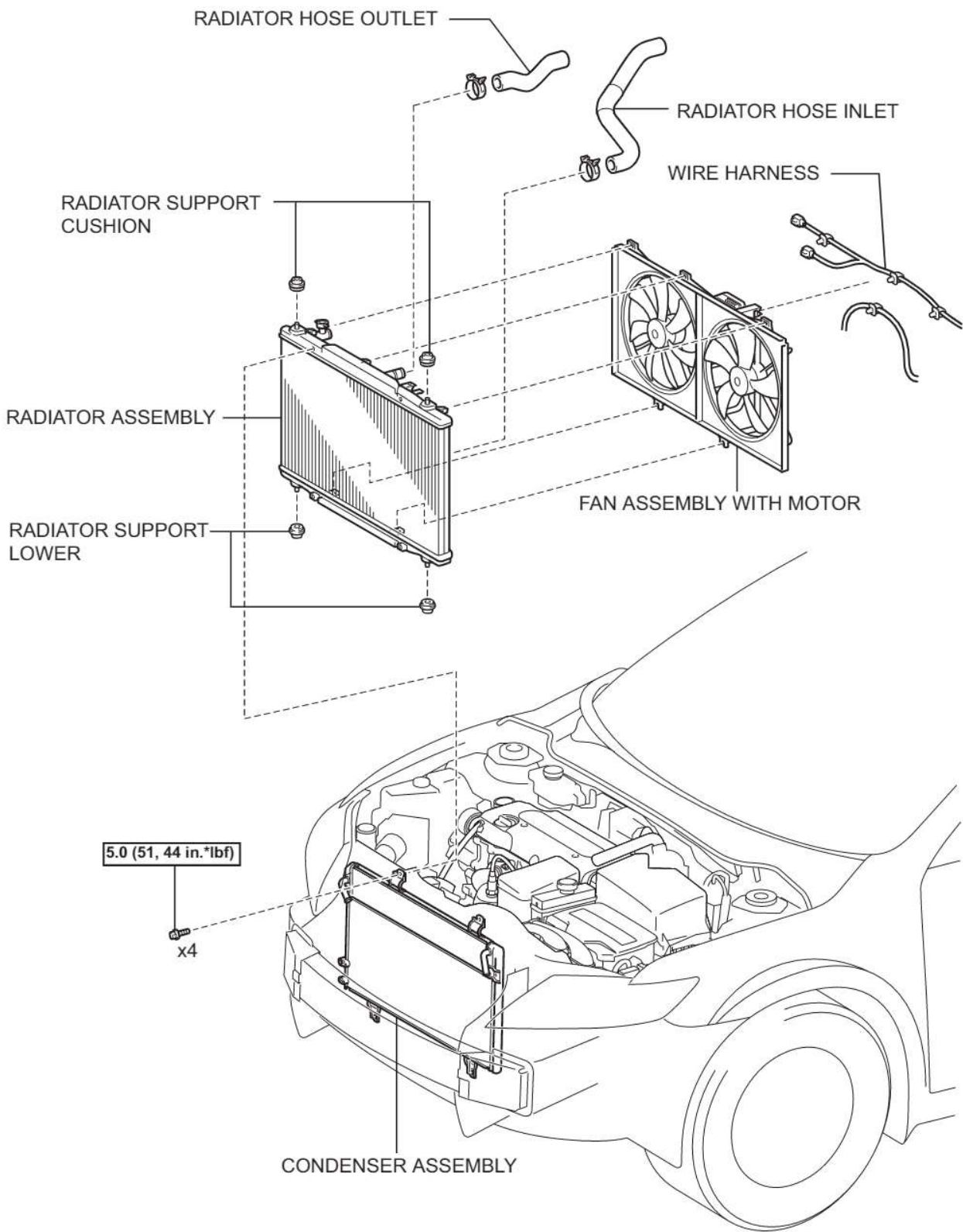


CO

CO-18

2AZ-FXE COOLING – RADIATOR



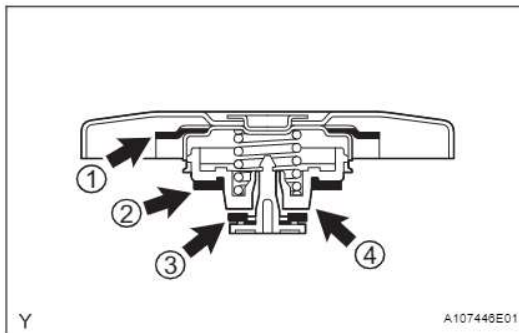
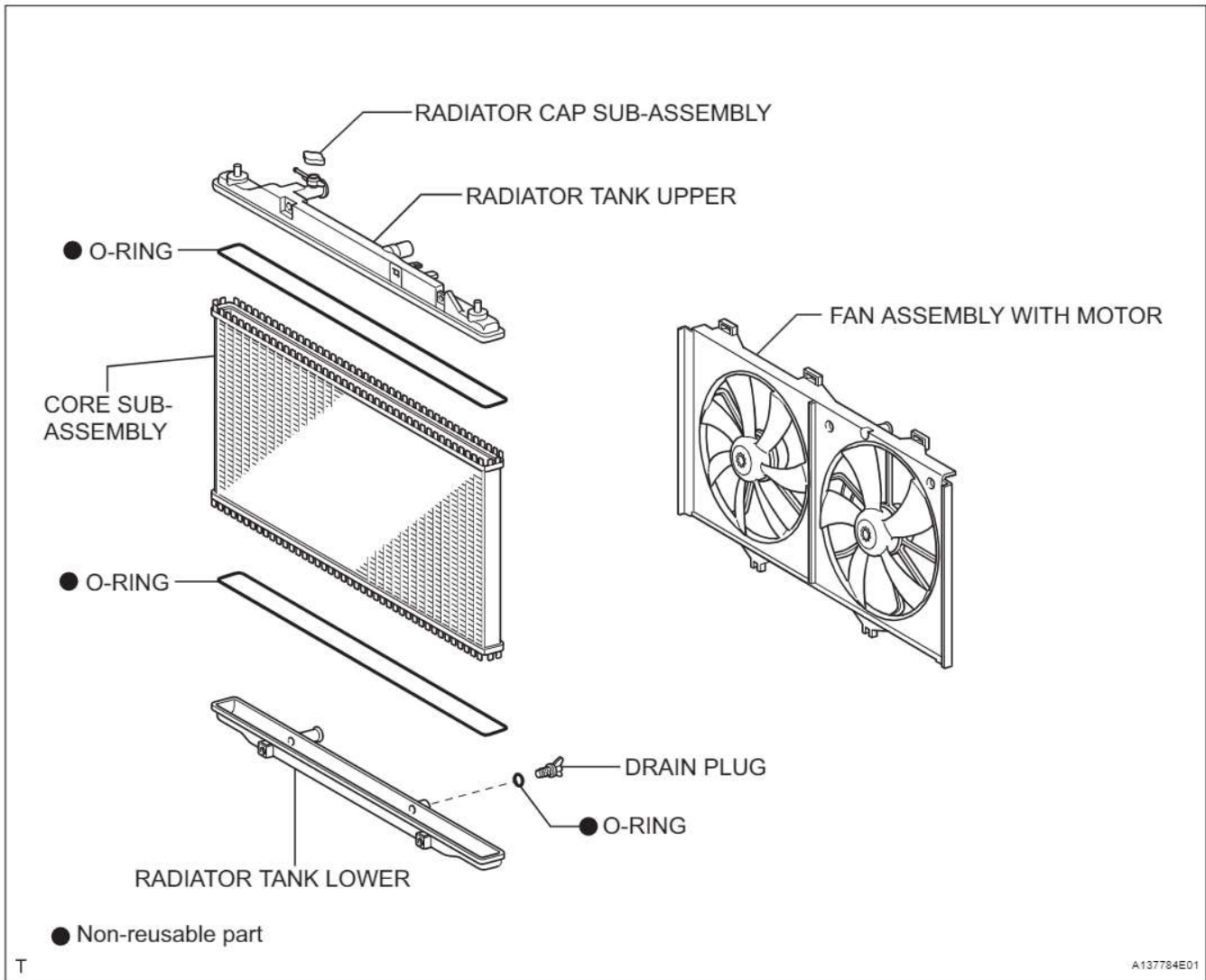


N*m (kgf*cm, ft.*lbf) : Specified torque

CO

CO-20

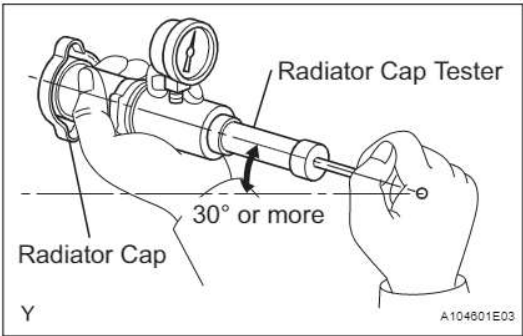
2AZ-FXE COOLING – RADIATOR



ON-VEHICLE INSPECTION

1. CHECK RADIATOR CAP SUB-ASSEMBLY

- (a) Measure the valve opening pressure.
 - (1) If there are water stains or foreign matter on rubber packings 1, 2 or 3, clean the part(s) with water and finger scouring.
 - (2) Check that rubber packings 1, 2 and 3 are not deformed, cracked or swollen.
 - (3) Check that rubber packings 3 and 4 are not stuck together.
 - (4) Apply engine coolant to rubber packings 2 and 3 before using the radiator cap tester.
 - (5) When using the cap tester, tilt it to 30° or more above the level.



(6) Pump the cap tester several times, and check the maximum pressure ^{*1}.

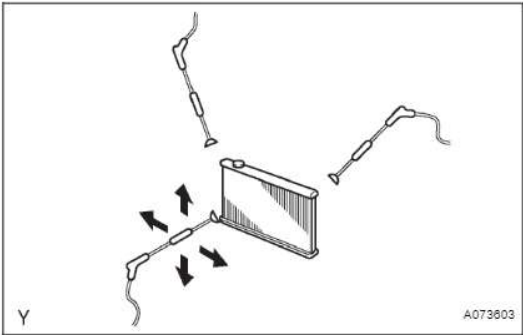
Pumping speed:
1 pump every second

^{*1}: Even if the cap cannot maintain the maximum pressure, it is not a defect.

Judgment Criteria

Item	Specified Condition
Standard valve (for brand-new cap)	93.3 to 122.7 kPa (0.95 to 1.25 kgf/cm ² , 13.5 to 17.8 psi)
Minimum standard valve (after using cap)	78.5 kPa (0.8 kgf/cm ² , 11.4 psi)

If the maximum pressure is less than the specified pressure for the minimum standard valve, replace the radiator cap sub-assembly.



ON-VEHICLE CLEANING

1. INSPECT FINS BLOCKAGE

(a) If the fins are clogged, wash them with water or a steam cleaner. Dry with compressed air.

NOTICE:

- If the distance between the steam cleaner and the core is too close, the fins may become damaged. Keep the following injection distance.

Standard

Injection Distance	Injection Pressure
300 mm (11.81 in.)	2,942 to 4,903 kPa (30 to 50 kg/cm ² , 427 to 711 psi)
500 mm (19.69 in.)	4,903 to 7,845 kPa (50 to 80 kg/cm ² , 711 to 1,138 psi)

- If the fins are bent, straighten them with a screwdriver or pliers.
- Never apply water directly onto the electronic components.

CO