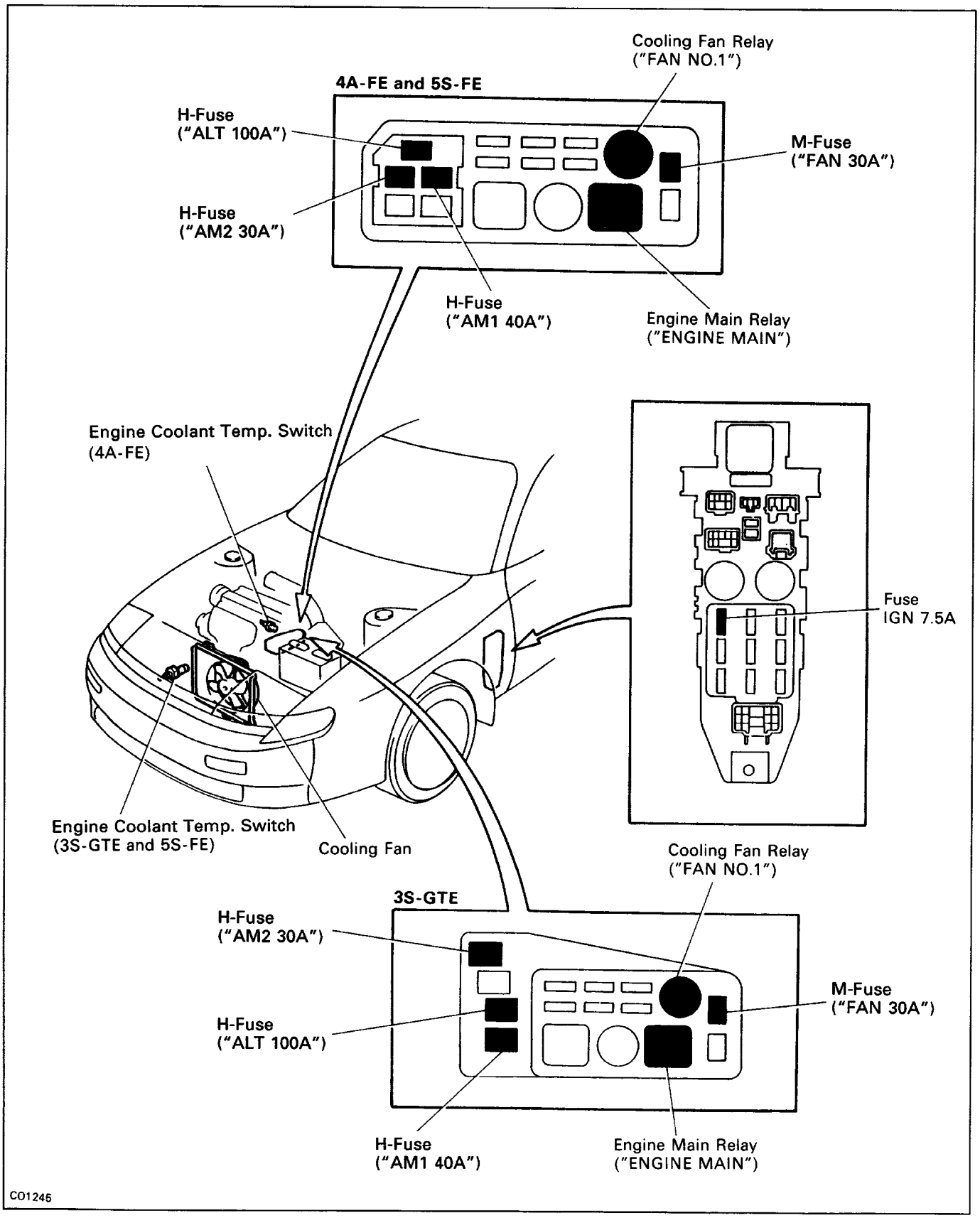
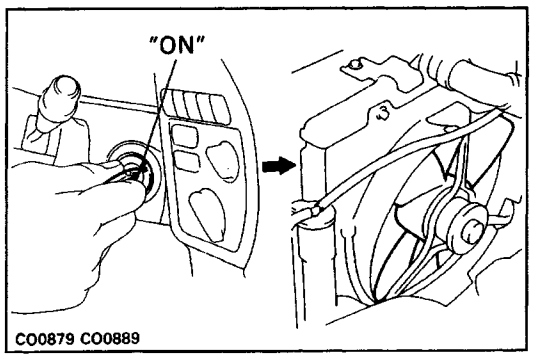
ELECTRIC COOLING FANS

LOCATION OF ELECTRIC COOLING FAN COMPONENTS





ON–VEHICLE INSPECTION

Low Temperature (Below 83°C (181°F))

1. TURN IGNITION SWITCH "ON"

Check that the cooling fan stops.

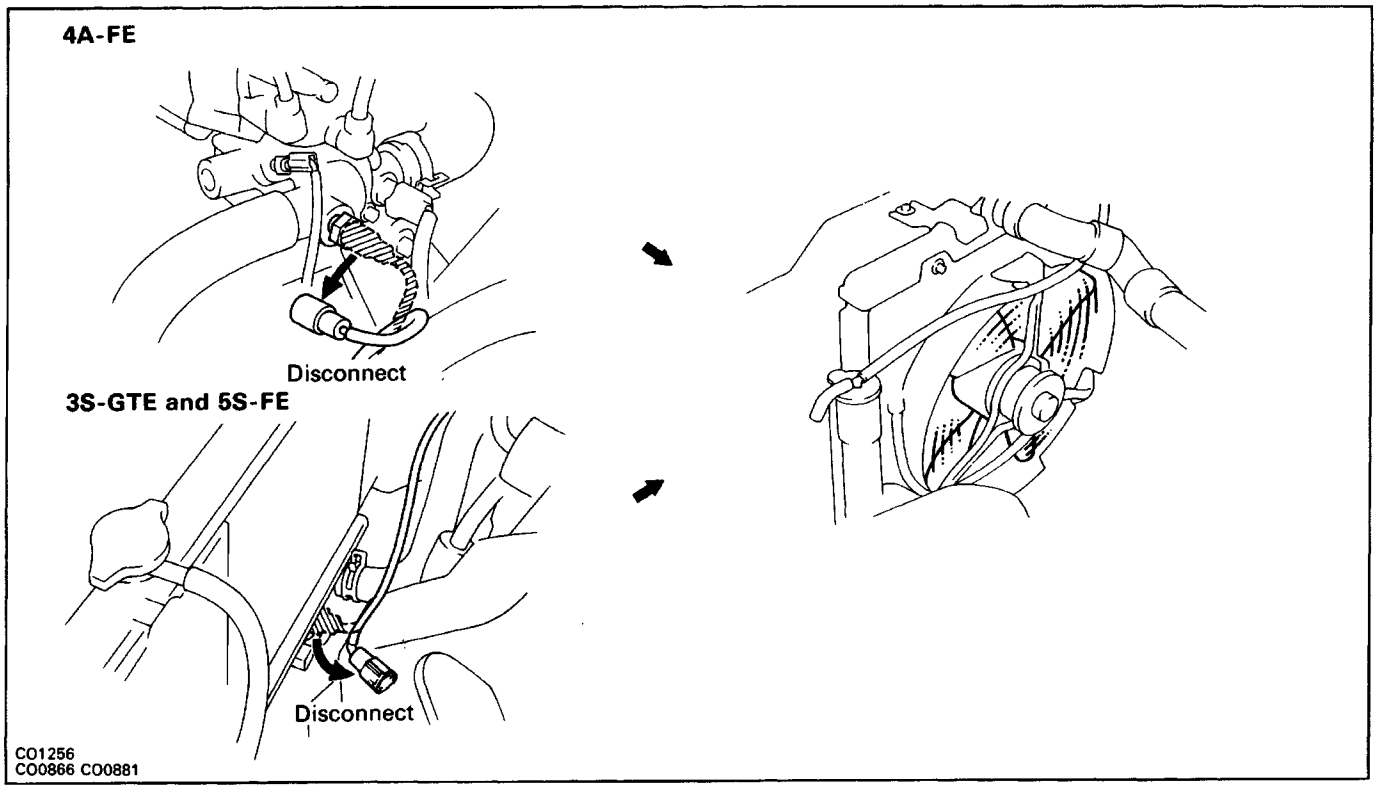
If not, check the cooling fan relay and engine coolant temperature switch, and check for a separated connector or severed wire between the cooling fan relay and engine coolant temperature switch.

2. DISCONNECT ENGINE COOLANT TEMPERATURE SWITCH CONNECTOR

Check that the cooling fan rotates.

If not, check the cooling fan relay, cooling fan, engine main relay and fuse, and check for a short circuit between the cooling fan relay and engine coolant temperature switch.

3. CONNECT ENGINE COOLANT TEMPERATURE SWITCH CONNECTOR



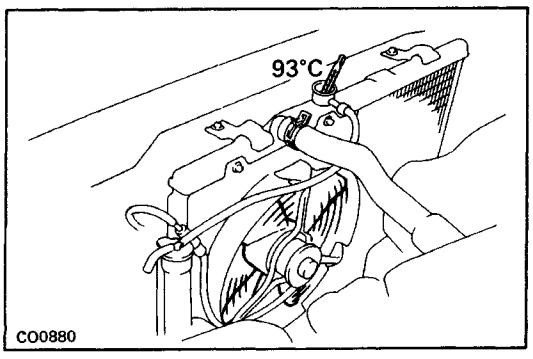
High Temperature (Above 93°C (199'F))

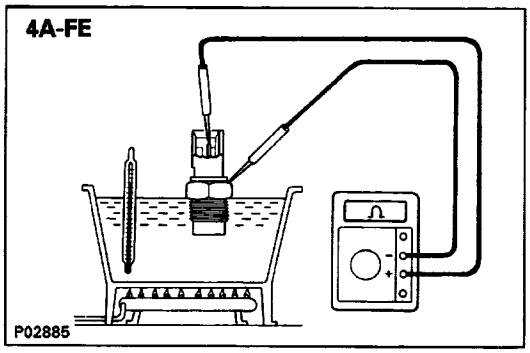
4. START ENGINE

(a) Raise engine coolant temperature to above 93°C (199°F).

(b) Check that the cooling fan rotates.

If not, replace the engine coolant temperature switch.





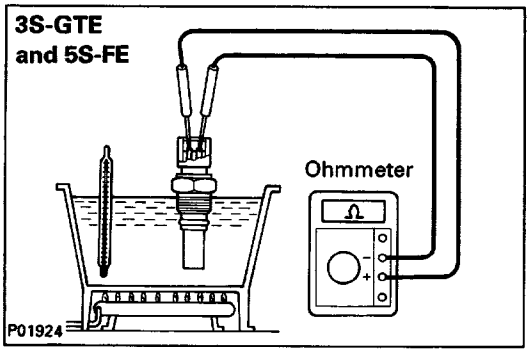
INSPECTION OF ELECTRIC COOLING FAN COMPONENTS

1. INSPECT ENGINE COOLANT TEMPERATURE SWITCH (4A–FE)

(a) Using an ohmmeter, check that there is no continuity between the terminal and switch body when the engine coolant temperature is above 93°C (199°F).

(b) Using an ohmmeter, check that there is continuity between the terminal and switch body when the engine coolant temperature is below 83°C (181°F).

If continuity is not as specified, replace the switch.

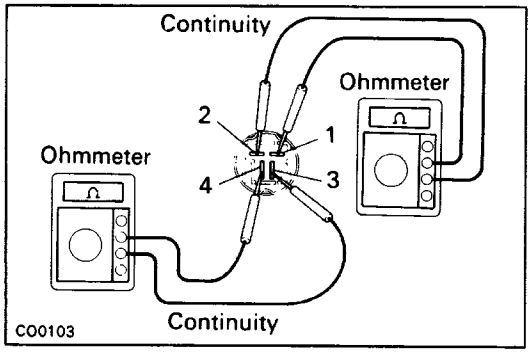


(3S–GTE and 5S–FE)

(a) Using an ohmmeter, check that there is no continuity between the terminals when the engine coolant temperature is above 93°C (199°F).

(b) Using an ohmmeter, check that there is continuity between the terminals when the engine coolant temperature is below 83°C (181°F).

If continuity is not as specified, replace the switch.



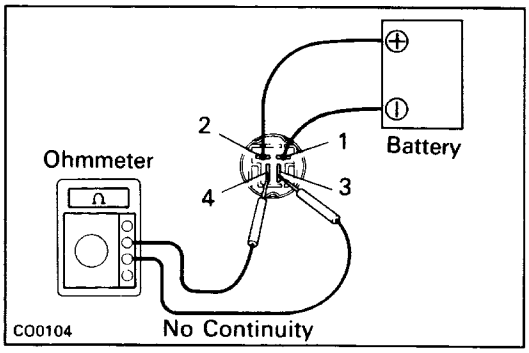
2. INSPECT COOLING FAN RELAY (”FAN NO.1”)

A. Inspect relay continuity

(a) Using an ohmmeter, check that there is continuity between terminals 1 and 2.

(b) Check that there is continuity between terminals 3 and 4.

If continuity is not as specified, replace the relay.

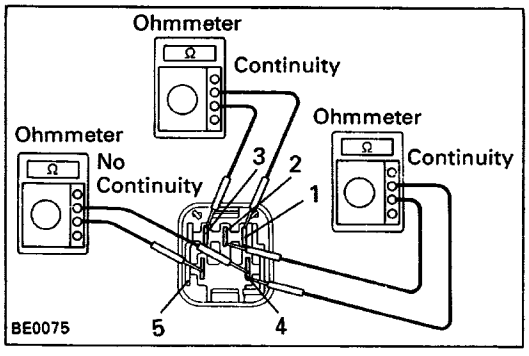


B. Inspect relay operation

(a) Apply battery positive voltage across terminals 1 and 2.

(b) Using an ohmmeter, check that there is no conti–nuity between terminals 3 and 4.

If operation is not as specified, replace the relay.



3. INSPECT ENGINE MAIN RELAY (”ENGINE MAIN”)

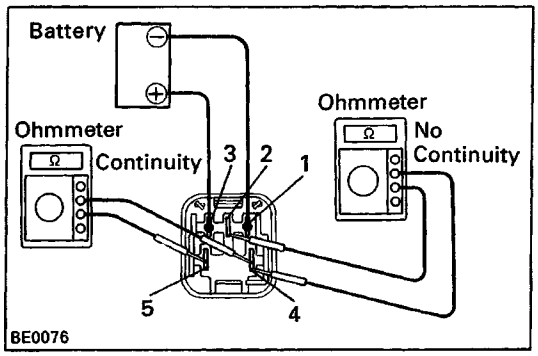
A. Inspect relay continuity

(a) Using an ohmmeter–, check that there is continuity between terminals 1 and 3.

(b) Check that there is continuity between terminals 2 and 4.

(c) Check that there is no continuity between termi–nals 4 and 5.

If continuity is not as specified, replace the relay.



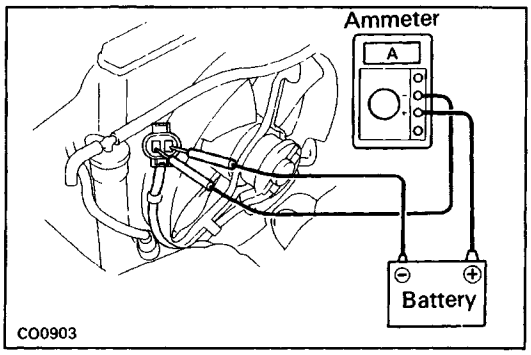
6. Inspect relay operation

(a) Apply battery positive voltage across terminals 1 and 3.

(b) Using an ohmmeter, check that there is no continu–ity between terminals 2 and 4.

(c) Check that there is continuity between terminals 4 and 5.

If operation is not as specified, replace the relay.



4. INSPECT COOLING FAN

(a) Connect battery and ammeter to the cooling fan connector.

(b) Check that the cooling fan rotates smoothly, and check the reading on the ammeter.

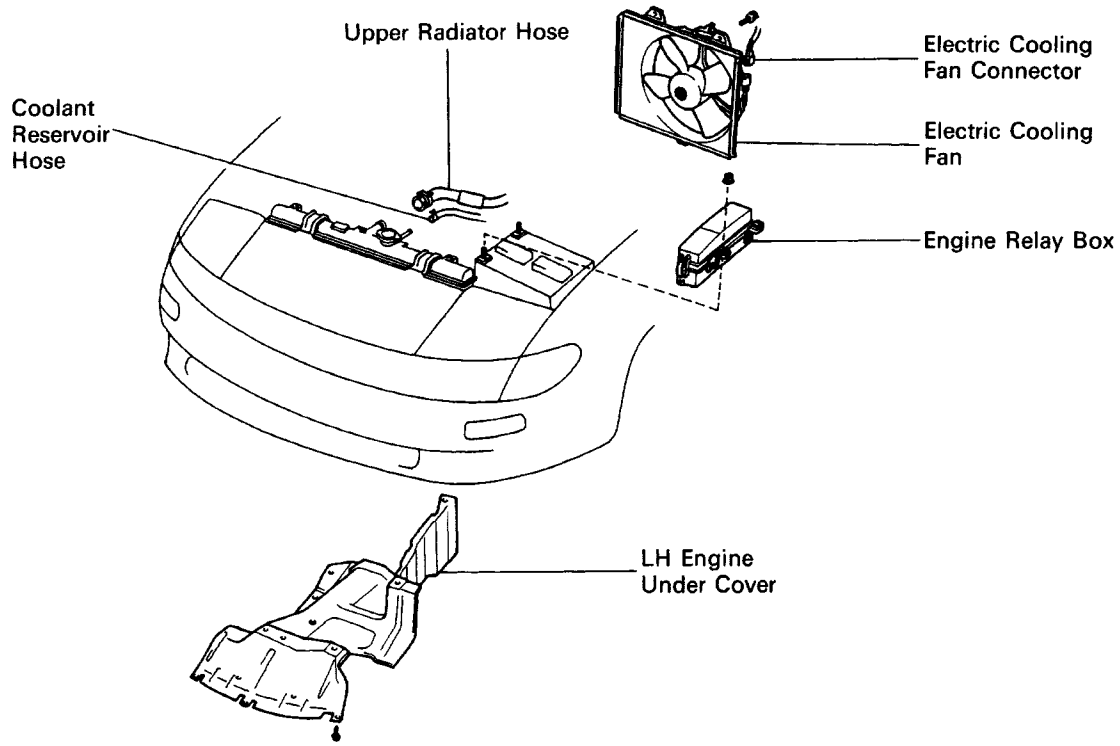
Standard amperage:

4A–FE and 5S–FE 5.8 – 7.4 A

3S–GTE 8.8–10.8 A

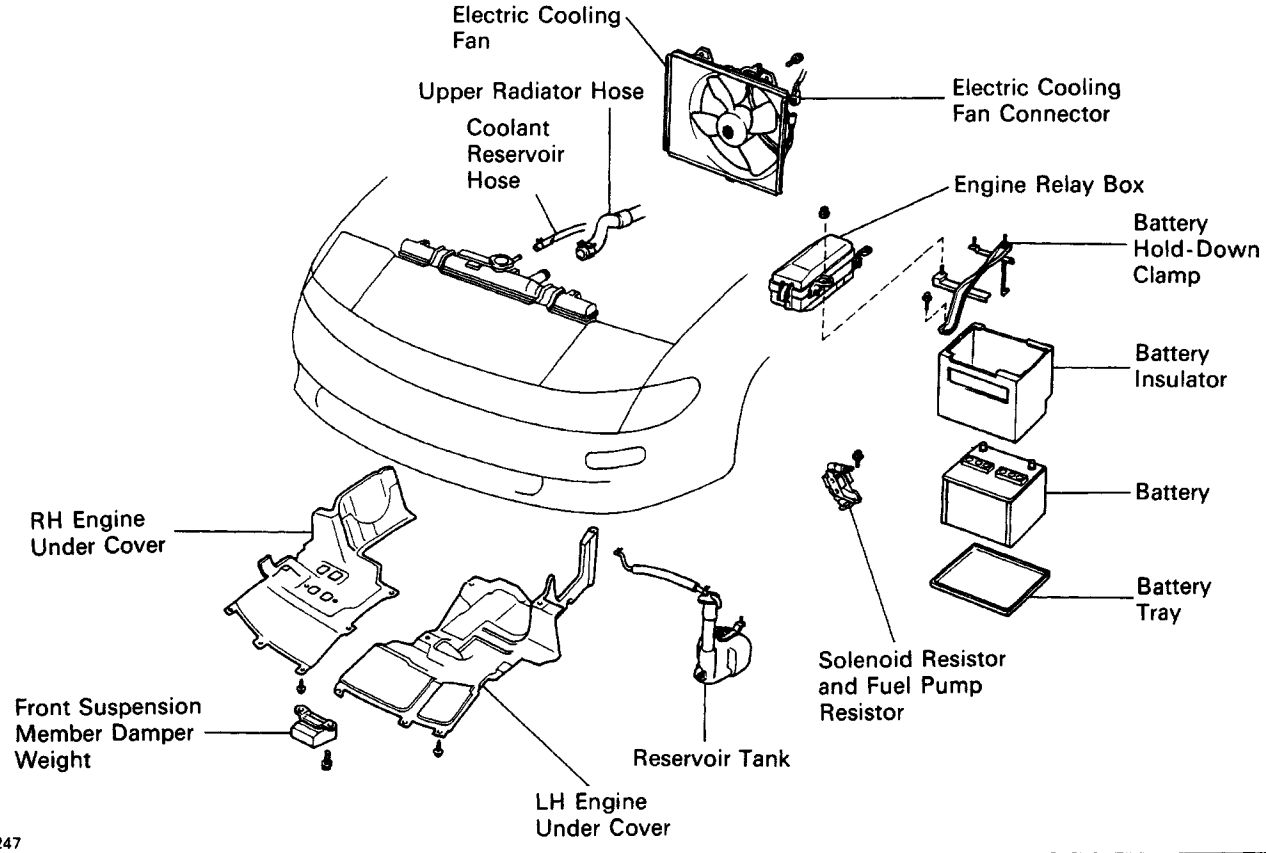
REMOVAL OF ELECTRIC COOLING FAN

4A-FE



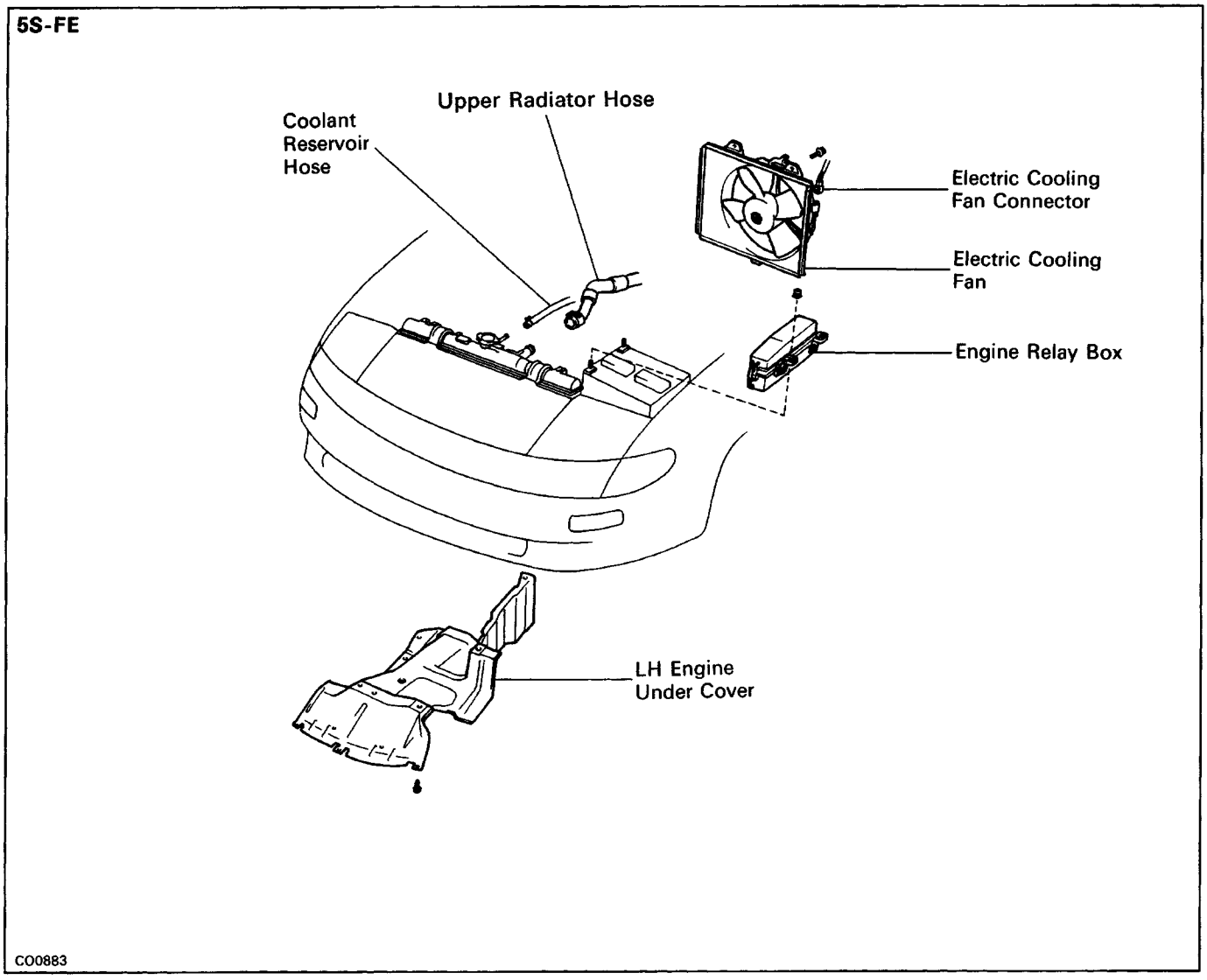
CO1246

3S-GTE



CO1247

5S-FE



1. DISCONNECT CABLE FROM NEGATIVE TERMINAL OF BATTERY

   CAUTION: Work must be started after approx. 20 seconds or longer from the time the ignition switch is turned to the "LOCK" position and the negative (–) terminal cable is disconnected from the battery.

2. (4A–FE AND 5S–FE)

   REMOVE LH ENGINE UNDER COVER

3. (3S–GTE)

   REMOVE RH AND LH ENGINE UNDER COVERS

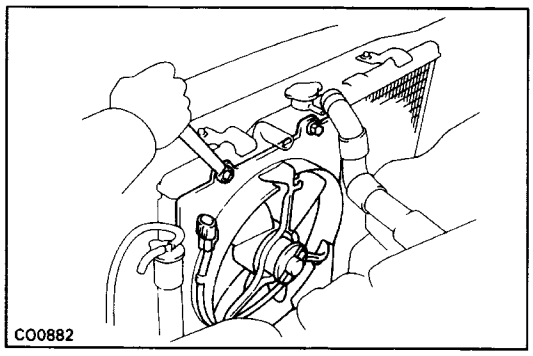
4. DRAIN ENGINE COOLANT (See page CO–6)
5. DISCONNECT ENGINE RELAY BOX FROM BATTERY
6. (3S–GTE)

   REMOVE BATTERY

7. (3S–GTE)

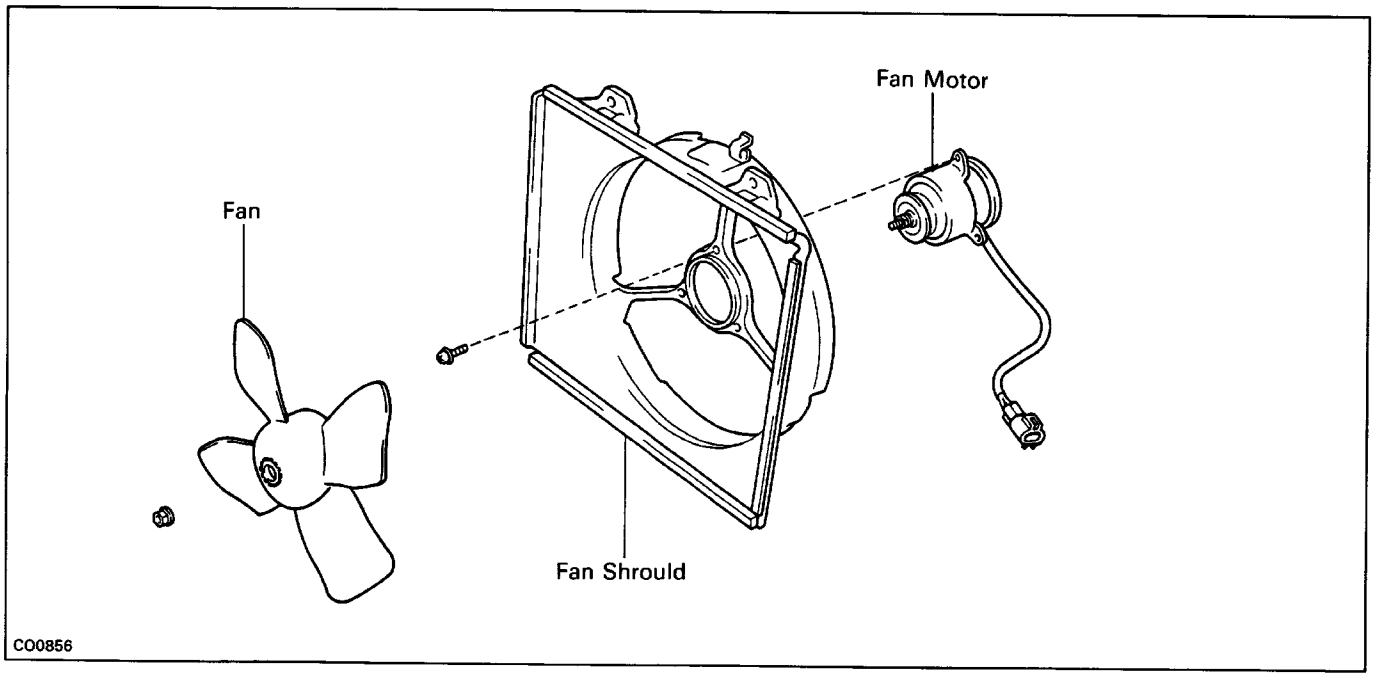
   REMOVE SOLENOID RESISTOR AND FUEL PUMP RESISTOR

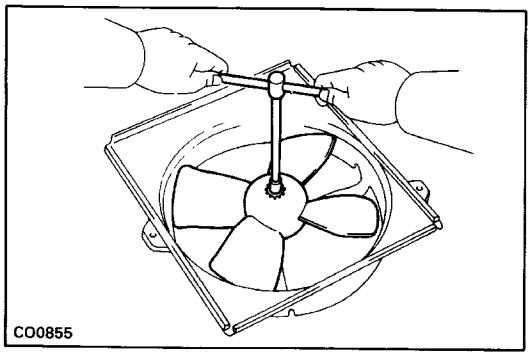
8. (3S–GTE)
REMOVE RESERVOIR TANK
9. (4A–FE AND 5S–FE)
DISCONNECT COOLANT RESERVOIR HOSE FROM RADIATOR
10. DISCONNECT UPPER RADIATOR HOSE FROM RADIATOR



11. REMOVE ELECTRIC COOLING FAN
(a) Disconnect the cooling fan connector.
(b) Remove the three bolts and cooling fan.

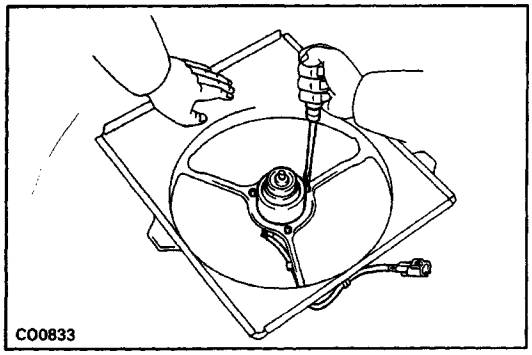
COMPONENTS





DISASSEMBLY OF ELECTRIC COOLING FAN

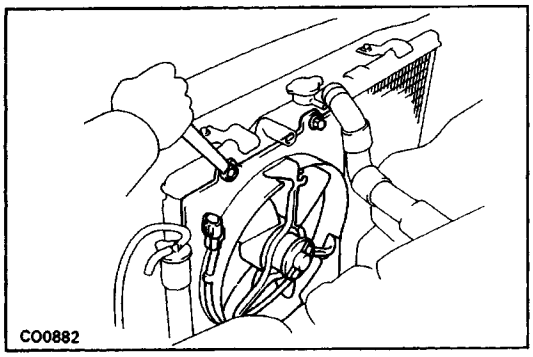
1. REMOVE FAN
Remove the nut and fan.



2. REMOVE FAN MOTOR
Remove the three screws and fan motor.

ASSEMBLY OF ELECTRIC COOLING FAN

(See page CO–32)
1. INSTALL FAN MOTOR
2. INSTALL FAN



INSTALLATION OF ELECTRIC COOLING FAN

(See page CO–30 or 31)
1. INSTALL ELECTRIC COOLING FAN
(a) Install the cooling fan with the three bolts.
(b) Connect the cooling fan connector.
2. CONNECT UPPER RADIATOR HOSE TO RADIATOR
3. (4A–FE AND 5S–FE)
CONNECT COOLANT RESERVOIR HOSE TO RADIATOR
4. (3S–GTE)
INSTALL RESERVOIR TANK
5. (3S–GTE)
INSTALL SOLENOID RESISTOR AND FUEL PUMP RESISTOR
6. (3S–GTE)
INSTALL BATTERY
7. INSTALL ENGINE RELAY BOX FROM BATTERY
8. FILL WITH ENGINE COOLANT (See page CO–6)
9. CONNECT CABLE TO NEGATIVE TERMINAL OF BATTERY
10. START ENGINE AND CHECK FOR LEAKS
11. (3S–GTE)
INSTALL RH AND LH ENGINE UNDER COVERS
12. (4A–FE AND 5S–FE)
INSTALL LH ENGINE UNDER COVER