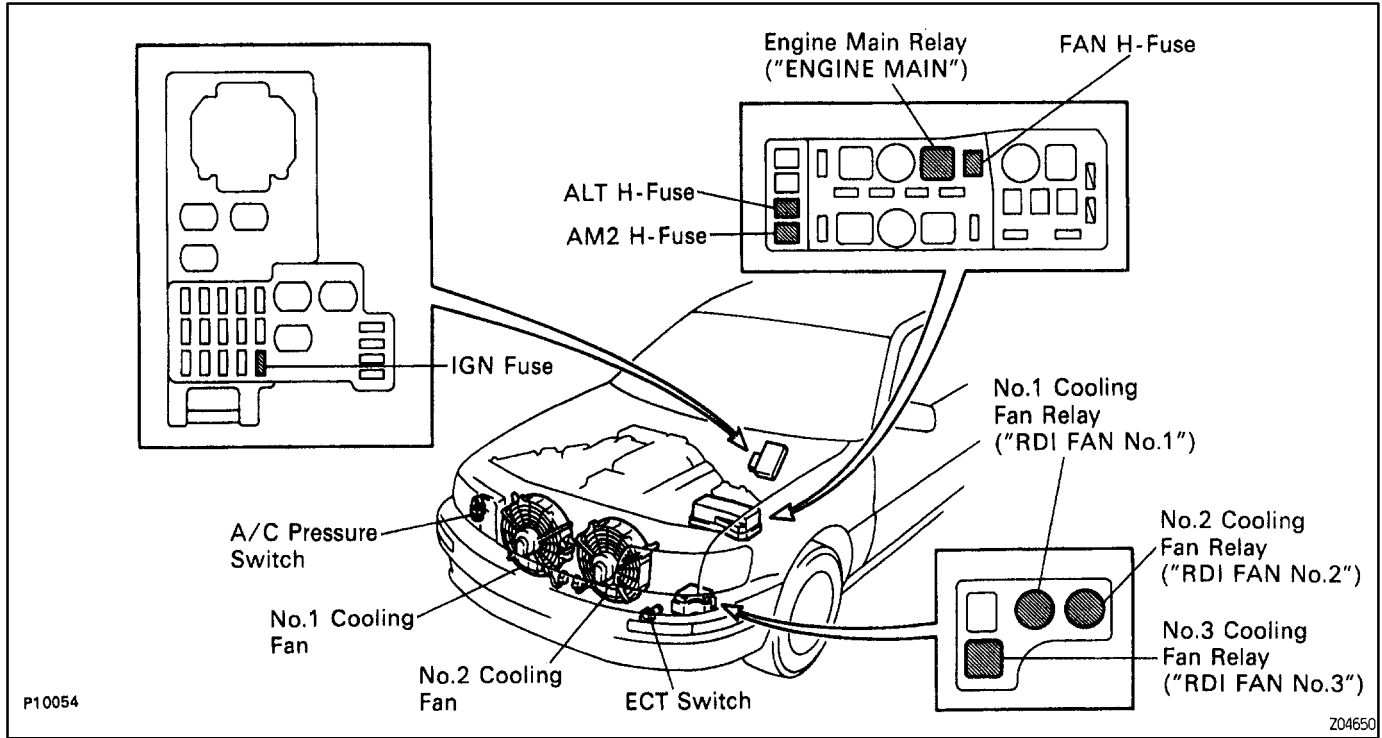
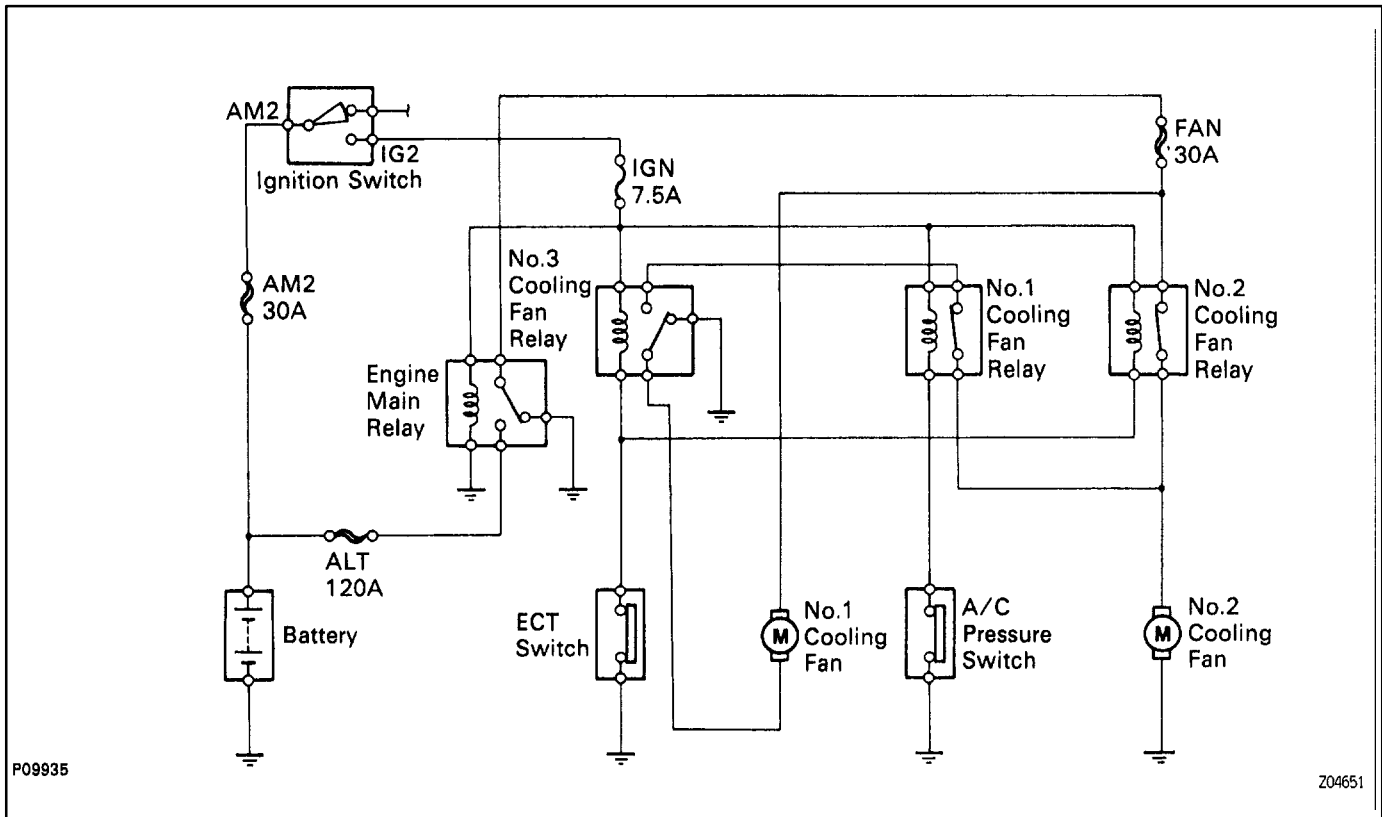


# ELECTRIC COOLING FAN

## Part Location

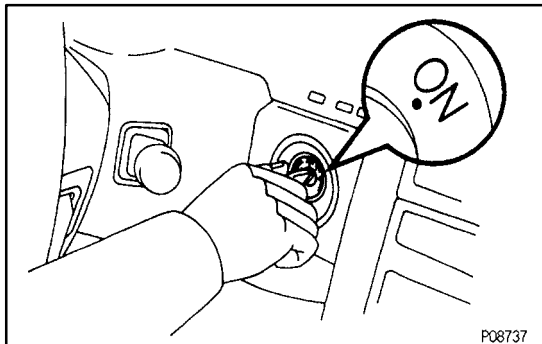


## System Circuit



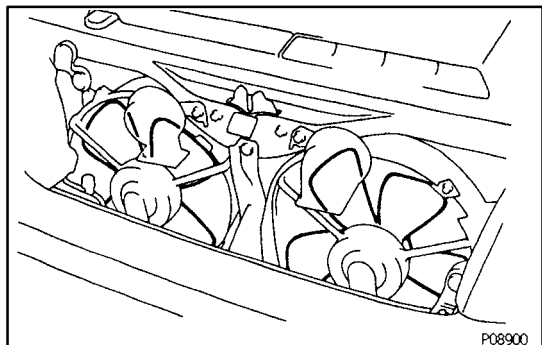
## On-Vehicle Inspection

HINT: The cooling fans operate at 2 speeds depending on the water temperature and A/C switch.

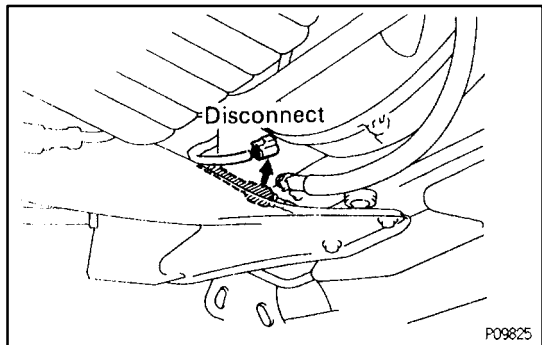


### 1. CHECK COOLING FAN OPERATION WITH LOW TEMPERATURE (Below 83°C (181°F))

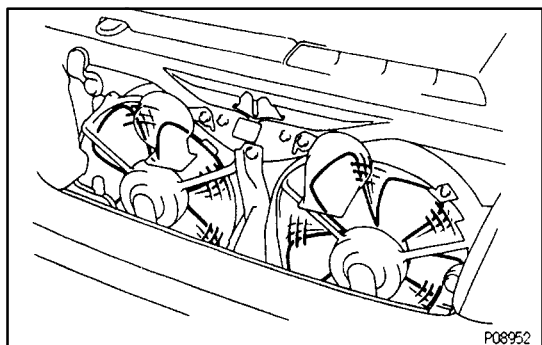
- (a) Turn the ignition switch ON.



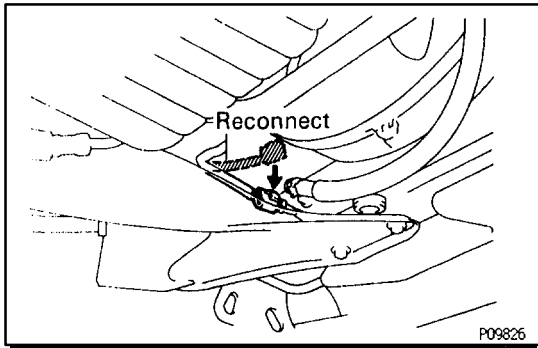
- (b) Check that the cooling fans stop.  
If not, check the cooling fan relay and ECT switch, and check for a separated connector or severed wire between the cooling fan relay and ECT switch.



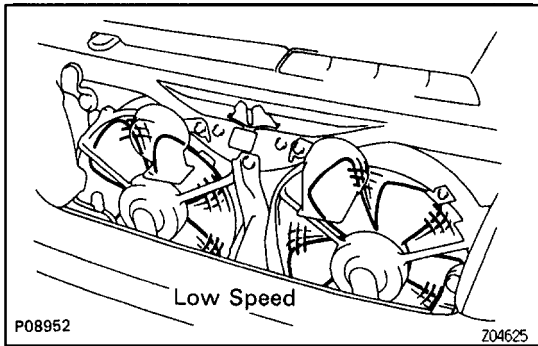
- (c) Disconnect the ECT switch connector.



- (d) Check that the cooling fans rotate.  
If not, check the engine main relay, cooling fan relay, cooling fan, fuses, and check for short circuit between the cooling fan relay and ECT switch.



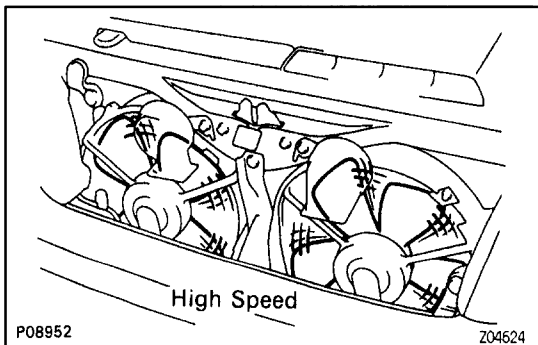
(e) Reconnect the ECT switch connector.



(f) Set the following initial conditions.

- A/C switch ON
- Magnetic clutch ON
- Refrigerant pressure to 1,520 kPa (15.5 kgf/cm<sup>2</sup>, 220 psi) or more

(g) Check that the cooling fans rotate at low speed.

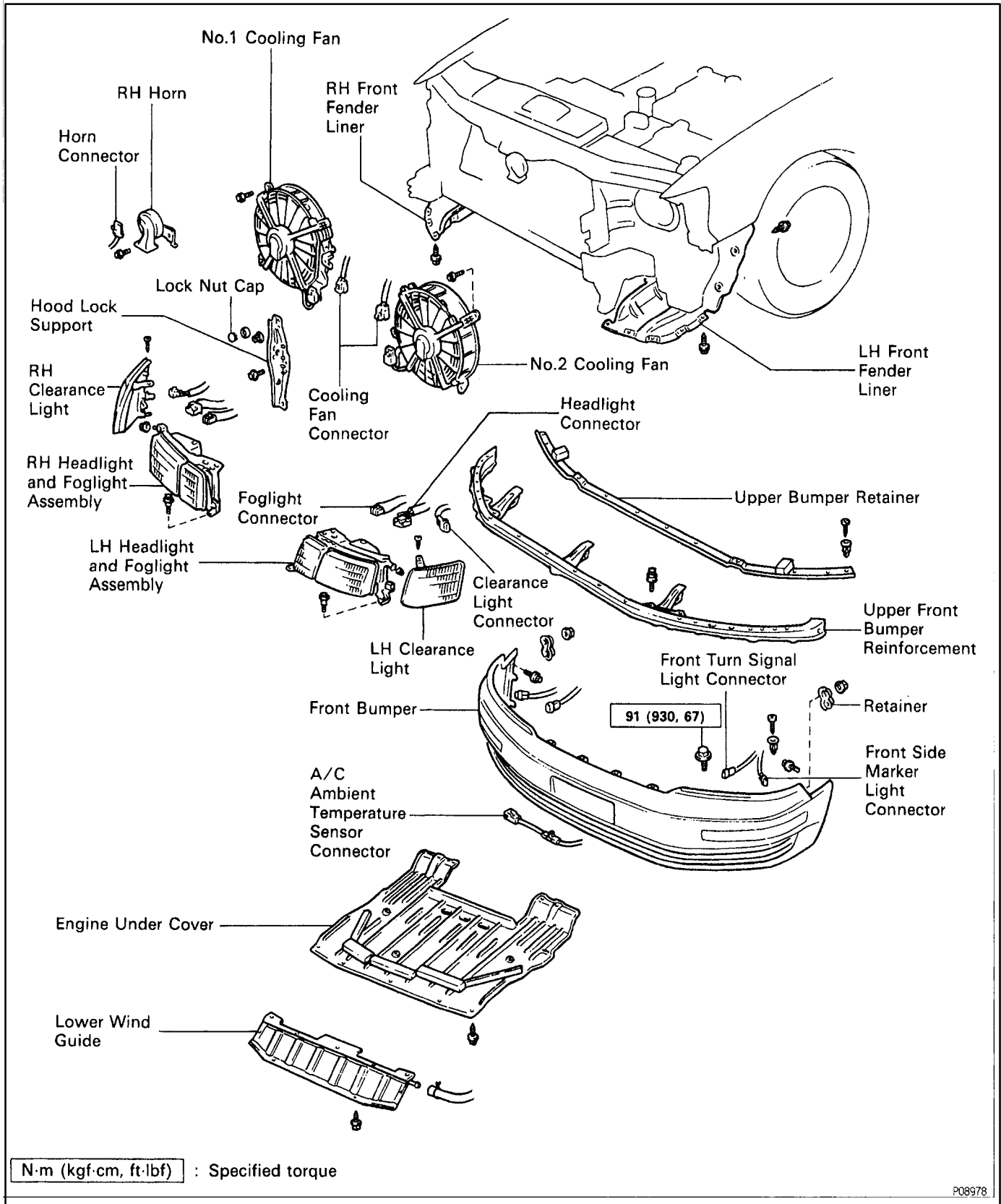


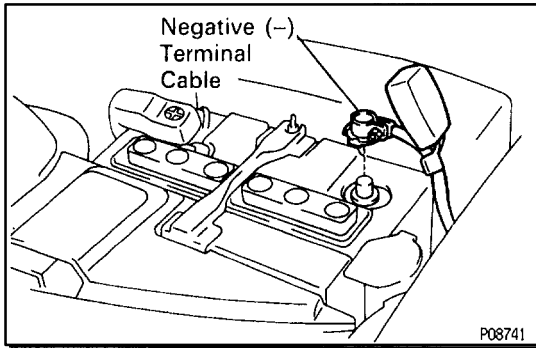
## 2. CHECK COOLING FAN OPERATION WITH HIGH TEMPERATURE (Above 93°C (199°F))

(a) Start the engine, and raise coolant temperature to above 93°C (199°F).

(b) Check that the cooling fans rotate at high speed. If not, replace the ECT switch.

# Cooling Fans COMPONENTS FOR REMOVAL AND INSTALLATION





## COOLING FANS INSPECTION

(See Components for Removal and Installation)

### 1. DISCONNECT NEGATIVE TERMINAL CABLE FROM BATTERY

**CAUTION:** Work must be started after 90 seconds from the time the ignition switch is turned to the “LOCK” position and the negative (-) terminal cable is disconnected from the battery.

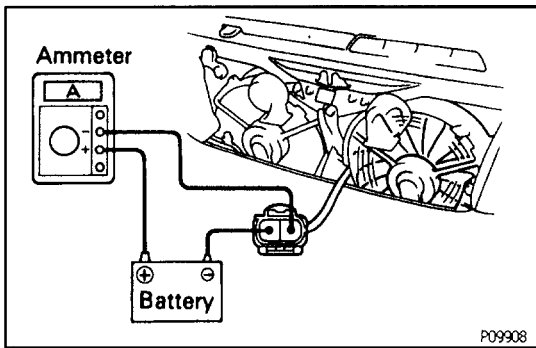
### 2. INSPECT COOLING FANS

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

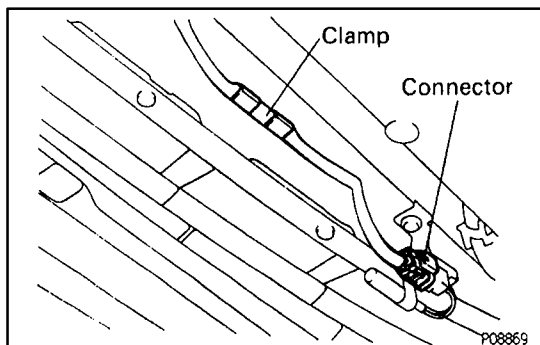
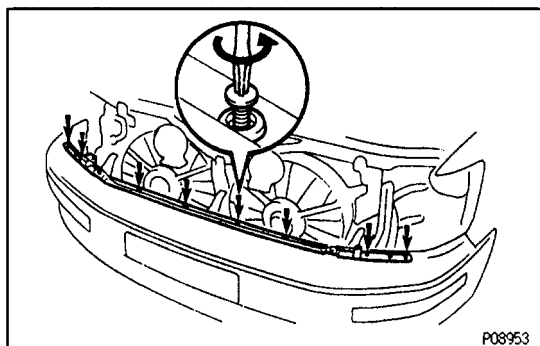
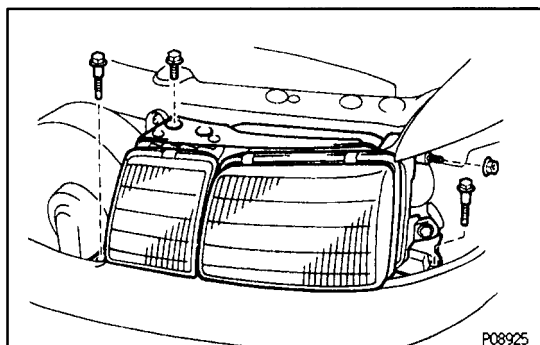
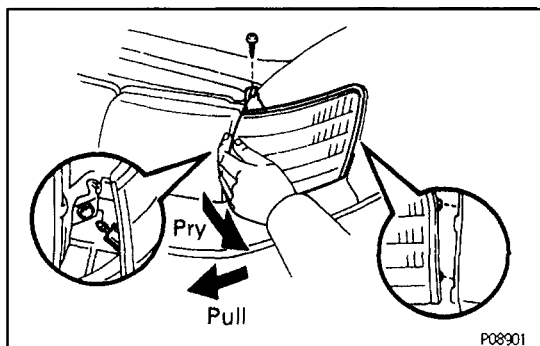
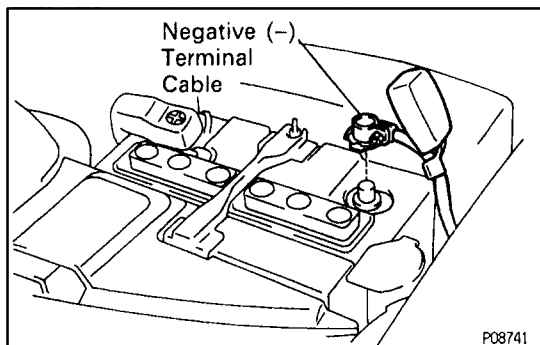
**Standard amperage:**

**4.2–4.4 A**

- Reconnect the fan connector.



### 3. RECONNECT NEGATIVE TERMINAL CABLE TO BATTERY



## COOLING FANS REMOVAL

(See Components for Removal and Installation)

### 1. DISCONNECT NEGATIVE TERMINAL CABLE FROM BATTERY

**CAUTION:** Work must be started after 90 seconds from the time the ignition switch is turned to the "LOCK" position and the negative (-) terminal cable is disconnected from the battery.

### 2. REMOVE ENGINE UNDER COVER

### 3. REMOVE LOWER WIND GUIDE

### 4. REMOVE CLEARANCE LIGHTS

- (a) Remove the screw.
- (b) Disconnect the clearance light by prying and pulling it.
- (c) Disconnect the connector, and remove the clearance light.

### 5. REMOVE HEADLIGHT AND FOG LIGHT ASSEMBLIES

- (a) Remove the nut and 3 bolts.
- (b) Disconnect the 2 connectors, and remove the headlight and fog light assembly.

### 6. REMOVE UPPER BUMPER RETAINER

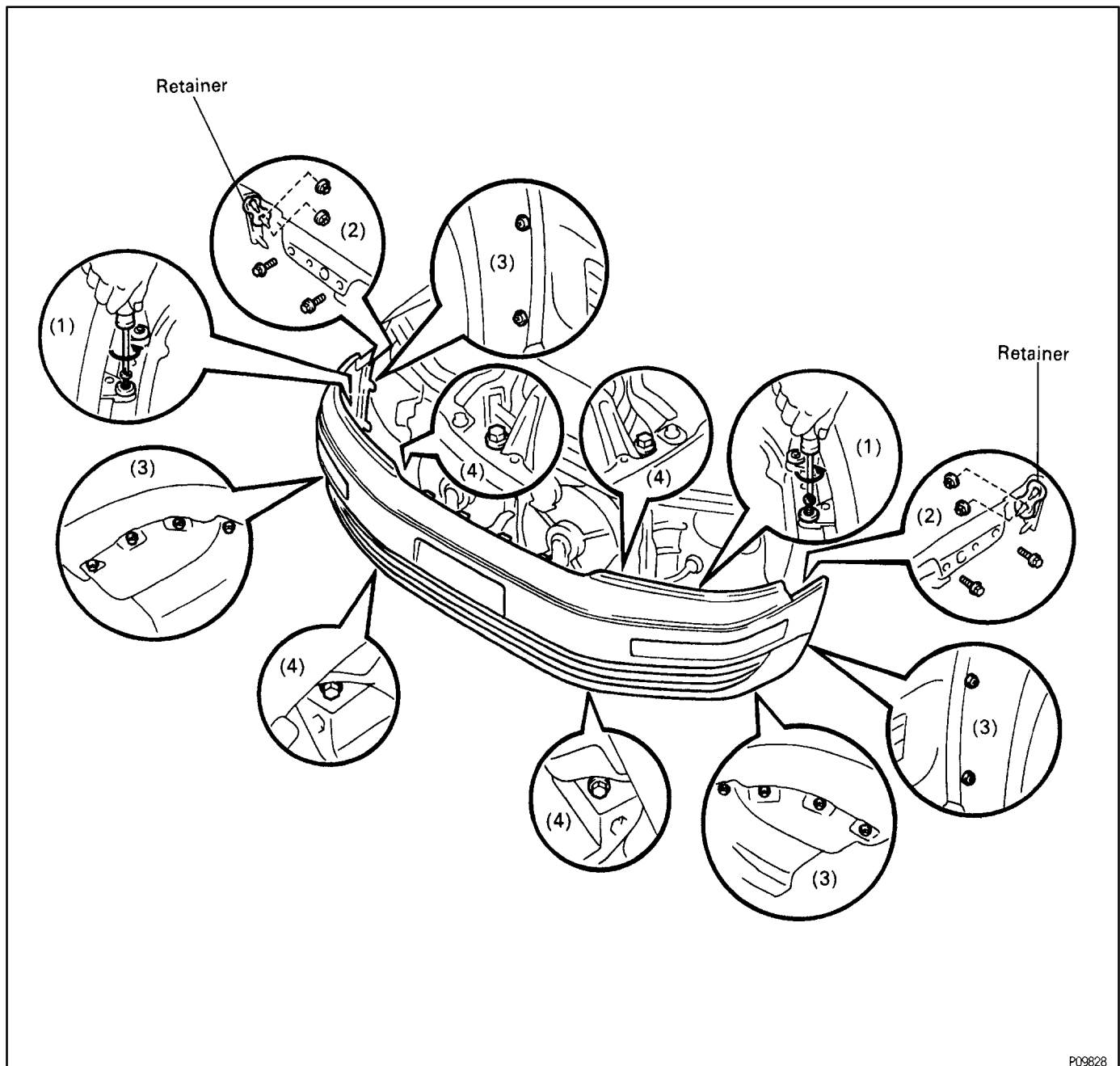
Remove the 8 clips and bumper retainer.

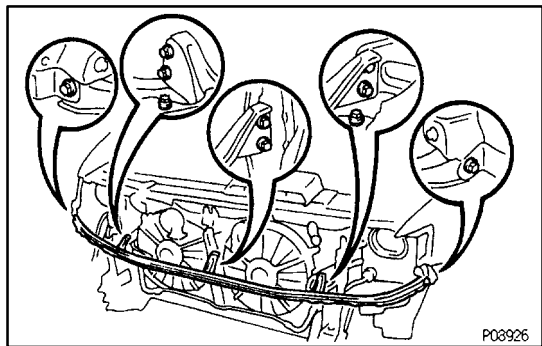
### 7. DISCONNECT AIR CONDITIONING (A/C) AMBIENT TEMPERATURE SENSOR CONNECTOR

- (a) Disconnect the ambient temperature sensor connector.
- (b) Disconnect the ambient temperature sensor wire from the front bumper.

**8. REMOVE FRONT BUMPER**

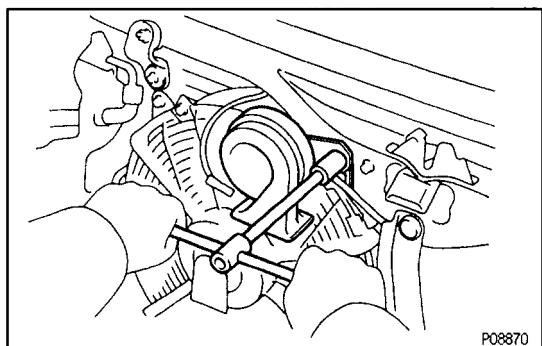
- (a) Disconnect the 4 connectors (for turn signal right and side marker light).
- (b) Remove the following clips, screws, bolts, nuts, retainer and front bumper.
  - (1) 4 clips holding front bumper to upper front bumper reinforcement
  - (2) 4 bolts, 4 nuts and 2 retainers holding to front fender
  - (3) 12 screws holding front bumper to front fender liners
  - (4) 4 bolts holding front bumper to body





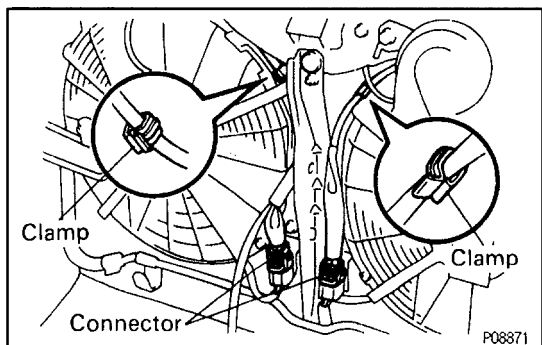
### 9. REMOVE UPPER FRONT BUMPER REINFORCEMENT

Remove the 10 bolts and front bumper reinforcement.



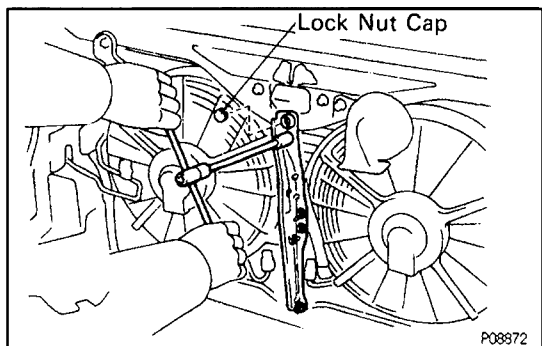
### 10. REMOVE RH HORN

- (a) Disconnect the horn connector.
- (b) Remove the bolt and horn.

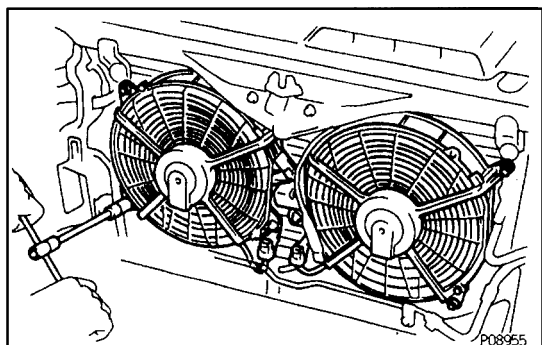


### 11. REMOVE COOLING FANS

- (a) Disconnect the 2 cooling fan connectors.
- (b) Disconnect the 2 cooling fan wires from the clamps.



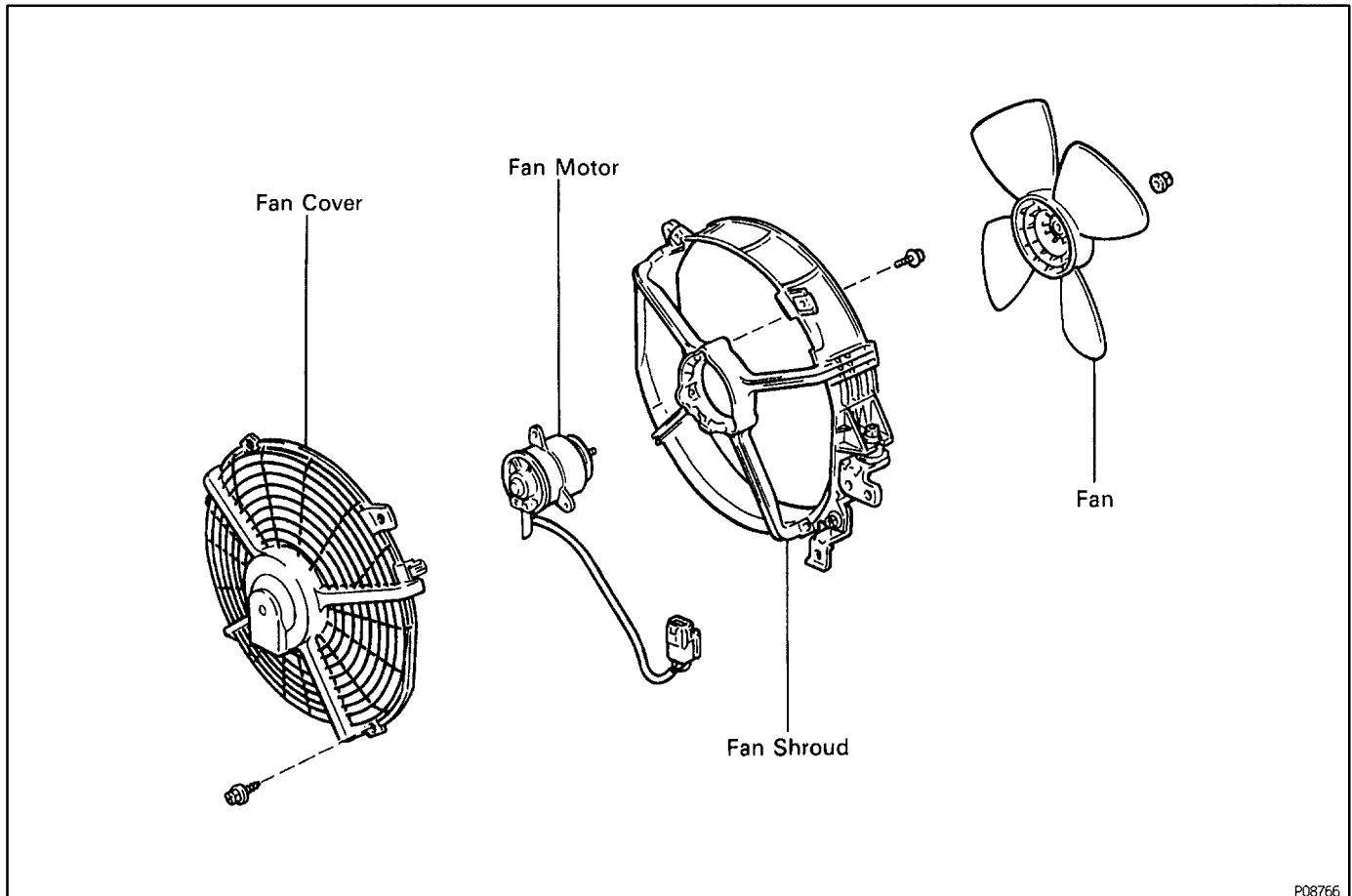
- (c) Remove the lock nut cap.
- (d) Remove the 3 nuts, 2 nuts and hood lock support.



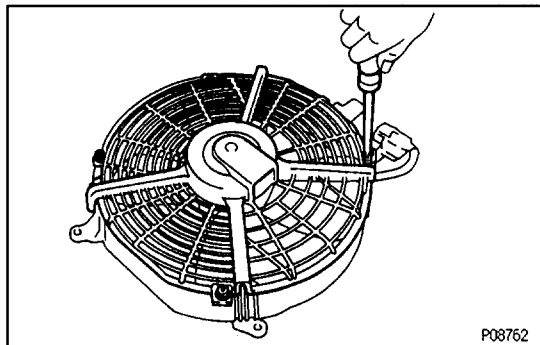
- (e) Remove the 2 bolts and cooling fan. Remove the 2 cooling fans.



## COMPONENTS FOR DISASSEMBLY AND ASSEMBLY



P08766



P08762

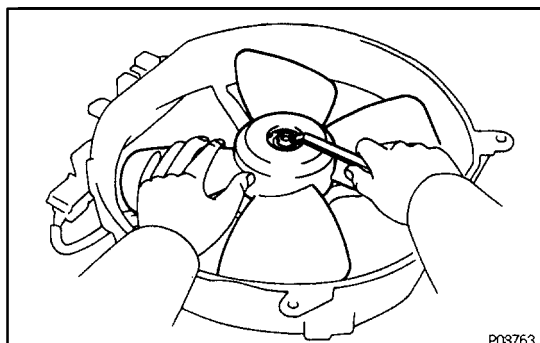
## COOLING FAN DISASSEMBLY

EG1LC-02

(See Components for Disassembly and Assembly)

### 1. REMOVE FAN COVER

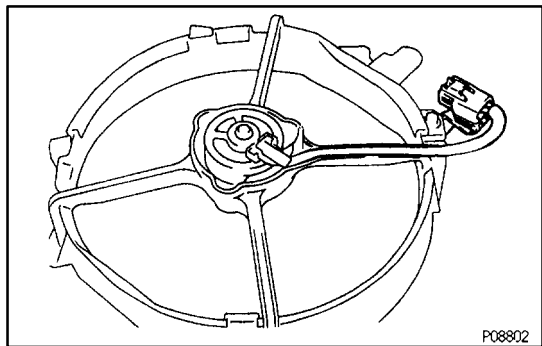
Remove the 4 screws and fan cover.



P08763

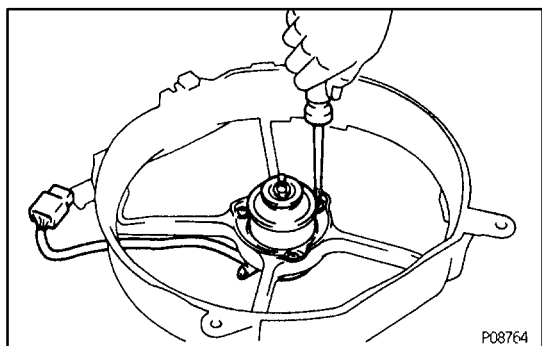
### 2. REMOVE FAN

Remove the nut and fan.

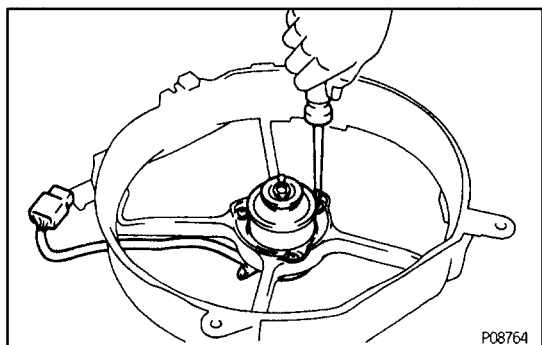


### 3. REMOVE FAN MOTOR

- (a) Disconnect the wire and connector from the fan shroud.



- (b) Remove the 3 screws and fan motor.



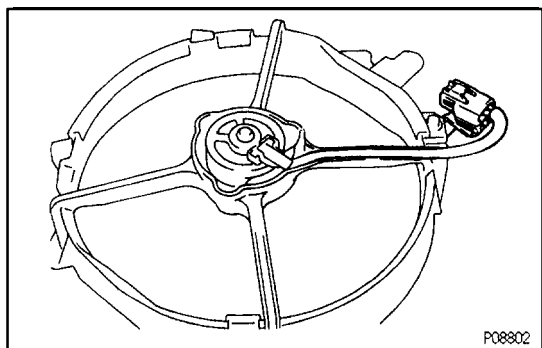
## COOLING FAN ASSEMBLY

EG1LD-02

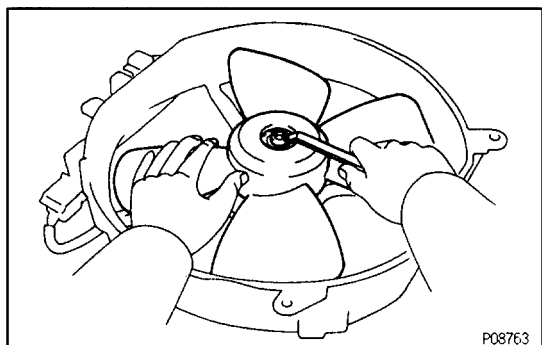
(See Components for Disassembly and Assembly)

### 1. INSTALL FAN MOTOR

- (a) Install the fan motor with the 3 screws.

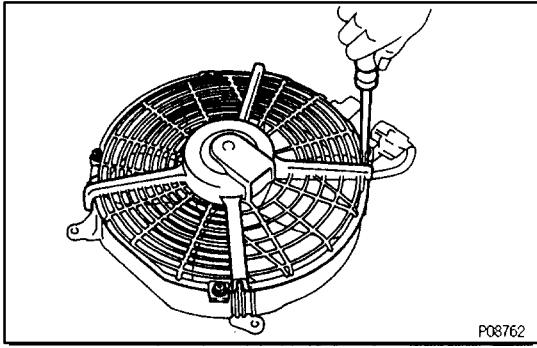


- (b) Install the wire and connector to the fan shroud.



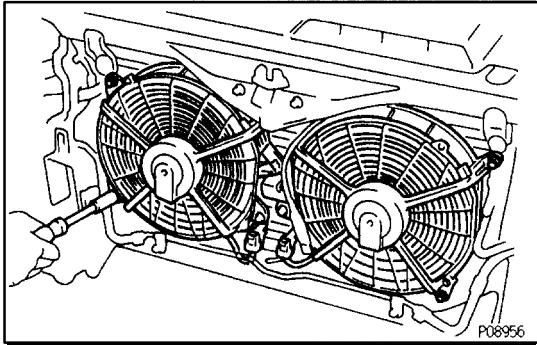
### 2. INSTALL FAN

Install the fan with the nut.



### 3. INSTALL FAN COVER

Install the fan cover with the 4 screws.



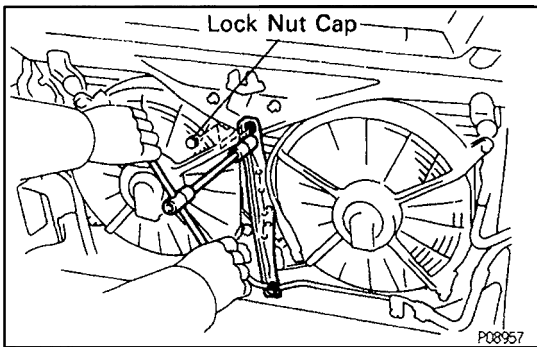
## COOLING FANS INSTALLATION

EG1LE-02

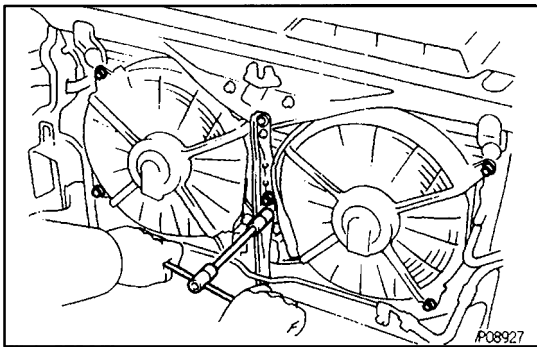
(See Components for Removal and Installation)

### 1. INSTALL COOLING FANS

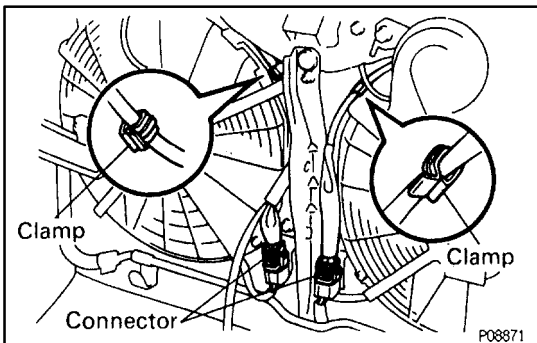
- (a) Temporarily install the cooling fan with the 2 bolts.  
Temporarily install the 2 cooling fans.



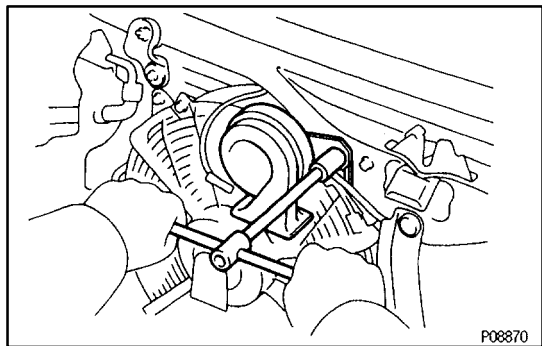
- (b) Install the hood lock support with the 3 nuts.  
(c) Install the lock nut cap.



- (d) Temporarily install the 2 bolts holding the hood lock support to the cooling fans.  
(e) Tighten the 6 bolts.

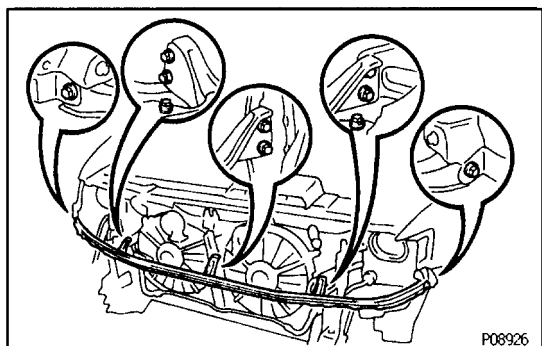


- (f) Connect the 2 cooling fan connectors.  
(g) Secure the 2 cooling fan wires with the clamps.



## 2. INSTALL RH HORN

- (a) Install the horn with the bolt.
- (b) Connect the horn connector.

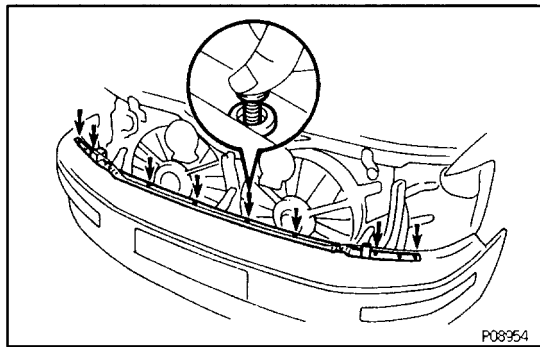
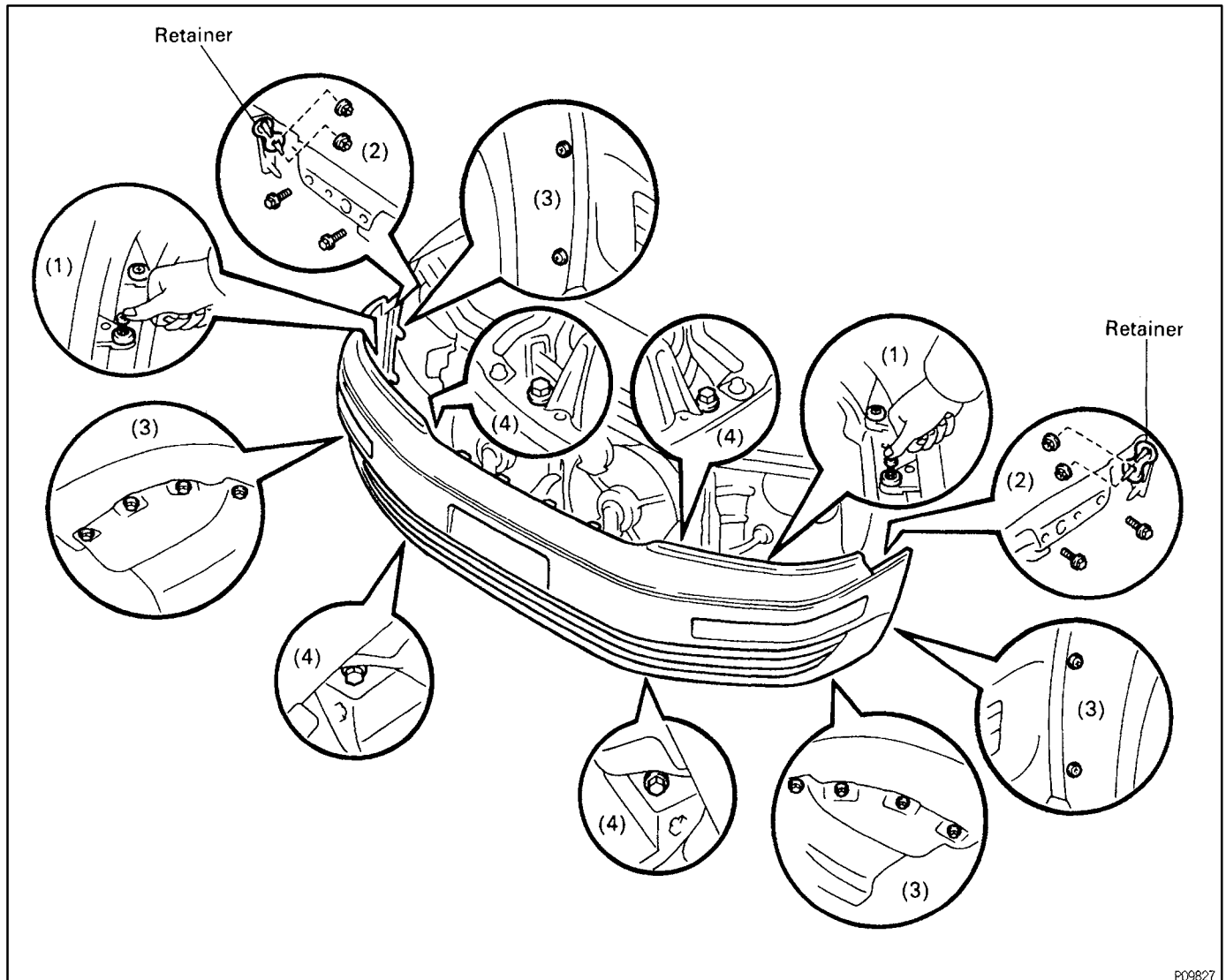


## 3. INSTALL UPPER FRONT BUMPER REINFORCEMENT

Install the front bumper reinforcement with the 10 bolts.

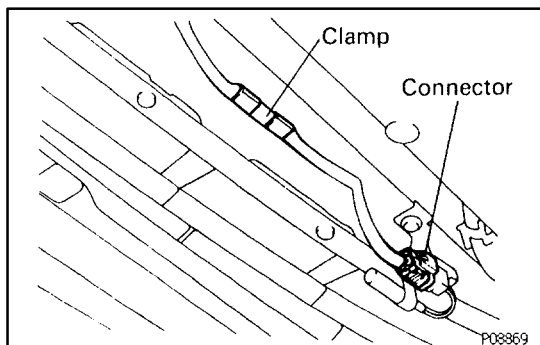
## 4. INSTALL FRONT BUMPER

- (a) Install the front bumper with the following retainers, bolts, nuts, screws and clips.
  - (1) 4 bolts holding front bumper to body  
**Torque: 91 N·m (930 kgf·cm, 67 ft·lbf)**
  - (2) 4 bolts, 4 nuts and 2 retainers holding to front fender
  - (3) 4 clips holding front bumper to upper front bumper reinforcement
  - (4) 12 screws holding front bumper to front fender liners
- (b) Connect the 4 connectors (for turn signal right and side marker light).



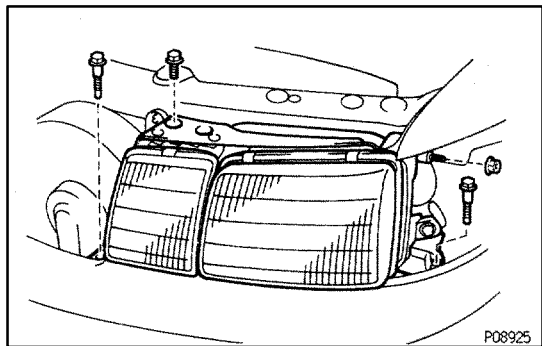
### 5. INSTALL UPPER BUMPER RETAINER

Install the bumper retainer with the 8 clips.

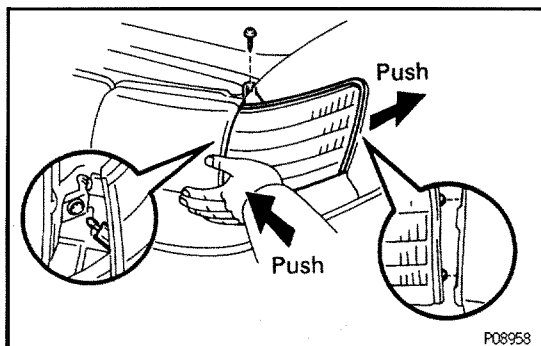


### 6. CONNECT AIR CONDITIONING (A/C) AMBIENT TEMPERATURE SENSOR CONNECTOR

- Connect the ambient temperature sensor connector.
- Install the ambient temperature sensor wire to the front bumper.

**7. INSTALL HEADLIGHT AND FOG LIGHT ASSEMBLIES**

- (a) Connect the 2 connectors.
- (b) Install the headlight and fog light assembly with the nut and 3 nuts.

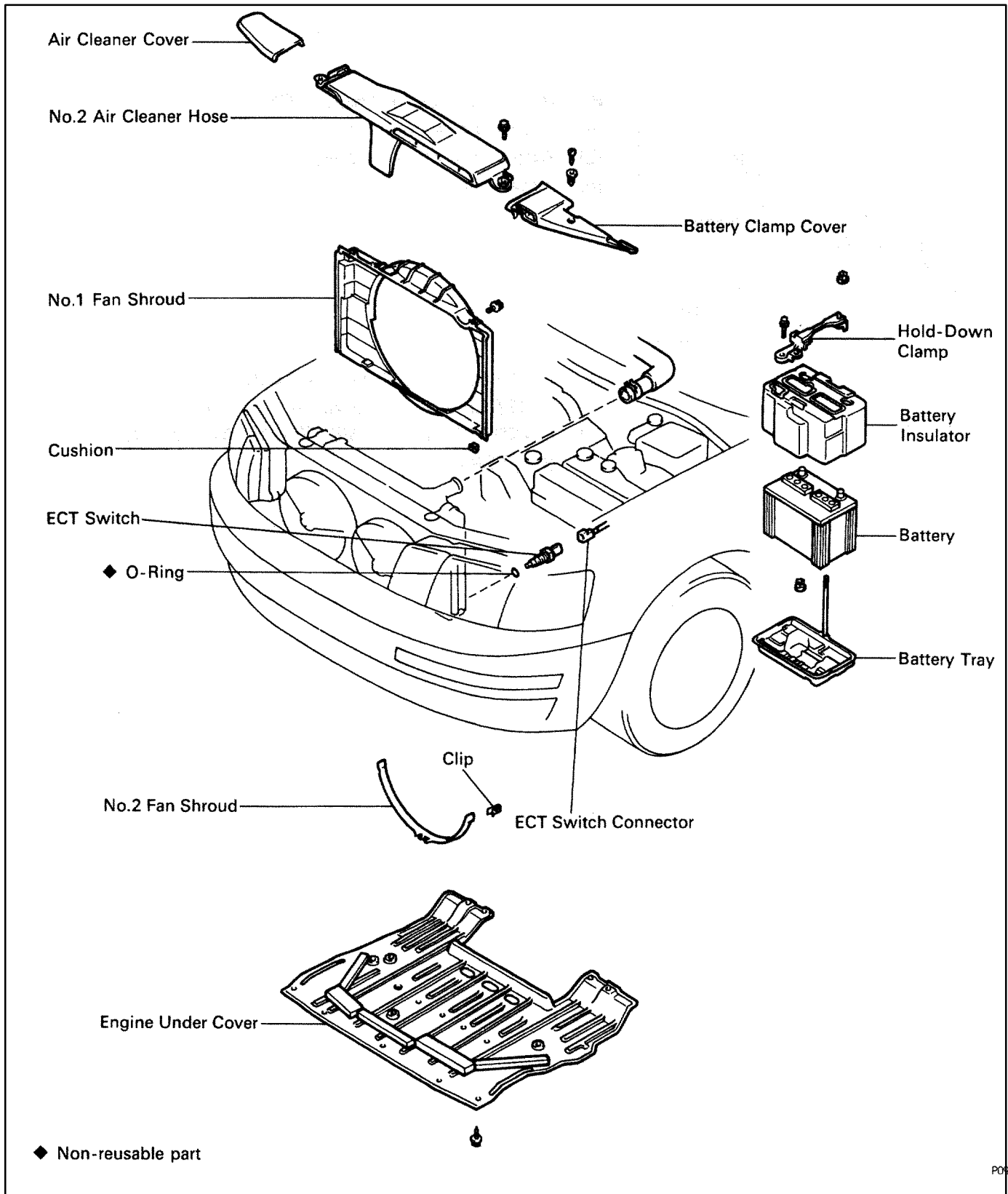
**8. INSTALL CLEARANCE LIGHTS**

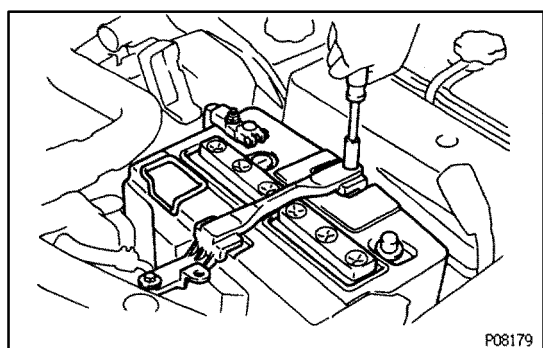
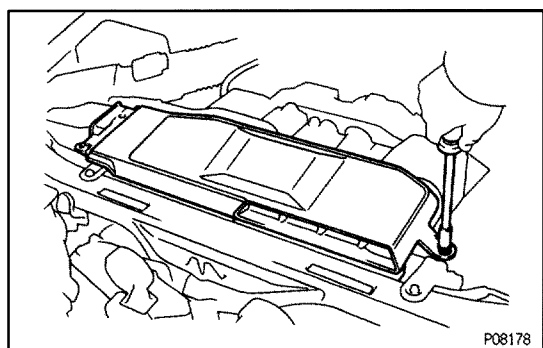
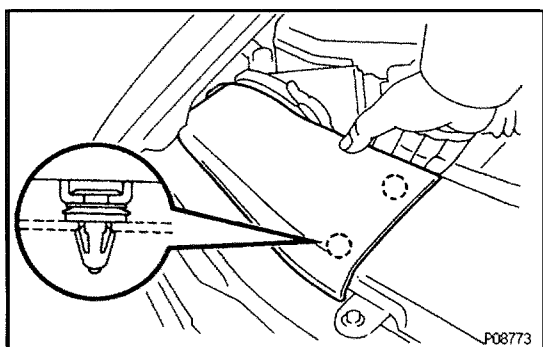
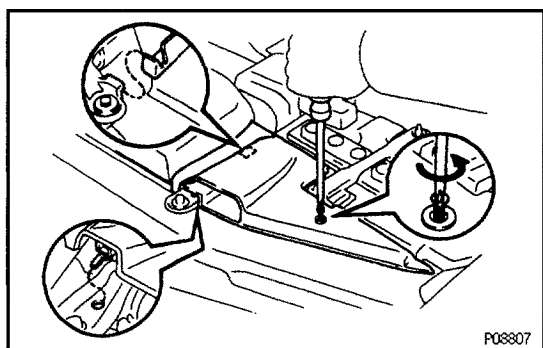
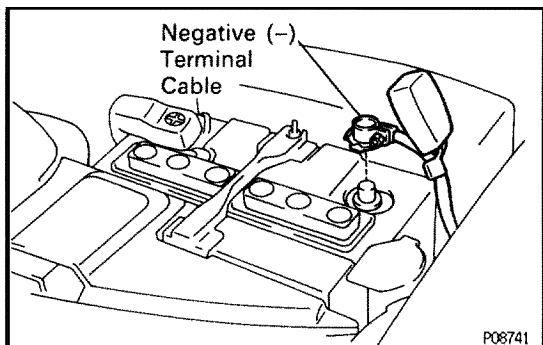
- (a) Connect the connector.
- (b) Attach the clearance light to the body.
- (c) Install the screw.

**9. INSTALL LOWER WIND GUIDE****10. INSTALL ENGINE UNDER COVER****11. CONNECT NEGATIVE TERMINAL CABLE TO BATTERY**

# Engine Coolant Temperature (ECT) Switch

## COMPONENTS FOR REMOVAL AND INSTALLATION





## ECT SWITCH INSPECTION

(See Components for Removal and Installation)

### 1. DISCONNECT NEGATIVE TERMINAL CABLE FROM BATTERY

**CAUTION:** Work must be started after 90 seconds from the time the ignition switch is turned to the "LOCK" position and the negative (-) terminal cable is disconnected from the battery.

### 2. REMOVE ENGINE UNDER COVER

### 3. DRAIN ENGINE COOLANT

### 4. REMOVE BATTERY CLAMP COVER

- (a) Remove the clip.
- (b) Disconnect the 2 claws of the battery clamp cover from the hole of the upper radiator support and the end of the No.2 air cleaner hose.

### 5. REMOVE AIR CLEANER COVER

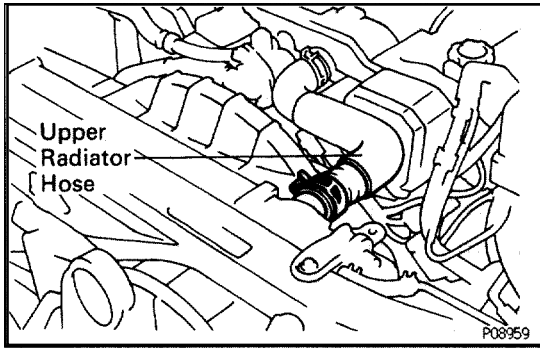
Disconnect the 2 clips from the No.2 air cleaner hose by pulling the air cleaner cover, and remove the air cleaner cover.

### 6. REMOVE NO.2 AIR CLEANER HOSE

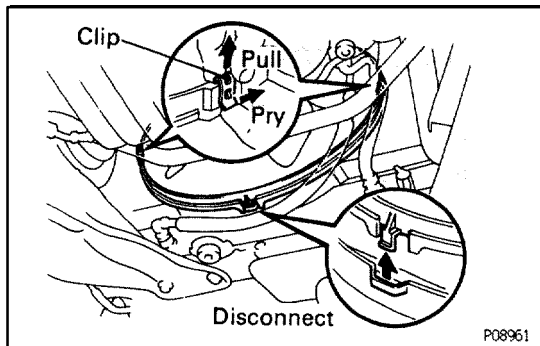
Remove the bolt and air cleaner hose.

### 7. REMOVE BATTERY



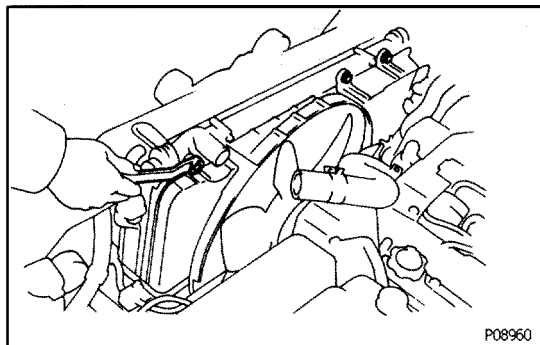


### 8. DISCONNECT UPPER RADIATOR HOSE FROM RADIATOR



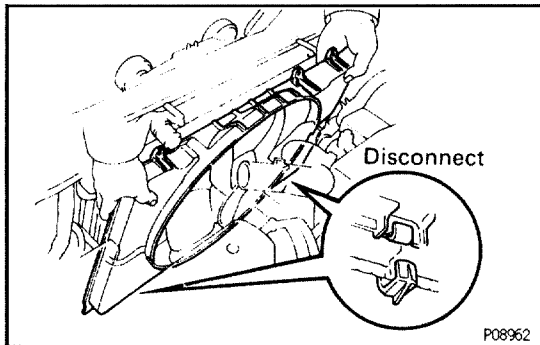
### 9. REMOVE NO.2 FAN SHROUD

- (a) Remove the 2 clips.
- (b) Disconnect the claw of the No.2 fan shroud from the hook of the No.1 fan shroud, and remove the No.2 fan shroud.

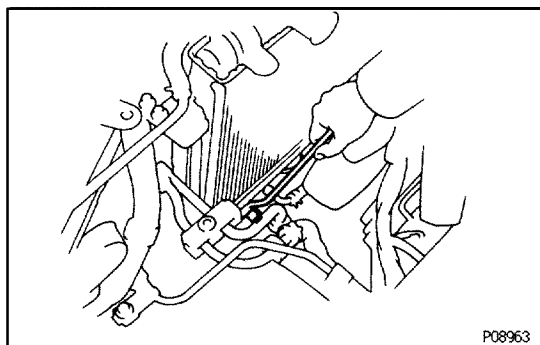


### 10. REMOVE NO.1 FAN SHROUD

- (a) Remove the 3 bolts.

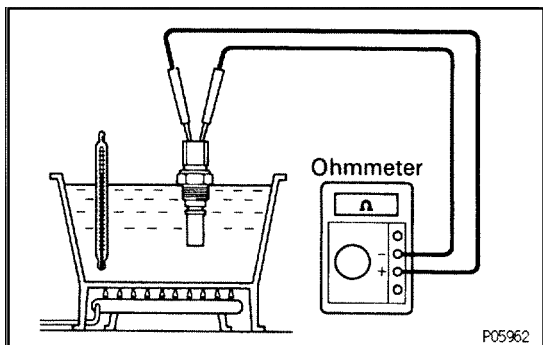


- (b) Disconnect the lower sides of the No.1 fan shroud from the 2 hooks of the radiator, and remove the radiator.



### 11. REMOVE ECT SWITCH

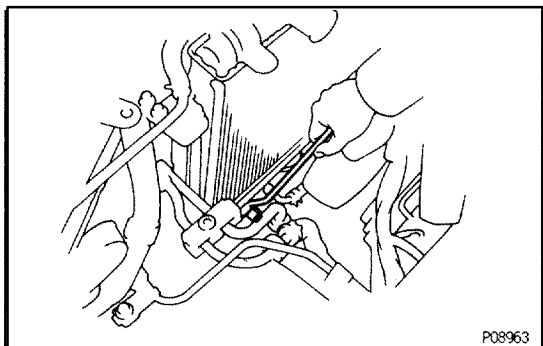
- (a) Disconnect the ECT switch connector.
- (b) Remove the ECT switch.
- (c) Remove the O-ring the ECT switch.



## 12. INSPECT ECT SWITCH

- Using an ohmmeter, check that there is no continuity between the terminals when the coolant temperature is above 93°C (199°F).
- Using an ohmmeter, check that there is continuity between the terminals when the coolant temperature is below 83°C (181°F).

If continuity is not as specified, replace the switch.

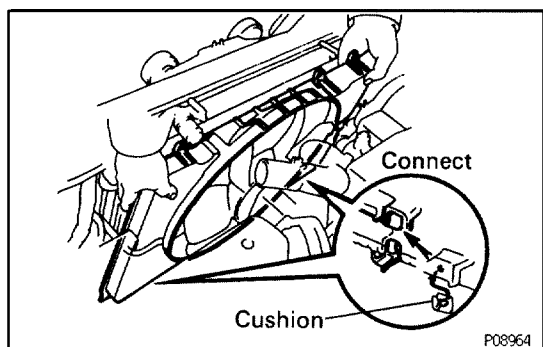


## 13. REINSTALL ECT SWITCH

- Install a new O-ring to the ECT switch.
- Apply soapy water on the O-ring.
- Install the ECT switch.

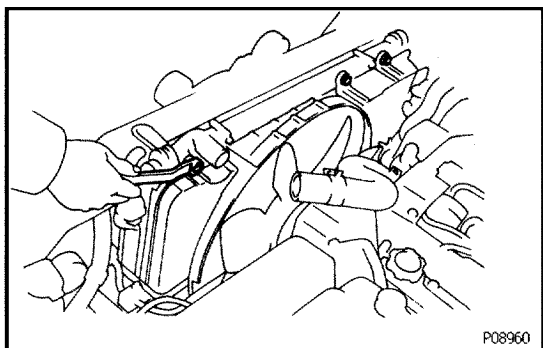
**Torque: 7.4 N·m (75 kgf·cm, 65 in.·lbf)**

- Connect the ECT switch connector.

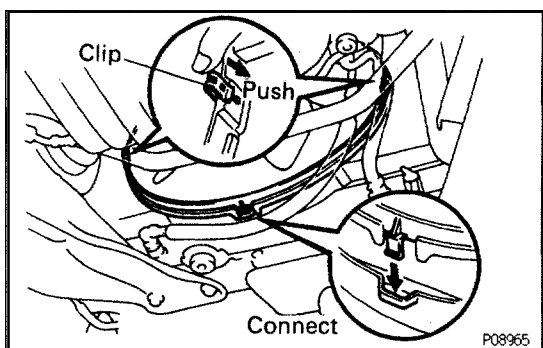


## 14. REINSTALL NO.1 FAN SHROUD

- Connect the lower sides of the No.1 fan shroud to the 2 hooks of the radiator.

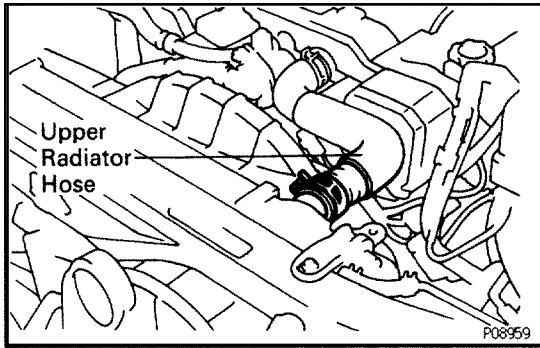


- Install the No.1 fan shroud with the 3 bolts.

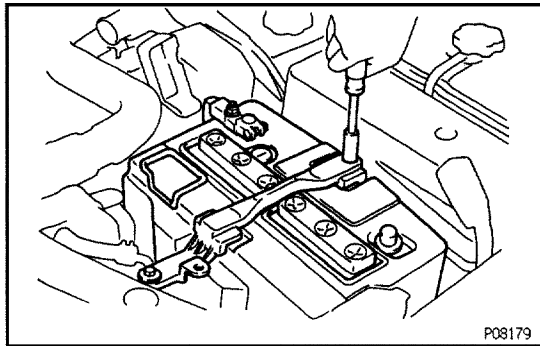


## 15. REINSTALL NO.2 FAN SHROUD

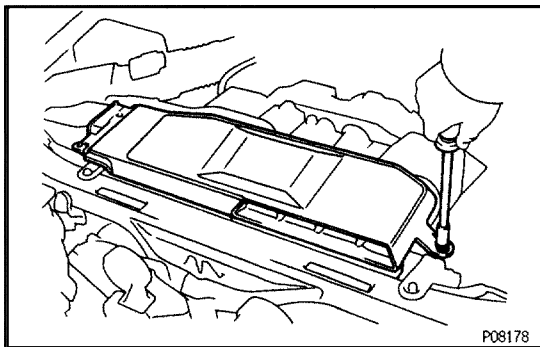
- Connect the claw of the No.2 fan shroud from the hook of the No.1 fan shroud.
- Install the No.2 fan shroud with the 2 clips.



#### 16. RECONNECT UPPER RADIATOR HOSE TO RADIATOR

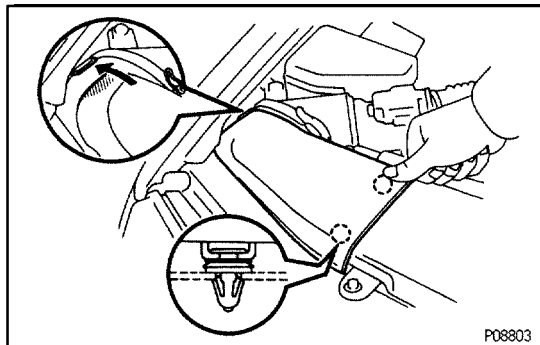


#### 17. REINSTALL BATTERY



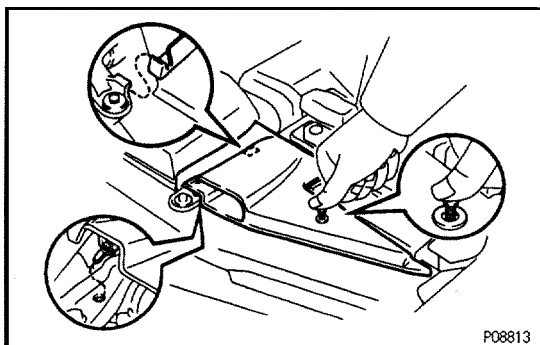
#### 18. REINSTALL NO.2 AIR CLEANER HOSE

- (a) Connect the air cleaner hose to the air cleaner cap.
- (b) Install the air cleaner hose with the bolt.



#### 19. REINSTALL AIR CLEANER COVER

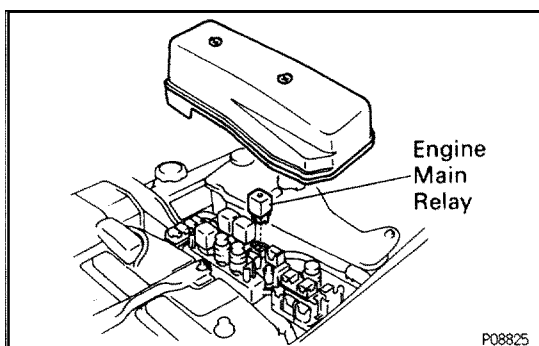
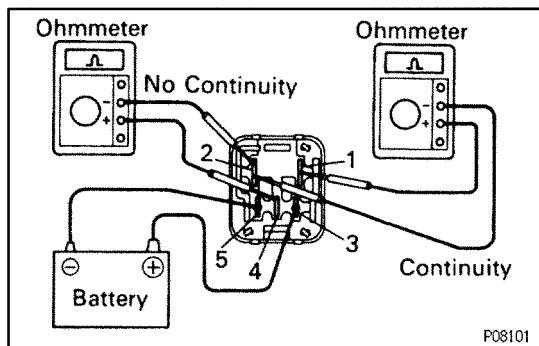
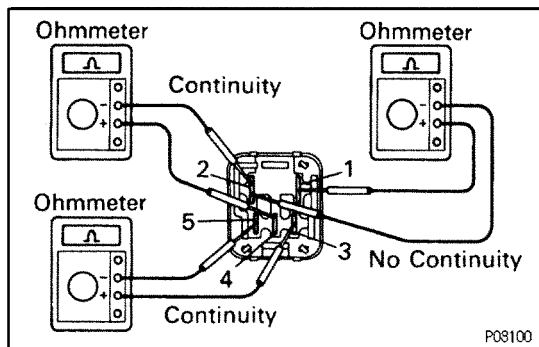
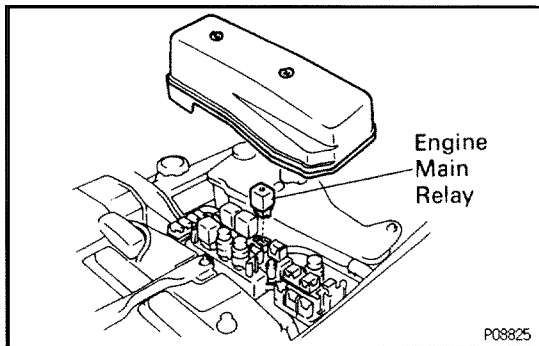
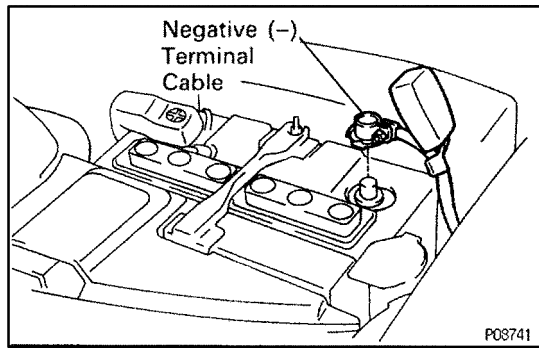
- (a) Insert the end of the air cleaner cover to the portion of the air cleaner case.
- (b) Fit the air cleaner cover to the air cleaner hose with the 2 clips.



#### 20. REINSTALL BATTERY CLAMP COVER

- (a) Fit the 2 claws of the battery clamp cover to the hole of the upper radiator support and the end of the No.2 air cleaner hose.
- (b) Install the battery clamp cover with the clip.

21. RECONNECT NEGATIVE TERMINAL CABLE TO BATTERY
22. REFILL WITH ENGINE COOLANT
23. START ENGINE AND CHECK FOR LEAKS
24. RECHECK ENGINE COOLANT LEVEL
25. REINSTALL ENGINE UNDER COVER



## Engine Main Relay ("ENGINE MAIN") ENGINE MAIN RELAY INSPECTION

(See Components for Removal and Installation)

1. **DISCONNECT NEGATIVE TERMINAL CABLE FROM BATTERY**

**CAUTION:** Work must be started after 90 seconds from the time the ignition switch is turned to the "LOCK" position and the negative (-) terminal cable is disconnected from the battery.

2. **REMOVE RELAY BOX COVER**
3. **REMOVE ENGINE MAIN RELAY**

4. **INSPECT ENGINE MAIN RELAY**

### A. Inspect relay continuity

- (a) Using an ohmmeter, check that there is continuity between terminals 3 and 5.
- (b) Check that there is continuity between terminals 2 and 4.
- (c) Check that there is no continuity between terminals 1 and 2. If continuity is not as specified, replace the relay.

### B. Inspect relay operation

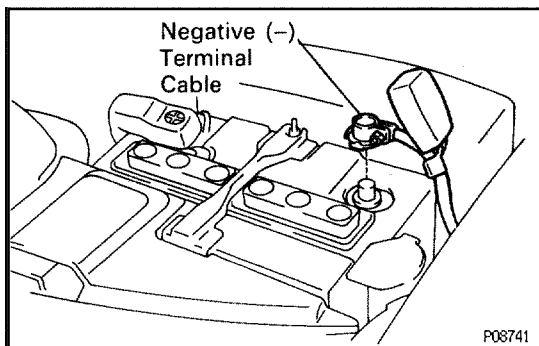
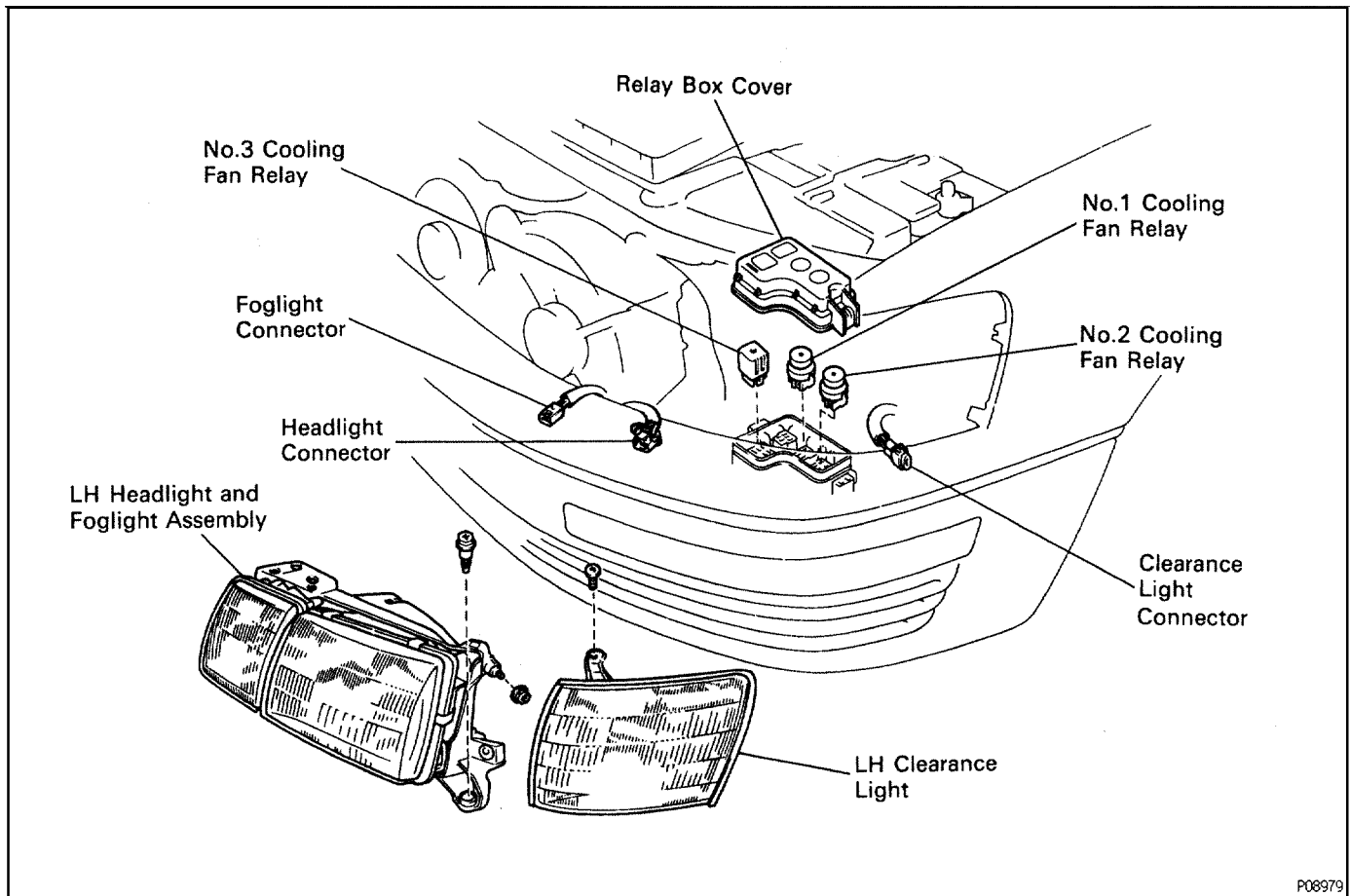
- (a) Apply battery voltage across terminals 3 and 5.
- (b) Using an ohmmeter, check that there is no continuity between terminals 2 and 4.
- (c) Check that there is continuity between terminals 1 and 2. If operation is not as specified, replace the relay.

5. **REINSTALL ENGINE MAIN RELAY**

6. **REINSTALL RELAY BOX COVER**

7. **RECONNECT NEGATIVE TERMINAL CABLE TO BATTERY**

## Cooling Fan Relays COMPONENTS FOR REMOVAL AND INSTALLATION



## COOLING FAN RELAYS INSPECTION

EG1LK-02

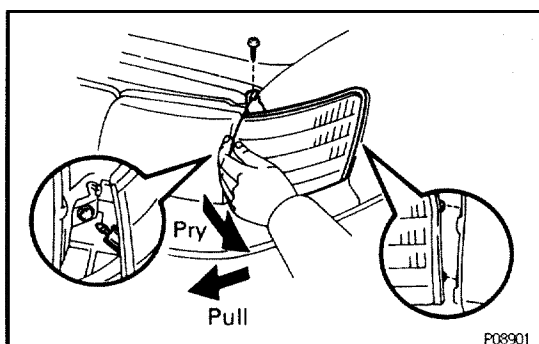
(See Components for Removal and Installation)

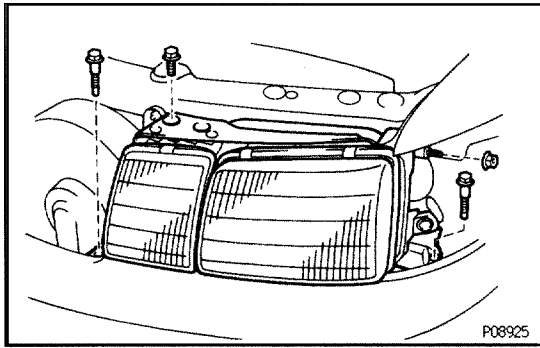
### 1. DISCONNECT NEGATIVE TERMINAL CABLE FROM BATTERY

**CAUTION:** Work must be started after 90 seconds from the time the ignition switch is turned to the "LOCK" position and the negative (-) terminal cable is disconnected from the battery.

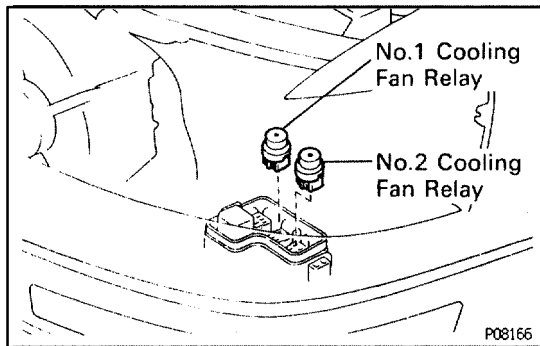
### 2. REMOVE CLEARANCE LIGHTS

- (a) Remove the screw.
- (b) Disconnect the clearance light by prying and pulling it.
- (c) Disconnect the connector, and remove the clearance light.

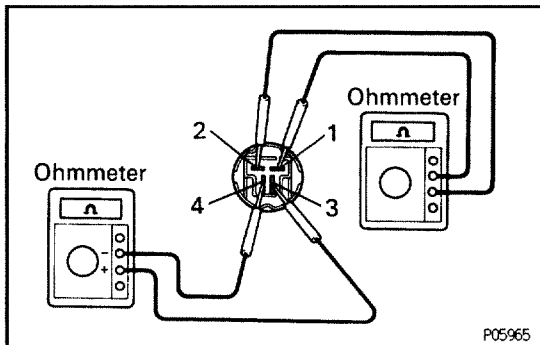




- 3. REMOVE HEADLIGHT AND FOG LIGHT ASSEMBLIES**
  - (a) Remove the nut and 3 bolts.
  - (b) Disconnect the 2 connectors, and remove the headlight and fog light assembly.
- 4. REMOVE RELAY BOX COVER**



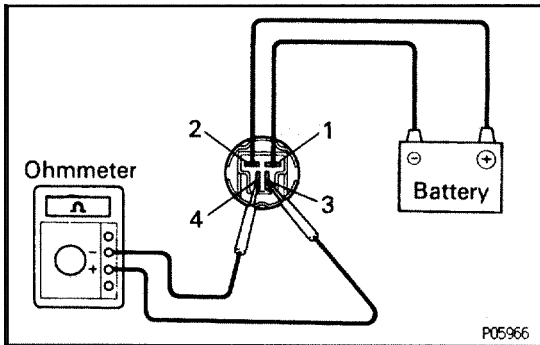
- 5. REMOVE NO.1 AND NO.2 COOLING FAN RELAYS ("RDI FAN NO.1" AND "RDI FAN NO.2")**



- 6. INSPECT NO.1 AND NO.2 COOLING FAN RELAYS ("RDI FAN NO.1" AND "RDI FAN NO.2")**

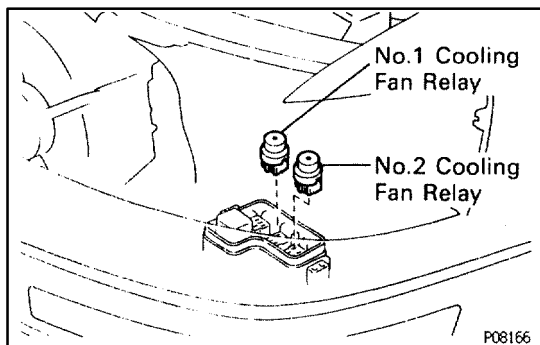
**A. Inspect relay continuity**

- (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.

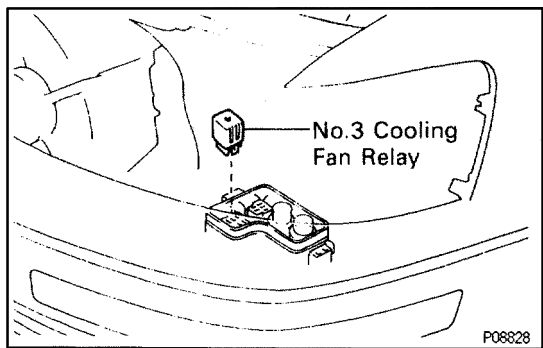


**B. Inspect relay operation**

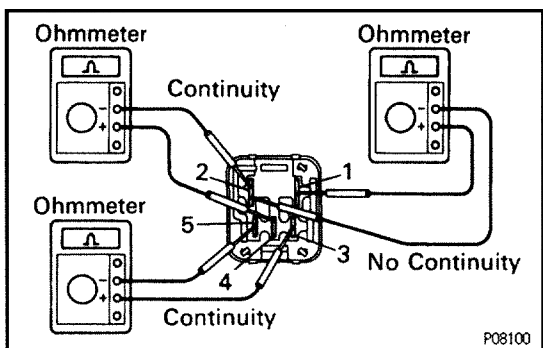
- (a) Apply battery voltage across terminals 1 and 2.
- (b) Using an ohmmeter, check that there is no continuity between terminals 3 and 4. If operation is not as specified, replace the relay.



- 7. REINSTALL NO.1 AND NO.2 COOLING FAN RELAYS ("RDI FAN NO.1" AND "RDI FAN NO.2")**



## 8. REMOVE NO.3 COOLING FAN RELAY ("RDI FAN NO.3")



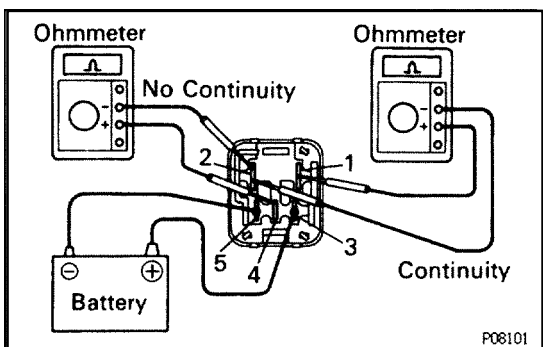
## 9. INSPECT NO.3 COOLING FAN RELAY ("RDI FAN NO.3")

### A. Inspect relay continuity

- Using an ohmmeter, check that there is continuity between terminals 3 and 5.
- Check that there is continuity between terminals 2 and 4.
- Check that there is no continuity between terminals 1 and 2. If continuity is not as specified, replace the relay.

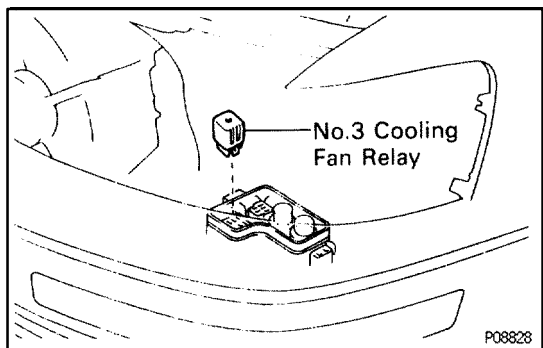
### B. Inspect relay operation

- Apply battery voltage across terminals 3 and 5.
- Using an ohmmeter, check that there is no continuity between terminals 2 and 4.
- Check that there is continuity between terminals 1 and 2. If operation is not as specified, replace the relay.



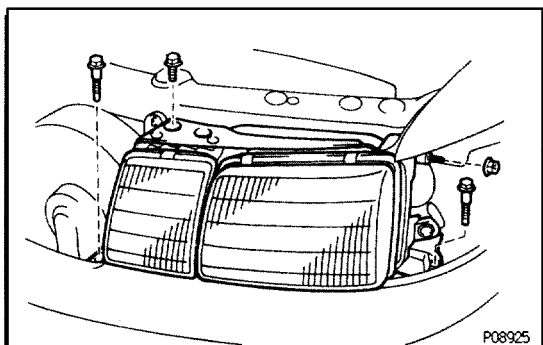
## 10. REINSTALL NO.3 COOLING FAN RELAY ("RDI FAN NO.3")

## 11. REINSTALL RELAY BOX COVER

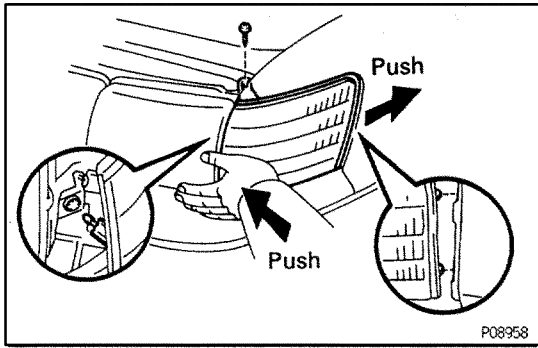


## 12. REINSTALL HEADLIGHT AND FOG LIGHT ASSEMBLIES

- Connect the 2 connectors.
- Install the headlight and fog light assembly with the nut and 3 nuts.





**13. REINSTALL CLEARANCE LIGHTS**

- (a) Disconnect the connector.
- (b) Attach the clearance light to the body.
- (c) Install the screw.

**14. RECONNECT NEGATIVE TERMINAL CABLE TO BATTERY**