

INSTALLATION

1. INSTALL COMPRESSOR

(a) Install the compressor with the 4 bolts.

Torque: 27 N·m (275 kgf·cm, 20 ft·lbf)

(b) Connect the connector.

2. CONNECT DISCHARGE AND SUCTION HOSES

Connect the both hoses with the 2 bolts.

Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

NOTICE:

Hoses should be connected immediately after the caps have been removed.

HINT:

Lubricate 2 new O-rings with compressor oil and install them to the hoses.

3. INSTALL DRIVE BELT

(See page AC-15)

4. INSPECT DRIVE BELT TENSION

(See page AC-15)

5. INSTALL ENGINE UNDER COVER

6. CONNECT NEGATIVE (-) TERMINAL CABLE TO BATTERY

7. EVACUATE AIR FROM REFRIGERATION SYSTEM AND CHARGE SYSTEM WITH REFRIGERANT

Specified amount: 600 ± 50 g (21.16 ± 1.76 oz.)

8. INSPECT FOR LEAKAGE OF REFRIGERANT

Using a gas leak detector, check for leakage of refrigerant.

If there is leakage, check the tightening torque at the joints.

9. INSPECT A/C OPERATION

CONDENSER

AC16B-01

ON-VEHICLE INSPECTION

1. INSPECT CONDENSER FINS FOR BLOCKAGE OR DAMAGE

If the fins are clogged, wash them with water and dry with compressed air.

NOTICE:

Be careful not to damage the fins.

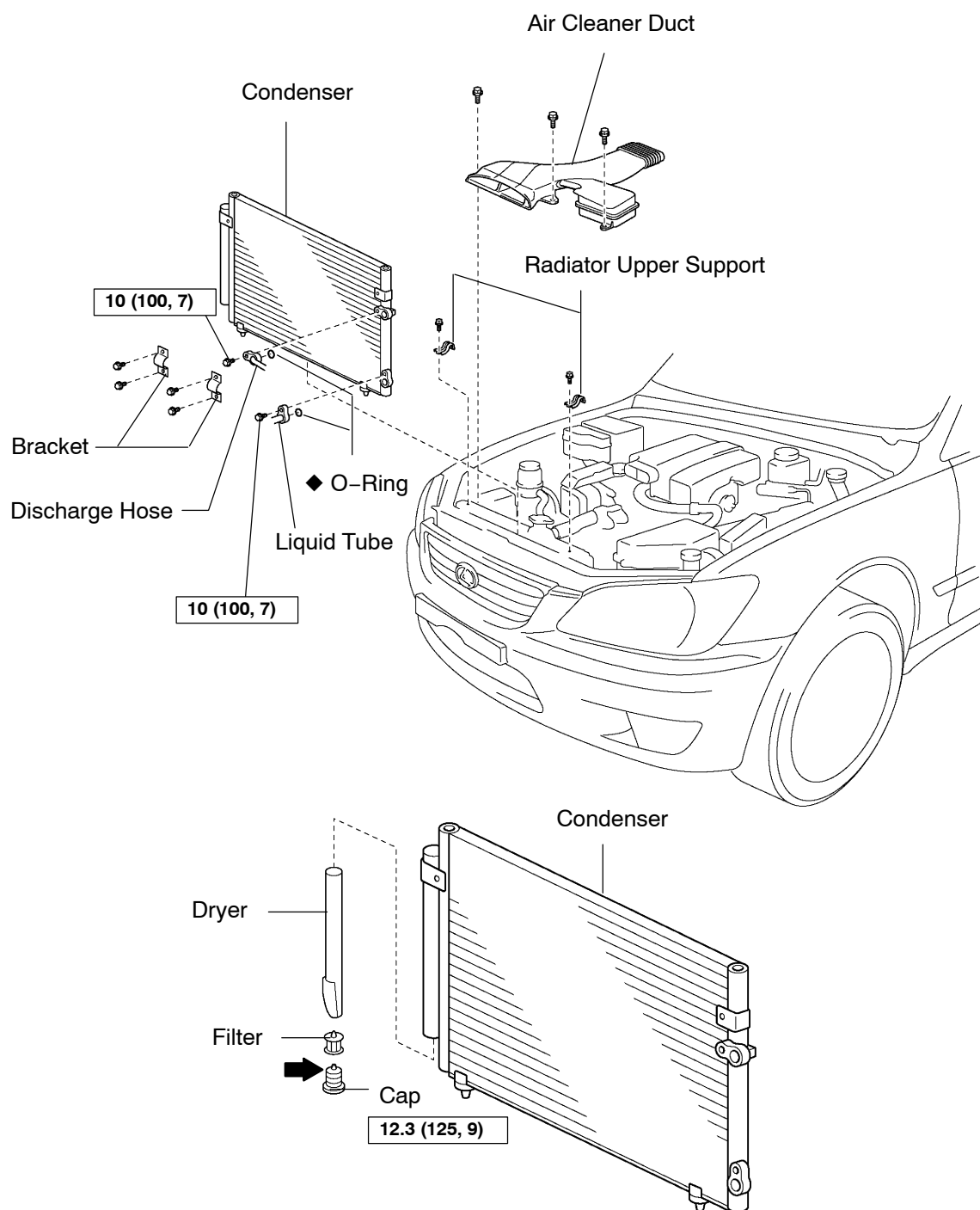
If the fins are bent, straighten them with a screwdriver or pliers.

2. INSPECT CONDENSER AND FITTINGS FOR LEAKAGE OF REFRIGERANT

Using a gas leak detector, check for leakage of refrigerant.

If there is leakage, check the tightening torque at the joints.

COMPONENTS



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

◆ Non-reusable part

➡ Compressor oil ND-OIL 8 or equivalent

I11789

REMOVAL

1. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM

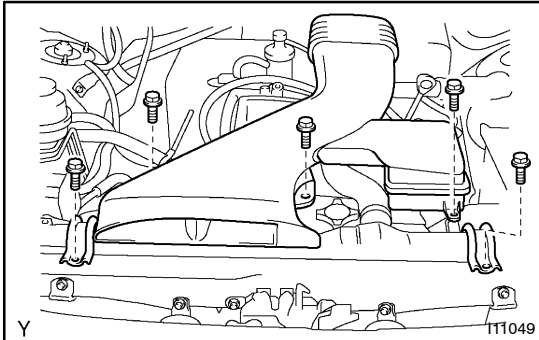
HINT:

At the time of installation, please refer to the following item.

Evacuate air from refrigeration system.

Charge system with refrigerant and inspect for leakage of refrigerant.

Specified amount : 600 ± 50 g (21.16 ± 1.76 oz.)



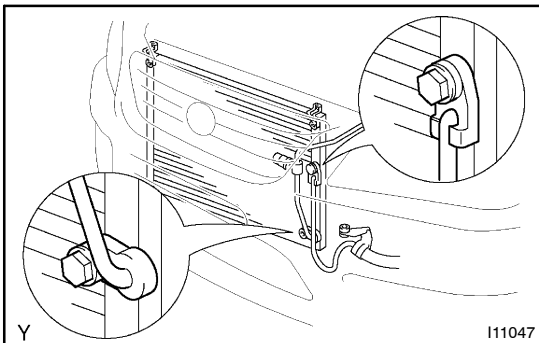
2. REMOVE AIR CLEANER DUCT

Remove the 2 bolts and air cleaner duct.

3. REMOVE ECU OUTLET DUCT

4. REMOVE 2 RADIATOR UPPER SUPPORTS

Remove the 2 bolts and upper supports.



5. DISCONNECT DISCHARGE HOSE AND LIQUID TUBE

Remove the 2 bolts and disconnect the hose and tube.

Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

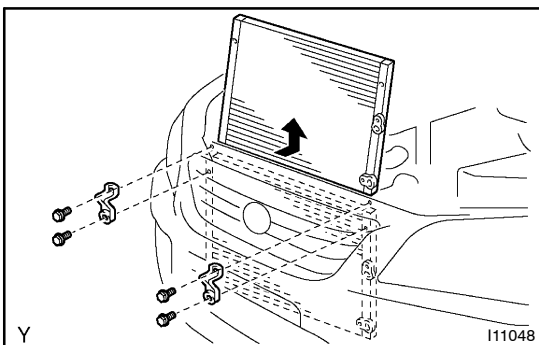
NOTICE:

Cap the open fittings immediately to keep moisture or dirt out of the system.

HINT:

At the time of installation, please refer to the following item.

Lubricate 2 new O-rings with compressor oil and install them to the hose and tube.



6. REMOVE CONDENSER

(a) Remove the 4 bolts and 2 brackets.

(b) Push the radiator toward engine.

(c) Push the condenser toward radiator and pull it upward.

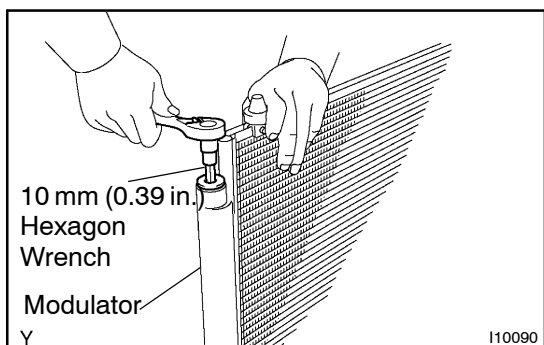
HINT:

At the time of installation, please refer to the following item.

If condenser is replaced, add compressor oil to the condenser.

Add 40 cc (1.4 fl. oz)

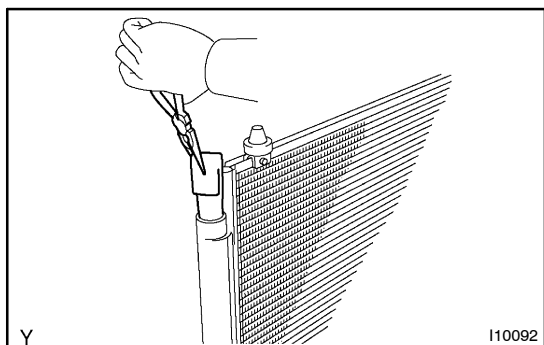
Compressor oil: ND - OIL 8 or equivalent



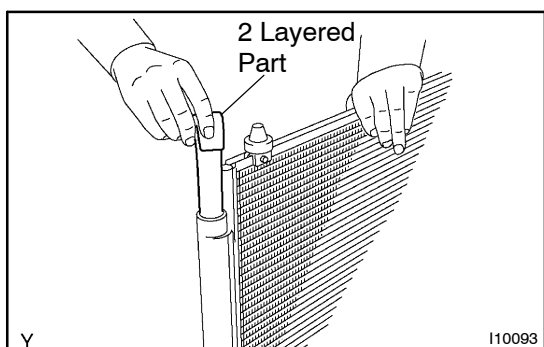
REPLACEMENT

REPLACE DRYER FROM MODULATOR

- (a) Using a hexagon wrench (10 mm, 0.39 in.), remove the cap from the modulator.
- (b) Remove the filter from the modulator.



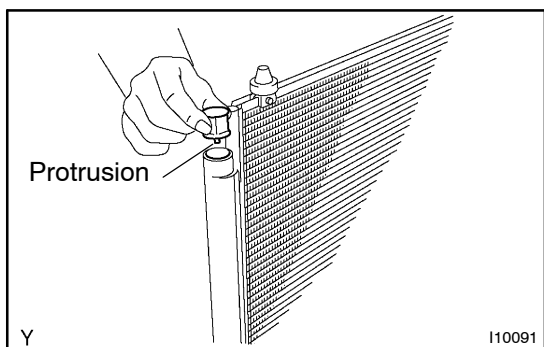
- (c) Using pliers, remove the dryer.



- (d) Insert a new dryer into the modulator.

NOTICE:

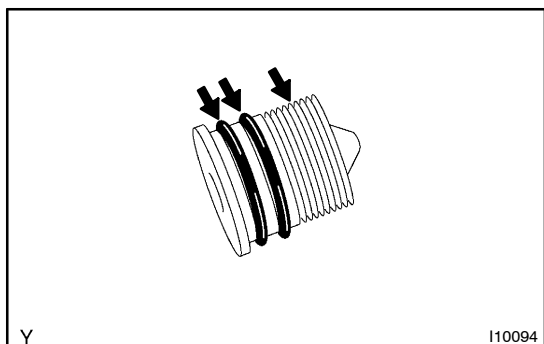
- Do not remove the dryer from a vinyl bag until inserting it into the modulator.
- Install the dryer with its 2 layered part faced upward to the modulator.



- (e) Insert the filter into the modulator.

NOTICE:

Install the filter with its protrusion faced downward to the modulator.



- (f) Install the cap to the modulator.
 - (1) Apply compressor oil to the O-rings and screw part of the cap.

Compressor oil: ND-OIL 8 or equivalent

- (2) Using a hexagon wrench (10 mm, 0.39 in.), install the caps.

Torque: 12.3 N·m (125 kgf·cm, 9 ft·lbf)

INSTALLATION

Installation is in the reverse order of removal (See page AC-50).

EXPANSION VALVE

AC16K-01

ON-VEHICLE INSPECTION

1. CHECK QUANTITY OF GAS DURING REFRIGERATION CYCLE

2. SET ON MANIFOLD GAUGE SET

(See page AC-19)

3. RUN ENGINE

Run the engine at 1,500 rpm for at least 5 minutes.

Then check that the high pressure reading is 1.37 – 1.57 MPa (14 – 16 kgf/cm², 199 – 228 psi).

4. CHECK EXPANSION VALVE

If the expansion valve is faulty, the low pressure reading will drop to 0 kPa (0 kgf/cm², 0 psi).

REMOVAL

1. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM

HINT:

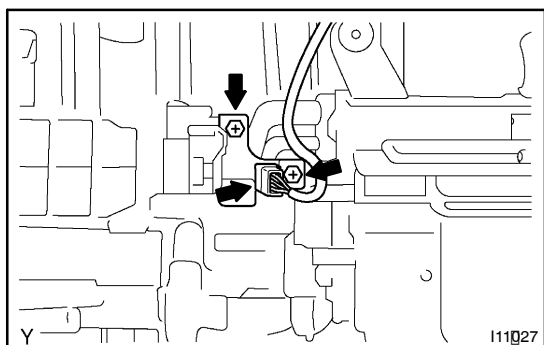
At the time of installation, please refer to the following item.

Evacuate air from refrigeration system.

Charge system with refrigerant and inspect for leakage of refrigerant.

Specified amount: 600 ± 50 g (21.16 ± 1.76 oz.)

2. REMOVE INSTRUMENT PANEL (See page BO-96)



3. RHD models:

REMOVE EXPANSION VALVE

(a) Remove the bracket.

(1) Disconnect the wire harness clamp.

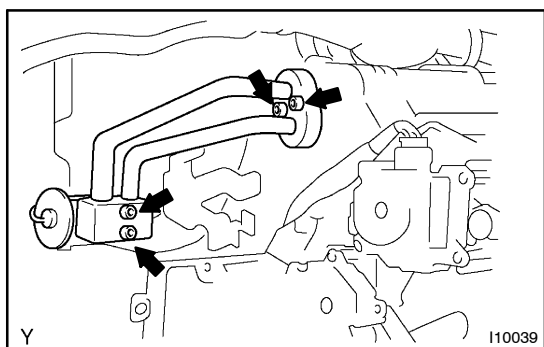
(2) Remove the 2 bolts and bracket.

(b) Pry out the packings.

HINT:

At the time of installation, please refer to the following item.

Do not reuse the packing.



(c) Using SST, remove the 4 bolts and separate the expansion valve and tube and accessory.

SST 07110-61050

Torque: 4.1 N·m (42 kgf·cm, 36 in·lbf)

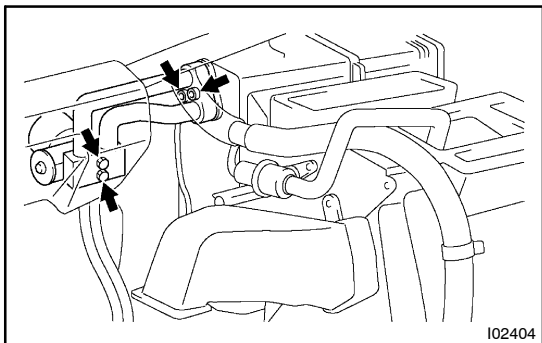
NOTICE:

Cap the open fittings immediately to keep moisture or dirt out of the system.

HINT:

At the time of installation, please refer to the following item.

Lubricate 6 new O-rings with compressor oil and install them to the tube and valve.



4. LHD models:
REMOVE EXPANSION VALVE

- (a) Pry out the packings.

HINT:

At the time of installation, please refer to the following item.

Do not reuse the packing.

- (b) Using SST, remove the 4 bolts and separate the expansion valve and tube and accessory.

SST 07110-61050

Torque: 4.1 N·m (42 kgf·cm, 36 in.·lbf)

NOTICE:

Cap the open fittings immediately to keep moisture or dirt out of the system.

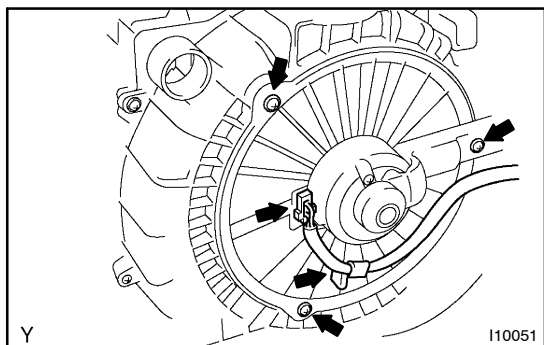
HINT:

At the time of installation, please refer to the following item.

Lubricate 6 new O-rings with compressor oil and install them to the tube and valve.

INSTALLATION

Installation is in the reverse order of removal ([See page AC-54](#)).

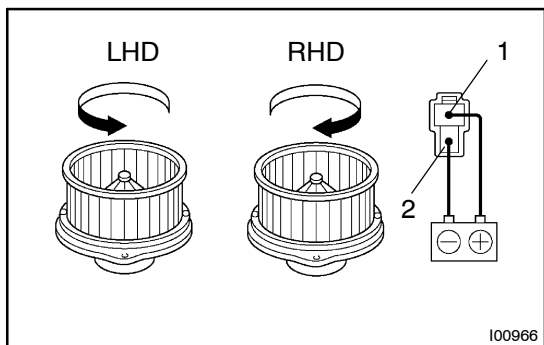


BLOWER MOTOR INSPECTION

AC201-02

1. REMOVE BLOWER MOTOR

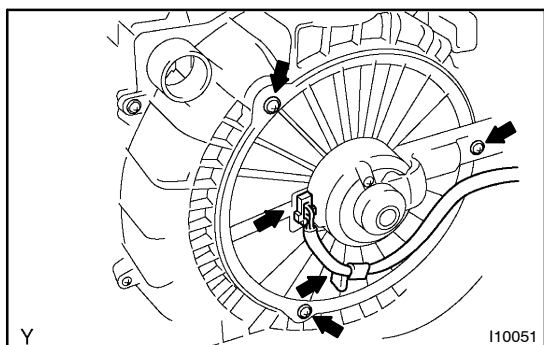
- (a) Remove the wire harness clamp and disconnect the connector.
- (b) Remove the 3 screws and blower motor.



2. INSPECT BLOWER MOTOR OPERATION

Connect the positive (+) lead from the battery to terminal 2 and negative (-) lead to terminal 1, then check that the motor operations smoothly.

If operation is not as specified, replace the blower motor.



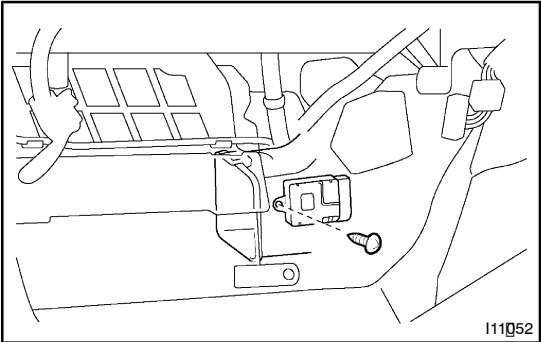
3. INSTALL BLOWER MOTOR

- (a) Install the blower motor with the 3 screws.
- (b) Connect the connector and wire harness clamp.

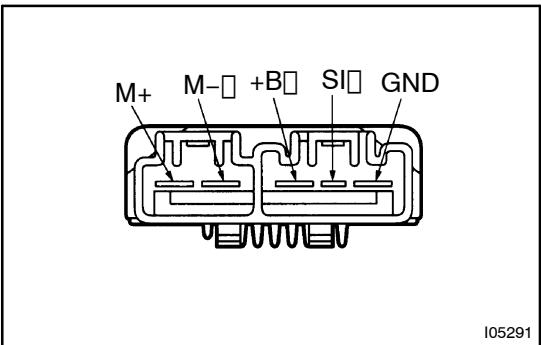
BLOWER MOTOR CONTROL RELAY INSPECTION

AC25T-01

1. REMOVE GLOVE COMPARTMENT DOOR
(See page BO-96)



2. REMOVE BLOWER MOTOR CONTROL RELAY
- (a) Disconnect the connectors.
 - (b) Remove the screw and blower motor control relay.



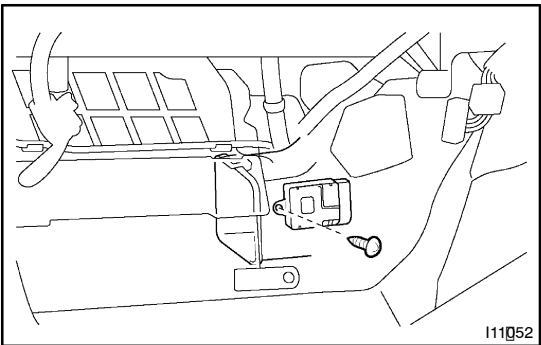
3. INSPECT BLOWER MOTOR CONTROL CIRCUIT
- Inspect the wire harness side connector from the back side, as shown in the chart.

Test conditions:

- Turn ignition switch to ON
- Operate blower motor (High blower speed)

Terminals	Standard Value
GND ↔ Body Ground	Continuity
+B ↔ Body Ground	Battery voltage
+M ↔ Body Ground	Battery voltage
M+ ↔ M-	Battery voltage
SI ↔ Body Ground	1 - 3 V

If resistance is not as specified, replace the blower motor control relay.

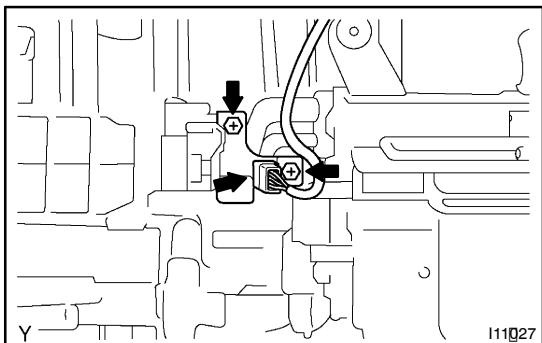


4. INSTALL BLOWER MOTOR CONTROL RELAY
- (a) Install the blower motor control relay with the screw.
 - (b) Connect the connectors.
5. INSTALL GLOVE COMPARTMENT DOOR
(See page BO-104)

AIR INLET SERVOMOTOR INSPECTION

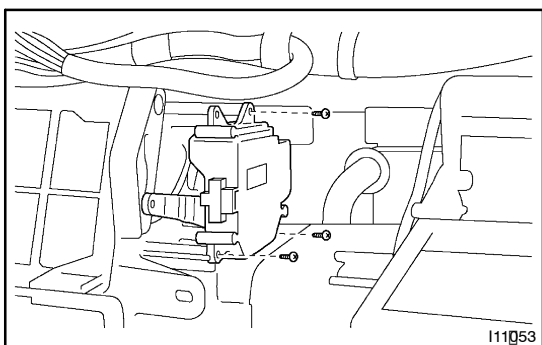
AC25U-01

1. REMOVE GLOVE COMPARTMENT DOOR
(See page BO-96)



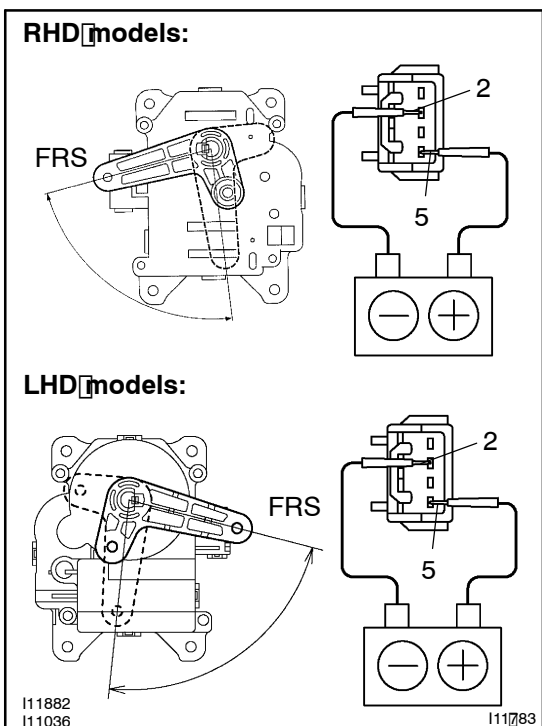
2. REMOVE BRACKET

- (a) Disconnect the wire harness clamp.
- (b) Remove the 2 bolts and bracket.



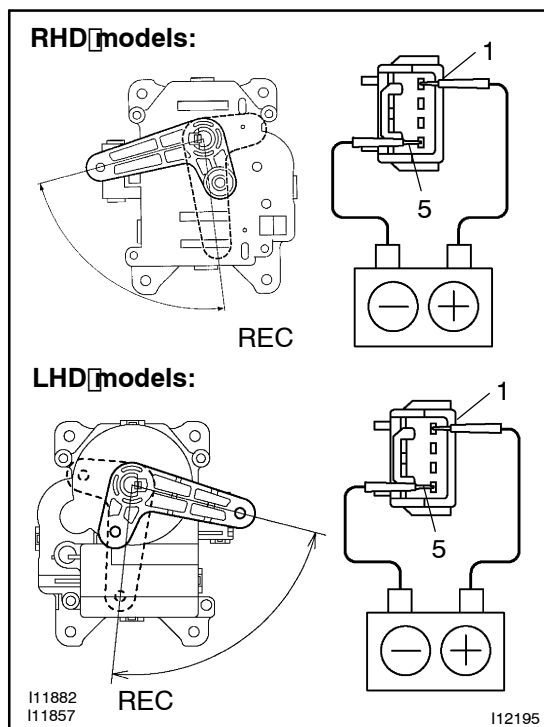
3. REMOVE AIR INLET SERVOMOTOR

- (a) Disconnect the connector.
- (b) Remove the 3 screws and servomotor.

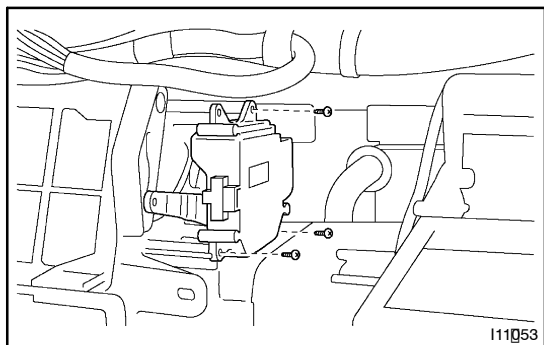


4. INSPECT AIR INLET SERVOMOTOR OPERATION

- (a) Connect the positive (+) lead from the battery to terminal 5 and negative (-) lead to terminal 2, then check that the arm turns to "FRESH" side smoothly.

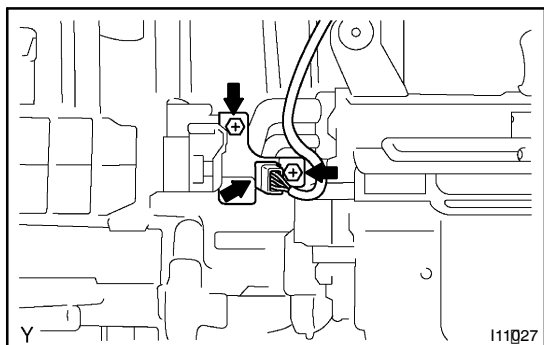


- (b) Connect the positive (+) lead from the battery to terminal 1 and negative (-) lead to terminal 5, then check that the arm turns to "RECIRC" side smoothly. If operations are not as specified, replace the servomotor.



5. INSTALL AIR INLET SERVOMOTOR

- (a) Install the servomotor with the 3 screws.
(b) Connect the connector.



6. INSTALL BRACKET

- (a) Install the bracket with 2 bolts.
(b) Connect the wire harness clamp.

7. INSTALL GLOVE COMPARTMENT DOOR (See page BO-104)

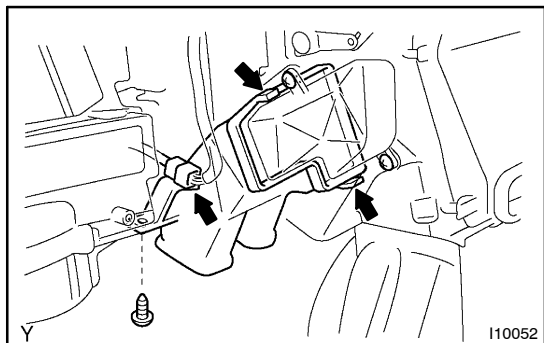
AIR MIX SERVOMOTOR INSPECTION

AC25V-01

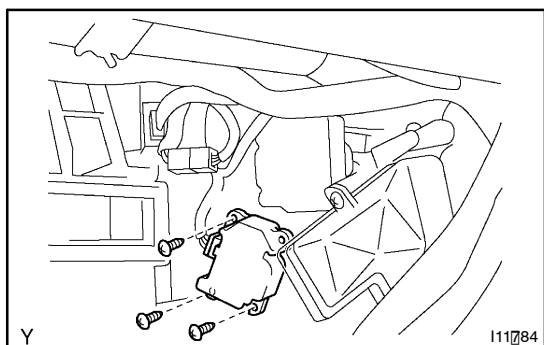
RHD models:

INSPECT AIR MIX SERVOMOTOR

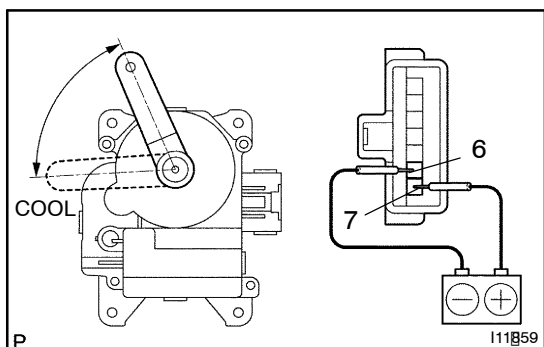
- (a) Remove the glove compartment door
(See [page BO-96](#)).



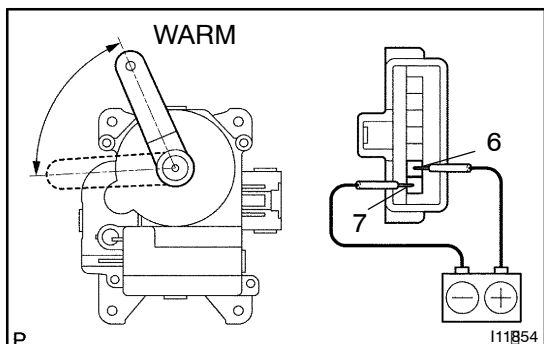
- (b) Remove the air duct (duct side).
(1) Disconnect the connector clamp.
(2) Remove the screw.
(3) Release the 2 claws and pull out the air duct.



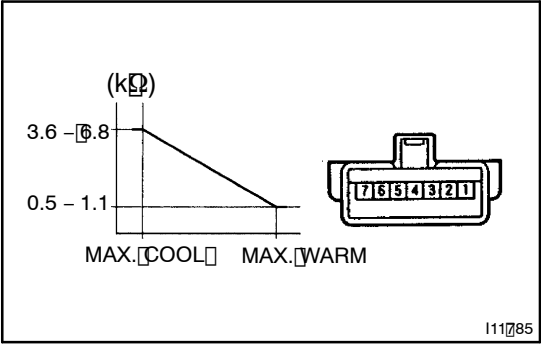
- (c) Remove the air mix servomotor.
(1) Disconnect the connector.
(2) Remove the 3 screws and servomotor.



- (d) Inspect the air mix servomotor operation.
(1) Connect the positive (+) lead from the battery to terminal 7 and negative (-) lead to terminal 6, then check that the arm turns to "COOL" side smoothly.



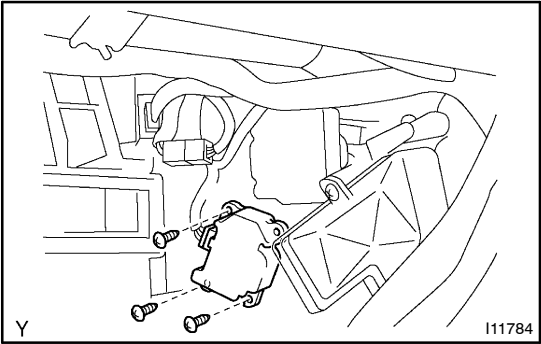
- (2) Connect the positive (+) lead from the battery to terminal 6 and negative (-) lead to terminal 7, then check that the arm turns to "WARM" side smoothly.
If operations are not as specified, replace the servomotor.



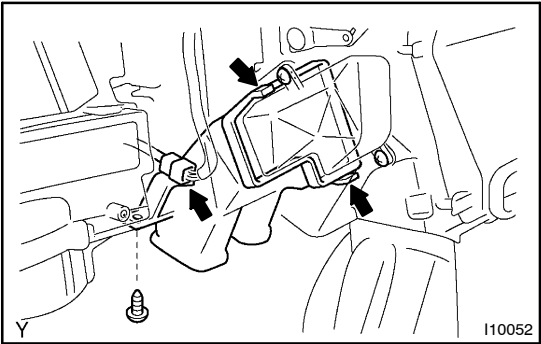
- (e) Inspect the position sensor resistance.
Measure resistance between terminals at servomotor arm each position as shown in the chart.

Tester	Condition	Specified condition
1 – 3	Constant	4.2 – 7.8 kΩ
1 – 5	Max. cool	3.6 – 6.8 kΩ
1 – 5	Max. warm	0.5 – 1.1 kΩ

If resistance is not as specified, replace the servomotor.



- (f) Install the air mix servomotor.
(1) Install the servomotor with the 3 screws.
(2) Connect the connector.



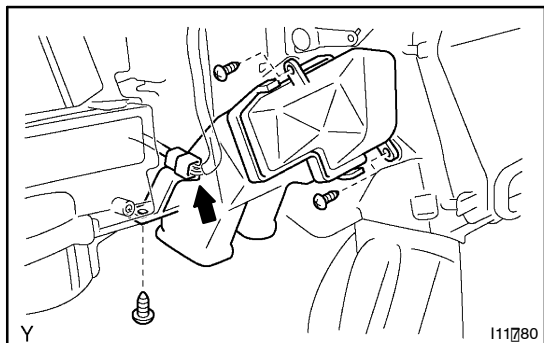
- (g) Install the air duct (duct side).
(1) Install the air duct and fit the 2 claws.
(2) Install the screw.
(3) Connect the connector clamp.

- (h) Install the glove compartment door (See page BO-104).

AIR OUTLET SERVOMOTOR INSPECTION

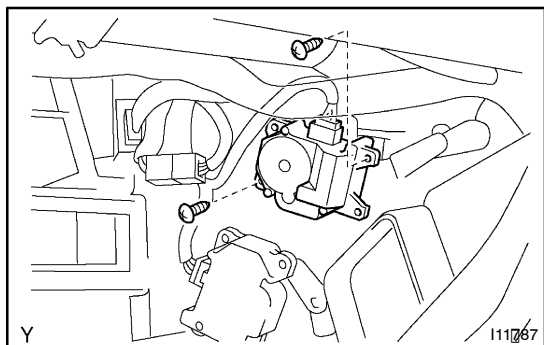
AC25W-01

1. REMOVE INSTRUMENT PANEL (See page BO-96)



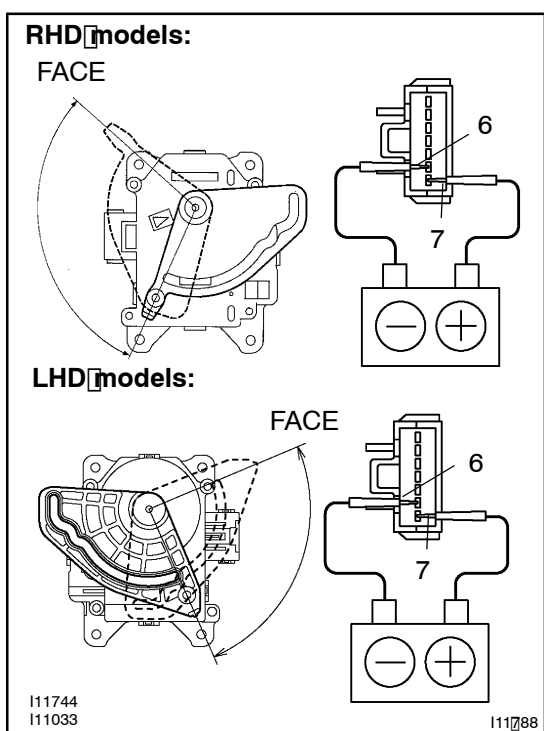
2. REMOVE AIR DUCT

- Disconnect the connector clamp.
- Remove the 3 screws and air duct.



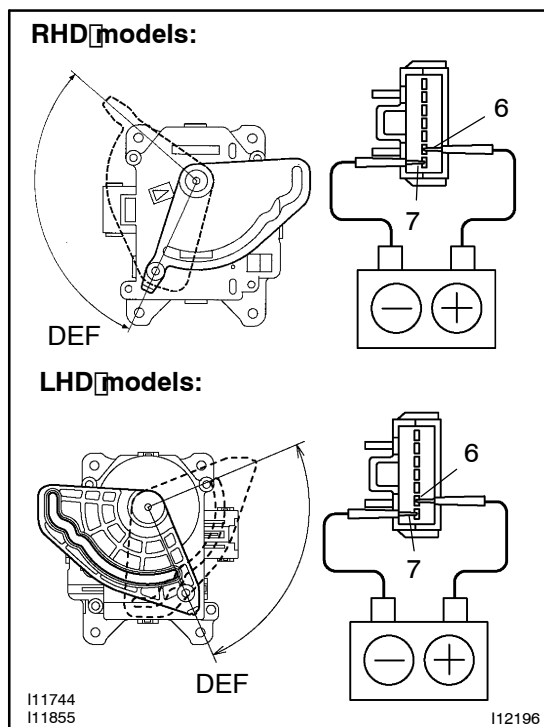
3. REMOVE AIR OUTLET SERVOMOTOR

- Disconnect the connector.
- Remove the 2 screws and servomotor.

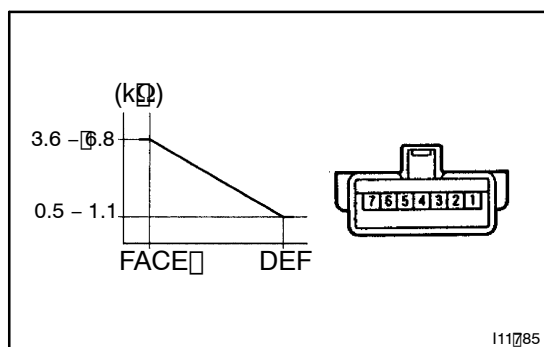


4. INSPECT AIR OUTLET SERVOMOTOR OPERATION

- Connect the positive (+) lead from the battery to terminal 7 and negative (-) lead to terminal 6, then check that the arm turns to "FACE" side smoothly.



- (b) Connect the positive (+) lead from the battery to terminal 6 and negative (-) lead to terminal 7, then check that the arm turns to "DEF" side smoothly. If operations are not as specified, replace the servomotor.

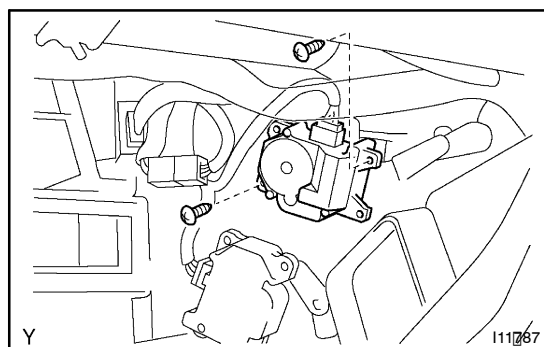


5. INSPECT POSITION SENSOR RESISTANCE

Measure resistance between terminals at servomotor arm each position as shown in the chart.

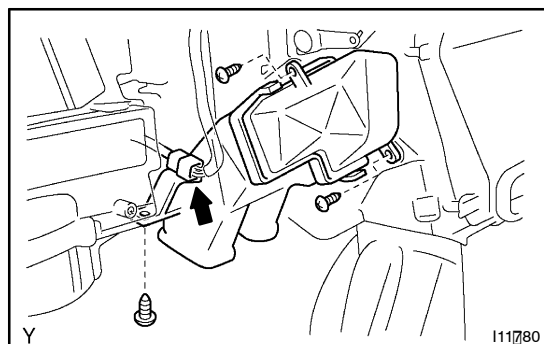
Tester connection	Condition	Specified condition
1 - 3	Constant	4.2 - 7.8 kΩ
3 - 5	FACE	3.6 - 6.8 kΩ
3 - 5	DEF	0.5 - 1.1 kΩ

If resistance is not as specified, replace the servomotor.



6. INSTALL AIR OUTLET SERVOMOTOR

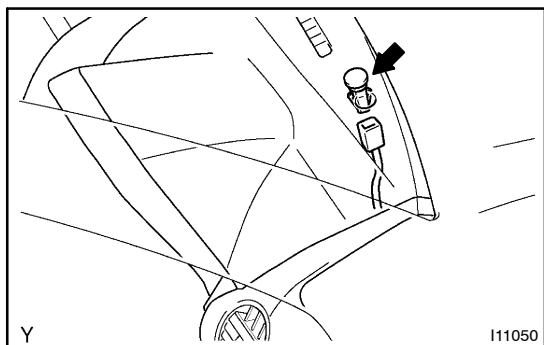
- (a) Install the servomotor with the 2 screws.
(b) Connect the connector.



7. INSTALL AIR DUCT

- (a) Install the air duct with the 3 screws.
(b) Connect the connector clamp.

8. INSTALL INSTRUMENT PANEL (See page BO-104)



SOLAR SENSOR INSPECTION

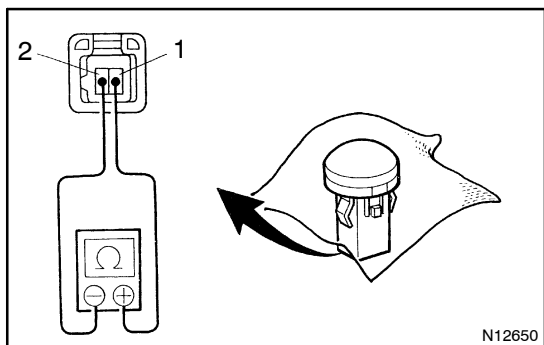
AC25X-01

1. REMOVE SOLAR SENSOR

Using a screwdriver, pull out the sensor, then disconnect the connector.

HINT:

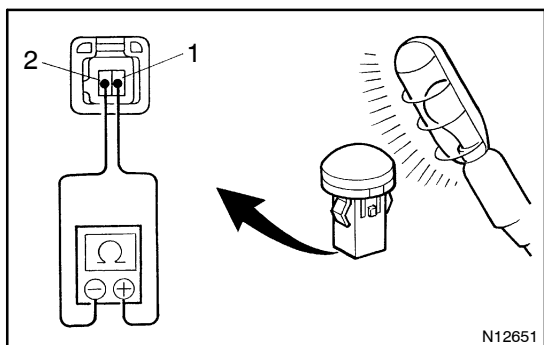
Tape the screwdriver tip before use.



2. INSPECT SOLAR SENSOR CONTINUITY

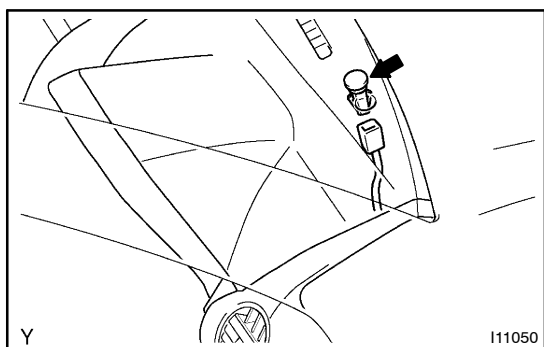
- (a) Cover the sensor with a cloth, check that the no continuity exists between terminals.

If continuity exists, replace the sensor.



- (b) Remove the cloth from the sensor and subject the sensor to electric light, check that continuity exists between terminals.

If no continuity exists, replace the sensor.



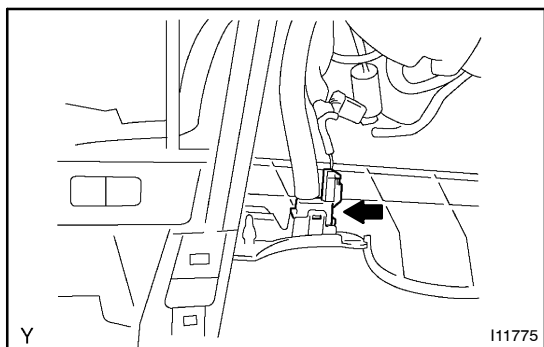
3. INSTALL SOLAR SENSOR

Connect the connector and install the solar sensor.

ROOM TEMPERATURE SENSOR INSPECTION

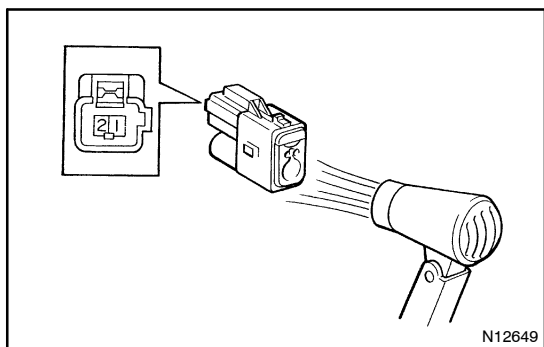
1. REMOVE LOWER FINISH PANEL

- Remove the 3 screws.
- Release the 3 claws and pull out the lower finish panel.



2. REMOVE ROOM TEMPERATURE SENSOR

- Disconnect the connector and aspirator hose.
- Release the 2 claws and pull out the sensor.

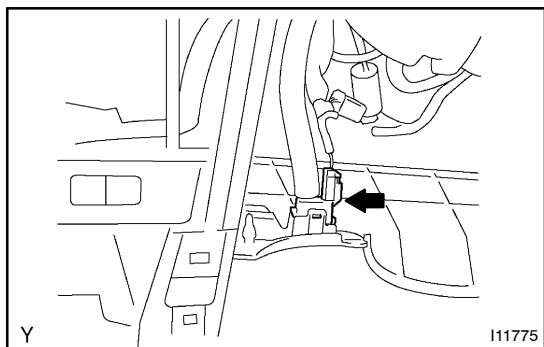


3. INSPECT ROOM TEMPERATURE SENSOR RESISTANCE

Measure resistance between terminals at each temperature as shown in the chart.

Temperature	Specified condition
25 °C (77 °F)	1.6 – 1.8 kΩ
50 °C (122 °F)	0.6 – 0.8 kΩ

If resistance is not as specified, replace the sensor.

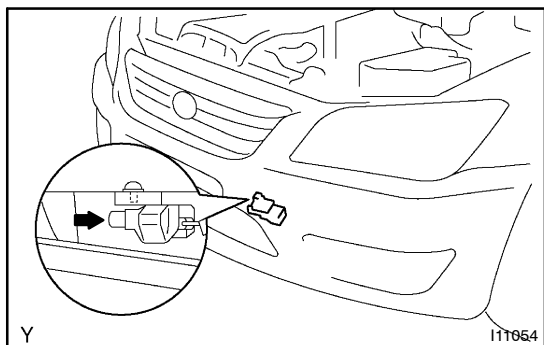


4. INSTALL ROOM TEMPERATURE SENSOR

- Install the sensor and fit the 2 claws.
- Connect the aspirator hose and connector.

5. INSTALL LOWER FINISH PANEL

- Install the lower finish panel and fit the 3 claws.
- Install the 3 screws.

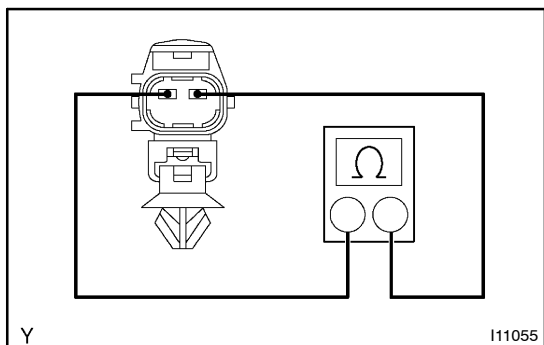


AMBIENT TEMPERATURE SENSOR INSPECTION

AC20R-02

1. REMOVE AMBIENT TEMPERATURE SENSOR

- Disconnect the connector.
- Using a clip remover, pull out the sensor from bumper reinforcement.

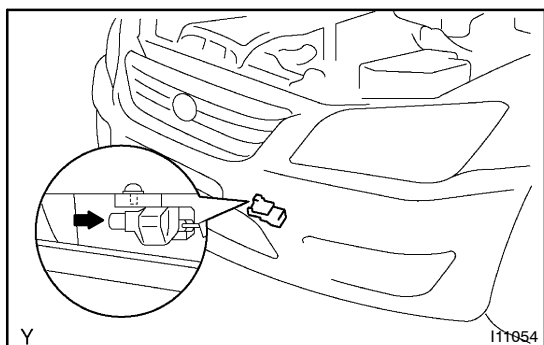


2. INSPECT AMBIENT TEMPERATURE SENSOR RESISTANCE

Measure resistance between terminals at each temperature as shown in the chart.

Temperature	Specified condition
25 °C (77 °F)	1.6 – 1.8 kΩ
50 °C (122 °F)	0.5 – 0.7 kΩ

If resistance is not as specified, replace the sensor.



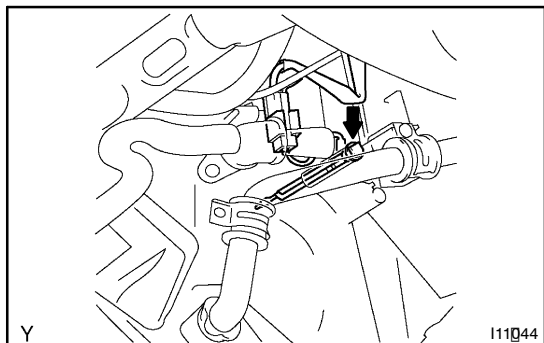
3. INSTALL AMBIENT TEMPERATURE SENSOR

- Push the sensor in bumper reinforcement.
- Connect the connector.

EVAPORATOR TEMPERATURE SENSOR INSPECTION

AC25Y-01

1. REMOVE LOWER FINISH PANEL (See page BO-96)

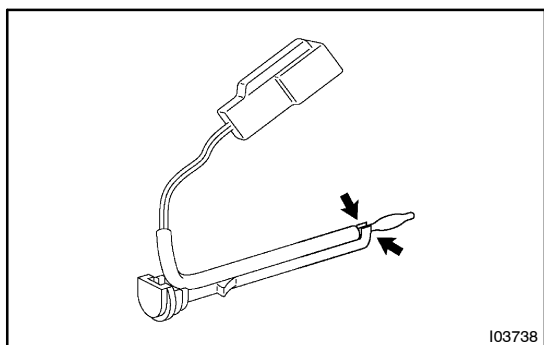


2. REMOVE EVAPORATOR TEMPERATURE SENSOR

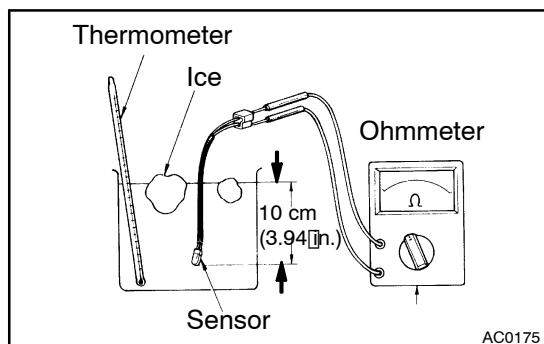
- Disconnect the connector.
- Using a screwdriver, pull out the sensor with bracket plate.

HINT:

Tape the screwdriver tip before use.

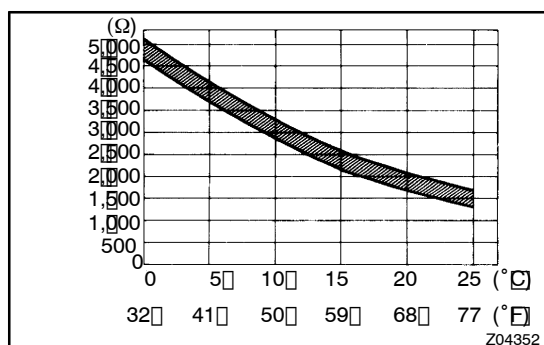


- Release the 2 claws and remove the sensor from bracket plate.

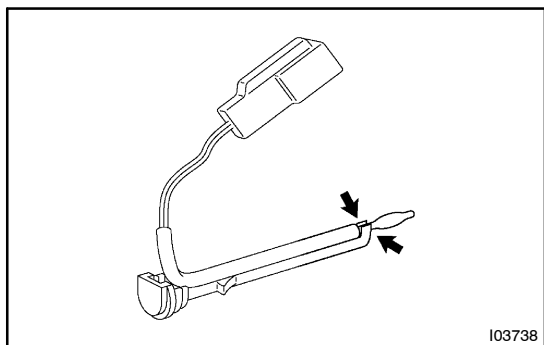


3. INSPECT EVAPORATOR TEMPERATURE SENSOR RESISTANCE

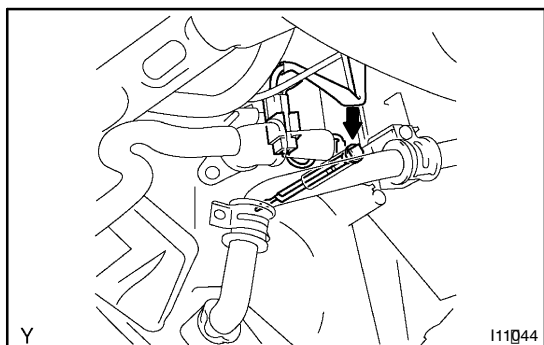
- Place the sensor in cold water, and while changing the temperature of the water, measure resistance at the connector and at the same time, measure temperature of the water with a thermometer.



- Compare the 2 readings on the chart. If resistance value is not as specified, replace the sensor.

**4. INSTALL EVAPORATOR TEMPERATURE SENSOR**

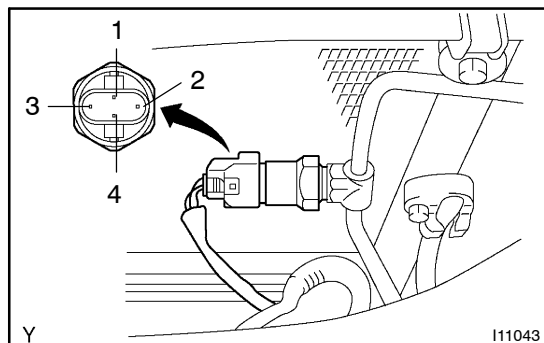
(a) Install the sensor in bracket plate and 2 claws.



(b) Push in the sensor with the bracket plate.

(c) Connect the connector.

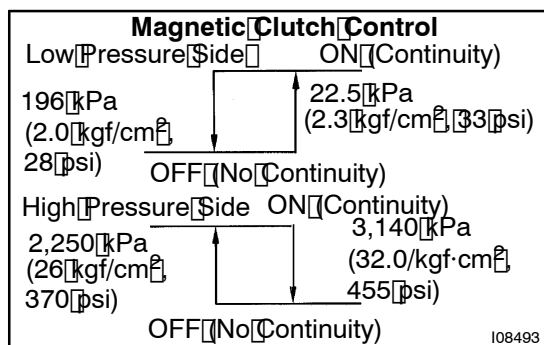
5. INSTALL LOWER FINISH PANEL (See page BO-104)



PRESSURE SWITCH ON-VEHICLE INSPECTION

AC16Z-02

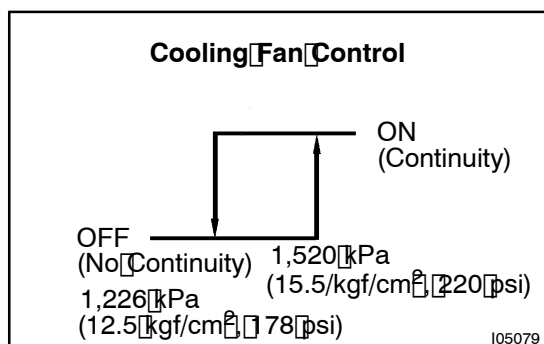
1. SET ON MANIFOLD GAUGE SET (See page AC-19)
2. DISCONNECT CONNECTOR FROM PRESSURE SWITCH
3. RUN ENGINE AT APPROX. 1,500 RPM



4. Magnetic clutch control: INSPECT PRESSURE SWITCH OPERATION

- (a) Connect the positive (+) lead from the ohmmeter to terminal 4 and the negative (-) lead to terminal 1.
- (b) Check continuity between terminals when refrigerant pressure is changed, as shown in the illustration.

If operation is not as specified, replace the pressure switch.



5. Cooling fan control: INSPECT PRESSURE SWITCH OPERATION

- (a) Connect the positive (+) lead from the ohmmeter to terminal 2 and the negative (-) lead to terminal 3.
- (b) Check continuity between terminals when refrigerant pressure is changed, as shown in the illustration.

If operation is not as specified, replace the pressure switch.

6. STOP ENGINE AND SET OFF MANIFOLD GAUGE SET
7. CONNECT CONNECTOR TO PRESSURE SWITCH

REMOVAL

1. DISCHARGE REFRIGERANT FROM REFRIGERATION SYSTEM

HINT:

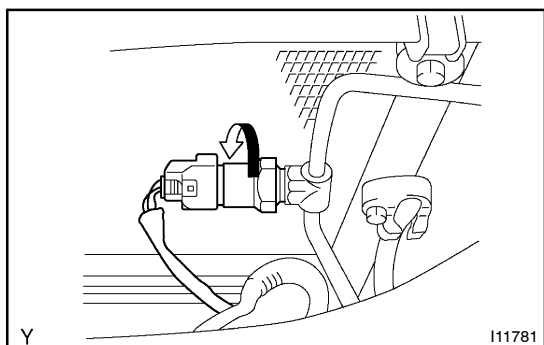
At the time of installation, please refer to the following item.

Evacuate air from refrigeration system.

Charge system with refrigerant and inspect for leakage of refrigerant.

Specified amount: 600 ± 50 g (21.16 ± 1.76 oz.)

2. REMOVE RADIATOR GRILLE (See page BO-4)



3. REMOVE PRESSURE SWITCH FROM LIQUID TUBE

Disconnect the connector and remove the pressure switch.

Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

HINT:

- Lock the switch mount on the tube with an open end wrench, being careful not to deform the tube, and remove the switch.
- At the time of installation, please refer to the following item.

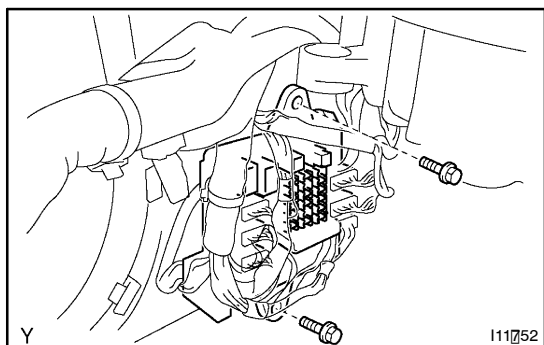
Lubricate a new O-ring with compressor oil and install the switch.

INSTALLATION

Installation is in the reverse order of removal (See [page AC-71](#)).

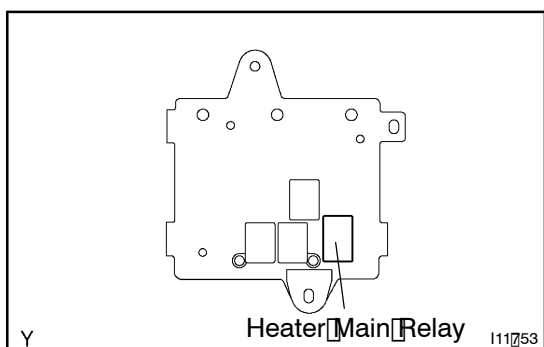
HEATER MAIN RELAY INSPECTION

1. REMOVE FRONT DOOR SCUFF PLATE LH
(See page BO-96)
2. REMOVE COWL SIDE TRIM BOARD LH
(See page BO-96)

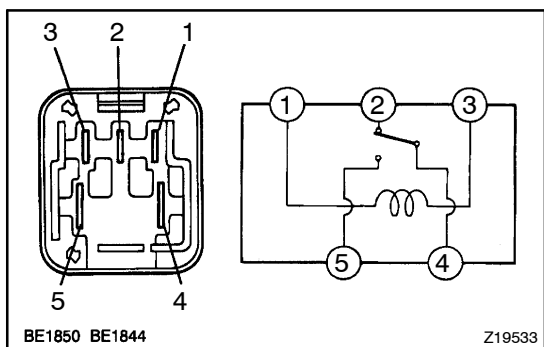


3. REMOVE HEATER MAIN RELAY

- (a) Disconnect the connectors.
- (b) Remove the 2 passenger side junction block set nuts.



- (c) Remove the heater main relay from passenger side junction block.



4. INSPECT HEATER MAIN RELAY CONTINUITY

Condition	Tester connection	Specified condition
Constant	2 - 4 1 - 3	Continuity
Apply B+ between terminals 1 and 3.	4 - 5	Continuity

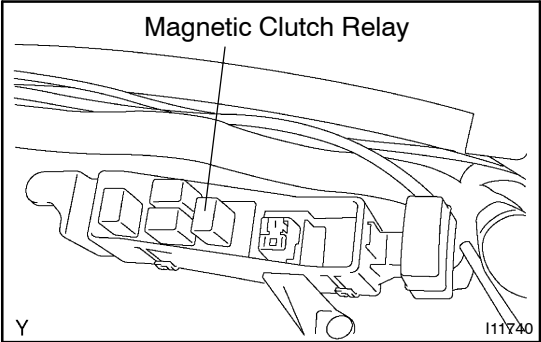
If continuity is not as specified, replace the relay.

5. INSTALL HEATER MAIN RELAY

- (a) Install the heater main relay to passenger side junction block.
- (b) Install the passenger side junction block set nuts.
- (c) Connect the connectors.

6. INSTALL COWL SIDE TRIM BOARD LH (See page BO-104)

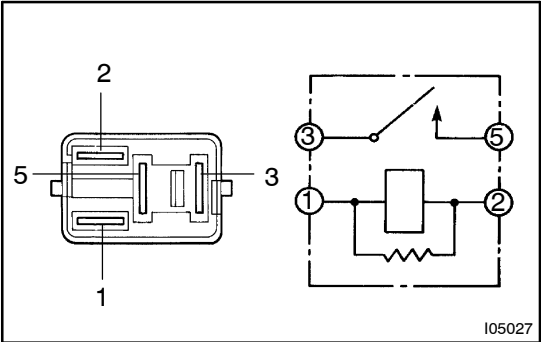
7. INSTALL FRONT DOOR SCUFF PLATE LH (See page BO-104)



MAGNETIC CLUTCH RELAY INSPECTION

AC20U-02

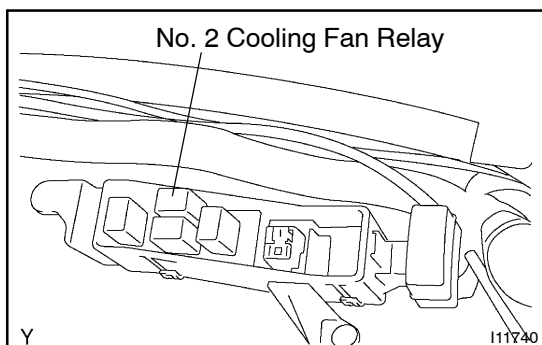
1. REMOVE MAGNETIC CLUTCH RELAY FROM RELAY BLOCK NO.3



2. INSPECT MAGNETIC CLUTCH RELAY (Marking: A.C COMP) CONTINUITY

Condition	Tester connection	Specified condition
Constant	1 – 2	Continuity
Apply B+ between terminals 1 and 2.	3 – 5	Continuity

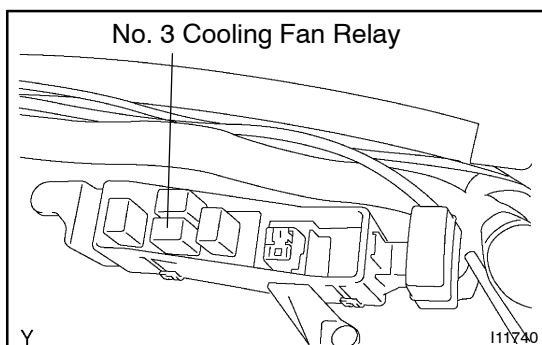
If continuity is not as specified, replace the relay.



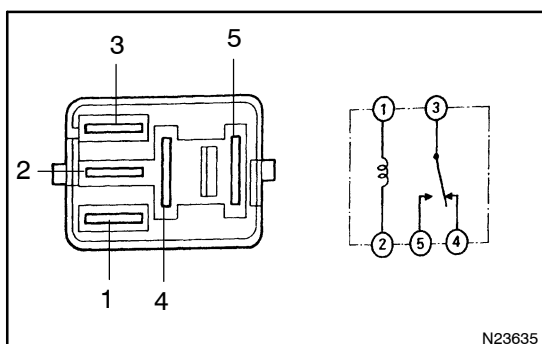
COOLING FAN RELAY INSPECTION

AC260-01

1. REMOVE NO.2 COOLING FAN RELAY FROM RELAY BLOCK NO.3



2. REMOVE NO.3 COOLING FAN RELAY FROM RELAY BLOCK NO.3



3. INSPECT NO.2 COOLING FAN RELAY
(Marking: FAN NO.2) CONTINUITY

Condition	Tester connection	Specified condition
Constant	1 – 2 3 – 4	Continuity
Apply B+ between terminals 1 and 2.	3 – 5	Continuity

If continuity is not as specified, replace the relay.

4. INSPECT NO.3 COOLING FAN RELAY
(Marking: FAN NO.3) CONTINUITY

Check the relay in the same way as for "MAGNETIC CLUTCH RELAY".

CONDENSER FAN ON-VEHICLE INSPECTION

AC173-02

1. INSPECT CONDENSER FAN OPERATION

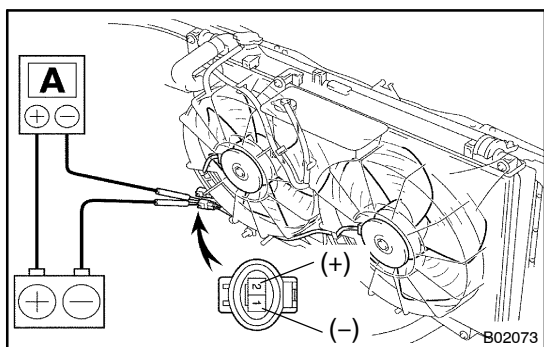
Inspect the fan operation, as shown in the chart below.

Test conditions:

- Ignition switch ON
- Blower speed control switch position "HI"
- Temperature control dial at "MAX. COOL" position
- Install manifold gauge set"
- A/C switch ON

Condition	Fan operation (Fan speed)
Engine coolant temperature 91°C (196 °F) or below	Rotate (Low speed)
Engine coolant temperature 100°C (212 °F) or above	Rotate (High speed)
Refrigerant pressure is less than 1,520 kPa (15.5 kgf-cm ² , 220 psi)	Rotate (Low speed)
Refrigerant pressure is 1,520 kPa (15.5 kgf-cm ² , 220 psi) or above	Rotate (High speed)

If operation is not as specified, proceed to the next inspection.



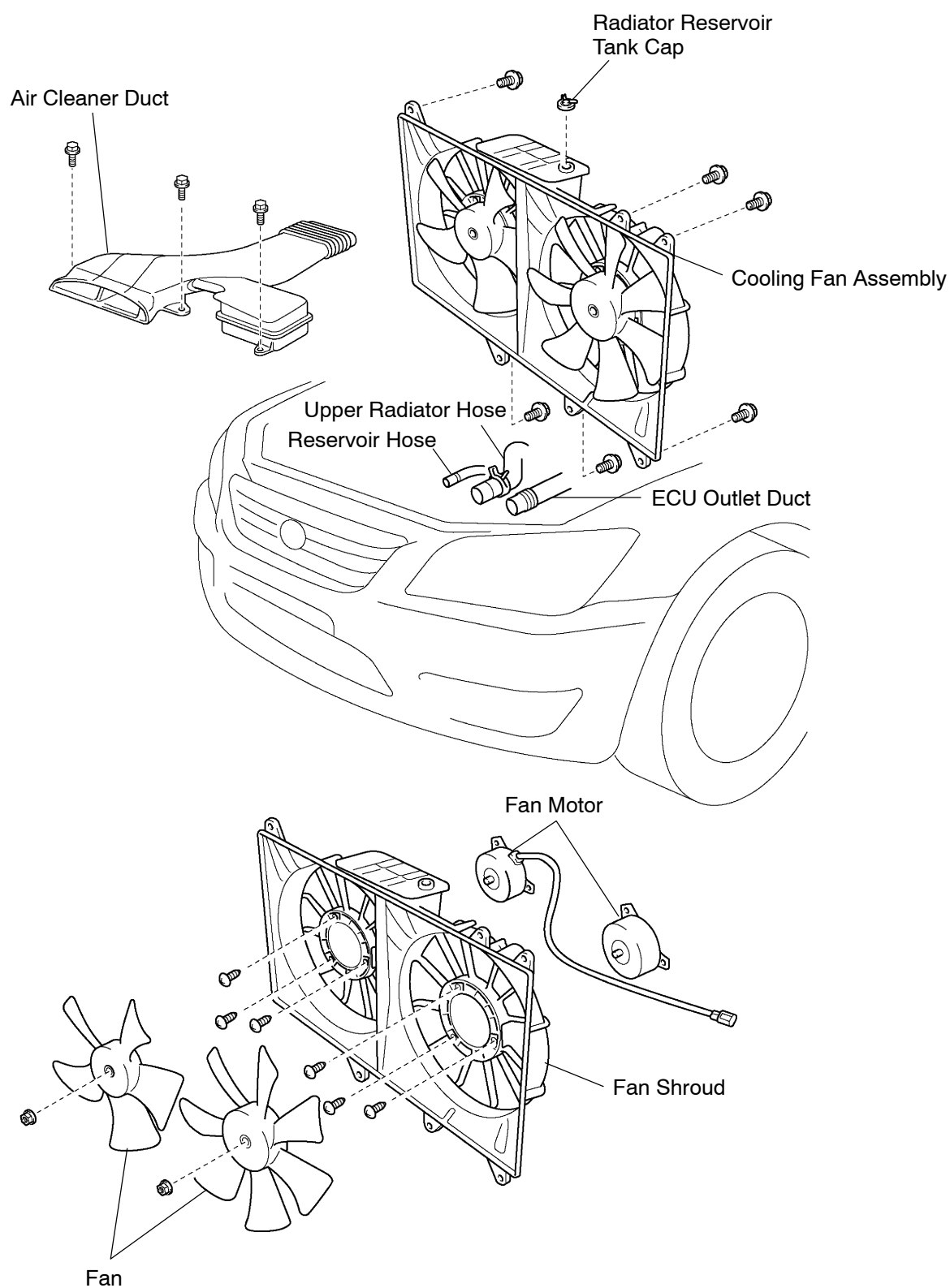
2. INSPECT CONDENSER FAN MOTOR OPERATION

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

Specified amperage: 8.5 – 11.5 A at 20 °C (68 °F)

- If operation is not as specified, replace the fan motor.
- If operation is as specified, check the pressure switch, cooling fan relays and engine coolant temp. switch.

COMPONENTS



Y

I11741

REMOVAL

1. DRAIN ENGINE COOLANT FROM RADIATOR

HINT:

It is not necessary to drain out all coolant.

2. REMOVE AIR CLEANER DUCT

Remove the 2 bolts and air cleaner duct.

3. REMOVE RADIATOR CAP

4. REMOVE RADIATOR RESERVOIR TANK CAP

5. DISCONNECT ECU OUTLET DUCT

6. DISCONNECT UPPER RADIATOR HOSE

7. DISCONNECT RESERVOIR HOSE

8. REMOVE COOLING FAN ASSEMBLY

- (a) Disconnect the connectors.
- (b) Remove the 6 bolts cooling fan assembly.

DISASSEMBLY

1. REMOVE COOLING FANS

Remove the 2 nuts and both fans.

2. REMOVE COOLING FAN MOTORS

- (a) Disconnect wire harness clamps.
- (b) Remove the 6 screws and both motors.

REASSEMBLY

Reassembly is in the reverse order of disassembly ([See page AC-79](#)).

INSTALLATION

Installation is in the reverse order of removal ([See page AC-78](#)).