

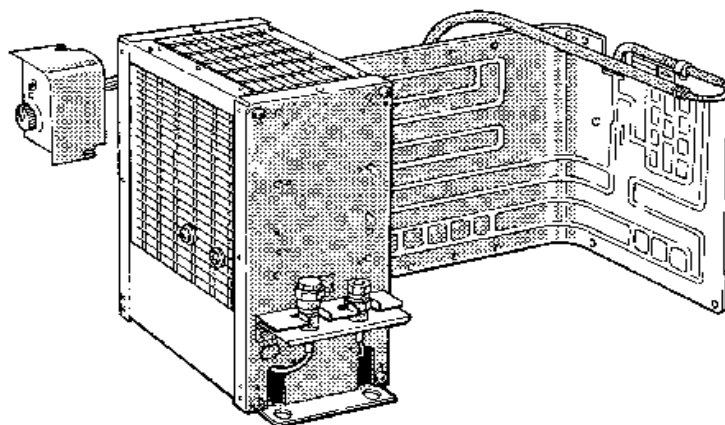


**MODEL**

**SCQT-6407**

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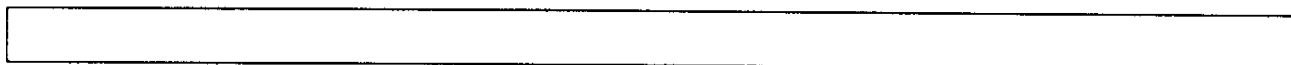
**SERVICE MANUAL  
&  
PARTS LIST**



**NORCOLD  
PO BOX 4248  
SIDNEY, OH 45365-4248**

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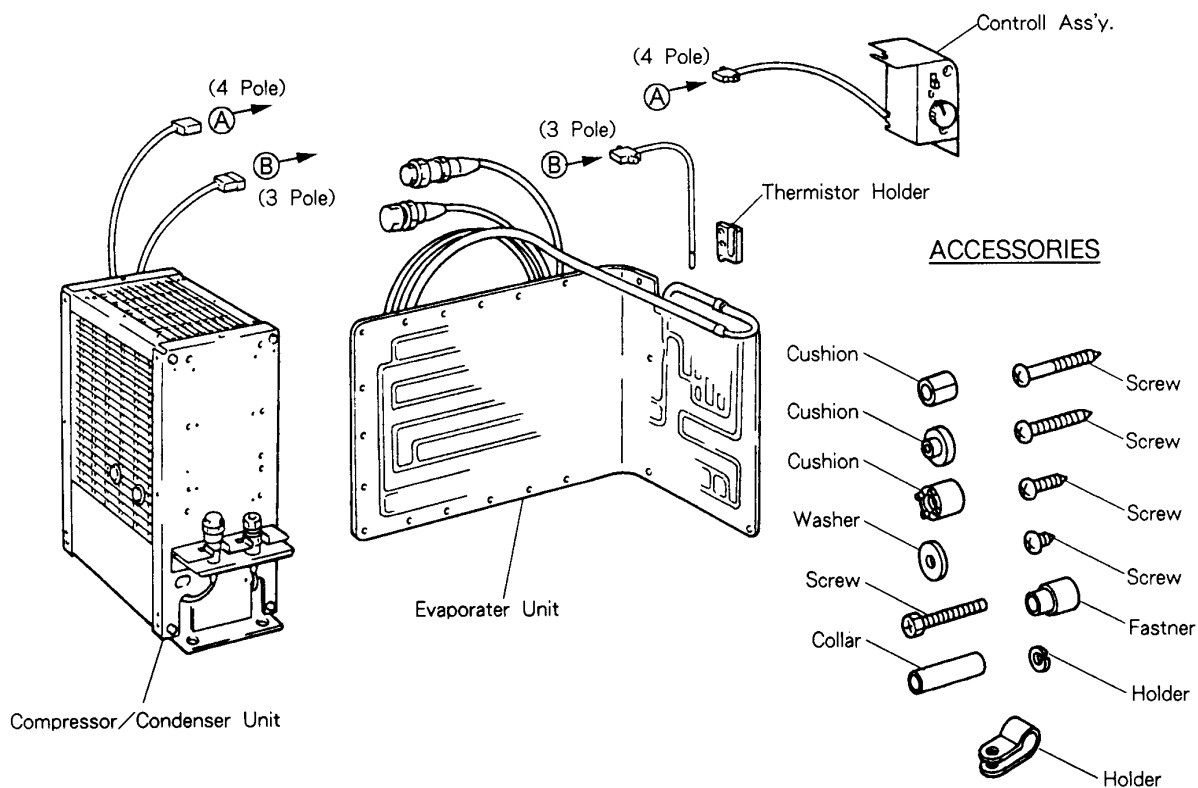


# SERVICE MANUAL

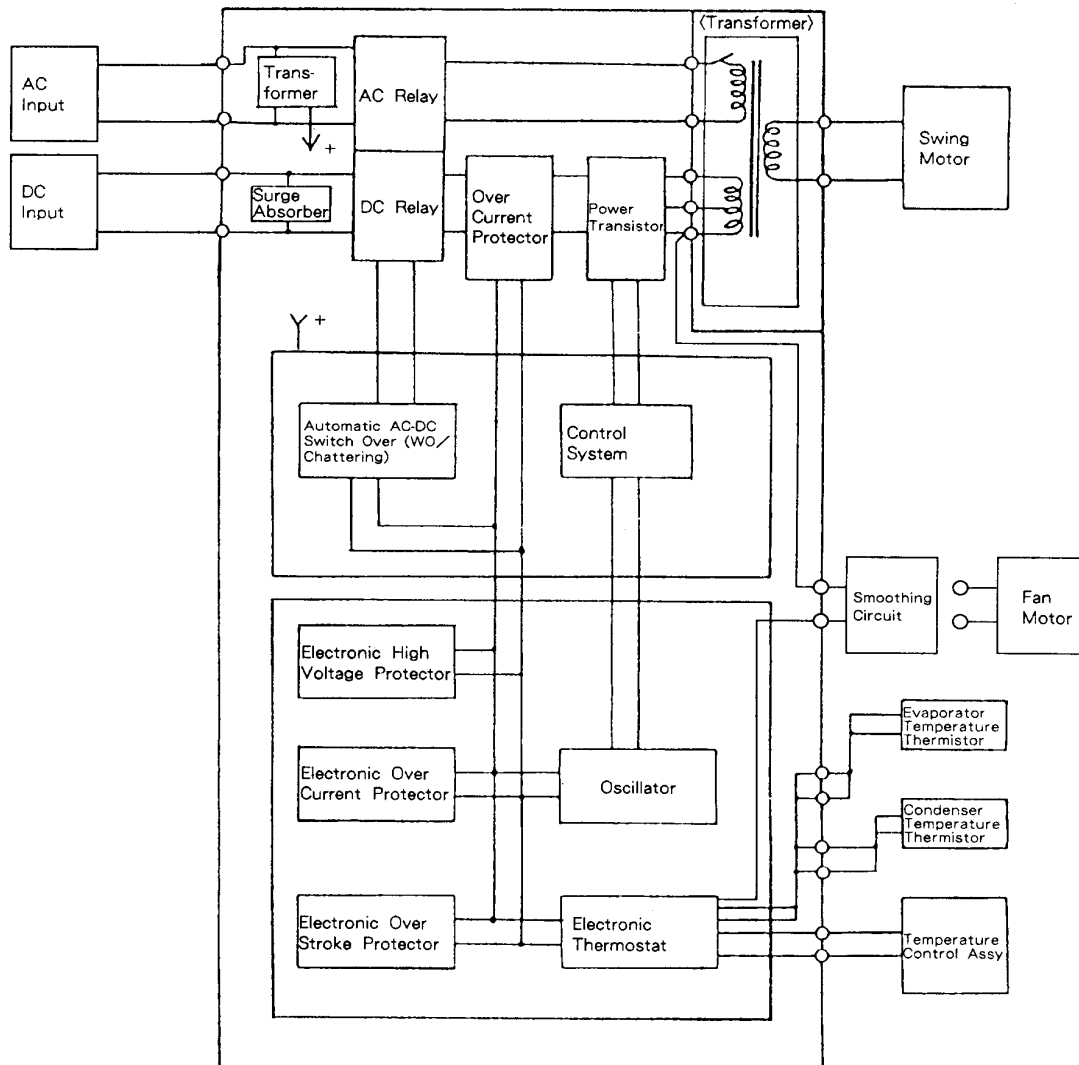
## 1 SPECIFICATIONS

| MODEL                                        | SCQT - 6407                      |
|----------------------------------------------|----------------------------------|
| ELECTRICAL RATING                            | AC 120V 0.4A 60Hz<br>DC 12V 3.7A |
| COMPRESSOR/CONDENSER                         |                                  |
| Exterior Dimensions (H × W × D) (in.)        | 12.4 × 9.1 × 6.0                 |
| Dimensions of Evaporator (L1 × L2 × H) (in.) | 16.0 × 8.5 × 10.6                |
| Length of Suction Tube (ft.)                 | 12                               |
| Length AC Cord (ft.)                         | 5                                |
| Length of DC Cord (in.)                      | 6.7 min.                         |
| Length of Thermostat Cord (ft.)              | 10.5                             |
| THERMOSTAT BOX                               |                                  |
| Exterior Dimensions (H × W × D) (in.)        | 3.3 × 2.0 × 1.6                  |
| ACCESSORIES                                  |                                  |
| Evaporator Standoff                          | 13 pieces                        |

## 2 DESIGNATION OF PARTS



### 3 BLOCK DIAGRAMS



### 4 FUNCTIONS OF PROTECTIVE DEVICES

(1) Electronic over current protector :

Protect oscillator from over current flow into swing motor and oscillator circuit by cutting off oscillator output voltage (Automatic return after 3~4seconds.)

(2) Electronic high voltage protector :

Protect swing motor from high input voltage into oscillator by decreasing output voltage of oscillator.

(3) Electronic over stroke protector :

Protect swing motor from over stroke operation in low ambient temperature by

controlling stroke of the piston.

(In case of operation at low ambient temperature, radiation of condenser is getting good and decreasing both of suction and delivery pressures→piston over stroking →valve beating→destroy swing motor).

(4) Evaporator temperature thermistor :

Detect evaporator temperature by thermistor instead of mechanical thermostat.

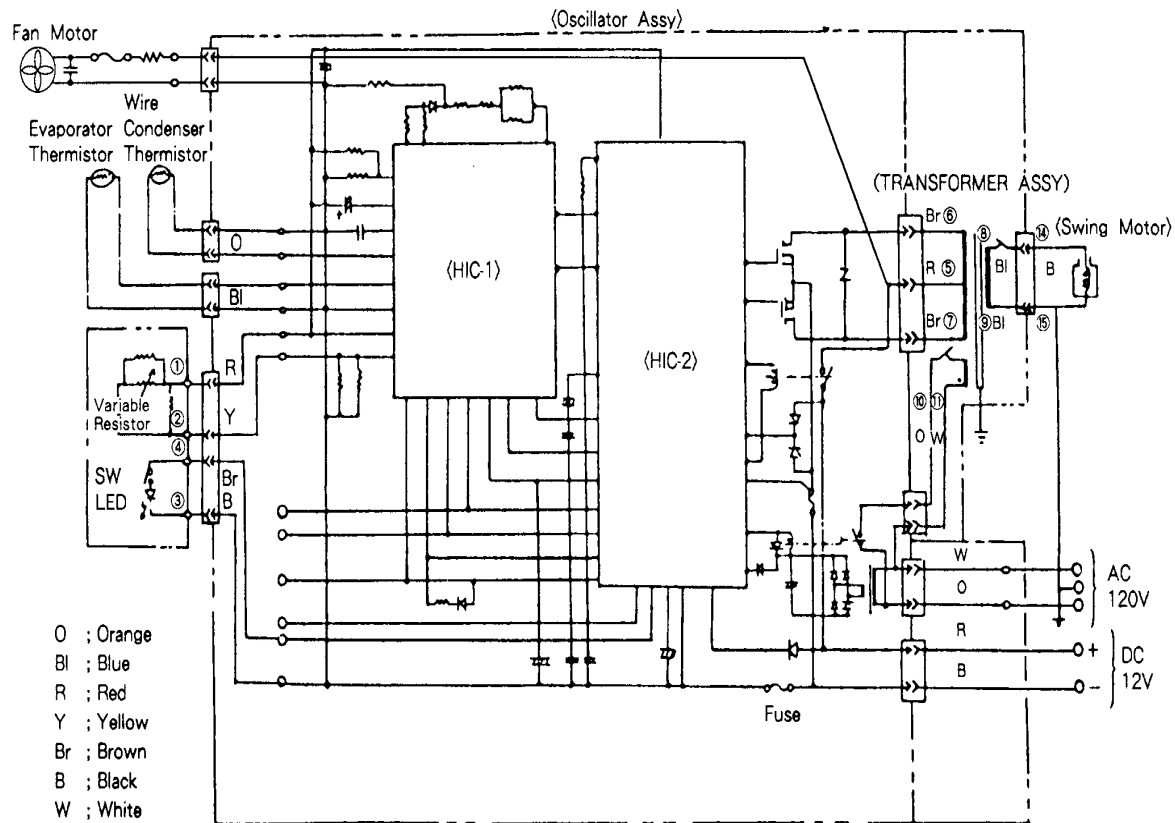
In case of DC operation, decide operation frequency of Swing Motor with wire condenser thermistor.

- (5) Wire condenser temperature thermistor :  
Detect wire condenser temperature by thermistor. When the thermistor temperature below 30°C, electronic over stroke protector will operate automatically.
- (6) Temperature control assy :  
Electronic temperature control by variable resistor is used instead of mechanical thermostat.
- (7) Surge absorber :  
Protect oscillator from surge voltage which might be occurred at the time of switch off relays of the vehicle.

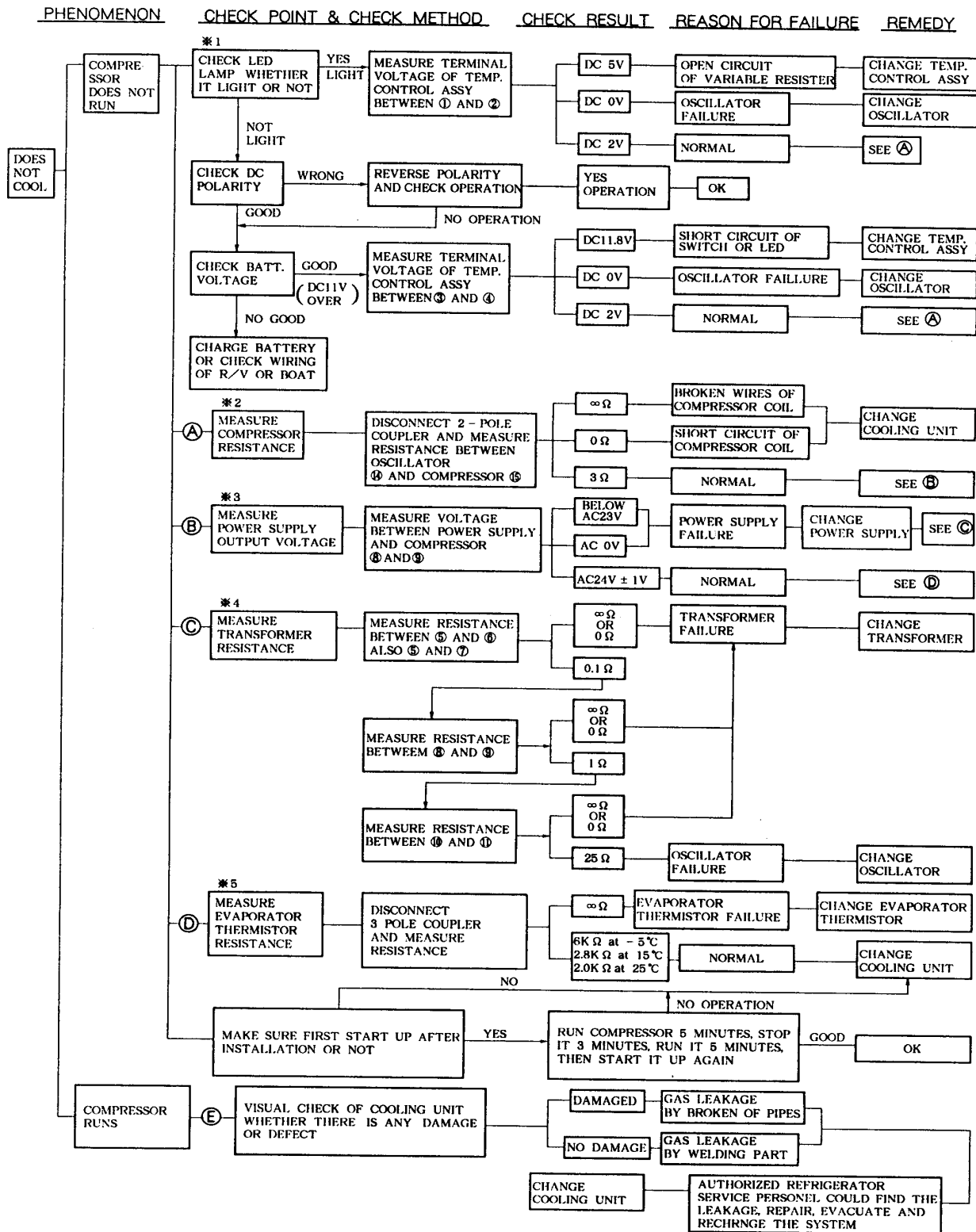
NOTE : Thermistor for evaporator temperature and wire condenser temperature :  
Thermistor is a kind of resister and its resistance value is decided by the temperature.

It has a characteristic that when thermistor temperature goes up , resistance value of the thermistor will small , and conversely thermistor temperature goes down, resistance value of the thermistor will be large.

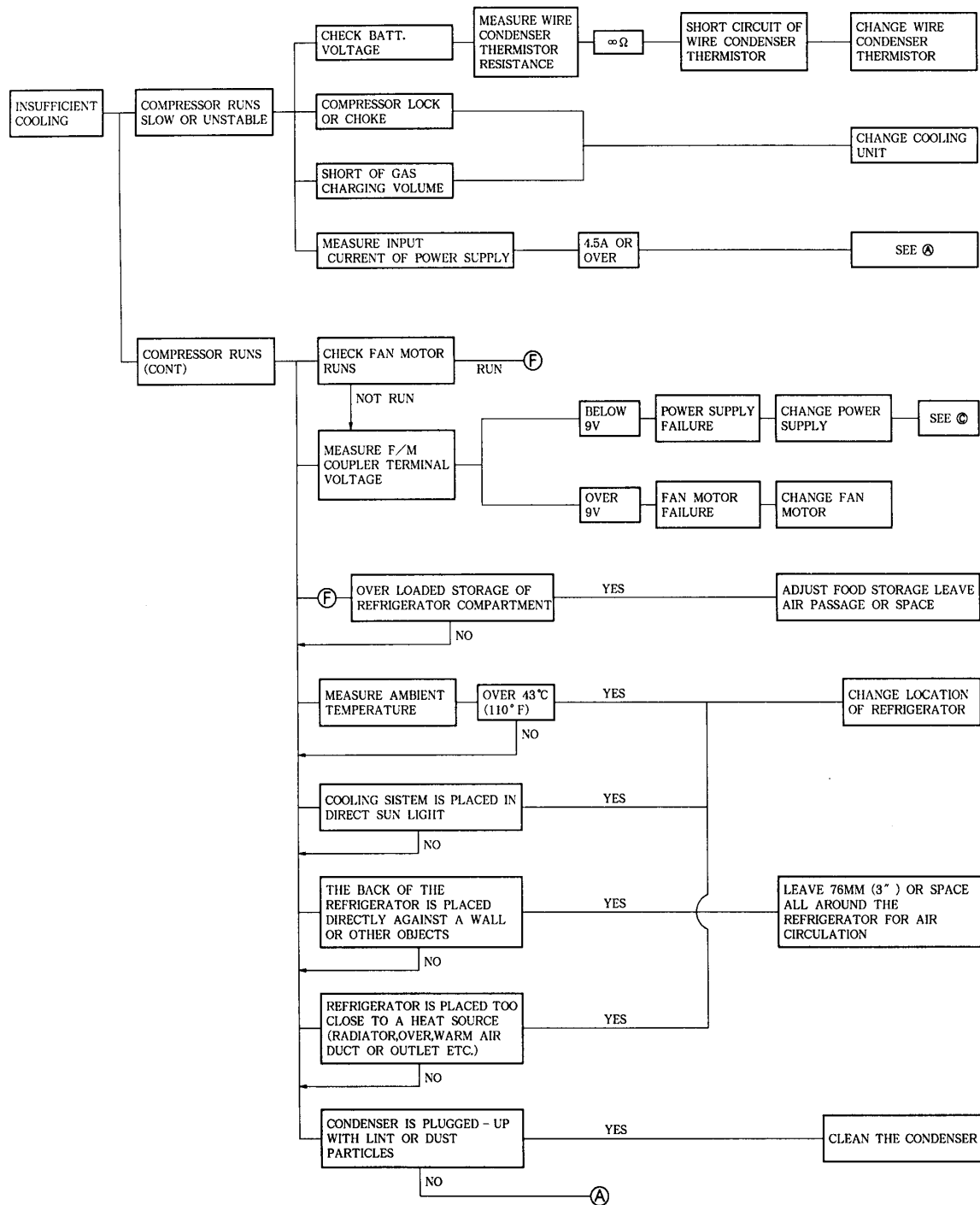
## 5 WIRING DIAGRAMS



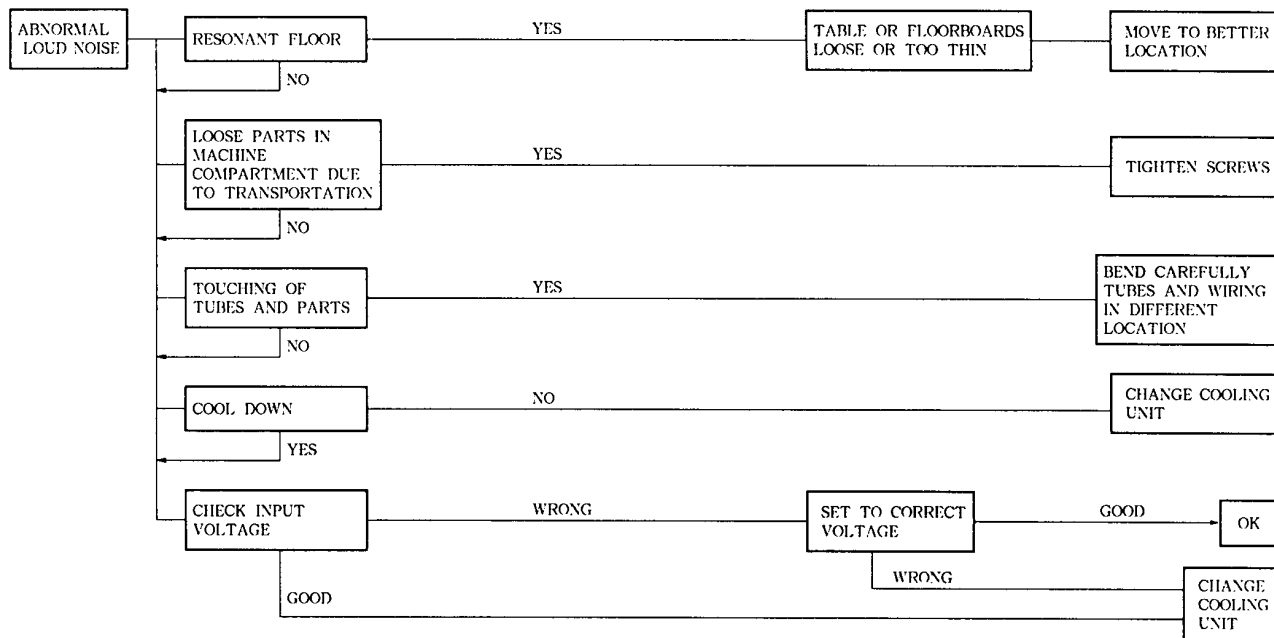
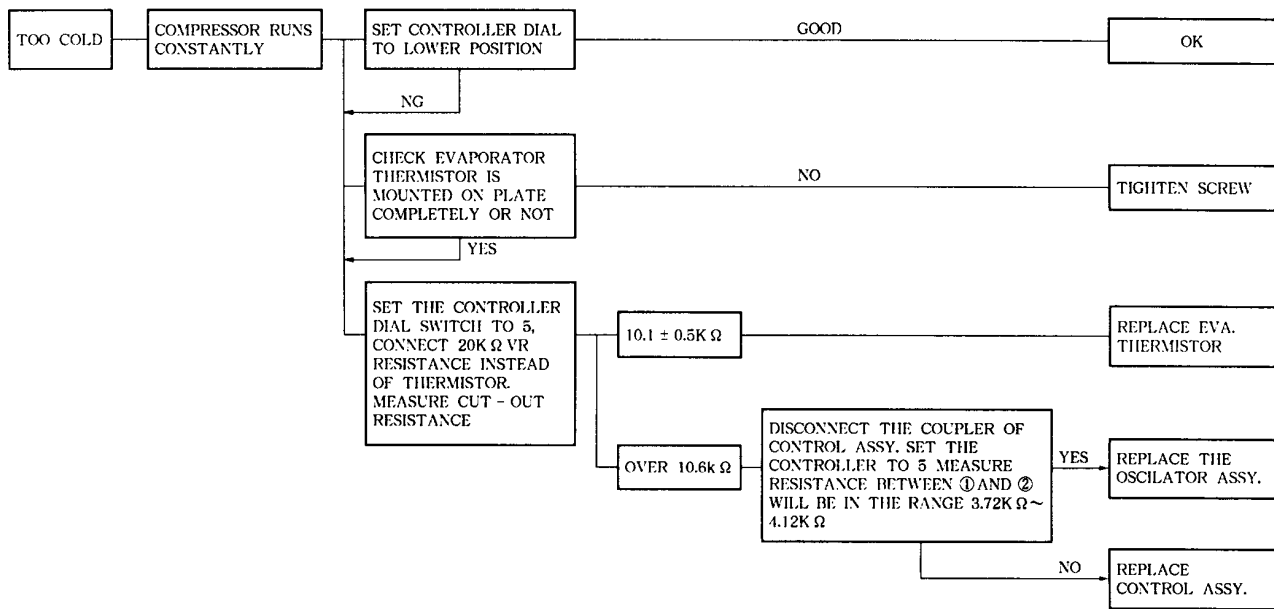
# 6 TROUBLE SHOOTING FOR SCQT-6407



PHENOMENON    CHECK POINT & CHECK METHOD    CHECK RESULT    REASON FOR FAILURE    REMEDY



| PHENOMENON | CHECK POINT & CHECK METHOD | CHECK RESULT | REASON FOR FAILURE | REMEDY |
|------------|----------------------------|--------------|--------------------|--------|
|------------|----------------------------|--------------|--------------------|--------|



# 7 SERVICING OF REFRIGERATION

## 7 – 1. HOW TO REPLACE COOLING UNIT, COMPRESSOR CONDENSER UNIT AND EVAPORATOR ASSY.

- 1) Pull out AC cord plug from the power source and disconnect DC cord from the battery. And disconnect 3-POLE coupler (white) and 4-POLE coupler (BLACK) from EVA. ASSY.
- 2) Disconnect couplers using by proper size wrenches (on coupling body hex and union nut). (See Fig. 1)

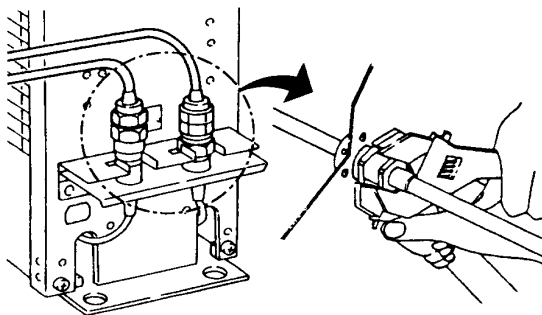


Fig. 1

- 3) Fit dust cap and plug on to the disconnected coupler.

### CAUTION A :

If you change compressor condenser unit or evaporator unit.  
Please change both of them, not apparently.

- 4) Remove the 8 screws securing S plate and condensing unit and evaporator assy. (See Fig. 2)

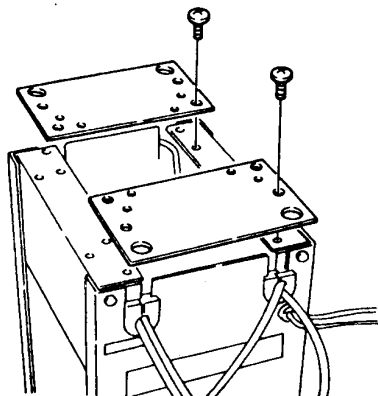


Fig. 2

- 5) Disconnect the fastener combining suction pipe. (See Fig. 3)

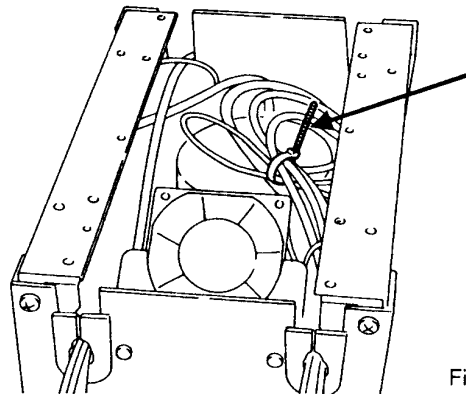


Fig. 3

- 6) Remove the screws, securing both sides of supports.  
Take off the supports. (See Fig. 4)

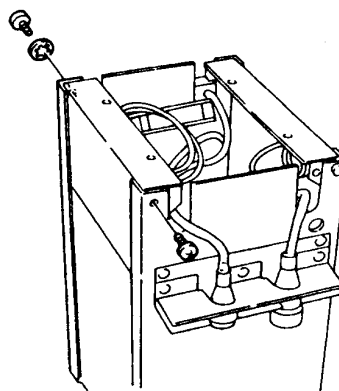


Fig. 4

# UNIT AND ELECTRICAL PARTS

- 7) Disconnect the white fastener fixing wire condenser thermistor. Disconnect thermistor from wire condenser. (See Fig. 5)

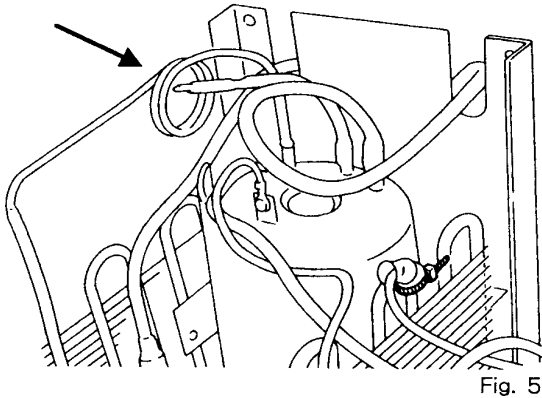


Fig. 5

- 8) Remove the rest of 3 screws on the plate. Take off the plate. (See Fig. 6)

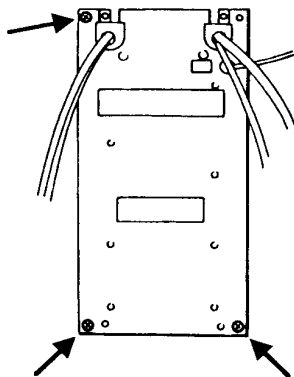


Fig. 6

- ¥ 9) Remove the screws fixing rest of 3 supports, Take off the rest of 3 supports. (See Fig. 7)

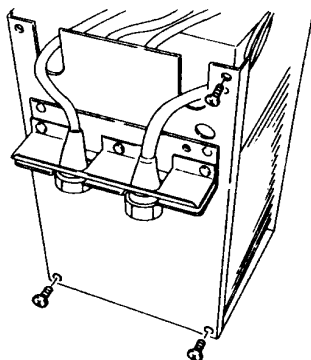


Fig. 7

- 10) Pull out the two motor cords (Blue) and grounding cord (green) from swing motor terminal. (See Fig. 8)

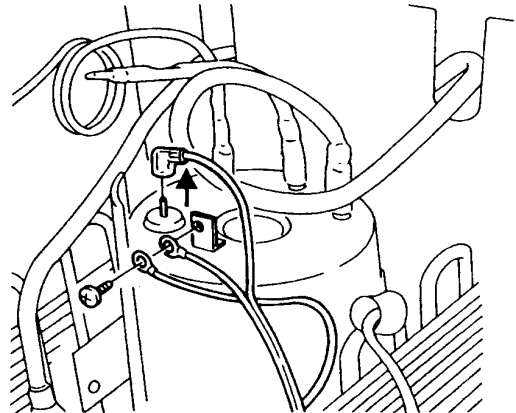


Fig. 8

- 11) Replace the compressor/condenser unit with new one and put back all the component parts, follow the reverse order of disassembly.

- 12) Remove all the screws securing the evaporator to the inside of the cabinet. (See Fig. 9)

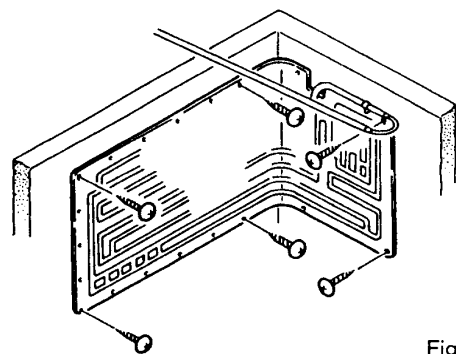


Fig. 9

- 13) Remove the screw securing evaporator thermistor.  
Take off evaporator thermistor.  
(See Fig. 10)

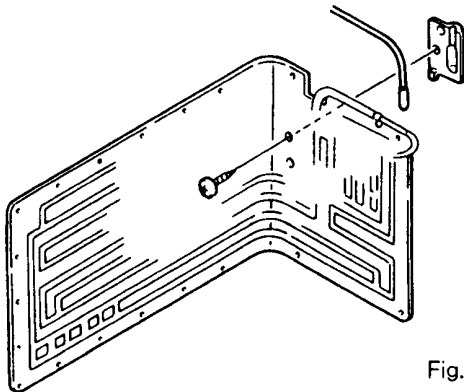
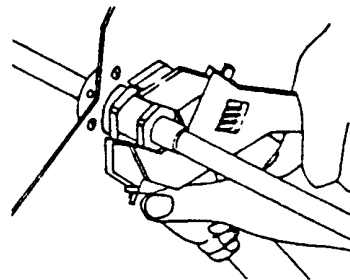


Fig. 10

- 14) Take off the evaporator from the cabinet.  
  
15) Replace the evaporator with new one, follow the reverse order of disassembly.

CAUTION B :  
CONNECTION OF THE COUPLINGS



- 1 : Remove dust caps and plugs if used, making sure that components synthetic seals are intact.
- 2 : Wipe off coupling seals and threaded surfaces with a clean cloth to prevent the inclusion of dirt or any foreign material in the system.
- 3 : LUBRICATE rubber seal in male half with refrigeration oil. Thread coupling halves together by hand to insure proper mating of threads.  
Use proper size wrenches (on coupling body hex and union nut) and tighten until coupling bodies "bottom" or definite resistance is felt.  
Using a marker or ink pen, mark a line lengthwise from the coupling hex to the bulkhead. Then tighten an additional  $1/6$  to  $1/4$  turn.  
The misalignment of the line will show the degree of tightening.  
This final turn is necessary to insure that the knife edge metal seal bites into the brass seat of the coupling halves, forming the leakproof joint. If torque wrench is used, the following torque values are recommended.

Coupling Size : No. 6  
Ft. Lbs : 18

## 7 – 2. HOW TO REPLACE POWER SUPPLY

- 1) Follow the order of them 1), 4), 5), 7), 8), of 7-1.
- 2) Pull out the grommet of the DC cords.
- 3) Pull out rubber bushings with cords in the U channel of the plate. Disconnect 2P coupler connecting with fan motor. (See Fig. 11)
- 4) Loosen 7 cap nuts with box driver or the like and remove them.
- 5) Remove black truss tapping screws fixing the power supply.
- 6) Cut down fasteners bundled the cords in the power supply case and remove 4 relaying couplers. (See Fig. 12)
- 7) Replace the power supply with new one, follow the reverse order of disassembly.

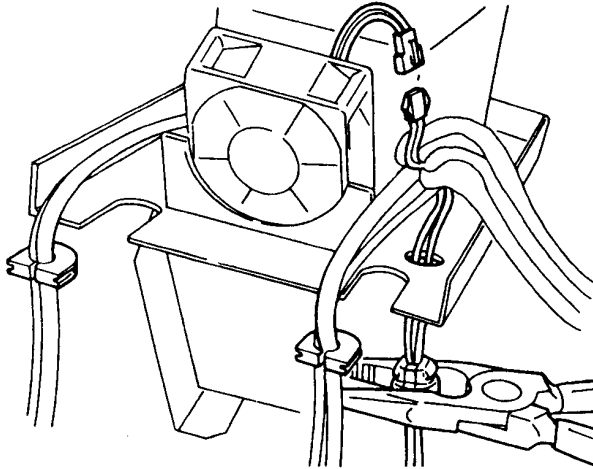


Fig. 11

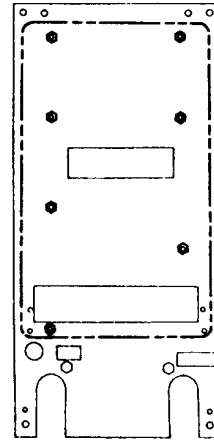
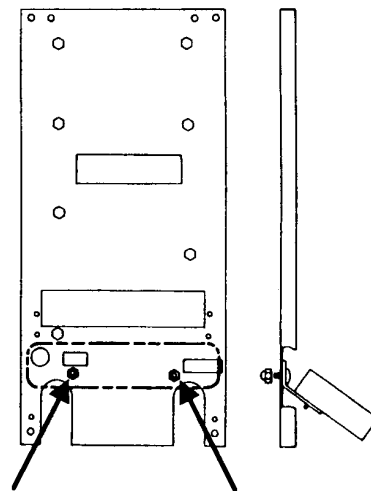


Fig. 12

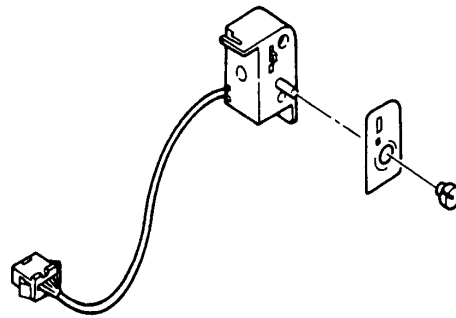
## 7 – 3. HOW TO REPLACE FAN MOTOR

- 1) Follow the order of item 7-1-1, 4).
- 2) Take off 2 cap nuts at lower part of plate of the power supply.
- 3) Take off quadrangle tapping screws (M5×10) at the plate of power supply side and remove the plate from power supply.
- 4) Raise cord clamps at the side of the power supply case and remove fan couplers.
- 5) Loose 2 truss screws (M4×8) and separate the fan-mounting support from the plate.
- 6) Looser 2 screws fixing fan and support for mounting and take off fan motor.

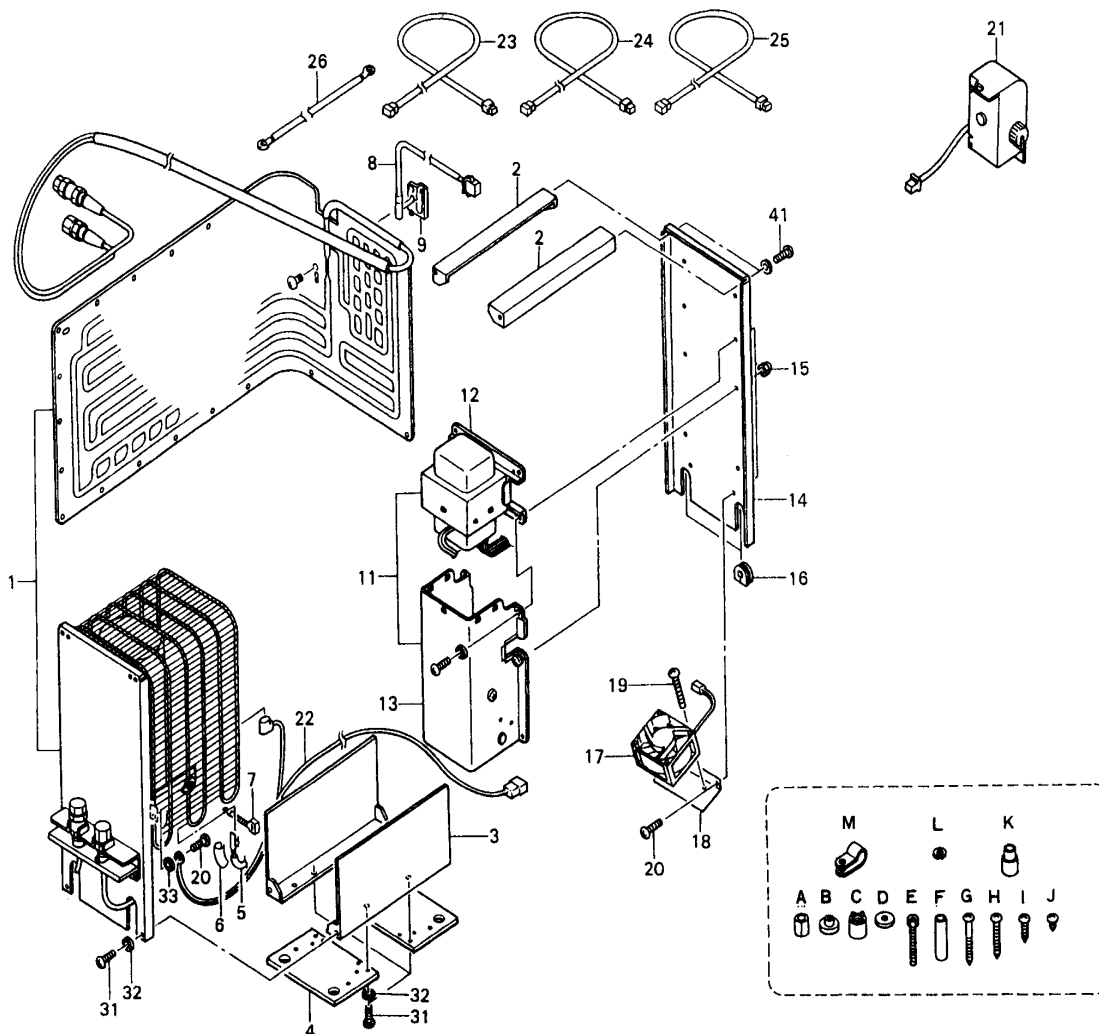


## 7-4. HOW TO REPLACE TEMPERATURE CONTROL ASSY.

- 1) Disconnect 4 poles coupler with extension cords and take out temperature control assy.
- 2) Replace the old temperature control assy. with a new one, following with the order of disassembly.



## 8 PARTS LIST



| Illustration No. | Parts Number  | Description                 | Quantity per one set |
|------------------|---------------|-----------------------------|----------------------|
| 1                | 1610 064 01X0 | Cooling Unit                | 1                    |
| 2                | 3222 235 30X0 | Support                     | 2                    |
| 3                | 3222 235 40X0 | Support                     | 2                    |
| 4                | 3022 085 20X0 | S Plate                     | 2                    |
| 5                | 6055 033 01X0 | Wire-Condenser              | 1                    |
| 6                | 4101 102 00X0 | Cap                         | 1                    |
| 7                | 6451 059 00X0 | Fastner                     | 1                    |
| 8                | 6055 032 02X0 | Thermister Evap.            | 1                    |
| 9                | 4223 050 00X0 | Holder                      | 1                    |
| 11               | 1601 100 00X0 | Power Supply                | 1                    |
| 12               | 1960 131 00X0 | Trans Assy.                 | 1                    |
| 13               | 1630 089 00X9 | Oscillator assy with carton | 1                    |
|                  | 1630 089 00X0 | Oscillator assy.            | 1                    |
|                  | 4302 111 00X0 | I Plate                     | 1                    |
|                  | 3221 191 00X0 | Cover                       | 1                    |
|                  | 6016 000 10X0 | Grommet                     | 1                    |
|                  | 1912 034 10X0 | Cord Assy.                  | 1                    |
|                  | 6451 000 10X0 | Fastner                     | 1                    |
|                  | 6010 340 30X0 | Coupler                     | 1                    |
|                  | 6010 333 00X0 | Coupler                     | 1                    |
|                  | 4160 188 00X0 | Grommet                     | 1                    |
| 14               | 3223 330 40X0 | Plate                       | 1                    |
| 15               | 5020 079 00X0 | Caped Nut                   | 9                    |
| 16               | 4160 098 00X0 | Cushion                     | 2                    |
| 17               | 1609 170 20X0 | Fan Assy.                   | 1                    |
| 18               | 3221 340 00X0 | Holder Fan                  | 1                    |
| 19               | 8084 043 3010 | Tapping Screw               | 2                    |
| 20               | 8083 043 0830 | Tapping Screw               | 9                    |
| 21               | 1601 072 00X9 | Control Assy with carton    | 1                    |
| 22               | 1902 286 00X0 | Coupler Assy.               | 1                    |
| 23               | 1912 247 20X0 | Cord Assy.                  | 1                    |
| 24               | 1912 248 00X0 | Cord Assy.                  | 1                    |
| 25               | 1912 248 20X0 | Cord Assy.                  | 1                    |
| 26               | 1921 166 05X0 | Cord with Terminal          | 1                    |
| 31               | 8080 053 1030 | Tapping Screw               | 16                   |
| 32               | 8340 050 0010 | Teethlock Washer            | 7                    |
| 33               | 8340 040 0010 | Teethlock Washer            | 3                    |
| Accompany Parts  |               |                             |                      |
| A                | 4120 007 00X0 | Cushion                     | 4                    |
| B                | 4120 105 00X0 | Cushion                     | 4                    |
| C                | 4120 104 02X0 | Cushion                     | 4                    |
| D                | 5030 055 00X0 | Washer                      | 4                    |
| E                | 5010 318 00X0 | Bolt                        | 4                    |
| F                | 2400 135 20X0 | Collar                      | 4                    |
| G                | 5008 022 00X0 | Tapping Screw               | 6                    |
| H                | 8080 041 2520 | Tapping Screw               | 6                    |
| I                | 8080 044 1620 | Tapping Screw               | 6                    |
| J                | 8080 044 0810 | Tapping Screw               | 6                    |
| K                | 6451 057 00X0 | Fastener                    | 6                    |
| L                | 8320 052 0010 | Spring Washer               | 4                    |
| M                | 6451 032 10X0 | Holder                      | 6                    |

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