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LG

LG Room Air Conditioner

SERVICE MANUAL

***MODEL: HBLG8004R, HBLG8004RA4, HBLG8004RB4,
HBLG1004R, CL8000ER, M8004R, M8004RY4,
M1004R, L8004R, L8004RY4, L1004R***

CAUTION

- BEFORE SERVICING THE UNIT, READ THE SAFETY PRECAUTIONS IN THIS MANUAL.
- ONLY FOR AUTHORIZED SERVICE PERSONNEL.

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Safety Precautions



To prevent injury to the user or other people and property damage, the following instructions must be followed.

- Incorrect operation due to ignoring instruction will cause harm or damage. The seriousness is classified by the following indications.

⚠ WARNING This symbol indicates the possibility of death or serious injury.

⚠ CAUTION This symbol indicates the possibility of injury or damage to property only.

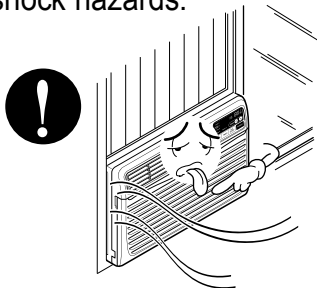
- Meanings of symbols used in this manual are as shown below.

| | |
|---|---|
|  | Be sure not to do. |
|  | Be sure to follow the instruction. |

⚠ WARNING

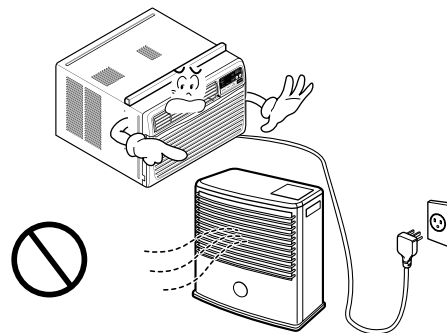
Always install the expansion panel(s).

- Improper assembly or installation may cause incorrect operation, including injury, fire, and electric shock hazards.



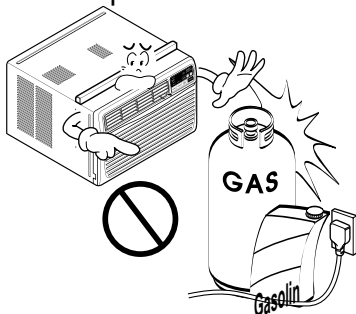
Do not place the power cord near a heater.

- It may cause fire and electric shock.



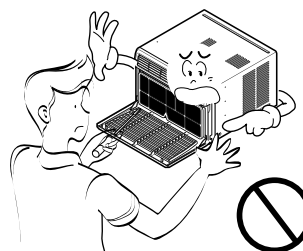
Do not use the power cord near flammable gas or combustibles such as gasoline, benzene, thinner, etc.

- It may cause explosion or fire.



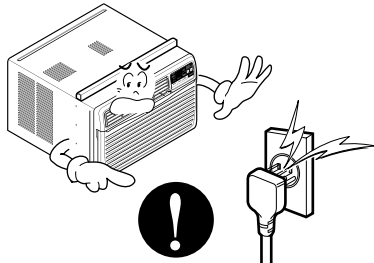
Do not disassemble or modify products.

- It may cause electric shock and failure.



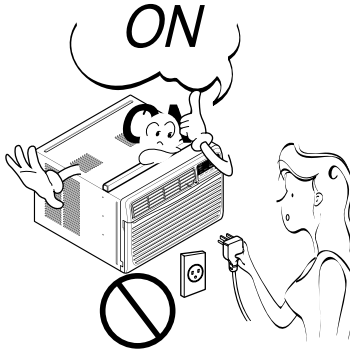
Plug in the power plug properly.

- Otherwise, it will cause electric shock or fire.



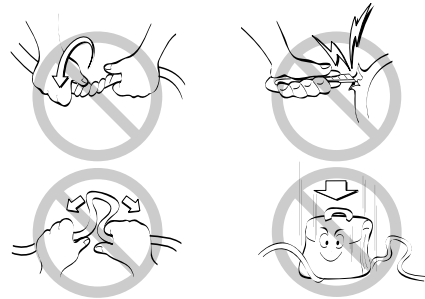
Do not operate or stop the unit by inserting or pulling out the power plug.

- It will cause electric shock or fire.



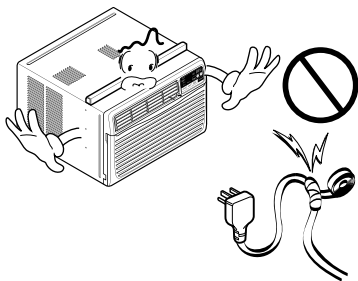
Do not damage or use an unspecified power cord.

- It will cause electric shock or fire.



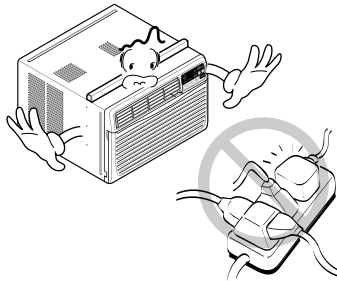
Do not modify power cord length.

- It will cause electric shock or fire.



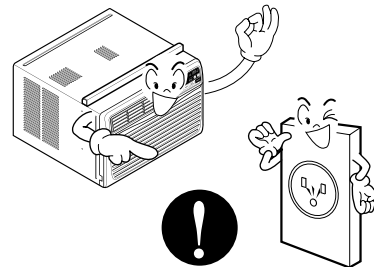
Use the air conditioner on a single outlet circuit. Do not share the outlet with other appliances.

- It will cause electric shock or fire.



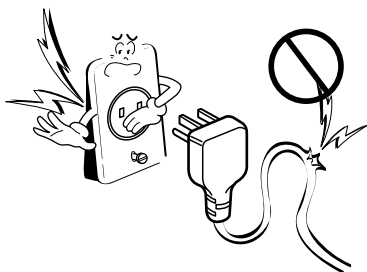
Always plug into a grounded outlet.

- No grounding may cause electric shock.



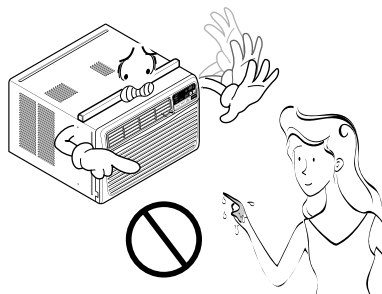
Do not use the socket if it is loose or damaged.

- It may cause fire and electric shock.



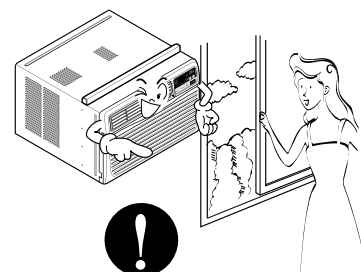
Do not operate with wet hands or in damp environment.

- It may cause electric shock.



Ventilate before operating air conditioner when gas goes out.

- It may cause explosion, fire, and burn.



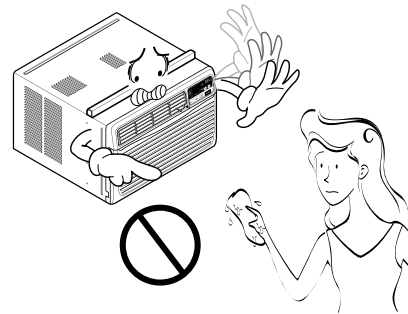
If water enters the product, turn off the the power switch of the main body of appliance. Contact service center after taking the power-plug out from the socket.

- It will cause electric shock or failure of machine.



Do not clean the air conditioner with water.

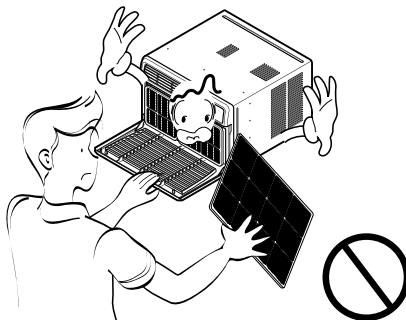
- Water may enter the unit and degrade the insulation. It may cause an electric shock.



CAUTION

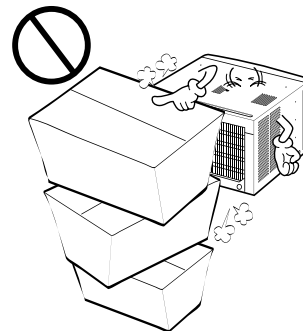
Never touch the metal parts of the unit when removing the filter.

- They are sharp and may cause injury.



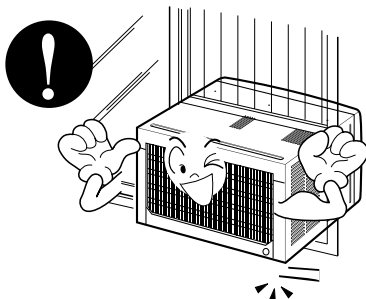
Do not block the inlet or outlet.

- It may cause failure of appliance or performance deteriorate.



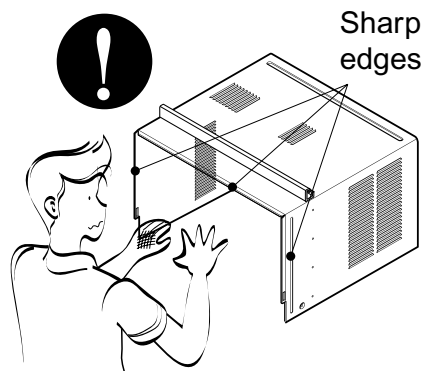
Ensure that the outer case is not damaged by age or wear.

- If the outer case is damaged, it must be repaired or replaced immediately. Leaving it damaged could result in the air conditioner falling out of the window, creating a safety hazard.



Be cautious not to touch the sharp edges when installing.

- It may cause injury.



Product Specifications

| ITEMS | | MODELS | | |
|----------------------------------|---------------------|---|---------------|----------------------------|
| | | HBLG8004R(A4/B4) L8004R(Y4)/M8004R(Y4) | CL8000ER | HBLG1004R L1004R/M1004R |
| POWER SUPPLY | | 1 ϕ , 115V, 60Hz | | |
| COOLING | CAPACITY (BTU/h) | 8,000 | 8,000 | 10,000 |
| | INPUT (W) | 820 | 740 | 1,020 |
| | RUNNING CURRENT (A) | 7.3 | 7.0 | 9.4 |
| | E.E.R (BTU/W.h) | 9.8 | 10.8 | 9.8 |
| OPERATING CONDITION | INDOOR (°C) | 26.7(DB)* 19.4(WB)** | | |
| | OUTDOOR (°C) | 35(DB)* 23.9(WB)** | | |
| REFRIGERANT (R-22) CHARGE | | 420g(14.8 oz) | 410g(14.3 oz) | 480g(16.9 oz) |
| EVAPORATOR | | 2 ROW 11 STACKS, LOUVER-FIN TYPE | | |
| CONDENSER | | 2 ROW 15 STACKS, STRAGHT TYPE | | |
| FAN, INDOOR | | TURBO FAN | | |
| FAN, OUTDOOR | | PROPELLER TYPE FAN WITH SLINGER RING | | |
| FAN SPEEDS, FAN/COOLING/HEATING | | 3/3 | | |
| FAN MOTOR | | 6 POLES | | |
| OPERATION CONTROL | | REMOTE CONTROLLER | | |
| ROOM TEMP. CONTROL | | THERMISTOR | | |
| AIR DIRECTION CONTROL | | VERTICAL LOUVER (RIGHT & LEFT) | | |
| | | HORIZONTAL LOUVER (UP & DOWN) | | |
| CONSTRUCTION | | TOP DOWN CHASSIS | | |
| PROTECTOR | COMPRESSOR | OVERLOAD PROTECTOR | | |
| | FAN MOTOR | INTERNAL THERMAL PROTECTOR | | |
| POWER CORD | | 3 WIRE WITH GROUDING | | |
| | | ATTACHMENT PLUG (CORD-CONNECTED TYPE) | | |
| DRAIN SYSTEM | | DRAIN PIPE OR SPLASHED BY FAN SLINGER | | |
| NET WEIGHT | (lbs/kg) | 62/28 | 62/28 | 71/32 |
| OUTSIDE DIMENSION (W x H x D) | (inch) | 19 ⁹ / ₁₆ X 12 ³ / ₈ X 19 ³ / ₈ | | |
| | (mm) | 497 x 315 x 492 | | |

* DB : dry bulb

** WB : wet bulb

Installation

Select the Best Location

1. To prevent vibration and noise, make sure the unit is installed securely and firmly.
2. Install the unit where the sun does not shine directly on the unit.
3. The outside of the cabinet must extend outward for at least 12" and there should be no obstacles, such as a fence or wall, within 20" from the back of the cabinet because it will prevent heat radiation of the condenser. Restriction of outside air will greatly reduce the cooling efficiency of the air conditioner.



CAUTION: All side louvers of the cabinet must remain exposed on the outside of the structure.

4. Install the unit slanted slightly so the back is slightly lower than the front (about 1/4"). This will force condensed water to the outside.
5. Install the unit with the bottom about 30"~60" above the floor level.

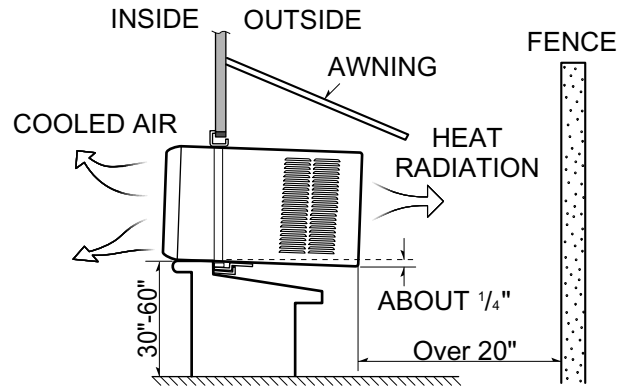


Figure 1

Installation Check

The setting conditions must be checked prior to initial starting.

The following items are especially important checking points when the installation is finished.

1. Grounding wire (Green or Green and Yellow) is provided in the power cord. The green wire must be grounded.
2. Connect to a single-outlet 15A circuit.
(or 20A circuit for Electric Heater Model)
3. To avoid vibration or noise, make sure the air conditioner is installed securely.
4. Avoid placing furniture or draperies in front of the air inlet and outlet.

How to Secure the Drain Pipe

In humid weather, excess water may cause the Base Pan to overflow. To drain the water, remove the Drain Cap and secure the Drain Pipe to the rear hole of the Base Pan. (Figure. 2)

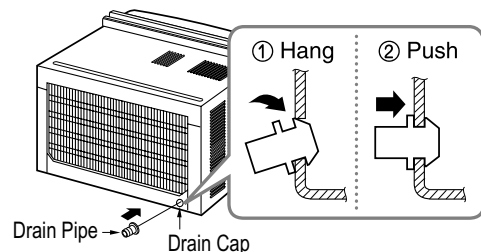


Figure 2

How to Install

Window Requirements

NOTICE All supporting parts should be secured to firm wood, masonry, or metal.

1. This unit is designed for installation in standard double hung windows with actual opening widths of 22" to 36". The upper and lower sash must open sufficiently to allow a clear vertical opening of 13" from the bottom of the sash to the window stool.
2. If storm window presents interference, fasten a 2" wide wood strip to the inner window sill across the full width of the sill. The wood strip should be thick enough to raise the height of the window sill so that the unit can be installed without interference by the storm window frame. See Figure. 4. Top of wood strip should be approximately 3/4" higher than the storm window frame (STORM WINDOW FRAME) or wood strip (OUTDOORS) to help condensation to drain properly to the outside.
3. Install a second wood strip (approximately 6" long by 1 1/2" wide and same thickness as first strip) in the center of the outer sill flush against the back off the inner sill. This will raise the L bracket as shown Figure. 4.
4. If the distance between STORM WINDOW FRAME and WOOD STRIP MOUNTED ON TOP OF INNER SILL is more than 1", two of wood strip are not necessary.

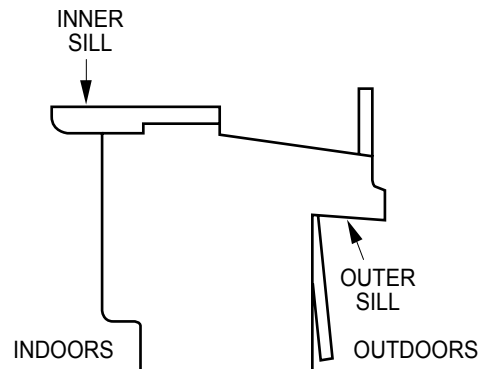


Figure 3

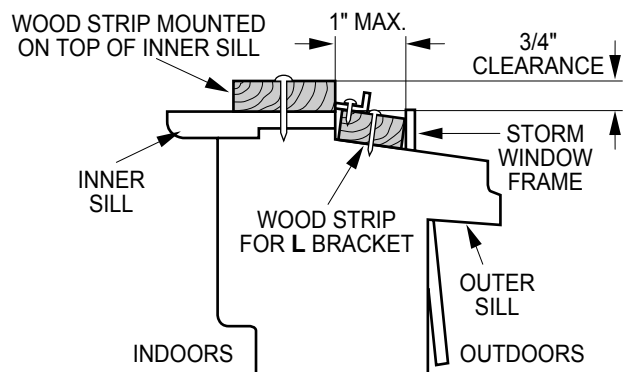
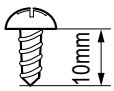
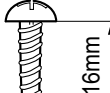
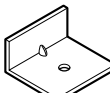



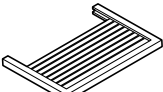
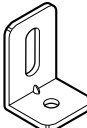


Figure 4

Installation

| HARDWARE | | | |
|--|--|--|---|
| TYPE A: 11EA (SHORT SCREW) | TYPE B: 5EA (WOOD SCREW) | TYPE C: 3EA (L BRACKET) | DRAIN PIPE |
|  |  |  |  |
| TYPE D: 1EA (SEAL STRIP) | TYPE E: 1EA (SASH SEAL) | TYPE F: 2EA (GUIDE PANEL) | TYPE G: 1EA (SUPPORT BACKET) |
| (Adhesive backed)  | (Not adhesive backed)  |  |  |

BEFORE INSTALLATION

1. Insert the guide panels into the guides of the air conditioner. Fasten the curtains to the unit with screws (TYPE A) as shown Figure. 5.
2. Cut the adhesive-backed seal strip (TYPE D) to the window width. Remove the backing from the seal strip and attach the seal strip to the underside of the bottom window. (Figure. 6)

NOW START INSTALLATION

1. LOCATING UNIT IN WINDOW

Open the window and mark center line on the center of the inner sill, as shown in Figure. 6.

2. ATTACH L BRACKET

- a. Install the L brackets behind the inner window sill, with the short side of bracket as shown. Use the 2 screws (TYPE A) provided.
- b. The bracket helps to hold unit securely in place. Be sure to place bracket edge flush against back of inner sill. See Figure. 7.

CAUTION: During the following step, hold unit firmly until window sash is lowered to top channel behind side panel frames. Personal injury or property damage may result if unit falls from window.

3. INSTALL THE AIR CONDITIONER IN THE WINDOW

- a. Carefully lift the air conditioner and slide it into the open window. Make sure the bottom guide of the air conditioner drops into the notches of the L bracket. See Figure. 8.

IMPORTANT :

When the air conditioner drops into the L bracket, the air conditioner will be centered in window opening as shown in Figure. 9.

- b. While steadying the air conditioner, carefully bring the window sash down behind the upper guide of the air conditioner, as shown in Figure. 10.

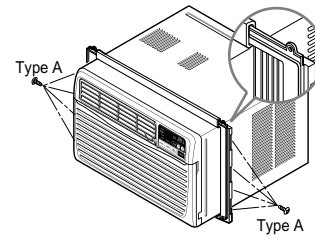


Figure 5

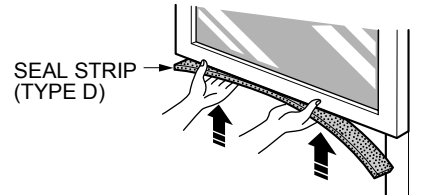


Figure 6

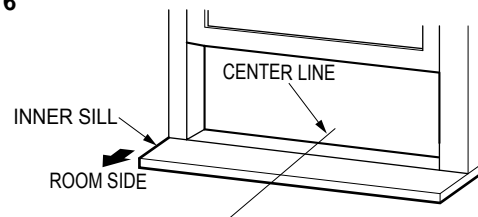


Figure 7

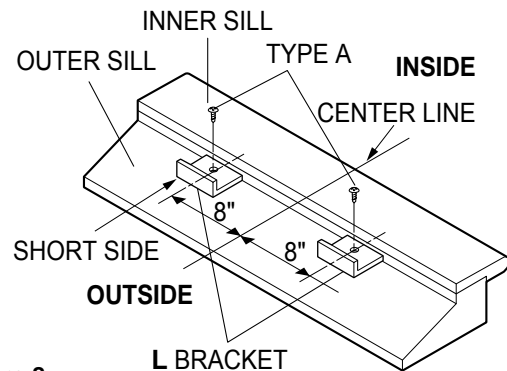


Figure 8

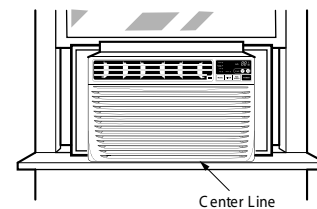


Figure 9

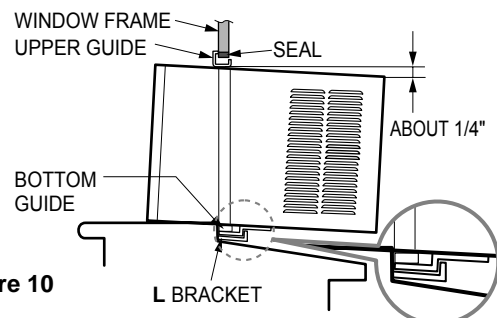


Figure 10

4. SECURE THE GUIDE PANELS

Extend the guide panels (TYPE F) to fill the window opening using 4 screws (TYPE B) to secure them, as shown in Figure. 11.

5. INSTALL THE SASH SEAL AND SASH LOCK

- Cut the sash seal (TYPE E) to the window width. Stuff the sash seal between the glass and the window to prevent air and insects from getting into the room, as shown in Figure. 11.
- Fasten the L bracket using a (TYPE A) screw, as shown in Figure. 11.

6. Window installation of room air conditioner is now completed. See ELECTRICAL DATA for attaching power cord to electrical outlet.

NOTICE REMOVAL FROM WINDOW

Turn the air conditioner off, disconnect the power cord, remove the L bracket and the screws installed through the top and bottom of the guide panels, and save for reinstallation later. Close the guide panels. Keeping a firm grip on the air conditioner, raise the sash, and carefully tilt the air conditioner backward, draining any condensate water. Lift the air conditioner from the window and remove the sash seal from between the windows.

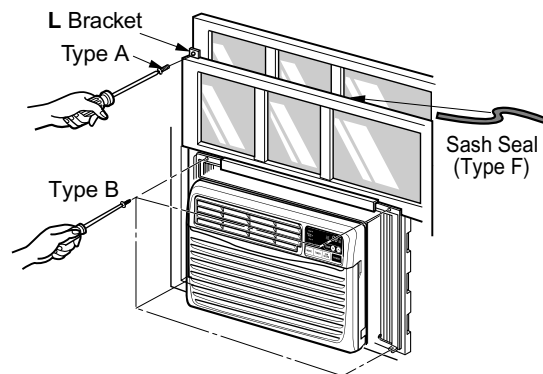
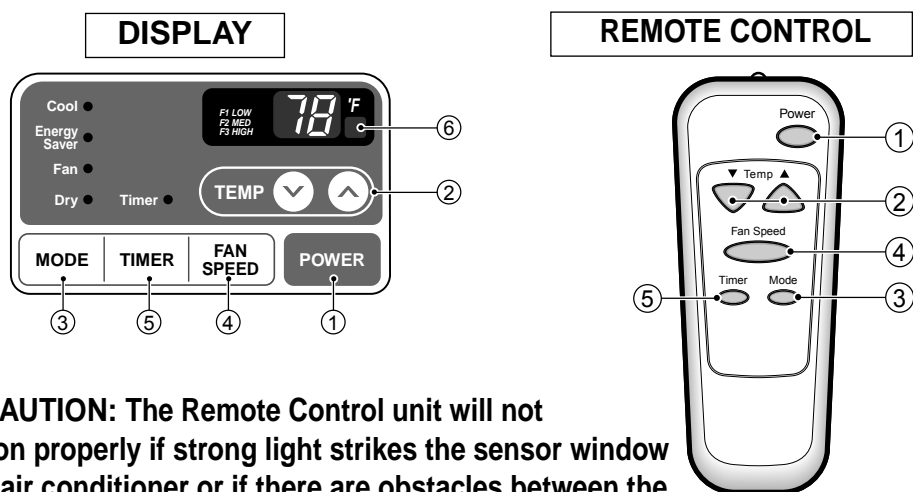


Figure 11

Operation

- Designed for COOLING ONLY.
- Powerful and quiet cooling.
- Top-down chassis for the simple installation and service.
- Low air-intake, top cooled-air discharge.
- Built-in adjustable Thermistor
- Washable one-touch filter
- Compact size
- Equipped with reliable and efficient rotary compressor.

Function of Controls



! PRECAUTION: The Remote Control unit will not function properly if strong light strikes the sensor window of the air conditioner or if there are obstacles between the Remote Control unit and the air conditioner.

1 POWER BUTTON

To turn the air conditioner ON, push the button. To turn the air conditioner OFF, push the button again. This button takes priority over any other buttons.

2 ROOM TEMPERATURE SETTING BUTTON

This button can automatically control the temperature of the room. The temperature can be set within a range of 60°F to 86°F by 1°F. (16°C to 30°C by 1°C)
Select the lower number for lower temperature of the room.

3 OPERATION MODE SELECTION BUTTON

Every time you push this button, it will shift among COOL, ENERGY SAVER, FAN and DRY.

- Energy Saver: If Energy Save mode is selected, the fan stops when the compressor stops cooling. Approximately every 3 minutes the fan will turn on and check the room air to determine if cooling is needed.

4 FAN SPEED SELECTOR

Every time you push this button, it is set as follows.
(Hi [F3] → Low [F1] → Med [F2] → Hi [F3] → Low [F1] → ...)

5 ON/OFF TIMER BUTTON

You can set the time when the unit will turn on or turn off automatically by pressing the timer button. If the unit is operating, this button controls the time it will be turned off. If the unit is off state, this button controls the time it will start. Every time you push this button, the remaining time will be set as follows.

- Stopping operation

(1Hour → 2Hours → 3Hours → 4Hours → 5Hours → 6Hours → 7Hours → 8Hours → 9Hours → 10Hours → 11Hours → 12Hours → 0Hour → 1Hour → 2Hours → ...)

- Starting operation

(1Hour → 2Hours → 3Hours → 4Hours → 5Hours → 6Hours → 7Hours → 8Hours → 9Hours → 10Hours → 11Hours → 12Hours → off → 1Hour → 2Hours → ...)

6 REMOCON SIGNAL RECEIVER

Disassembly

— Before the following disassembly, set the **CONTROL BOX** to **OFF** and disconnect the power cord.

Mechanical Parts

1. Front Grille

1. Open the Inlet grille downward and remove the air filter.
2. Remove the screw that fastens the front grille.(See Figure 12)
3. Pull the front grille from the right side.
4. Remove the front grille.(There are 4 hooks.)
5. Re-install the components by referring to the removal procedure, above.

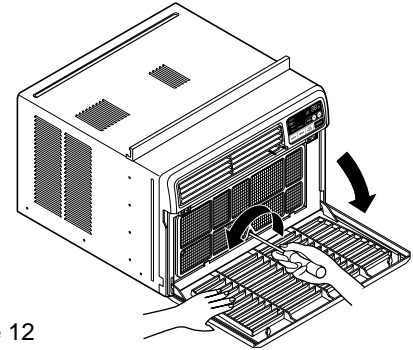


Figure 12

2. Cabinet

1. After disassembling the FRONT GRILLE, remove the 6 screws that fasten the cabinet at both sides.
2. Remove the 2 screws that fasten the cabinet at back.
3. Lift the cabinet from the unit.□□
4. Remove the cabinet.
5. Re-install the components by referring to the removal procedure, above.

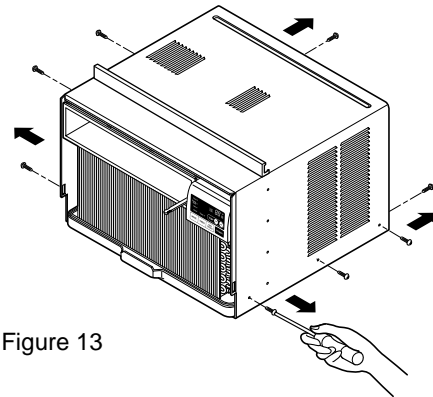


Figure 13

3. Control Box

1. Remove the front grille. (Refer to section 1)
2. Remove the cabinet. (Refer to section 2)
3. Remove the 1 screw which fasten the power cord.
4. Disconnect the grounding screw from the evaporator channel.
5. Remove the 2 screws that fastens the control box cover.
6. Remove the housing that connects PCB and motor wire in the control box.
7. Remove the nut that fastens the terminal cover.
8. Remove the terminal cover.
9. Remove all the leads from the overload protector.
10. Discharge the capacitor by placing a 20,000 ohm resistor across the capacitor terminals.
11. Raise the control box upward completely. (See Figure 14)
12. Re-install the components by referring to the removal procedure, above. (Refer to the wiring diagram found on page 21 in this manual and on the control box.)

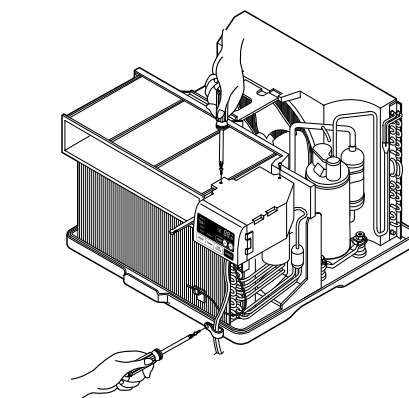


Figure 14

Air Handling Parts

4. Air Guide and Turbo Fan

1. Remove the front grille. (Refer to section 1)
2. Remove the cabinet. (Refer to section 2)
3. Remove the control box. (Refer to section 3)
4. Remove the 4 screws that fasten the brace.
5. Remove the brace.
6. Remove the 2 screws that fasten the air guide upper.
7. Remove the air guide upper.(See Figure 15)
8. Remove the 2 screws that fasten the evaporator.
9. Move the evaporator forward and pulling it upward slightly. (See Figure 16)
10. Pull out the hook of orifice by pushing the tabs and remove it. (See Figure 16)
11. Remove the clamp with hand pliers which secures the turbo fan.
12. Remove the turbo fan.
13. Remove the 2 screws that fasten the air guide from the base pan.
14. Move the air guide backward, and pull out from the base pan.(Move the air giude lower carefully.)
15. Re-install the components by referring to the removal procedure, above.

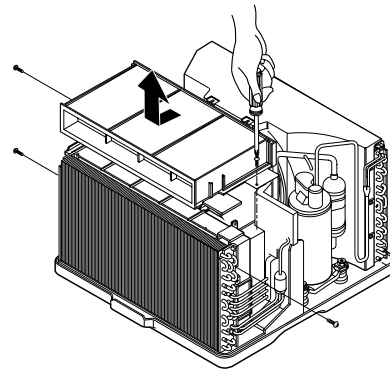


Figure 15

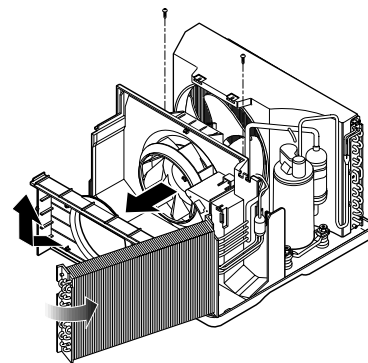


Figure 16

5. FAN

1. Remove the cabinet. (Refer to section 2)
2. Remove the brace (Refer to section 4)
3. Remove the 5 screws which fasten the condenser.
4. Move the condenser to the left carefully.
5. Remove the clamp that secures the fan.
6. Remove the fan. (See Figure 17)
7. Re-install by referring to the removal procedure.

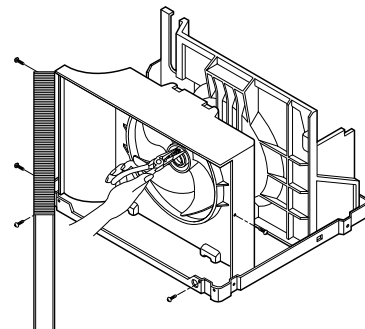


Figure 17

6. Shroud

1. Remove the fan. (Refer to section 2.2.2)
2. Remove the shroud. (See Figure 18)
3. Re-install the components by referring to the removal procedure, above.

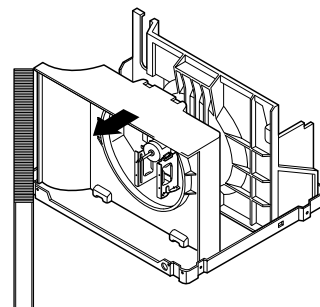


Figure 18

Electrical Parts

7. Overload Protector

1. Remove the cabinet. (Refer to section 2)
2. Remove the nut that fastens the terminal cover.
3. Remove the terminal cover. (See Figure 19)
4. Remove all the leads from the overload protector.
5. Remove the overload protector.
6. Re-install the components by referring to the removal procedure, above.

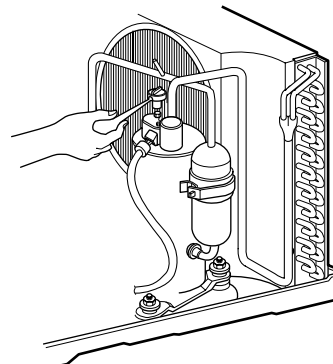


Figure 19

8. Compressor

1. Remove the cabinet. (Refer to section 2)
2. Discharge the refrigerant system using a Freon™ Recovery System.
If there is no valve to attach the recovery system, install one (such as a WATCO A-1) before venting the Freon™. Leave the valve in place after servicing the system.
3. Remove the overload protector. (Refer to section 7)
4. After purging the unit completely, unbraid the suction and discharge tubes at the compressor connections.
5. Remove the 3 nuts and the 3 washers which fasten the compressor.
6. Remove the compressor. (See Figure 20)
7. Re-install the components by referring to the removal procedure, above.

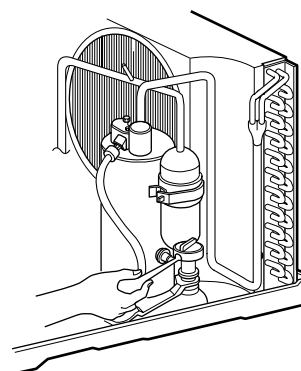


Figure 20

9. Capacitor

1. Remove the control box. (Refer to section 3)
2. Open the top cover from the control box. (See Figure 21)
3. Pull out the capacitor from the control box.
4. Disconnect all the leads of capacitor terminals.
5. Re-install the components by referring to the removal procedure, above.

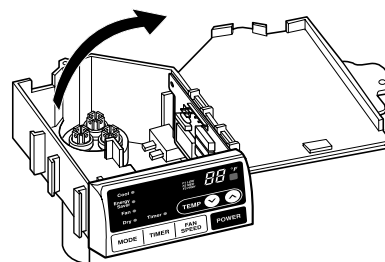


Figure 21

10. Power Cord

1. Remove the control box. (Refer to section 3)
2. Open the top cover from the control box. (Refer to section 9)
3. Disconnect the front panel from the control box. (See Figure 22)
4. Disconnect two leads from the capacitor and relay.
5. Pull out the power cord.
6. Re-install the component by referring to the above removal procedure, above. (Use only one ground-marked hole for ground connection.)
7. If the supply cord of this appliance is damaged, it must be replaced by the special cord. (The special cord means the cord which has the same specification marked on the supply cord attached at the unit.)

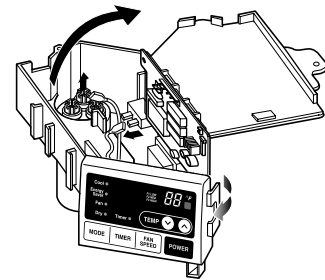
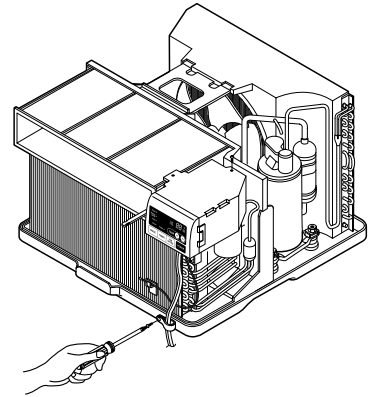


Figure 22

11. Motor

1. Remove the cabinet. (Refer to section 2)
2. Remove the turbo fan. (Refer to section 4)
3. Remove the fan. (Refer to section 5)
4. Remove the 4 screws that fasten the motor from the air guide. (See Figure 23)
5. Remove the motor.
6. Re-install the components by referring to the removal procedure, above. (See Figure 23)

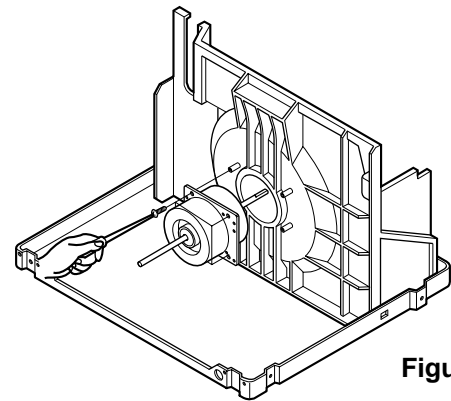


Figure 23

Refrigerating Cycle

12. Condenser

CAUTION: Discharge the refrigerant system using a Freon™ Recovery System. If there is no valve to attach the recovery system, install one (such as a WATCO A-1) before venting the Freon™. Leave the valve in place after servicing the system.

1. Remove the cabinet. (Refer to section 2)
2. Remove the 4 screws that fasten the brace. (Refer to section 4)
3. Remove the 5 screws that fasten the condenser and shroud.
4. After discharging the refrigerant completely, unbrazed the interconnecting tube at the condenser connections.
5. Remove the condenser.
6. Re-install the components by referring to notes. (See Figure 23)

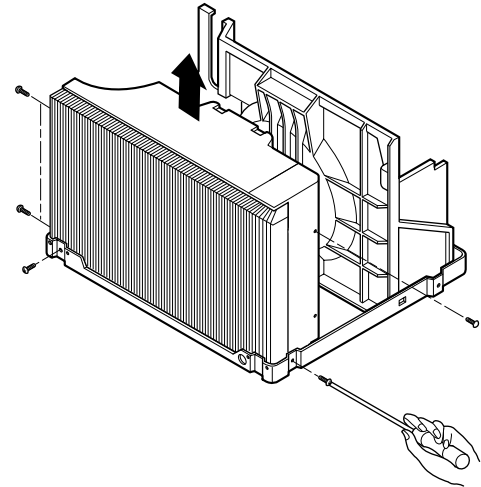


Figure 23

13. Evaporator

1. Remove the control box. (Refer to section 3)
2. Remove the air guide upper. (Refer to section 4)
3. Remove the 2 screws that fasten the evaporator.
4. Move the evaporator sideways carefully. (Refer to section 4)
5. After discharging the refrigerant completely, unbrazed the interconnecting tube at the evaporator connections.
6. Remove the evaporator.
7. Re-install the components by referring to notes. (See Figure 24)

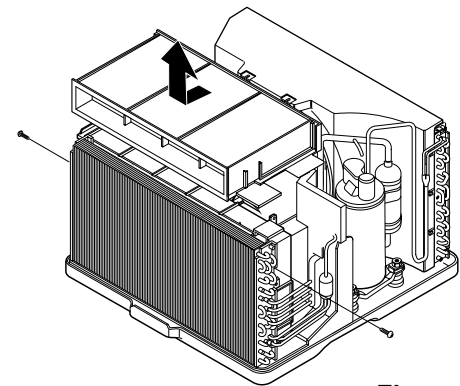


Figure 24

14. Capillary Tube


1. Remove the cabinet. (Refer to section s2)
2. After discharging the refrigerant completely, unbrazed the interconnecting tube at the capillary tube. (See caution above)

3. Remove the capillary tube.
4. Re-install the components by referring to notes.

NOTICE

— Replacement of the refrigeration cycle.

1. When replacing the refrigeration cycle, be sure to Discharge the refrigerant system using a Freon™ recovery System.
If there is no valve to attach the recovery system, install one (such as a WATCO A-1) before venting the Freon™. Leave the valve in place after servicing the system.
2. After discharging the unit completely, remove the desired component, and unbrazed the pinch-off tubes.
3. Solder service valves into the pinch-off tube ports, leaving the valves open.
4. Solder the pinch-off tubes with Service valves.
5. Evacuate as follows.
 - 1) Connect the vacuum pump, as illustrated figure 25A.
 - 2) Start the vacuum pump, slowly open manifold valves A and B with two full turns counterclockwise and leave the valves open.
The vacuum pump is now pulling through valves A and B up to valve C by means of the manifold and entire system.

 **CAUTION: If high vacuum equipment is used, just crack valves A and B for a few minutes, then open slowly with the two full turns counterclockwise. This will keep oil from foaming and being drawn into the vacuum pump.**

- 3) Operate the vacuum pump vacuum for 20 to 30 minutes, until 600 microns of vacuum is obtained. Close valves A and B, and observe vacuum gauge for a few minutes. A rise in pressure would indicate a possible leak or moisture remaining in the system. With valves A and B closed, stop the vacuum pump.
- 4) Remove the hose from the vacuum pump and place it on the charging cylinder. See figure 25B.
Open valve C.
Discharge the line at the manifold connection.
- 5) The system is now ready for final charging.

6. Recharge as follows :

- 1) Refrigeration cycle systems are charged from the High-side. If the total charge cannot be put in the High-side, the balance will be put in the suction line through the access valve which you installed as the system was opened.
- 2) Connect the charging cylinder as shown in figure 25B.
With valve C open, discharge the hose at the manifold connection.
- 3) Open valve A and allow the proper charge to enter the system. Valve B is still closed.
- 4) If more charge is required, the high-side will not take it. Close valve A.
- 5) With the unit running, open valve B and add the balance of the charge.
 - a. Do not add the liquid refrigerant to the Low-side.
 - b. Watch the Low-side gauge; allow pressure to rise to 30 lbs.
 - c. Turn off valve B and allow pressure to drop.
 - d. Repeat steps b. and c. until the balance of the charge is in the system.
- 6) When satisfied the unit is operating correctly, use the pinch-off tool with the unit still running and clamp on to the pinch-off tube. Using a tube cutter, cut the pinch-off tube about 2 inches from the pinch-off tool. Use sil-fos braze and braze pinch-off tube closed. Turn off the unit, allow it to set for a while, and then test the leakage of the pinch-off connection.

Equipment needed: Vacuum pump, Charging cylinder, Manifold gauge, Brazing equipment. Pin-off tool capable of making a vapor-proof seal, Leak detector, Tubing cutter, Hand Tools to remove components, Service valve.

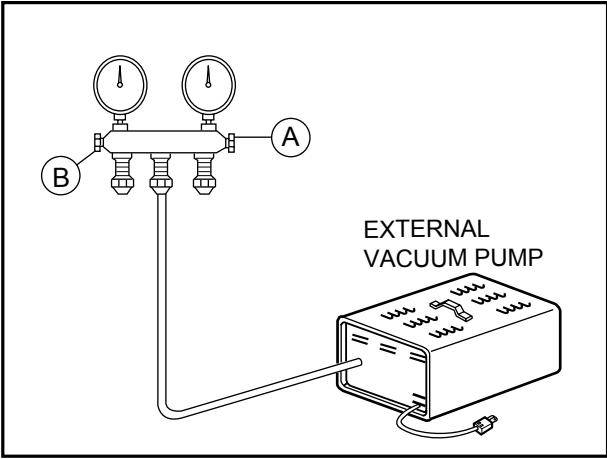
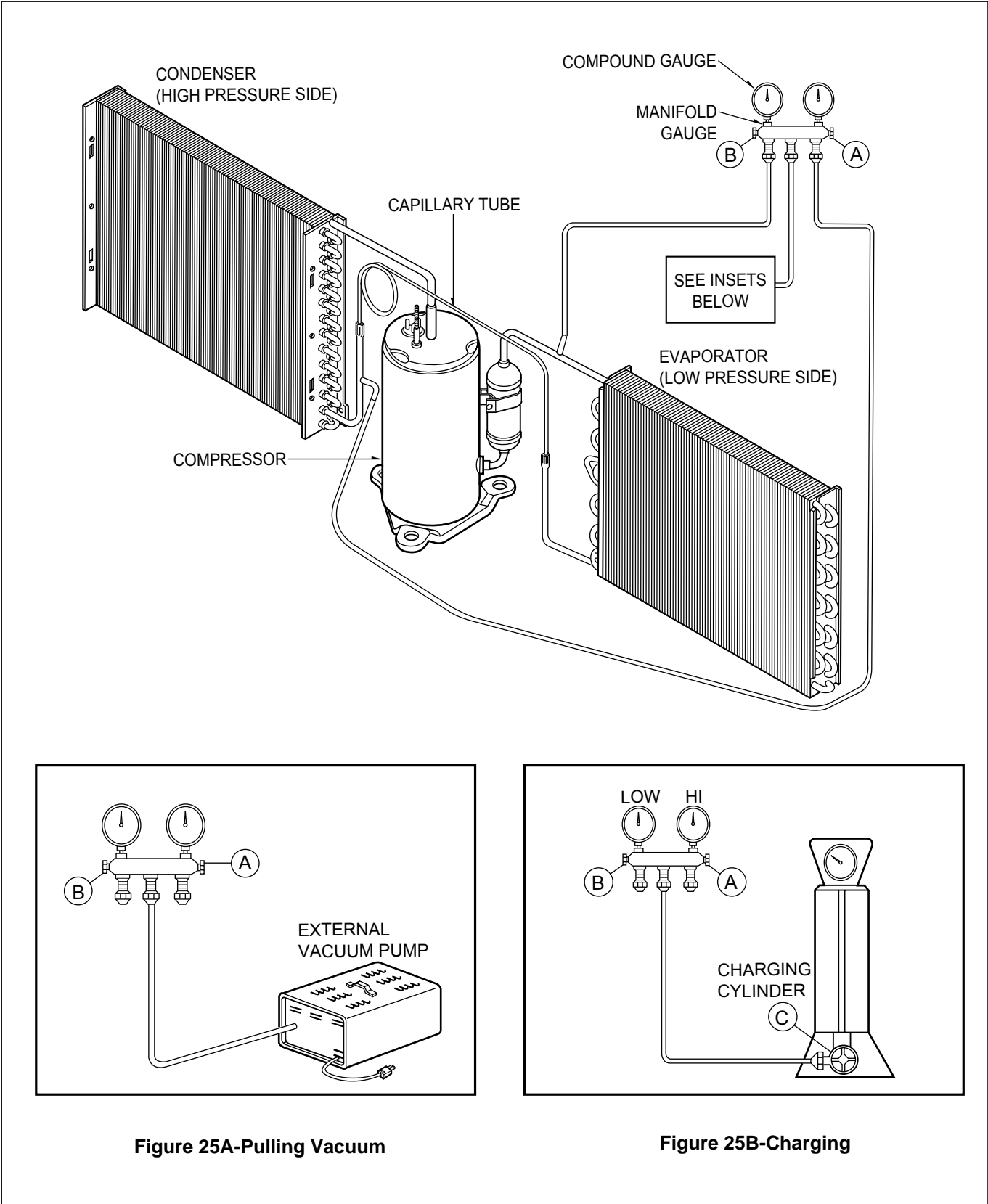


Figure 25A-Pulling Vacuum

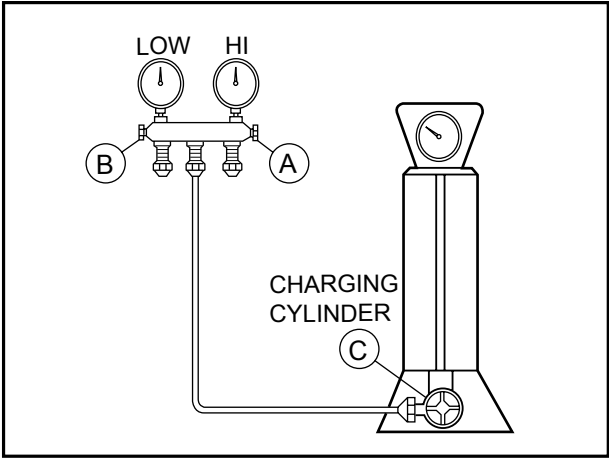
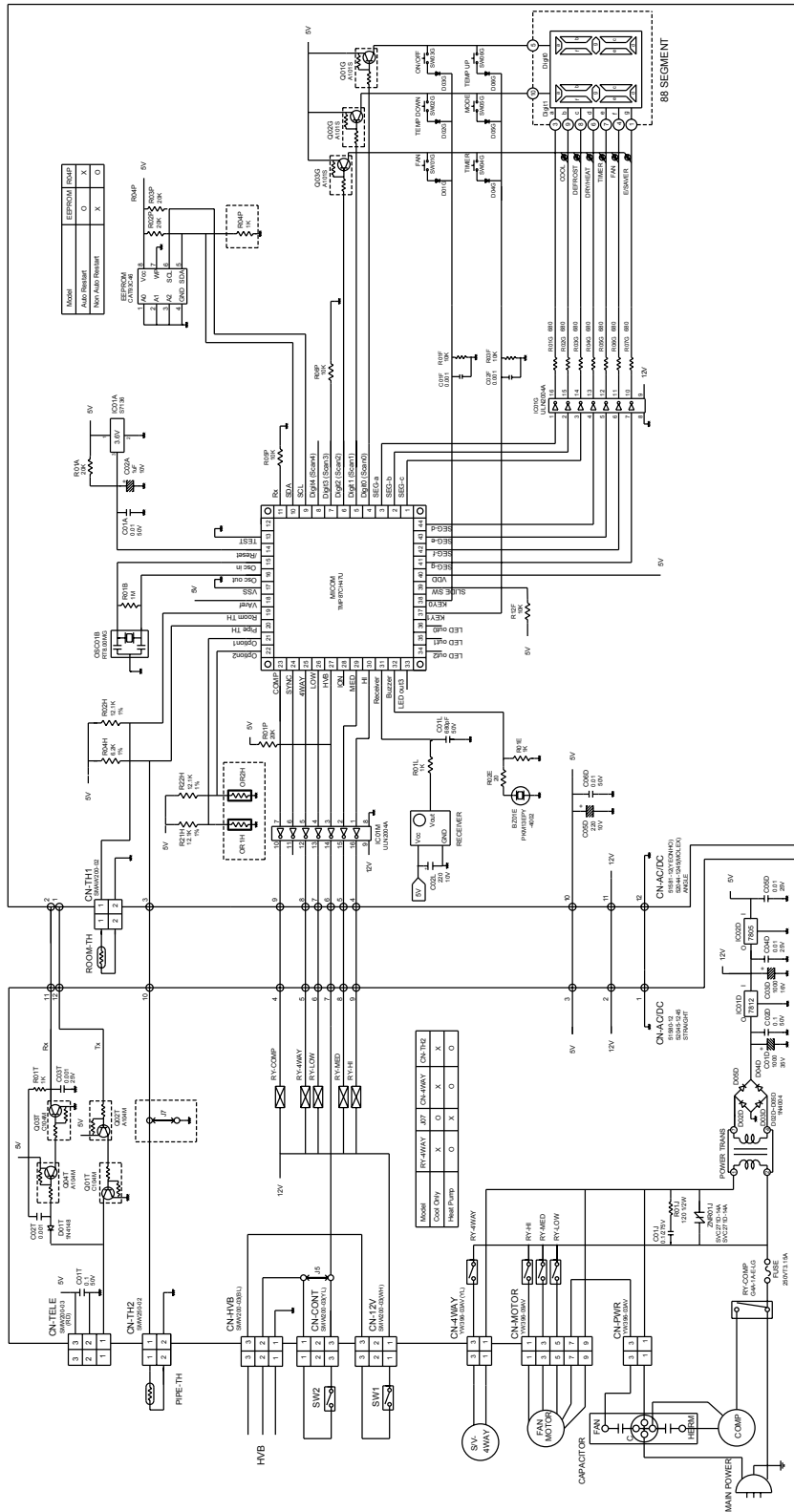


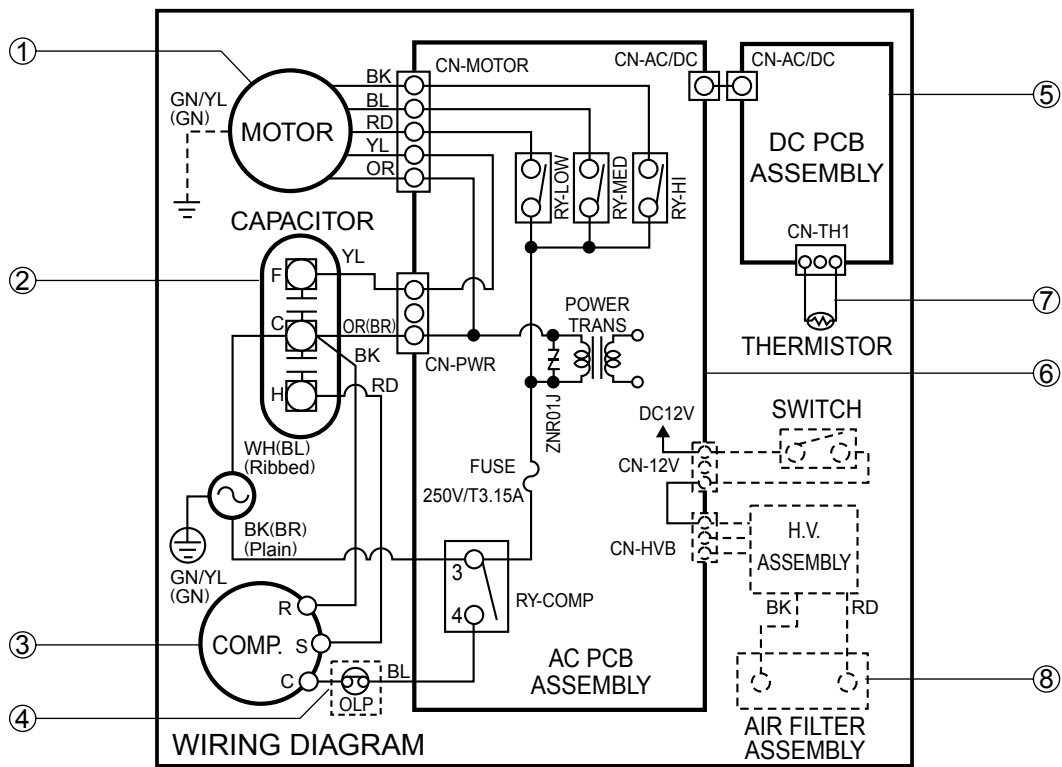
Figure 25B-Charging

Schematic Diagram

Electronic Control Device



Wiring Diagram



S: Service Parts
N: Non Service Parts

| LOCATION NO. | DESCRIPTION | Q'TY PER SET | REMARKS |
|--------------|--------------------|--------------|---------|
| 1 | MOTOR ASSY | 1 | S |
| 2 | CAPACITOR | 1 | S |
| 3 | COMPRESSOR | 1 | S |
| 4 | OVERLOAD PROTECTOR | 1 | S |
| 5 | DC PCB ASSEMBLY | 1 | S |
| 6 | AC PCB ASSEMBLY | 1 | S |
| 7 | THERMISTOR | 1 | S |
| 8 | PLASMA FILTER ASSY | 1 | S |

Troubleshooting Guide

Piping System

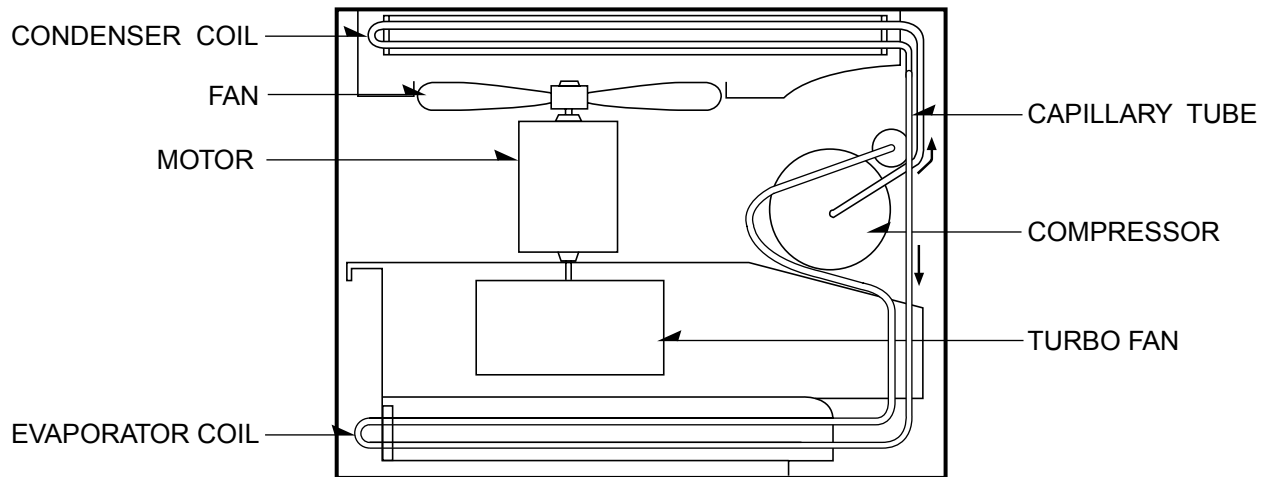
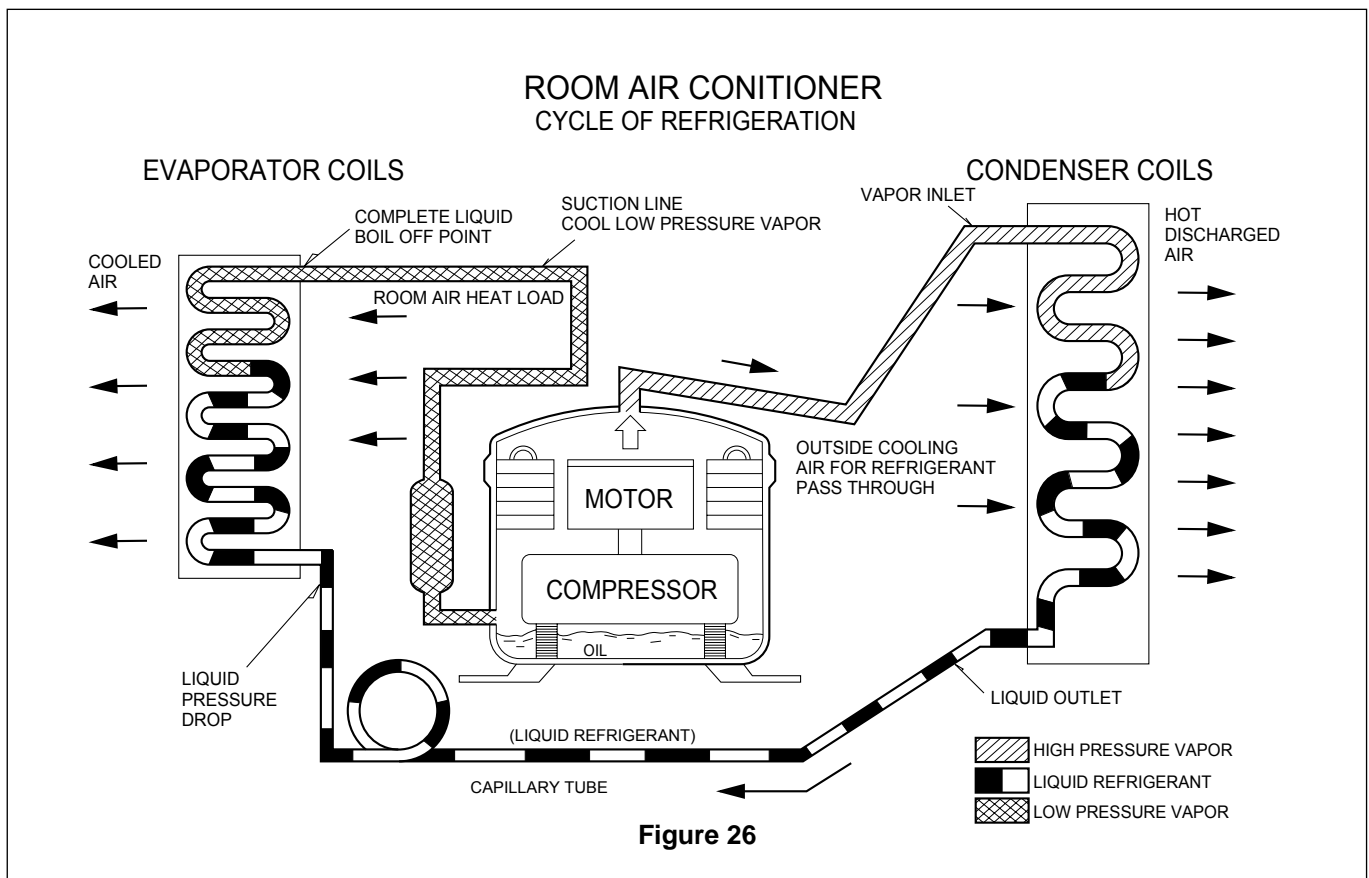


Figure 26 is a brief description of the important components and their function in what is called the refrigeration system. This will help you to understand the refrigeration cycle and the flow of the refrigerant in the cooling cycle.

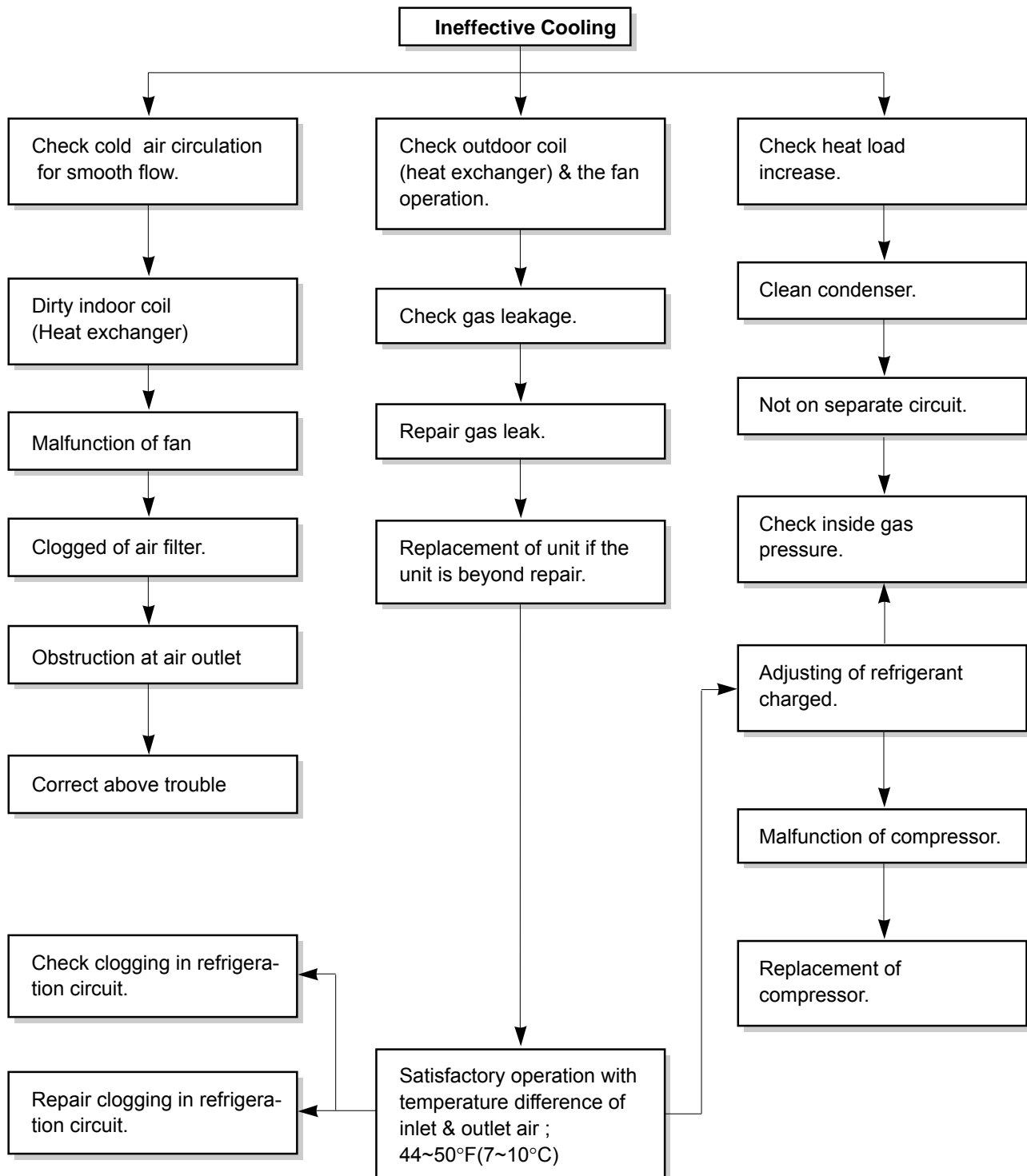


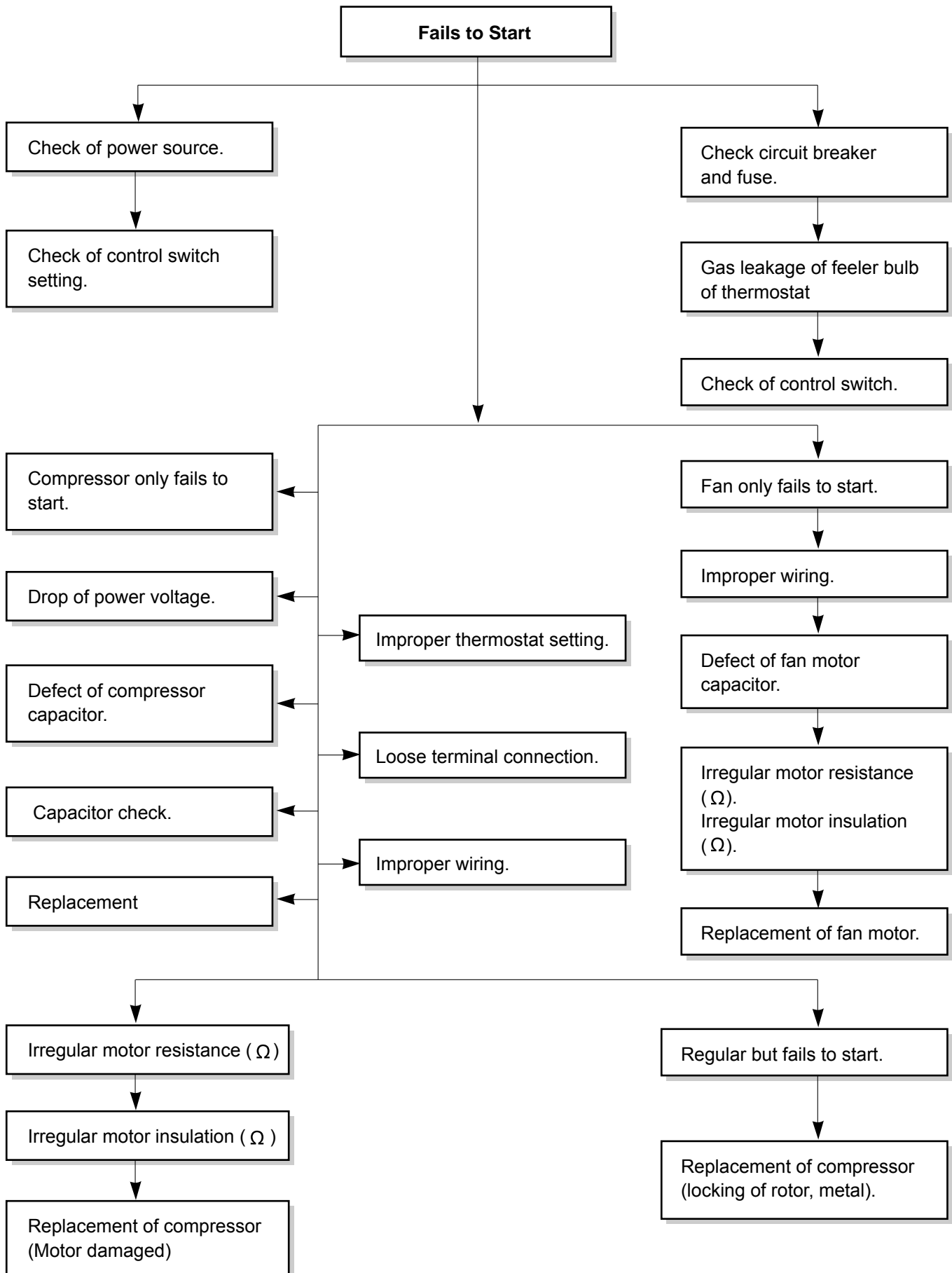
Troubleshooting Guide

In general, possible trouble is classified in two kinds.

The one is called Starting Failure which is caused from an electrical defect, and the other is ineffective Air Conditioning caused by a defect in the refrigeration circuit and improper application.

Unit runs but poor cooling.

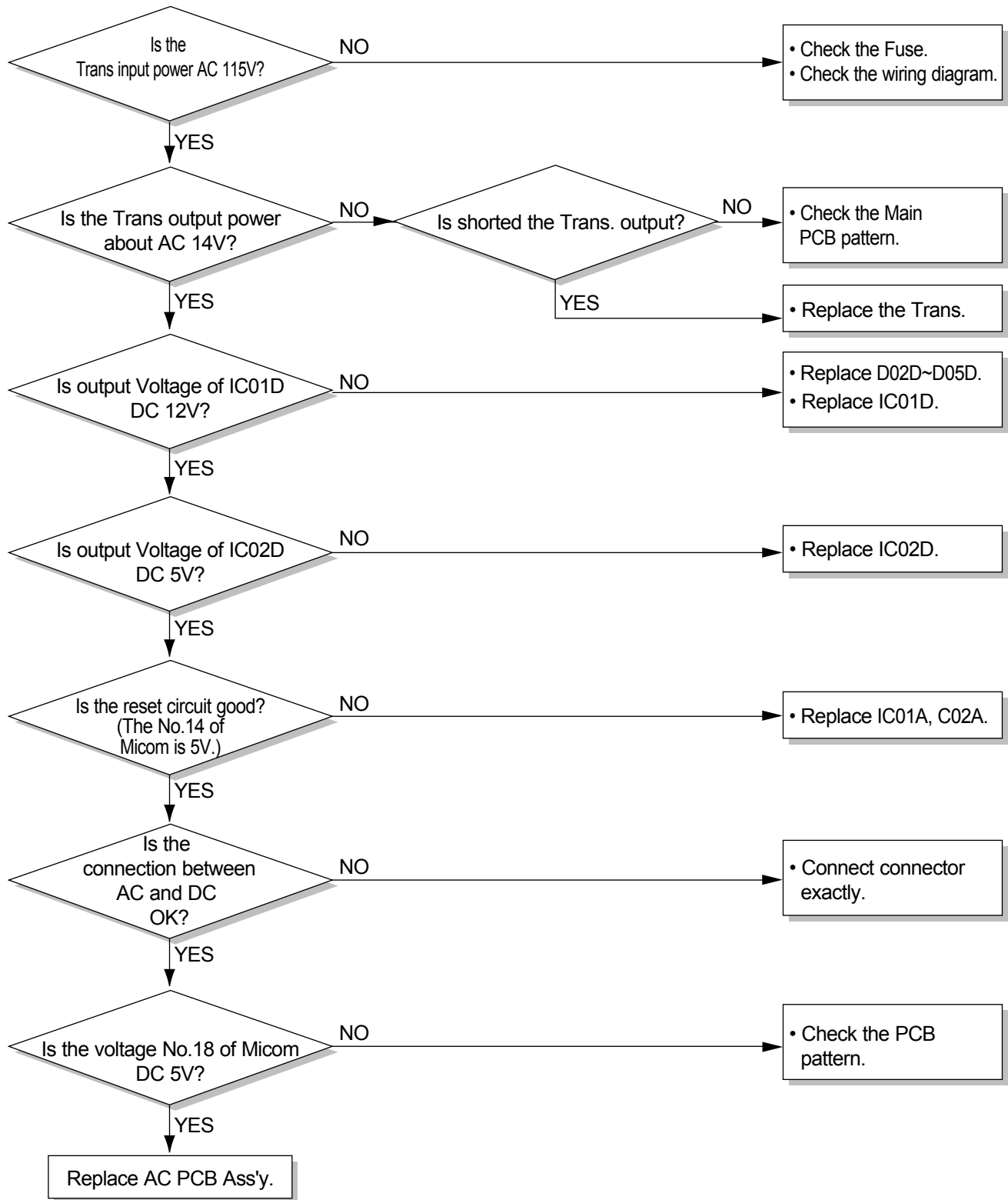




Electrical Parts Troubleshooting Guide

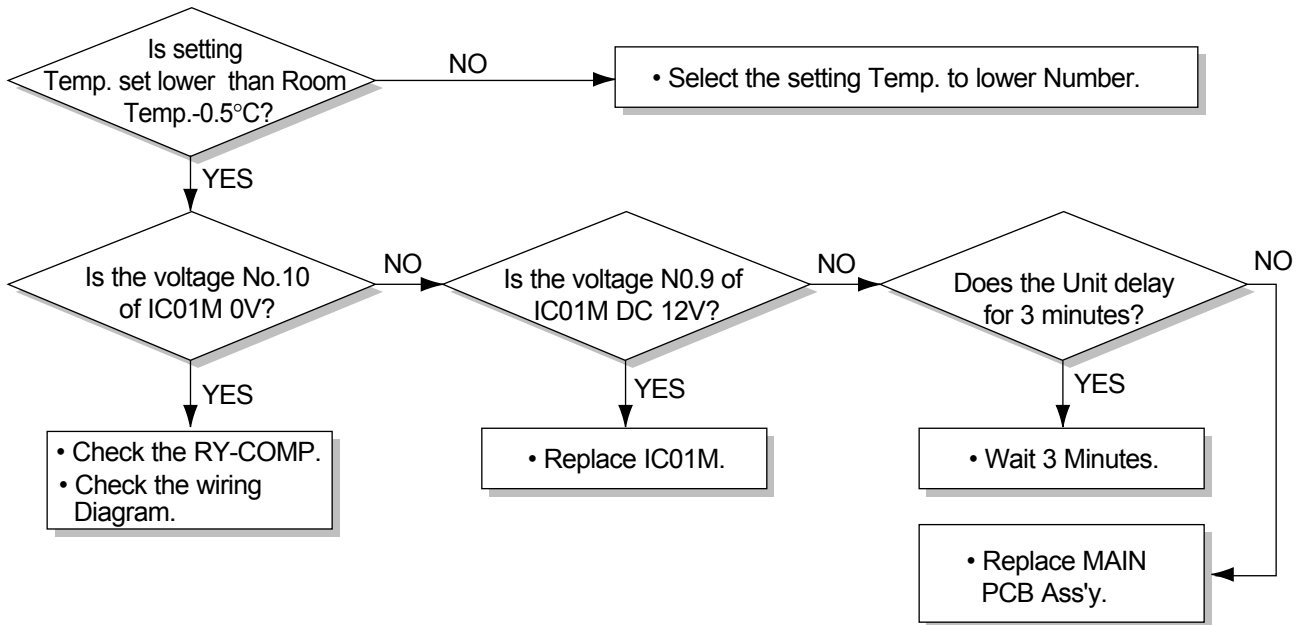
Possible Trouble 1

The unit does not operate.



Possible Trouble 2

The compressor does not operate.

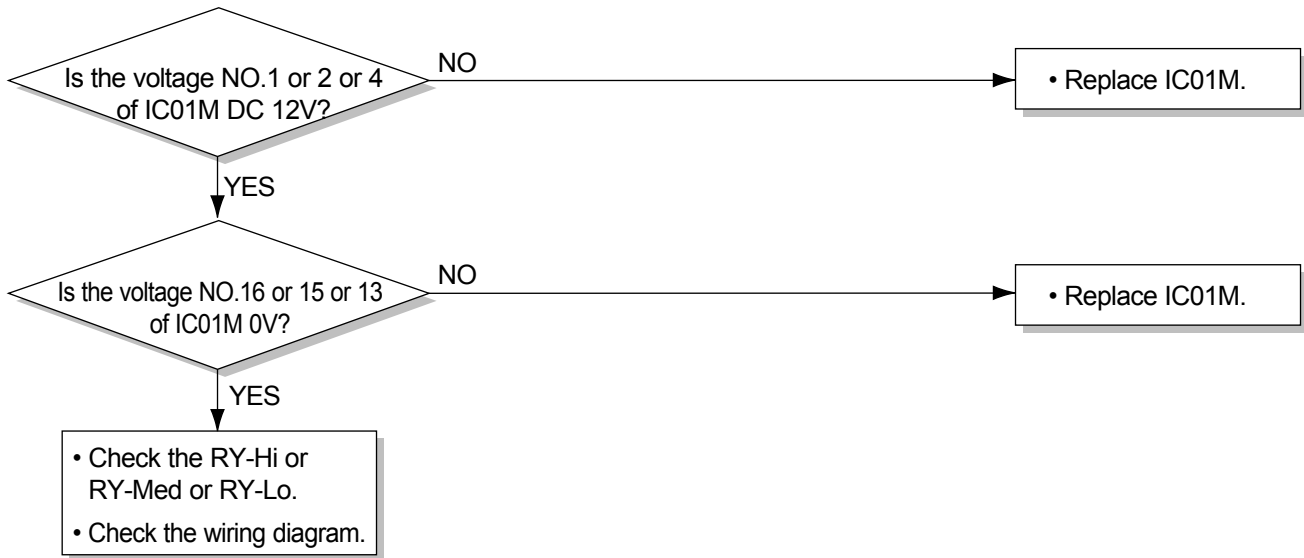


Possible Trouble 3

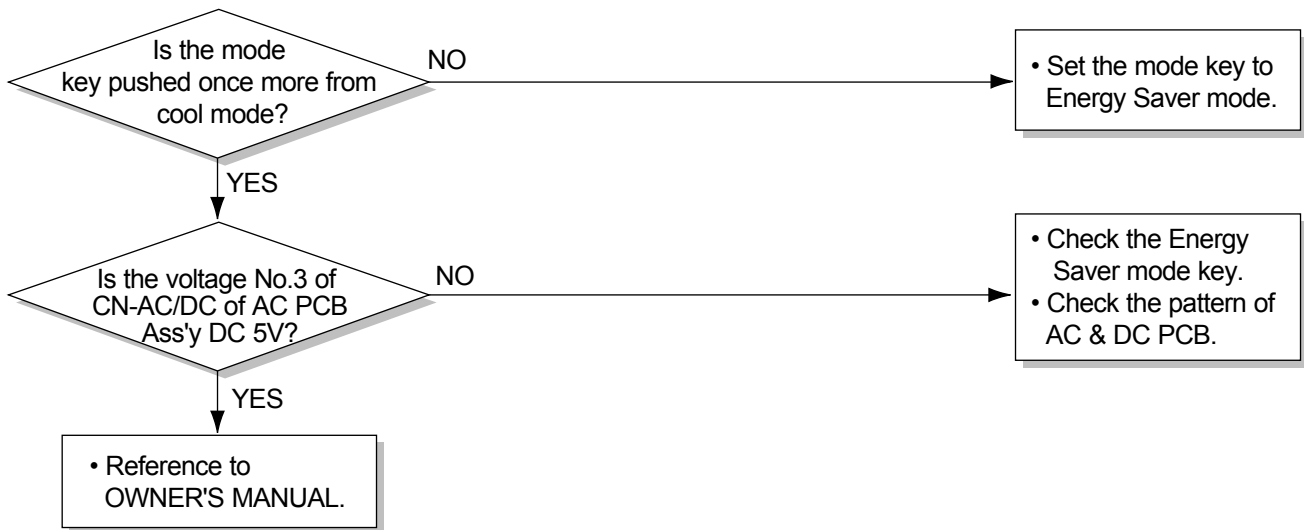
The compressor always operate.



Possible Trouble 4 FAN does not operate.

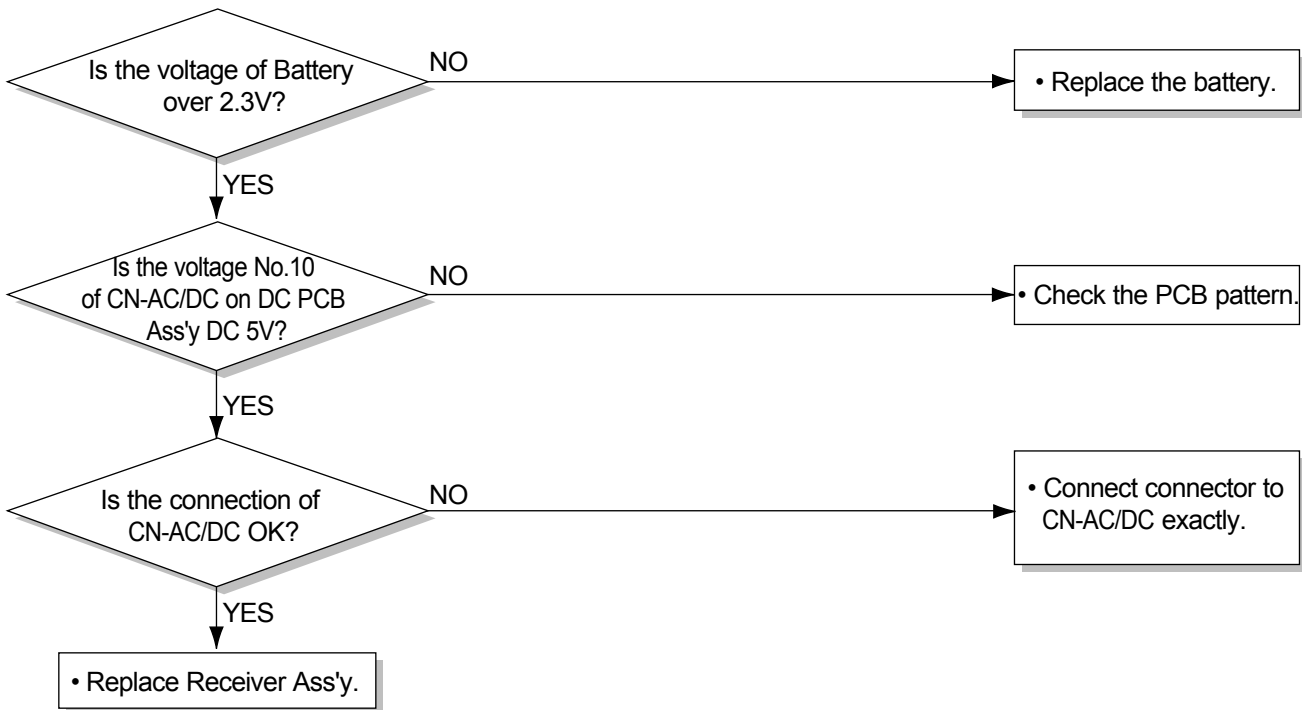


Possible Trouble 5 The function of Energy Saver does not operate.



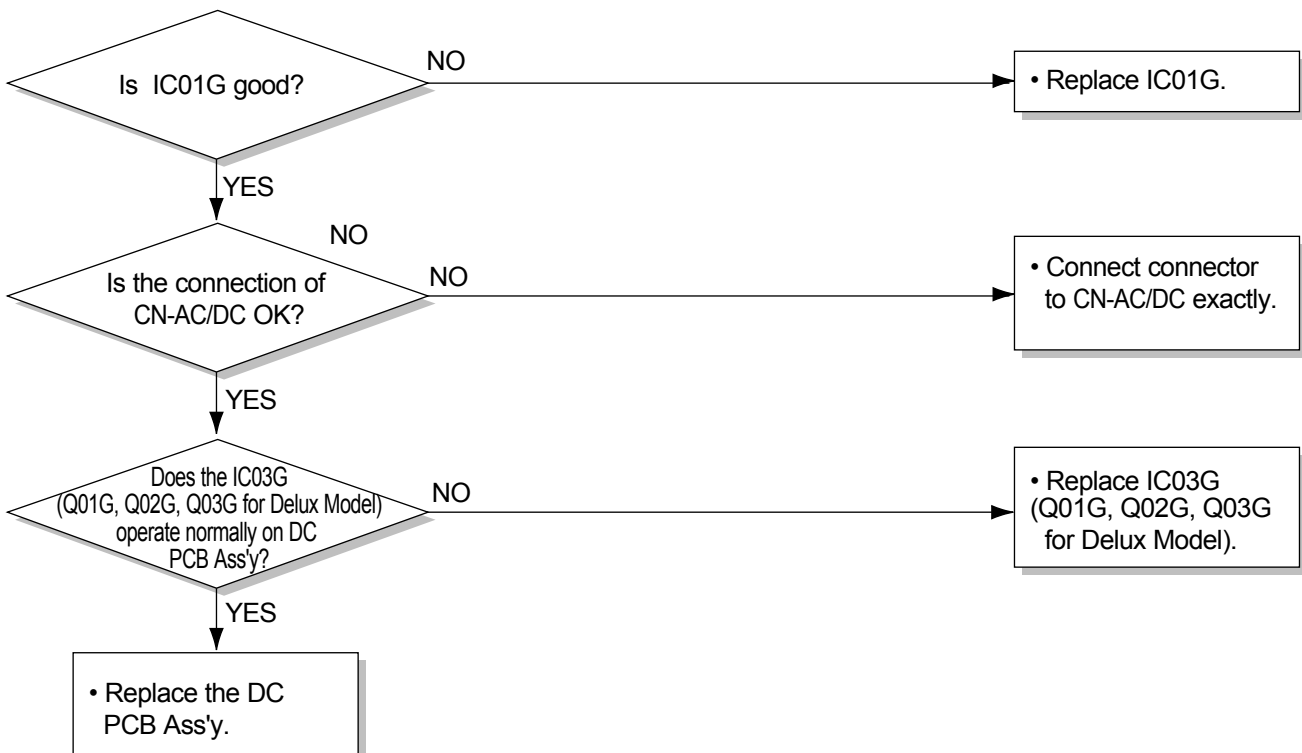
Possible Trouble 6

Remote controller does not operate.



Possible Trouble 7

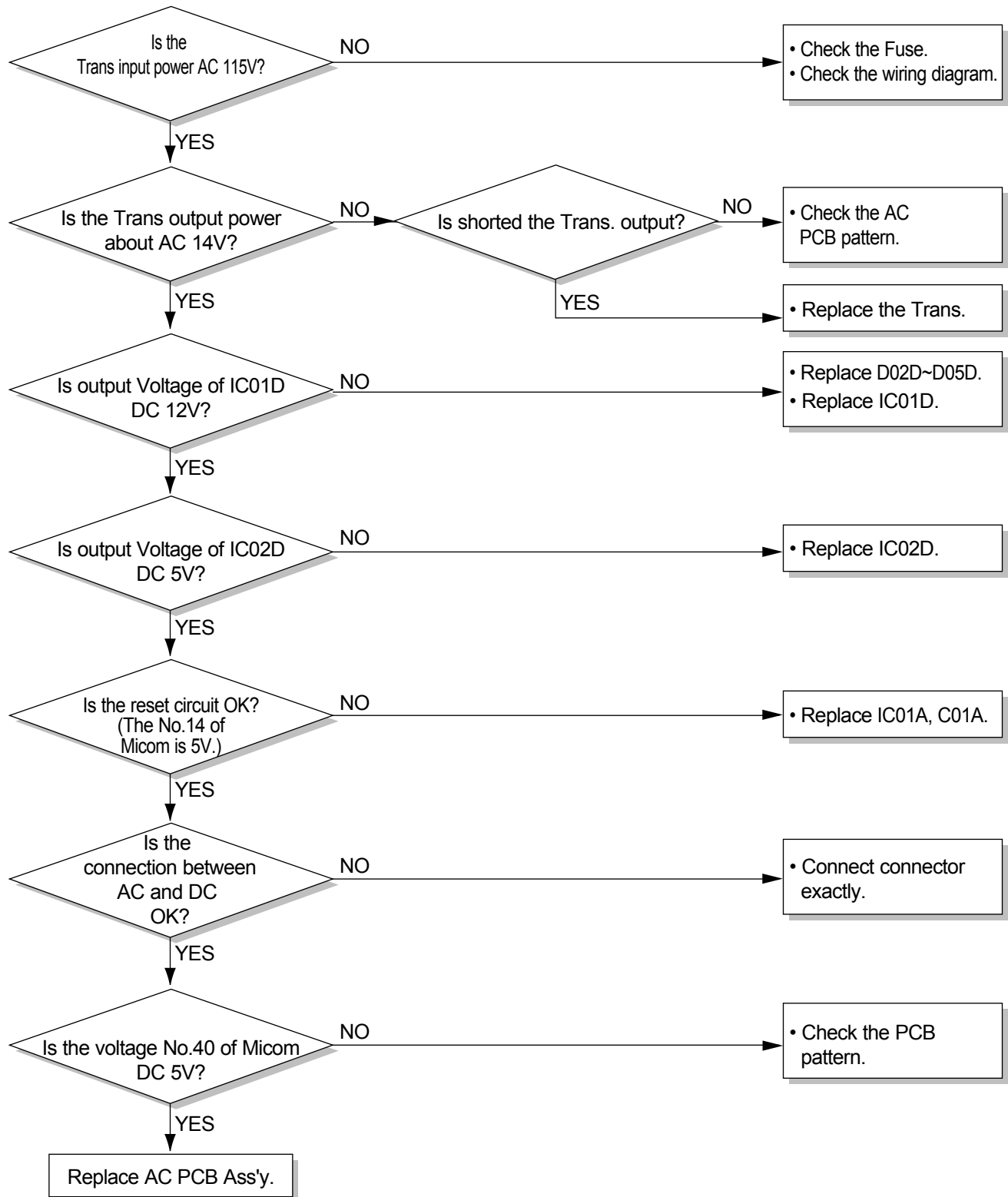
It displays abnormally on DC PCB Ass'y.



Electrical Parts

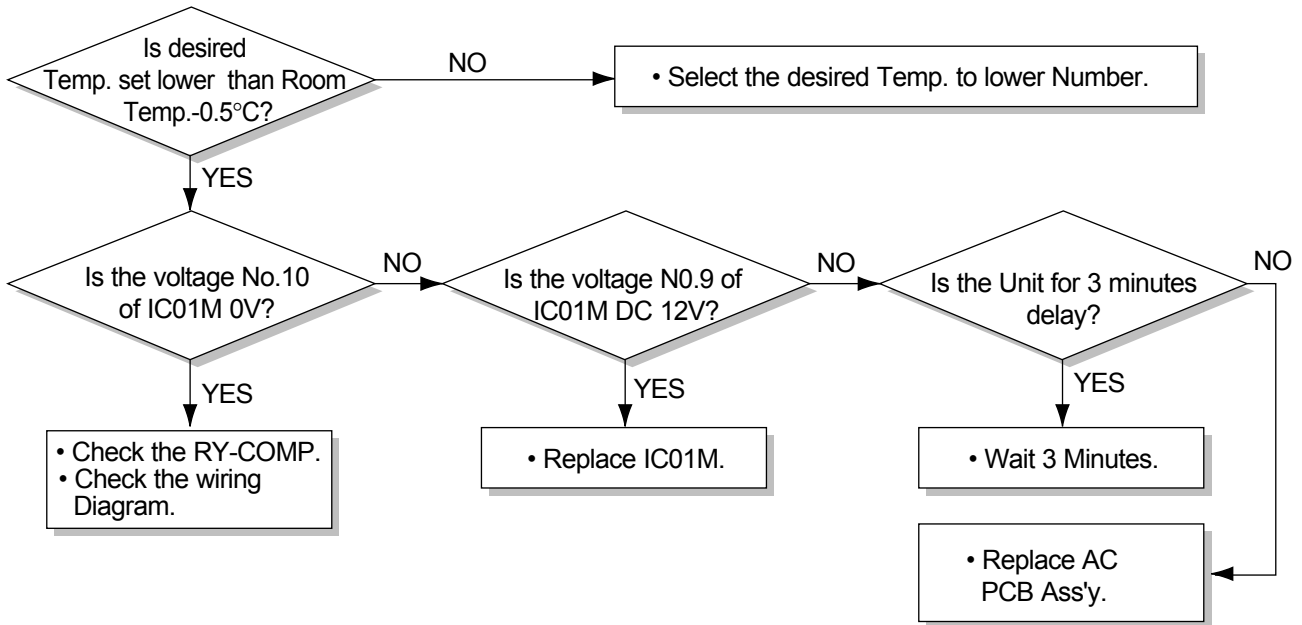
Possible Trouble 1

The unit does not operate.



Possible Trouble 2

The compressor does not operate.

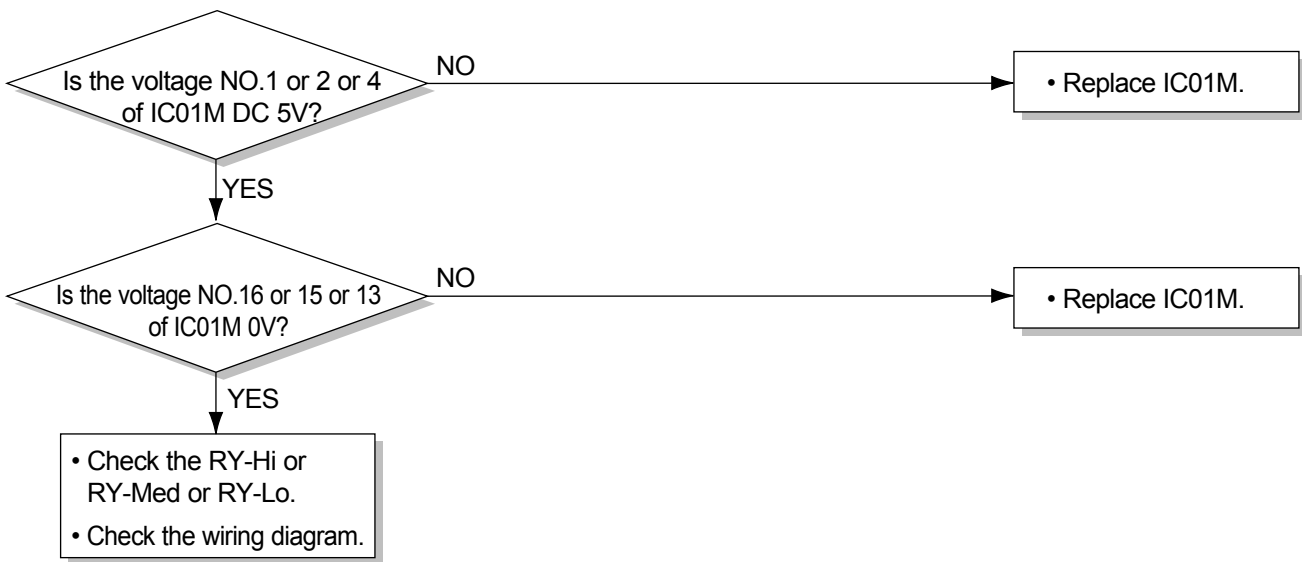


Possible Trouble 3

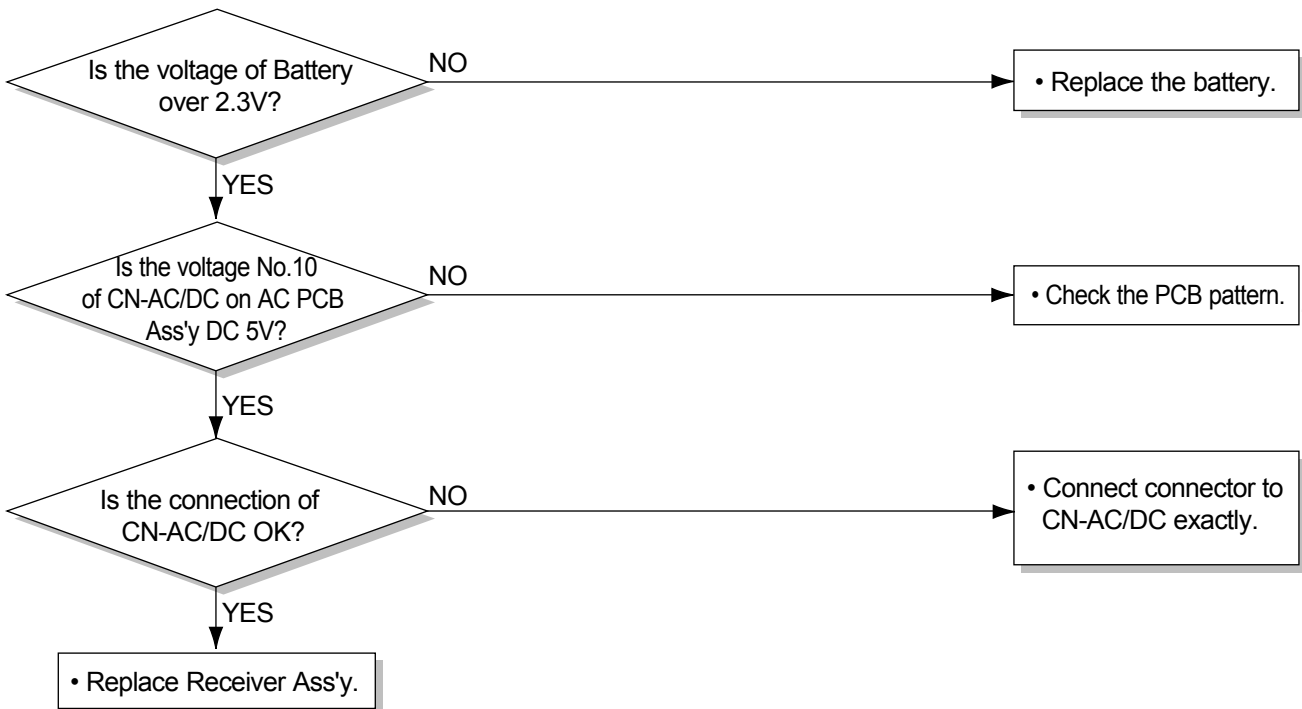
The compressor always operate.



Possible Trouble 4 FAN does not operate.

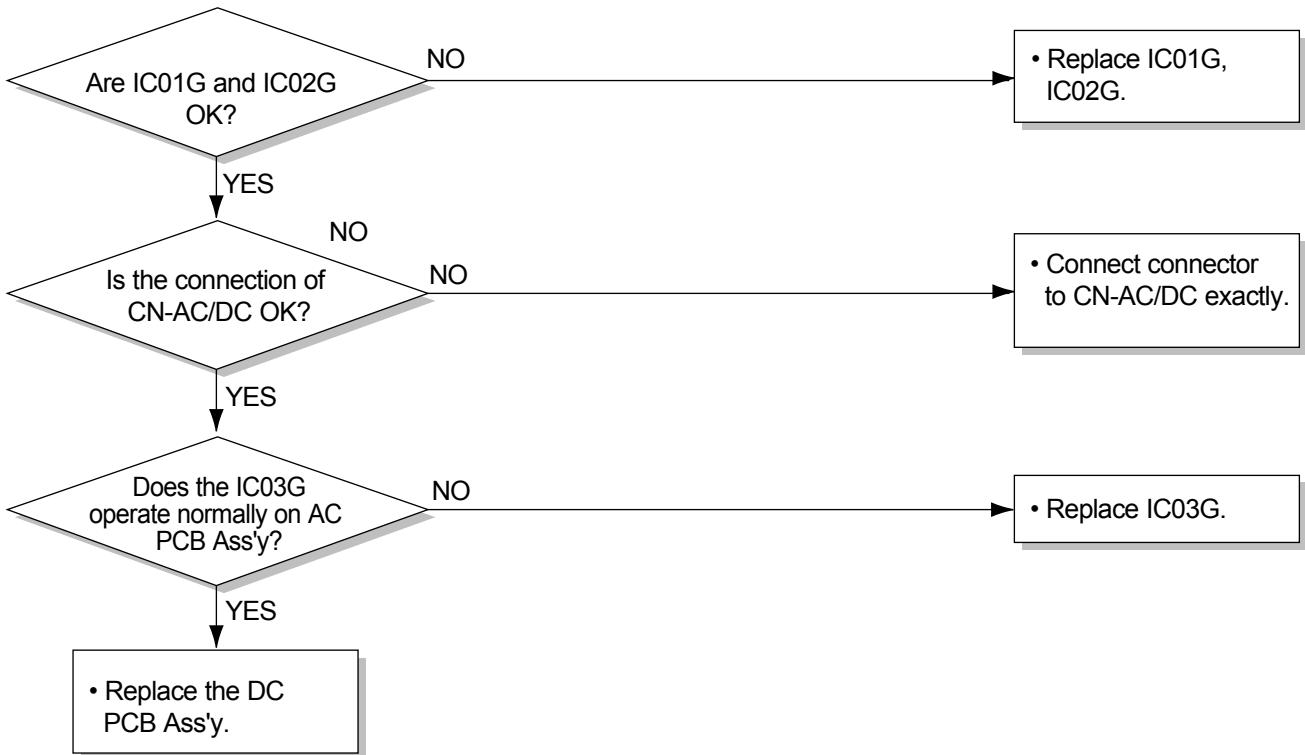


Possible Trouble 5 Remote controller does not operate.



Possible Trouble 6

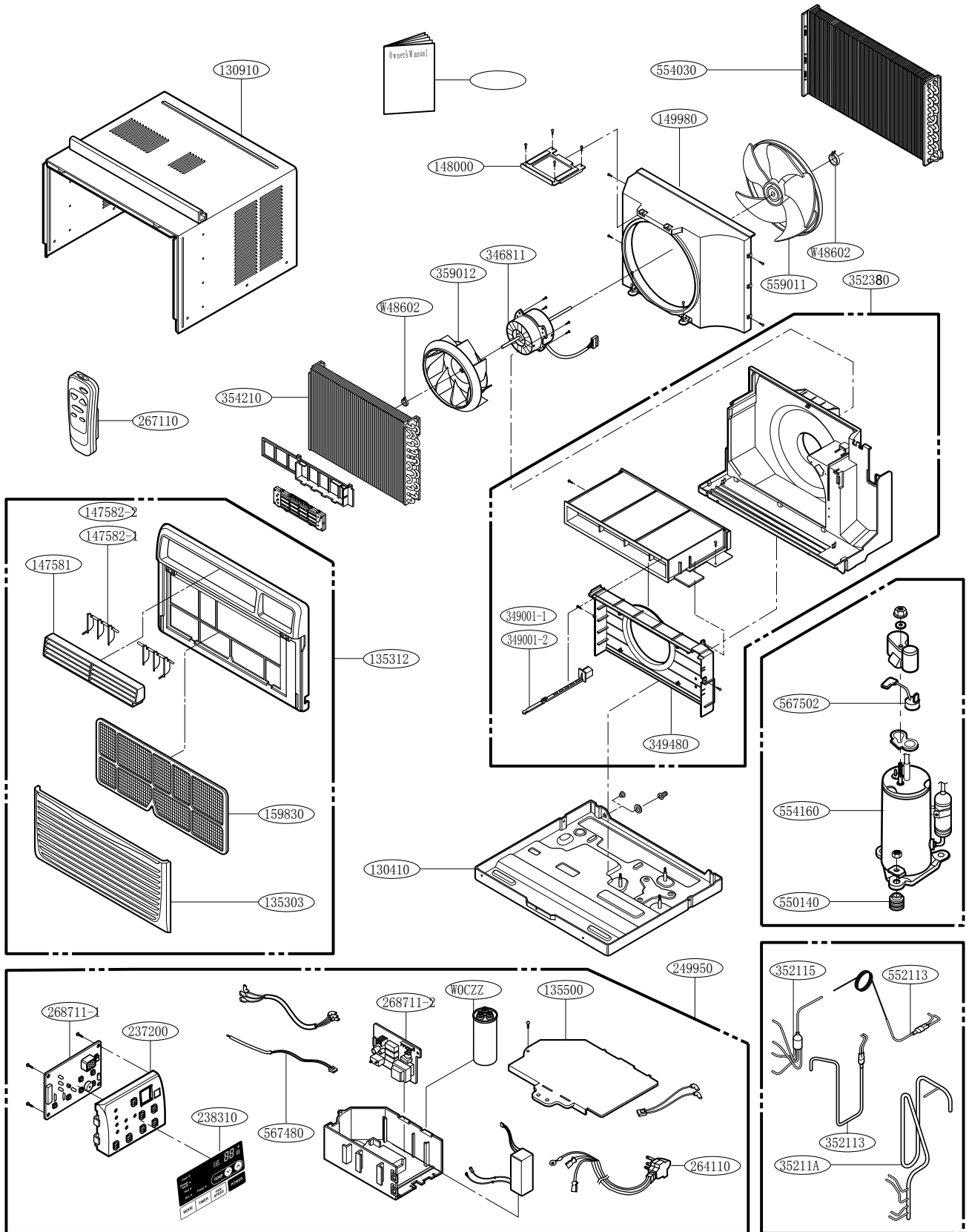
It displays abnormally on DC PCB Ass'y.



| COMPLAINT | CAUSE | REMEDY |
|--|---|---|
| Fan motor will not run. | No power | Check voltage at outlet. Correct if none. |
| | Power supply cord | Check voltage to Control Box. If none, check power supply cord. Replace cord if circuit is open. |
| | Wire disconnected or connection loose | Connect wire. Refer to wiring diagram for terminal identification. Repair or replace loose terminal. |
| | Capacitor (Discharge capacitor before testing.) | Test capacitor. Replace if not within $\pm 10\%$ of manufacturer's rating. Replace if shorted, open, or damaged. |
| | Will not rotate | Fan blade hitting shroud or blower wheel hitting scroll. Realign assembly. Units using slinger ring for condenser fan must have $\frac{1}{4}$ to $\frac{5}{16}$ inch clearance to the base. If it hits the base, shim up the bottom of the fan motor with mounting screw(s). Check fan motor bearings; if motor shaft will not rotate, replace the motor. |
| Fan motor runs intermittently | Revolves on overload. | Check voltage. If not within limits, call an electrician. Test capacitor. Check bearings. Does the fan blade rotate freely? If not, replace fan motor. Pay attention to any change from high speed to low speed. If the speed does not change, replace the motor. |
| Fan motor noise. | Fan | If cracked, out of balance, or partially missing, replace it. |
| | Turbo | If cracked, out of balance, or partially missing, replace it. |
| | Loose clamper | Tighten it. |
| | Worn bearings | If knocking sounds continue when running or loose, replace the motor. If the motor hums or noise appears to be internal while running, replace motor. |
| Compressor will not run, but fan motor runs. | Voltage | Check voltage. If not within limits, call an electrician. |
| | Wiring | Check the wire connections, if loose, repair or replace the terminal. If wires are off, refer to wiring diagram for identification, and replace. Check wire locations. If not per wiring diagram, correct. |

| COMPLAINT | CAUSE | REMEDY |
|--|---|---|
| Compressor will not run, but fan motor runs. | Thermistor | Check the TEMP control. If not at the lowest number, set TEMP control to this setting and restart the unit. Check the continuity of the thermistor. Replace the thermistor if the circuit is open. |
| | Capacitor (Discharge capacitor before servicing.) | Check the capacitor. Replace if not within $\pm 10\%$ of manufacturers rating. Replace if shorted, open, or damaged. |
| | Compressor | Check the compressor for open circuit or ground. If open or grounded, replace the compressor. |
| | Overload | Check the compressor overload, if externally mounted. Replace if open. (If the compressor temperature is high, remove the overload, cool it, and retest.) |
| Compressor cycles on overload. | Voltage | Check the voltage. If not within limits, call an electrician. |
| | Overload | Check overload, if externally mounted. Replace if open. (If the compressor temperature is high, remove the overload, cool, and retest.) |
| Compressor cycles on overload. | Fan motor | If not running, determine the cause. Replace if required. |
| | Condenser air flow restriction | Remove the cabinet. inspect the interior surface of the condenser; if restricted, clean carefully with a vacuum cleaner (do not damage fins) or brush. Clean the interior base before reassembling. |
| | Condenser fins (damaged) | If condenser fins are closed over a large area on the coil surface, head pressures will increase, causing the compressor to overload. Straighten the fins or replace the coil. |
| Compressor cycles on overload. | Capacitor | Test capacitor. |
| | Wiring | Check the terminals. If loose, repair or replace. |
| | Refrigerating system | Check the system for a restriction. |
| Insufficient cooling or heating | Air filter | If restricted, clean or replace. |
| | Exhaust damper door | Close if open. |
| | Unit undersized | Determine if the unit is properly sized for the area to be cooled. |
| Excessive noise | Turbo or fan | Check the set screw or clamp. If loose or missing, correct. If the turbo or fan is hitting air guide, rearrange the air handling parts. |
| | Copper tubing | Remove the cabinet carefully and rearrange tubing not to contact cabinet, compressor, shroud, and barrier. |

Exploded View



Replacement Parts List

| LOCATION No. | DESCRIPTION | PART NO(2006) | | | REMARK |
|--------------|--------------------------------|---------------|-------------|-------------|--------|
| | | L8004R | HBLG8004R | M8004R | |
| 130410 | BASE ASSEMBLY,WELD[SINGLE] | 3041A10041H | 3041A10041H | 3041A10041H | R |
| 130910 | CABINET ASSEMBLY,SINGLE | 3091A10056A | 3091A10056A | 3091A10056A | R |
| 135312 | GRILLE ASSEMBLY,FRONT(SINGLE) | 3531A24016A | 3531A24017A | 3531A24020A | R |
| 135303 | GRILLE,INLET | 3530A10238A | 3530A10239A | 3530A10236A | R |
| 135500 | COVER | 3550A30226A | 3550A30226A | 3550A30226A | R |
| 147581 | LOUVER,HORIZONTAL | 4758A20064A | 4758A20064A | 4758A20064A | R |
| 147582-1 | LOUVER,VERTICAL | 4758A20040C | 4758A20040C | 4758A20040C | R |
| 147582-2 | LOUVER,VERTICAL | 4758A20040D | 4758A20040D | 4758A20040D | R |
| 148000 | BRACE | 4800A30002C | 4800A30002C | 4800A30002C | R |
| 149980 | SHROUD | 4998A10036A | 4998A10036A | 4998A10036A | R |
| 159830 | FILTER ASSEMBLY,AIR CLEANER | 5231A20023A | 5231A20023A | 5231A20023A | R |
| 237200 | PANEL,CONTROL | 3720A10111C | 3720A10111C | 3720A10111C | R |
| 249950 | CONTROL BOX ASSEMBLY,SINGLE | 4995A10113D | 4995A10113G | 4995A10113J | R |
| 268711-1 | PWB(PCB) ASSEMBLY,MAIN(AC) | 6871A20417C | 6871A20417C | 6871A20417C | R |
| 238310 | ESCUTCHEON | 3831A10021L | 3831A10021E | 3831A10021A | R |
| 268711-2 | PWB(PCB) ASSEMBLY,MAIN(DC) | 6871A20418A | 6871A20418A | 6871A20418A | R |
| 567480 | THERMISTOR ASSEMBLY | 6323A20004P | 6323A20004P | 6323A20004P | R |
| 264110 | POWER CORD ASSEMBLY | 6411A20037C | 6411A20037C | 6411A20037C | R |
| 346811 | MOTOR ASSEMBLY,SINGLE | 4681A20140A | 4681A20140A | 4681A20140A | R |
| 349001-1 | DAMPER,VENTILATION | 4900A20020A | 4900A20020A | 4900A20020A | R |
| 349001-2 | DAMPER,VENTILATION | 4900A20020B | 4900A20020B | 4900A20020B | R |
| 349480 | ORIFICE | 4948A20030A | 4948A20030A | 4948A20030A | R |
| 352115 | TUBE ASSEMBLY,EVAPORATOR IN | 5211A25020A | 5211A25020A | 5211A25020A | R |
| 35211A | TUBE ASSEMBLY,SUCTION SINGLE | 5211A22017A | 5211A22017A | 5211A22017A | R |
| 352113 | TUBE ASSEMBLY,DISCHARGE SINGLE | 5211A21237A | 5211A21237A | 5211A21237A | R |
| 552113 | TUBE ASSEMBLY,CONDENSER OUT | 5211A22016A | 5211A22016A | 5211A22016A | R |
| 552111 | TUBE ASSEMBLY,CAPILLARY | | | | R |
| 352380 | AIR GUIDE ASSEMBLY | 5239A20019A | 5239A20019A | 5239A20019A | R |
| 354210 | EVAPORATOR ASSEMBLY,FIRST | 5421A10043A | 5421A10043A | 5421A10043A | R |
| 554030 | CONDENSER ASSEMBLY,FIRST | 5403A20180A | 5403A20180A | 5403A20180A | R |
| 550140 | ANTI-VIBRATION BUSH | 5040AR4195A | 5040AR4195A | 5040AR4195A | R |
| 554160 | COMPRESSOR SET | 5416A90007A | 2520UCBA002 | 5416A90007A | R |
| 559011 | FAN, AXIAL | 5900A20015A | 5900A20015A | 5900A20015A | R |
| 359012 | FAN,TURBO | 5900A20020A | 5900A20020A | 5900A20020A | R |
| 267110 | REMOTE CONTROLLER ASSEMBLY | 6711A20034G | 6711A20056S | 6711A20034C | R |
| W48602 | CLAMP,SPRING | 3H02932B | 3H02932B | 3H02932B | R |
| W0CZZ | CAPACITOR, DRAWING | 0CZZA20005B | 0CZZA20005B | 0CZZA20005B | R |
| 567502 | O.L.P | | 6750U-L048A | | R |

Replacement Parts List

| LOCATION NO. | DESCRIPTION | PART NO. | | | | REMARK |
|--------------|--------------------------------|-------------|-------------|-------------|-------------|--------|
| | | CL8000ER | L1004R | HBLG1004R | M1004R | |
| 130410 | BASE ASSEMBLY,WELD[SINGLE] | 3041A10041H | 3041A10041K | 3041A10041K | 3041A10041K | R |
| 130910 | CABINET ASSEMBLY,SINGLE | 3091A10056B | 3091A10056A | 3091A10056A | 3091A10056A | R |
| 135312 | GRILLE ASSEMBLY,FRONT(SINGLE) | 3531A24016A | 3531A24016A | 3531A24017A | 3531A24020A | R |
| 135313 | GRILLE,INLET | 3530A10238A | 3530A10238A | 3530A10239A | 3530A10236A | R |
| 135500 | COVER | 3550A30226A | 3550A30226A | 3550A30226A | 3550A30226A | R |
| 147581 | LOUVER,HORIZONTAL | 4758A20064A | 4758A20064A | 4758A20064A | 4758A20069A | R |
| 147582-1 | LOUVER,VERTICAL | 4758A20040C | 4758A20040C | 4758A20040C | 4758A20040C | R |
| 147582-2 | LOUVER,VERTICAL | 4758A20040D | 4758A20040D | 4758A20040D | 4758A20040D | R |
| 148000 | BRACE | 4800A30002C | 4800A30002C | 4800A30002C | 4800A30002C | R |
| 159980 | SHROUD | 4998A10038A | 4998A10038A | 4998A10038A | 4998A10038A | R |
| 152302 | FILTER ASSEMBLY,AIR CLEANER | 5231A20023A | 5231A20023A | 5231A20023A | 5231A20023A | R |
| 237200 | PANEL,CONTROL | 3720A10111C | 3720A10111C | 3720A10111C | 3720A10111C | R |
| 249950 | CONTROL BOX ASSEMBLY,SINGLE | 4995A10113D | 4995A10113E | 4995A10113H | 4995A10113K | R |
| 268712 | PWB(PCB) ASSEMBLY,MAIN(AC) | 6871A20417C | 6871A20417C | 6871A20417C | 6871A20417C | R |
| 238310 | ESCUTCHEON | 3831A20021L | 3831A20021L | 3831A20021E | 3831A10046A | R |
| 268714 | PWB(PCB) ASSEMBLY,MAIN(DC) | 6871A20418A | 6871A20418A | 6871A20418A | 6871A20418A | R |
| 263230 | THERMISTOR ASSEMBLY | 6323A20004P | 6323A20004P | 6323A20004P | 6323A20004P | R |
| 264110 | POWER CORD ASSEMBLY | 6411A20037C | 6411A20037D | 6411A20037D | 6411A20037D | R |
| 346811 | MOTOR ASSEMBLY,SINGLE | 4681A20140A | 4681A20140B | 4681A20140B | 4681A20140B | R |
| 349001-1 | DAMPER,VENTILATION | 4900A20020A | 4900A20020A | 4900A20020A | 4900A20020A | R |
| 349001-2 | DAMPER,VENTILATION | 4900A20020B | 4900A20020B | 4900A20020B | 4900A20020B | R |
| 349480 | ORIFICE | 4948A20030A | 4948A20030A | 4948A20030A | 4948A20030A | R |
| 352115 | TUBE ASSEMBLY,EVAPORATOR IN | 5211A25022A | 5211A25022A | 5211A25022A | 5211A25022A | R |
| 35211A | TUBE ASSEMBLY,SUCTION SINGLE | 5211A22029B | 5211A22029A | 5211A22029A | 5211A22029A | R |
| 352113 | TUBE ASSEMBLY,DISCHARGE SINGLE | 5211A24011A | 5211A21268A | 5211A21268A | 5211A21268A | R |
| 552111 | TUBE ASSEMBLY,CONDENSER OUT | 5211A21269A | 5211A21269A | 5211A21269A | 5211A21269A | R |
| 552102 | TUBE ASSEMBLY,CAPILLARY | 5211A22042A | 5211A23020A | 5211A23020A | 5211A23020A | R |
| 352390 | AIR GUIDE ASSEMBLY | 5239A20019A | 5239A20019A | 5239A20019A | 5239A20019A | R |
| 354212 | EVAPORATOR ASSEMBLY,FIRST | 5421A10047B | 5421A10047B | 5421A10047B | 5421A10047B | R |
| 554030 | CONDENSER ASSEMBLY,FIRST | 5403A22003A | 5403A20190A | 5403A20190A | 5403A20190A | R |
| 550140 | ANTI-VIBRATION BUSH | 5040AR4195A | 4830AR4335A | 4830AR4335A | 4830AR4335A | R |
| 554160 | COMPRESSOR SET | 5416A90007A | 2520UCAK030 | 2520UCAK030 | 2520UCAK030 | R |
| 559010 | FAN, AXIAL | 5900A20015A | 5900A20015A | 5900A20015A | 5900A20015A | R |
| 359012 | FAN, TURBO | 5900A20020A | 5900A20020A | 5900A20020A | 5900A20020A | R |
| 267110 | REMOTE CONTROLLER ASSEMBLY | 6711A20034G | 6711A20034G | 6711A20056S | 6711A20034C | R |
| W48602 | CLAMP, SPRING | 3H02932B | 3H02932B | 3H02932B | 3H02932B | R |
| W0CZZ | CAPACITOR, DRAWING | 0CZZA20005B | 0CZZA20001N | 0CZZA20001N | 0CZZA20001N | R |

Replacement Parts List

| LOCATION NO. | DESCRIPTION | PART NO. | | | | REMARK |
|--------------|--------------------------------|-------------|-------------|-------------|-------------|--------|
| | | M8004RY4 | L8004RY4 | HBLG8004RA4 | HBLG8004RB4 | |
| 130410 | BASE ASSEMBLY,WELD[SINGLE] | 3041A10041H | 3041A10041H | 3041A10041H | 3041A10041H | R |
| 130910 | CABINET ASSEMBLY,SINGLE | 3091A10056A | 3091A10056A | 3091A10056A | 3091A10056A | R |
| 135312 | GRILLE ASSEMBLY,FRONT(SINGLE) | 3531A24020A | 3531A24016A | 3531A24017A | 3531A24017A | R |
| 135313 | GRILLE,INLET | 3530A10236A | 3530A10238A | 3530A10239A | 3530A10239A | R |
| 135500 | COVER | 3550A30226A | 3550A30226A | 3550A30226A | 3550A30226A | R |
| 147581 | LOUVER,HORIZONTAL | 4758A20069A | 4758A20064A | 4758A20064A | 4758A20064A | R |
| 147582-1 | LOUVER,VERTICAL | 4758A20040C | 4758A20040C | 4758A20040C | 4758A20040C | R |
| 147582-2 | LOUVER,VERTICAL | 4758A20040D | 4758A20040D | 4758A20040D | 4758A20040D | R |
| 148000 | BRACE | 4800A30002C | 4800A30002C | 4800A30002C | 4800A30002C | R |
| 159980 | SHROUD | 4998A10036A | 4998A10036A | 4998A10036A | 4998A10036A | R |
| 152302 | FILTER ASSEMBLY,AIR CLEANER | 5231A20023A | 5231A20023A | 5231A20023A | 5231A20023A | R |
| 237200 | PANEL,CONTROL | 3720A10111C | 3720A10111C | 3720A10111C | 3720A10111C | R |
| 249950 | CONTROL BOX ASSEMBLY,SINGLE | 4995A10113J | 4995A10113D | 4995A10113G | 4995A10113G | R |
| 268712 | PWB(PCB) ASSEMBLY,MAIN(AC) | 6871A20417C | 6871A20417C | 6871A20417C | 6871A20417C | R |
| 238310 | ESCUTCHEON | 3831A10046A | 3831A20021L | 3831A20021E | 3831A20021E | R |
| 268714 | PWB(PCB) ASSEMBLY,MAIN(DC) | 6871A20418A | 6871A20418A | 6871A20418A | 6871A20418A | R |
| 263230 | THERMISTOR ASSEMBLY | 6323A20004P | 6323A20004P | 6323A20004P | 6323A20004P | R |
| 264110 | POWER CORD ASSEMBLY | 6411A20037C | 6411A20037C | 6411A20037C | 6411A20037C | R |
| 346811 | MOTOR ASSEMBLY,SINGLE | 4681A20140A | 4681A20140A | 4681A20140A | 4681A20140A | R |
| 349001-1 | DAMPER,VENTILATION | 4900A20020A | 4900A20020A | 4900A20020A | 4900A20020A | R |
| 349001-2 | DAMPER,VENTILATION | 4900A20020B | 4900A20020B | 4900A20020B | 4900A20020B | R |
| 349480 | ORIFICE | 4948A20030A | 4948A20030A | 4948A20030A | 4948A20030A | R |
| 352115 | TUBE ASSEMBLY,EVAPORATOR IN | 5211A25020A | 5211A25020A | 5211A25020A | 5211A25020A | R |
| 35211A | TUBE ASSEMBLY,SUCTION SINGLE | 5211A22017A | 5211A22017A | 5211A22017A | 5211A22017A | R |
| 352113 | TUBE ASSEMBLY,DISCHARGE SINGLE | 5211A21237A | 5211A21237A | 5211A21237A | 5211A21237A | R |
| 552111 | TUBE ASSEMBLY,CONDENSER OUT | 5211A22016A | 5211A22016A | 5211A22016A | 5211A22016A | R |
| 552102 | TUBE ASSEMBLY,CAPILLARY | | | | | R |
| 352390 | AIR GUIDE ASSEMBLY | 5239A20019A | 5239A20019A | 5239A20019A | 5239A20019A | R |
| 354212 | EVAPORATOR ASSEMBLY,FIRST | 5421A10043A | 5421A10043A | 5421A10043A | 5421A10043A | R |
| 554030 | CONDENSER ASSEMBLY,FIRST | 5403A20180A | 5403A20180A | 5403A20180A | 5403A20180A | R |
| 550140 | ANTI-VIBRATION BUSH | 5040AR4195A | 5040AR4195A | 5040AR4195A | 5040AR4195A | R |
| 554160 | COMPRESSOR SET | 2520UCBA002 | 2520UCBA002 | 5416A20014B | 2520UCBA002 | R |
| 559010 | FAN, AXIAL | 5900A20015A | 5900A20015A | 5900A20015A | 5900A20015A | R |
| 359012 | FAN, TURBO | 5900A20020A | 5900A20020A | 5900A20020A | 5900A20020A | R |
| 267110 | REMOTE CONTROLLER ASSEMBLY | 6711A20034C | 6711A20034G | 6711A20056S | 6711A20056S | R |
| W48602 | CLAMP, SPRING | 3H02932B | 3H02932B | 3H02932B | 3H02932B | R |
| W0CZZ | CAPACITOR, DRAWING | 0CZZA20005B | 0CZZA20001N | 0CZZA20001N | 0CZZA20001N | R |



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