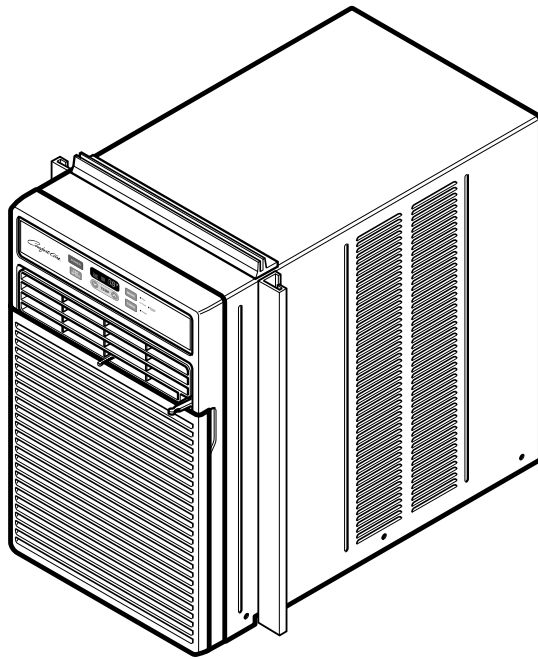


HEAT CONTROLLER, INC.

Comfort-Cire[®]

**Window-Type
Air Conditioner**

MODELS: CD-121
CD-101-5



Service Manual

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 properties only.

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

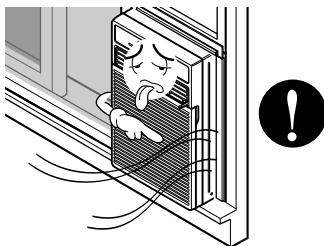
	Be sure not to do.
	Be sure to follow the instruction.

⚠ WARNING

■ Installation

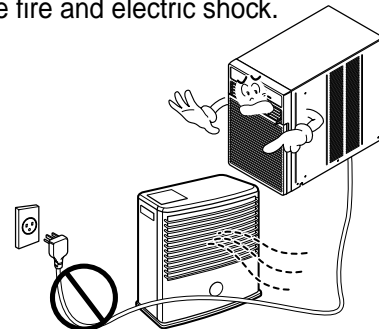
Always install the expansion panel(s).

- No installation may cause fire and electric shock accident.



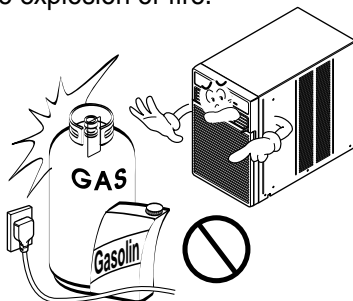
Do not place the power cord near a heater.

- 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 failure and electric shock.

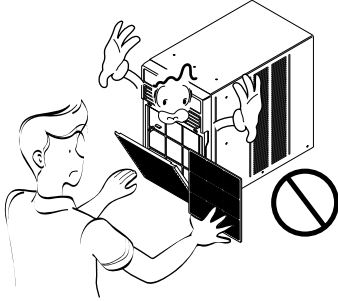


⚠ CAUTION

■ Installation

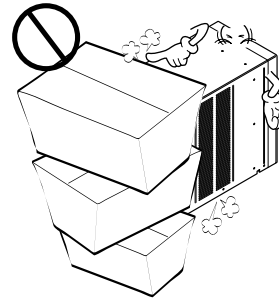
Never touch the metal parts of the unit when removing the filter.

- They are sharp and may cause injury.



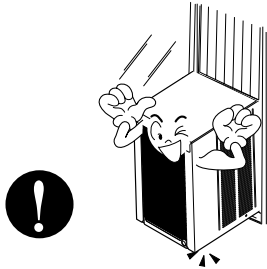
Do not block the inlet or outlet.

- It may cause failure of appliance or accident.



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

- If leaving appliance damaged, there is concern of damage due to the falling of product.



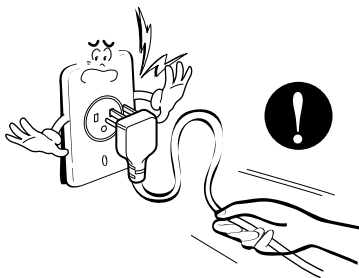
Be cautious not to touch the sharp edges when installing.

- It may cause injury.



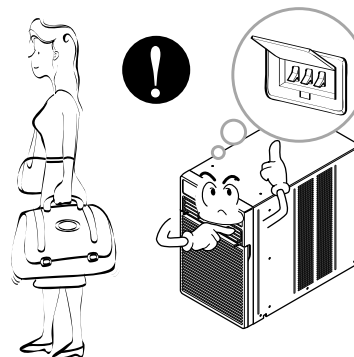
Hold the plug by the head when taking it out.

- It may cause electric shock and damage.



Turn off the main power switch when not using it for a long time.

- Prevent accidental startup and the possibility of injury.



Dimensions

Symbols Used in this Manual



This symbol alerts you to the risk of electric shock.

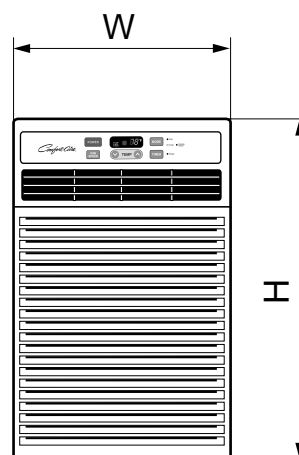
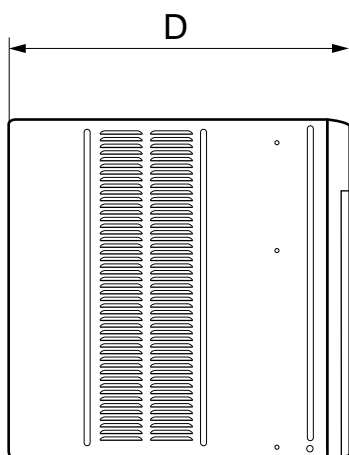


This symbol alerts you to hazards that could cause harm to the air conditioner.

NOTICE

This symbol indicates special notes.

Outside Dimensions



Model		All Model
Dimension		
W	mm(inch)	368(14 1/2")
H	mm(inch)	521(20 1/2")
D	mm(inch)	584(23)

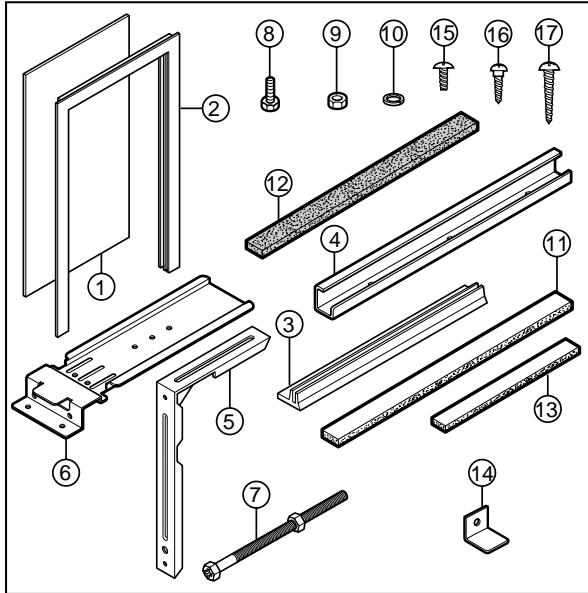
Product Specifications

ITEMS		MODELS	
		CD-101-5	CD-121
POWER SUPPLY		115V/60Hz	
COOLING CAPAC	(Btu/H)	10,000	11,500
INPUT	(W)	1,050	1,210
RUNNING CUR	(A)	9.6	11.0
E. E. R	(BTU/W • h)	9.5	
OPERATING CONDITION	INDOOR (°C)	26.7 (DB) *	19.4 (WB) **
	OUTDOOR (°C)	35 (DB) *	23.9 (WB) **
REFRIGERANT (R-22) CHARGE		480g (16.9oz)	655g (23.1oz)
EVAPORATOR		3 ROW 16STACKS, SLIT FAN TYPE	
CONDENSER		2 ROW 23STACKS, LOUVER FIN TYPE	3 ROW 16STACKS, SLIT FAN TYPE
FAN, INDOOR		TURBO FAN	
FAN, OUTDOOR		AXIAL FAN	
FAN SPEEDS, FAN/COOLING		3/3	
FAN MOTOR		6 POLES	
OPERATION CONTROL		REMOTE CONTROLLER	
ROOM TEMP . CONTROL		THERMOSTAT	
AIR DIRECTION CONTROL		VERTICAL LOUVER (RIGHT&LEFT)	
CONSTRUCTION		HORIZONTAL LOUVER (UP&DOWN)	
PROTECTOR	COMPRESSOR	OVERLOAD PROTECTOR	
	FAN MOTOR	INTERNAL THERMAL PROTECTOR	
POWER CORD		3 WIRE WITH GROUNDING	
		ATTACHMENT PLUG (CORD-CONNECTED TYPE)	
DRAIN SYSTEM		DRAIN PIPE SPLASHED BY FAN SLINGER	
NET WEIGHT	(lbs/kg)	77/35	79/36
OUTSIDE DIMENSION (W×H×D)	(inch)	14 ¹ / ₂ × 20 ¹ / ₂ × 23	
	(mm)	368 × 521 × 584	

NOTICE SPECIFICATIONS ARE SUBJECT TO MINOR CHANGE WITHOUT NOTICE FOR FURTHER IMPROVEMENT.

Installation

Installation Kits Contents

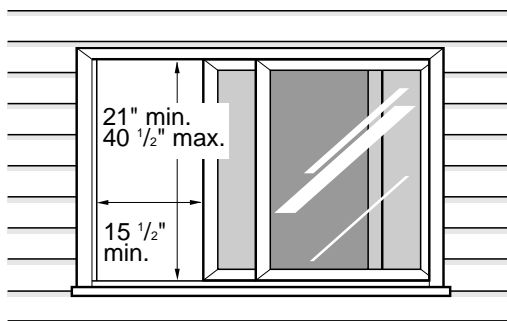


NO.	NAME OF PARTS	QTY
1	Curtain	1
2	Curtain Frame	1
3	Upper Guide	1
4	Side Guide	2
5	Support Bracket	1
6	Bracket	1
7	Leveling Bolt & Nut	1
8	Bolt	2
9	Nut	2
10	Washer	2
11	Side Guide seal	1
12	Foam Seal Strip	1
13	Window Track Seal	1
14	Window Locking Bracket	1
15	Screw (Type A)	9
16	Screw (Type B)	3
17	Screw (Type C)	8

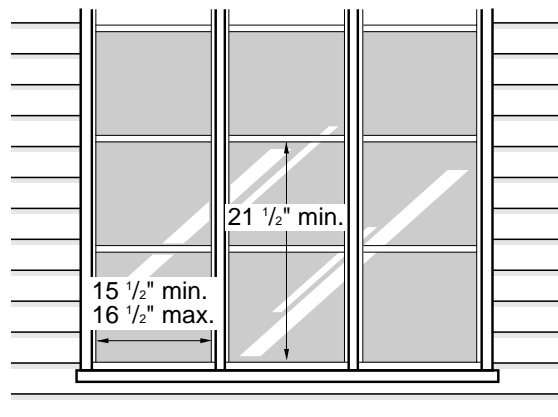
Window Requirements

1. These instructions are for a horizontal sliding or a casement window.
2. The electrical outlet must be within reach of the power cord.

For installation in a casement window, the window frame assembly and the side of the building must be adequate to support the weight of the air conditioner.



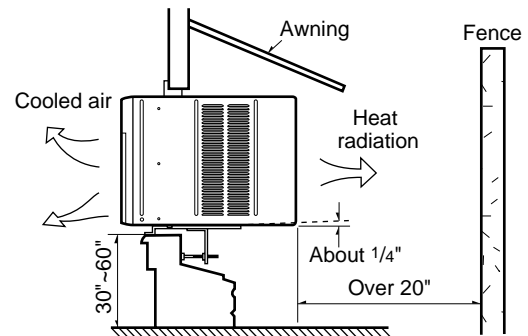
Horizontal sliding window



Casement window

How to Install the Unit

1. To prevent vibration and noise, make sure the unit is installed securely and firmly
2. Install the unit where the sunlight does not shine directly on the unit.
3. The outside of the cabinet must extend outward for at least 14" 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.



NOTICE All side louvers of the cabinet must remain exposed to the outside of the structure.

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

Horizontal Sliding Window Installation

1. Loosely attach the Support Bracket to the bottom of Bracket using Bolts, Washer, and Nuts. Attach the Leveling Bolt and Nut. (Fig. 1)

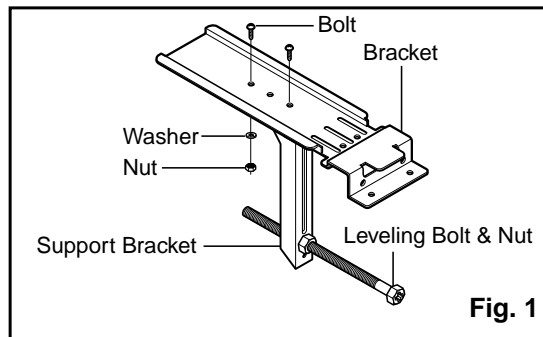


Fig. 1

2. Remove protective backing from Window Track Seal and apply seal to window track. (Fig.2)

3. Measure and lightly mark a line 8-1/4 inches from window jamb. Center the Support Bracket assembly on the window track and fasten with 4 Type C screws.(Fig. 2)

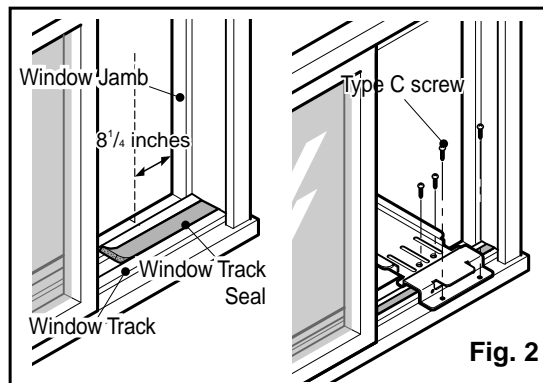


Fig. 2

4. Put the Support Bracket against the outside wall and tighten the Bolts on top of the Bracket. Adjust the Leveling Bolt so that the air conditioner will be installed with a very slight tilt (about 1/4") downward toward the outside for proper drainage. Tighten the nut. (Fig. 3)

NOTICE DO NOT drill a hole in the bottom of the base pan. The air conditioner is designed to operate with the bottom of the base pan approximately half-full of water.

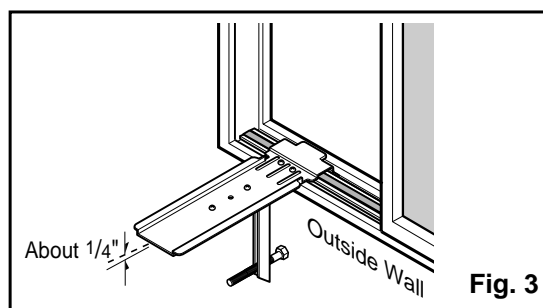


Fig. 3

5. Fasten Side Guides to the sides of the Air Conditioner using 3 Type A screws per Guide. Start with first screw at middle of Guide. (Fig. 4)

6. Fasten Upper Guide on the top of the Air Conditioner using 3 Type A screws. (Fig. 4)

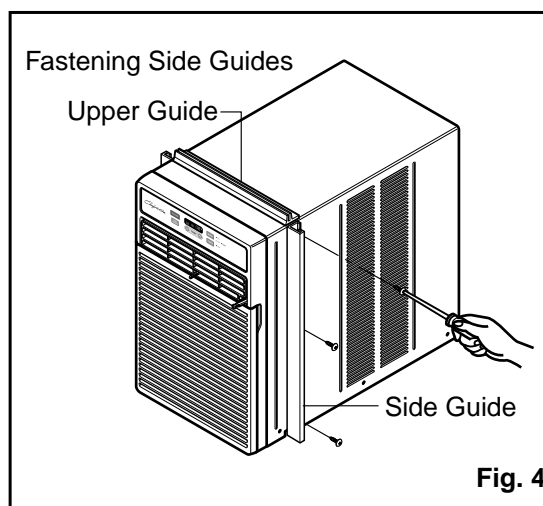


Fig. 4

7. Measure height of window opening from top of Bracket assembly as shown Fig. 5. Subtract 20-3/4 inches. Mark this measurement on Curtain and cut the Curtain. (Fig. 5)

8. Slide Curtain into Curtain Frame. Slide Curtain Frame assembly into side Guides of the Air Conditioner cabinet. Make sure Curtain is firmly enclosed on all sides by the Frame. (Fig. 6)

9. Cut side Guide seal into 2 equal lengths. Remove protective backing and apply it to the rear side of cabinet Side Guides, starting just below Curtain Frame assembly. Pinch off excess length so seal is even with the bottom of side Guide. (Fig. 7)

10. Place Air Conditioner in window opening. It should sit on Bracket assembly so that Curtain Frame and cabinet Side Guides are against top and side window jambs. Mate front of Bracket with Base Guide attached to the bottom of base pan.

11. Drill 1/8 inch holes in window track through the existing holes on Base Guide. Screw 4 Type C screws through the holes. (Fig. 8)

12. If this is a casement window installation, proceed to Casement Window Installation. If not, slide inner window sash firmly against side of the cabinet.

13. Drill 1/8 inch hole in window jamb to align with the existing holes in the Curtain Frame. Attach Curtain Frame to window frame with 2 Type B screws. (Fig. 8)

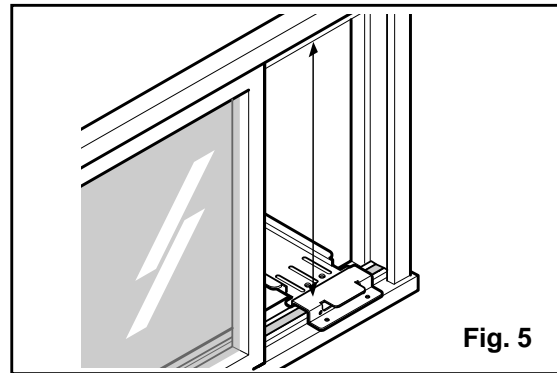


Fig. 5

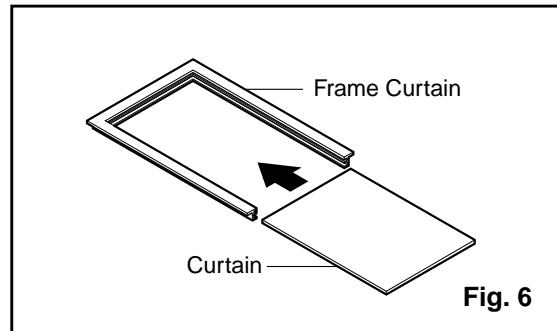


Fig. 6

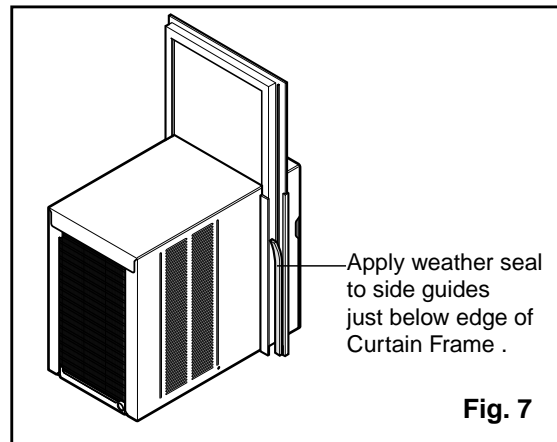


Fig. 7

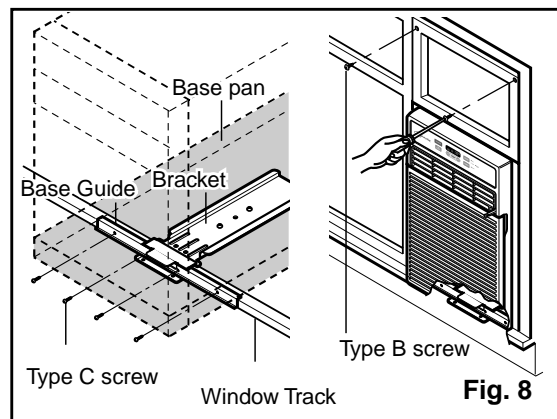
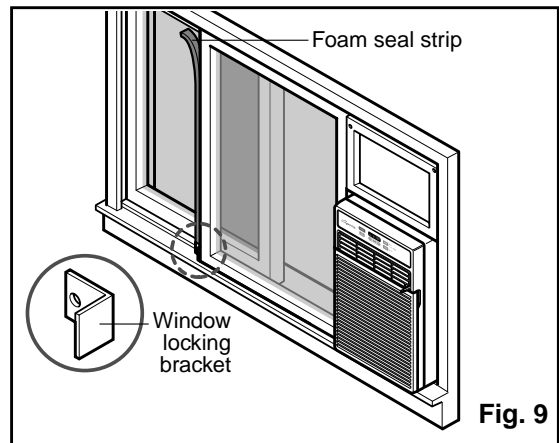


Fig. 8

NOTICE Check all seals and plug any remaining air gaps with a suitable weatherproof caulk.

14. If this is a casement window installation, proceed to Casement Window Installation.
If not, stuff the Foam Seal Strip between the vertical sash and the window glass. (Fig. 9)
15. Attach the L Bracket with a Type B screw. (Fig. 9)



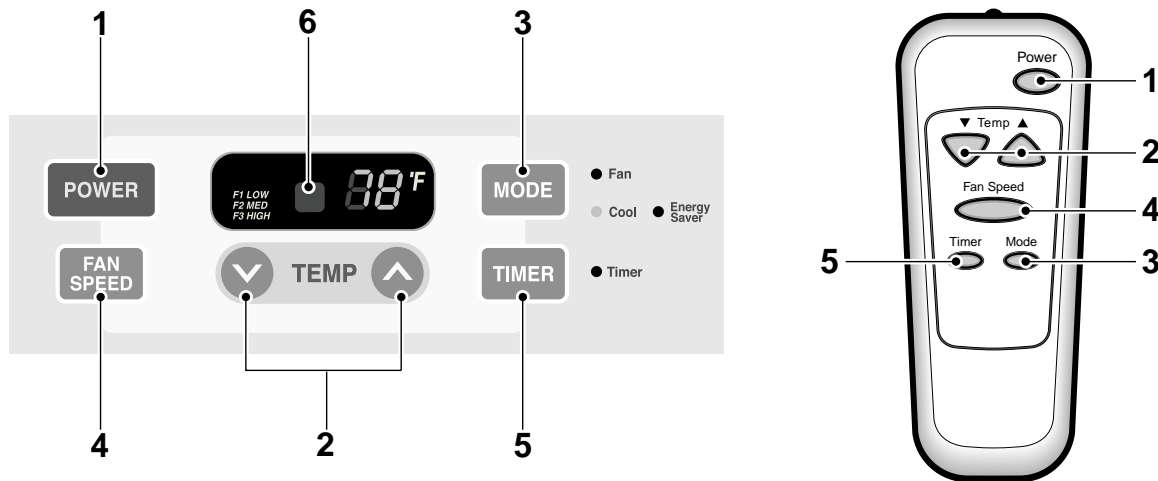
Casement Window Installation

1. Installation procedure is the same as that described in steps 1 through 11 and step 13 of the Horizontal Sliding Window installation.
2. If the window opening is wider than 15-3/4 inches you will need to install a filler panel. Make this panel from 3/4 inch thick wood and run it the full length of the window.
Attach it securely to the window frame and paint it to protect it from the weather.
3. Since styles and sizes of casement windows vary widely, it is advisable to have the air conditioner installed by someone skilled in this type of installation.

Operation

Controls

The remote control and control panel will look like those represented in the following pictures.



Remote Control Operations

1. POWER

- To turn the air conditioner ON, push this button. To turn the air conditioner OFF, push the button again.
- This button takes priority over any other button.
- When you first turn it on, the unit is in cool mode, high fan speed, temperature setting at 72°F.

2. TEMPERATURE SETTING

- Use this button to automatically control the temperature of the room.
The temperature can be set within a range of 60°F to 86°F by increments of 1°F.

3. MODE

- Every time you push this button, it will cycle through the following modes: COOL, ENERGY SAVER and FAN.
- ENERGY SAVER
 - The fan stops when the compressor stops cooling. Approximately every 3 minutes the fan will turn on and the unit will check the room air to determine if cooling is needed.

4. FAN SPEED

- Every time you push this button, it advances the setting as follows: {High(F3) → Low(F1) → Med(F2) → High(F3)}

5. TIMER

- SHUT-OFF TIME
 - You will usually use shut-off time while you sleep.
 - With unit running, use Timer to set number of hours until shut-off.
 - For your sleeping comfort, once Time is set, the Temperature setting will raise 2°F after 30 min, and 2°F after another 30 min.
- START TIME
 - Every time you push Timer button, it advances the Timer setting as follows: 1 Hour → 2 Hours → etc. → 12 Hours maximum.
- START TIME
 - With unit not running, use timer to set number of hours before unit starts.
 - Every time you push Timer button, it advances the Timer setting as follows: 1 Hour → 2 Hours → etc. → 12 Hours maximum.

6. REMOTE CONTROL SENSOR

AUTO RESTART

When power is restored after an electrical power failure, the unit will begin to run at its last setting.

Disassembly

- Before the following disassembly, set POWER SWITCH 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 screws which fasten the front grille.(See Figure 1)
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.

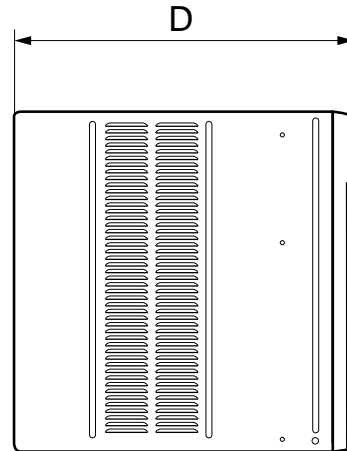


Figure 1

2. Cabinet

1. After disassembling the FRONT GRILLE, remove the 6 screws which fasten the cabinet at both sides.(See Figure 2)
2. Remove the 4 screws which fasten the cabinet at back.
3. Remove the cabinet.
4. Re-install the components by referring to the removal procedure, above.

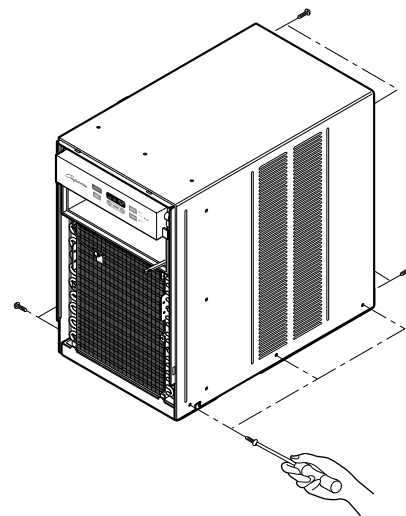


Figure 2

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. (See Figure 3)
4. Disconnect the grounding screw from the evaporator channel.
5. Remove the 2 screws which fasten the control box.(See Figure 3)
6. Remove the housing which connects motor wire in the control box.
7. Remove three leads which connect compressor.
8. Discharge the capacitor by placing a 20,000 ohm resistor across the capacitor terminals.
9. Raise the control box upward completely.
10. Re-install the components by referring to the removal procedure, above.
(Refer to the circuit diagram found on pages 21~22 in this manual and on the control box.)

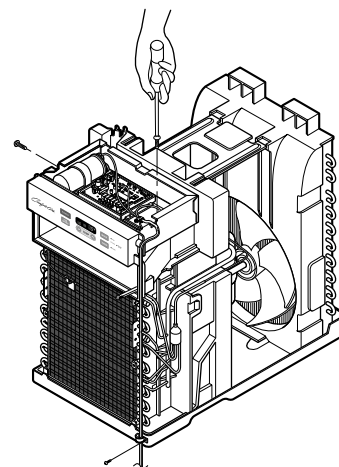


Figure 3

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 which fasten the brace.
5. Remove the brace.
6. Remove the 2 screws which fasten the upper air guide. (See Figure 4)
7. Remove the upper air guide.
8. Remove the 2 screws which fasten the evaporator.
9. Move the evaporator forward and pulling it upward slightly. (See Figure 5)
10. Remove orifice by pulling two taps.
11. Remove the clamp with a hand plier which secures the turbo fan.
12. Remove the turbo fan. (See Figure 6)
13. Remove the motor. (Refer to section 11)
14. Remove the 2 screws which fasten the lower air guide from the base pan.
15. Remove the 2 screws which fasten the motor mount from the base pan.
16. Remove the 2 screws which fasten the lower air guide and motor mount.
17. Move the lower air guide backward and pull out from the base pan. (Move the lower air guide carefully.)
18. Re-install the components by referring to the removal procedure, above.

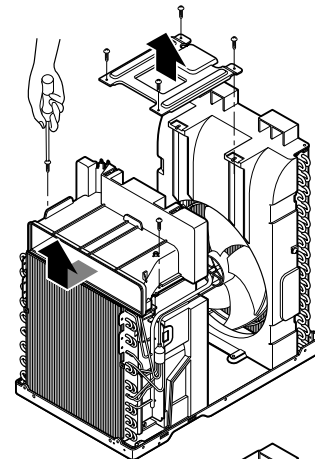


Figure 4

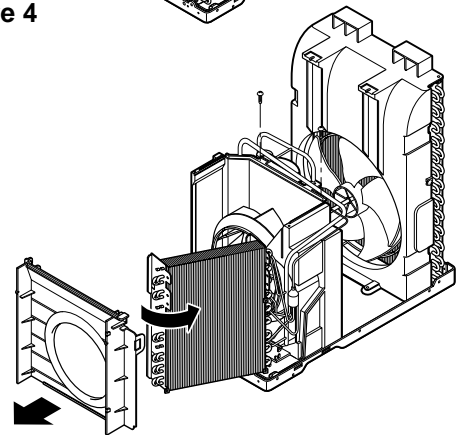


Figure 5

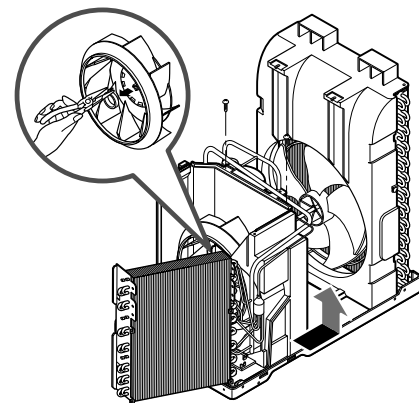
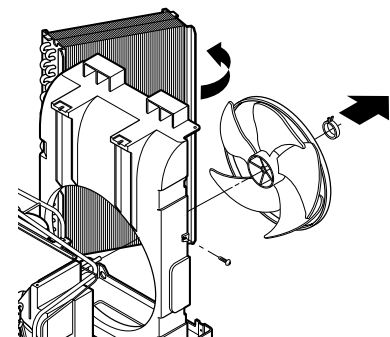


Figure 6



5. FAN

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

5. Shroud

1. Remove the fan. (Refer to section 2.5)
2. Remove the shroud. (See Figure 8)
3. Re-install the components by referring to the removal procedure, above.

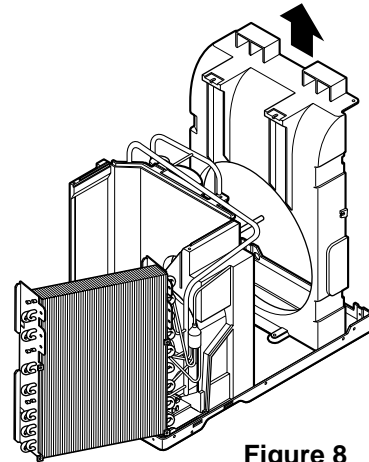


Figure 8

Electrical Parts

6. Overload Protector

1. Remove the cabinet. (Refer to section 2)
2. Remove the nut which fastens the terminal cover.
3. Remove the terminal cover. (See Figure 9)
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.

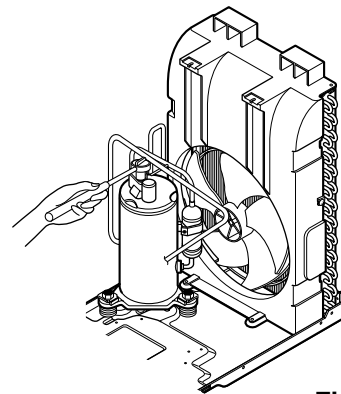


Figure 9

7. 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 6)
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 10)
7. Re-install the components by referring to the removal procedure, above.

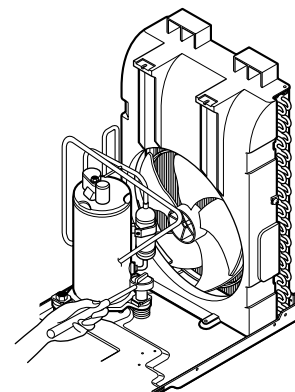


Figure 10

8. Capacitor

1. Remove the cabinet. (Refer to section 2)
2. Remove the screw and the clamp which fastens the capacitor.
3. Disconnect all the leads of capacitor terminals.
4. Re-install the components by referring to the removal procedure, above. (See Figure 11)

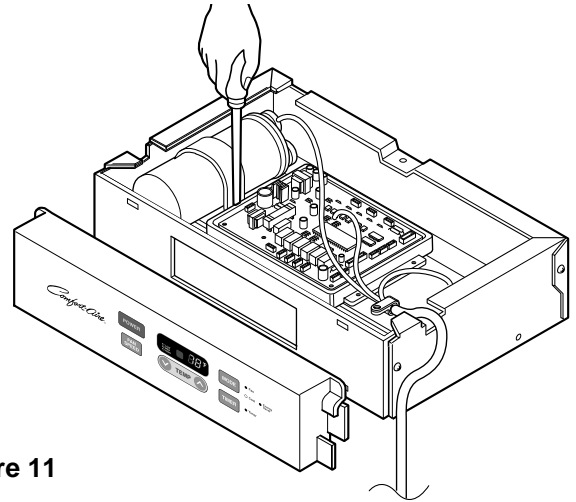


Figure 11

9. Power Cord

1. Remove the cabinet. (Refer to section 2)
2. Disconnect the grounding screw from the control box.
3. Disconnect the 2 receptacles.
4. Remove a screw which fastens the clip cord. (See Figure 12)
5. Remove the power cord.
6. Re-install the component by referring to the above removal procedure, above. (Use only one ground-marked hole \oplus 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.)

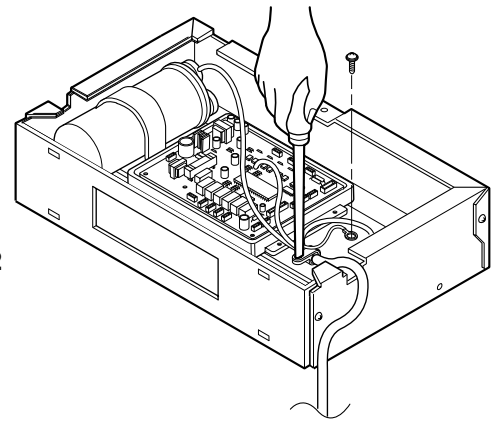


Figure 12

10. Thermostat

1. Remove the cabinet. (Refer to section 2.1.2)
2. Remove the 2 screws which fasten the thermostat.
3. Disconnect 2 leads of thermostat terminals.
4. Remove the thermostat.
5. Re-install the components by referring to the above removal procedure. (See Figure 13)

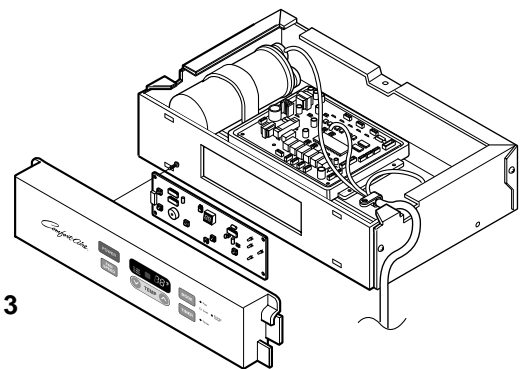


Figure 13

11. Motor

1. Remove the cabinet. (Refer to section 5)
2. Remove the turbo fan. (Refer to section 5)
3. Remove the fan. (Refer to section 6)
4. Remove the 4 screws which fasten the motor from the Motor Mount. (See Figure 14)
5. Remove the motor.
6. Re-install the components by referring to the removal procedure, above.(See Figure 14)

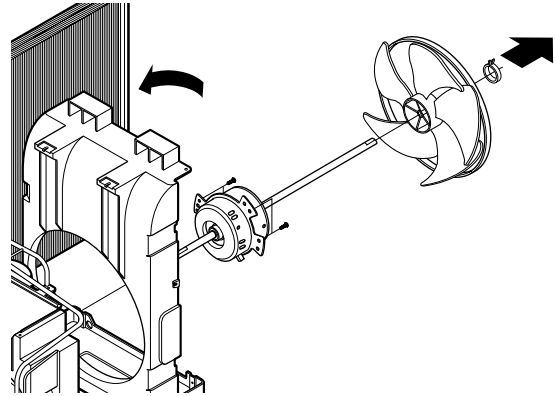


Figure 14

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. Remove the 4 screws which fasten the brace.
3. Remove the 4 screws which fasten the condenser and shroud. (See Figure 15)
4. Remove the 2 screws which fasten the condenser and base pan.
5. After discharging the refrigerant completely, unbrazed the interconnecting tube at the condenser connections.
6. Remove the condenser.
7. Re-install the components by referring to notes. (See Figure 15)

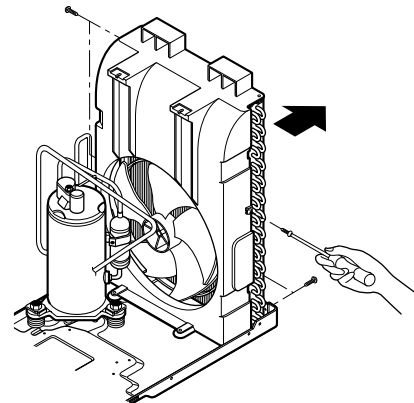


Figure 15

13. Evaporator

1. Remove the cabinet. (Refer to section 2)
2. Remove the control box.(Refer to section 3)
3. Remove the upper air guide. (Refer to section 4)
4. Remove the 2 screws which fasten the evaporator from lower air guide.
5. Move the evaporator sideways carefully. (Refer to section 4)
6. After discharging the refrigerant completely, unbrazed the interconnecting tube at the evaporator connections.
7. Remove the evaporator.
8. Re-install the components by referring to notes. (See Figure 16)

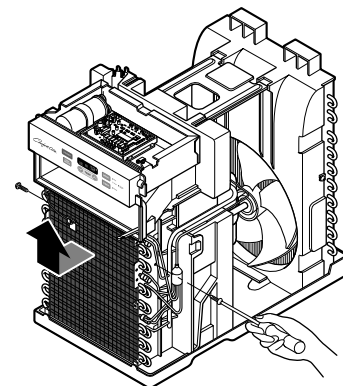


Figure 16

14. Capillary Tube

1. Remove the cabinet. (Refer to section 2)
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.

NOTES

— Replacement of the refrigerant.

1. When replacing the refrigerant, 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 17A.
 - 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.
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 17B.
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 solder and solder 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.

CAUTION

If high vacuum equipment is used, adjust valves A and B so they are opened only slightly 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 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 17B. Open valve C.
Discharge the line at the manifold connection.
- 5) The system is now ready for final charging.

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.

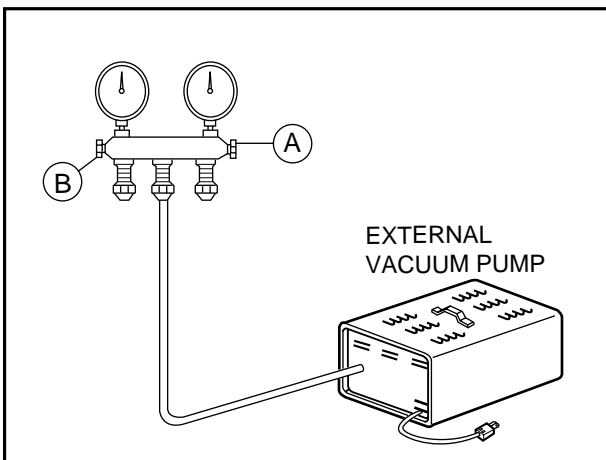
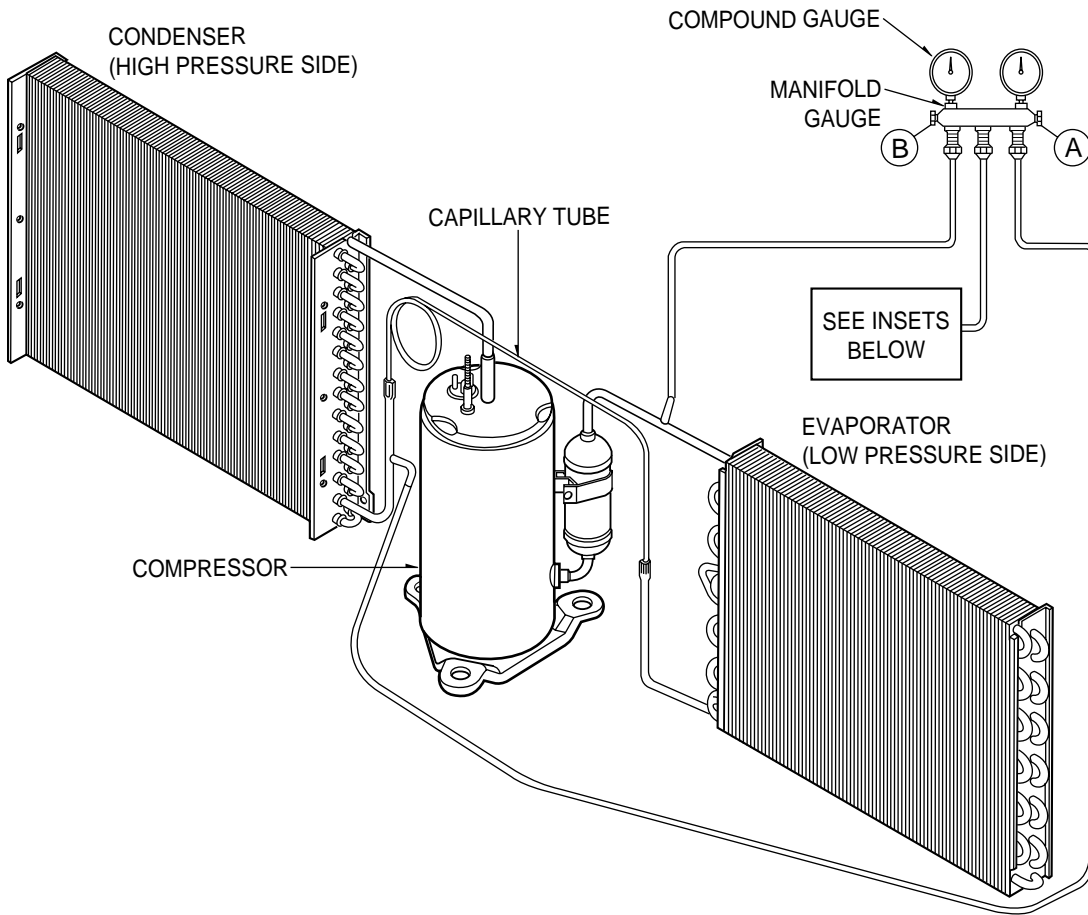


Figure 17A-Pulling Vacuum

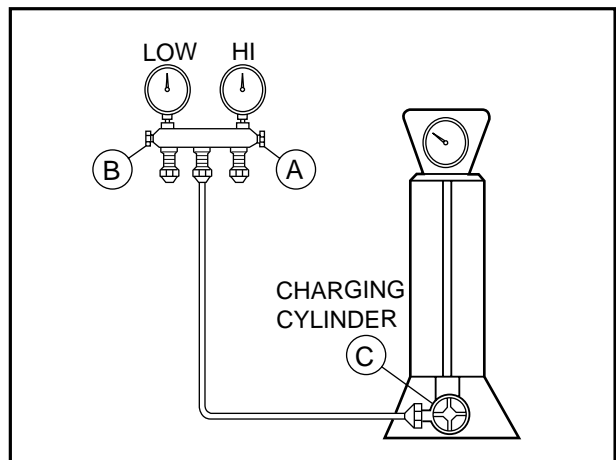
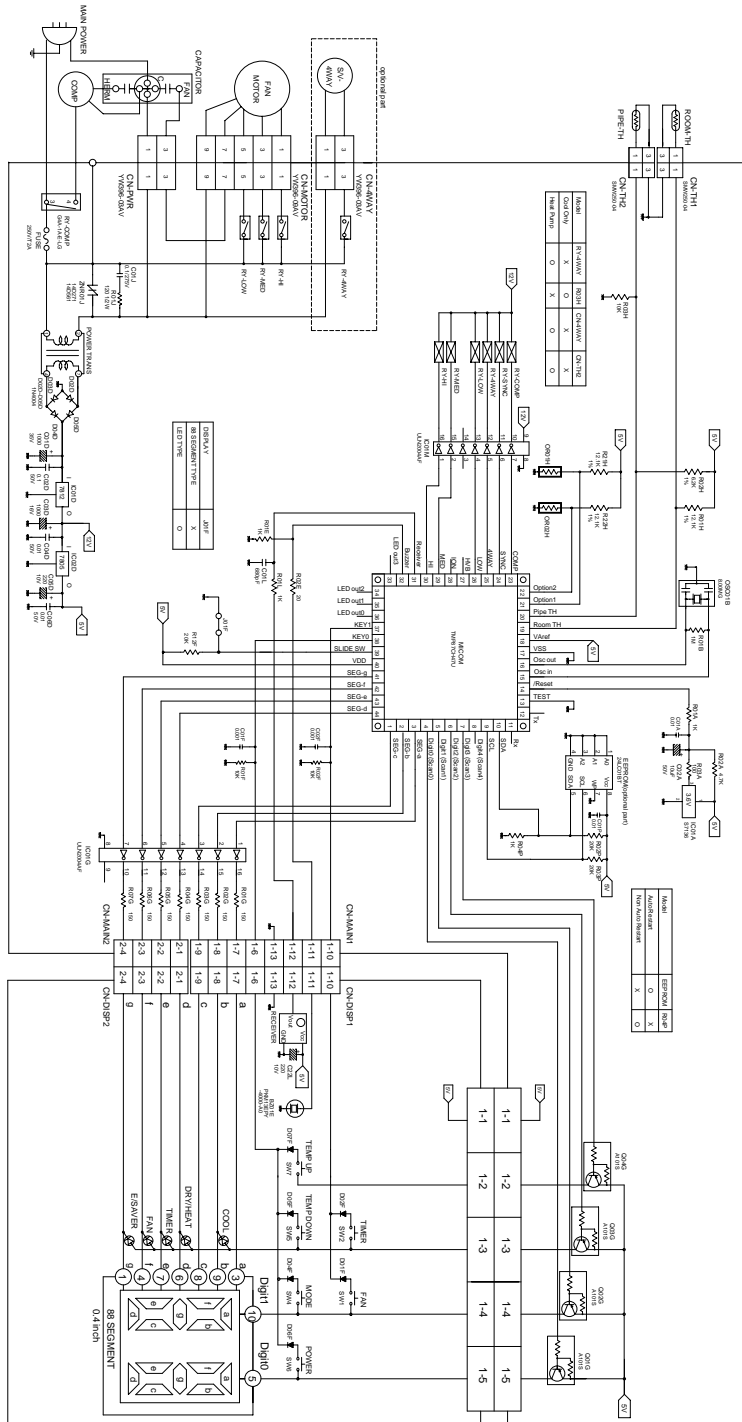


Figure 17B-Charging

Schematic Diagram

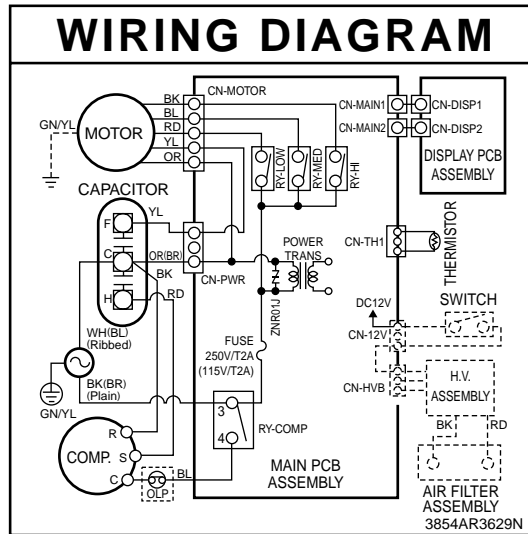
Wiring Diagram



Wiring Diagram

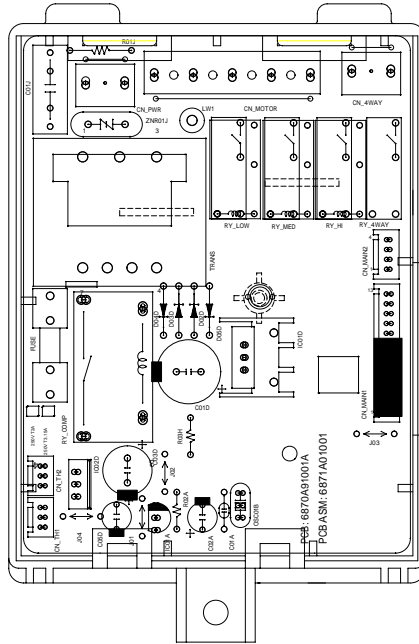
CASEMENT_10K

CASEMENT_12K

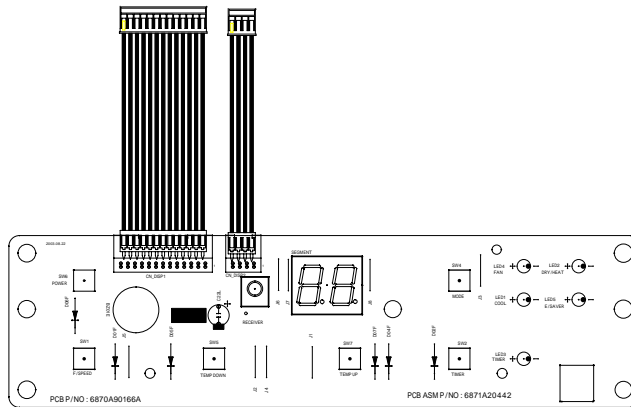


Components Location

Main P.W.B Assembly

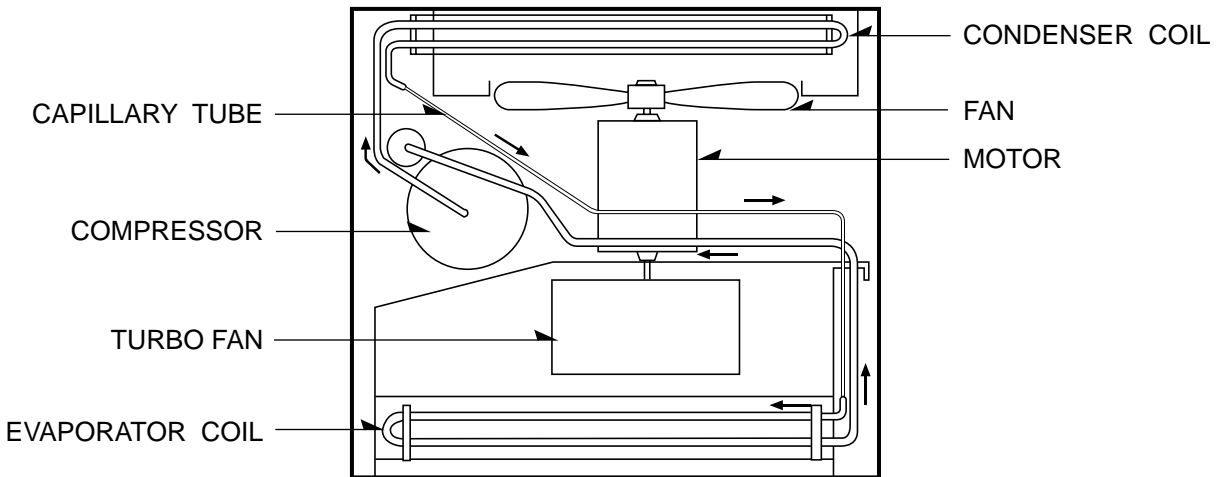


Display P.W.B Assembly

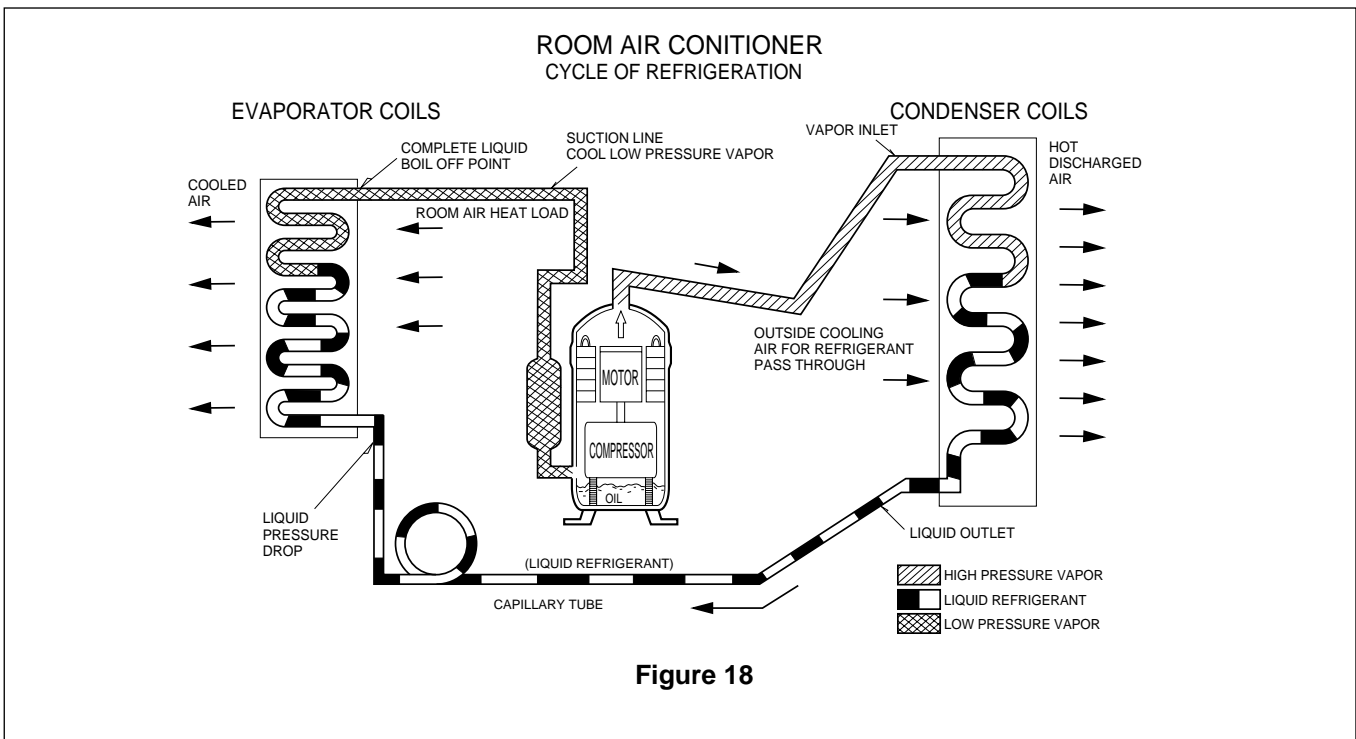


Troubleshooting Guide

Piping System



Following is a brief description of the important components and their functions in the refrigeration system. Refer to Fig. 18 to follow the refrigeration cycle and the flow of the refrigerant in the cooling cycle.

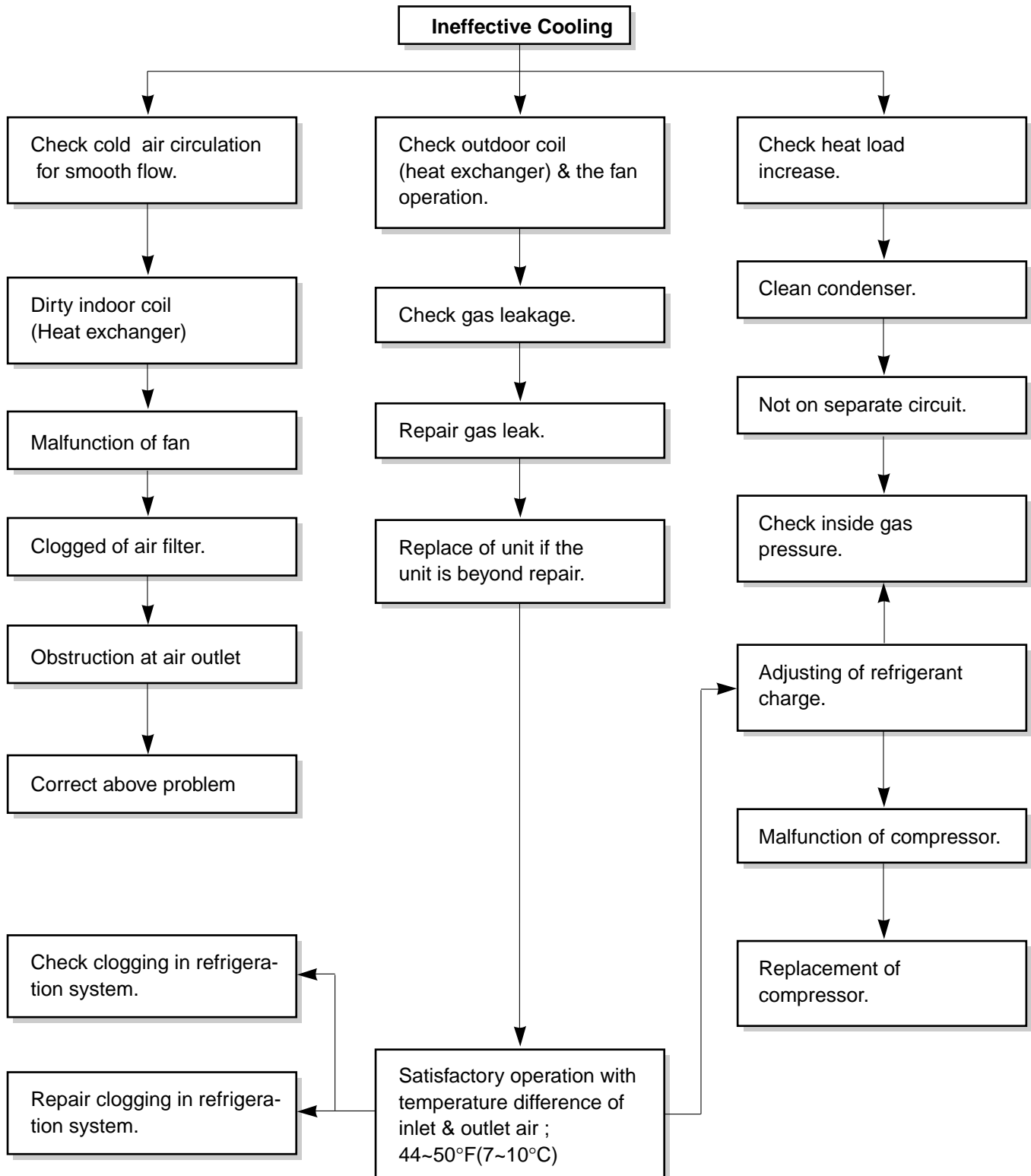


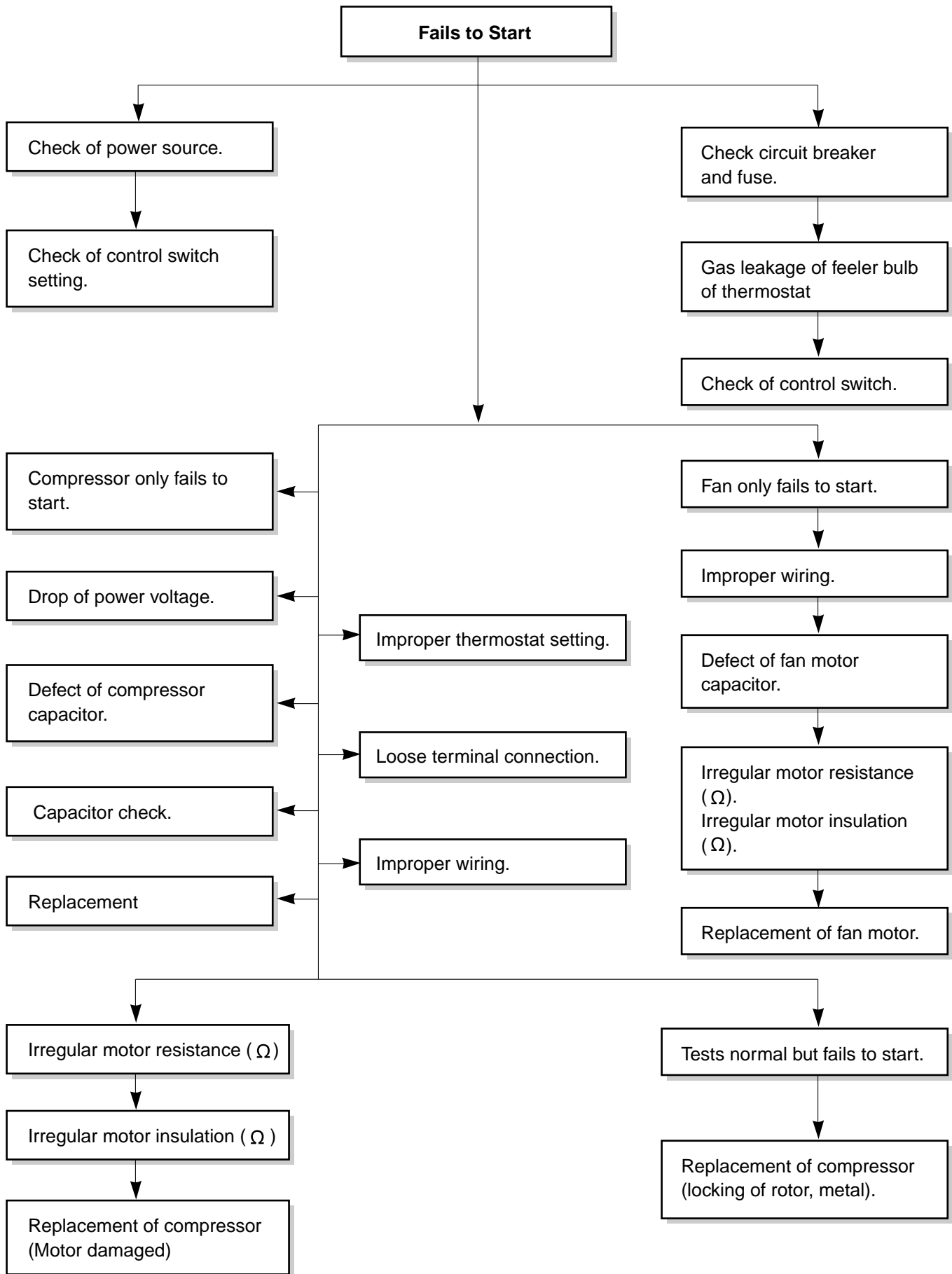
Troubleshooting Guide

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 is running but cooling is ineffective.





Room Air Conditioner Voltage Limits

NAME PLATE RATING	MINIMUM	MAXIMUM
AC 115V \pm 10%	AC 103.5V	AC 126.5V

COMPLAINT	CAUSE	REMEDY
Fan motor will not run.	No power	Check voltage at outlet. Correct if none.
	Power supply cord	Check voltage to rotary switch. 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.
Compressor cycles on overload.	Overload	Check the compressor overload, if externally mounted. Replace if open. (If the compressor temperature is high, remove the overload, cool it, and retest.)
	Voltage	Check the voltage. If not within limits, call an electrician.
Compressor cycles on overload.	Overload	Check overload, if externally mounted. Replace if open. (If the compressor temperature is high, remove the overload, cool, and retest.)
	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.
Compressor cycles on overload.	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.
	Capacitor	Test capacitor.
	Wiring	Check the terminals. If loose, repair or replace.
Insufficient cooling or heating	Refrigerating system	Check the system for a restriction.
	Air filter	If restricted, clean or replace.
	Exhaust damper door	Close if open.
Excessive noise	Unit undersized	Determine if the unit is properly sized for the area to be cooled.
	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.

Specifications and performance data subject to change without notice.

HEAT CONTROLLER, INC.

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THE QUALITY LEADER IN CONDITIONING AIR

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