



LG

LG Room Air Conditioner

SERVICE MANUAL

MODELS: LWHD8008R

CAUTION

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

CONTENTS

1. PREFACE	3
1.1 FEATURES	3
1.2 SPECIFICATIONS	3
1.3 LOCATIONS OF CONTROLS	4
1.4 SAFETY PRECAUTIONS	4
1.5 INSULATION RESISTANCE TEST	4
2. DISASSEMBLY INSTRUCTIONS	5
2.1 MECHANICAL PARTS	5
2.1.1 FRONT GRILLE	5
2.1.2 CABINET	5
2.1.3 CONTROL BOARD	5
2.2 AIR HANDLING PARTS	6
2.2.1 AIR GUIDE UPPER	6
2.2.2 ORIFICE, TURBO FAN AND FAN	6
2.2.3 MOTOR	7
2.2.4 AIR GUIDE	7
2.3 ELECTRICAL PARTS	7
2.3.1 OVERLOAD PROTECTOR	7
2.3.2 COMPRESSOR	8
2.3.3 CAPACITOR	8
2.3.4 THERMOSTAT	8
2.3.5 ROTARY SWITCH	8
2.3.6 POWER CORD	9
2.4 REFRIGERANT CYCLE	9
2.4.1 CONDENSER	9
2.4.2 EVAPORATOR	10
2.4.3 CAPILLARY TUBE	10
3. INSTALLATION	12
3.1 SELECT THE BEST LOCATION	12
3.2 HOW TO INSTALL	12
3.3 ELECTRICAL DATA	15
4. TROUBLESHOOTING GUIDE	15
4.1 OUTSIDE DIMENSIONS	15
4.2 PIPING SYSTEM	16
4.3 TROUBLESHOOTING GUIDE	17
5. CIRCUIT DIAGRAM	22
6. EXPLODED VIEW	23
7. SERVICE PARTS LIST	24

1. PREFACE

This service manual provides various service information, including the mechanical and electrical parts, etc. This room air conditioner was manufactured and assembled under a strict quality control system. The refrigerant is charged at the factory. Be sure to read the safety precautions prior to servicing the unit.

1.1 FEATURES

- DESIGNED FOR COOLING ONLY
- POWERFUL AND INCREDIBLE COOLING
- TOP-DOWN CHASSIS FOR THE SIMPLE INSTALLATION AND SERVICE
- BUILT-IN ADJUSTABLE THERMOSTAT
- WASHABLE ONE-TOUCH FILTER
- COMPACT SIZE

1.2 SPECIFICATIONS

ITEMS	MODELS	RAD-61A
COOLING CAPACITY (BTU/h)		5,800
POWER SUPPLY (Phase, V, Hz)		1ø, 115V, 60HZ
INPUT (W)		600
OPERATING CURRENT (AMP.)		5.6
REFRIGERANT CONTROL		CAPILLARY TUBE
REFRIGERANT CHARGE (R-22)		269g (9.5 oz)
INSIDE FAN		TURBO FAN
OUTSIDE FAN		PROPELLER FAN WITH SLINGER RING
AIR DISCHARGE		2-WAY (RIGHT AND LEFT)
CHASSIS		TOP-DOWN
PROTECTOR		<ul style="list-style-type: none">• OVERLOAD PROTECTOR FOR COMPRESSOR• INTERNAL PROTECTOR FOR FAN MOTOR
TEMPERATURE CONTROL		THERMOSTAT
ROTARY SWITCH		5 STEP (LOW FAN, HIGH FAN, OFF, HIGH COOL, LOW COOL)
FAN MOTOR		6 POLES, 16W

1-1. PREFACE

This service manual provides various service information, including the mechanical and electrical parts, etc. This room air conditioner was manufactured and assembled under a strict quality control system. The refrigerant is charged at the factory. Be sure to read the safety precautions prior to servicing the unit.

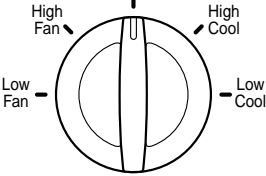
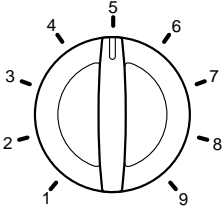
1.1 FEATURES

- DESIGNED FOR COOLING ONLY
- POWERFUL AND INCREDIBLE COOLING
- TOP-DOWN CHASSIS FOR THE SIMPLE INSTALLATION AND SERVICE
- BUILT-IN ADJUSTABLE THERMOSTAT
- WASHABLE ONE-TOUCH FILTER
- COMPACT SIZE

1.2 SPECIFICATIONS

ITEMS	MODELS	RADS-51B
COOLING CAPACITY (BTU/h)		5,100
POWER SUPPLY (Phase, V, Hz)		1ø, 115V, 60HZ
INPUT (W)		475
OPERATING CURRENT (AMP.)		4.4
REFRIGERANT CONTROL		CAPILLARY TUBE
REFRIGERANT CHARGE (R-22)		280g (9.9 oz)
INSIDE FAN		TURBO FAN
OUTSIDE FAN		PROPELLER FAN WITH SLINGER RING
AIR DISCHARGE		2-WAY (RIGHT AND LEFT)
CHASSIS		TOP-DOWN
PROTECTOR		<ul style="list-style-type: none">• OVERLOAD PROTECTOR FOR COMPRESSOR• INTERNAL PROTECTOR FOR FAN MOTOR
TEMPERATURE CONTROL		THERMOSTAT
ROTARY SWITCH		5 STEP (LOW FAN, HIGH FAN, OFF, HIGH COOL, LOW COOL)
FAN MOTOR		6 POLES, 16W

1.3 LOCATIONS OF CONTROLS

<p>Operation</p> 	<p>Off - Turns air conditioner off.</p> <p>High Fan - High speed fan operation without cooling.</p> <p>Low Fan - Low speed fan operation without cooling.</p> <p>High Cool - Cooling with high speed fan operation.</p> <p>Low Cool - Cooling with low speed fan operation.</p>
<p>Thermostat</p> 	<p>This automatically controls the temperature of the indoor air.</p> <p>Turn the knob so that arrow points to the larger marks for greater cooling. Point the arrow to the smaller marks for more moderate cooling.</p> <p>(i.e. the higher the number, the greater the cooling)</p>

CAUTION : After switching the air conditioner from Cool to Off or Fan, wait at least 3 minutes before switching it back to Cool.

1.4 SAFETY PRECAUTIONS

1. When servicing, set the ROTARY SWITCH to Off and unplug the power cord.
2. Observe the original lead dress.
If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
3. After servicing, make an insulation resistance test to prevent the customer from being exposed to shock hazards.

1.5 INSULATION RESISTANCE TEST

1. Unplug the power cord and connect a jumper between 2 pins (black and white).
2. The grounding conductor (green or green and yellow) is to be open.
3. Measure the resistance value with an ohm meter between the jumpered lead and each exposed metallic part on the equipment at all position [except Off] of the ROTARY SWITCH.
4. The value should be over 1 MΩ.

2. DISASSEMBLY INSTRUCTIONS

2.1 MECHANICAL PARTS

2.1.1 FRONT GRILLE

1. Disconnect the unit from source of power.
2. Remove the two knobs by pulling them off.
Using a screwdriver, remove the screw that secures the front grille to control board.
(See Figure 1)
3. Push the front grille up from the bottom.
Pull the top of the front grille away from the cabinet as the top tabs lift out of their slots.
(See Figure 2)
4. Replace the grille by placing the tabs in the slots and push the grille until it snaps into place.

Figure 1

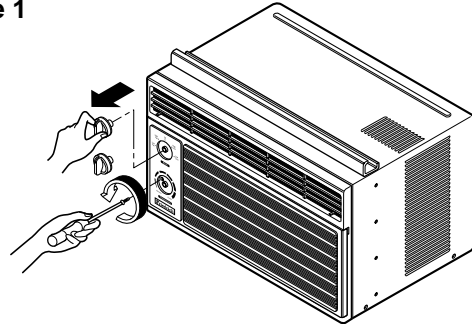


Figure 2

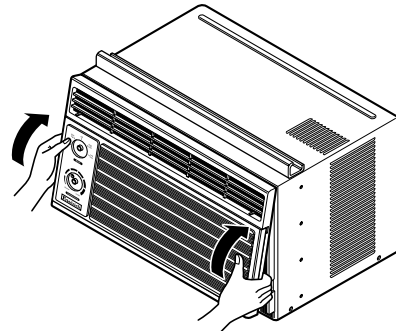


Figure 3

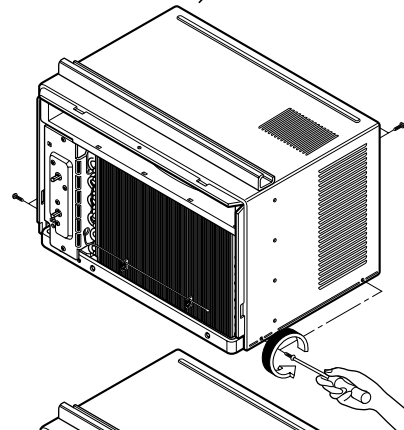


Figure 4

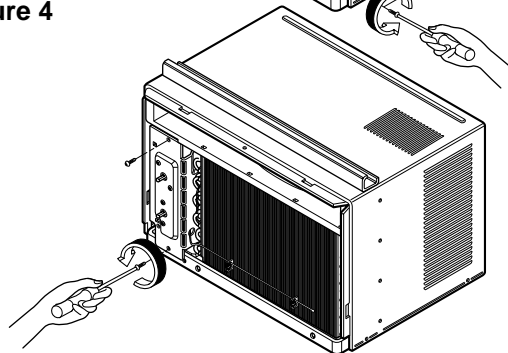
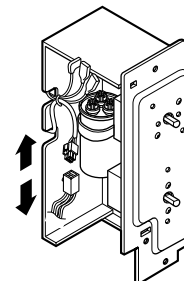


Figure 5



2.1.2 CABINET

1. Disconnect the unit from the power source.
2. Remove the front grille. (Refer to section 2.1.1)
3. Remove 9 screws that secure the cabinet to the base pan and condenser. (See Figure 3)
4. Lift the cabinet from the unit.
5. Re-install by referring to the procedures above.

2.1.3 CONTROL BOARD

1. Disconnect the unit from the power source.
2. Remove the front grille. (Refer to Section 2.1.1)
3. Remove the cabinet. (Refer to Section 2.1.2)
4. Remove 2 screws that secure the control board to base pan and air guide. (See Figure 4)
5. Pull the control board toward yourself.

NOTE : Controls, wires, and capacitor are now accessible for servicing. Discharge the capacitor before servicing. See step 2.3.3 on page 8 for procedures.

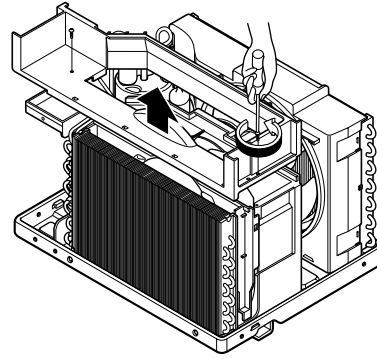
6. Disconnect one housing terminal and 3 wires for the fan motor and compressor. (See Figure 5)
7. Re-install components by referring to procedures above. (Refer to wiring diagram on page 23 in this manual or inside control board.)

2.2 AIR HANDLING PARTS

2.2.1 AIR GUIDE UPPER

1. Disconnect the unit from the power source.
2. Remove the front grille. (Refer to Section 2.1.1)
3. Remove the cabinet. (Refer to Section 2.1.2)
4. Remove the control board.
(Refer to Section 2.1.3)
5. Remove 2 screws that secure the air guide upper to air guide lower. (See Figure 6)
6. Lift air guide upper upward.
7. Re-install by referring to the procedures above.

Figure 6



2.2.2 ORIFICE, TURBO FAN AND FAN

1. Disconnect the unit from the power source.
2. Remove the front grille. (Refer to Section 2.1.1)
3. Remove the cabinet. (Refer to Section 2.1.2)
4. Remove the control board.
(Refer to Section 2.1.3)
5. Remove the air guide upper.
(Refer to Section 2.2.1)
6. Remove 2 screws that secure the base pan to condenser. (See Figure 7)
7. Remove screw that secures the shroud to channel of condenser.
8. Press the snap area of shroud with your thumbs. This allows you to remove it from the condenser.
9. Lift the compressor upward with the evaporator and condenser. (See Figure 7)
10. Remove the orifice by pushing the snap area of the air guide blower. (See Figure 8)
11. Remove the clamp springs which are clamped to the boss of fan and turbo fan by hand plier. (See Figure 9)
12. Pull the fan and turbo fan outward.
13. Remove the shroud.
14. Re-install by referring to the procedures above.

Figure 7

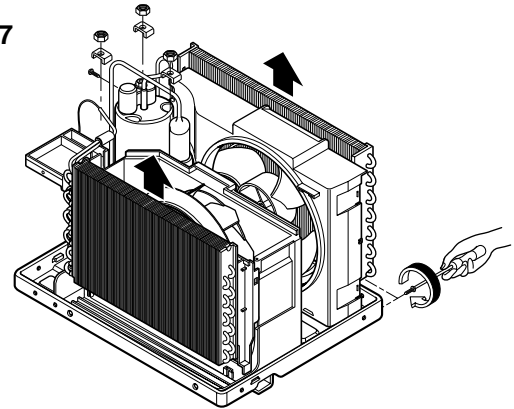


Figure 8

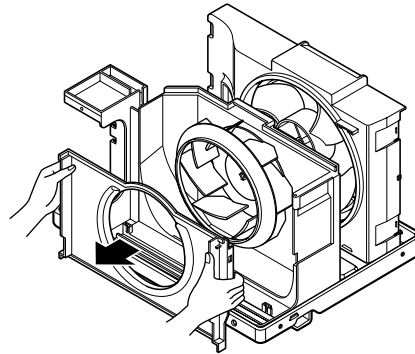
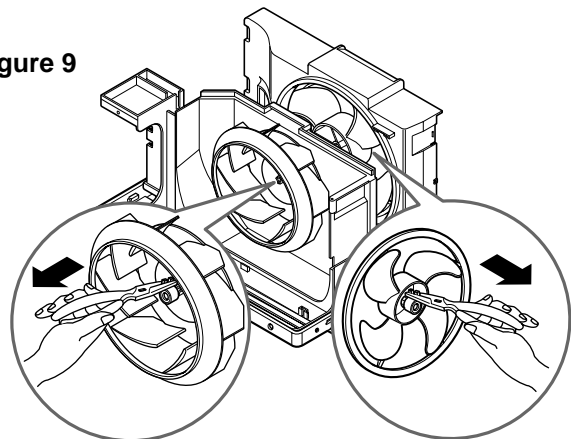


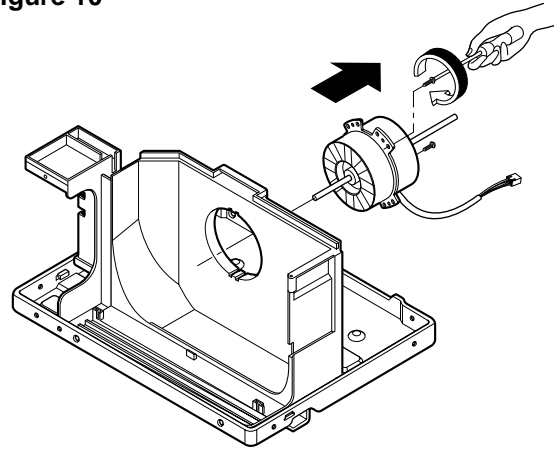
Figure 9



2.2.3 MOTOR

1. Disconnect the unit from the power source.
2. Remove the front grille. (Refer to Section 2.1.1)
3. Remove the cabinet. (Refer to Section 2.1.2)
4. Remove the control board.
(Refer to Section 2.1.3)
5. Remove the air guide upper.
(Refer to Section 2.2.1)
6. Remove the compressor, turbo fan, fan and shroud. (Refer to Section 2.2.2)
7. Remove 2 screws that secure the motor to the motor. (See Figure 10)
8. Remove the motor.
9. Re-install by referring to the procedures above.

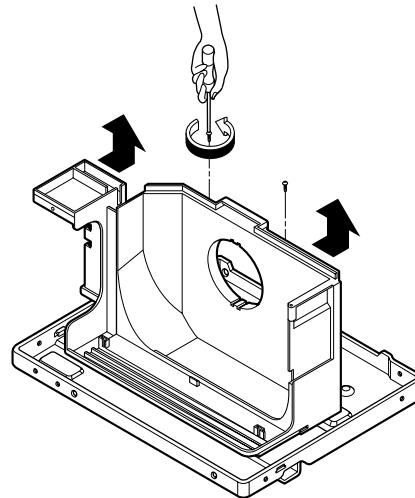
Figure 10



2.2.4 AIR GUIDE

1. Disconnect the unit from the power source.
2. Remove the front grille. (Refer to Section 2.1.1)
3. Remove the cabinet. (Refer to Section 2.1.2)
4. Remove the control board.
(Refer to Section 2.1.3)
5. Remove the air guide upper.
(Refer to Section 2.2.1)
6. Remove the compressor, turbo fan, fan and shroud. (Refer to Section 2.2.2)
7. Remove the motor. (Refer to Section 2.2.3)
8. Remove 2 screws that secure the air guide to the base pan. (See Figure 11)
9. Push the air guide backward and lift it upward.
(See Figure 11)
10. Re-install by referring to the procedures above.

Figure 11



2.3 ELECTRICAL PARTS

2.3.1 OVERLOAD PROTECTOR

1. Remove the front grille and cabinet.
(Refer to Section 2.1)
2. Remove the nut which fastens the terminal cover.
3. Remove the terminal cover.
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.
(See Figure 12 and 13)

Figure 12

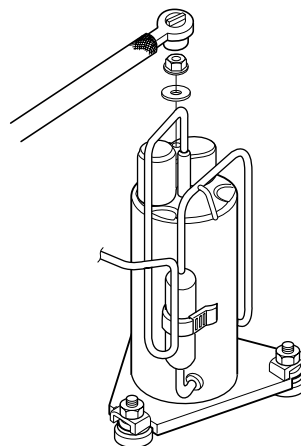
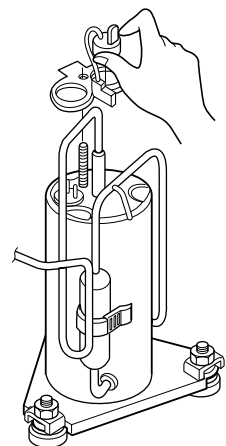


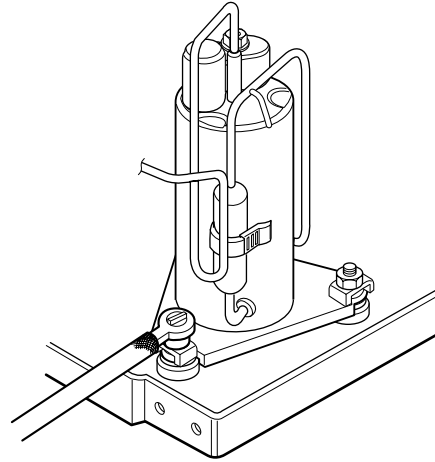
Figure 13



2.3.2 COMPRESSOR

1. Remove the front grille and cabinet.
(Refer to Section 2.1)
2. Discharge the refrigerant by using a refrigerant recovery system.
3. Remove the overload protector.
(Refer to Section 2.3.1)
4. After discharging the unit completely, unbrace the suction and discharge pipes at the compressor connections.
5. Remove 3 nuts which fasten the compressor.
6. Remove the compressor.
7. Re-install by referring to the removal procedure above. (See Figure 14)

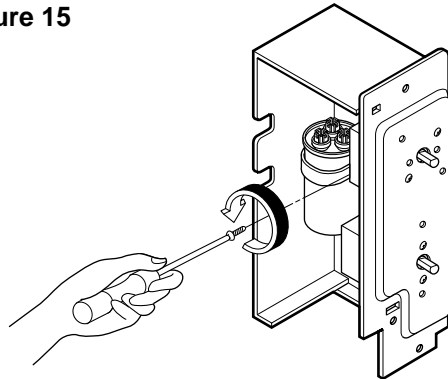
Figure 14



2.3.3 CAPACITOR

1. Remove the cabinet. (Refer to Section 2.1.2)
2. Remove the control board.
(Refer to Section 2.1.3)
3. Discharge the capacitor by placing a 20 K Ω resistor across the capacitor terminals.
4. Remove the screw which fastens the capacitor clamp.
5. Remove all the leads of capacitor terminals.
6. Re-install the components by referring to the removal procedure above. (See Figure 15)

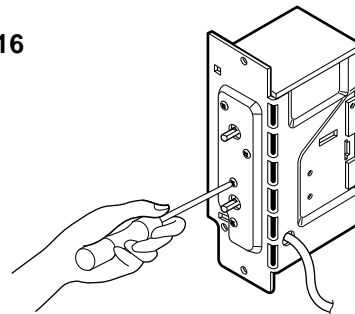
Figure 15



2.3.4 THERMOSTAT

1. Remove the cabinet. (Refer to Section 2.1.2)
2. Remove the control board.
(Refer to Section 2.1.3)
3. Remove 2 screws which fasten the thermostat.
4. Remove all the leads of the thermostat terminals.
5. Remove the thermostat.
6. Re-install the components by referring to the removal procedure above. (See Figure 16)

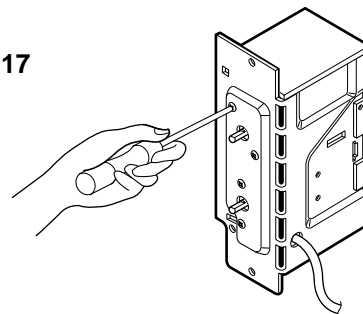
Figure 16



2.3.5 ROTARY SWITCH

1. Remove the cabinet. (Refer to Section 2.1.2)
2. Remove the control board.
(Refer to Section 2.1.3)
3. Remove 2 screws which fasten the rotary switch.
4. Remove all the leads of the rotary switch terminals.
5. Remove the rotary switch.
6. Re-install the components by referring to the removal procedure above. (See Figure 17)

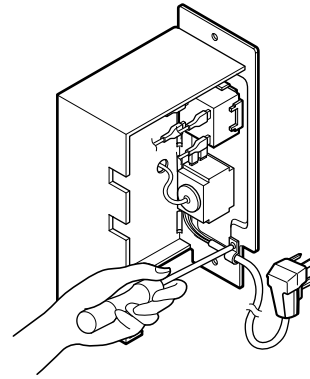
Figure 17



2.3.6 POWER CORD

1. Disconnect the unit from source of power.
2. Remove the front grille. (Refer to Section 2.1.1)
3. Remove the cabinet. (Refer to Section 2.1.2)
4. Remove a screw that secures control board to base pan. (Refer to Section 2.1.3)
5. Pulls the control board toward you.
6. Disconnect the 2 receptacles and remove the grounding screw.
7. Remove a screw securing the clip with cord to the control board.
8. Pull the power cord.
9. Re-install by referring to procedures above.

Figure 18

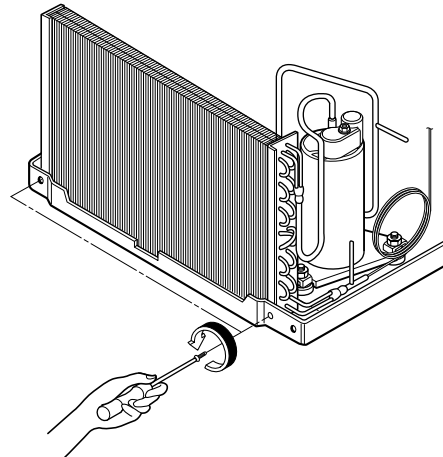


2.4 REFRIGERANT CYCLE

2.4.1 CONDENSER

1. Remove the cabinet. (Refer to Section 2.1.2)
2. Discharge the refrigerant by using a refrigerant recovery system.
3. Remove the air guide. (Refer to Section 2.2.1)
4. Remove 2 screws which fasten the condenser.
5. After discharging the refrigerant completely, unbrazed the interconnecting tube at the condenser connections.
6. Remove the condenser.
7. Re-install by referring to the procedures above.

Figure19



2.4.2 EVAPORATOR

1. Remove the cabinet.
2. Discharge the refrigerant by using a refrigerant recovery system.
3. Remove the air guide upper. (Refer to Section 2.2.1)
4. After discharging the refrigerant completely, unbrazed the interconnecting tube at the condenser connections.
5. Remove the evaporator.
6. Re-install by referring to the procedures above.

2.4.3 CAPILLARY TUBE

1. Remove the cabinet.
2. Discharge the refrigerant by using a refrigerant recovery system.
3. Remove the air guide upper. (Refer to Section 2.2.1)
4. After discharging the refrigerant completely, unbrazed the interconnecting tube of the capillary tube.
5. Remove the capillary tube.
6. Re-install by referring to the procedures above.

NOTES

Replacement of the refrigeration cycle.

1. When replacing the refrigerating cycle, be sure to discharge the refrigerant by using a refrigerant recovery system.
2. After discharging the unit completely, remove the desired components, 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. After completing the above procedures, the valve must be closed and left in place on the system for any subsequent procedures.
6. Evacuate as follows:
 - 6-1. Connect the vacuum pump, as illustrated in figure 21A.
 - 6-2. Start the vacuum pump. Slowly open manifold valves A and B with two full turns counterclockwise and leave the valves closed. The vacuum pump is now pulling through valves A and B up to valve C by means of manifold and the 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 counterclock-

wise. This will keep oil from foaming and being drawn into the vacuum pump.

- 6-3. Operate the vacuum pump for 20 to 30 minutes, until 600 micron 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.
- 6-4. Remove the hose from the vacuum pump and place it on the charging cylinder. See figure 23B. Open valve C. Discharge the line at the manifold connection.
- 6-5. The system is now ready for final charging.
7. Recharge as follows:
 - 7-1. 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 is installed as the system is opened.
 - 7-2. Connect the charging cylinder as shown in figure 21B. With valve C open, discharge the hose at the manifold connection.
 - 7-3. Open valve A and allow the proper charge to enter the system. Valve B is still closed.
 - 7-4. If more charge is required, the high-side will not take it. Close valve A.
 - 7-5. 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 the pressure to drop.
 - d. Repeat steps b. and c. until the balance of the charge is in the system.
 - 7-6. When the unit is operating correctly, use the pinch-off tool with the unit still running and clamp on 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 the pinch-off tube closed. Turn off the unit, allow setting for a while and then test the leakage of the pinch-off connection.

Equipment needed: Vacuum pump, charging cylinder, manifold gauge, brazing equipment, pinch-off tool capable of making a vapor proof seal, leak detector, tubing cutter, hand tools to remove components and service valve.

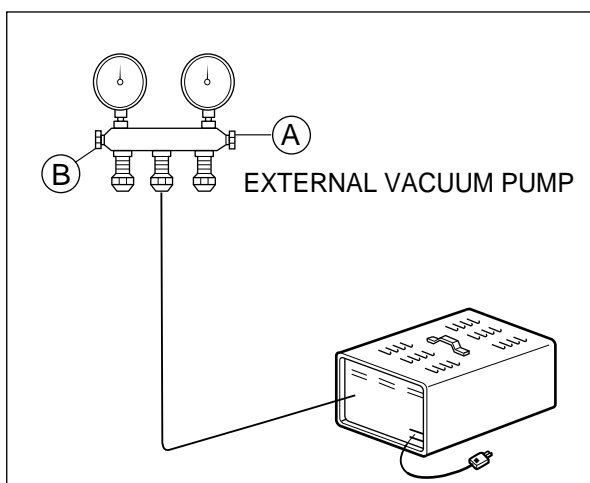
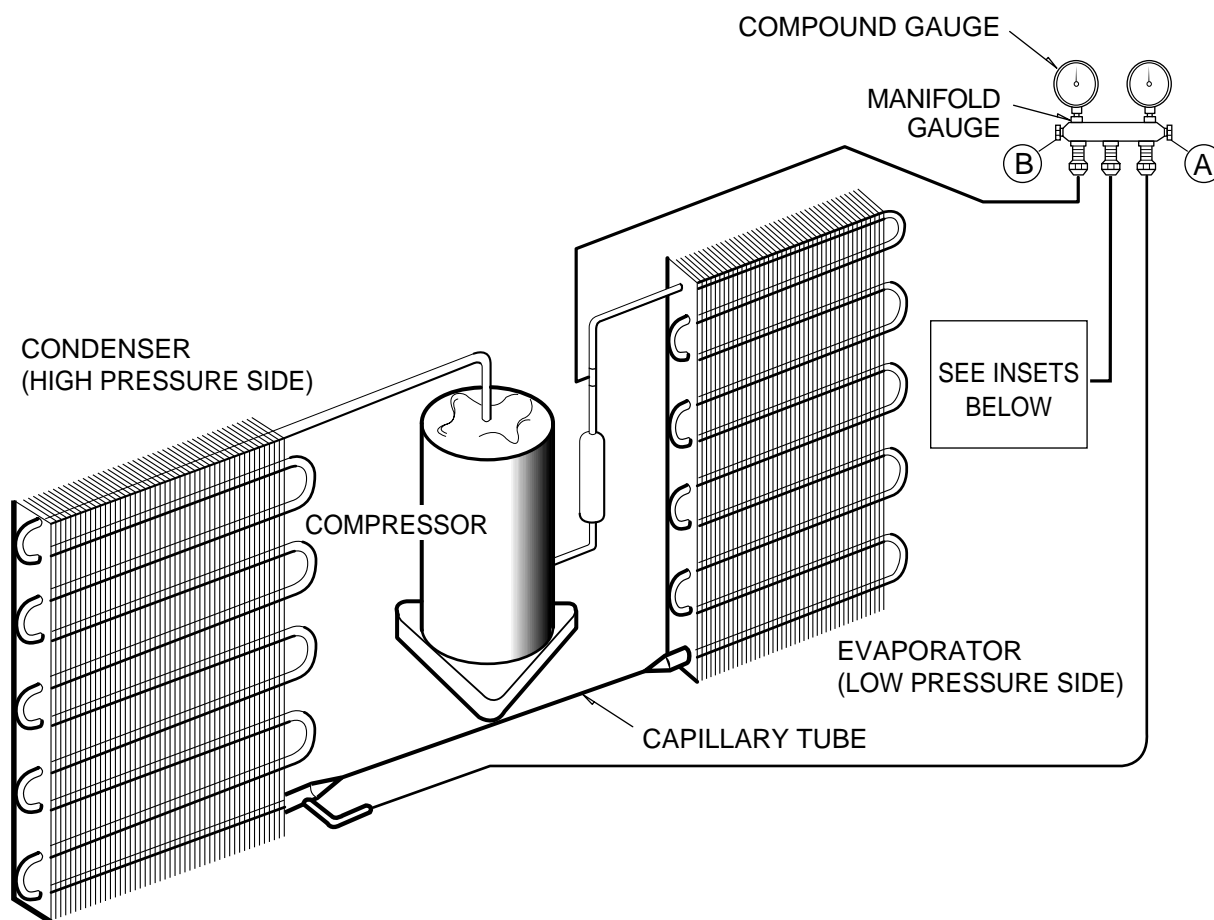


Figure 21A-Pulling Vacuum

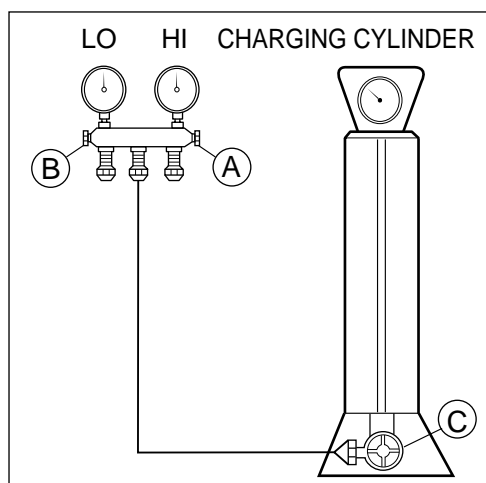


Figure 21B-Charging

3. INSTALLATION

This air conditioner is designed with a button-down chassis so it can be easily installed in a window.

3.1 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 10" 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 $\frac{1}{4}$ "). This will force condensed water to the outside.
5. Install the unit with the bottom about 30"~60" above the floor level.

3.2 HOW TO INSTALL

3.2.1 WINDOW REQUIREMENTS

NOTE: 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. 24. Top of wood strip should be approximately $\frac{3}{4}$ " 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 $1\frac{1}{2}$ " 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. 24.
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.

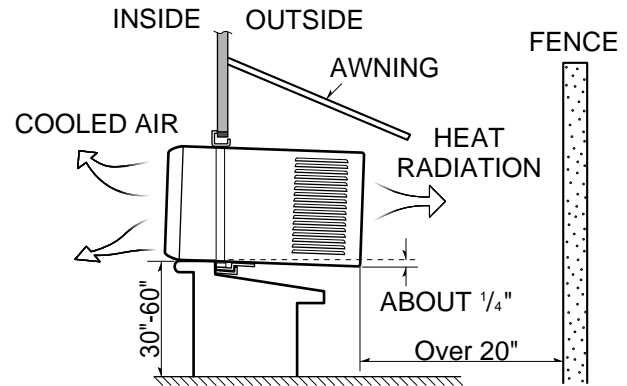


Figure 22

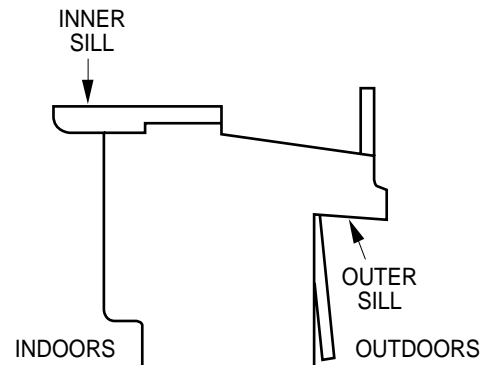


Figure 23

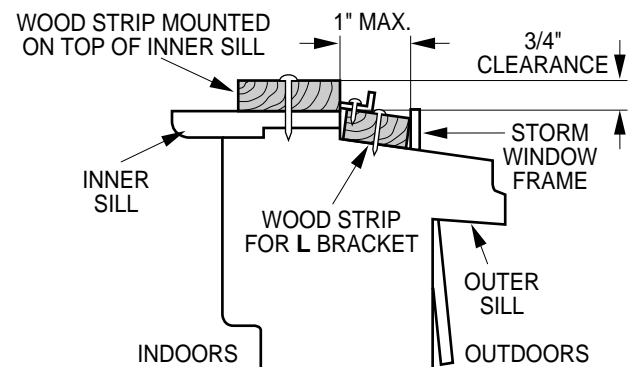
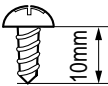
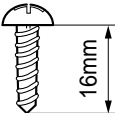
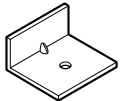


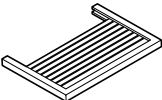


Figure 24

Installation

HARDWARE		
TYPE A: 11EA (SHORT SCREW)	TYPE B: 4EA (WOOD SCREW)	TYPE C: 3EA (L BRACKET)
		
TYPE D: 1EA (SEAL STRIP)	TYPE E: 1EA (SASH SEAL)	TYPE F: 2EA (GUIDE PANEL)
(Adhesive backed) 	(Not adhesive backed) 	

3.2.2 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. 25.
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. 26)

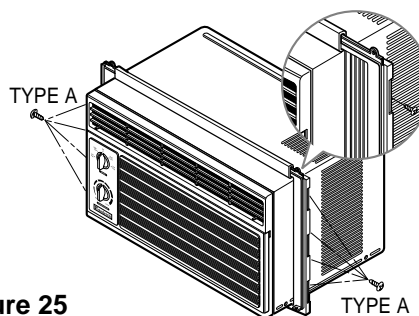


Figure 25

3.2.3 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. 27.

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. 27.

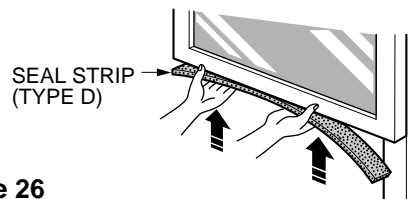


Figure 26

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.

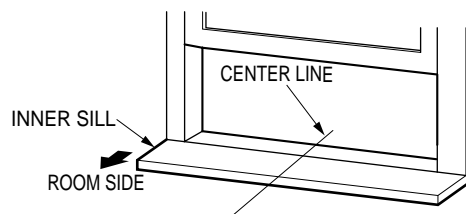


Figure 27

3. INSTALL THE AIR CONDITIONER IN THE WINDOW

- 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. 28.

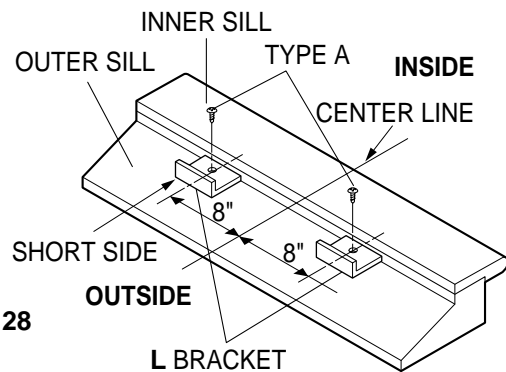


Figure 28

IMPORTANT :

When the air conditioner drops into the L bracket, the air conditioner will be centered in window opening as shown in Figure. 29.

- While steadying the air conditioner, carefully bring the window sash down behind the upper guide of the air conditioner, as shown in Figure. 30.

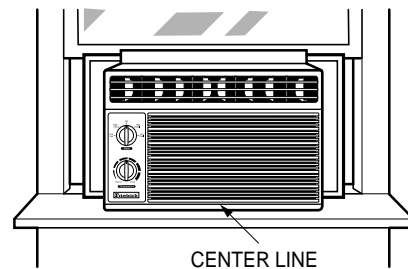


Figure 29

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. 31.

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. 31.
- Fasten the L bracket using a (TYPE A) screw, as shown in Figure. 31.

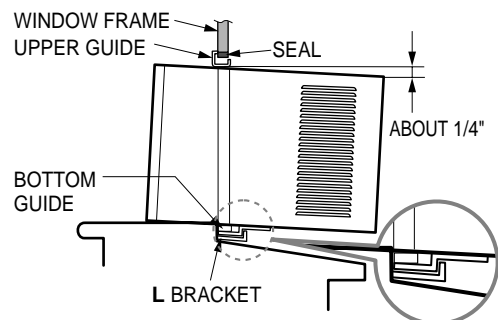


Figure 30

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

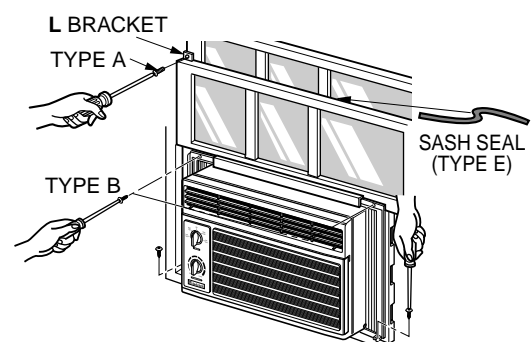
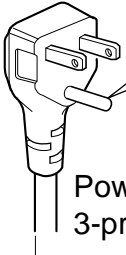
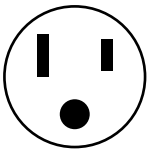


Figure 31

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.

3.3 ELECTRICAL DATA

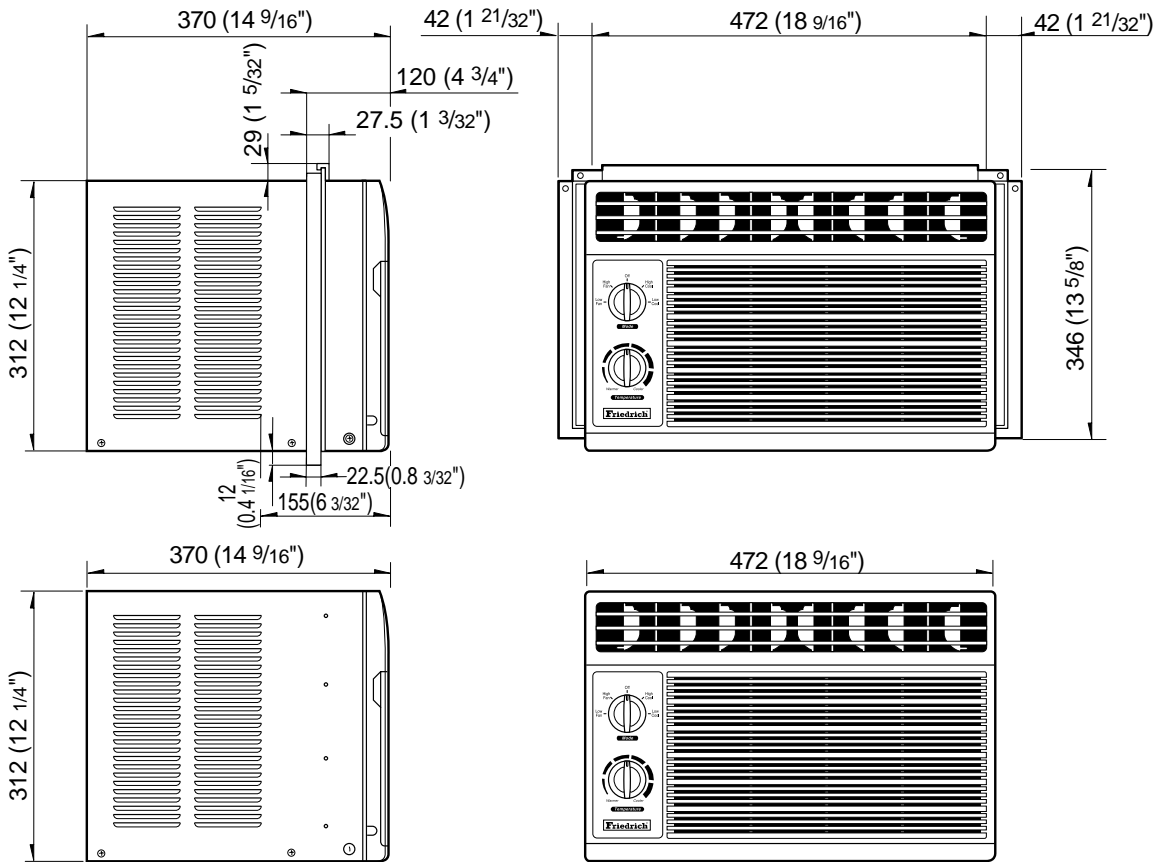
Line Cord Plug	Use Wall Receptacle	Power Supply
<div><p>Power supply cord with 3-prong grounding plug</p></div>	<div><p>Standard 125V, 3-wire grounding receptacle rated 15A, 125V AC</p></div>	<p>Use 15 AMP, time delay fuse, or circuit breaker.</p>

USE OF EXTENSION CORDS

Because of potential safety hazards, we strongly discourage the use of an extension cord. However, if you wish to use an extension cord, use a CSA certified/UL-listed 3-wire (grounding) extension cord, rated 15A, 125V.

4. TROUBLESHOOTING GUIDE

4.1 OUTSIDE DIMENSIONS (unit: mm [in])



4.2 PIPING SYSTEM

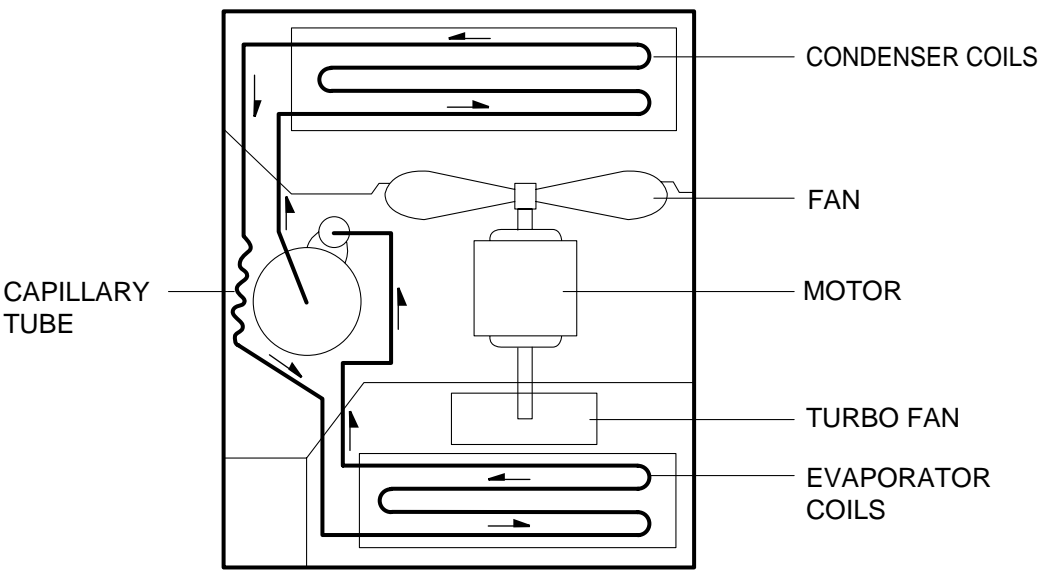
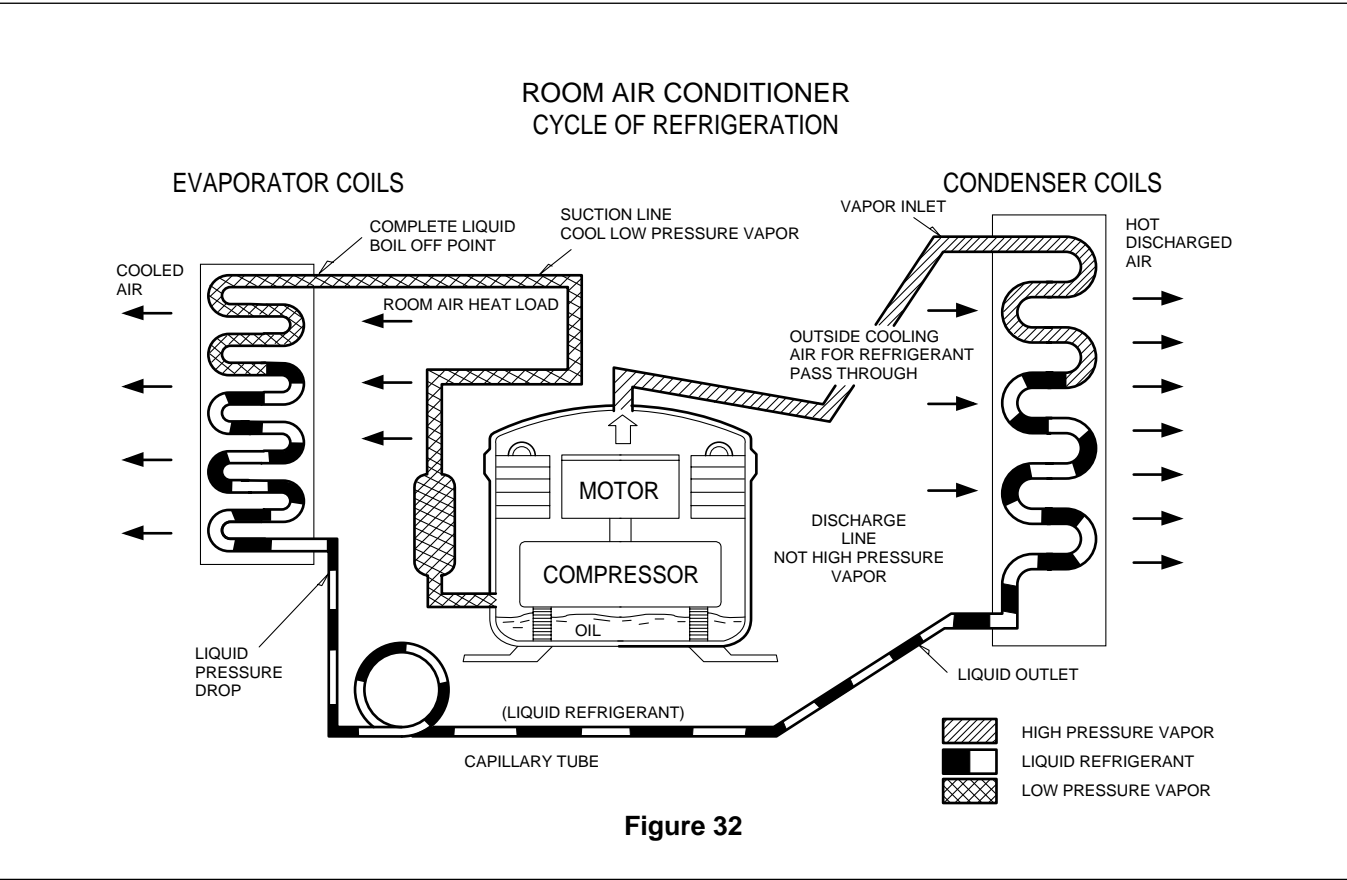


Figure 32 is a brief description of the important components and their function in what is called the refrigeration system. This will help you to understand the refrigeration cycle and the flow of the refrigerant in the cooling cycle.

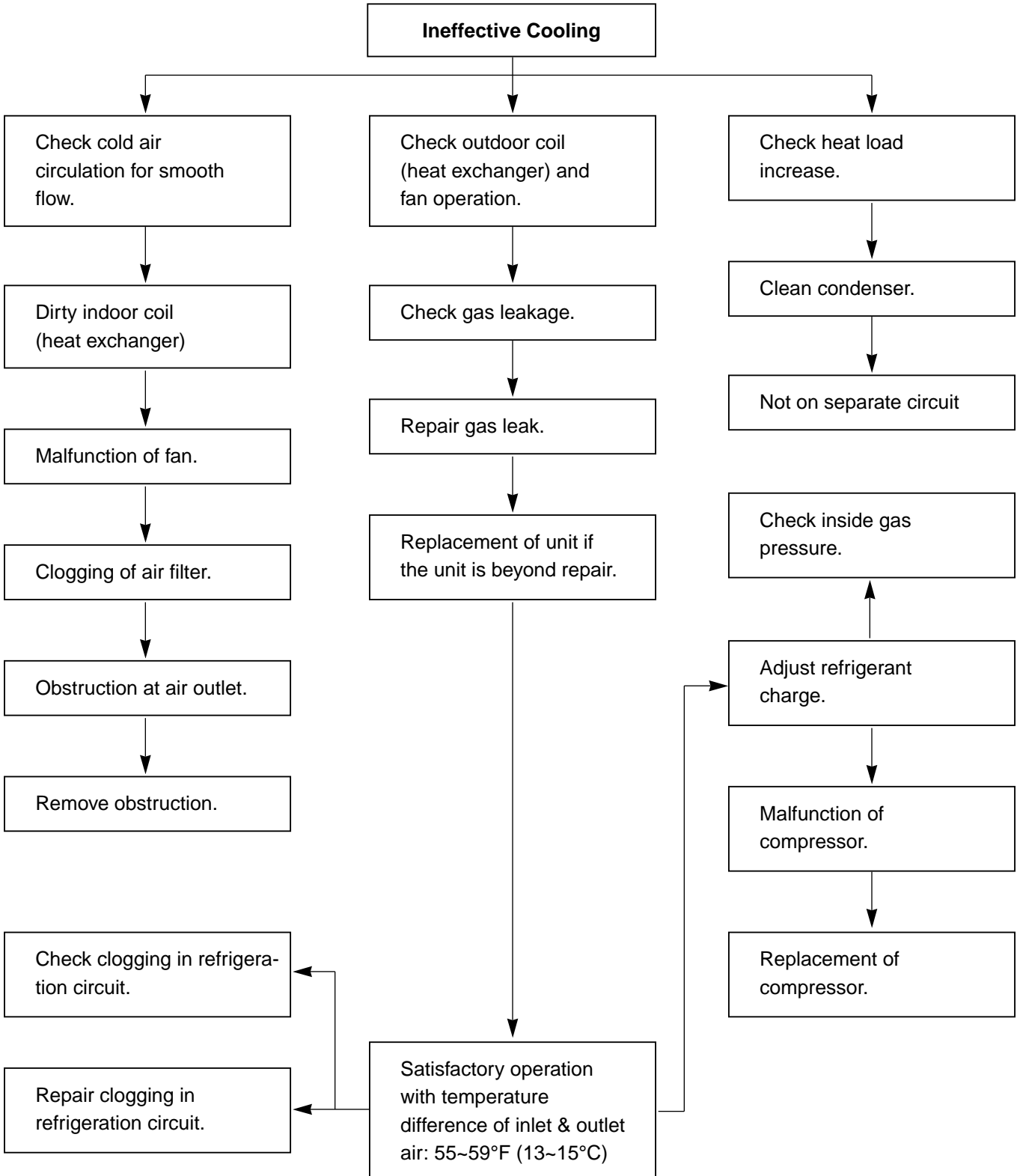


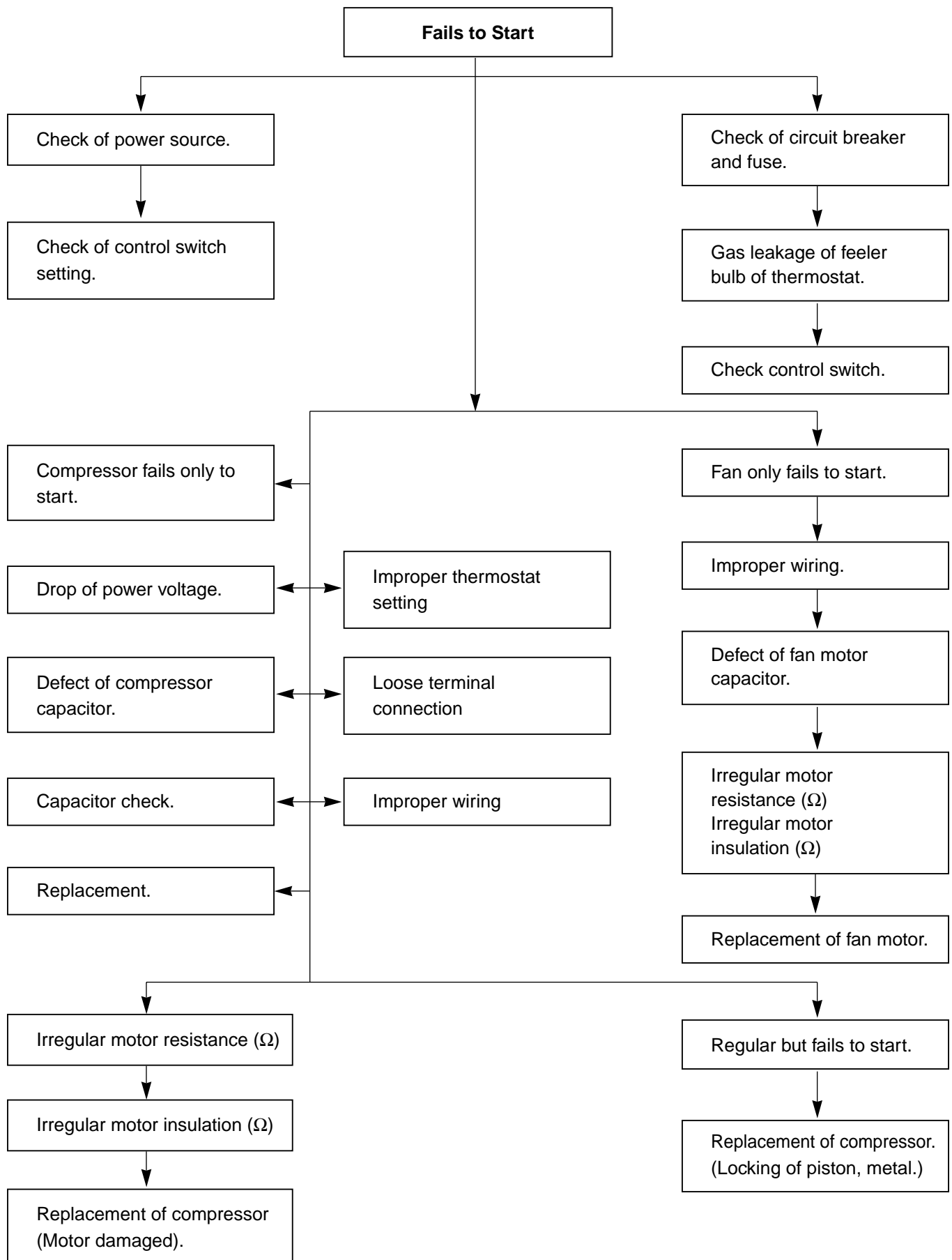
4.3 TROUBLESHOOTING GUIDE

In general, possible trouble is classified in two kinds.

The one is called **Starting Failure** which is caused by an electrical defect. 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

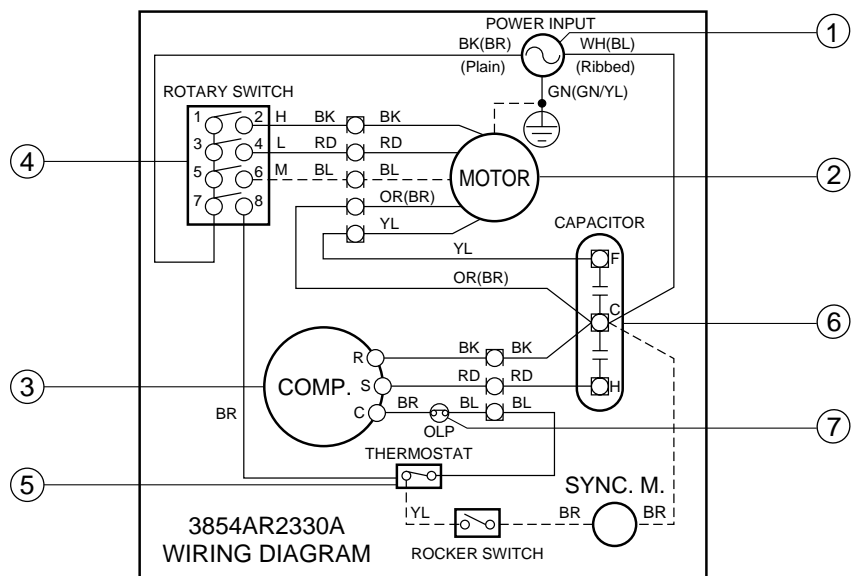
NAME PLATE RATING	MINIMUM	MAXIMUM
115V \pm 10%	103.5V	126.5V

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.
	Rotary switch	Check switch continuity. Refer to wiring diagram for terminal identification. Replace switch if defective.
	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. Re-align assembly. Units using slinger ring condenser fans must have 0.22~0.25 inch clearance to the base. If necessary, 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.	Revolves on overload	Check voltage. See limits on this page. 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.

COMPLAINT	CAUSE	REMEDY
Fan motor noise.	Fan	If cracked, out of balance, or partially missing, replace it.
	Blower	If cracked, out of balance, or partially missing, replace it.
	Loose set screw	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, fan motor runs.	Voltage	Check voltage. See the limits on the preceding page. If not within limits, call an electrician.
	Wiring	Check the wire connections; if loose, repair or replace the terminal. If the wires are disconnected, refer to wiring diagram for identification, and replace the wires. Check the wire connections; If not according to the wiring diagram, correct the connections.
	Rotary	Check for continuity, refer to the wiring diagram for terminal identification. Replace the switch if the circuit is open.
	Thermostat	Check the position of knob. If not at the coldest setting, advance the knob to this setting and restart the unit.
		Check the continuity of the thermostat. Replace the thermostat if the circuit is open.
	Capacitor (discharge capacitor before servicing.)	Check the capacitor. Replace if not within $\pm 10\%$ of manufacturer's 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, and retest.)
Compressor cycles on overload.	Voltage	Check the voltage. See the limits on the preceding page. If voltage is not within these 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.)

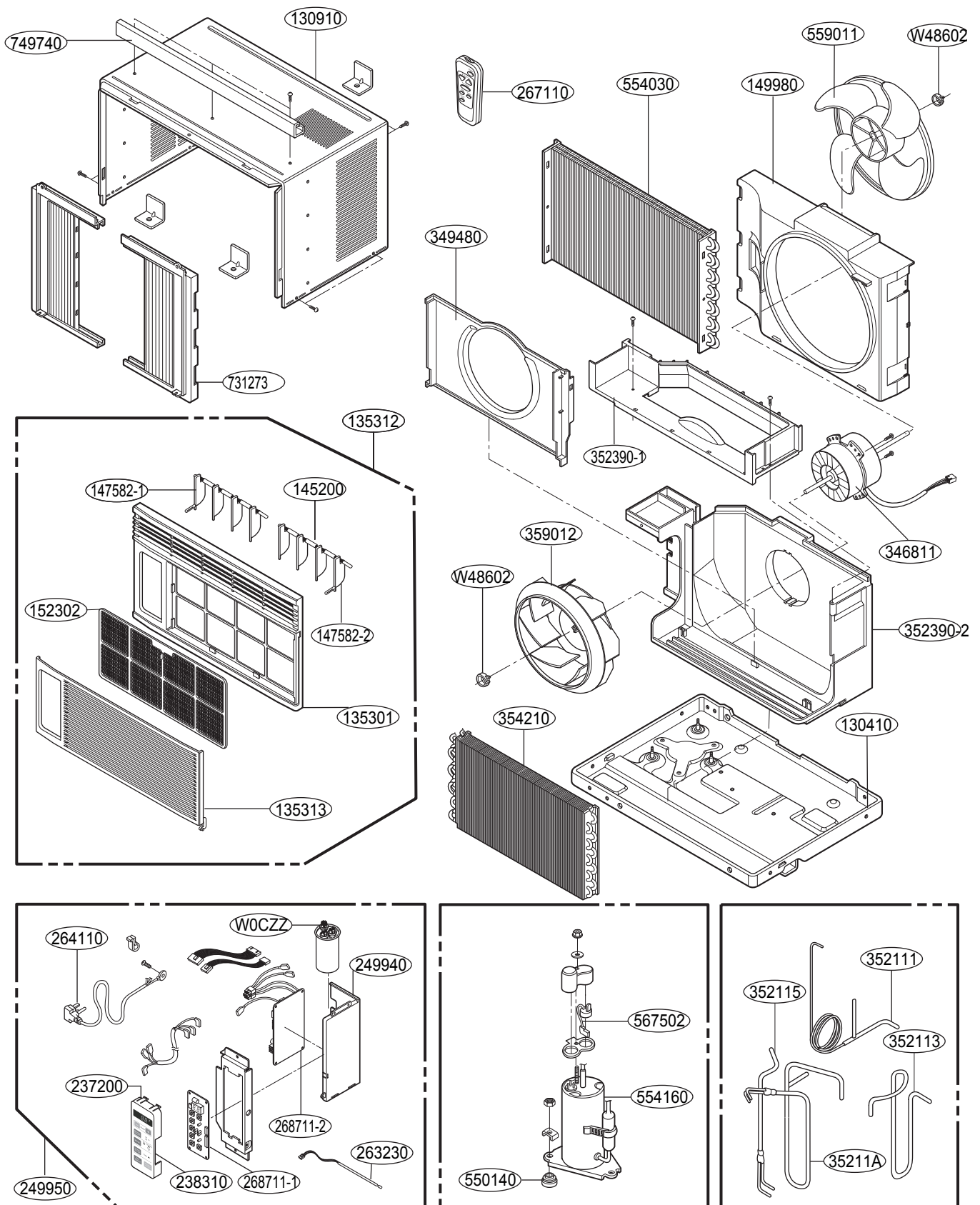
COMPLAINT	CAUSE	REMEDY
Compressor cycles on overload.	Fan motor	If not running, determine the cause. Replace if required.
	Condenser air flow restriction	Remove the cabinet, inspect the interior surface of the condenser. If restricted, clean carefully with a vacuum cleaner (do not damage fins) or brush. Clean the interior base before re-assembling.
	Condenser fins (damaged)	If the condenser fins are closed over a large area on the coil surface, head pressures will increase, causing the compressor to cycle. Straighten the fins or replace the coil.
	Capacitor	Test the capacitor.
	Wiring	Check the terminals. If loose, repair or replace.
	Refrigeration system	Check the system for a restriction.
Insufficient cooling	Air filter	If restricted, clean or replace.
	Unit undersized	Determine if the unit is properly sized for the area to be cooled.
Excessive noise	Blower or fan	Check the set screw, or clamp. If loose or missing, correct. If the blower or fan is hitting scroll or barrier, rearrange the air handling parts.
	Copper tubing	Remove the cabinet and carefully rearrange the tubing not to contact the cabinet, compressor, shroud, and barrier.

5. CIRCUIT DIAGRAM



LOCATION NO.	DESCRIPTION	PART NO.	Q'TY PER SET
1	POWER CORD ASSY	2H00677P	1
2	FAN MOTOR	4681A10016C	1
3	COMPRESSOR	2520UCAA003	1
4	ROTARY SWITCH	2H00154H	1
5	THERMOSTAT	2H01109H	1
6	CAPACITOR	0CZZA20005B	1
7	OVERLOAD PROTECTOR	6750U-L050A	1

6. EXPLODED VIEW



Replacement Parts List			
LocNo	P/NO	RADS - 51B	REMARK
		Description	
130410	3041A20036G	BASE ASSEMBLY,WELD	R
130910	3091AR6055M	CABINET ASSEMBLY,SINGLE	R
135312	3530AR1615B	GRILLE ASSEMBLY,FRONT	R
135313	3530A10039A	GRILLE,INLET	R
147581	4520AR3191A	LINK	R
147582-1	5990AR3190C	LOUVER,VERTICAL	R
147582-2	5990AR3190D	LOUVER,VERTICAL	R
149980	4998AR1608A	SHROUD	R
152302	5231AR2148A	FILTER,AIR	R
237200	3720A20017A	PANEL,CONTROL	R
238310	3831A10001F	ESCUTCHEON	R
249950	ABQ30999202	CASE ASSEMBLY,CONTROL	R
263230	6323A20003S	THERMISTOR,NTC	R
264110	6411A20056A	POWER CORD ASSEMBLY	R
267110	6711A20066C	REMOTE CONTROLLER ASSEMBLY	R
268711-1	6871A10123F	PCB ASSEMBLY,MAIN	R
268711-2	6871A20432B	PCB ASSEMBLY,DISPLAY	R
346811	4681A10016N	MOTOR ASSEMBLY,AC,SINGLE	R
349480	4948A10016B	ORIFICE	R
352111	5211AR3332N	TUBE ASSEMBLY,CAPILLARY	R
352113	5211A10129A	TUBE ASSEMBLY,DISCHARGE	R
352115	5211A10063E	TUBE ASSEMBLY,EVAPORATOR(IN)	R
35211A	5211A10062G	TUBE ASSEMBLY,SUCTION	R
352380	5238A20013A	GUIDE,AIR	R
352390	5239A30003G	GUIDE ASSEMBLY,AIR	R
354210	5421A20016L	EVAPORATOR ASSEMBLY,FIRST	R
359012	5900A10005B	FAN,TURBO	R
550140	5040AR4195A	DAMPER,COMPRESSOR	R
554030	5403A20009N	CONDENSER ASSEMBLY,FIRST	R
554160	2520UABC2JA	COMPRESSOR SET,KOREA	R
559011	5901A20011B	FAN ASSEMBLY,AXIAL	R
567502	6750U-L050A	OVERLOAD PROTECT	R
731273	3127A20074A	INSTALL PART ASSEMBLY,SINGLE	R
749740	5210AR3196C	GUIDE	R
W0CZZ	0CZZA20005B	CAPACITOR,FILM. BOX	R
W48602	3H02932B	CLAMP,SPRING	R

7. SERVICE PARTS LIST

LOCATION NO	DESCRIPTION	PART NO	Remark
		RAD-61A	
130410	BASE ASSEMBLY, SINGLE	3041A20036N	R
130910	CABINET ASSY, SINGLE	3091AR6055M	R
135312	GRILLE ASSY, FRONT(SINGLE)	3531A20087B	R
135313	GRILLE ASSY, INLET	3530A10039A	R
147581	LINK	4520AR3191A	R
147582-1	VANE, VERTICAL	5990AR3190C	R
149980	SHROUD	4998A10025A	R
152302	FILTER ASSY, A/C	5231AR2148A	R
238310	ESCUTCHEON	3831A10001F	R
267110	REMOTE CONTROLLER	6711A20066C	R
268712	PWB(PCB) ASSEMBLY, DISPLAY	6871A20432B	R
268714	PWB(PCB) ASSEMBLY, MAIN	6871A10123F	R
263230	THERMISTOR ASSEMBLY	6323A20003S	R
346811	MOTOR ASSEMBLY, SINGLE	4681A10016M	R
349480	ORIFICE	4948A10016B	R
35211A	TUBE ASSEMBLY, SUCTION SINGLE	5211A10062G	R
352113	TUBE ASSEMBLY, DISCHARGER SINGLE	5210A21748B	R
352115-1	TUBE ASSEMBLY, EVAPORATOR IN	5210A10063E	R
352390	AIR GUIDE ASSEMBLY LOWER	5990AR3190D	R
352390-1	AIR GUIDE ASSEMBLY UPPER	5239A30003G	R
550140	ISOLATOR, COMP	2520UCAA004	R
352111	TUBE ASSEMBLY, CAPILLARY OUT	5211AR3332X	R
554160	COMPRESSOR	5040AR4195A	R
559010	FAN ASSEMBLY, AXIAL	5901A20011B	R
359012	FAN, TURBO	5900A10005B	R
567502	O. L. P	6750U-L029A	R
WOCZZ	CAPACITOR	0ZCCA20005B	R
132111-1	Frame ASSEMBLY L	3211AR3239A	R
132111-2	Frame ASSEMBLY R	3211AR3239B	R
749740	UPPER GUIDE CABINET	3920A21155A	R

