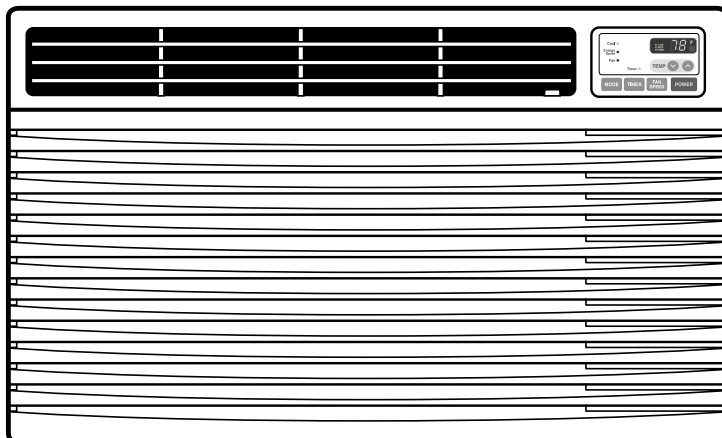


# HEAT CONTROLLER, INC.

*Comfort-Caire*®

## Through-The-Wall Air Conditioning

**Models: BD-81  
BD-101  
BD-123  
BDE-103  
BDE-123**



## *Service Manual*

### ***Important Information***

- Please read carefully and thoroughly this manual before operating this unit.
- Contact a qualified service technician for installation, repair and maintenance of this unit.
- The appliance is not intended for use by young children or those who require supervision.
- Young children should be supervised to ensure that they do not play with the appliance.

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## 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 SAFETY PRECAUTIONS

1. When servicing the unit, set the ROTARY SWITCH or POWER SWITCH to OFF(O) 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 the unit, make an insulation resistance test to protect the customer from being exposed to shock hazards.

### 1.2 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 & 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 the positions (except OFF or O) of the ROTARY SWITCH or POWER SWITCH.
4. The value should be over 1M $\Omega$ .

# 1.3 SPECIFICATIONS

## 1.3.1 FOR BD-81/BD-101

ITEMS		MODELS		REMARK
		BD-81	BD101	
POWER SUPPLY		1Ø, 115V, 60Hz		
COOLING CAPACITY	(Btu/h)	8,000	10,000	
INPUT	(W)	800	1,050	
RUNNING CURRENT	(A)	7.5	9.8	
E.E.R	(Btu/w.h)	10.0	9.5	
REFRIGERANT (R-22) CHARGE(g)		380(13.2 OZ)	410(14.5 OZ)	
OPERATING TEMPERATURE	INDOOR (°C)	26.7(DB) 19.4(WB)		
	OUTDOOR (°C)	35(DB) 23.9(WB)		
EVAPORATOR		2 ROW 12 STACKS		LOUVERED-FIN TYPE
CONDENSER		2 ROW 17 STACKS, L-BENDED TYPE		
FAN, INDOOR		TURBO FAN		
FAN, OUTDOOR		PROPELLER TYPE FAN WITH SLINGER-RING		
FAN SPEEDS, FAN/COOLING		3/3		
FAN MOTOR		6 POLES		
OPERATION CONTROL		ELECTRIC		
ROOM TEMP. CONTROL		THERMISTOR		
AIR DIRECTION CONTROL		VERTICAL LOUVER(RIGHT & LEFT)		
		HORIZONTAL LOUVER(UP & DOWN)		
CONSTRUCTION		TOP-DOWN		
PROTECTOR	COMPRESSOR	EXTERNAL OVERLOAD PROTECTOR		
	FAN MOTOR	INTERNAL THERMAL PROTECTOR		
POWER CORD		1.6m (3WIRE WITH GROUNDING)		
		ATTACHMENT PLUG(CORD-CONNECTED TYPE)		
DRAIN SYSTEM		SPLASHED BY FAN SLINGER		
NET WEIGHT	(lbs/kg)	72/33	79/36	
DIMENSION (W x H x D)	(inch)	24 <sup>21/32</sup> x 14 <sup>13/32</sup> x 19 <sup>21/32</sup>		
	(mm)	626 x 366 x 499		
SLEEVE DIMESION (W x H x D)	(inch)	25 <sup>7/8</sup> x 15 <sup>17/32</sup> x 16 <sup>23/32</sup>		OPTIONAL PART
	(mm)	656 x 394 x 425		
SLEEVE DEPTH WITH FRONT GRILLE	(inch)	20		
	(mm)	510		

### 1.3.2 FOR BD-123

ITEMS		MODELS	BD-123	REMARK
POWER SUPPLY			1Ø, 208/ 230V, 60Hz	
COOLING CAPACITY		(Btu/h)	11,400/11,700	
INPUT		(W)	1,200/1,230	
RUNNING CURRENT		(A)	6.2/5.8	
E.E.R.		(Btu/W.h)	9.5	
OPERATING TEMPERA-TURE	INDOOR (°C)		26.7 (DB) 19.4 (WB)	
	OUTDOOR (°C)		35 (DB) 23.9 (WB)	
REFRIGERANT (R-22) CHARGE(g)			465(16.4 OZ)	
EVAPORATOR			2 ROW 11 STACKS	LOUVERED-FIN TYPE
CONDENSER			2 ROW 17 STACKS, L-BENDED 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			ELECTRIC	
ROOM TEMP. CONTROL			THERMISTOR	
AIR DIRECTION CONTROL			VERTICAL LOUVER (RIGHT & LEFT)	
			HORIZONTAL LOUVER (UP & DOWN)	
CONSTRUCTION			TOP-DOWN	
PROTECTOR	COMPRESSOR		EXTERNAL OVERLOAD PROTECTOR	
	FAN MOTOR		INTERNAL THERMAL PROTECTOR	
POWER CORD			1.6m (3 WIRE WITH GROUDING)	
			ATTACHMENT PLUG (CORD-CONNECTED TYPE)	
DRAIN SYSTEM			SPLASHED BY FAN SLINGER	
NET WEIGHT		(lbs/kg)	80/37	
DIMENSION (W x H x D)		(inch)	24 <sup>21/32</sup> x 14 <sup>13/32</sup> x 19 <sup>21/32</sup>	
		(mm)	626 x 366 x 499	
SLEEVE DIMESION (W x H x D)		(inch)	25 <sup>7/8</sup> x 15 <sup>17/32</sup> x 16 <sup>23/32</sup>	OPTIONAL PART
		(mm)	656 x 394 x 425	
SLEEVE DEPTH WITH FRONT GRILLE		(inch)	20	
		(mm)	510	

### 1.3.3 FOR BDE-103/BDE-123

ITEMS		MODELS	BDE-103	BDE-123	REMARK
POWER SUPPLY			1Ø, 208/ 230V, 60Hz		
COOLING	CAPACITY (Btu/h)		9,800/10,000	11,400/11,700	
	INPUT (W)		1,030/1,050	1,200/1,230	
	RUNNING CURRENT (A)		5.2/4.7	6.2/5.8	
	E.E.R. (Btu/W.h)		9.5	9.5	
HEATING	CAPACITY (Btu/h)		9,200/11,200		
	INPUT (W)		2,900/3,500		
	RUNNING CURRENT (A)		14.0/15.3		
OPERATING TEMPERATURE	COOLING	INDOOR (°C)	26.7 (DB)	19.4 (WB)	
		OUTDOOR (°C)	35 (DB)	23.9 (WB)	
	HEATING	INDOOR (°C)	21.1 (DB)	15.6 (WB)	
		OUTDOOR (°C)	8.3 (DB)	6.1 (WB)	
REFRIGERANT (R-22) CHARGE(g)			440(15.5 OZ)	465(16.4 OZ)	
EVAPORATOR			2 ROW 12 STACKS	2 ROW 11 STACKS	LOUVERED-FIN TYPE
CONDENSER			2 ROW 17 STACKS, L-BENDED TYPE		
FAN, INDOOR			TURBO FAN		
FAN, OUTDOOR			PROPELLER TYPE FAN WITH SLINGER-RING		
FAN SPEEDS (FAN/COOLING/HEATING)			1/ 2/ 2		
FAN MOTOR			6 POLES		
OPERATION CONTROL			ROTARY SWITCH		
ROOM TEMP. CONTROL			THERMOSTAT		
AIR DIRECTION CONTROL			VERTICAL LOUVER (RIGHT & LEFT)		
			HORIZONTAL LOUVER (UP & DOWN)		
CONSTRUCTION			TOP-DOWN		
ELECTRIC HEATER			3.5KW, 208/230V		
PROTECTOR	COMPRESSOR		EXTERNAL OVERLOAD PROTECTOR		
	FAN MOTOR		INTERNAL THERMAL PROTECTOR		
	ELECTRIC HEATER		FUSE LINK, BIMETAL THERMOSTAT		
POWER CORD			1.6m (3 WIRE WITH GROUding)		
			ATTACHMENT PLUG (CORD-CONNECTED TYPE)		
DRAIN SYSTEM			SPLASHED BY FAN SLINGER		
NET WEIGHT		(lbs/kg)	80/36	81/37	
DIMENSION (W x H x D)		(inch)	24 <sup>21/32</sup> x 14 <sup>13/32</sup> x 19 <sup>21/32</sup>		
		(mm)	626 x 366 x 499		
SLEEVE DIMESION (W x H x D)		(inch)	25 <sup>7/8</sup> x 15 <sup>17/32</sup> x 16 <sup>23/32</sup>		
		(mm)	656 x 394 x 425		
SLEEVE DEPTH WITH FRONT GRILLE		(inch)	20		
		(mm)	510		

## 1.4 FEATURES

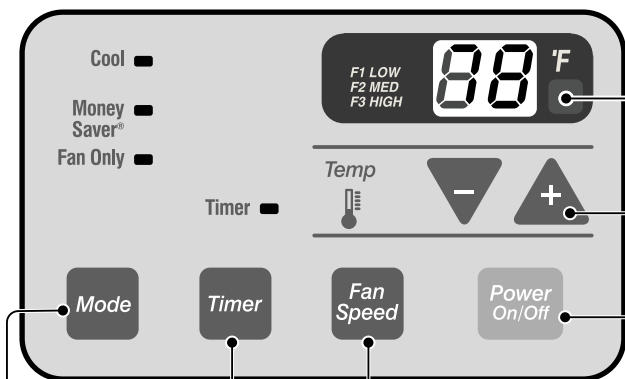
- Designed for cooling only.
- Powerful and quiet cooling.
- Top-down chassis for the simple installation and service.

- Side air-intake, side cooled-air discharge.
- Built in adjustable THERMISTOR and THERMOSTAT.
- Washable one-touch filter.
- Compact size.

## 1.5 CONTROL LOCATIONS

### 1.5.1 COOLING ONLY MODEL

#### • OPERATION



#### REMOTE CONTROL SIGNAL RECEIVER

#### 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.

#### 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, at High fan speed, and set at a temperature setting of 72°F.

#### FAN SPEED

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

#### 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.
- Every time you push Timer button, it advances the Timer setting as follows: 1 Hour → 2 Hours → ..... → 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 → ..... → 12 Hours maximum.

#### MODE

- Every time you push this button, the air conditioner alternates between COOL, MONEY SAVER® and FAN.

##### - MONEY SAVER:

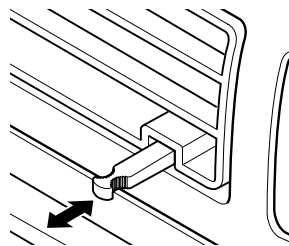
- The fan stops when the compressor stops cooling. Approximately every 3 minutes the fan will turn on and the unit will check the room air to determine if cooling is needed.

#### • VENTILATION

Push the lever to the "CLOSE" position to cool, heat or recirculate room air only.

Pull the lever to the "OPEN" position to exhaust smoke or stale air from the room.

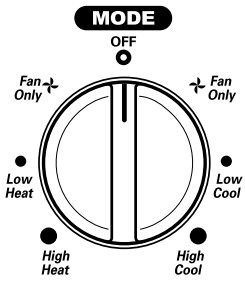
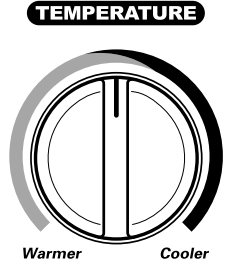
This feature is best used in conjunction with the FAN ONLY position.



PULL OPEN / PUSH CLOSE

## 1.5.2 COOLING AND HEATING MODEL

### • OPERATION

 <p>The diagram shows a circular MODE knob with a vertical line through the center. At the top is a small circle labeled 'OFF'. Moving clockwise from the top, there are two positions labeled 'Fan Only', two labeled 'Low Cool', and two labeled 'High Cool'. Moving counter-clockwise from the top, there are two labeled 'Low Heat' and two labeled 'High Heat'.</p>	<p>Off - Turns the air conditioner off.          Fan Only - The low fan speed operation without cooling (heating).          Low Cool - Cooling with the low speed fan operation.          High Cool - Cooling with the high speed fan operation.          Low Heat - Heating with the low speed fan operation.          High Heat - Heating with the high speed fan operation.</p>
 <p>The diagram shows a circular TEMPERATURE knob with a vertical line through the center. A curved arrow on the left side points counter-clockwise and is labeled 'Warmer'. A curved arrow on the right side points clockwise and is labeled 'Cooler'.</p>	<p>Turn the Temperature Knob to the desired setting. The central position is a normal setting for average conditions. You can change this setting, if necessary, in accordance with your temperature preference.</p> <p>The thermostat automatically controls cooling or heating, but the fan runs continuously whenever the air conditioner is in operation. If the room is too warm, turn the thermostat control clockwise. If the room is too cool, turn the thermostat control counterclockwise.</p>

### CAUTION

When the air conditioner has been operating in the cooling or heating mode and is turned off or set to the fan only position, wait at least 3 minutes before resetting to the cooling operation again.

A slight burning odor may come from the unit when first switching to HEAT after the cooling season is over. This odor, caused by fine dust particles on the heater, will disappear quickly. This is normal operation.

## 2. DISASSEMBLY INSTRUCTIONS

— Prior to disassembling the unit, make sure that the POWER switch is set to OFF and the power cord is unplugged from the wall receptacle.

### 2.1 MECHANICAL PARTS

#### 2.1.1 FRONT GRILLE

1. Open the inlet grille downward.
2. Remove the screw which fastens the front grille.
3. Pull the front grille from the right side.
4. Remove the front grille. (See Fig. 1)
5. Re-install the component by referring to the removal procedure.

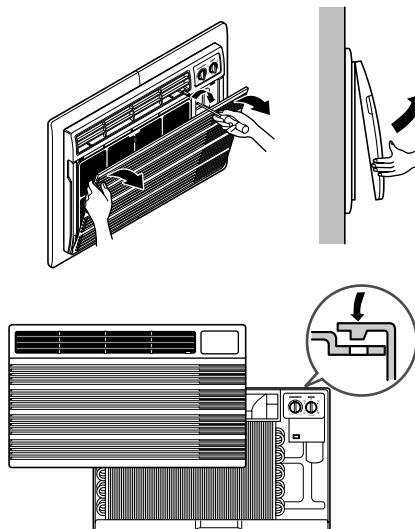


Figure 1

#### 2.1.2 CABINET

1. After disassembling the FRONT GRILLE, remove the 9 screws which fasten the cabinet at the both sides and the top. (See Fig. 2)  
Keep these for later use.

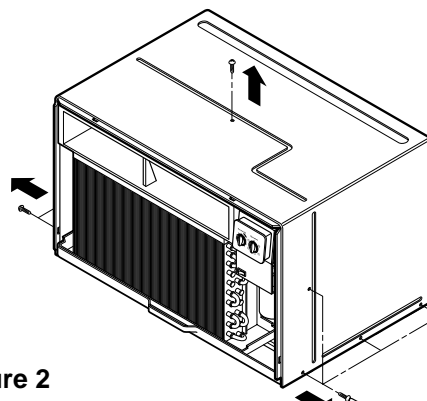


Figure 2

#### 2.1.3 CONTROL BOX

1. Remove the front grille. (Refer to section 2.1.1)
2. Remove the screw which fasten the control box. (See Fig. 3)
3. Pull the control box from the barrier. (See Fig.3)
4. Discharge the capacitor by placing a 20,000 ohm resistor across the capacitor terminals.
5. Disconnect two wire housings in the control box.
6. Pull the control box forward completely.
7. Re-install the components by referring to the removal procedure. (See Fig. 3)  
(Refer to the circuit diagram found on pages 29~30 in this manual and on the control box.)

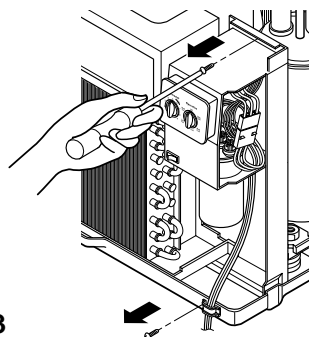


Figure 3



## 2.2 AIR HANDLING PARTS

### 2.2.1 ORIFICE, HEATER ASSY AND TURBO FAN

1. Remove the front grille. (Refer to section 2.1.1)
2. Remove the cabinet. (Refer to section 2.1.2)
3. Remove the 2 screws which fasten the evaporator at the left side and the right side. (See Fig. 4)
4. Move the evaporator sideward carefully.
5. Remove the 2 terminals carefully (See Fig. 5, Electric Heater Model only)
6. Remove the 4 screws which fasten the orifice. (See Fig. 5)
7. Remove the orifice. (See Fig. 5)

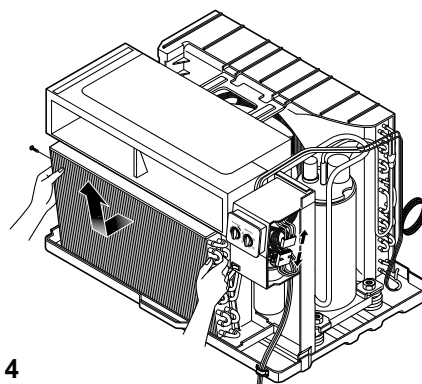


Figure 4

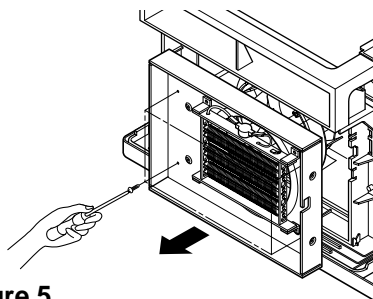


Figure 5

8. Using handheld pliers, remove the clamp which secures the turbo fan. (See Fig. 6)

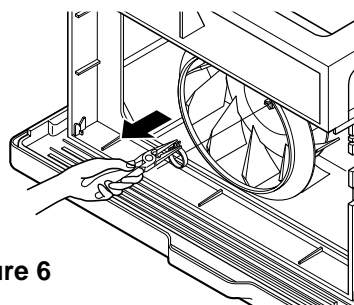


Figure 6

9. Remove the turbo fan with pliers or your hand, without touching blades. (See Fig. 7)
10. Re-install the components by referring to the removal procedures, above.

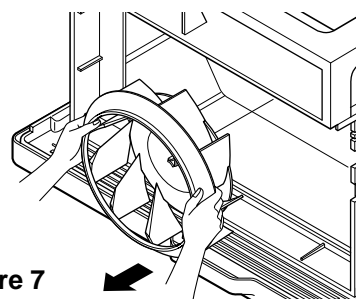


Figure 7

### 2.2.2 FAN

1. Remove the cabinet. (Refer to section 2.1.2)
2. Remove the brace and shroud cover. (Refer to section 2.2.1)
3. Remove the 6 screws which fasten the condenser.
4. Move the condenser sideways carefully.
5. Using handheld pliers, remove the clamp which secures the fan.
6. Remove the fan. (See Fig. 8)
7. Re-install the components by referring to the removal procedures, above.

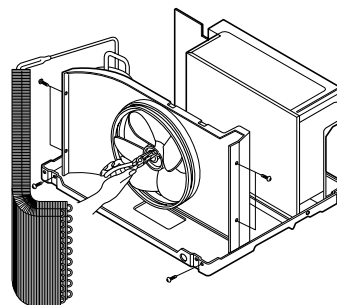


Figure 8

### 2.2.3 SHROUD

1. Remove the fan. (Refer to section 2.2.2)
2. Remove the screw which fastens the shroud.
3. Remove the shroud. (See Fig. 9)
4. Re-install the components by referring to the removal procedures, above.

## 2.3 ELECTRICAL PARTS

### 2.3.1 MOTOR

1. Remove the cabinet. (Refer to section 2.1.2)
2. Remove the clamp cord and disconnect the wire housing in control box. (Refer to section 2.1.3)
3. Remove the turbo fan. (Refer to section 2.2.2)
4. Remove the fan. (Refer to section 2.2.2)
5. Remove the 4 or 2 screws which fasten the motor. (See Fig. 10)
6. Remove the motor.
7. Re-install the components by referring to the removal procedures, above.

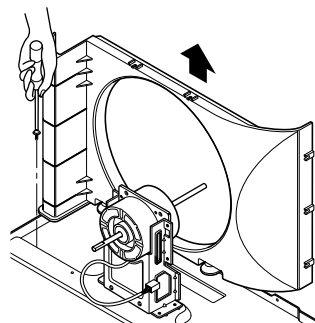


Figure 9

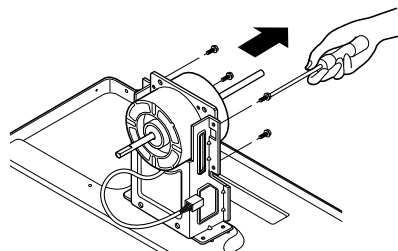


Figure 10

### 2.3.2 COMPRESSOR

1. Remove the cabinet. (Refer to section 2.1.2)
2. Discharge the refrigerant system using a Freon™ Recovery System.  
If there is no valve to attach the recovery system to, install one (such as a WATCO A-1) before venting the Freon™. Leave the valve in place after servicing the system.
3. Disconnect the 3 leads from the compressor.
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. (See Fig. 11)
6. Remove the compressor.
7. Re-install the components by referring to the removal procedures, above.

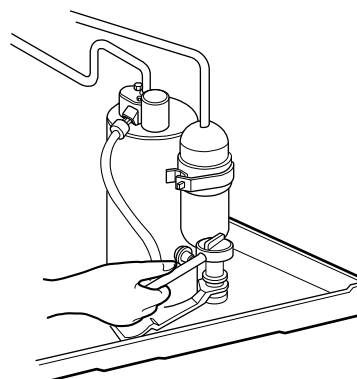


Figure 11

### 2.3.3 CAPACITOR

1. Remove the control box. (Refer to section 2.1.3)
2. Remove knobs and the tips which fasten the display panel.
3. Disconnect the 2 leads from the rocker switch and remove the panel (Energy saver model only).
4. Remove 2 screws and unfold the control box. (See Fig. 12)
5. Remove the Rotary Switch.
6. Remove the screw and the clamp which fastens the capacitor. (See Fig. 12)
7. Disconnect all the leads on the capacitor terminals.
8. Re-install the components by referring to the removal procedures, above.

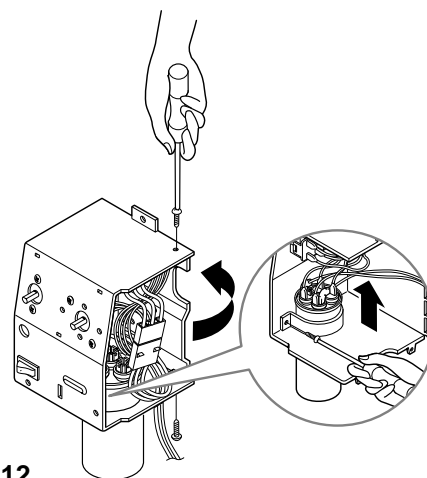


Figure 12

### 2.3.4 POWER CORD

1. Remove the control box. (Refer to section 2.1.3)
2. Unfold the control box. (Refer to section 2.3.3)
3. Disconnect the grounding screw from the control box.
4. Disconnect 2 receptacles.
5. Remove a screw which fastens the clip cord.
6. Pull the power cord. (See Fig. 13)
7. Re-install the components by referring to the removal procedure, above.  
(Use only one ground-marked hole,  $\oplus$ , for ground connection.)
8. If the supply cord of this appliance is damaged, it must be replaced with the factory-authorized and specified cord.

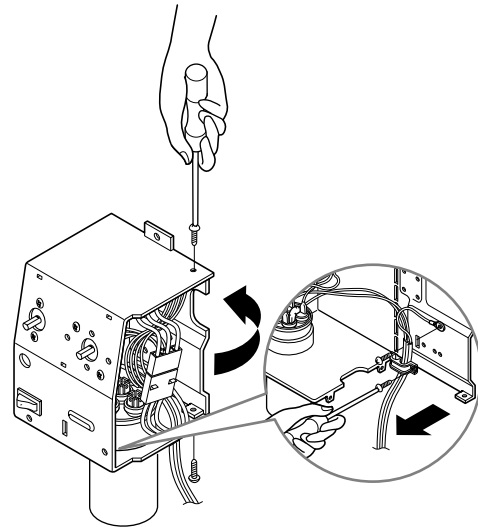


Figure 13

### 2.3.5 THERMOSTAT

1. Remove the control box. (Refer to section 2.1.3)
2. Unfold the control box. (Refer to section 2.3.3)
3. Remove the 2 screws which fasten the thermostat.
4. Disconnect all the leads of thermostat terminals.
5. Remove the thermostat. (See Fig. 14)
6. Re-install the components by referring to the removal procedures, above.

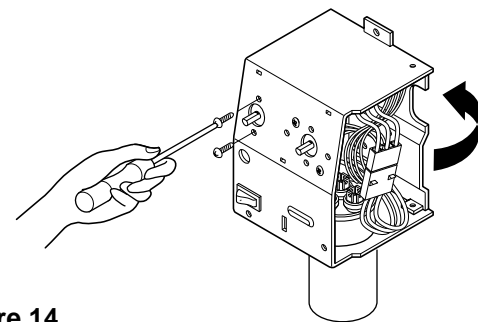


Figure 14

### 2.3.6 ROTARY SWITCH

1. Remove the control box. (Refer to section 2.1.3)
2. Unfold the control box. (Refer to section 2.3.3)
3. Remove 2 screws which fasten the rotary switch.
4. Disconnect all the leads of the rotary switch terminals.
5. Remove the rotary switch. (See Fig. 15)
6. Re-install the components by referring to the removal procedure, above.

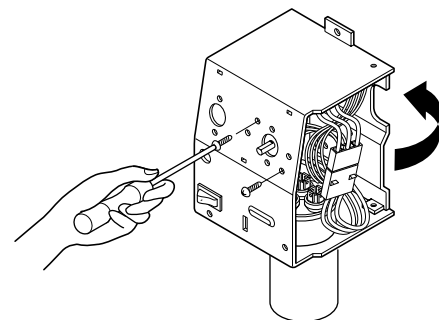


Figure 15

## 2.4 REFRIGERATION CYCLE

### 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.

### 2.4.1 CONDENSER

1. Remove the cabinet. (Refer to section 2.1.2)
2. Remove the brace and the shroud cover. (Refer to section 2.2.1)
3. Remove the 5 screws which fasten the condenser.
4. After discharging the refrigerant completely into a Freon™ Recovery System, unbraid the interconnecting tube at the condenser connections.
5. Remove the condenser.
6. Re-install the components by referring to the notes – on pages 13-14. (See Fig. 16)

### 2.4.2 EVAPORATOR

1. Remove the cabinet. (Refer to section 2.1.2)
2. Discharge the refrigerant completely – into a Freon™ Recovery System.
3. Remove the 2 screws which fasten the evaporator at the left side and the right side.
4. Move the evaporator sideward carefully and then unbraid the interconnecting tube at the evaporator connectors.
5. Remove the evaporator.
6. Re-install the components by referring to the notes – on pages 13-14. (See Fig. 17)

### 2.4.3 CAPILLARY TUBE

1. Remove the cabinet. (Refer to section 2.1.2)
2. After discharging the refrigerant completely – into a Freon™ Recovery System, unbraid the interconnecting tube at the capillary tube.
3. Remove the capillary tube.
4. Re-install the components by referring to the notes – on page 13-14.

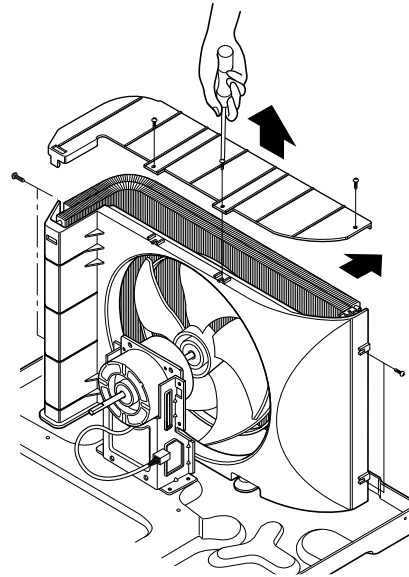


Figure 16

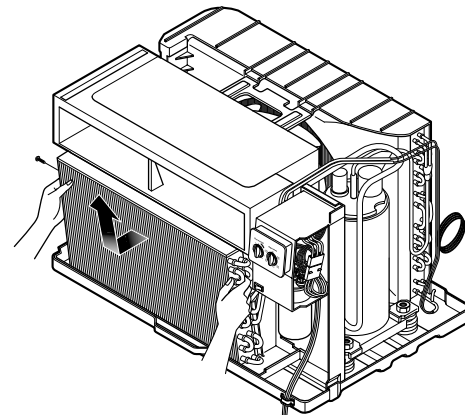


Figure 17

## NOTES

— 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 unbrace 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 Fig. 18A.
  - 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 the manifold and entire system.

### CAUTION

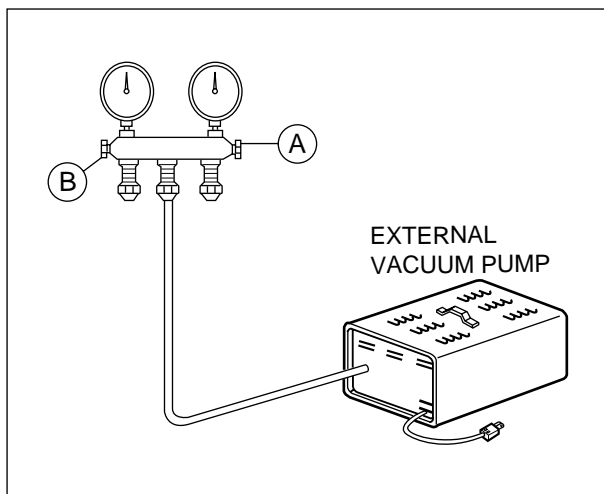
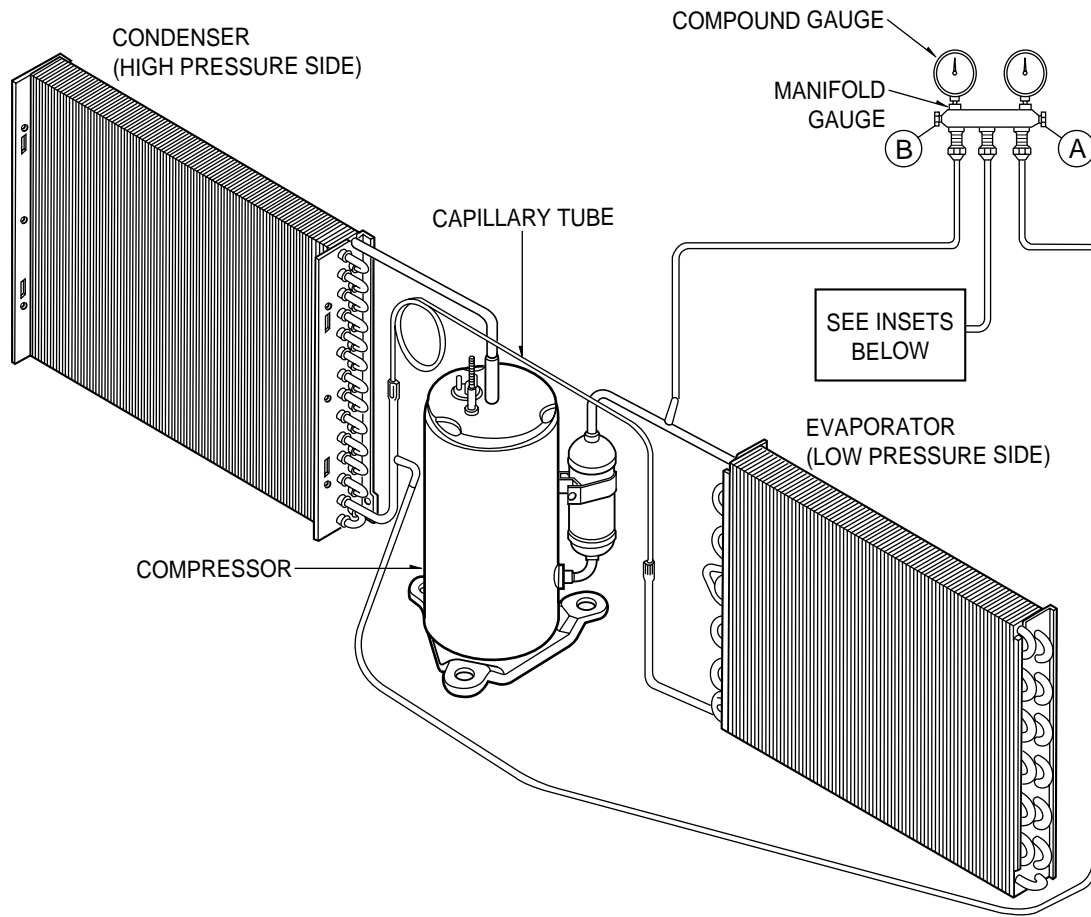
If high vacuum equipment is used, just crack valves A and B for a few minutes, then open slowly with the two full turns counterclockwise. This will keep oil from foaming and being drawn into the vacuum pump.

- 3) Operate the vacuum pump 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 Fig. 18B. Open valve C.  
Discharge the line at the manifold connection.
- 5) The system is now ready for final charging.

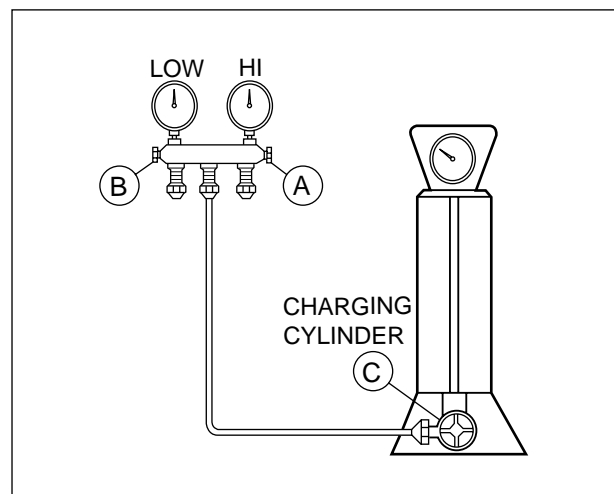
6. Recharge as follows :

- 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 Fig. 18B. 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.

**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, Service valve.



**Figure 18A-Pulling Vacuum**



**Figure 18B-Charging**

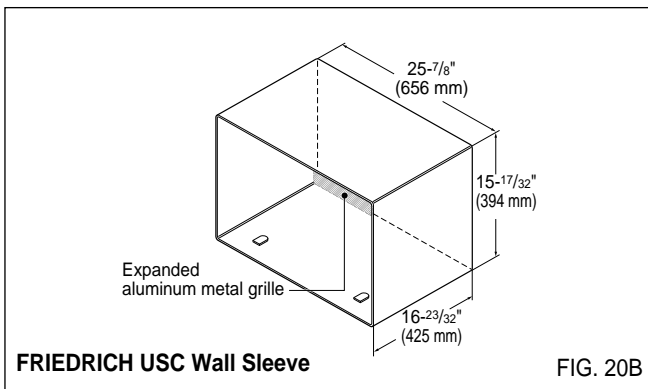
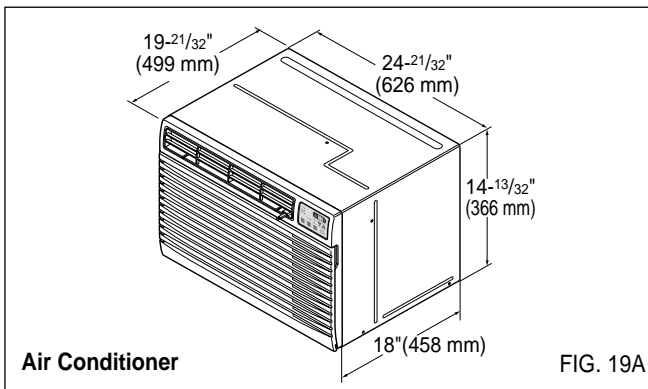
# 3. INSTALLATION

## 3.1 INSTALLATION REQUIREMENTS

If you use an existing wall sleeve, you should measure its dimensions.

Install the new air conditioner according to these installation instructions to achieve the best performance. All wall sleeves used to mount the new air conditioner must be in good structural condition and have a compatible rear grille in order to securely attach the new air conditioner. (FIG. 19A)

With the **FRIEDRICH USC sleeve**, you can maintain the best performance of the new air conditioner. (FIG. 19B)

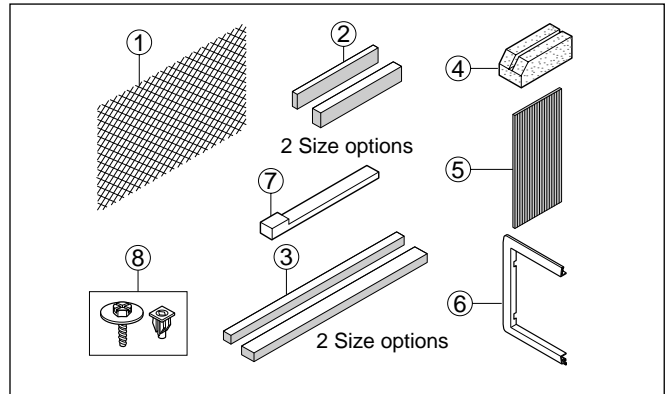


### ELECTRICAL SERVICE

Check your available electrical service. The power supply available must be the same as that shown on the unit nameplate (found on left side of cabinet).

All models are equipped with a 3-prong service plug to provide proper service and safe positive grounding. Do not change plug in any way. Do not use an adapter plug. If your present wall outlet does not match your plug, call a qualified electrician to make the necessary corrections. SAVE CARTON for storage and this OWNER'S MANUAL for future reference. The carton is the best way to store unit during winter or when not in use.

## INSTALLATION HARDWARE



ITEM	NAME OF PARTS	Q'TY
①	PLASTIC GRILLE	1
②	HORIZONTAL INSULATION STRIPS	2
③	AROUND INSULATION STRIPS	2
④	SUPPORT BLOCK	2
⑤	BAFFLE	1
⑥	TRIM FRAME	2
⑦	SHIM	2
⑧	PLASTIC NUTS AND WASHER SCREWS	4

### ⚠ CAUTION

To avoid risk of personal injury, property damage, or product damage due to the weight of this device and sharp edges that may be exposed:

- Air conditioners covered in this manual pose an excessive weight hazard. Two or more people are needed to move and install the unit. To prevent injury or strain, use proper lifting and carrying techniques when moving unit.
- Carefully inspect location where air conditioner will be installed. Be sure it will support the weight of the unit over an extended period of time.
- Handle air conditioner with care. Wear protective gloves whenever lifting or carrying the unit. AVOID the sharp metal fins of front and rear coils.
- Make sure air conditioner does not fall during installation.

### REQUIRED TOOLS:

- Tight Fitting gloves
- Standard screwdriver
- Phillips screwdriver
- Pliers
- Sharp knife
- 3/8-inch open end wrench or adjustable wrench
- 1/4-inch hex socket and ratchet
- Tape measure
- Electric drill
- 1/4-inch drill bit

## 3.2 INSTALLATION

### CAUTION

**We strongly recommend the removal of the old wall sleeve and the installation of a new FRIEDRICH USC Wall Sleeve.**

If you decide to keep the existing wall sleeve, you have to redirect the louvers at the back of the wall sleeve illustration. The use of pliers is recommended. If you DO NOT redirect, you run the risk of poor performance or product failure. This is not covered under the terms of the FRIEDRICH warranty.

- Pick a location which will allow the conditioned air to blow into the area you want. Good installation with special attention to the proper position of the unit will lessen the chance that service will be needed.

### ITEMS IN INSTALLATION HARDWARE

You may not need all parts in the kit. Discard unused parts

ITEM (inches)		Qty.
Plastic grille	26 <sup>3</sup> / <sub>4</sub> x 16 <sup>1</sup> / <sub>2</sub>	1
Horizontal Insulation Strips	1 <sup>3</sup> / <sub>8</sub> x 5 <sup>5</sup> / <sub>8</sub> x 27 <sup>3</sup> / <sub>16</sub>	1
	1 <sup>3</sup> / <sub>8</sub> x 1 <sup>3</sup> / <sub>8</sub> x 27 <sup>3</sup> / <sub>16</sub>	1
Around Insulation Strips	1 <sup>3</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>4</sub> x 61 <sup>1</sup> / <sub>2</sub>	1
	1 <sup>3</sup> / <sub>8</sub> x 1 <sup>3</sup> / <sub>8</sub> x 61 <sup>1</sup> / <sub>2</sub>	1
Support Block	1 <sup>3</sup> / <sub>4</sub> x 1 <sup>3</sup> / <sub>8</sub> x 4 <sup>5</sup> / <sub>16</sub>	2
Baffle	14 x 4 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>8</sub>	1
Shim	13 x 1 x 3 <sup>3</sup> / <sub>4</sub>	2
Trim Frame		2
Washer Screw		4
Nuts(Plastic)		4

### HOW TO INSTALL

- 1 Before installing the unit, identify the existing wall sleeve from the list below.

Brand	Wall Sleeve Dimensions (inches)		
	Width	Height	Depth
White-Westinghouse Frigidaire Carrier (52F series)	25-1/2	15-1/4	16, 17-1/2 or 22
General Electric /Hotpoint	26	15-5/8	16-7/8
Whirlpool	25-7/8	16-1/2	17-1/8 or 23
Fedders/Emerson Friedrich WSC	27	16-3/4	16-3/4 or 19-3/4
FRIEDRICH USC	25-7/8	15-17/32	16-23/32
Emerson/Fedders	26-3/4	15-3/4	15
Carrier (51S Series)	25-3/4	16-7/8	18-5/8

**NOTE:** All wall sleeves used to mount the new Air Conditioner must be in sound structural condition and have a compatible rear grille that securely attaches to sleeve, or rear flange that serves as a stop for the Air Conditioner.

- 2 Remove old air conditioner from existing wall sleeve.
- 3 Clean the interior of an existing sleeve. (Do not disturb existing seals or gaskets.)
- 4 Wall sleeve must be securely fastened in wall before installing the air conditioner. Use the nails or screws through the sides of the sleeve into wall, if needed. Repaint sleeve if needed.
- 5 Prepare the wall sleeve for installation of the unit. If you plan to use your existing wall sleeve, and it is not the FRIEDRICH USC sleeve, use procedure B or C below.

Procedure	Brand	Depth(inches)
A	FRIEDRICH USC	16-23/32
B	White-Westinghouse Frigidaire Carrier (52F series)	16, 17-1/2 or 22
	General Electric /Hotpoint	16-7/8
	Whirlpool	17-1/8 or 23
	Carrier (51S series)	18-5/8
C	Fedders/Emerson	16-3/4 or 19-3/4
	Emerson/Fedders	15

- 6 Install new unit into wall sleeve.

**CAUTION:** When installation is completed, replacement unit MUST have a rearward slope as shown.

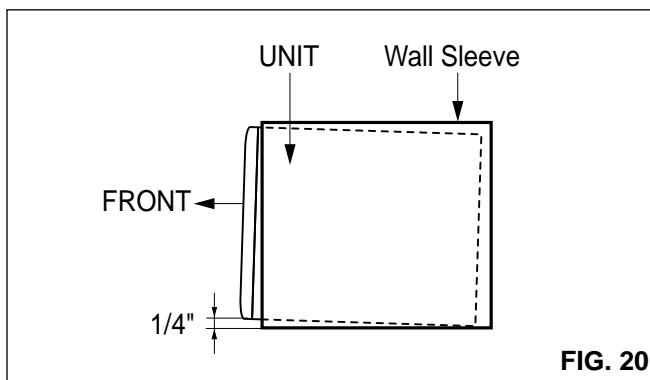
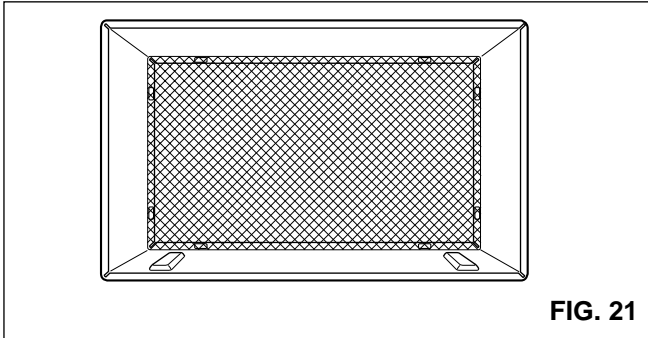


FIG. 20

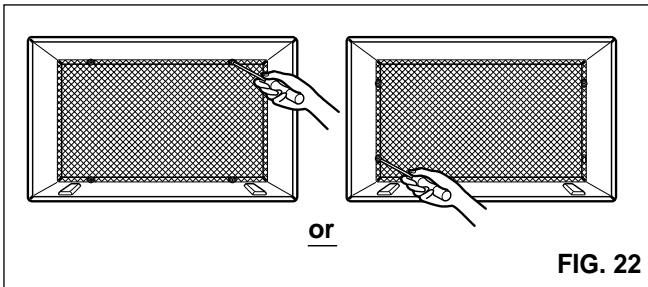


### 3.3 PROCEDURE A

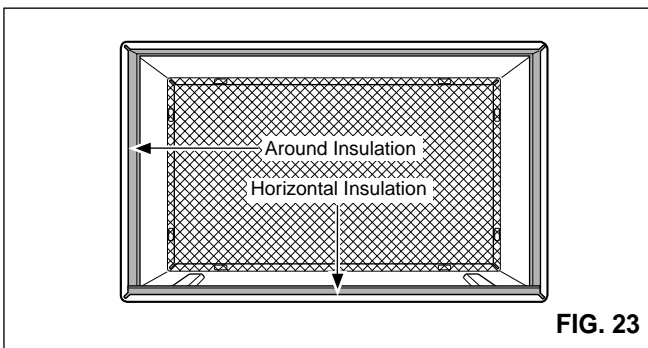
- 1 If you are using a new USC sleeve in conjunction with your unit, skip to step 3. Otherwise, install the plastic grille from the kit. Cut the plastic grille to fit the rear opening of the existing sleeve. Place the plastic grille to the inside of the wall sleeve at the rear flange.



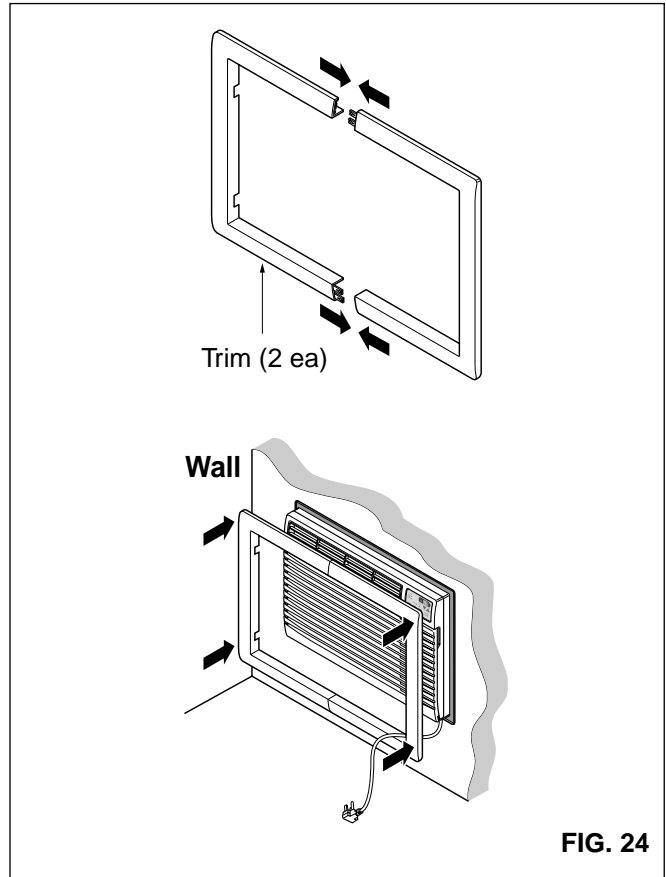
- 2 Fasten the 4 washer screws to secure the grille to the wall sleeve. If you need plastic nuts to mount plastic grille to the inside of the wall sleeve, there are plastic nuts in the installation kit. The nuts are installed from the inside of the sleeve and are pressed into the square holes of the rear flanges.



- 3 Ensure that the inside of the sleeve is thoroughly clean. Remove the backing from the Horizontal Insulation strip  $1\frac{3}{8} \times \frac{3}{8} \times 27\frac{3}{16}$  and attach that to the inside bottom of the sleeve as shown below. Remove the backing from the Around Insulation strip  $1\frac{3}{8} \times \frac{3}{4} \times 61\frac{1}{2}$  and attach that to the inside front of the sleeve as shown below.



- 4 Install the new unit into the wall sleeve.
- 5 To assemble trim, snap the tab of each piece into the slot of the other piece as shown below. Slide trim over the front of the air conditioner until trim is flush with sleeve as shown below.



#### **CAUTION**

- Air conditioners covered in this manual pose an excessive weight hazard. Two or more people are needed to move and install the unit. To prevent injury or strain, use proper lifting and carrying techniques when moving unit.
- When handling the air conditioner, be careful to avoid cuts from sharp metal fins on front and rear coils.
- Make sure air conditioner does not fall during removal.

### 3.4 PROCEDURE B

- 1 Redirect the louvers at the back of the wall sleeve to 60° angle as shown in the FIG 25. The use of pliers is recommended.

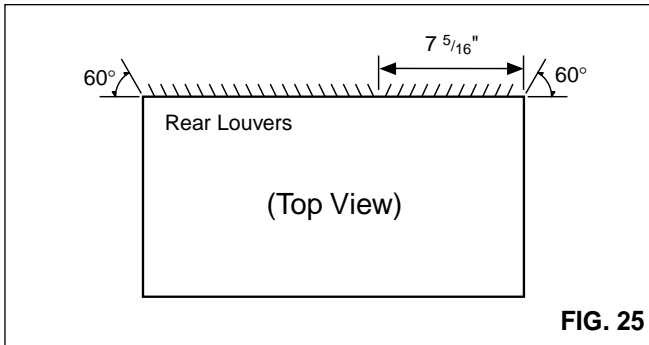
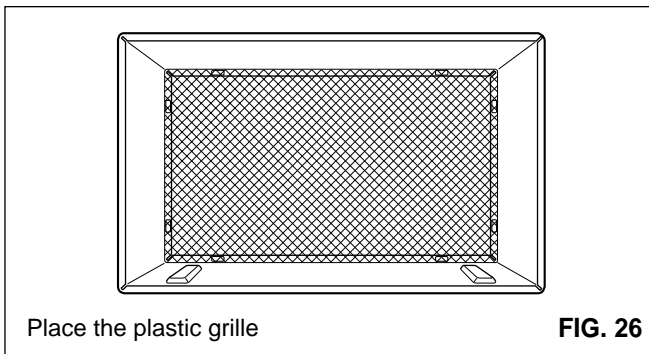
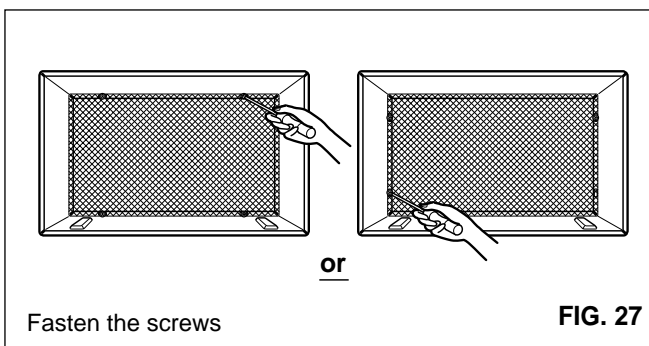


FIG. 25

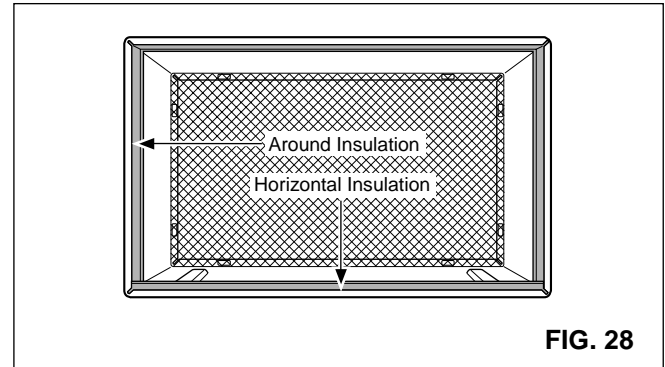
- 2 If the wall sleeve already has a rear grille, skip to step 4. If the wall sleeve does not have a rear grille or louvered panel, install the plastic grille from the kit. Cut the plastic grille to 25-1/2" wide and 15-1/4" high. Place the plastic grille to the inside of the wall sleeve at the rear flange.



- 3 Fasten the 4 washer screws to secure the grille to the wall sleeve. If you need plastic nuts to mount plastic grille to the inside of the wall sleeve, there are plastic nuts in the installation kit. The nuts are installed from the inside of the sleeve and are pressed into the square holes of the rear flanges.



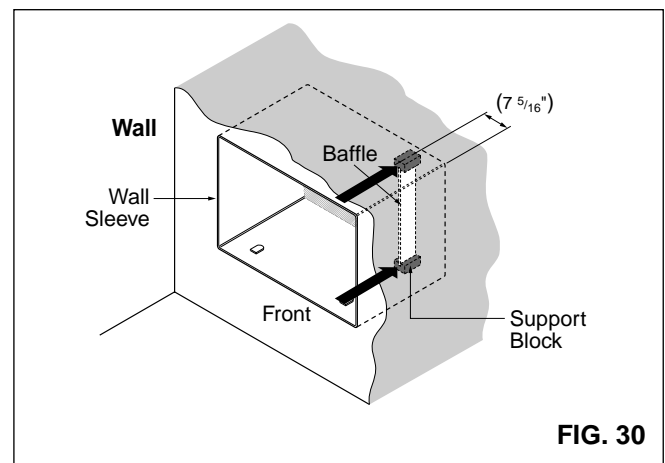
- 4 Remove the backing from the Horizontal Insulation strip  $1\frac{3}{8} \times \frac{5}{8} \times 27\frac{3}{16}$  and attach that to the inside bottom of the sleeve as shown below. Remove the backing from the Around Insulation strip  $1\frac{3}{8} \times \frac{3}{4} \times 61\frac{1}{2}$  and attach that to the inside front of the sleeve as shown below.



- 5 If the depth of your existing wall sleeve is less than or equal to 18", skip to step 7. Otherwise, cut the baffles and the support blocks according to length "A" in the table below.

Depth "D" of the existing wall sleeve (inches)	Length "A" (inches)
$18 < D \leq 18\text{-}\frac{5}{8}$	$\frac{3}{4}$
$18\text{-}\frac{5}{8} < D \leq 19\text{-}\frac{3}{4}$	$1\text{-}\frac{3}{4}$
$19\text{-}\frac{3}{4} < D \leq 22$	4

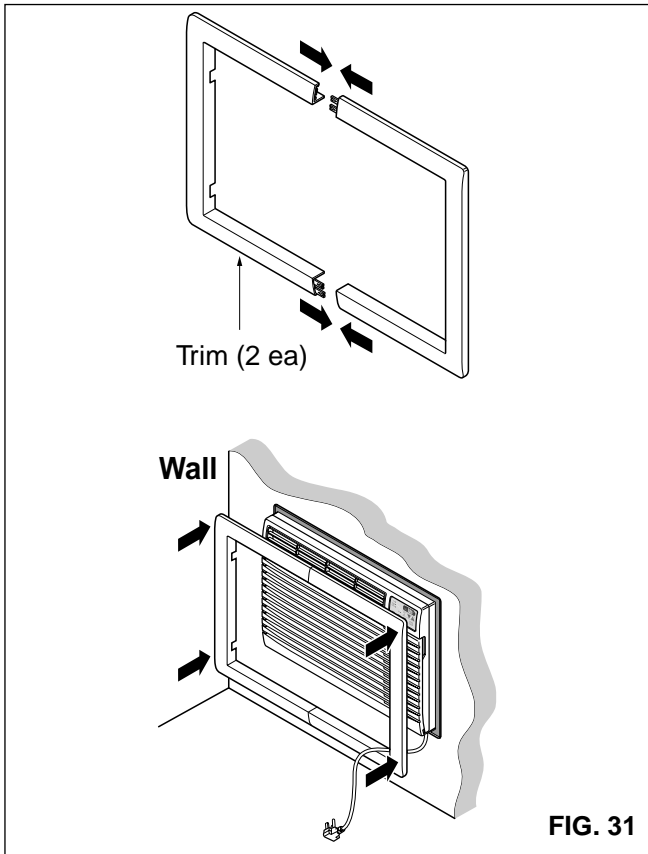
- 6 Remove the backing from the support blocks and attach them to the inside of the wall sleeve as shown FIG 30. Slide the baffle into slots of the support blocks.



- 7 Install the new unit into the wall sleeve.

## PROCEDURE B

- 8** To assemble trim, snap the tab of each piece into the slot of the other piece as shown below. Slide trim over the front of the air conditioner until trim is flush with sleeve as shown below.



### CAUTION

- Air conditioners covered in this manual pose an excessive weight hazard. Two or more people are needed to move and install the unit. To prevent injury or strain, use proper lifting and carrying techniques when moving unit.
- When handling the air conditioner, be careful to avoid cuts from sharp metal fins on front and rear coils.
- Make sure air conditioner does not fall during removal.

### 3.5 PROCEDURE C

- 1 Redirect the louvers at the back of the wall sleeve to 60° angle as shown in the FIG 32. The use of pliers is recommended.

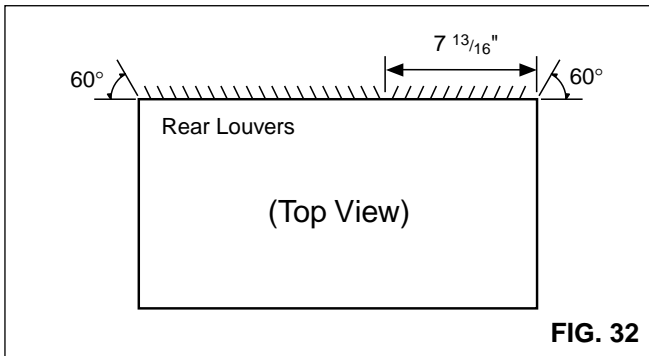
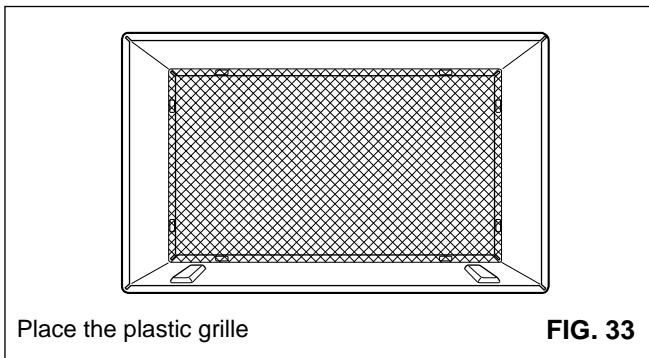


FIG. 32

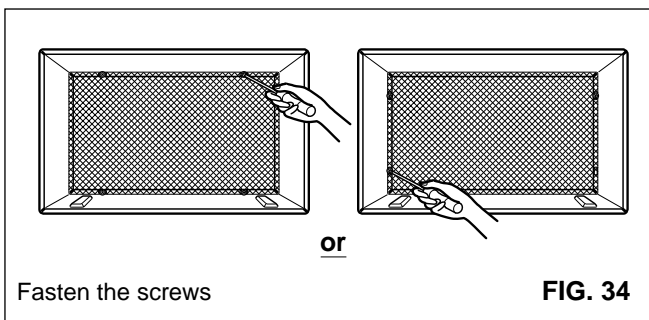
- 2 If the wall sleeve already has a rear grille, skip to step 4. If the wall sleeve does not have a rear grille or louvered panel, install the plastic grille from the kit. Cut the plastic grille to 26-1/2" wide and 15-1/2" high. Place the plastic grille to the inside of the wall sleeve at the rear flange.



Place the plastic grille

FIG. 33

- 3 Fasten the 4 washer screws to secure the grille to the wall sleeve. If you need plastic nuts to mount plastic grille to the inside of the wall sleeve, there are plastic nuts in the installation kit. The nuts are installed from the inside of the sleeve and are pressed into the square holes of the rear flanges.



Fasten the screws

FIG. 34

- 4 Remove the backing from the Horizontal Insulation strip  $1\frac{3}{8} \times 1\frac{3}{8} \times 27\frac{3}{16}$  and attach that to the inside bottom of the sleeve as shown below. Remove the backing from the Around Insulation strip  $1\frac{3}{8} \times 1\frac{3}{8} \times 61\frac{1}{2}$  and attach that to the inside front of the sleeve as shown below.

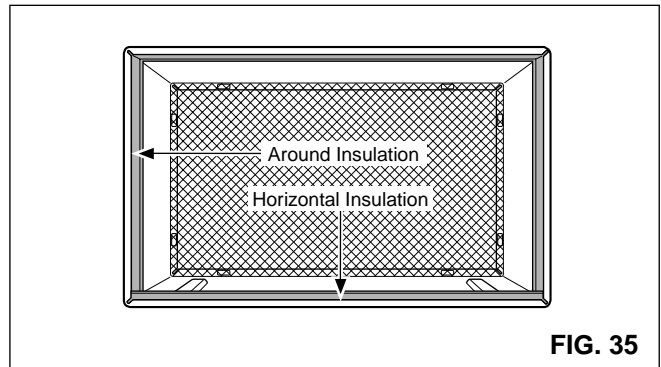


FIG. 35

- 5 If the depth of your existing sleeve is less than or equal to 18", skip to step 7. Otherwise, cut the baffles and the support blocks according to Length "A" in the table below.

Depth "D" of the existing wall sleeve (inches)	Length "A" (inches)
$18 < D \leq 18\text{-}\frac{5}{8}$	$\frac{3}{4}$
$18\text{-}\frac{5}{8} < D \leq 19\text{-}\frac{3}{4}$	$1\text{-}\frac{3}{4}$
$19\text{-}\frac{3}{4} < D \leq 22$	4

FIG. 36

- 6 Remove the backing from the support blocks and attach them to the inside of the wall sleeve as shown FIG 37. Slide the baffle into slots of the support blocks

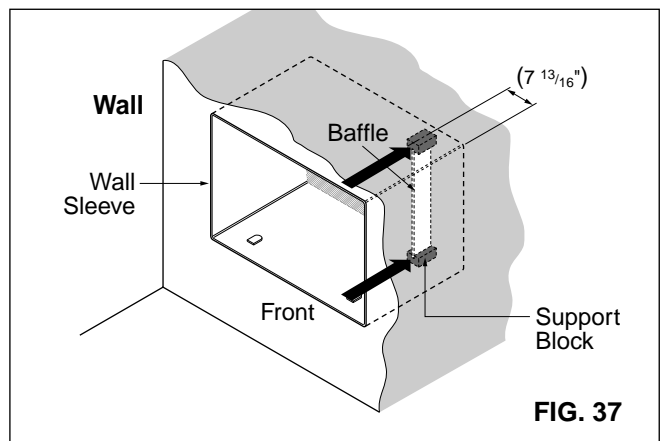
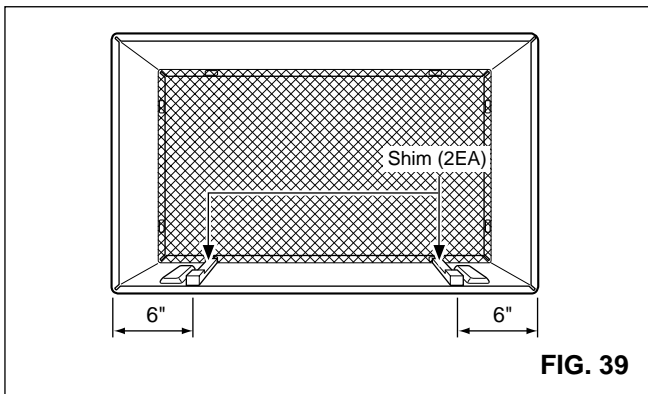
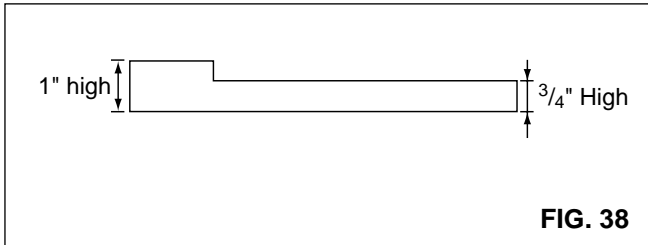


FIG. 37

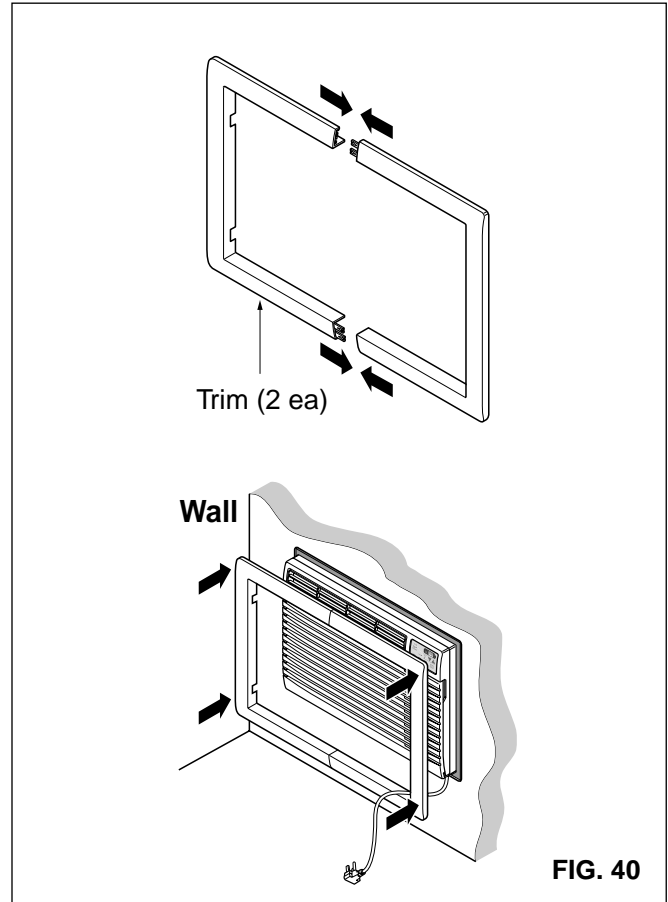
## PROCEDURE C

- 7** Remove the backing from the 13" shim strips and attach them as shown below in Fig. 39. The higher portion of shim is to be placed in front of the rib on the base of wall sleeve.



- 8** Install the new unit into the wall sleeve

- 9** To assemble trim, snap the tab of each piece into the slot of the other piece as shown below. Slide trim over the front of the air conditioner until trim is flush with sleeve as shown below.


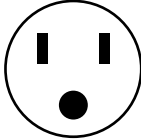


### **!** CAUTION

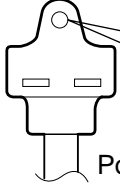

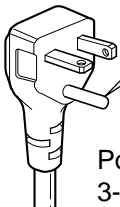
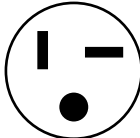
- Air conditioners covered in this manual pose an excessive weight hazard. Two or more people are needed to move and install the unit. To prevent injury or strain, use proper lifting and carrying techniques when moving unit.
- When handling the air conditioner, be careful to avoid cuts from sharp metal fins on front and rear coils.
- Make sure air conditioner does not fall during removal.

### 3.4 ELECTRICAL REQUIREMENTS

#### 3.4.1 ELECTRICAL DATA (FOR 115V MODEL)

Line Cord Plug	Use Wall Receptacle	Power Supply
 <p data-bbox="365 506 646 570">Power supply cord with 3-prong grounding plug</p>	<p data-bbox="727 410 824 474"><b>Parallel type</b></p>  <p data-bbox="699 506 1094 570">Standard 125V, 3-wire grounding receptacle rated 15A, 125V AC</p>	<p data-bbox="1138 410 1382 506">Use 15 AMP time delay fuse or 15 AMP circuit breaker.</p>
<p data-bbox="251 591 691 623"><b>USE OF EXTENSION CORDS</b></p> <p data-bbox="251 629 1386 691">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.</p>		

#### 3.4.2 ELECTRICAL DATA (FOR 230/208V MODEL)

Line Cord Plug	Use Wall Receptacle	Power Supply
 <p data-bbox="365 1036 646 1100">Power supply cord with 3-prong grounding plug</p>	<p data-bbox="727 940 824 1004"><b>Tandem type</b></p>  <p data-bbox="691 1036 1086 1100">Standard 250V, 3-wire grounding receptacle rated 15A, 250V AC</p>	<p data-bbox="1122 902 1325 998">Use 15 AMP time delay fuse or circuit breaker.</p>
 <p data-bbox="365 1285 646 1349">Power supply cord with 3-prong grounding plug</p>	<p data-bbox="727 1198 898 1261"><b>Perpendicular type</b></p>  <p data-bbox="691 1285 1086 1349">Standard 250V, 3-wire grounding receptacle rated 20A, 250V AC</p>	<p data-bbox="1122 1159 1382 1319">Use 20 AMP time delay fuse or circuit breaker. Refer to the nameplate for correct fusing.</p>

All wiring should be made in accordance with local electrical codes and regulations.

**NOTE :** Aluminum house wiring may pose special problems. Consult a qualified electrician.

#### 3.4.3 ELECTRICAL SAFETY

##### IMPORTANT GROUNDING INSTRUCTIONS

Air conditioner has a three-prong grounding plug on its power supply cord, which must be plugged into properly grounded three-prong wall receptacle for your protection against possible shock hazard.

**FUSE** – Use a time-delay fuse or circuit breaker. Refer to the nameplate for proper power supply requirements.

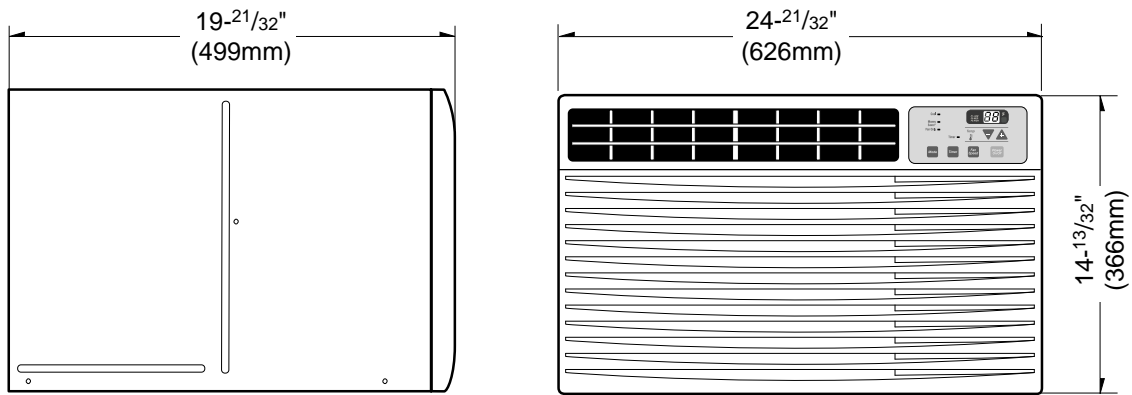
##### 208, 230, and 208/230 VOLT UNITS

These units are equipped with a three-prong grounding plug on the power supply cord, which must be plugged into a matching properly grounded three-prong wall receptacle for your protection against possible shock hazard. If such an outlet is not present, one must be installed by a qualified electrician in accordance with the National Electrical Code and local codes and ordinances.

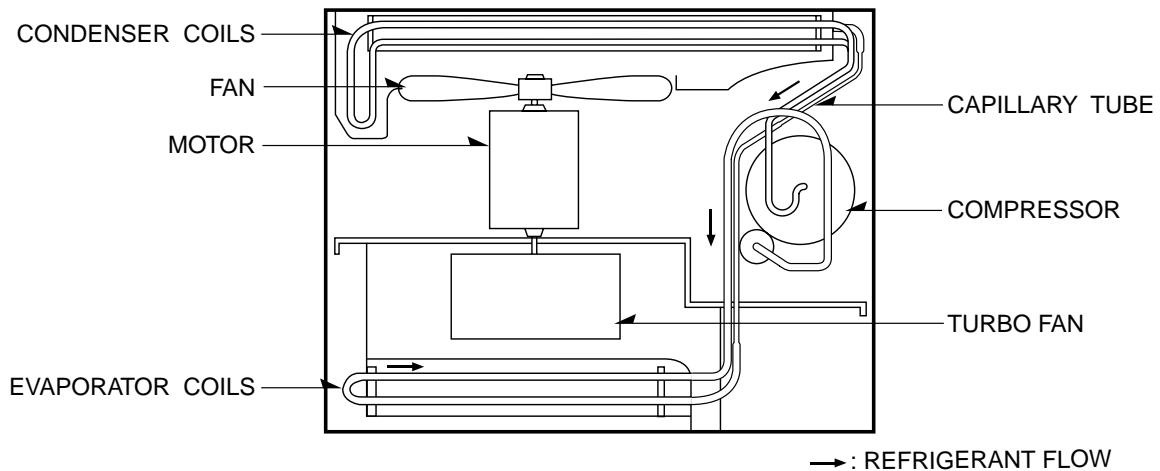
**NOTE:** DO NOT USE AN EXTENSION CORD on 208, 230, and 208/230 Volt units.

# 4. TROUBLESHOOTING GUIDE

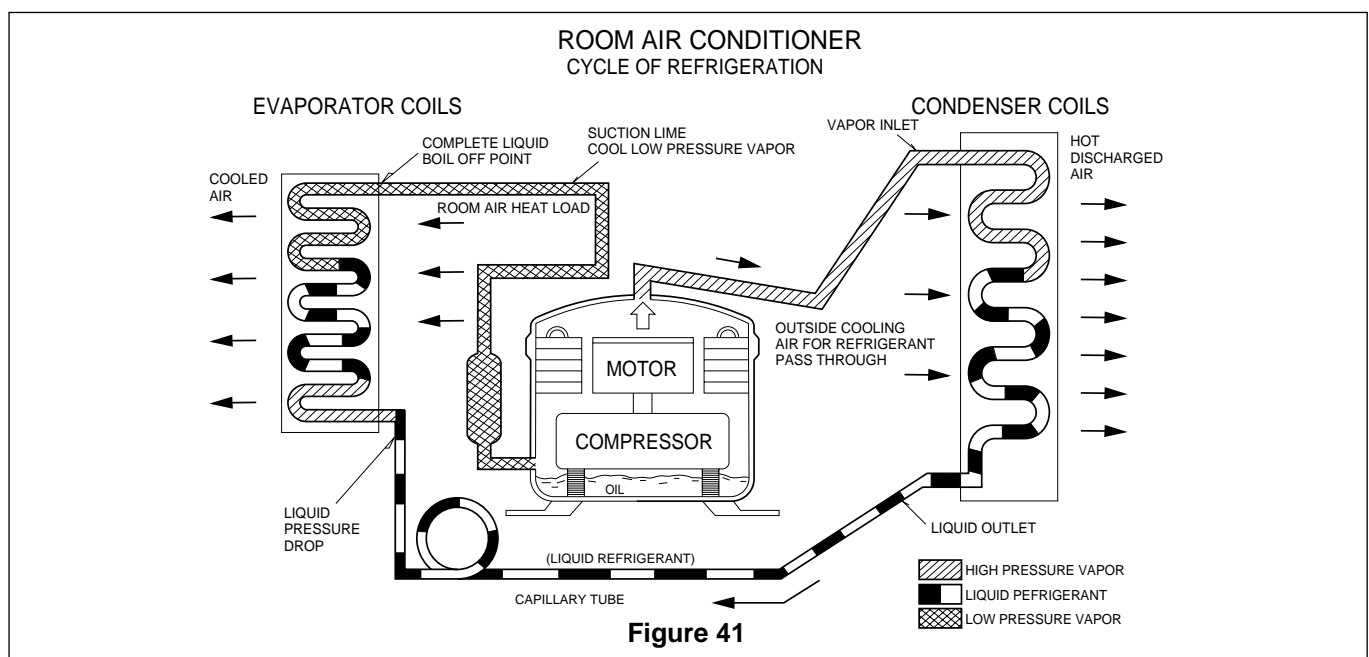
## 4.1 OUTSIDE DIMENSIONS



## 4.2 PIPING SYSTEM



Following is a brief description of the important components and their functions in the refrigeration system. Refer to Fig. 41 to follow the refrigeration cycle and the flow of the refrigerant in the cooling cycle.

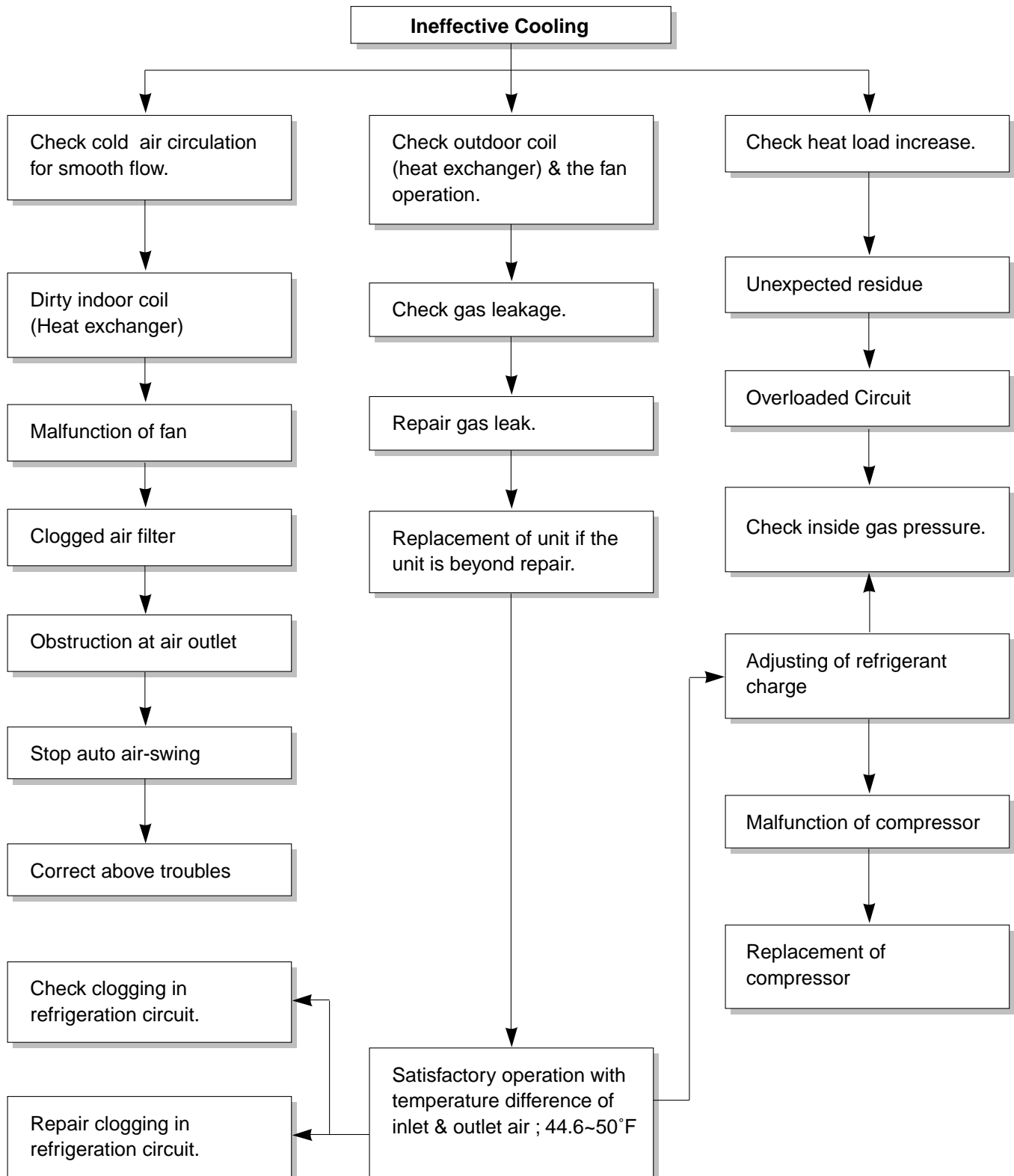


### 4.3 TROUBLESHOOTING GUIDE

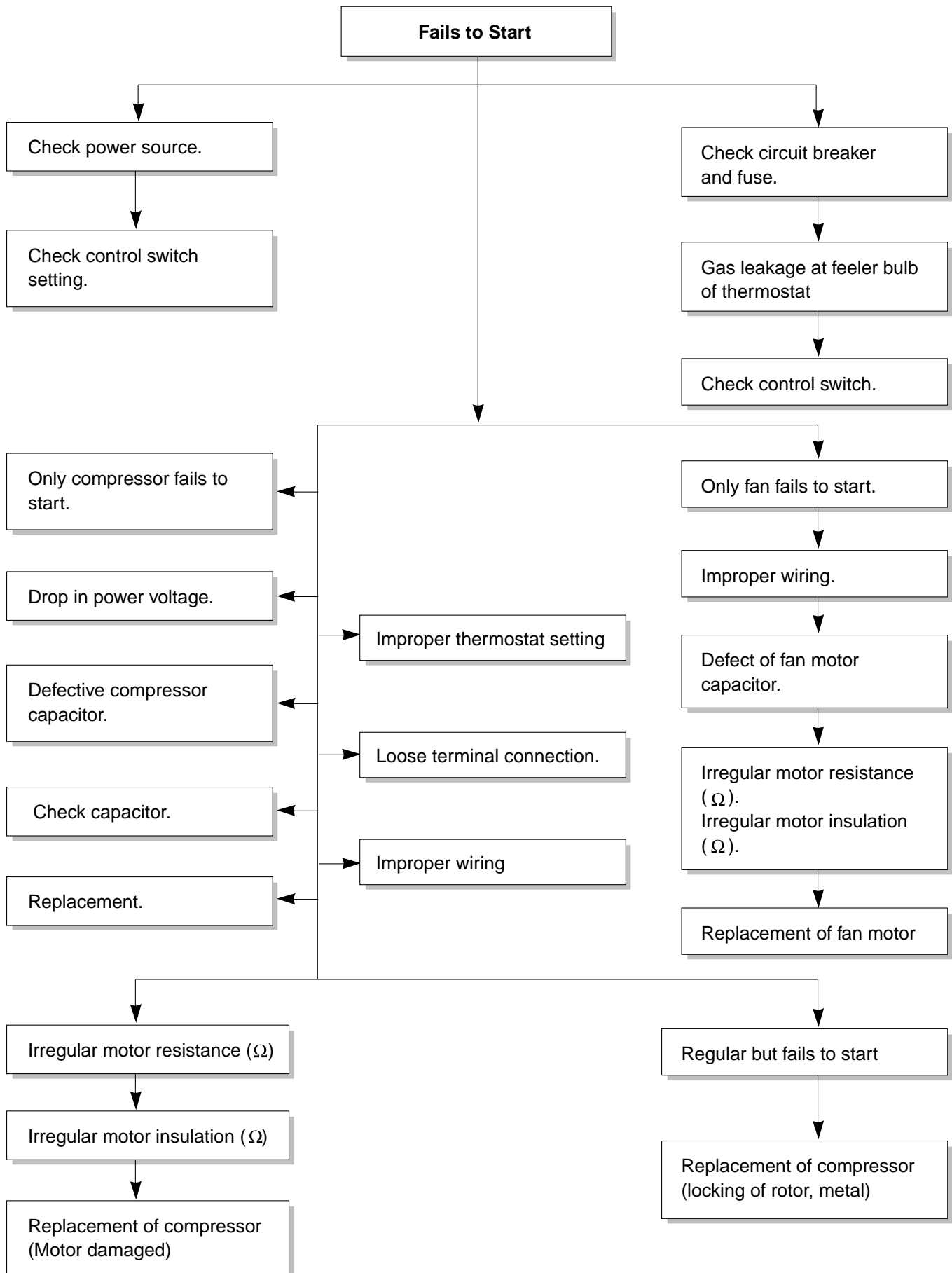
In general, possible trouble is classified in two causes.

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







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. Realign assembly.  Units using slinger ring condenser fans must have $\frac{1}{4}$ to $\frac{5}{16}$ inch clearance to the base. If it is hitting 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. See limits on page 27. 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.	Grommets	Check grommets; if worn or missing, replace them.
	Fan	If cracked, out of balance, or partially missing, replace it.
	Turbo fan	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.

COMPLAINT	CAUSE	REMEDY
Compressor will not run, but 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 wires are off, refer to wiring diagram for identification, and replace. Check wire locations. If not per wiring diagram, correct.
	Rotary	Check for continuity, refer to the wiring diagram for terminal identification. Replace the switch if circuit is open.
	Thermostat	Check the position of knob. If not at the coldest setting, advance the knob to this setting and restart unit. Check continuity of the thermostat. Replace thermostat if 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 it, and retest.)

## ROOM AIR CONDITIONER VOLTAGE LIMITS

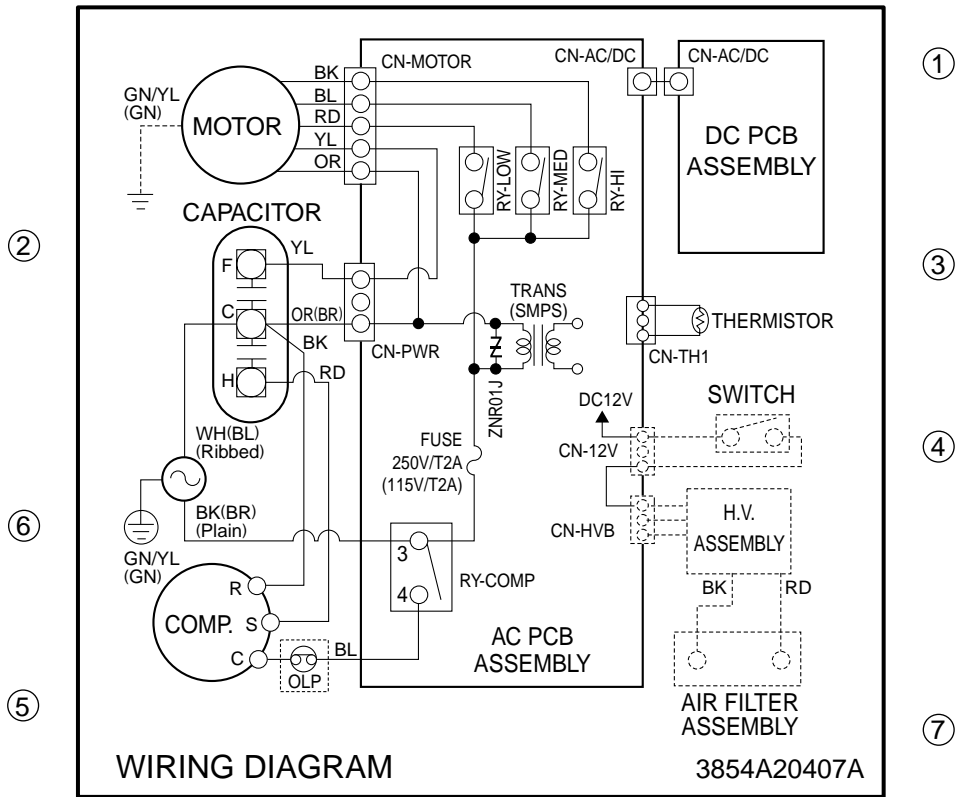
NAME PLATE RATING	MINIMUM	MAXIMUM
115V	103.5V	126.5V
208/230V	187V	253V

<b>COMPLAINT</b>	<b>CAUSE</b>	<b>REMEDY</b>
Compressor cycles on overload.	Voltage	Check the voltage. See the limits on the preceding page. 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.)
	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 cycle. Straighten the fins or replace the coil.
	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.	Blower or fan	Check the set screw or clamp. If loose or missing, correct. If the blower or fan is hitting air guide, rearrange the air handling parts.
	Copper tubing	Remove the cabinet and carefully rearrange tubing not to contact cabinet, compressor, shroud, and barrier.

# 5. SCHEMATIC DIAGRAM

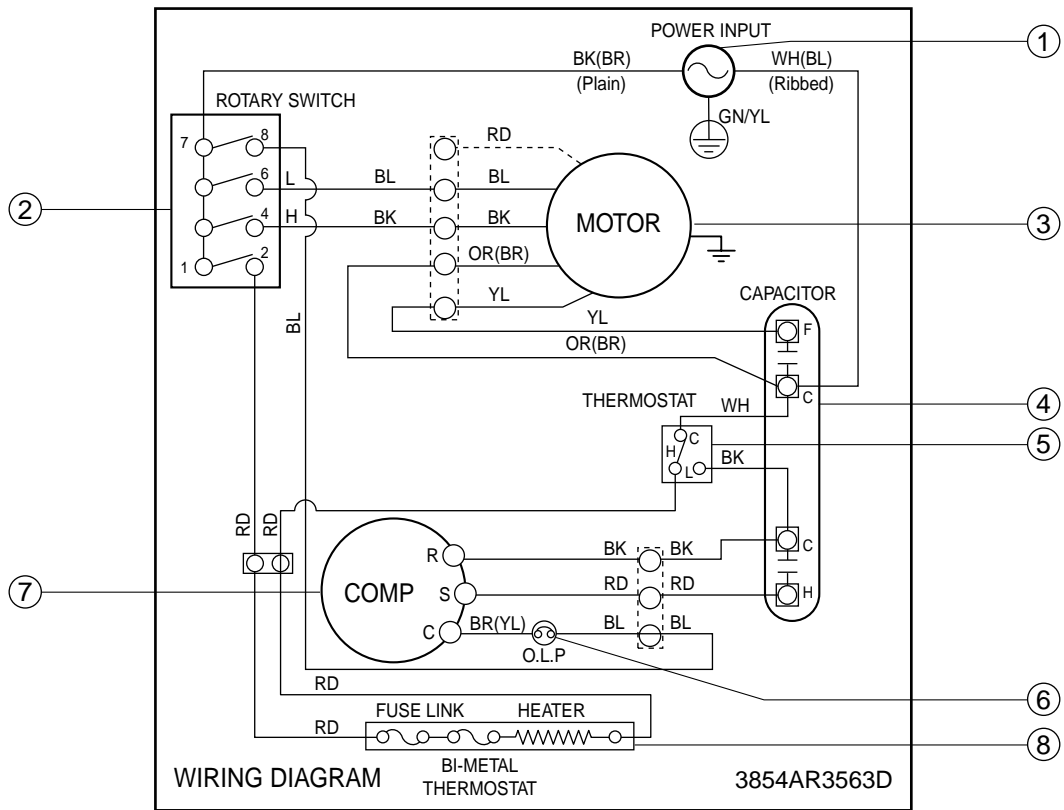
## 5.1 CIRCUIT DIAGRAM

• MODEL : BD-81/BD-101/BD-123



NO.	DESCRIPTION	PART NO.			Q'TY PER SET	RE-MARKS
		BD-81	BD-101	BD-123		
1	POWER CORD	6411A20028A	6411A20028C	6411A20028B	1	
2	FAN MOTOR	4681A20044H	4681A20044F	4681A20041C	1	
3	CAPACITOR	6120AR2194F	6120AR2194K	6120AR2194D	1	
4	THERMISTOR	6322AQ9189F			1	
5	COMPRESSOR	5416A90007D	2520UKCC2CA	2520UKHK2CA	1	
6	OVERLOAD PROTECTOR	6750A30001N	6750U-L031A	6750U-058A	1	

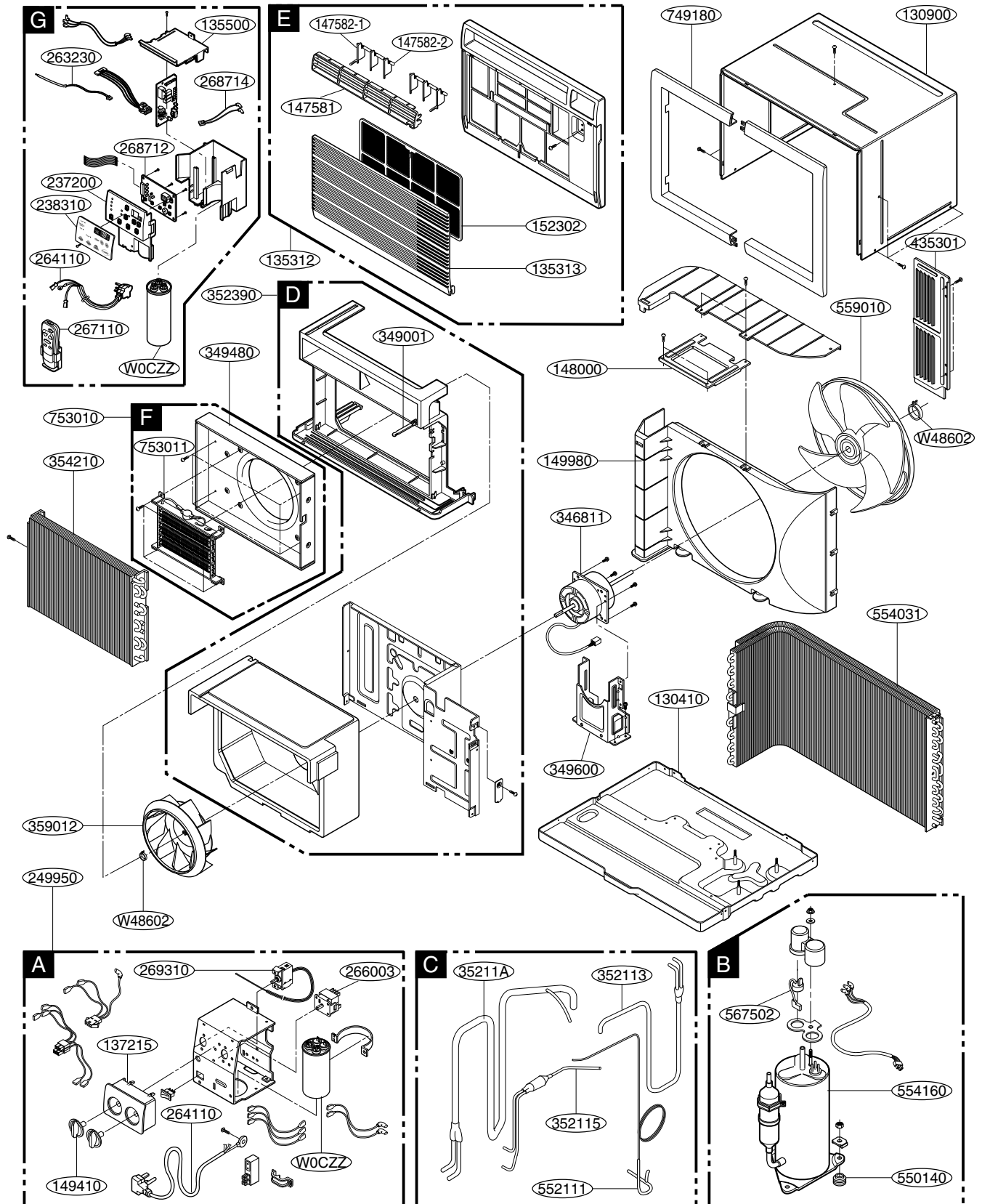
• MODEL : BDE-103/BDE-123



NO.	DESCRIPTION	PART NO.		Q'TY PER SET	RE-MARKS
		BDE-103	BDE-123		
1	POWER CORD	2H00677U		1	
2	ROTARY SWITCH	2H00598F		1	
3	FAN MOTOR	4681A20044E	4681A20041C	1	
4	CAPACITOR	6120AR2359E		1	
5	THERMOSTAT	2H01127D		1	
6	COMPRESSOR	2520UKCK2BA	2520UKHK2CA	1	
7	OVERLOAD PROTECTOR	6750U-L028A	6750U-L058A	1	
8	ELECTRIC HEATER	5300A20003A		1	

# 6. EXPLODED VIEW

• MODEL: BD-81/BD-101/BD-123/BDE-103/BDE-123



# 7. REPLACEMENT PARTS LIST

• MODEL: BD-81/BD-101

R: Service Parts  
N: Non Service parts

	LOCATION NO.	DESCRIPTION	PART NO.		REMARK
			BD-81	BD-101	
<b>G</b>	249950	CONTROL BOX ASSY, SINGLE	4995A10089G	4995A10089H	R
	268714	PWB(PCB) ASSEMBLY, MAIN(AC)	6871A20343C		R
	268712	PWB(PCB) ASSEMBLY, MAIN(DC)	6871A20344C		R
	264110	POWER CORD ASSY	6411A20028C	6411A20028C	R
	263230	THERMOSTAT ASSY	6322AQ9189F		R
	W0CZZ	CAPACITOR, DRAWING	6120AR2194P	6120AR2194K	R
	267110	REMOTE, CONTROLLER	6727A90001A		R
	237200	PANEL ASSY, CONTROL	3720A10128A		R
<b>B</b>	554160	COMPRESSOR	2520UAF2C2AC	2520UKCC2CA	R
	550140	ISOLATOR, COMP	4H00982E		R
	567502	O.L.P	6750U-L005A	6750U-L031A	R
<b>C</b>	352113	TUBE ASSY, DISCHARGE SINGLE	5211A30588C	5211A30588E	R
	352115	TUBE ASSY, EVAPORATOR IN	5211A20289C	5211A20289D	R
	352115-1	TUBE ASST, EVAPORATOR IN	-	-	R
	35211A	TUBE ASSY, SUCTION SINGLE	5211A20498A	5211A20494C	R
	552111	TUBE ASSY, CAPELLARY	5211A20214N	5211A20214L	R
<b>D</b>	352390	AIR GUIDE ASSY	5239A10002E		R
	349001	DAMPER, VENTILATION	4900A20001A		R
<b>E</b>	135312	GRILLE ASSY, FRONT	3531A20121A		R
	135313	GRILLE, INLET	3530A20053A		R
	147581	LOUVER, HORIZONTAL	4758A20008B		R
	147582-1	LOUVER, VERTICAL	4758A20009A		R
	147582-2	LOUVER, VERTICAL	4758A20009B		R
	152302	FILTER(MESH), A/C	5230A20007A		R
	349480	ORIFICE	4948A10006A		R
	149980	SHROUD	4998A10007B		R
	346811	MOTOR ASSY, SINGLE	4681A20044G	4681A20044F	R
	349600	MOUNT, MOTOR	4960A20005A		R
	148000	BRACE	4800A30002A		R
	435301	GRILLE, REAR	3530A30002A		R
	354210	EVAPORATOR ASSY, FIRST	5421A20071E		R
	359012	FAN, TURBO	5900A20009A		R
	554031	CONDENSER ASSY, BENT	5403A20040P		R
	559010	FAN ASSY, AXIAL	5900AR1173A		R
	W48602	CLAMP, SPRING	3H02932B		R
	130410	BASE ASSY, SINGLE	3041A10014X	3041A10014V	R
	130900	CABINET	3090A20003B		R
	749180	TRIM	4918A20001A		R



• **MODEL: BD-123**

R: Service Parts  
N: Non Service parts

	LOCATION NO.	DESCRIPTION	PART NO.	REMARK
			BD-123	
<b>G</b>	249950	CONTROL BOX ASSY, SINGLE	4995A10089L	R
	268714	RPWB(PCB) ASSEMBLY, MAIN(AC)	6871A20343D	R
	268712	PWB(PCB) ASSEMBLY, MAIN(DC)	6871A20344C	R
	264110	POWER CORD ASSY	6411A20028B	R
	263230	THERMOSTAT ASSY	6322AQ9189F	R
	W0CZZ	CAPACITOR, DRAWING	6120AR2194D	R
	267110	REMOTE CONTROLLER	6727A90001A	R
	237200	PANEL ASSY, CONTROL	3720A10128A	R
<b>B</b>	554160	COMPRESSOR	2520UKHK2CA	R
	550140	ISOLATOR, COMP	4H00982E	R
	567502	O.L.P	6750U-L058A	R
<b>C</b>	352113	TUBE ASSY, DISCHARGE SINGLE	5211A30588A	R
	352115	TUBE ASSY, EVAPORATOR IN	5211A20904A	R
	352115-1	TUBE ASST, EVAPORATOR IN	5211A20904B	R
	35211A	TUBE ASSY, SUCTION SINGLE	5211A30587A	R
	552111	TUBE ASSY, CAPILLARY	5211A20214K	R
<b>D</b>	352390	AIR GUIDE ASSY	5239A10002E	R
	349001	DAMPER VENTILATION	4900A20001A	R
<b>E</b>	135312	GRILLE ASSY, FRONT	3531A20121A	R
	135313	GRILLE, INLET	3530A20053A	R
	147581	LOUVER, HORIZONTAL	4758A20008B	R
	147582-1	LOUVER, VERTICAL	4758A20009A	R
	147582-2	LOUVER, VERTICAL	4758A20009B	R
	152302	FILTER(MESH), A/C	5230A20007A	R
	349480	ORIFICE	4948A10006A	R
	149980	SHROUD	4998A10007B	R
	346811	MOTOR ASSY, SINGLE	4681A20041C	R
	349600	MOUNT, MOTOR	4960A20008A	R
	148000	BRACE	4800A30002A	R
	435301	GRILLE, REAR	3530A30002A	R
	354210	EVAPORATOR ASSY, FIRST	5421A20060A	R
	359012	FAN, TURBO	5900A20009A	R
	554031	CONDENSER ASSY, BENT	5403A20040H	R
	559010	FAN ASSY, AXIAL	5900AR1173A	R
	W48602	CLAMP, SPRING	3H02932B	R
	130410	BASE ASSY, SINGLE	3041A10014T	R
	130900	CABINET	3090A20003B	R
	749180	TRIM	4918A20001A	R

• MODEL: BDE-103/BDE-123

R: Service Parts  
N: Non Service parts

	LOCATION NO.	DESCRIPTION	PART NO.		REMARK
			BDE-103	BDE-123	
A	249950	CONTROL BOX ASSY, SINGLE	4995A20131V		R
	264110	POWER CORD ASSY	2H00677U		R
	266003	SWITCH, ROTARY	2H00598F		R
	269310	THERMOSTAT ASSY	2H01127D		R
	W0CZZ	CAPACITOR, DRAWING	6120AR2359E		R
	149410	KNOB ASSY	4941A30005B		R
	137215	PANEL ASSY, CONTROL	3721A20049F		R
B	554160	COMPRESSOR	2520UKCK2BA	2520UKHK2CA	R
	550140	ISOLATOR, COMP	4H00982E		R
	567502	O.L.P	6750U-L028A	6750U-L058A	R
C	352113	TUBE ASSY, DISCHARGE SINGLE	5211A30588B	5211A30588A	R
	352115	TUBE ASSY, EVAPORATOR IN	5211A20289C	5211A20904A	R
	352115-1	TUBE ASST, EVAPORATOR IN	-	5211A20904B	R
	35211A	TUBE ASSY, SUCTION SINGLE	5211A20498B	5211A30587A	R
	552111	TUBE ASSY, CAPILLARY	5211A20214L	5211A20214K	R
D	352390	AIR GUIDE ASSY	5239A10002F		R
	349001	DAMPER, VENTILATION	4900A20001A		R
E	135312	GRILLE ASSY, FRONT	3531A20121B		R
	135313	GRILLE, INLET	3530A20053A		R
	147581	LOUVER, HORIZONTAL	4758A20008B		R
	147582-1	LOUVER, VERTICAL	4758A20009A		R
	147582-2	LOUVER, VERTICAL	4758A20009B		R
	152302	FILTER(MESH), A/C	5230A20007A		R
F	753010	HEATER ASSY	5301A20011A		R
	753011	HEATER ASSY, ELECTRIC	5300A20003A		R
	349480	ORIFICE	4948A10006A		R
	149980	SHROUD	4998A10007B		R
	346811	MOTOR ASSY, SINGLE	4681A20044E	4681A20041C	R
	349600	MOUNT, MOTOR	4960A20005A	4960A20008A	R
	148000	BRACE	4800A30002A		R
	435301	GRILLE, REAR	3530A30007A		R
	354210	EVAPORATOR ASSY, FIRST	5421A20071E	5421A20060A	R
	359012	FAN, TURBO	5900A20009B		R
	554031	CONDENSER ASSY, BENT	5403A20040P	5403A20040H	R
	559010	FAN ASSY, AXIAL	5900AR1173A		R
	W48602	CLAMP, SPRING	3H02932B		R
	130410	BASE ASSY, SINGLE	3041A10014V	3041A10014T	R
	130900	CABINET	3090A20003B		R
	749180	TRIM	4918A20001A		R

**Specifications and performance data subject to change without notice.**

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