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Room Air Conditioner

SERVICE MANUAL

CAUTION

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

MODEL: LW1200PR
LW1200ER
LW1000PR
LW1000ER
LWL1210WAL
LWL1230WAL

CONTENTS

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 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) 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) of the ROTARY SWITCH.
4. The value should be over 1MΩ.

1.3 SPECIFICATIONS

1.3.1 FOR LW1200PR / LW1200ER / LWL1210WAL / LWL123220WAL / LW1000PR / LW1000ER

ITEMS \ MODELS		LW1200PR / LW1200ER LWL1210WAL	LWL1230WAL	LW1000PR / LW1000ER
POWER SUPPLY		1ø, 115, 60Hz	1ø, 208/230, 60Hz	1ø, 115, 60Hz
COOLING CAPACITY (Btu/h)		12,300	12,000	10,000
INPUT (W)		1,140	1,110	910
RUNNING CURRENT (A)		10.2	5.2	8.2
E.E.R (BTU/W·h)		10.8	10.8	11.0
OPERATING CONDITION	INDOOR (°C)	26.7(DB)* 19.4(WB)**		
	OUTDOOR (°C)	35(DB)* 23.9(WB)**		
REFRIGERANT (R-22) CHARGE		540g (19.0 oz)	550g (19.4 oz)	480(17.0 oz)
EVAPORATOR		3 ROW 12 STACKS, SLIT-FIN TYPE		2 ROW 10 STACKS, LG-LOUVER TYPE
CONDENSER		2 ROW 17 STACKS, L-BENDED TYPE		2 ROW 17 STACKS, LG-LOUVER 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		REMOTE CONTROLLER		
ROOM TEMP. CONTROL		THERMISTOR		
AIR DIRECTION CONTROL		VERTICAL LOUVER (RIGHT & LEFT)		
		HORIZONTAL LOUVER (UP & DOWN)		
CONSTRUCTION		SLIDE IN-OUT CHASSIS		
PROTECTOR	COMPRESSOR	OVERLOAD PROTECTOR		
	FAN MOTOR	INTERNAL THERMAL PROTECTOR		
POWER CORD		(3 WIRE WITH GROUDING)		
		ATTACHMENT PLUG (CORD-CONNECTED TYPE)		
DRAIN SYSTEM		DRAIN PIPE OR SPLASHED BY FAN SLINGER		
NET WEIGHT (lbs/kg)		79/36		
OUTSIDE DIMENSION (W x H x D)	(inch)	$23\frac{5}{8}$ x $14\frac{31}{32}$ x $22\frac{5}{16}$		
	(mm)	600 x 380 x 560		

* DB:Dry Bulb
**WB:Wet Bulb

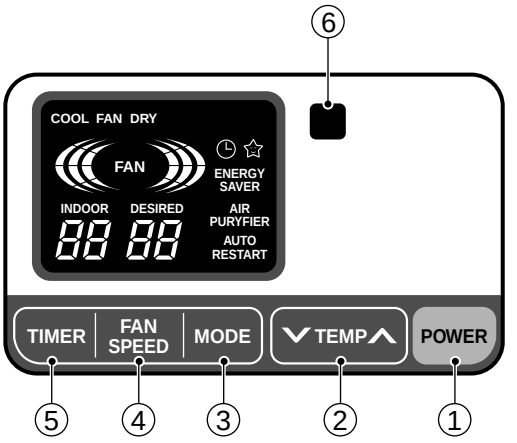
1.4 FEATURES

- Designed for COOLING ONLY.
- Powerful and whispering cooling.
- Slide-in and slide-out chassis for the simple installation and service.
- Low air-intake, top cooled-air discharge.
- Built-in adjustable Thermistor
- Washable one-touch filter
- Compact size
- Reliable and efficient rotary compressor is equipped.

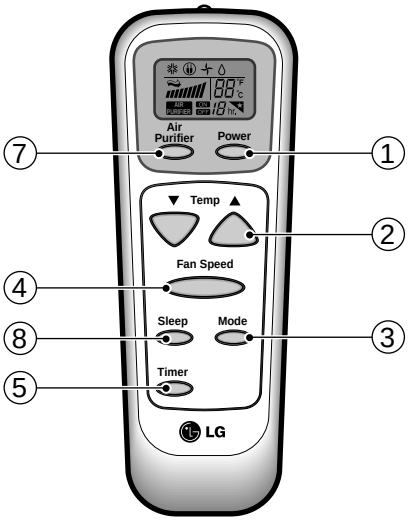
1.5 CONTROL LOCATIONS

■ LW1200PR / LW1000PR / LWL1210WAL / LWL1230WAL

DISPLAY



REMOTE CONTROL



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

1 POWER BUTTON

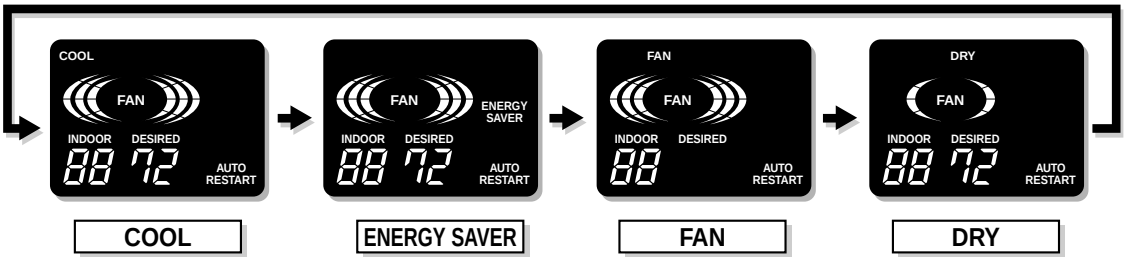
To turn the air conditioner ON, push the button. To turn the air conditioner OFF, push the button again.
This button takes priority over any other buttons.

2 ROOM TEMPERATURE SETTING BUTTON

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

3 OPERATION MODE SELECTION BUTTON

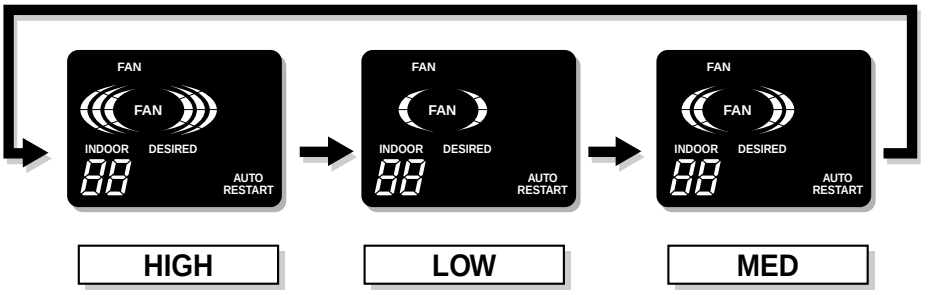
Every time you push this button, it will shift among COOL, ENERGY SAVER, FAN and DRY as follows.



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

4 FAN SPEED SELECTOR

Every time you push this button, it is set as follows.
(Hi → Low → Med → Hi → Low →...)



5 ON/OFF TIMER BUTTON

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

- Stopping operation
  (1Hour → 2Hours → 3Hours → 4Hours → 5Hours → 6Hours → 7Hours → 8Hours → 9Hours → 10Hours → 11Hours → 12Hours → 0Hour → 1Hour → 2Hours →...)
- Starting operation
  (1Hour → 2Hours → 3Hours → 4Hours → 5Hours → 6Hours → 7Hours → 8Hours → 9Hours → 10Hours → 11Hours → 12Hours → off → 1Hour → 2Hours → ...)

6 REMOCON SIGNAL RECEIVER

7 AIR PURIFIER

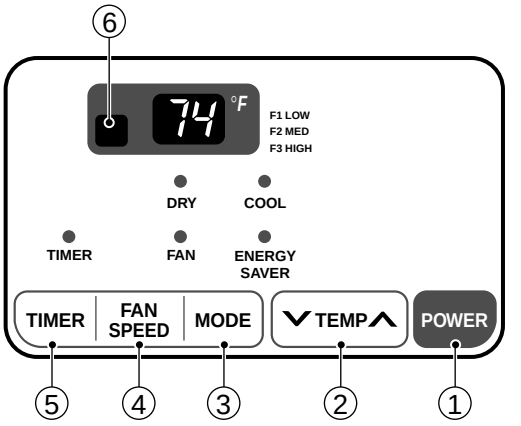
- Press the Air Purifier button.
  Operation will start when the button is pressed and stop when the button is pressed again.
- Set the fan speed with the remote control. You can select the fan speed in three steps high, low or medium.
  Each time the button is pressed, the fan speed mode is shifted.
- If you press the only Air Purifier button, only air purifying operates.
  Then, fan speed is low. You can select the fan speed in three steps high, low or medium.
  Each time the button is pressed, the fan speed mode is shifed.

8 SLEEP MODE

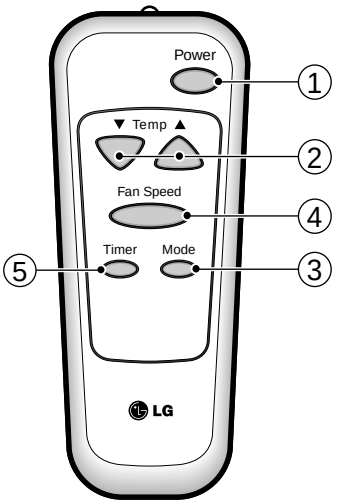
- Press the sleep mode button to set the time you want the unit to turn off automatically.
- Every time you push this button, the remaining time will be set as follows.
  (1Hour → 2Hours → 3Hours → 4Hours → 5Hours → 6Hours → 7Hours → 0Hour → 1Hour → 2Hours → ···)
- The temperature setting will be raised by 2˚F in 30 minutes and by 4˚F in 1 hour to prevent overcooling during sleep.

■ LW1200ER / LW1000ER

DISPLAY



REMOTE CONTROL



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

1 POWER BUTTON

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

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

3 OPERATION MODE SELECTION BUTTON

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

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

4 FAN SPEED SELECTOR

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

5 ON/OFF TIMER BUTTON

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

- Stopping operation
  (1Hour → 2Hours → 3Hours → 4Hours → 5Hours → 6Hours → 7Hours → 8Hours → 9Hours → 10Hours → 11Hours → 12Hours → 0Hour → 1Hour → 2Hours →...)
- Starting operation
  (1Hour → 2Hours → 3Hours → 4Hours → 5Hours → 6Hours → 7Hours → 8Hours → 9Hours → 10Hours → 11Hours → 12Hours → off → 1Hour → 2Hours → ...)

6 REMOCON SIGNAL RECEIVER

2. DISASSEMBLY INSTRUCTIONS

— Before the following disassembly, POWER SWITCH set to OFF and disconnect the power cord.

2.1 MECHANICAL PARTS

2.1.1 FRONT GRILLE

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

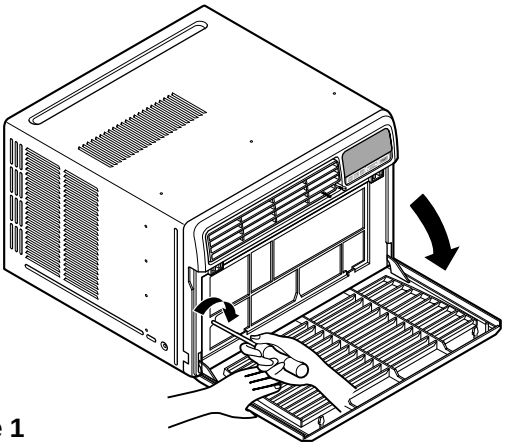


Figure 1

2.1.2 CABINET

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

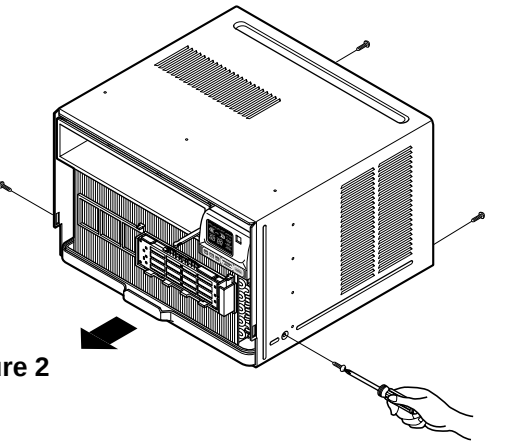


Figure 2

2.1.3 CONTROL BOX

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 power cord.
4. Disconnect the grounding screw from the evaporator channel.
5. Remove the 1 screw which fasten the control box cover.
6. Remove the housing which connects PCB and motor wire in the control box.
7. Disconnect the housing which connects Plazma Air Purifier.(Optional)
8. Remove the screw at left cover of filter case and open the cover to remove inner screw. (Optional)
9. Remove the nut which fastens the terminal cover.
10. Remove the terminal cover.
11. Remove all the leads from the overload protector.
12. Discharge the capacitor by placing a 20,000 ohmresistor across the capacitor terminals.
13. Raise the control box upward completely. (See Figure 3)
14. Re-install the components by referring to the removal procedure, above. (Refer to the circuit diagram found on page 32 in this manual and on the control box.)

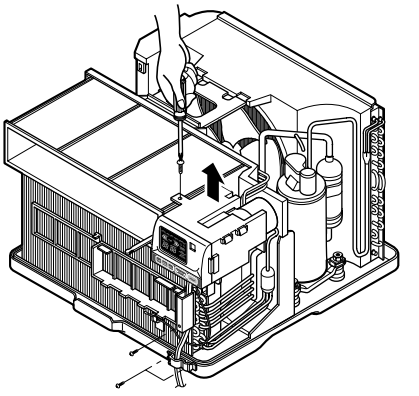


Figure 3

2.2 AIR HANDLING PARTS

2.2.1 AIR GUIDE 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 control box. (Refer to section 2.1.3)
4. Remove the 4 screws which fasten the brace.
5. Remove the brace.
6. Remove the 2 screws which fasten the air guide upper.
7. Remove the air guide upper.(See figure 4)
8. Remove the 2 screws which fasten the evaporator.
9. Move the evaporator forward and pulling it upward slightly. (See Figure 5)
10. Pull out the hook of orifice by pushing the tabs and remove it. (See Figure 6)
11. Remove the clamp with a hand plier which secures the turbo fan.
12. Remove the turbo fan.
13. Remove the 2 screws which fasten the air guide from the base pan.
14. Move the air guide backward, and pull out from the base pan.(Move the air giude lower carefully.)
15. Re-install the components by referring to the removal procedure, above.

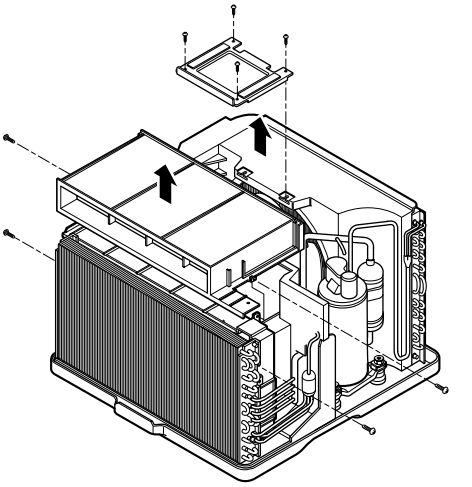


Figure 4

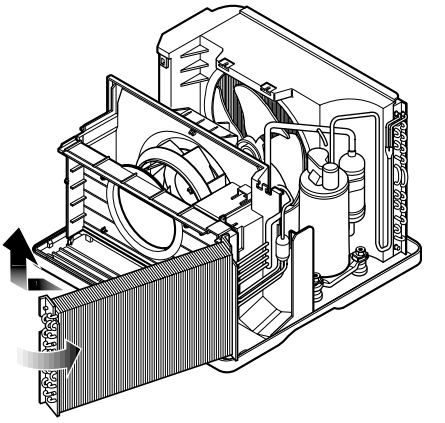


Figure 5

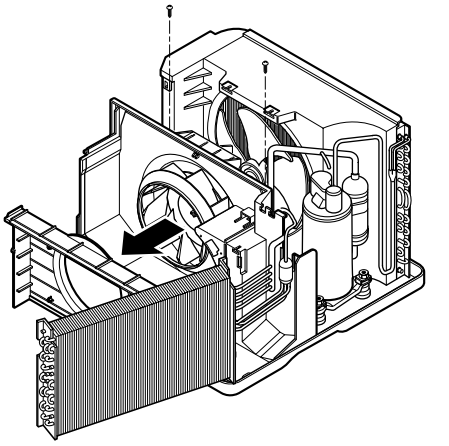


Figure 6

2.2.2 FAN

1. Remove the cabinet. (Refer to section 2.1.2)
2. Remove the brace (Refer to section 2.2.1)
3. Remove the 5 screws which fasten the condenser.
4. Move the condenser to the left carefully.
5. Remove the clamp which secures the fan.
6. Remove the fan. (See Figure 7)
7. Re-install by referring to the removal procedure.

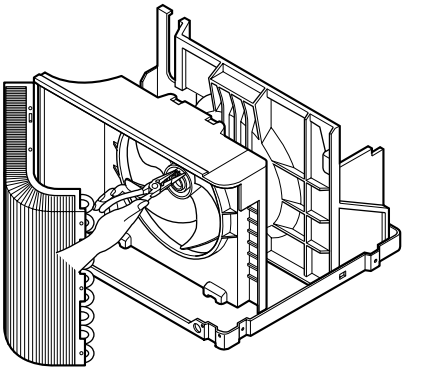


Figure 7

2.2.3 SHROUD

1. Remove the fan. (Refer to section 2.2.2)
2. Remove the shroud. (See Figure 8)
3. Re-install the components by referring to the removal procedure, above.

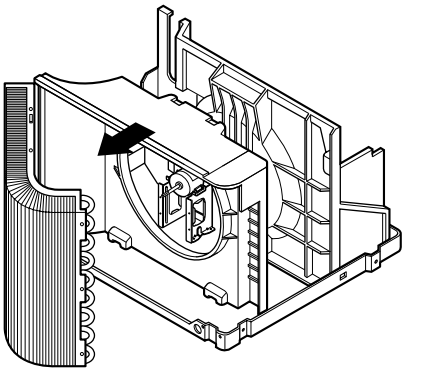


Figure 8

2.3 ELECTRICAL PARTS

2.3.1 OVERLOAD PROTECTOR

1. Remove the cabinet. (Refer to section 2.1.2)
2. Remove the nut which fastens the terminal cover.
3. Remove the terminal cover. (See Figure 9)
4. Remove all the leads from the overload protector.
5. Remove the overload protector.
6. Re-install the components by referring to the removal procedure, above.

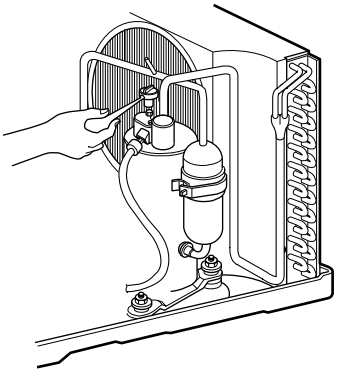


Figure 9

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, install one (such as a WATCO A-1) before venting the Freon™. Leave the valve in place after servicing the system.
3. Remove the overload protector. (Refer to section 2.3.1)
4. After purging the unit completely, unbraze the suction and discharge tubes at the compressor connections.
5. Remove the 3 nuts and the 3 washers which fasten the compressor.
6. Remove the compressor. (See Figure 10)
7. Re-install the components by referring to the removal procedure, above.

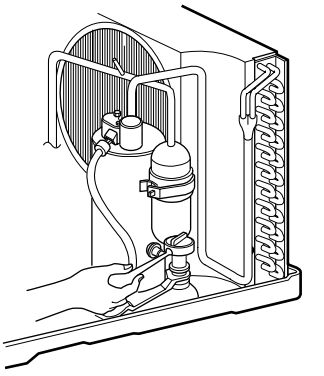


Figure 10

2.3.3 CAPACITOR

1. Remove the control box. (Refer to section 2.1.3)
2. Open the top cover from the control box. (See Figure 11)
3. Pull out the capacitor from the control box.
4. Disconnect all the leads of capacitor terminals.
5. Re-install the components by referring to the removal procedure, above.

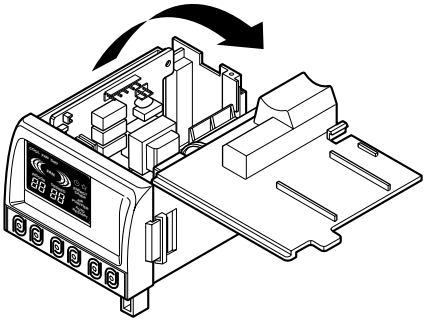


Figure 11

2.3.4 POWER CORD

1. Remove the control box. (Refer to section 2.1.3)
2. Open the top cover from the control box. (Refer to section 2.3.3)
3. Disconnect the front panel from the control box. (See Figure 12)
4. Disconnect two leads from the capacitor and relay.
5. Pull out the power cord.
6. Re-install the component by referring to the above removal procedure, above. (Use only one ground-marked hole for ground connection.)
7. If the supply cord of this appliance is damaged, it must be replaced by the special cord. (The special cord means the cord which has the same specification marked on the supply cord attached at the unit.)

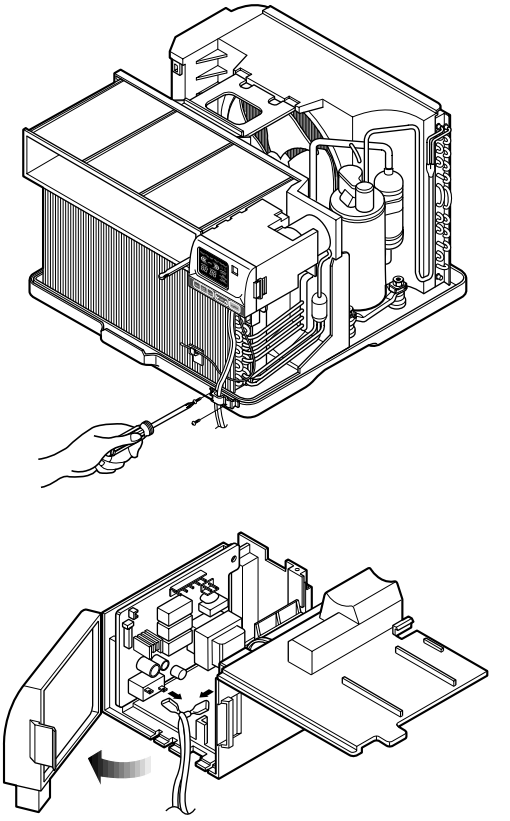


Figure 12

2.3.5 MOTOR

1. Remove the cabinet. (Refer to section 2.1.2)
2. Remove the turbo fan. (Refer to section 2.2.1)
3. Remove the fan. (Refer to section 2.2.2)
4. Remove the 4 screws which fasten the motor from the air guide. (See Figure 13)
5. Remove the motor.
6. Re-install the components by referring to the removal procedure, above.(See Figure 13)

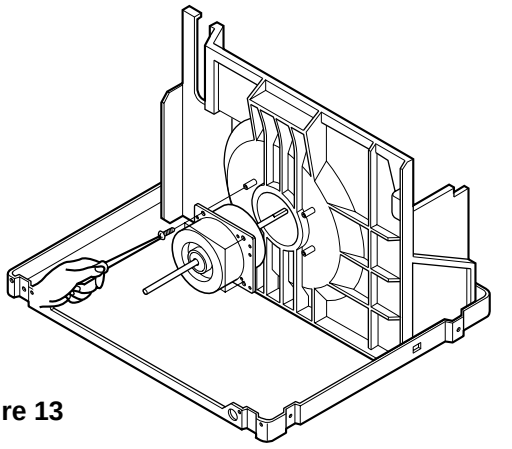


Figure 13

2.4 REFRIGERATING CYCLE

2.4.1 CONDENSER

CAUTION

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

1. Remove the cabinet. (Refer to section 2.1.2)
2. Remove the 4 screws which fasten the brace.(Refer to section 2.2.1)
3. Remove the 5 screws which fasten the condenser and shroud.
4. After discharging the refrigerant completely, unbraze the interconnecting tube at the condenser connections.
5. Remove the condenser.
6. Re-install the components by referring to notes. (See Figure 14)

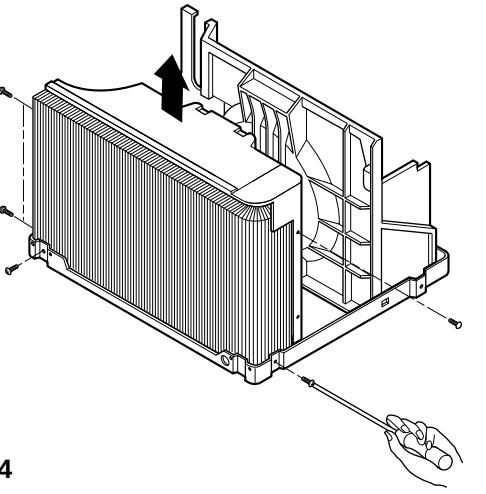


Figure 14

2.4.2 EVAPORATOR

1. Remove the control box.(Refer to section 2.1.3)
2. Remove the air guide upper. (Refer to section 2.2.1)
3. Remove the 2 screws which fasten the evaporator.
4. Move the evaporator sideways carefully. (Refer to section 2.2.1)
5. After discharging the refrigerant completely, unbraze the interconnecting tube at the evaporator connections.
6. Remove the evaporator.
7. Re-install the components by referring to notes. (See Figure 15)

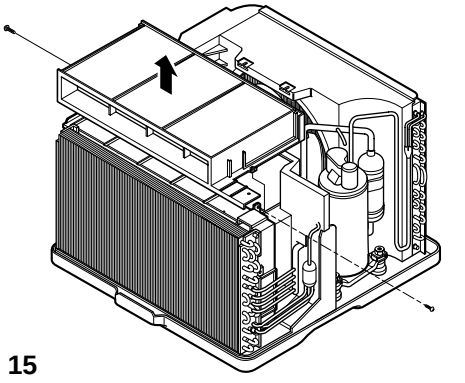


Figure 15

2.4.3 CAPILLARY TUBE

1. Remove the cabinet. (Refer to section 2.1.2)
2. After discharging the refrigerant completely, unbraze the interconnecting tube at the capillary tube.(See caution above)
3. Remove the capillary tube.
4. Re-install the components by referring to notes.

NOTES

— Replacement of the refrigeration cycle.

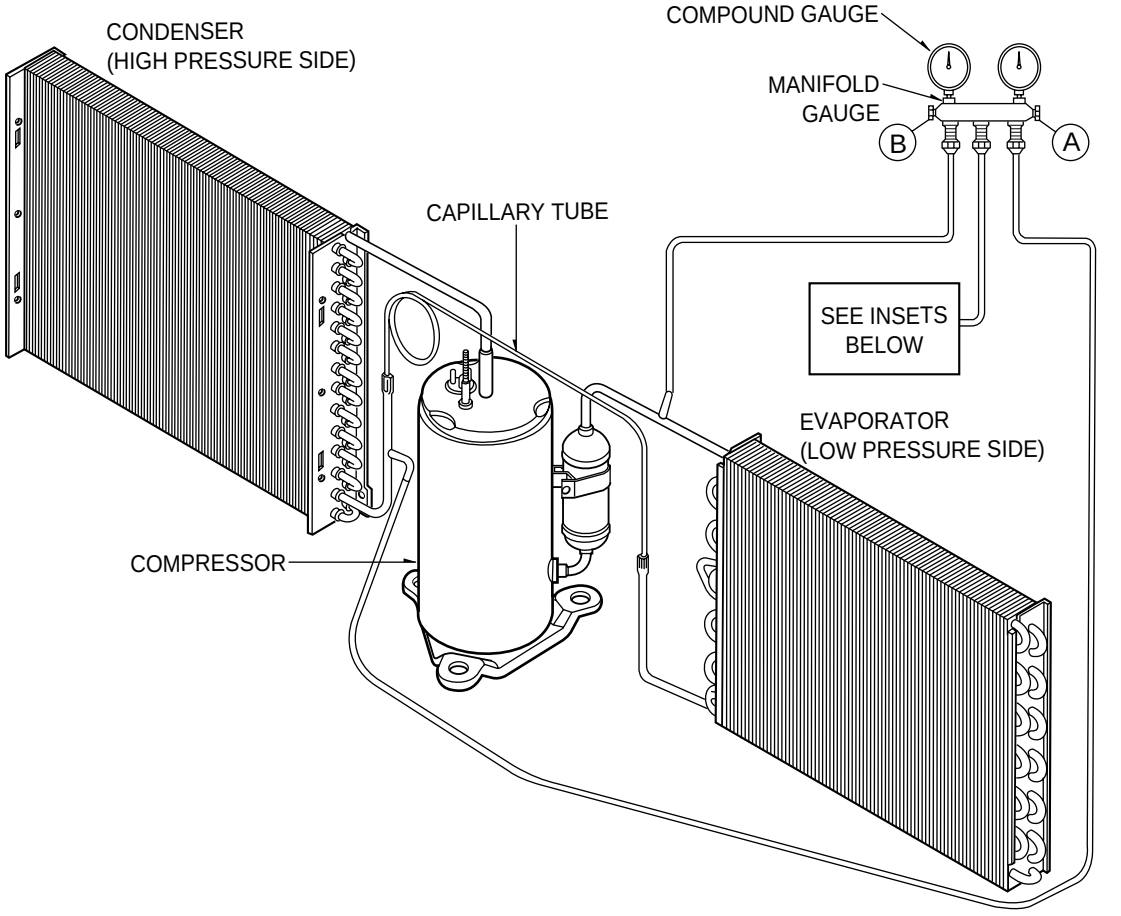
1. When replacing the refrigeration cycle, be sure to Discharge the refrigerant system using a Freon™ recovery System.
   If there is no valve to attach the recovery system, install one (such as a WATCO A-1) before venting the Freon™. Leave the valve in place after servicing the system.
2. After discharging the unit completely, remove the desired component, and unbraze the pinch-off tubes.
3. Solder service valves into the pinch-off tube ports, leaving the valves open.
4. Solder the pinch-off tubes with Service valves.
5. Evacuate as follows.
   1) Connect the vacuum pump, as illustrated figure 16A.
   2) Start the vacuum pump, slowly open manifold valves A and B with two full turns counterclockwise and leave the valves open. The vacuum pump is now pulling through valves A and B up to valve C by means of the manifold and entire system.

   CAUTION

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

   3) Operate the vacuum pump vaccum for 20 to 30 minutes, until 600 microns of vaccum is obtained. Close valves A and B, and observe vacuum gauge for a few minutes. A rise in pressure would indicate a possible leak or moisture remaining in the system. With valves A and B closed, stop the vacuum pump.
   4) Remove the hose from the vacuum pump and place it on the charging cylinder. See figure 16B.
      Open valve C.
      Discharge the line at the manifold connection.
   5) The system is now ready for final charging.
6. Recharge as follows :
   1) Refrigeration cycle systems are charged from the High-side. If the total charge cannot be put in the High-side, the balance will be put in the suction line through the access valve which you installed as the system was opened.
   2) Connect the charging cylinder as shown in figure 16B.
      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. Pin-off tool capable of making a vapor-proof seal, Leak detector, Tubing cutter, Hand Tools to remove components, Service valve.



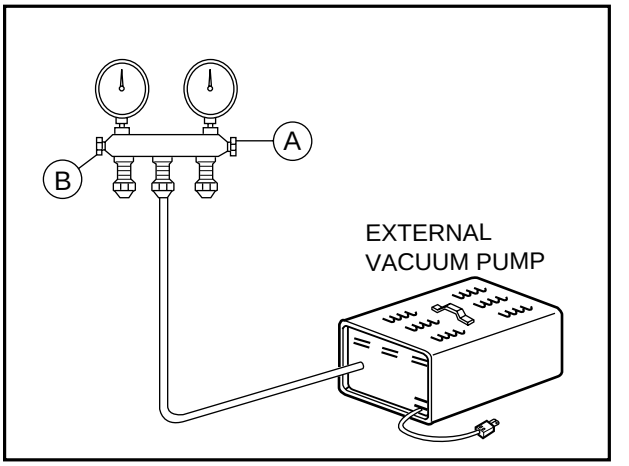


Figure 16A-Pulling Vacuum

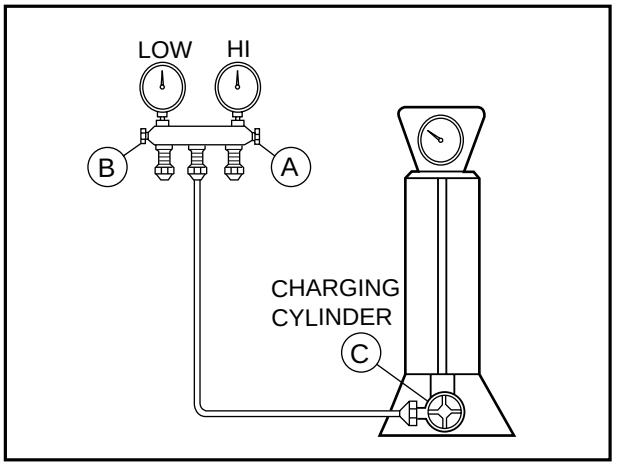


Figure 16B-Charging

3. INSTALLATION

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 sunlight does not shine directly on the unit.

3.The outside of the cabinet must extend outward for at least 12" and there should be no obstacles, such as a fence or wall, within 20" from the back of the cabinet because it will prevent heat radiation of the condenser.
Restriction of outside air will greatly reduce the cooling efficiency of the air conditioner.

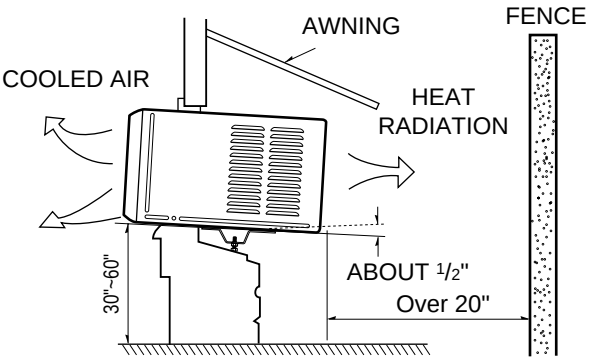


Figure 17

CAUTION

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

4.Install the unit a little slanted so the back is slightly lower than the front (about 1/2"). This will help force con-densed water to the outside.

5.Install the unit from the bottom about 30"~60" above the floor level.

3.2 CHECK OF INSTALLATION

The setting conditions must be checked prior to initial starting.

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

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

3.3. HOW TO DRAIN (When using drain pipe)

The air conditioner must be installed horizontally or tilted slightly to the outside for proper water drainage.

On exceptionally hot and humid days the air conditioner may overflow condensed water.

If the air conditioner is used in hot and a high humidity zone, exchange the ① HOLE RUBBER for the ② DRAIN PIPE.(See figure 18, figure 19.)

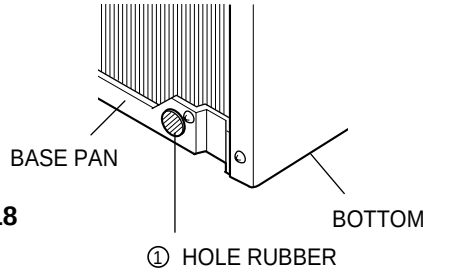


Figure 18

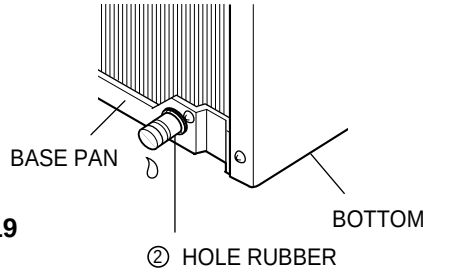
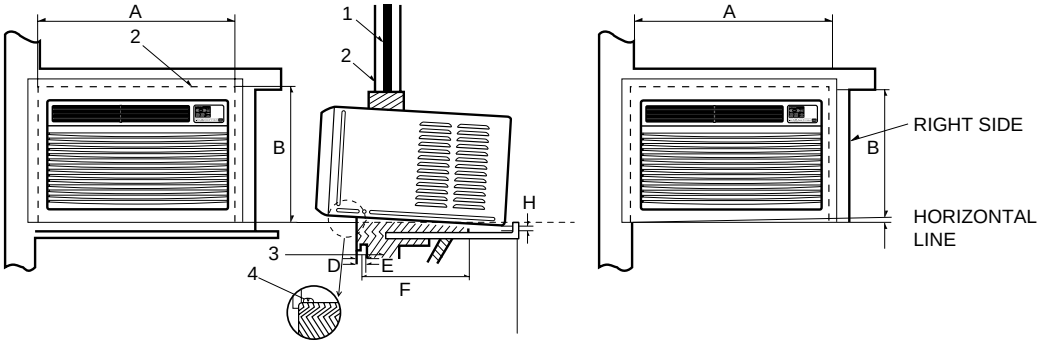


Figure 19

3.4 HOW TO INSTALL

3.4.1 WHEN USING GASKET



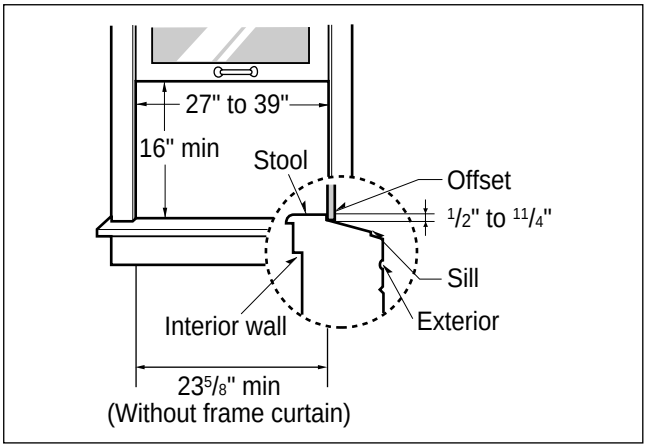
1. WINDOW (WIDTH-A, HEIGHT-B)
2. GASKET
3. WALL
4. DETAILS 5.1 x 30 ROUND HEAD WOOD SCREWS

A	B	C	D	E	F	H	I
625mm ($24^{5}/_{8}$")	392mm ($15^{7}/_{16}$")	280mm ($11^{1}/_{32}$")	30mm ($1^{1}/_{16}$")	0~25mm (0~1")	OVER 420mm (OVER $16^{17}/_{32}$")	5~10mm ($^{3}/_{16}$"~$^{3}/_{8}$")	-5~5mm ($-^{3}/_{16}$"~$^{3}/_{16}$")

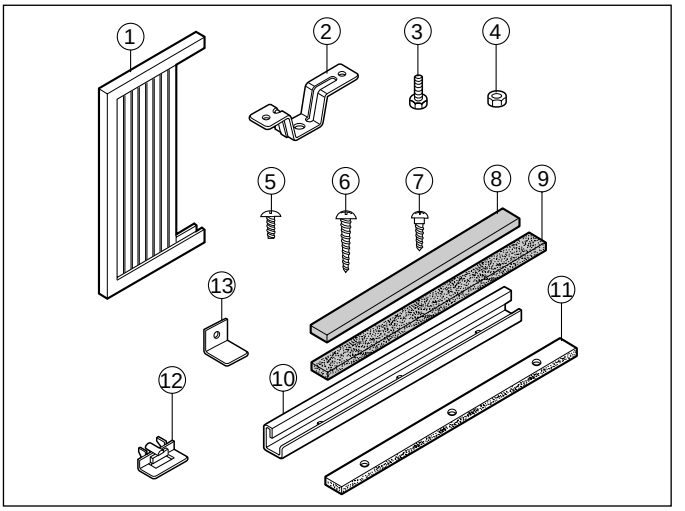
3.4.2 WHEN USING INSTALLATION KITS

A. WINDOW REQUIREMENTS

This unit is designed for installation in standard double hung windows with actual opening widths from 27" to 39".
The top and bottom window sash must open sufficiently to allow a clear vertical opening of 16" from the bottom of the upper sash to the window stool.



B. INSTALLATION KITS CONTENTS



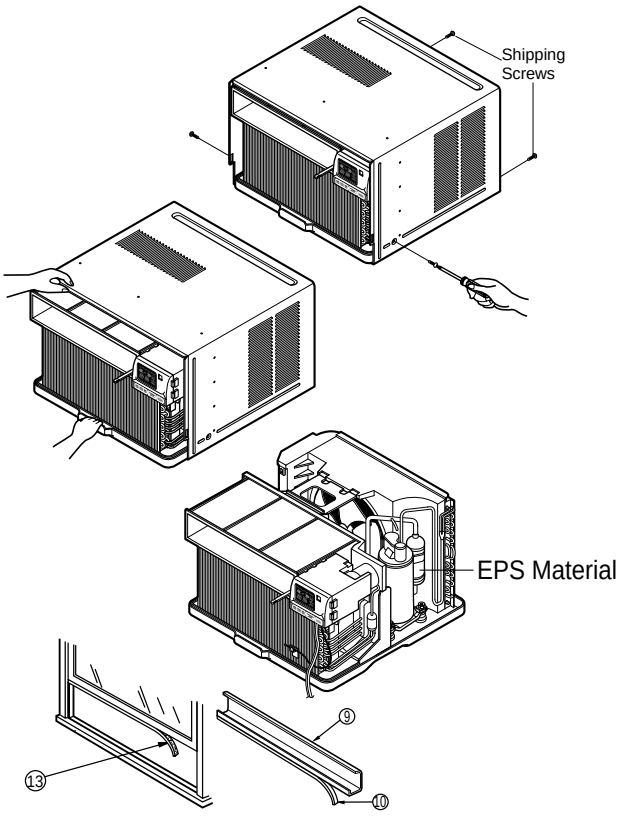
NO.	NAME OF PARTS	Q'TY
1	FRAME CURTAIN	2
2	SILL SUPPORT	2
3	BOLT	2
4	NUT	2
5	SCREW(TYPE A)	16
6	SCREW(TYPE B)	3
7	SCREW(TYPE C)	5
8	FOAM-STRIP	1
9	FOAM-PE	1
10	UPPER GUIDE	1
11	FOAM-PE	1
12	FRAME GUIDE	2
13	WINDOW LOCKING BRACKET	1

SUGGESTED TOOL REQUIREMENTS

SCREWDRIVER(+, -), RULER, KNIFE, HAMMER, PENCIL, LEVEL

PREPARATION OF CHASSIS

1. Remove the screws which fasten the cabinet at both sides and at the back.
2. Slide the unit out from the cabinet by gripping the base pan handle and pulling forward while bracing the cabinet.
3. Cut the window sash seal to the proper length. Peel off the backing and attach the Foam-Pe ⑨ to the underside of the window sash.
4. Remove the backing from the top upper guide Foam PE ⑪ and attach it to the bottom of the Upper Guide ⑩.
5. Attach the upper guide onto the top of the cabinet with 3 type A screws.
6. Insert the Frame Guides ⑫ into the bottom of the cabinet.
7. Insert the Frame Curtain ① into the upper guide ⑩ and Frame Guides ⑫.
8. Fasten the curtains to the unit with 4 Type A screws at the both sides.



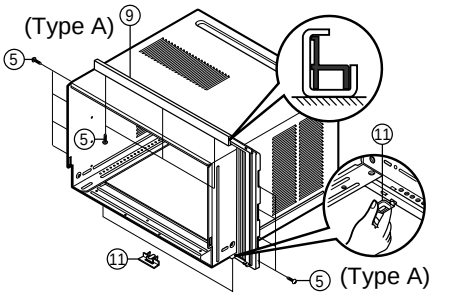
CABINET INSTALLATION

1. Open the window. Mark a line on center of the window stool (or desired air conditioner location). Carefully place the cabinet on the window stool and align the center mark on the front angle with the center line marked in the window stool.

2. Pull the bottom window sash down behind the upper guide until it meets.

NOTE:

• Do not pull the window sash down so tightly that the movement of Frame Curtain ① is restricted.



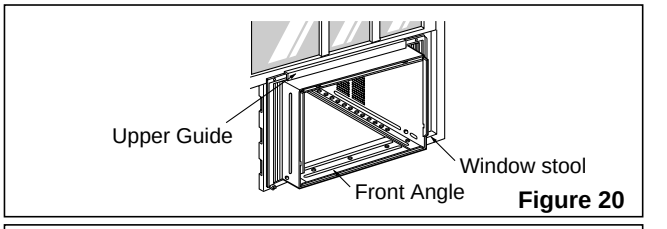


Figure 20

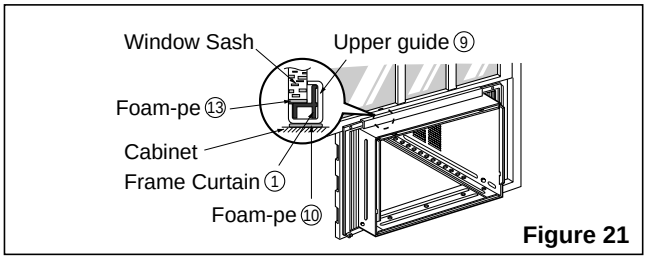


Figure 21

3. Loosely assemble the sill support using the parts in Figure 22.

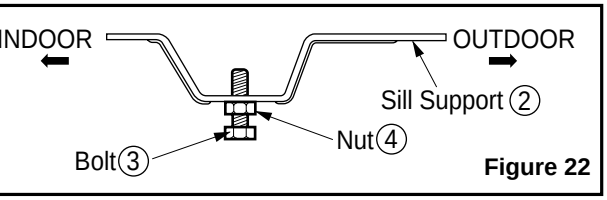


Figure 22

4. Select the position that will place the sill support near the outer most point on sill (See Figure 22)

NOTE: Be careful when you install the cabinet (Frame Guides ⑫ are broken easily).

5. Attach the sill support to the cabinet track hole in relation to the selected position using 2 Type A screws in each support (See Figure 23).

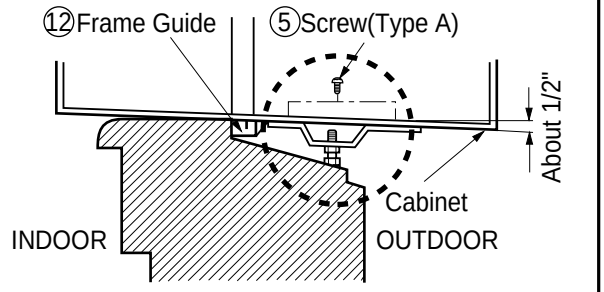


Figure 23

6. The cabinet should be installed with a very **slight tilt (about 1/2") downward** toward the outside (See Figure 24).
Adjust the bolt and the nut of Sill Support ② for balancing the cabinet.

7. Attach the cabinet to the window stool by driving the screws ⑥ (Type B: Length sixteen millimeters and below.) through the front angle into window stool (5/8").

8. Pull each Frame Curtain ① properly to each window sash track, and repeat step 2.

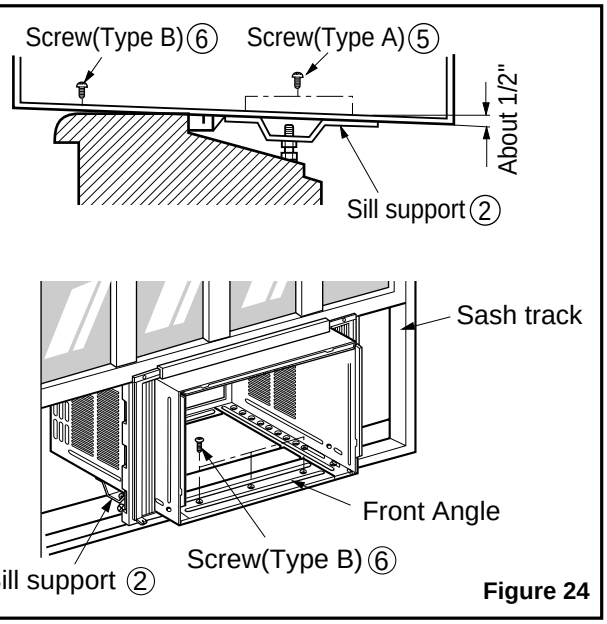


Figure 24

9. Attach each Frame Curtain ① to the window sash by using screws ⑦ (Type C).
(See Figure 25)

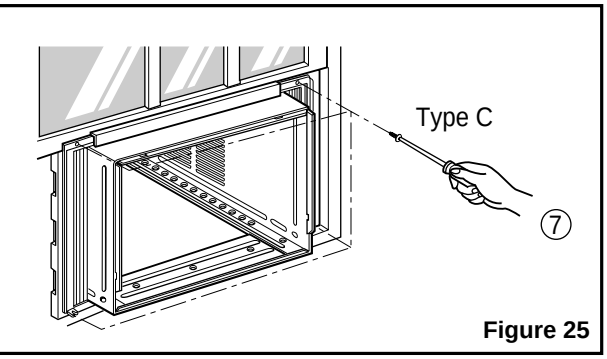


Figure 25

10. Slide the unit into the cabinet.(See Fig. 26)

CAUTION: For security purpose, reinstall screws (Type A) at the cabinet's sides.

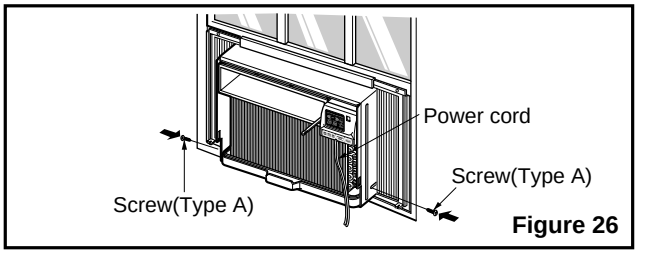


Figure 26

11. Cut the Foam-Strip ⑧ to the proper length and insert between the upper and lower window sash. (See Fig. 27)

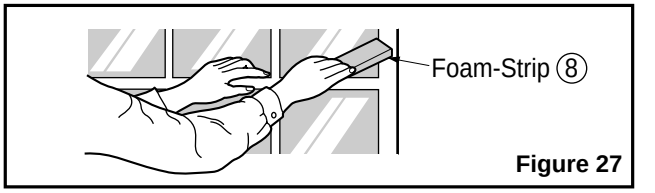


Figure 27

12. Attach the window Locking Bracket ⑬ with a type C screw. (See Fig. 28)

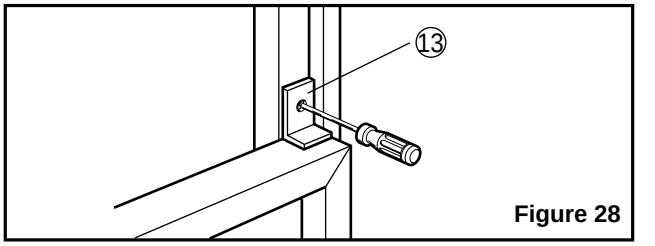


Figure 28

13. Attach the front grille to the cabinet by inserting the tabs on the grille into the tabs on the front of the cabinet. Push the grille in until it snaps into place.(See Fig. 29)

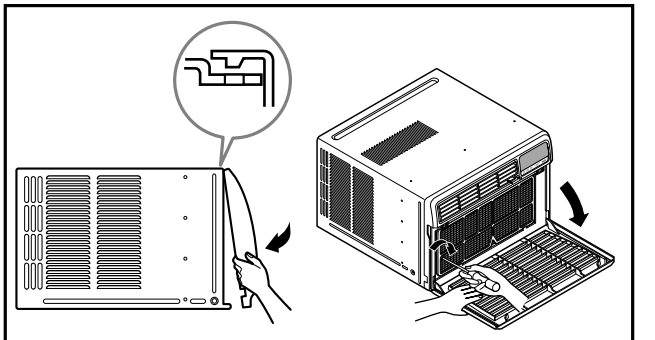


Figure 29 **Figure 30**

14. Lift the inlet grille and secure it with a type A screw through the front grille.(See Fig. 30)

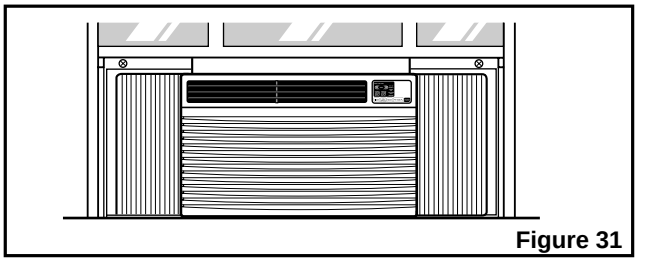
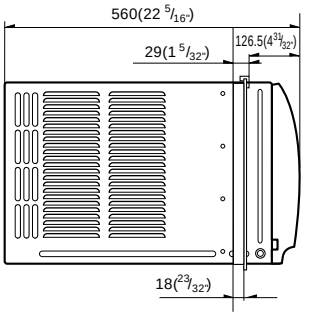


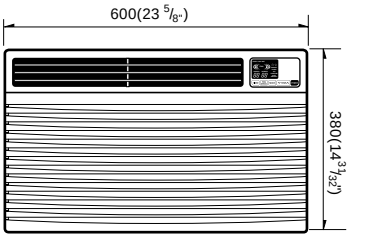
Figure 31

4. TROUBLESHOOTING GUIDE

4.1 OUTSIDE DIMENSIONS

unit: mm(inch)





4.2 PIPING SYSTEM

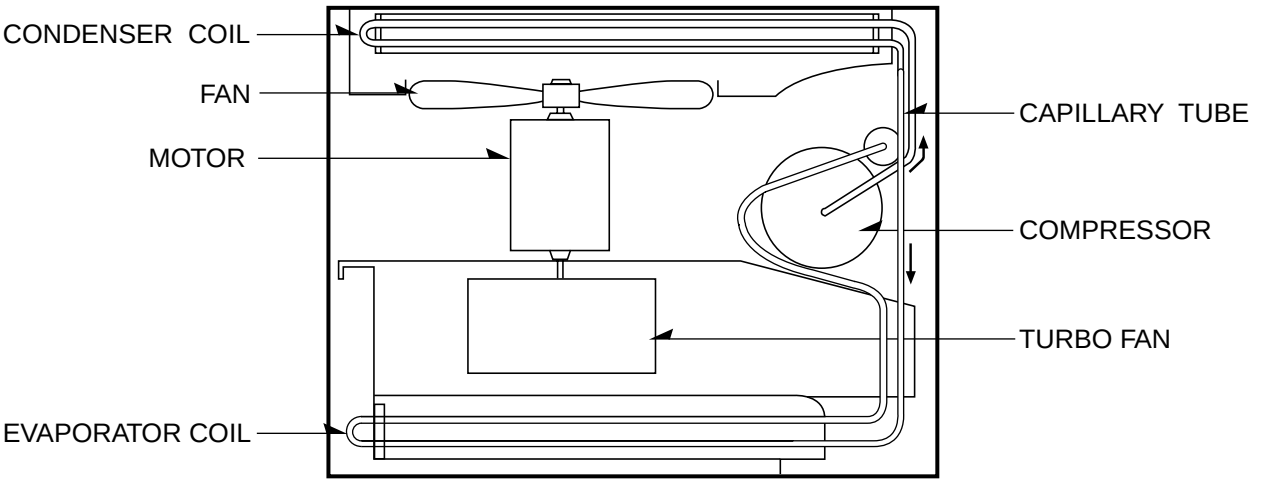


Figure 32 is a brief description of the important components and their function in what is called the refrigeration system. This will help you to understand the refrigeration cycle and the flow of the refrigerant in the cooling cycle.

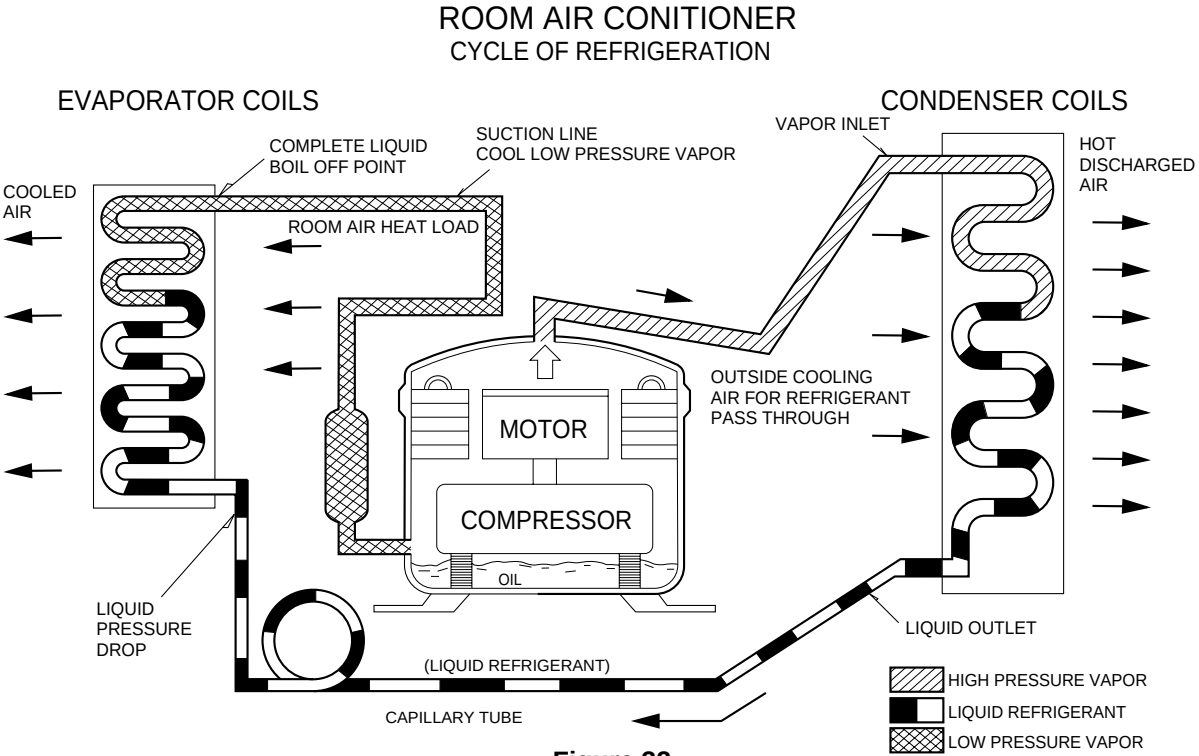
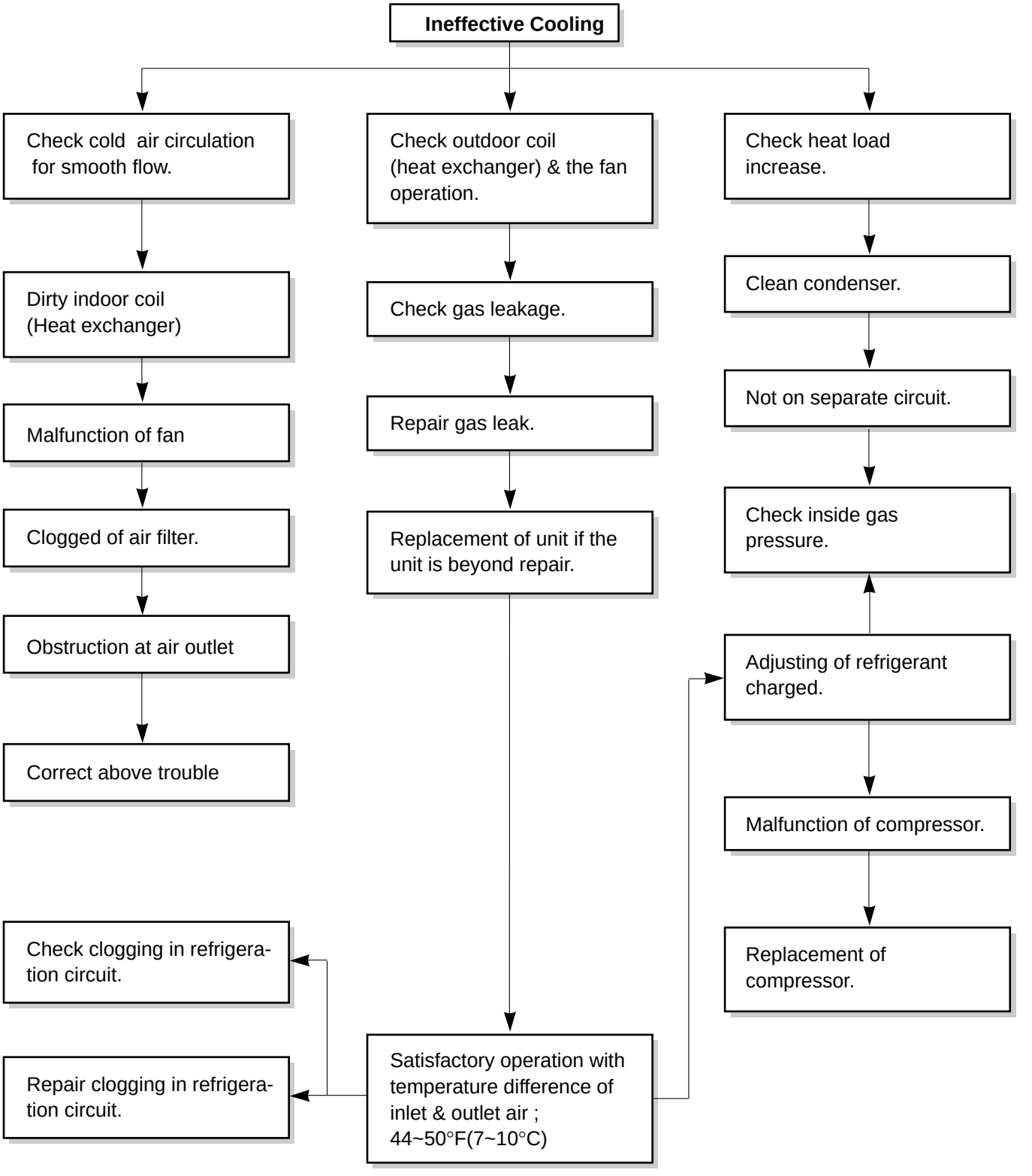


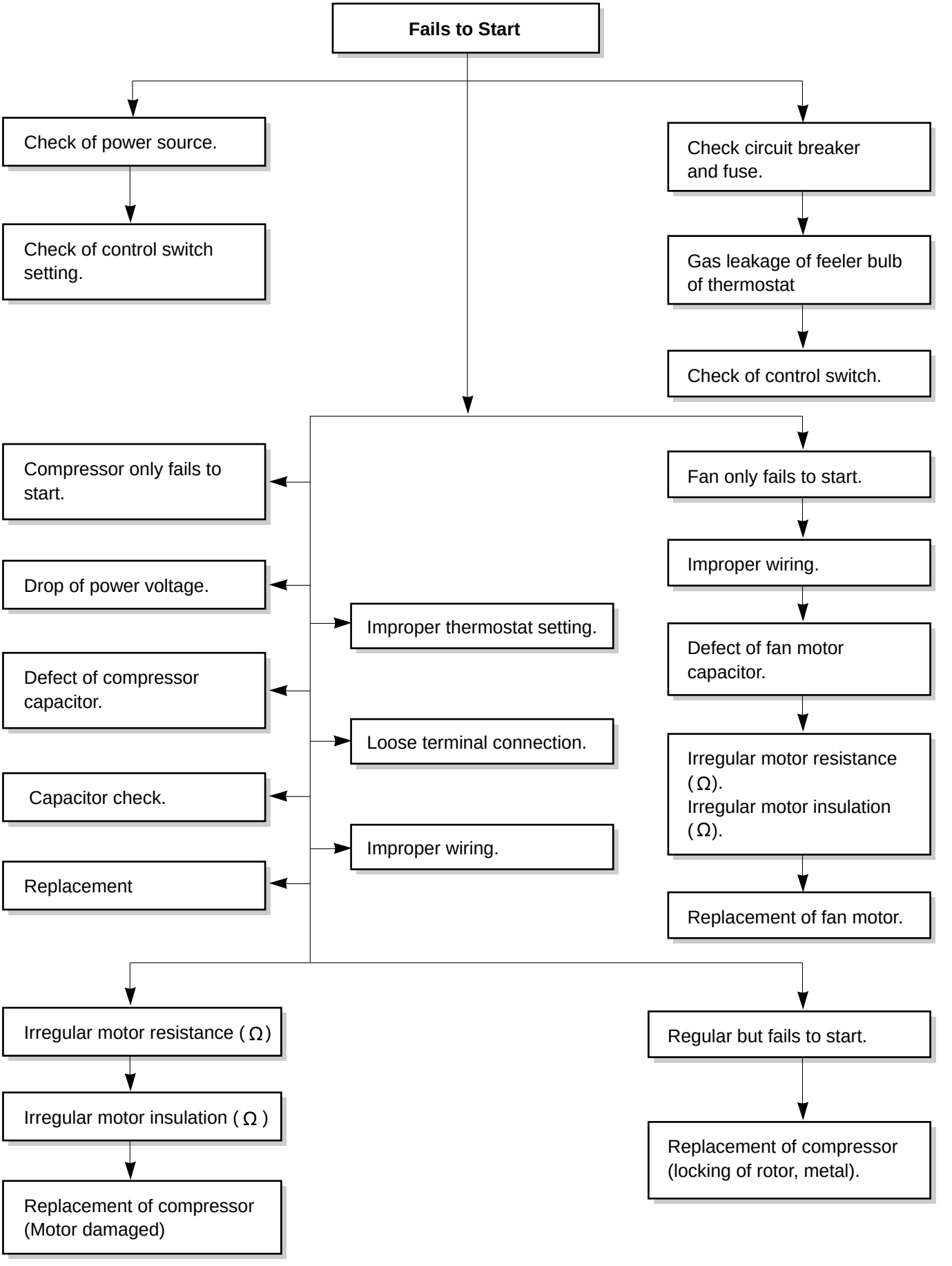
Figure 32

4.3 TROUBLESHOOTING GUIDE

In general, possible trouble is classified in two kinds.
The one is called Starting Failure which is caused from an electrical defect, and the other is ineffective Air Conditioning caused by a defect in the refrigeration circuit and improper application.

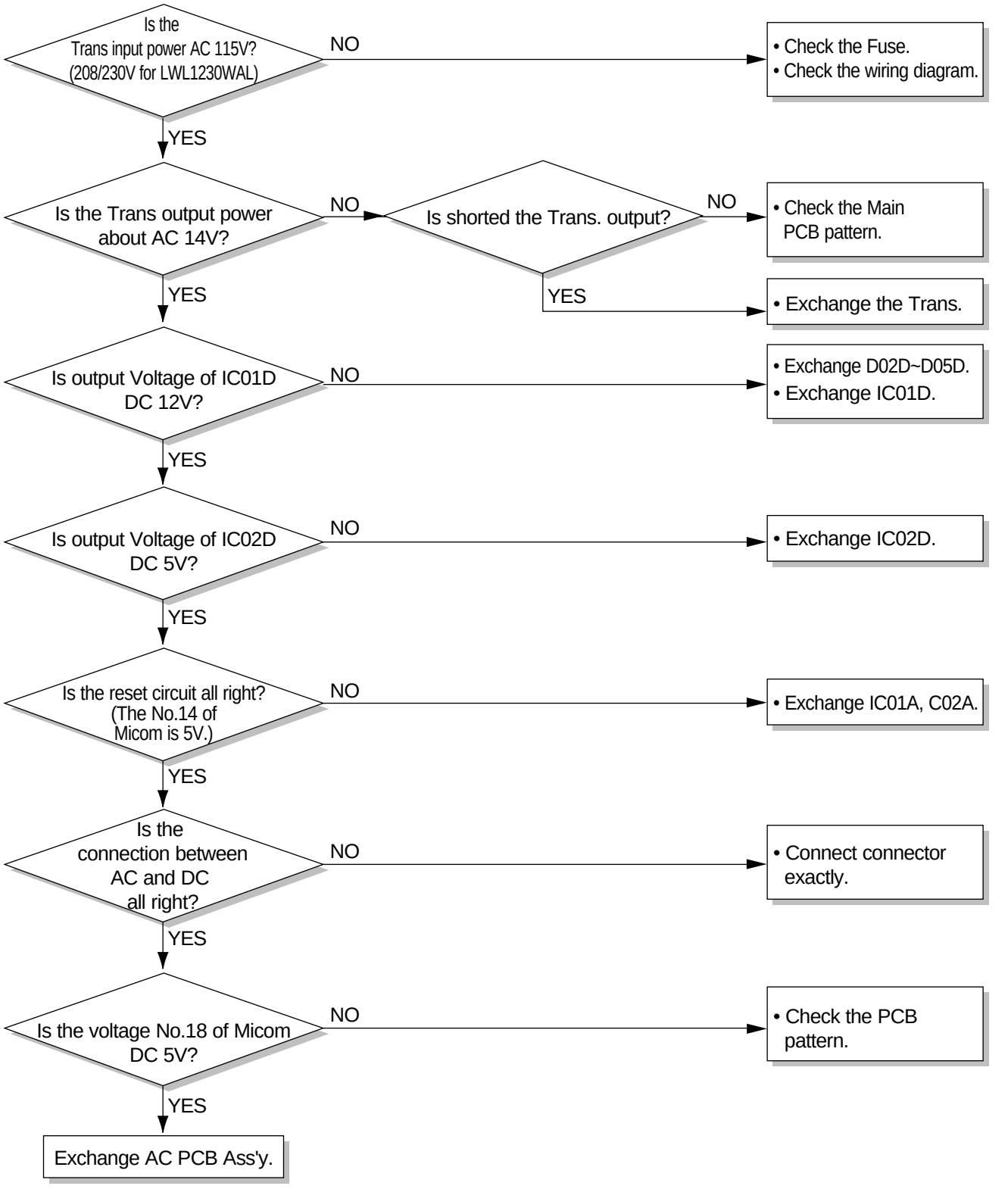
Unit runs but poor cooling.



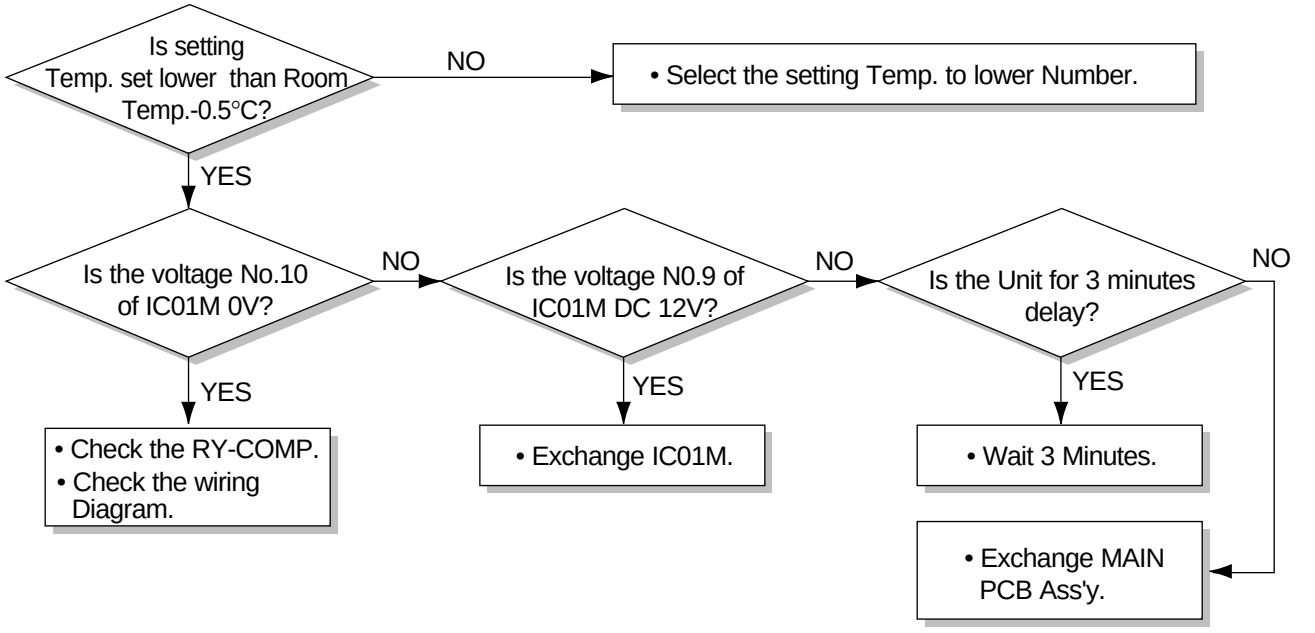

Fails to Start
Check of power source.
Check of control switch setting.
Check circuit breaker and fuse.
Gas leakage of feeler bulb of thermostat
Check of control switch.
Compressor only fails to start.
Drop of power voltage.
Defect of compressor capacitor.
Capacitor check.
Replacement
Improper thermostat setting.
Loose terminal connection.
Improper wiring.
Fan only fails to start.
Improper wiring.
Defect of fan motor capacitor.
Irregular motor resistance (Ω).
Irregular motor insulation (Ω).
Replacement of fan motor.
Irregular motor resistance (Ω)
Irregular motor insulation (Ω)
Replacement of compressor (Motor damaged)
Regular but fails to start.
Replacement of compressor (locking of rotor, metal).

■ ELECTRICAL PARTS TROUBLESHOOTING GUIDE: LW1200PR

Possible Trouble 1 The unit does not operate.

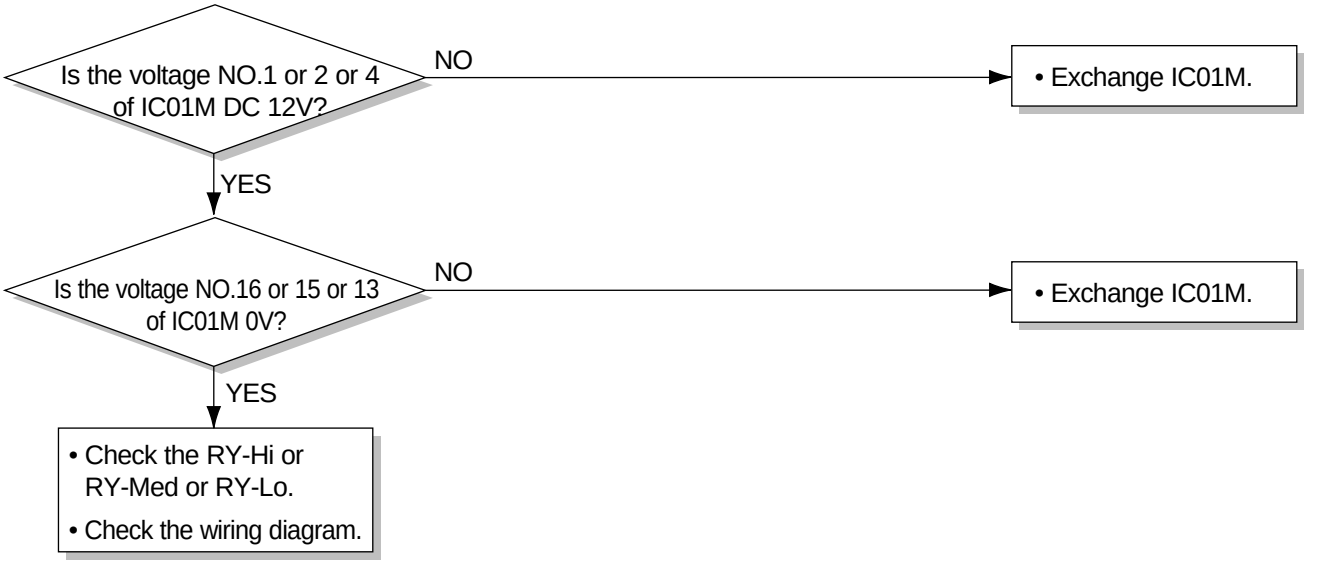


Possible Trouble 2 The compressor does not operate.

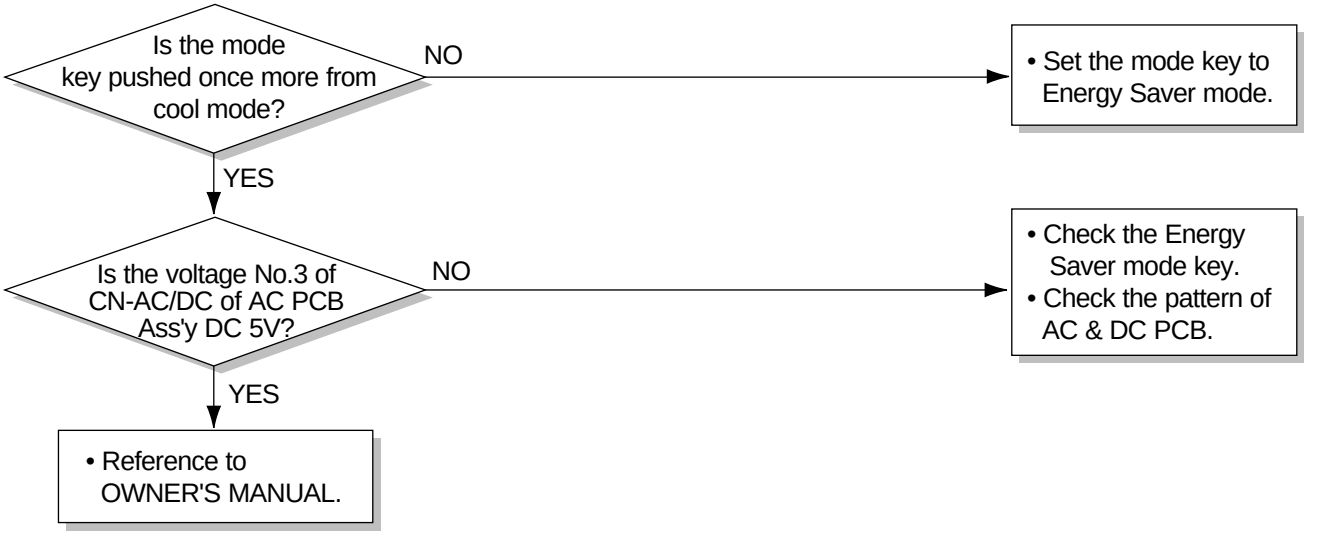


Possible Trouble 3 The compressor always operate.

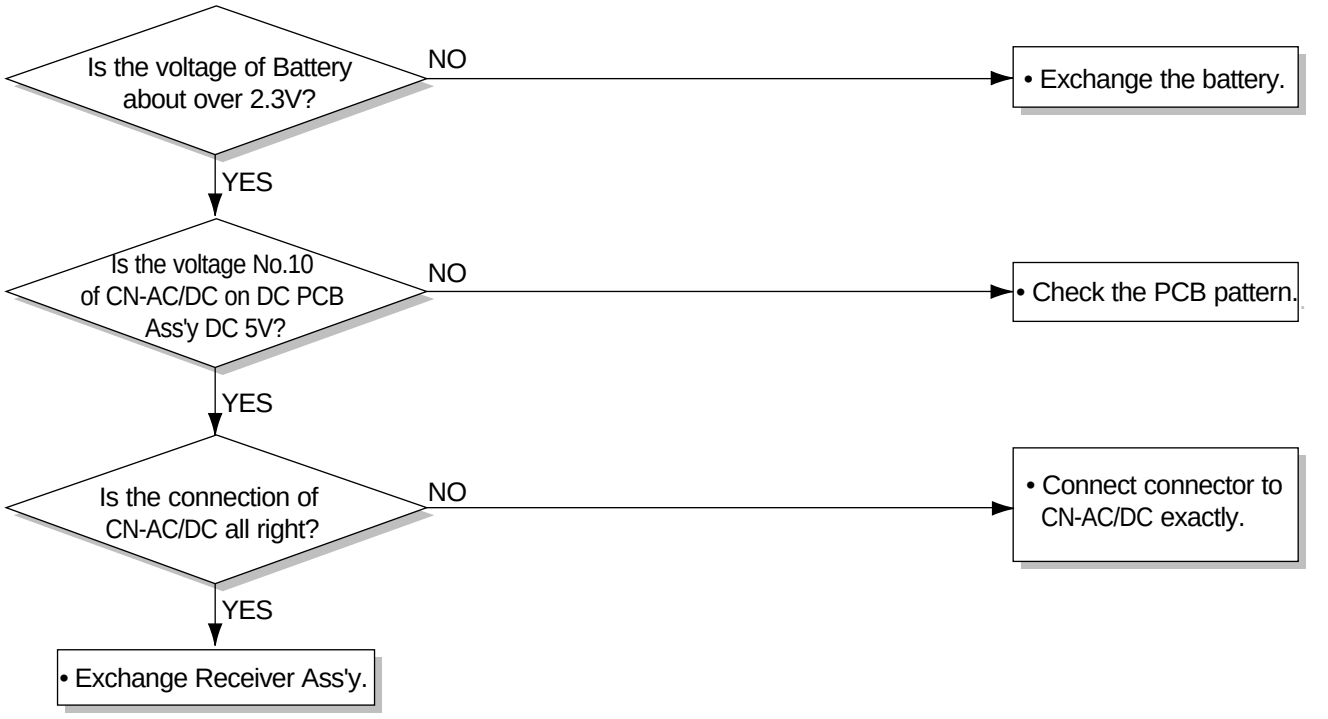
Possible Trouble 4 FAN does not operate.



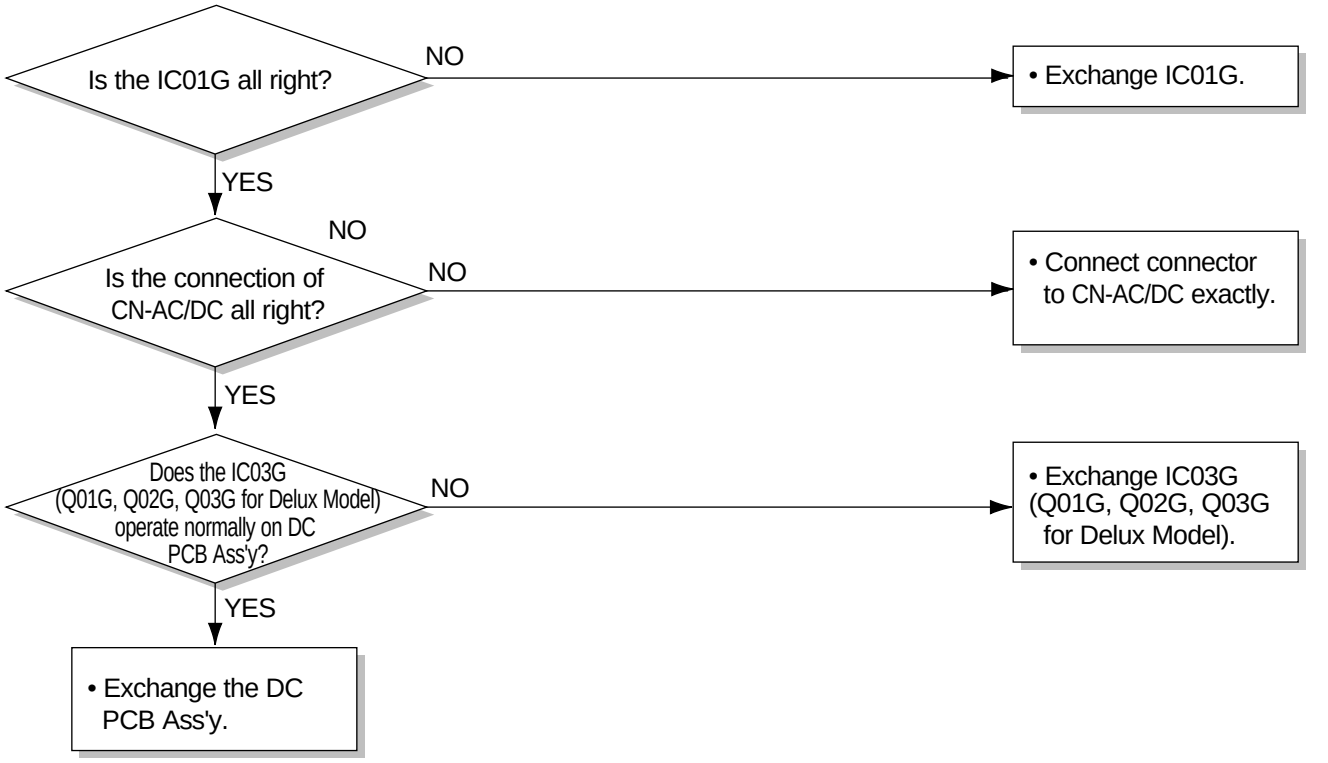
Possible Trouble 5 The function of Energy Saver does not operate.



Possible Trouble 6 Remote controller does not operate.

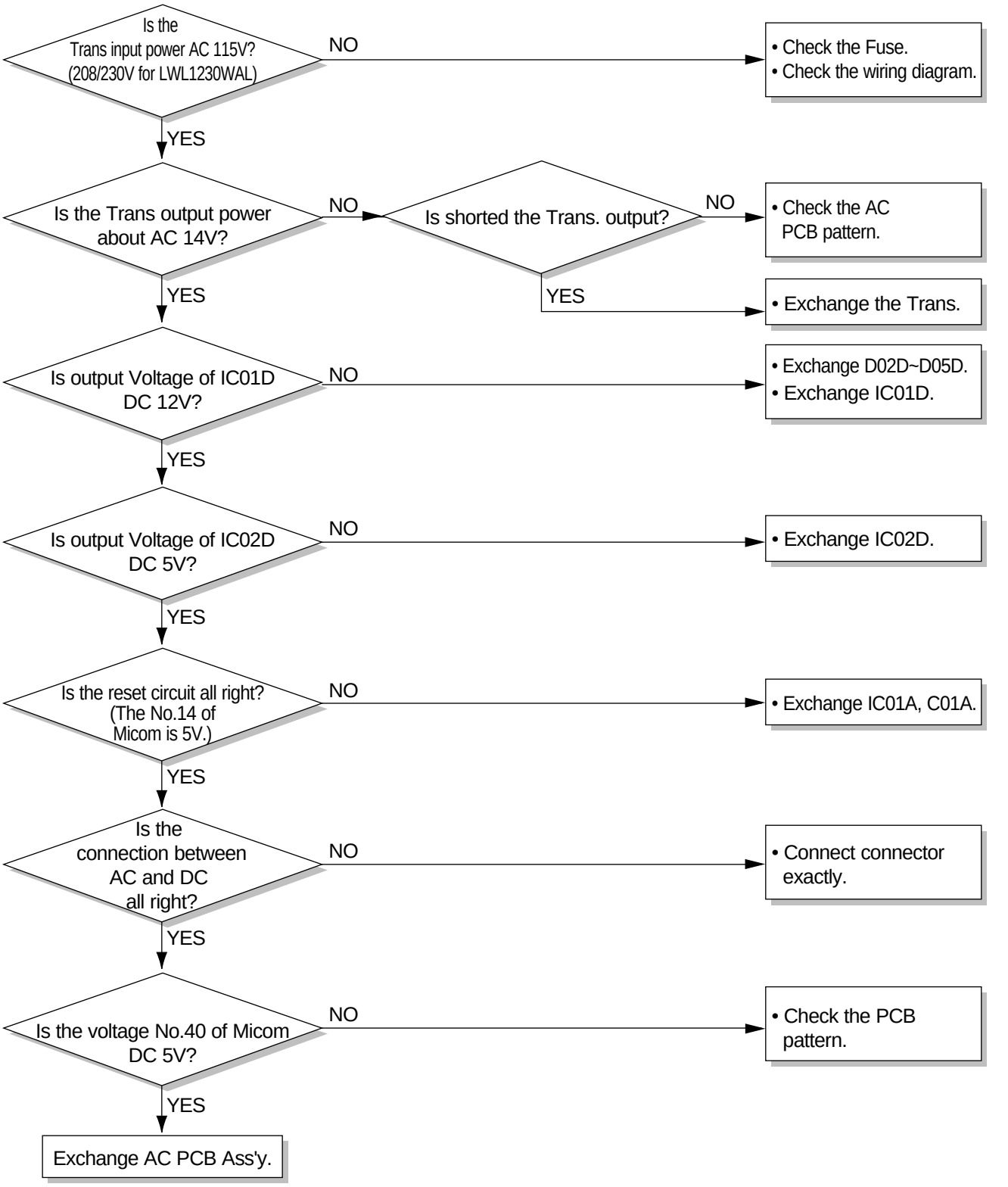


Possible Trouble 7 It displays abnormally on DC PCB Ass'y.

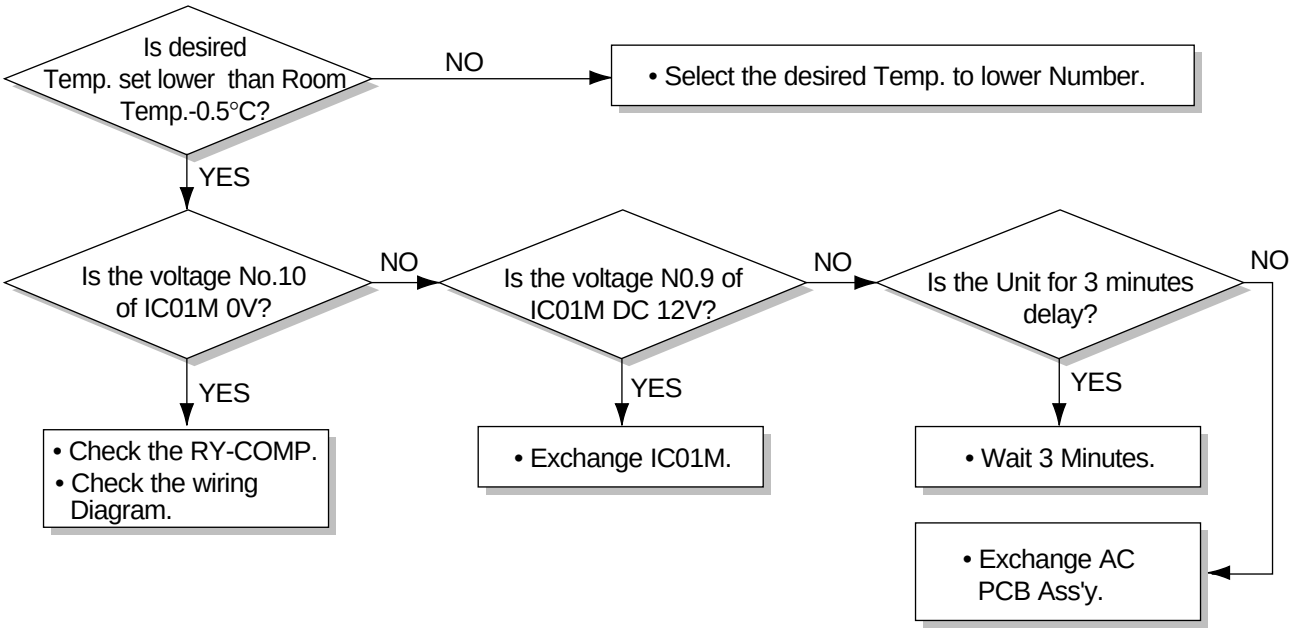


■ ELECTRICAL PARTS TROUBLESHOOTING GUIDE:

Possible Trouble 1 The unit does not operate.

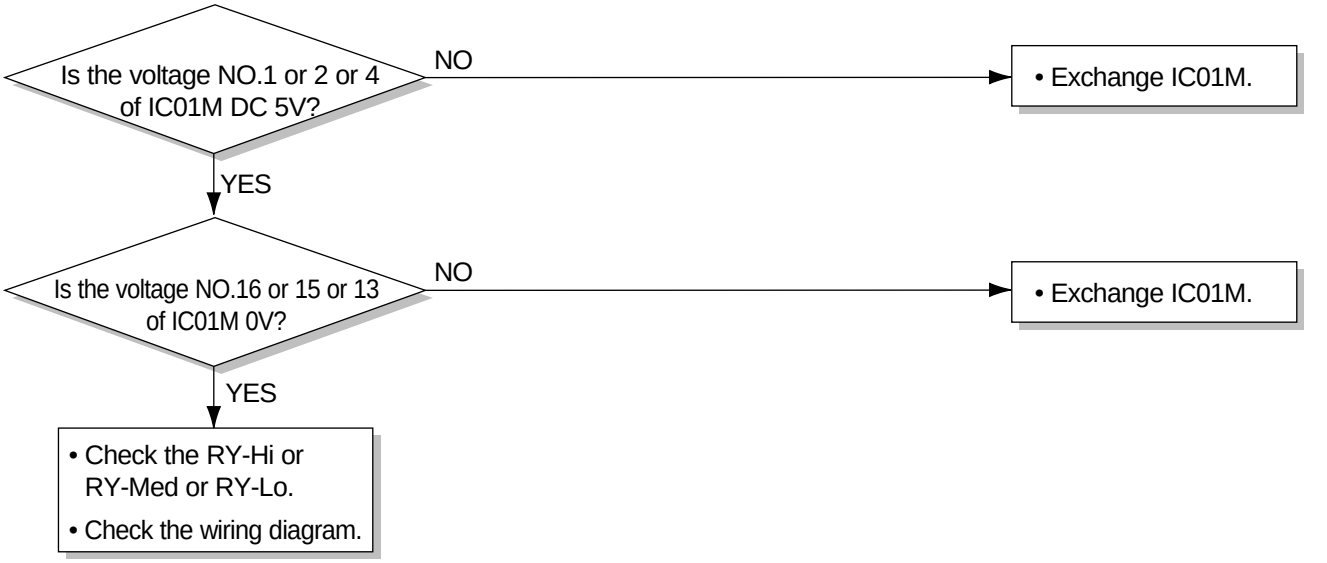


Possible Trouble 2 The compressor does not operate.

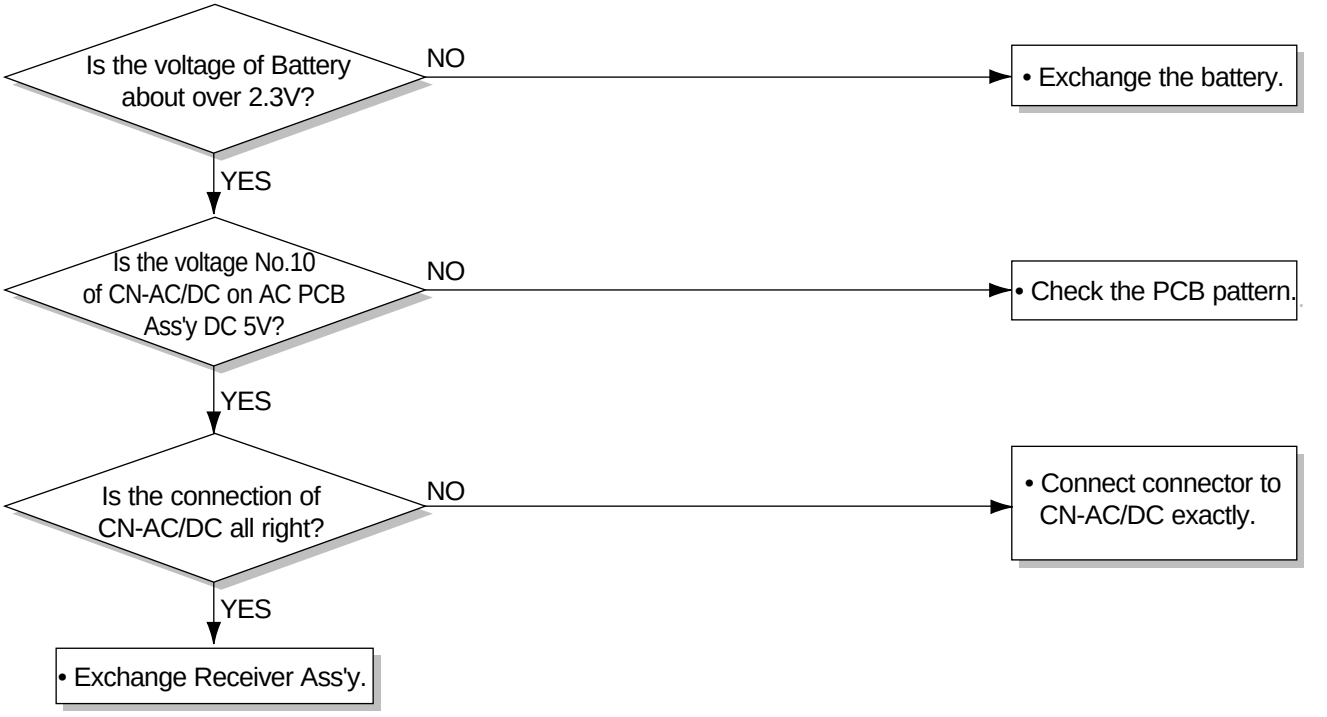


Possible Trouble 3 The compressor always operate.

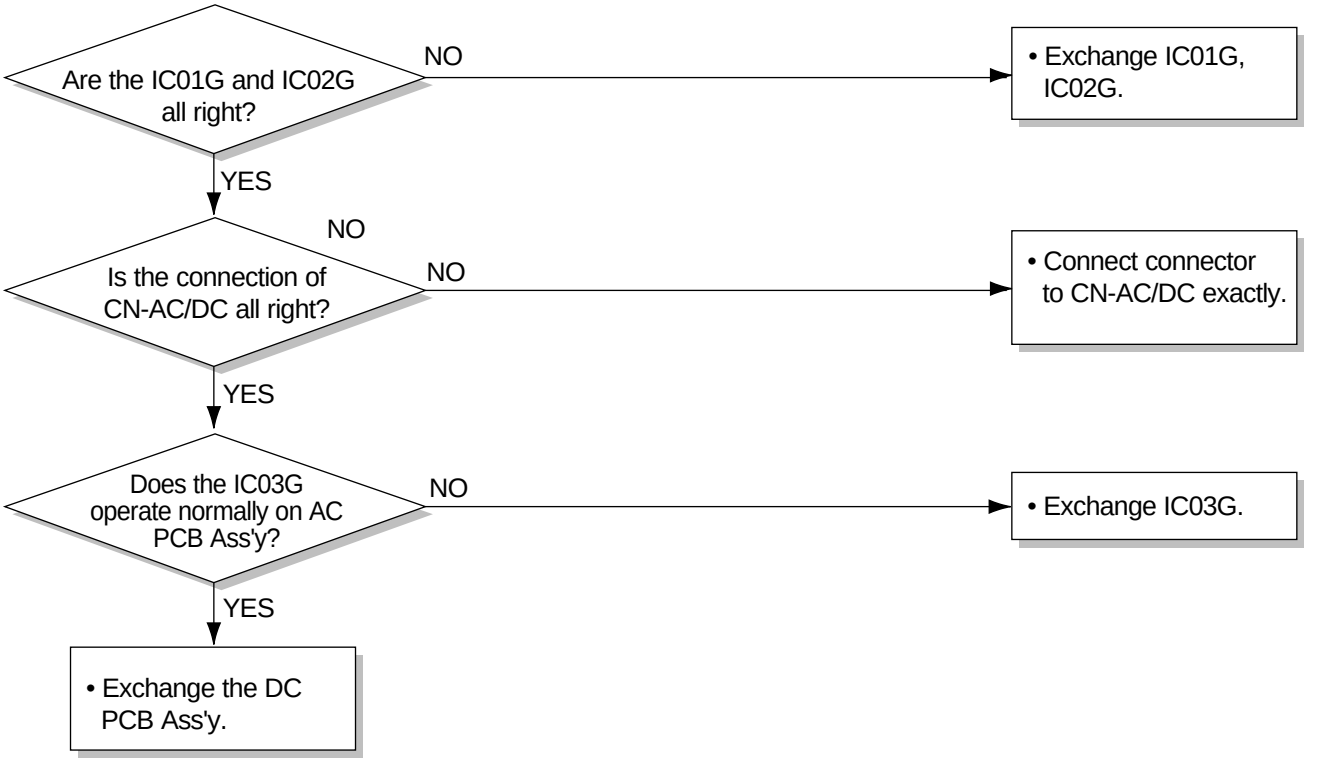
Possible Trouble 4 FAN does not operate.



Possible Trouble 5 Remote controller does not operate.



Possible Trouble 6 It displays abnormally on DC PCB Ass'y.

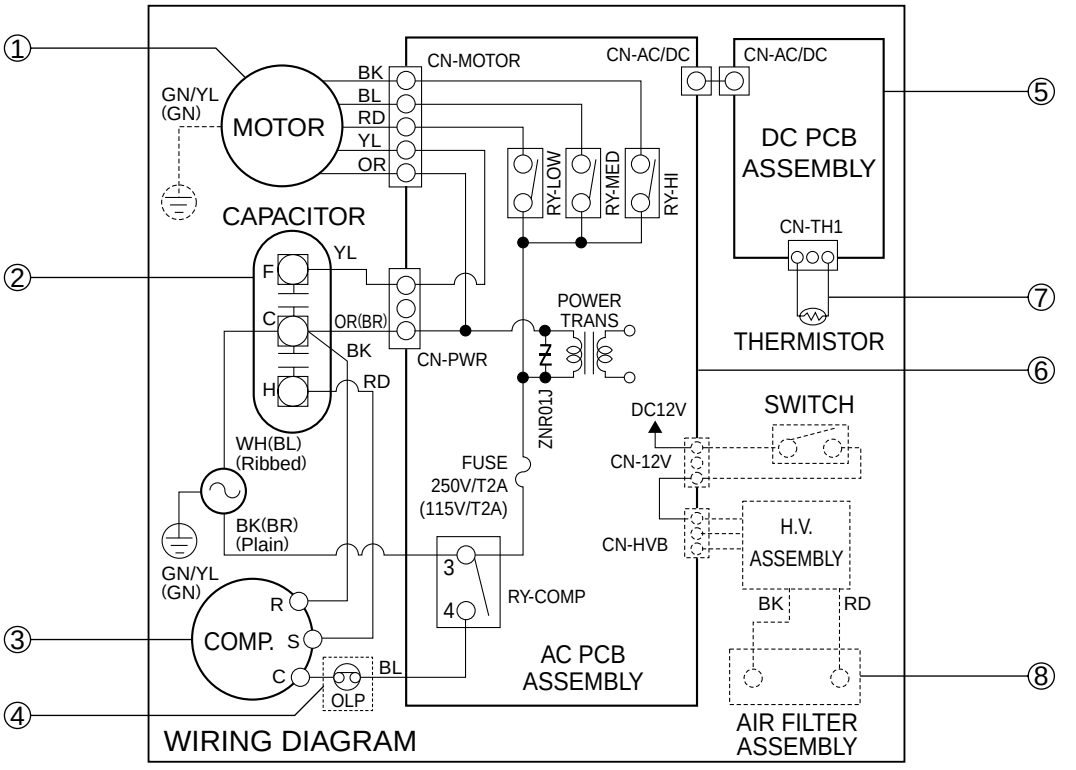


COMPLAINT	CAUSE	REMEDY
Fan motor will not run.	No power	Check voltage at outlet. Correct if none.
	Power supply cord	Check voltage to rotary switch. If none, check power supply cord. Replace cord if circuit is open.
	Rotary switch	Check switch continuity. Refer to wiring diagram for terminal identification.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

COMPLAINT	CAUSE	REMEDY
Compressor will not run, but fan motor runs.	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 ±10% of manufacturers rating. Replace if shorted, open, or damaged.
	Compressor	Check the compressor for open circuit or ground. If open or grounded, replace the compressor.
	Overload	Check the compressor overload, if externally mounted. Replace if open. (If the compressor temperature is high, remove the overload, cool it, and retest.)
Compressor cycles on overload.	Voltage	Check the voltage. If not within limits, call an electrician.
	Overload	Check overload, if externally mounted. Replace if open. (If the compressor temperature is high, remove the overload, cool, and retest.)
Compressor cycles on overload.	Fan motor	If not running, determine the cause. Replace if required.
	Condenser air flow restriction	Remove the cabinet. inspect the interior surface of the condenser; if restricted, clean carefully with a vacuum cleaner (do not damage fins) or brush. Clean the interior base before reassembling.
	Condenser fins (damaged)	If condenser fins are closed over a large area on the coil surface, head pressures will increase, causing the compressor to overload. Straighten the fins or replace the coil.
Compressor cycles on overload.	Capacitor	Test capacitor.
	Wiring	Check the terminals. If loose, repair or replace.
	Refrigerating system	Check the system for a restriction.
Insufficient cooling or heating	Air filter	If restricted, clean of 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 carefully and rearrange tubing not to contact cabinet, compressor, shroud, and barrier.

5. SCHEMATIC DIAGRAM

5.1 CIRCUIT DIAGRAM

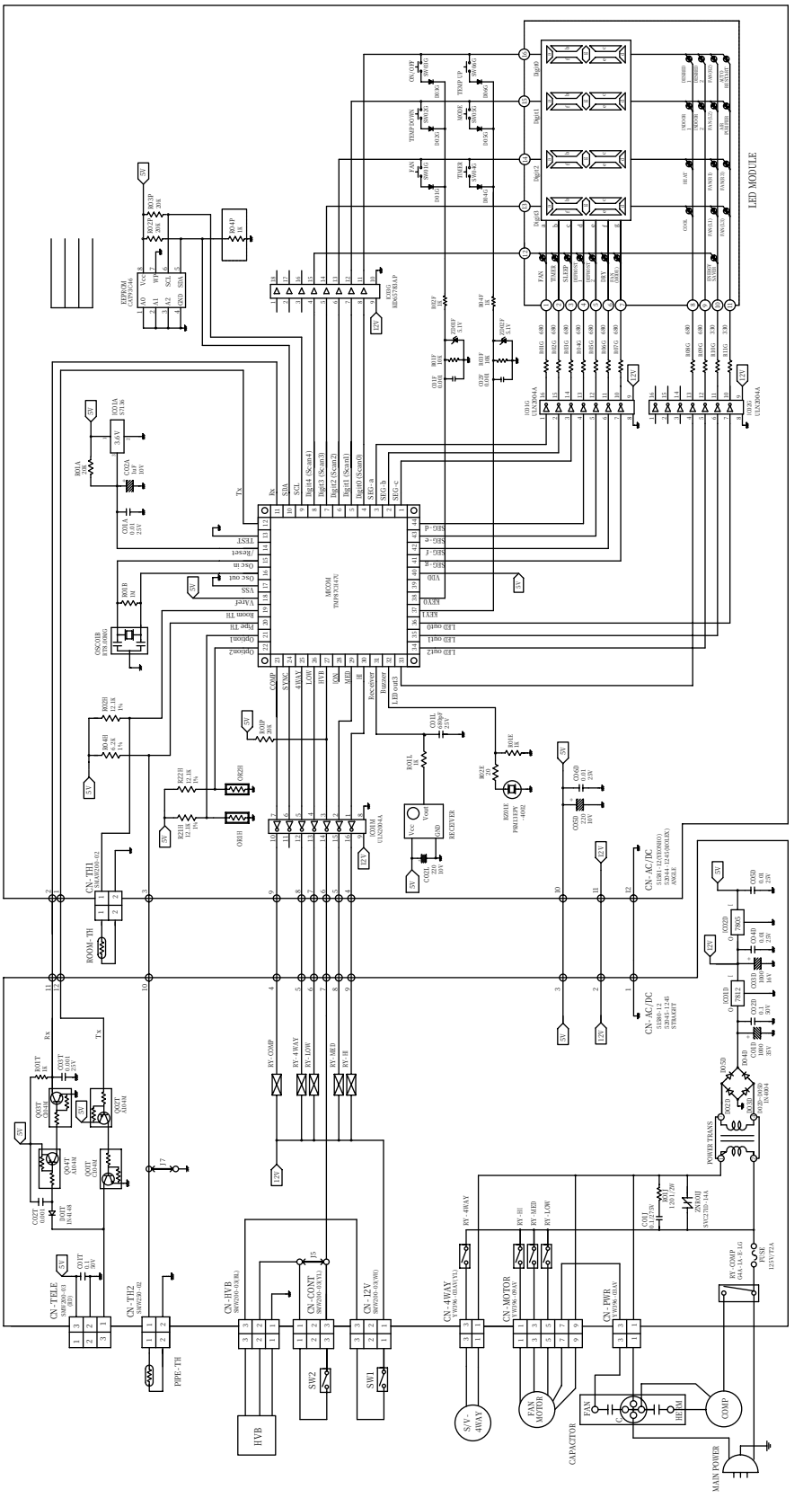


S: Service Parts
N: Non Service Parts

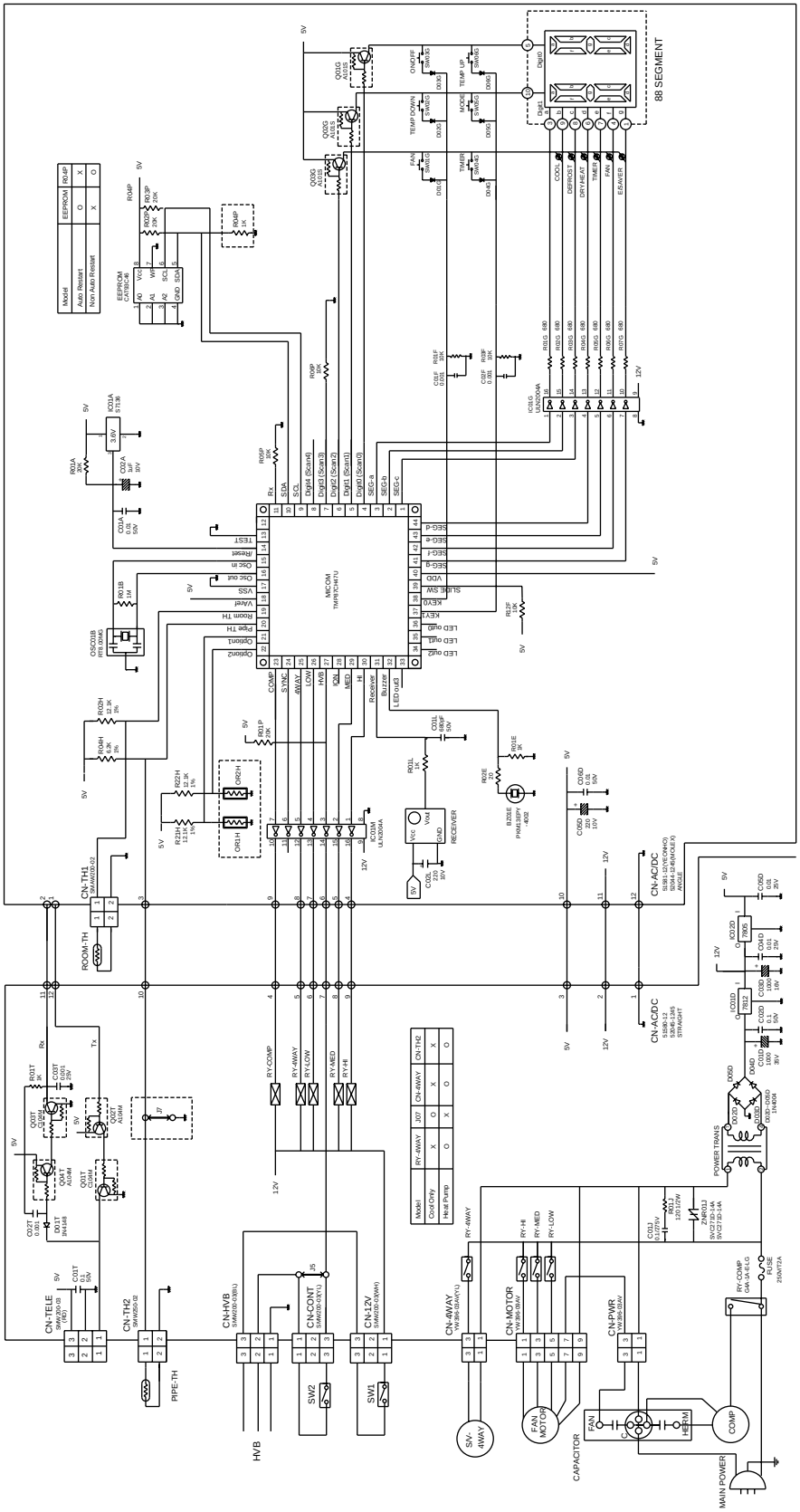
LOCATION NO.	DESCRIPTION	Q'TY PER SET	REMARKS
1	MOTOR ASSY	1	S
2	CAPACITOR	1	S
3	COMPRESSOR	1	S
4	OVERLOAD PROTECTOR	1	S
5	DC PCB ASSEMBLY	1	S
6	AC PCB ASSEMBLY	1	S
7	THERMISTOR	1	S
8	PLASMA FILTER ASSY	1	S

5.2 ELECTRONIC CONTROL DEVICE

■ MODEL: LW1200PR / LW1000PR / LWL1210WAL / LWL1230WAL

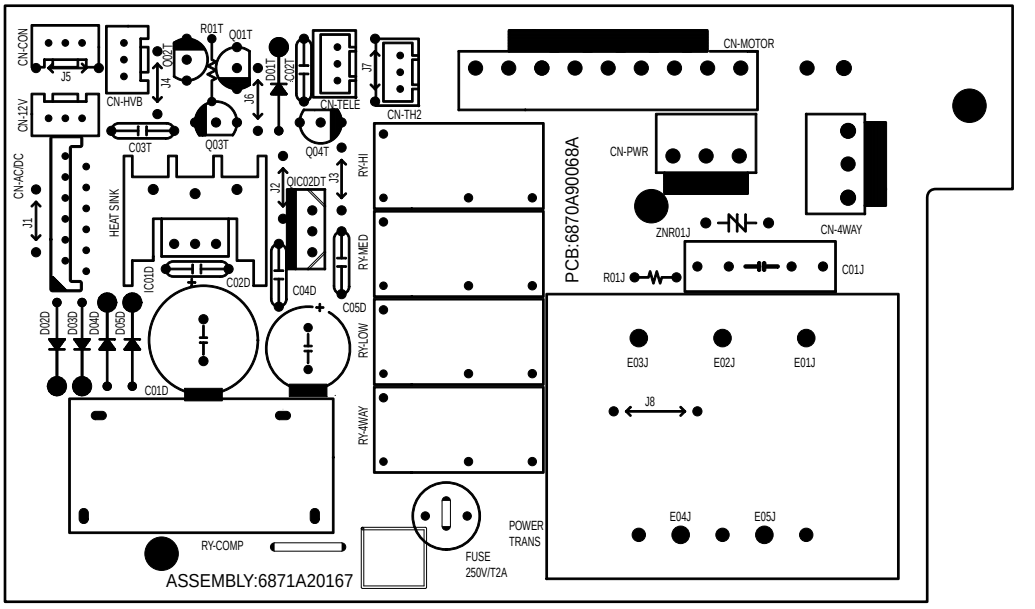


■ MODEL: LW1200ER / LW1000ER



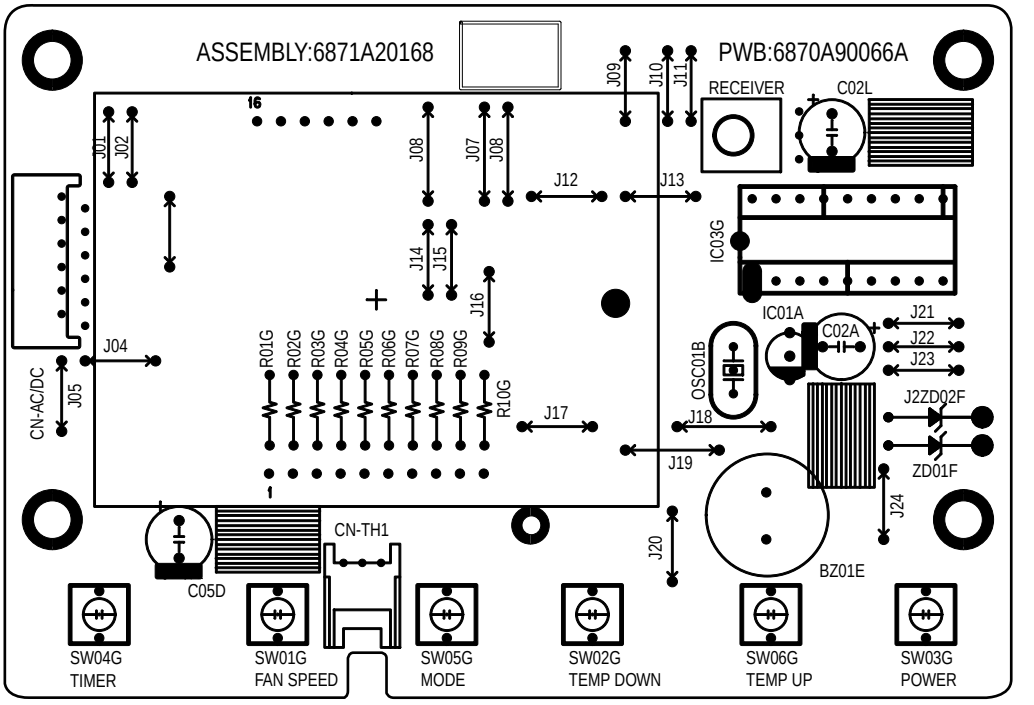
5.3 COMPONENTS LOCATION(FOR AC P.C.B ASM)

■ **MODEL: LW1200PR / LW1200ER / LW1000PR / LW1000ER / LWL1210WAL / LWL1230WAL**

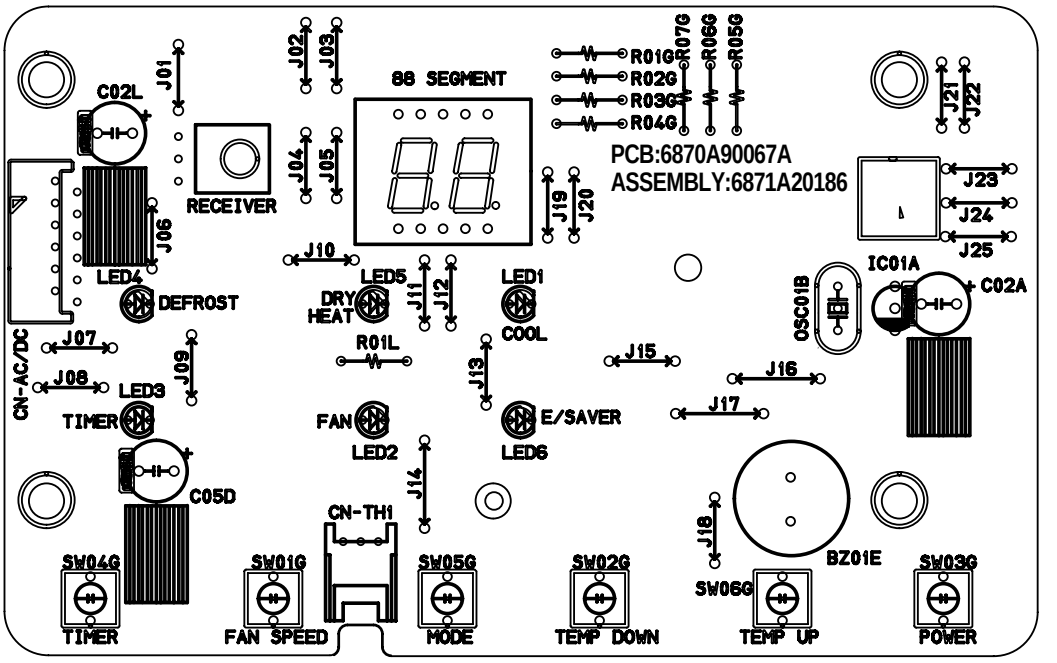


5.4 COMPONENTS LOCATION(FOR DC P.C.B ASM)

■ **MODEL: LW1200PR / LW1000PR / LWL1210WAL / LWL1230WAL**

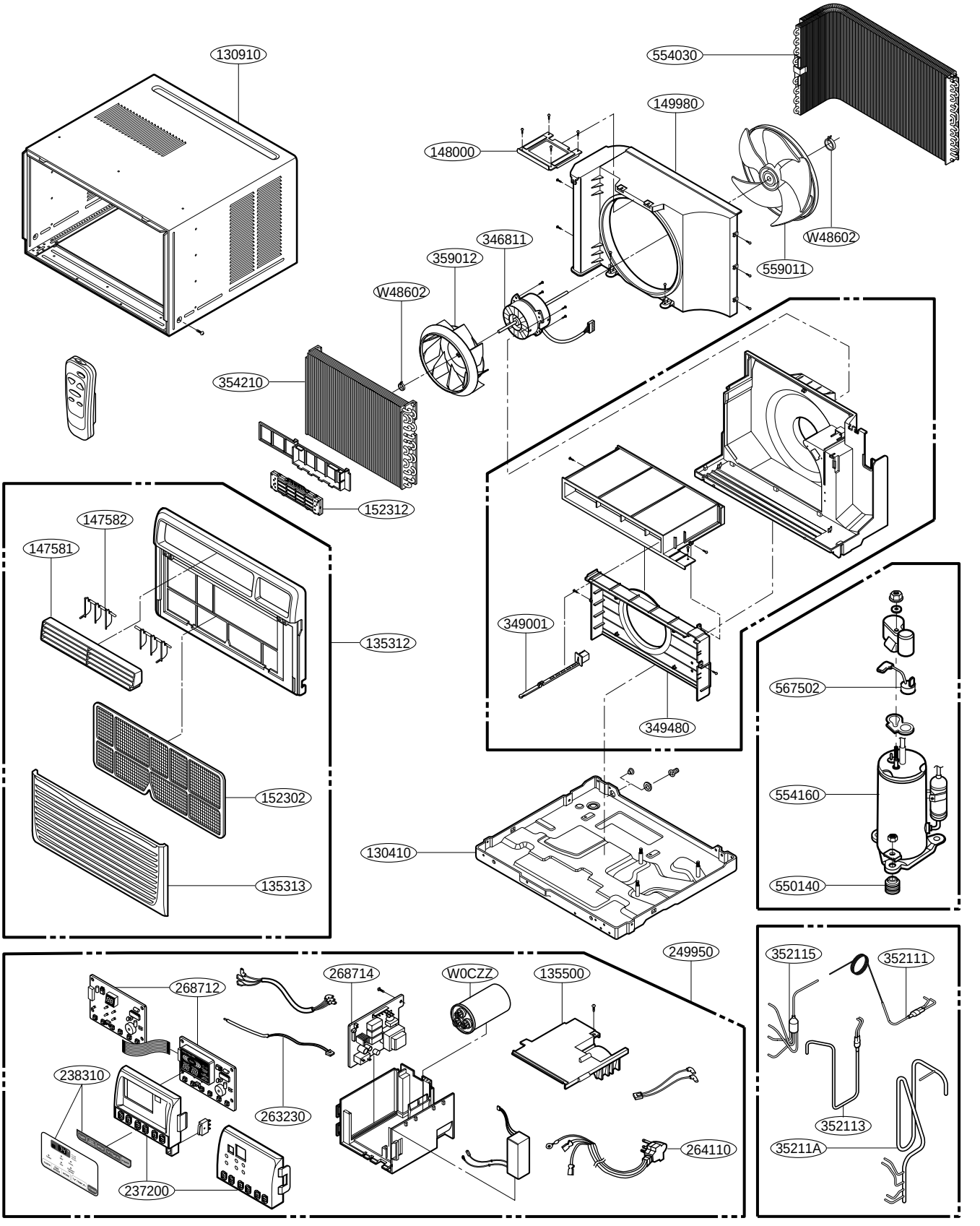


■ MODEL: LW1200ER / LW1000ER



6. EXPLODED VIEW

■ MODEL: LW1200PR / LW1200ER / LW1000PR / LW1000ER / LWL1210WAL / LWL1230WAL



7. REPLACEMENT PARTS LIST

• MODEL: LW1200PR / LW1200ER

R: Service Parts
N: Non Service Parts

LOCATION NO.	DESCRIPTION	PART NO.		REMARK
		LW1200PR	LW1200ER	
130410	BASE PAN WELD ASS'Y	3041A20020J		R
130910	CABINET ASS'Y	3091A10032C		R
135312	FRONT GRILL ASS'Y	3531A20098A		R
135313	INLET GRILLE	3530A20037A		R
135500	COVER, CONTROL BOX	3550A30114A		R
147581	HORIZONTAL LOUVER	4758A20018A		R
147582	VERTICAL LOUVER	4758A20017A		R
148000	BRACE	4800A30002B		R
149980	SHROUD	4999A20001A		R
152302	AIR FILTER ASS'Y	5231A20007A		R
152312	PLASMA FILTER ASS'Y	5983A10009H	-	R
237200	CONTROL PANEL	3720A10061A		R
249950	CONTROL BOX ASS'Y	4995A20194A	4995A20194G	R
268712	DISPLAY PCB ASS'Y	6871A20168A	6871A20186A	R
238310	ESCUTCHEON	3831A10020A	3831A10021A	R
268714	MAIN PCB ASS'Y	6871A20167A	6871A20167C	R
263230	THERMISTOR ASS'Y	6323A20004D		R
264110	POWER CORD ASS'Y	6411A20011H		R
346811	MOTOR ASS'Y	4681A20027W		R
349001	VENTILATION DAMPER	4900A20002A		R
349480	ORIFICE	4948A10015A		R
352111	TUBE ASS'Y CAPILLARY	5211AR3332W		R
352113	DISCHARGE TUBE	5211AR2930Q		R
352115	TUBE FORMED, EVAPORATOR	5211A20388B		R
35211A	SUCTION TUBE ASS'Y	5211A20228E		R
354210	EVAPORATOR ASS'Y	5421A20099A		R
567502	OVERLOAD PROTECTOR	6750U-L029A		R
550140	ISOLATOR, COMP	4830AR4335A		R
554030	CONDENSER ASS'Y	5403A20042D		R
554160	COMPRESSOR	2520UKGC2BA		R
559011	FAN	5900AR1173A		R
359012	TURBO FAN	5900A20019A		R
W0CZZ	CAPACITOR	0CZZA20001N		R
W48602	CLAMP, SPRING	3H02932B		R

• MODEL: LW1000PR / LW1000ER

R: Service Parts
N: Non Service Parts

LOCATION NO.	DESCRIPTION	PART NO.		REMARK
		LW1000PR	LW1000ER	
130410	BASE PAN WELD ASS'Y	3041A20020L		R
130910	CABINET ASS'Y	3091A10032C		R
135312	FRONT GRILL ASS'Y	3531A20098A		R
135313	INLET GRILLE	3530A20037A		R
135500	COVER, CONTROL BOX	3550A30114A		R
147581	HORIZONTAL LOUVER	4758A20018A		R
147582	VERTICAL LOUVER	4758A20017A		R
148000	BRACE	4800A30002B		R
149980	SHROUD	4998A10016A		R
152302	AIR FILTER ASS'Y	5231A20007A		R
152312	PLASMA FILTER ASS'Y	5983A10009H	-	R
237200	CONTROL PANEL	3720A10061A		R
249950	CONTROL BOX ASS'Y	4995A20194K	4995A20194L	R
268712	DISPLAY PCB ASS'Y	6871A20168A	6871A20186A	R
238310	ESCUTCHEON	3831A10020A	3831A10021A	R
268714	MAIN PCB ASS'Y	6871A20167A	6871A20167C	R
263230	THERMISTOR ASS'Y	6323A20004D		R
264110	POWER CORD ASS'Y	6411A20011H		R
346811	MOTOR ASS'Y	4681A20027Z		R
349001	VENTILATION DAMPER	4900A20002A		R
349480	ORIFICE	4948A10015A		R
352111	TUBE ASS'Y CAPILLARY	5211A30275E		R
352113	DISCHARGE TUBE	5211A10074E		R
352115	TUBE FORMED, EVAPORATOR	5211A20215C, 5211A20215D		R
35211A	SUCTION TUBE ASS'Y	5211A20441B		R
354210	EVAPORATOR ASS'Y	5421A20108A		R
567502	OVERLOAD PROTECTOR	6750U-L031A		R
550140	ISOLATOR, COMP	4830AR4335A		R
554030	CONDENSER ASS'Y	5403AR2921H		R
554160	COMPRESSOR	2520UKAC2CA		R
559011	FAN	5900AR1173A		R
359012	TURBO FAN	5900A20019A		R
W0CZZ	CAPACITOR	0CZZA20001M		R
W48602	CLAMP, SPRING	3H02932B		R

R: Service Parts
N: Non Service Parts

• MODEL: LWL1210WAL / LWL1230WAL

LOCATION NO.	DESCRIPTION	PART NO.		REMARK
		LWL1210WAL	LWL1230WAL	
130910	CABINET ASSEMBLY,SINGLE	3091A10032K		R
135303	GRILLE,INLET	3530A20037A		R
135312	GRILLE ASSEMBLY,FRONT(SINGLE)	3531A20098B		R
147581	LOUVER,HORIZONTAL	4758A20018A		R
147582-1	LOUVER,VERTICAL	4758A20017B		R
147582-2	LOUVER,VERTICAL	4758A20017A		R
148000	BRACE	4800A30002B		R
149950	CONTROL BOX ASSEMBLY,SINGLE	4995A20194Q	4995A20194S	R
152302	FILTER ASSEMBLY,AIR CLEANER	5231A20007A		R
159830	AIR CLEANER ASSEMBLY	5983A10009H		R
267110	REMOTE CONTROLLER ASSEMBLY	6711A20052D		R
346811	MOTOR ASSEMBLY,SINGLE	4681A20027W	4681A20069E	R
349001	DAMPER,VENTILATION	4900A20002A		R
349480	ORIFICE	4948A10015A		R
352113	TUBE ASSEMBLY,DISCHARGE SINGLE	5211AR2930Q	5211AR2930V	R
352115-1	TUBE ASSEMBLY,EVAPORATOR IN	5211A20388B		R
35211A	TUBE ASSEMBLY,SUCTION SINGLE	5211A20228E	5211A20228L	R
352380	AIR GUIDE	5238A20008A		R
352390	AIR GUIDE ASSEMBLY	5239A20004A		R
354210	EVAPORATOR ASSEMBLY,FIRST	5421A20099B		R
359012	FAN,TURBO	5900A20019A		R
549990	SHROUD ASSEMBLY	4999A20001A		R
550140	ISOLATOR,COMP	4830AR4335A		R
552111	TUBE ASSEMBLY,CAPILLARY	5211AR3332W		R
554031	CONDENSER ASSEMBLY,BENT	5403A20042H		R
554160	COMPRESSOR SET	2520UKGC2BA	2520UKQK2BA	R
559010	FAN ASSY,AXIAL	5900AR1173A		R
567502	O.L.P	6750U-L029A	6750U-L039A	R
738281	MANUAL,SERVICE	3828A20140B		R
738290	MANUAL,OWNERS	3828A20141Q		R
130410	BASE ASSEMBLY,SINGLE	3041A20020J		R
W48602	CLAMP,SPRING	3H02932B		R

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P/No : 3828A20140B

May, 2002
Printed in Korea