



FRIEDRICH

RoomAir Conditioners

Chill Premiere Series Models



Fixed chassis, cool only

CCF05B10A, CCF06B10A, CCF08B10A, CCF10B10A
CCF12B10A

Slide out chassis, cool only

CCW06B10B, CCW08B10B,

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INTRODUCTION

IMPORTANT SAFETY INFORMATION

The information in this manual is intended for use by a qualified technician who is familiar with the safety procedures required for installation and repair, and who is equipped with the proper tools and test instruments required to service this product.

Installation or repairs made by unqualified persons can result in subjecting the unqualified person making such repairs as well as the persons being served by the equipment to hazards resulting in injury or electrical shock which can be serious or even fatal.

Safety warnings have been placed throughout this manual to alert you to potential hazards that may be encountered. If you install or perform service on equipment, it is your responsibility to read and obey these warnings to guard against any bodily injury or property damage which may result to you or others.

Your safety and the safety of others is very important.

We have provided many important safety messages in this manual and on your appliance. Always read and obey all safety messages.

This is a safety Alert symbol.
This symbol alerts you to potential hazards that can kill or hurt you and others.



All safety messages will follow the safety alert symbol with the word "WARNING" or "CAUTION". These words mean:

 WARNING	Indicates a hazard which, if not avoided, can result in severe personal injury or death and damage to product or other property.
 CAUTION	Indicates a hazard which, if not avoided, can result in personal injury and damage to product or other property.
NOTICE	All safety messages will tell you what the potential hazard is, tell you how to reduce the chance of injury, and tell you what will happen if the instructions are not followed. Indicates property damage can occur if instructions are not followed.

 WARNING	
	<p>Refrigeration system under high pressure</p> <p>Do not puncture, heat, expose to flame or incinerate.</p> <p>Only certified refrigeration technicians should service this equipment.</p> <p>R32 systems operate at higher pressures than R410A equipment. Appropriate safe service and handling practices must be used.</p> <p>Only use gauge sets designed for use with R32. Do not use standard R410A gauge sets.</p>

INTRODUCTION

PERSONAL INJURY OR DEATH HAZARDS

SAFETY FIRST	 WARNING		 ADVERTENCIA
	Do not remove, disable or bypass this unit's safety devices. Doing so may cause fire, injuries, or death.	Ne pas supprimer, désactiver ou contourner cette l'unité des dispositifs de sécurité, faire vous risqueriez de provoquer le feu, les blessures ou la mort.	

ELECTRICAL HAZARDS:

- Unplug and/or disconnect all electrical power to the unit before performing inspections, maintenance, or service.
- Make sure to follow proper lockout/tag out procedures.
- Always work in the company of a qualified assistant if possible.
- Capacitors, even when disconnected from the electrical power source, retain an electrical charge potential capable of causing electric shock or electrocution.
- Handle, discharge, and test capacitors according to safe, established, standards, and approved procedures.
- Extreme care, proper judgment, and safety procedures must be exercised if it becomes necessary to test or troubleshoot equipment with the power on to the unit.
- Do not spray water on the air conditioning unit while the power is on.
- Electrical component malfunction caused by water could result in electric shock or other electrically unsafe conditions when the power is restored and the unit is turned on, even after the exterior is dry.
- Use air conditioner on a single dedicated circuit within the specified amperage rating.
- Use on a properly grounded outlet only.
- Do not cut or modify the power supply cord or remove the ground prong of the plug.
- Never operate the unit on an extension cord.
- Follow all safety precautions and use proper and adequate protective safety aids such as: gloves, goggles, clothing, properly insulated tools, and testing equipment etc.
- Failure to follow proper safety procedures and/or these warnings can result in serious injury or death.

INTRODUCTION

PERSONAL INJURY OR DEATH HAZARDS

- **REFRIGERATION SYSTEM REPAIR HAZARDS:**

- Use approved standard refrigerant recovering procedures and equipment to relieve high pressure before opening system for repair.
- Do not allow liquid refrigerant to contact skin. Direct contact with liquid refrigerant can result in minor to moderate injury.
- Be extremely careful when using an oxy-acetylene torch. Direct contact with the torch's flame or hot surfaces can cause serious burns.
- Make certain to protect personal and surrounding property with fire proof materials and have a fire extinguisher at hand while using a torch.
- Provide adequate ventilation to vent off toxic fumes, and work with a qualified assistant whenever possible.
- Always use a pressure regulator when using dry nitrogen to test the sealed refrigeration system for leaks, flushing etc.

- **MECHANICAL HAZARDS:**

- Extreme care, proper judgment and all safety procedures must be followed when testing, troubleshooting, handling, or working around unit with moving and/or rotating parts.
- Be careful when, handling and working around exposed edges and corners of the sleeve, chassis, and other unit components especially the sharp fins of the indoor and outdoor coils.
- Use proper and adequate protective aids such as: gloves, clothing, safety glasses etc.
- Failure to follow proper safety procedures and/or these warnings can result in serious injury or death.

- **PROPERTY DAMAGE HAZARDS**

- **FIRE DAMAGE HAZARDS:**

- Read the Installation/Operation Manual for the air conditioning unit prior to operating.
- Use air conditioner on a single dedicated circuit within the specified amperage rating.
- Connect to a properly grounded outlet only.
- Do not remove ground prong of plug.
- Do not cut or modify the power supply cord.
- Do not use extension cords with the unit.
- Be extremely careful when using acetylene torch and protect surrounding property.
- Failure to follow these instructions can result in fire and minor to serious property damage.

- **WATER DAMAGE HAZARDS:**

- Improper installation, maintenance or servicing of the air conditioner unit can result in water damage to personal items or property.
- Insure that the unit has a sufficient pitch to the outside to allow water to drain from the unit.
- Do not drill holes in the bottom of the drain pan or the underside of the unit.
- Failure to follow these instructions can result in damage to the unit and/or minor to serious property damage.

INTRODUCTION

This service manual is designed to be used in conjunction with the installation and operation manuals provided with each air conditioning system.

This service manual was written to assist the professional service technician to quickly and accurately diagnose and repair malfunctions.

Installation procedures are not given in this manual. They are given in the Installation/Operation manual which can be acquired on the Friedrich website.

IMPORTANT: It will be necessary for you to accurately identify the unit you are servicing, so you can be certain of a proper diagnosis and repair.

SPECIFICATIONS

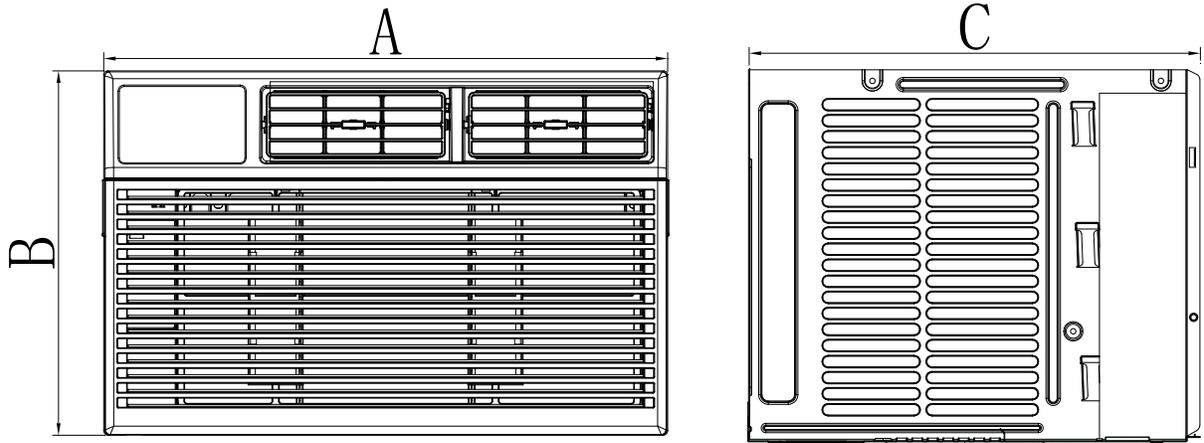
Model	Cooling Btu	Heating Btu	Volts Rated	Cooling Amps	Cooling Watts	Heating Amps	Heating Watts	EER	CEER	Moisture Removal-Pints/HR	Refrigerant	Refrigerant Charge	CFM	Sleeve	Weight Net./ Ship lbs.
FIXED CHASSIS, COOL ONLY (WINDOW INSTALLATION ONLY)															
CCF05B10A	5250	—	115	3.9	420	—	—	12.2	12.1	0.6	R32	8.11	141		44/51
CCF06B10A	6000	—	115	5.0	490	—	—	12.2	12.1	0.9	R32	9.52	141		44/51
CCF08B10A	8000	—	115	6.1	640	—	—	12.1	12.0	1.0	R32	10.58	206		47/53
CCF10B10A	10000	—	115	8.8	810	—	—	12.1	12.0	1.2	R32	12.35	282		62/70
CCF12B10A	12000	—	115	10.2	980	—	—	12.1	12.0	1.5	R32	18.34	270		70/77
CHILL PREMIER SLIDE OUT CHASSIS, COOL ONLY															
CCW06B10B	6000	—	115	5.3	590	—	—	12.2	12.1	0.9	R32	9.52	200		54/60
CCW08B10B	8000	—	115	6.4	720	—	—	12.1	12.0	1.0	R32	10.58	250		55/61

Figure 201 (Refrigeration Systems Performance Data)

Model	Type	Brand	Capacity BTU/h	Refrigerant Oil (ml)
FIXED CHASSIS, COOL ONLY (WINDOW INSTALLATION ONLY)				
CCF05B10A	Rotary	GMCC	4964	190
CCF06B10A	Rotary	Rechi	5160	160
CCF08B10A	Rotary	GMCC	8172	190
CCF10B10A	Rotary	GMCC	9843	190
CCF12B10A	Rotary	GMCC	11840	320
CHILL PREMIER SLIDE OUT CHASSIS, COOL ONLY				
CCW06B10B	6000	GMCC	6056	190
CCW08B10B	8000	GMCC	6284	180

Figure 202 (Compressor Performance Data)

SPECIFICATIONS



Model	Height Inches "B"	Width Inches "A"	Depth Inches "C"	Minimum Extension Into Room Inches	Minimum Extension Outside Inches	Window Width Inches	
						Minimum*	Maximum
CCF05B10A, CCF06B10A, CCF08B10A	13 ³ / ₈	18 ⁵ / ₈	15 ⁵ / ₈	—	—	23	36
CCF10B10A, CCF12B10A	15 ¹ / ₈	19 ³ / ₄	21 ¹ / ₂	—	—	23	36
CCW06B10B, CCW08B10AB	13 ¹ / ₂	18 ¹ / ₂	19 ³ / ₄	—	—	26	36

Figure 203 (Chill Premier Installation)

Installation Clearances

Improper installation of the Air Conditioner can cause poor performance and premature wear of the unit. Ensure that the unit is installed with proper clearances as described below. Ensure no obstructions, or enclosures are within clearances limits to allow for proper airflow.

Clearances

Rear of Unit - Three (3) feet

SPECIFICATIONS

Electrical Data

 WARNING	
	<p>ELECTRIC SHOCK HAZARD</p> <p>Turn off electric power before service or installation.</p> <p>All electrical connections and wiring MUST be installed by a qualified electrician and conform to the National Electrical Code and all local codes which have jurisdiction.</p> <p>Failure to do so can result in personal injury or death.</p>

NOTICE
<p>FIRE HAZARD</p> <p>Not following the above WARNING could result in fire or electrically unsafe conditions which could cause moderate or serious property damage.</p> <p>Read, understand and follow the above warning.</p>

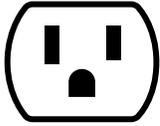
Model	Circuit Rating Breaker or T-D Fuse	Plug Face (NEMA#)	Power Cord Length (ft.)	Wall Outlet Appearance
CCF05B10A, CCF06B10A, CCF08B10A,	125V-15A	5-15P	6.5	
CCF10B10A, CCF12B10A			6	
CCW06B10A, CCW08B10A,			6	

Figure 204 (Circuit Breaker / Plug / Receptacle / Cord Rating)

SPECIFICATIONS

Electrical Data

⚠ WARNING	
	<p>Electrical Shock Hazard</p> <p>Make sure your electrical receptacle has the same configuration as your air conditioner's plug. If different, consult a Licensed Electrician.</p> <p>Do not use plug adapters.</p> <p>Do not use an extension cord.</p> <p>Do not remove ground prong. Always plug into a grounded 3 prong outlet.</p> <p>Failure to follow these instructions can result in death, fire, or electrical shock.</p>

Wire Size - Use ONLY wiring size recommended for single outlet branch circuit.

Fuse/ Circuit Breaker - Use ONLY the correct HACR type and size fuse/circuit breaker. Read electrical ratings on unit's rating plate. Proper circuit protection is the responsibility of the homeowner.

Grounding - Unit MUST be grounded from branch circuit through service cord to unit, or through separate ground wire provided on permanently connected units. Be sure that branch circuit or general purpose outlet is grounded.

Receptacle - The field supplied outlet must match plug on service cord and be within reach of service cord. Do NOT alter the service cord or plug. Do NOT use an extension cord. Refer to the table above for proper receptacle and fuse type. **Make sure the wiring is adequate for your unit.**

If you have fuses, they should be of the time delay type. Before you install or relocate this unit, be sure that the amperage rating of the circuit breaker or time delay fuse does not exceed the amp rating listed in Table 206.

DO NOT use an extension cord.

The cord provided will carry the proper amount of electrical power to the unit; an extension cord may not.

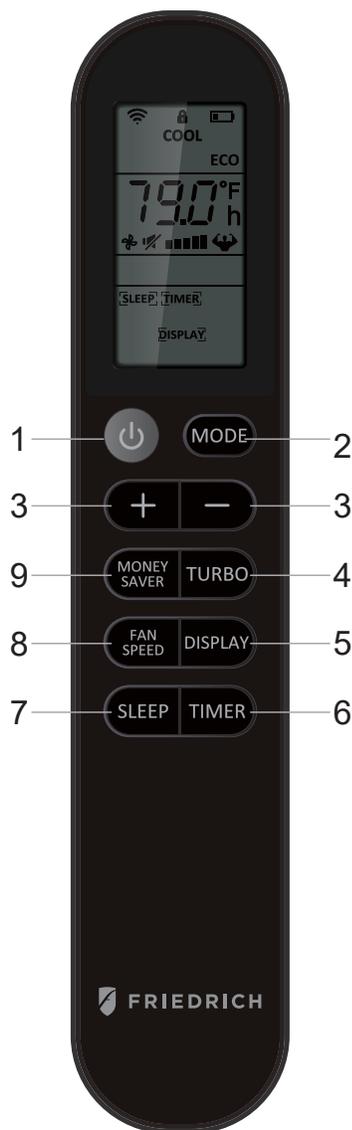
Make sure that the receptacle is compatible with the air conditioner cord plug provided.

Proper grounding must be maintained at all times. Two prong receptacles must be replaced with a grounded receptacle by a certified electrician.

The grounded receptacle should meet all national and local codes and ordinances. You must use the three prong plug furnished with the air conditioner. Under no circumstances should you remove the ground prong from the plug.

OPERATION

Remote Control



1. Power: Turn the air conditioner on and off. This button will clear the TIMER setting.

2. MODE: Press the button to select the mode of operation, AUTO, COOL, DRY, FAN ONLY, HEAT.
Note: The HEAT mode is only for some heating models. If you do not need it, press the MODE button for more than 5 seconds to delete the HEAT function, and the COOL mode will be selected automatically. Press the MODE again for more than 5 seconds to add the HEAT function, and the HEAT mode will be selected automatically.

3. + And - : Use these buttons to increase or decrease the setting Temperature or Timer. Setting temperature range: 61 ~88°F or 16 ~31°C .

Note: After setting temperature with remote using th + and - buttons, both the remote display and the unit display will automatically turn off after a short time. This does not affect the unit operation.

4. TURBO: When the remote is ON, press the button to activate the TURBO function, under AUTO/COOL/FAN ONLY mode. Press again to cancel the TURBO function, and the fan speed will change to pre-setting before.
Note: °F and °Cchange: After inserting the batteries, in the off state within 3 minutes, press the TURBO button for more than 5 seconds to switch the Fahrenheit (°F) or Celsius (°C) degree display.

5. DISPLAY: When the unit is ON, press the button, to switch off/on all lights or LED display. And this function will be canceled when changing mode.

6. TIMER: Use the button to set the TIMER, or cancel the TIMER.

TIMER OFF: When the unit is ON, the timed OFF is programmed by pressing TIMER button, the remote will display 6 hours pre-setting at first. Set the rest time by pressing the button or until the needed rest time display, then press TIMER button again to confirm.

TIMER ON: When the unit is OFF, the timed ON is programmed by pressing TIMER button, the remote will display 6 hours pre-setting at first. Set the rest time by pressing the button or until the needed rest time display, then press TIMER button again to confirm. Later, the remote screen will keep display [TIMER] icon.
Note: When TIMER ON, it cannot select Sleep mode, but can pre-set Mode, temperature, fan speed, ECO.

7. SLEEP: Press the SLEEP button, all of the display lights will turn off after a while, but the Sleep light is always on. In SLEEP mode, the air conditioner will automatically adjust the temperature and fan speed to make the room more comfortable during the night. The set temperature will automatically raise every 30-60 minutes and at most change six times until the set temperature is 81 or 82°F. This function can be selected when COOL or HEAT mode.

8. FAN SPEED: Press the FAN SPEED button to choose the fan speed options. You can choose Hi, Med, Lo or Auto speed in COOL or HEAT mode and choose Hi, Med, Lo in FAN mode. When DRY mode, it is only Low fan speed.

9. MONEY SAVER: When the unit is in COOL mode, press the button to MONEY SAVER function. In MONEY SAVER mode, the unit will turn off once the room is cooled to the user set temperature. The unit will turn back on when the room temperature rises above the user set temperature. Before the compressor starts, the fan motor will run for 20 sec., then it will stop for 10 min., and will repeat to provide a much more comfortable feeling and save energy.

Battery size: AAA

Note: Do not mix old and new batteries or different types of AAA batteries.

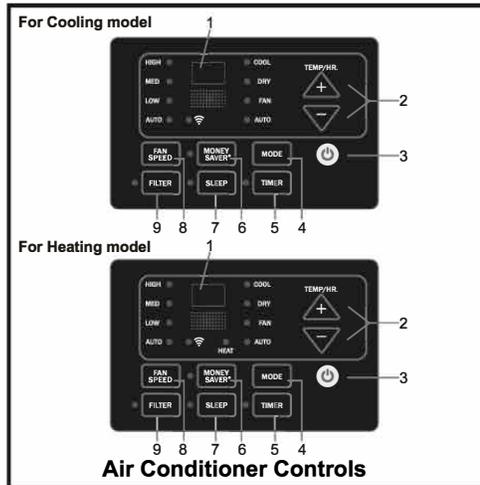
Figure 301 (Remote Control Operation)

OPERATION

Control Panel

USING YOUR AIR CONDITIONER Electronic Control Panel & Remote Control

NOTE: This display always shows the room temperature in Fan Mode except when setting the Timer.



Air Conditioner Controls

Normal Operating Sounds

- You may hear a pinging noise caused by water hitting the condenser on rainy days, or when the humidity is high. This design feature helps remove moisture and improve efficiency.
 - You may hear the thermostat click when the compressor cycles on and off.
 - Water will collect in the base pan during rain or days of high humidity. The water may overflow and drip from the outside part of the unit.
 - The fan may run even when the compressor is not on.
- Digital Display:** Without timer setting, the set temperature will be displayed. Time will be displayed under the timer setting.
 - + and - Button:** Use these buttons on the control panel and remote to increase or decrease the Set Temperature or Timer. Temperature range: 61°F~88°F or 16°C~31°C.
 - ⏻ Button:** Turn the air conditioner on and off.
 - Mode Button:** Press the mode button to cycle through the various modes: Cool, Dry, Fan and Auto, or Heat.

Cool Mode: The cooling function allows the air conditioner to cool the room and at the same time reduces air humidity. Press the MODE button to activate the cooling function. To optimize the function of the air conditioner, adjust the temperature and the speed by pressing the button indicated.

Dry Mode: This function reduces the humidity of the air to make the room more comfortable. Press MODE button to set the DRY mode. An automatic function of alternating cooling cycles and air fan is activated.

Fan Mode: The conditioner works in only ventilation. Press MODE button to set the FAN mode. With pressing the FAN SPEED button the speed changes in the following sequence: Hi, Med and Lo in FAN mode.

Auto Mode: In AUTO mode the unit automatically chooses the fan speed and the mode of operation (COOL, HEAT, DRY or FAN). In this mode the temperature is set automatically according to the room temperature (tested by the temperature sensor which is incorporated in the indoor unit.).

Heat Mode: The heating function allows the air conditioner to heat the room. Press the MODE button to activate the heating function. To optimize the function of the air conditioner, adjust the temperature and the speed by pressing the button indicated.

- Timer Button:** Use these buttons on the control panel and remote to set the Timer.
Timer Off: The timed stop is programmed by pressing TIMER button. Set the rest time by pressing the button “+” or “-” until the rest time displayed is to your liking then press the TIMER button again.
Timer On: When the unit is off, press TIMER button at the first time, set the temperature with pressing the button “+” or “-”. Press TIMER button at the second time, set the rest time with pressing the button “+” or “-”. Press TIMER button at the third time, confirm the setting, then the rest time to next automatic switching-on could be read on the display of the machine. **Note:** It can be set to automatically turn off or on in 0.5-24 hours. Each press of the “+” “-” buttons will increase or decrease the timer. The Timer can be set in 0.5 hours increment below 10 hours and 1 hour increment for 10 hours or above. The SET light will turn on while setting. To cancel the set function, press the TIMER button again.

OPERATION

Control Panel

6. **Money Saver Button:** When the unit is in Money Saver mode, the light will turn on. In Money Saver mode, the unit will turn off once the room is cooled to the user-set temperature.

The unit will turn back on when the room temperature rises above the user-set temperature. Before the compressor starts, the fan motor will run for a while, then it will stop for a while, and will repeat to provide a much more comfortable feeling and save energy.

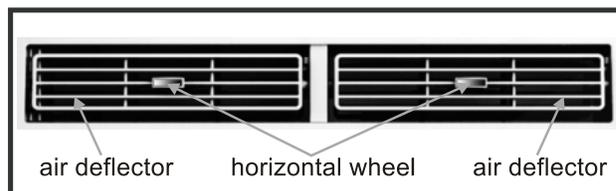
7. **Sleep Button:** Press the SLEEP button, all of the display lights will turn off after a while, but the Sleep light is always on. In SLEEP mode, the air conditioner will automatically adjust the temperature and fan speed to make the room more comfortable during the night. The set temperature will automatically raise every 30-60 minutes, and at most change six times until the set temperature is 81 or 82°F for cooling and 75 or 76°F for heating.

8. **Fan Speed Button:** Press the FAN SPEED button to choose the fan speed options. You can choose Hi, Med, Lo or auto speed in COOL mode or HEAT mode and choose Hi, Med, Lo in FAN mode.

9. **Filter Button:**

When the Filter Check light is on, you can turn off the light by pressing the Filter Check button. After the fan motor works for 500 total hours, the Filter Check light will turn on to remind the user to clean the filter. When the Filter Check light is off, it is not necessary to press the Filter Check button.

10. **Directional Louvers:** To direct the airflow, use the horizontal wheel to control the horizontal direction, and use the air deflectors to control the vertical direction.



OPERATION

Sequence of Operation

Main function

NOTES:

RT-----Room Temperature.

IPT-----Indoor Pipe (Coil) Temperature.

ST-----indoor Set Temperature.

OPT---Outdoor Pipe (Coil) Temperature.

CRT---Compensated Room Temperature

1. Cooling mode

In the cooling mode, COOL indicator is ON, the set temperature and fan speed could be changed or adjusted.

a. When $RT-ST \geq 33.8^{\circ}\text{F}$ the compressor operates if there is not any protection or failure happened.

b. When $RT-ST < 30.2^{\circ}\text{F}$ the compressor stops, and fan motor keeps operation continuous.

c. When $30.2^{\circ}\text{F} < RT-ST < 33.8^{\circ}\text{F}$ the compressor keeps former status.

1.1 Indoor fan motor control

1.1.1 Indoor fan motor could be controlled by Auto, Low, Med and High speed circularly .

1.1.2 Indoor fan motor Auto control as below:

a) In cooling mode $\Delta T = RT - ST$

b) While $\Delta T < 32^{\circ}\text{F}$, operates in low speed;

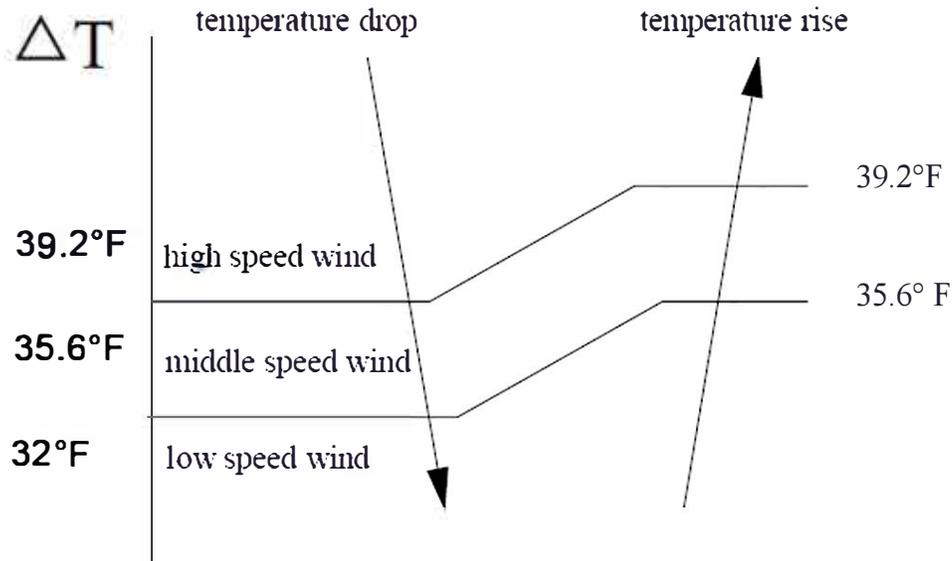
c) If $\Delta T = 35.6^{\circ}\text{F}$, in medium speed

d) If $\Delta T \geq 39.2^{\circ}\text{F}$, in high speed

e) If $35.6^{\circ}\text{F} < \Delta T < 39.2^{\circ}\text{F}$, The fan motor runs at original speed while it was set in High or Med mode. If originally at Low speed, it will change to Med speed automatically.

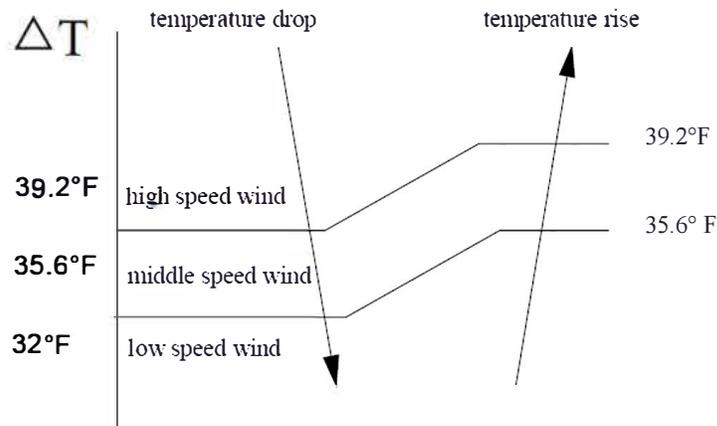
f) If $32^{\circ}\text{F} < \Delta T < 35.6^{\circ}\text{F}$, The fan motor operates at original speed while it was set in Low or Med mode. If originally at High speed, it will change to Med automatically.

g) When fan speed changes due to the temperature variation, it could be changed only by sequence as High, Med to Low speed or Low, Med to High speed, and each status will keep at least 2 minutes.



OPERATION

Sequence of Operation



Auto fan speed in cooling mode

2. Dry mode

While selected to Dry mode, AC works at set temperature to 44.6°F for 3 minutes. After that the set temperature change to be RT 28.4°F, the compressor works as cooling mode, and indoor fan motor operates at low speed. The fan speed can not be changed while in dry mode, but the air direction can be adjusted.

3. I FEEL Mode

3.1 The operation mode and initial ST are generated by the Initial RT, and the operation mode is enabled once unless AC is switched off and powered on again. While I FEEL is changed from other mode, the AC will operate based on the RT temperature judgement.

3.2 PCB with Auto Restart Function, while power on again,

- With Auto Restart Function activated, AC runs according to the temperature judgement.
- If without Auto Restart Function or the function is shut off, AC works on stand by.

Operation MODE	Initial RT	Initial ST
<u>Cooling</u>	RT ≥ 78.8°F	73.4°F
<u>Dry</u>	78.8°F > RT ≥ 35.6°F	RT- 28.4°F
<u>Heating</u> for Heat Pump or <u>Fan</u> for Cooling Only.	RT < 35.6°F	73.4°F

When AC works in Dry mode after judgement, the display temperature ranges from 3.2°F to 87.8°F, and the set temperature ranges from 41°F to 87.8°F.

When AC works in Fan mode, the set temperature is fixed to 73.4°F, and displays room temperature.

In I FEEL mode (I FEEL cooling or heating), and the PCB receives instructions of temperature adjustment as increasing or decreasing from remote control, the unit sets ST as the current room temperature±1°F.

(in heating mode, the RT need to be compensated), I FEEL temperature adjusts : ±3.6°F and buzzer responds but the controller takes no action. The set temperature range is from: 60.8°F -87.8°F.

Only works on Cooling or Heating of I FEEL mode, the unit has above temperature control process. In I FEEL Dry or Fan mode, the buzzer responds, but does not have control of any other operation.

OPERATION

Sequence of Operation

4. Heating mode (for Cooling & Heating pump)

When in heating operation mode, the set temperature, fan speed and air direction can be adjusted, compressor does not operate, but electrical heater works, and indoor fan motor starts up 10s later.

a $ST-RT > 33.8^{\circ}F$ electrical heater operates

b $ST-RT < 30.2^{\circ}F$ electrical heater stops.

c $30.2^{\circ}F \leq ST-RT < 33.8^{\circ}$ electrical heater keeps the original works status .

Indoor fan motor control

4.1 Indoor fan motor could control by Auto, Low, Med or High speed circularly.

4.2 Indoor fan motor Auto works as follow:

a) In heating mode: $\Delta T = ST - CRT$

b) $\Delta T \geq 32^{\circ}F$, running in low speed

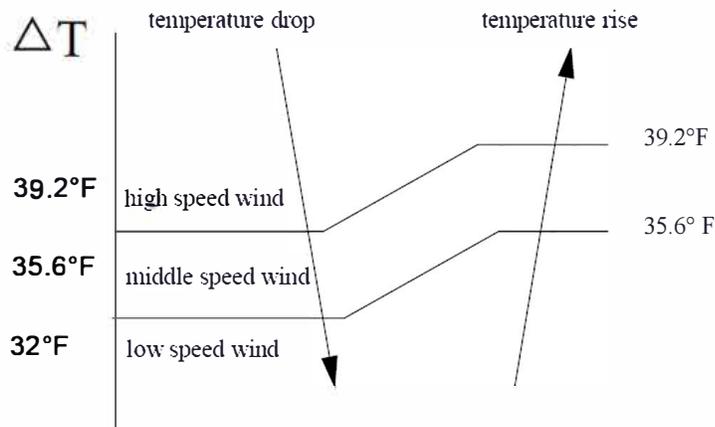
c) $\Delta T = 35.6^{\circ}F$, in medium speed

d) $\Delta T > 39.2^{\circ}F$, in high speed .

e) $35.6^{\circ}F < \Delta T < 39.2^{\circ}F$, the fan speed keeps in medium or high speed as it's originally preset, but if the fan was originally in low speed, it will change to medium.

f) $32^{\circ}F \leq \Delta T < 35.6^{\circ}F$, the fan speed keeps in low or medium speed as it's originally preset, if fan in high speed, it will change to medium speed.

g) When fan speed changes due to the temperature variation , it could be changed only by sequence as High, Med to Low speed or Low, Med to High speed , and each status keeps at least 2 minutes.



5. Fan mode

In FAN mode, the corresponding indicator is ON, fan motor runs according to the set speed (default High speed for the first time), compressor doesn't work, Buzzer and PCB do not respond while pressing the UP/DOWN button on remote controller; the fan motor is adjustable in high, medium or low speed, but no auto wind, 88 digital display shows environment temperature.

6. Sleep mode

6.1 In SLEEP mode, the indoor fan motor runs at low speed, except that the power source and sleep LED is ON, the running LED and others light are OFF, the condition of timer LED is according to the preset, and all the LEDs will be OFF after 30 seconds.

6.2 Temperature control

Processing SLEEP while in Cooling or Heating mode, unit runs according to the sleeping operation.

Item	initial set temp. (F)	The 1st change		The 2nd change		The 3rd change		The 4th change		The 5th change		The 6th change	
		runing time	ST(F)	runing time	ST(F)	runing time	ST(F)	runing time	ST(F)	runing time	ST(F)	runing time	ST(F)
The controlled set temperature. Note:unit--- Time: minute	≥ 82	60	no change	60	no change	60	no change	60	no change	60	no change	60	no change
	80	60	82	60	no change	60	no change	60	no change	60	no change	60	no change
	78	50	80	60	82	60	no change						
	77	40	78	50	80	60	no change						
	75	30	77	40	78	50	80	60	no change	60	no change	60	no change
	73	30	75	30	77	40	78	50	80	60	no change	60	no change
	71	30	73	30	75	30	77	40	78	50	80	60	no change
≤ 70	0 3	4	30	5 8	0 5	75	0 5	9 1	0 4	10 9	0 5	80	
Fan speed	set speed	set speed		low speed		low-low speed							
UP/DOWN swing	ON/OFF	keep original		keep angle for cold air prevention									

OPERATION

Sequence of Operation

- a) The indoor fan runs at the set speed when processing sleep mode, after the 1st change, unit runs at low speed, and after the 2nd change, unit runs at low-low speed (if AC without low-low speed, it runs at low speed instead). 10 hours later AC quits from sleep mode and runs at former set fan speed .
- b) In SLEEP mode, the vane works according to the preset, after the first change, vane blade works at cold air prevention angle. 10 hours later AC quits from sleep and works as the former preset.
- c) The set fan speed refers to the preset value before processing SLEEP mode. If the unit just on stand by before sleep operation, the set value to be according to low speed . If AC preset in super speed, the set value will change to high speed, while in Auto wind, it will change to low speed.

table 2

Item	initial set temp. (F)	The 1st change		The 2nd change		The 3rd change		The 4th change		The 5th change		The 6th change	
		runing time	ST(F)	runing time	ST(F)	runing time	ST(F)	runing time	ST(F)	runing time	ST(F)	runing time	ST(F)
The controlled set temperature. Note:unit— Time: minute	≥82	60	12.9	0.6	78	0.6	9.3	60	no change	60	no change	60	no change
	80	60	78	60	77	60	75	60	no change	60	no change	60	no change
	78	60	77	60	75	60	no change						
	77	60	75	60	no change	60	no change	60	no change	60	no change	60	no change
	≤75	60	no change	60	no change	60	no change	60	no change	60	no change	60	no change
Fan speed	set speed	set speed		only High speed change to Med speed, otherwise keep the set fan speed									
UP/DOWN swing	ON/OFF	keep original											

B. Sleep mode on Heating operation:

- 1) The indoor fan runs at the set speed when processing in sleep mode, after the first change, unit changes to medium speed if the preset is in high operation, and the medium and low speed preset will keep the original even after the first change. 10 hours later AC quits from sleep mode and runs at former set fan speed.
- 2) Processing SLEEP mode, the vane works according to the preset, 10 hours later AC quits from sleep and works as the former preset.
- 3) The set fan speed refers to the preset value before processing SLEEP mode. If the unit just on stand by before sleep operation, the set value to be according to low speed. if AC preset in super speed, the set value will change to high speed, while in Auto wind, it change to low speed.

Sleep process control

- 1) If the set temperature is changed during the period of sleep mode, it is also executed as the initial sleep set, and the change time is reset to 0, the temperature change will be restarted, but the 10 hours running time will not be reset as 0, it will accumulate continuously.
- 2) The fan speed can not be changed during sleep mode.
- 3) During the sleep period in cooling mode, the new set will be executed if the vane work status is changed, the anti-cold angle will not be executed.
- 4) During the sleep period in heating mode, the wind speed and vane swinging for cold air prevention function is selected first.

The sleep instruction in Cooling or Heating of I FEEL mode

- 1) The current set temperature is set as initial value if sleep mode has not been set before processing sleep mode.
- 2) If the set temperature is changed, the change times is reset to 0, the new set temperature will be executed, 10 hours timing will be continued.
- 3) There is other operation during sleep mode, e.g. vane operation, AC keeps operation continuously with the initial value no exchanged.
- 4) The sleep mode category is changed during sleep operation, the initial set temperature in cooling or heating of I FEEL mode will be set as initial running value if no temperature adjustment; or the temperature after increased or decreased will be set as initial running value after temperature adjustment; and the change times is reset to 0, 10 hours timing accumulation will be restarted.
- 5) The unit works according to the new set temperature when operating remote controller or other controller to quit sleep mode.

7. Auto Restart Function (Optional) .

- 7.1 PCB with auto restart function will keep the operation parameters in EEPROM even with power off. And the unit can restore operation as the former status automatically while power is on.
- 7.2 The status parameters include the set mode, fan speed, set temperature and the vane blade position when unit is off (the swinging status will be remembered when the vane was set as swinging)
- 7.3 Pressing sleep button 10 times within 8 seconds during running status, the Auto Restart Function could be activated or turned off; The buzzer sounds 3 times BIBI when activated and 4 times BIBI when function is turned off (operate with remote controller).

8. ECO function

- 8.1 The adjustable temperature: 16°C-31°C or 61°F-88°F.
- 8.2 The action temperature and running of compressor is the same as cooling mode.
- 8.3 The fan speed setting and other assistant function same as cooling mode.

OPERATION

Sequence of Operation

- 8.4 The indoor fan motor works as below while RT meets the set temperature to stop compressor:
- The indoor fan motor runs for 1 min according to the set speed continuously, and then stops.
 - The indoor fan keeps the stopping status in the following 10 min if RT meets the requirement of compressor stopping work.
 - After 10 min, the indoor fan motor runs for 20 seconds and lets the indoor air flow through the evaporator.
 - The indoor fan works as step b) and c) circularly.
 - During above process, if RT increase or ST decrease, also RT meet the requirement of compressor need to work, the unit exits above b), c) & d) circulation----indoor fan motor operation immediately at set speed, and compressor also starts up while three-min protection is met.
 - If the compressor working condition is not met after switching on the unit, the indoor fan runs at set speed for 1 min, then runs as step b) and c) circularly; If the compressor working condition is met after switching on the unit, the indoor fan runs at set speed
 - In above circulation, the 3-min protection for compressor always function.

9. Filter cleaning function

- The LED for air FILTER will light (ON) when the indoor fan motor work has accumulated 500 hours.
- Pressing the FILTER button means cleaning is finished, the accumulation hours are reset to 0 and start timing again, the FILTER indicator OFF.
- 500 accumulation hours could be reset to 0 by pressing the filter cleaning button only.
- There is no effect on the AC operation even when the filter indicator is ON.

Assistance function

- Display and Key button

Display: default indicates set temperature (ST).

The key buttons include POWER (ON/OFF), FAN, MODE, UP, DOWN, TIMER, SLEEP, ECO, FILTER cleaning and HEALTH, the buzzer BIBI response for each valid button pressing.

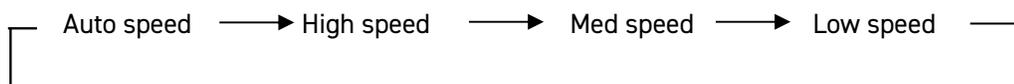
The detailed instructions are below:

POWER ON/OFF button

When switched on, the indicator displays current set value and the running status can be adjusted by pressing buttons; there is no display when turned off, press FAN, UP, DOWN and MODE button is invalid; In timer mode, the timer indicator ON and digital LED displays the remained time, no other indicator, FAN and MODE button invalid. Pressing ON/OFF button may cancel the timer function. (Note: The Auto Restart Function default activated after production in the factory.)

FAN speed button

Pressing the FAN speed button causes switchover as:



MODE button

Cooling Only: Cooling - Dry - Fan - Auto.

Cooling & Heating pump : Cooling - Dry - Fan - Heat - Auto.

UP / DOWN button

It is used for temperature preset and timer adjustment.

When pressing the UP or DOWN button, buzzer response, and the digital display the set temperature or the set time.

In the running status, press SLEEP button 6 times within 8 seconds will be ON or OFF the room temperature display, the buzzer shortly BIBI twice. (by remote controller)

TIMER button

When unit is working (without time set), press TIMER button to set the AC time to shut down, the timer indicator ON.

When unit is OFF, press TIMER button to set the time of AC power on, the timer indicator ON

The timer can be set from 0.5, 1.0, 1.5, 2.0,10, 11, 12..... to 24 hours, it could circulate by dual direction: when showing 0.5, pressing DOWN button, the time changes to 24, vice versa, when showing 24, pressing UP button, the time changes to 0.5.

When 88 digital display timer, press UP/DOWN to adjust the timing time, the number flashes and 10s later, the digital recovery to display the set temperature. In order to regulate timer quickly in timing mode, pressing the UP/DOWN button for 2 seconds to trigger continuous adjustment with the frequency 5Hz.

FILTER button

When filter light is ON, pressing this button, the light will be OFF. It will be meaningless to press this button while the light is OFF.

HEALTH button

Pressing this button to turn on anion function, if pressing once more time to shut off anion.

2 BUZZER function

Power on controller: Buzzer buzzing once for 0.3s.

OPERATION

Sequence of Operation

Power off unit: Buzzer buzzing once.

Pressing button and/or receiving signal: Buzzer BIBI shortly once.

Malfunction: buzzer BIBI shortly 3 times

Protection / Failure code

1 Anti-frozen protection for indoor evaporator:

If IPT < 32°F for continuous 3min, compressor shut off, fan motor keeps former operation; 3min later, if IPT > 50°F, compressor start up operation and fan motor keeps the former running status.

2 SENSOR error protection

When sensor short circuit or broken, Room Temperature failure shows E1, and Coil Temperature failure shows E2. When E1 or E2 happened, compressor stops and indoor fan motor operates at the set speed.

When AC on STANDBY, there is no malfunction inspection.

The NTC sensor resistance: 5kΩ / 77°F

3 Compressor protection

If unit is on STANDBY before power off, there is no 3-min protection while switch on, otherwise the unit always has 3-min protection.

4 SELF-DIAGNOSIS function

Press the ON/OFF button first, and then switching on unit. AC works and checks as below accordingly:

Buzzer BIBI 2 times, 88 Digital fully lights, Electric heating (for cooling & heating) , Compressor , High fan speed ,Medium speed ,Low speed , Health , WIFI LED, indicator of Heat/Cool /High speed/Dry / Medium speed / Low speed/Auto fan/ Timing /Sleep/ Filter cleaning/ ECO/Health, Room temperature , Indoor coil Temperature , EEPROM calibration etc.

After self-diagnosis, unit to STANDBY (Note: unit with auto restart function will operate according to it's former status)

OPERATION

Refrigeration Sequence Of Operation

A good understanding of the basic operation of the refrigeration system is essential for the service technician. Without this understanding, accurate troubleshooting of refrigeration system problems will be more difficult and time consuming, if not (in some cases) entirely impossible. The refrigeration system uses four basic principles (laws) in its operation they are as follows:

1. "Heat always flows from a warmer body to a cooler body."
2. "Heat must be added to or removed from a substance before a change in state can occur"
3. "Flow is always from a higher pressure area to a lower pressure area."
4. "The temperature at which a liquid or gas changes state is dependent upon the pressure."

The refrigeration cycle begins at the compressor. Starting the compressor creates a low pressure in the suction line which draws refrigerant gas (vapor) into the compressor. The compressor then "compresses" this refrigerant vapor, raising its pressure and its (heat intensity) temperature.

The refrigerant leaves the compressor through the discharge Line as a hot High pressure gas (vapor). The refrigerant enters the condenser coil where it gives up some of its heat. The condenser fan moving air across the coil's finned surface facilitates the transfer of heat from the refrigerant to the relatively cooler outdoor air.

When a sufficient quantity of heat has been removed from the refrigerant gas (vapor), the refrigerant will "condense" (i.e. change to a liquid). Once the refrigerant has been condensed (changed) to a liquid it is cooled even further by the air that continues to flow across the condenser coil.

The design determines at exactly what point (in the condenser) the change of state (i.e. gas to a liquid) takes place. In all cases, however, the refrigerant must be totally condensed (changed) to a Liquid before leaving the condenser coil.

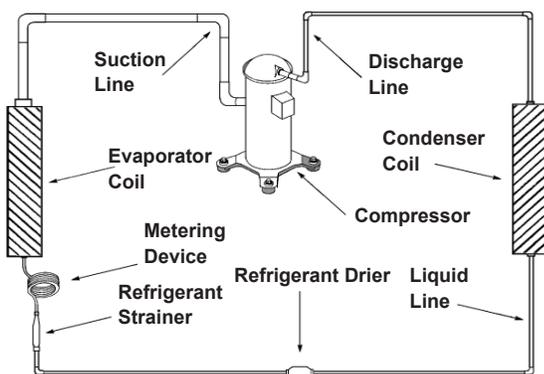
The refrigerant leaves the condenser Coil through the liquid line as a warm high pressure liquid. It next will pass through the refrigerant drier (if equipped). It is the function of the drier to trap any moisture present in the system, contaminants, and large particulate matter.

The liquid refrigerant next enters the metering device. The metering device is a capillary tube. The purpose of the metering device is to "meter" (i.e. control or measure) the quantity of refrigerant entering the evaporator coil.

In the case of the capillary tube this is accomplished (by design) through size (and length) of device, and the pressure difference present across the device.

Since the evaporator coil is under a lower pressure (due to the suction created by the compressor) than the liquid line, the liquid refrigerant leaves the metering device entering the evaporator coil. As it enters the evaporator coil, the larger area and lower pressure allows the refrigerant to expand and lower its temperature (heat intensity). This expansion is often referred to as "boiling" or atomizing. Since the unit's blower is moving indoor air across the finned surface of the evaporator coil, the expanding refrigerant absorbs some of that heat. This results in a lowering of the indoor air temperature, or cooling.

The expansion and absorbing of heat cause the liquid refrigerant to evaporate (i.e. change to a gas). Once the refrigerant has been evaporated (changed to a gas), it is heated even further by the air that continues to flow across the evaporator coil.



The particular system design determines at exactly what point (in the evaporator) the change of state (i.e. liquid to a gas) takes place. In all cases, however, the refrigerant must be totally evaporated (changed) to a gas before leaving the evaporator coil.

The low pressure (suction) created by the compressor causes the refrigerant to leave the evaporator through the suction line as a cool low pressure vapor. The refrigerant then returns to the compressor, where the cycle is repeated.

Figure 341 (Refrigeration Sequence Of Operation)

COMPONENT TESTING

Hermetic Components Check

 WARNING	
	BURN HAZARD Proper safety procedures must be followed, and proper protective clothing must be worn when working with a torch. Failure to follow these procedures could result in moderate or serious injury.

 WARNING	
	CUT/SEVER HAZARD Be careful with the sharp edges and corners. Wear protective clothing and gloves, etc. Failure to do so could result in serious injury.

Metering Device - Capillary Tube Systems

All units are equipped with capillary tube metering devices. Checking for restricted capillary tubes.

1. Connect pressure gauges to unit.
2. Start the unit in the cooling mode. If after a few minutes of operation the pressures are normal, the check valve and the cooling capillary are not restricted.
3. Switch the unit to the heating mode and observe the gauge readings after a few minutes running time. If the system pressure is lower than normal, the heating capillary is restricted.
4. If the operating pressures are lower than normal in both the heating and cooling mode, the cooling capillary is restricted.

COMPONENTS TESTING

Fan Motor

A single phase permanent split capacitor motor is used to drive the evaporator blower and condenser fan. A self-resetting overload is located inside the motor to protect against high temperature and high amperage conditions. (See Figure 23)

⚠ WARNING	
	<p>ELECTRIC SHOCK HAZARD Turn off electric power before service or installation. Extreme care must be used, if it becomes necessary to work on equipment with power applied.</p> <p>Failure to do so could result in serious injury or death.</p>

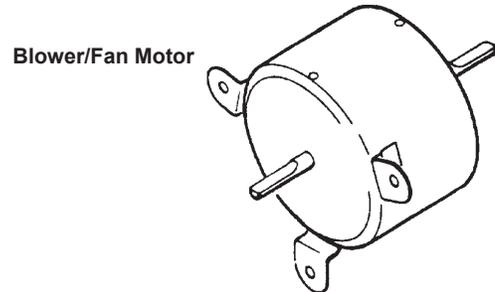


Figure 601 (Blower)

Blower / Fan Motor Test

1. Determine that capacitor is serviceable.
 2. Disconnect fan motor wires from fan speed switch or system switch.
 3. Apply "live" test cord probes on black wire and common terminal of capacitor. Motor should run at high speed.
 4. Apply "live" test cord probes on red wire and common terminal of capacitor. Motor should run at low speed.
 5. Apply "live" test cord probes on each of the remaining wires from the speed switch or system switch to test intermediate speeds.
- If the control is in the "MoneySaver" mode and the thermostat calls for cooling, the fan will start - then stop after approximately 2 minutes; then the fan and compressor will start together approximately 2 minutes later.

Capacitors

⚠ WARNING	
	<p>ELECTRIC SHOCK HAZARD Turn off electric power before service or installation. Extreme care must be used, if it becomes necessary to work on equipment with power applied.</p> <p>Failure to do so could result in serious injury or death.</p>

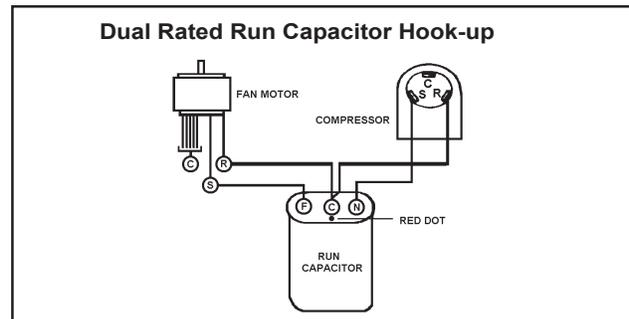


Figure 602 Dual Rated Capacitor Hook-Up

Many motor capacitors are internally fused. Shorting the terminals will blow the fuse, ruining the capacitor. A 20,000 ohm 2 watt resistor can be used to discharge capacitors safely. Remove wires from capacitor and place resistor across terminals. When checking a dual capacitor with a capacitor analyzer or ohmmeter, both sides must be tested.

Capacitor Check

The meter will show whether the capacitor is "open" or "shorted." It will tell whether the capacitor is within its micro farads rating and it will show whether the capacitor is operating at the proper power-factor percentage. The instrument will automatically discharge the capacitor when the test switch is released.

Capacitor Connections

The starting winding of a motor can be damaged by a shorted and grounded running capacitor. This damage usually can be avoided by proper connection of the running capacitor terminals.

From the supply line on a typical 230 volt circuit, a 115 volt potential exists from the "R" terminal to ground through a possible short in the capacitor. However, from the "S" or start terminal, a much higher potential, possibly as high as 400 volts, exists because of the counter EMF generated in the start winding. Therefore, the possibility of capacitor failure is much greater when the identified terminal is connected to the "S" or start terminal. The identified terminal should always be connected to the supply line, or "R" terminal, never to the "S" terminal.

When connected properly, a shorted or grounded running capacitor will result in a direct short to ground from the "R" terminal and will blow the line fuse. The motor protector will protect the main winding from excessive temperature.

TROUBLESHOOTING

Check Thermistors

1. Gain Access to Main PCB (logic) board
2. Using a multi meter ohm across applicable pins for the sensor you are checking.
3. All Sensors are 5k. Refer to thermistor chart on following for resistance and temperature deviation.
4. Replace sensor if open or if resistance values deviate by more than 10% of the listed values.

MODEL	RT SENSOR	IPT SENSOR (INDOOR COIL)	IET SENSOR
CCF05B10A	5k Ω	/	/
CCF06B10A	5k Ω	/	/
CCF08B10A	5k Ω	/	/
CCF10B10A	5k Ω	5k Ω	/
CCF12B10A	5k Ω	5k Ω	/
CCW06B10B	5k Ω	/	/
CCW08B10B	5k Ω	/	/

TROUBLESHOOTING

Check Thermistors -Resistance Table of Thermistors (5K)

Temp	Resis	Temp	Resis	Temp	Resis	Temp	Resis	Temp	Resis
-33	130100	7	34252	47	10785	57	8275	97	3119
-32	125518	8	33209	48	10499	58	8063	98	3048
-31	121114	9	32202	49	10221	59	7857	99	2980
-30	116881	10	31228	50	9952	60	7657	100	2913
-29	112811	11	30288	51	9690	61	7462	101	2848
-28	108898	12	29378	52	9437	62	7273	102	2785
-27	105131	13	28499	53	9190	63	7090	103	2723
-26	101511	14	27650	54	8952	64	6911	104	2662
-25	98029	15	26828	55	8720	65	6738	105	2604
-24	94676	16	26034	56	8494	66	6569	106	2546
-23	91453	17	25266	57	8275	67	6406	107	2491
-22	88349	18	24523	58	8063	68	6247	108	2436
-21	85362	19	23805	59	7857	69	6092	109	2383
-20	82486	20	23110	60	7657	70	5942	110	2331
-19	79719	21	22437	61	7462	71	5796	111	2281
-18	77052	22	21787	62	7273	72	5654	112	2231
-17	74486	23	21158	63	7090	73	5515	113	2183
-16	72014	24	20548	64	6911	74	5381	114	2137
-15	69633	25	19959	65	6738	75	5251	115	2091
-14	67338	26	19388	66	6569	76	5124	116	2046
-13	65127	27	18836	67	6406	77	5000	117	2003
-12	62996	28	18301	68	6247	78	4880	118	1960
-11	60943	29	17783	69	6092	79	4763	119	1919
-10	58965	30	17282	70	5942	80	4649	120	1878
-9	57055	31	16796	71	5796	81	4538	121	1839
-8	55216	32	16325	72	5654	82	4431	122	1800
-7	53442	33	15870	73	5515	83	4326	123	1763
-6	51732	34	15428	74	5381	84	4224	124	1726
-5	50082	35	15001	75	5251	85	4125	125	1690
-4	48490	36	14586	76	5124	86	4028	126	1655
-3	46955	37	14184	77	5000	87	3934	127	1621
-2	45473	38	13795	48	10499	88	3842	128	1588
-1	44044	39	13418	49	10221	89	3753	129	1555
0	42664	40	13052	50	9952	90	3666	130	1524
1	41332	41	12698	51	9690	91	3582	131	1493
2	40047	42	12354	52	9437	92	3499	132	1462
3	38805	43	12021	53	9190	93	3419	133	1433
4	37607	44	11698	54	8952	94	3341	134	1404
5	36450	45	11384	55	8720	95	3265	135	1375
6	35332	46	11080	56	8494	96	3191	136	1348

TROUBLESHOOTING

ROOM AIR CONDITIONER UNIT PERFORMANCE TEST DATA SHEET			
JOB NAME _____		TECH'S NAME _____	
DATE _____		MODEL# _____ SERIAL # _____	
CHECK THE INSTALLATION	ACCEPTABLE	NOT ACCEPTABLE	
		YES	NO
IS A CHASIS GASKET INSTALLED?		_____	_____
IS THE FRESH / EXHAUST AIR VENT OPEN?		_____	_____
IS A FRIEDRICH SLEEVE INSTALLED?	_____	_____	_____
IS A FRIEDRICH OUTDOOR GRILLE INSTALLED?	_____	_____	_____
IS MAINTENANCE BEING PERFORMED?		_____	_____
ELECTRICAL			
LINE VOLTAGE (STATIC)		_____ VOLTS	
START UP VOLTAGE		_____	VOLTS
AMPERAGE DRAW (COOL)		_____	AMPS
AMPERAGE DRAW (HEAT)		_____	AMPS
COMPRESSOR			
LOCKED ROTOR AMPS		_____	AMPS
RUNNING AMPERAGE DRAW		_____	AMPS
INDOOR CONDITIONS			
INDOOR AMBIENT TEMPERATURE		_____ F	
RELATIVE HUMIDITY (RH) INDOOR		_____	%
DISCHARGE AIR TEMPERATURE (INDOOR)(COOL)		_____	F
DISCHARGE AIR TEMPERATURE (INDOOR)(HEAT)		_____	F
RETURN AIR TEMPERATURE (INDOOR)(COOL)		_____	F
RETURN AIR TEMPERATURE (INDOOR) (HEAT)		_____	F
OUTDOOR TEMPERATURE			
OUTDOOR AMBIENT TEMPERATURE		_____ F	
RH OUTDOOR RELATIVE HUMIDITY		_____	%
DISCHARGE AIR TEMPERATURE (OUTDOOR)(COOL)	_____	F	
DISCHARGE AIR TEMPERATURE (OUTDOOR)(HEAT)	_____	F	
INTAKE AIR TEMPERATURE (OUTDOOR)(COOL)		_____ F	
INTAKE AIR TEMPERATURE (OUTDOOR)(HEAT)		_____ F	
COOLING OR HEATING AREA			
AREA W _____ * L _____ = FEET SQUARED			
FOR A GENERAL GUIDE REFER TO SIZING GUIDE TO THE RIGHT			
FOR EXACT LOAD CALCULATIONS CONSULT MANUAL J OR M.			

Figure 701 (Test Data Sheet)

COOLING SIZING GUIDE

AREA TO BE CONDITIONED IN SQ. FT.	APPROXIMATE COOLING BTU REQUIRED
100 - 150	5000
150 - 250	6000
250 - 300	7000
300 - 350	8000
350 - 400	9000
400 - 450	10000
450 - 550	12000
550 - 700	14000
700 - 1000	18000
1000 - 1200	21000
1200 - 1400	23000
1400 - 1500	24000
1500 - 2000	30000
2000 - 2500	34000

Guide based on normal room insulation, average number of sun exposed windows and two person occupancy.

1. If heavily shaded, reduce cooling Btus required by 10%
2. If very sunny, increase cooling Btus required by 10%
3. Add 500 Btus per person over 2 people
4. Add 4,000 Btus if the area is a kitchen

Figure 702 (Cooling Sizing Guide)

TROUBLESHOOTING

Product Does Not Operate At All

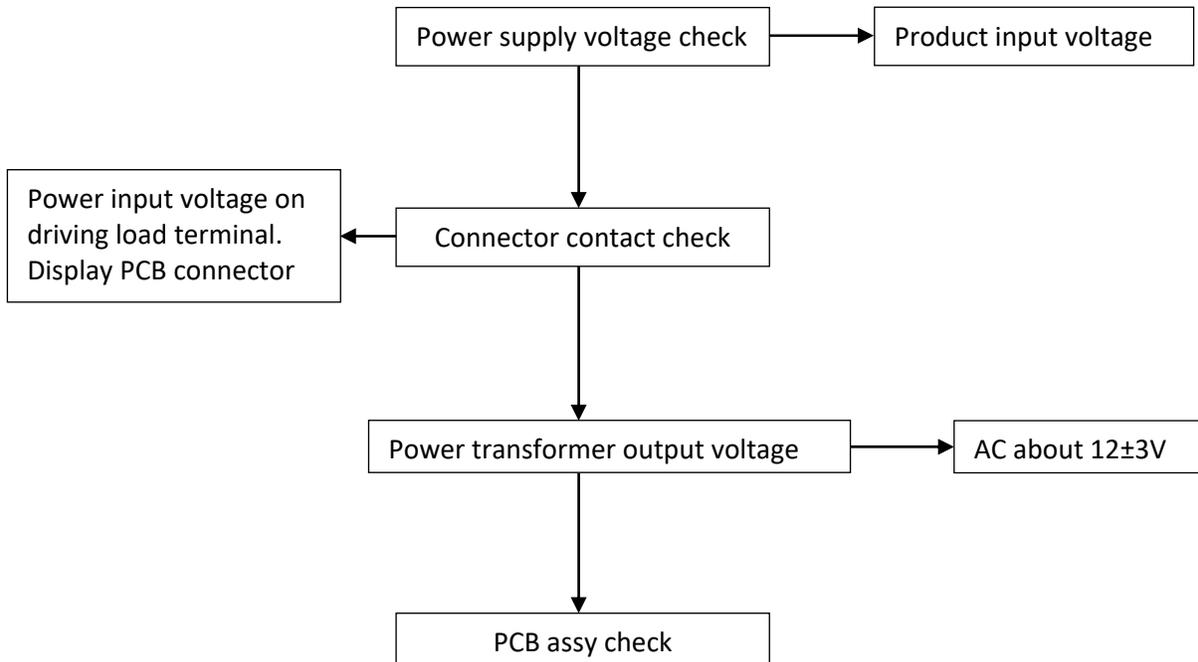


Figure 703

TROUBLESHOOTING

Indoor Fan Does Not Operate At All

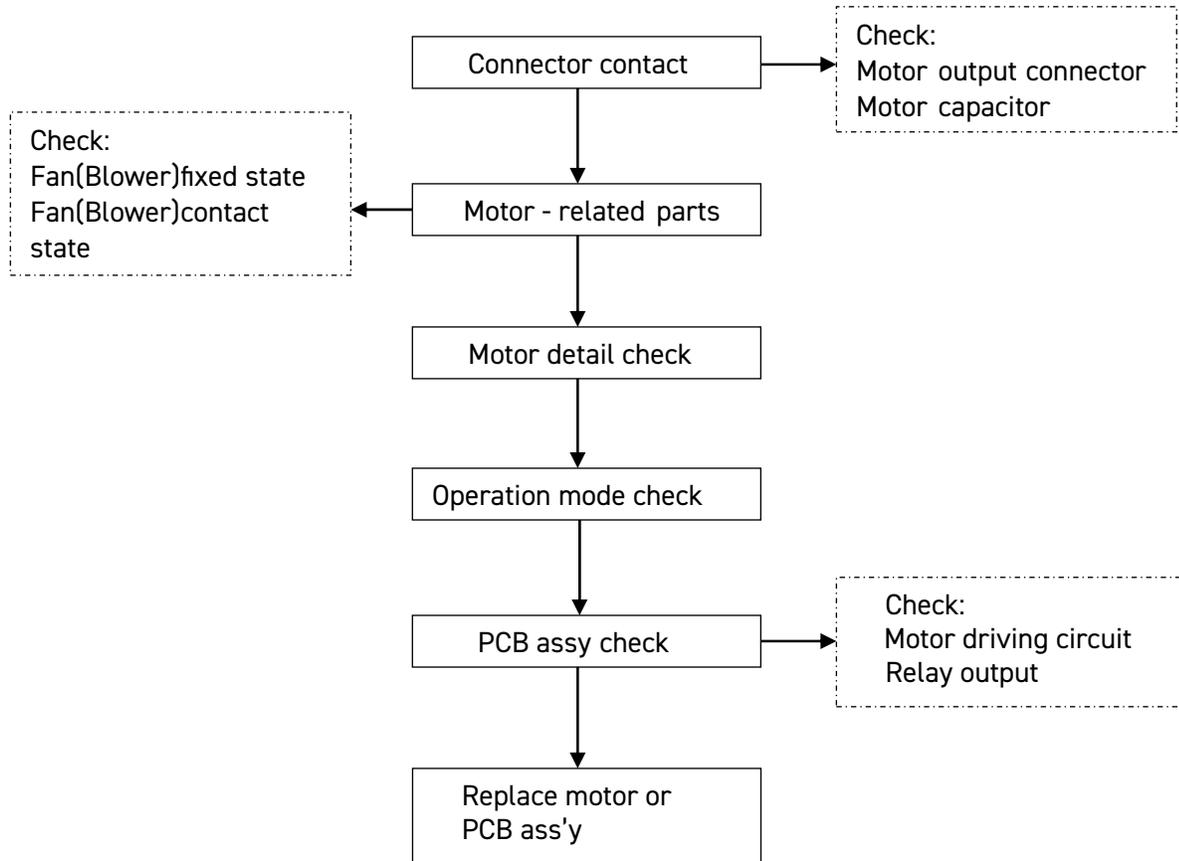


Figure 704

TROUBLESHOOTING

Compressor Or Outdoor Fan Does Not Operate At All

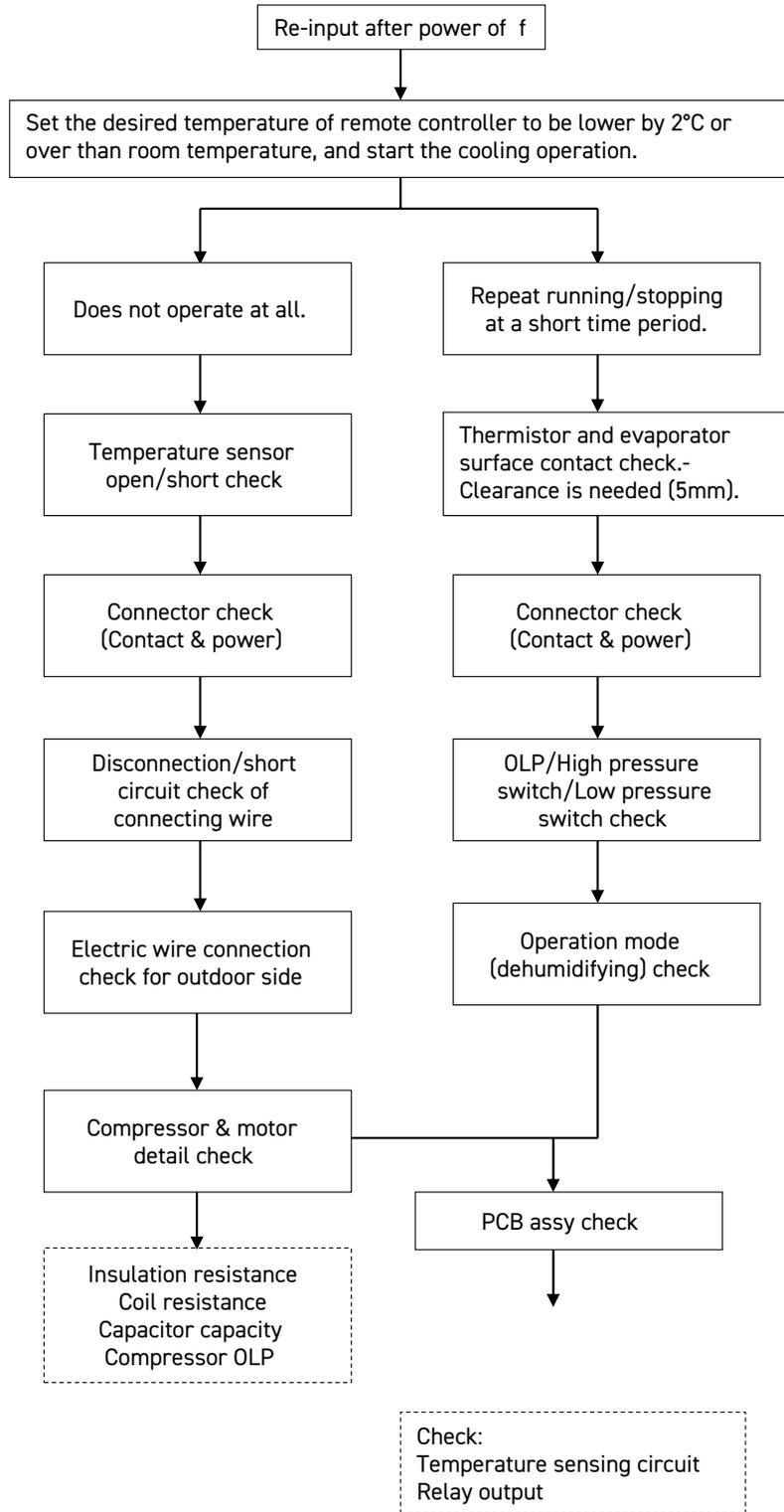


Figure 705

TROUBLESHOOTING

Display E1 or E2

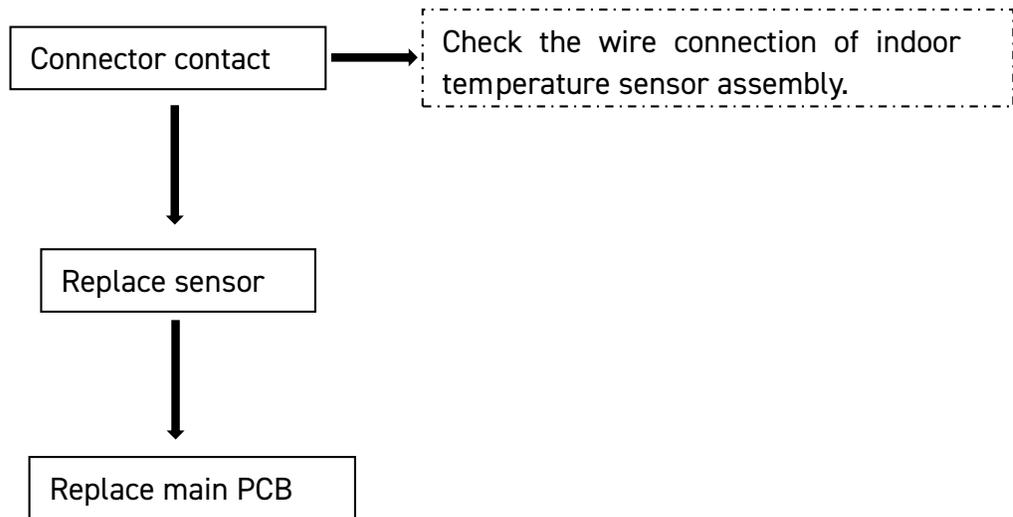


Figure 706

WIRING DIAGRAMS

CCF05B10A, CCF06B10A, CCF08B10A, CCF10A10B, CCF12B10A

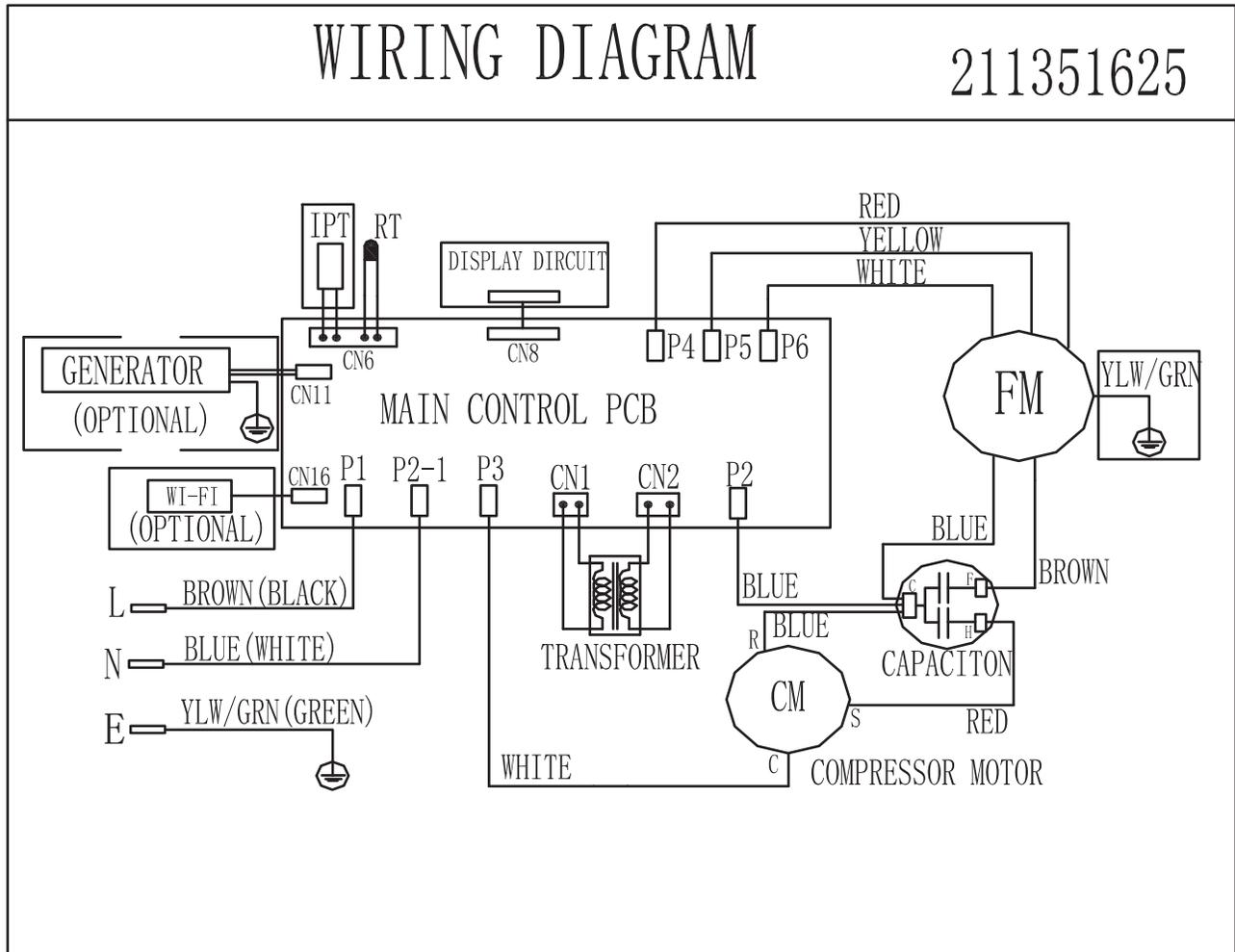


Figure 801

WIRING DIAGRAMS

CCW06B10B

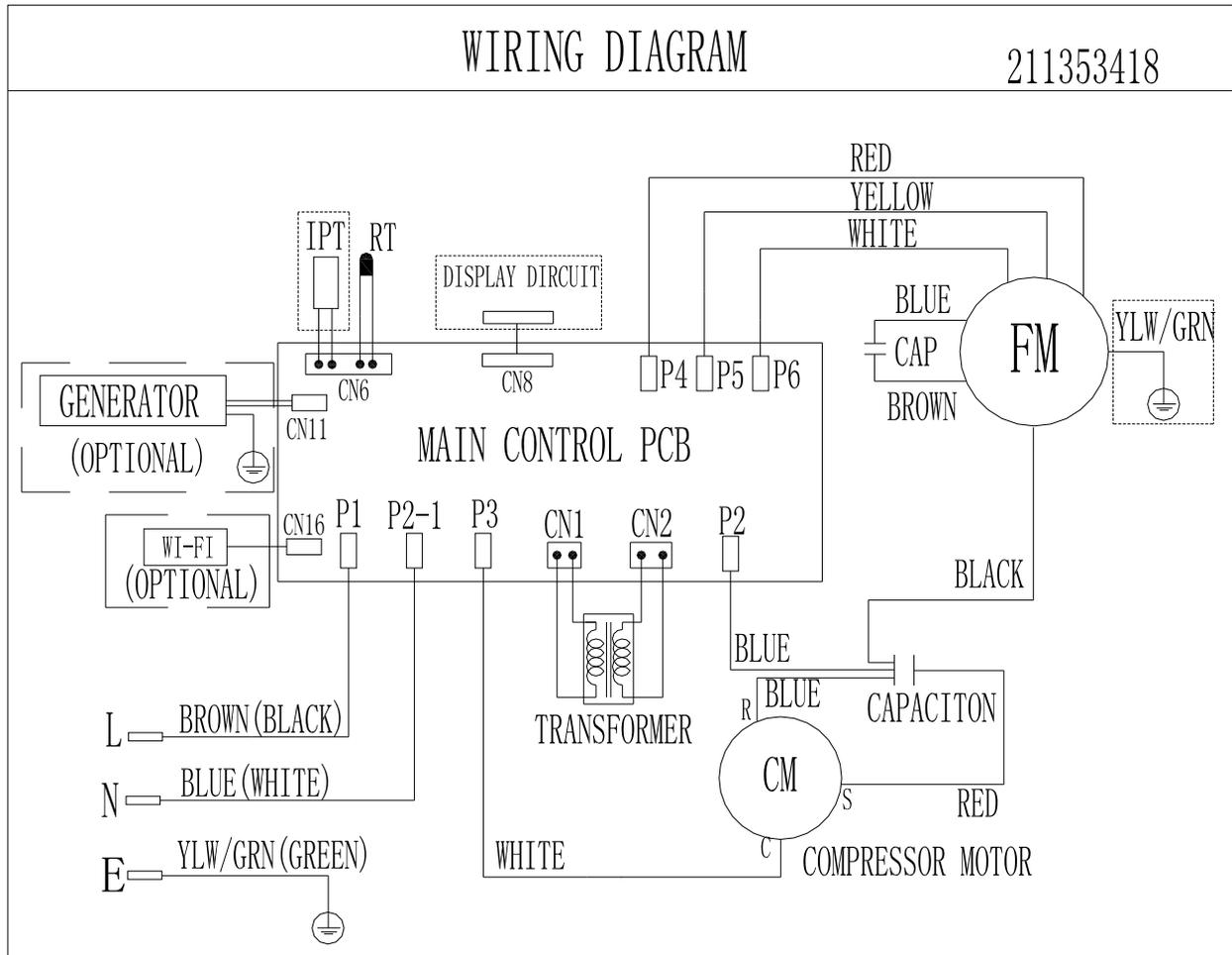


Figure 802

WIRING DIAGRAMS

CCW08B10B

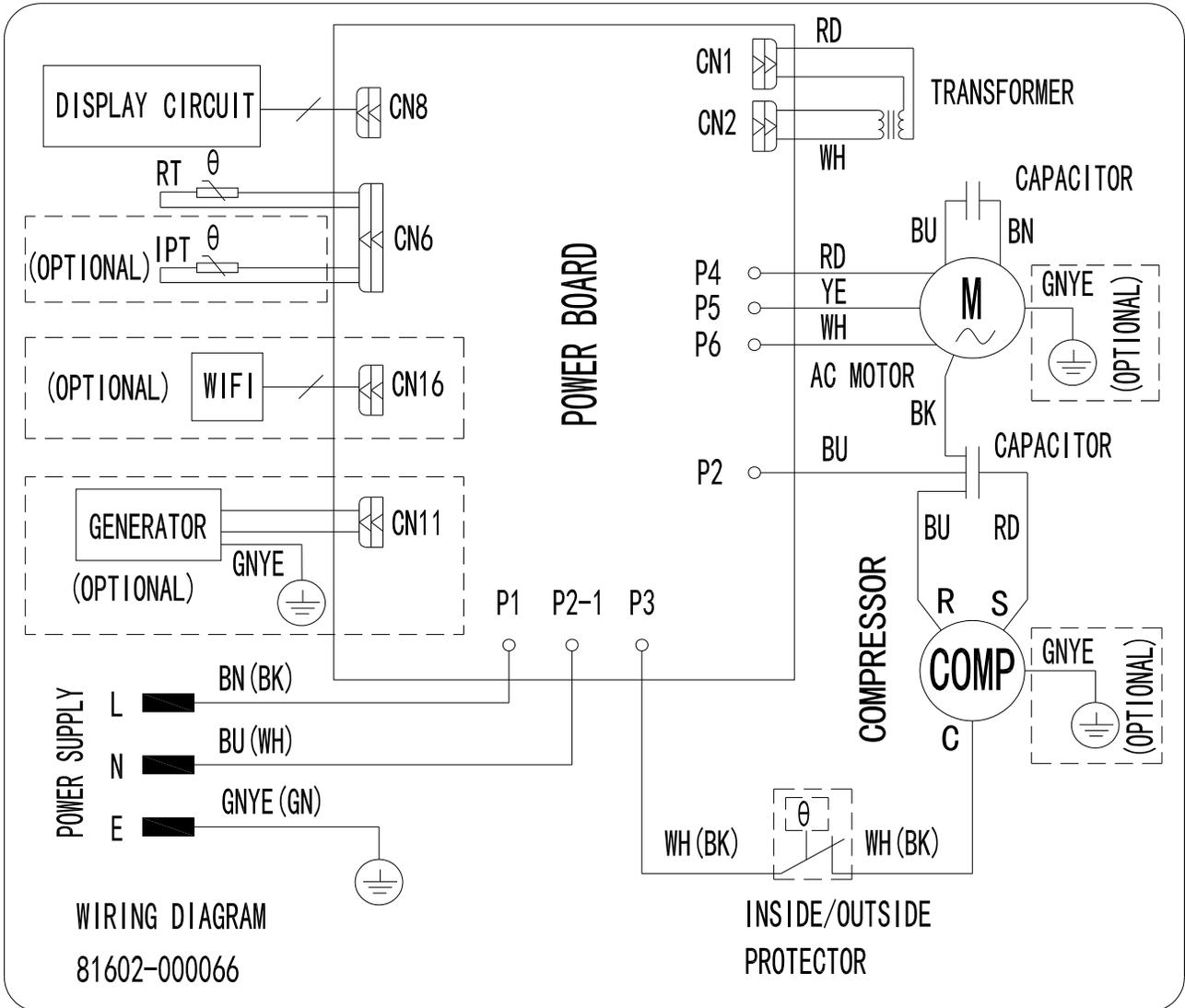


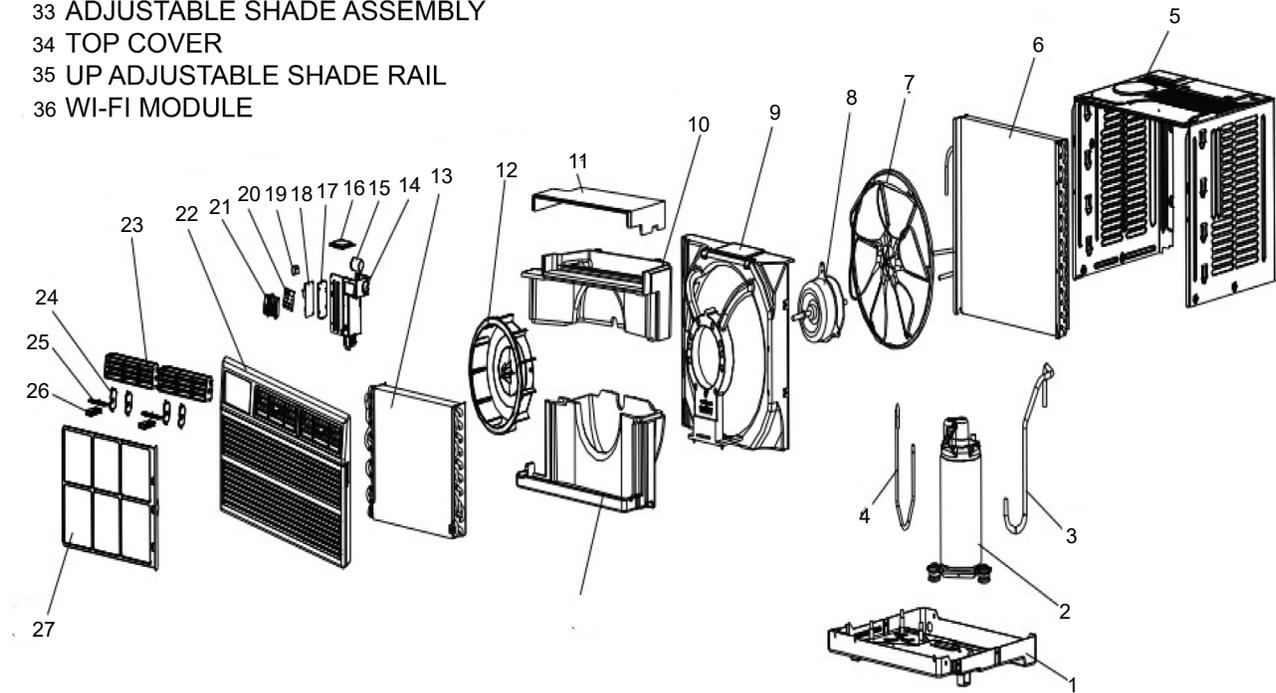
Figure 803

PARTS CATALOG

CCW06B10B CCW08B10B

Figure 901

- NON-ILLUSTRATED PARTS
29 POWER SUPPLY CORD
30 REMOTE CONTROL
31 SENSOR
33 ADJUSTABLE SHADE ASSEMBLY
34 TOP COVER
35 UP ADJUSTABLE SHADE RAIL
36 WI-FI MODULE



PARTS CATALOG

Figure 901

CCW06B10B CCW08B10B

ITEM	PART NUMBER	PART DESCRIPTION	USED ON MODEL	QTY
1	68000464	41502-000051 - Base	ALL	1
5	68000468	41508-000039 - Cabinet	ALL	1
7	68000470	41503-000027 - Propeller Fan	ALL	1
8	68000491	22001-000502 - Fan Motor	ALL	1
10	68000472	41504-000207 - Vortex Shell	ALL	1
12	68000473	42004-000142 - Centrifugal Fan	ALL	1
14	68000475	41505-000282 - Electrical Box	ALL	1
15	68000009	10303-100042 - Compressor Capacitor	CCW06B10B	1
15	68000025	10303-100046 - Compressor Capacitor	CCW08B10B	1
16	68000477	41505-000280 - Electrical Box Cover	ALL	1
17	68000065	41214-000877 - Main pcb supporter	ALL	1
18	68000462	31502-000041 - Main pcb	ALL	1
19	68000040	10502-100032 - Transformer	ALL	1
20	68000315	31502-000027 - Display pcb	ALL	1
21	68000120	41507-000032 - Control Box panel	ALL	1
22	68000479	41507-000019 - Front Panel	ALL	1
23	68000480	41507-000115 - Leading Flow Circle	ALL	1
24	68000481	41507-000091 - Louver	ALL	1
25	68000482	41507-000070 - Louver Connector	ALL	1
26	68000167	41507-000106 - swing rod	ALL	1
27	68000014	41507-000135 - Air Filter	ALL	1
29	68000020	22007-000068 - Power Supply Cord	ALL	1
30	68000036	22013-000936 - Remote Controller	ALL	1
31	68000463	10104-100060 - Sensor	ALL	1
33	68000484	41509-000063 - Adjustable shade assembly	ALL	1
34	68000487	A1502-000018 - Top cover	ALL	1
35	68000022	41509-000021 - Up Adjustable shade rail	ALL	1
36	68000039	32001-000143 - wifi module	ALL	1

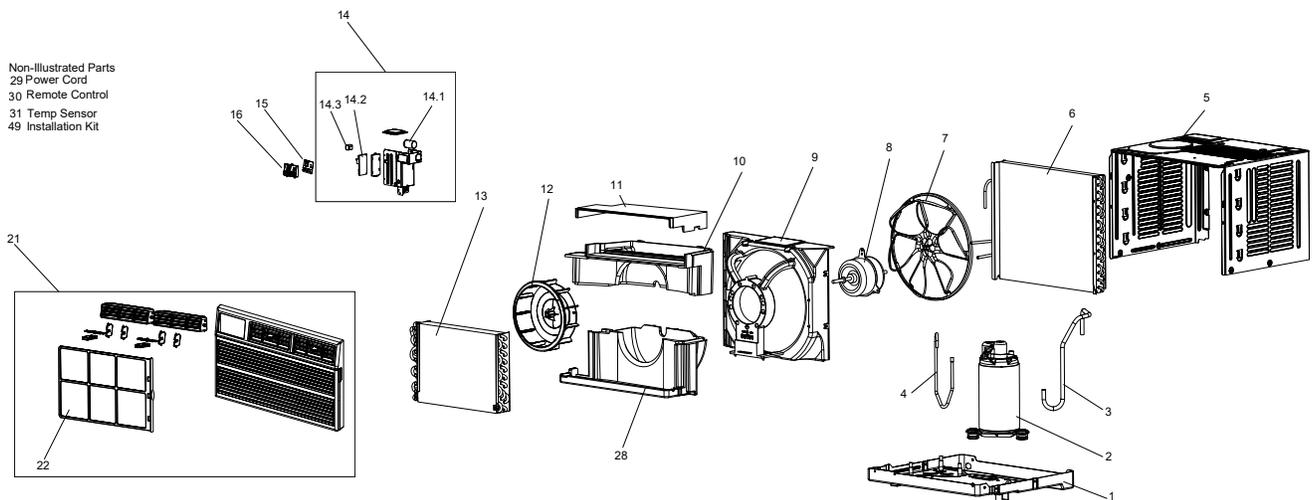
-ITEMS ARE NON- ILLUSTRATED

*ITEMS ARE NON-STOCKED, WILL NORMALLY REQUIRE 2-3 WEEKS LEAD TIME

PARTS CATALOG

CCF05B10A CCF06B10A CCF08B10A

Figure 902



PARTS CATALOG

Figure 902

CCF05B10A CCF06B10A CCF08B10A

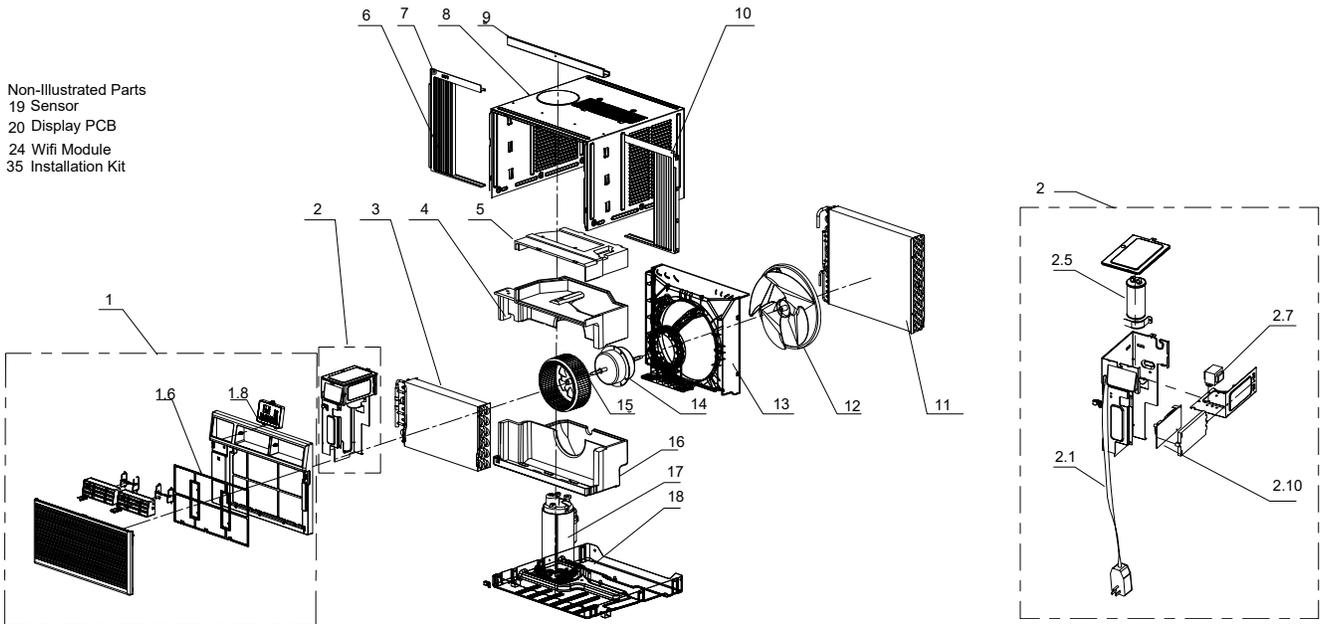
ITEM	PART NUMBER	PART DESCRIPTION	USED ON MODEL	QTY
1	68000499	Base	ALL	1
5	68000012	Cabinet	ALL	1
7	68000018	Propeller Fan	ALL	1
8	68000011	Fan Motor	ALL	1
8	68000494	Fan Motor	ALL	1
9	68000053	Back Partition Plate	ALL	1
10	68000505	Middle Vortex Shell	ALL	1
11	68000503	Up Vortex Shell	ALL	1
12	68000473	Centrifugal Fan	CCF05B10A	1
12	68000010	Centrifugal Fan	CCF06B10A	1
12	68000016	Centrifugal Fan	CCF08B10A	1
14	68000576	Electrical Box Assy	ALL	1
14.1	68000009	Compressor Capacitor	ALL	1
14.2	68000462	Main Pcb	ALL	1
14.3	68000040	Transformer	ALL	1
15	68000315	Display Pcb	ALL	1
16	68000120	Control Box Panel	ALL	1
21	68000575	Front Panel Assy	ALL	1
27	68000014	Air Filter	ALL	1
28	68000504	Down Vortex Shell	ALL	1
29	68000020	Power Supply Cord	ALL	1
30	68000495	Remote Controoller	ALL	1
31	68000463	Sensor	ALL	1
49	68000577	Installation Kit	ALL	1
-ITEMS ARE NON- ILLUSTRATED				
*ITEMS ARE NON-STOCKED, WILL NORMALLY REQUIRE 2-3 WEEKS LEAD TIME				

PARTS CATALOG

CCF10B10A CCF12B10A

Figure 903

Non-Illustrated Parts
19 Sensor
20 Display PCB
24 Wifi Module
35 Installation Kit



PARTS CATALOG

Figure 903

CCF10B10A CCF12B10A

ITEM	PART NUMBER	PART DESCRIPTION	USED ON MODEL	QTY
1	68000160	Front Panel Assembly	ALL	1
1.6	68000027	Air Filter	ALL	1
2	68000164	Electrical Box Assembly	ALL	1
2.1	68000496	Main Pcb	ALL	1
2.1	68000035	Power Supply Cord	ALL	1
2.5	68000025	Capacitor	ALL	1
2.7	68000040	Transformer	ALL	1
4	68000502	Middle Vortex Shell	ALL	1
5	68000512	Up Vortex Shell	ALL	1
8	68000176	Cabinet	ALL	1
12	68000032	Propeller Fan	ALL	1
13	68000506	Back Surround Plate	CCF10B10A	1
13	68000180	Back Surround Plate	CCF12B10A	1
14	68000033	Fan Motor	ALL	1
15	68000034	Centrifugal Fan	ALL	1
16	68000501	Down Vortex Shell	ALL	1
18	68000500	Base	ALL	1
19	68000031	Sensor	ALL	1
20	68000029	Display Pcb	ALL	1
24	68000039	Wifi	ALL	1
35	68000578	Installation Kit	ALL	1

-ITEMS ARE NON- ILLUSTRATED

*ITEMS ARE NON-STOCKED, WILL NORMALLY REQUIRE 2-3 WEEKS LEAD TIME



Friedrich Air Conditioning Company
10001 Reunion Place, Suite 500
San Antonio, TX 78216
800-541-6645
www.friedrich.com

ROOM AIR CONDITIONERS LIMITED WARRANTY

FIRST YEAR

ANY PART: If any part supplied by FRIEDRICH fails because of a defect in workmanship or material within twelve months from date of original purchase, FRIEDRICH will repair the product at no charge, provided room air conditioner is reasonably accessible for service. Any additional labor cost for removing inaccessible units and/or charges for mileage related to travel by a Service Agency that exceeds 25 miles one way will be the responsibility of the owner. This remedy is expressly agreed to be the exclusive remedy within twelve months from the date of the original purchase.

SECOND THROUGH FIFTH YEAR

SEALED REFRIGERANT SYSTEM: If the Sealed Refrigeration System (defined for this purpose as the compressor, condenser coil, evaporator coil, reversing valve, check valve, capillary, filter drier, and all interconnecting tubing) supplied by FRIEDRICH in your Room Air Conditioner fails because of a defect in workmanship or material within sixty months from date of purchase, FRIEDRICH will pay a labor allowance of \$100 and parts necessary to repair the Sealed Refrigeration System; PROVIDED FRIEDRICH will not pay any additional labor charges over the prescribed labor allowance including the cost of diagnosis of the problem, removal, freight charges, and transportation of the air conditioner to and from the Service Agency, and the reinstallation charges associated with repair of the Sealed Refrigeration System. All such cost will be the sole responsibility of the owner. This remedy is expressly agreed to be the exclusive remedy within sixty months from the date of the original purchase.

APPLICABILITY AND LIMITATIONS: This warranty is applicable only to units retained within the Fifty States of the U.S.A., District of Columbia, and Canada. This warranty is not applicable to:

1. Air filters, fuses, batteries and the front grille removal tool.
2. Products on which the model and serial numbers have been removed.
3. Products which have defects or damage which results from improper installation, wiring, electrical current characteristics, or maintenance; or caused by accident, misuse or abuse, fire, flood, alterations and/or misapplication of the product and/or units installed in a corrosive atmosphere, default or delay in performance caused by war, government restrictions or restraints, strikes, material shortages beyond the control of FRIEDRICH, or acts of God.

OBTAINING WARRANTY PERFORMANCE: Service will be provided by the FRIEDRICH Authorized Dealer or Service Organization in your area. They are listed in the Yellow Pages. If assistance is required in obtaining warranty performance, write to: Room Air Conditioner Service Manager (the Friedrich address is at the top of this warranty) or email tac@friedrich.com.

LIMITATIONS: THIS WARRANTY IS GIVEN IN LIEU OF ALL OTHER WARRANTIES. Anything in the warranty notwithstanding, ANY IMPLIED WARRANTIES OF FITNESS FOR PARTICULAR PURPOSE AND/OR MERCHANTABILITY SHALL BE LIMITED TO THE DURATION OF THIS EXPRESS WARRANTY. MANUFACTURER EXPRESSLY DISCLAIMS AND EXCLUDES ANY LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGE FOR BREACH OF ANY EXPRESSED OR IMPLIED WARRANTY.

Performance of Friedrich's Warranty obligation is limited to one of the following methods:

1. Repair of the unit
2. A refund to the customer for the prorated value of the unit based upon the remaining warranty period of the unit.
3. Providing a replacement unit of equal value

The method of fulfillment of the warranty obligation is at the sole discretion of Friedrich Air Conditioning.

NOTE: Some states do not allow limitations on how long an implied warranty lasts, or do not allow the limitation or exclusion of consequential or incidental damages, so the foregoing exclusions and limitations may not apply to you.

OTHER: This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

PROOF OF PURCHASE: Owner must provide proof of purchase in order to receive any warranty related services.

All service calls for explaining the operation of this product will be the sole responsibility of the consumer.

All warranty service must be provided by an **Authorized FRIEDRICH Service Agency**, unless authorized by FRIEDRICH prior to repairs being made.

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CUSTOMER SATISFACTION and QUALITY ASSURANCE

Friedrich is a conscientious manufacturer, concerned about customer satisfaction, product quality, and controlling warranty costs. As an Authorized Service Provider you play a vital role in these areas. By adhering to the policies and procedures you provide us with vital information on each warranty repair you complete. This information is used to identify product failure trends, initiate corrective action, and improve product quality, thereby further reducing warranty expenses while increasing customer satisfaction levels.

FRIEDRICH AUTHORIZED PARTS DEPOTS

AAA Refrigeration Service

1322 24th Street
Suite B
Kenner, Louisiana 70062

504-464-7444
877-813-7444

The Gabbert Company

6868 Ardmore
Houston, Texas 77054

713-747-4110
800-458-4110

Johnstone Supply of Woodside

27-01 Brooklyn Queens Expway
Woodside, New York 11377

718-545-5464
800-431-1143

Reeve Air Conditioning, Inc.

2501 South Park Road
Hallandale, Florida 33009

954-962-0252
800-962-3383



FRIEDRICH

TECHNICAL SUPPORT CONTACT INFORMATION

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