PORTABLE COOLING SYSTEMS

KWIB
Operation Manual

ICEBERG SERIES

| KWIB 1411-1811 | KWIB 2411-2421-3021 | KWIB 4221 | KWIB 6021-6023-6043 | KWIB 12023-12043 |

KwiKool KWIB Iceberg Series Operation Manual

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Before installing and using your KwiKool Portable Cooling System, read this manual carefully for instructions and proper usage and all safeguards.
This manual should be retained for future reference.

I / Unit Components
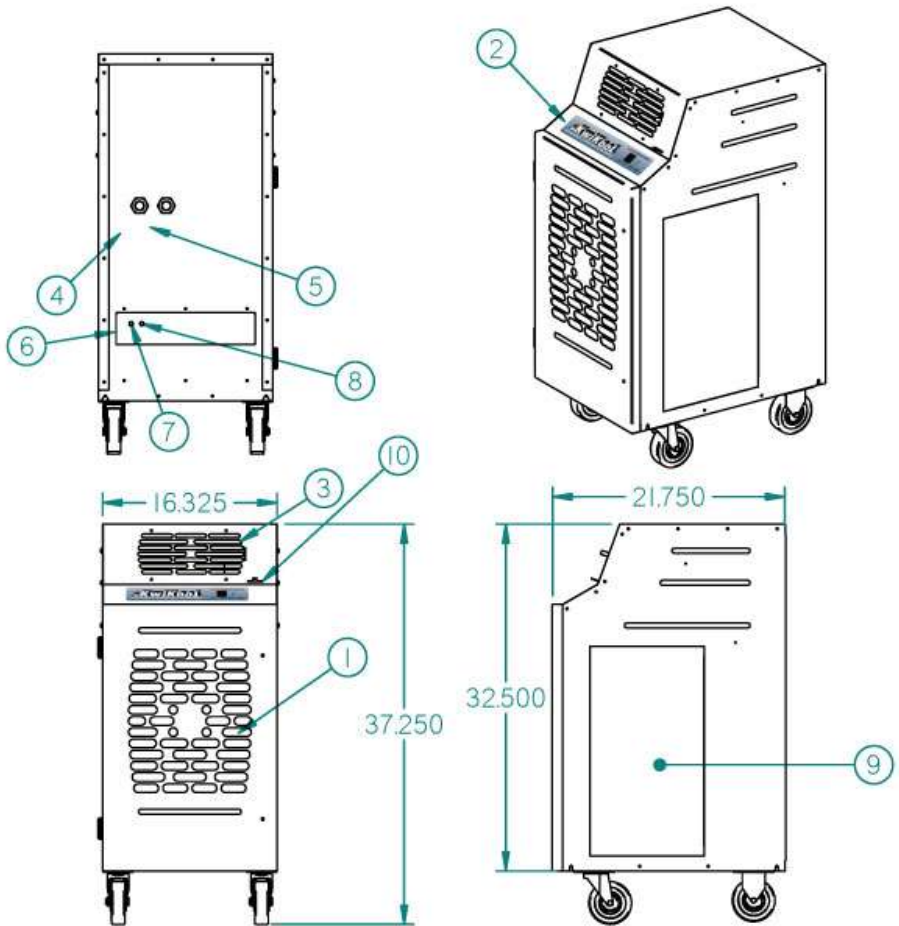
LEGEND

1	Cold Air Return	6	Power Cord
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3	Cold Air Supply	8	Condensate Alarm Jack
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II / Assembly and Installation

A. Air Chutes (If equipped or as an optional accessory) - Install supply air flanges to the front of your KwiKool unit above the control panel. (See instructions in the air chute kit for specific procedures).

**Air Chutes** - Conditioned air supply, if equipped or as an optional accessory.

B. Condensate Tank - KwiKool systems come standard with an external 5-gallon condensate tank. The external condensate tank is equipped with a float switch that shuts your KwiKool down and alerts operators with an alarm and display **CF** ("Condensate Full") when the condensate tank is full. This prevents accidental water overflow on the floor. The alarm will clear automatically upon emptying the 5 gallon tank and reconnecting it. If connecting to a permanent drain, do **NOT** connect or use the equipped tank. To use the external condensate tank, remove the factory installed condensate float switch bypass plug on your KwiKool unit and install the male connector jack supplied on the condensate tank. Next connect the factory supplied ¼" ID condensate tubing to the ¼" OD barbed condensate water outlet on the back of your KwiKool and connect the discharge end of the tube to the ¼" barbed connector on the condensate tank. The condensate float jack must be inserted into the female condensate jack to operate your KwiKool. **CF** displays if the jack is not connected or the bypass plug is not inserted properly.

Condensate Tank - 5-gal Condensate Tank with float assembly for automatic cutoff.

Condensate Water Outlet - 1/4" OD barbed fitting

Cord Compartment
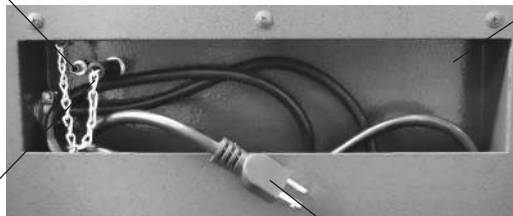
Condensate Float Switch Jack - Connects to the condensate tank or is bypassed by the factory installed male bypass switch plug pictured

Power cord with plug - available on 1.1-ton thru 2.5-ton models

C. **Water Connection for Water-Cooled (KWIB) Models** - KWIBXX KwiKool systems do not require a ceiling kit or duct to operate in your conditioned space, a chilled water loop or cooling tower supplies and returns water to cool the condenser on your KwiKool. Contact a building engineer or HVAC contractor to verify the viability of connecting to a re-circulation system. Tap water is generally no used for operating your KWIB due to the potential large volume of water needed. A constant flow of water is needed between 35 psi and 150 psi, not to exceed 85 degrees F and above 40 degrees F. Connect supply water to the 1/2" or 3/4" NPT female connector labeled Water Inlet on the back of your KWIB, and connect the return water line to the 1/2" or 3/4", NPT female connector labeled Water Outlet. KWIB120 systems have 2 water inlets and 2 water outlets. Use a back up wrench on the female connectors supplied on your KWIB when connecting the water lines to prevent the internal copper tube from twisting, apply Telfon tape to the threads of the male connectors. KWIB must have a supply of water to operate or the system will shut down, sound an alarm, and display the HP alarm on the control panel. This will protect the mechanical system from damage. The manual reset is located in the filter compartment, labeled "HP reset", Push in to reset after the water supply is restored.

**Note: if during operation of your unit you notice a loud clanging or hammering should, this is known as water hammer and has nothing to do with the unit itself but the location of the water source. Installation or a water hammer suppressor such as a Watts or Sioux Chief water hammer arrester will solve this issue.

Visit www.KwiKool.com for more information and a complete set up guide.

D. **Power Connection -** Verify that the source power, phase and breaker size is compatible with your KwiKool serial plate information and that the electrical circuit is dedicated only for the use of your KwiKool Unit. If you aren't sure about your power, contact a licensed electrician. KwiKool systems are factory equipped with 8 feet of power cable sized to meet the power requirement of your system. Extension power cable is allowed but cannot exceed 25' and must be rated to operate your KwiKool. KwiKool units that come supplied with a factory installed plug require the exact receptacle to match the plug and exact circuit size and power. Cutting the power plug on your KwiKool unit will void its warranty. All other KwiKool systems over 3-tons are not equipped with a male plug and must be hard wired by a qualified personal.

**Note: 208/230 volt systems require voltage to be selected to the proper voltage before operating your unit. This is controlled by a rocker switch located on the top of the control box in the service door. The factory default selection is 208 volts for KwiKool systems purchased after June 2016 and 230 volts for equipment purchased before this date. Always set the voltage incoming to the correct setting to avoid potential operational issues. Read the Operational Safeguard section before applying electrical power.

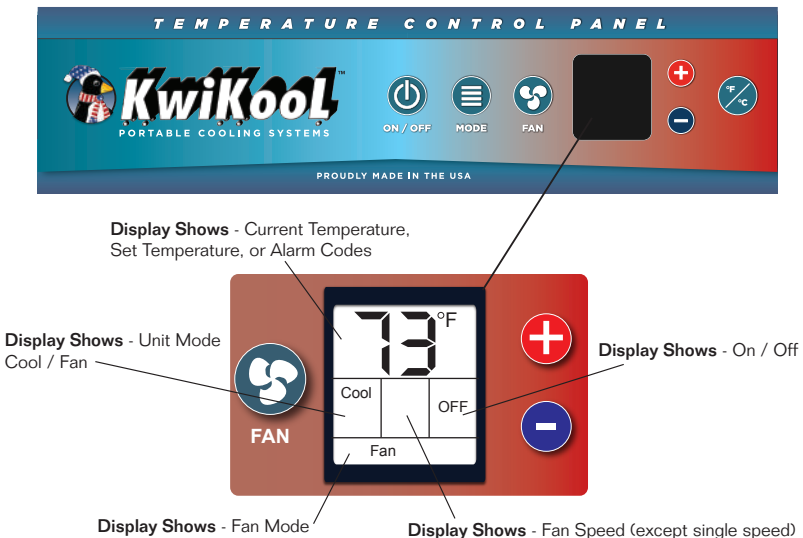# III / Operational Safeguards

Read the following safeguards carefully before installing your KwiKool:

A. Do not operate or install your KwiKool unit in a potentially explosive, combustible, or corrosive gas atmosphere.

B. Keep your KwiKool system away from flammable materials and open flame.

C. To avoid electrical shock keep your KwiKool system away from direct contacts with water and any liquids and do not touch your system with wet hands.

D. To insure your KwiKool system is stable, the floor on which the system is to be place should be level, free of vibration and strong enough to support the weight of your KwiKool model.

E. Do not move the system while it is operating. Before moving the system, first turn system to OFF then unplug the system from the power source. Then unlock casters.

F. Do not tilt or overturn your unit, since this could damage the compressor.

G. Do not place objects on top of your unit.

H. Do not insert your hand or any other object into the cold air supply chutes.

I. Do not operate your KwiKool system with its service doors open.

J. If your KwiKool system makes abnormal noises or vibrations, call KwiKool at 1-800-594-5665.

IV / System Operation

A. **Apply Electrical Power -** Once power is engaged by plugging in your system and/or switching the breaker to the on position, your KwiKool display will come alive and show the current room temperature. The unit is set to OFF and the fan is set to the default position. A 2 minute time delay starts, indicated by a flashing F on the display. If you are not seeing anything on the display, refer to the Troubleshooting Guide section of this manual.

B. **Control Panel -** The control panel display shows the current operational status of the unit.

TEMPERATURE CONTROL PANEL

KwiKool
PORTABLE COOLING SYSTEMS
ON / OFF   MODE   FAN
PROUDLY MADE IN THE USA

Display Shows - Current Temperature, Set Temperature, or Alarm Codes

Display Shows - Unit Mode Cool / Fan

Display Shows - On / Off

73°F
Cool   OFF
FAN
Fan

Display Shows - Fan Mode

Display Shows - Fan Speed (except single speed)

1. **ON/OFF Button -** Pressing this button on your control panel engages or shuts down your KwiKool system. All settings selected are stored in the microprocessor board even if the power is lost including the ON/OFF selection. Refer to the Troubleshooting Guide section of this manual if your KwiKool is alerting an alarm after selecting ON.

2. **MODE Button -** Depressing the MODE button selects your choice of operations. Cool, for cooling with compressor operation. "Cool" will flash when the compressor is running. "Cool" will not flash when the room temperature is equal to or lower than the set temperature or the system is timing out. Fan, for air circulation without compressor operation.

3. **F/C -** Selects the way that room temperature and set point are displayed on the control panel. Choices are Fahrenheit or Celsius. F is the factory default. This indicator will flash when the system is in "time out" to prevent compressor short cycling.

4. **Fan -** Pressing the fan button has different operations depending on the model.
   a. **Single Speed Models -** KWIB 2411, KWIB6023, KWIB6043, **KWIB12023, **KWIB12043. On the single speed models, pressing the fan key cycles the supply air fan between auto fan and fan on. When the system is in auto fan, the supply air fan only operates when the compressor is running. When the fan is set to on, the fan runs continuously as long as the unit is in the ON position. The fan speed window will be blank on these models.

   b. **Three Speed Models –** (All other models **NOT** listed above.) The supply air fan control button has several functions. First pressing the fan key will cycle through the fan speeds. Each press cycles from low, med, high, and multispeed. Multispeed will display all three speeds and flash only the speed currently in use. The fan speed is automatically adjusted based on demand. The second function is to change from auto fan to fan (constant fan). To change this function, press and hold the fan key until the indicator changes from fan (constant fan) to auto fan. When in FAN MODE, auto fan is not available. If the unit was set to auto fan before changing the mode to fan, auto fan will return when the unit is set back to COOL. Factory default is fan (constant fan) and is the best choice for electronic equipment.

   c. ****KWIB12023 and KWIB12043 -** These models are 2 stage systems and have a fan speed for each stage. This feature is **not** user settable. This system always starts in first stage fan speed (low) in COOL or FAN MODE, second stage fan speed (high) only operates in COOL MODE when the second stage compressor is running.

5. **Up (+) and Down (-) Arrow Buttons -** Raises or lowers the desired set temperature. When changing the set point, pressing the + or – key, the word SET will appear on the display and the current set point flashes ON and OFF. The value of the set point is changed 1 degree each time the + or – is pressed. The adjusted set point flashes on and off 12 times after the last change and then returns to display the room temperature.

NOTES:

a. **Lowering or raising the set point will not change the temperature of the supply air.** For best results always adjust the set point to a temperature your KwiKool can cycle on and off at to avoid operational issues such as freezing or rapid discharge fan cycling, KwiKool systems are designed to maintain the set point when sized properly and constant operation without achieving the set point may shorten the expected operational life of your system.

b. The lowest set point temperature available for your KwiKool is 60 degrees F, and the highest setting is 95 degrees F. The control will not allow adjustments beyond these ranges.

C. **System Operation -**

1. **Turn On Your KwiKool System -** Pressing the ON/OFF button once on your control panel will put your unit in the ON position and "ON" will be displayed on the right side of your display as well as the previously chosen mode.

2. **COOL -** If the unit was previously set to the cooling mode (cool) then "cool" will be displayed. If the compressor is running, the "cool" on the display will be flashing. If your unit has been sitting for over 2 minutes, this should happen immediately upon turning the unit on, unless your set point is lower than the current room temperature. In this case your unit is ready to automatically turn on once the temperature rises above the set point. If the unit was recently turned off or the unit turned itself off because it reached the set point, the compressor will not turn on until the system waits for approximately 2 minutes. This prevents the compressor from being damaged do to a condition called short cycling. The indicator that the unit is in the "time out" condition is that the F (or C) in the display will be flashing. When the compressor starts, the F will stop flashing and the "COOL" will begin flashing. ****Note:** the condenser water supply will not start to flow immediately but is controlled by head pressure. If the display flashes 99, this indicates the ambient temperature is 99 degrees F or higher. This is normal and will stop flashing when the ambient temperature falls below 99 degrees F.

3. **FAN -** If the unit was previously set to the fan mode then "FAN" will be displayed and the fan will start to run.

V / Built in Safeguards

KwiKool is proud to provide its customers with high quality features and safety devices that are not found in most other brands.

A. **Time Delay -** Protects your KwiKool from potential damage by delaying the compressor from starting before the pressures in the mechanical system equalize. This always activates when your KwiKool cycles off, is turned off, power is lost and then restored or the operational mode is changed. Display flashes C or F if the time delay is activated.

B. **Condenser Water Control Valve -** Part of your KwiKool limited freeze protection and works by regulating the discharge water flow to keep the refrigerant pressures at the optimum range.

C. **High-Pressure Switch and Alarm -** Protects your Iceberg Series unit from potential damage to the mechanical system by shutting down, sounding an audible alarm and displaying a fault code (**HP**) when the system pressure exceeds safe operating conditions. The high pressure switch is a manual reset switch and must be reset after the switch is activated and the condition causing the trip is corrected.

D. **Low Pressure Switch and Alarm -** Protects your KwiKool from potential damage to the mechanical system by shutting down the system, sounding an audible alarm and displaying a fault code (**LP**) when the low side pressure is too low. This is normally caused by low refrigerant charge. This switch is an automatic reset.

E. **Automatic Restart -** In the event of a power loss your KwiKool Iceberg resumes operation when the power is restored. All operational functions are preserved in the memory of the Microprocessor Board including the ON/OFF selection.

F. **Condensate Pump & High Level Alarm -** All KWIB Iceberg models are factory equipped with an internal high lift condensate pump. KwiKool condensate pumps are able to pump the condensation either to the factory supplied condensate bottle, or to a drain or other location as required by the application. The internal pump is rated at 20 foot of head pressure. This means it can pump water to a maximum of 20 feet vertically. Each pump is equipped with an overflow safety cut-off that automatically shuts your Iceberg unit down, sounds an audible alarm and displays a fault code (**CP**). This prevents accidental flooding of the conditioned space.

G. **Condensate Tank & High Level Alarm -** All KWIB Iceberg models come standard with an external condensate tank. The tank is equipped with an overflow safety cut-off. When the tank is full, the safety will automatically shut down your Iceberg unit, sound an audible alarm and display a fault code (**CF**). This prevents accidental flooding of the conditioned space. If you are using the supplied bypass plug and not using the tank this alarm is nonfunctional.

H. **Power/Phase Monitor (Optional) -** The KwiKool Phase Monitor is available as an option on all 3 phase KwiKool models. The phase monitor samples the power supply for low or high voltage, out of phase and loss of phase. If any of these power conditions arise, the Phase Monitor will automatically shut down your Iceberg unit, sound an audible alarm and display a fault code (**A1**). This alarm will reset automatically when the power is restored to normal.

I. **Service Ports -** Located in the filter access compartment in the front of your KwiKool below the control panel. This gives service personal a connection point for service gauges to monitor the operating pressures of your Icebergs refrigeration system.

J. **Sight Glass/Moisture Indicator -** Located in the service access compartment. This feature allows operators and service personal to view the condition of the refrigerant returning to the evaporator coil. Used as a diagnostic tool by qualified personal.

VI / Application Requirements

A. Water Supply Temperature Requirements - The supply water temperature to your KwiKool unit at the installation site should be from 40 to 85 degrees F to the condenser supply water inlet located on the back of your KWIB Iceberg. If the water supply is above 85 degrees F the high pressure switch may trip, stopping the unit's compressor. You also may notice diminished performance. The High Pressure Switch type is a manual reset. The reset switch is located in the Return Air grill filter compartment Reset the unit by pressing the button labeled HP Reset. Standard water-cooled KwiKool models are not designed to operate with supply water temperatures below 40 degrees F. Low-ambient temperature controls must be special ordered at an additional cost. Temperatures below 40 degrees F will cause low performance and/or freezing and operating in this condition can shorten the expected operational life of your system and void your warranty.

B. Water Supply Pressure - KWIB systems are equipped with a Water Control Valve, the water control valve requires water pressure of at least 35 psi and not to exceed 150 psi. Pressures below 35 psi may cause a High Pressure trip. This requires a manual reset (see paragraph above). And pressures above 150 psi can cause the control valve to fail and leak supply water in your conditioned space.

C. Capacity & Temperature Settings - Sizing of our units is based on matching capacity to a specific heat load while maintaining a 72 degree F temperature. In order to reach temperatures below 72 degrees F, the unit must have extra capacity. **Therefore, we recommend that you do not set the temperature set point below 72 degrees F, unless you have excess cooling capacity beyond your heat load, since this may cause the unit's evaporator coil to freeze up.**

D. Positioning of Unit - Do not place your KwiKool unit in direct sunlight, The unit should be positioned so that the output of the unit can be focused as close to the heat generating equipment as possible with the front grill fully exposed. Do not block the front of the unit, since this will cause a restriction in the airflow and can cause low performance and/or evaporator coil freezing.

VII / Maintenance

A. Air Filters - Your KwiKool unit comes from the factory with filters installed on the evaporator inlet to prevent dust and debris from entering the system and circulating in the conditioned space, factory installed filters are a disposable type and must be periodically checked and replaced based on the air quality of your conditioned space. **Failure to maintain the filters will cause restricted air flow and low overall unit performance.** The air filter is located on the front of your KwiKool unit below the control, release the 2 slotted fasteners on the access door to open.

B. Conditioned Air Supply Drive Belts - Your KwiKool KWIB120 models moves air over the evaporator coil to remove heat and moisture from the conditioned space by way of a motor attached to a blower wheel, this wheel turns by way of a pulley and belt system. **Inspect/adjust these belts every 60 days of operation, replace as needed.** Failure to maintain the drive belts will cause low performance, coil freezing or in extreme cases damage to the blower/motor in the event of a belt breaking. Located in the left side evaporator access door as you face the control panel. When adjusting the belts, adjust them from the base of the motor. **Do NOT adjust the sheave (pulley).**

VIII / Utilizing your KwiKool System

In contrast to conventional air conditioners, which circulate air conditioning capacity evenly to an entire floor, KwiKool systems are designed for cooling an area with a high concentration of heat load, usually from electrical or computer equipment. Understanding the capabilities of your KwiKool can help you avoid problems. For example, if you add heat-generating equipment to the room after purchasing a KwiKool system, you may be short of the necessary cooling capacity. Your KwiKool system offers an effective affordable solution for many applications. It can also provide spot cooling for workers or process cooling within a large space without the use of condenser ducting, such as a warehouse factory, or production areas. If the system is used in this manner, the cold air supply must be within 5 feet of the person or equipment being cooled, since the hot ambient air will mix with the cool air very quickly. Your KwiKool system is specifically designed to adapt to today's high tech environments such as telecommunication or computer rooms and is equipped with the necessary controls to maintain those special environments. Call your nearest KwiKool Distributor or 1-800-594-5665 for help or for questions about other applications.

IX / Fault Codes

Your KwiKool Iceberg System incorporates a self-diagnostic system that sounds an audible alarm, stops your system and displays a fault code to indicate the nature of the problem on the display panel. See the troubleshooting guide later in this manual for further information.

CF = Condensate Tank Full

CP = Condensate Pump Fault

HP = High Pressure Switch Tripped

LP = Low Pressure Switch tripped or tripping

A1 = Phase Monitor Senses power problem (if equipped)

FP = Freeze Protection

X / KIB Troubleshooting Guide

Fault	Possible Cause	Possible Solution
Unit displays **CF**, Audio alarm fails to clear on start up or while operating	External Condensate Tank is full. Condensate bypass jack or condensate float switch jack is not installed or not positioned correctly. Water level switch is engaged	Empty External Tank (if using). Make sure thank is upright and level. Unplug bypass plug or tank plug and reinstall to assure good connections. System automatically resets when fault condition is corrected.
Unit Displays **CP** and Audio alarm is sounding during start up or while operating.	Microprocessor board has detected high water level in the condensate pump.	Inspect condensate pump for over flow and proper operation, check condensate line for a clog or crimping. Resets automatically upon fault correction, or call 1-800-KwiKool if the problem persist.
Unit Displays **HP**, Audio alarm is sounding during start up or while operating.	Microprocessor board has detected high pressure. The High Pressure switch is tripped.	High pressure is normally caused by reduced condenser water flow. Check for restriction in the supply water line. Check for condenser supply water flow of at least 35 psi and temperature not exceeding 85 degrees F. (See Section VI, A & B4). High pressure is a manual reset type. To reset, open filter door and the button is located above the filter. Press button to reset (you should feel a click).
Unit Displays **LP**, Audio alarm is sounding during start up or while operating.	Microprocessor board has detected low pressure. **This alarm might cycle on and off.**	Check air filter and replace if dirty. Make sure nothing is blocking the filter inlet. Check for icing on coil. Resets automatically when fault condition is corrected. Call 1-800-KwiKool if condition continues.

Fault	Possible Cause	Possible Solution
Unit Displays **A1**, Audio alarm is sounding during start up.	Phase Monitor (if equipped) has detected incoming power issue on equipped systems.	See Troubleshooting Guide for systems equipped with a phase monitor (Appendix - Part B).
Audio alarm fails to clear on start up or while operating, unit displays **FP**.	Microprocessor has detected freezing on the evaporator coil if the system has a factory installed freeze sensor. (**Special order**)	Check for freezing on the evaporator coil and turn the system off to let it thaw out, call 1-800-KwiKool if your system is not equipped with a freeze sensor. Auto resets upon correction.
System is ON and display is showing **ON** but unit is not supplying conditioned air.	System is in time out (F or C is flashing), control is set above room temperature or control is adjusted out of operating parameters or not in the correct operational MODE.	Wait 2 minutes, review System Operations guide.
System is **ON** but the microprocessor board resets the time delay (flashing F or C) when the compressor attempts to start.	Microprocessor board detects voltage drop below operating parameters.	Confirm the integrity of your source power, check for proper wire size and length of power extension cable. Be sure the circuit is dedicated to only the operation of your KwiKool.
Power is supplied but control is blank	Low voltage circuit is not engaged	Check source power breaker and verify incoming power to connector, reset switch on low voltage transformer in KWIB120XX and KWIB6043 systems. Call 1-800-KwiKool for assistance.
System trips breaker on start up	Incoming power is incorrect, breaker is undersized or faulty, and or power cable is too long and or undersized.	Verify the circuit and power cable is within the systems specifications, consult with your electrician or call 1-800-KwiKool for guidance.
Display flashes **32 (or 0 if in Celsius setting** and unit will not turn on cooling.	No connection of temperature sensor to Microprocessor. Temperature Sensor malfunction.	Call 1-800-KwiKool for instructions.

| Fault	Possible Cause	Possible Solution
Supply air flow is limited, and or water is dripping from the front of the system	Supply or return air is blocked or restricted, and or the evaporator coil is freezing.	Verify that supply and return air are not blocked and duct work (if used) is installed to specification, remove or add duct as needed, check air filter for blockage. KWIB120xx users check supply air fan for correct rotation, refer to Appendix B.
Condensate is not pumping.	Water is below pumping level, external line restricted, line installed with too high of lift.	Reservoir fills, and then pumps. Check for line crimping or restrictions and proper line run height. Refer to the user guide Section 5: Built in Safeguards.
Evaporator coil is freezing	Low or restricted air flow. Undersized capacity, unit constantly on, unable to achieve set point. Low return air temperature out of factory specifications. Evaporator door open, mechanical system malfunction.	Direct supply return air to area of highest heat load, check for blocked air flow from the supply air, replace air filters, adjust set point to allow the unit to cycle, add another KwiKool system or larger capacity model, close evaporator compartment door, check for correct rotation and inspect drive belts on KWIB120XX supply air blower for worn condition or breaking, Install service gauges to view pressures. Call 1-800-KwiKool.
Chatter or hum is heard from the control box while the system is operating.	Incoming source power is poor or low voltage component is faulty.	Check for proper voltage selection on 208/230 volt units, remove excess or undersized power cable, and check incoming power. Call 1-800-KwiKool.
99 Flashes on display	Ambient room temperature over 99 degrees F.	Unit is working properly. Lowering of room temperature will rectify the flashing.
59 degrees or lower temperature flashes on the room temperature display and the system will not operate.	Ambient room temperature under 60 degrees F.	Limits of unit have been reached. Operating temperatures are 65 - 105 degrees F.

Appendix

A: Systems Equipped with a Standard Phase Monitor

Fault	Possible Cause	Possible Solution
Unit displays **A1** Audio alarm sounding during start up, phase monitor displays, lock out "Front Fault" red light	Phase monitor detects reverse phasing, lost phase or improper power incoming.	Exchange any line voltage wire with the other, verify incoming power. Auto reset upon correction.
Unit displays **A1**, Audio alarm is sounding during start up, phase monitor displays, lock out "Front Fault" low volt red light.	Phase monitor detects voltage lower than factory setting.	Verify incoming power, slowly raise voltage adjust knob on the phase monitor to match incoming power. Auto reset upon correction.
Unit displays **A1**, Audio alarm is sounding during start up, phase monitor displays, lock out "Front Fault" high volt red light.	Phase monitor detects voltage higher than factory setting.	Verify incoming power, Slowly lower voltage adjust knob on the phase monitor to match incoming power.
System starts up but goes into visual and audible alarm **A1** when the compressor starts.	Phase monitor detects voltage drop.	Observe the phase monitor on start for fault lights and adjust the monitor accordingly, verify incoming power. Auto reset upon correction. Check wire size and voltage drop.
Unit displays **A1**, Alarm is sounding during start up or during operation, phase monitor displays "Back Fault" red light.	A fault has been detected from one of the unit's condenser motors.	Inspect motor components for faulty or loose connections and proper operation, Call 1-800-KwiKool for guidance.

The KwiKool Phase Monitor is factory installed and is located inside the Control Box. The Phase Monitor can be accessed through the right side service door as you face the unit and removing the cover to the control box.
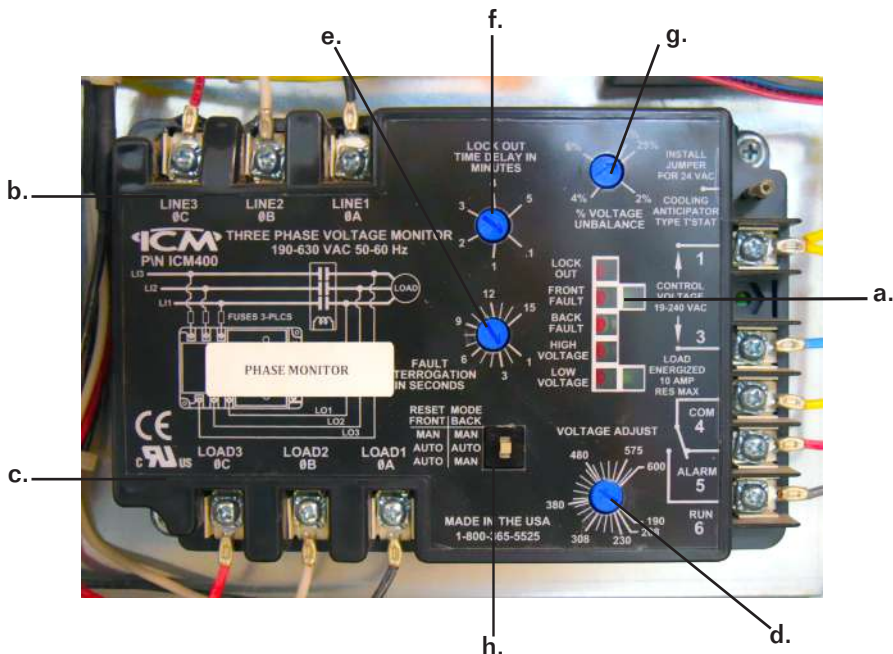
a. LED Lights -
Used to indicate failure cause.

b. Line Side -
Incoming voltage from the contractor.

c. Load Side -
Outgoing voltage from the contractor

d. Voltage Adjustment Knob -
Set knob to match correct unit voltage.

e. Fault Interrogation Knob - Never Adjusted.
Factory set to 8 seconds for the time it takes for non-critical fault to be analyzed & before de-energizing load.

f. Lock-out Time Delay Knob - Never Adjusted.
Used for time between de-energizing and re-energizing the load with a factory setting of 1 minute.

g. % Voltage Unbalanced Knob -
This is the allowable voltage unbalanced between the 3 phases with a factory setting of 10%.

h. Reset Switches -
Position 1: Full Manual Reset (MAN-MAN). Manual control reset used for highly critical loads. The system will not reset until the fault is corrected and then manually reset by personnel.
Position 2: Leave In Full Automatic Reset (AUTO-AUTO). Auto Front/Manual Back Reset (AUTO-MAN). Automatic reset is used on the front line side only (Power coming into the unit). Back load side requires manual reset. This setting is typically used with a reliable power source (Power to condenser & evaporator motors, and compressor).

B: Special Section for KWIB120 Systems

A. **Compressor Priority Switch -** For KWIB12023 and KWIB12043. These KwiKool models have 2 compressors and refrigerant circuits that operate independently of each other and are staged to come on at different intervals as needed for cooling. Your KwiKool KWIB120 is equipped with a Compressor Priority Switch located on the top of the control box in the evaporator access compartment. The rocker switch is factory set to use compressor 1 as the first stage compressor or lead compressor on start up, and compressor 2 as the second stage or lag compressor. The lag compressor comes on when the demand requires it. The rocker switch when moved to the compressor 2 position reverses the order of the lead and lag compressors. This allows for rotation of the compressors for even wear. Change this switch position at regular intervals. Factory recommendation is approximately every 6 months. **Turn off the power to the unit before changing this switch position.**

B. **Evaporator Fan Rotation -** On KWIB120 models without the optional factory installed phase monitor, you will have to visually confirm the rotation direction of the cold air supply fan and correct if needed. As you face the front control panel of the KwiKool unit, open the left side evaporator access door with the system in the OFF position. Secure the door from closing and keep clear any objects from the moving or rotating parts. Select FAN mode on your control pad and turn the system ON briefly and then OFF. The supply air fan should be rotating in a clockwise direction from this view. If rotating counterclockwise, qualified personal should disconnect power at the source and exchange any incoming line voltage wire with any other line voltage wire and repeat the previous instructions. Operating your KwiKool unit with the supply air fan rotating incorrectly will cause low performance and evaporator coil freezing.
Note: KwiKool units with a factory installed phase monitor have already been set for rotation. Users will be notified of incorrect rotation by an audio and visual alarm that will clear automatically when the phase issue is corrected by exchanging the line voltage wire as described above in this section.

C. **Supply Air Fan Speed -** KWIB120 models are 2 stage systems and have a fan speed for each stage. This is not user settable. This system always start on 1st stage fan speed (low) in COOL or FAN MODE, second stage fan speed (high) only operates in COOL MODE when the second stage compressor is running.

D. **Conditioned Air Supply Drive Belts -** Your KwiKool KWIB120 models moves air over the evaporator coil to remove heat and moisture from the conditioned space by way of a motor attached to a blower wheel, this wheel turns by way of a pulley and belt system. **Inspect/adjust these belts every 60 days of operation, replace as needed.** Failure to maintain the drive belts will cause low performance, coil freezing or in extreme cases damage to the blower/motor in the event of a belt breaking. The belts are located in the left side evaporator access door as you face the control panel. When adjusting the belts, adjust the tension using the base adjustment screw. Never adjust the sheave (pulley) as it can cause damage to your system and/or make the system have poor performance.