



KIBXX II/KWIBXX II Iceberg Series Systems



Operating Manual

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SECTION I UNIT COMPONENTS

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

KwiKool Iceberg systems are designed for cooling an area with a high concentration of heat load, usually from electrical or computer equipment. 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. The units are portable and not meant to be permanently mounted. There are both air-cooled (KIBXX II) and water-cooled (KWIBXX II) models.

KIBXX II/KWIBXX-II



SECTION II ASSEMBLY AND INSTALLATION

The KwiKool Iceberg KIBXX II systems provide portable cooling to match customer needs. These systems come with touchscreen controls, internal condensate pumps, freeze protection, integral condensers, and other features. Models exist in the 1.1-ton, 1.5-ton, 2-ton, 2.5-ton, 3.5-ton, 5-ton and 10-ton ranges.

A PREVIEW THE INSTALLATION SITE

Before moving the KIB/KWIB into place, verify the following:

- The direction to which the supply air is going
- The direction from which the return air is coming (cooling)
- The direction to which the hot air exhaust is going (heat removal)
- The direction from which the condenser make-up air is coming
- The location of the power supply
- The direction to which the condensate water will be pumped, or where the condensate bottle is placed

Position the unit based on these guidelines for best results.

NOTE

Leave at least five feet of open space around the return air inlet for the filter to ensure proper operation.

B AIR CHUTES (AS AN OPTIONAL ACCESSORY).

Install supply air flanges to the front of the KwiKool unit above the control panel. (See instructions in the air chute kit for specific procedures). Install air chutes on the flanges with included clamps.

C CONNECT CONDENSATE TANK OR DRAIN LINE

The 5-gallon condensate tank is equipped with a float switch that shuts the unit's compressor off, alerts operators with an alarm, and displays **CF** ("Condensate Full") when the condensate tank is full. (Turn the system to OFF to stop the alarm). This prevents accidental water overflow on the floor. Operators can connect ¼" ID tubing (sold separately) to the ¼" OD barbed fitting located in the power cord pocket on the back of the KIBXX II and pump condensate water to the external condensate tank that comes standard with the system or up to 20 feet straight up and out over 100 feet to an approved drain source. All KIBXX-II systems have a condensate pump built in.

CAUTION

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 5-gallon tank. Use the by-pass jack installed from the factory.

Connecting the external condensate tank.

1. Remove the factory installed condensate float switch bypass jack on the KIB-II series system (located in the power cord pocket at the back of the KwiKool).
2. Install the condensate float switch jack, installed on the condensate bottle.
3. Connect the factory supplied ¼" ID condensate tubing to the ¼" OD barbed condensate water outlet on the back of the KwiKool.
4. Connect the discharge end of the tube to the ¼" barbed connector on the condensate tank.
5. The condensate float jack must be inserted into the female condensate plug to operate the KwiKool.

NOTE

CF displays if the jack is not connected or the bypass plug is not inserted properly.

D CEILING KIT FOR KIBXX-II ONLY (OPTIONAL ACCESSORY FOR AIR COOLED SYSTEMS)

The ceiling kit is comprised of flanges with foam tape, fasteners, two (2) eight-foot lengths of flexible duct, duct clamps, and one 24"X24" replacement ceiling tile for KIB1411-II and KIB1811-II. All other KIBXX II models use two (2) 24"X24" replacement-ceiling tiles.

E CEILING KIT INSTALLATION

Be sure the area receiving ducting can absorb the heat load and is open enough to keep the system from returning its own hot discharge air.

CAUTION

*A confined or closed discharge point will lead to the KIBXX-II Series System tripping its high-pressure safety switch. If this occurs, **HP** will appear on the control panel. To resolve, fix the excess heating of the Make-up air and reset the High Pressure (**HP**) switch per the instructions in the Troubleshooting Guide section.*

CAUTION

The Iceberg Series System must have fresh Make-up air going to the condenser to operate.

NOTE

Be sure to use the replacement panel with the deflector on the rear duct and that the deflector is facing away from the front replacement panel.

1. Align the holes of the flange to the holes located on the top of the unit. Attach to the top of the KwiKool unit using the factory-supplied fasteners.
2. Attach each duct to the flanges on the replacement ceiling panel(s); secure the duct to each flange using the supplied clamps.
3. Install the replacement ceiling panel(s) in the ceiling grid with the duct attached, connect the open end of the duct to the flanges on your KwiKool and secure with supplied clamps.

NOTE

For areas with a closed ceiling or no ceiling use the double flange ceiling kit method or extended duct method. The ceiling kit replacement panel is not limited to ceiling use and may be placed or fastened to any vertical or horizontal surface providing the discharge and make-up air can be directed to the space where it is mounted.

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

F WATER COOLED CONDENSER

KWIBXX II Iceberg systems do not require a ceiling kit or duct to operate in the conditioned space. Water from a recirculation source is used to remove heat from the condenser coil. A water valve that maintains the optimum operating pressures of the system controls the flow of water in and out of the Iceberg System. The recirculation source refers to a chilled water loop or cooling tower that supplies a constant flow of water of at least 35 PSI but not more than 150 PSI and is above 40 degrees F but below 85 degrees F, and can also return the discharge water for processing. There must be a water supply and a place to discharge the water leaving the coil in order to operate the KWIBXX II system.

NOTE

Tap water is not used for operating this system due to the large volume of water required. However, tap water may be used for testing or proofing the KWIBXX as long as the temperature and pressure requirements of the supply water are met. If tap water is being supplied to the Iceberg, a way to discharge water must also be available.

G WATER CONNECTION FOR WATER-COOLED (KWIBXX II) MODELS

Water-cooled systems are equipped with two brass female ½" (NPT) pipe thread connections located on the lower left corner of the back panel for all systems up to 2.5 tons. Systems of 3.5 tons and up have two female ¾" (NPT) pipe thread connections and 10-ton systems have four female ¾" connections. Each fitting is labeled for Water In or Water Out.

1. Use the proper sized wrench to connect either hard piping or the optional high-pressure line set, available in various lengths from the factory.
2. Use a backup wrench on the mounting bolt of the fitting to prevent the copper tube inside the cabinet from twisting when making the connections to the fillings.
3. Apply Teflon tape or pipe sealant to the thread for a good seal.

CAUTION

*Water pressure should be limited to 150 PSI maximum and should be between 40 and 85 degrees F. If the water supply is interrupted or the incoming water temperature is too high, the Iceberg Series System will shut down, trip an audible alarm, and display **HP** on the control.*

- a) *The **HP** switch is tripped and must be reset by pressing the **HP reset** button located in the return air compartment and labeled **High Pressure Reset**.*
- b) *Ensure the water supply has been re-established to avoid future tripping.*

H POWER CONNECTION

Verify that the source power, phase and breaker size is compatible with the KwiKool serial plate information and that the electrical circuit is dedicated to the use of the KwiKool Iceberg Series System. If not sure about the power, contact a licensed electrician.

Iceberg systems are factory equipped with eight feet of power cable sized to meet the power requirement of the system.

- An extension power cable is allowed but cannot exceed 25 feet and must be rated to operate the Iceberg.
- KwiKool Iceberg Series Systems that come supplied with a factory-installed plug require the exact receptacle to match the plug and exact circuit size and power.
- All other Iceberg systems over 3-tons are not equipped with a male plug and must be hard wired by qualified personnel.

CAUTION

Cutting the male power plug on the KwiKool Iceberg Series System will void its warranty.

SECTION III OPERATIONAL SAFEGUARDS

Read the following safeguards carefully before installing your KwiKool:

WARNING

Do not operate or install the KwiKool Iceberg Series System in a potentially explosive, combustible, or corrosive gas atmosphere.

WARNING

To avoid burns and fire damage, keep the Iceberg system away from flammable materials and open flame.

WARNING

To avoid electrical shock, keep the Iceberg system away from direct contact with water and any liquids and do not touch the system with wet hands.

WARNING

Do not move the system while it is operating. Before moving the system, first turn to OFF then unplug the system from the power source. Remove all duct and hoses attached to the Iceberg unit. Only then should casters be unlocked.

CAUTION

To ensure the Iceberg system is stable, the floor on which the system is to be placed should be level, free of vibration and strong enough to support the weight of the KwiKool Iceberg Series Systems.

CAUTION

Do not tilt or overturn the Iceberg Series System, since this could damage the compressor.

- Do not place objects on top of the Iceberg Series System
- Do not insert your hand or any other object into the cold air supply chutes.
- Do not operate the Iceberg system with its service doors open.

If the Iceberg system makes abnormal noises or vibrations, call KwiKool at 1-800-594-5665 (1-800-KWIKOOL).

SECTION IV UNIT OPERATION

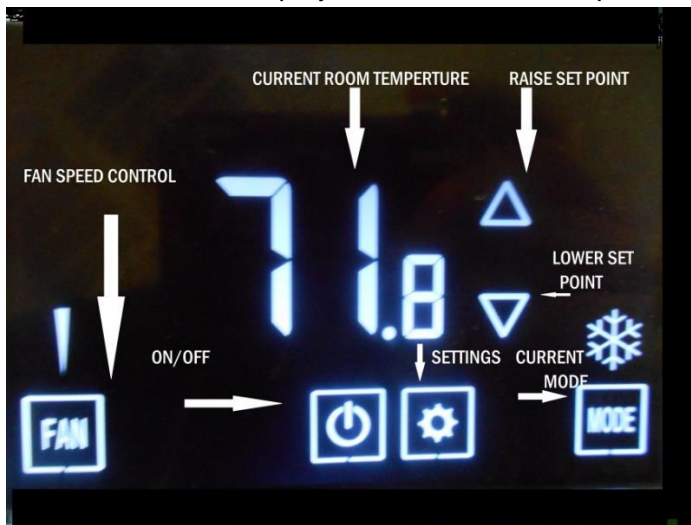
A STARTUP

Apply Electrical Power

Once power is engaged by plugging in the system and/or switching the breaker dedicated to the system on, the Iceberg display will come on and show the current room temperature. The Iceberg Series System is factory set to **OFF** and the fan is set to the default position. A 2.5-minute time delay starts when power is engaged. If nothing appears on the display, refer to the Troubleshooting Guide section of this manual.

B TOUCH SCREEN PANEL

The touch screen display shows the current operational status of the Iceberg Series System.



ICON Descriptions

ICON	NAME	FUNCTION
	ON/OFF	Turns Iceberg System On or Off
	MODE	Allows user to choose Cool or Fan, as the desired operation
	COOL	Flashes when Compressor is running. Stays steady when room temperature is equal or lower than set point or when system is timing out.
	FAN	Indicates fan is in use for air circulation without compressor operation.
FAN	Fan Speed Control	Used to adjust fan speed through up to 3 settings and AUTO FAN depending on model of system
	Up/Down Selector	Raises or lowers desired set point temperature.
	SETTINGS	Pressing for 3 seconds allows access to User Operating Parameter List.

1. **ON/OFF Button** - A short press on this button engages or shuts down the Iceberg 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 the Iceberg is giving an alarm after selecting **ON**.
2. **MODE Button** – A short press on the icon selects the operator’s choice of operations.
 - a) **COOL** for cooling with compressor operation. Flashes when the compressor is running. Will not flash when the room temperature is equal to or lower than the set temperature or the system is timing out, signified by **F** or **C** flashing next to the room temperature.
 - b) **FAN** for air supply circulation without compressor operation.
3. **FAN Button** – A short press on the **FAN** button has different operations depending on the model.
 - a) **Single Speed Models** – KWIB & KIB2411 II, KWIB & KIB6043 II, KWIB & KIB12023 II, KWIB and KIB12043 II.
 - 1) **Models 2411 and 6043** - A short press on the **FAN** button in **COOL** mode 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 and the words **AUTO FAN** display above the **MODE** button.
 - 2) **Models 2411 and 6043** - A second short press on the **FAN** button operates the fan continuously as long as the Iceberg Series System is in **COOL** and in the **ON** position. The display above the **MODE** button will be blank when this function is selected.
 - 3) **Models 12023 II and 12043 II** - 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**. Second stage fan speed (high) only operates in **COOL** when the second stage compressor is running.
 - b) **Three Speed Models** – (All other models NOT listed above.) The Supply Air **FAN** button has several functions.
 - 1) A short press on the **FAN** button in **COOL** mode will cycle through the fan speeds. Each press cycles the fan from low to medium to high, signified by an ascending set of arrows above the **FAN** button.
 - 2) A short press on the **FAN** button after high speed appears and the word **AUTO** appears above the speed indicator. In **AUTO**, the fan speed is automatically adjusted based on demand, the currently operating fan speed is displayed.
 - 3) The second function is to change from constant fan, signified by a blank screen above **MODE**, to **AUTO FAN**.
 - 4) When in **AUTO FAN**; the Supply Air only operates when the compressor is running. To select this function, press and hold the **FAN** button until the indicator above the **MODE** button reads **AUTO FAN**.
 - 5) When in **FAN** mode, **AUTO FAN** is not available; however, operators are able to adjust the speed of the fan with each short press of the **FAN** button. If the Iceberg Series System was set to **AUTO FAN** before changing the mode to **FAN**, **AUTO FAN** will return when the Iceberg Series System is set back to **COOL**. Factory default is **FAN** (constant fan) and is the best choice for electronic equipment.
4. **Up (+) and Down (-) Selector Buttons** - Raises or lowers the desired set temperature.

- a) When changing the set point using a short press on the button, 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 button is pressed.
- b) The adjusted set point flashes on and off 12 times after the last change and then returns to display the room temperature after about ten seconds.




CAUTION

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 at which the Iceberg can cycle on and off to avoid operational issues such as freezing or rapid discharge air fan cycling

CAUTION

The lowest set point temperature available for the Iceberg is 60 degrees F, and the highest set point is 95 degrees F. The control will not allow adjustments beyond these ranges. Iceberg systems are designed to maintain the set point when sized properly. Constant operation without achieving the set point may shorten the expected operational life of the system.


C SYSTEM OPERATION

1. **Turn On Iceberg System** - Pressing the **ON/OFF** button once on the control touch screen will allow operation of the Iceberg. The system will operate in the previously chosen **MODE**, either **COOL** or **FAN**.
2. **COOL** - If the Iceberg Series Cooler was previously set to the cooling mode, then  will be displayed.
 - a) If the compressor is running, the  on the display will be flashing.
 - b) If the Iceberg Series System has been sitting for over 2 minutes, this should happen immediately upon turning the Iceberg Series System on, unless the set point is lower than the current room temperature. In the latter case, the Iceberg Series System is ready to automatically turn on once the temperature rises above the set point.
 - c) If the Iceberg Series System was recently turned off or the Iceberg Series System turned itself off because it reached the set point, the compressor will not turn on until the system waits for approximately 2.5 minutes. This prevents the compressor from being damaged due to a condition called short cycling (of the compressor). The indication that the Iceberg Series System is in the "time out" condition is that the **F** (or **C**) in the display will be flashing.
 - d) When the compressor starts, the **F** will stop flashing and the  will begin flashing.

NOTE

The condenser fan will not start immediately when the compressor operates. Once the condenser fan starts, and if the ambient temperature entering the Make-up air for the condenser return is below 75 degrees F, the fan may cycle on and off. This is normal.

- *For KIB120XX II models, the fans will instead speedup and slowdown in lieu of turning on and off.*
- *If the display flashes 99, this indicates ambient temperature of 99 degrees F or more. This is normal and will stop flashing when the ambient temperature falls below 99 degrees F.*

3. **FAN** - If the Iceberg Series Cooler was previously set to the fan mode then  will be displayed and the Supply Air fan will start to run in the selected speed.
4. **USER OPERATING PARAMETERS LIST**- Entrance into this function is gained by a 3-second press on the **SETTINGS** button. Another short press on this button changes the temperature display to C or F. Use the **FAN** and **Mode** buttons to scroll through the different settings while in the “User Parameters”.
5. Select **ON/OFF** to exit or after 1 minute the display will default back to the operating screen.
6. **ADMINISTRATOR OPERATING PARAMETERS LIST** - Entrance into this function is gained by a long press of the **MODE** button until it beeps and flashes a lock icon, then a long press on the **FAN** button until it beeps, then release the **FAN** button and once again a long press on the **FAN** button. There will be a beep and then display **P04**. Use the **FAN** and **MODE** buttons to scroll through the different settings while in the “Administrator Parameters”.
7. Select **ON/OFF** to exit, or after 1 minute the display will default back to the operating screen.

D OPERATING PARAMETERS LIST, USER

P30- Beeper enable	Select 0 or 1	0- Disable, 1-enable
P40-Filter counter	Hours/10- 0 thru 999	Read Only
P41-Filter counter reset	Select 1 to reset	Defaults back to 0
P42-Filter Alarm Delay	Days, select 0 thru 180	0- Disable
P100- Enable Dimming	Select 0 or 1	0-Disable, 1 Enable
P101-Dimming time	Min, Select 0 through 10	Defaults to 5
P102Dimming brightness	% 1,5,10 through 90	Defaults to 10
P105-Brightness in active state	% 50 through 100	Defaults to 100

E OPERATING PARAMETERS LIST, ADMINISTRATOR

P04- Lock Fan Button	Select 0 or 1	0- Unlock, 1-Lock
P05- Lock Mode Button	Select 0 or 1	0- Unlock, 1- Lock
P06- Lock On/Off Button	Select 0 or 1	0-Unlock, 1- Lock
P07- Lock Plus/Minus	Select 0 or 1	0-Unlock, 1- Lock

SECTION V BUILT IN SAFEGUARDS

A COMPRESSOR TIME DELAY

The Compressor Time Delay protects the Iceberg Series System from potential damage by delaying the compressor from starting before the pressures in the mechanical system equalize. The Time Delay always activates when the Iceberg Series System:

- Cycles off.
- Is turned off.
- Power is lost and then restored.
- The operational mode is changed.

Temperature Display flashes **C** or **F** if the time delay is activated.

B CONDENSER FAN CYCLING OR CONDENSER FAN SPEED CONTROL KIBXX II ONLY (AIR COOLED MODELS)

Part of the Iceberg Series System limited freeze protection and works by regulating the Discharge airflow to keep the refrigerant pressures at the optimum range.

C CONDENSER WATER VALVE KWIBXX II (WATER COOLED MODELS)

Part of the Iceberg Series limited freeze protection and works by regulating the flow of water out of the system, to keep the refrigerant pressures at the optimum range

D HIGH-PRESSURE SWITCH AND ALARM

Protects the Iceberg Series System from potential damage to the mechanical system by shutting down the system, 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 condition causing the trip and alarm is corrected. See the trouble-shooting guide for reset instruction.

E LOW PRESSURE SWITCH AND ALARM

Protects the Iceberg Series System 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 (Freon) charge. This switch is an automatic reset switch that resets when the condition causing the alarm is corrected.

F AUTOMATIC RESTART

In the event of a power loss, the Iceberg Series System resumes operation when the power is restored. All operational functions are preserved in the memory of the Microprocessor Board including the **ON/OFF** selection.

G CONDENSATE PUMP & HIGH LEVEL ALARM

All KWIBXX II & KIBXX II Iceberg models are factory equipped with an internal high lift condensate pump. Iceberg Series 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 feet 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 switch that automatically shuts the Iceberg unit down, sounds an audible alarm and displays a fault code (**CP**). This prevents accidental flooding of the conditioned space. Automatic reset upon fault correction, see the troubleshooting guide

H CONDENSATE TANK & HIGH LEVEL ALARM

All KIBXX II Iceberg models come standard with an external condensate tank. The tank is equipped with an overflow safety cut-off switch. When the tank is full, the safety will automatically shut down the Iceberg Series System, sound an audible alarm and display a fault code (**CF**). This prevents accidental flooding of the conditioned space. If using the supplied bypass plug and not using the tank, this alarm is nonfunctional.

I POWER/PHASE MONITOR (OPTIONAL)

The Iceberg Series Phase Monitor is available as an option on all 3-phase Iceberg Series 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 the Iceberg Series system, sound an audible alarm and display a fault code (**PH**). This alarm will reset automatically when the power is restored to normal.

J SERVICE PORTS

Service Ports are located in the filter access compartment in the front of the Iceberg Series system below the control panel. This gives service personnel a connection point for service gauges to monitor the operating pressures of the mechanical system.

K SIGHT GLASS/MOISTURE INDICATOR

The Sight Glass is located in the Discharge air make-up inlet on KIBXX II systems and located on the rear panel above the condenser water connections on KWIBXX II systems. Remove the rubber grommet to view through the sight glass. This feature allows operators and service personnel to view the condition of the refrigerant returning to the evaporator coil. Used as a diagnostic tool by qualified personnel.

SECTION VI APPLICATION REQUIREMENTS

A AIR TEMPERATURE REQUIREMENTS FOR KIBXX II MODEL

The environmental requirements of the Iceberg Series Cooler at the installation site are 60 to 110 degrees F for the condenser Make-up air located on the front inlet on the top of the Iceberg Series System. If the Iceberg Series System is operated in an environment above 110 degrees F, the high-pressure switch may trip, stopping the Iceberg Series System's compressor. Alternatively, you may notice performance diminished before the HP trip.

NOTE

*The High Pressure Switch (HP Switch) is a manual reset switch. The HP switch is located in the Return Air grill filter compartment. Reset the Iceberg Series System by pressing the button labeled **HP Reset**.*

NOTE

Standard air-cooled KIBXX II Iceberg Series Systems models are not designed to operate at temperatures below 60 degrees F. Low-ambient temperature controls must be special ordered at an additional cost.

CAUTION

Air cooled systems operated below 60 degrees F will cause the Discharge air exhaust fan to cycle excessively and may damage the fan cycling switch, which requires qualified service personnel to repair and can void the warranty.

B WATER TEMPERATURE REQUIREMENTS FOR KWIBXX II MODEL

The water temperature requirements of the Iceberg Series System at the installation site are 40 to 85 degrees F for the condenser supply water. If the Iceberg Series System is operated with incoming water above 85 F, the high-pressure switch may trip, stopping the Iceberg Series system's compressor. Performance may also be diminished.

NOTE

*The High Pressure Switch is manually reset. The reset switch is located in the Return Air grill filter compartment. Reset the Iceberg Series System by pressing the button labeled **HP Reset**.*

NOTE

Standard water-cooled KWIBXX II Iceberg Series models are not designed to operate with water temperatures below 40 degrees F. Low-ambient temperature controls must be special ordered at an additional cost.

CAUTION

Temperatures below 40 degrees F will cause evaporator coil freezing and possible compressor damage. This can void the warranty.

C CAPACITY & TEMPERATURE SETTINGS

Sizing of the Iceberg Series is based on matching capacity to a specific heat load while maintaining a 72-degree F temperature. To reach temperatures below 72 degrees F, the Iceberg Series System must have extra capacity.

CAUTION

We recommend that the operator not set the temperature set point below 72 degrees F, unless there is excess cooling capacity beyond the heat load, since this may cause the unit's evaporator coil to freeze up.

D POSITIONING OF ICEBERG SERIES SYSTEMS

Do not place the Iceberg Series System in direct sunlight. The system should be positioned so that the output of the Iceberg Series System can be focused as close to the heat generating equipment as possible with the front grill fully exposed.

CAUTION

Do not block the front of the Iceberg Series System, since this will cause a restriction in the airflow and can cause low performance and/or evaporator coil freezing.

SECTION VII MAINTENANCE

A AIR FILTERS

The Iceberg Series 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 the conditioned space.

CAUTION

Failure to maintain the filters will cause restricted airflow and low overall Iceberg Series performance.

The air filter is located on the front of the Iceberg Series System below the control. Release the two slotted fasteners on the access door to open.

B CONDITIONED AIR SUPPLY DRIVE BELTS

Iceberg Series KWIB120XX & KIB120XX models move 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 and pulleys every 60 days of operation. Replace as needed. Adjust the tension on the belts by adjusting the motor base. The belt is located inside the right side evaporator access door as seen when facing the control panel.

CAUTION

Failure to maintain the drive belts and pulleys will cause low performance, coil freezing or, in extreme cases, damage to the blower/motor in the event of a belt breaking. DO NOT ADJUST THE DRIVE PULLEY.

SECTION VIII UTILIZING THE ICEBERG SYSTEM

KwiKool Iceberg systems are designed for cooling an area with a high concentration of heat load, usually from electrical or computer equipment. 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 area. 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. The Iceberg Series 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 the nearest Iceberg Series Distributor or 1-800-594-5665 (1-800-KWIKOOL) for help or for questions about other applications.

SECTION IX FAULT CODES

The Iceberg Series System incorporates a self-diagnostic system that sounds an audible alarm, stops the system in critical cases, and displays a fault code to indicate the nature of the problem on the display panel. See the Troubleshooting Guide in Section X for further information.

ALARM CODES

A1	Customer installed input	Optional
A2	Customer installed input	Optional
CP	Condensate pump fault	Standard
LP	Low Pressure (Freon) detected	Standard
CF	Condensate bottle full	Standard
HP	High Pressure detected	Standard
FD	VFD Fault	Standard on KIB120XX II only
PH	Incoming Power Fault	Optional
FL	Run time for filter elapsed	Standard
FS	Freezing detected	Optional
DC	Deicer in cool	Optional

SECTION X KIBXX II/KWIBXX II TROUBLESHOOTING GUIDE

FAULT	POSSIBLE CAUSE	POSSIBLE SOLUTION
Iceberg Series System displays CF (Condensate Full) and audible alarm fails to clear on start up or while operating.	<ul style="list-style-type: none"> 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 tank is upright and level. Unplug bypass plug or tank plug and reinstall to assure good connections. System automatically resets when fault condition is corrected
Iceberg Series System displays CP (Condensate Pump) and Audible alarm is sounding during start up or while operating.	Microprocessor board has detected high water level in the condensate pump. System is not level.	Inspect condensate pump for over flow and proper operation. Confirm that the system is level. Check condensate line for a clog or crimping. Reset occurs automatically upon fault correction. Call 1-800-594-5665 (1-800-KWIKOOL) if the problem persists.

FAULT	POSSIBLE CAUSE	POSSIBLE SOLUTION
Iceberg Series System Displays HP . Audible alarm is sounding during start up or while operating.	Microprocessor board has detected high pressure. The High Pressure switch is tripped.	High-pressure trip is normally caused by reduced or stopped Condenser Air flow on KIBXX II, or water flow on KWIBXX II. <ul style="list-style-type: none"> • Check for restriction in ducting on air-cooled systems or restrictions in water line sets on water-cooled systems. • Check for Condenser Air system ventilation (See Section II. C. 4) or source water input on KWIBXX II. • For KIBXX II, check condenser motors and/or blowers for proper operation. • On KIB12023 II or KIB12043 II check VFD (motor drive) for trip. Reset if necessary. • High-pressure reset switch is a manual reset type. To reset, open filter door. The button is located above the filter. Press button to reset (the operator should feel a click).
Iceberg Series System Displays LP (Low Pressure (Freon)), Audible alarm is sounding during start up or while operating.	Microprocessor board has detected low pressure. This alarm may cycle on and off.	<ul style="list-style-type: none"> • 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 1-800-594-5665 (1-800-KWIKOOL) for guidance if condition continues.
Iceberg Series System Displays PH , Audible 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).
Audible alarm fails to clear on start up or while operating. Iceberg Series System displays FS .	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 the system is not equipped with a freeze sensor. Auto resets upon correction.
Audible alarm fails to clear on start up or while operating. Iceberg Series System displays A1 .	Microprocessor has detected customer installed normally closed circuit open.	Review aftermarket device installed for fault that is opening the circuit. Auto resets upon correction
Audible alarm fails to clear on start up or while operating. Iceberg Series System displays A2 .	Microprocessor has detected customer-installed normally-open circuit closed	Review aftermarket device installed for fault that is closing the circuit. Auto reset upon correction. Call 1-800-594-5665 (1-800-KWIKOOL) for guidance.

FAULT	POSSIBLE CAUSE	POSSIBLE SOLUTION
Audible alarm fails to clear on start up or while operating (KIB120XX II Only). Iceberg Series System displays FD .	Microprocessor has detected fault with the system VFD.	View fault code displayed on the system VFD, located in the evaporator access door Call 1-800-594-5665 (1-800-KWIKOOL) for guidance.
Control board displays FL .	Microprocessor has detected Filter counter time has elapsed (customer controlled parameter) Factory default settings is 30 days.	Replace air filters and reset counter. Note <i>FL only alerts operators of the condition; the system will not shut down during this alarm.</i>
System is ON and display is showing ON but Iceberg Series System is not supplying conditioned air.	<ul style="list-style-type: none"> • System is in time out (F or C is flashing). • Control is set above room temperature. • Control is adjusted out of operating parameters. • Not in the correct operational MODE. 	Wait 2 minutes for the time delay to elapse. Review System Operations guide, Mode & temperature settings. Call 1-800-594-5665 (1-800-KWIKOOL) for guidance.
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.	<ul style="list-style-type: none"> • Confirm the integrity of the source power. • Check for proper wire size and length of power extension cable. • Be sure the circuit is dedicated to only the operation of the KwiKool. Call 1-800-594-5665 (1-800-KWIKOOL) for guidance.
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 KWIB & KIB120XX II systems. Call 1-800-594-5665 (1-800-KWIKOOL) for guidance.
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 the electrician. Call 1-800-594-5665 (1-800-KWIKOOL) for guidance.
System starts up and cools, but the Condenser Discharge air exhaust fan ramps up and slows down or the condenser discharge fan stops and starts.	Normal operating condition especially in low temperatures. Only the KIB120XX II or other Iceberg Series Systems with optional ultra-low ambient temperature controls ramps up and slows down. All other models stop and start.	No action required, see sections IV C. 2. NOTE <i>To avoid excessive fan cycling, Discharge Return air must not be below the specifications of the Iceberg system</i>

FAULT	POSSIBLE CAUSE	POSSIBLE SOLUTION
Display shows 32 and Iceberg Series System will not turn on cooling.	No connection of temperature sensor to Microprocessor. Temperature Sensor malfunctions.	Call 1-800-594-5665 (1-800-KWIKOOL) for guidance.
Supply airflow 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.	<ul style="list-style-type: none"> • Verify that Supply and Return air are not blocked and ductwork is installed to specification. • Remove or add duct as needed. • Check air filter for blockage. • KWIB & KIB120XX II users check Supply air fan for correct rotation and belt condition. Refer to Appendix B.
Condensate is not pumping.	Water is below pumping level, external line restricted, line installed with too high a lift for the pump's capacity.	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	<ul style="list-style-type: none"> • Low or restricted airflow. • Undersized capacity. • Iceberg Series Cooler constantly on, unable to achieve set point. • Low return air temperature out of factory specifications. • Evaporator door open. • Mechanical system malfunction. 	<ul style="list-style-type: none"> • Direct Supply Return air to area of highest heat load. • Check for blocked airflow from the supply air. • Replace air filters. • Adjust set point to allow the Iceberg Series System to cycle. • Add another Iceberg system or larger capacity model. • Close evaporator compartment door. • Check for correct rotation and inspect drive belts on KWIB & KIB120XX II systems supply air blower for worn condition or breaking. Install service gauges to view pressures. Call 1-800-594-5665 (1-800-KWIKOOL) for guidance.
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 Iceberg Series Systems. Remove excess or undersized power cable and check incoming power. Call 1-800-594-5665 (1-800-KWIKOOL) for guidance.
Discharge air exhaust fan stops and the system alarms HP during operation. KIB120XX II only.	Condenser drive has detected a fault with the incoming electrical power or is not receiving an operating signal.	Check condenser motor drive (VFD) for trip. Reset if needed. Make note of the displayed fault code on the drive. Call 1-800-594-5665 (1-800-KWIKOOL) for guidance.

FAULT	POSSIBLE CAUSE	POSSIBLE SOLUTION
The numeral 99 flashes on display.	Ambient room temperature over 99 degrees F.	Iceberg Series System is working properly. Cooling will continue but display cannot show more than two digits regardless of temperature. Lowering of room temperature to 99 or less will end the flashing.
The numeral 60 flashes on display.	Ambient room temperature under 60 degrees F.	Iceberg Series Cooler is working properly. Limits of Iceberg Series Cooler have been reached and further cooling is not possible. Operating temperatures are 65 - 105 degrees F.

APPENDIX

A SYSTEMS EQUIPPED WITH A PHASE MONITOR

FAULT	POSSIBLE CAUSE	POSSIBLE SOLUTION
Iceberg Series System displays PH , audible alarm sounding during start up, phase monitor displays, REV PHASE	Phase monitor detects reverse phasing, lost phase or improper power incoming.	Exchange any line voltage wire with the other. Do not change the Green wire. Auto reset upon correction.
Iceberg Series System displays PH , audible alarm is sounding during start up, and phase monitor displays current incoming power is low	Phase monitor detects voltage lower than factory setting.	<ul style="list-style-type: none"> • Verify incoming power. • Raise incoming voltage. • Adjust incoming power tolerance on monitor if authorized. Auto reset upon correction.
Iceberg Series System displays PH , audible alarm is sounding, and phase monitor displays current incoming power is high	Phase monitor detects voltage higher than factory setting.	<ul style="list-style-type: none"> • Verify incoming power. • Lower incoming voltage. • Adjust incoming power tolerance on the monitor if authorized. Auto reset upon correction.
System starts up but goes into visual and audible alarm. Displays PH when the compressor starts	Phase monitor detects voltage drop.	<ul style="list-style-type: none"> • 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.
Iceberg Series System displays PH , Alarm is sounding during start up or during operation, and phase monitor displays "Back Fault"	A fault has been detected from one of the Iceberg Series System's condenser motors.	Inspect motor components for faulty or loose connections and proper operation. Call 1-800-594-5665 (1-800-KWIKOOL) for guidance.

B SPECIAL SECTION FOR KWIB & KIB120XX II SYSTEMS

Compressor Priority Switch

These Iceberg Series Systems have two compressors and two refrigeration circuits that operate independently of each other and are staged to come on at different intervals as needed for cooling. The KwiKool Iceberg 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.

CAUTION

Failure to turn off power prior to changing the switch position may damage the equipment or injure personnel.

Turn off the power to the Iceberg Series System before changing this switch position.

Evaporator Fan Rotation

On KWIB & KIB120XX II Iceberg Series Coolers without the optional factory installed phase monitor, visually confirm the rotation direction of the Cold Air-Supply fan and correct if needed.

1. When facing the front control panel of the Iceberg Series Cooler, open the right side evaporator access door with the system in the **OFF** position.
2. Secure the door from closing and keep clear any objects from the moving or rotating parts.
3. Select **FAN** mode on the control and turn the system **ON** briefly and then **OFF**.

CAUTION

Operating the Iceberg Series Cooler with the Supply air fan rotating incorrectly will cause low performance and evaporator coil freezing.

4. The Supply air fan should be rotating in a counter-clockwise direction from this view. If rotating clockwise, qualified personnel should disconnect power at the source and exchange any incoming line voltage wire with any other line voltage wire and repeat the previous instructions. KwiKool Iceberg Series Systems with a factory installed phase monitor will not allow the system to start if the proper phase is not connected, PH will display and you will hear an audible alarm.

NOTE

Users will be notified of incorrect rotation by an audible alarm and the display showing PH. This will clear automatically when the phase issue is corrected by exchanging the line voltage wire as described above in this section.

Supply Air Fan Speed

KWIB & KIB120XX II Iceberg Series Systems are 2-stage systems and have a fan speed for each stage. This is not user settable. These systems always start on first stage fan speed (low) in **COOL MODE** or **FAN MODE**, second stage fan speed (high) only operates in **COOL MODE** when the second stage compressor is running.

CAUTION

Do not tamper with or attempt to adjust the VFD system.

VFD (Variable Frequency Drive)

Only used on KIB120XX II Iceberg Series (10-ton Systems), to optimize the operation of the condenser fan by slowing down and speeding up the rotations of the blower to maintain the best pressure needed to operate in the environment. The VFD is located in the left side evaporator access compartment as seen when facing the control panel. The VFD has a screen that displays the current operating frequency or any error message needed for fault diagnosis. The VFD is not used on KWIBXX II series systems nor is it used on smaller KIBXX II Systems. Call Factory Technical support for guidance.

Conditioned Air Supply Drive Belts

The KwiKool KWIB & KIB120XX II Iceberg Series Systems move 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.

CAUTION

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 inside the right side evaporator access door as seen when facing the control panel. When adjusting the belts, adjust the tension using the base adjustment screw.

CAUTION

Never adjust the sheave (pulley) as it can cause damage to the system and/or make the system have poor performance.