KIBXX II/KWIBXX II ICEBERG SERIES SYSTEMS

OPERATION MANUAL

TABLE OF CONTENTS

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 coolers 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.

A. KIBXX II/KWIBXX-II

SECTION II - INSTALLATION AND ASSEMBLY

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. Install air chutes on the flanges with included clamps. See instructions in the air chute kit for specific procedures.

C. CONDENSATE TANK

KwiKool Systems come standard with an external 5-gallon condensate tank. 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.

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.

PRUDENCE

L'alarme s'effacera automatiquement une fois le réservoir de 5 gallons vidé et reconnecté. Si vous vous connectez à un drain permanent, ne connectez PAS et n'utilisez PAS le réservoir de 5 gallons équipé. Utilisez la prise de dérivation installée en usine.

D. CONNECTING THE EXTERNAL CONDENSATE TANK TO SYSTEM

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.*

E. CONNECT CONDENSATE PUMP TO TANK

1. 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**.
2. 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.

NOTE

The 5-gallon condensate tank is equipped with a float switch that shuts the unit's compressor off and alerts operators with an alarm and displays CF ("Condensate Full") when the condensate tank is full. This prevents accidental water overflow on the floor.

3. The alarm clears automatically upon the operator emptying the 5-gallon tank and reconnecting it. If connecting to a permanent drain, do NOT connect or use the equipped tank.

F. 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.

G. 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. A confined or closed discharge point will lead to the **KIBXX-II** Series System tripping its high-pressure safety switch (**HP Reset** 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 Reset (**HP Reset**) switch per the instructions in **Section XII, KIB/KWIB Troubleshooting Guide**.

CAUTION

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

PRUDENCE

Le système de la série Iceberg doit disposer d'air d'appoint frais acheminé vers le condenseur pour fonctionner.

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.

H. 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 F but below 85 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.*

I. 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 F. If the water supply is interrupted or the incoming water temperature is too high, the Iceberg Series Cooler 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 **HP Reset**.*

b) *Ensure the water supply has been re-established to avoid future tripping.*

PRUDENCE

La pression de l'eau doit être limitée à 150 PSI maximum et doit être comprise entre 40 et 85 F. Si l'alimentation en eau est interrompue ou si la température de l'eau entrante est trop élevée, le refroidisseur de la série Iceberg s'arrêtera, déclenchera une alarme sonore et affichera HP. le contrôle.

c) *a) L'interrupteur HP est déclenché et doit être réinitialisé en appuyant sur le bouton HP Reset situé dans le compartiment d'air de retour et étiqueté HP Reset.*

d) *b) Assurez-vous que l'approvisionnement en eau a été rétabli pour éviter de futurs déclenchements.*

J. POWER CONNECTION

Verify that the source power, phase and breaker size is compatible with the KwiKool serial plate information. 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 Coolers 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 Cooler will void its warranty.

PRUDENCE

Couper la fiche d'alimentation mâle du refroidisseur KwiKool Iceberg Series annulera sa garantie.

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.

AVERTISSEMENT

N'utilisez pas ou n'installez pas le système KwiKool Iceberg Series dans une atmosphère de gaz potentiellement explosive, combustible ou corrosive.

WARNING

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

AVERTISSEMENT

Pour éviter les brûlures et les dommages causés par le feu, gardez le système Iceberg à l'écart des matériaux inflammables et des flammes nues.

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.

AVERTISSEMENT

Pour éviter les chocs électriques, gardez le système Iceberg à l'écart de tout contact direct avec l'eau et tout liquide et ne touchez pas le système avec les mains mouillées.

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.

AVERTISSEMENT

Ne déplacez pas le système pendant son fonctionnement. Avant de déplacer le système, éteignez-le d'abord, puis débranchez-le de la source d'alimentation. Retirez tous les conduits et tuyaux fixés à l'unité Iceberg. Ce n'est qu'alors que les roulettes doivent être déverrouillées.

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.

PRUDENCE

Pour garantir la stabilité du système Iceberg, le sol sur lequel le système doit être placé doit être de niveau, exempt de vibrations et suffisamment solide pour supporter le poids des systèmes KwiKool Iceberg Series.

CAUTION

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

PRUDENCE

N'inclinez pas et ne renversez pas le système de la série Iceberg, car cela pourrait endommager le compresseur.

CAUTION

Do not place objects on top of the Iceberg Series System, since these objects could fall off and hurt personnel or damage the equipment.

PRUDENCE

Ne placez pas d'objets sur le système Iceberg Series, car ces objets pourraient tomber et blesser le personnel ou endommager l'équipement.

CAUTION

Do not insert your hand or any object into the cold air supply chutes. This blocks the supply chutes and may affect operation of the Iceberg Series System.

PRUDENCE

N'insérez pas votre main ni aucun objet dans les goulottes d'alimentation en air froid. Cela bloque les goulottes d'alimentation et peut affecter le fonctionnement du système Iceberg Series.

CAUTION

Do not operate the Iceberg Series System with its service doors open, since this could affect the circulation of air in the system.

PRUDENCE

Ne faites pas fonctionner le système de la série Iceberg avec ses portes de service ouvertes, car cela pourrait affecter la circulation de l'air dans le système.

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

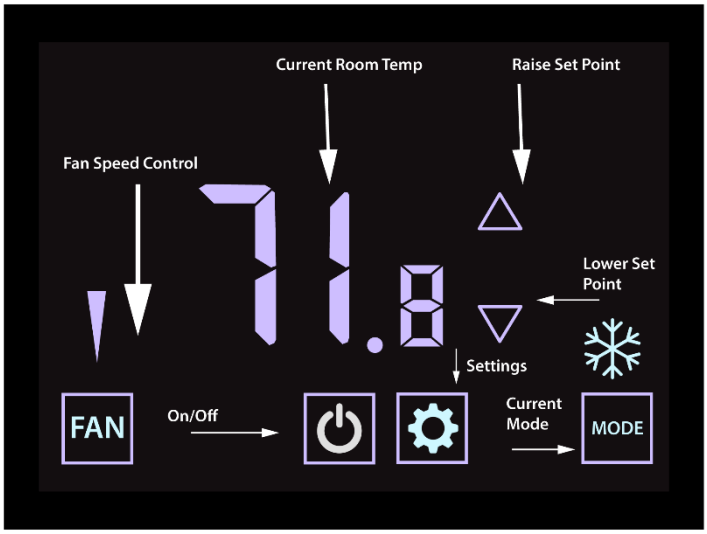
SECTION IV - UNIT OPERATION

A. 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 Cooler 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 **Section XII, KIB/KWIB Troubleshooting Guide.**

B. TOUCH SCREEN PANEL

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



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 **Section XII, KIB/KWIB Troubleshooting Guide** 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.
3. **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.
4. **FAN** for air supply circulation without compressor operation
5. **FAN Speed Control**– A short press on the **FAN** button has different operations depending on the model.
    a) **Single Speed Models** – **KWIB** and **KIB2411 II**, **KWIB** and **KIB6043 II**, **KWIB** and **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 Cooler 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 Cooler was set to **AUTO FAN** before changing the mode to **FAN**, **AUTO FAN** will return when the Iceberg Series Cooler is set back to **COOL**. Factory default is **FAN** (constant fan) and is the best choice for electronic equipment.

6. **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.

PRUDENCE

L'abaissement ou l'augmentation du point de consigne ne modifiera pas la température de l'air soufflé. Pour de meilleurs résultats, ajustez toujours le point de consigne à une température à laquelle l'Iceberg peut s'allumer et s'éteindre pour éviter des problèmes de fonctionnement tels que le gel ou le cycle rapide du ventilateur d'air d'évacuation.

CAUTION

The lowest set point temperature available for the Iceberg is 60 F, and the highest set point is 95 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.

PRUDENCE

La température de consigne la plus basse disponible pour l'Iceberg est de 60 F et la température de consigne la plus élevée est de 95 F. La commande ne permettra pas de réglages au-delà de ces plages. Les systèmes Iceberg sont conçus pour maintenir le point de consigne lorsqu'ils sont correctement dimensionnés. Un fonctionnement constant sans atteindre le point de consigne peut raccourcir la durée de vie opérationnelle prévue du système.

7. **TECHNICAL SETTINGS** **-** Access into these operations is described later in this manual. User and technician menus all have different features that allow access into settings and certain functions of the controls based on information supplied by the engineers.

C. SYSTEM OPERATION

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.**

COOL MODE - If the Iceberg Series Cooler was previously set to the cooling mode, then ❄ will be displayed.

1. If the compressor is running, the ❄on the display will be flashing.
2. If the Iceberg Series Cooler has been sitting for over 2 minutes, this should happen immediately upon turning the Iceberg Series Cooler on, unless the set point is lower than the current room temperature. In the latter case, the Iceberg Series Cooler is ready to automatically turn on once the temperature rises above the set point.
3. If the Iceberg Series Cooler was recently turned off or the Iceberg Series Cooler 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 Cooler is in the "time out" condition is that the **F** (or **C**) in the display will be flashing.
4. 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 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 F or more. This is normal and will stop flashing when the ambient temperature falls below 99 F.*

FAN MODE - 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.

SECTION V - BUILT IN SAFEGUARDS

A. COMPRESSOR TIME DELAY

The Compressor Time Delay protects the Iceberg Series Cooler 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 Cooler:

- 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. The time delay lasts about 2.5 minutes.

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

Part of the Iceberg Series Cooler limits 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 limits 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 RESET SWITCH AND ALARM

Protects the Iceberg Series Cooler 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 reset switch (**HP Reset**) is a manual reset switch and must be reset after the condition causing the trip and alarm is corrected. Refer to **Section XII, KIB/KWIB Troubleshooting Guide** for reset instruction.

E. LOW PRESSURE SWITCH AND ALARM

Protects the Iceberg Series Cooler 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 Cooler 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 TANK AND 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 Cooler, 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.

H. CONDENSATE PUMP AND HIGH LEVEL ALARM

All **KWIBXX II** and **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. Refer to **Section XII, KIB/KWIB Troubleshooting Guide**.

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 Cooler, sound an audible alarm and display a fault code (**PH**). This alarm will reset automatically when the power is restored to normal. Refer to **Appendix A, Troubleshooting for Systems equipped with a Phase Monitor**.

J. SERVICE PORTS

Service Ports are located in the filter access compartment in the front of the Iceberg Series Cooler 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

The environmental requirements of the Iceberg Series Cooler at the installation site are 60 to 110 F for the condenser Make-up air located on the front inlet on the top of the Iceberg Series System.

- If the Iceberg Series Cooler is operated in an environment above 110 F, the high-pressure switch may trip, stopping the Iceberg Series Cooler's compressor. Alternatively, you may notice performance diminished before the HP trip.
- The High Pressure Reset Switch (**HP Reset**) is a manual reset switch. The **HP Reset** switch is located in the Return Air grill filter compartment.
- Reset the Iceberg Series Cooler by pressing the button labeled **HP Reset.**

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

CAUTION

Air cooled systems operated below 60 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.

PRUDENCE

Les systèmes refroidis par air fonctionnant en dessous de 60 F entraîneront un cycle excessif du ventilateur d'évacuation de l'air de refoulement et peuvent endommager le commutateur de cycle du ventilateur, ce qui nécessite une réparation par un personnel de service qualifié et peut annuler la garantie.

B. WATER TEMPERATURE REQUIREMENTS FOR KWIBXX II MODEL

The water temperature requirements of the Iceberg Series Cooler at the installation site are 40 to 85 F for the condenser supply water. If the Iceberg Series Cooler is operated with incoming water above 85 F, the **HP Reset** switch may trip, stopping the Iceberg Series cooler's compressor. Performance may also be diminished.

NOTE

*The **HP Reset** switch is manually reset. The **HP Reset** switch is located in the Return Air grill filter compartment. Reset the Iceberg Series Cooler 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 F. Low-ambient temperature controls must be special ordered at an additional cost.*

CAUTION

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

PRUDENCE

Des températures inférieures à 40 F entraîneront le gel du serpentin de l'évaporateur et d'éventuels dommages au compresseur. Cela peut annuler la garantie.

C. CAPACITY AND TEMPERATURE SETTINGS

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

CAUTION

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

PRUDENCE

Nous recommandons à l'opérateur de ne pas régler le point de consigne de température en dessous de 72 F, à moins qu'il n'y ait une capacité de refroidissement excessive au-delà de la charge thermique, car cela pourrait provoquer le gel du serpentin de l'évaporateur de l'unité.

D. POSITIONING OF ICEBERG SERIES COOLERS

Do not place the Iceberg Series Cooler in direct sunlight. The cooler should be positioned so that the output of the Iceberg Series Cooler 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 Cooler, since this will cause a restriction in the airflow and can cause low performance and/or evaporator coil freezing.

PRUDENCE

Ne bloquez pas l'avant du refroidisseur de la série Iceberg, car cela entraînerait une restriction du flux d'air et pourrait entraîner une faible performance et/ou le gel du serpentin de l'évaporateur.

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.

PRUDENCE

Le fait de ne pas entretenir les filtres entraînera un débit d'air restreint et de faibles performances globales de la série Iceberg.

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

B. CONDITIONED AIR SUPPLY DRIVE BELTS

Iceberg Series **KWIB120XX** and **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.

PRUDENCE

Le non-entretien des courroies d'entraînement et des poulies entraînera une faible performance, le gel de la bobine ou, dans les cas extrêmes, des dommages au ventilateur/moteur en cas de rupture de la courroie. NE AJUSTEZ PAS LA POULIE D'ENTRAÎNEMENT.

SECTION VIII - UTILIZING THE ICEBERG SYSTEM

KwiKool Iceberg coolers 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 cooler 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 - TECHNICIAN PARAMETERS

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 **Technician Parameters**.

Select **ON/OFF** to exit, or after 1 minute the display will default back to the operating screen.

TECHNICIAN PARAMETERS LIST

P04 is the Lock Fan Button. It allows the technician to disable operation of the FAN button to prevent operation by unauthorized personnel. 0=Unlock, 1=Lock

P05 is the Lock Mode Button. It allows the technician to disable operation of the MODE button to prevent operation by unauthorized personnel. 0=Unlock. 1=Lock

P06 is the Lock On/Off Button. It allows the technician to disable operation of the Power On/ Off button to prevent operation by unauthorized personnel. 0=Unlock, 1=Lock

P07 is the Lock Plus/Minus arrows. It allows the technician to disable changing of the set point of the system by unauthorized personnel. 0=Unlock, 1=Unlock

Technician Parameters Table

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 X - USER PARAMETERS

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 **User Parameters**.

Select **ON/OFF** to exit or after 1 minute the display will default back to the operating screen.

USER PARAMETERS LIST

P30 turns the sound that indicates a button is pressed on the display screen off or on. Use the UP or DOWN arrow buttons to choose 0= no sound. 1= sound.

P40 displays the remaining time until filter maintenance is required in 1-day intervals. This is Read Only. Not adjustable by user.

P41 Allows reset of the filter counter and alarm by choosing 1 (UP Arrow). Select 0 for normal operations without resetting. Always defaults back to 0 after reset.

P42 sets the Filter Alarm Delay Time in days. Use the UP and DOWN arrows to set how long (in days) until the alarm displays after the filter counter time (shown in P40) elapses.

P100 enables the user adjusted dimming control for the display. 0=Inactive, 1 Active.

P101 adjusts how long the display will stay bright in active mode before it dims to inactive, in seconds. The minimum is 30 seconds. 0=30 seconds up to 99 seconds.

P102 adjusts how bright the dim setting is in terms of percent of full brightness.

P105 adjusts how bright the bright setting is in terms of percent of full brightness during the active mode.

P201 displays the microprocessor board version.

User Parameters Table

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
P201-Microprocessor Board version	N/A	N/A

SECTION XI - ALARM CODES

The Iceberg Series Cooler 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. Refer to **Section XII, KIB/KWIB Troubleshooting Guide** for further information.

Alarm Codes Table

A1	Customer installed input	Optional. Normally Closed.
A2	Customer installed input	Optional. Normally Open
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. Alert only – No system shut down	Standard
FS	Freezing detected	Optional
DC	Deicer in cool	Optional

SECTION XII - KIB/KWIB TROUBLESHOOTING GUIDE

The **KIB/KWIB** Troubleshooting Table below lists the most common problems and the most common solutions. In case of questions or problems, call 1-800-KWIKOOL (1-800-594-5665)

KIB/KWIB Troubleshooting Table

FAULT	POSSIBLE CAUSE	POSSIBLE SOLUTION
Iceberg Series Cooler displays **CF** (Condensate Full) and audible alarm fails to clear on start up or while operating.	External Condensate Tank is full (if using). Condensate bypass jack or condensate float switch jack is not installed or not positioned correctly. Water level switch is engaged	• Empty External Tank • 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 Cooler displays **CP** (Condensate Pump). 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.	• Confirm that the system is level. • Inspect condensate pump for over flow and proper operation. • Clean out pump reservoir. • Check condensate line for a clog or crimping. System automatically resets when fault condition is corrected.
Iceberg Series Cooler Displays **HP**. Microprocessor board has detected high pressure. Audible alarm is sounding during start up or while operating.	. The **HP Reset** 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**. • Check for restriction in ducting on air-cooled systems or restrictions in water lines on water-cooled systems. • For **KIBXX II**, check condenser motors and/or blowers and/or drive belts for proper operation. • On **KIB12023 II or KIB12043 II** check VFD (motor drive) for trip. Reset if necessary. The **HP Reset** switch requires manual reset. To reset, open filter door. The button is located above the filter. Press button to reset (the operator should feel a click).

FAULT	POSSIBLE CAUSE	POSSIBLE SOLUTION
Iceberg Series Cooler 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.	• Check air filter and replace if dirty. • Make sure nothing is blocking the filter inlet. • Check for icing on coil. • System automatically resets when fault condition is corrected.
Iceberg Series Cooler Displays **PH**, Audible alarm is sounding during start up.	Phase Monitor (if equipped) has detected incoming power issue on equipped systems.	Refer to **Appendix, Part A** and **Part B** for systems equipped with a Phase Monitor.
Audible alarm fails to clear on start up or while operating. Iceberg Series Cooler 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. System automatically resets when fault condition is corrected. Call 1-800-KWIKOOL if the system is not equipped with a freeze sensor.
Audible alarm fails to clear on start up or while operating. Iceberg Series Cooler displays **A1**.	Microprocessor has detected customer installed normally closed circuit open.	Review aftermarket device installed for fault that is opening the circuit. System automatically resets when fault condition is corrected.
Audible alarm fails to clear on start up or while operating. Iceberg Series Cooler displays **A2**.	Microprocessor has detected customer-installed normally-open (**NO**) circuit closed	Review aftermarket device installed for fault that is closing the circuit. System automatically resets when fault condition is corrected.
Audible alarm fails to clear on start up or while operating (**KIB120XX II** Only). Iceberg Series Cooler displays **FD**.	Microprocessor has detected fault with the system VFD.	View fault code displayed on the system VFD, located in the evaporator access door.
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** **FL** only alerts operators of the condition. The system will not shut down during this alarm.
System is ON and display is showing **ON** but Iceberg Series Cooler is not supplying conditioned air.	System is in time out (**F** or **C** is flashing).	Wait 2 minutes for the time delay to elapse. Review **Section 4, Unit Operation**, Mode and temperature settings.
	Control is set above room temperature	
	Control is adjusted out of operating parameters.	
	Not in the correct operational mode.	

FAULT	POSSIBLE CAUSE	POSSIBLE SOLUTION
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 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.
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** and **KIB120XX II** systems.
System trips breaker on start up.	Incoming power is incorrect. Breaker is undersized or faulty Power cable is too long and/or undersized.	Verify the circuit and power cable is within the systems specifications. Consult with the electrician.
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 Coolers with optional ultra-low ambient temperature controls ramp up and slow down. All other models stop and start.	No action required. Refer to **Section IV, Unit Operation**, Paragraph C. **NOTE** To avoid excessive fan cycling, Discharge Return air must not be below the specifications of the Iceberg cooler.
Display shows **32** and Iceberg Series Cooler 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. The evaporator coil is freezing.	• 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** and **KIB120XX II** users check Supply air fan for correct rotation and belt condition. Refer to **Appendix B Special Maintenance.**

FAULT	POSSIBLE CAUSE	POSSIBLE SOLUTION
Condensate is not pumping.	Water is below pumping level	Reservoir fills, and then pumps. Check for line crimping or restrictions and proper line run height. Refer to **Section 5, Built in Safeguards**.
	External line restricted	
	Line installed with too high a lift for the pump's capacity	
Evaporator coil is freezing	Low or restricted airflow.	• 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** and **KIB120XX II** coolers supply air blower for worn condition or breaking. • Install service gauges to view pressures. Refer to **Section V, Built-in Safeguards.**
	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.	
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 Cooler. • Remove excess or undersized power cable and check incoming power.
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.
The numeral **99** flashes on display.	Ambient room temperature over 99 F.	Iceberg Series Cooler 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 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 F.

APPENDIX

A. TROUBLESHOOTING FOR SYSTEMS EQUIPPED WITH A PHASE MONITOR

Troubleshooting Guide for Systems with A Phase Monitor

FAULT	POSSIBLE CAUSE	POSSIBLE SOLUTION
Iceberg Series Cooler 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 any other. **CAUTION** Do not change the Green wire. System automatically resets when fault condition is corrected.
Iceberg Series Cooler 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.	• Verify incoming power. • Raise incoming voltage. • Adjust incoming power tolerance on monitor if authorized. System automatically resets when fault condition is corrected.
Iceberg Series Cooler displays **PH,** audible alarm is sounding, and Phase Monitor displays current incoming power is high	Phase Monitor detects voltage higher than factory setting.	• Verify incoming power. • Lower incoming voltage. • Adjust incoming power tolerance on the monitor if authorized. System automatically resets when fault condition is corrected.
System starts up but goes into visual and audible alarm. Displays **PH** 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. • Check wire size and voltage drop. System automatically resets when fault condition is corrected.
Iceberg Series Cooler 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 Cooler's condenser motors.	Inspect motor components for faulty or loose connections and proper operation.

B. SPECIAL MAINTENANCE SECTION FOR KWIB AND KIB120XX II SYSTEMS

Compressor Priority Switch

These Iceberg Series Coolers 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 to change switch position approximately every 6 months.

CAUTION

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

PRUDENCE

Ne pas couper l'alimentation avant de changer la position de l'interrupteur peut endommager l'équipement ou blesser le personnel.

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

Evaporator Fan Rotation

On **KWIB** and **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.

PRUDENCE

Faire fonctionner le refroidisseur de la série Iceberg avec le ventilateur d'alimentation en air qui tourne incorrectement entraînera de faibles performances et le gel du serpentin de l'évaporateur.

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 Coolers 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 and **KIB120XX II** Iceberg Series Coolers 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.

PRUDENCE

Ne pas modifier ni tenter de régler le système VFD.

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.

Conditioned Air Supply Drive Belts

The KwiKool **KWIB** and **KIB120XX II** Iceberg Series Coolers 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.

PRUDENCE

Le non-entretien des courroies d'entraînement entraînera une faible performance, le gel de la bobine ou, dans les cas extrêmes, des dommages au ventilateur/moteur en cas de rupture de la courroie.

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.

PRUDENCE

N'ajustez jamais la poulie (poulie) car cela pourrait endommager le système et/ou nuire à ses performances.