Shelleyglas® by Delfield

Shelleysteel® by Delfield

Shelleyglas®/Shelleysteel®

Service and Installation Manual

Please read this manual completely before attempting to install or operate this equipment!
Notify carrier of damage! Inspect all components immediately. See page 2.

Refrigerated, Heated and Non-Electrical Units

CAUTION

IMPORTANT INFORMATION
READ BEFORE USE
PLEASE SAVE THESE INSTRUCTIONS!

September 2010

Contents

Serial Number Information

If your unit is **heated**, the serial tag is located above the louvered panel near the on/off switch.

Refrigerated units have the serial tag located in the compressor area near the on/off switch.

Understorage units often have the serial tag located on the left inside the storage area.

All purpose counters, utility equipment or delivery carts do not require serial numbers but a model tag is placed at the top of the pylon on the back of the unit.

Always have the serial number of your unit available when calling for parts or service.

This manual covers standard units only. If you have a custom unit, consult the customer service department at the number listed below.

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Receiving And Inspecting The Equipment

Even though most equipment is shipped crated, care should be taken during unloading so the equipment is not damaged while being moved into the building.

1. Visually inspect the exterior of the package and skid or container. Any damage should be noted and reported to the delivering carrier immediately.
2. If damaged, open and inspect the contents with the carrier.
3. In the event that the exterior is not damaged, yet upon opening, there is concealed damage to the equipment notify the carrier. Notification should be made verbally as well as in written form.
4. Request an inspection by the shipping company of the damaged equipment. This should be done within 10 days from receipt of the equipment.
5. Check the lower portion of the unit to be sure legs or casters are not bent.
6. Also open the compressor compartment housing and visually inspect the refrigeration package. Be sure lines are secure and base is still intact.
7. Freight carriers can supply the necessary damage forms upon request.
8. Retain all crating material until an inspection has been made or waived.

The units with LiquiTec technology cold pans contain a non-toxic eutectic fluid within a sealed inner liner. This fluid may leak if the tank is punctured so care must be taken when uncrating and setting in place. The eutectic fluid is non-toxic and may be flushed down a disposal drain. If the LiquiTec unit cold pans leak, immediately call the Delfield service department directly at 1-800-733-8821 not your local service agent.

Uncrating the Equipment

First cut and remove the banding from around the crate. Remove the front of the crate material, use of some tools will be required. If the unit is on legs remove the top of the crate as well and lift the unit off the skid. If the unit is on casters it can be "rolled" off the skid.

Shelleyglas® Specifications

This manual covers standard units only. If you have a custom unit, consult the customer service department at the number listed below.

Heated Serving Counters

Model	*V/ Hz/Ph*	*NEMA Plug*	*Amperage*
KH-2	120/208-230/60/1	14-20P	15.0
KH-3	120/208-230/60/1	14-30P	20.0
KH-4	120/208-230/60/1	14-50P	26.0
KH-5	120/208-230/60/1	14-50P	31.0
KH-6	120/208-230/60/1	14-50P	37.0
KH-2-NU	120/208-230/60/1	14-20P	11.0
KH-3-NU	120/208-230/60/1	14-20P	16.0
KH-4-NU	120/208-230/60/1	14-30P	22.0
KH-5-NU	120/208-230/60/1	14-50P	28.0
KH-6-NU	120/208-230/60/1	14-50P	33.0

Refrigerated Cold Pan Serving Counters

Model	*V/ Hz/Ph*	*NEMA Plug*	*Amperage*	*H.P.*	*Refrigerant*	*BTU*
KCSC-36B	115/60/1	5-15P	7.0	1/4	404a	1102
KCSC-50B	115/60/1	5-15P	7.0	1/4	404a	1240
KCSC-60B	115/60/1	5-15P	7.0	1/4	404a	1343
KCSC-74B	115/60/1	5-15P	7.0	1/4	404a	1423
KCSC-96B	115/60/1	5-15P	7.0	1/4	404a	1487

Shelleyglas with LiquiTec

Model	*V/ Hz/Ph*	*NEMA Plug*	*Amperage*	*H.P.*	*Refrigerant*	*BTU*
KCSC-36-EF	115/60/1	5-15P	7.0	1/4	404a	1102
KCSC-50-EF	115/60/1	5-15P	7.0	1/4	404a	1240
KCSC-60-EF	115/60/1	5-15P	7.0	1/4	404a	1343
KCSC-74-EF	115/60/1	5-15P	7.0	1/4	404a	1423
KCSC-96-EF	115/60/1	5-15P	7.0	1/4	404a	1487

Heated and Refrigerated Combo Counters

Model	*V/ Hz/Ph*	*NEMA Plug*	*Amperage*	*H.P.*	*Refrigerant*	*BTU*
KHCR-50-B	120/60/1	5-20P	16.0	1/4	404a	1102
KHCR-60-B	120/60/1	5-20P	16.0	1/4	404a	1102
KHCR-74-B	120/60/1	5-20P	16.0	1/4	404a	1102
KHCR-96-B	120/60/1	5-20P	16.0	1/4	404a	1240
KH2CR-72-B	120/208-230/60/1	14-30P	18.0	1/4	404a	1102
KH2CR-96-B	120/208-230/60/1	14-30P	18.0	1/4	404a	1343
KH3CR-96-B	120/208-230/60/1	14-30P	23.0	1/4	404a	1240
KH4CR-96-B	120/208-230/60/1	14-50P	29.0	1/4	404a	1102

Shelleyglas® Specifications, continued

Heated and Ice Cooled Combo Counters

Model	*V/ Hz/Ph*	*NEMA Plug*	*Amperage*
KHC-50-NU	120/60/1	5-15P	9.0
KHC-60-NU	120/60/1	5-15P	9.0
KHC-74-NU	120/60/1	5-15P	9.0
KHC-96-NU	120/60/1	5-15P	9.0
KH2C-74-NU	120/208-230/60/1	14-20P	11.0
KH2C-96-NU	120/208-230/60/1	14-20P	11.0
KH3C-74-NU	120/208-230/60/1	14-20P	16.0
KH3C-96-NU	120/208-230/60/1	14-20P	16.0
KH4C-96-NU	120/208-230/60/1	14-30P	22.0

Frost Top Serving Counters

Model	*V/ Hz/Ph*	*NEMA Plug*	*Amperage*	*H.P.*	*Refrigerant*	*BTU*
KCFT-36-NU	115/60/1	5-15P	7.0	1/4	404a	435
KCFT-50-NU	115/60/1	5-15P	7.0	1/4	404a	595
KCFT-60-NU	115/60/1	5-15P	7.0	1/4	404a	717
KCFT-74-NU	115/60/1	5-15P	7.0	1/4	404a	827
KCFT-96-NU	115/60/1	5-15P	7.0	1/4	404a	921

Milk Counters

Model	*V/ Hz/Ph*	*NEMA Plug*	*Amperage*	*H.P.*	*Refrigerant*	*BTU*
KCM-36	115/60/1	5-15P	7.0	1/4	404A	1114
KCM-50	115/60/1	5-15P	7.0	1/4	404A	1190
KCM-60	115/60/1	5-15P	7.0	1/4	404A	1329
KCM-74	115/60/1	5-15P	7.0	1/4	404A	1535

Ice Cream Counters

Model	*V/ Hz/Ph*	*NEMA Plug*	*Amperage*	*H.P.*	*Refrigerant*	*BTU*
KCF-36	115/60/1	5-15P	7.0	1/4	404A	915
KCF-50	115/60/1	5-15P	7.0	1/4	404A	1350
KCF-60	115/60/1	5-15P	8.0	1/3	404A	1456
KCF-74	115/60/1	5-15P	8.0	1/3	404A	1609

Milk and Ice Cream Counters

Model	*V/ Hz/Ph*	*NEMA Plug*	*Amperage*	*H.P.*	*Refrigerant*	*BTU REF/FRZ*
KCFM-50	115/60/1	5-15P	7.0	1/4	404A	789/1580
KCFM-74	115/60/1	5-15P	8.0	1/3	404A	1199/2040

Carving Counter

Model	*V/ Hz/Ph*	*NEMA Plug*	*Amperage*
KRB	115/60/1	5-15P	5.0

Shelleysteel® Specifications

Heated Serving Counters

Model	*V/Hz/Ph*	*NEMA Plug*	*Amperage*
SH-2	120/208-230/60/1	14-20P	15.0
SH-3	120/208-230/60/1	14-30P	20.0
SH-4	120/208-230/60/1	14-50P	26.0
SH-5	120/208-230/60/1	14-50P	31.0
SH-6	120/208-230/60/1	14-50P	37.0
SH-2-NU	120/208-230/60/1	14-20P	11.0
SH-3-NU	120/208-230/60/1	14-20P	16.0
SH-4-NU	120/208-230/60/1	14-30P	22.0
SH-5-NU	120/208-230/60/1	14-50P	28.0
SH-6-NU	120/208-230/60/1	14-50P	33.0

Refrigerated Cold Pan Serving Counters

Model	*V/Hz/Ph*	*NEMA Plug*	*Amperage*	*H.P.*	*Refrigerant*	*BTU*
SCSC-36B	115/60/1	5-15P	7.0	1/4	404a	1102
SCSC-50B	115/60/1	5-15P	7.0	1/4	404a	1240
SCSC-60B	115/60/1	5-15P	7.0	1/4	404a	1343
SCSC-74B	115/60/1	5-15P	7.0	1/4	404a	1423
SCSC-96B	115/60/1	5-15P	7.0	1/4	404a	1487

Shelleysteel with LiquiTec

Model	*V/Hz/Ph*	*NEMA Plug*	*Amperage*	*H.P.*	*Refrigerant*	*BTU*
SCSC-36-EF	115/60/1	5-15P	7.0	1/4	404a	1102
SCSC-50-EF	115/60/1	5-15P	7.0	1/4	404a	1240
SCSC-60-EF	115/60/1	5-15P	7.0	1/4	404a	1343
SCSC-74-EF	115/60/1	5-15P	7.0	1/4	404a	1423
SCSC-96-EF	115/60/1	5-15P	7.0	1/4	404a	1487

Heated and Refrigerated Combo Counters

Model	*V/Hz/Ph*	*NEMA Plug*	*Amperage*	*H.P.*	*Refrigerant*	*BTU*
SHCR-50-B	120/60/1	5-20P	16.0	1/4	404a	1102
SHCR-60-B	120/60/1	5-20P	16.0	1/4	404a	1102
SHCR-74-B	120/60/1	5-20P	16.0	1/4	404a	1102
SHCR-96-B	120/60/1	5-20P	16.0	1/4	404a	1240
SH2CR-62-B	120/208-230/60/1	14-20P	16.0	1/4	404a	1423
SH2CR-72-B	120/208-230/60/1	14-30P	18.0	1/4	404a	1102
SH2CR-96-B	120/208-230/60/1	14-30P	18.0	1/4	404a	1343
SH3CR-96-B	120/208-230/60/1	14-30P	23.0	1/4	404a	1240
SH4CR-96-B	120/208-230/60/1	14-50P	29.0	1/4	404a	1102

Shelleysteel® Specifications, continued

Heated and Ice Cooled Combo Counters

Model	*V/Hz/Ph*	*NEMA Plug*	*Amperage*
SHC-50-NU	120/60/1	5-15P	9.0
SHC-60-NU	120/60/1	5-15P	9.0
SHC-74-NU	120/60/1	5-15P	9.0
SHC-96-NU	120/60/1	5-15P	9.0
SHC2-62-NU	120/208-230/60/1	14-20P	11.0
SH2C-74-NU	120/208-230/60/1	14-20P	11.0
SH2C-96-NU	120/208-230/60/1	14-20P	11.0
SH3C-74-NU	120/208-230/60/1	14-20P	16.0
SH3C-96-NU	120/208-230/60/1	14-20P	16.0
SH4C-96-NU	120/208-230/60/1	14-30P	22.0

Frost Top Serving Counters

Model	*V/Hz/Ph*	*NEMA Plug*	*Amperage*	*H.P.*	*Refrigerant*	*BTU*
SCFT-36-NU	115/60/1	5-15P	7.0	1/4	404a	435
SCFT-50-NU	115/60/1	5-15P	7.0	1/4	404a	595
SCFT-60-NU	115/60/1	5-15P	7.0	1/4	404a	717
SCFT-74-NU	115/60/1	5-15P	7.0	1/4	404a	827
SCFT-96-NU	115/60/1	5-15P	7.0	1/4	404a	921

Milk Counters

Model	*V/Hz/Ph*	*NEMA Plug*	*Amperage*	*H.P.*	*Refrigerant*	*BTU*
SCM-36	115/60/1	5-15P	7.0	1/4	404A	1114
SCM-50	115/60/1	5-15P	7.0	1/4	404A	1190
SCM-60	115/60/1	5-15P	7.0	1/4	404A	1328
SCM-74	115/60/1	5-15P	7.0	1/4	404A	1535

Ice Cream Counters

Model	*V/Hz/Ph*	*NEMA Plug*	*Amperage*	*H.P.*	*Refrigerant*	*BTU*
SCF-36	115/60/1	5-15P	7.0	1/4	404A	915
SCF-50	115/60/1	5-15P	7.0	1/4	404A	1350
SCF-60	115/60/1	5-15P	8.0	1/3	404A	1456
SCF-74	115/60/1	5-15P	8.0	1/3	404A	1609

Milk and Ice Cream Counter

Model	*V/Hz/Ph*	*NEMA Plug*	*Amperage*	*H.P.*	*Refrigerant*	*BTU REF/FRZ*
SCFM-50	115/60/1	5-15P	7.0	1/4	404A	789/1580
SCFM-74	115/60/1	5-15P	8.0	1/3	404A	1199/2040

Carving Counter

Model	*V/Hz/Ph*	*NEMA Plug*	*Amperage*
SRB	115/60/1	5-15P	5.0

Trimline L-shaped Heated Serving Counter

Model	*V/Hz/Ph*	*NEMA Plug*	*Amperage*
SLT4 (-L OR -R)	208-230/60/1	14-30P	22.0

Installation: Heated Units

Location
Do not install the unit near combustible objects or surfaces affected by heat or moisture.

Leveling
The unit must be level, both front and back and left to right, in order to maintain an equal water depth throughout the wells.

Electrical Connections


Connections must be made in accordance with all applicable local codes and/or the National Electrical Code. Refer to the amperage data on page 3 and the wiring diagrams on pages 8 and 9. A standard unit is provided with a power cord and 3-prong grounded plug. All units should be plugged into a grounded receptacle with its own circuit protection that matches the amperage of the plug.

Operation: Heated Units

After plugging in the power supply cord, select desired temperature by rotating the knob on the temperature control panel. Indicator light will come on when the switch is activated. Individual temperature control knobs and indicator lights are provided for each heated food well.

If the same temperature settings for each well are used every day, the temperature knobs can be left in their set position and the wells can be turned off using the ON/OFF switch at the end of the control panel.

Before the unit is used the first time for serving, turn the temperature knob to "10" and heat the well for 15 minutes. Do not be alarmed if smoke appears; this preheat should burn off any residue or dust that has adhered to the food well element.

When serving thick sauces always use the hot food well in "wet" operation. This provides more uniform temperature for the sauce. Product temperature should range from 140˚F to 160˚F

Never place food directly in well. Always use pans.

For most efficient operation, keep covered insets empty in each well during preheating and when the well is not in use.

Always place covers on pans when not serving to prevent food from drying out and to reduce your operating costs.

Wet operation
Fill the food well with about two inches of water and cover with lid or empty pan. To preheat water, set temperature control at "High". With pans in place, wells will boil water. Food temperature will vary depending on type and amount of product. To minimize steam and water usage, set control to lowest setting that will maintain proper food temperature.

To reduce preheating time, use hot water to fill the well.

Steam can cause serious burns. Always wear some type of protective covering on your hands and arms when removing lids from the unit. Lift the lid in a way that will direct escaping steam away from your face and body. Water temperature will average 180˚F.

Dry operation
Wet operation is usually much more efficient and is usually preferred. However, these units may be operated without water with no damage to the unit.

The dry well should never be preheated longer than 15 minutes. Only 6" deep pans should be used with dry food wells.

When operated dry, the well bottoms become very hot. Do not allow unprotected skin to contact any well surface.

When operated dry, the bottom of the well will discolor. To clean, use a stainless steel cleaner or mild abrasive.

Operation of optional heated understorage
If necessary, preheat the heated understorage to desired temperature. Temperature range of understorage is 100°F to 200°F. The temperature control knob is always the far left knob on the panel. Indicator light is also at the far left.

Installation: Refrigerated Units

Location

Be sure the location chosen has a floor strong enough to support the total weight of the cabinet and contents. Reinforce the floor as necessary to provide for maximum loading.

For the most efficient refrigeration, be sure to provide good air circulation inside and out.

Inside cabinet: Do not pack unit so full that air cannot circulate. Take care not to block air flow to the fans and allow space along the sides.

Outside cabinet: Be sure the unit has access to ample air; avoid hot corners and locations near stoves and ovens. It is suggested the rear of the unit be no less than two inches from any wall, partition or any other object which will restrict exhaust air flow.

Leveling

A level cabinet looks better and will perform better because the doors will line up with the door frames properly, and the cabinet will not be subject to unnecessary strain.

Stabilizing

Some models are supplied on casters for your convenience, for ease of cleaning underneath and mobility.

The unit must be installed in a stable condition with the front wheels locked, locking the front casters after installation is the owner's and operator's responsibility.

Plumbing

Refrigerated units have a drain that exits the unit on the bottom, and is located on the operator's left side. Standard units on casters or legs will have a bronze faucet that fits a standard garden hose. Units on legs with optional remote drain valve handle will have 1" threaded pipe extending from bottom of unit. On standard units, a stainless steel access panel or hinged louver will be provided for access to drain connections.

Moisture collecting from improper drainage can create a slippery surface on the floor and a hazard to employees. It is the owner's and operator's responsibility to provide a container or outlet for drainage.

Electrical connection

A standard refrigerated unit is provided with a power cord and 3-prong grounded plug.

The unit should be plugged into a receptacle with its own circuit protection that matches the amperage of the plug.

Refer to the amperage data on page 3 or the serial tag data and your local code or the National Electrical Code to be sure the unit is connected to the proper power source. A protected circuit of the correct voltage and amperage must be run for connection of the supply cord or permanent connection to the unit.

On cord-connected units, an ON/OFF switch is located directly on the face of the compressor section. The switch must be turned to its OFF position and power supply disconnected whenever doing the following:

1. **Performing maintenance functions.**
2. **Cleaning the refrigerated cabinet area.**
3. **Performing service or repair functions.**

Under no circumstances should the unit be operated without the louvered panel in place.

Operation: LiquiTec Units

LiquiTec Series cold pans are adjusted at the factory to provide satisfactory operation without any further adjustments. However, if it is necessary to adjust the temperature, the control is located in the machine compartment. Turn the knob clockwise as indicated on the control. Settings are from 1 through 7; 7 being the coldest. Adjustments should be made gradually. Several small adjustments will be more effective than one large adjustment. It may take an hour or longer to realize the temperature change depending on the application and location of the unit.

These units are not designed to cool warm food products. Items should be placed in the unit pre-cooled at least to the desired holding temperature, if not slightly colder. In some applications, a gradual warming of product may occur, particularly at the exposed top of the products. Stirring or rotation of the product may be necessary to maintain overall temperature. Warming of food product can occur very quickly outside of the unit. When loading or rotating the product, avoid leaving food items in a non-refrigerated location for any length of time to prevent warming or spoilage.

The cold pan is not intended to be used with ice.

The unit has an ON/OFF switch. Turn the unit ON an hour prior to use to allow for ample cool down time. The unit must be turned off when not in use or overnight for defrosting and cleaning.

Pressure Control Settings

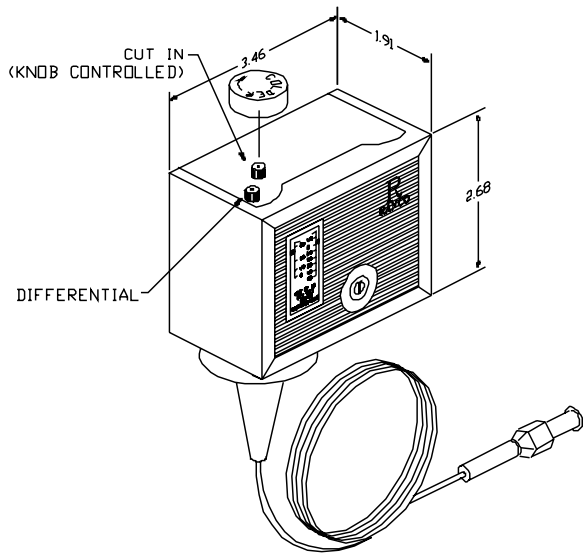
All Delfield refrigerated models come equipped with 115-volt, 60 cycle, single phase refrigeration units. The refrigeration valves are open and ready to operate as soon as the power supply cord is plugged into the standard 115-volt, grounded electrical outlet.

Pressure Control

The temperature is controlled by an adjustable pressure control located in the machine compartment. An adjustable control has the word **COLDER** near the knob, with an arrow to indicate the adjustment direction. These controls are field adjustable and do not require a service agent. If you have any questions, feel free to contact the Delfield Service Department.

NOTE

In attempting to adjust the pressure control, you can do damage to your unit by accidentally adjusting the differential. Please make small incremental adjustments if a temperature adjustment is necessary, please contact the service department at Delfield (800) 733-8821 or your local service agent. Delfield is not responsible for charges incurred while having the pressure control adjusted.



Pressure control settings:

KCSC/SCSC, KHCR/SHCR & KCFT/SCFT

55# cut in 30# cut out

KCM/SCM

40# cut in 20# cut out

Maintenance

Drain Maintenance - Base
Each unit has a drain located inside the unit that removes the condensation from the evaporator coil and routes it to an external condensate evaporator pan. Each drain can become loose or disconnected during normal use. If you notice water accumulation on the inside of the unit be sure the drain tube is connected to the evaporator drain pan. If water is collecting underneath the unit make sure the end of the drain tube is in the condensate evaporator in the machine compartment. The leveling of the unit is important as the units are designed to drain properly when level. Be sure all drain lines are free of obstructions.

Caster Maintenance
Wipe casters with a damp cloth monthly to prevent corrosion.

The power switch must be turned to OFF and the unit disconnected from the power source whenever performing service, maintenance functions or cleaning the refrigerated area.

Interiors & Exteriors
The interior and exterior can be cleaned using soap and warm water. If this isn't sufficient, try ammonia and water or a nonabrasive liquid cleaner. When cleaning the exterior, always rub with the "grain" of the stainless steel to avoid marring the finish. Do not use an abrasive cleaner because it will scratch the stainless steel and can damage the breaker strips and gaskets.

For all fiberglass and stainless steel parts, use a mild, non-abrasive soap or detergent and warm water. This may be followed by an application of stainless steel cleaner or polish which will eliminate water spotting, fingerprints and bring out the color of the fiberglass. To maintain the rich, brilliant color of the fiberglass and to remove shallow surface scratches, wax twice a year. This can be done in the same manner in which a car is waxed.

Stainless Steel Care and Cleaning
To prevent discoloration or rust on stainless steel several important steps need to be taken. First, we need to understand the properties of stainless steel. Stainless steel contains 70- 80% iron, which will rust. It also contains 12-30% chromium, which forms an invisible passive film over the steel's surface, which acts as a shield against corrosion. As long as the protective layer is intact, the metal is still stainless. If the film is broken or contaminated, outside elements can begin to breakdown the steel and begin to form discoloration or rust. Proper cleaning of stainless steel requires soft cloths or plastic scouring pads.

NEVER USE STEEL PADS, WIRE BRUSHES OR SCRAPERS!

Cleaning solutions need to be alkaline based or non-chloride cleaners. Any cleaner containing chlorides will damage the protective film of the stainless steel. Chlorides are also commonly found in hard water, salts, and household and industrial cleaners. If cleaners containing chlorides are used be sure to rinse repeatedly and dry thoroughly. Routine cleaning of stainless steel can be done with soap and water. Extreme stains or grease should be cleaned with a non-abrasive cleaner and plastic scrub pad. Always rub with the grain of the steel. There are stainless steel cleaners available which can restore and preserve the finish of the steels protective layer. Early signs of stainless steel breakdown are small pits and cracks. If this has begun, clean thoroughly and start to apply stainless steel cleaners in attempt to restore the passivity of the steel.

Never use an acid based cleaning solution! Many food products have an acidic content, which can deteriorate the finish. Be sure to clean the stainless steel surfaces of ALL food products. Common items include, tomatoes, peppers and other vegetables.

Cleaning the Condenser Coil
In order to maintain proper refrigeration performance, the condenser fins must be cleaned of dust, dirt and grease regularly. It is recommended that this be done at least every three months. If conditions are such that the condenser is totally blocked in three months, the frequency of cleaning should be increased. Clean the condenser with a vacuum cleaner or stiff brush. If extremely dirty, a commercially available condenser cleaner may be required.

Failure to maintain a clean condenser coil can initially cause high temperatures and excessive run times. Continuous operation with a dirty or clogged condenser coil can result in compressor failure. Neglecting the condenser coil cleaning procedures will void any warranties associated with the compressor and cost to replace the compressor.

Never use a high-pressure water wash for this cleaning procedure as water can damage the electrical components located near or at the condenser coil.

Doors/Hinges
Over time and with heavy use doors the hinges may become loose. If this happens tighten the screws that mount the hinge brackets to the frame of the unit. Loose or sagging doors can cause the hinges to pull out of the frame, which may damage both the doors and the hinges. In some cases this may require qualified service agents or maintenance personnel to perform repairs.

Maintenance, continued

Do not place hot pans on/against the blue ABS liner. Do not throw items into the storage area. Failure to follow these recommendations could result in damage to the interior of the cabinet or to the blower coil. Overloading the storage area, restricting the airflow, and continuous opening and closing of the doors and drawers will hamper the units ability to maintain operational temperature.

Preventing blower coil corrosion

To help prevent corrosion of the blower coil, store all acidic items, such as pickles and tomatoes, in sealable containers. Immediately wipe up all spills.

Units with pans should be operated with pans in place. Operating the unit without all pans in place will lower efficiency and may damage the unit.

Continuous opening and closing of the doors will hamper the unit's ability to maintain optimum refrigeration temperature. Top section is not intended for overnight storage. Product should be removed from pans. Pans can remain in unit while empty.

Defrosting

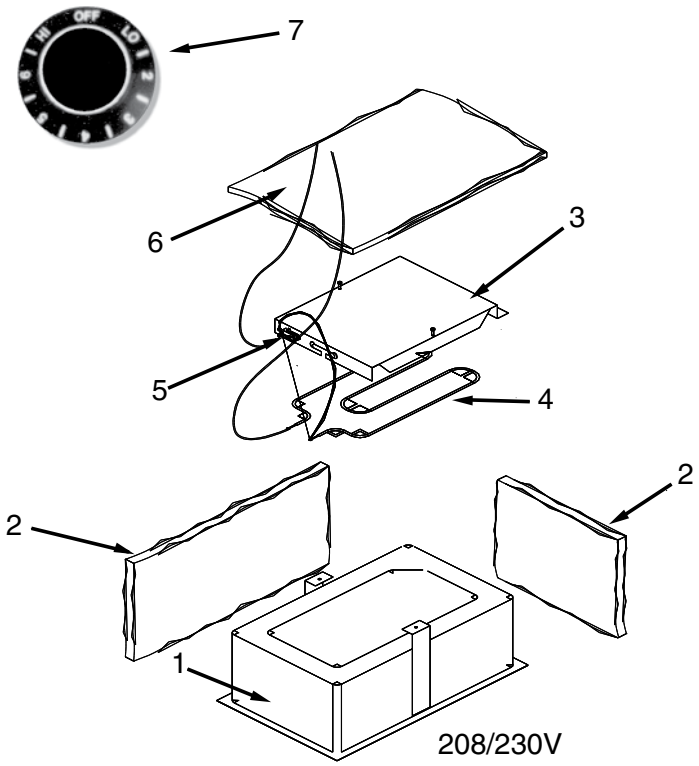
Refrigerated cold pans and frost tops should be defrosted daily. Milk or Ice Cream dispensers require defrosting after 3/8 to 1/2 of frost forming. On/Off switch located above louver panel.

Never use sharp objects or tools to clean or scrape ice/frost build up from the refrigerated cold pans or frost tops. A puncture to the pan could cause irreparable damage to the refrigeration system.

Units with a Eutectic Fluid Cold Pan require the same precautions. The fluid is NOT refillable and loss of fluid due to a puncture would cause irreparable damage.

Over shelves and other items mounted to the top of the counters should never be installed in the field due to the potential damage to the refrigeration system.

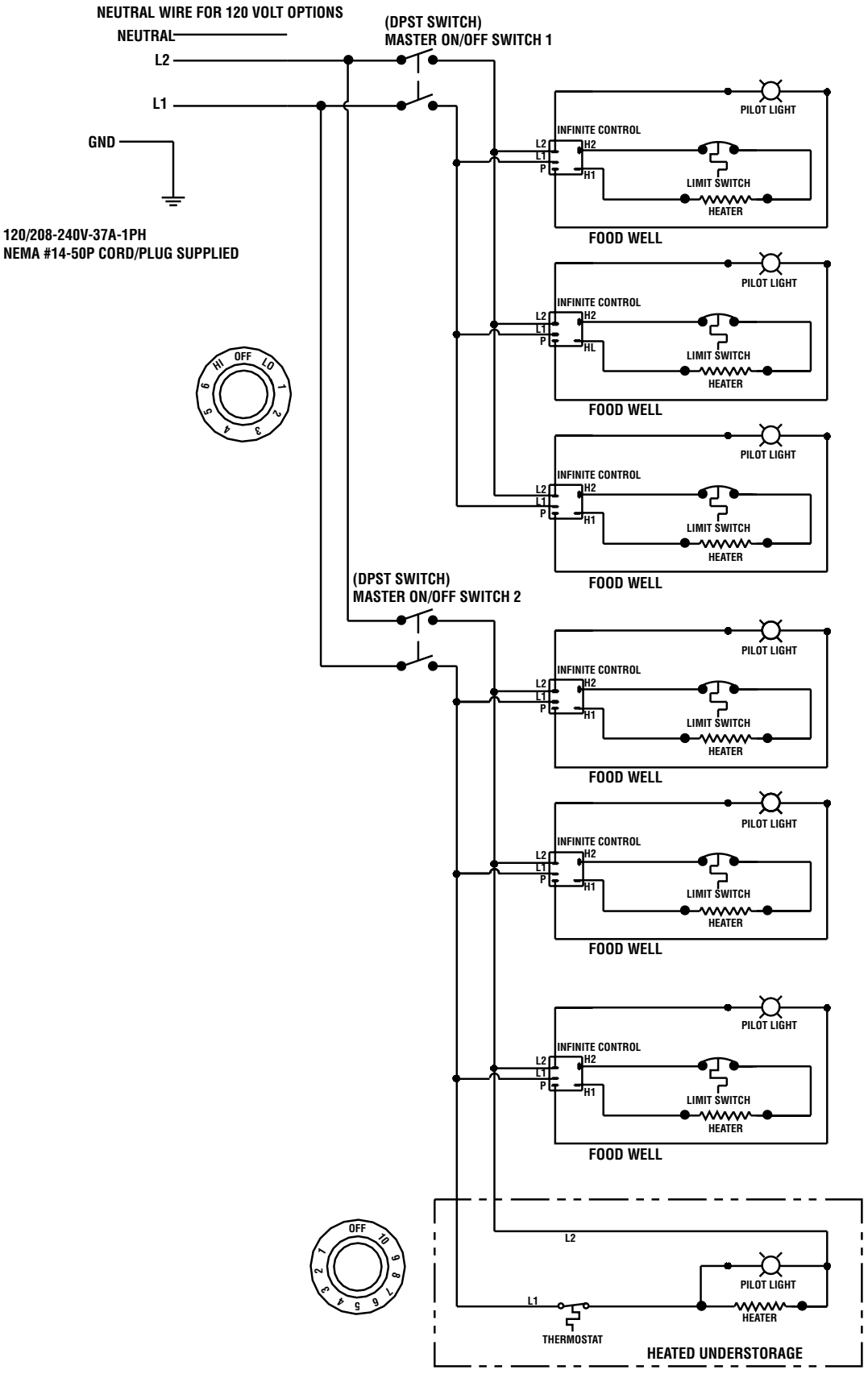
Food Well Assembly — KH/SH/-NU Series with Infinite Controls



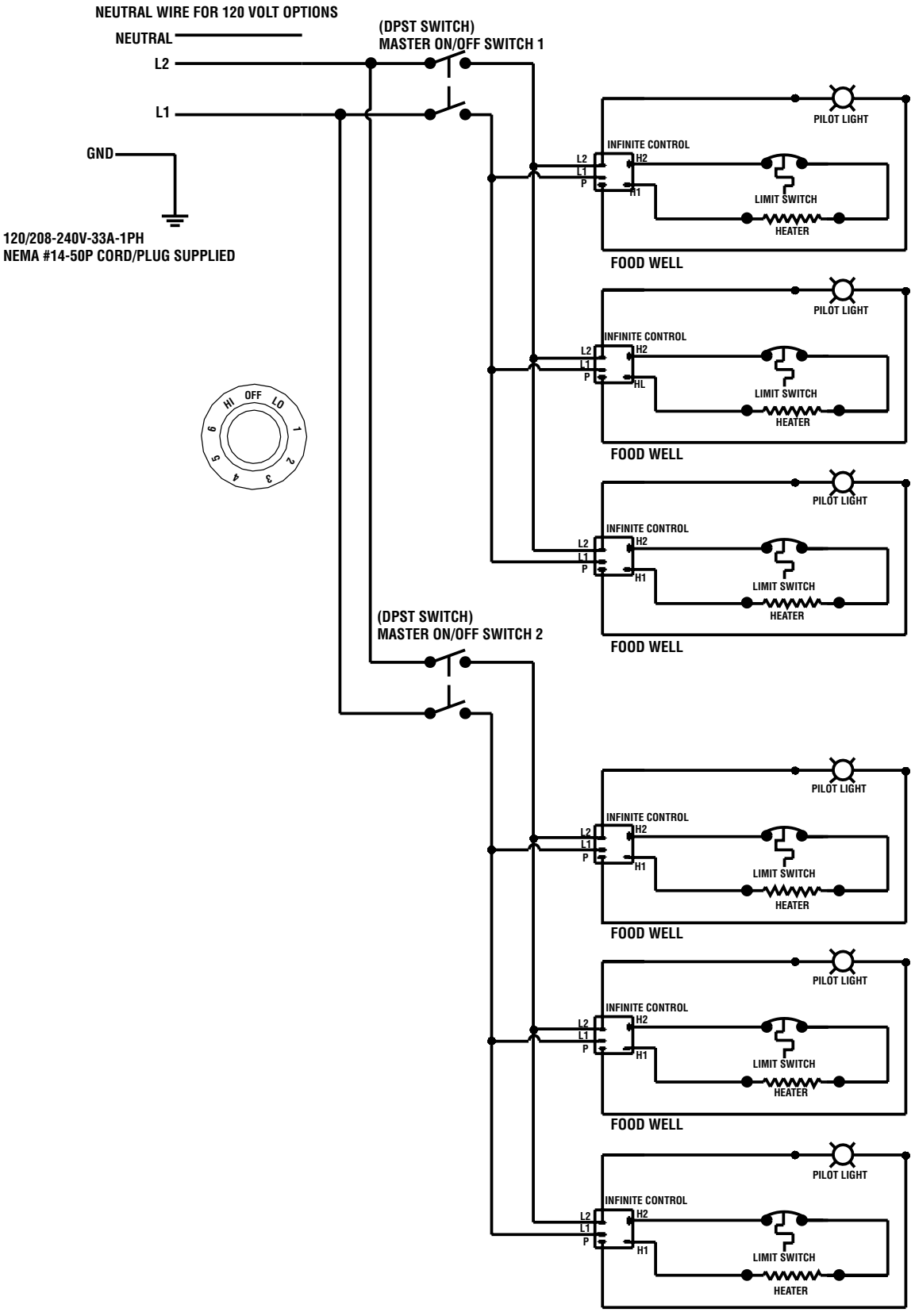
No.	Part Description
7	KNOB, INFINITE CONTROL
6	INSULATION, BLANKET
5	THERMOSTAT, NON-ADJ, 550°F
4	ELEMENT, HEATING, 208/230V,1000/1222W ELEMENT, HEATING, 120V/1000W
3	PLATE, DEFLECTOR, DFW, W/O DRAIN
	PLATE, DEFLECTOR, DFW, W/DRAIN
2	INSULATION, FIBERGLASS, 9" X 48"
1	FOOD WELL W/STRAPS, ASSY, WO/ DRAIN
	FOOD WELL W/STRAPS, W/ DRAIN
—	CONTROL, INFINITE, 240V, 13A
—	CONTROL, INFINITE, 120V, 13A

NOTE: See page 18 for part numbers

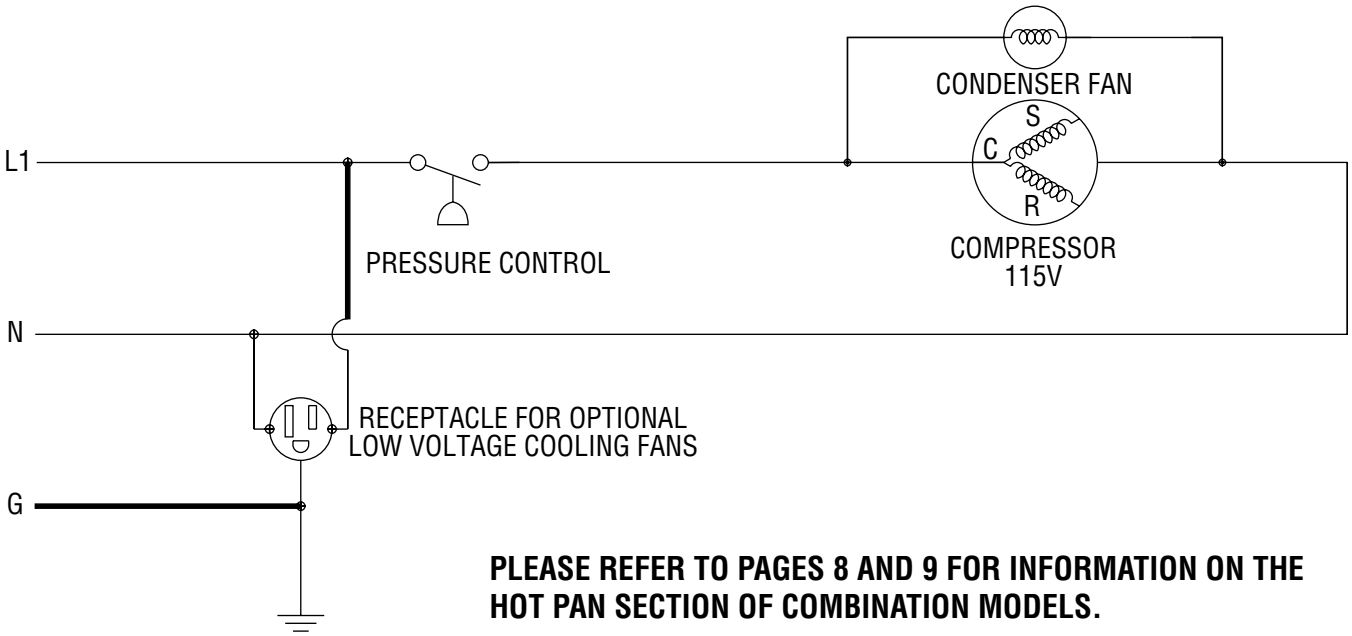
Wiring Diagram — Units With Infinite and Thermostatic Controls



Wiring Diagram — Units With Infinite Controls

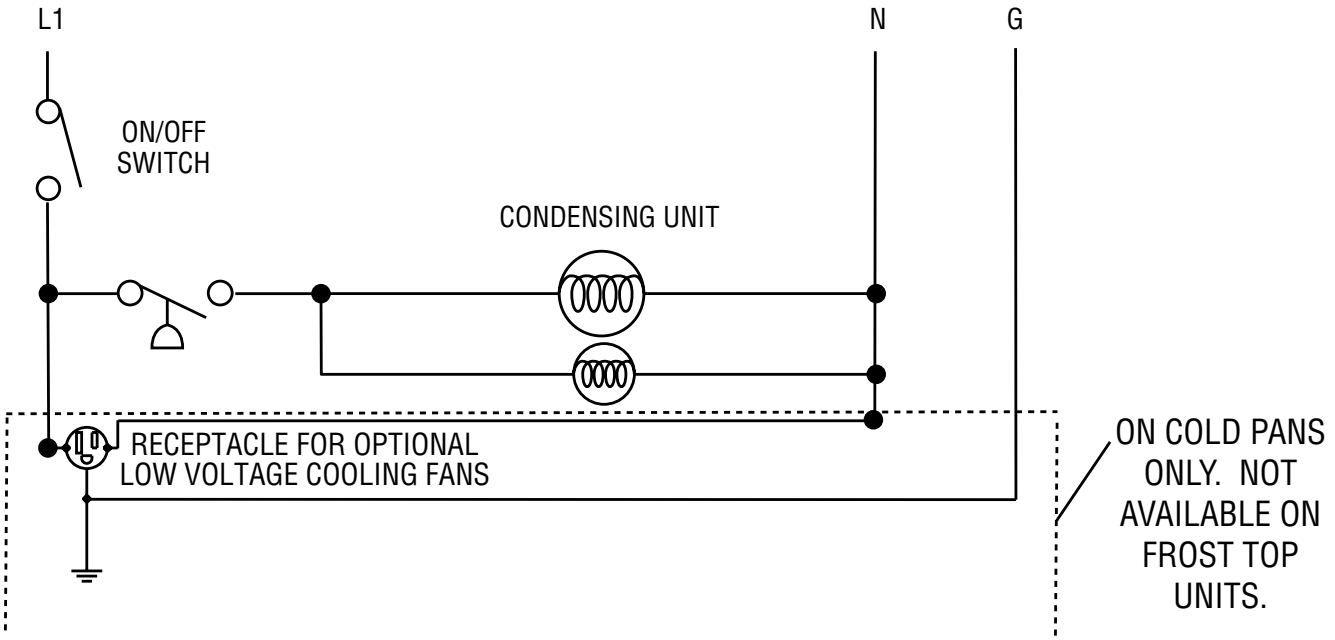


Wiring Diagram — Cold Pan Combo

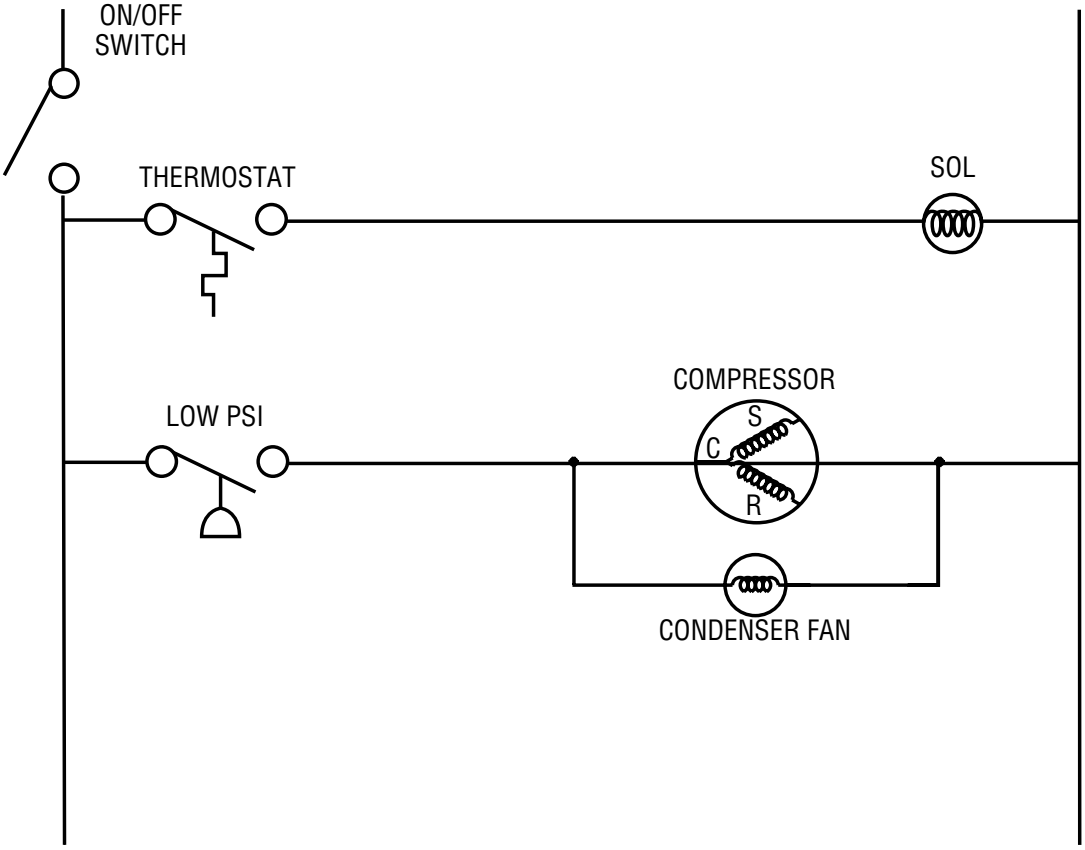


PLEASE REFER TO PAGES 8 AND 9 FOR INFORMATION ON THE HOT PAN SECTION OF COMBINATION MODELS.

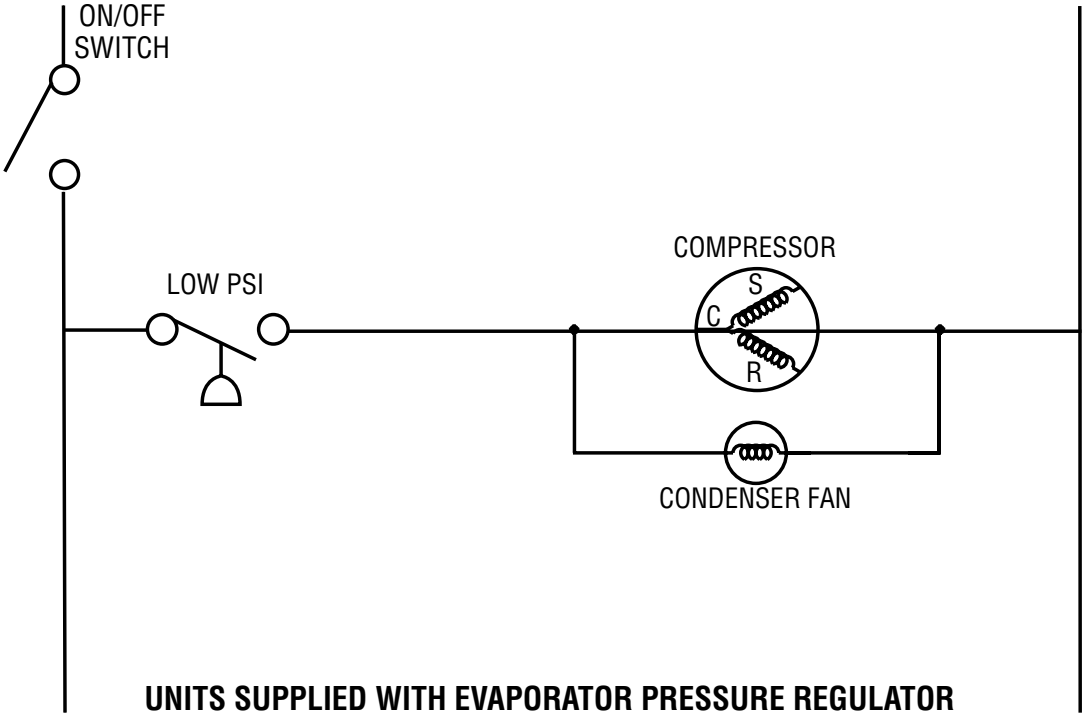
Wiring Diagram — KCSC, SCSC, KCFT And SCFT Cold Pans



Wiring Diagram — KCFM, SCFM



Wiring Diagram — KCF, SCF, KCM, SCM



UNITS SUPPLIED WITH EVAPORATOR PRESSURE REGULATOR

Replacement Parts List

Heated Serving Counters

Part Number	*Description*	*KH/SH-2*	*KH/SH-3*	*KH/SH-4*	*KH/SH-5*	*KH/SH-6*	*KH/SH-2-NU*	*KH/SH-3-NU*	*KH/SH-4-NU*	*KH/SH-5-NU*	*KH/SH-6-NU*
3234557	Control Knob	X	X	X	X	X	X	X	X	X	X
*000-519-0001	Food Warmer, 208V, w/o Drain	X	X	X	X	X	X	X	X	X	X
*000-442-0031	Heated Door Assembly		X	X	X	X					
*000-442-0030	Heated Door Assembly	X									
6190215	Heating Element	X	X	X	X	X					
2194110	Infinite Control 208V	X	X	X	X	X	X	X	X	X	X
2194212	On/Off Switch	X	X	X	X	X	X	X	X	X	X
2194095	Pilot Light	X	X	X	X	X	X	X	X	X	X
2194460	Thermostat (Heated Insert)	X	X	X	X	X					

Refrigerated Cold Pans

Part Number	*Description*
3234902	Caster, 5"
3234783	Caster, 5", with brake
*000-BN5-0030	Condensing Unit, 1/4HP
3234242	Drain
3516225	Expansion Valve
*356-411-0001	Louver Panel, End
*356-411-0000	Louver Panel, Front/Rear
2193927	Low Pressure Control
2190154	Rocker Switch

Shelleyglas & Shelleysteel with LiquiTec

Part Number	*Description*
3234902	Caster, 5"
3234783	Caster, 5", with brake
*000-BN5-0030	Condensing Unit, 1/4HP
3516225	Expansion Valve
*356-411-0001	Louver Panel, End
*356-411-0000	Louver Panel, Front/Rear
2193927	Low Pressure Control
2190154	Rocker Switch

Heated and Refrigerated Combo Counters

Part Number	*Description*
3234902	Caster, 5"
3234783	Caster, 5", with brake
*000-BN5-0030	Condensing Unit, 1/4HP
3234557	Control Knob
3234242	Drain
3516225	Expansion Valve
*000-519-0001	Food Warmer, 208V, w/o Drain
2194110	Infinite Control 208V
*356-411-0001	Louver Panel, End
*356-411-0000	Louver Panel, Front/Rear
2193927	Low Pressure Control
2194212	On/Off Switch
2194095	Pilot Light
2190154	Rocker Switch

* Exploded views and replacement parts shown on page 17.

Replacement Parts List

Heated and Ice Cooled Combo Counters

Part Number	*Description*
*272-412-0000	Access Panel
*265-102-0030	Bottom, Perforated
3234902	Caster, 5"
3234783	Caster, 5", with brake
3234557	Control Knob
3234242	Drain
*000-519-0001	Food Warmer, 208V, w/o Drain
2194110	Infinite Control 208V
2194212	On/Off Switch
2194095	Pilot Light

Frost Top Serving Counters

Part Number	*Description*
*000-BN5-0030	Assy, 1/4 Hp Cond Unit
3234902	Caster, 5, Plt, Swvl,
3234783	Caster, 5, Plt, Swvl, Brk,
3234242	Drain, Plastic, 1ips, 2.87
3234669	Interlock Assy, Sg
*356-411-0001	Panel, Shy Lvr, End
*356-411-0000	Panel, Shy Lvr, Frt/rear
2190154	Switch, Rocker, 20a/125v,

Milk Counters

Part Number	*Description*
3234902	Caster, 5, Plt, Swvl,
3234783	Caster, 5, Plt, Swvl, Brk,
3526674	Cond Unit, 1/4hp, Hi, R134a
3234242	Drain, Plastic, 1ips, 2.87
3516101	Drier, Filter, 1/4odf
3234669	Interlock Assy, Sg
3234188	Lid, Large, Ice Cream,
*356-411-0001	Panel, Shy Lvr, End
*356-411-0000	Panel, Shy Lvr, Frt/rear
6150201	Spring, Extension,
2190154	Switch, Rocker, 20a/125v,

Ice Cream Counters

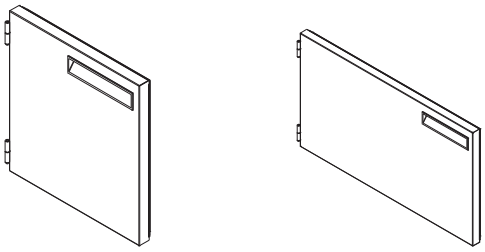
Part Number	*Description*
*000-BN5-0030	Assy, 1/4 Hp Cond Unit
3234902	Caster, 5, Plt, Swvl,
3234783	Caster, 5, Plt, Swvl, Brk,
3234242	Drain, Plastic, 1ips, 2.87
3234669	Interlock Assy, Sg,
3234188	Lid, Large, Ice Cream,
*356-411-0001	Panel, Shy Lvr, End
*356-411-0000	Panel, Shy Lvr, Frt/rear
6150201	Spring, Extension,
2190154	Switch, Rocker, 20a/125v,

Milk And Ice Cream Counters

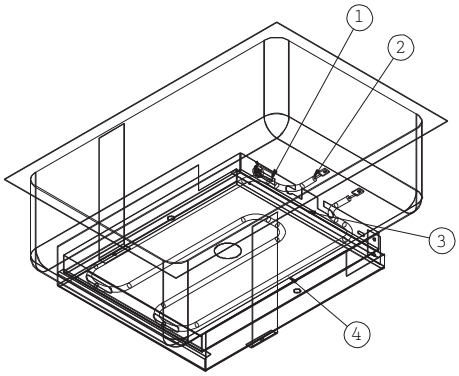
Part Number	*Description*
*000-BN5-0030	Assy, 1/4 Hp Cond Unit
3234902	Caster, 5, Plt, Swvl,
3234783	Caster, 5, Plt, Swvl, Brk
3234242	Drain, Plastic, 1ips, 2.87
3234669	Interlock Assy, Sg
3234188	Lid, Large, Ice Cream
*356-411-0001	Panel, Shy Lvr, End
*356-411-0000	Panel, Shy Lvr, Frt/rear
6150201	Spring, Extension,
2190154	Switch, Rocker, 20a/125v,

* Exploded views and replacement parts shown on page 17.

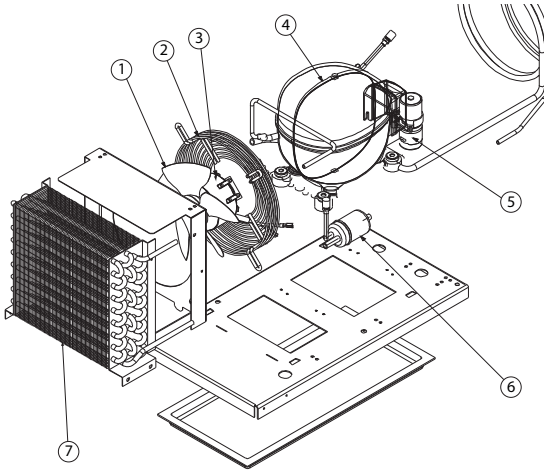
Exploded Views & Replacement Parts



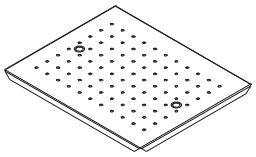
000-442-0030	**Heated Door Assembly**
1701249	Door Gasket
3234067	Flag Hinge
000-442-0031	**Heated Door Assembly**
1701244	Door Gasket
3234067	Flag Hinge



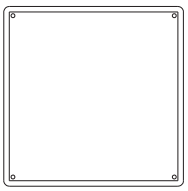
000-519-0001		**Food Warmer, 208V, w/o Drain**
1	2194335	Hi-Limt Safety Switch
2	2194007	Heating Element 208V
3	026-061-0001	Deflector Plate
4	0160014	Hot Food Well, 12 x 20



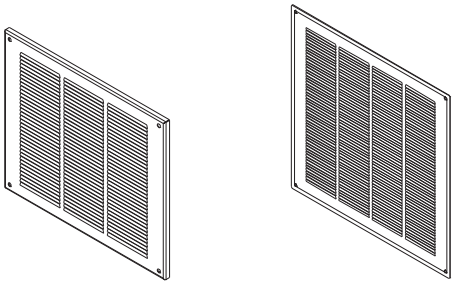
	000-BN5-0030	**Condensing Unit, 1/4HP**
1	3516457	Fan Blade
2	2160020	Fan Guard
3	2162717	Fan Motor
4	3526999	Danfoss Compressor
5	3516444	Compressor Relay
5	2194787	Start Capacitor
6	3516322	Filter Drier
7	3516454	Condenser Coil



265-102-0030 Bottom, Perforated



272-412-0000 Access Panel



356-411-0000 Louver Panel, Front/Rear

356-411-0001 Louver Panel, End

Standard Labor Guidelines To Repair Or Replace Parts On Delfield Equipment

Advice and recommendations given by Delfield Service Technicians do not constitute or guarantee any special coverage.

- A maximum of 1-hour is allowed to **diagnose a defective component**.
- A maximum of 1-hour is allowed for **retrieval of parts** not in stock.
- A maximum **travel distance** of 100 miles round trip and 2-hours will be reimbursed.
- Overtime, installation/start-up, normal control adjustments, general maintenance, glass breakage, freight damage, and/or correcting and end-user installation error will not be reimbursed under warranty unless pre-approved with a **Service Work Authorization** from Delfield. You must submit the number with the service claim.

LABOR OF 1-HOUR IS ALLOWED TO REPLACE:

- Thermostat
- Infinite Switch
- Door Jamb Switch
- Solenoid Coil
- Hi-limit/Thermal Protector Switch
- Fan Delay/Defrost Termination Switch
- Compressor Start Components and Overload Protector
- Defrost Timer
- Thermometer
- Gear Box
- Contactor/Relay
- Transformer
- Evaporator/Condenser Fan Motor and Blade
- Circulating Fan Motor and Blade
- Microprocessor Control
- Water Level Sensor/Probe
- Door Hinges, Locks, and Gaskets
- Condensate Element
- Springs/Lowerator

LABOR OF 2 HOURS TO REPLACE:

- Drawer Tracks/Cartridges
- Pressure Control
- Solenoid Valve
- Defrost Element
- Heating Element
- Locate/Repair Leak

LABOR OF 3 HOURS TO REPLACE:

- EPR or CPR Valve
- Expansion Valve
- Condenser or Evaporator Coil

LABOR OF 4 HOURS TO REPLACE

- Compressor

This includes recovery of refrigerant and leak check.

$55.00 maximum reimbursement for refrigerant recovery (includes recovery machine, pump, torch, oil, flux, minor fittings, solder, brazing rod, nitrogen, or similar fees.)

REFRIGERANTS

- R22 A maximum of $4.00/lb. or 25¢/oz. will be reimbursed.
- R134A A maximum of $5.00/lb. or 31¢/oz. will be reimbursed.
- R404A A maximum of $15.00/lb. or $1.00/oz. will be reimbursed.

Standard One Year Limited Warranty One year parts, 90 days labor

The Delfield Company ("Delfield") warrants to the Original Purchaser of the Delfield product (herein called the "Unit") that such Unit, and all parts thereof, will be free from defects in material and workmanship under normal use and service for a period of one (1) year from the date of shipment of the Unit to the Original Purchaser **or, if the Original Purchaser returns the warranty card completely filled out including the date of installation within thirty (30) days of receipt of the Unit, one (1) year from the date of installation.** During this one year warranty period, Delfield will repair or replace any defective part or portion there of returned to Delfield by the Original Purchaser which Delfield determines was defective due to faulty material or workmanship. The Original purchaser will pay all labor, crating, freight and related costs incurred in the removal of the Unit of defective component and shipment to Delfield, except that during a period of either ninety (90) days from the date of shipment of the Unit to the Original Purchaser or, if the Original Purchaser returns the warranty card completely filled out including the date of installation within thirty (30) days of receipt of the Unit, ninety (90) days from the date of installation Delfield will pay all related labor costs. Delfield will pay the return costs if the Unit or part thereof was defective.

The term "Original Purchaser" as used herein means that person, firm, association, or corporation for whom the Unit was originally installed.

This warranty does not apply to any Unit or part thereof that has been subjected to misuse, neglect, alteration, or accident, such as accidental damage to the exterior finish, operated contrary to the recommendations specified by Delfield; or repaired or altered by anyone other than Delfield in any way so as to, in Delfield's sole judgement, affect its quality or efficiency. This warranty does not apply to any Unit that has been moved from the location where it was originally installed. This warranty also does not cover the refrigerator drier or the light bulbs used in the Unit. **The warranty is subject to the user's normal maintenance and care responsibility as set forth in the Service and Installation Manual, such as cleaning the condenser coil, and is in lieu of all other obligations of Delfield. Delfield neither assumes, nor authorizes any other person to assume for Delfield, any other liability in connection with Delfield's products.**

Removal or defacement of the original Serial Number or Model Number from any Unit shall be deemed to release Delfield from all obligations hereunder or any other obligations, express or implied.

Parts furnished by suppliers to Delfield are guaranteed by Delfield only to the extent of the original manufacturer's express warranty to Delfield. Failure of the Original Purchaser to receive such manufacturers warranty shall in no way create any warranty, expressed or implied, or any other obligation or liability on Delfield's part in respect thereof.

IF THE CUSTOMER IS USING A PART THAT RESULTS IN A VOIDED WARRANTY AND A DELFIELD AUTHORIZED REPRESENTATIVE TRAVELS TO THE INSTALLATION ADDRESS TO PERFORM WARRANTY SERVICE, THE SERVICE REPRESENTATIVE WILL ADVISE CUSTOMER THE WARRANTY IS VOID. SUCH SERVICE CALLS WILL BE BILLED TO CUSTOMER AT THE AUTHORIZED SERVICE CENTER'S THEN APPLICABLE TIME AND MATERIALS RATES. CONSIDER: CUSTOMER MAY INITIATE A SERVICE AGREEMENT WITHOUT PARTS COVERAGE.

If shipment of a replacement part is requested prior to the arrival in the Delfield factory of the part claimed to be defective, the Original Purchaser must accept delivery of the replacement part on a C.O.D. basis, with credit being issued after the part has been received and inspected at Delfield's plant and determined by Delfield to be within this warranty. Under no condition does this warranty give the Original Purchaser the right to replace the defective Unit with a complete Unit of the same manufacturer or of another make. Unless authorized by Delfield in writing, this warranty does not permit the replacement of any part, including the motor-compressor, to be made with the part of another make or manufacturer.

No claims can be made under this warranty for spoilage of any products for any reason, including system failure.

The installation contractor shall be responsible for building access, entrance and field conditions to insure sufficient clearance to allow any hood(s), vent(s), or Unit(s) if necessary, to be brought into the building. Delfield will not be responsible for structural changes or damages incurred during installation of the Unit or any exhaust system.

Delfield shall not be liable in any manner for any default or delay in performance hereunder caused by or resulting from any contingency beyond Delfield's control, including, but not limited to, war, governmental restrictions or restraints, strike, lockouts, injunctions, fire, flood, acts of nature, short or reduced supply of raw materials, or discontinuance of the parts by the original part manufacturer.

Except as provided in any Additional Four Year Protection Plan, if applicable, and the Service Labor Contract, if applicable, the foregoing is exclusive and in lieu of all other warranties, whether written or oral, express or implied. This warranty supersedes and excludes any prior oral or written representations or warranties. Delfield expressly disclaims any implied warranties of merchantability, fitness for a particular purpose, or compliance with any law, treaty, rule or regulation relating to the discharge of substances into the environment. The sole and exclusive remedies of any person relating to the Unit, and the full liability of Delfield for any breach of this warranty, will be as provided in this warranty.

Other than this Delfield Standard One Year Limited Warranty, any applicable Delfield Additional Four Year Protection Plan or applicable Delfield Service Labor Contract, the Original Purchaser agrees and acknowledges that no other warranties are offered or provided in connection with or for the Unit or any other part thereof.

In no event will Delfield be liable for special, incidental or consequential damages, or for damages in the nature of penalties.

IF DURING THE WARRANTY PERIOD, CUSTOMER USES A PART FOR THIS DELFIELD EQUIPMENT OTHER THAN AN UNMODIFIED NEW OR RECYCLED PART PURCHASED DIRECTLY FROM DELFIELD OR ANY OF ITS AUTHORIZED SERVICE CENTERS AND/OR THE PART BEING USED IS MODIFIED FROM ITS ORIGINAL CONFIGURATION, THIS WARRANTY WILL BE VOID. FURTHER, DELFIELD AND ITS AFFILIATES WILL NOT BE LIABLE FOR ANY CLAIMS DAMAGES OR EXPENSES INCURRED BY THE CUSTOMER WHICH ARISE DIRECTLY OR INDIRECTLY, IN WHOLE OR IN PART, DUE TO THE INSTALLATION OF ANY MODIFIED PART AND/OR PART RECEIVED FROM AN UNAUTHORIZED SERVICE CENTER. If the warranty becomes void, Customer may purchase from Delfield, if available, a Service Agreement or service at the then current time and materials rate.

For more information on Delfield warranty's log on and check out the service section of our web site at www.delfield.com.

Additional Four Year Protection Plan for Motor-Compressor only

Delfield Model#	Serial #	Installation Date

In addition to the Standard One Year Warranty on the Motor-Compressor contained in the above listed Delfield product (the "Unit"), The Delfield Company ("Delfield") also agrees to repair, or exchange with similar or interchangeable parts in design and capacity at Delfield's option, the defective Motor-Compressor contained in the Unit (the "Motor-Compressor), or any part thereof, for the Original Purchaser only, at any time during the four (4) years following the initial one (1) year period commencing on the date of installation for the Original Purchaser. **Failure of the Original Purchaser to register the registration card containing the Original Purchasers name, address, date of installation, model number and serial number of the Unit containing the Motor-Compressor within 30 days from the date of installation shall void this warranty.** This additional warranty is only available if the Motor-Compressor is inoperative due to defects in material or factory workmanship, as determined by Delfield in its sole judgement and discretion. The Original Purchaser shall be responsible for returning the defective Motor-Compressor to Delfield prepaid, F.O.B. at the address shown on the back cover of this manual.

The term "Original Purchaser" as used herein means that person, firm, association, or corporation for whom the Unit was originally installed.

The term "Motor-Compressor" as used herein does not include unit base, air or water cooled condenser, receiver, electrical accessories such as relay, capacitors, refrigerant controls, or condenser fan/motor assembly. This warranty does not cover labor charges incidental to the replacement of parts. This warranty further does not include any equipment to which said condensing unit is connected, such as cooling coils, temperature controls or refrigerant metering devices. This warranty shall be void if the Motor-Compressor, in Delfield's sole judgement, has been subjected to misuse, neglect, alteration or accident, operated contrary to the recommendations specified by the Unit manufacturer, repaired or altered by anyone other than Delfield in any way so as, in Delfield's sole judgment, to affect its quality or efficiency or if the serial number has been altered, defaced or removed. This Warranty does not apply to a Motor-Compressor in any Unit that has been moved from the location where it was originally installed. The addition of methyl chloride to the condensing unit or refrigeration system shall void this warranty.

General Conditions

Delfield shall not be liable in any manner for any default or delay in performance hereunder caused by or resulting from any contingency beyond Delfield's control, including, but not limited to, war, governmental restrictions or restraints, strike, lockouts, injunctions, fire, flood, acts of nature, short or reduced supply of raw materials, or discontinuance of any part or the Motor-Compressor by the unit manufacturer.

Replacement of a defective Motor-Compressor is limited to one (1) Motor-Compressor by us during the four (4) year period. Delfield shall replace the Motor-Compressor at no charge.

This warranty does not give the Original Purchaser of the Motor-Compressor the right to purchase a complete replacement Motor-Compressor of the same make or of another make. It further does not permit the replacement to be made with a Motor-Compressor of another kind unless authorized by Delfield. In the event Delfield authorizes the Original Purchaser to purchase a replacement Motor-Compressor locally, only the wholesale cost of the Motor-Compressor is refundable.

Expressly excluded from this warranty are damages resulting from spoilage of goods.

Except as provided in any applicable Standard One Year Limited Warranty or applicable Service Labor Contract, the foregoing is exclusive and in lieu of all other warranties, whether written or oral, express or implied. This Warranty supersedes and excludes any prior oral or written representations or warranties. Delfield expressly disclaims any implied warranties of merchantability, fitness for a particular purpose or compliance with any law, treaty, rule or regulation relating to the Motor-Compressor, and the full liability of Delfield for any breach of this warranty, will be as provided in this warranty.

Other than any applicable Delfield Standard One year Limited Warranty, this Delfield Additional Four Year Protection Plan and any applicable Delfield Service Labor Contract, the Original Purchaser agrees and acknowledges that no other warranties are offered or provided in connection with or for the Motor-Compressor or any part thereof.

In no event will Delfield be liable for special, incidental or consequential damages, or for damages in the nature of penalties.

Notes

Delfield®

Mt. Pleasant, MI

Covington, TN

Thank you for choosing Delfield!

Help is a phone call away. Help our team of professional, courteous customer service reps by having your model number and serial number available at the time of your call (800) 733-8829

Model: _____ S/N: _____

Installation Date: _____

Manitowoc STAR CERTIFIED SERVICE AND PARTS

For a list of Delfield's authorized parts depots, visit our website at www.delfield.com

Delfield®

980 S. Isabella Rd., Mt. Pleasant, MI 48858, U.S.A. • (989) 773-7981 or (800) 733-8829 • Fax (989) 773-3210 • www.delfield.com

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DMSG_SS 09/10