Delfield

F5 and F15 Series

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.

F5 and F15 SERIES
Drop-In and Serview Display Cases

CAUTION

Important Information
Read Before Use
Please Save These Instructions!

February 2013

Important Warning And Safety Information

WARNING Read This Manual Thoroughly Before Operating, Installing, Or Performing Maintenance On The Equipment.

WARNING Failure To Follow Instructions In This Manual Can Cause Property Damage, Injury Or Death.

WARNING Do Not Store Or Use Gasoline Or Other Flammable Vapors Or Liquids In The Vicinity Of This Or Any Other Appliance.

WARNING Unless All Cover And Access Panels Are In Place And Properly Secured, Do Not Operate This Equipment.

WARNING This Appliance Is Not Intended For Use By Persons Who Lack Experience Or Knowledge, Unless They Have Been Given Supervision Or Instruction Concerning Use Of The Appliance By A Person Responsible For Their Safety.

WARNING This Appliance Is Not To Be Played With.

WARNING Do Not Clean With Water Jet.

WARNING Do Not Use Electrical Appliances Inside The Food Storage Compartment Of This Appliance.

CAUTION Observe the following:

- Minimum clearances must be maintained from all walls and combustible materials.
- Keep the equipment area free and clear of combustible material.
- Allow adequate clearance for air openings.
- Operate equipment only on the type of electricity indicated on the specification plate.
- Unplug the unit before making any repairs.
- Retain this manual for future reference.

Contents

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.

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.

Serial Number Location

The serial number on all self-contained F5 Series units is located near the condensing unit. On all remote F5 Series units the serial number is located on the drop-in frame.

The serial number on all self-contained F15 Series units is located behind the compressor housing. On all remote F15 Series units the serial number is located behind the six inch panel in the base.

Always have the serial number of your unit available when calling for parts or service. A complete list of authorized Delfield parts depots is available at www.delfield.com.

SERIAL #
MODEL #
INSTALLATION DATE:

Warranty Information

Visit *http://www.delfield.com/minisite/service/warranty_info* to:

- Register your product for warranty.
- Verify warranty information.
- View and download a copy of your warranty.

Regulatory Certifications

All models are certified by:

National Sanitation Foundation (NSF)

Underwriters Laboratories (UL)

F5 Series Specifications

24" (61cm) Deep Remote Drop-In Refrigerated Display Cases

MODEL	L	D	H	VOLTS/ HERTZ/ PHASE	AMPS	CABINET LOAD BTU/ HOUR	EVAPORATOR DISPLAY CAPACITY BTU	°TD	TEMP
F5MR48N	48" (121.9cm)	24" (61.0cm)	42" (106.7cm)	115/60/1	4.0	1215	150	20°	15°
F5SR48N	48" (121.9cm)	24" (61.0cm)	42" (106.7cm)	115/60/1	4.0	1867	150	20°	15°
F5PR48N	48" (121.9cm)	24" (61.0cm)	42" (106.7cm)	115/60/1	4.0	1945	150	20°	15°
F5MR72N	72" (182.9cm)	24" (61.0cm)	42" (106.7cm)	115/60/1	4.0	1783	450	13°	22°
F5SR72N	72" (182.9cm)	24" (61.0cm)	42" (106.7cm)	115/60/1	4.0	2791	450	13°	22°
F5PR72N	72" (182.9cm)	24" (61.0cm)	42" (106.7cm)	115/60/1	4.0	2884	450	13°	22°

24" (61cm) Deep Self-Contained Drop-In Refrigerated Display Cases

MODEL	L	D	H	VOLTS/ HERTZ/ PHASE	AMPS	CABINET LOAD BTU/ HOUR	SYSTEM CAPACITY BTU/HOUR	H.P.	R404A CHARGE, OZ.	NEMA PLUG
F5MC48N	48" (121.9cm)	24" (61.0cm)	57.5" (146.1cm)	115/60/1	12.0	1215	2970	1/2	32	5-15P
F5SC48N	48" (121.9cm)	24" (61.0cm)	57.5" (146.1cm)	115/60/1	12.0	1867	2970	1/2	32	5-15P
F5PC48N	48" (121.9cm)	24" (61.0cm)	57.5" (146.1cm)	115/60/1	12.0	1945	2970	1/2	32	5-15P
F5MC72N	72" (182.9cm)	24" (61.0cm)	57.5" (146.1cm)	115/60/1	16.0	1783	5821	3/4	48	5-20P
F5SC72N	72" (182.9cm)	24" (61.0cm)	57.5" (146.1cm)	115/60/1	16.0	2791	5821	3/4	48	5-20P
F5PC72N	72" (182.9cm)	24" (61.0cm)	57.5" (146.1cm)	115/60/1	16.0	2884	5821	3/4	48	5-20P

30" (76.2cm) Deep Remote Drop-In Refrigerated Display Cases

MODEL	L	D	H	VOLTS/ HERTZ/ PHASE	AMPS	CABINET LOAD BTU/ HOUR	EVAPORATOR DISPLAY CAPACITY BTU	°TD	TEMP
F5MR48D	48" (121.9cm)	30" (76.2cm)	42" (106.7cm)	115/60/1	4.0	1282	150	20°	15°
F5SR48D	48" (121.9cm)	30" (76.2cm)	42" (106.7cm)	115/60/1	4.0	1934	150	20°	15°
F5PR48D	48" (121.9cm)	30" (76.2cm)	42" (106.7cm)	115/60/1	4.0	2012	150	20°	15°
F5MR72D	72" (182.9cm)	30" (76.2cm)	42" (106.7cm)	115/60/1	4.0	1870	450	13°	22°
F5SR72D	72" (182.9cm)	30" (76.2cm)	42" (106.7cm)	115/60/1	4.0	2878	450	13°	22°
F5PR72D	72" (182.9cm)	30" (76.2cm)	42" (106.7cm)	115/60/1	4.0	2971	450	13°	22°

30" (76.2cm) Deep Self-Contained Drop-In Refrigerated Display Cases

MODEL	L	D	H	VOLTS/ HERTZ/ PHASE	AMPS	CABINET LOAD BTU/ HOUR	SYSTEM CAPACITY BTU/HOUR	H.P.	R404A CHARGE, OZ.	NEMA PLUG
F5MC48D	48" (121.9cm)	30" (76.2cm)	57.5" (146.1cm)	115/60/1	12.0	1282	2970	1/2	32	5-15P
F5SC48D	48" (121.9cm)	30" (76.2cm)	57.5" (146.1cm)	115/60/1	12.0	1934	2970	1/2	32	5-15P
F5PC48D	48" (121.9cm)	30" (76.2cm)	57.5" (146.1cm)	115/60/1	12.0	2012	2970	1/2	32	5-15P
F5MC72D	72" (182.9cm)	30" (76.2cm)	57.5" (146.1cm)	115/60/1	16.0	1870	5821	3/4	48	5-20P
F5SC72D	72" (182.9cm)	30" (76.2cm)	57.5" (146.1cm)	115/60/1	16.0	2878	5821	3/4	48	5-20P
F5PC72D	72" (182.9cm)	30" (76.2cm)	57.5" (146.1cm)	115/60/1	16.0	2971	5821	3/4	48	5-20P

M = Mirror Back • **P** = Pass Thru • **S** = See Thru • **R** = Remote • **C** = Self-Contained • **N** = Narrow • **D** = Deep 30"

F15 Series Specifications

24" (61cm) Deep Remote Serview Refrigerated Display Cases

MODEL	L	D	H	VOLTS/ HERTZ/ PHASE	AMPS	CABINET LOAD BTU/ HOUR	EVAPORATOR DISPLAY CAPACITY			EVAPORATOR BASE CAPACITY		
							BTU	°TD	TEMP	BTU	°TD	TEMP
F15MR48N	48" (121.9cm)	31.5" (80.0cm)	78" (198.1cm)	115/60/1	4.0	1644	200	23°	12°	120	30°	5°
F15SR48N	48" (121.9cm)	33.38" (84.8cm)	78" (198.1cm)	115/60/1	4.0	2296	200	23°	12°	120	30°	5°
F15PR48N	48" (121.9cm)	33.38" (84.8cm)	78" (198.1cm)	115/60/1	4.0	2374	200	23°	12°	120	30°	5°
F15MR72N	72" (182.9cm)	31.5" (80.0cm)	78" (198.1cm)	115/60/1	4.0	2491	450	13°	22°	120	30°	5°
F15SR72N	72" (182.9cm)	33.38" (84.8cm)	78" (198.1cm)	115/60/1	4.0	3499	450	13°	22°	120	30°	5°
F15PR72N	72" (182.9cm)	33.38" (84.8cm)	78" (198.1cm)	115/60/1	4.0	3592	450	13°	22°	120	30°	5°

24" (61cm) Deep Self-Contained Serview Refrigerated Display Cases

MODEL	L	D	H	VOLTS/ HERTZ/ PHASE	AMPS	CABINET LOAD BTU/ HOUR	SYSTEM CAPACITY BTU/HOUR	H.P.	R404A CHARGE OZ.	NEMA PLUG
F15MC48N	48" (121.9cm)	31.5" (80.0cm)	78" (198.1cm)	115/60/1	16.0	1569	8146	3/4	48	5-20P
F15SC48N	48" (121.9cm)	33.38" (84.8cm)	78" (198.1cm)	115/60/1	16.0	2221	8146	3/4	48	5-20P
F15PC48N	48" (121.9cm)	33.38" (84.8cm)	78" (198.1cm)	115/60/1	16.0	2299	8146	3/4	48	5-20P
F15MC72N	72" (182.9cm)	31.5" (80.0cm)	78" (198.1cm)	115/60/1	16.0	2361	9422	3/4	48	5-20P
F15SC72N	72" (182.9cm)	33.38" (84.8cm)	78" (198.1cm)	115/60/1	16.0	3369	9422	3/4	48	5-20P
F15PC72N	72" (182.9cm)	33.38" (84.8cm)	78" (198.1cm)	115/60/1	16.0	3462	9422	3/4	48	5-20P

30" (76.2cm) Deep Remote Serview Refrigerated Display Cases

MODEL	L	D	H	VOLTS/ HERTZ/ PHASE	AMPS	CABINET LOAD BTU/ HOUR	EVAPORATOR DISPLAY CAPACITY			EVAPORATOR BASE CAPACITY		
							BTU	°TD	TEMP	BTU	°TD	TEMP
F15MR48D	48" (121.9cm)	31.5" (80.0cm)	78" (198.1cm)	115/60/1	4.0	1711	200	23°	12°	120	30°	5°
F15SR48D	48" (121.9cm)	33.38" (84.8cm)	78" (198.1cm)	115/60/1	4.0	2363	200	23°	12°	120	30°	5°
F15PR48D	48" (121.9cm)	33.38" (84.8cm)	78" (198.1cm)	115/60/1	4.0	2441	200	23°	12°	120	30°	5°
F15MR72D	72" (182.9cm)	31.5" (80.0cm)	78" (198.1cm)	115/60/1	4.0	2578	450	13°	22°	120	30°	5°
F15SR72D	72" (182.9cm)	33.38" (84.8cm)	78" (198.1cm)	115/60/1	4.0	3586	450	13°	22°	120	30°	5°
F15PR72D	72" (182.9cm)	33.38" (84.8cm)	78" (198.1cm)	115/60/1	4.0	3679	450	13°	22°	120	30°	5°

30" (76.2cm) Deep Self-Contained Serview Refrigerated Display Cases

MODEL	L	D	H	VOLTS/ HERTZ/ PHASE	AMPS	CABINET LOAD BTU/ HOUR	SYSTEM CAPACITY BTU/HOUR	H.P.	R404A CHARGE OZ.	NEMA PLUG
F15MC48D	48" (121.9cm)	31.5" (80.0cm)	78" (198.1cm)	115/60/1	16.0	1636	8146	3/4	48	5-20P
F15SC48D	48" (121.9cm)	33.38" (84.8cm)	78" (198.1cm)	115/60/1	16.0	2288	8146	3/4	48	5-20P
F15PC48D	48" (121.9cm)	33.38" (84.8cm)	78" (198.1cm)	115/60/1	16.0	2366	8146	3/4	48	5-20P
F15MC72D	72" (182.9cm)	31.5" (80.0cm)	78" (198.1cm)	115/60/1	16.0	2448	9422	3/4	48	5-20P
F15SC72D	72" (182.9cm)	33.38" (84.8cm)	78" (198.1cm)	115/60/1	16.0	3456	9422	3/4	48	5-20P
F15PC72D	72" (182.9cm)	33.38" (84.8cm)	78" (198.1cm)	115/60/1	16.0	3549	9422	3/4	48	5-20P

M = Mirror Back • **P** = Pass Thru • **S** = See Thru • **R** = Remote • **C** = Self-Contained • **N** = Narrow • **D** = Deep 30"

Installation: Self-Contained F5 Series

Location

Units represented in this manual are for indoor use only. All self-contained units were tested at the factory to assure proper operation. The unit should not be installed directly next to high heat generating equipment (ranges, griddles, etc.). Be sure the location chosen has a counter strong enough to support the total weight of the cabinet and contents. A fully loaded model may weigh as much as 2,000 pounds! Reinforce the counter as necessary to provide for maximum loading.

These units are installed by "dropping" them into the counter from above. The counter cutout sizes are as follows:

48" wide units — 18.62" x 23.62" (47.3 cm x 60.0 cm)

72" wide units — 18.62" x 32.62" (47.3 cm x 82.9 cm)

Self-contained F5 Series units require airflow to the compressor. Two louvers are provided with each unit and should be installed as illustrated on page 13.

Unit is designed to maintain 36°F (2°C) to 40°F (4°C) interior cabinet temperature at 65% or lower ambient relative humidity.

Plumbing

Self-contained models are standard with a condensate evaporator. If, for some reason, a unit does not have a condensate evaporator, or the evaporator fails, the unit's drain must have an outlet to an appropriate drainage area or container.

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

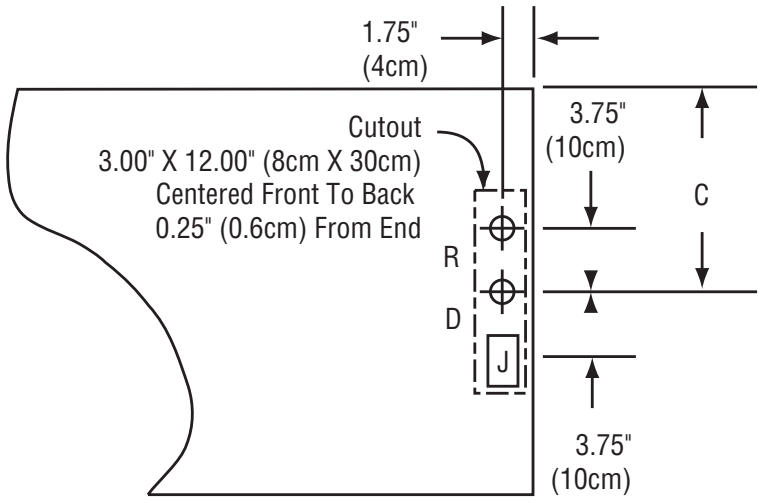
Electrical connection

Refer to the amperage data on the specification pages, the serial tag, 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 line cord, or permanent connection to the unit.

Self-contained units have an **ON/OFF** switch in the junction box. Simply turn the switch to **ON** to begin operation.

The power switch should be turned to OFF and the unit disconnected from the power source whenever performing service or maintenance functions.

Installation: Remote F5 Series



J= Junction Box
R= Refrigeration Lines,
0.25" Liquid,
0.37" Suction
D= 0.50" I.D. Drain

Typical Mechanical Access (Plan View)
All F5 Models

Installation: Self-Contained F15 Series

Location

Units represented in this manual are for indoor use only. Be sure the location chosen has a floor strong enough to support the total weight of the cabinet and contents. A fully loaded model may weigh as much as 3,000 pounds! 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. Don't pack the refrigerator so full that air cannot circulate. Be sure that the exterior of the unit has access to ample air. Avoid hot corners and locations near stoves and ovens.

Unit is designed to maintain 36°F (2°C) to 40°F (4°C) interior cabinet temperature at 65% or lower ambient relative humidity.

Leveling

A level cabinet looks better and will perform better because the drain pan will drain properly, the doors will line up with the frames properly and the cabinet will not be subject to undue strain. Units come standard with adjustable legs and bullet feet to make leveling easier. If your unit has casters, install in a stable condition with the front casters locked before operating.

Plumbing

Self-contained models are standard with a condensate evaporator. If your unit does not have a condensate evaporator, or the evaporator fails, the unit's drain must have an outlet to an appropriate drainage area or container.

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

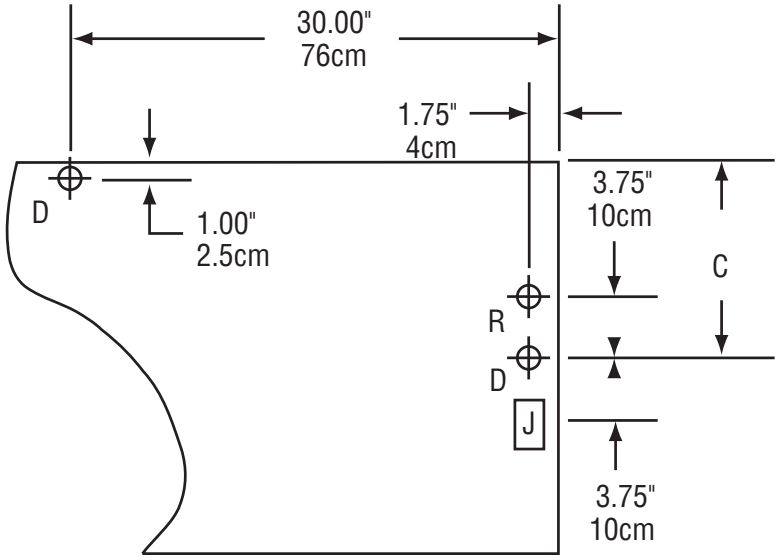
Electrical connection

Refer to the amperage data on the specification pages, the serial tag, 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 line cord, or permanent connection to the unit.

Self-contained units have an **ON/OFF** switch located directly behind the louvered panel covering the compressor section. Simply turn the switch to **ON** to begin operation.

The power switch should be turned to OFF and the unit disconnected from the power source whenever performing service or maintenance functions.

Installation: Remote F15 Series



J= Junction Box
R= Refrigeration Lines,
0.25" Liquid,
0.37" Suction
D= 0.50" I.D. Drain

Typical Mechanical Access (Plan View)
All F15 Models

Shelf Installation

Display cases come with four epoxy coated wire shelves that are adjustable in 3-3/4" increments.

Maximum weight for shelves is 75 pounds. Overloading shelves can damage equipment or cause bodily injury.

Display Lock Operation

At the factory, the keys are taped to the display case. Follow the directions below to lock and unlock the display case.

To lock: Line up key ridge with red dot.
Insert key and rotate one-half turn.
Remove key and push lock bolt in.

To open: Line up ridge with red dot.
Insert key and rotate key one-half turn.
Remove key.

Operation

After turning the **ON/OFF** switch to **ON** the unit's compressor will begin operating. Delfield display cases are designed to maintain an operational temperature of 36°F to 40°F (2°C to 4°C) in both the display (F5 and F15 Series) and storage areas (F15 Series only).

Located on the operator side at the top right is an **ON/OFF** switch for the display lights.

The display temperature control is located in the fan shroud. The F15 base thermostat is located in the mechanical compartment. Use the knob to adjust the temperature, 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.
Continuous opening and closing of the doors will hinder the unit's ability to maintain operational temperatures.

If humidity is above 65%, condensation on the glass will be present.

F15 Refrigerated Base Evaporator Fan Operation

When the refrigerator is initially powered up or immediately following a power outage the unit will begin cooling after a 3-6 minute delay. During normal operation the evaporator fan pulses independently of the compressor as dictated by the controller as follows:

1. During the cooling mode, compressor and evaporator fan run simultaneously.
2. During the compressor off mode, evaporator fan pulses three minutes on and three minutes off.
3. During an actual defrost event other than the off-cycle defrost, compressor stays off but the evaporator fan runs continuously.

Cooling Cycle				Defrost Cycle	
Compressor On		Compressor Off		Compressor Off	
Evap Fan On	Evap Fan Off	Evap Fan On	Evap Fan Off	Evap Fan On	Evap Fan Off
X		Cycles On 3-Min, Off 3-Min		X	

Display Temperature Control Settings

The display temperature control is located on the evaporator assembly on the ceiling of the display case. It is field adjustable and does not require a service agent. The factory setting is 2.5. Set toward 1 for higher temperatures and toward 7 for lower temperatures.

NOTE

Please make small incremental adjustments if a temperature adjustment is necessary. It may take an hour or longer to realize the temperature change depending on the application and location of the unit.

Contact the service department at Delfield +1 (989) 773-7981 or your local service agent for additional assistance. Delfield is not responsible for charges incurred while adjusting the thermostat.

Base Temperature Control Settings

The base temperature control is located in the machine compartment. It is field adjustable and does not require a service agent. The factory setting is 2.5. Set toward 1 for higher temperatures and toward 7 for lower temperatures.

NOTE

Please make small incremental adjustments if a temperature adjustment is necessary. It may take an hour or longer to realize the temperature change depending on the application and location of the unit.

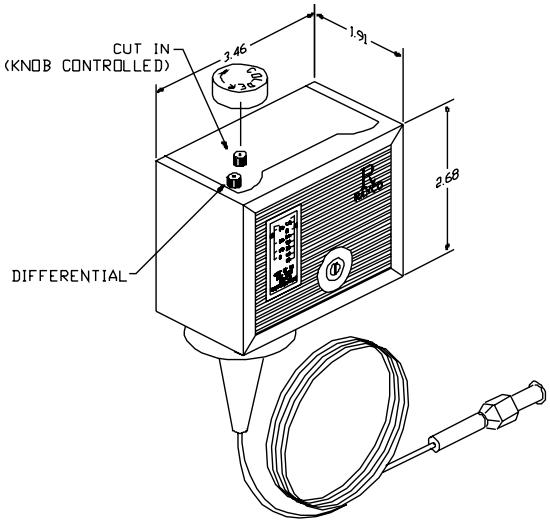
Contact the service department at Delfield +1 (989) 773-7981 or your local service agent for additional assistance. Delfield is not responsible for charges incurred while adjusting the thermostat.

Pressure Control Settings

Low pressure cut in at 20 psi.

Low pressure cut out at 5 psi.

Differential setting of 15 psi.



Maintenance

Door Gasket Maintenance
Door gaskets require regular cleaning to prevent mold and mildew build up and also to retain the elasticity of the gasket. Gasket cleaning can be done with the use of warm soapy water. Avoid full strength cleaning products on gaskets as this can cause them to become brittle and crack. Never use sharp tools or knives to scrape or clean the gasket. Gaskets can be easily replaced and do not require the use of tools or an authorized service person. The gaskets are "Dart" style and can be pulled out of the groove in the door and new gaskets can be "pressed" back into place.

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.

Refrigerators
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.

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.

Do not throw items into the display case. Failure to follow these recommendations could result in damage to the interior or blower coil. Overloading, restricting the airflow, and continuous opening and closing of the doors will hamper the units ability to maintain operational temperature.

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.

Maintenance, continued

Doors/Hinges
Over time and with heavy use the doors 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.

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.

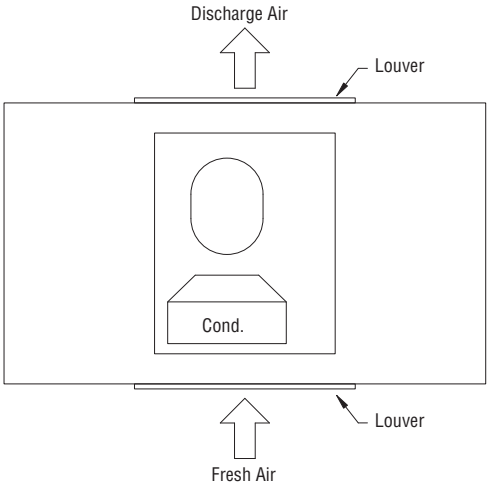
Preventing blower coil corrosion
To help prevent corrosion of the blower coil, store all acidic items, such as pickles and tomatoes, in sealable containers. Immediately wipe up all spills.

Cleaning the condensate evaporator (remote models only)
The stainless steel condensate evaporator pan should be cleaned every six months. Use a vacuum cleaner or damp cloth to remove dust that may have accumulated. This will prevent corrosion of the stainless steel.

Condenser Air Flow: F5

F5 units are designed to be operated with two supplied louvered panels for proper air flow. Failure to provide the proper air flow will void the warranty. Louver cut-outs are 22" by 11" (55.9cm by 27.9cm) typical. Cut-outs are to begin a maximum of 4.00" (10.2cm) from the counter-top. Proper installation must provide for air flow to and from the condensing unit. Install as shown below.

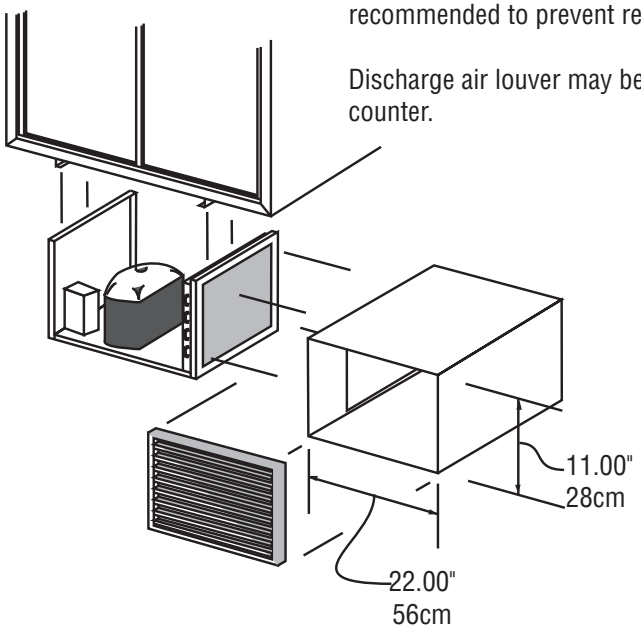
48" Wide Units Air Flow Detail

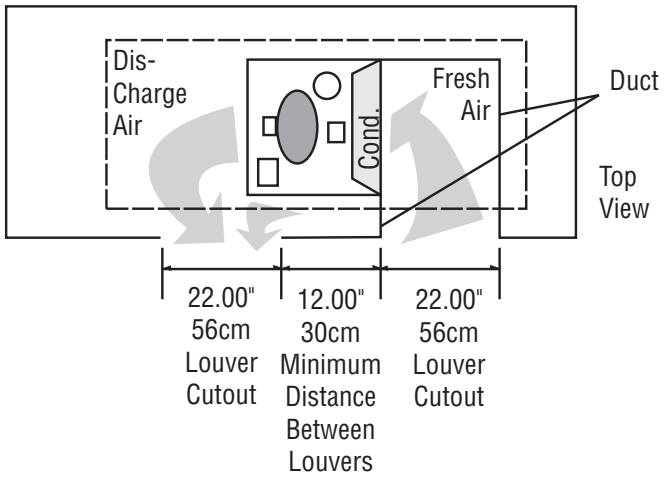


72" Wide Units Air Flow Detail

An “air duct” should be constructed from the air-intake louver to the condenser. This is recommended to prevent recirculation of discharge air.

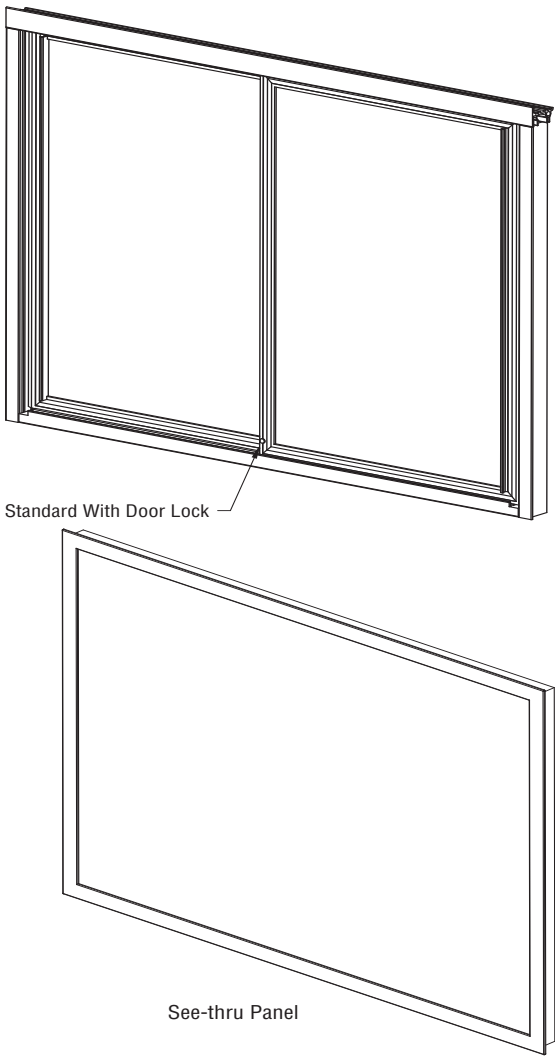
Discharge air louver may be located further from fresh air louver or on the opposite side of counter.





Pike Sliding Door

All Delfield F5 Series and F15 Series display cases feature a Pike® sliding door assembly. A typical Pike sliding door assembly is shown in the illustration at right.



Maintenance
Frequent, regular cleaning with a mild soap and water solution will keep the tracks free of foreign matter and will insure many years of service.

The glass may be cleaned with one of the many commercial glass cleaners currently available.

If it becomes necessary to replace a Pike sliding door assembly or a glass panel, have your unit's model and serial numbers available when you call Delfield's Service and Parts Department at (800) 733-8829. Indicate that your unit has the Pike sliding door assembly when you call.

Sliding Door Removal
Open the door almost completely. Firmly grasp both sides of the door. Lift the door up and move it until it enters a notch and can be lifted higher. Tilt the bottom out without removing the top. Use the top to gently return the spring to the closed position. Remove the door from the top track.

Sliding Door Reinstall
There is a notch in the top inside corner of the door. Put the spring in the door's notch and move the spring to the open position. Put the top into the track and find the notch where the door can be lifted higher. Set bottom of the door into the track.

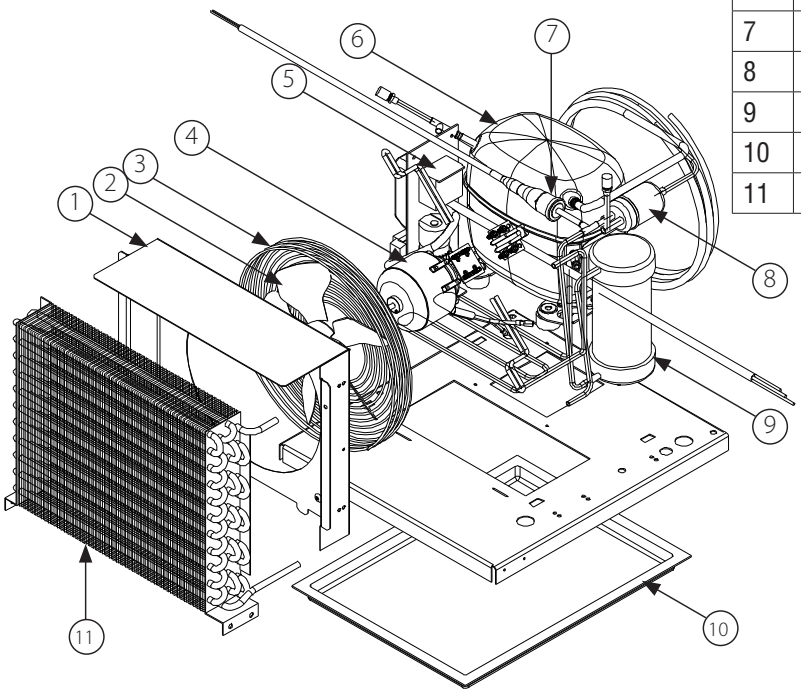
Pike Replacement Parts

48" Units	
Part #	*Description*
3234636	Bearing, roller, single
3234808	Gasket, bumper, 31 13/16"
3234809	Gasket, wiper strip, 30 3/8"
3234810	Spring, 17" gold
3234803	Track, bottom, 43 7/16"
3234800	Track top, 44 7/16"
3455397	See thru panel
3237549	Replacement lock, units 2007 and after
3233986	Replacement lock, units prior to 2007

72" Units	
Part #	*Description*
3234637	Bearing, roller, double
3234808	Gasket, bumper, 31 13/16"
3234809	Gasket, wiper strip, 30 3/8"
3233946	Spring, 30" gold
3234805	Track, bottom, 67 7/16"
3234802	Track top, 68 7/16"
3455399	See thru panel
3237549	Replacement lock, units 2007 and after
3233986	Replacement lock, units prior to 2007

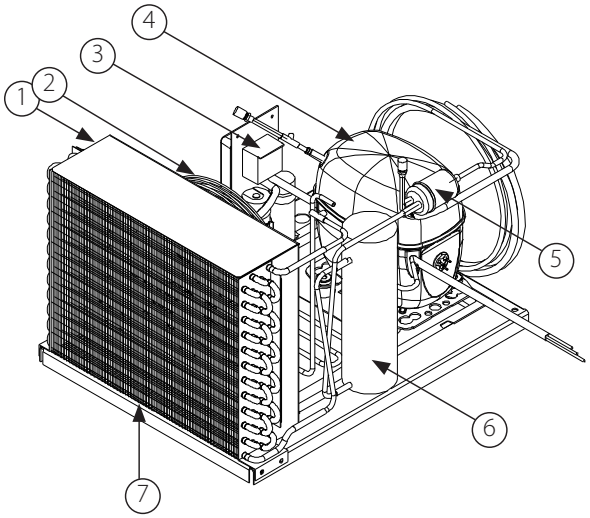
Note: Pass-thru units have two sets of sliding display doors, see-through and mirror-back units have one set.

Condensing Unit Assembly 1/2 H.P. F5 48" Models



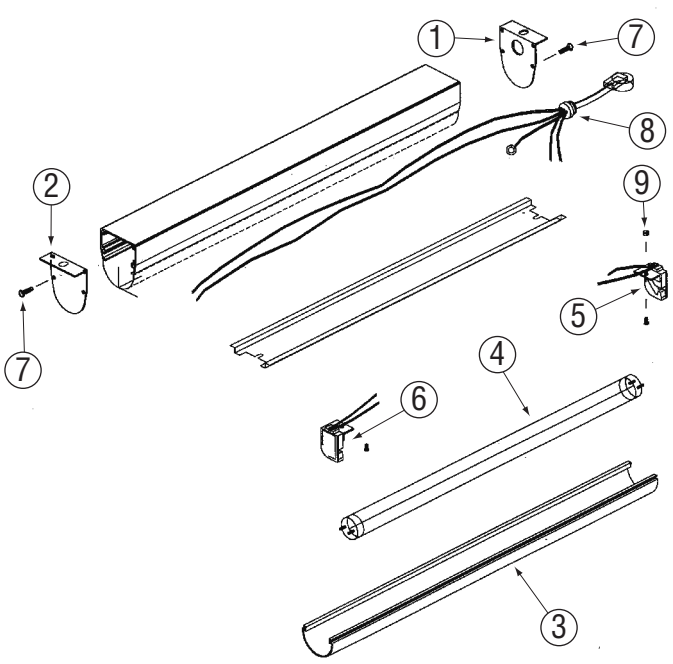
Key	*Delfield Part #*	*Description*
-	**000-BN5-0035**	**Condensing Unit Assembly**
1	026-C58-0031	Shroud, 1/2 HP condenser coil
2	3516554	Blade, fan 9.00", 5 pedal
3	2160019	Guard, fan, condenser, upright
4	2162716	Motor, fan, 16W, 115V
5	3516462	Capacitor, start, assembly
6	3527026	Compressor, SC12MLX, 115V/60Hz, Danfoss
7	3516331	High pressure switch
8	3516322	Filter dryer, (2) inlet, .25"
9	3516459	Tank, receiver
10	075-231-0031	Pan, condensate
11	3516455	Coil, 1/2 HP condensing

Condensing Unit Assembly 3/4 H.P. F15 Models, F5 72" Models



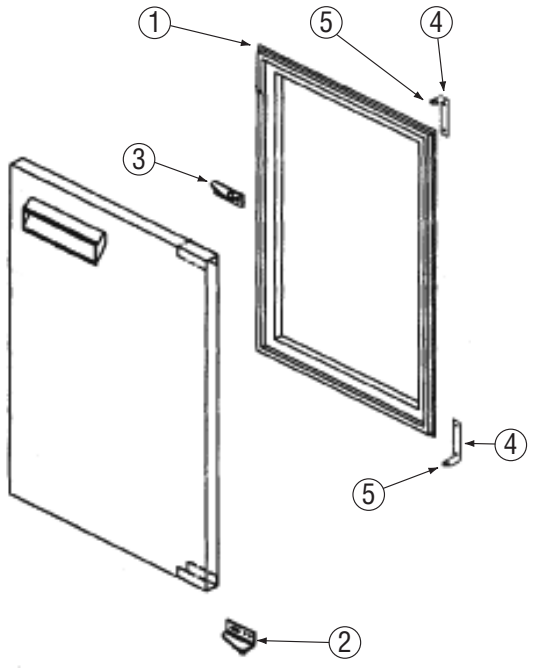
Key	*Delfield Part #*	*Description*
-	**000-BN5-0036**	**Condensing Unit Assembly**
1	026-C58-0032	Shroud, 3/4 HP condenser coil
2	2160019	Guard, fan, condenser, upright
3	3516442	Capacitor, start, run, assembly
4	3527021	Compressor, SC18MLX, 115V/60Hz, Danfoss
5	3516322	Filter dryer, (2) inlet, .25"
6	3516360	Tank, receiver
7	3516456	Coil, condenser, 3/4 HP
-	075-231-0031	Pan, condensate
-	3516433	Blade, fan 25º, 10", CW, upright
-	2162716	Motor, fan, 16W, 115V

Fluorescent Light Fixture



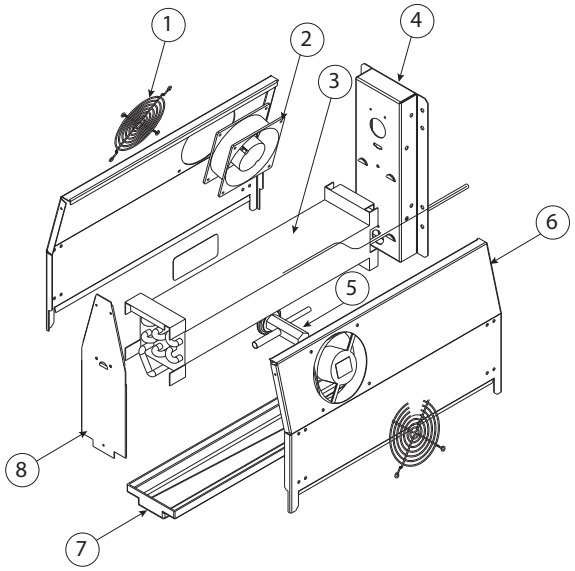
Key	Part#	Description
-	**000-406-0039**	**Complete assembly, 60"**
	000-406-0037	**Complete assembly, 36”**
	000-406-0038	**Complete assembly, 48”**
1	313-146-0032	cap, end, top mtg, pigtail, -rem.
2	313-146-0033	cap, end, top mtg, blank, -rem.
3	376-A0M-0055	diffuser, fluor. light, 36”
	376-A0M-0056	diffuser, fluor. light, 48"
	376-A0M-0057	diffuser, fluor. light, 60"
4	2193907	lamp, fluorescent, 36”
	2193908	lamp, fluorescent, 48”
	2193909	lamp, fluorescent, 60"
5	2193939	lamp holder, left
6	2193940	lamp holder, right
7	9321266	screw, #8-32 x .50
8	2183613	pigtail, male, 3.5”, rem. ballast
9	9321010	nut, hex, starlock, s/s, #6-32
-	2194992	Ballast, rapid start 36” lamp

Base Door Assembly



Key	Part#	Description
-	**000-187-0066**	**complete door assy., right, 19”, 18.75” x 25.72”**
	000-187-0067	**complete door assy., left, 19”, 18.75” x 25.72”**
	000-187-0068	**complete door assy., right, 24”, 23.75” x 25.72”**
	000-187-0069	**complete door assy., left, 24”, 23.75” x 25.72”**
	000-187-006A	**complete door assy., right, 27”, 26.75” x 25.72”**
	000-187-006B	**complete door assy., left, 27”, 26.75” x 25.72”**
	000-187-006C	**complete door assy., right, 32”, 31.75” x 25.72”**
	000-187-006D	**complete door assy., left, 32”, 31.75” x 25.72”**
1	1701183	gasket, door, 19”
	1701184	gasket, door, 24”
	1701185	gasket, door, 27”
	1701186	gasket, door, 32”
3	3234072	hinge, door, top/LH, bottom/RH
4	3234073	hinge, door, top/RH, bottom/LH
5	3234391	hinge, cabinet, L-shaped
6	9321107	bushing, nylon, hinge pin

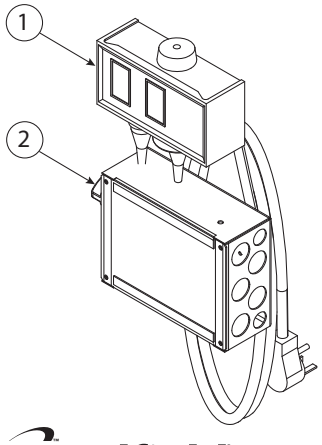
F15 Base Evaporator Assembly



Key	Part Number	Description
-	**000-248-0030**	**Coil Assembly, R404A, Ref**
1	2160024	Guard, fan, 4.7"
2	2160023	Fan, axiel, 120V
3	3516095	Coil, evaporator
4	030-232-0003	Back, evaporator, enclosure
5	3516273	Expansion valve, 1/4, R-404a
6	030-233-0001	Side, coil, angled
7	075-231-0033	Drip pan, evaporator
8	030-234-0003	Front, coil
-	2184317	Harness, coil
-	2194808	Probe, Defrost, Danfoss, Control
-	2194809	Probe, Temp, Sensor, Danfoss

F15 Dual Pressure Control Assy.

Key	Part Number	Description
-	**000-298-003X**	**Dual Pressure Control Assembly**
1	2193942	Dual pressure control
2	2194824	Control, Danfoss, ETC1H-3, 115V
-	2190154	Rocker switch, 20A/125V

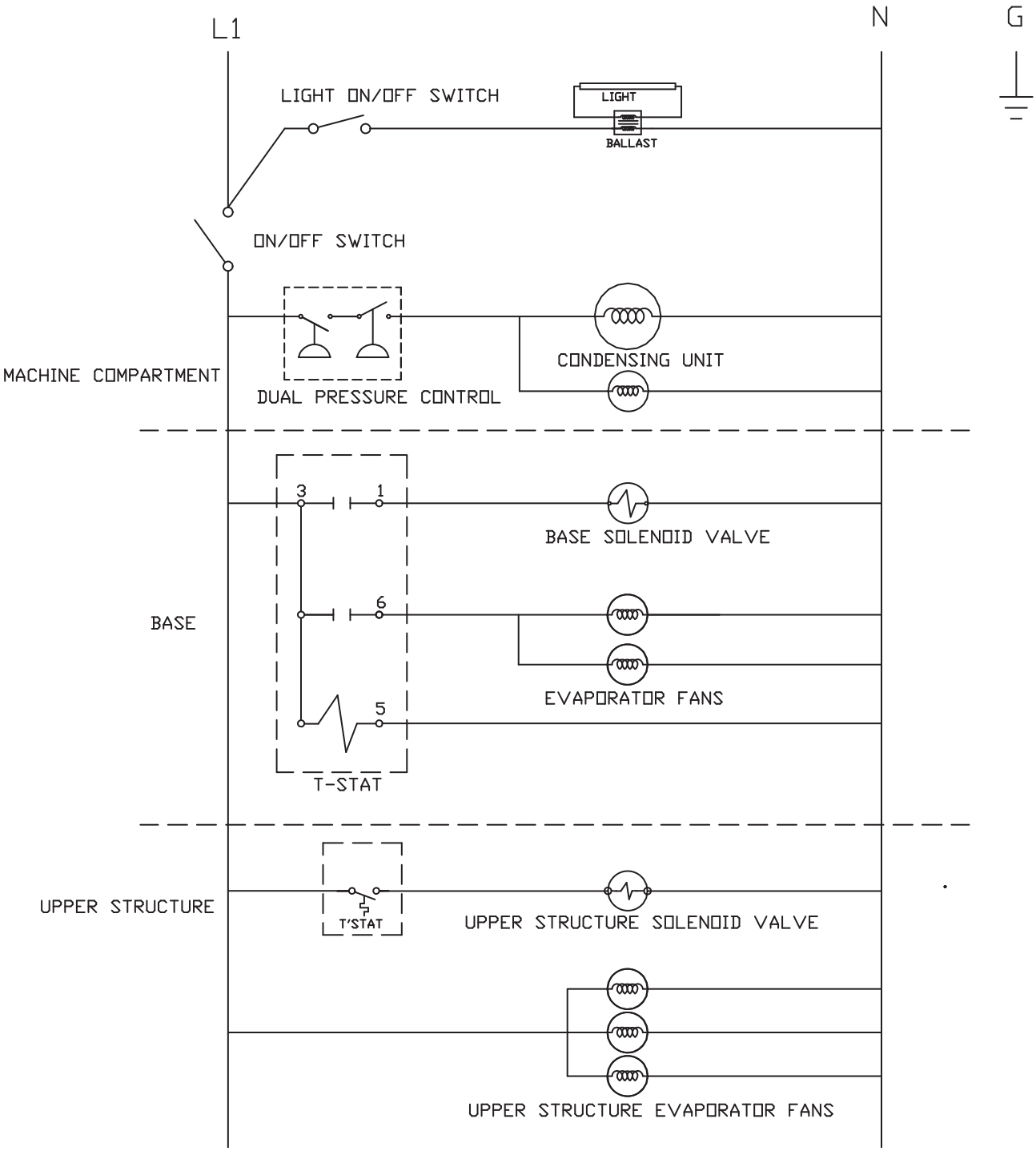


Miscellaneous Replacement Parts

Part Number	Description
Display Cases	
3516172	Blade, fan, Lexan, clear
031-264-0000	Bracket, fan motor, blower coil
3516173	Fan Guard
3516090	Coil, evaporator, 48"
3516091	Coil, evaporator, 72"
2193942	Control, pressure, low
2184063	Harness, elec., power to ballasts
2162691	Motor, fan, 115V 50/60
039-304-0030	Pan, drip, evap coil, 42" with flat bottom
000-BBO-0030	Pan, drip, evap coil, 42" w/ recessed drain
PMK00011	Pan, drip, evap coil, 72" with flat bottom
000-BBO-0032	Pan, drip, evap coil, 72" w/ recessed drain
2190154	Switch, rocker, 20A/125V, 15A/250V
3516135	Thermometer, hanging, 4"
2194536	Thermostat, in-39.5D/out-22.5D
3516084	Valve, expansion, 1/2 ton, R404A
3156101	Solenoid valve
3516103	Solenoid coil 120V
F15 Base	
2183347	Cord/plug assy, 14/3, NEMA 5-20P
3234645	Leg, 6" with mount plate (4 used on 48" — 6 used on 72")
356-303-0031	Louver, 18", 17.94 x 26.34
Mirror Glass	
3455418	Mirror, glass, top, 72"
Shelving & Misc. Parts — Serview Bases	
3234290	Shelf support, plastic, plug 1"
3977984	Shelf, wire, 19" door, 14.38 x 25.25
3977998	Shelf, wire, 24" door, 19.38 x 25.25
3978014	Shelf, wire, 27" door, 22.56 x 25.25
3977983	Shelf, wire, 32" door, 27.38 x 25.25
9321132	Stud, wall side, for shelf support, 1/4x1.50
9321040	Stud, coil side, for shelf support
Shelving for Mirror Back Display Cases	
3977993	Shelf, wire, 15.75" x 43.25" (M)
3978061	Shelf, wire, 15.75" x 67.25" (M)
3978025	Shelf, wire, 21.75" x 43.25" (M)
3978062	Shelf, wire, 21.75" x 67.25" (M)
Shelving for See Thru & Pass Thru Display Cases	
3978026	Shelf, wire, 17.75" x 43.25" (S&P)
3978063	Shelf, wire, 17.75" x 67.25" (S&P)
3978027	Shelf, wire, 23.75" x 43.25" (S&P)
3978064	Shelf, wire, 23.75" x 67.25" (S&P)

(M) = Mirror Back • (S&P) = See Thru & Pass Thru

Wiring Diagram: Self-Contained F5 & F15 Series



For customer service, call (800) 733-8829, (800) 733-8821, Fax (989) 773-3210, www.delfield.com

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:
- Ballast/Light
- Circulating Fan Motor and Blade
- Compressor Start Components and Overload Protector
- Condensate Element
- Door Hinges, Locks, and Gaskets
- Evaporator/Condenser Fan Motor and Blade
- Hi-limit/Thermal Protector Switch
- ON/OFF Switch
- Solenoid Coil
- Springs
- Thermostat

Labor Of 2 Hours To Replace:
- Locate/Repair Leak
- Pressure Control
- Solenoid Valve

Labor Of 3 Hours To Replace:
- Condenser or Evaporator Coil
- Expansion Valve

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:
- R404A A maximum of $15.00/lb. or $1.00/oz. will be reimbursed.

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

Register your Delfield warranty online. Go to www.delfield.com under the service tab to complete.

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