

# F2000 and F17 Series Equipment Stands

## Original Instructions Installation, Operation and Maintenance Manual

This manual is updated as new information and models are released. Visit our website for the latest manual.

### Warning

To assure proper operation a 2" airspace must be maintained between the lowest part of any cooking equipment and the top of this unit. Cooking equipment must have a barrier (i.e. bottom, drip pan) between its heat source and the top of the equipment stand. Failure to comply with this could severely damage the equipment stand and void all warranties.



## Safety Notices

### **⚠ Warning**

Read this manual thoroughly before operating, installing or performing maintenance on the equipment. Failure to follow instructions in this manual can cause property damage, injury or death.

### **⚠ DANGER**

Failure to disconnect the power at the main power supply disconnect could result in serious injury or death. The power switch DOES NOT disconnect all incoming power.

### **⚠ DANGER**

Do not install or operate equipment that has been misused, abused, neglected, damaged, or altered/modified from that of original manufactured specifications.

### **⚠ DANGER**

All utility connections and fixtures must be maintained in accordance with local and national codes.

### **⚠ DANGER**

Serious injury or death can occur from inhaling high concentrations of refrigerant vapors. These vapors also reduce oxygen levels in confined areas. Contact with liquid can cause frostbite. All containers, equipment and hoses are under high pressure. Do not puncture or damage these components.

### **⚠ Warning**

Use caution when handling metal surface edges of all equipment.

### **⚠ Warning**

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision concerning use of the appliance by a person responsible for their safety. Do not allow children to play with this appliance.

### **⚠ Warning**

Do not store or use gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance. Never use flammable oil soaked cloths or combustible cleaning solutions, for cleaning.

### **⚠ Warning**

This product contains chemicals known to the State of California to cause cancer and/or birth defects or other reproductive harm. Operation, installation, and servicing of this product could expose you to airborne particles of glasswool or ceramic fibers, crystalline silica, and/or carbon monoxide. Inhalation of airborne particles of glasswool or ceramic fibers is known to the State of California to cause cancer. Inhalation of carbon monoxide is known to the State of California to cause birth defects or other reproductive harm.

### **⚠ Warning**

Authorized Service Representatives are obligated to follow industry standard safety procedures, including, but not limited to, local/national regulations for disconnection / lock out / tag out procedures for all utilities including electric, gas, water and steam.

### **⚠ Warning**

DO NOT touch refrigeration lines inside units; some may exceed temperatures of 200°F (93.3°C).

### **⚠ Caution**

Maintenance and servicing work, other than cleaning as described in this manual, must be done by an authorized service personnel.

### **⚠ Caution**

Use caution handling, moving and use of the R290 refrigerators to avoid either damaging the refrigerant tubing or increasing the risk of a leak. Components shall be replaced with like components. Servicing shall be done by a factory authorized service personnel to minimize the risk of possible ignition due to incorrect parts or improper service.

### **Notice**

Proper installation, care and maintenance are essential for maximum performance and trouble-free operation of your equipment. Visit our website [www.mtwkitchencare.com](http://www.mtwkitchencare.com) for manual updates, translations, or contact information for service agents in your area.

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# Section 1

## General Information

### Model Numbers

This manual covers the following equipment stand models:

<b>Refrigerated Base</b>	
F17C52P	F17C75P
F17C60P	F17C78P
F17C62P	F17C87P
F17C73P	F17C110P
<b>Optional Export Refrigerated Base</b>	
F17C52-E	F17C75-E
F17C60-E	F17C78-E
F17C62-E	F17C87-E
F17C73-E	F17C110-E
<b>Dry Drawer</b>	
F17DD32	F17DD73
F17DD46	F17DD81
F17DD54	F17DD96
F17DD64	
<b>Freezer Base</b>	
F17FC94P	
<b>Open Shelf</b>	
F17OS36	F17OS72
F17OS48	F17OS84
F17OS60	F17OS96
<b>Low-Profile Freezer Base</b>	
F2660CP, F2660P	F2694CP, F2694P
<b>Low-Profile Refrigerator Base</b>	
F2936CP, F2936P	F2978CP, F2978P
F2952CP, F2952P	F2980CP, F2980P
F2956CP, F2956P	F2987CP, F2987P
F2960CP, F2960P	F2996CP, F2996P
F2962CP, F2962P	F2999CP, F2999P
F2973CP, F2973P	F29110CP, F29110P
F2975CP, F2975P	
<b>Optional Export Low-Profile Refrigerator Base</b>	
F2936-E	F2978-E
F2952-E	F2980-E
F2956-E	F2987-E
F2960-E	F2996-E
F2962-E	F2999-E
F2973-E	F29110-E
F2975-E	

### Serial Number Information

The serial number is on the identification plate that also includes the model number.

- The identification plate on self-contained models is located in the compressor housing.
- The identification plate on open shelf models is located on the left interior wall.
- The identification plate on dry drawer models is located on the inside of left wall.

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

### Warranty Information




Visit [www.delfield.com/warranty](http://www.delfield.com/warranty) to:

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

### Regulatory Certifications




#### STANDARD MODELS

115Volt, 60Hertz, 1Phase models are certified by:

-  National Sanitation Foundation (NSF)
-  Underwriters Laboratories (UL)
-  Underwriters Laboratories of Canada (cUL)

#### EXPORT OPTIONS

230-240Volt, 50Hertz, 1Phase models are certified by:

-  National Sanitation Foundation (NSF)
-  Technical Inspection Association
-  European Conformity

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## Section 2 Installation

### **⚠ DANGER**

Installation must comply with all applicable fire and health codes in your jurisdiction.

### **⚠ DANGER**

Use appropriate safety equipment during installation and servicing.

### **⚠ Warning**

Do not damage the refrigeration circuit when installing, maintaining or servicing the unit.

### **⚠ Warning**

To assure proper operation a 2" airspace must be maintained between the lowest part of any cooking equipment and the top of this unit. Cooking equipment must have a barrier (i.e. bottom, drip pan) between its heat source and the top of the equipment stand. Failure to comply with this could severely damage the equipment stand and void all warranties.

### **⚠ Caution**

The wall bracket must be installed properly and the equipment stand firmly secured to it before using this unit! Failure to observe this warning may result in damage to the equipment and/or injury to the operator!

### **⚠ Caution**

Never place any equipment on top of this unit without first installing the wall bracket and ensuring that the equipment is securely anchored and stable.

### Location

### **⚠ Warning**

This equipment must be positioned so that the plug is accessible unless other means for disconnection from the power supply (e.g., circuit breaker or disconnect switch) is provided.

### **⚠ Warning**

Adequate means must be provided to limit the movement of this appliance without depending on or transmitting stress to the electrical conduit or gas lines.

### **⚠ Warning**

To avoid instability the installation area must be capable of supporting the combined weight of the equipment and product. Additionally the equipment must be level side to side and front to back.

### **⚠ Warning**

This equipment is intended for indoor use only. Do not install or operate this equipment in outdoor areas.

The location selected for the equipment must meet the following criteria. If any of these criteria are not met, select another location.

- The location **MUST** be level, stable and capable of supporting the weight of the equipment.
- The location **MUST** be free from and clear of combustible materials.
- Equipment **MUST** be level both front to back and side to side.
- Position the equipment so it will not tip or slide.
- Front casters **MUST** be locked once positioned.
- Recommended air temperature is 50° - 100°F (10° - 38°C).
- Proper air supply for ventilation is **REQUIRED AND CRITICAL** for safe and efficient operation.
- Do not obstruct the flow of ventilation air. Make sure the air vents of the equipment are not blocked.
- Do not install the equipment directly over a drain. Steam rising up out of the drain will adversely affect operation, air circulation, and damage electrical / electronic components.

### Weight of Equipment

Model	Shipping Weight
<b>Refrigerated Base</b>	
F17C52P, F17C52-E	410lbs (186kg)
F17C60P, F17C60-E	460lbs (209kg)
F17C62P, F17C62-E	460lbs (208kg)
F17C73P, F17C73-E	500lbs (227kg)
F17C75P, F17C75-E	580lbs (263kg)
F17C78P, F17C78-E	580lbs (263kg)
F17C87P, F17C87-E	625lbs (284kg)
F17C110P, F17C110-E	750lbs (340kg)
<b>Dry Drawer</b>	
F17DD32	290lbs (132kg)
F17DD46	350lbs (159kg)
F17DD54	390lbs (177kg)
F17DD64	430lbs (195kg)
F17DD73	475lbs (215kg)
F17DD81	520lbs (236kg)
F17DD96	600lbs (272kg)
<b>Freezer Base</b>	
F17FC94P	710lbs (322kg)
<b>Open Shelf</b>	
F17OS36	200lbs (91kg)
F17OS48	250lbs (113kg)
F17OS60	300lbs (136kg)
F17OS72	350lbs (159kg)
F17OS84	400lbs (181kg)
F17OS96	475lbs (215kg)
<b>Low-Profile Freezer Base</b>	
F2660CP, F2660P	418lbs (190kg)
F2694CP, F2694P	505lbs (229kg)
<b>Low-Profile Refrigerator Base</b>	
F2936CP, F2936P	374lbs (170kg)
F2952CP, F2952P, F2952-E	398lbs (181kg)
F2956CP, F2956P, F2956-E	405lbs (184kg)
F2960CP, F2960P, F2960-E	464lbs (211kg)
F2962CP, F2962P, F2962-E	479lbs (217kg)
F2973CP, F2973P, F2973-E	535lbs (243kg)
F2975CP, F2975P, F2975-E	540lbs (245kg)
F2978CP, F2978P, F2978-E	589lbs (267kg)
F2980CP, F2980P, F2980-E	600lbs (272kg)
F2987CP, F2987P, F2987-E	672lbs (305kg)
F2996CP, F2996P, F2996-E	725lbs (329kg)
F2999CP, F2999P, F2999-E	725lbs (329kg)
F29110CP, F29110P, F29110-E	766lbs (347kg)

### Clearance Requirements

- 2" airspace must be maintained between the lowest part of any cooking equipment and the top of this unit. Cooking equipment must have a barrier (i.e. bottom, drip pan) between its heat source and the top of the equipment stand.
- Keep the vents clean and free of obstruction.
- Casters or optional legs must be used and not removed.

### Dimensions

Model	Length	Depth	Height
<b>Refrigerated Base</b>			
F17C52P, F17C52-E	52" (132cm)	30.74" (78cm) Base Depth plus 9.50" (24cm) Cutting Board	36" (91cm) Base Height plus 1.25" (3cm) Cutting Board
F17C60P, F17C60-E	60" (152cm)		
F17C62P, F17C62-E	62" (157cm)		
F17C73P, F17C73-E	73" (185cm)		
F17C75P, F17C75-E	75" (191cm)		
F17C78P, F17C78-E	78" (198cm)		
F17C87P, F17C87-E	87" (221cm)		
F17C110P, F17C110-E	110" (279cm)		
<b>Dry Drawer</b>			
F17DD32	32" (81cm)	30.74" (78cm) Base Depth plus 9.50" (24cm) Cutting Board	36" (91cm) Base Height plus 1.25" (3cm) Cutting Board
F17DD46	46" (117cm)		
F17DD54	54" (137cm)		
F17DD64	64" (163cm)		
F17DD73	73" (185cm)		
F17DD81	81" (206cm)		
F17DD96	96" (244cm)		
<b>Freezer Base</b>			
F17FC94P	94" (239cm)	30.74" (78cm) Base Depth plus 9.50" (24cm) Cutting Board	36" (91cm) Base Height plus 1.25" (3cm) Cutting Board
<b>Open Shelf</b>			
F17OS36	36" (91cm)	30.74" (78cm) Base Depth plus 9.50" (24cm) Cutting Board	36" (91cm) Base Height plus 1.25" (3cm) Cutting Board
F17OS48	48" (122cm)		
F17OS60	60" (152cm)		
F17OS72	72" (183cm)		
F17OS84	84" (213cm)		
F17OS96	96" (244cm)		
<b>Low-Profile Freezer Base</b>			
F2660CP	60.25" (153cm)	30.93" (79cm)	24" (61cm)
F2660P			26" (66cm)
F2694CP	94.25" (239cm)	30.93" (79cm)	24" (61cm)
F2694P			26" (66cm)
<b>Low-Profile Refrigerator Base</b>			
F2936CP	36.25" (92cm)	30.93" (79cm)	24" (61cm)
F2936P			26" (66cm)
F2952CP	52.25" (133cm)	30.93" (79cm)	24" (61cm)
F2952P, F2952-E			26" (66cm)
F2956CP			24" (61cm)
F2956P, F2956-E	56.25" (143cm)	30.93" (79cm)	26" (66cm)
F2960CP			24" (61cm)
F2960P, F2960-E	60.25" (153cm)	30.93" (79cm)	26" (66cm)
F2962CP			24" (61cm)
F2962P, F2962-E	62.25" (158cm)	30.93" (79cm)	26" (66cm)



Model	Length	Depth	Height
F2973CP	73.25" (186cm)	30.93" (79cm)	24" (61cm)
F2973P, F2973-E			26" (66cm)
F2975CP	75.25" (191cm)	30.93" (79cm)	24" (61cm)
F2975P, F2975-E			26" (66cm)
F2978CP	78.25" (199cm)	30.93" (79cm)	24" (61cm)
F2978P, F2978-E			26" (66cm)
F2980CP	80.25" (204cm)	30.93" (79cm)	24" (61cm)
F2980P, F2980-E			26" (66cm)
F2987CP	87.25" (222cm)	30.93" (79cm)	24" (61cm)
F2987P, F2987-E			26" (66cm)
F2996CP	96.25" (244cm)	30.93" (79cm)	24" (61cm)
F2996P, F2996-E			26" (66cm)
F2999CP	99.25" (252cm)	30.93" (79cm)	24" (61cm)
F2999P, F2999-E			26" (66cm)
F29110CP	110.25" (280cm)	30.93" (79cm)	24" (61cm)
F29110P, F29110-E			26" (66cm)

**Capacity**

Model	12x20 Pan Capacity	# Of Drawers			
		19" (48cm)	24" (61cm)	27" (69cm)	32" (81cm)
<b>Refrigerated Base</b>					
F17C52P, F17C52-E	4				2
F17C60P, F17C60-E	6	2		2	
F17C62P, F17C62-E	4		4		
F17C73P, F17C73-E	8			2	2
F17C75P, F17C75-E	8			2	2
F17C78P, F17C78-E	8				4
F17C87P, F17C87-E	10	2		4	
F17C110P, F17C110-E	12				6
<b>Dry Drawer</b>					
F17DD32	2				1
F17DD46	3	1		1	
F17DD54	4			2	
F17DD64	4				2
F17DD73	5	1		2	
F17DD81	6			3	
F17DD96	6				3
<b>Freezer Base</b>					
F17FC94P	8				4
<b>Open Shelf</b>					
F17OS36	NA	0 Drawers (1) 5.95ft <sup>2</sup> / 5528cm <sup>2</sup> Shelf			
F17OS48	NA	0 Drawers (1) 8.0ft <sup>2</sup> / 7432cm <sup>2</sup> Shelf			
F17OS60	NA	0 Drawers (1) 10.15ft <sup>2</sup> / 9430cm <sup>2</sup> Shelf			
F17OS72	NA	0 Drawers (1) 12.25ft <sup>2</sup> / 11381cm <sup>2</sup> Shelf			
F17OS84	NA	0 Drawers (1) 14.36ft <sup>2</sup> / 13341cm <sup>2</sup> Shelf			
F17OS96	NA	0 Drawers (1) 16.46ft <sup>2</sup> / 15292cm <sup>2</sup> Shelf			

Model	12x20 Pan Capacity	# Of Drawers			
		19" (48cm)	24" (61cm)	27" (69cm)	32" (81cm)
<b>Low-Profile Freezer Base</b>					
F2660CP, F2660P	2				1
F2694CP, F2694P	4				2
<b>Low-Profile Refrigerator Base</b>					
F2936CP, F2936P	4			2	
F2952CP, F2952P, F2952-E	4				2
F2956CP, F2956P, F2956-E	4				2
F2960CP, F2960P, F2960-E	6	2		2	
F2962CP, F2962P, F2962-E	6	2		2	
F2973CP, F2973P, F2973-E	8			2	2
F2975CP, F2975P, F2975-E	8			2	2
F2978CP, F2978P, F2978-E	8				4
F2980CP, F2980P, F2980-E	8				4
F2987CP, F2987P, F2987-E	10	2		4	
F2996CP, F2996P, F2996-E	12			6	
F2999CP, F2999P, F2999-E	12			6	
F29110CP, F29110P, F29110-E	12				6

### Maximum Cooking Equipment Weight Capacity

Model	Total Weight	Unit Weight	Total Drawer Capacity	Maximum Cooking Equipment Weight
<b>Refrigerated Base</b>				
F17C52P, F17C52-E	1000lbs (454kg)	410lbs (186kg)	150lbs (68kg)	440lbs (200kg)
F17C60P, F17C60-E	1500lbs (680kg)	460lbs (209kg)	300lbs (136kg)	740lbs (336kg)
F17C62P, F17C62-E	1500lbs (680kg)	460lbs (208kg)	300lbs (136kg)	740lbs (336kg)
F17C73P, F17C73-E	1500lbs (680kg)	500lbs (227kg)	300lbs (136kg)	700lbs (318kg)
F17C75P, F17C75-E	1500lbs (680kg)	580lbs (263kg)	300lbs (136kg)	620lbs (281kg)
F17C78P, F17C78-E	1500lbs (680kg)	580lbs (263kg)	300lbs (136kg)	620lbs (281kg)
F17C87P, F17C87-E	1500lbs (680kg)	625lbs (284kg)	450lbs (204kg)	425lbs (193kg)
F17C110P, F17C110-E	1500lbs (680kg)	750lbs (340kg)	450lbs (204kg)	300lbs (136kg)
<b>Dry Drawer</b>				
F17DD32	1000lbs (454kg)	290lbs (132kg)	75lbs (34kg)	635lbs (288kg)
F17DD46	1000lbs (454kg)	350lbs (159kg)	150lbs (68kg)	500lbs (227kg)
F17DD54	1000lbs (454kg)	390lbs (177kg)	150lbs (68kg)	460lbs (209kg)
F17DD64	1500lbs (680kg)	430lbs (195kg)	150lbs (68kg)	920lbs (417kg)
F17DD73	1500lbs (680kg)	475lbs (215kg)	225lbs (102kg)	800lbs (363kg)
F17DD81	1500lbs (680kg)	520lbs (236kg)	225lbs (102kg)	755lbs (342kg)
F17DD96	1500lbs (680kg)	600lbs (272kg)	225lbs (102kg)	675lbs (306kg)
<b>Freezer Base</b>				
F17FC94P	1500lbs (680kg)	710lbs (322kg)	300lbs (136kg)	490lbs (222kg)
<b>Open Shelf</b>				
F17OS36	1000lbs (454kg)	200lbs (91kg)	NA	476lbs (216kg)
F17OS48	1000lbs (454kg)	250lbs (113kg)	NA	452lbs (205kg)
F17OS60	1500lbs (680kg)	300lbs (136kg)	NA	736lbs (334kg)
F17OS72	1500lbs (680kg)	350lbs (159kg)	NA	665lbs (302kg)
F17OS84	1500lbs (680kg)	400lbs (181kg)	NA	378lbs (171kg)
F17OS96	1500lbs (680kg)	475lbs (215kg)	NA	325lbs (147kg)

Model	Total Weight	Unit Weight	Total Drawer Capacity	Maximum Cooking Equipment Weight
<b>Low-Profile Freezer Base</b>				
F2660CP, F2660P	1500lbs (680kg)	418lbs (190kg)	75lbs (34kg)	1007lbs (457kg)
F2694CP, F2694P	1500lbs (680kg)	505lbs (229kg)	150lbs (68kg)	845lbs (383kg)
<b>Low-Profile Refrigerator Base</b>				
F2936CP, F2936P	1000lbs (454kg)	374lbs (170kg)	150lbs (68kg)	476lbs (216kg)
F2952CP, F2952P, F2952-E	1000lbs (454kg)	398lbs (181kg)	150lbs (68kg)	452lbs (205kg)
F2956CP, F2956P, F2956-E	1000lbs (454kg)	405lbs (184kg)	150lbs (68kg)	445lbs (202kg)
F2960CP, F2960P, F2960-E	1500lbs (680kg)	464lbs (211kg)	300lbs (136kg)	736lbs (334kg)
F2962CP, F2962P, F2962-E	1500lbs (680kg)	479lbs (217kg)	300lbs (136kg)	721lbs (327kg)
F2973CP, F2973P, F2973-E	1500lbs (680kg)	535lbs (243kg)	300lbs (136kg)	665lbs (302kg)
F2975CP, F2975P, F2975-E	1500lbs (680kg)	540lbs (245kg)	300lbs (136kg)	660lbs (299kg)
F2978CP, F2978P, F2978-E	1500lbs (680kg)	589lbs (267kg)	300lbs (136kg)	611lbs (277kg)
F2980CP, F2980P, F2980-E	1500lbs (680kg)	600lbs (272kg)	300lbs (136kg)	600lbs (272kg)
F2987CP, F2987P, F2987-E	1500lbs (680kg)	672lbs (305kg)	450lbs (204kg)	378lbs (171kg)
F2996CP, F2996P, F2996-E	1500lbs (680kg)	725lbs (329kg)	450lbs (204kg)	325lbs (147kg)
F2999CP, F2999P, F2999-E	1500lbs (680kg)	725lbs (329kg)	450lbs (204kg)	325lbs (147kg)
F29110CP, F29110P, F29110-E	1800lbs (816kg)	766lbs (347kg)	450lbs (204kg)	584lbs (265kg)

## Electrical Service

### **⚠ DANGER**

Check all wiring connections, including factory terminals, before operation. Connections can become loose during shipment and installation.

### **⚠ Warning**

This appliance must be grounded and all field wiring must conform to all applicable local and national codes. Refer to rating plate for proper voltage. It is the responsibility of the end user to provide the disconnect means to satisfy the authority having jurisdiction.

- Plug units with R290 refrigerant into a receptacle that is a minimum of 14" (36cm) above the floor.
- All electrical work, including wire routing and grounding, must conform to local, state and national electrical codes.
- The equipment must be grounded.
- A separate fuse/circuit breaker must be provided for each unit.
- The maximum allowable voltage variation is  $\pm 10\%$  of the rated voltage at equipment start-up (when the electrical load is highest).
- Check all green ground screws, cables and wire connections to verify they are tight before start-up.

### **Ground Fault Circuit Interrupter**

Ground Fault Circuit Interrupter (GFCI/GFI) protection is a system that shuts down the electric circuit (opens it) when it senses an unexpected loss of power, presumably to ground. Manitowoc does not recommend the use of GFCI/GFI circuit protection to energize our equipment. If code requires the use of a GFCI/GFI then you must follow the local code. The circuit must be dedicated, sized properly and there must be a panel GFCI/GFI breaker. We do not recommend the use of GFCI/GFI outlets to energize our equipment as they are known for more intermittent nuisance trips than panel breakers.

Model	Amps	H.P.	Voltage/Hertz/ Phase	Nema Plug
<b>Refrigerated Base</b>				
F17C52P,	2.9	0.20	115/60/1	5-15P
F17C60P	2.9	0.20	115/60/1	5-15P
F17C62P	2.9	0.20	115/60/1	5-15P
F17C73P	4.8	0.25	115/60/1	5-15P
F17C75P	4.8	0.25	115/60/1	5-15P
F17C78P	4.8	0.25	115/60/1	5-15P
F17C87P	4.8	0.25	115/60/1	5-15P
F17C110P	6.3	0.35	115/60/1	5-15P
<b>Optional Export Refrigerated Base</b>				
F17C52-E,	1.5	1/5	230-240/50/1	CEE 7/7
F17C60-E	1.5	1/5	230-240/50/1	CEE 7/7
F17C62-E	1.5	1/5	230-240/50/1	CEE 7/7
F17C73-E	2.5	1/4	230-240/50/1	CEE 7/7
F17C75-E	2.5	1/4	230-240/50/1	CEE 7/7
F17C78-E	2.5	1/4	230-240/50/1	CEE 7/7
F17C87-E	2.5	1/4	230-240/50/1	CEE 7/7
F17C110-E	2.8	1/3	230-240/50/1	CEE 7/7
<b>Dry Drawer</b>				
F17DD Series	NA			
<b>Freezer Base</b>				
F17FC94P	7.6	(2) 0.35	115/60/1	5-15P
<b>Open Shelf</b>				
F17OS Series	NA			
<b>Low-Profile Freezer Base</b>				
F2660CP, F2660P	7.6	(2) 0.35	115/60/1	5-15P
F2694CP, F2694P	7.6	(2) 0.35	115/60/1	5-15P
<b>Low-Profile Refrigerator Base</b>				
F2936CP, F2936P	2.9	0.20	115/60/1	5-15P
F2952CP, F2952P	2.9	0.20	115/60/1	5-15P
F2956CP, F2956P	2.9	0.20	115/60/1	5-15P
F2960CP, F2960P	2.9	0.20	115/60/1	5-15P
F2962CP, F2962P	2.9	0.20	115/60/1	5-15P
F2973CP, F2973P	4.8	0.25	115/60/1	5-15P
F2975CP, F2975P	4.8	0.25	115/60/1	5-15P
F2978CP, F2978P	4.8	0.25	115/60/1	5-15P
F2980CP, F2980P	4.8	0.25	115/60/1	5-15P
F2987CP, F2987P	4.8	0.25	115/60/1	5-15P
F2996CP, F2996P	4.8	0.25	115/60/1	5-15P
F2999CP, F2999P	4.8	0.25	115/60/1	5-15P
F29110CP, F29110P	6.3	0.35	115/60/1	5-15P

Model	Amps	H.P.	Voltage/Hertz/ Phase	Nema Plug
<b>Optional Export Low-Profile Refrigerator Base</b>				
F2952-E	1.5	1/5	230-240/50/1	CEE 7/7
F2956-E	1.5	1/5	230-240/50/1	CEE 7/7
F2960-E	1.5	1/5	230-240/50/1	CEE 7/7
F2962-E	1.5	1/5	230-240/50/1	CEE 7/7
F2973-E	2.5	1/4	230-240/50/1	CEE 7/7
F2975-E	2.5	1/4	230-240/50/1	CEE 7/7
F2978-E	2.5	1/4	230-240/50/1	CEE 7/7
F2980-E	2.5	1/4	230-240/50/1	CEE 7/7
F2987-E	2.5	1/4	230-240/50/1	CEE 7/7
F2996-E	2.5	1/4	230-240/50/1	CEE 7/7
F2999-E	2.5	1/4	230-240/50/1	CEE 7/7
F29110-E	2.8	1/3	230-240/50/1	CEE 7/7

### Drain Connections

Self-contained equipment stands come standard with a condensate evaporator. If the condensate evaporator fails, the unit’s drain must have an outlet to an appropriate drainage area or container.

**⚠ Warning**

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.

### Leveling

After the cabinet has been placed in the desired location, cabinets with legs must be leveled. Level units from front to back and from side to side. Leveling will insure proper door operation and removal of condensate. Cabinets with casters must have the caster brake set so the cabinet cannot move.

### Stabilizing

It is very important that all legs are properly adjusted to keep the cabinet level, evenly distribute the weight and to make sure the unit will not rock, lean or be unstable.

### Leg & Caster Installation

**⚠ DANGER**

Legs or casters must be installed and the legs or casters must be screwed in completely to prevent bending. When casters are installed the mass of this unit will allow it to move uncontrolled on an inclined surface. These units must be tethered/secured to comply with all applicable codes.

**⚠ Warning**

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.

**⚠ Warning**

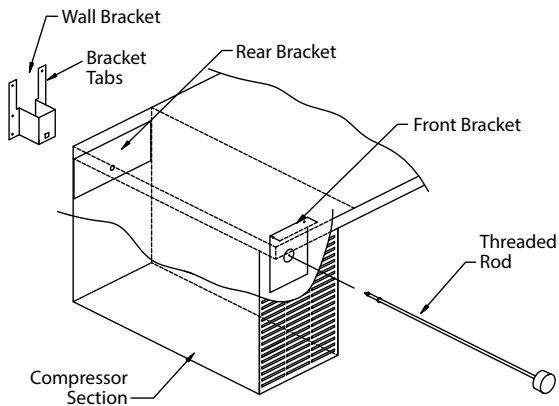
Use a jack to lift the refrigeration unit off the ground just far enough to remove the leg/caster. Place blocking underneath the unit. Do not work underneath a raised unit without proper blocking. Do not lift the unit more than necessary to remove the leg/caster. Lifting the unit too far can make the unit unstable.

### Refrigeration

Model	BTU System Capacity	Heat of Rejection	R290 Charge
<b>Refrigerated Base</b>			
F17C52P	1600	367	150g
F17C60P	1600	473	150g
F17C62P	1600	488	150g
F17C73P	2074	574	150g
F17C75P	2074	590	150g
F17C78P	2074	613	150g
F17C87P	2508	755	150g
F17C110P	2893	935	150g
<b>Dry Drawer</b>			
F17DD Series	NA		
<b>Freezer Base</b>			
F17FC94P	2567	1271	(2) 150g
<b>Open Shelf</b>			
F17OS Series	NA		
<b>Low-Profile Freezer Base</b>			
F2660CP, F2660P	1365	468	(2) 150g
F2694CP, F2694P	1365	816	(2)150g
<b>Low-Profile Refrigerator Base</b>			
F2936CP, F2936P	1064	224	105g
F2952CP, F2952P	1600	283	150g
F2956CP, F2956P	1600	283	150g
F2960CP, F2960P	1600	365	150g
F2962CP, F2962P	1600	365	150g
F2973CP, F2973P	2071	441	150g
F2975CP, F2975P	2071	441	150g
F2978CP, F2978P	2071	471	150g
F2980CP, F2980P	2071	471	150g
F2987CP, F2987P	2508	588	150g
F2996CP, F2996P	2508	634	150g
F2999CP, F2999P	2508	634	150g
F29110CP, F29110P	2893	723	150g

## Wall Bracket Installation Instructions

- A wall bracket kit is supplied to secure the equipment stand to an interior wall.
  - Models on optional casters must also have the wall bracket installed during use.
1. Place the threaded rod through the front and rear brackets in the compressor section. Thread the rod into the wall bracket, making sure the longer bracket tabs are above the height of the unit.



2. Tighten the rod until the wall bracket is snug against the back of the unit.
3. Move the unit against the wall at the desired location.
4. Secure the wall bracket to the wall using the top two bracket tab holes exposed above the unit. The wall material must be capable of supporting a minimum load of 300pounds (136kg) in the vertical direction. All screws must be 1/4" diameter and be capable of transferring the load from the bracket to the wall.
5. Remove the threaded rod from the wall bracket and move the unit away from the wall, leaving the bracket attached to the wall.
6. Secure the bracket to the wall using the remaining four holes.
7. Move the unit back into place and thread the rod back into the wall bracket.
8. The unit should now be secured to the wall. Test the mounting by pulling on the unit and checking that all screws are tightened and the unit is firmly in place. If the unit is secured, you may now place equipment on top and use the unit as required.
9. Be sure all cooking equipment resting on the equipment stand is properly anchored. Consult the manufacturer's instructions for the cooking equipment to determine the proper mounting technique. It is the owner's and operator's responsibility to securely anchor cooking equipment to the equipment stand.

## Section 3 Operation

### **DANGER**

The on-site supervisor is responsible for ensuring that operators are made aware of the inherent dangers of operating this equipment.

### **DANGER**

Do not operate any appliance with a damaged cord or plug. All repairs must be performed by a qualified service company.

### **DANGER**

Never stand on the unit or its drawers! They are not designed to hold the weight of an adult, and may collapse or tip if misused in this manner.

### **DANGER**

Keep power cord AWAY from HEATED surfaces. DO NOT immerse power cord in water. DO NOT let power cord hang over edge of table or counter.

### **Warning**

Do not contact moving parts.

### **Warning**

The operator of this equipment is solely responsible for ensuring safe holding temperature levels for all food items. Failure to do so could result in unsafe food products for customers.

### **Warning**

Do not use electrical appliances or accessories other than those supplied by the manufacturer.

### **Warning**

All covers and access panels must be in place and properly secured, before operating this equipment.

### **Warning**

Damp or wet hands may stick to cold surfaces.

### **Warning**

Do not block the supply and return air grills or the air space around the air grills. Keep plastic wrappings, paper, labels, etc. from being airborne and lodging in the grills. Failure to keep the air grills clear will result in unsatisfactory operation of the system.

### **Caution**

Do not throw items into the storage area. Failure to heed this recommendation could result in damage to the interior of the cabinet or to the blower coil.

### Equipment Stands

Refrigerated base equipment stands are designed and pre-set at the factory to maintain a temperature of 36°F to 40°F (2°C to 4°C). Freezer base equipment stands are designed and pre-set at the factory to maintain a temperature of 0°F to -5°F (-18°C to -21°C) interior cabinet temperature at 100°F (38°C) ambient room temperature. The temperature is controlled by a thermostat.

- Continuous opening and closing of the drawers will hamper the unit’s ability to maintain optimum refrigeration temperature.
- Excess weight on top of the unit will adversely affect the operation of the drawers.
- Storing all acidic items, such as peppers and tomatoes with lids that are sealable and immediately wiping up all spills of either acid or base items will greatly extend the life of your unit.

### Evaporator Fan Operation

#### REFRIGERATOR EVAPORATOR FAN

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
Evaporator Fan On	Evap Fan Cycles On 3-Min, Off 3-Min	Evaporator Fan On

#### FREEZER EVAPORATOR FAN

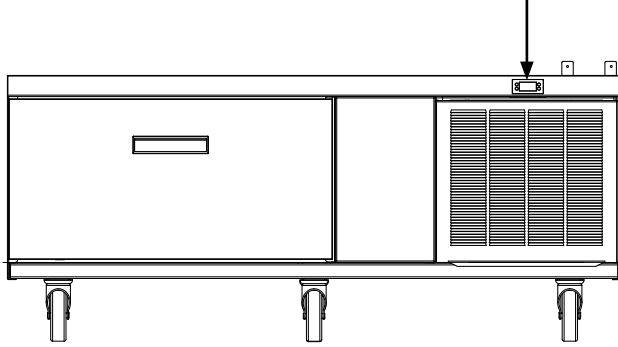
The evaporator fan(s) and condenser fan will cycle off and on with the compressor to conserve energy. The temperature control will cycle the compressor and condenser fan motor and evaporator fan motor to maintain box temperature at the control setting.

Cooling Cycle		Defrost Cycle
Compressor On	Compressor Off	Compressor On
Evaporator Fan On	Evaporator Fan Off	Evaporator Fan Off



## 115 Volt Controls

- The unit ON/OFF switch is located behind the louvered panel.
- The temperature 112ERC control display is located in the nosing above the louvered panel.



**F2660CP With Temperature Control in Nosing**

### AT START UP

1. At initial start-up or anytime power is disconnected, then reconnected to the unit, the control will go into defrost mode.
2. The control will enter a DEFROST mode and the display will read dEF. The compressor and condenser fan as well as the evaporator fan will remain off until this initial defrost is complete. This initial defrost cycle may take up to 35 minutes to complete.
3. The display will continue to read dEF for an additional 30 minutes while the cooling cycle cools the box to the set temperature.
4. Then the digital thermostat will display box temperature.
5. The temperature control will cycle the compressor, evaporator fan motor and condenser fan motor to maintain box temperature at the control setting. For more information see Evaporator Fan Operation on page 16.

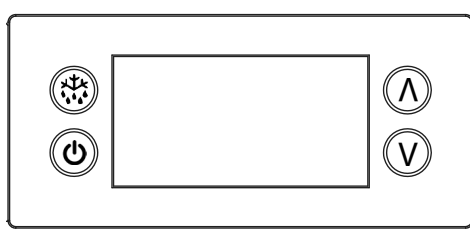
## Defrost

The temperature control also monitors the evaporator temperature and will turn off the compressor and condenser fan motor when needed to allow accumulated frost on the evaporator to clear. During this defrost cycle, the digital temperature display will read dEF. After the defrost cycle is complete, the temperature control will return to a normal cooling cycle, but the display will continue to read dEF until the evaporator returns to normal cooling temperatures (up to 30 minutes).

The electronic temperature controller monitors evaporator temperature and compressor run time to determine the proper time for a positive defrost cycle. A defrost cycle can occur as often as every 60 minutes under extremely heavy usage. It can last a minimum of 2 minutes. When the controller enters the defrost mode the compressor is shut off and will remain off until the evaporator coil temperature exceeds:

- 41°F (5°C) or the controller reaches a time limit of 75 minutes on a refrigerated unit.
- 55°F (13°C) or the controller reaches a time limit of 35 minutes on a freezer.

**ERC112 TEMPERATURE CONTROL**



Operation / Indication			
Status	Displayed		Comments
Normal (°C)	Temp. [°C]		Unit depends on setting (parameters in control)
Normal (°F)	Temp. [°F]		
Show set-point	Temp.		
Set to Defrost	dEF / Temp		Depends on setting (parameters in control or as chosen by upper left button)
Sensor 1 defect	E01	X	Air sensor
Sensor 2 defect	E02	X	Coil sensor
Sensor 3 defect	E03	X	Open
Sensor 4 defect	E04	X	Open
High temperature alarm	Hi	X	Automatically switching at 2 sec rate
Low temperature alarm	Lo	X	
Line voltage too high	uHi	X	
Line voltage too low	uLi	X	
Control calls for cooling for more than 24 hours straight	LEA	X	Time includes defrost. Error will go away if the control cycles off the compressor or if the power is shut off. If error is on a cold pan it could be related to a high ambient temperature or not shutting the rail off nightly.

**Press upper or lower right button.**

- Display show actual set-point (blinking).
  - If buttons untouched for 3 seconds returns to normal.
- Increase set-point by pressing upper button. Max value depends on parameters in control.
- Decrease set-point by pressing lower button. Min value depends on parameters in control.
  - If buttons untouched for 3 seconds returns to normal and stores new set-point.

**Press upper left button for 5 seconds.**

- Start defrost.

**Press lower left button for 5 seconds.**

- Unit goes into stand-by mode.
  - The display will read Off, then a period.
- Press the lower left button again for 5 seconds.
  - The display will read On.
  - The unit will then start up in the defrost mode, and display will read dEF.

**Temperature Alarm**

The alarm will sound and flash HI or LO 90 minutes after the unit has reached its alarm temperature point or after any power interruption if the temperature is above or below the alarm set points.

- The high refrigerator temperature point is 50°F (10°C).
- The low refrigerator temperature point is 25°F (-4°C).
- The high freezer temperature point is 20°F (-7°C).
- The low freezer temperature point is -25°F (-32°C).

### CHANGING DISPLAY FROM FAHRENHEIT TO CELSIUS ON ERC112 CONTROL

1. Simultaneously hold the up and down arrows for 5 seconds to access menu for password protected parameters.



2. Screen should temporarily flash **PAS** and then move to a numeric screen.



3. Scroll to **187** using the up/down arrows and push the stand-by button (lower left button) to enter.



4. Scroll to **dis** using the up/down arrows and push the stand-by button (lower left button) to enter into the display menu.



5. Scroll to **CFu** using the up/down arrows and push the stand-by button (lower left button) to enter the display unit menu.



6. **-F** should be displayed indicating Fahrenheit. Use the down arrow to change it to **-C** for Celsius and hit the stand-by button (lower left button) to enter the change.



7. Push the defrost button (upper left button) to move out of the display unit menu.



8. Push the defrost button (upper left button) to move out of the display menu and back to the normal display.

NOTE: For steps 7 and 8, display will return back to normal display after 30 seconds of inactivity.



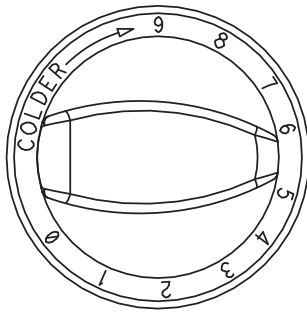
## 230-240 Volt Controls

Units will begin operating when plugged into the proper outlet. A solar-powered digital thermometer is located on the front of the unit to allow monitoring of the drawer housing temperature. The temperature is controlled by a thermostat located in the machine compartment.

### 230-240VOLT EXPORT THERMOSTAT

Temperature is controlled in self contained refrigerators and freezers by a thermostat.

- The thermostat is set at the factory to provide proper operation; refrigerators at 2.5, freezers at 4.5.
- To adjust the temperature, turn the knob clockwise as indicated on the control. Settings are from 1 through 9 (9 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.



**Thermostat Dial**

## Section 4 Maintenance

### ⚠ DANGER

It is the responsibility of the equipment owner to perform a Personal Protective Equipment Hazard Assessment to ensure adequate protection during maintenance procedures.

### ⚠ DANGER

Failure to disconnect the power at the main power supply disconnect could result in serious injury or death. The power switch DOES NOT disconnect all incoming power.

### ⚠ DANGER

Disconnect electric power at the main power disconnect for all equipment being serviced. Observe correct polarity of incoming line voltage. Incorrect polarity can lead to erratic operation.

### ⚠ Warning

When cleaning interior and exterior of unit, care should be taken to avoid the front power switch and the rear power cord. Keep water and/or cleaning solutions away from these parts.

### ⚠ Warning

Never use sharp objects or tools to remove ice or frost. Do not use mechanical devices or other means to accelerate the defrosting process.

### ⚠ Caution

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.

### ⚠ Caution

Maintenance and servicing work other than cleaning as described in this manual must be done by an authorized service personnel.

### General Cleaning

#### ⚠ Warning

When using cleaning fluids or chemicals, rubber gloves and eye protection (and/or face shield) must be worn.

#### Notice

Never use a high-pressure water jet for cleaning or hose down or flood interior or exterior of units with water. Do not use power cleaning equipment, steel wool, scrapers or wire brushes on stainless steel or painted surfaces.

You are responsible for maintaining the equipment in accordance with the instructions in this manual. Maintenance procedures are not covered by the warranty.

Maintenance	Daily	Weekly	Monthly	After Prolonged Shutdown	At Start-Up
Interior	X			X	X
Gasket	X			X	X
Exterior	X			X	X
Drain		X		X	X
Condenser Coil			X	X	X

## Interior Cleaning

The interior can be cleaned using soap and warm water. If this isn't sufficient, try ammonia and water or a nonabrasive liquid cleaner.

### GASKETS

Gaskets require regular cleaning to prevent mold and mildew build up and also to retain the elasticity of the gasket. Clean them with water and mild soap (not citrus based). 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. Place gasket in warm water to make the material more pliable for installation. Dry and press into place.

### PREVENTING BLOWER COIL CORROSION

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

## Exterior Cleaning

### Notice

Never use an acid based cleaning solution on exterior panels! Many food products have an acidic content, which can deteriorate the finish. Be sure to clean the stainless steel surfaces of ALL food products.

Clean the area around the unit as often as necessary to maintain cleanliness and efficient operation.

Wipe surfaces with a damp cloth rinsed in water to remove dust and dirt from the outside of the unit. Always rub with the "grain" of the stainless steel to avoid marring the finish. If a greasy residue persists, use a damp cloth rinsed in a mild dish soap and water solution. Wipe dry with a clean, soft cloth.

Never use steel wool or abrasive pads for cleaning. Never use chlorinated, citrus based or abrasive cleaners.

Stainless steel exterior panels have a clear coating that is stain resistant and easy to clean. Products containing abrasives will damage the coating and scratch the panels. Daily cleaning may be followed by an application of stainless steel cleaner which will eliminate water spotting and fingerprints. 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 steel.

Wipe casters with a damp cloth to prevent corrosion.

### WALL BRACKET REMOVAL FOR CLEANING

1. Allow time for the equipment to cool thoroughly, including cooking oils.
2. Use extreme care to remove cooking equipment placed on top of the stand.
3. Rotate the knob on the threaded rod counter-clockwise to loosen and remove the rod from the bracket.
4. The threaded rod must be reinstalled and tightened before returning the unit to service!

### DRAIN

Drains can become loose or disconnected during normal use. Be sure all drain lines are free of obstructions.

## Drawer Assembly Cleaning

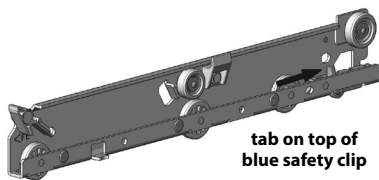
The drawer assembly is designed to be cleaned easily. Both drawer and tracks are removable without tools. The drawer tracks are dishwasher safe or can be cleaned in a sink with detergents and a soft bristle brush. Drawers and tracks should be cleaned on a weekly basis.

### Remove Drawers

Pull the drawer box out until it stops. Lift up on the drawer front and pull the drawer box completely out. Using a soft bristle brush, clean the track on the bottom of the drawer box. When finished, it should be wiped clean of all food and debris.

### Tracks

The drawer box assembly must be removed. Pull the drawer tracks out until they hit a stop. Locate blue safety clips towards the back of each drawer track. Blue safety clips have a tab on the top. Push the tab back until it clicks. Lift up and pull the drawer tracks all the way out of the drawer



cage. The drawer tracks are dishwasher safe or can be cleaned in a sink with detergents and a soft bristle brush. Drawers and tracks should be cleaned on

a weekly basis. Using a soft bristle brush, wash the track making sure each roller is thoroughly cleaned. The drawer cage should be cleaned with a soft bristle brush, removing any food and debris gathered on the bottom ledge. Once it's cleaned thoroughly with a soft bristle brush, wipe remaining debris clean with a soft towel.

### Reassembly

Push the drawer tracks into the drawer cage. The blue safety clip must remain pushed towards the back. Lift up and slide the drawer track all the way into the drawer cage. The blue safety clip will lock in place automatically. Once all tracks are replaced, insert the drawer box. Rest the drawer box bottom track on the front track roller. Then push the drawer back in place SLOWLY. When the drawer box is about half way in you will hit a STOP. You must lift the front of the drawer up approximately ½" (1.3cm) to continue inward. Clean tracks as often as possible. The cleaner the tracks are the better they will operate.

## 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 monthly. If conditions are such that the condenser is totally blocked in a month, 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.

## 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.

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