FZR5-PL Series
-30 C Undercounter Plasma Freezer

Installation, Operation and Service Manual
Serial numbers above D18495

**Following installation, please forward this manual
to the appropriate operations person.**

Contents

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Welcome

Follett equipment enjoys a well-deserved reputation for excellent performance, long-term reliability, and outstanding after-the-sale support. To ensure that this product delivers that same degree of service, we ask that you take a moment to review this manual before beginning the installation. Should you have any questions or require technical help at any point, please call our technical service group at (877) 612-5086 or +1 (610) 252-7301.

Before You Begin

After uncrating and removing all packing material, inspect the equipment for concealed shipping damage. If damage is found, immediately notify the shipper and contact Follett Corporation so that we can help in the filing of a claim, if necessary.

Check your paperwork to verify that you received the correct freezer. Follett configuration numbers are designed to provide information about the type of freezer you are receiving. The following is an explanation of the different item numbers.

Model Number	Item Number	Stackable/Use with Pedestal*	Temperature Surveillance Module
FZR5PL	FZR5PL-00STCR	Yes	Yes
	FZR5PL-00ST00	Yes	No

Specifications

Series Specifications

- FZR5-PL: 34" (864mm) high, fits below standard 36" (915mm) high counter, 2 drawers - up to 40 (35) ml plasma cartons, maximum drawer load - 35 lbs (16 kg) each

Electrical Specifications

- 115V, 60 Hz, 1 phase
- Full load: 8.0 A
- Minimum circuit ampacity: 15 A
- Maximum size of branch circuit overcurrent device: 15 A

Refrigeration Specifications

- Refrigerant – R404A
- Charge size – 10 oz
- Maximum design pressures: High side – 383 psi; Low side – 175 psi

Installation Specifications

- Ambient temperature must not exceed 86 F (30 C). Relative humidity 60%.
  The front louvered panel must be kept free of any cabinet trim or obstructions to ensure proper ventilation of the refrigeration system.

⚠️ *CAUTION!*

Equipment must be wired according to local NEC codes.

Unplug equipment before servicing.

Be sure to find adequate storage for products prior to unplugging equipment.

Installation ───

Installing Legs – Required

1. Remove legs from plastic bag packed inside freezer.
2. Tip freezer back and screw legs in all the way to stop **(Fig. 1)**. Legs will extend 1/8" (3.175mm) below base of freezer.
3. Adjust legs as needed to level freezer in both directions. To access legs, remove the lower front panel. Turn legs clockwise to extend legs.
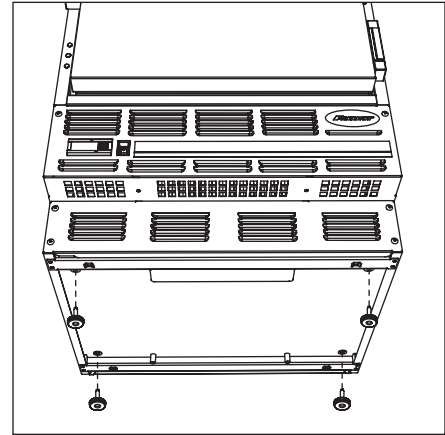
Changing Temperature Controller Settings – Optional

Follett's temperature controller is pre-programmed with a -35 C (-31 F) set point and degrees C display. The -35 C (-31 F) set point delivers a temperature range of -33 to -35 C (-27 to -31 F).

Follett's controller set point can be changed to deliver up to a -25 C (-13 F) temperature for applications where a lower temperature is not desired. See *Controller Operation on page 7* to change controller settings.

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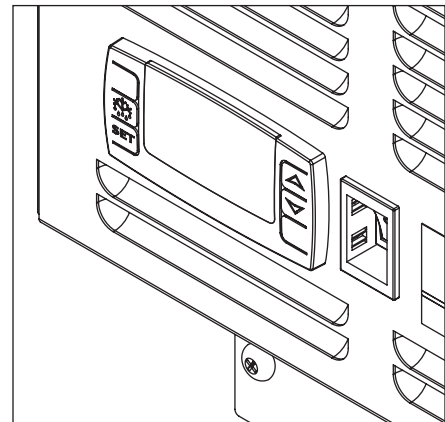
Reversing the Door Swing – Optional

> ⚠️ **CAUTION!**
> *When reinstalling latch and hinge screws, 242 blue Loctite* MUST be applied to screws. Torque screws to 25 in-lbs.*

1. Remove screws and latch from refrigerator cabinet **(Fig. 3)**.

2. Use flat screwdriver to carefully remove (do not scratch) hinge covers **(Fig. 4.1)**.
3. Support door and remove screws attaching hinge to refrigerator cabinet **(Fig. 4.2)**.
4. Cover hinge screw holes with screw hole plugs removed from opposite side.
5. Reverse door. Apply 242 blue Loctite to hinge screws and reinstall, torque to 25 in-lbs.
6. Reinstall latch on opposite side.

7. Remove screws and handle from door **(Fig. 5.1)**.
8. Rotate handle **(Fig. 5.2)**.
9. Apply 242 blue Loctite to latch screws and reinstall, torque to 25 in-lbs
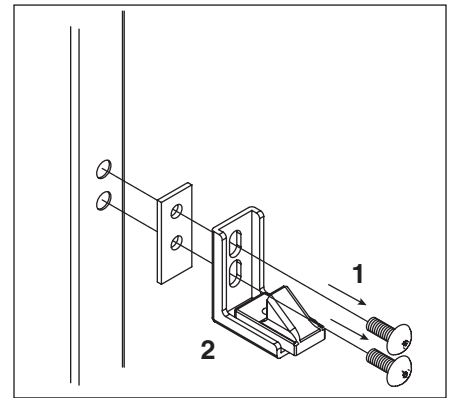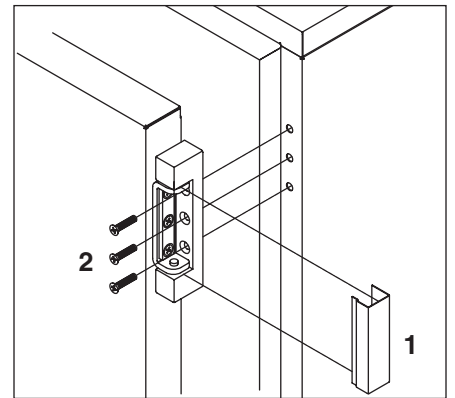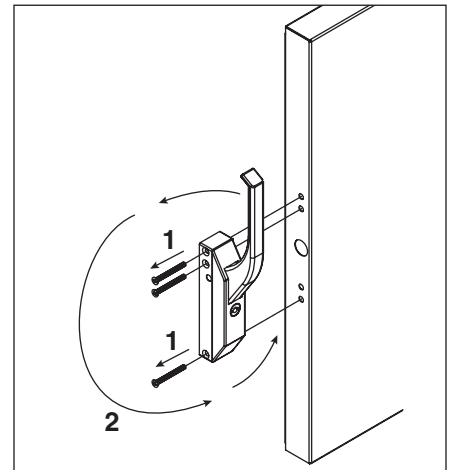
Fig. 3

Fig. 4

Fig. 5

* Loctite is a registered trademark of Henkel Corporation in the United States and other countries.

Changing Temperature Display - Optional

⚠ **NOTICE!**
*It is important that you review the temperature cut-out settings after you change the temperature display. The controller contains two separate temperature channels; F and C. Changes made to the factory default settings while displaying temperatures in F **will not** automatically transfer when you change the temperature display to C.*

Follett freezers are factory-set to display temperatures in degrees C (Celsius). To display the temperature in degrees F (Fahrenheit), follow these steps:

1. Move the power switch to OFF and unplug the freezer.
2. Remove the front lower panel cover **(Fig. 6)** to access the controller.
3. Locate jumper wires connecting pins #9 and #11 **(Fig. 7)** and disconnect.
4. Reinstall the front lower panel cover.
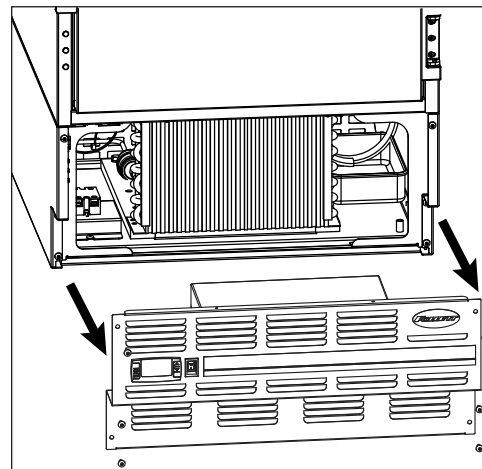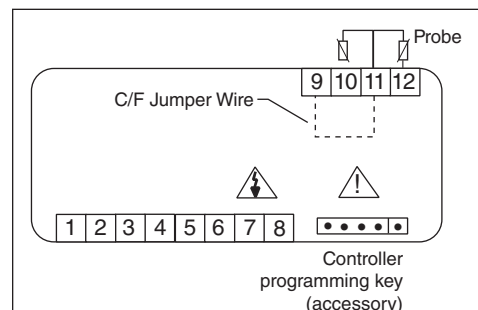5. Plug in the freezer and return the power switch to ON.

Fig. 6

Fig. 7

Temperature Surveillance Module

Follett's all-in-one temperature alarm and chart recording module (manufactured for Follett by Dickson) may be included with your FZR5-PL. Please refer to the instructions packed with this module for set-up and operation instructions.

A quick set-up guide has also been included (form# 00168609). This instruction sheet is also available in the Library section of the Follett website (www.follettice.com).

If equipped with temperature surveillance module, Follett's monitoring bottle and temperature probe has already been installed in the Follett FZR5-PL. Simply plug the loose end of the probe wire into the back of the freezer surveillance module to complete the install.

A box of sixty (6) -50 to +50 7-day charts have also been included with this module. Replacement charts and pens can be ordered by visiting www.follettice.com and choosing "order parts".

Item# 00162099 – Box of sixty (60), -50 to +50 7-day replacement charts

Item# 00162081 – Box of six (6) replacement red pens

Charts with different temperature scales are also available directly from Dickson www.dicksondata.com.

Automated Medication Dispensing and Inventory Systems Interface

(Pyxis˙, Omnicell˙, MedSelect˙, etc.)

Follett refrigerators and freezers are compatible with most major automatic medication and inventory systems. In some cases a Follett bracket accessory is required. Contact factory for further information.

* Pyxis is a registered trademark of Cardinal Health in the United States and other countries.
  Omnicell is a registered trademark of Omnicell, Inc. in the United States.
  MedSelect is a registered trademark of AmerisourceBergen Technology Group, in the United States.

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"Sleep" Function

You may not want the Follett temperature display when using a third-party temperature monitoring system with its own temperature display. You can put the Follett controller "to sleep" to avoid confusion. The compressor icon remains illuminated when the compressor is running.

1. Press BOTTOM RIGHT button to put display to sleep.
2. Press BOTTOM RIGHT button to return to display mode.
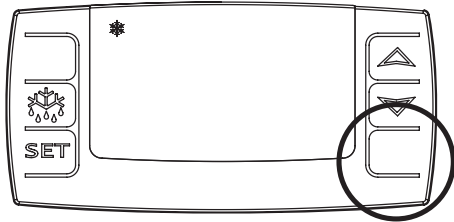
Controller Operation

In normal operation, the controller displays cabinet temperatures in degrees C (default) or user-selected degrees F (see *Changing Temperature Display - Optional on page 6*). C temperatures are displayed to one decimal point, F temperatures are displayed to the nearest degree. A snowflake LED displays when the compressor is running.

Up/down/set membrane switches at right and left of the temperature display control all programming functions.

The controller is pre-programmed with a -35 C (-31 F) set point, which provides a compressor cut-in at -33 C (-27 F) and cut-out at -35 C (-31 F). The controller set point can be raised to -25 C (-13 F) when a lower temperature is not desired. Follow instructions for changing temperature cut-out below.

All set points have a 2 C (4 F) differential. The 2 C (4 F) differential means that with a -35 C (-31 F) set point, for example, the compressor will turn off at -35 C (-31 F) and turn on when it reaches -33 C (-27 F).

This temperature may not reflect the temperature of the blood products in the freezer. The temperature of the blood products will be reflected on the recorder chart and the recorder's digital temperature display. At times there may be a difference between the two displayed temperatures. Adjust the controller SET value to achieve your desired blood product temperature as displayed on your chart recorder.

Fig. 8
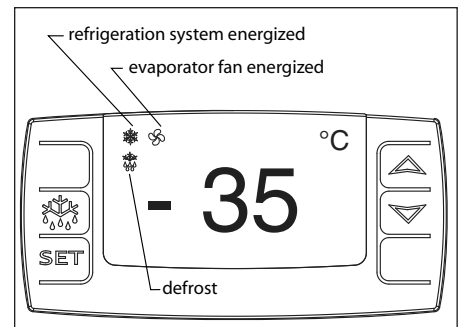
To display temperature cut-out

STEP	INPUT	DISPLAY
1	Press and release SET	Current cut-out temperature will display for approximately 5 seconds. Display will return to current refrigerator temperature.

To change temperature cut-out

STEP	INPUT	DISPLAY
1	Press and hold SET for 3 seconds	Current cut-out temperature displayed and °C (°F) will flash
2	Press UP or DOWN arrows to desired cut-out temperature	New cut-out temperature displayed
3	Press and release SET	New cut-out temperature blinks three times, then current refrigerator temperature will display

Controller Security

The controller panel can be locked to prevent unauthorized programming changes. In locked mode, the controller displays cabinet temperature and set point only.

To lock the controller

1. Simultaneously press and hold UP and DOWN ARROW buttons for 3 seconds, until "PoF" displays (flashes 3 times).
2. Programmer is now locked.

To unlock the controller

1. Simultaneously press and hold UP and DOWN ARROW buttons for 3 seconds, until "Pon" displays (flashes 3 times).
2. Programmer is now unlocked.

Programming Refrigerator from a Program Key (download)

A controller programming key is available from Follett to provide fast and easy reprogramming of factory settings.

Program Serial# Range	Frequency of Defrost	Maximum Duration of Defrost	Temp Display °	FZR5-PL – Item#
Above D18495	6 hrs	25 min	C or F	00976662

Fig. 9

1. Move the power switch to OFF.
2. Remove the front lower panel cover to access the controller **(Fig. 9)**.
3. Insert appropriate programmed key into 5-pin receptacle located on back of controller.
4. Move the power switch to ON.
5. Values from key automatically download to refrigerator ("dol" message blinks followed by "end").
6. After 10 seconds, the display returns to current refrigerator temperature and controller restarts with new values.
7. Move the power switch to OFF.
8. Remove programming key.
9. Reinstall panel.
10. Move the power switch to ON.
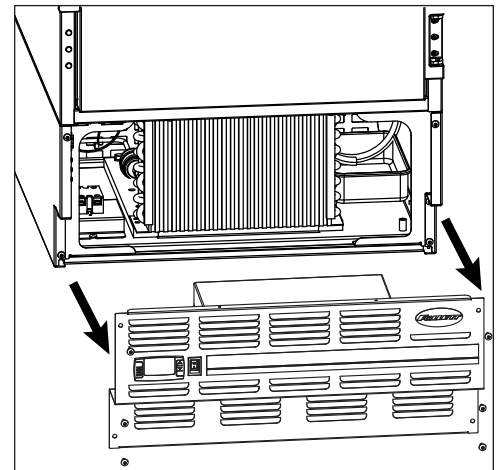
Note: An "Err" message displays for failed programming. Turn refrigerator OFF then ON to restart download, or remove key to abort.

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Operation ──

The temperature controller and probe indicate when the refrigeration system is required to turn on and off.

The refrigeration system removes heat from the cabinet interior and rejects it to the surrounding room air. When the cabinet interior temperature reaches +2 C (+4 F) above the controller set point, the probe signals the controller to turn the refrigeration system on. The normally-open controller contacts 2 and 3 close and energize the evaporator fan motor, door heater, and control relay that energizes the condensing unit (condenser fan motor and compressor). The snowflake and fan LEDs on the controller will light to indicate that the refrigeration system is on. The compressor uses a current-style starting relay and a starting capacitor to start the compressor motor.

When the cabinet interior temperature falls to the set point, the probe signals the controller to turn the refrigeration system off. The controller contact 3 reopens, which de-energizes the control relay and turns off the condenser fan motor and the compressor. The snowflake LED will go out and the fan LED will remain on.

Any accumulated frost on the evaporator coils melts during the defrost cycle. Freezer products will remain at or below -20 C (-4 F) during the defrost cycle. The condensate drains to a drain pan mounted along the condensing unit. The heat from the condensing unit evaporates any condensate in the drain pan.

Temperature Control

The temperature control system is preset by the factory to maintain a cabinet temperature of -33 C (-27 F). If desired, the cut-out temperature can be raised as high as -25 C (-13 F) by following the instructions on page for changing the temperature set point. The 2 C (4 F) cut-out differential will be maintained regardless of the controller set point.

Defrosting

The FZR5-PL series undercounter freezers control frost accumulation on the evaporator through automatic timed defrost cycles. The defrost cycle is initiated by the temperature controller every 6 hours. Contacts 2 and 3 on the controller open and the refrigeration system is turned off. Contact 7 is closed and the defrost heater is energized. The melting snowflake LED on the controller will light, and the temperature display will read "dEF" to indicate the freezer is in the defrost cycle.

The heaters warm the evaporator coil and drain pan to melt the frost and drain the water to the condensate pan. The temperature controller monitors evaporator temperature using a probe embedded in the coil. The controller terminates the defrost cycle when the evaporator temperature reaches +5 C (+41 F) or after 25 minutes of defrost time, whichever occurs first. As the defrost cycle terminates, the controller de-energizes the heater and energizes the control relay, turning on the compressor and condenser fan. The snowflake LED on the controller will light to indicate that the refrigeration system is running.

There is a 10 minute delay before the evaporator fan motor is re-energized. The fan LED on the controller will come on to indicate the fan is running and the temperature display resumes displaying cabinet temperature. A defrost cycle can be initiated manually at any time by depressing and holding the melting snowflake button for approximately three seconds. As a safety feature, a temperature safety switch mounted on the evaporator will turn off the defrost heater if the temperature of the evaporator reaches +27 C (+80 F) regardless of controller operation.

Note: Storage of products of very low volumes or mass may require additional product insulation.

Cleaning

> ⚠️ **CAUTION!**
>
> *Use only non-chlorine based cleaners. Cleaners containing chlorine can cause staining and pitting of the stainless steel.*

Interior

Using a sponge or soft cloth, clean unit with a non-abrasive, non-chlorinated, all-purpose detergent.

Exterior

Wipe exterior with a soft cloth in the direction of grain as needed. Stainless steel polish may be used to enhance the finish of the unit.

Annual Cleaning and Inspection

Fig. 10

1. Shut down unit by moving rocker switch on the lower front panel to the OFF position and removing power cord from receptacle.
2. Remove 6 screws from front panel.
3. Remove lower front panel **(Fig. 10.1)**.

Note: Front louvered panel may be completely removed for easier cleaning by disconnecting the controller wiring plugs from the freezer.

4. Remove drain pan **(Fig. 10.2)**.
5. Clean drain pan with a non-abrasive, non-chlorinated all-purpose detergent.
6. Reinstall drain pan.
7. Use a vacuum cleaner with brush attachment to clean condenser through lower front panel and compressor motor and related parts through lower rear panel.
8. Reinstall lower front panel.
9. Remove interior drawers.
10. Remove evaporator cover (six screws).
11. Using hair drier, melt all ice from evaporator coil and drain pan.
12. Using a piece of wire, confirm that drain tube is free of ice and clear of any blockage.
13. Check evaporator fan for smooth operation.
14. Reinstall evaporator cover.
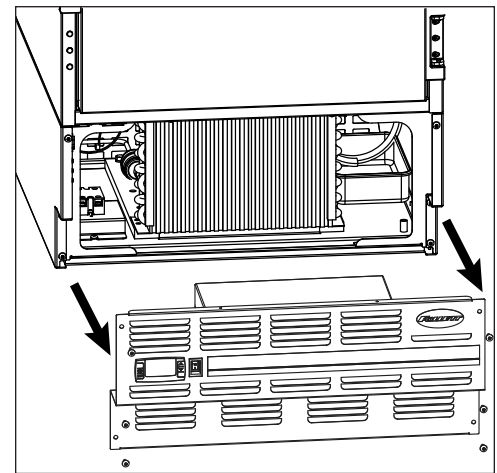15. Reinstall drawers.

Removing drawers

1. Pull drawer forward to stop.
2. Lift drawer front to free front rollers from sides.
3. Still lifted, pull drawer forward to free back rollers from sides.

Removing slides

1. Push slides all the way back.
2. Swing bottom of slide away from refrigerator wall and lift slide off of rollers.

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Service ──

Latch Adjustment

To adjust for proper latch engagement

1. Loosen striker plate mounting screws **(Fig. 11.1)**.
2. Move striker plate up or down as required and tighten screws.
3. Test operation of latch.

To adjust for proper gasket seal

1. Loosen striker depth adjustment screw **(Fig. 11.2)**.
2. Adjust stop in or out and tighten screws.
3. Test operation of latch.

Door Gasket Replacement

1. Remove existing gasket from mounting track.
2. Verify mounting track is free of any remaining gasket material.
3. Align new gasket with mounting track and press firmly in place.
4. Open and close door, checking for proper gasket seal without pinching against freezer.
5. Adjust latch and or striker as necessary for proper door closure.

Fig. 11

Slide-out Compressor Tray

Follett's slide-out compressor tray allows technicians to partially slide the condensing unit from the freezer back without cutting refrigerant lines.

1. Remove rear panel **(Fig. 12.1)**.
2. Remove two bolts securing condensing unit to freezer base **(Fig. 12.2)**.
3. Carefully slide out condensing unit **(Fig. 12.3)**.
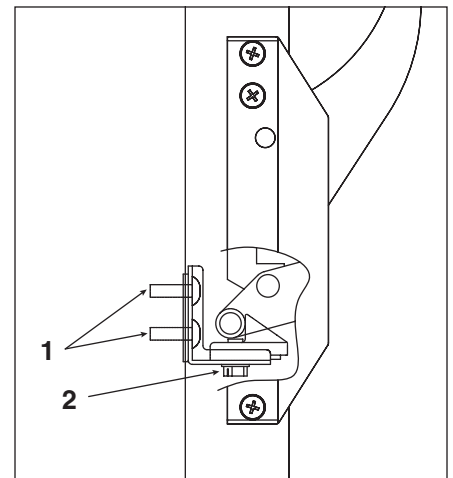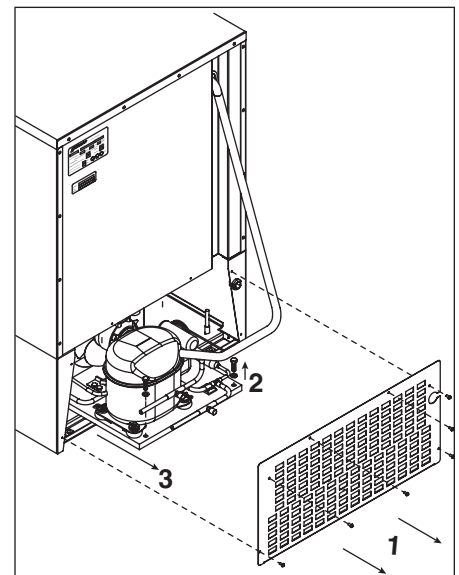
Note: Do not put strain on the refrigerant lines.

Fig. 12

Controller Replacement

1. Shut down unit by moving rocker switch on the lower front panel to the OFF position and removing power cord from receptacle.

2. Remove 6 screws from front panel and slide panel forward to access back of controller.

3. Disconnect front panel and wiring harness from freezer at the 3-, 4-, and 5-pin connectors and door heater connector to simplify replacement.

4. Push in on center of side brackets (on controller) to release and slide brackets back and off controller.

5. Push controller and wires out through front of front panel.

6. Using wiring diagram on next page (and attached to front panel) as a guide, remove wires one at a time from back of existing controller and connect to corresponding terminals on replacement controller.

7. Insert replacement controller back through front of panel.

8. Slide brackets onto sides of controller and push against back of front panel.

9. Reconnect 3-, 4-, and 5-pin connectors of wiring harness to freezer.

10. Keeping wiring clear of condenser, replace front panel.

11. Restore power and test operation. Reprogram replacement controller if necessary.

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Wiring Diagram

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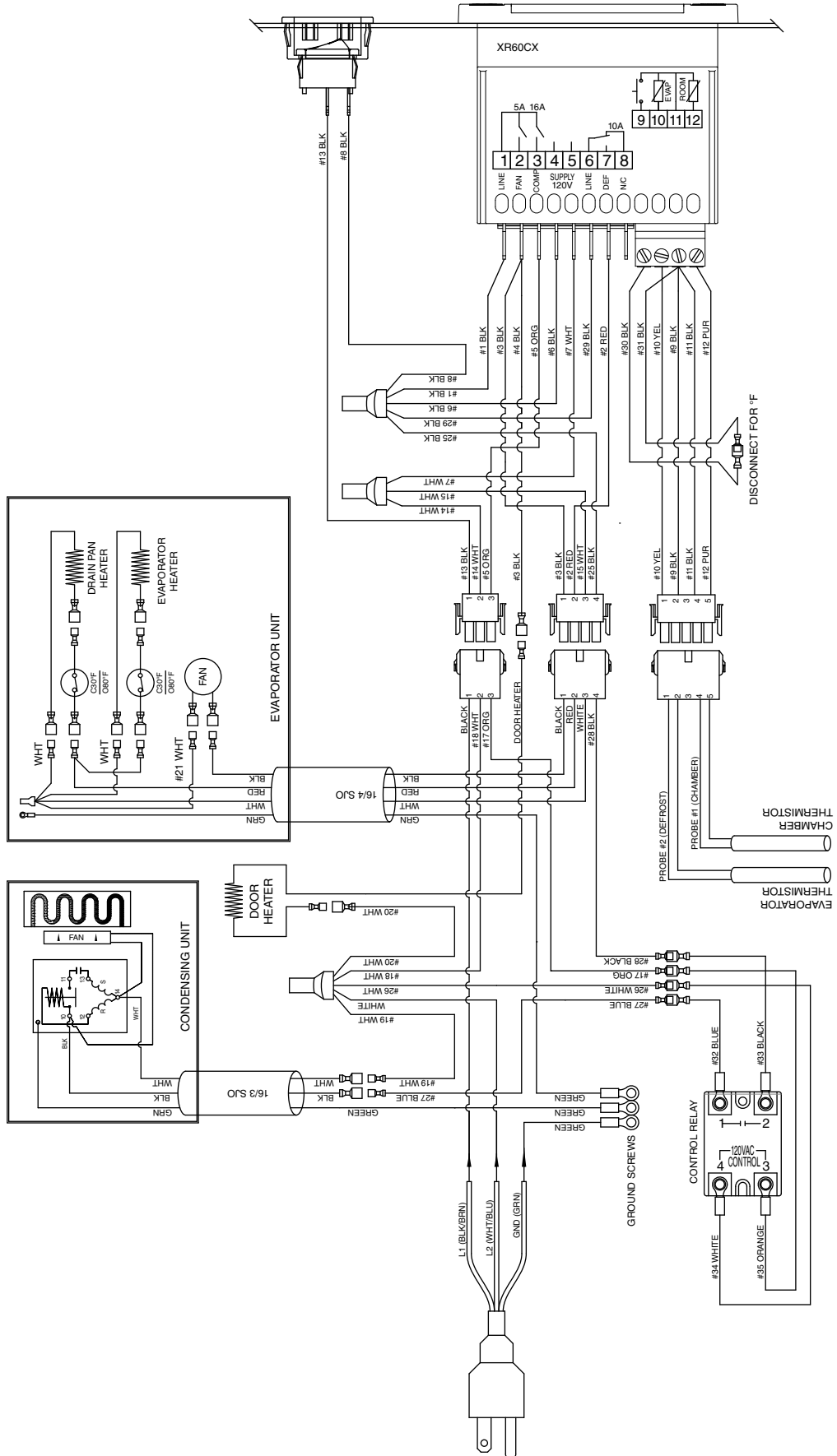
Refrigeration System

The FZR5-PL series -30 C (-22 F) freezer refrigeration system is designed to give many years of trouble-free service. Except for routine cleaning and inspection of the air-cooled condenser and evaporator defrost, the refrigeration system requires no service or maintenance. The system uses a thermostatic expansion valve and is critically charged. Access fittings are provided for ease of service. However, the connection of refrigeration service hoses to the fittings will almost invariably result in a significant change in the system charge. This change can adversely affect the performance of your freezer. Therefore, Follett recommends that if hoses are ever connected to the refrigeration system for service, the refrigerant should be recovered, the system evacuated, and recharged by weighing in the correct refrigerant charge.

Note: Do not charge the system by pressures.

Checking Refrigeration System Pressures

Fig. 13

1. Remove the rear access panel **(Fig. 13)**.
2. Turn the power switch to the on position.
3. Following the instructions on *page 7,* verify that the temperature controller is set to the original factory cut-in setting of -35 C (-31 F).
4. Allow the freezer to operate and stabilize at least 60 minutes, verifying the cut-out temperature is being reached.
5. Connect refrigerant gauges to access fittings and measure air temperature at condenser intake grille.
6. Verify correct pressures with the temperature chart below.
7. Troubleshoot refrigeration system as needed.
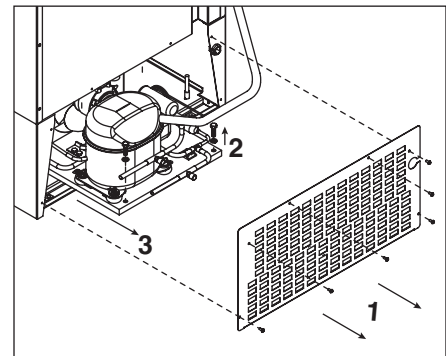
Discharge and suction pressure table

Condenser Inlet Air Temperature	70 F (21 C)	80 F (27 C)
Discharge pressure (psi)	197	225
Suction pressure (psi)	12	13

Note: Do not attempt to obtain correct refrigeration pressures by adjusting the system charge.

Refrigeration System Diagram

FOLLETT®
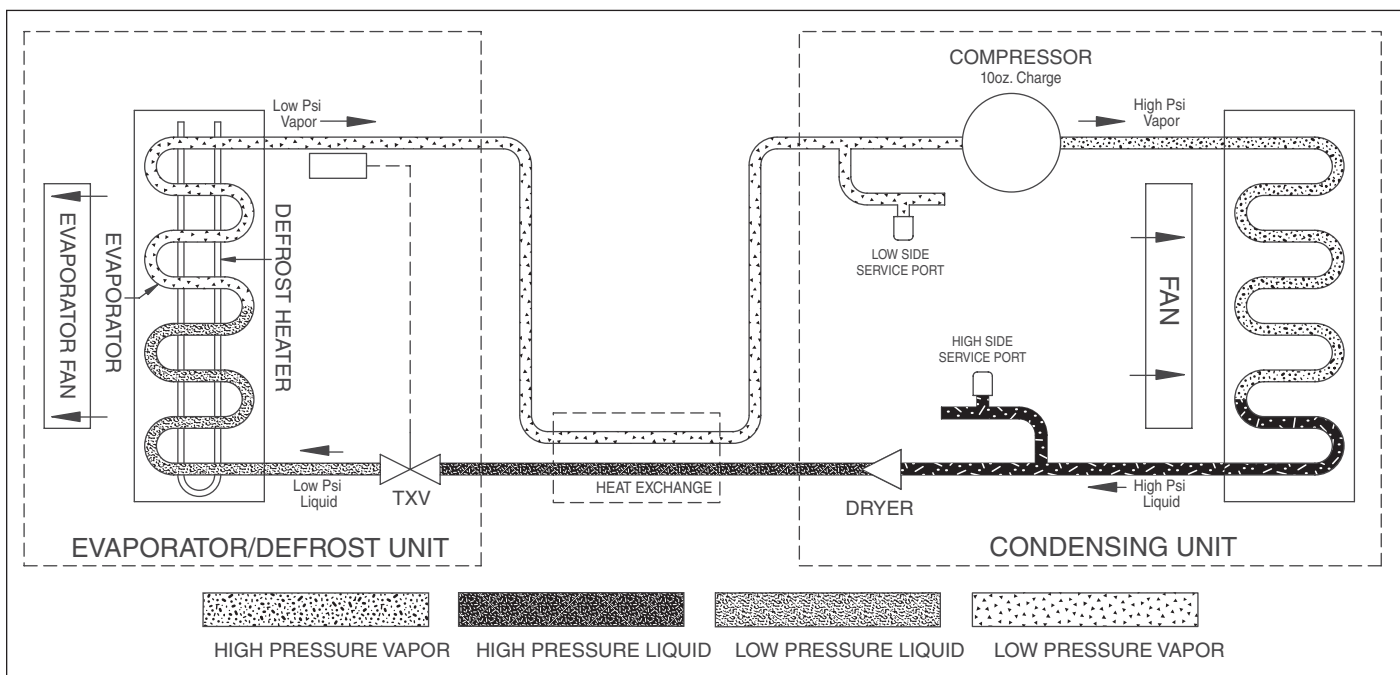
Freezer Troubleshooting Guide

Before Calling For Service
Check to be sure unit is plugged in. Test outlet with another appliance to verify power.

Symptom	Possible Cause	Solution
Freezer does not operate (no components run)	1. Power switch faulty or in OFF position; loose connection.	1. Tun power switch to ON position; check switch connections.
	2. Freezer not plugged in.	2. Connect plug.
	3. No power to cord.	3. Restore power.
	4. Temp controller not energizing components.	4. Check controller contact terminals for power. Replace controller if needed.
	5. Probe not sensing cut in temperature.	5. Replace controller and/or probe.
Compressor does not run	1. Thermal overload open or defective.	1. Allow to cool or replace.
	2. Capacitor and/or relay defective.	2. Replace as required.
	3. Compressor defective.	3. Replace compressor.
Compressor and condenser fan do not run.	1. No power on terminal 3 of controller (during cooling).	1. Replace controller.
	2. Control relay coil open or faulty contacts.	2. Replace control relay.
Evaporator fan motor does not run.	1. No power on terminal 2 of controller (during cooling).	1. Replace controller.
Freezer does not shut off.	1. Controller not sensing cut off temperature.	1. Replace controller and/or probe.
	2. Control relay defective.	2. Replace control relay.
	3. Controller keeping refrigeration system energized.	3. Replace controller.
Freezer does not maintain temperature (all components run).	1. Fan upgrade needed	1. If fan is not black in color contact Follett for a retrofit kit.
	2. Condenser or evaporator coil needs cleaning.	2. Clean coils as needed.
	3. Faulty door gasket.	3. Replace door gasket.
	4. Excessively high ambient/humidity.	4. Maximum recommended ambient is 86 F (30 C).
	5. Refrigerant leak.	5. Locate and repair leak.
	6. Incorrect refrigerant charge.	6. Recover, evacuate and weigh in correct charge.
	7. Plugged expansion valve.	7. Replace expansion valve.
	8. Inefficient compressor.	8. Consult technical service.
	9. Evaporator coil blocked with ice.	9. Depress defrost button on controller to defrost coil.
Evaporator does not defrost.	1. Defective defrost heater.	1. Replace defrost heater.
	2. Faulty heater safety switch.	2. Replace switch.
	3. No power on terminal 7 of controller (during defrost).	3. Replace controller.
	4. Defrost settings may require change for specific applications.	4. Call Follett's technical service department.
If problems persist after following this basic troubleshooting guide, call Follett's technical service group at (877) 612-5086 or +1 (610) 252-7301.		

Accessory Installation

The following instruction sheets are available in the download section of the Follett website (www.follettice.com).

Temperature Surveillance Module Accessory

- Reference instruction #00168609 (packed with module)

Temperature Alarm Accessory

- Reference instruction #00112052 (packed with alarm)

Pedestal Base
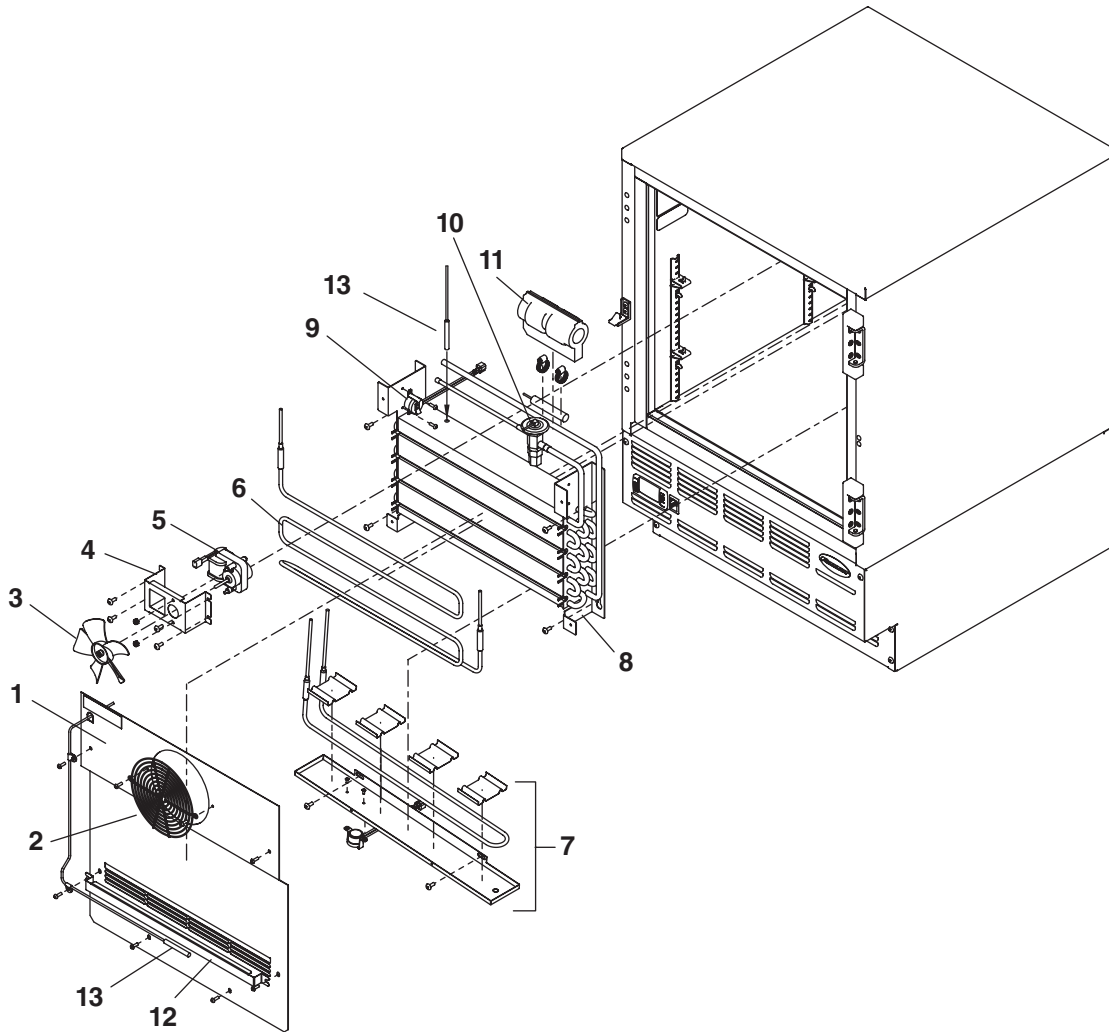
- Reference instruction #00192534 (packed with base)

Stacking Kit

- Reference instruction #00192526 (packed with stacking kit)

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Replacement Parts

Evaporator

Reference	Description	Part #
1	Cover, evaporator, FZR5 (includes 00152892)	00155564
1	Cover, evaporator, FZR4-ADA (includes 00152892)	00155572
2	Fan guard	00152892
3	Fan blade	00152991
4	Bracket, fan motor	00152983
5	Fan motor, evaporator	00104919
6	Evaporator, defrost heater	00923631
7	Drain pan, defrost heater assembly	00923649
8	Evaporator	00151563
9	Heater safety switch	00153932
10	Expansion valve (includes 00106534)	00155671
11	Insulation, bulb	00106534
12	Evaporator cover guard	00157586
13	Probe1 and Probe 2 harness assy	00155705

Condensing Unit
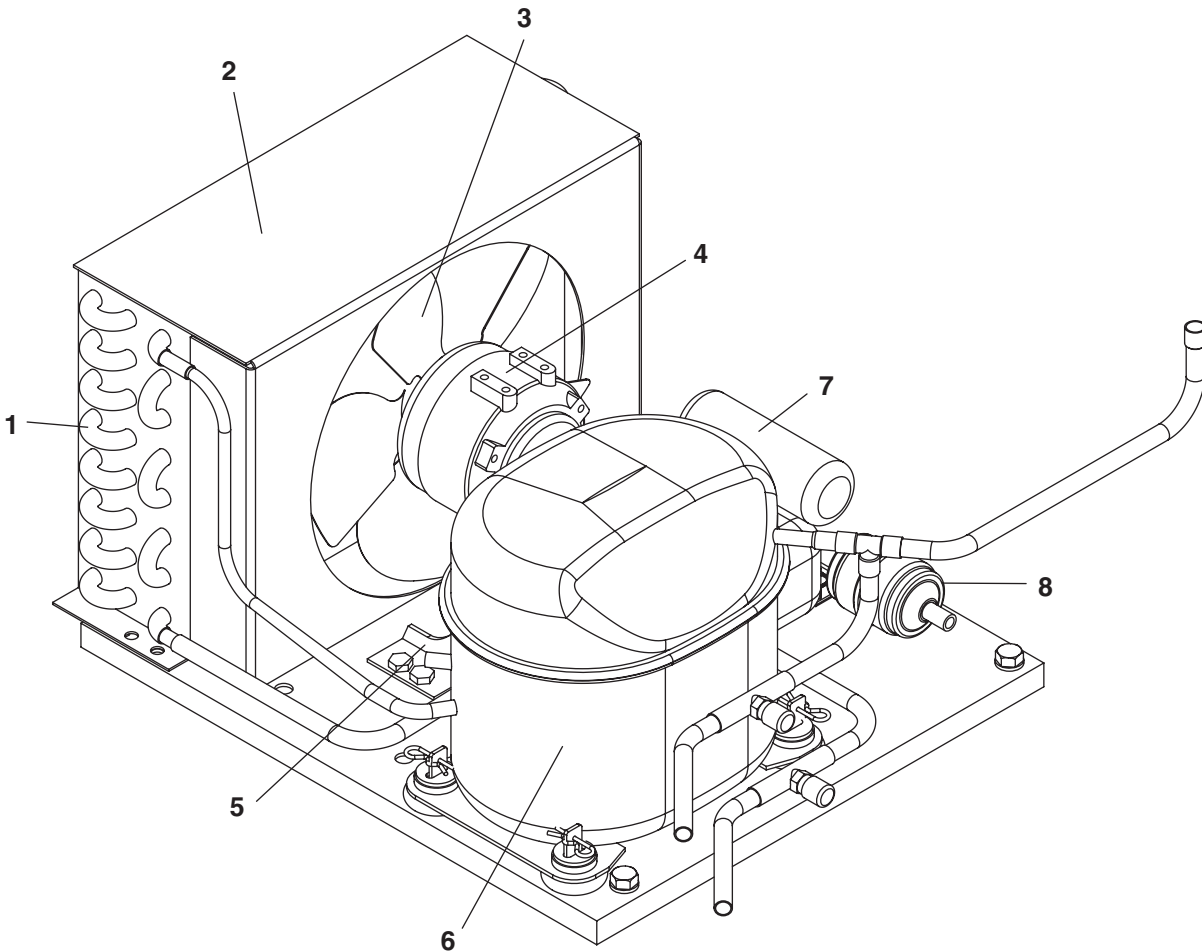
Reference	Description	Part #
	Condensing unit	00153874
1	Condenser	00157339
2	Shroud, condenser	00157347
3	Condenser fan blade	00105007
4	Condenser fan motor	00104992
5	Fan motor bracket	00157412
6	Compressor	00157313
7	Starting capacitor	00104968
8	Filter drier	502724
Not shown	Cap, starting capacitor	00105627
Not shown	Starting relay	00157305
Not shown	Overload protector	00104984

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Hardware
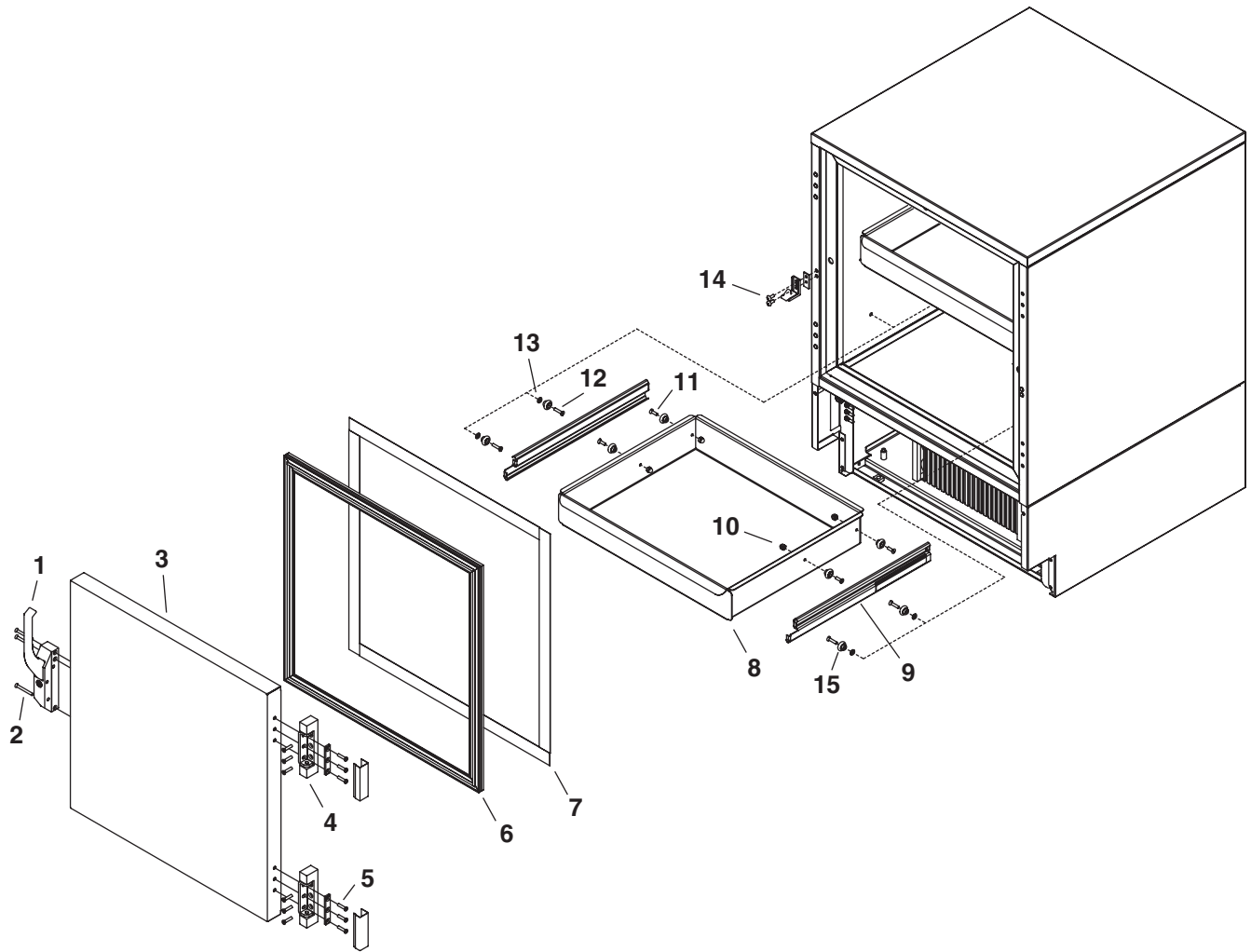
Reference #	Description	Part #
1	Latch & striker includes screws	00105023
2	Latch screws, 3 per latch	00103507
3	Door, FZR5-PL (includes gasket - 21 3/8" x 21 3/8")	00105015
4	Hinge, each - 2 required, includes screws	00105031
5	Hinge screws, each - 6 per hinge	00105080
6	Gasket, FZR5-PL	00125732
7	Strip sealer (set of 4) FZR5-PL	00130138
8	Drawer (includes 8 and 4 each of 10, 11 & 15)	00165134
9	Drawer slides (pair)	00161927
10	Nut, acorn, each (4 required per drawer)	00161802
11	Screw, 5/8", each (4 required per drawer)	200093
12	Screw, 7/8", each (4 required per drawer)	00161794
13	Washer, each (4 required per drawer)	00161786
Kit	Drawer & slide mounting hardware kit (includes 8, 9, 4 each of 10, 11, 12, 13 and 8 each of 15)	00165142
14	Striker screws, each - 2 per striker	502287
15	Bearing, roller	00167726
Kit	Slide & bearings (includes 9 (pair) and 4 each of 12, 13 & 15)	00167924
Kit	Bearings & screws kit (includes 8 each of 15 and 4 each of 10, 11, 12 & 13)	0016795

Hardware and Electrical Components
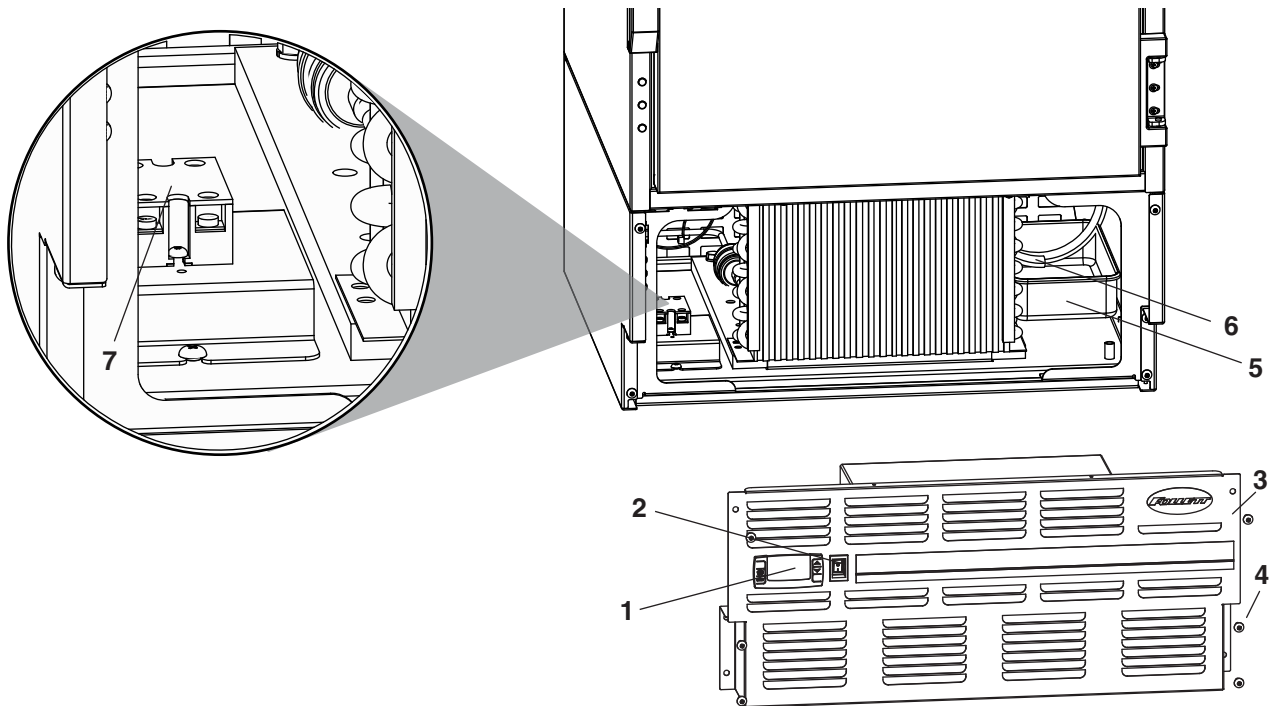
Reference	Description	Part #
1	Temperature controller, FZR5-PL, Dual map	00977058
Not shown	Temperature probes & harness	00155705
2	Power switch	00114371
3	Front panel (includes 00114371 and 00105379)	00157669
4	Front panel screws, each - 6 per panel	00105379
Not shown	Rear panel, includes screws	00130161
Not shown	Rear panel screws, each - 6 per panel	00105387
5	Condensate pan	00155622
6	Evaporator drain line, sold by the foot	203627
7	Control relay	00924068
Not shown	Programming key, XR60CX Dual map, FZR5-PL	00976662
Not shown	Power cord	00103903

Temperature Alarm Accessory

Reference	Description	Part #
Not shown	Bottle kit (includes bottle, bracket and gasket)	00113779
Not shown	Controller kit (includes battery, probe and power supply)	00108175
Not shown	Gasket, bottle	00112029
Not shown	Bracket, bottle	00112011
Not shown	Bottle	00112037
Not shown	Battery	00112177
Not shown	Screws, (includes two for securing cover)	00115063
Not shown	Label, controller cover	00115071
Not shown	Temperature probe	00115097

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