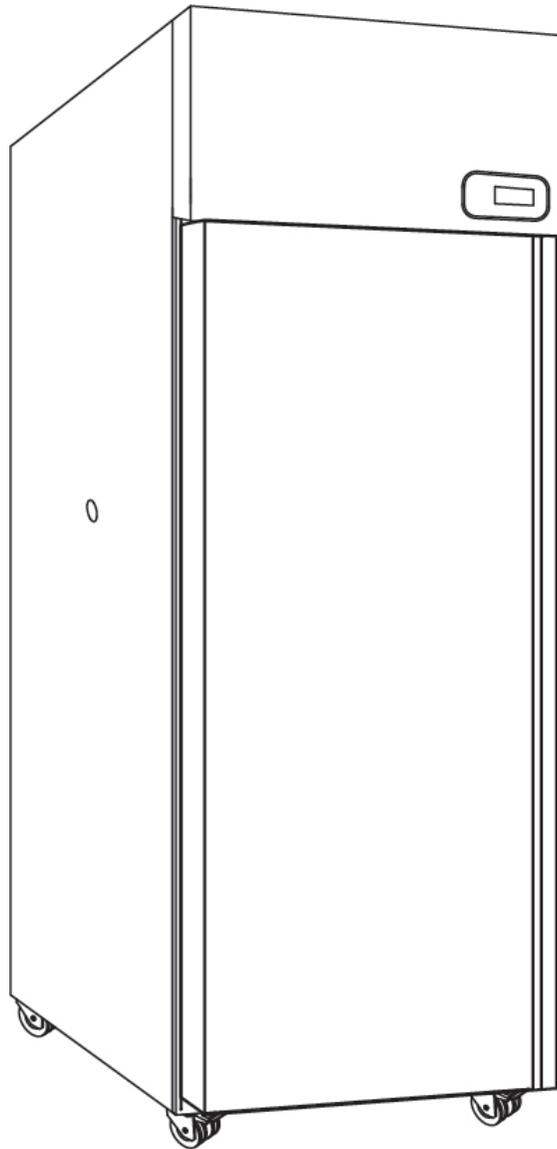# Follett Advantage™
FZRADV25-LB Freezers

Operation and Service Manual

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

FOLLETT
HEALTHCARE™

Contents

Welcome to Follett Products LLC

Follett Products LLC 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 1-855-686-5592.

Before you begin

Do not tilt unit further than 30° off vertical during uncrating or installation. After uncrating and removing all packing material, inspect the equipment for concealed shipping damage. If damage is found, notify the shipper immediately and contact Follett Products LLC so that we can help in the filing of a claim, if necessary.

Check your paperwork to determine which configuration you have. Follett Products LLC configuration numbers are designed to provide information about the type of freezer you are receiving. Following is an explanation of the different item numbers.

Model Number	Width (inches)	Depth (inches)	Height (inches)	Ref. Volume (cu.ft.)	Set Point Temp.	Elec. V/Ph/Hz	Cooling Capacity	Absorbed Power
FZRADV25-LB-R00S	28 11⁄32	31 1⁄2	79 3⁄16	25	–20 C	120/1/60	1774 BTU	500 W

Ambients

Intended for indoor use where ambient temperature does not exceed 104 F (40 C) and ambient relative humidity does not exceed 65% RH.

Clearances

The top of the unit must have 15 inches of clear space above the freezer to ensure proper ventilation of the refrigeration system.

The back of the freezer should have 2 inches of clearance to allow for power cord clearance and ventilation on unit.

Electrical Specifications

- 115 V, 60 Hz, 1 phase
- Minimum circuit ampacity: 20A
- Maximum size of branch circuit overcurrent device: 20A circuit
- Follett Products LLC recommends circuit be protected by GFCI breaker
- Requires a dedicated circuit

Refrigeration Specifications

- Refrigerant R290
- FZR25: 3.9 oz

Installation

The equipment must be transported and handled exclusively in upright position, in observance of the instructions printed on the packing. This precaution is necessary to avoid contamination of the refrigerant circuit with compressor lube oil with resulting valve and heat exchanger coil failure and problems starting the electric motor or the risk of gas leak. The manufacturer is not responsible for any problems due to transport executed in conditions other than those specified herewith. The equipment is secured to a wooden pallet base, wrapped in a plastic film and packaged into a three waves carton box. The equipment must be handled using a fork lift truck or a pallet truck with suitable forks (fork length at least equal to 2/3 length of unit).

1. Remove packing material.

2. Remove accessories from inside the unit.

3. Carefully slide the cabinet off the skid.

4. Use gloves when handling the carton box or the wooden base to protect the hands from splinters.

5. Position the equipment with the help of a level. Remove the protective PVC film from the external surfaces of the unit.

Install shelves (if equipped) and power up

1. If freezer is equipped with shelves, remove bag containing shelf supports and position them in desired locations on each pilaster and insert shelves **(Fig. 1)**.

2. Plug freezer into a 115 V 60 Hz 15A outlet.

Fig. 1
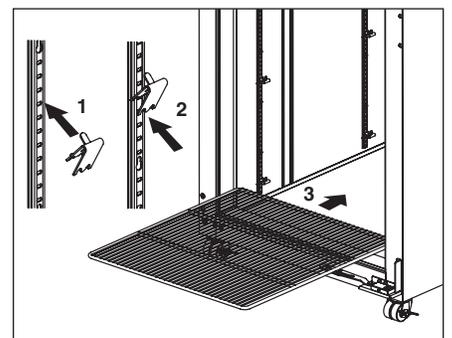
Power the Unit

1. Plug in unit and press power button located on rear, right-hand corner.

Stabilizer Bracket Details

Warning: To offset any potential for unit tipping, the unit must not be used or loaded for use without being secured to the wall with the wall bracket included. To mount the unit to the bracket and wall, please procure the proper screw and anchor type suitable for the wall material.

Installation

1. Each Scientific model has a galvanized iron crossbar at the top rear side **(Fig. 2.1)**.

2. The galvanized iron bracket will be used to attach the unit to the wall.

3. Attach the brackets to the crossbar using the two bolts provided and torque to 3 N-m **(Fig. 2.2)**.

4. Attach wall anchor brackets to wall using appropriate hardware and installation method suitable to application and local codes.
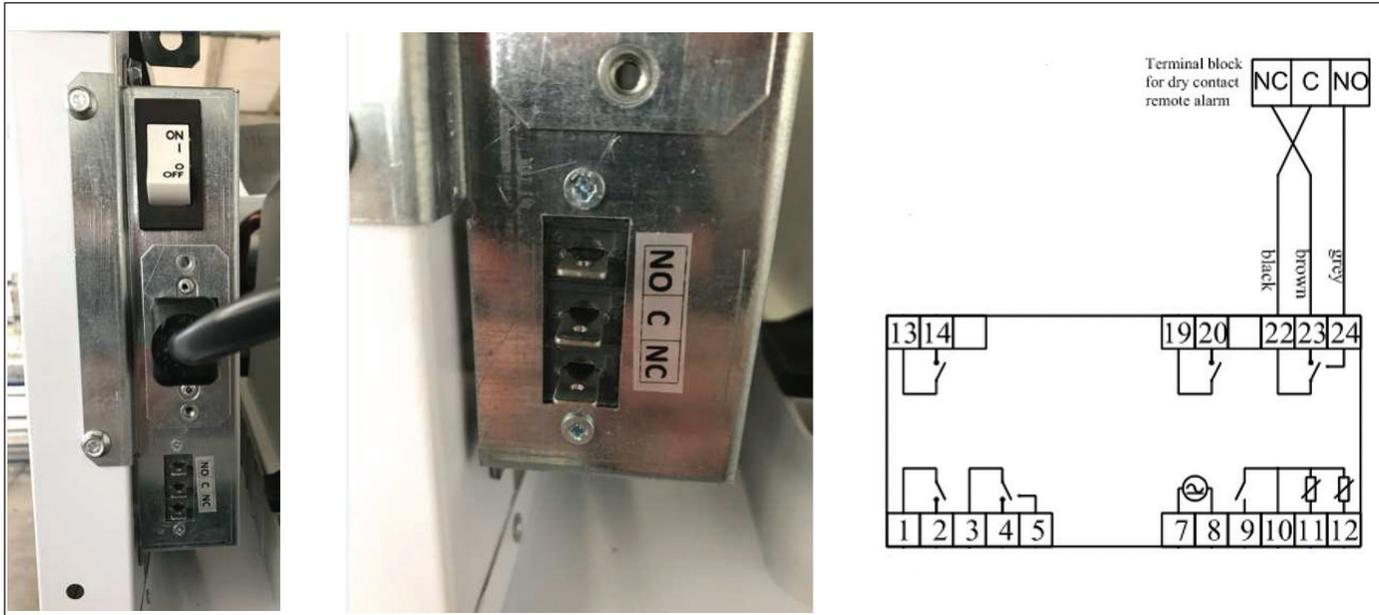
Fig. 2
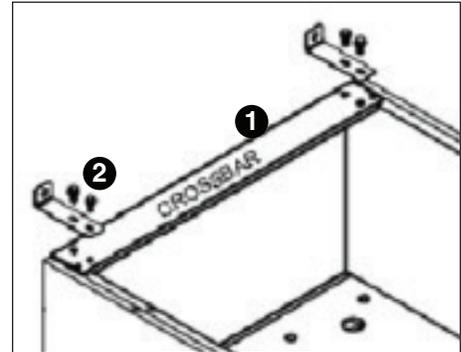
Remote Alarm Connection

These units are equipped with a remote alarm plug for the connection to a remote alarm network.

The remote alarm plug is installed at the back of the cabinet near the main power plug enclosure and it is wired through a connection cable to the controller board.

Fig. 3

The Remote alarm contact is a Dry contact (low voltage: max 24VAc/VDc, 1A, SELV) and consist of three outputs: C (Common)/N.O. (Normally Opened Circuit)/N.C. (Normally Closed Circuit).

For the external network connection, fasten directly the pins according to the remote alarm network configuration. When an alarm occurs the contact relay switches from the N.C. position to N.O.

Controller Operation
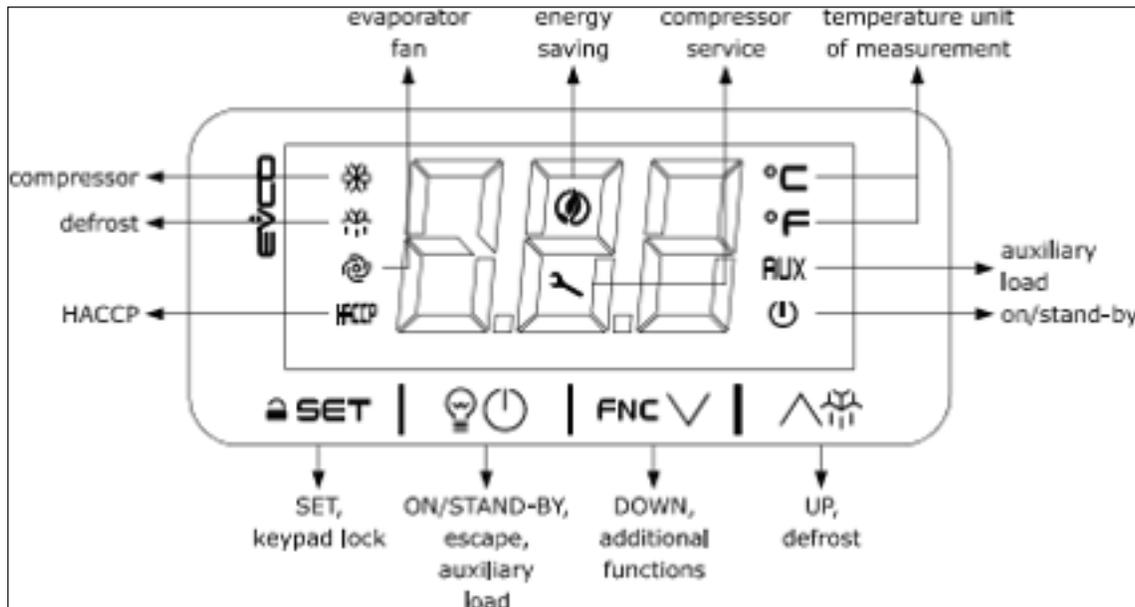
In normal operation, the controller will display temperature in degrees Celsius. To change from Celsius to Fahrenheit requires a programming key. Contact Vector Products Parts Department at 1-855-686-5592 for part numbers and pricing.

> *CAUTION! Follett Products LLC does not authorize changing any critical operating parameters as it can cause improper system operation and/or severe mechanical damage.Changing operating parameters may result in Follett Products LLC voiding equipment warranty.*

Freezers are pre-programmed with a –25 C (–13 F) set point. If desired, the freezer's set point can be adjusted within a –25 C to –10 C (–13 F to 14 F) range

All set points have a +2 C (+3.6 F) differential (r0 setting on the controller). The 2.2 C (3.6 F) differential means that with a 4 C (39.2 F) set point, the compressor will turn off at 4 C (39.2 F) and turn on when it reaches 6 C (42.8 F).

It is important to understand that the set point equals the compressor cut out.

Locking/Unlocking of the Keypad

The temperature controller is defaulted to lock out after 30 seconds without a key being pressed and will display "Loc". To unlock the controller press the SET key for 1 second until "UnL" is displayed. The controller is now unlocked.

Viewing/Adjusting the Set Point

With the controller unlocked, press and release the SET key. The current Set Point will populate. Use the UP & DOWN arrows to the desired Set Point and again press the SET key to store.

Powering the Equipment ON.

Locate the power switch to the left of the controller and place in the ON position (I).

Controller Set Up

Upon power up your controller will alarm RTC. This is instructing you to program the TIME/DATE.

Press and release any key to silence the alarm.

Check that the controller is not locked (LOC). If locked press and hold any key for 1 second and (UNL) will DISPLAY.

Check that the keypad is not locked.

1.	FNC ∨	Touch the DOWN key for 4 s.
2.	FNC ∨ △	Touch the UP or DOWN key within 15 s to select the label "rtc".
3.	SET	Touch the SET key: the display will show the label "yy" followed by the last two figures of the year.
4.	FNC ∨ △	Touch the UP or DOWN key within 15 s to set the year.
5.	Repeat actions 3. and 4. to set the next labels.	

LAB.	DESCRIPTION OF THE NUMBERS FOLLOWING THE LABEL
n	month (01... 12)
d	day (01... 31)
h	time (00... 23)
n	minute (00... 59)

6.	SET	Touch the SET key: the display will show the label for the day of the week.
7.	FNC ∨ △	Touch the UP or DOWN key within 15 s to set the day of the week.

LAB.	DESCRIPTION
Mon	Monday
tuE	Tuesday
UEd	Wednesday
thu	Thursday
Fri	Friday
Sat	Saturday
Sun	Sunday

8.	SET	Touch the SET key: the device will exit the procedure.
9.	☼⏻	Touch the ON/STAND-BY key to exit the procedure beforehand.

Controllers are preprogrammed to alarm at the following temperature:

FZR: High alarm: –15 C (5 F), Low: –35 C (–32 F)

All alarm points operate off of a set SP +/- (A1/LOW, A4/HIGH) strategy.

Alarms will automatically clear when the temperature rises above/below the alarm value plus the A11 parameter value (Alarm offset) of 3.

AL on the controller screen reports a Low Temperature Alarm.

AH on the controller screen reports a High Temperature Alarm.

Defrosting

Follett Products LLC freezers and freezers do not require manual defrost as they utilize a hot gas defrost cycle to keep the evaporator coil frost free. The defrost cycle is typically always terminated when the evaporator probe (Pb2) reads 8 C.

If the defrost probe (Pb2) experiences a failure, or is out of spec, the MAX time the unit will stay in a defrost cycle is 15 minutes. If this occurs a dFd alarm will appear.

Upon termination of the defrost cycle, the compressor, condenser fan, and evaporator fan will remain off for 60 seconds to allow for the melted frost to drip away from the evaporator coil.

Freezers enable an automatic defrost every 6 hours.

Seeing as the cooling and defrost system are external to the cabinet, the stored product and cabinet temperature should experience a minimal rise during the defrost cycle.

Door Switch

Each freezer door is equipped with a normally opened mechanical switch that recognizes when the door is opened or closed. When the controller senses an interruption in the continuity of the door switch circuit, the evaporator fan(s) and compressor will power down. If the door remains open for longer than 2 minutes the controller will alternate between the temperature and an audible and visual (id) alarm will appear. Once the circuit is closed the alarm will clear. If an (id) alarm appears with all doors closed troubleshoot the switch circuit.

Alarms

8 ALARMS

COD.	DESCRIPTION	RESET	REMEDIES
Pr1	cabinet probe alarm	automatic	- check P0
Pr2	evaporator probe alarm	automatic	- check probe integrity
Pr3	auxiliary probe alarm	automatic	- check electrical connection
rtc	clock alarm	manual	set date, time and day of the week
AL	low temperature alarm	automatic	check AA, A1 and A2
AH	high temperature alarm	automatic	check AA, A4 and A5
id	open door alarm	automatic	check i0 e i1
PF	power failure alarm	manual	- touch a key - check electrical connection

COH	high condensation warning	automatic	check C6
CSd	high condensation alarm	manual	- switch the device off and on - check C7
iA	multi-purpose input alarm	automatic	check i5 and i6
Cth	compressor thermal switch alarm	automatic	check i5 and i6
th	global thermal switch alarm	manual	- switch the device off and on - check i5 and i6
dFd	defrost timeout alarm	manual	- touch a key - check d2, d3 and d11

Cleaning

Use non chlorine-based cleaners. Cleaners containing chlorine can cause staining and pitting of the stainless steel.

Disconnect power to unit by turning the power switch off, located on the rear, right hand corner, and removing the power cord from the receptacle.

The appliance is designed for medications, vaccines and laboratory product storage so it is important to keep it clean. The equipment is thoroughly cleaned at the factory before being shipped. We recommend, however, to clean the interior cabinet before the first start up of the appliance.

Interior Cleaning

Using a sponge or soft cloth, clean unit with a non-abrasive, non-chlorinated, all-purpose detergent. Note: The air plenum can be removed to clean it, as well as behind it. In addition, the shelves and slides should be cleaned as well.

Exterior Cleaning

Wipe stainless steel 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. The glass door and exterior parts may be cleaned with a soft cloth, window cleaner or other non-abrasive cleaner.

Annual Cleaning

Removal of dust and other particulates from air intake areas and the condenser is important for proper operation. Environments with large amounts of dust may require more frequent cleaning.

1. Disconnect power to unit by turning power switch off and removing power cord from receptacle.

2. The condenser can be accessed from rear for cleaning.

3. Inspect drain pan for any debris or obstruction in condensate pan.

4. Use a vacuum cleaner with brush attachment to clean condenser, compressor and related parts.

Refrigeration System

The Follett Products LLC refrigeration system is designed to give many years of trouble-free service. Except for routine cleaning of the air-cooled condenser and related parts, the refrigeration system requires no service or maintenance. Temporary piercing valves are required to work on the refrigeration system. Due to the small charge size contained within these products, Follett Products LLC does not recommend accessing the refrigeration system. If a sealed system failure is suspected, Follett Products LLC recommends replacing the cooling system in its entirety.

Refrigeration Diagram - Freezers

HIGH PRESSURE VAPOR   HIGH PRESSURE LIQUID   LOW PRESSURE LIQUID   LOW PRESSURE VAPOR
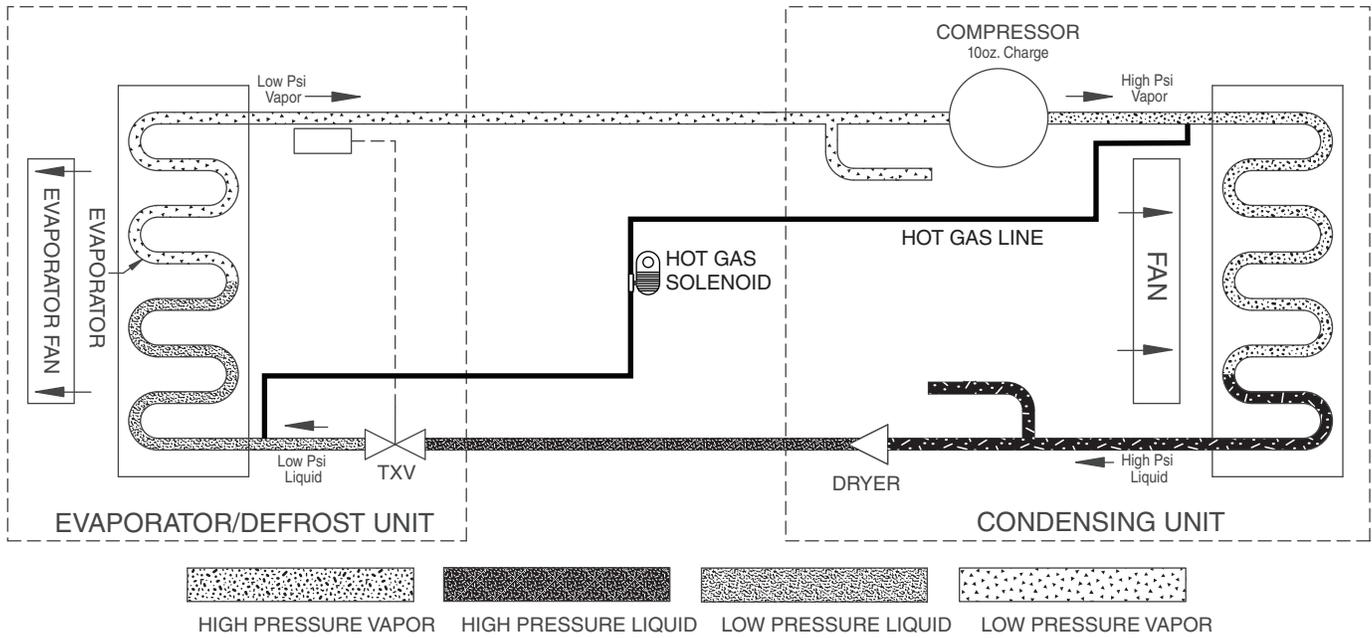
Component Details

Model	Gas Type	Gas Charge	Low side pressure at 70°F	High side pressure at 70°F	Compressor Windings at 77°F	Locked Rotor (A)
FZR25-LB-RSD	R290	3.9 oz (0.110 kg)	2.9 psig (0.2 barg)	149.39 psig (10.3 barg)	Start winding = 5.99 Ω Run winding = 1.10 Ω	40

Accessing Controls Behind Facade

The controls located behind the facade are accessed by loosening the screws and then the front panel can swing upward. If the facade will be completely removed, the electrical plugs should be disconnected.

Fig. 4
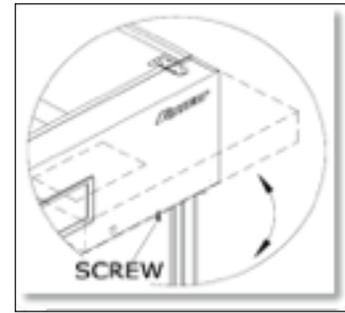
Controller Replacement

⚠ CAUTION
• ***Controller is susceptible to electrostatic discharge. Care should be exercised when handling and installing the controller.***

Required equipment:
- Replacement Ev3294 Controller
- Programming key (see Replacement Parts section)
- #2 Phillips screwdriver
- Flat blade jeweler's screwdriver
- (6) 6" wire ties

1. Turn off power to unit and unplug.

2. Remove façade hold down screws, rotate façade, and set safety latch.

3. Disconnect (+) terminal from back up battery.

4. Carefully cut wire ties to provide slack in control wires.

5. Press the release button on controller retainer clips (one on each side) and slide back to remove.

6. Carefully pull controller through the façade far enough to remove wires.

7. Removing ONE AT A TIME, transfer wiring from the original controller to the replacement controller ensuring each wire is secured at the same location from which it was removed.

8. Carefully reinsert controller into façade and reattach retainer clips.

9. Secure wires with wire ties.

10. Reconnect (+) terminal to back up battery.

11. Remove safety latch, rotate façade, and reinstall hold down screws.

12. Plug in unit, power on, and ensure proper operation.

Controller EV3294- Programming by programming-key

Signal leds

Copy-key button

Enter key

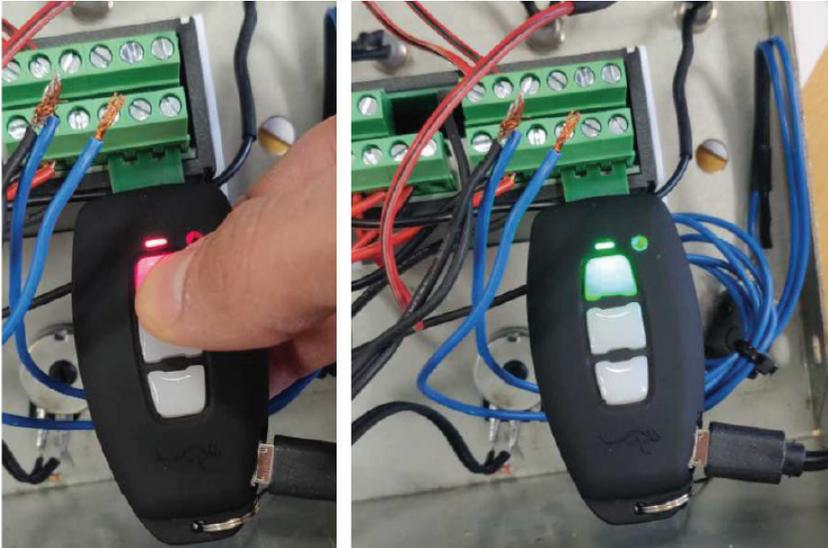### Dowload the parameters from the programming-key to the controller

1. Firstly make sure that the main switch is turned off and the controller is not powered. The controller has removable screw-connection terminals blocks so unscrew at the maximum openings the screw connectors n. 11-12-13 where the temperature probes are wired and remove the cables.

2. Insert the programming key in the controller terminals n.10-11-12:

The programming key must be powered in order to be operational. Use a USB 5V/1A output to feed the key and a typeA USB/male Micro-B USB cable

3. Once the programming-key is plugged, press and release the Copy-key button. The Signal leds will start flashing red for few seconds then they'll turn firmly into green if the programming has been correctly accomplished.

4. If the programming fails, the signal leds will turn firmly red instead of green. In this case, repeat the procedure making sure that the programming key is correctly inserted into the controller terminal blocks.

Copy the parameters from the controller to the programming key

1. After the above steps. 1&2: Press and hold the Copy-key button until the signal leds light firmly red, then press the Enter key: he Signal leds will start flashing red for few seconds then they'll turn firmly into green if the programming has been correctly accomplished.
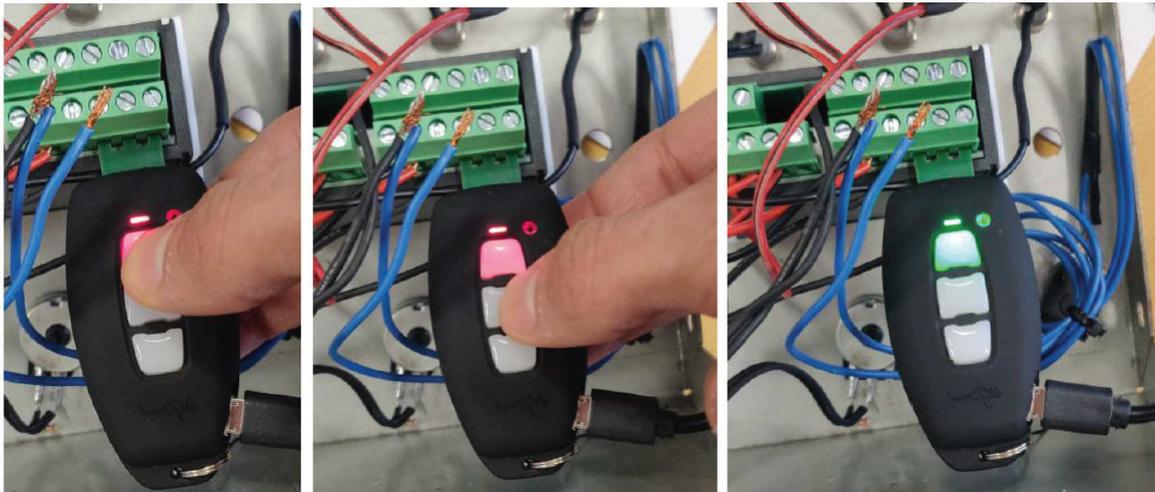

2. If the programming fails, the signal leds will turn firmly red instead of green. In this case, repeat the procedure making sure that the programming key is correctly inserted into the controller terminal blocks.

Door Gasket Replacement

1. Remove existing gasket from mounting track **(Fig. 5)**.

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.
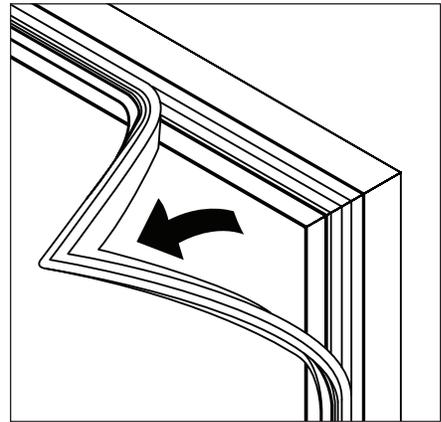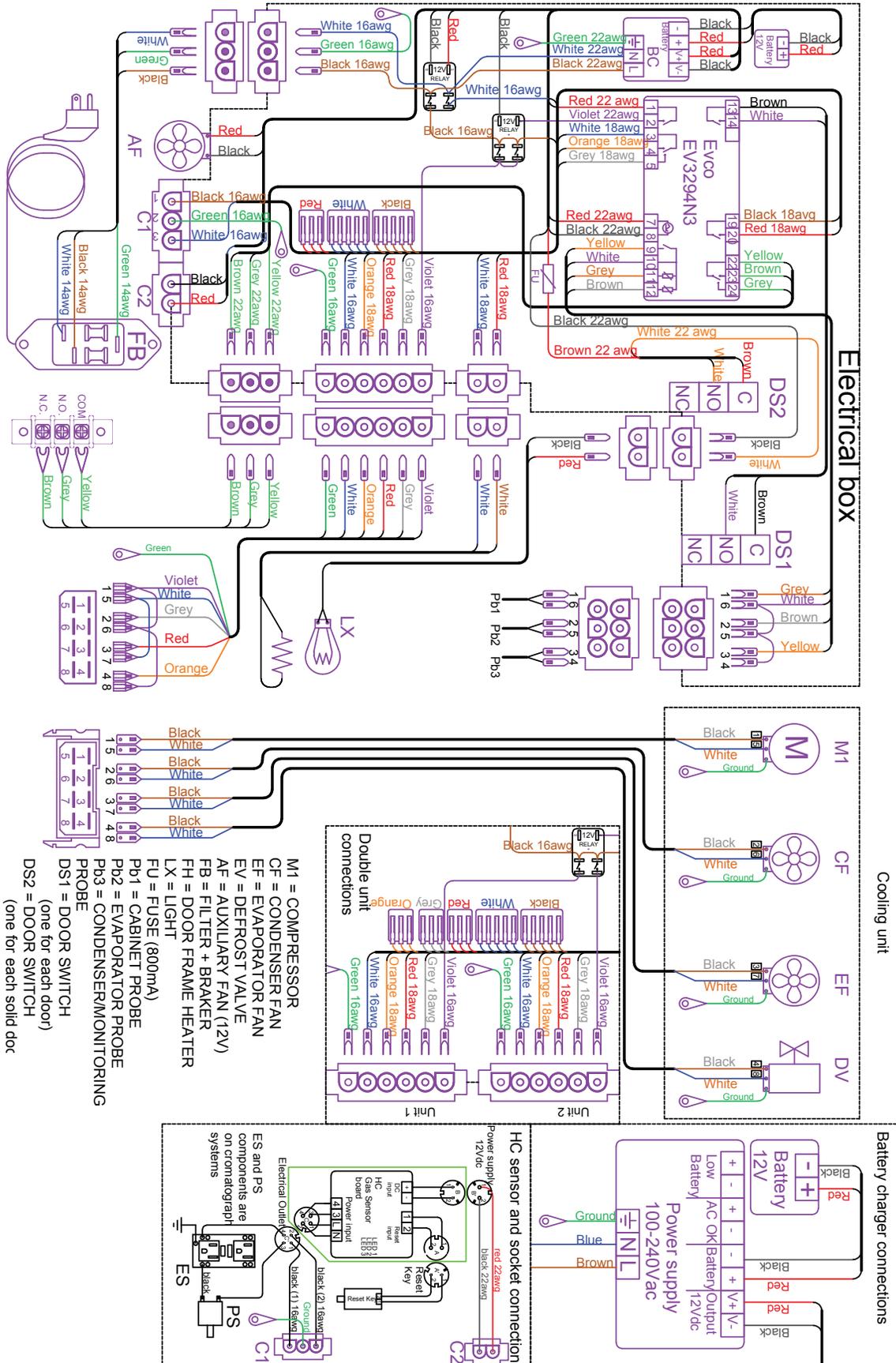

Modular Refrigeration System

Follett Products LLC' Modular Refrigeration System allows technicians to remove the entire unit from the freezer top.
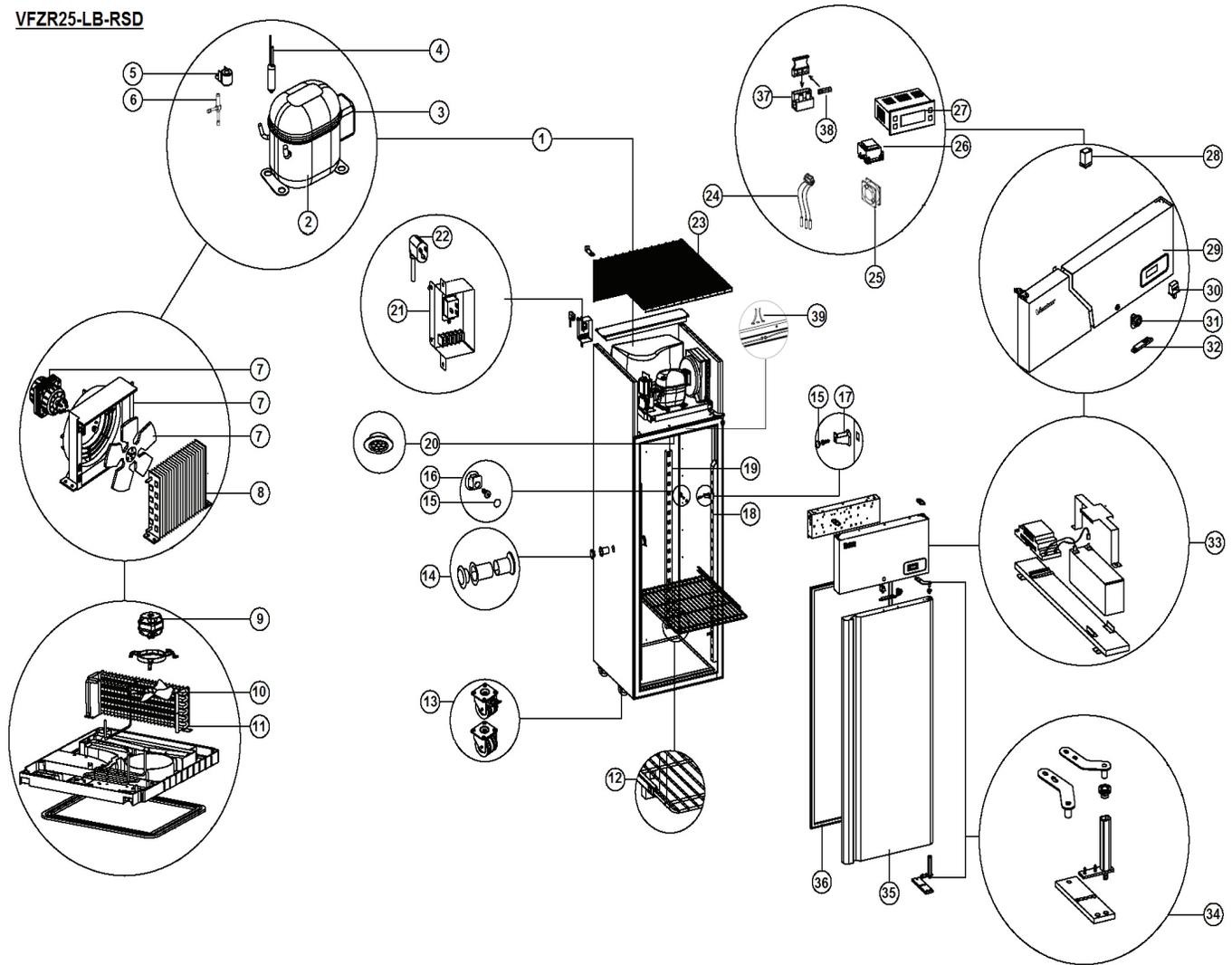
1. Remove rear support column using 5/16" nut driver.

2. Remove incoming power supply assembly.

3. Remove bolts securing unit cooler to freezer top.

4. Gently lift off cooler.

Wiring diagram - Solid Door

Replacement Parts

VFZR25-LB-RSD

Reference	Description	Part #	Quantity
1	Monoblock	01394444	1
3	Compressor Start Components	01395201	1
5	Valve Coil	01394535	1
7	Condenser Finger Guard& Fan Holder + Motor	01394550	1
9	Evaporator Fan Motor	01394584	1
10	Fan Blade	01394568	1
12	Shelf Kit	01394030	3
13	Castor Kit	01394154	2
14	Third Party Probe Kit	01394188	1
20	Led Lighting Kit	01394246	1
21	Main Switch Kit	01394238	1
22	Power Cord	01316140	1
23	Top Protection Grid	01398155	1
24	Probes Kit	01394220	1
25	Safety Fan	01394345	1
26	Battery Backup Protection Relay	01394394	1
27	Controller-Requires Programming Key	01394410	1
	Key, Programming, Celsius, Vector FZR 25`	01398411	
	Key, Programming, Fahrenheit, Vector FZR 25`	01398429	
28	Compressor/Power Relay	01312560	1
30	Door Switch	01394378	1
31	Door Lock with Key	01394329	1
32	Lock Latch	01398148	2
33	Battery Back-Up Kit	01394212	1
34	Hinging Kit	01394162	2
35	Door Panel	01398163	1
36	Door Gasket	01394261	1
39	Door Frame Heater	01394386	1

Warranty Registration and Equipment Evaluation

Thank you for purchasing Follett Products LLC equipment. We hope you find that our equipment meets or exceeds your expectations, as our goal is to deliver high value products and services that earn your complete satisfaction!

Please review the enclosed installation and operations manual. It is important that the installation be performed to factory specifications, so your equipment operates to its maximum efficiency.

Follett Products LLC will not be liable for any consequential damages, expenses, connecting or disconnecting charges or any losses resulting from a defect of the machine.

For full warranty details, visit our website www.vectorlabproducts.

Warranty registration and equipment evaluation is important to help us keep track of our equipment and to record the machine's performance. We request that you register Follett Products LLC equipment warranties on our website www.vectorlabproducts.com and choose Warranty Registration and Equipment Evaluation. It's simple to do; please take a moment to register today. There is also space on the form to provide us with comments and feedback. Please let us know about your experience so we can capture it for our continuous improvement efforts.

We pride ourselves on producing outstanding equipment and we work hard to back it up with outstanding customer and technical support. Please let us know what else we can do to assist you. We would be happy to answer your questions.