



# SERVICE MANUAL

## Column Refrigeration Residential and Commercial



CR24R



CC24W



CR24F

### Product Series Covered in this Manual:

Residential
CR24D
CR24F
CR24R
CR24W
CR30R

Commercial
CC24D
CC24W

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## 1.0 General Information

### 1.1 Use of Service Manual

This service manual is intended for use by a qualified service technician. It is provided as a guide to diagnose and repair service issues for the product models listed on the cover.

If you have any questions or require additional assistance, contact Perlick Customer Service during regular hours of operation.

### 1.2 Model Families

This manual contains specific instructions for servicing the Perlick Residential and Front Venting Commercial Series refrigeration products, which include the following families:

<u>RESIDENTIAL</u>	<u>COMMERCIAL</u>
CR24D	CC24D
CR24F	CC24W
CR24R	
CR24W	
CR30R	

### 1.3 I.D. Label

The model and serial numbers can be found on the ceiling of the refrigerated space. See Figure 1-1.



Figure 1-1. Information Plate for Refrigeration Units

## 2.0 Safety Information

### 2.1 Refrigerant HC-600a

All self-contained models covered in this service manual are manufactured using refrigerant HC-600a (Isobutane).

### 2.2 Servicing with R-600a

R600a is a hydrocarbon. This refrigerant is flammable and is only allowed for use in appliances which fulfill the requirements of UL 60335 - 2 - 24 (To cover potential risk originated from the use of flammable refrigerants). Consequently, R600a is only allowed to be used in household appliances which are designed for this refrigerant and fulfill the above-mentioned standard.

- R600a is heavier than air. The concentration will always be highest at floor level.
- The explosion limits are as follows:  
Lower limit: 1.5% by vol. (38 g/m<sup>3</sup>)  
Upper limit: 8.5% by vol. (203 g/m<sup>3</sup>)  
Ignition temperature: 460°C

#### 2.2.1 General

#### **⚠ WARNING**

**Do not use near open fire.** To carry out service and repair on R600a systems the service personnel must be properly trained to be able to handle a flammable refrigerant. This includes knowledge on tools, transportation of compressors and refrigerant, and the relevant regulations and safety precautions when carrying out service and repair.

#### 2.2.2 Transportation of refrigerant and replaced compressors

- The refrigerant must be stored and transported in approved containers.
- Replaced compressors containing refrigerant residues must be sealed before being transported.

#### 2.2.3 Tools

In general: No open fire when troubleshooting and repairing.

- The refrigeration circuit must be opened with a tube cutter or a special tool.

- Vacuum pumps must be explosion-safe. It must be possible to lead the discharge air from the vacuum pump into open air.
- Leak detection cannot take place with normal halogen leak detectors, as they do not react on hydrocarbons. A special detector reacting on a hydrocarbon must be used instead. Another possibility is to use a leak spray. Both solutions only work properly if the vapor pressure in the system is higher than 1 bar (atmospheric pressure).
- If the pressure is lower than the normal atmospheric pressure, it is necessary to raise the pressure within the system to ambient temperature.

#### **⚠ WARNING**

**Never use liquid to detect system leaks if system is in a vacuum!**

### 2.3 Service Manual Safety Labels

PLEASE READ all instructions completely before attempting to service the unit. Take particular note of the DANGER, WARNING and CAUTION information in this manual. The information is important for the safe and efficient service, operation and care of the Perlick unit.

#### **⚠ DANGER**

**HAZARD!! Indicates hazardous situation that will result in death or serious injury if not avoided.**

#### **⚠ WARNING**

**Indicates hazardous situation that may result in death or serious injury if not avoided.**

#### **⚠ CAUTION**

**Caution indicates hazardous situation that could result in minor or moderate injury and property damage.**

#### **CAUTION**

Caution without symbol indicates unsafe practice situation that could result in property damage only.

## 2.0 Safety Information

### 2.4 Product Safety Labels

Figure 2-1.1. Danger Fire/Explosion Risk Label

**DANGER - Risk Of Fire Or Explosion. Flammable Refrigerant Used. Do Not Use Mechanical Devices To Defrost Refrigerator. Do Not Puncture Refrigerant Tubing.**

Figure 2-1.2. Danger Fire/Explosion Risk Servicing Label

**▲ DANGER - Risk Of Fire Or Explosion. Flammable Refrigerant Used. To Be Repaired Only By Trained Service Personnel. Do Not Puncture Refrigerant Tubing. Consult Repair Manual/Owner's Guide Before Attempting To Install Or Service This Product. All Safety Precautions Must Be Followed. Follow Handling Instructions Carefully.**

Figure 2-1.3. Warning Handling Label

**▲ CAUTION - Risk Of Fire Or Explosion Due To Flammable Refrigerant Used. Follow Handling Instructions Carefully In Compliance With U.S. Government Regulations.**

Figure 2-1.4. Warning Tip-Over Hazard Label

<b>WARNING! ADVERTENCIA! AVERTISSEMENT!</b>		
<b>TIP OVER HAZARD</b>	<b>PELIGRO DE VUELCO</b>	<b>RISQUE DE RENVERSEMENT</b>
<p>Appliance tips easily when not completely installed.</p> <p>Keep door(s) taped closed until appliance is completely installed.</p> <p>Use two or more people to move and install appliance.</p> <p>Failure to do so can result in serious injury or death.</p>	<p>El electrodoméstico se vuelca con facilidad si no está completamente instalado.</p> <p>Mantenga las puertas cerradas y atadas hasta que el electrodoméstico esté completamente instalado.</p> <p>Trabaje con dos o más personas para mover e instalar el electrodoméstico.</p> <p>El incumplimiento a estas recomendaciones puede ser causa de lesiones graves o de muerte.</p>	<p>L'appareil risque de se renverser tant qu'il n'a pas été complètement installé.</p> <p>Tant que l'appareil n'est pas complètement installé, maintenez l'ailes porte(s) fermée(s) par du ruban adhésif.</p> <p>Faites-vous aider de deux personnes ou plus pour déplacer et installer l'appareil.</p> <p>Si vous ne le faites pas, risquez de blessures graves ou danger de mort!</p>

Figure 2-1.5. Disposal Label

**CAUTION - Risk Of Fire Or Explosion. Dispose Of Properly In Accordance With Federal Or Local Regulations. Flammable Refrigerant Used.**

Figure 2-1.6. Warning Transporting Hazard Label

**TIP HAZARD!!!**

DURING SHIPMENT SECURE  
LOAD WITH STRAP OR BAR AT  
ARROW

**RIESGO EXTREMO!!!**

DURANTE SU TRASLADO,  
ASEGURE LA CARGA CON  
BANDAS O BARRAS  
ESTABILIZADORAS EN LA FLECHA

Figure 2-1.7. Uncrating Label

**Removing the column refrigeration unit from the shipping pallet**

- To remove this column refrigeration from the shipping pallet, start by carefully cutting the protective wrapping with a utility knife.
- Next, remove the 4 bolts securing the refrigerator to the pallet from underneath the refrigerator with a 1/2" socket and wrench. The bolts may be discarded.
- Next, with a minimum of 3 people, shift the unit back and forth to slide it toward the edge of the pallet. Continue to move the refrigerator beyond edge of the pallet and tilt it just enough that the bottom of the unit makes contact with the floor.
- Tip the unit so its weight is completely off the pallet. With at least two people holding the unit in place, slide the pallet out from underneath the unit and return the unit to the upright position. Keep the door closed while moving it in place to reduce the risk of tipping.



### 3.0 Troubleshooting Guide

#### 3.1 Refrigeration System

Use this diagnostic guide to identify issues and to locate applicable instructions within this service manual. This diagnostic guide can be used for any of Perlick’s Back Bar Refrigeration Products.

**⚠ DANGER**

**ELECTROCUTION HAZARD!!  
Never attempt to repair or perform  
maintenance on the unit until the Main  
electrical power has been disconnected.**

PROBLEM	CAUSE	SOLUTION
Not Cooling	<b>Power Supply</b>	
	Unplugged, off, blown fuse, tripped or defective circuit breaker	Check for power at the receptacle
	Loose Connection	Check for continuity of wires
	Power Requirements not within specification	Verify that power at receptacle is the same as nameplate rating
	<b>Cord and Plug</b>	
	Loose Connection	Check for continuity of wires
	Defective	Replace
	<b>Unit in Showroom Mode</b>	
	Disable showroom mode	See User Interface Section #.##
	<b>Internal Wiring</b>	
	Loose Connection	Check for continuity or voltage at control board (or check for heartbeat on control board) See Control Board Section <a href="#">7.1</a> .
	Miswired	Verify wiring by comparing to wiring diagram Section <a href="#">5.3</a> .
	<b>Evaporator Fan Motor</b>	
	Loose Connection	Check Continuity or power at fan motor
	Defective	Verify Component Specifications
	<b>Condenser Fan Motor</b>	
	Loose Connection	Check Continuity or power at fan motor
	Defective	Verify Component Specifications
	<b>Evaporator</b>	
	Clogged	Remove Obstruction
	Frozen	De-Ice coil
	<b>Condenser</b>	
	Air flow obstructed	Remove Obstruction
Dirty Condenser	Verify condenser is clean	

Table 3.1. Refrigeration System Diagnostics/Troubleshooting



### 3.1 Refrigeration System (cont.)

PROBLEM	CAUSE	SOLUTION
Not Cooling (cont.)	<b>Inverter</b>	
	Loose Connection	Check Connections
	Power	Ensure 120 power to inverter continuously
	Signal Circuit Power	Ensure Signal Circuit has power
	<b>Compressor</b>	
	Open Windings	Check continuity between pins
	Locked Rotor	Verify locked rotor
	Internal Damage	Verify Amperage
	<b>Refrigerant</b>	
	Leak	<a href="#">See Section 6.11.</a>
	<b>Refrigerant Circuit</b>	
	Restriction	Replace Refrigeration Module
	<b>Hot Gas Bypass Valve</b>	
	Internal Leak	Check Valve
	<b>Damper</b>	
	Obstructed	Remove Obstruction
	Power	Determine if damper is getting power
	Defective	Replace
	<b>Thermistors</b>	
	Loose Connection	Verify Continuity
	Defective	Verify Component Specifications
	<b>Temp/Humidity Sensor</b>	
	Defective	Verify Component Specifications
	Loose Connection	Verify Continuity
	<b>Control Board</b>	
	Loose Connection	Verify Continuity
	Defective	Verify Component Specifications
	<b>User Interface</b>	
	Loose Connection	Verify Continuity
	Defective	Verify Component Specifications

Table 3.1. Refrigeration System Diagnostics/Troubleshooting



### 3.1 Refrigeration System (cont.)

PROBLEM	CAUSE	SOLUTION
Evaporator Frozen	<b>Air Infiltration</b>	
	Access Hole	Ensure access hole is sealed with permagum
	Module to Cabinet Seal	Check for leaks between the refrigeration module and cabinet
	Door Left Open	Ensure door closes properly (hinges activated)
	Door Gasket Seal	Ensure door gasket integrity and it is installed properly
	Reed Switch Wire Hole	Ensure reed switch wire hole is sealed with permagum
	<b>Thermistors</b>	
	Loose Connection	Verify Continuity
	Defective	Verify Component Specifications
	<b>Temp/Humidity Sensor</b>	
	Defective	Verify Component Specifications
	Loose Connection	Verify Continuity
	<b>Evaporator</b>	
	Dirty	Clean
	Defective	Verify Component Specifications
	<b>Evaporator Fan Motor(s)</b>	
	Fan Blades Binding	Remove Obstruction
	Defective	Verify and Replace
	<b>Defrost Thermistor</b>	
	Out of Position	Install in proper location
	Loose Connection	Verify Continuity
	Defective	Verify and Replace
	<b>Hot Gas Solenoid Valve (Freezer Only)</b>	
	Valve Stuck	Verify and Replace Module
	Coil Open	Verify and Replace

Table 3.1. Refrigeration System Diagnostics/Troubleshooting



### 3.1 Refrigeration System (cont.)

PROBLEM	CAUSE	SOLUTION
Compartment Not Holding Temperature	<b>Check Setpoints</b>	
	Incorrect Setpoint	Adjust Setpoint
	<b>Thermistors</b>	
	Loose Connection	Verify Continuity
	Defective	Verify Component Specifications
	<b>Temp/Humidity Sensor</b>	
	Defective	Verify Component Specifications
	Loose Connection	Verify Continuity
	<b>Damper</b>	
	Obstructed	Remove Obstruction
	Power	Determine if damper is getting power
	Defective	Replace
	<b>Obstructed Airflow</b>	
Check airflow inlet and outlet for obstructions	Remove Obstruction	

PROBLEM	CAUSE	SOLUTION
Noisy Operation	<b>Airflow Noise</b>	
	Condenser Fan Motors	Airflow noise from the condenser fans is normal
	Evaporator Fan Motors	Airflow noise from the evaporator fans is normal
	<b>Clicking/Crackling During Defrost</b>	
	Solenoid Valve	Normal during defrost
	Frost/Ice Melting	Normal during defrost
	<b>Metallic Noises</b>	
	Tubes	Isolate the tubes from surroundings
	Sheet metal vibration	Isolate the parts to prevent vibration
	<b>Compressor Noise</b>	
	Normal Operation	Some noise is normal from a refrigeration compressor

Table 3.1. Refrigeration System Diagnostics/Troubleshooting





### 3.2 Electrical System

PROBLEM	CAUSE	SOLUTION
No Power To Cabinet	Does Control board show Heartbeat?	Red LED on control board should flash like a heartbeat
	Is control board receiving power?	Check control connector P1 for Power (115V)
	Check Receptacle Cabinet is plugged in	Trace back to find where power is interrupted
	Check Power Cord	Replace if defective
	Check internal cabinet wiring	Fix loose or disconnected terminals
Compressor Not Running	Ensure unit is not in Showroom Mode	Take unit out of Showroom mode
	Control board compressor LED illuminated	Green LED (LED2) should illuminate continuously if calling for cooling
Evaporator Fans not Running	Ensure unit is not in Showroom Mode	Take unit out of Showroom mode
	Control board Evap Fan LED illuminated	Green LED (LED7) should illuminate when call for Evap Fans
	Check power at control board	Connector P12 (Red to Black) 12VDC
	Check power at fan terminal block	12VDC at block
Condenser Fans not Running	Ensure unit is not in Showroom Mode	Take unit out of Showroom mode
	Control board Cond Fan LED illuminated	Green LED (LED4) should illuminate when call for Cond Fans
	Check power at control board	Connector P12 (Blue to Black) 12VDC
	Check power at fan connectors	12VDC at connection
White Lights not Working (Door Open)	Control Board White LED Illuminated	Green LED (LED6) should illuminate when call for white lights
	Reed switch is open	Check continuity of reed switch (magnet on door)
	Check power at control board	Connector P13 (Orange to Black) 12VDC
	Loose Connection	Check connections

Table 3.2. Electrical System Diagnostics/Troubleshooting



### 3.2 Electrical System (cont.)

PROBLEM	CAUSE	SOLUTION
White Lights not Working (Door Closed) (Wine Units Only)	Is the unit in display mode?	Ensure unit is in display mode
	Reed switch is closed	Check continuity of reed switch (magnet on door)
	Control Board White LED Illuminated	Green LED (LED6) should illuminate when call for white lights
	Check Power at control board	Connector P13 (Orange to Black) 12VDC
	Loose Connection	Check connections
Blue Light not Working (Door Closed) (Wine Units Only)	Is the unit in display mode?	Ensure unit is in display mode
	Is light intensity adjusted to Blue?	Adjust Intensity to Blue
	Reed switch is closed	Check continuity of reed switch (magnet on door)
	Control Board Blue LED Illuminated	Green LED (LED5) should illuminate when call for blue lights
	Check power at control board	Connector P13 (Blue to Black) 12VDC
	Loose Connection	Check connections
Hot Gas Valve Solenoid (Freezer Only)	Is unit in Defrost Mode	Operates only when in defrost mode
	Control Board LED Illuminated	Green LED (LED3) should be illuminated during defrost
	Check power at control board	Connector P12 (Yellow to Black) 12VDC
	Check power at solenoid	Should be 12VDC
	Check Continuity of coil	Coil resistance 11.1 ohms
Dampers	Loose Connection	Check connections
User Interface	No Illumination	Loose Connections
Door alarm activated	Door Open	Close Door
	Missing/misaligned door magnet	Align or install door magnet
	Defective reed switch	Evaluate and replace if defective

Table 3.2. Electrical System Diagnostics/Troubleshooting



### 3.3 Doors, Drawers, Shelving

PROBLEM	CAUSE	SOLUTION
Hinge Problems	Improper Door Mounting	Verify proper mounting.
	Hinges not activated	Activate Hinges
	Excessive wear	Replace Worn Parts
Door Handle Loose	Improper Handle Mounting	Verify proper mounting.
	Excessive wear	Replace Worn Parts
Overlay Loose	Improper Overlay Installation	Verify proper installation
	Excessive wear	Replace Worn Parts
Condensation On Glass Doors	High ambient temperatures, high humidity environmental conditions	Refer to Refrigeration System Repairs- Ambient Temperatures
	Frequent Door Openings	Refer to Door, Drawers and Shelving
Key Won't Come Out Of Lock	Key not in proper position	Rotate key to the proper position and remove
	Excessive wear	Replace Worn Parts
	Wrong Orientation	Verify orientation
Push To Open Drawers	Drawers won't open	Verify push to open mechanisms work properly
	Drawers won't close	Verify proper slide engagement
Tip-out Bin Operation	Slides have disengaged from bin	Re-engage the bin and troubleshoot
	Slides/Stops misaligned	Align Slides and spring steel stops
Shelving	Full Extension Shelves disengage	Verify proper slide engagement
Slides Noisy	Lack of lubricant	Lubricate slide with food grade lubricant
	Debris in slides	Clean and remove debris

Table 3.3. Doors, Drawers, Shelving Diagnostics/Troubleshooting



## 4.0 Electrical Components and Specifications

### 4.1 Compressor

#### 4.1.1 MODEL: VEMX5C

<b>Column Models</b>	CC24D, CC24W, CR24D, CR24R, CR24W, CR30R
<b>Type</b>	Variable Capacity (Speed) Hermetic Reciprocating Compressor
<b>Nominal Voltage/ Frequency/ Phase</b>	230V / 40-150Hz / 3 Ph
<b>Refrigerant</b>	R-600a (Refrigerant Grade Isobutane)
<b>Commercial Designation</b>	1/5 HP
<b>Starting Device Type</b>	Inverter
<b>Start Winding Resistance</b>	16.07 (@ 77°F) +/-8%
<b>Run Winding Resistance</b>	16.07 (@ 77°F) +/-8%
<b>Locked Rotor Amperage</b>	2.10 A
<b>Full Load Amperage</b>	2.10 A

Table 4.1.1. Compressor Specs (Model VEMX5C)

#### 4.1.2 MODEL: VEMZ9C

<b>Column Models</b>	CR24F
<b>Type</b>	Variable Capacity (Speed) Hermetic Reciprocating Compressor
<b>Nominal Voltage/ Frequency/ Phase</b>	230V / 53-150Hz / 3 Ph
<b>Refrigerant</b>	R-600a (Refrigerant Grade Isobutane)
<b>Commercial Designation</b>	1/5 HP
<b>Starting Device Type</b>	Inverter
<b>Start Winding Resistance</b>	16.07 (@ 77°F) +/-8%
<b>Run Winding Resistance</b>	16.07 (@ 77°F) +/-8%
<b>Locked Rotor Amperage</b>	2.10 A
<b>Full Load Amperage</b>	2.10 A

Table 4.1.2. Compressor Specs (Model VEMZ9C)

### 4.2 Inverter

#### 4.2.1: Drop-In

<b>Model: EM (Used with VEMX5C Compressor)</b>	
<b>Input</b>	115-127V AC / 50-60 HZ / 1 Ph / 3.3 A Max
<b>Output</b>	230V AC / 40-150 Hz / 3 Ph / 2.1 A
<b>Model: VEMZ9C (Used with VEMZ9C Compressor)</b>	
<b>Input</b>	115-127V AC / 50-60 HZ / 1 Ph / 3.3 A Max
<b>Output</b>	230V AC / 53-150 Hz / 3 Ph / 2.1 A

Table 4.2.1. Inverter Specs (Drop-In)

#### 4.2.2 MODEL: Frequency Drive

<b>Model: EM (Used with VEMX5C Compressor)</b>	
<b>Input</b>	115-127V AC / 50-60 HZ / 1 Ph / 3.3 A Max
<b>Output</b>	230V AC / 40-150 Hz / 3 Ph / 2.1 A
<b>Model: VEMZ9C (Used with VEMZ9C Compressor)</b>	
<b>Input</b>	115-127V AC / 50-60 HZ / 1 Ph / 3.3 A Max
<b>Output</b>	230V AC / 53-150 Hz / 3 Ph / 2.1 A

Table 4.2.2. Inverter Specs (Frequency Drive)

### 4.3 Condenser Fan Motor

<b>Specifications</b>	12VDC / 0.12A / 1.44W / 1.62 kOhms / 1600 RPM / 63.5 CFM / 27.0 dB
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Table 4.3. Condenser Fan Motor Specs

### 4.4 Evaporator Fan Motor

<b>Specifications</b>	12VDC / 0.13A / 1.56W / 16.4 MOhms / 3700 RPM / 39.9 CFM / 3750 dB
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Table 4.4. Evaporator Fan Motor Specs



#### 4.5 Hot Gas Defrost Solenoid Valve

<b>Coil Rating</b>	12VDC, 15W, 1.08A, 11.1 ohms
--------------------	------------------------------

Table 4.5. Hot Gas Defrost Solenoid Valve Specs

#### 4.6 Control

Specifications	
<b>Input</b>	120V AC, 3.3A max
<b>Output</b>	Various

Table 4.6. Control Specs

#### 4.7 Damper

<b>Specifications</b>	12VDC, 0.5W, 1850 Step Stepper Motor
-----------------------	---

Table 4.7. Damper Specs

#### 4.8 User Interface

Custom Design: Connect only to Perlick Column Control Board



## 5.0 Component Operation

### 5.1 Modes Of Operation

**Model: CR24R And CR30R**

Component	Initial Power-Up	Cooling Mode (1)	Humidification Mode (2)	Off Mode	Defrost Mode (3)	Showroom Mode
<b>Control Board HeartBeat</b>	Flashing	Flashing	Flashing	Flashing	Flashing	Flashing
<b>Lights</b>	Activated with Door Openings	Activated with Door Openings	Activated with Door Openings	Activated with Door Openings	Activated with Door Openings	Activated with Door Openings
<b>Door Alarm</b>	Activated with Door Opening (3 minute delay)	Activated with Door Opening (3 minute delay)	Activated with Door Opening (3 minute delay)	Activated with Door Opening (3 minute delay)	Activated with Door Opening (3 minute delay)	Activated with Door Opening (3 minute delay)
<b>Compressor</b>	Delayed 3 Minutes	On	Off	Off	Off	Off
<b>Condenser Fan</b>	Delayed 3 Minutes	On	Off	Off	Off	Off
<b>Evaporator Fan</b>	Delayed 3 Minutes	On	Activated if humidity required	Off	On	Off
<b>Tip-Out Produce Bin Damper</b>	Opening	Open until satisfied by temperature	Open if humidity required	Closed	Closed	Closed
<b>Meat/Fish Drawer Damper</b>	Opening	Open until satisfied by temperature	Closed	Closed	Closed	Closed
<b>Deli Drawer Damper</b>	Opening	Open until satisfied by temperature	Closed	Closed	Closed	Closed

*Table 5.1.1. Modes of Operation (CR24R)*

1. To avoid short cycling of the compressor there is a programmed 3-minute delay.
2. Upon the evaporator probe sensing 32°F during the off cycle, a humidity reading is taken in the tip-out bin, if below desired humidity setpoint, tip-out bin damper opens and evaporator fans turn on.
3. During the off cycle after eight (8) hours have elapsed, the unit goes into a defrost mode that has the evaporator fan motors run for 10 minutes.



## 5.1 Modes Of Operation

### Model: CR24F

Component	Initial Power-Up	Cooling Mode (1)	Off Mode	Defrost Mode (2)	Showroom Mode
<b>Control Board HeartBeat</b>	Flashing	Flashing	Flashing	Flashing	Flashing
<b>Lights</b>	Activated with Door Openings	Activated with Door Openings	Activated with Door Openings	Activated with Door Openings	Activated with Door Openings
<b>Door Alarm</b>	Activated with Door Opening (3 minute delay)	Activated with Door Opening (3 minute delay)	Activated with Door Opening (3 minute delay)	Activated with Door Opening (3 minute delay)	Activated with Door Opening (3 minute delay)
<b>Compressor</b>	Delayed 4 Minutes	On	Off	On	Off
<b>Condenser Fan</b>	Delayed 4 Minutes	On	Off	Off	Off
<b>Evaporator Fan</b>	Delayed 4 Minutes	On	Off	Off	Off
<b>Defrost Solenoid</b>	Off	Off	Off	On	Off

Table 5.1.2. Modes of Operation (CR24F)

1. To avoid short cycling of the compressor there is a programmed 4-minute delay. Therefore, the compressor must be off for 4 minutes before it will start the next cooling cycle.
2. Every eight (8) hours, the unit goes into a defrost mode that is timed (15 minutes) or evaporator coil temperature (42°F) terminated. Upon termination of the defrost, the unit is idol for a 2 minute drip (off) mode. Dependent upon cabinet temperature, the unit either goes into cooling mode or resumes in off mode.



## 5.1 Modes Of Operation

### Models: CR24W or CC24W

Component	Initial Power-Up	Cooling Mode (1)	Humidification Mode (2)	Off Mode (4)	Defrost Mode (3)	Showroom Mode
<b>Control Board HeartBeat</b>	Flashing	Flashing	Flashing	Flashing	Flashing	Flashing
<b>Lights</b>	Activated with Door Openings	Activated with Door Openings	Activated with Door Openings	Activated with Door Openings	Activated with Door Openings	Activated with Door Openings
<b>Door Alarm</b>	Activated with Door Opening (3 minute delay)	Activated with Door Opening (3 minute delay)	Activated with Door Opening (3 minute delay)	Activated with Door Opening (3 minute delay)	Activated with Door Opening (3 minute delay)	Activated with Door Opening (3 minute delay)
<b>Compressor</b>	Delayed 3 Minutes	On	Off	Off	Off	Off
<b>Condenser Fan</b>	Delayed 3 Minutes	On	Off	Off	Off	Off
<b>Evaporator Fan</b>	Delayed 3 Minutes	On	Activated if humidity required	Off/On	On	Off

Table 5.1.3. Modes of Operation (CR24W/CC24W)

1. To avoid short cycling of the compressor there is a programmed 3-minute delay.
2. Upon the evaporator probe sensing 32°F during the off cycle, a cabinet humidity reading is taken, if below desired humidity setpoint, evaporator fans turn on until humidity setpoint is achieved. Then unit resumes moves to off mode.
3. During the off cycle after 12 hours has elapsed, the unit goes into a defrost mode that has the evaporator fan motors run for 10 minutes.
4. During the off cycle, the evaporator fans are off for 4 minutes and then on for 1 minute, through the duration of the off mode.





## 5.1 Modes Of Operation

### Models: CR24D or CC24D

Component	Initial Power-Up	Cooling Mode (1)	Humidification Mode (2)	Off Mode (4)	Defrost Mode (3)	Showroom Mode
<b>Control Board HeartBeat</b>	Flashing	Flashing	Flashing	Flashing	Flashing	Flashing
<b>Lights</b>	Activated with Door Openings	Activated with Door Openings	Activated with Door Openings	Activated with Door Openings	Activated with Door Openings	Activated with Door Openings
<b>Door Alarm</b>	Activated with Door Opening (3 minute delay)	Activated with Door Opening (3 minute delay)	Activated with Door Opening (3 minute delay)	Activated with Door Opening (3 minute delay)	Activated with Door Opening (3 minute delay)	Activated with Door Opening (3 minute delay)
<b>Compressor</b>	Delayed 3 Minutes	On	Off	Off	Off	Off
<b>Condenser Fan</b>	Delayed 3 Minutes	On	Off	Off	Off	Off
<b>Evaporator Fan</b>	Delayed 3 Minutes	On	Activated if humidity required	Off/On	On	Off
<b>Upper Zone Damper</b>	Opening	Open until satisfied by temperature	Open if humidity required	Closed/Open	Closed/Open	Closed
<b>Lower Zone Damper</b>	Opening	Open until satisfied by temperature	Open if humidity required	Closed/Open	Closed/Open	Closed

Table 5.1.4. Modes of Operation (CR24D/CC24D)

1. To avoid short cycling of the compressor there is a programmed 3-minute delay.
2. Upon the evaporator probe sensing 32°F during the off cycle, upper and lower zone humidity readings are taken, if below desired humidity setpoint, evaporator fans turn on and respective damper(s) open until humidity setpoint is achieved in each zone (dampers close up reaching zone humidity setpoint). Then unit resumes moves to off mode.
3. During the off cycle after 12 hours has elapsed, the unit goes into a defrost mode that has the evaporator fan motors run for 10 minutes and the warmer setpoint damper open.
4. During the off cycle, the evaporator fans are off for 4 minutes and then on for 1 minute, through the duration of the off mode.



## 5.2 Electrical Specifications

**Electrical Specifications**

MODEL	POWER TYPE	VOLTAGE (V)	CURRENT (A)	FREQ (Hz)	PHASE	ELECTRICAL CONNECTION	PLUG
CC24D	AC	115	3.2	60	1	CORD CONNECTED	NEMA 5-15P
CC24W	AC	115	3.2	60	1	CORD CONNECTED	NEMA 5-15P
CR24D	AC	115	3.2	60	1	CORD CONNECTED	NEMA 5-15P
CR24F	AC	115	3.3	60	1	CORD CONNECTED	NEMA 5-15P
CR24R And CR30R	AC	115	3.2	60	1	CORD CONNECTED	NEMA 5-15P
CR24W	AC	115	3.2	60	1	CORD CONNECTED	NEMA 5-15P

*Table 5.2. Electrical Specifications*

### 5.3 Wiring Diagrams

## COLUMN REFRIGERATOR

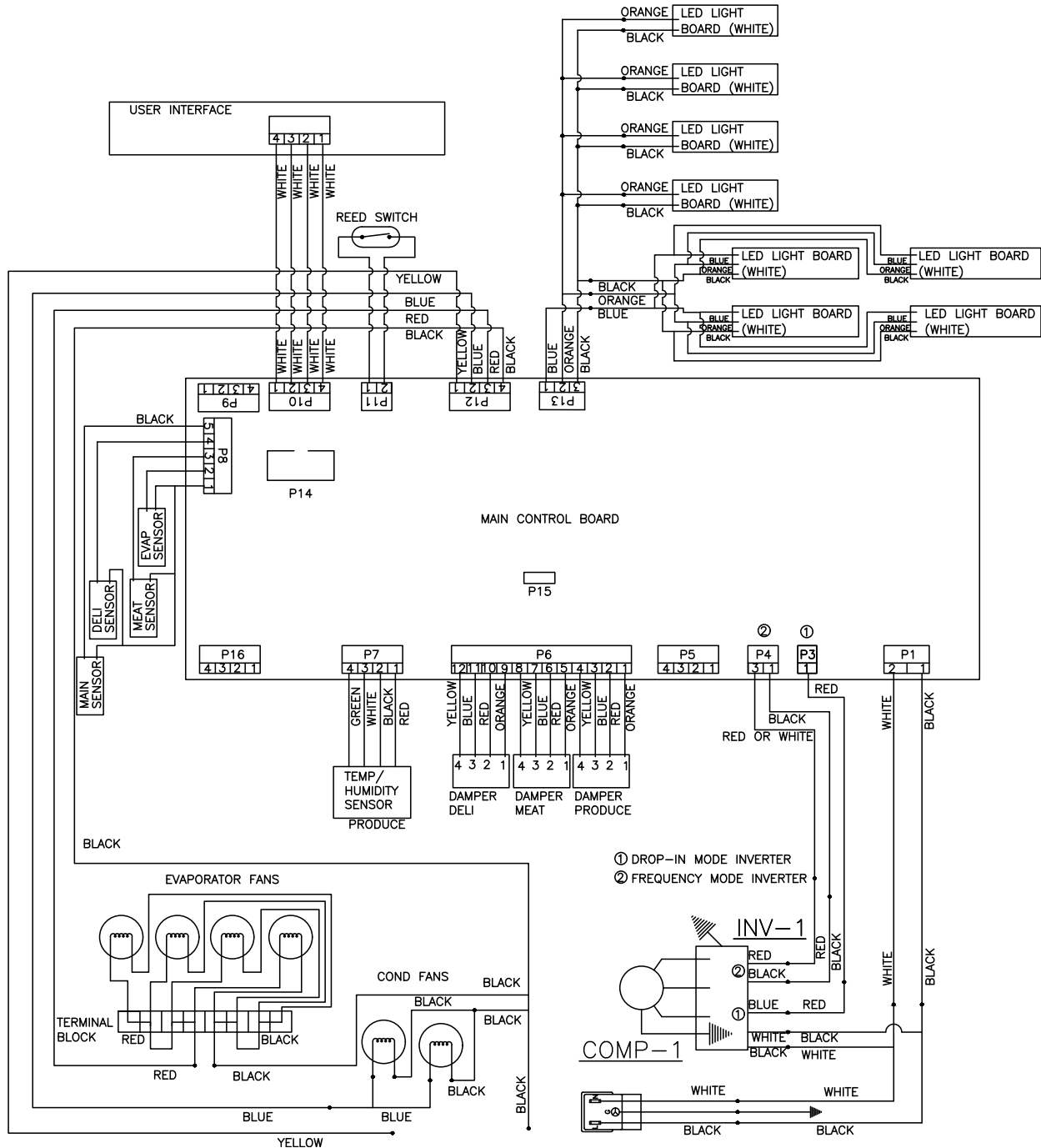


Figure 5-1.1. Refrigerator Column Wiring Diagram

### 5.3 Wiring Diagrams

## COLUMN SINGLE ZONE WINE

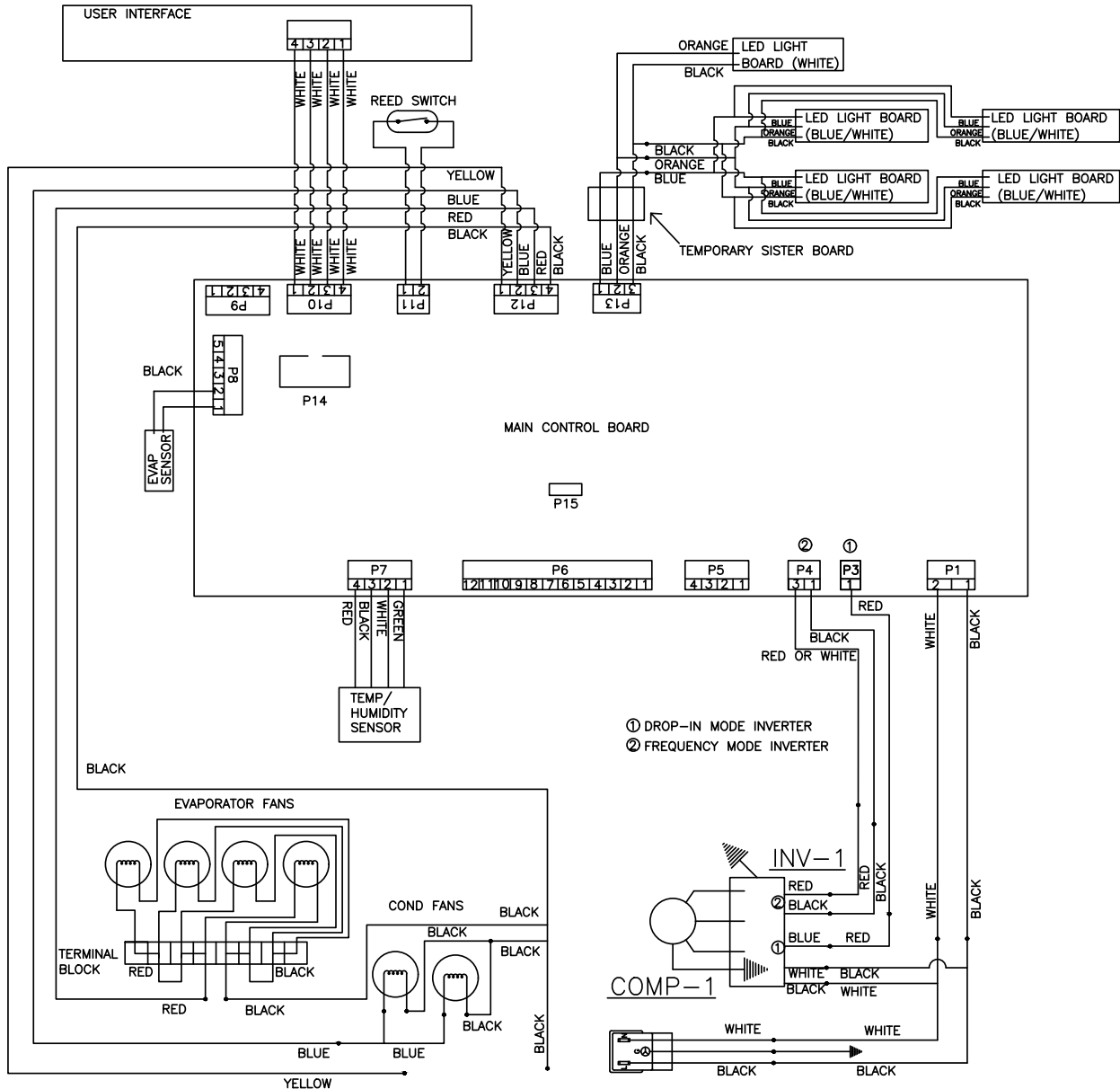


Figure 5-1.2. Wine Column Single Zone Wiring Diagram

### 5.3 Wiring Diagrams

## COLUMN DUAL ZONE WINE

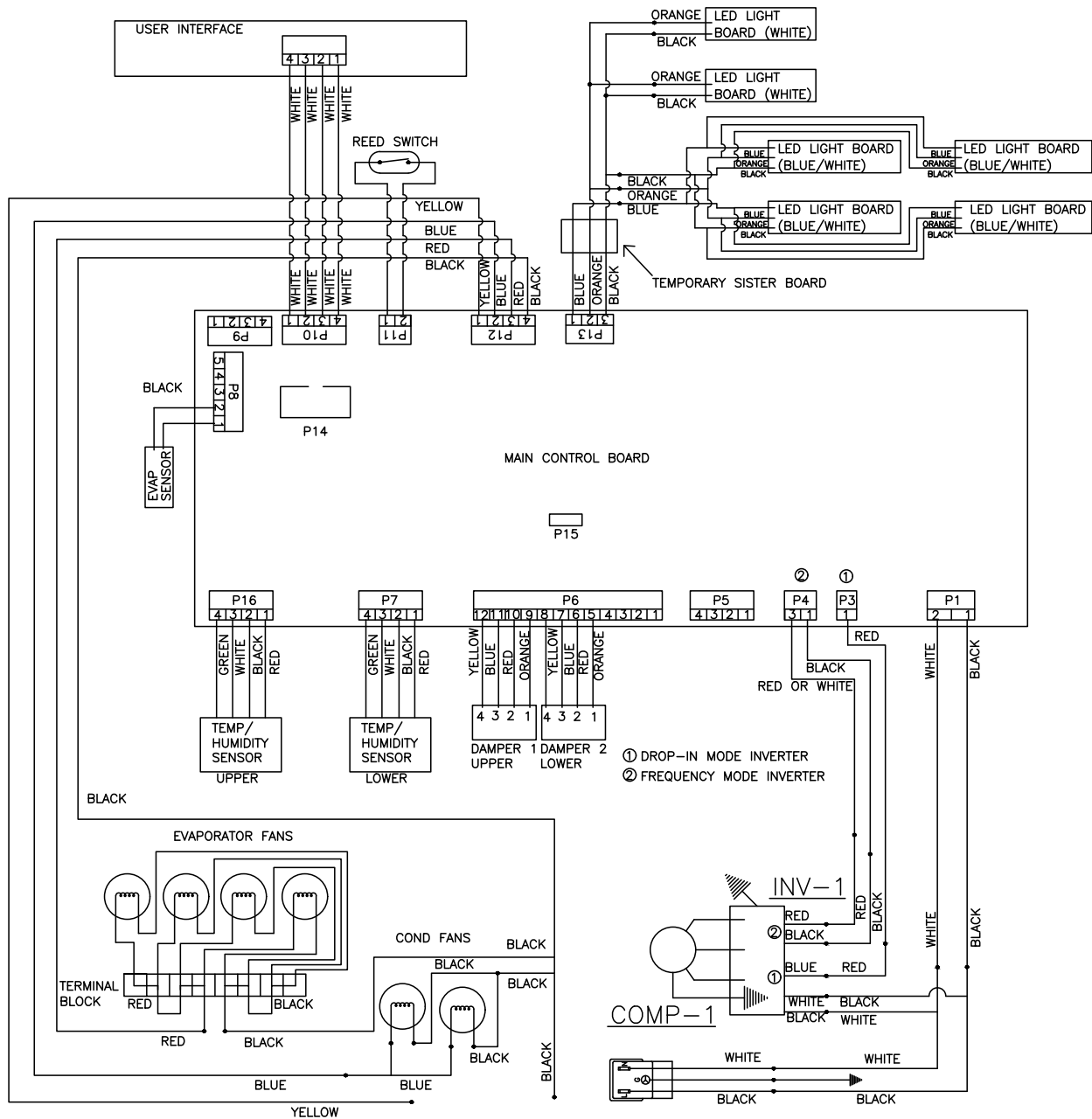


Figure 5-1.3. Wine Column Dual-Zone Wiring Diagram





## 5.4 Control Alarms

**Column Temperature/Humidity Sensors**

Model	Temperature Sensor 1	Temperature Sensor 2	Temperature Sensor 3	Temperature Sensor 4	Temperature Sensor 5	Temperature Sensor 6
	NTC Thermistor	NTC Thermistor	NTC Thermistor	NTC Thermistor	Temp/Humidity Sensor	Temp/Humidity Sensor
<b>Refrigerator</b>	Main Compartment	Deli Drawer	Meat Drawer	Evap Temp	Produce Drawer	
<b>Freezer</b>	Main Compartment			Evap Temp		
<b>Single-Zone Wine</b>				Evap Temp	Main Compartment	
<b>Dual-Zone Wine</b>				Evap Temp	Lower Compartment	Upper Compartment
<b>Associated Alarms</b>	P1, L1, H1	P2, L2, H2	P3, L3, H3	P4, L4, H4	P5, L5, H5, R5	P6, L6, H6, R6

Table 5.3. Control Alarms

**\*\*NOTE: Alarm will stop once the cause of the alarm is corrected.**

P1, P2, P3, P4, P5, P6 = Open/Disconnected NTC Thermistor or Temperature/Humidity Sensor

L1, L2, L3, L4, L5, L6 = Low Temperature Alarm (Sensed temperature is below X degrees F below setpoint for over 30 minutes)

H1, H2, H3, H4, H5, H6 = High Temperature Alarm (Sensed temperature is above X degrees F above setpoint for over 30 minutes)

r5, r6 = Open/Disconnected Humidity Sensor

d1 = door open alarm

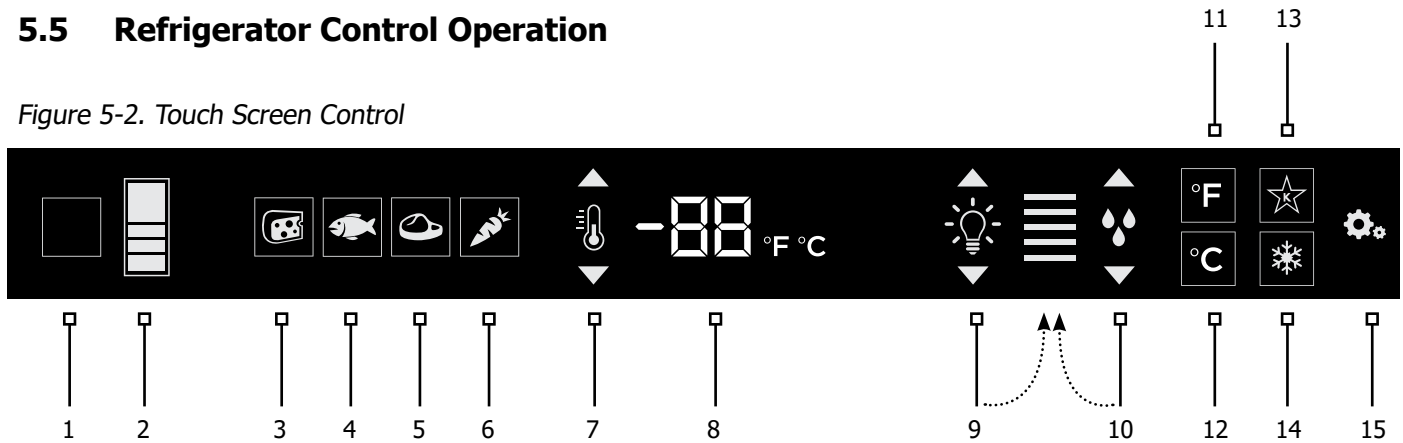
**Low/High Temperature Alarm Offsets**

Alarm	Freezer	Refrigerator	Wine Single Zone	Wine Dual Zone
<b>L1</b>	10°F below setpoint	6°F below setpoint		
<b>L2</b>		6°F below setpoint		
<b>L3</b>		6°F below setpoint		
<b>L4</b>				
<b>L5</b>		6°F below setpoint	6°F below setpoint	6°F below setpoint
<b>L6</b>				6°F below setpoint
<b>H1</b>	10°F above setpoint	6°F above setpoint		
<b>H2</b>		6°F above setpoint		
<b>H3</b>		6°F above setpoint		
<b>H4</b>				
<b>H5</b>		6°F above setpoint	6°F above setpoint	6°F above setpoint
<b>H6</b>				6°F above setpoint

Table 5.4. Low/High Temperature Alarm Offsets

## 5.5 Refrigerator Control Operation

Figure 5-2. Touch Screen Control



Control shown fully illuminated above for illustration purposes only.

1. Wake Button
2. Temperature zone selection
3. Deli temperature setting
4. Fish/Seafood temperature setting
5. Meat temperature setting
6. Fresh Produce temperature setting
7. Temperature adjustment  
(up and down in 1° increments)
8. Temperature readout
9. Light intensity adjustment
10. Humidity control adjustment
11. Fahrenheit temperature mode
12. Celsius temperature mode
13. Sabbath mode
14. QuickCool mode
15. Settings menu

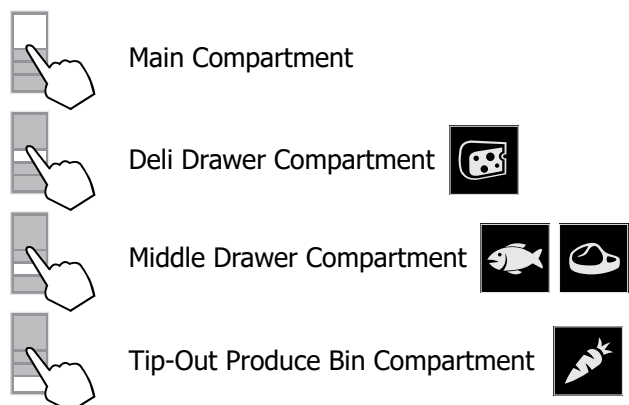
### 5.5.1 Using the Refrigerator Column Control

Upon door opening, the Wake button (1) outline will illuminate. Once activated, the temperature zone selection (2), temperature adjustment (7), temperature readout (8) and settings (15) menu icons will illuminate.

### 5.5.2 Selecting a Temperature Zone

Perlick's touch-screen controller is preset with recommended temperature settings for various goods. Within these presets, you have the ability to adjust the temperature in 1° increments as you desire.

Press the temperature zone selection (2) icon to toggle through the zones until desired zone is illuminated. Zone and preset icon will illuminate to prompt you to store certain goods in that particular zone as shown below:



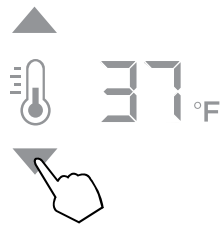




### 5.5.3 Main Compartment

The main compartment of the refrigerator features two full-width shelves and a split shelf that can be adjusted to fit tall items. Because this is a common zone that doesn't store specific items, only the temperature adjustment (7) and temperature readout (8) will illuminate - no specialty temperature settings (Sp.) will appear.

Compartment	Sp.	Factory Setting	Temperature Range
<b>Main</b>	<b>N/A</b>	<b>38°F</b>	<b>34°F - 42°F</b>

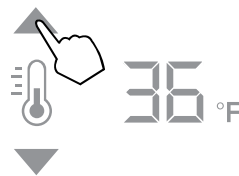


The main compartment of the refrigerator will come set from the factory to 38°F. To adjust the temperature up or down, press the temperature adjustment (7) arrows until desired temperature is reflected in the temperature readout (8). Double beep indicates that minimum or maximum temperature has been reached. Temperature will flash twice to indicate the new setting.

### 5.5.4 Top Drawer Compartment

The deli compartment (top drawer) of the refrigerator features a two-tier design for storing and displaying charcuterie items such as artisan meats and cheeses. When this zone is chosen, the charcuterie (cheese) temperature setting (3), temperature adjustment (7) and the temperature readout (8) will illuminate.

Compartment	Sp.	Factory Setting	Temperature Range
<b>Deli Drawer</b>		<b>33°F</b>	<b>32°F - 37°F</b>



The two-tier charcuterie (deli) drawer of the refrigerator will come set from the factory at 33°F. To adjust the temperature up or down, press the temperature adjustment (7) arrows until desired temperature is reflected in the temperature readout (8). Double beep indicates that the minimum or maximum temperature has been reached. Temperature will flash twice to indicate new setting.

### 5.5.5 Middle Drawer Compartment

The middle drawer compartment of the refrigerator features a full-width drawer designed for storing meat and seafood. When this zone is chosen, the fish/seafood (fish) temperature setting (4), meat (steak) temperature setting (5), temperature adjustment (7) and temperature readout (8) will illuminate.

Compartment	Sp.	Factory Setting	Temperature Range
<b>Middle</b>		<b>33°F</b>	<b>32°F - 37°F</b>
<b>Middle</b>		<b>35°F</b>	<b>32°F - 37°F</b>



The middle drawer compartment of the refrigerator will come set from the factory to 35°F (meat). If storing fish or other types of seafood, press the fish icon to bring the drawer to the preset mode of 33°F.



34 °F

As with the other compartments, you have the ability to raise or lower the temperature in 1°F increments. To adjust the temperature up or down, press the temperature adjustment (7) arrows until desired temperature is reflected in the temperature readout (8).



32 °F

As with the other compartments, you have the ability to raise or lower the temperature in 1°F increments. To adjust the temperature up or down, press the temperature adjustment (7) arrows until desired temperature is reflected in the temperature readout (8). Double beep indicates that minimum or maximum temperature has been reached. Temperature will flash twice to indicate new setting.



The tip-out produce bin also features a comprehensive humidity system that delivers real moisture based on your desired humidity levels. This keeps produce such as leafy greens fresher for longer. The humidity is factory set to 80%, but can be adjusted up and down in 10% increments between 50% and 90% by pressing the up or down arrows in the humidity control adjustment icon (10). The more bars that illuminate, the higher the humidity setting. Double beep indicates that the minimum or maximum level has been reached. Icons will flash twice to indicate new setting.

### 5.5.6 Bottom Drawer Compartment

The bottom drawer compartment of the refrigerator features a unique tip out bin design for storing fresh produce. When this zone is chosen, the fresh produce (carrot) temperature setting (6), temperature adjustment (7) and temperature readout (8) will illuminate. In addition to temperature-related icons, the humidity control adjustment (10) icon will also illuminate.

Compartment	Sp.	Factory Setting	Temperature Range
<b>Tip-out Produce Bin</b>		<b>35°F</b>	<b>32°F - 37°F</b>

### 5.5.7 Column Theater Lighting

Perlick column refrigerators feature an impressive amount of lighting for clear viewing and display of goods. Main lighting runs vertically down the walls and horizontally across the ceiling of the main compartment, deli drawer, meat/fish drawer and tip-out produce bin.

### 5.5.8 Changing From Fahrenheit To Celsius Scale

The controller is factory set to Fahrenheit scale, but can easily be changed to read Celsius in the settings menu.



Press the settings menu (15) icon on the far right. This will illuminate a cluster of four icons as shown to the left. To display temperatures in Celsius, press the Celsius readout (12) icon.

Change will be reflected in the temperature readout (8). The C will be illuminated to signify the scale.

### 5.5.9 Sabbath Mode

All Perlick column refrigeration models have Sabbath mode capabilities. This allows the user to interact with the unit without changing the amount of energy it is using. In this mode, the interior lighting is turned off until user turns off Sabbath mode.



Press the settings menu (15) icon on the far right. This will illuminate a cluster of four icons as shown to the left. To activate Sabbath mode, press the Sabbath mode icon.



Please note that, when in Sabbath mode, the Sabbath mode (13) icon will be the only icon that will be illuminated (continuously) until user presses the Sabbath mode icon to turn the mode off.

### 5.5.10 Quick Cool (Shopping) Mode

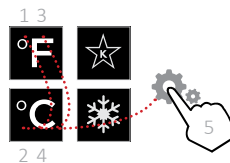
The main compartment of the refrigerator can be set to Quick Cool (shopping) mode to lower the temperature after loading a large quantity of product to quickly bring them to the preferred temperature.



Press the settings menu (15) icon on the far right. This will illuminate a cluster of four icons as shown to the left. To activate Quick Cool (shopping) mode, press the Quick Cool (14) icon. This will activate the mode and the Quick Cool (14) will remain illuminated until the set point is achieved.

### 5.5.11 Showroom Mode

Select Showroom mode for units that are being used solely for display purposes. Showroom mode has the user interface fully functional along with the cabinet lights, however, no compressor, evaporator fans or condenser fans will operate.



Press the settings menu (15) icon on the far right. This will illuminate a cluster of four icons as shown to the left. A 5 key combination\*, including the Fahrenheit readout (11) icon, Celsius readout (12) icon and settings menu (15) icon, will activate Showroom mode: F-C-F-C-Settings. Upon activating showroom mode, the temperature readout (7) with show Sh each time the door is opened until showroom mode is turned off.



To exit showroom mode, enter the 5 key combination.

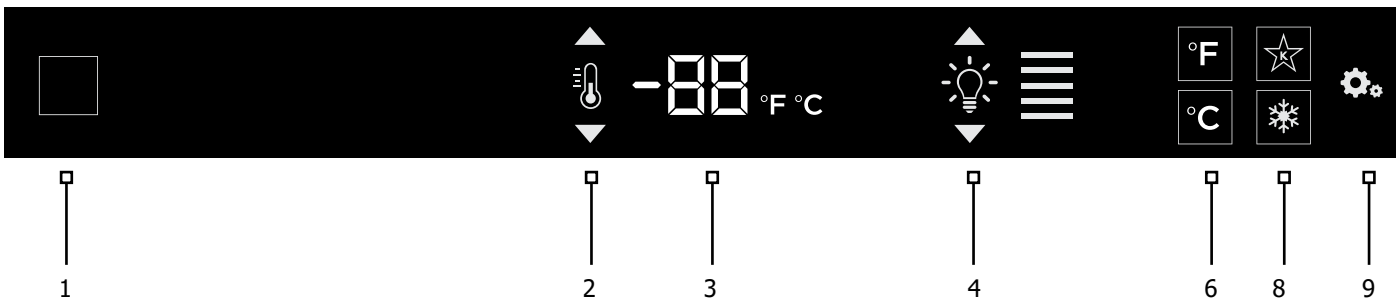
*\*5 key combination must be completed within 5 seconds to turn showroom mode on and off.*



## 5.6 Freezer Control Operation

The following instructions are for the touch-screen control in Perlick column freezers (model CR24F).

Figure 5-3. Freezer Touch Screen Control



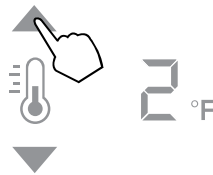
Control shown fully illuminated above for illustration purposes only.

1. Wake Button
2. Temperature adjustment (up and down in 1° increments)
3. Temperature readout
4. Light intensity adjustment
5. Fahrenheit readout
6. Celsius readout
7. Sabbath mode
8. Quick cool mode
9. Settings menu

### 5.6.2 Freezer Temperature

The freezer is the same temperature throughout, so only the temperature adjustment (2) and temperature readout (3) will illuminate.

Compartment	Sp.	Factory Setting	Temperature Range
<b>All</b>	<b>N/A</b>	<b>0°F</b>	<b>-10°F - 10°F</b>



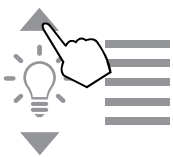
The freezer will come set from the factory to 0°F. To adjust the temperature adjustment (2) arrows until desired temperature is reflected in the temperature readout (3). Double beep indicates that minimum or maximum temperature has been reached. Temperature will flash twice to indicate new setting.

#### 5.6.1 Using the Freezer Column Control

Upon door opening, the Wake button (1) outline will illuminate. Once activated, temperature adjustment (2), temperature readout (3) and settings (9) menu icons will illuminate.

### 5.6.3 Column Theater Lighting

Perlick column freezers feature an impressive amount of lighting for clear viewing and display of goods. White LED lighting runs vertically down the walls and horizontally across the ceiling of main compartment.



To adjust the brightness of the lighting when the door is opened, press the up and down arrows in the light intensity adjustment icon (4). Double beep indicates that minimum or maximum level has been reached. Icons will flash twice to indicate new setting.

### 5.6.4 Changing From Fahrenheit To Celsius Scale

The controller is factory set to Fahrenheit scale, but can easily be changed to read Celsius in the settings menu.



Press the settings menu (9) icon on the far left. This will illuminate a cluster of four icons as shown to the left. To display temperatures in Celsius, press the Celsius readout icon (6).

Change will be reflected in the temperature readout (3). The C will be illuminated to signify the scale.

### 5.6.5 Sabbath Mode

All Perlick column refrigeration models have Sabbath mode capabilities. This allows the user to interact with the unit without changing the amount of energy it is using. In this mode, the interior lighting is turned off until user turns off Sabbath mode.



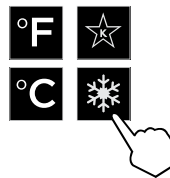
Press the settings menu (9) icon on the far right. This will illuminate a cluster of four icons as shown to the left. To activate Sabbath mode, press the Sabbath mode icon (7).



Please note that, when in Sabbath mode, the Sabbath mode (7) icon will be the only icon that will be illuminated (continuously) until user presses the Sabbath mode icon to turn the mode off.

### 5.6.6 Quick Cool (Shopping) Mode

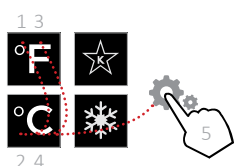
The main compartment of the freezer can be set to Quick Cool (shopping) mode to lower the temperature after loading a large quantity of product to quickly bring them to the preferred temperature.



Press the settings menu (9) icon on the far right. This will illuminate a cluster of four icons as shown to the left. To activate Quick Cool (shopping) mode, press the Quick Cool (8) icon. This will activate the mode and the Quick Cool (8) will remain illuminated until the set point is achieved.

## 5.6.7 Showroom Mode

Select Showroom mode for units that are being used solely for display purposes. Showroom mode has the user interface fully functional along with the cabinet lights, however, no compressor, evaporator fans or condenser fans will operate.



Press the settings menu (9) icon on the far right. This will illuminate a cluster of four icons as shown to the left. A 5 key combination\*, including the Fahrenheit readout (5) icon, Celsius readout (6) icon and settings menu (9) icon, will activate Showroom mode: F-C-F-C-Settings. Upon activating showroom mode, the temperature readout (7) with show Sh each time the door is opened until showroom mode is turned off.

Sh

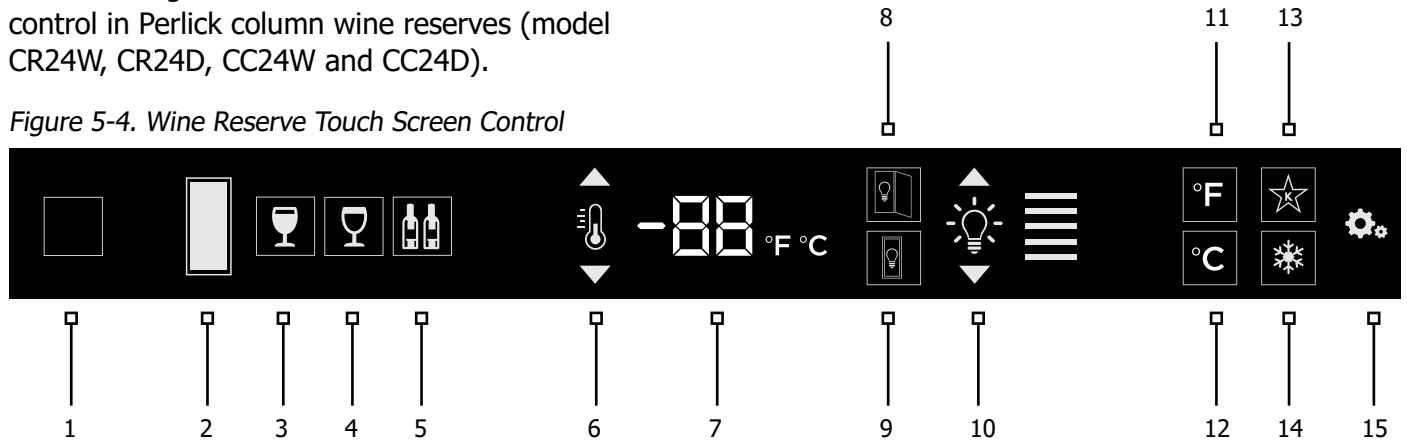
To exit showroom mode, enter the 5 key combination.

*\*5 key combination must be completed within 5 seconds to turn showroom mode on and off.*

## 5.7 Wine Reserve Control Operation

The following instructions are for the touch-screen control in Perlick column wine reserves (model CR24W, CR24D, CC24W and CC24D).

Figure 5-4. Wine Reserve Touch Screen Control



Control shown fully illuminated above for illustration purposes only.

1. Wake Button
2. Temperature zone selection (Dual-zone models)
3. White wine temperature setting
4. Red wine temperature setting
5. Cellar temperature setting
6. Temperature adjustment (up and down in 1° increments)
7. Temperature readout
8. Light adjustment (door open)
9. Light adjustment (door closed)
10. Light intensity adjustment
11. Fahrenheit temperature mode
12. Celsius temperature mode
13. Sabbath mode
14. QuickCool mode
15. Settings menu

### 5.7.1 Using The Wine Column Control

Upon door opening, the Wake button (1) outline will illuminate. Once activated, the temperature zone selection (2), temperature adjustment (7), temperature readout (8) and settings (15) menu icons will illuminate.

### 5.7.2 Selecting A Temperature Zone

Perlick's touch-screen controller is preset with recommended temperature settings for white wine, red wine and cellaring. Within the presets, you have the ability to adjust the temperature in 1° increments as you desire. Because single zone models (CR24W) are one temperature throughout, there is no zone selection. On dual zone models (CR24D), press the temperature zone selection (2) icon to toggle through the zones until desired zone is illuminated. Single zone models come factory set to 50°F. Dual zone models come factory set to 60°F in the top zone and 50°F in the bottom zone.



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### 5.7.3 Storing White Wine

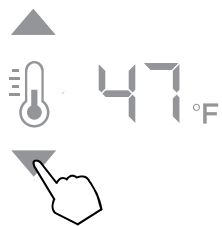
Perlick wine columns are preset with expert-recommended temperature settings for white wine. To set a zone in dual zone models to this preset, touch the temperature zone selection icon (2) to illuminate the zone you'd like to set to white wine temperature, then choose the white wine temperature setting icon (3) to set. For single zone models, simply choose the white wine temperature setting icon (3).

### 5.7.4 Storing Red Wine

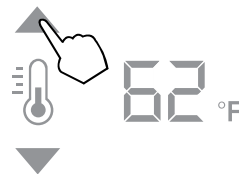
Perlick wine columns are preset with expert-recommended temperature settings for red wine. To set a zone in dual zone models to this preset, touch the temperature zone selection icon (2) to illuminate the zone you'd like to set to red wine temperature, then choose the red wine temperature setting icon (4) to set. For single zone models, simply choose the red wine temperature setting icon (4).

Compartment	Sp.	Factory Setting	Temperature Range
Any		50°F	40°F - 68°F

Compartment	Sp.	Factory Setting	Temperature Range
Any		60°F	40°F - 68°F




To adjust the temperature up or down, press the temperature adjustment (6) arrows until desired temperature is reflected in the temperature readout (7). Double beep indicates that minimum or maximum temperature has been reached. Temperature will flash twice to indicate new setting.

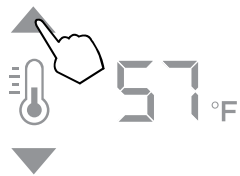


To adjust the temperature up or down, press the temperature adjustment (6) arrows until desired temperature is reflected in the temperature readout (7). Double beep indicates that minimum or maximum temperature has been reached. Temperature will flash twice to indicate new setting.

### 5.7.5 Cellaring Wine

Perlick wine columns are preset with expert-recommended temperature settings for cellaring (long-term storage) wine. By choosing the cellar mode, the entire cabinet will default to 55°F for long-term storage. For dual zone models, touch the temperature zone selection icon (2) to illuminate, then choose the Cellar temperature setting icon (5) to set. For single zone models, simply choose the Cellar temperature icon (5).

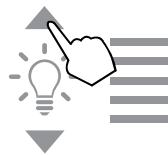
Compartment	Sp.	Factory Setting	Temperature Range
Any		55°F	40°F - 68°F



To adjust the temperature up or down, press the temperature adjustment (6) arrows until desired temperature is reflected in the temperature readout (7). Double beep indicates that minimum or maximum temperature has been reached. Temperature will flash twice to indicate new setting.

### 5.7.6 Column Theater Lighting

Perlick column wine reserves feature an impressive amount of lighting for clear viewing and display of wine bottles. Door open white LED lighting runs vertically down the walls and horizontally across the ceiling of each compartment. Door closed (display) lighting can be changed from white to blue (blue will only illuminate the side walls.)



Wine models are factory set to white lighting. To adjust the brightness of the lighting when the door is opened, press the up and down arrows in the light intensity adjustment icon (4).



To change to blue lighting, continue pressing the arrows until the control turns blue in color (blue light only illuminates when the door is closed.) To return to white lighting, continue pressing the arrows until controls illuminate white. Icons will flash twice to indicate new setting.



Lighting adjustments can be made separately for when the door is opened and closed. Select the light adjustment (door open) icon (8) to change the intensity of the light when the door is opened. Select the light adjustment (door closed) icon (9) to change the intensity or color of the light when the door is closed. Please note that when the door is open, the lights will automatically go back to white for visibility.

### 5.7.7 Changing From Fahrenheit To Celsius Scale

The controller is factory set to Fahrenheit scale, but can easily be changed to read Celsius in the settings menu.



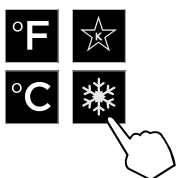
Press the settings menu (15) icon on the far right. This will illuminate a cluster of four icons as shown to the left. To display temperatures in Celsius, press the Celsius readout icon (12).



Change will be reflected in the temperature readout (7). The C will be illuminated to signify the scale.

### 5.7.8 Quick Cool (Shopping) Mode

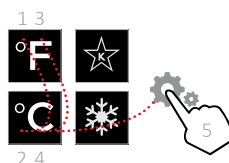
The wine column can be set to Quick Cool (shopping) mode to lower the temperature after loading a large quantity of product to quickly bring them to the preferred temperature.



Press the settings menu (15) icon on the far right. This will illuminate a cluster of four icons as shown to the left. To activate Quick Cool (shopping) mode, press the Quick Cool (14) icon. This will activate the mode and the Quick Cool (14) will remain illuminated until the set point is achieved.

### 5.7.9 Showroom Mode

Select Showroom mode for units that are being used solely for display purposes. Showroom mode has the user interface fully functional along with the cabinet lights, however, no compressor, evaporator fans or condenser fans will operate.



Press the settings menu (15) icon on the far right. This will illuminate a cluster of four icons as shown to the left. A 5 key combination\*, including the Fahrenheit readout (11) icon, Celsius readout (12) icon and settings menu (15) icon, will activate Showroom mode: F-C-F-C-Settings. Upon activating showroom mode, the temperature readout (7) will show Sh each time the door is opened until showroom mode is turned off.



To exit showroom mode, enter the 5 key combination.

*\*5 key combination must be completed within 5 seconds to turn showroom mode on and off.*

### 5.7.10 Ambient Conditions

For units installed in areas with changing ambient conditions, please take note of the table below. In extreme conditions that exceed those listed below, condensation may start to form on the front face of the cabinet.

Condensation will subside as conditions return to levels below those shown in the table.

Ambient (F°)	Relative Humidity (%)
<b>70°</b>	<b>80%</b>
<b>80°</b>	<b>78%</b>
<b>90°</b>	<b>75%</b>

Table 5.5. Ambient Conditions (Wine Reserve)

## 6.0 Refrigeration System Repair

### 6.1 Air Infiltration

Air infiltration can occur in several locations.

*NOTE: Unit may manifest longer than normal run times caused by the additional loads that air infiltration presents.*

Signs of air infiltration include:

- Presence of water, moisture or ice
- Condensation on glass or metal surfaces

#### STEP 1 - Door Gaskets

Check door gaskets for rips, cracks, or other damage.

The door gasket should be pushed in firmly and lay flat.

Ensure gasket forms a complete seal around the door.

#### STEP 2 - Sealing Compound

Sealing compound is used to seal wiring and line set pass-through between the condenser and the evaporator compartments. See *Figure 6-1.1* and *6-1.2*.

Additionally, sealing compound is used to seal door switch wiring pass-through holes at top of cabinet. See *Figure 6-1.3* and *6-1.4*.

Check for voids and ensure sealing compound completely fills space (both on interior and exterior openings (if both tubes and wires pass-through and opening, ensure sealing compound is used between the items)).



Figure 6-1.1. Sealing Compound (Inside)



Figure 6-1.2. Sealing Compound (Outside)



Figure 6-1.3. Sealing Compound - Door Switch (Inside)



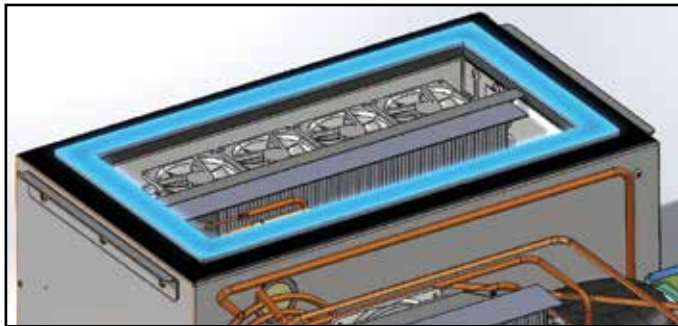
Figure 6-1.4. Sealing Compound - Door Switch (Outside)

**STEP 3 - Refrigeration Module Gasket**

A gasket is used to seal between the refrigeration module and the bottom of the cabinet. See *Figure 6-2.1*.

Ensure refrigeration module is lifted tight against the bottom of the cabinet using the refrigeration module lift kit (lift bolts should be tight against face of left and right cabinet machine compartment endplates). See *Figure 6-2.2*.

Check for condensation or cold air around the top perimeter of the refrigeration module, or using a bright light, shine the light at the gasket and look for light on the other side of the gasket. If any condensation, cold air or light can be detected around the gasket, remove the refrigeration module and inspect the gasket and replace. See section Replace Refrigeration Module for details on how to remove the module.



*Figure 6-2.1. Refrigeration Gasket*



*Figure 6-2.2. Lift Bolts*

**STEP 4 - Drain**

Check that the evaporator condensate drain is secure and connected. See *Figure 6-3*.



*Figure 6-3. Evaporator Condensate Drain*

## 6.2 Ambient Temperatures

- High ambient temperatures and high humidity conditions may result in performance issues and/or refrigeration system failure.
- These products are indoor rated products and should never be exposed to direct weather.
- Do not subject the product to direct solar load.
- This equipment is not intended to be installed directly adjacent to a heat source.
- Under extreme temperature and/or relative humidity conditions, the front face, gasket and glass door may show signs of condensation. When the temperature and/or relative humidity conditions return to normal, condensation will disappear.

### 6.2.1 Freezer Ambient Conditions

For units installed in areas with changing ambient conditions, please take note of the table below. In extreme conditions that exceed those listed below, condensation may start to form on the front face of the cabinet.

Condensation will subside as conditions return to levels below those shown in the table.

Ambient (F°)	Relative Humidity (%)
70°	80%
80°	78%
90°	75%

Table 6.1. Ambient Conditions (Freezer)

## 6.3 Air Flow Obstructions

- The unit must have free air flow to the front **grill** and to the evaporator intake and discharge openings to operate properly. Restricted air flow results in high head pressures and reduction in efficiency due to longer run times. Proper air flow through the condenser and evaporator is necessary for efficient operation.
- Never obstruct air flow in and out of the machine compartment. The front grill must be free from obstructions, dust and debris. See *Figure 6-4.1 and 6-4.2.*
- Never obstruct the evaporator intake openings or the discharge louvers or openings. Avoid placing bagged or solid items at intake or discharge openings. See *Figure 6-5.1. and 6-5.2.*
- Make sure higher temperature ambient air from another unit is not directed to the condenser coil (i.e. another heat source adjacent to or directly across from the unit).

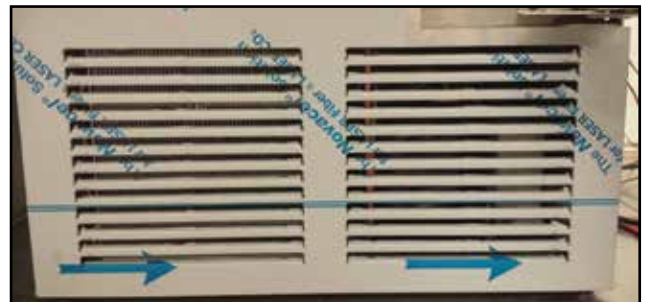


Figure 6-4.1. Grill/toe kick inlet and outlet

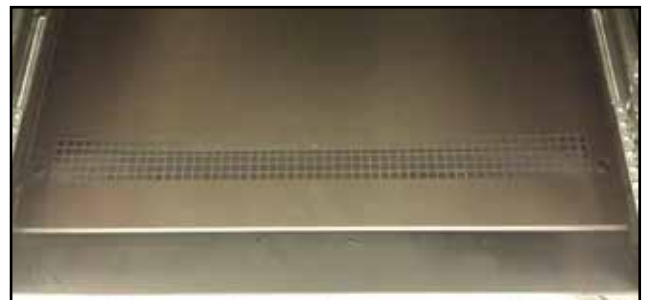


Figure 6-4.2. Evaporator Intake Openings



Figure 6-5.1. Evaporator Air Outlet Louvers



Figure 6-5.2. Evaporator Air Damper Outlet Openings

- Ensure the condenser airflow divider is installed on the lower interior portion of the door. This divider prevents direct circulation of machine compartment air. If missing, unit will run extremely inefficiently and extreme high discharge pressures and temperature which could lead to compressor damage. See Figure 6-6.

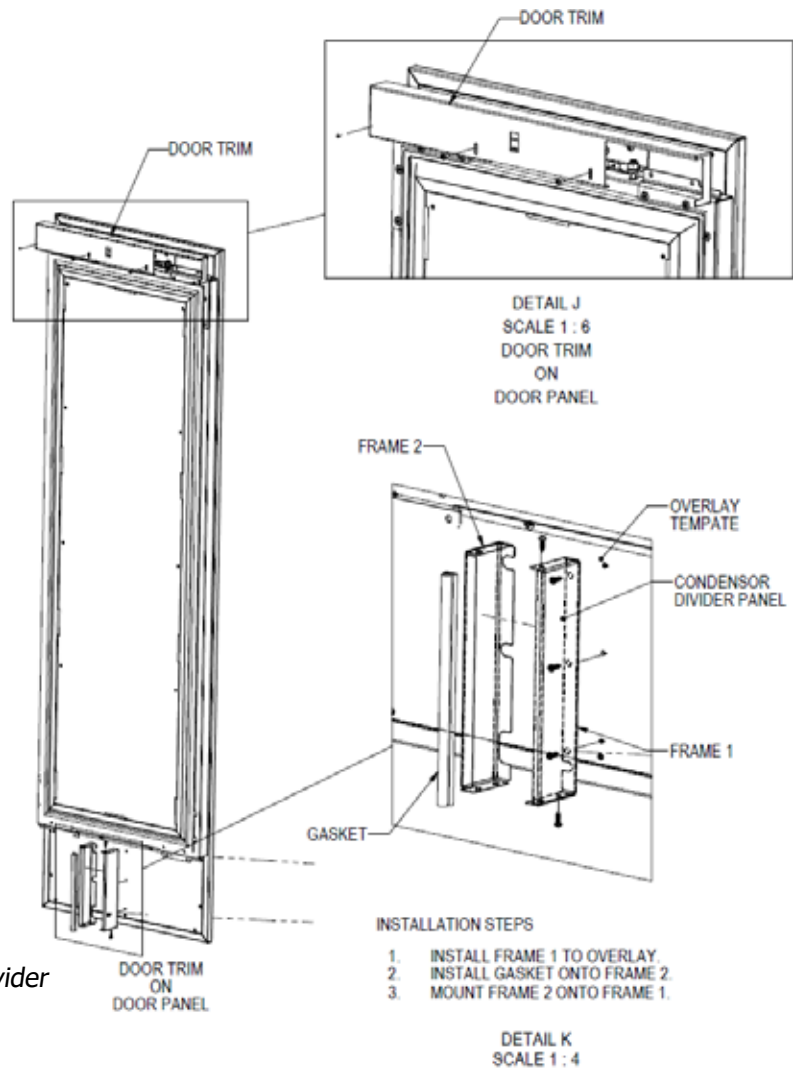


Figure 6-6. Condenser Airflow Divider

## 6.4 Condenser Coil Cleaning

- Perlick’s warranty does not cover cleaning of the condenser coil.
- The condenser coil should be free obstruction, dust and debris. The condenser coil should be cleaned every 6 months or more or less often dependent upon the environment.

To clean the condenser:

1. Open the door and remove the grill by pulling away from the cabinet (grill is held on by four (4) latch and mate connectors). See *Figure 6-7.1*.
2. Once the grill is removed, using a soft brush and vacuum, remove any dust or debris, being careful to avoid damaging (bending) the fins on the condenser coil. See *Figure 6-7.2*.
3. Once cleaned, reinstall the grill.

Figure 6-7.1. Remove Grill

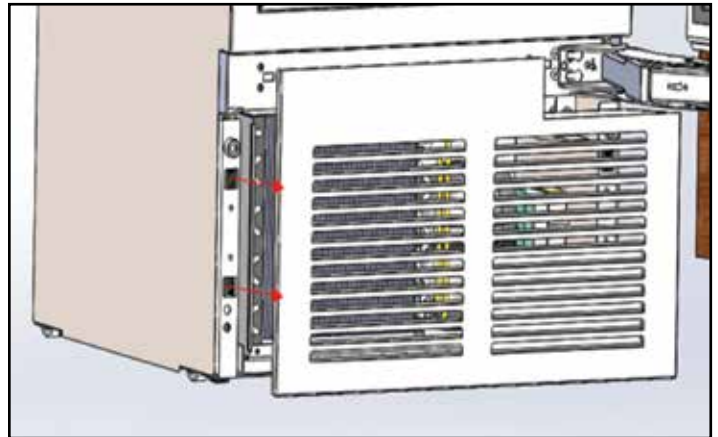
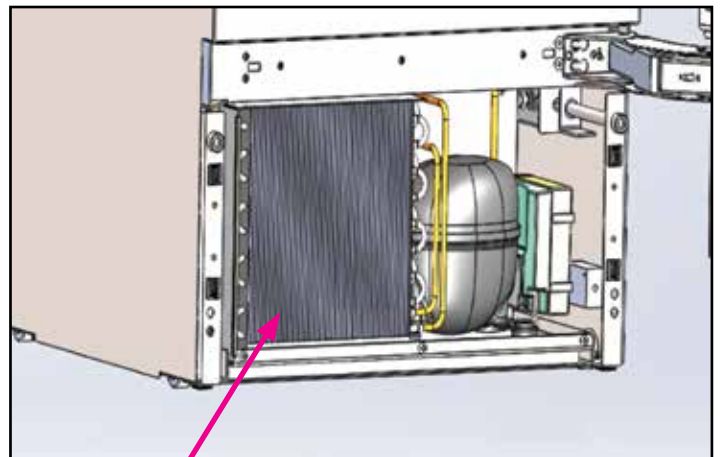


Figure 6-7.2. Clean Condenser Coil



Condenser Coil



## 6.5 De-Ice Blocked Evaporator Coil

### **⚠ WARNING**

Use towels to absorb water to avoid damage to the machine compartment or surrounding flooring. Machine compartment condensate pan may overflow if manually defrosted without the use of towels.

1. Unplug or turn off power to the unit.

To access the evaporator:

**Freezer:** Remove the bottom drawer (see [Section 8.14.2.](#)) and then remove the false inner liner bottom panel. See [Figure 6-8.](#)

**Wine:** Remove the bottom two or three shelves (see [Section 8.16.1.](#)) and then remove the false inner liner bottom panel. See [Figure 6-9.1](#) and [6-9.2.](#)

**Refrigerator:** Remove the tip-out bin (see [Section 8.13.](#)) and then remove the false inner liner bottom panel. See [Figure 6-10.](#)

2. Using a fan or heat gun, direct warm air over the coil to melt the ice. See [Figure 6-11.](#)

### **⚠ DANGER**

**NEVER USE TOOLS OR SHARP OBJECTS TO CHIP OR REMOVE ICE FROM THE EVAPORATOR OR TUBES.**

3. Once ice has been removed, review air infiltration section (see [Section 6.1.](#)).
4. Reinstall components removed reversing the removal instructions.



Figure 6-8. Freezer Drawer



Figure 6-9.1. Wine Shelves



Figure 6-9.2. Bottom Shelves/Bottom Panel



Figure 6-10. Tip-Out Bin/Inner Liner



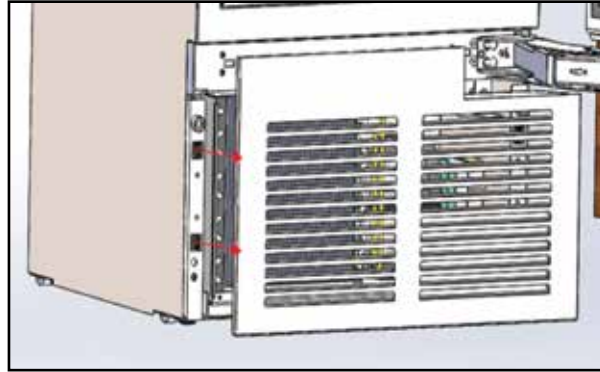
Figure 6-11. Evaporator Coil

## 6.6 Replace Refrigeration Module

### STEP 1

Remove the grill by pulling it directly away from the cabinet.

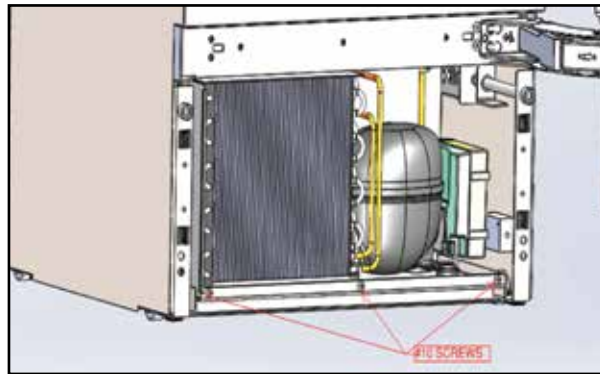
Figure 6-12.1. Remove Grill



### STEP 2

Remove front lift bracket by removing (3) #10 sheet metal screws.

Figure 6-12.2. Remove Lift Bracket



### STEP 3

Disconnect the refrigeration module wiring by removing the bottom panel in the cabinet. Shelves or drawers will need to be removed to access the bottom of the cabinet.

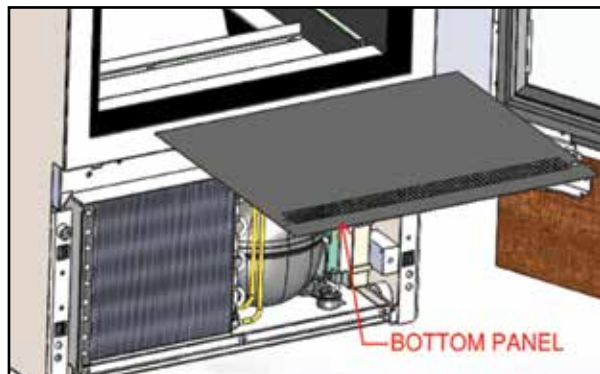


Figure 6-12.3. Disconnect Refrigeration Wiring

## 6.6 Replace Refrigeration Module (cont.)

### STEP 4

Using a 3/8" allen wrench, lower the refrigeration module by loosening (2) socket head cap screws.

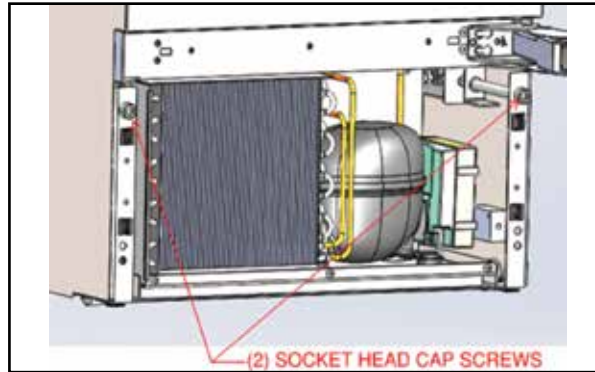


Figure 6-12.4.  
Lower  
Refrigeration  
Module

### STEP 5

Once module is lowered and all wires disconnected, slide module out by pulling on the vase panel of the module. Protect the floor in front of the unit to prevent scratches to the floor.

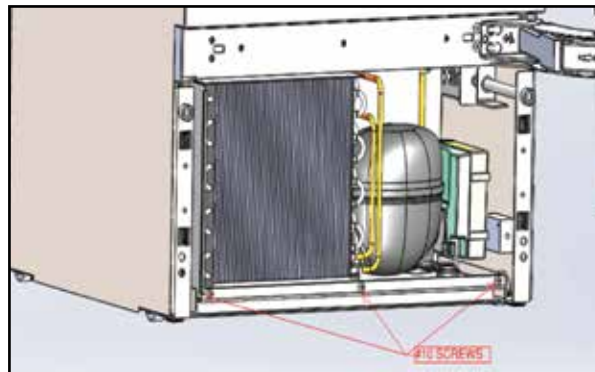


Figure 6-12.5.  
Slide  
Refrigeration  
Module Out

### STEP 6

Disconnect the power cord from the rear of the unit after the refrigeration module is removed.

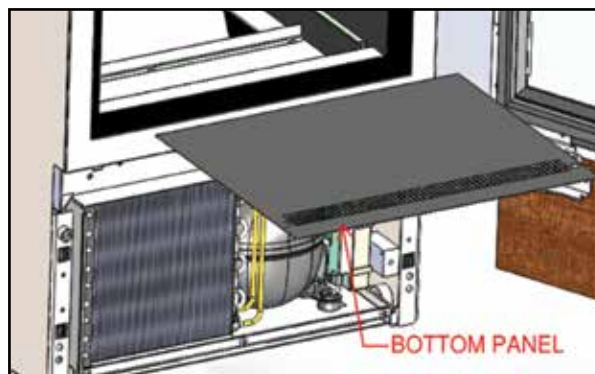


Figure 6-12.6.  
Disconnect  
Power Cord

## 6.6 Replace Refrigeration Module (cont.)

### STEP 7

To replace the refrigeration module, reconnect the power cord to the new unit. Reference Step 6, where the power cord was disconnected.

### STEP 8

Position the module flanges onto the lift brackets and slide the unit into the cabinet until it stops.

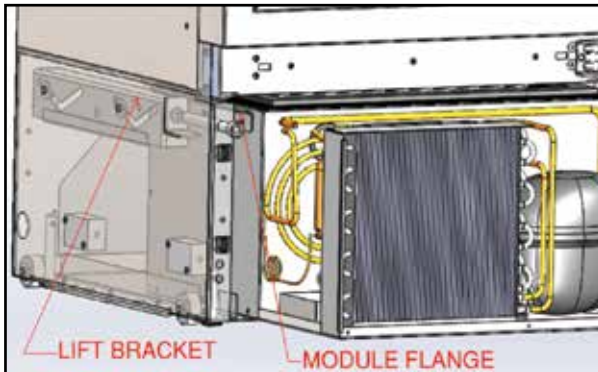


Figure 6-12.7. Slide Unit Back Into Cabinet

### STEP 9

Raise the refrigeration module into place by tightening the socket head cap screws using a 3/8" allen wrench.

### STEP 10

Reconnect all wiring from the refrigeration module and cabinet. The wires from the cabinet and module are color coded to match one another. Before proceeding to Step 11, make sure unit is functioning as intended. If not, ensure all wires are tightly secured.

### STEP 11

Install the cabinet bottom panel and any drawers or shelves removed in Step 3.

### STEP 12

Reinstall the front lift bracket to the module using the (3) #10 screws removed in step 2.

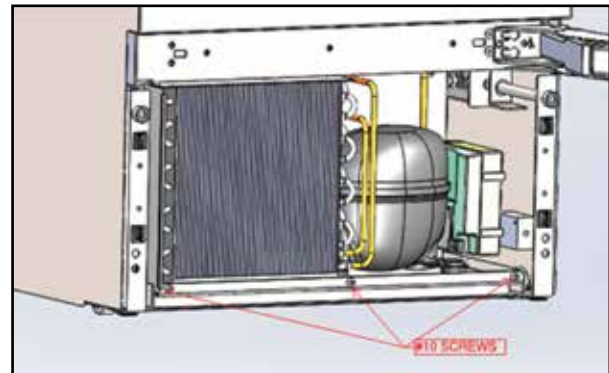


Figure 6-12.8. Reinstall Front Lift Bracket

### STEP 13

Reinstall the grill. Make sure latches are aligned with the catches on each side of the unit before pushing grill onto cabinet.

## 6.7 Replace Condenser Fan Motor

Following the instructions for replacing the refrigeration module, remove the module from the cabinet. Using a phillips screwdriver, remove the fasteners holding the condenser fan motor to the condenser shroud. Unplug fan from electrical connection. Install new fan in reverse manor. Re-install refrigeration module (replace module gasket if worn or damaged). See *Figure 6-13*.



*Figure 6-13. Condenser Fan Motor/Fastener*

## 6.8 Replace Evaporator Fan Motor

Following the instructions for replacing the refrigeration module, remove the module from the cabinet. Using a phillips screwdriver, remove the fasteners holding the evaporator fan motor to the fan housing. Using small flat blade screwdriver disconnect fan leads from terminal block. Install new fan in reverse manor. Re-install refrigeration module (replace module gasket if worn or damaged). See *Figure 6-14.1* and *6-14.2*.



*Figure 6-14.1. Evaporator Fan Motor/Fastener*



*Figure 6-14.2. Evaporator Terminal Block*

## 6.9 Replace Inverter

### ⚠ WARNING

Disconnect power to the unit before working on product to avoid electrocution hazard.

#### STEP 1

Remove Refrigeration Module from cabinet by following instructions in [Section 6.6](#).

#### STEP 2

Remove the four retaining cotter pins and washers from the tabs that secure the compressor to the base.

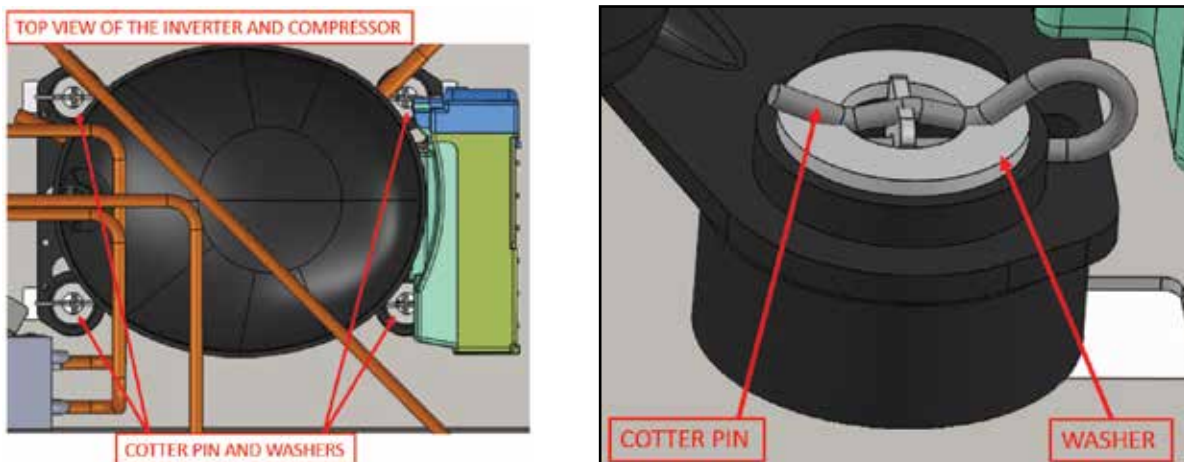


Figure 6-15.1. Remove Cotter Pins

#### STEP 3

Carefully lift the compressor up so the rubber feet clear the tabs and rotate the compressor slightly to access the inverter mounting screw.

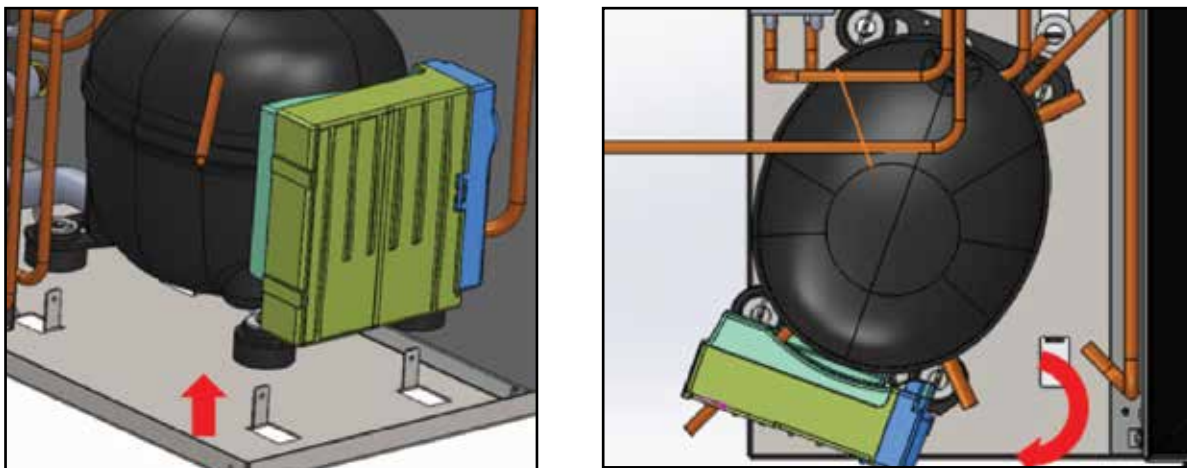


Figure 6-15.2. Lift And Rotate Compressor

Return to [Table of Contents](#)

## 6.9 Replace Inverter (cont.)

### STEP 4

Remove the inverter mounting screw and disconnect the inverter electrical connections.



Figure 6-15.3. Inverter Mounting Screw/Electrical Connections

### STEP 5

Lift the inverter and pull away from compressor.

#### **⚠ WARNING**

Before proceeding, ensure power has been disconnected.

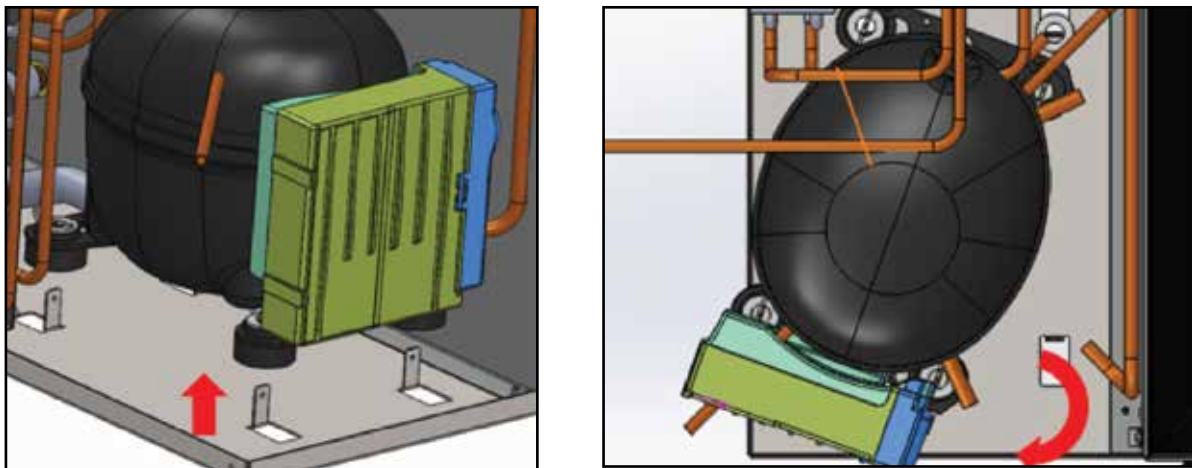


Figure 6-15.4. Lift Inverter

### 6.9 Replace Inverter (cont.)

#### STEP 6

Remove the three-pin connector and ground connector from the compressor using a small flat head screwdriver.



Figure 6-15.5. Remove 3-Pin And Ground Connectors

#### STEP 7

Install the new inverter and remount the compressor.

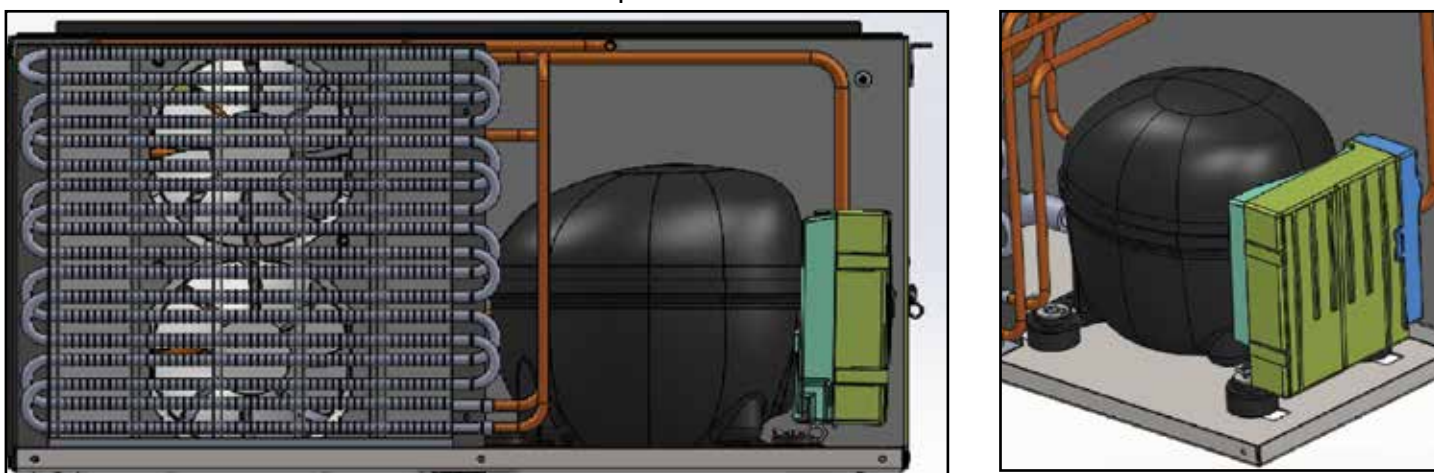


Figure 6-15.6. Install Inverter And Remount Compressor



## 6.9 Replace Inverter (cont.)

### STEP 8

Using included wire harness 1015081, connect to black and red connector coming off inverter.



Figure 6-15.7. Connect Inverter Wires

### STEP 9

Feed other end of harness 1015081 through tube/wire access hole. (Single red lead is no longer required, remove or wire tie so it is out of the way).



Figure 6-15.8. Feed Harness End Through Access Hole

## 6.9 Replace Inverter (cont.)

### STEP 10

Make sure the tube/wire access hole is fully sealed to prevent air leaks.



Figure 6-15.9. Seal Access Hole

### STEP 11

Install refrigeration module following instruction 6.6.

### STEP 12

New harness 1015081 gets connected to spare black/wire lead set from cabinet.

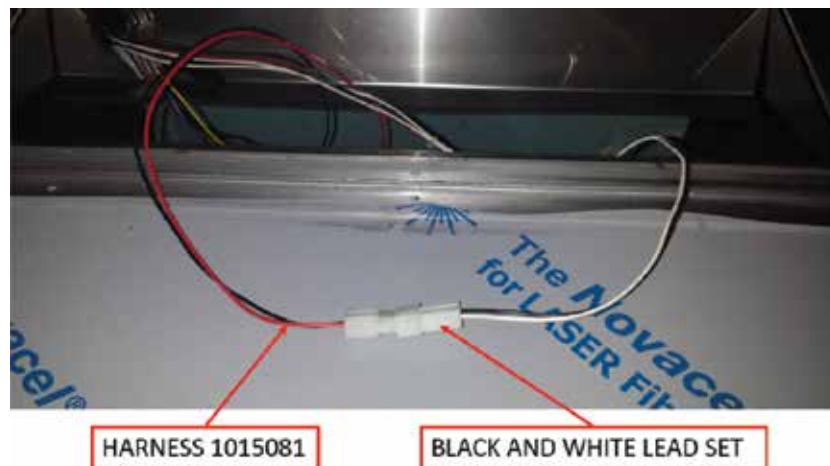


Figure 6-15.10. Connect New Harness

**Note:** Inverter signal leads are connected to control board connection P4 for the frequency converter.

## 6.10 Replace Damper

To replace a damper, remove drawer (see [Section 8.14.](#)) or shelving (see [Section 8.16.](#)), to access the damper. Remove the four damper cover mounting fasteners. Pull out on the cover to remove the damper assembly. Unplug the damper from the wire harness. Replace the damper assembly. Plug in damper, install damper assembly into opening and fasten. Reinstalled drawers or shelves.

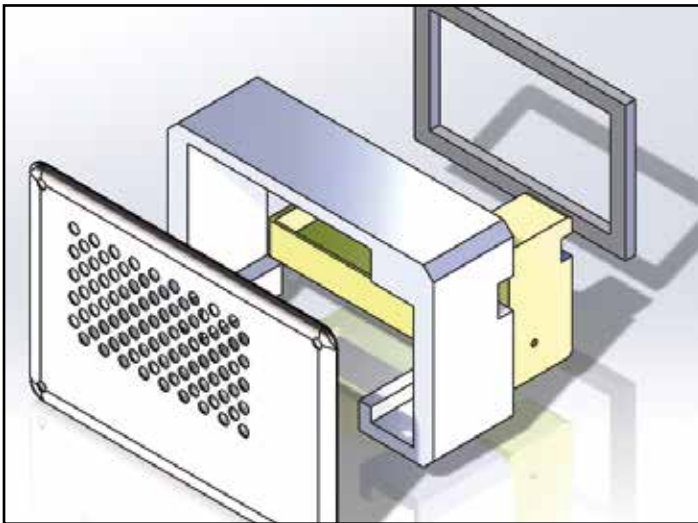


Figure 6-16.1. Refrigerator and Dual Zone Wine Lower Damper

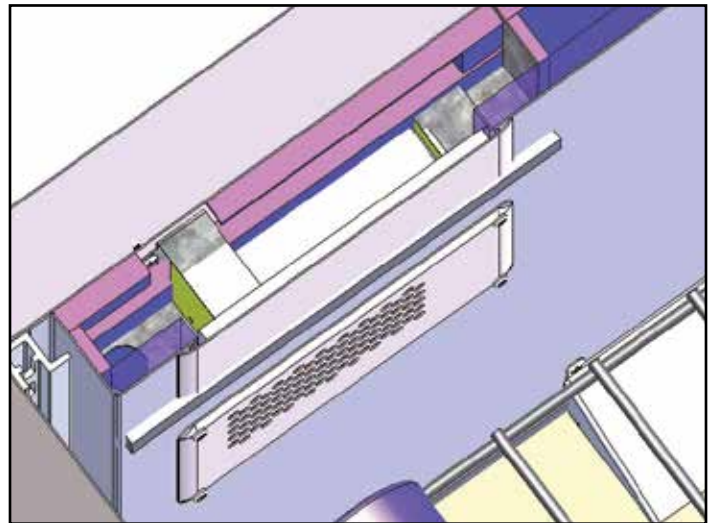


Figure 6-16.2. Dual Zone Wine Upper Damper

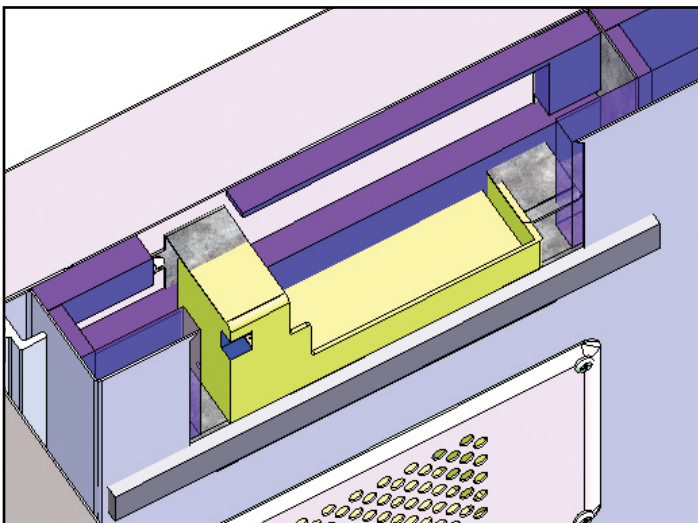


Figure 6-16.3. Dual Zone Wine Upper Damper (Cover and Insulation Pad Suppressed)

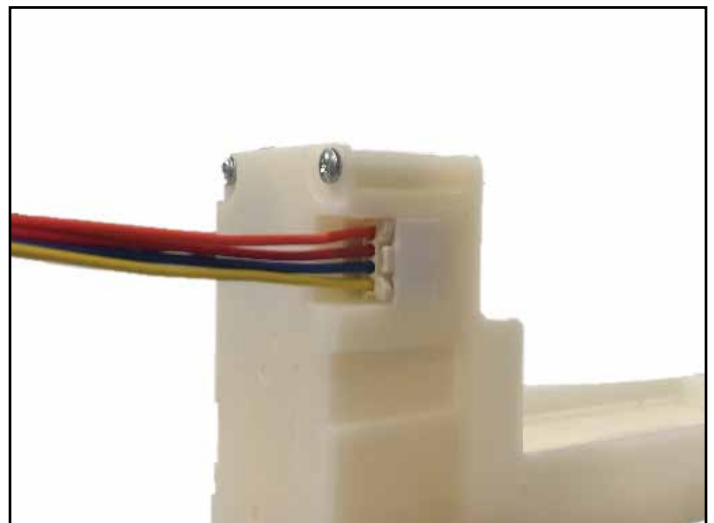


Figure 6-16.3. Damper Electrical Connection



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## 6.11 Leak Detection

### **⚠ DANGER**

**IF A LEAK IS SUSPECTED, VENTILATE THE AREA AND ENSURE THERE ARE NO NEARBY IGNITION SOURCES.**

### **⚠ WARNING**

Isobutane (R-600a) is a low pressure refrigerant (30 PSIG @ 70°F). If checking for a leak, the system should be at a minimum temperature of 70°F.

Use an isobutane (R-600a) compatible electronic leak detector, check all joints, tubing and coils for leaks. If a leak is detected, replace the refrigeration module (see [Section 6.6](#)).

### 6.12 Refrigeration System Diagram - Medium Temperature

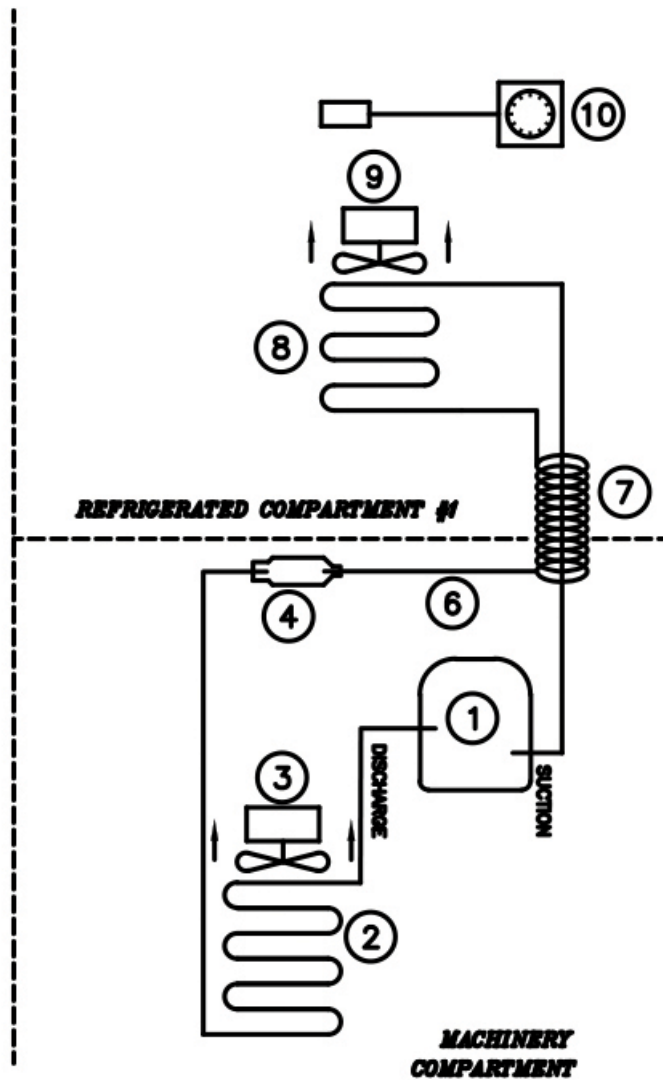
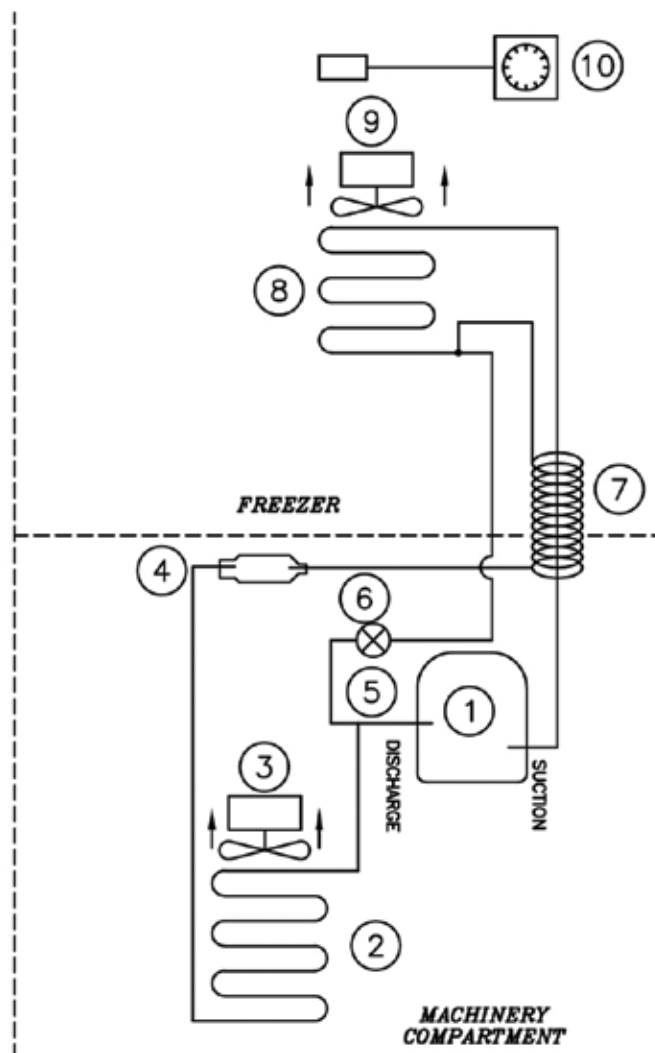


Figure 6-17.1.  
Refrigeration System Diagram  
(Medium Temperature)

ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION
①	COMPRESSOR	⑥	CAPILLARY TUBE
②	CONDENSER	⑦	HEAT EXCHANGER
③	CONDENSER FAN	⑧	EVAPORATOR
④	DRIER	⑨	EVAPORATOR FAN
○		⑩	TEMPERATURE CONTROL

### 6.13 Refrigeration System Diagram - Freezer

Figure 6-17.2.  
Refrigeration System Diagram  
(Freezer)



ITEM NO.	DESCRIPTION	ITEM NO.	DESCRIPTION
①	COMPRESSOR	⑥	CAPILLARY TUBE
②	CONDENSER	⑦	HEAT EXCHANGER
③	CONDENSER FAN	⑧	EVAPORATOR
④	DRIER	⑨	EVAPORATOR FAN
⑤	HOT-GAS BYPASS VALVE	⑩	TEMPERATURE CONTROL



## 7.0 Component Operation

### 7.1 Control

The column products come with a custom designed control, located in on the interior ceiling of the product.

#### 7.1.1 Diagnostics

See [Figure 7-1](#). for the control board’s integral Load LED’s for diagnostic purposes. The LED’s indicate which loads are in operation.

<b>LED1:</b>	The Heartbeat LED flashes red to indicate that the fuse F1 is closed, the electronics is receiving power, and the software is running normally.
<b>LED2:</b>	When the green compressor LED is ON, it indicates that the microprocessor is calling for the relay to turn ON the compressor.
<b>LED3:</b>	When the green defrost solenoid LED is ON, it indicates that the microprocessor is calling for the defrost solenoid to turn ON.
<b>LED4:</b>	When the green condenser fan LED is ON, it indicates that the microprocessor is calling for the condenser fan to turn ON.
<b>LED5:</b>	When this green LED is ON, it indicates that the microprocessor is calling for the BLUE interior lighting to turn ON.
<b>LED6:</b>	When this green LED is ON, it indicates that the microprocessor is calling for the white interior lighting to turn ON.
<b>LED7:</b>	When the green evaporator fan LED is ON, it indicates that the microprocessor is calling for the evaporator fan to turn ON.

Table 7.1. LED Diagnostics

#### 7.1.2 Troubleshooting

To determine if the control board is operating, check for the heartbeat LED, it should be flashing. Check all wire connections to ensure they are connected without any type of damage. If not flashing, using a multimeter check for power at connector P1, if no power, trace back to determine where power is being interrupted. If power is present, but no heartbeat, integral fuse is probably open (check fuse for continuity), if open replace board. To troubleshoot individual components, check diagnostic LED’s for operation and then confirm power is available at the corresponding pins. If the correct power is not available at any of the pins, with the corresponding LED illuminated, replace the board.

<b>The red heart beat LED is not flashing</b>	Confirm that 120 VAC is being applied to the control board.
	Remove the P1 plug and measure the resistance across F1. It should be 0 ohm. Replace the control if P1 is open.

Table 7.2. LED Troubleshooting

### 7.1.3 Visible LED Descriptions

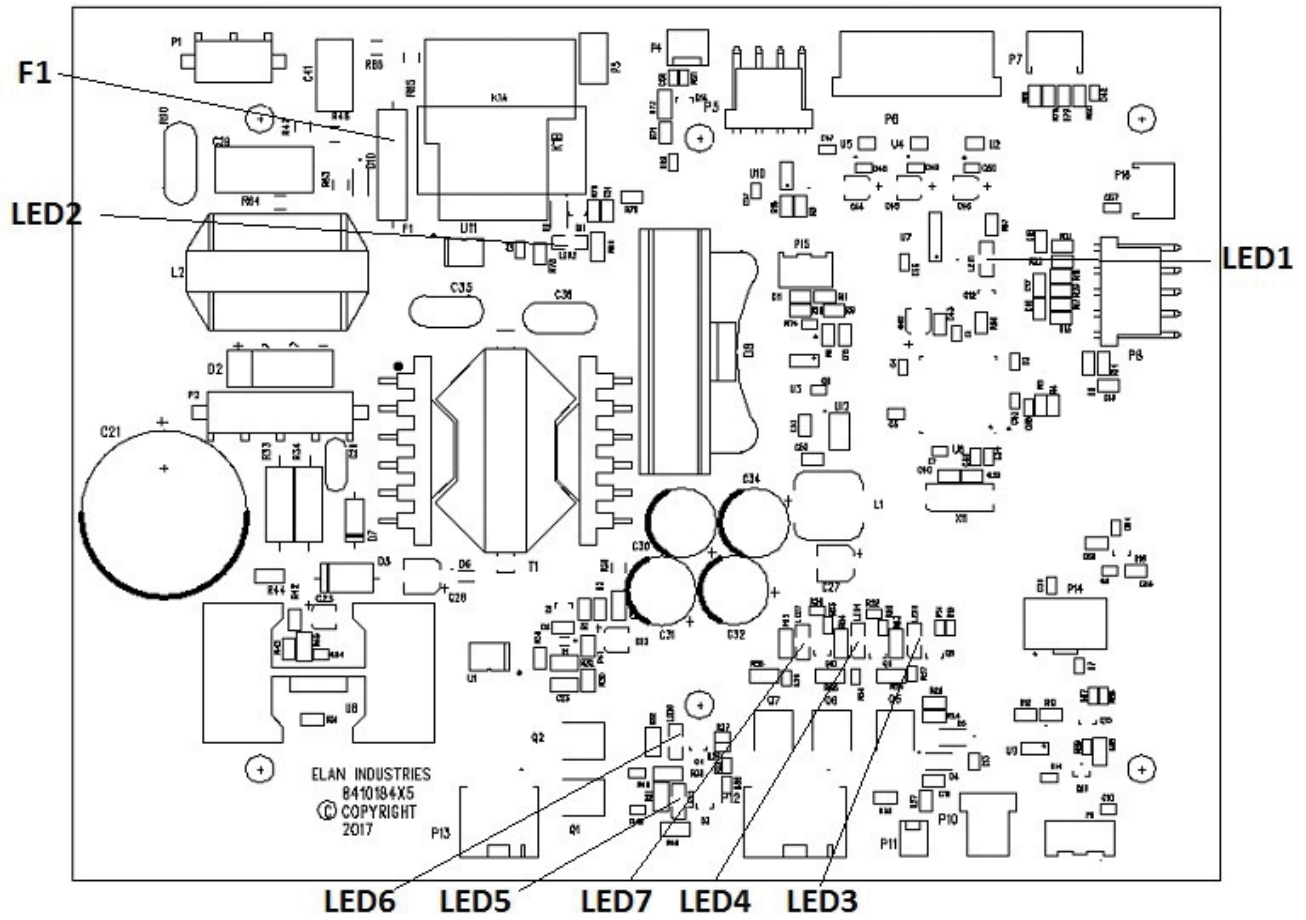


Figure 7-1. Visible LED Descriptions





### 7.1.4 Replacing

To replace the control board:

1. Remove any shelving or product that will interfere with accessing the inner ceiling of the cabinet.
2. Once the inner ceiling is accessible, lower the carbon filter housing by pulling on the front edge to release the latch and mate connector and remove the carbon filter.
3. Remove the wire channel cover in the left rear corner by removing the fasteners holding it in place.
4. Next remove the two (2) fasteners located on the rear flange of the cover, that hold the control cover panel to the ceiling. For the freezer and wine models slide the cover back a ½" to disengage the tabs that mate with the user interface bracket. For the refrigerator, pull forward on the cover to disengage the open hem flange on the front of the cover.
5. Slowly lower the cover and remove the bushing that protects the wires going through the wire access hole.
6. Remove the wires through the key slot hole and set the cover panel aside. The control board is now visible. (If desired for the freezer and wine models, the user interface can be removed). (See [Section 7.2](#)).
7. Disconnect all wire harnesses from the control board, noting connecting locations if required.
8. Remove the 4 fasteners that hold the control board to the ceiling (support the control board).
9. Replace with new control board, installing in reverse steps.
10. Ensure all electrical connections are correct and properly engaged.

## 7.2 User Interface

If user interface is not operational, check electrical connections from the control board to the user interface. Use Control Replacing (see [section 7.1.4](#).) instructions to access the control board and user interface connections. For a refrigerator, there is a third connection located at the rear of the user interface housing, to access, remove the deli bin glass lid by removing the two pivot fasteners, one on each end of the lid, then pull the two pins on the edges of the user interface housing and pull out on the housing. If connections are good, replace the user interface assembly.

### Replacing

#### Freezer and Wine

See Control Replacing instructions (see [section 7.1.4](#).) Once the control board is accessible, remove the two fasteners, one on each inner end of the user interface bracket. Slide the user interface assembly forward to release the flange on the front top. Once loose, disconnect the harness. Replace following reverse instructions.

#### Refrigerator

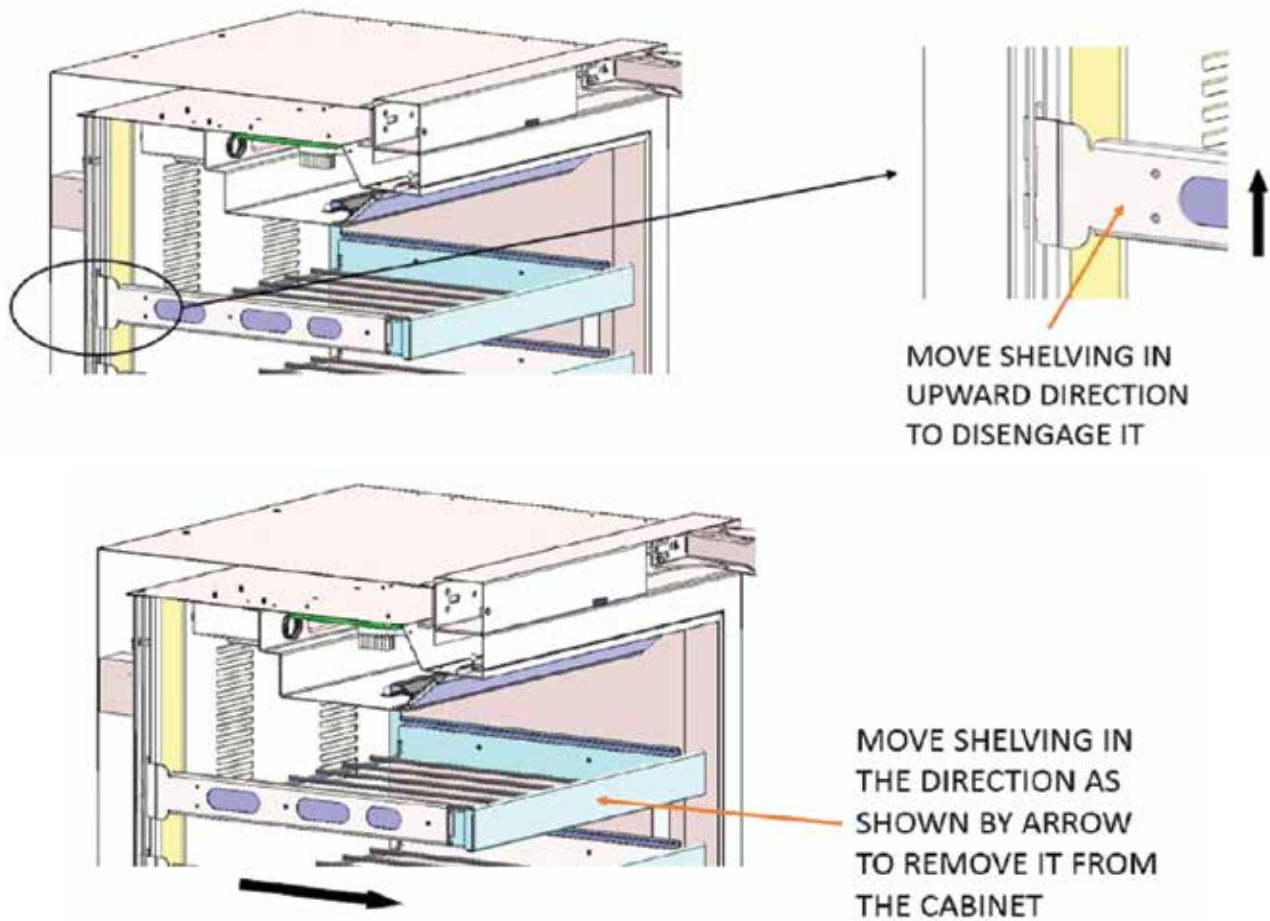
The user interface housing is the complete sheet metal housing that contains the user interface. To remove the housing, remove the deli bin glass lid by removing the two (2) pivot fasteners, one on each end. Next, pull the two retaining pins from the left and right edge of user interface housing. Finally, pull out the housing, it will slide along the rails, manage the wire harness and disconnect before pulling completely out of the rails. Early models may require removal of the left rear wall cover panel to access the third connector. To remove that panel, remove all shelving, remove the center and left pilaster and finally remove the panel. Locate the connector and disconnect. Replace with a new user interface assembly and complete user interface wire harness so the connection is at the rear of the housing.

### 7.3 Lighting Replacement

#### 7.3.1 Replace Wine Lighting

**STEP 1**

Remove all shelving.



Figures 7-2.1. Remove Wine Shelving

### 7.3.1 Replace Wine Lighting (cont.)

#### STEP 2

Using small flat screwdriver pry out light covering each led light board on cabinet side walls (Upper covers have a cut-out at the top of each opening, lower covers have cut-out at the bottom of each opening).

#### CAUTION

Be careful while removing cover, do not scratch liners.

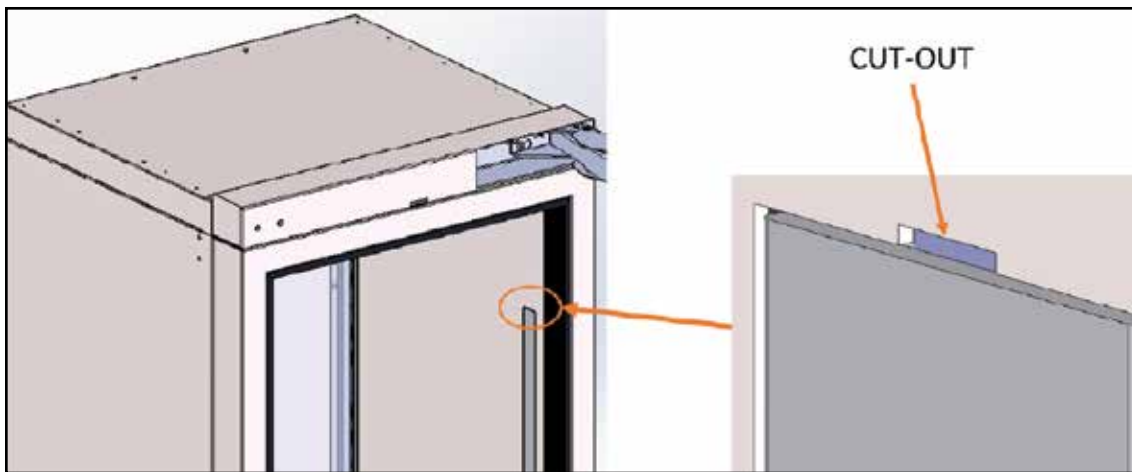
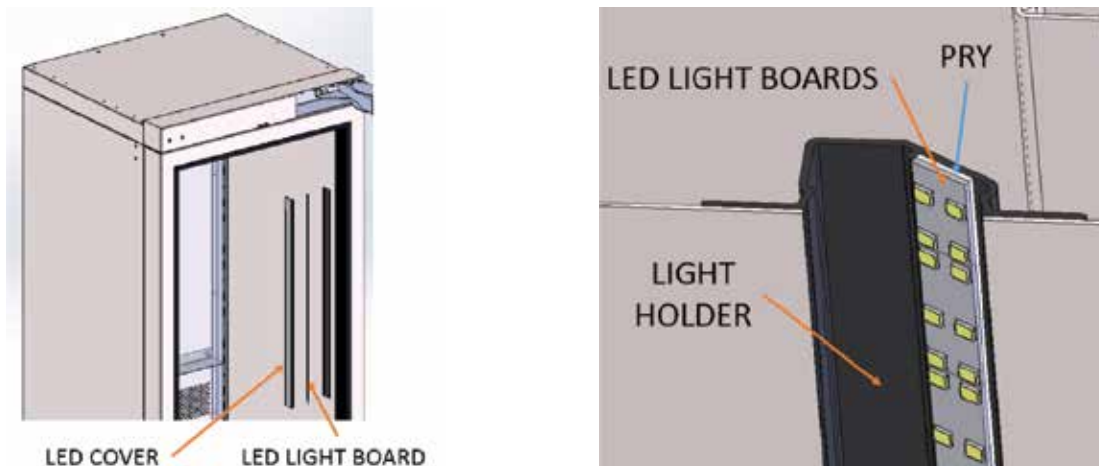


Figure 7-2.2. Pry Light Covering

#### STEP 3

Light boards are adhesive backed, so using a flat blade screwdriver, start at one end of board and pry the board of the light housing. Gradually work your way from one end to the other to remove completely.



Figures 7-2.3. Pry Light Housing Board

### 7.3.1 Replace Wine Lighting (cont.)

#### STEP 4

Disconnect board from harness using harness connector to remove (Do not pull on wires and cause damage).

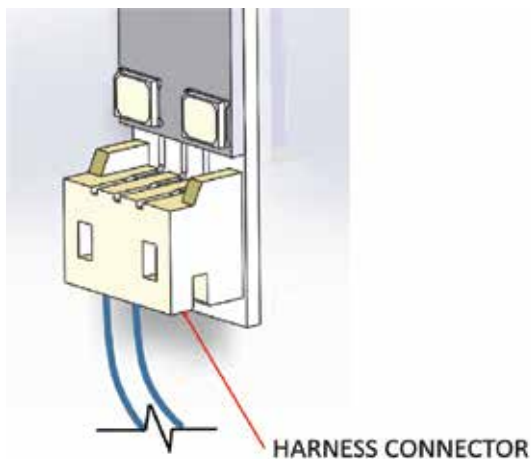


Figure 7-2.4. Disconnect Board From Harness

#### STEP 5

Replace led board with new and continue to replace all four (4).

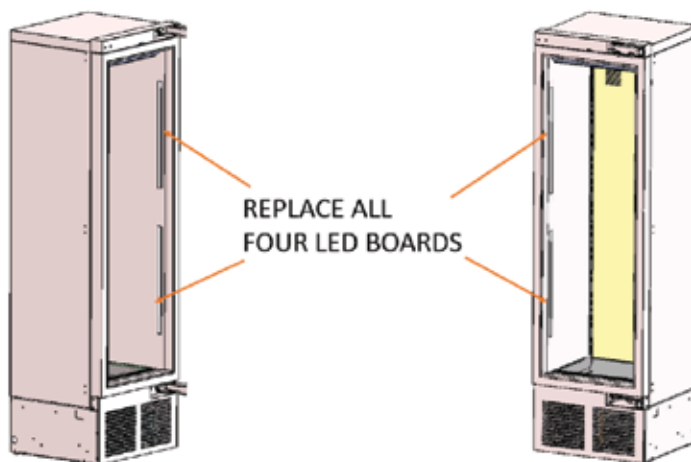
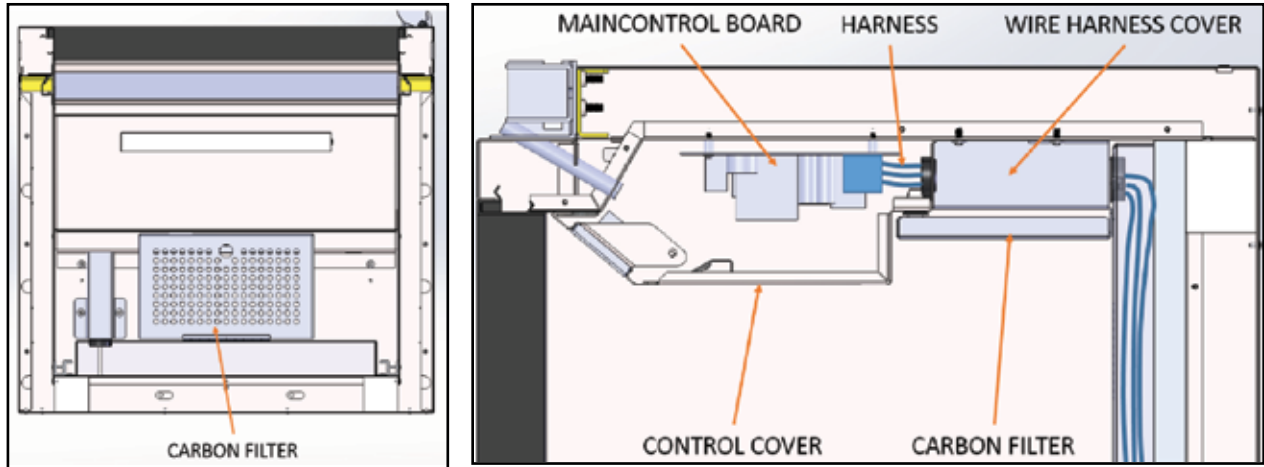


Figure 7-2.5. Remove Wine Shelving

### 7.3.1 Replace Wine Lighting (cont.)

#### STEP 6

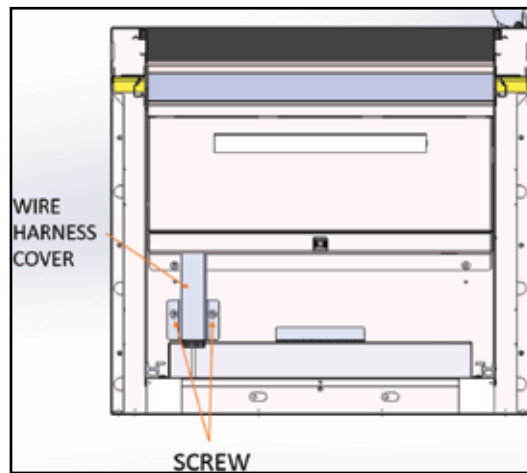
Remove carbon filter from housing at top of cabinet.



Figures 7-2.6. Remove Carbon Filter

#### STEP 7

Remove wire harness cover by removing screws that hold it in place (Top rear left of cabinet).

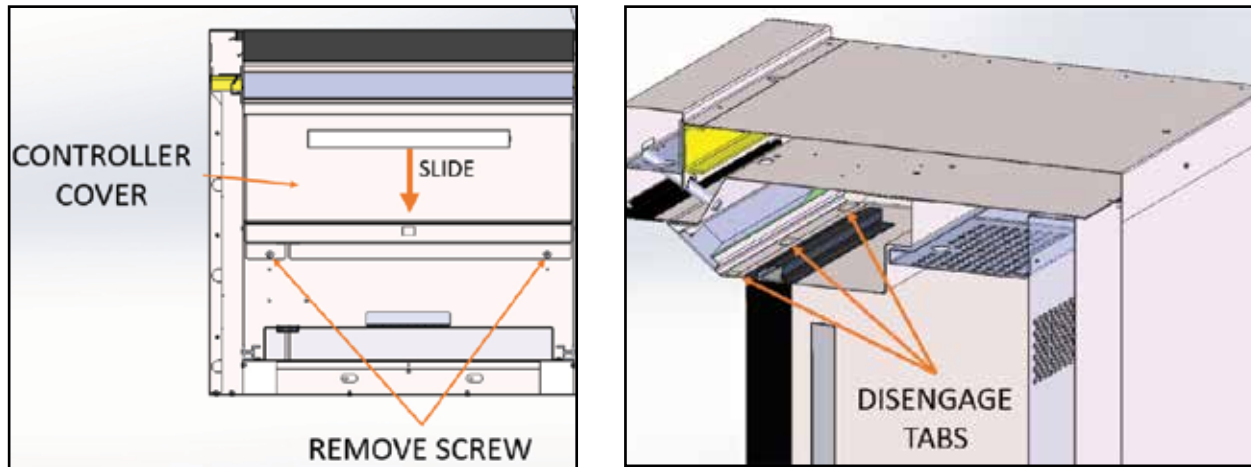


Figures 7-2.7. Remove Wire Harness Cover

### 7.3.1 Replace Wine Lighting (cont.)

#### STEP 8

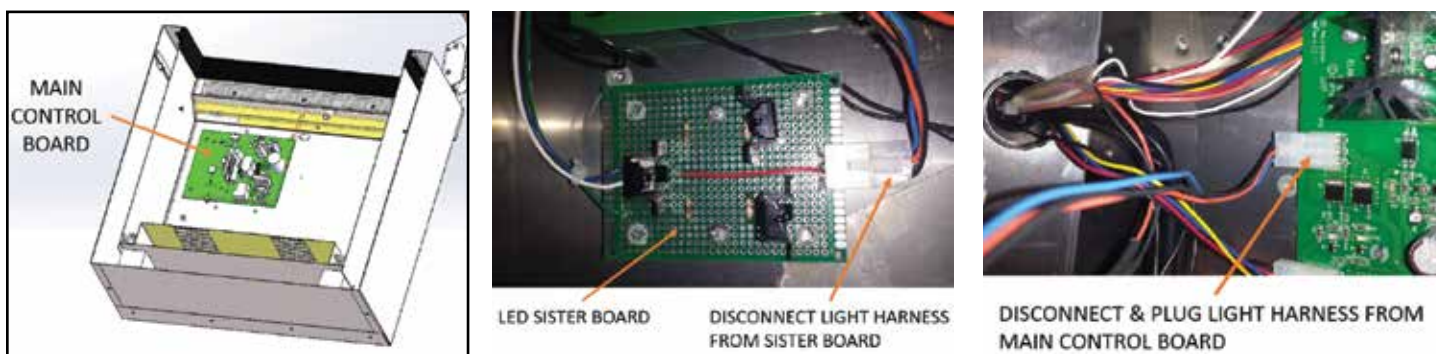
Remove controller cover by removing two screws from rear flange of cover. Slide cover towards rear of cabinet to disengage tabs on cover that mate with user interface housing.



Figures 7-2.8. Remove Controller Cover

#### STEP 9

Disconnect light harness from sister board adjacent to main control board and follow wires from sister board to main control board and disconnect and plug light harness directly into main control board (Sister board is no longer requirement with new led boards).



Figures 7-2.9. Disconnect Light Harness

### 7.3.2 Replace Freezer and Refrigerator Lighting

The freezer and refrigerator lighting can be replaced similarly to the wine instructions, however, there is no sister board for these two models. Additionally, each drawer contains a light in the ceiling divider panel.



## 7.4 Temperature Probes

Below is a table showing the type of probe used for sensing temperatures for each model. The probe is a 10K ohm NTC probe. See resistance values below.

Model	Temperature Sensor 1	Temperature Sensor 2	Temperature Sensor 3	Temperature Sensor 4	Temperature Sensor 5	Temperature Sensor 6
	NTC Thermistor	NTC Thermistor	NTC Thermistor	NTC Thermistor	Temp/Humidity Sensor	Temp/Humidity Sensor
Refrigerator	Main Compartment	Deli Drawer	Meat Drawer	Evap Temp	Produce Drawer	
Freezer	Main Compartment			Evap Temp		
Single-Zone Wine				Evap Temp	Main Compartment	
Dual-Zone Wine				Evap Temp	Lower Compartment	Upper Compartment
Associated Alarms	P1, L1, H1	P2, L2, H2	P3, L3, H3	P4, L4, H4	P5, L5, H5, R5	P6, L6, H6, R6

Table 7.3. Column Temperature/Humidity Sensors

**\*\*NOTE: Alarm will stop once the cause of the alarm is corrected.**

P1, P2, P3, P4, P5, P6 = Open/Disconnected NTC Thermistor or Temperature/Humidity Sensor

L1, L2, L3, L4, L5, L6 = Low Temperature Alarm (Sensed temperature is below X degrees F below setpoint for over 30 minutes)

H1, H2, H3, H4, H5, H6 = High Temperature Alarm (Sensed temperature is above X degrees F above setpoint for over 30 minutes)

r5, r6 = Open/Disconnected Humidity Sensor

d1 = door open alarm

**Troubleshooting** - To troubleshoot, check all connections and using a multimeter check resistance values.

Temperature (°C)	Temperature (°F)	Resistance (OHMS)
-30	-22	111300
-25	-13	86430
-20	-4	67770
-15	5	53410
-10	14	24270
-5	23	33900
0	32	27280
5	41	22050
10	50	17960

Temperature (°C)	Temperature (°F)	Resistance (OHMS)
15	59	14690
20	68	12090
25	77	10000
30	86	8313
35	95	6940
40	104	5827
45	113	4911
50	122	4160
55	131	3536

Table 7.4. Temperature - Resistance Values

### 7.4.1 Probe Locations



Figure 7-3.1. Evaporator Temperature Probe



Figure 7-3.2. Dual-Zone Wine Lower Compartment Temperature/Humidity Sensor



Figure 7-3.3. Dual-Zone Wine Upper Compartment and Single-Zone Wine Temperature/Humidity Sensor



Figure 7-3.4. Freezer and Refrigerator (Main Compartment) Temperature Probe



Figure 7-3.5. Refrigerator Deli Bin Temperature Probe



Figure 7-3.6. Refrigerator Meat/Fish Bin Temperature Probe



Figure 7-3.7. Refrigerator Tip-Out Bin Temp/Humidity Sensor



## 7.4.2 Troubleshooting

Ensure all connections are good and there is no damage to the wires. Check resistance values based on temperature, ensure that the probe is at a stabilized temperature.

For the temperature and humidity sensors used on the wine units and the tip-out bin of the refrigerator, these are electronic devices. Ensure that all connections are made. The dual zone wine reserves have two separate sensors, one for each compartment. The difference between the two is a different internal address. Ensure which sensor is being replaced as the sensors can't have the same address as this will confuse the control board and it will not know which sensor it is talking with.

## 7.5 Door Switch

The door switch is a simple reed switch, located at the top of the cabinet. The actuation magnet should be located in the cutout on the door top trim cover. Of the two mounting locations for the magnet, it should always be located at the mounting location furthest from the hinge. See *figure 7-4*.



*Figure 7-4. Door Magnet (Reed Switch)*

### 7.5.1 Troubleshooting

Using a multimeter, check continuity of the reed switch and ensure it opens and closes through proximity of the magnet.

## 8.0 Doors, Drawers, Shelving and Misc.

### 8.1 Overlay Panel Installation and Adjustments

Typical panel dimensions are based on 84" (2134mm) finished height with 1/8" (3mm) reveals. Template must be adjusted for panels exceeding typical dimensions.

1. Place panel face down on a protected work surface.
2. Attach six clips to the back of overlay in locations indicated in wood overlay drawing below.
3. Use provided #10 x 1/2" screws to attach clips to overlay.
4. Overlay then slides onto door face.
5. Attach overlay to door adjustment brackets using remaining #10 x 1/2" screws.
6. Once mounted, adjust overlay to match adjacent cabinetry.
7. Close the door to make adjustments to align panels and reveals.
8. For up and down adjustments, turn the height adjustment screws in the top bracket (see **Top of Door illustration**, Figure 8-2, on page 75) in and out.
9. Adjust the screws as needed to achieve an even reveal on each side of the door overlay.
10. Once final adjustments are made to the position of the door overlay, secure the overlay in place by installing the bottom overlay brackets. See Figure 8-1.

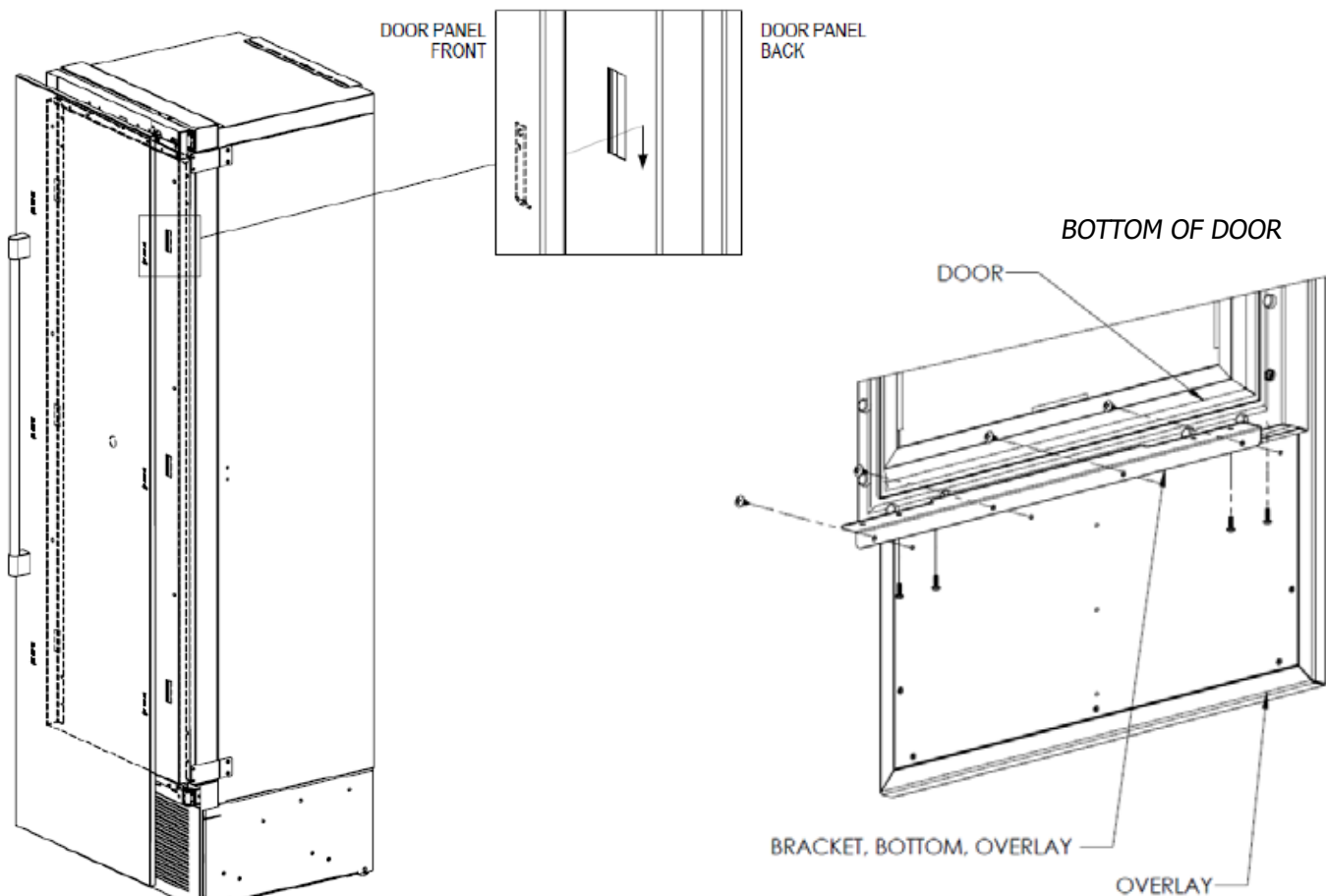
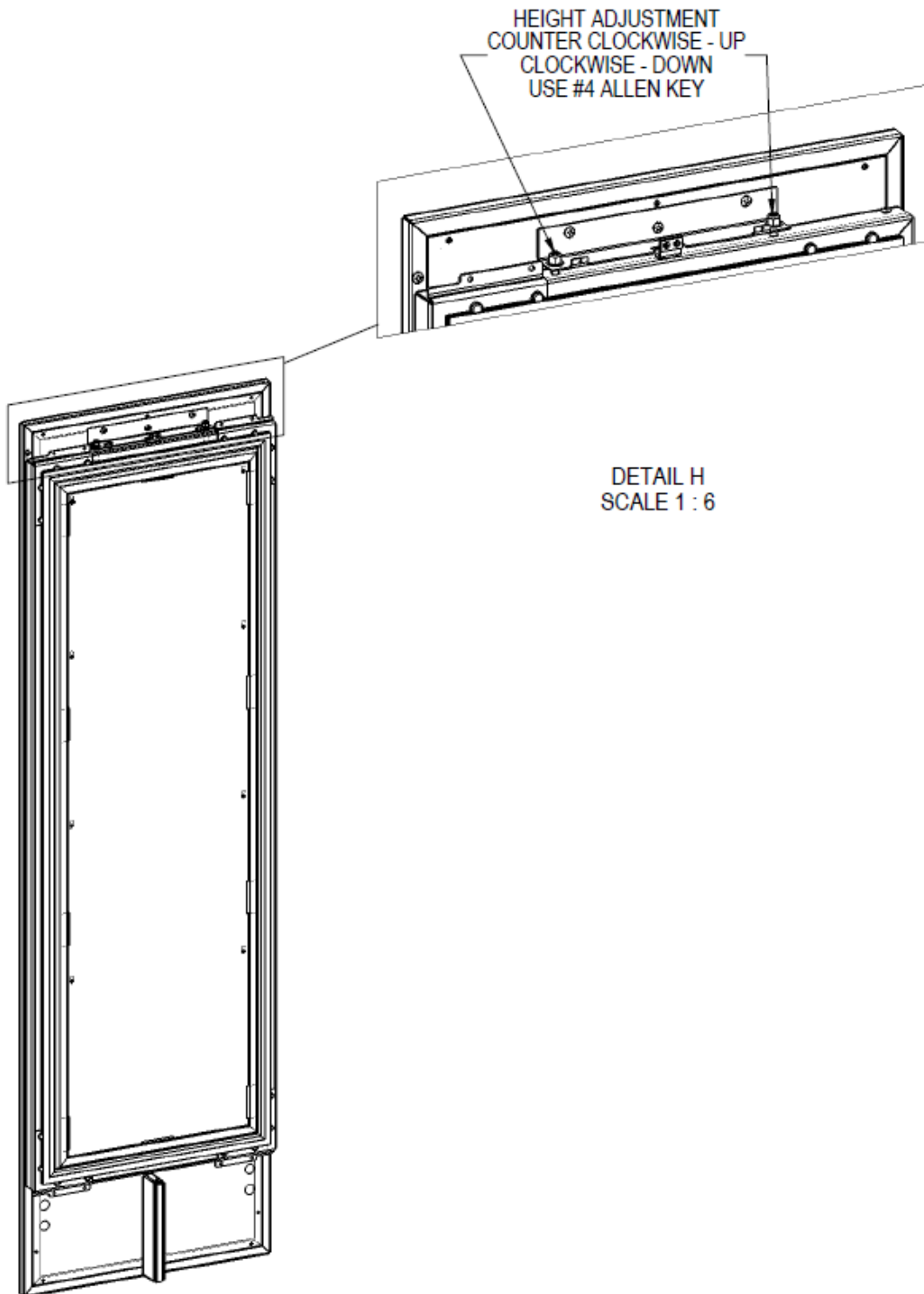


Figure 8-1. Overlay Panel Installation

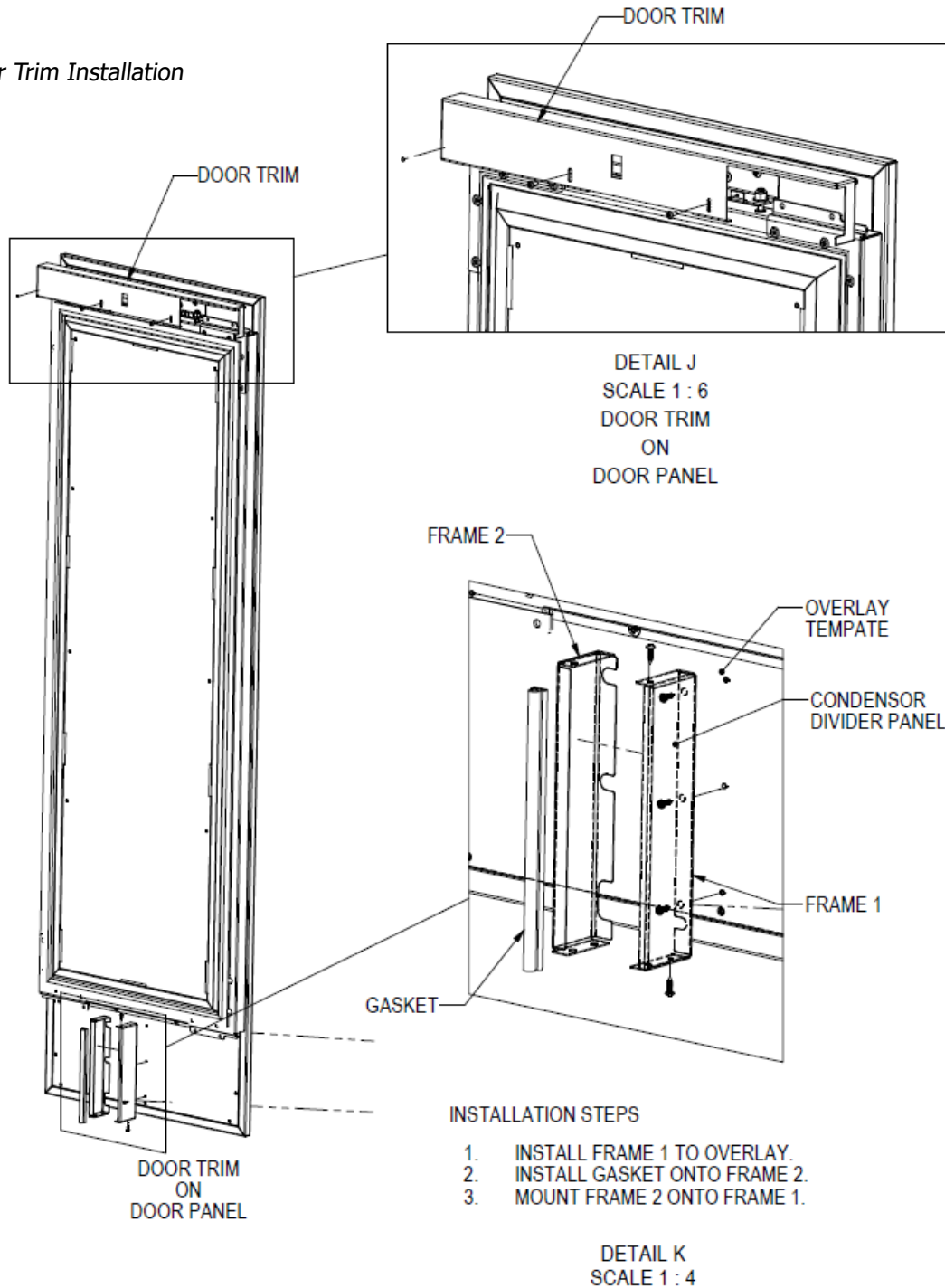
## 8.2 Top Of Door Illustration



### 8.3 Door Trim Installation

Once overlay is adjusted, mount the door trim bracket onto the door adjustment bracket using the provided screws.

Figure 8-3. Door Trim Installation



## 8.4 Grill Installation

Install the grill by snapping into latch catches.

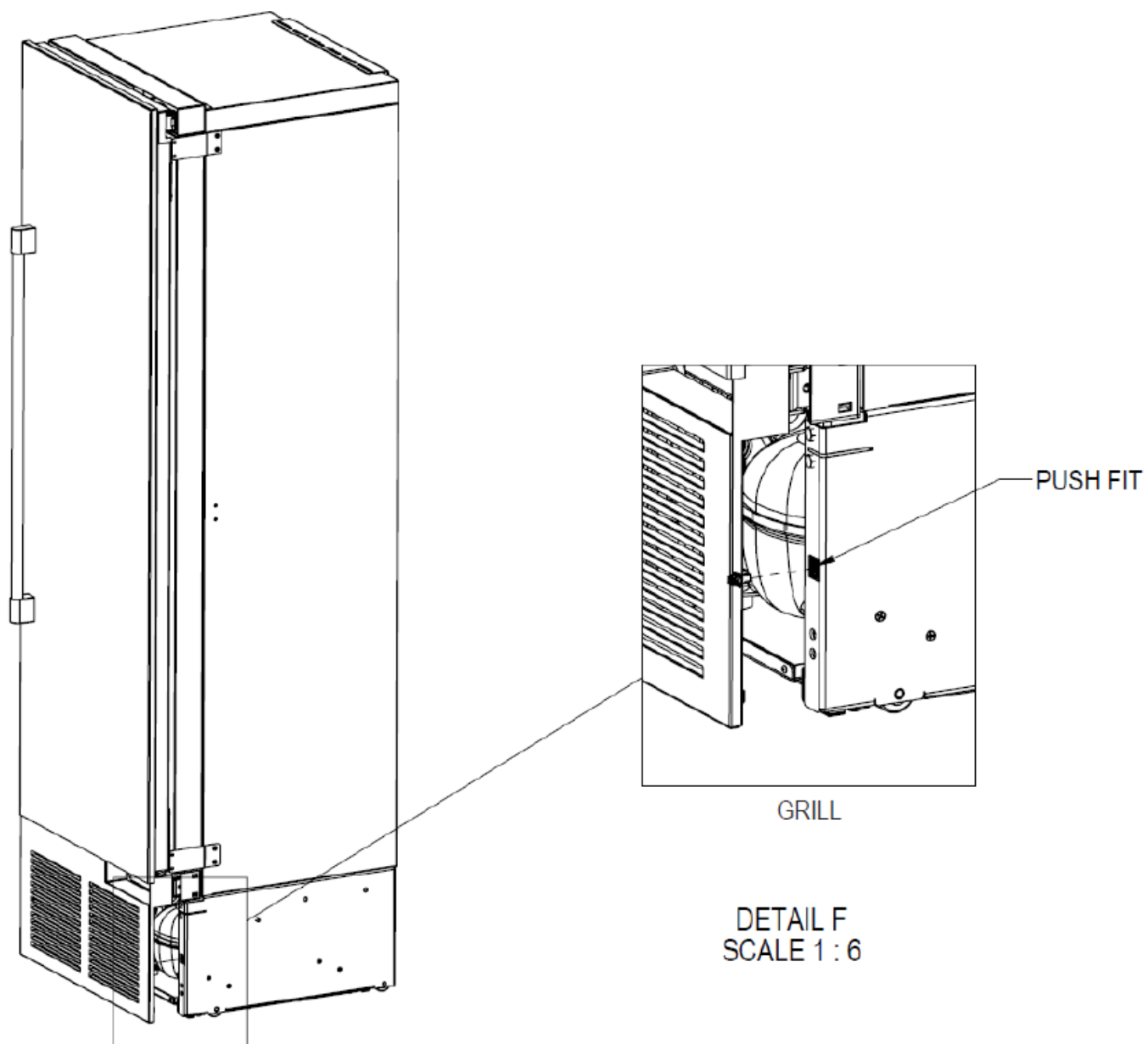


Figure 8-4. Grill Installation

### 8.5 Toe Kick Clearance

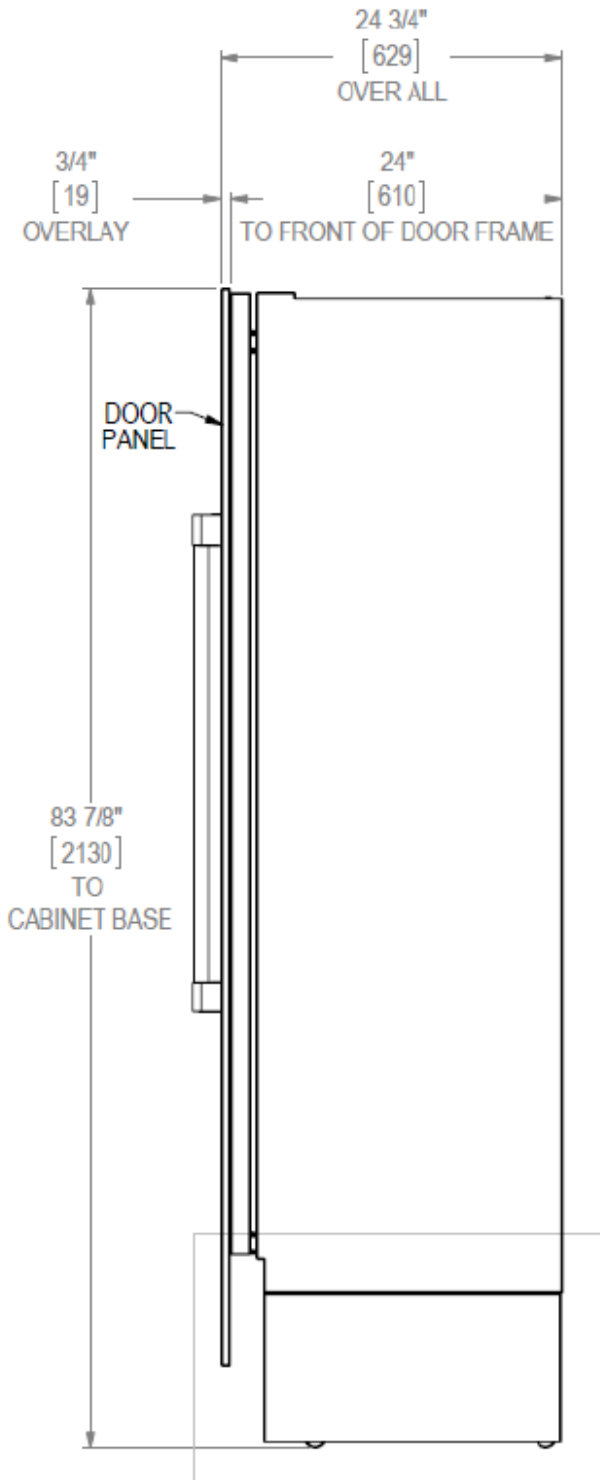
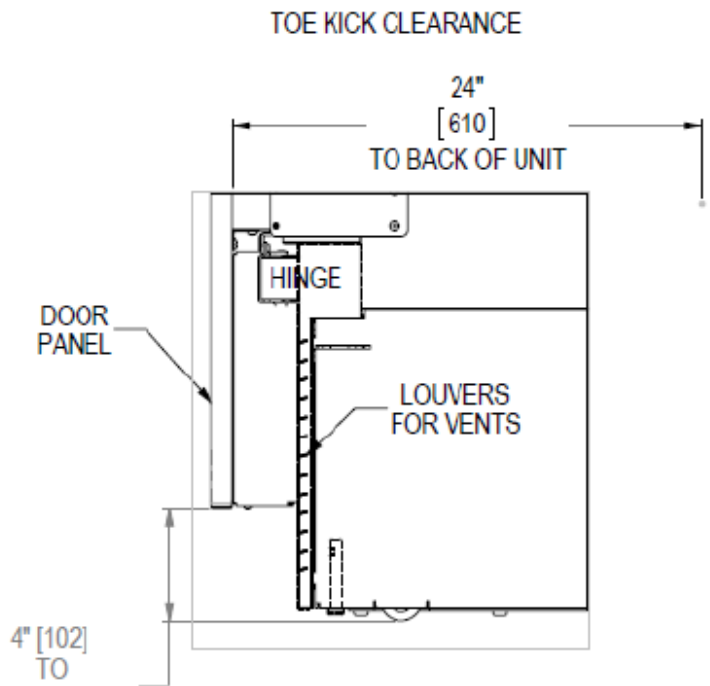


Figure 8-5. Toe Kick Clearance



## 8.6 Installing Filters

### 8.6.1 Carbon Air Filters

Carbon air filters should be placed in the holder in the perforated panel located in the top-rear of the cabinet (A).

**NOTE:** When installing carbon air filter in wine units, the top rack will need to be removed to access the perforated panel.

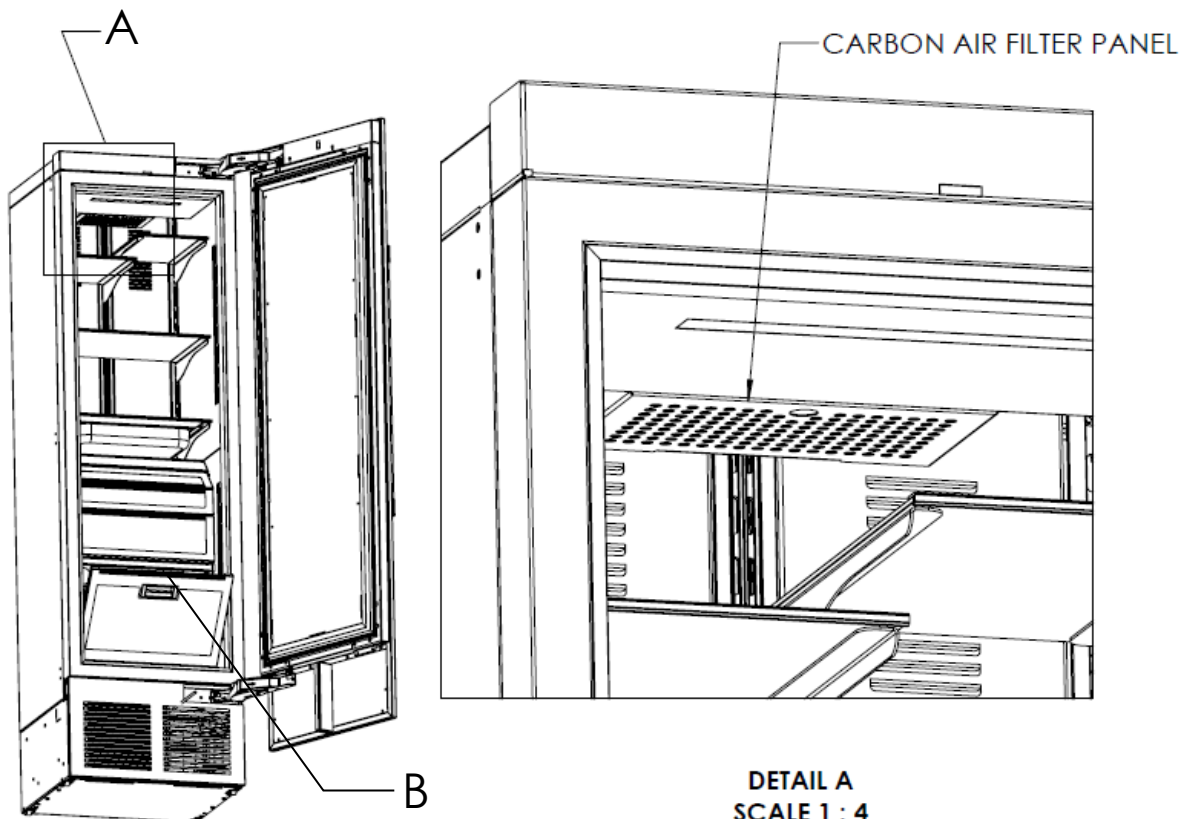
1. Remove the filter from the plastic bag before installing into the unit. Take care not to open or puncture the tyvek bag in the casing.
2. Pull firmly to lower the carbon air filter panel.
3. Place the carbon air filter into the holder directly onto the panel and close panel - push firmly to engage closure clips.
4. It is recommended to replace the carbon air filter every 3-6 months.

### 8.6.2 Ethylene Air Filters

Ethylene filters should be placed in the holder in top of the tip-out produce bin (B).

1. Remove the filter from the plastic bag before installing into the unit. Take care not to open or puncture the tyvek bag in the casing.
2. Open the tip-out bin to access filter housing located on the top of the bin.
3. Slide filter into housing and close tip-out bin.
4. It is recommended to replace the ethylene filter every 3 months.

Figure 8-6. Air Filter Installation



## 8.7 Activation/Deactivation of Hinges

### **⚠ CAUTION**

Pinch hazard! Always de-activate hinges before removing from door and cabinet.

To activate the self-closing feature of the hinge follow these steps:

- 1) Open the door to expose the T-20 torx fastener in the obround hole in the hinge labeled position zero (0) and one (1).

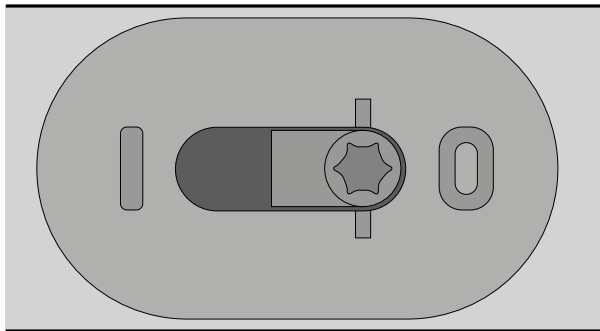


Figure 8-7.1. Hinge activation fastener (shown in de-activated position).

- 2) Using a T-20 torx drive, turn the fastener approximately 9 to 9-1/2 turns from the zero (0) position to the one (1) position. Do not over-tighten (2Nm torque max).

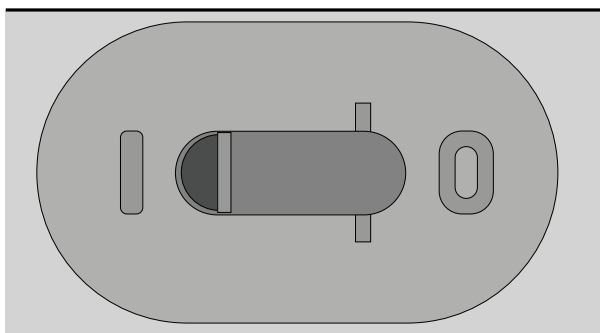


Figure 8-7.2. Hinge activation fastener (T-20) (shown fully activated).

To de-activate the hinges move the T-20 torx fastener from position one (1) to position zero (0) by turning the fastener 9 to 9-1/2 turns (see figures 8-7.1 and 8-7.2 for activated and deactivated positions).



## 8.8 Replace Door Gasket

### STEP 1

Door and drawer gaskets can be replaced without removing the door or drawer from the cabinet. Open the door or drawer.

### STEP 2

Remove gasket by lifting at one corner and pulling gasket away from door/drawer. Work around door/drawer until gasket is free.

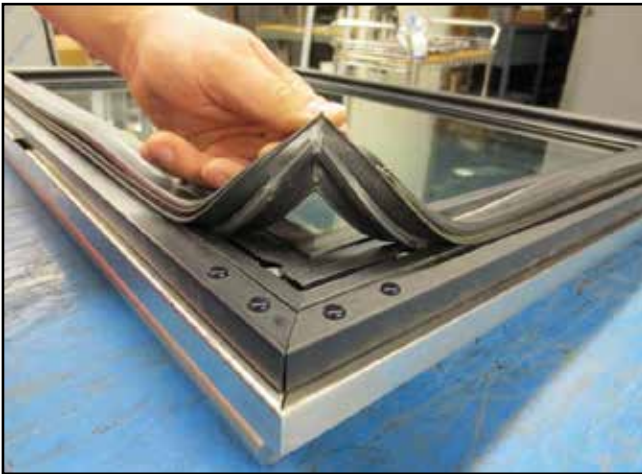


Figure 8-8. Removing gasket.

### STEP 3

To replace, start at one corner and press firmly to seat the gasket dart in the channel of the door/drawer frame. Feel for a click to indicate the dart is completely seated. Install all corners first and then work your way around the perimeter of the door/drawer to seat the gasket into its track.

### STEP 4

Finish by going around the gasket once more to feel for any gaps and to ensure the gasket is flat and fully seated.

## 8.9 Replace Door

### STEP 1

Deactivate Hinges (see [Section 8.7.](#))

### STEP 2

Remove Door Trim Cover and condenser air flow divider from Overlay (see [Section 8.1.](#))

### STEP 3

Remove Overlay Panel (see [Section 8.1.](#))

### STEP 4

Remove the fasteners holding the door to the hinges.

Follow reverse instructions to install the new door.

## 8.10 Replace Door Handle

To replace the door handle:

1. Remove the door trim cover at the top of the door by removing the two fasteners.  
See figure 8-9.

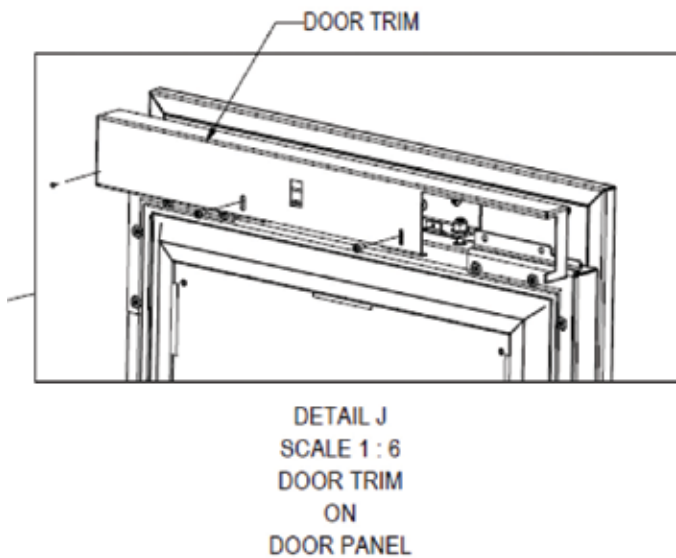


Figure 8-9. Removing door trim cover.

2. Remove the overlay from the door (see **Overlay Panel Installation and Adjustments** - [Section 8.1.](#)).
3. Remove the four (4) fasteners holding the handle to the overlay (never over-tighten the handle mounting fasteners as this could deform the overlay panel).



### 8.11 Lock Installation and Troubleshooting

To gain access to the lock, remove the door trim cover from the top of the door. See Figure 8-10.

### Lock Troubleshooting

Problem	Cause
Lock rotates but doesn't engage latch	Lock misassembled and has cam in incorrect orientation
	Cam is missing
	Misalignment of cam and catch
Lock catch interferes with door	Catch is bent
	Door is out of alignment
Key will not disengage from lock	Lock is not installed properly in the door
	Key is over-rotated

Table 8.1. Lock Troubleshooting

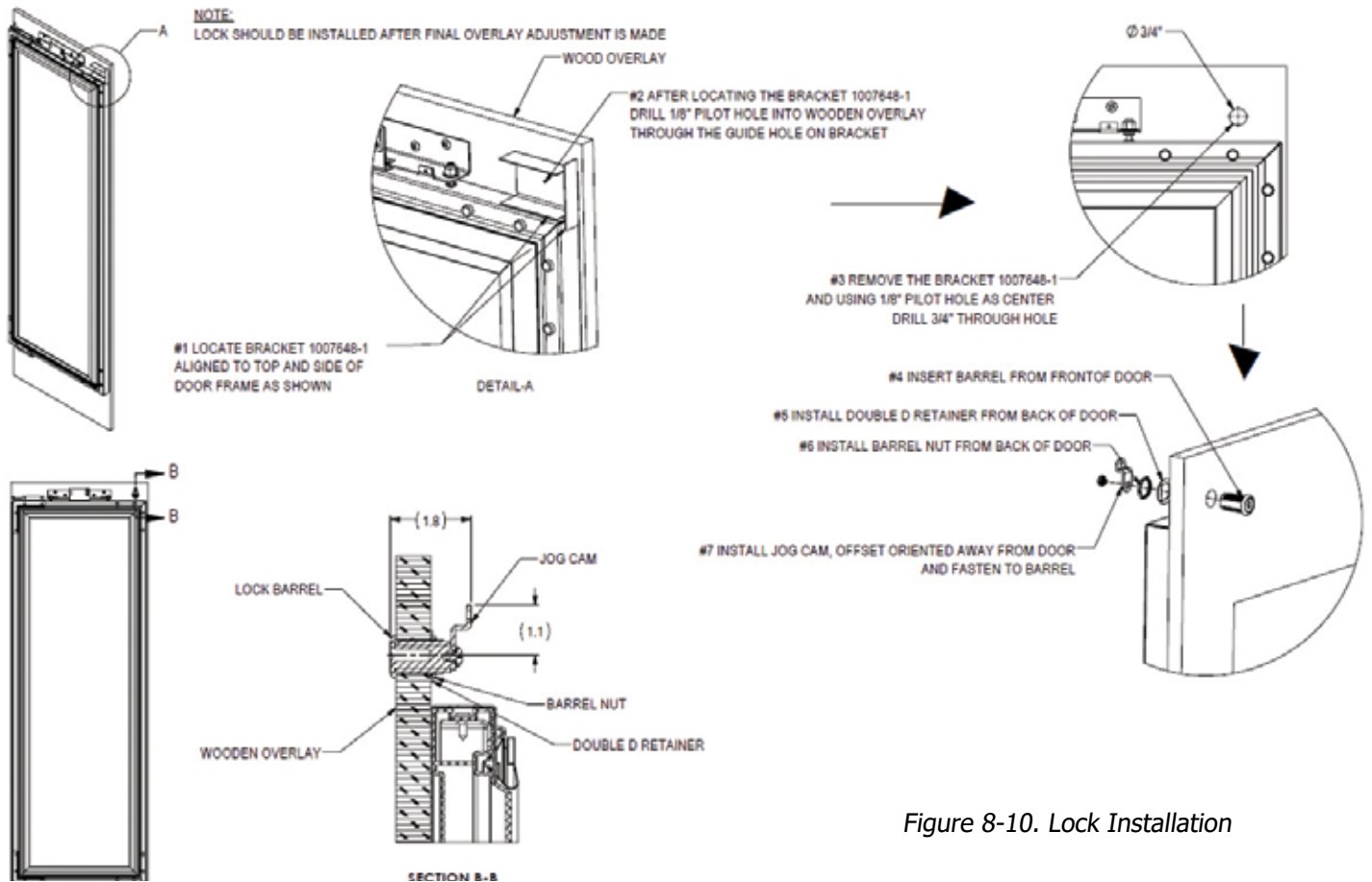


Figure 8-10. Lock Installation



## 8.12 Custom Overlay Door Panels

Perlick columns come ready to accept customer-supplied door panel and handle hardware. The thickness of the custom panel can vary. A minimum 5/8" (16mm) thick panel is required, but the thickness can be increased provided it does not exceed the maximum panel weight is 65 lbs (29kg). Please note that the combined door and overlay weight cannot exceed 242 lbs (110kg). The depth of each model is 24" (610mm) without a finished overlay. Allow for panel thickness when planning the finished opening depth. Templates for 4" and 6" solid and glass door models can be found on pages 85-88.

Reveals between panels can vary – 1/8" (3mm) is the minimum.

### **⚠ CAUTION**

When installing a panel thicker than 3/4" (19mm), the 90° stop may be required to prevent damage to the unit and adjacent cabinetry.

### **⚠ CAUTION**

As reveals between cabinetry and the unit decrease, severe finger pinching can occur while the door is closing.

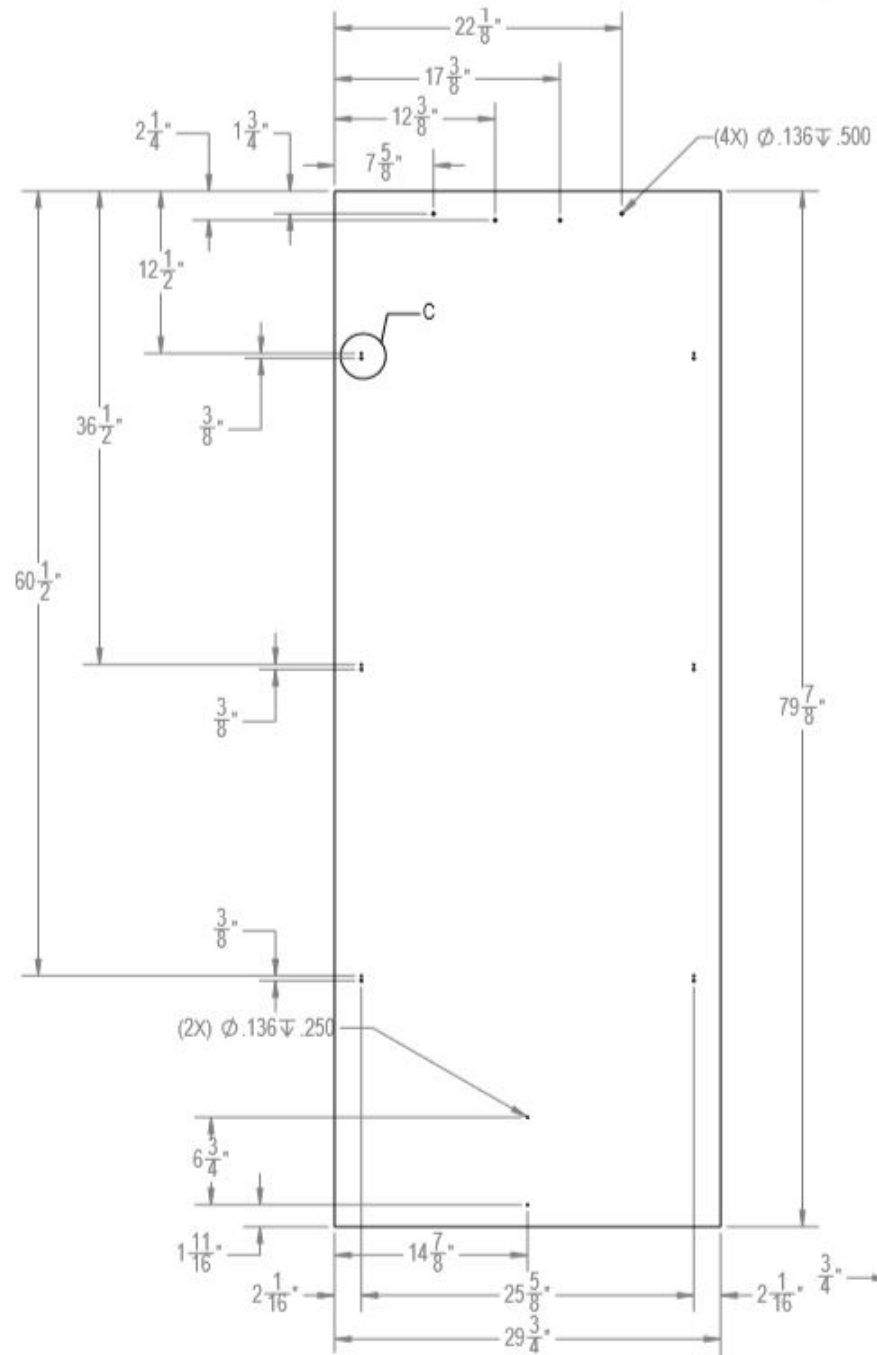
Finish sides of surrounding cabinetry — they will be visible when the door is open. The height of the custom door panel can extend beyond the typical panel height provided the door and overlay combined do not exceed 242 lbs (110kg) .

See [Section 8.12.5](#). for screw zone for overlay panels. Hatch areas should provide enough thickness for wood screw and overlay attachment brackets.



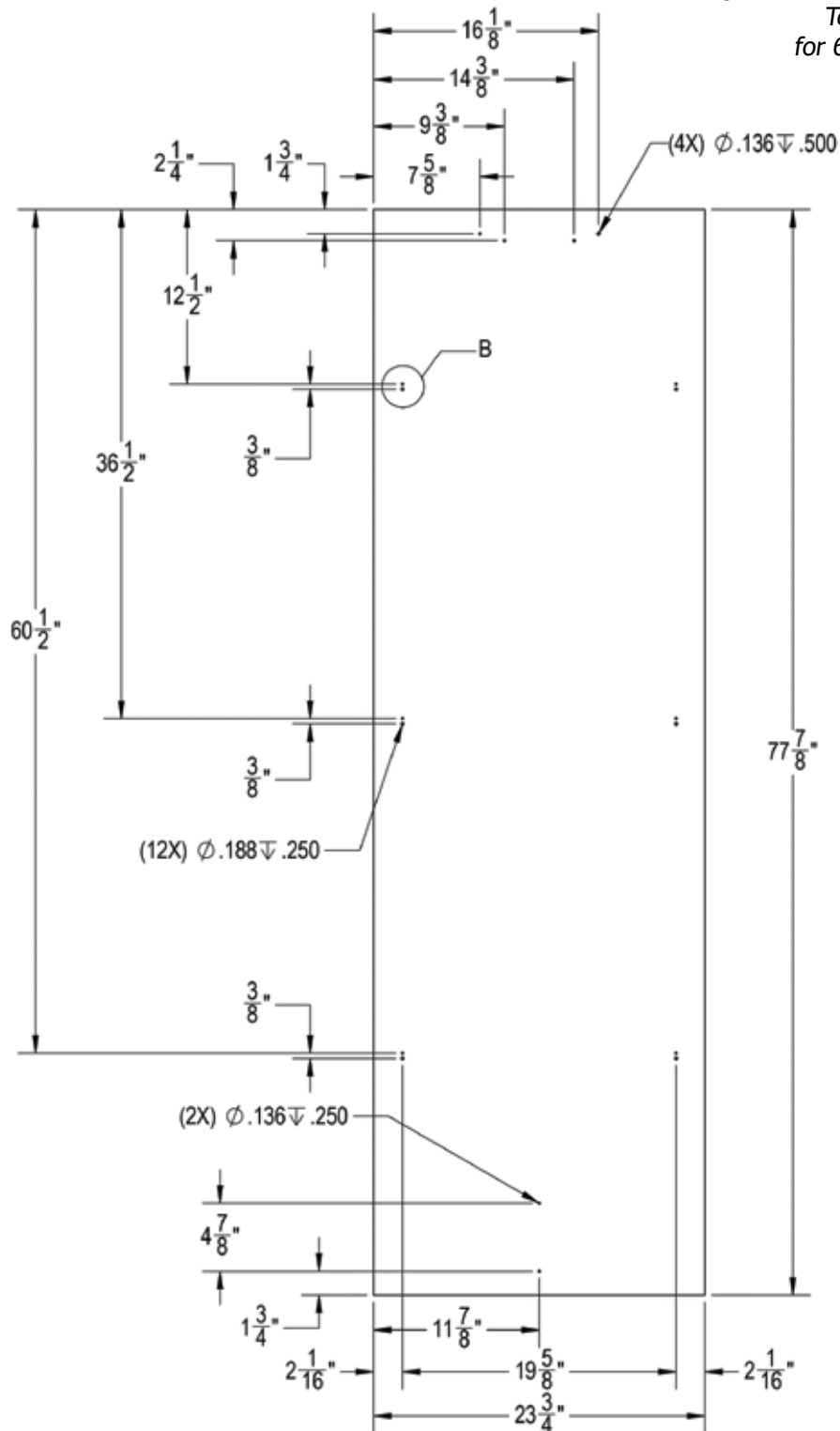
### 8.12.2 CR30 Solid Door Template For 4" Toe Kick

Figure 8-11.2. CR30R Solid Door Template for 4" Toe Kick



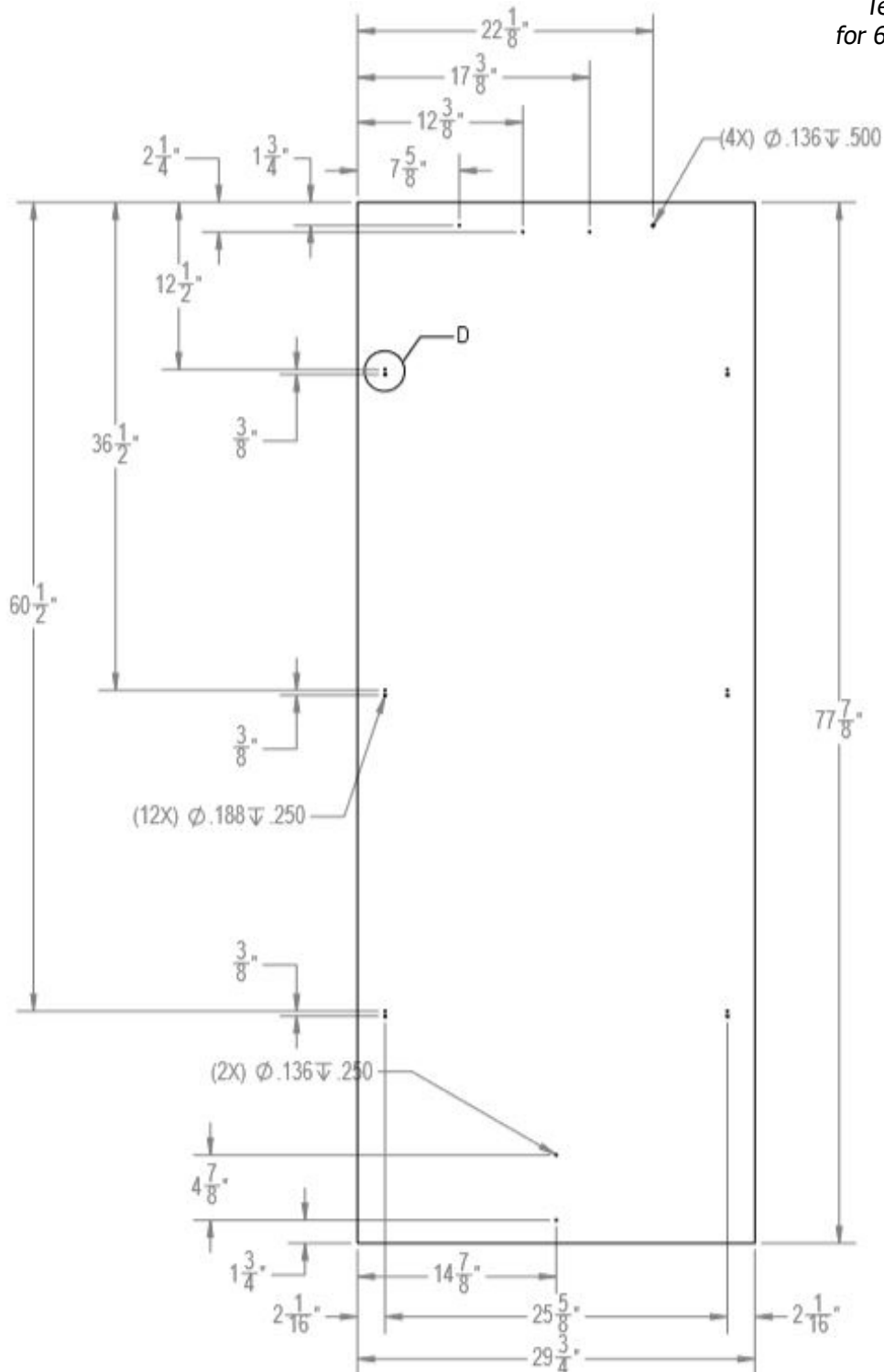
### 8.12.3 CR24 Solid Door Template For 6" Toe Kick

Figure 8-11.3. CR24 Solid Door Template  
Template  
for 6" Toe Kick



### 8.12.4 CR30 Solid Door Template For 6" Toe Kick

Figure 8-11.4. CR30 Solid Door Template for 6" Toe Kick





### 8.12.5 CR24 Glass Door Template For 4" Toe Kick

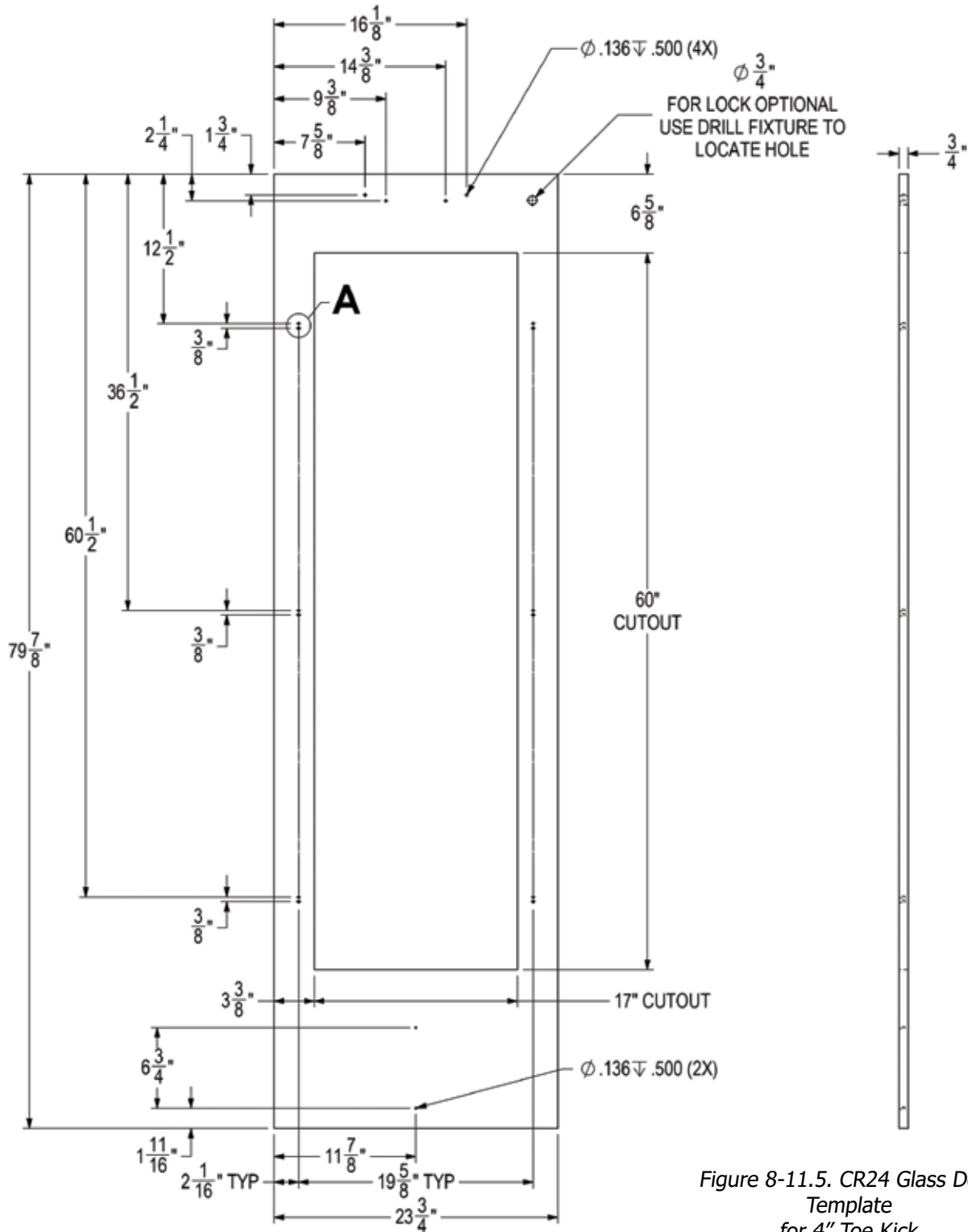
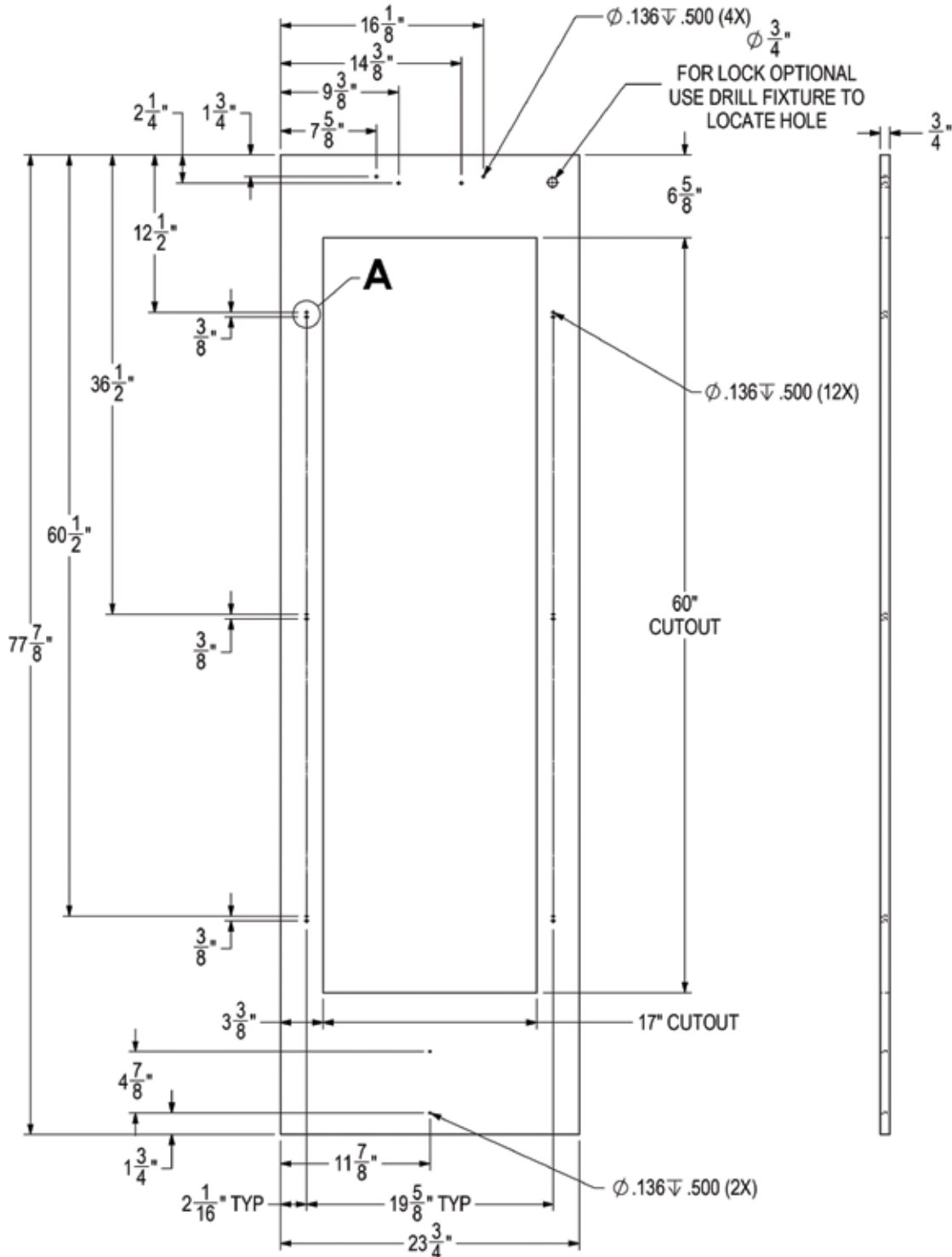


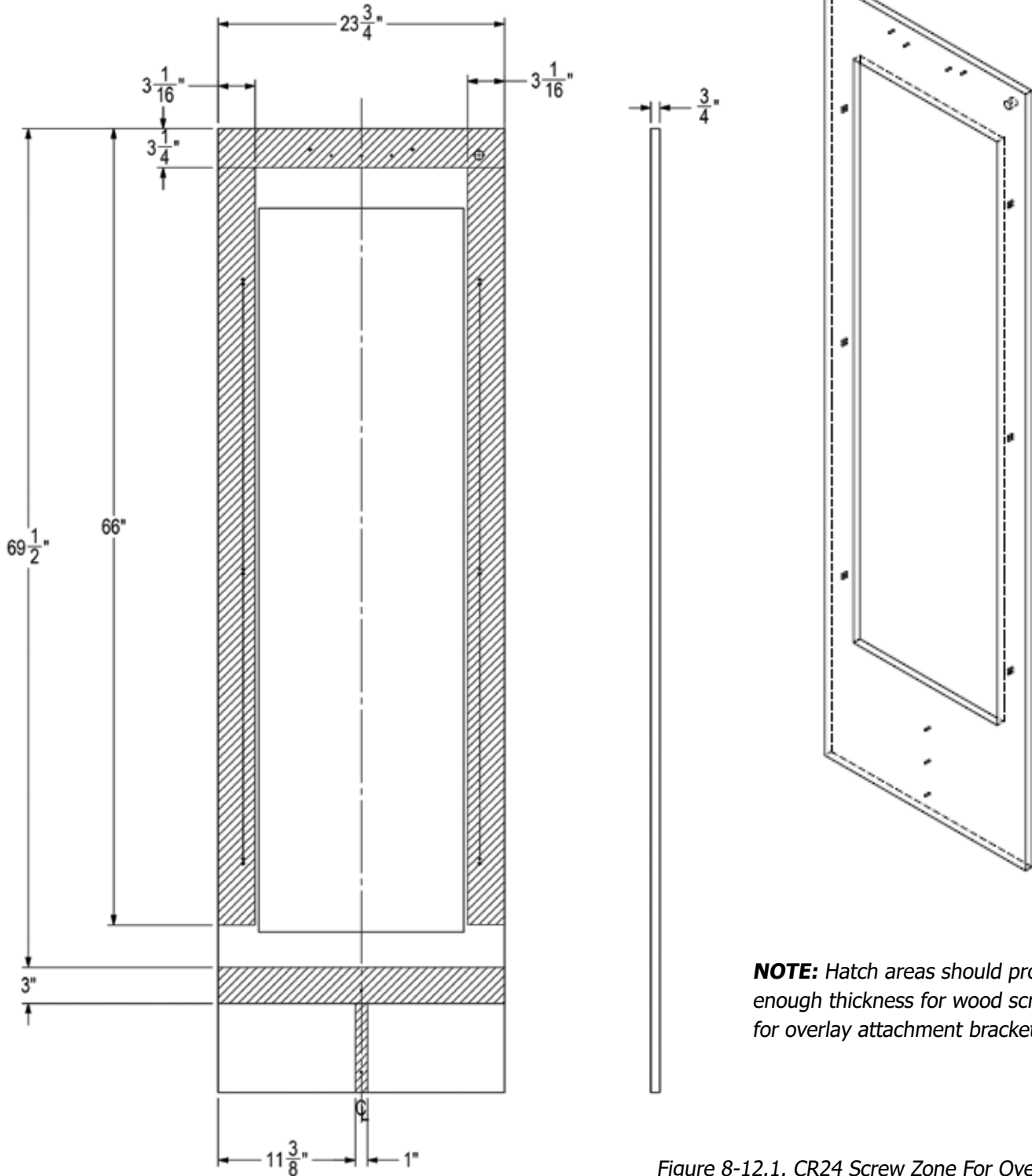
Figure 8-11.5. CR24 Glass Door Template for 4" Toe Kick

**8.12.6 CR24 Glass Door Template For 6" Toe Kick**

Figure 8-11.6. CR24 Glass Door Template for 6" Toe Kick



### 8.12.7 CR24 Screw Zone For Overlay Templates



**NOTE:** Hatch areas should provide enough thickness for wood screws for overlay attachment bracket.

Figure 8-12.1. CR24 Screw Zone For Overlay Templates

### 8.12.8 CR30 Screw Zone For Overlay Templates

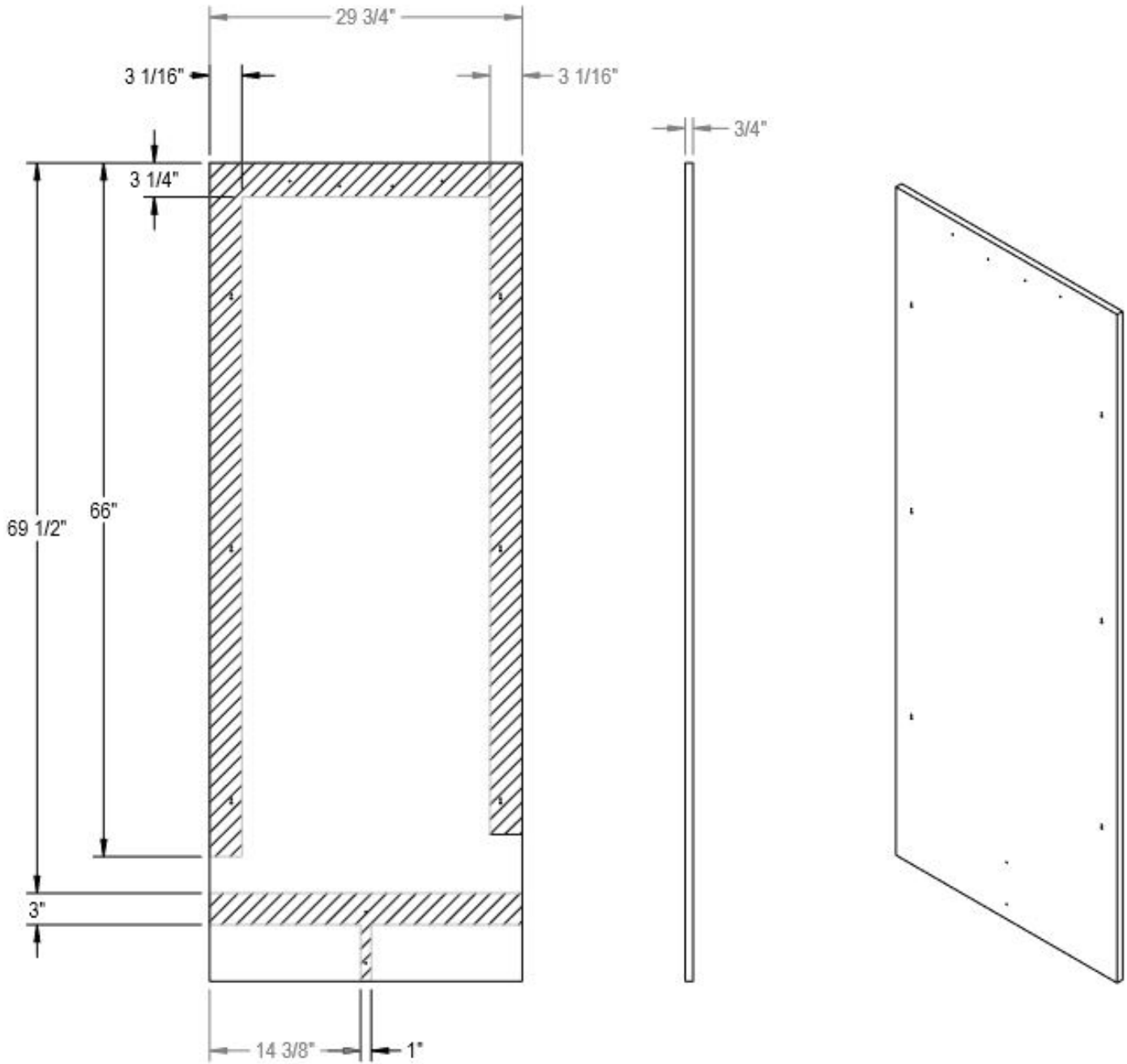


Figure 8-12.2. CR30 Screw Zone For Overlay Templates

### 8.13 Tip-Out Bins

#### Removal - Slide Tip-Out Bin

To remove tip-out bin, tip bin out, pull out and rotate down on spring steel stop bracket to disengage stop. When stop is disengaged, bin will tip-out further. Once the slides are fully extended, remove the slide from the key hole slot on each side of the bin. Lift up and pull the bin towards you to disengage the pivot blocks from the pivot fastener. See figures 8-13.1 through 8-13.4.

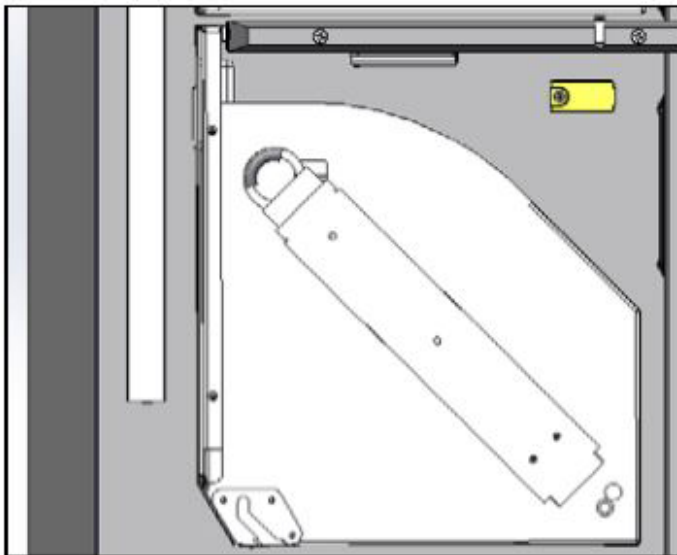


Figure 8-13.1

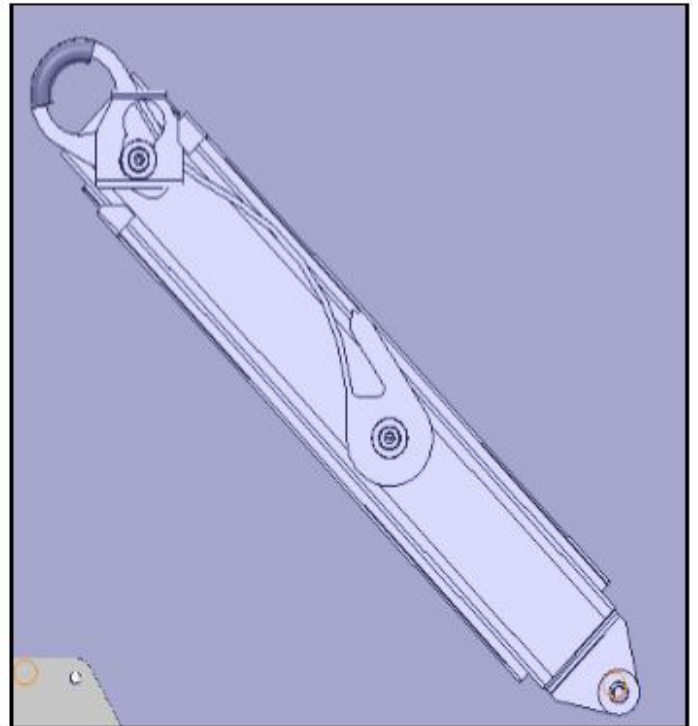


Figure 8-13.2

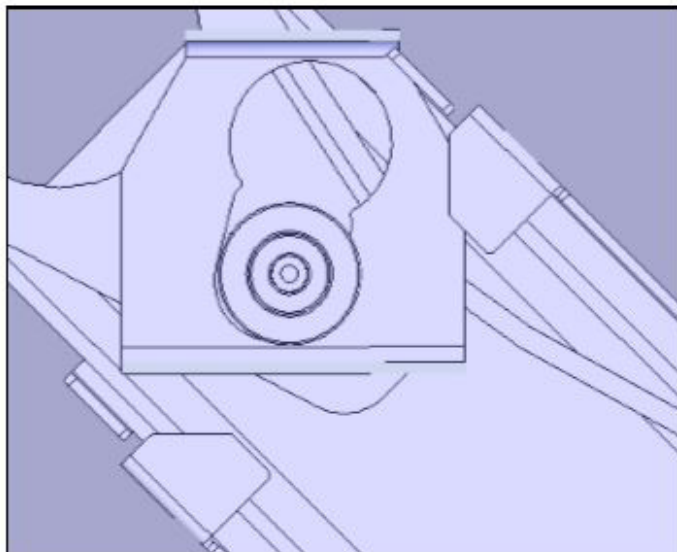


Figure 8-13.3

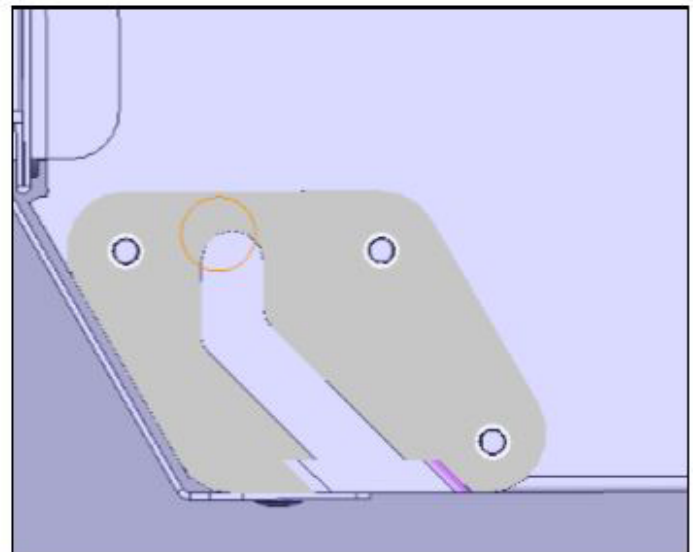
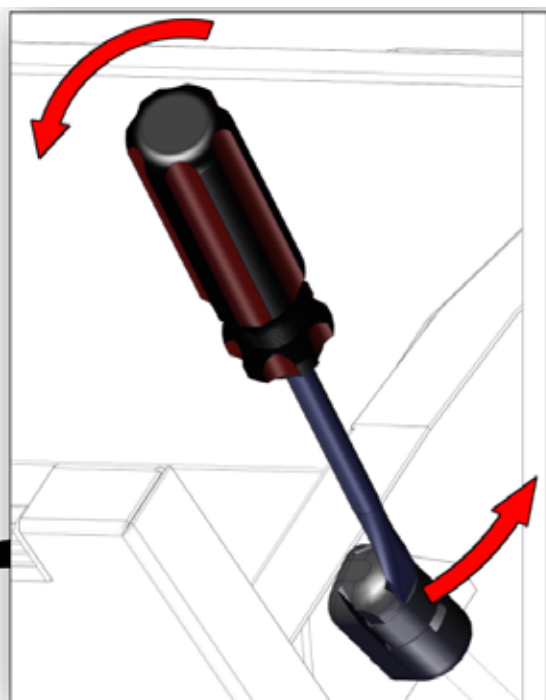
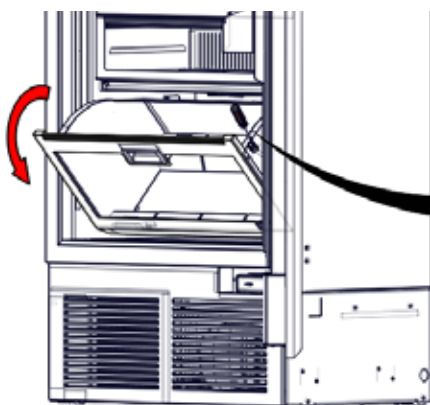


Figure 8-13.4

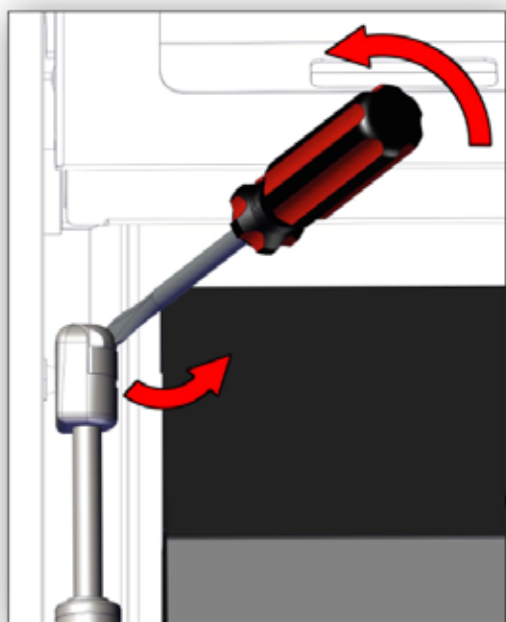
## Removal - Damper Tip-Out Bin

### Operation #1

1. Remove all contents from the tip-out bin, including glass divider and bottom panel.
2. Open tip-out bin until the right side damper end is showing.
3. While supporting the tip-out bin, locate the damper end fitting on the right side. Using a flat head screwdriver, release the end fitting on the damper, by placing the flat head screwdriver into the release latch and prying inward to disengage the end fitting from the bin fitting.



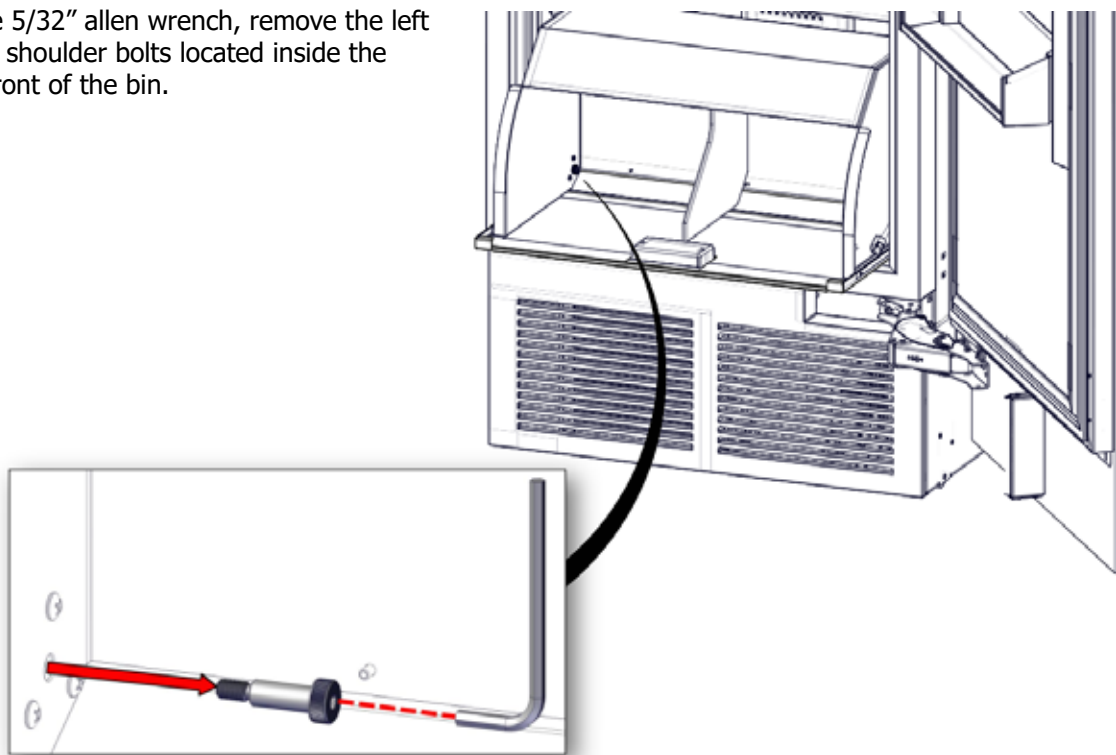
### Operation #2



1. Rotate the bin all the way down, so it is resting on the bottom of the cabinet fully open.
2. Locate the end fitting on the gas spring on the left side of the bin and using the flat head screwdriver, release the end fitting by placing the flat head screwdriver into the release latch and prying outward to disengage the end fitting from the cabinet wall fitting.

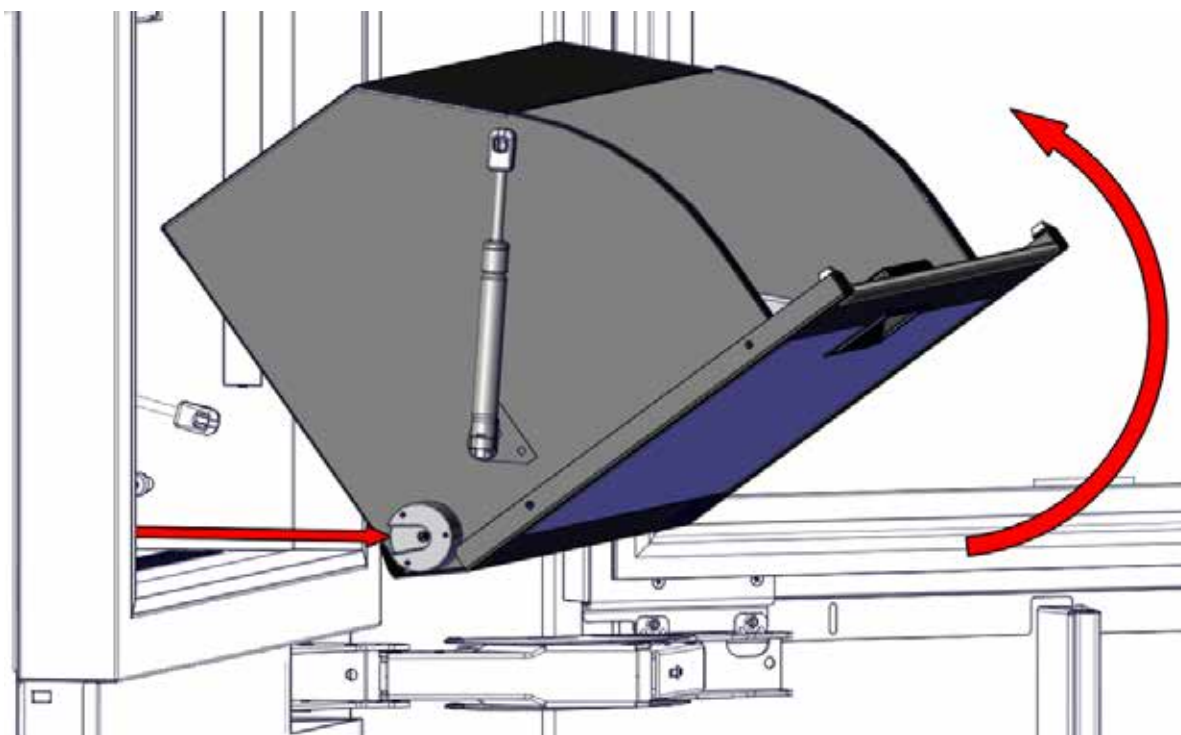
### Operation #3

1. Using the 5/32" allen wrench, remove the left and right shoulder bolts located inside the bottom front of the bin.



### Operation #4

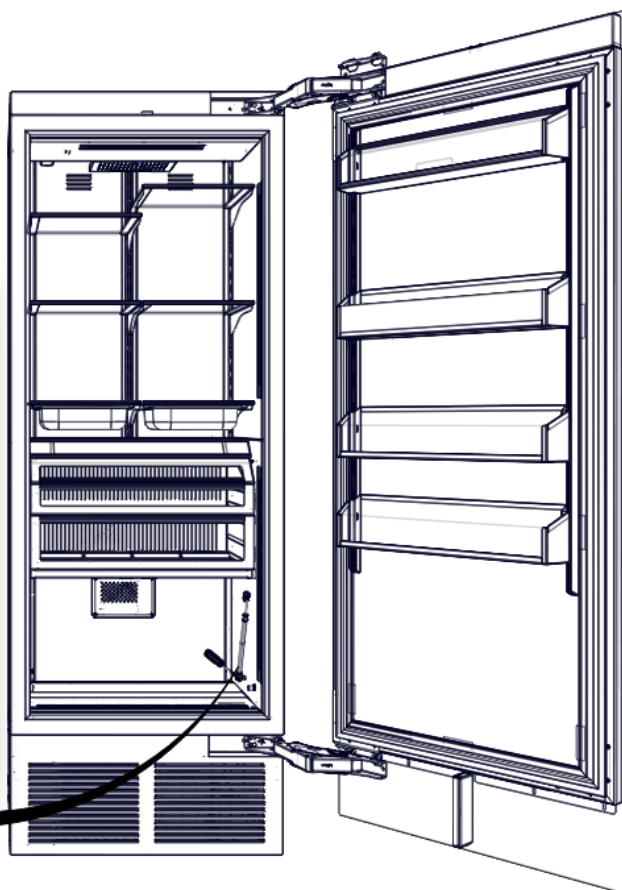
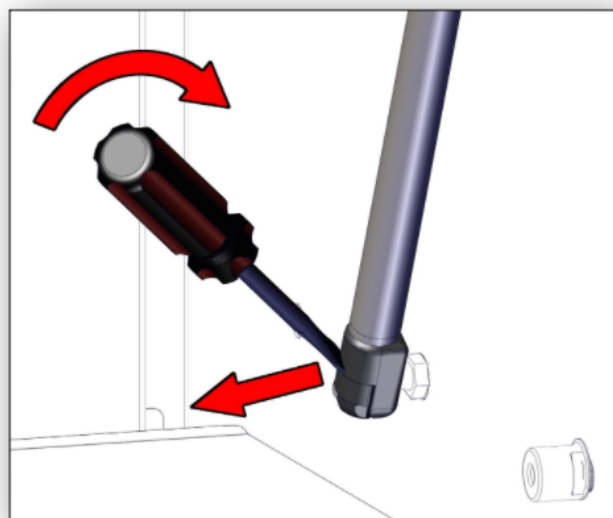
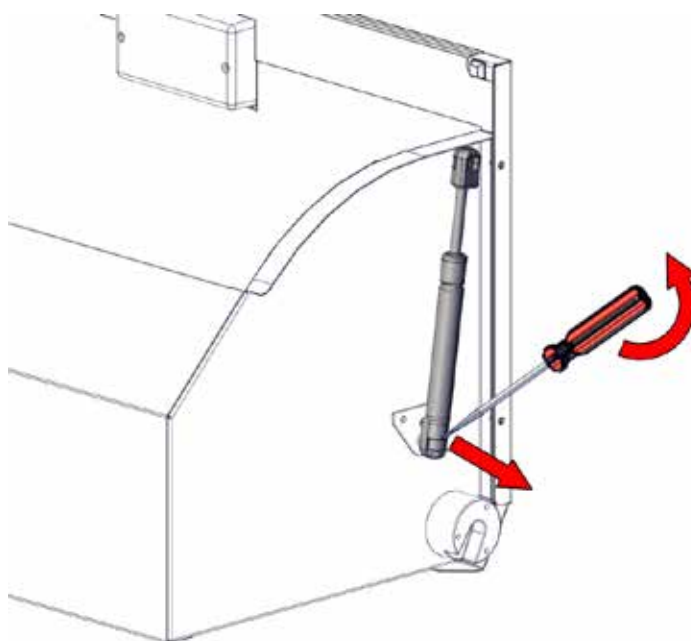
1. Once retainer fasteners are removed, tilt the tip-out bin up and pull out towards you to remove.



Operation #5

**THE FOLLOWING STEPS ARE TO REPLACE THE GAS SPRING AND DAMPER ONLY. SKIP TO OPERATION #6 FOR TIP-OUT BIN ASSEMBLY.**

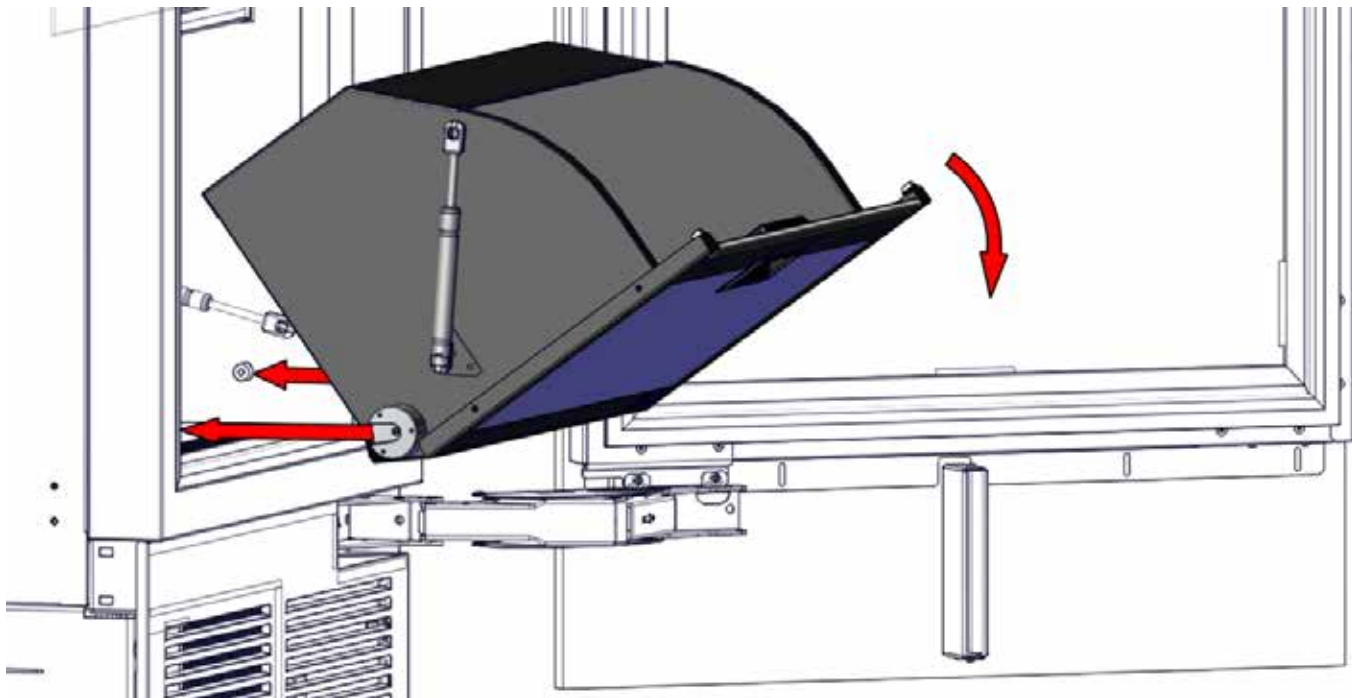
1. Locate the end fitting on the gas spring on the left side of the bin and using the flat head screwdriver, release the end fitting by placing the flat head screwdriver into the release latch and prying outward to disengage the end fitting from the bin wall ball stud.
2. Locate the damper end fitting on the right side of the cabinet. Using a flat head screwdriver, release the end fitting on the damper, by placing the flat head screwdriver into the release latch and prying inward to disengage the end fitting from the bin ball stud.
3. Once removed, press & snap the new gas spring or damper back onto the ball stud.





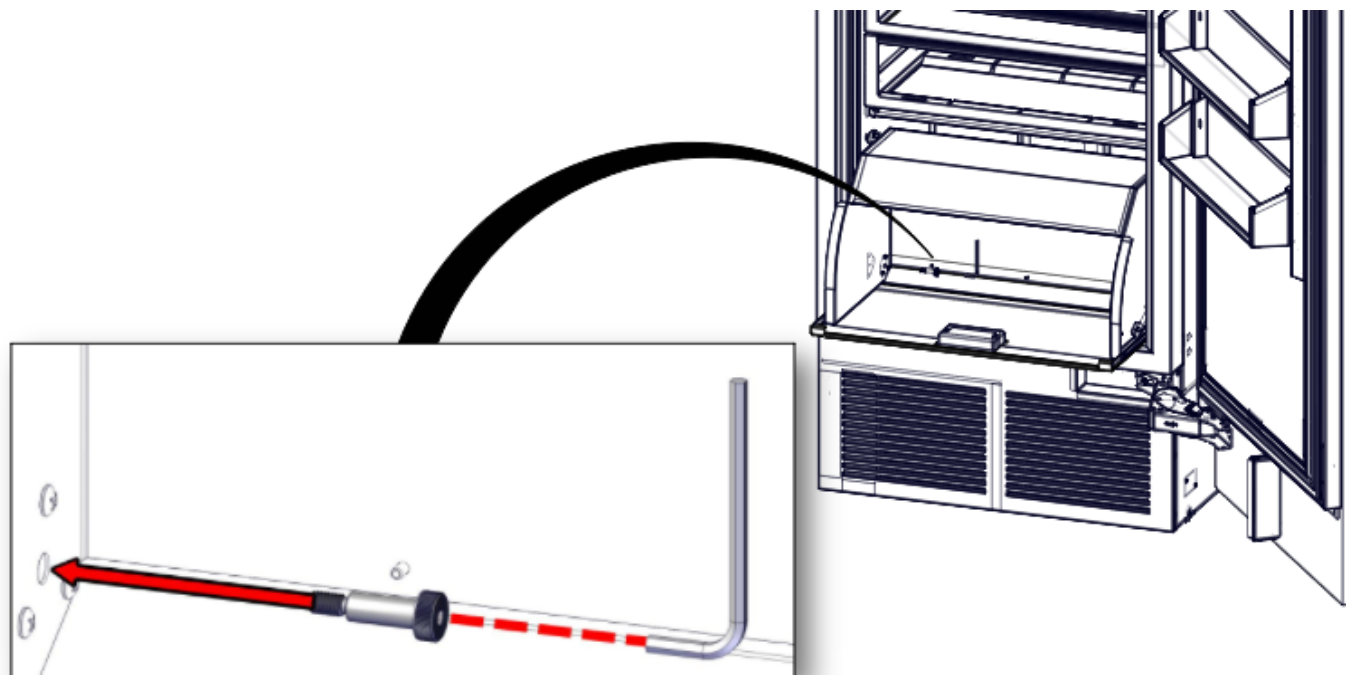
### Operation #6

1. Place tip-out bin into position by placing left and right guide blocks on bin over pivot bushing in cabinet. Allow tip-out bin to rest on bottom of cabinet.



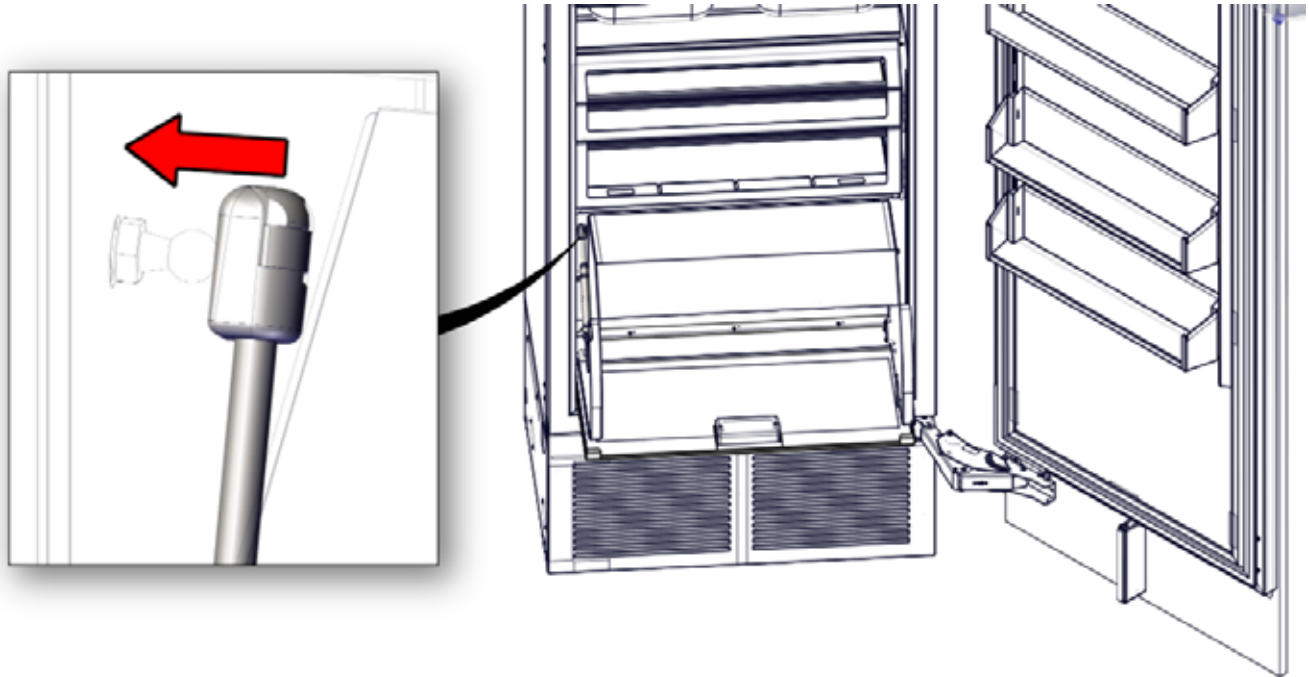
### Operation #7

1. Install left and right shoulder bolts using 5/32" allen wrench and tighten snugly.



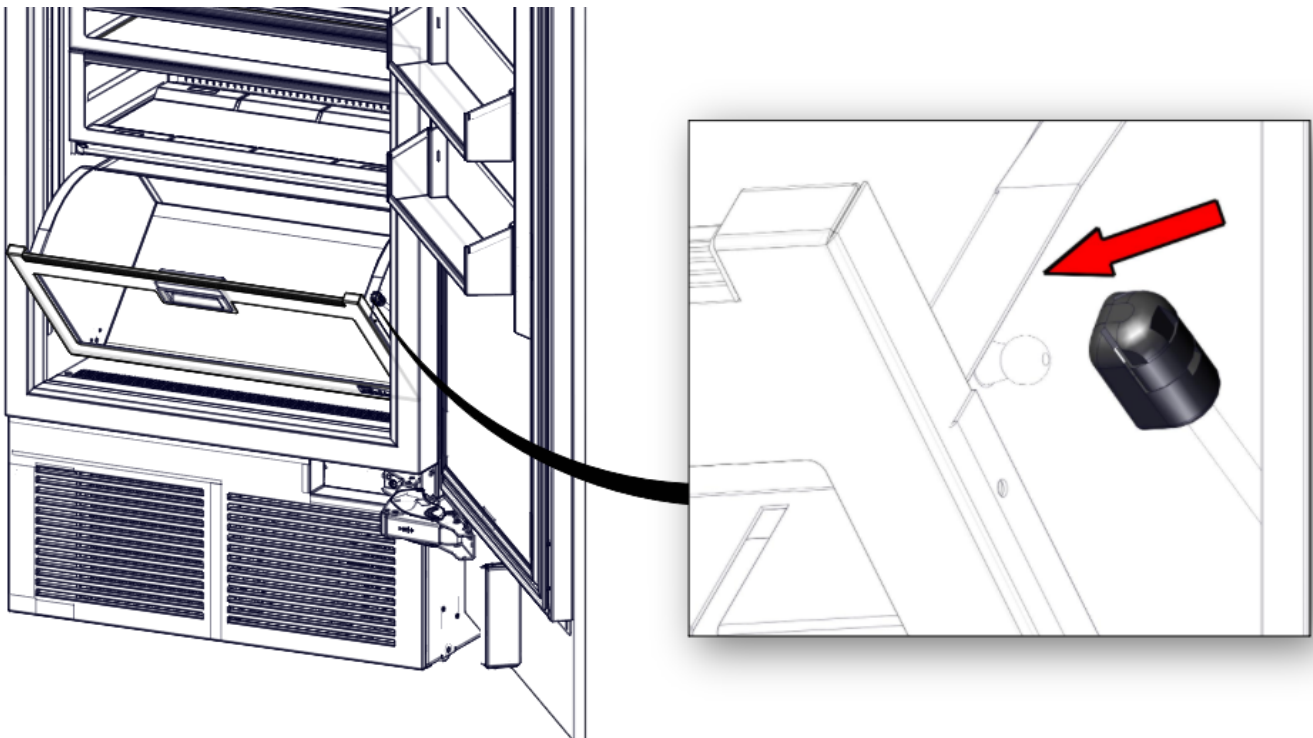
### Operation #8

1. With the tip out bin rotated all way open, install the left side damper onto the cabinet wall fitting by snapping it onto the fitting.



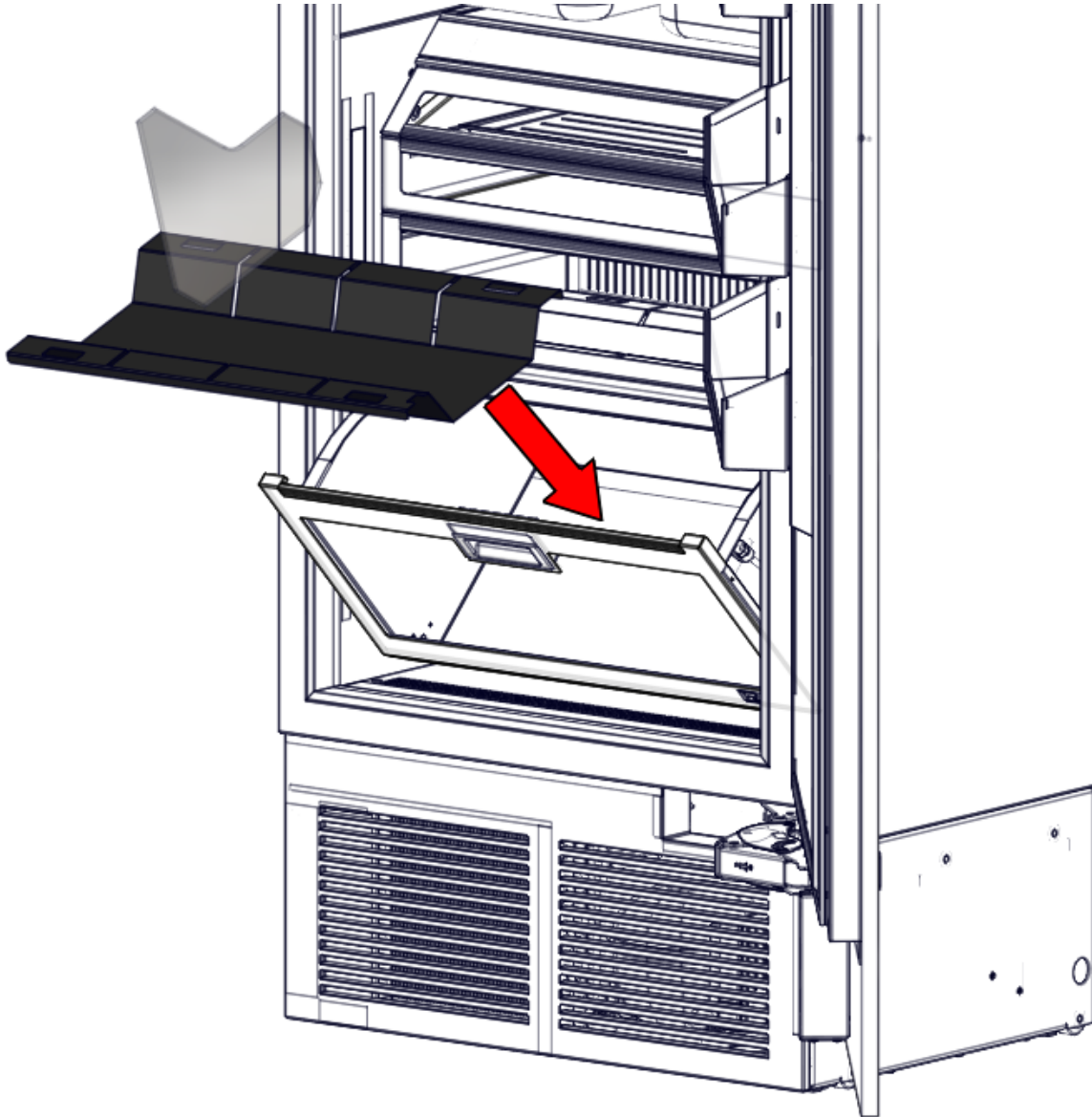
### Operation #9

1. Pivot tip-out bin approximately 45 degrees, so right side damper end fitting aligns with bin fitting and snap into place.



## Operation #10

1. Check for smooth operation of the tip-out bin closing and opening a number of times.
2. Re-install interior bottom panel and glass dividers.



## 8.14 Drawers

### 8.14.1 Deli And Meat Drawer

The deli and meat drawers on the refrigerator use push to open slides. To open, push inward on the face of the drawer and release and the slide will push open the drawer.

#### Removal

To remove the deli drawer flap, partially open the drawer and lift up on the flap, remove the pivot fastener on the left and right ends of the flap. Always support the flap when removing the fasteners.

To remove the deli and meat drawers, push to open and then full extend the drawer, located the release mechanism on each slide and pull forward on the release mechanisms and pull the drawer out. To remove the slide member from the cabinet side wall, locate the mounting screws and remove. Support the slide to avoid scratching the side wall of the cabinet.

#### Reinstallation

To reinstall the drawers, line up the drawer slide member with the cabinet slide member, slide together gently, ensuring that the drawer slide member is parallel with the cabinet slide member. Do not force together as this can result in damage to the ball bearing retainer and result in ball bearings dislodging from the retainer. Once engaged, push the drawer in all the way and then push to open and pull the drawer out to full extension to ensure the slide lock mechanism is engaged.



Figure 8-14 - Deli And Meat Drawer Release

### 8.14.2 Freezer Drawers

#### Removal

To remove the freezer drawers, pull out on the drawer until fully extended, locate the release mechanism on each slide and pull forward on the release mechanisms and pull the drawer out. To remove the slide member from the cabinet side wall, locate the mounting screws and remove. Support the slide to avoid scratching the side wall of the cabinet.

#### Reinstallation

To reinstall the drawers, line up the drawer slide member with the cabinet slide member, slide together gently, ensuring that the drawer slide member is parallel with the cabinet slide member. Do not force together as this can result in damage to the ball bearing retainer and result in ball bearings dislodging from the retainer. Once engaged, push the drawer in all the way and then pull the drawer out to full extension to ensure the slide lock mechanism is engaged.



Figure 8-15.1 - Freezer Drawer Slide



Figure 8-15.2 - Freezer Drawer Release

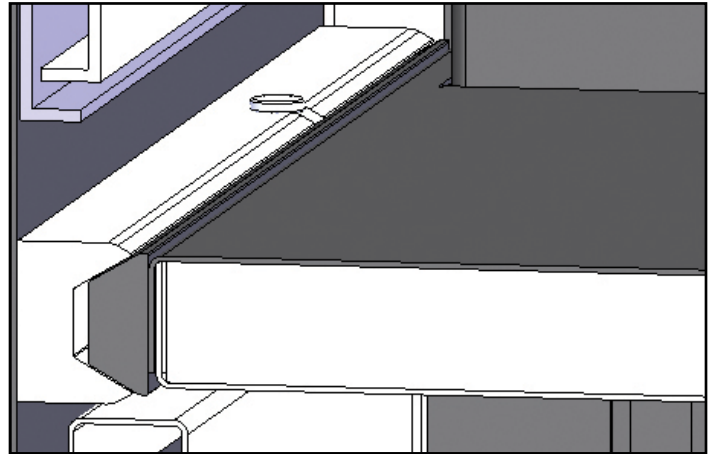
## 8.15 Drawer Compartment Dividers

**To remove the drawer compartment dividers**  
(insulated dividers between each drawer):

1. Locate the two retaining pins on the left and right sides approximately 2/3 back on the divider extrusions.
2. Remove the two retaining pins by prying up using a flat blade screwdriver (protect material surfaces to avoid scratches) and then pulling the pins out.
3. Pull forward on the divider and disconnect the light electrical connection.
4. Pull the divider out of the cabinet.

**To install:**

1. Slide divider into cabinet extrusion
2. Make light electrical connection
3. Manage excess wire and slide divider in until completely inserted.
4. Install the two retaining pins.



*Figure 8-16 - Drawer Compartment Divider  
And Retaining Pin*

## 8.16 Shelving

### 8.16.1 Wine Shelving

The wine reserves use soft-close full extension slides. Never force the slide all the way closed as this can cause damage to the soft-close mechanism.

#### Removal

To remove the wine shelves, pull on the shelf and fully extend. Locate the release mechanism on each slide and pull forward on the release mechanisms and pull the shelf out. To remove the slide member from the cabinet pilaster, simply lift-up evenly and pull forward. Support the slide to avoid scratching the side wall of the cabinet.

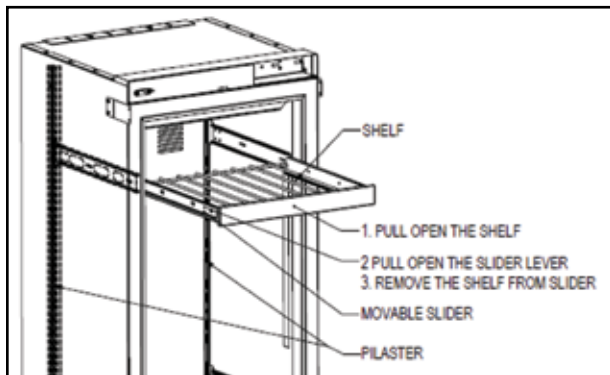


Figure 8-17.1. Remove Wine Shelves

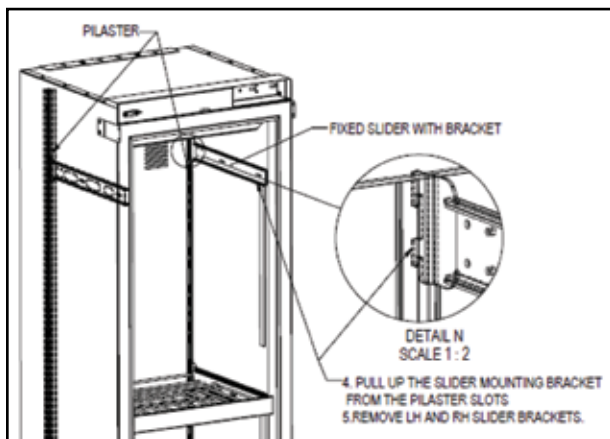


Figure 8-17.2. Remove Wine Shelves

#### Reinstallation

To reinstall the shelves, first install the cabinet slide assemblies into the pilasters, next, line up the shelf slide members with the cabinet slide members, slide together gently, ensuring that the shelf slide member is parallel with the cabinet slide member. Do not force together as this can result in damage to the ball bearing retainer and result in ball bearings dislodging from the retainer. Once engaged, push the shelf in until shelf slide is fully retracted, then pull the shelf out to full extension to ensure the slide lock mechanism is engaged. Finally, push the shelf in until the soft-close mechanism engages and fully retracts the shelf into position.

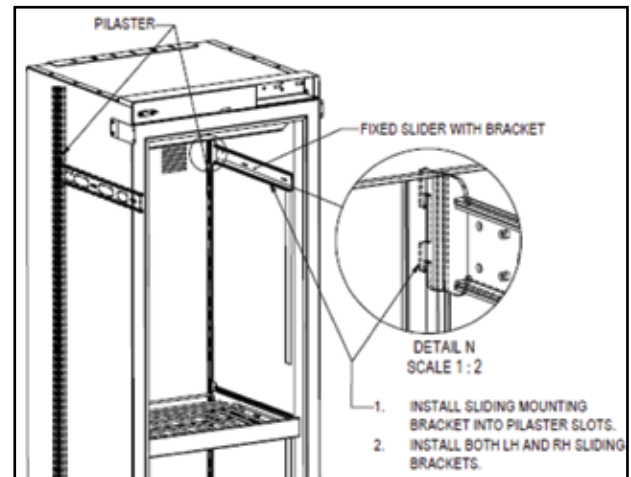


Figure 8-17.3. Install Wine Shelves

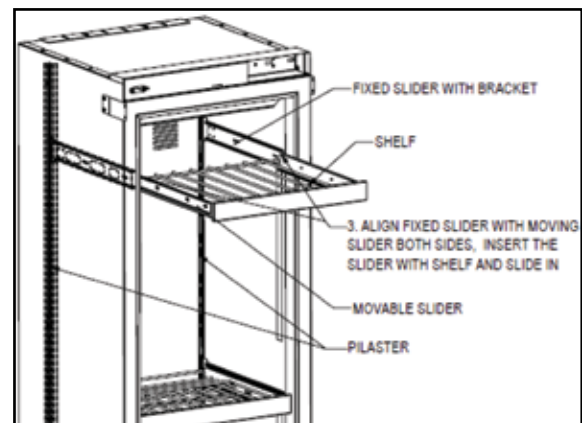


Figure 8-17.4. Install Wine Shelves

### 8.16.2 Freezer Shelving

The freezer shelves are simple single piece design, cantilever shelves.

#### Removal

To remove, simply lift-up squarely on the shelf and pull forward to remove from the pilasters.

#### Installation

To install, align shelf brackets with pilasters and slide down into pilaster, ensure all for attachment points are engaged.

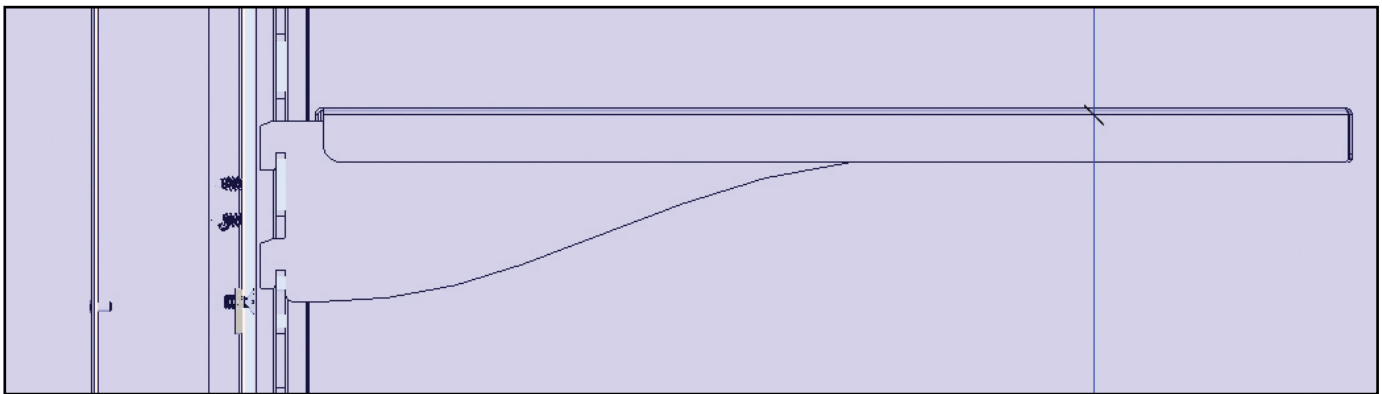


Figure 8-18. Freezer Shelving



### 8.16.3 Refrigerator Shelving

The wine reserves use soft-close full extension slides. Never force the slide all the way closed as this can cause damage to the soft-close mechanism.

#### Removal

To remove the wine shelves, pull on the shelf and fully extend. Locate the release mechanism on each slide and pull forward on the release mechanisms and pull the shelf out. To remove the slide member from the cabinet pilaster, simply lift-up evenly and pull forward. Support the slide to avoid scratching the side wall of the cabinet.

#### Reinstallation

To reinstall the shelves, first install the cabinet slide assemblies into the pilasters, next, line up the shelf slide members with the cabinet slide members, slide together gently, ensuring that the shelf slide member is parallel with the cabinet slide member. Do not force together as this can result in damage to the ball bearing retainer and result in ball bearings dislodging from the retainer. Once engaged, push the shelf in until shelf slide is fully retracted, then pull the shelf out to full extension to ensure the slide lock mechanism is engaged. Finally, push the shelf in until the soft-close mechanism engages and fully retracts the shelf into position.

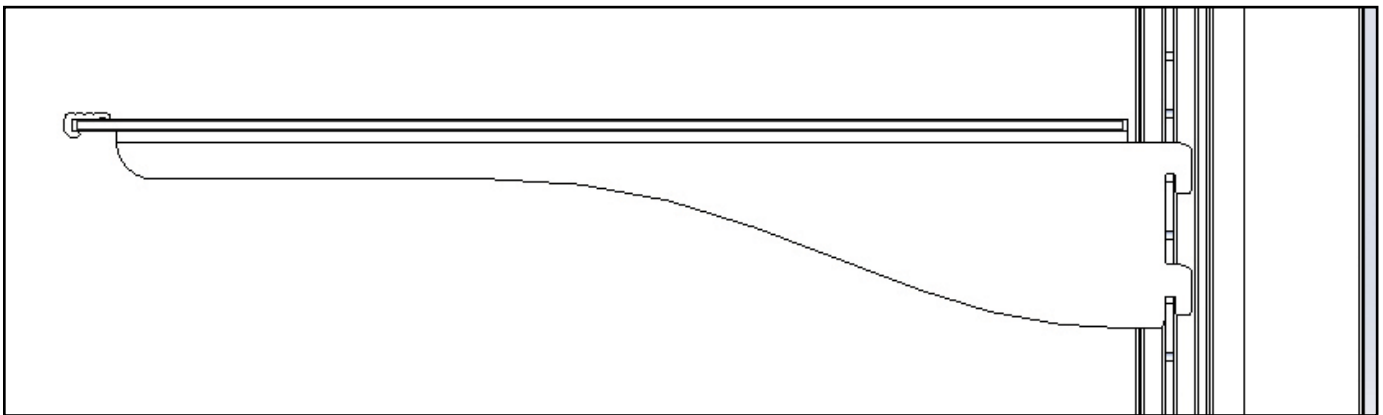


Figure 8-19. Refrigerator Shelving

### 8.17 Dual-Zone Wine Compartment Divider

#### Removal

To remove the dual zone wine compartment divider, locate the two fasteners on the bottom left and right edges and remove. Pull out on the divider and disconnect the light electrical connector. Remove divider from the cabinet.

#### Installation

To install, slide divider into cabinet extrusions, make light electrical connection, manage excess wire and push divider into cabinet until flush with back wall. Install retaining fasteners into bottom left and right edges.

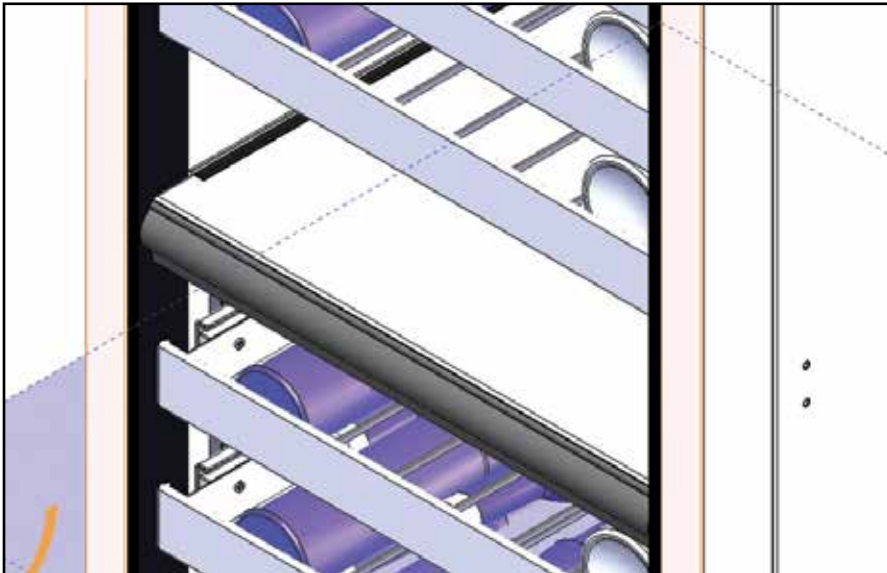


Figure 8-20.1. Dual-Zone Compartment Divider

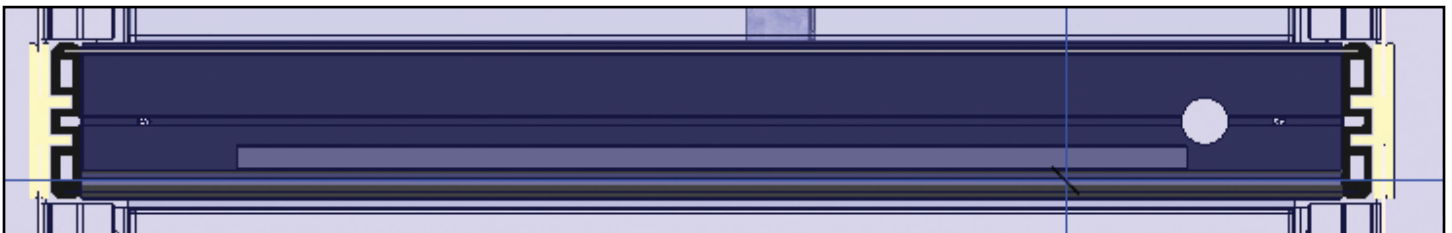


Figure 8-20.2. Dual-Zone Compartment Divider

### 8.18 Leveling/Alignment

Move the unit near the opening. Plug the power cord into the grounded outlet and roll the unit into position. Push unit into place.

Front and rear leveling legs can be adjusted from the front once the unit is positioned. To access leveling adjustment access holes, remove toe kick grill.

Once the unit is in position, height adjustment can be made from the front. Using the hex driver leveling tool, turn clockwise to raise the unit or counterclockwise to lower. See *figure 8-21*.

When the unit is properly leveled, door adjustments are less likely to be needed.

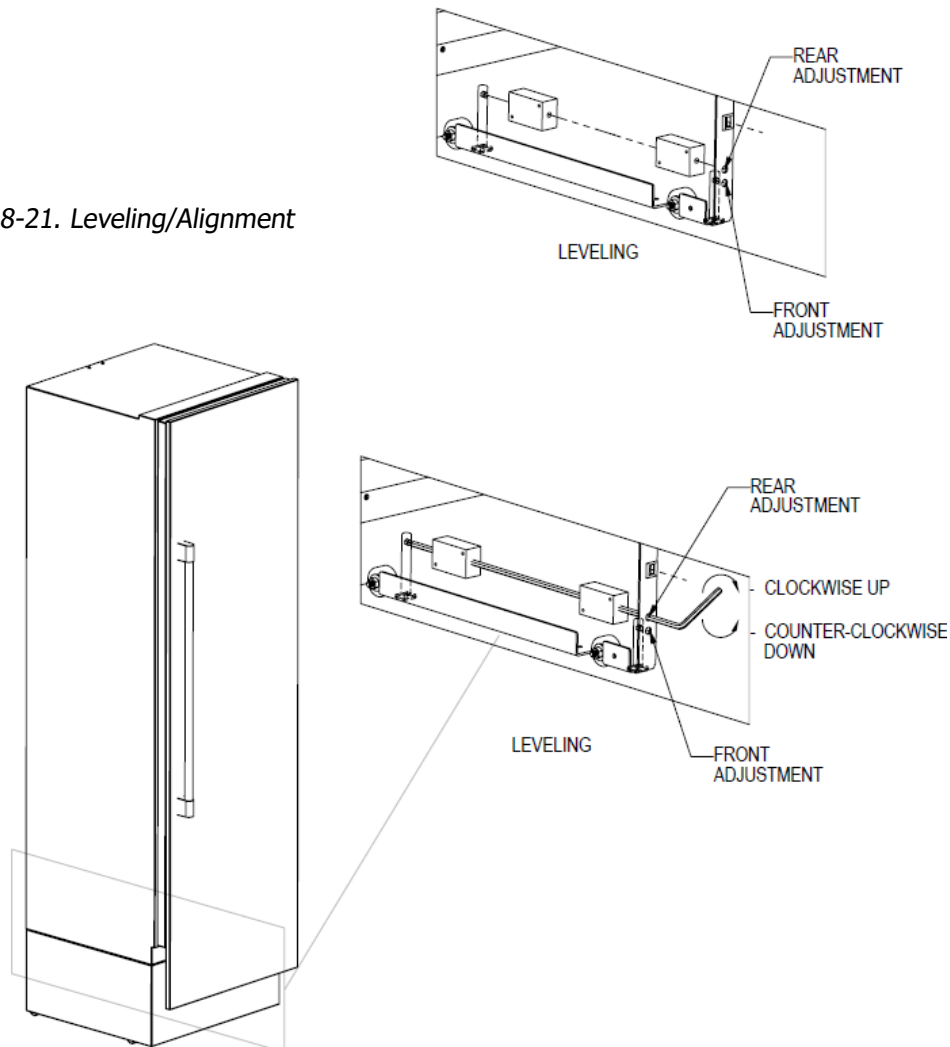
**⚠ WARNING**

To reduce the possibility of the unit tipping forward, the front leveling legs must be in contact with the floor.

**⚠ CAUTION**

The refrigerated cabinet should be level for proper operation, such as door closing, drawer and shelf slide operation.

Figure 8-21. Leveling/Alignment



## 8.19 Cabinet Anti-Tip/Anti-Tip Bracket

### **⚠ WARNING**

To prevent the unit from tipping forward, the anti-tip bracket must be installed. Use all anti-tip bracket hardware as instructed. Level as instructed on *Page 98* prior to installing anti-tip bracket(s)

The anti-tip bracket and supporting hardware is included with your unit. Please note that four anti-tip brackets are required for each unit or dual installation. In the case of dual installation, each individual unit must be outfitted with the two anti-tip brackets on cabinet sides for a total of four.

For drawings of the anti-tip bracket installation on integrated (built-in) units, see [Page 100](#). For drawings of the anti-tip bracket installation on freestanding units, see [Page 101](#).

### **⚠ WARNING**

Verify there are no electrical wires or plumbing in the area which the screws could penetrate.

### **⚠ CAUTION**

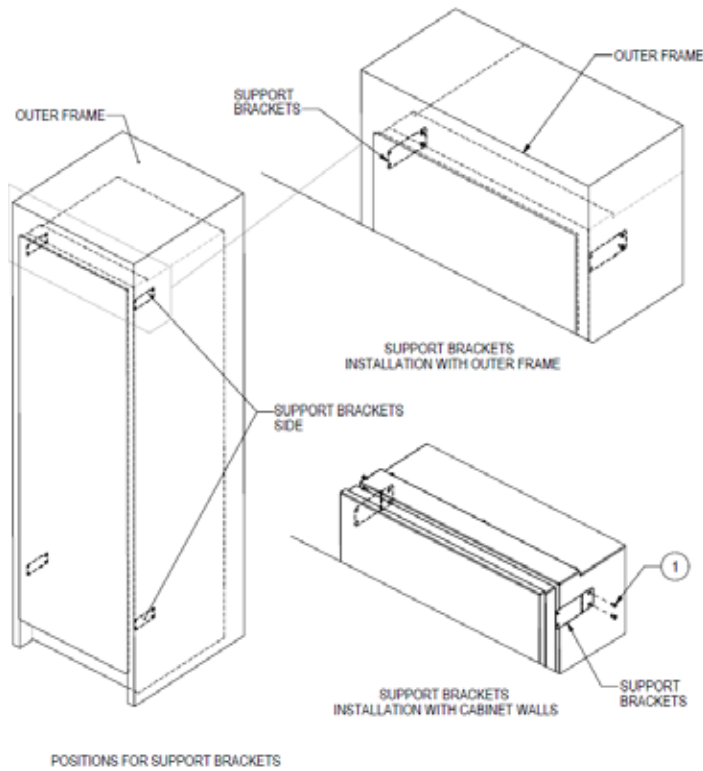
Always wear safety glasses and use other necessary protective devices or apparel when installing or working with anchors. Anchors are not recommended for use in lightweight masonry material such as block or brick, or for use in new concrete which has not had sufficient time to cure. The use of core drills is not recommended to drill holes for anchors.

### **⚠ CAUTION**

Before moving unit into position, secure the door closed and protect any finished flooring.

Use an appliance dolly to move the unit near the opening.

### 8.19.1 Anti-Tip Installation For Integrated Installation



**NOTE:** Do not fasten anti-tip brackets to adjacent cabinetry until the cabinet has been leveled.

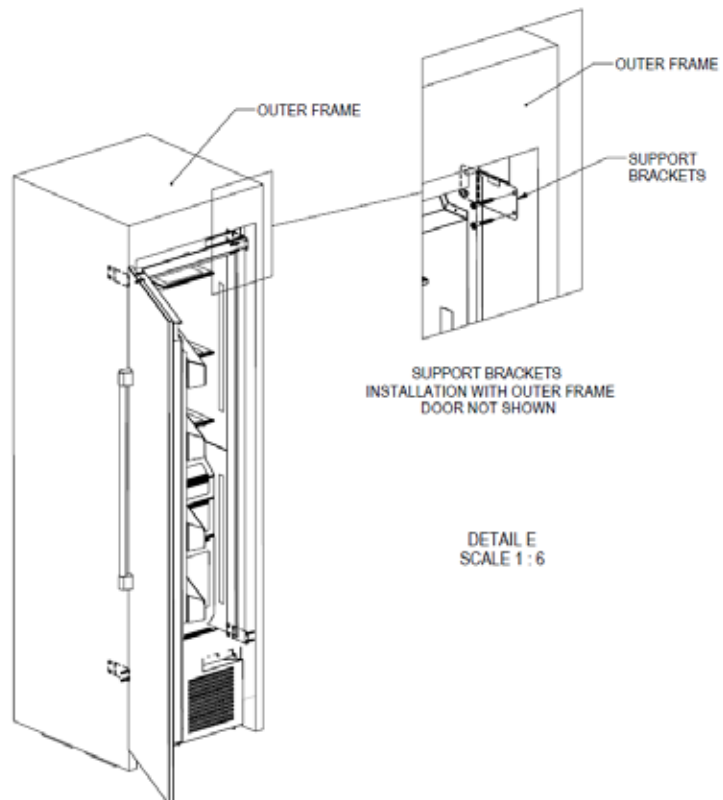


Figure 8-22.1. Anti-tip Installation (Integrated)

### 8.19.2 Anti-Tip Installation For Freestanding Installation

**NOTE:** Cabinet must be leveled before securing to wall with anti-tip bracket.

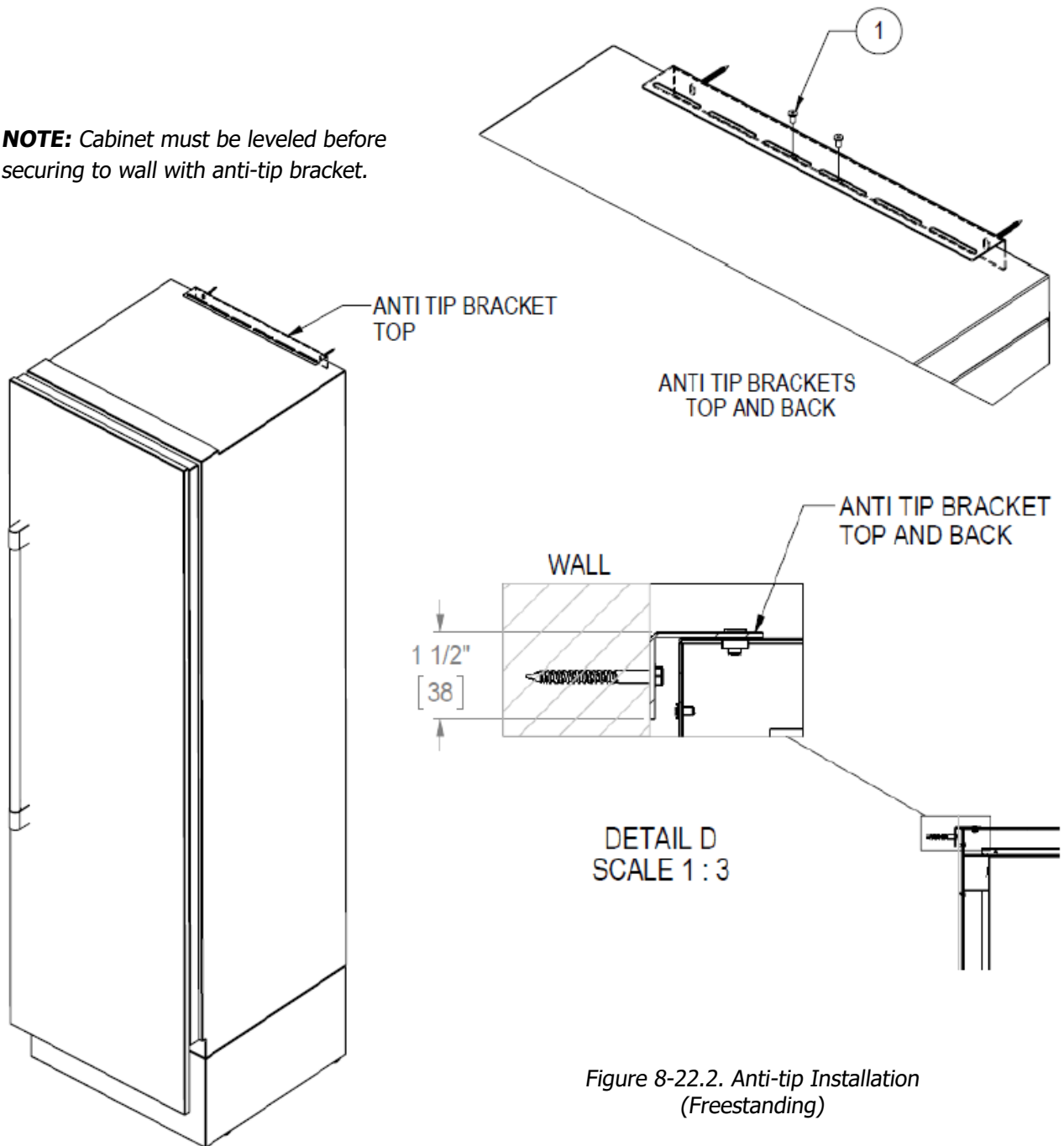
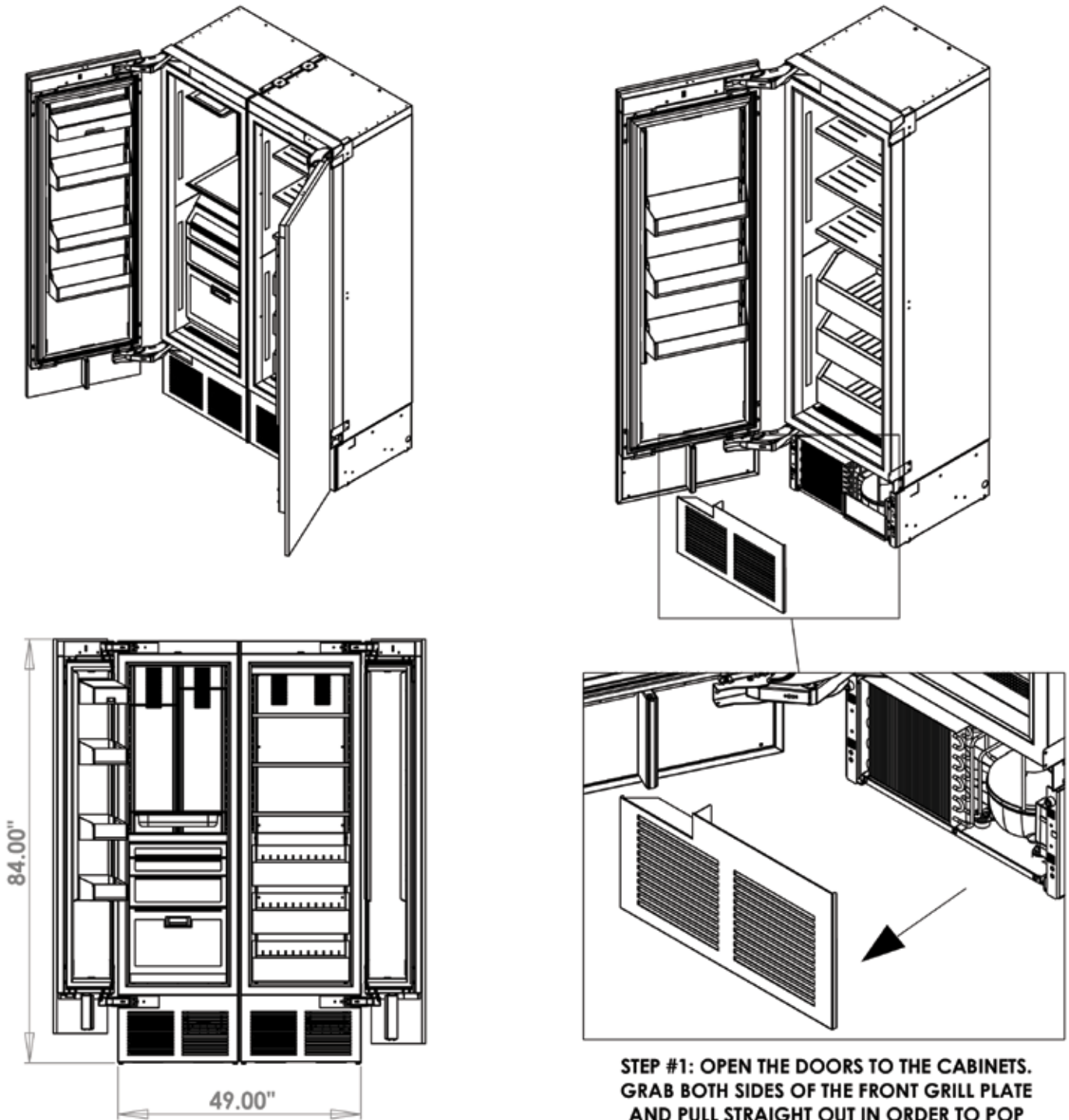


Figure 8-22.2. Anti-tip Installation (Freestanding)

## 8.20 Marriage Kit Installation

Figure 8-23.1. Marriage Kit Install (1)



**STEP #1: OPEN THE DOORS TO THE CABINETS. GRAB BOTH SIDES OF THE FRONT GRILL PLATE AND PULL STRAIGHT OUT IN ORDER TO POP THE CLIPS OUT OF THE LATCHES. DO THIS TO BOTH CABINETS.**

## 8.20 Marriage Kit Installation (cont.)

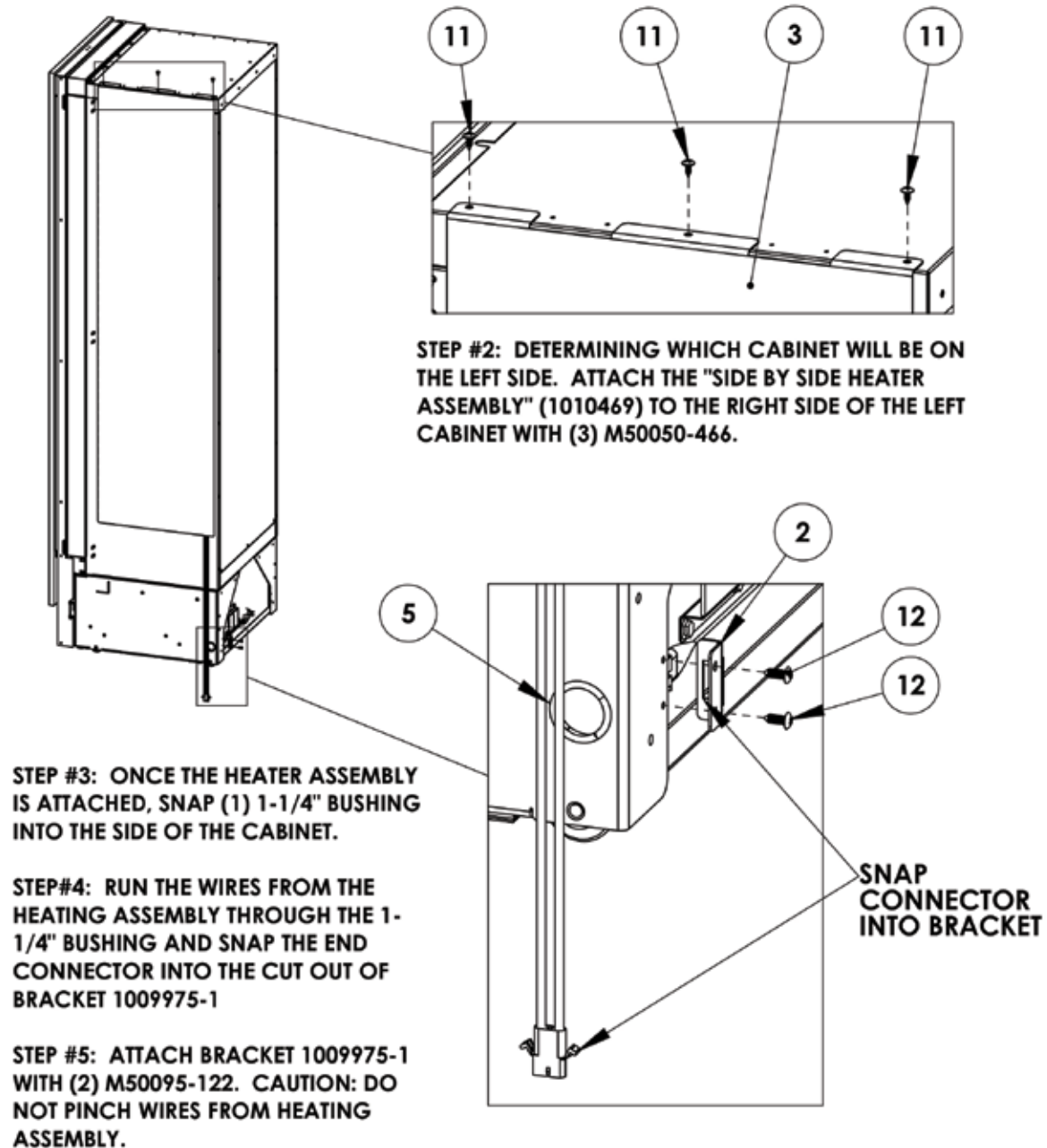
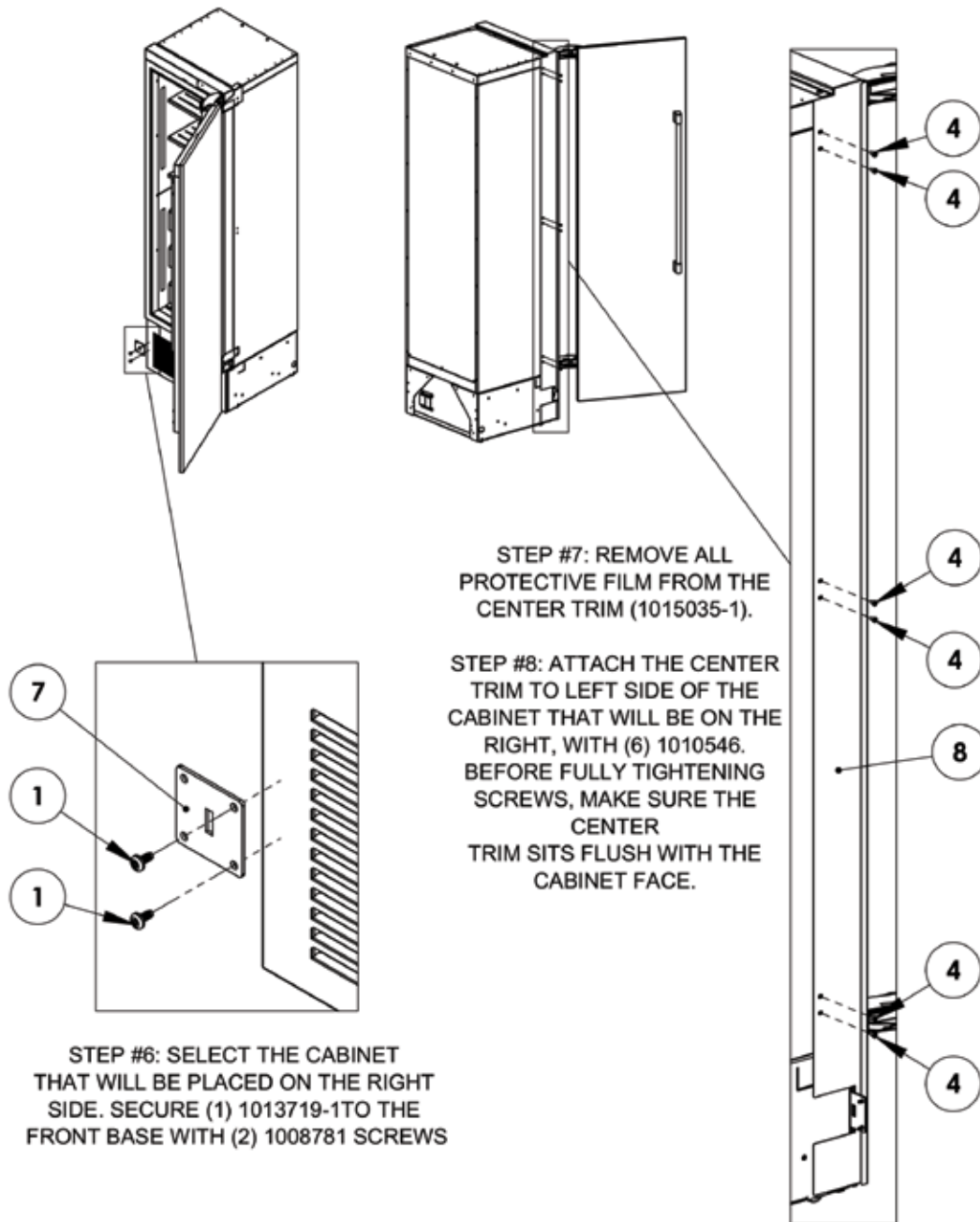


Figure 8-23.2. Marriage Kit Install (2)



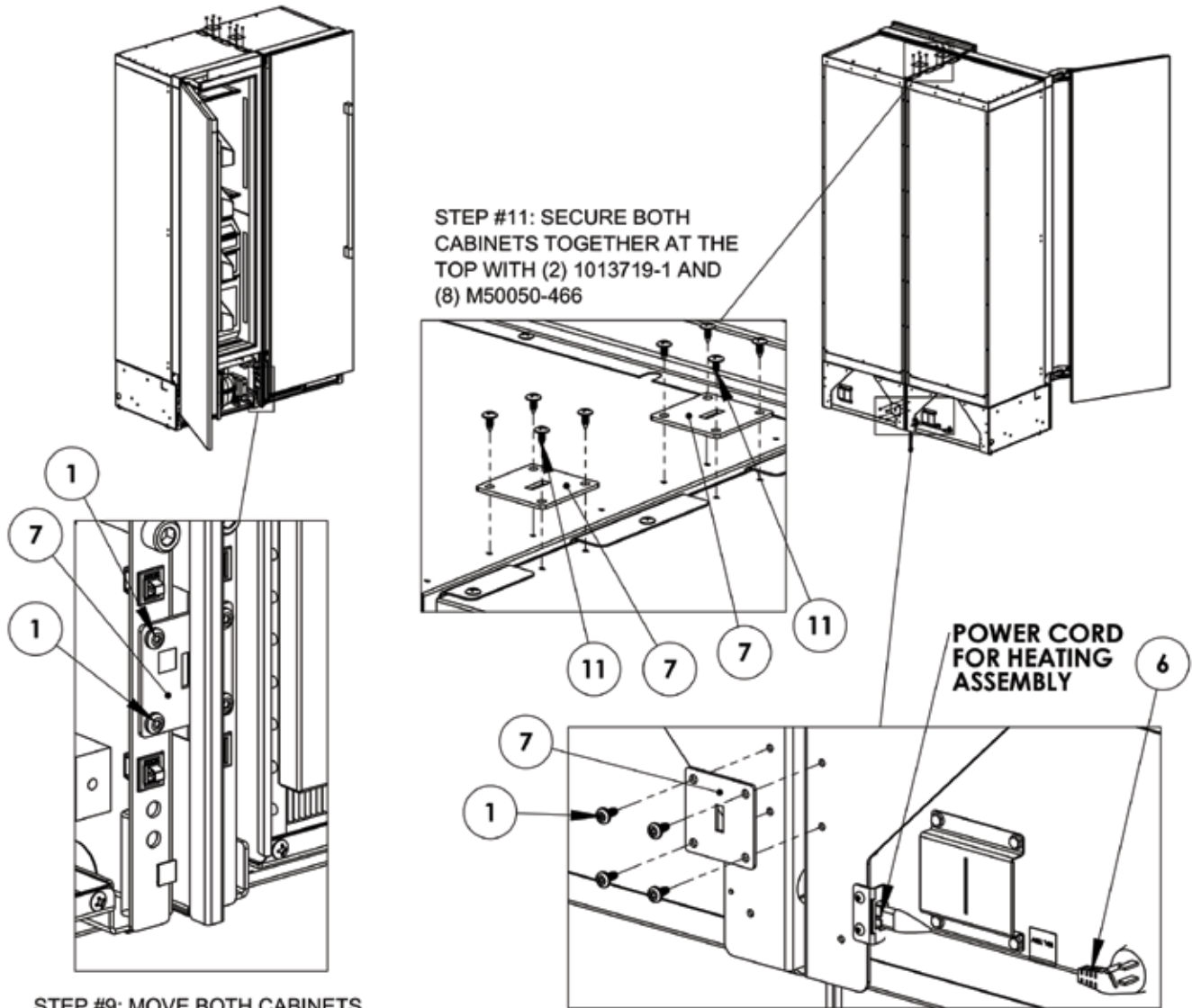
## 8.20 Marriage Kit Installation (cont.)

Figure 8-23.3. Marriage Kit Install (3)



## 8.20 Marriage Kit Installation (cont.)

Figure 8-23.4. Marriage Kit Install (4)



STEP #11: SECURE BOTH CABINETS TOGETHER AT THE TOP WITH (2) 1013719-1 AND (8) M50050-466

POWER CORD FOR HEATING ASSEMBLY

STEP #9: MOVE BOTH CABINETS DIRECTLY NEXT TO EACH OTHER SO THAT THE LEFT CABINET COMES IN CONTACT WITH THE CENTER TRIM.

STEP #10: SECURE BOTH CABINETS TOGETHER BY SECURING THE "ATTACHING BRACKET (1013719-1)," PREVIOUSLY SECURED TO THE RIGHT CABINET, TO THE LEFT CABINET WITH (2) 1008781 SCREWS.

STEP #12: SECURE BOTH CABINETS TOGETHER AT THE BACK WITH (1) 1013719-1 AND (4) 1008781

STEP #13: ONCE ALL BRACKETS HAVE BEEN SECURED IN PLACE, ATTACH THE FRONT GRILLS BACK ONTO THE UNIT.

STEP #14: PLUG POWER CORD (1012862) INTO HEATING ASSEMBLY CONNECTOR  
NOTE: HEATING ASSEMBLY CAN UTILIZE SAME ELECTRICAL CIRCUIT AS THE CABINET

## 8.21 Butter Bin

To remove butter bin lid, flex lid in center and pull upwards on one end of lid to disengage lid from pin. Slide off opposite end pin.

To install butter bin lid, slide one end over pin and flex center of the lid to slip opposite lid end over pin.

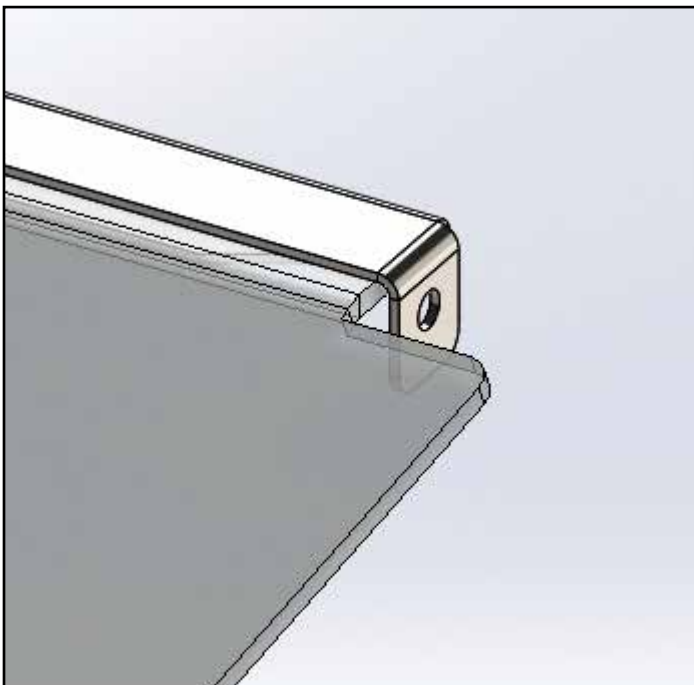


Figure 8-24.1. Butter Bin (1)

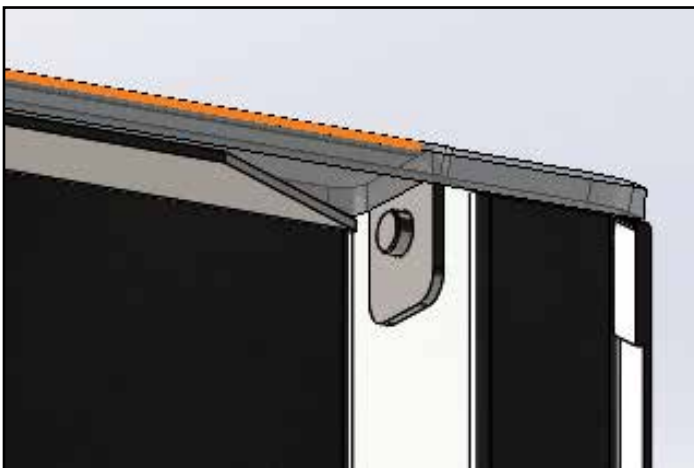


Figure 8-24.2. Butter Bin (2)

### 8.22 Trim Kits

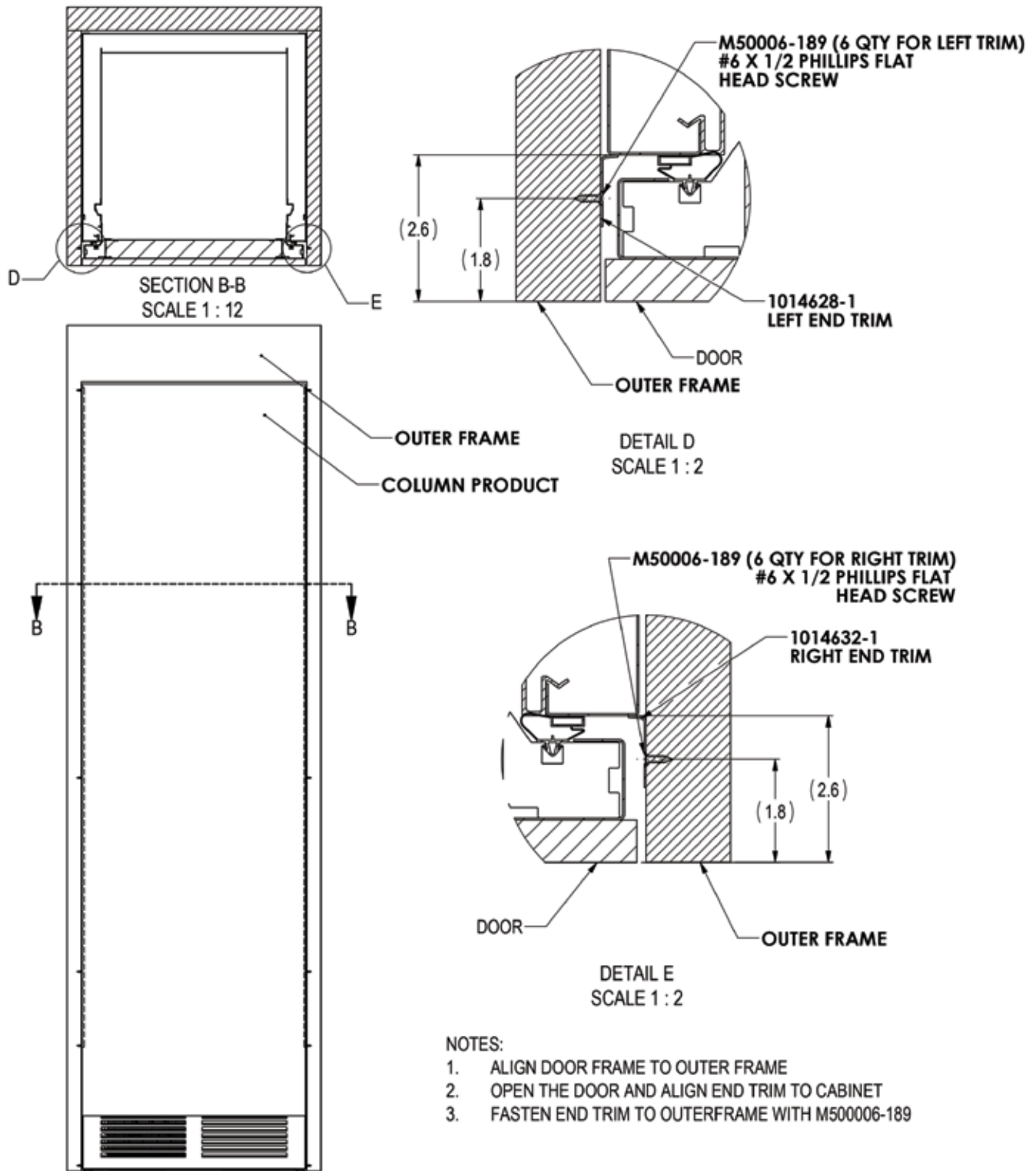
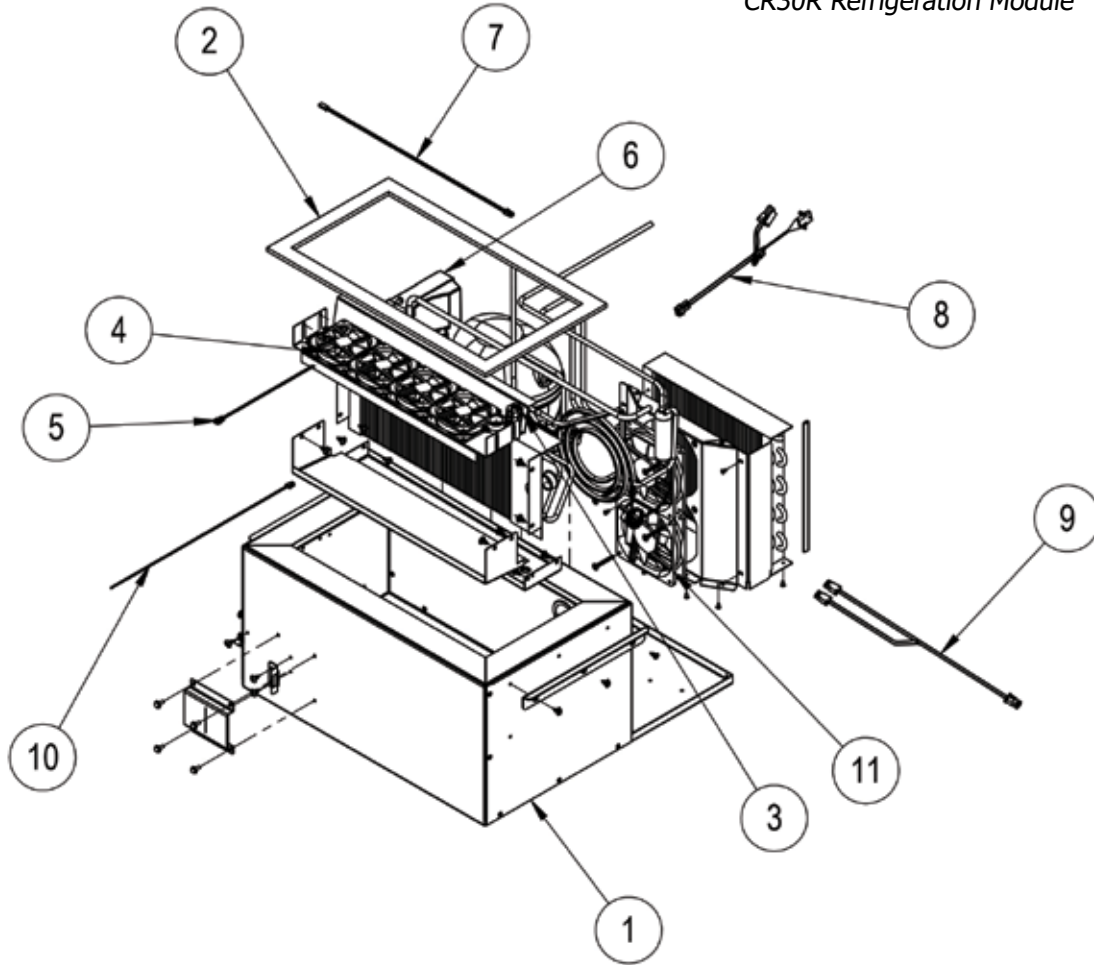


Figure 8-25. Trim Kit

## 9.0 Replacement Parts

### 9.1 CR24R, CR24D, CR24W, CC24D, CC24W, and CR30R Refrigeration Module

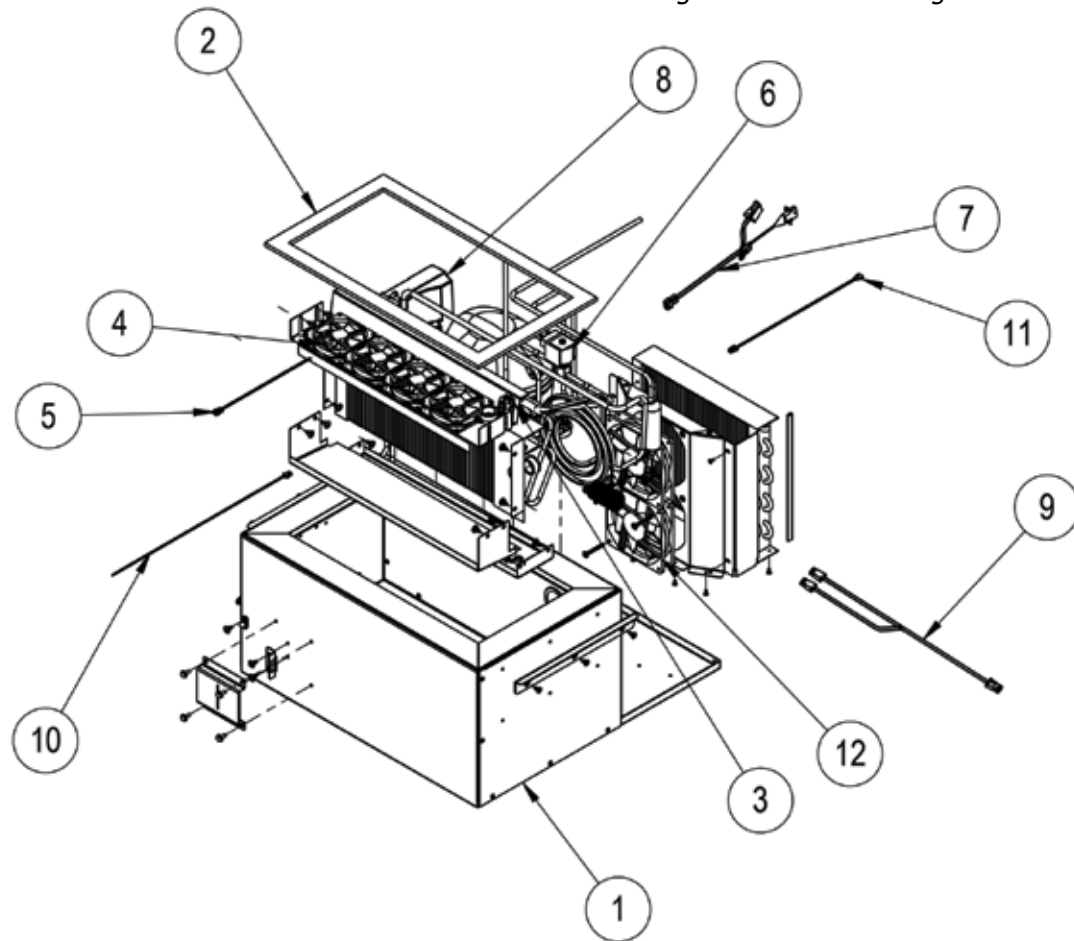
Figure 9-1. CR24R, CR24D, CR24W, CC24D, CC24W, and CR30R Refrigeration Module



ITEM	DESCRIPTION
1	REFRIGERATION MODULE, REFRIG/W
2	GASKET, REFRIGERATION MODULE,
3	TERMINAL BLOCK, FAN MOTORS,
4	FAN, 80MM AXIAL, EVAPORATOR, N
5	HARNESS, WIRE, EVAP FAN JUMPER
6	INVERTER, COMPRESSOR, VEMX5C-ECO 2018-0249
7	HARNESS, INVERTER SIGNAL, FOR C
8	HARNESS, MACHINE COMPARTMENT
9	HARNESS, WIRE, COND FAN, JUMPER
10	Sensor, Evaporator, NTC, 10K ¼
11	FAN MOTOR, NMB, 12VDC, 63.5CFM

## 9.2 CR24F Refrigeration Module

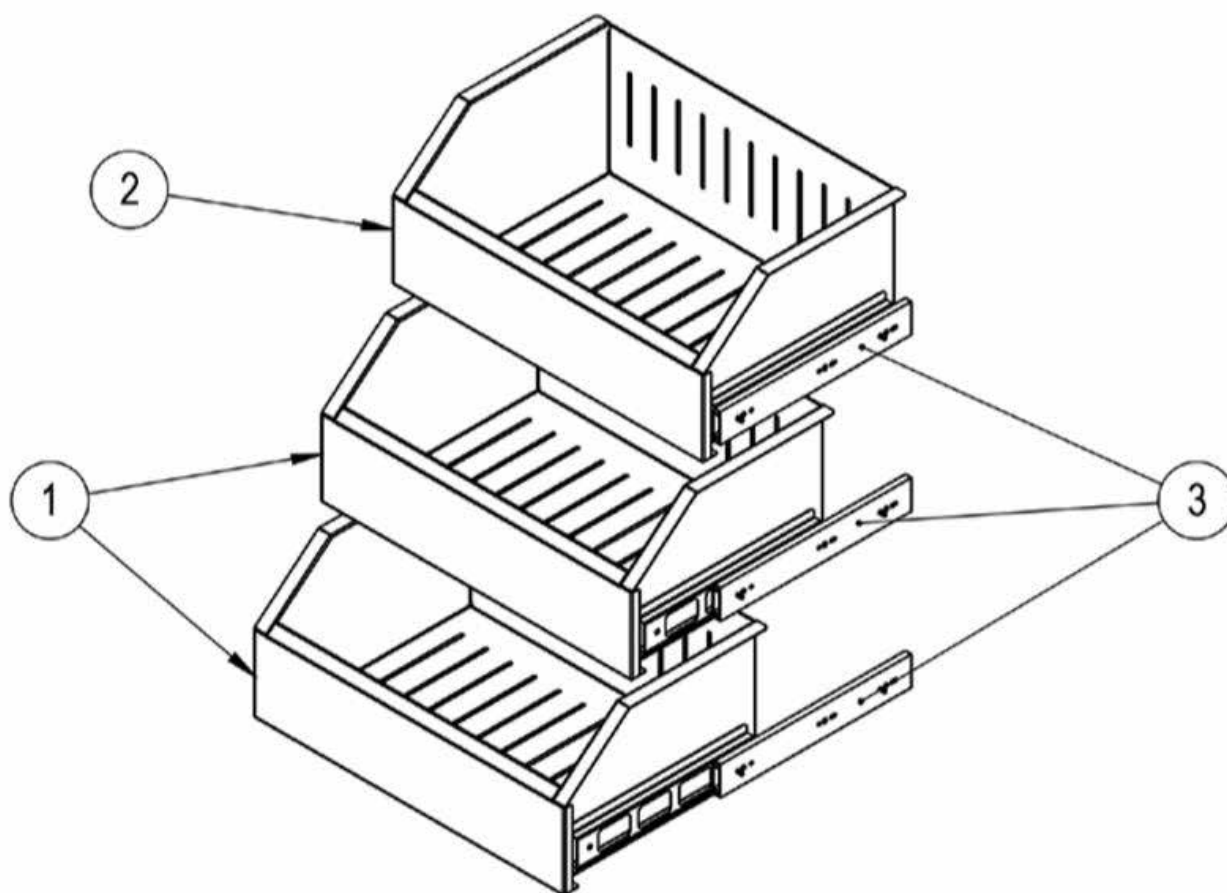
Figure 9-2. CR24F Refrigeration Module



ITEM	DESCRIPTION
1	REFRIGERATION MODULE, REFRIG/W
2	GASKET, REFRIGERATION MODULE,
3	TERMINAL BLOCK, FAN MOTORS,
4	FAN, 80MM AXIAL, EVAPORATOR, N
5	HARNESS, WIRE, EVAP FAN JUMPER
6	COIL, 12VDC, 1/4" SPADE, CONNE
7	HARNESS, MACHINE COMPARTMENT
8	INVERTER, COMPRESSOR, VEMZ9C
9	HARNESS, WIRE, COND FAN, JUMPER
10	Sensor, Evaporator, NTC, 10K 1/4
11	HARNESS, SOLENOID EXTENSION
12	FAN MOTOR, NMB, 12VDC, 63.5CFM

### 9.3 CR24F Drawers

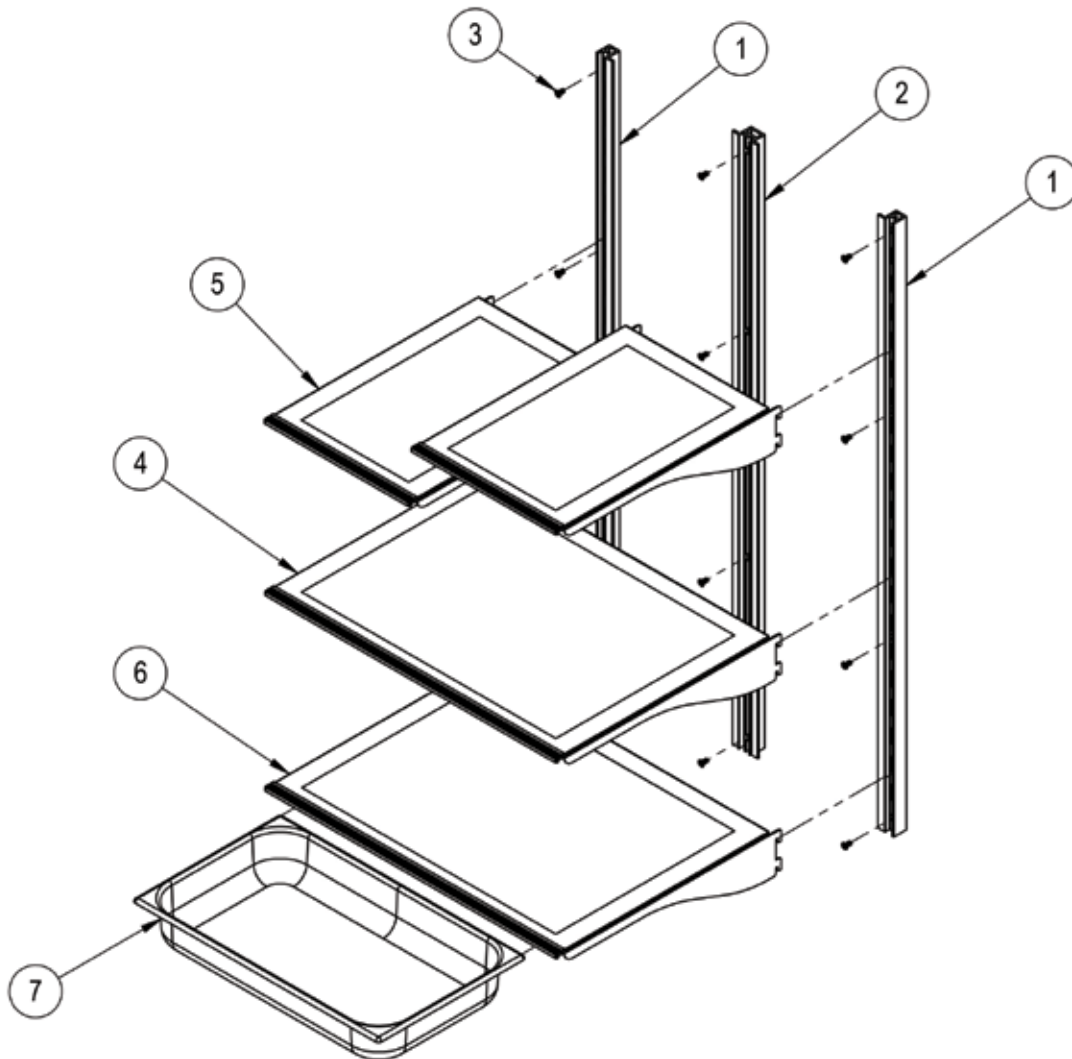
Figure 9-3. CR24F Drawers



ITEM	DESCRIPTION
1	DRAWER ASSEMBLY, COLUMN FREEZE
2	DRAWER ASSEMBLY W/PERLICK LOGO
3	SLIDE, 12" FREEZER, FOR COLUMN

### 9.4 CR24R Shelving

Figure 9-4. CR24R Shelving

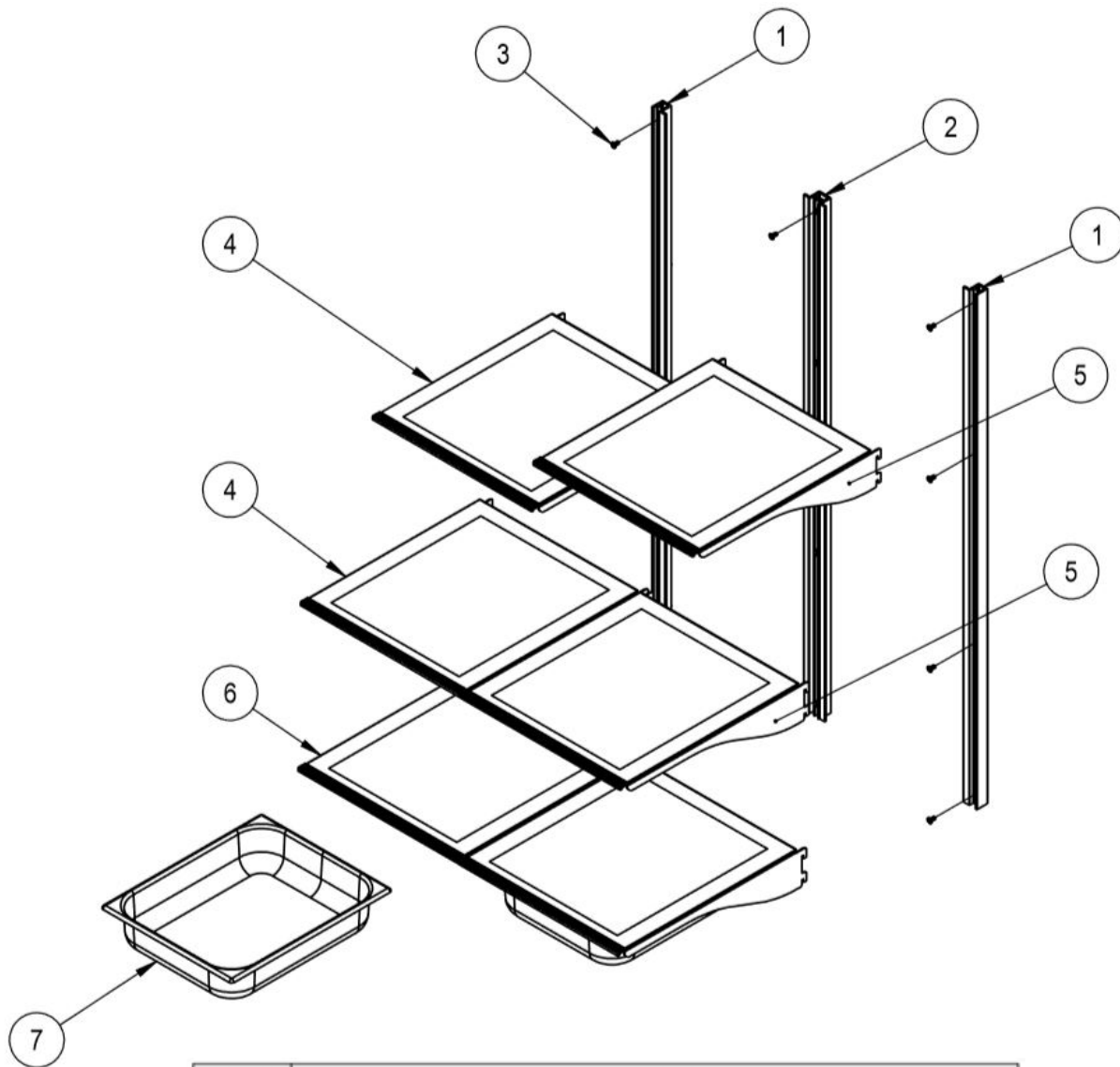


ITEM	DESCRIPTION
1	EXTRUSION, PILASTER, CABINET,
2	EXTRUSION, PILASTER, CABINET,
3	SCREW, MACHINE, M5 X .8MM, 10MM LONG, FLAT PH HD, 18-8SS
4	GLASS SHELF ASSY, 20" LG, COLU
5	GLASS SHELF, 10" WITH LOGO, CO
6	SHELF ASSY, MARINATING PAN, COL
7	PAN, MARINATING, 5 QT. 16-38"



## 9.5 CR30R Shelving

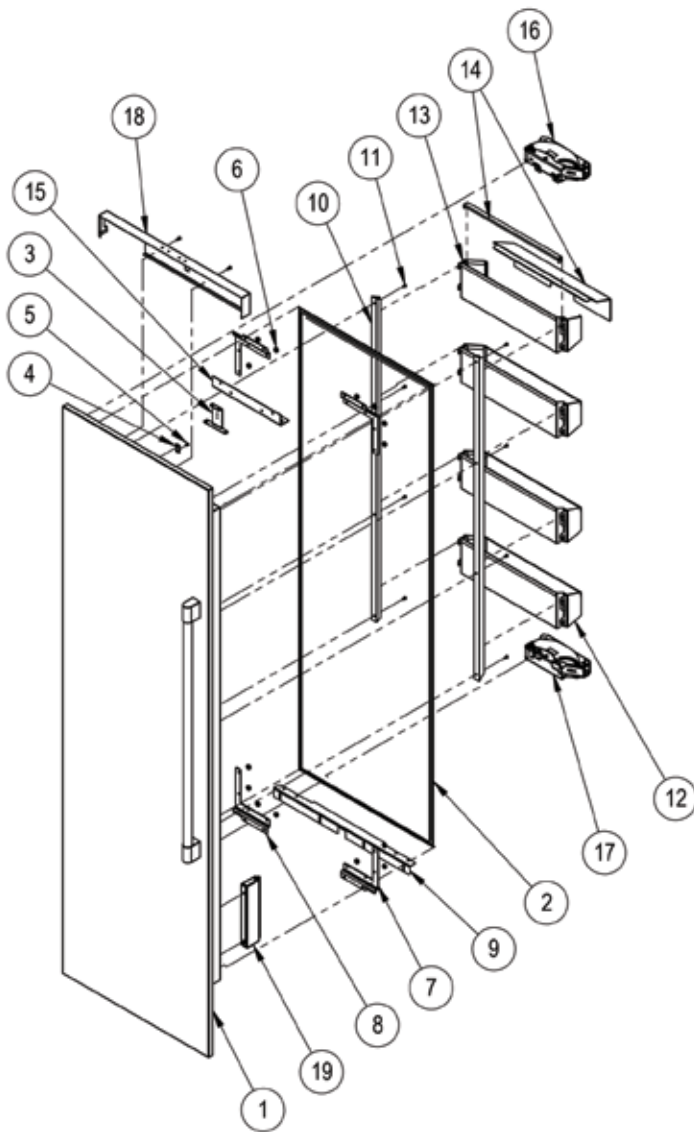
Figure 9-5. CR30R Shelving



ITEM	DESCRIPTION
1	EXTRUSION, PILASTER, CABINET, SIDE
2	EXTRUSION, PILASTER, CABINET, CENTER
3	SCREW, MACHINE, M5 X .8MM, 10MM LONG, FLAT PH HD, 18-8SS
4	GLASS SHELF ASSY, 12 -1/2" LG, WITH LOGO
5	GLASS SHELF ASSY, 12 -1/2" LG, WITH OUT LOGO
6	GLASS SHELF ASSY, MARINATING PAN
7	MARINATING PAN

### 9.6 CR24R, CR24F, and CR30R Door

Figure 9-6. CR24R, CR24F, and CR30R Door

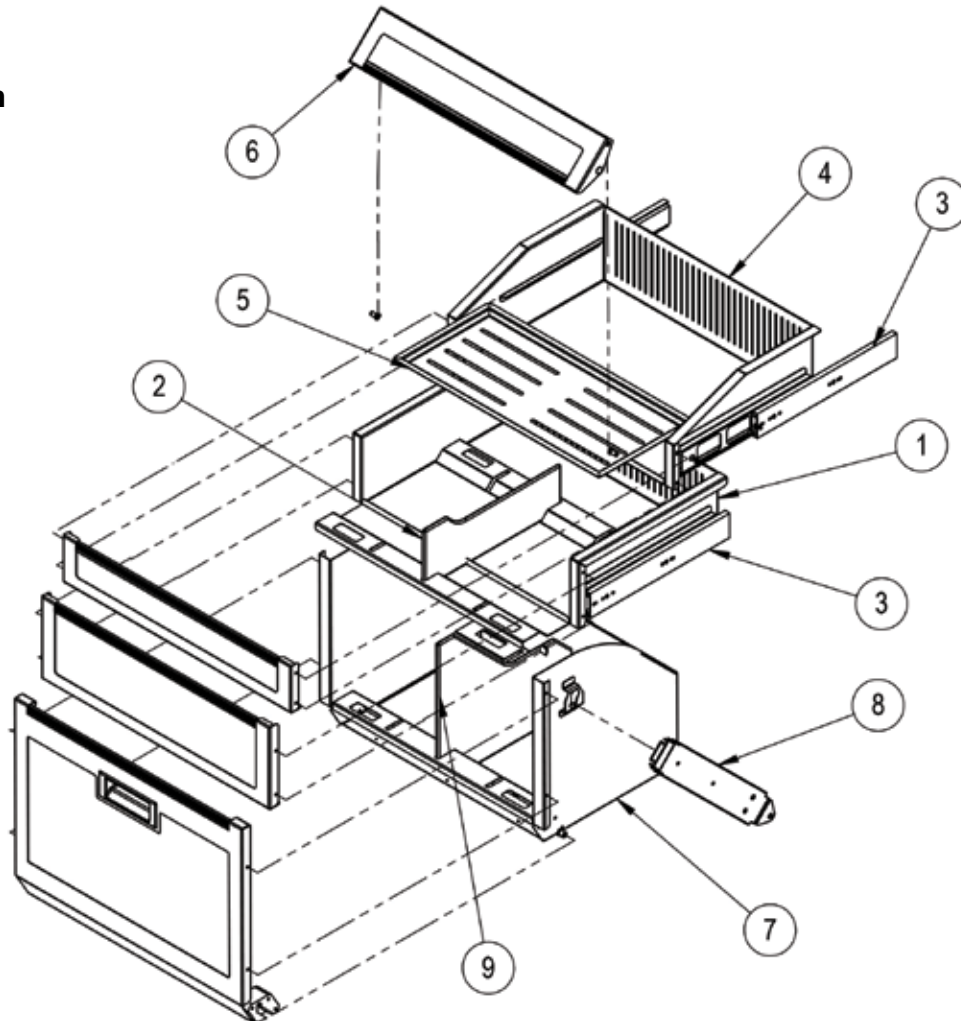


ITEM	DESCRIPTION
1	SOLID FOAMED PHANTOM
2	GASKET, DOOR
3	BRKT,MAGNET,REED SWITCH, FOR C
4	MAGNET, REED SENSOR, FOR COLUM
5	SCREW, M4 X .7MM, 8MM LONG, FLAT PH HD, 18-8SS
6	SNAP-CAP, CHROME, 8/8-CHR-ECO 2018-0249
6	RIGHT HINGE KIT (NOT SHOWN)
7	BRACKET, HINGE, LEFT
8	BRACKET, HINGE, RIGHT
9	BRACKET, BOTTOM, OVERLAY ATTAC
10	PILASTER, POWDER COATED, DOOR
11	SCREW, MACHINE, M4-.7 X 8MM L, PH PAN HD, 18-8SS
12	DOOR BIN ASSEMBLY, REFRIGERATO
13	BUTTER BIN ASSEMBLY
13	DOOR BIN ASSEMBLY, FREEZER
14	COVER ASSEMBLY, ACRYLIC. DOOR BIN
15	BRACKET, DOOR TILT, OVERLAY
16	HINGE, HETTICH, 110 KG, K05-A;
17	HINGE, HETTICH, 110 KG, K05-B;
18	DOOR TRIM KIT, LEFT HINGE DOOR
18	DOOR TRIM KIT, LEFT HINGE DOOR W/LOCK
18	DOOR TRIM KIT, RIGHT HINGE DOOR
18	DOOR TRIM KIT, RIGHT HINGE DOOR W/LOCK
19	CONDENSER AIRFLOW DIVIDER KIT

## 9.7 CR24R and CR30R Drawers

Figure 9-7. CR24R and CR30R Drawers

### Slide Tip-Out Bin



ITEM	DESCRIPTION
1	MIDDLE DRAWER ASSY, FRIDGE, CO
2	GLASS DIVIDER, SECOND DRAWER,
3	SLIDE, 12", PUSH TO OPEN, SET
4	DELI DRAWER, REFRIGERATOR
5	SLIDE, 12", PUSH TO OPEN, SET
6	PAN, DELI DRAWER, COLUMN REFRI
6	DELI BIN FLAP ASSEMBLY, COLUMN
7	TIP OUT BIN ASSY, COLUMN REFRI
8	SLIDE ASSEMBLIES, LT & RT, TIP
9	GLASS SEPERATOR, TIP OUT BIN,C

## 9.8 Damper Tip-Out Bin

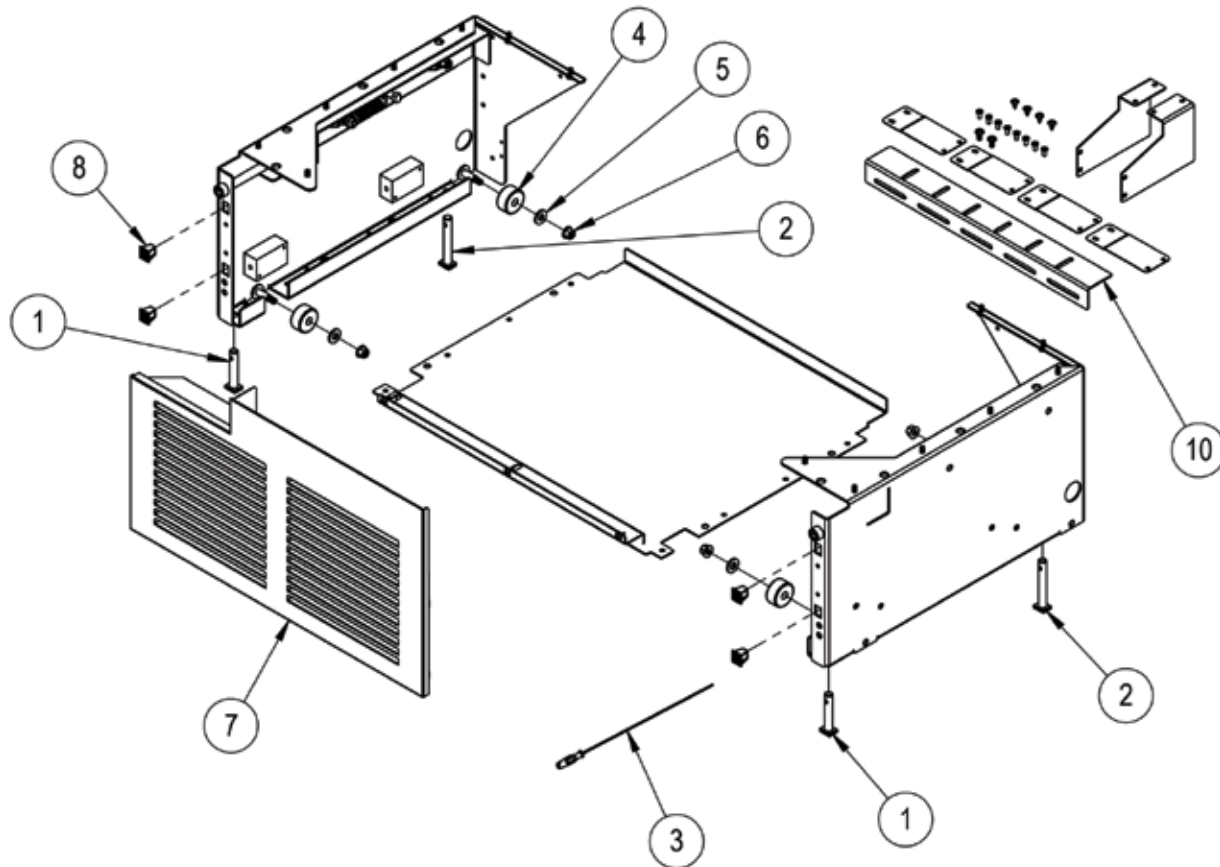


Figure 9-8. Damper Tip-Out Bin

ITEM	DESCRIPTION
1	FLAP FRAME ASSY , DELI BIN
2	DELI BIN DRAWER
3	PAN, DELI DRAWER
4	SLIDE, 12", PUSH TO OPEN, SET
5	GLASS HOLDING PANEL,MID DRAWER
6	GLASS DIVIDER, SECOND DRAWER
7	MIDDLE DRAWER ASSEMBLY
8	GLASS SEPERATOR, TIP OUT BIN
9	PAN, BOTTOM, TIP-OUT BIN,
10	GAS SPRING 20LB
11	PLASTIC END FITTING M6 THREAD
12	GAS DAMPER
13	TIP OUT BIN SUB-ASSY,

### 9.9 CR24R, CR24D, CR24W, CR24F, CC24D, CC24W, and CR30R Machine Compartment

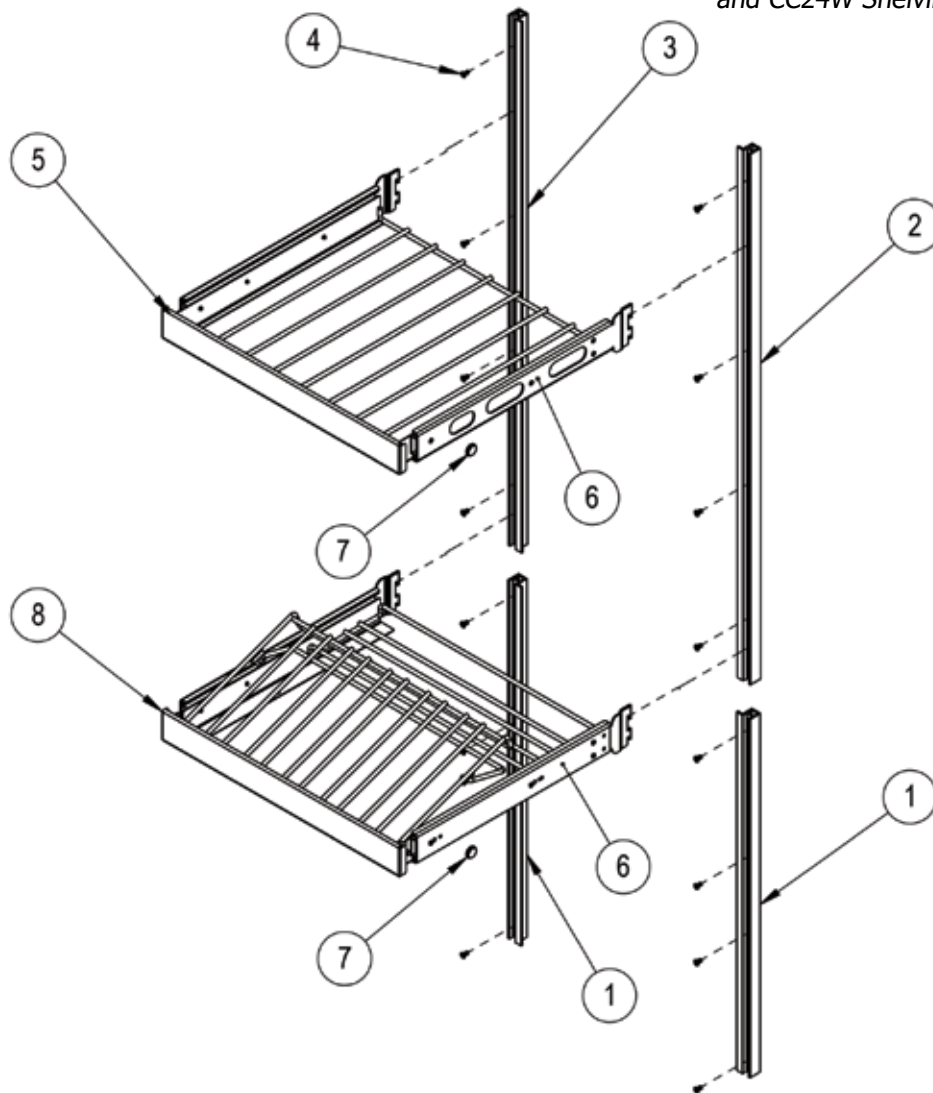
Figure 9-9. CR24R, CR24D, CR24W, CR24F, CC24D, CC24W, and CR30R Machine Compartment



ITEM	DESCRIPTION
1	LEVELING FOOT, FRONT, CAMAR
2	LEVELING FOOT, BACK, CAMAR
3	LEVELING TOOL KIT
3	TOOL, HEX, LEG LEVELING-SELL KIT 1012859
4	WHEEL, COLUMN
5	WASHER, NYLON, 10MM
6	M8 X 1.25 FLANGE LOCKNUT ZINC
7	CONDENSER GRILL ASSEMBLY, RIGHT HINGED, FOR COLUMN
7	CONDENSER GRILL ASSEMBLY, LEFT
8	LATCH, FASTEX #7800-02-9909
9	ANTI-TIP KIT, COLUMN

### 9.10 CR24D, CR24W, CC24D and CC24W Shelving

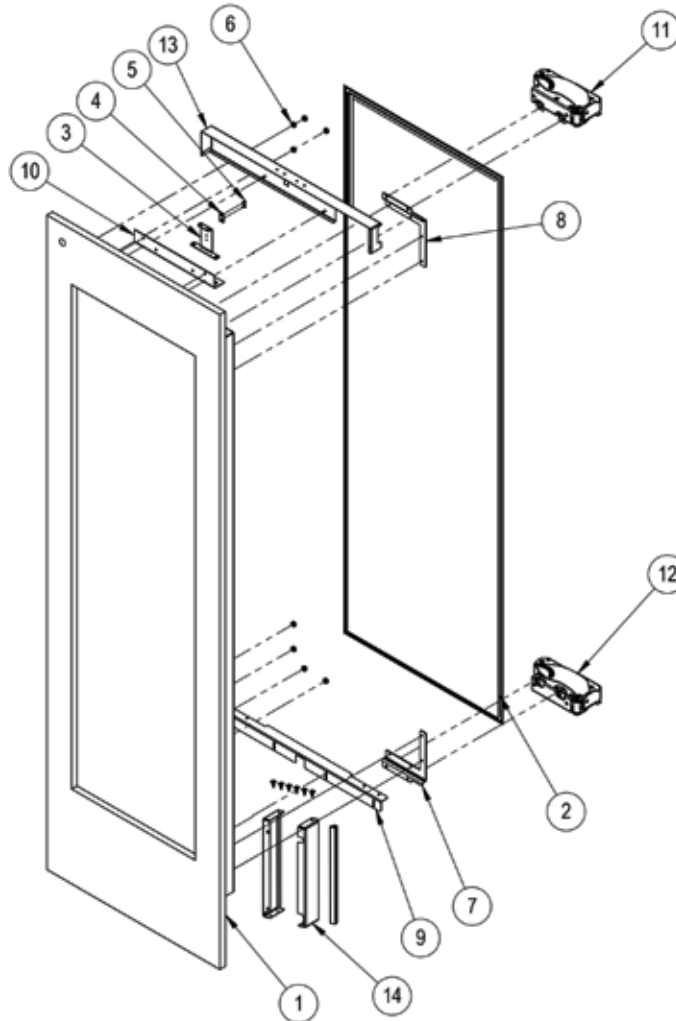
Figure 9-10. CR24D, CR24W, CC24D and CC24W Shelving



ITEM	DESCRIPTION
1	PILASTER, SIDE,BOTTOM, DZW
2	PILASTER, SIDE, TOP,RH, DZW
3	PILASTER, SIDE, TOP,LH, DZW
4	SCREW, MACHINE, M5 X .8MM, 10MM LONG, FLAT PH HD, 18-8SS
5	WINE SHELF, COLUMN WINE UNITS
6	SLIDE WINE SHELF_GS4270 16"
7	BUMPER, .160", BLACK, BS-44
8	WINE SHELF, DISPLAY, SS FASCIA

### 9.11 CR24D, CR24W, CC24D and CC24W Door

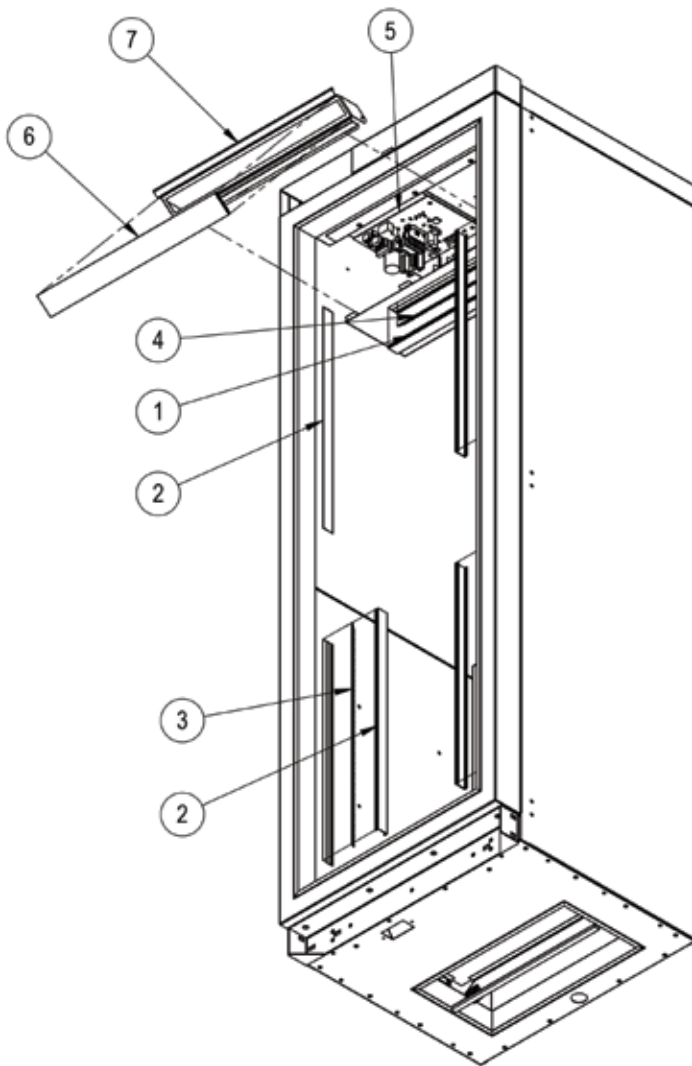
Figure 9-11. CR24D, CR24W, CC24D and CC24W Door



ITEM	DESCRIPTION
1	DOOR, SOLID FOAMED PHANTOM
2	GASKET, DOOR
3	BRKT,MAGNET,REED SWITCH, FOR C
4	MAGNET, REED SENSOR, FOR COLUM
5	SCREW, M4 X .7MM, 8MM LONG, FLAT PH HD, 18-8SS
6	SNAP-CAP, CHROME, 8/8-CHR-ECO 2018-0249
8	RIGHT HINGE KIT (NOT SHOWN)
7	BRACKET, HINGE, LEFT
8	BRACKET, HINGE, RIGHT
9	BRACKET, BOTTOM, OVERLAY ATTAC
10	BRACKET, DOOR TILT, OVERLAY
11	HINGE, HETTICH, 110 KG, K05-A;
12	HINGE, HETTICH, 110 KG, K05-B;
13	DOOR TRIM KIT, LEFT HINGE DOOR
13	DOOR TRIM KIT, LEFT HINGE DOOR W/LOCK
13	DOOR TRIM KIT, RIGHT HINGE DOOR
13	DOOR TRIM KIT, RIGHT HINGE DOOR W/LOCK
14	CONDENSER AIRFLOW DIVIDER KIT

### 9.12 CR24F Column Freezer

Figure 9-12. CR24F - Column Freezer

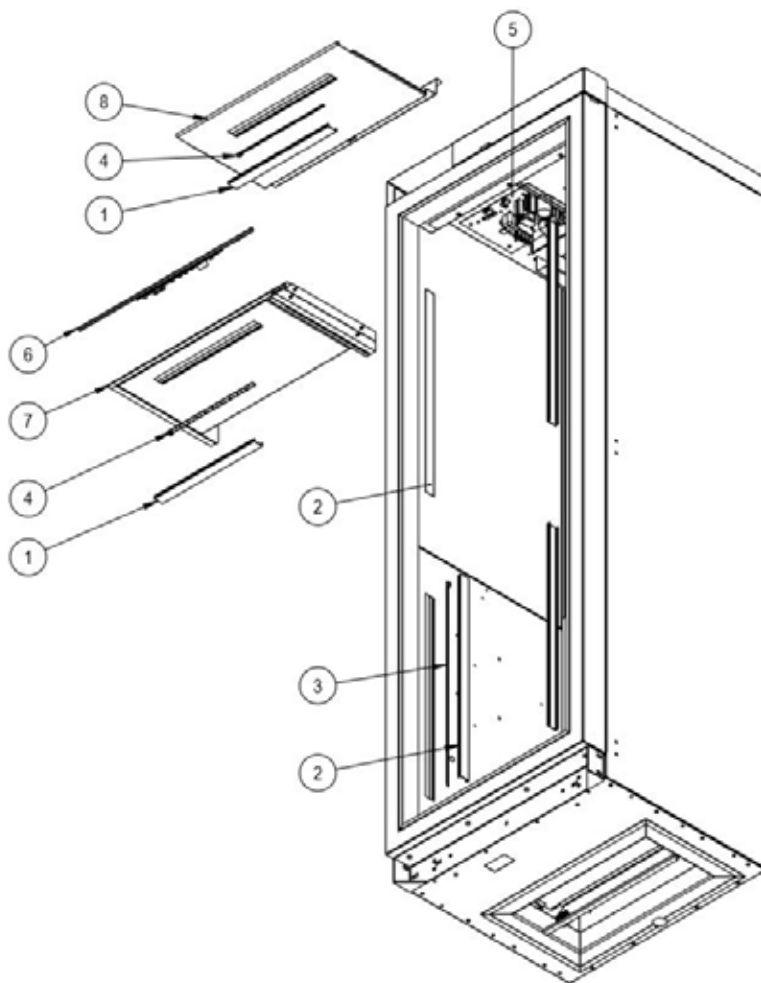


ITEM	DESCRIPTION
1	LENS COVER, LED, 8.0"
2	LENS COVER, LED, 22.0"
3	LED LIGHT BOARD, LONG, WHITE,
4	LED LIGHT BOARD, SHORT, WHITE
5	CONTROL BOARD, ELAN, COLUMN
6	USER INTERFACE, ELAN, COLUMN FREEZER
7	BRACKET, USER INTERFACE, FOR C
8	WIRE HARNESS, SHORT, UI - CONT
9	HARNESS, REED SWITCH, FOR COLUMN
10	SENSOR, COMPARTMENT, NTC, 10K
11	WIRE HARNESS, BUNDLED, COLUMN FREEZER
12	LIGHT HARNESS, COLUMN, CEILING
13	HARNESS, SENSOR EXTENSION, DUA
14	FAN WIRE HARNESS COLUMN
15	WIRE HARNESS, C-BOARD TO LIGHT
16	WIRE HARNESS INVERTER SIGNAL
17	POWER CORD KIT



### 9.13 CR24R Column Refrigerator

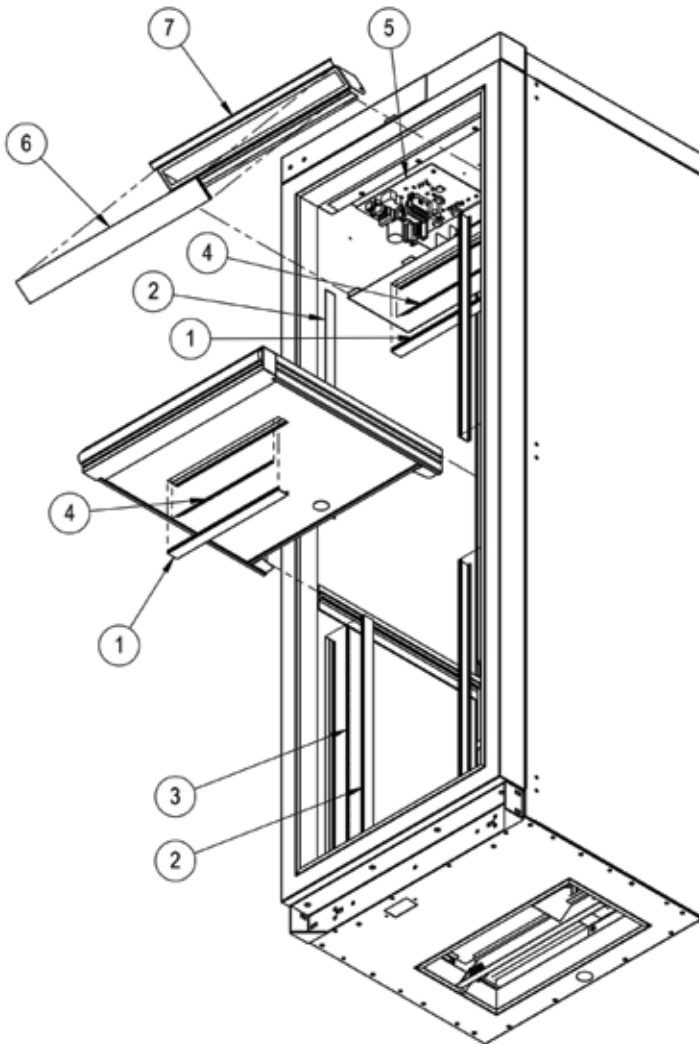
Figure 9-13. CR24R - Column Refrigerator



ITEM	DESCRIPTION
1	LENS COVER, LED, 12"
2	LENS COVER, LED, 22"
3	LED LIGHT BOARD, LONG, WHITE
4	LED LIGHT BOARD, SHORT, WHITE
5	CONTROL BOARD, ELAN, COLUMN
6	USER INTERFACE, ELAN, COLUMN REFRIGERATOR
7	BRACKET, USER INTERFACE
8	HOUSING CONTROL BOARD, COLUMN REFRIGERATOR
9	WIRE HARNESS, SHORT, UI-CONT
10	WIRE HARNESS, REED SWITCH
11	SENSOR, COMPARTMENT, NTC, 10K
12	WIRE HARNESS, BUNDLED, COLUMN REFRIGERATOR
13	WIRE HARNESS, LIGHT, COLUMN CEILING
14	WIRE HARNESS, SENDOR EXTENSION
15	WIRE HARNESS, FAN, COULMN
16	WIRE HARNESS, C-BOARD TO LIGHT
17	WIRE HARNESS, INVERTER SIGNAL
20	POWER CORD KIT

### 9.14 CR24D & CC24D Dual-Zone Wine Column

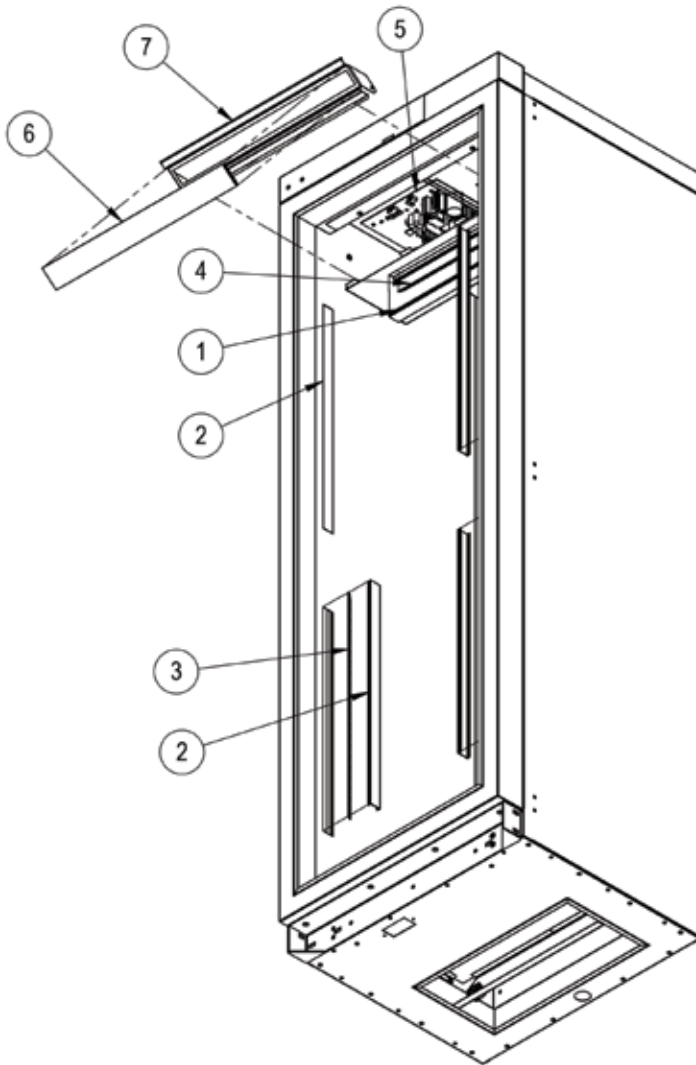
Figure 9-14. CR24D & CC24D  
- Dual-Zone Wine Column



ITEM	DESCRIPTION
1	LENS COVER, LED, 8.0"
2	LENS COVER, LED, 22.0"
3	LED LIGHT BOARD, LONG, WHITE/B-ECO 2018-0249
4	LED LIGHT BOARD, SHORT, WHITE
5	CONTROL BOARD, ELAN, COLUMN
6	USER INTERFACE, ELAN, COLUMN D
7	BRACKET, USER INTERFACE, FOR C
8	WIRE HARNESS, SHORT, UI - CONT
9	HARNESS, REED SWITCH, FOR COLUMN
10	HUMIDITY / TEMP SENSOR, COLUMN
11	HUMIDITY/TEMP. SENSOR #300780, DZ UPPER COMPARTMENT
12	WIRE HANRESS, BUNDLED, COLUMN DUAL ZONE WINE
13	LIGHT HARNESS, COLUMN, CEILING
14	WIRE HARNESS, DUAL ZONE WINE L
15	DAMPER HARNESS, COLUMN DZ WINE
16	HARNESS, SENSOR EXTENSION, SIN
17	FAN WIRE HARNESS COLUMN
18	WIRE HARNESS, C-BOARD TO LIGHT
19	WIRE HARNES INVERTER SIGNAL
20	HARNESS, HUMIDITY SENSOR, 24"
21	HARNESS, HUMIDITY SENSOR, 96"
22	POWER CORD KIT

### 9.15 CR24W & CC24W Single-Zone Wine Column

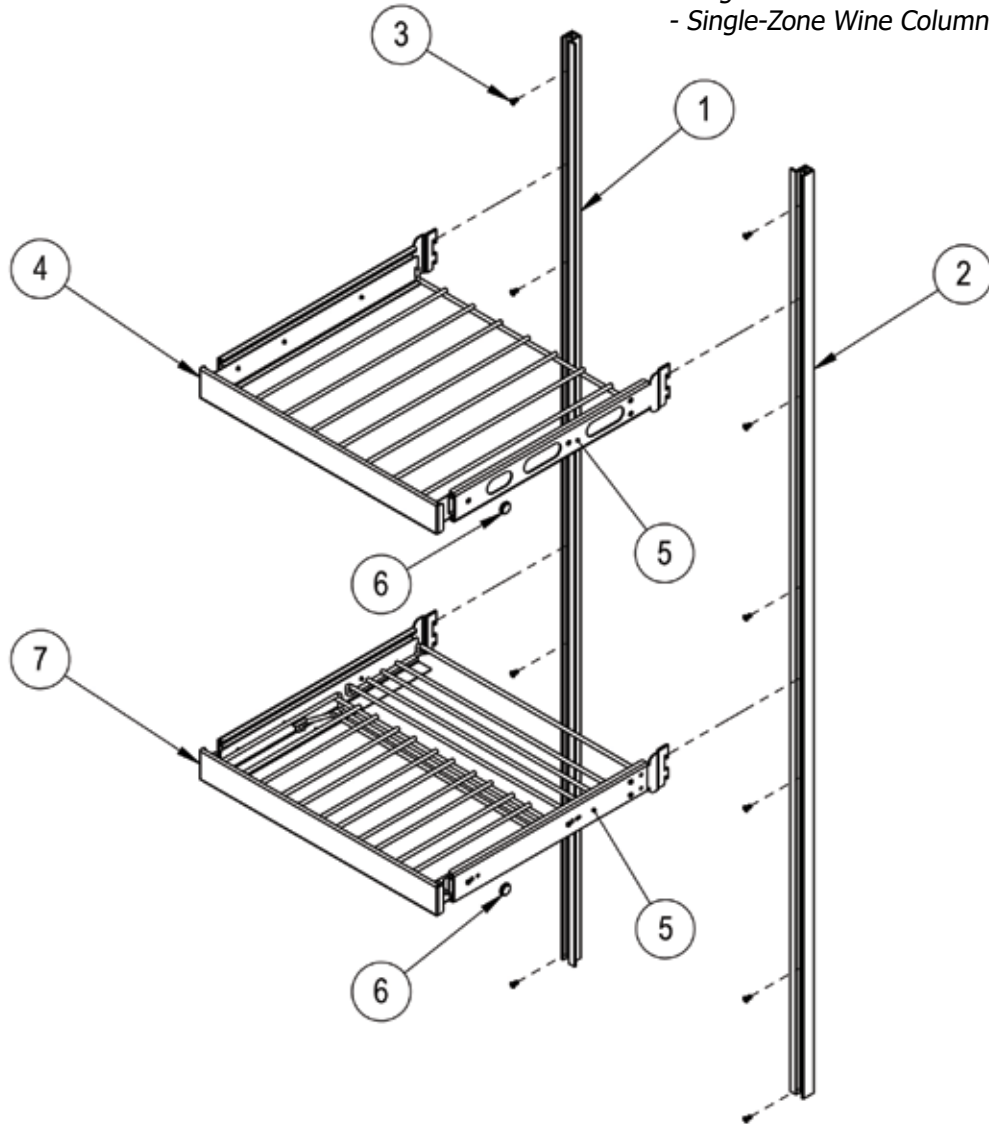
Figure 9-15. CR24W & CC24W  
- Single-Zone Wine Column



ITEM	DESCRIPTION
1	LENS COVER, LED, 8.0"
2	LENS COVER, LED, 22.0"
3	LED LIGHT BOARD, LONG, WHITE/B-ECO 2018-0249
4	LED LIGHT BOARD, SHORT, WHITE
5	CONTROL BOARD, ELAN, COLUMN
6	USER INTERFACE, ELAN, COLUMN S
7	BRACKET, USER INTERFACE, FOR C
8	WIRE HARNESS, SHORT, UI - CONT
9	HARNESS, REED SWITCH, FOR COLUMN
10	HUMIDITY / TEMP SENSOR, COLUMN
11	WIRE HARNESS, BUNDLED, COLUMN SINGLE ZONE WINE
12	LIGHT HARNESS, COLUMN, CEILING
13	HARNESS, SENSOR EXTENSION, SIN
14	FAN WIRE HARNESS COLUMN
15	WIRE HARNESS, C-BOARD TO LIGHT
16	WIRE HARNESS INVERTER SIGNAL
17	HARNESS, HUMIDITY SENSOR, 24"
18	POWER CORD KIT

### 9.16 CR24W & CC24W Single-Zone Wine Column Shelves

Figure 9-16. CR24W & CC24W  
- Single-Zone Wine Column Shelves



ITEM	DESCRIPTION
1	PILASTER, SIDE, LH, WINE
2	PILASTER, SIDE, RH, WINE
3	SCREW, MACHINE, M5 X .8MM, 10MM LONG, FLAT PH HD, 18-8SS
4	WINE SHELF, COLUMN WINE UNITS
5	SLIDE WINE SHELF_GS4270 16"
6	BUMPER, .160", BLACK, BS-44
7	WINE SHELF, DISPLAY, SS FASCIA

