



16-F & 16-Fp SPACE SAVER Frozen Fry Dispenser

Equipment Manual
English
P/N 310157 Rev. A

Manufactured By
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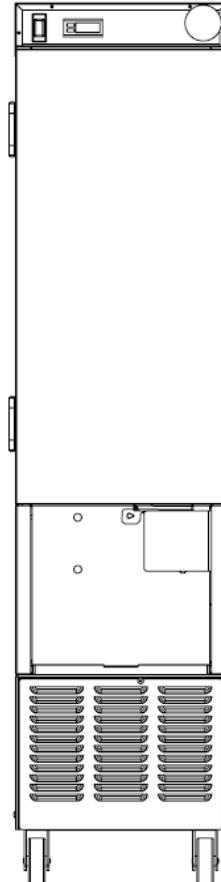


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Introduction

This manual contains important information on the proper installation, operation, and care of the RAM Space Saver Frozen Fry Dispenser. Following the instructions and procedures in this document will ensure that your dispenser provides years of reliable service. If any problems with the dispenser arise, this manual will also provide troubleshooting tips and service information.

Unpacking & Installation

Remove all packing material from Dispenser. Open Cabinet Door. Disassemble, clean, sanitize and dry the Hopper and dispensing components. Clean, sanitize and dry Fry Baskets. (see pages 5 and 8 for disassembly & cleaning). Reassemble all components (see page 7 for startup and operation).

The equipment must be installed by qualified personnel, in accordance with the manufacturer's instructions. Local electrical installation and safety regulations must be observed. Before installing check that voltage and frequency on the data plate match the electrical supply.

Intended Use

The Frozen Fry Dispenser must only be used for the temporary frozen storage and dispensing of non-meat based food products at commercial restaurants and similar locations. Any other use would be deemed as inappropriate. The dispenser is designed for installation and use indoors, in a restaurant environment protected from weather, excessive heat, excessive humidity and salt air.

HAZARD COMMUNICATION STANDARD:

Hazard Communication Standard (HCS) Procedures in this manual may include the use of chemical products. These chemical products will be highlighted with boldface letters followed by the abbreviation (HCS) in the text of the procedure. See the HCS Manual for the appropriate Material Safety Data Sheets (MSDS).

FCC STATEMENT

WARNING: This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause interference to radio communications.

EMC STATEMENT

This equipment meets EMC directives:

- EN 55014-1:2006 + A1:2009

- EN55014-2:1997 + A1:2001 + A2:2008-Category II

Serial Number: The information on the serial number identification label is as follows:

<i>Example: s/n 16FR1512A00025</i>	
16F = Model	12 = Month
R = Manu. Facility	A = Revision Level
15= Year	00025 = Sequence #

<i>Example: s/n 16PR1705A00045</i>	
16P = Model	05 = Month
R = Manu. Facility	A = Revision Level
17= Year	00045 = Sequence #

Warning!

Only personnel qualified, trained and licensed in refrigeration, may diagnose or repair the refrigeration systems on this equipment.

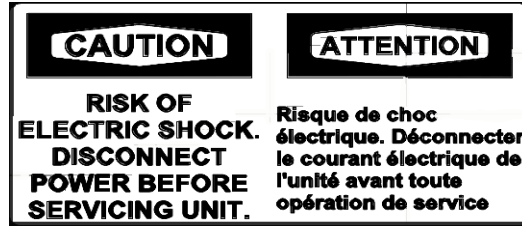
Service functions described in this manual could cause irreversible damage to the equipment and/or injury to personnel if performed improperly.

If the power cord is damaged, it must be replaced by the manufacturer, or its service agent, or a similarly qualified person in order to avoid a hazard.

Equipment Safety

- Turn the Power Switch off and disconnect the Dispenser Power Cord from the wall outlet before cleaning, moving or servicing the Dispenser.
- Inspect the Dispenser on a regular basis to identify potential problems before they occur.
- Keep the Dispenser clean.
- Keep hands away from the Outlet Door and Dispenser Drum while the Dispenser is operating. Disconnect power before clearing a blocked Outlet Door or Dispenser Drum.
- Fry Baskets may be hot. Pick them up by the handles only.
- Do NOT roll the Dispenser to the back sink for cleaning, this will cause unnecessary wear on the Dispenser.
- If the Power Cord is damaged it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid a hazard.
- Use only the Power Cord that came with the Dispenser. Do NOT use an extension cord.
- Do NOT modify the Power Cord
- In a safety emergency, immediately disconnect the Dispenser Power Cord from the wall outlet.
- Do NOT obstruct access to the wall outlet or place pressure on the Power Cord.
- Only trained and/or qualified personnel should service the electrical system.
- DO NOT SPRAY THE DISPENSER WITH LIQUID OR SOLVENTS.
It is not sealed against jetting fluids and contamination may get into sensitive components. Spraying the dispenser may void the warranty.
- Use caution when handling heavy parts such as back and top panels.
- Always reinstall service panels when maintenance is complete.
- Do NOT drill or otherwise puncture cabinet walls or top.
- Keep unit upright at all times.
- Keep ventilation openings in the appliance enclosure, particularly in the bottom back panel, clear of obstruction.
- Do NOT use mechanical devices or other means to accelerate the defrosting process, other than those recommended by the manufacturer. Do NOT drill or otherwise puncture cabinet walls or top.
- Do NOT damage the refrigerant circuit.
- Do NOT use electrical appliances inside the food storage compartments of the appliance, unless they are of the type recommended by the manufacturer.
- Do NOT store explosive substances such as aerosol cans with a flammable propellant in this appliance.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

Equipment Safety Cont.

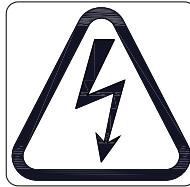


US and Canada

Label is located near Power Cord inlet.

CAUTION, RISK OF ELECTRIC SHOCK.

DISCONNECT POWER BEFORE SERVICING UNIT.



International

Label is located on the top and bottom Rear Access Panels, Side Access Panel Top Cover and near Power Cord inlet.

CAUTION, RISK OF ELECTRIC SHOCK.

INDICATES HAZARDOUS VOLTAGE WITHIN



US and Canada

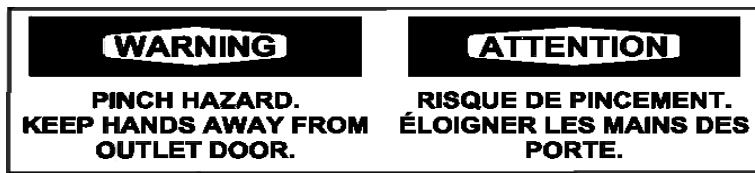


International

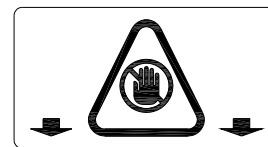
DISCONNECT POWER BEFORE SERVICING UNIT.

Label is located on the rear access panel and applies to both the drum motor and outlet door assemblies within the enclosure.

CAUTION, MOVING PARTS.



US and Canada



International

Label is located on the front and applies to the outlet door assembly.

CAUTION, MOVING PARTS.

HANDS SHOULD NOT BE PLACED NEAR OR BELOW THE OUTLET DOOR.

Equipment Safety Cont.



US and International

Label is located on the Rear Access Panel and applies to the refrigeration system.

CAUTION, RISK OF FIRE

KEEP OPEN FLAME FROM EXPOSED INSULATION WHEN SERVICING

REFRIGERENT IS FLAMMABLE (MODEL 16-FP ONLY, R290 REFRIGERANT)

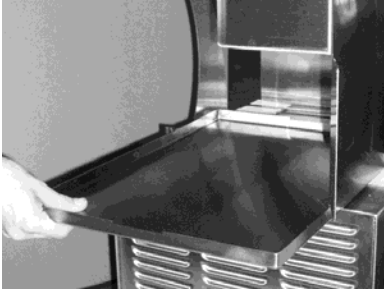
Warning: Keep ventilation openings in the appliance enclosure, particularly in the back-bottom panel, clear of obstruction.

Caution: The 16-Fp utilizes R290 (propane) as a refrigerant. Release of refrigerant into the atmosphere is strictly prohibited.

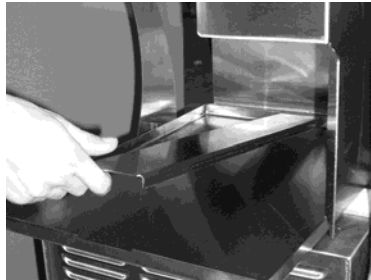
Caution: Propane (R290) is highly flammable.

Dispenser Assembly

Note: Before assembling the Dispenser it is recommended that all parts be cleaned, sanitized, dry, and handled in a sanitary manner. Refer to the Cleaning Procedures for more information.



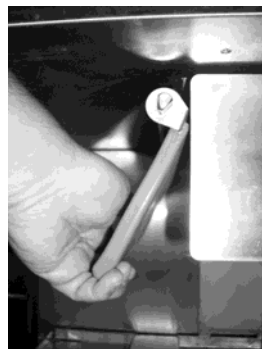
Drip Tray



Drip Tray Spacer



Door Alignment Arrow



Outlet Door

Install the Drip Tray under the cabinet outlet, lifting it slightly over the cabinet supports. Position the Drip Tray Spacer on the Drip Tray in the mounting slots.

With the dispenser turned off, align the Outlet Door with the Door Alignment Arrow and slide the Outlet Door over the shaft toward the back wall engaging the Alignment Arrow. (See page 10 if the alignment Arrow is in the closed position.) With your hands removed, turn the dispenser on, the Outlet Door will retract into the closed position.



Drum



Fry Diverter

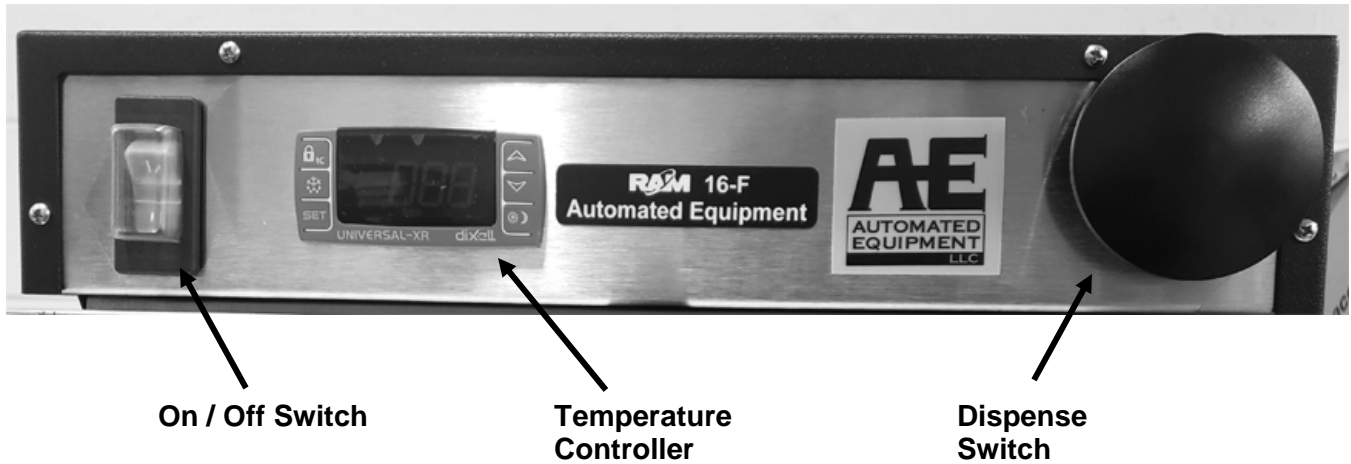


Hopper Assembly

Install the Drum into the Hopper making sure the square opening in the drum is pointed toward the rear of the Hopper. Install the Fry Diverter in the Hopper by sliding the Fry Diverter tabs into the slots located on the inside Hopper wall. Install the hopper assembly into the cabinet by sliding them onto the hopper supports. **DO NOT** force the drum on to the shaft. Rotate the drum in the hopper until the square opening meshes with the drum motor shaft, then slide the hopper assembly backward until it drops into place.

Operator Panel and Controls

The Operator Panel consists of the On/Off Switch, the Temperature Controller with Display and the Dispense Button.



The **On/Off Switch** is the main power switch and turns the dispenser power on and off. The switch illuminates when on.

The **Temperature Controller** maintains the cabinet temperature and displays the current cabinet temperature. The dispenser's controller can also detect an abnormal refrigeration condition. When an error condition is detected the display will state the error that has occurred.

The **Dispenser Button** operates both the Dispensing Drum and the Outlet Door. When the Dispense Button is pressed the Outlet Door moves to the dispensing (open) position and the drum begins to turn in the hopper. When the desired amount of frozen fries have dispensed into the basket, the Dispense button is released, the Dispenser Drum stops rotating and the Outlet Door closes.

Start up and Operation

- When the dispenser is in place, lock both front casters.
- Make sure Power Switch, located on the left side of the operator panel, is turned off.
- Assemble the Dispenser (see page 5).
- Plug the Power Cord into an approved outlet and turn the Dispenser on.

Note: Turn Dispenser on a minimum of 90 minutes (depending on ambient temperature conditions) before loading frozen product into the Dispenser. Once the temperature display has dropped to 10°F (-12°C) load frozen product into Dispenser and use the Dispenser.

Note: This machine is to be used only for dispensing frozen fries or other approved product. Any other use may cause injury to personnel or damage to the machine.

The Frozen Fry Dispenser is intended to maintain and dispense frozen fries on demand eliminating the need for staging full baskets of fries. Dispensing and cooking fries direct from the freezer results in improved fry quality, consistency and yield.

Do not stage full baskets of fries on the side mount basket rack, if equipped. The side mount basket rack should be used for empty fry basket storage only.

Loading the Hopper

Note: To achieve optimum fry yield and the most consistent basket loads, it is important to use the following technique for loading frozen fries into the Hopper.

For each bag or box of fries:

1. Remove the bag of fries from the case. Be careful not to crush the fries.
2. Open the top of the bag or box completely. (A partially open bag may retain fries.)
3. Hold the opened end of the bag closed with your hand and lay it in the Hopper with the opening toward the side opposite of the Diverter.
4. Release the opened end of the bag or box.
5. Empty the bag into the Hopper by pulling it evenly toward the diverter. When adding multiple bags of fries, alternate the placement of the bag in the Hopper opposite of the previous bag. The second bag of fries should be emptied into the Hopper with the opening toward the Diverter, and pulling it evenly toward the Hopper wall opposite the Diverter.

This crisscross loading method assures an even distribution of fry lengths in the Hopper and the Baskets

The dispenser hopper holds 36 lbs (16.3 kg) Hopper capacity may vary depending on the product.

Warning: Pinch Hazard. Personnel should take care not to place hands or fingers near the Drum inside the Hopper while this machine is in operation. Hands or fingers could be pinched between the Drum and the Hopper as the Drum turns.

Note: Do NOT shake or drop fries from the bag or box into the Hopper, this will result in unnecessary fry breakage.

Operation

1. Place a basket under the Outlet Door in the loading position.
2. Press and hold the Dispense Button until the desired amount of fries are dispensed into the basket.
3. Release the Dispense Button.
4. Remove the basket.

Daily Closing: Disassembly, Defrost & Cleaning

IMPORTANT! These cleaning instructions are intended as a guide. Refer to your local, state, and federal regulations for any additional instructions and for cleaning frequency requirements.

Remove all Baskets from the dispense area and basket rack. Open the Cabinet Door and remove the Hopper Assembly by lifting the front of the Hopper up slightly and pulling forward on assembly.

Remove any unused product from the Hopper by emptying the product into an approved storage container. Place the storage container immediately into a freezer to maintain frozen product.

Defrost

Because the dispenser employs a cold wall design, it will be necessary to manually defrost the cabinet daily.

1. Press the On/Off Switch to the Off position and unplug the dispenser power cord.
2. With the dispenser off and the remaining product removed, move the Outlet Door into the open position
3. Remove the Outlet Door from the mounting shaft.
4. Lift and remove the Drip Tray and Drip Tray Spacer.
5. Open the Cabinet Door and allow 1 hour to defrost.

Caution: Never use a sharp object to remove frost build-up. Never drill or otherwise puncture cabinet walls or top.

Take the removable components from the Dispenser to the washing area. Wash them with a hot solution of detergent and water. Rinse each component with clear water and sanitize (wash/rinse/sanitize) (**HCS**). Allow components to air dry.

NOTE: The removable components are **NOT** dishwasher safe.

Move the Dispenser out from the wall to clean behind and underneath it.

Do NOT roll the dispenser to the back sink for cleaning, this will cause unnecessary wear on the dispenser.

Once the cabinet is free of frost, wipe down the internal and external of the cabinet with a hot solution of detergent and water. Rinse with clear water and repeat wipe down with sanitizing solution (**HCS**) and allow to air dry.

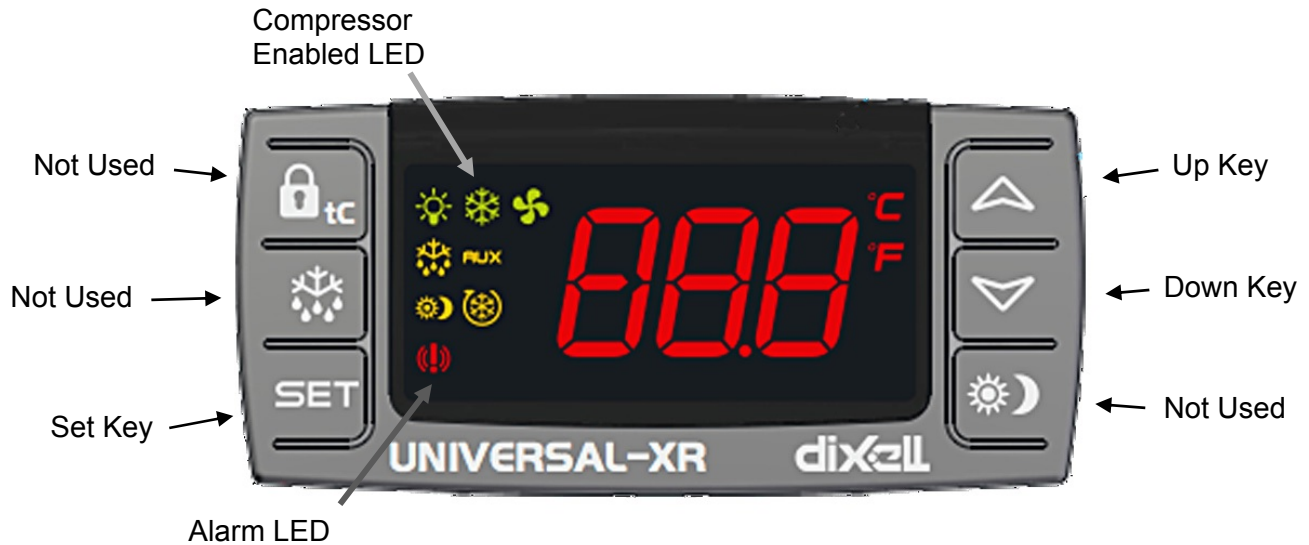
Warning: Do not spray the Dispenser with Liquid or Solvents. The Dispenser does not provide a water tight seal. Contaminants and moisture may get into sensitive components.

Dry all components and reassemble the Dispenser (see page 4). Move Dispenser back into place.

Notice: The dispenser must be accessible from all sides for routine cleaning and maintenance. A minimum of 1" (26 mm) clearance on both sides and 2" (50 mm) behind the dispenser is recommended.

Temperature Controller Operation and Menu Structure

The Space Saver Frozen Fry Dispenser uses an electronic temperature controller to operate the refrigeration system. It directly controls the compressor. The following sections will cover basic operation and programming of this controller.



Key and LED descriptions	
Set key	Displays current set point, allows set point changes
Up key	Increases displayed value; browses up lists of parameters
Down key	Decreases displayed value; browses down lists of parameters
Compressor Enabled LED	On: Compressor enabled
	Flashing: Anti-short cycle delay enabled
Alarm LED	On: Alarm is occurring
Measurement Units	Displays the current measurement unit
Temperature Display	Displays the current temperature

Displaying and changing set point temperature

The set point is the temperature at which the refrigeration system will turn off. The recommended set point is 0 degrees Fahrenheit (-18 degrees Celsius). The set point can be viewed and adjusted with the SET key. Press and immediately release the SET key to view the current set point. To change the set point, press and hold the SET key for 4 seconds or until the display is flashing. The set point can be adjusted by using the up and down arrow keys. The new set point is stored by pressing the SET key again.

Locking the Controller

The controller keys may be locked by pressing both the up and down keys for 3 seconds. The display will flash **PoF**. The keys are now locked and cannot be used to change any parameter (the set point is still visible by pressing the set key). To unlock the keys, once again press both the up and down keys for 3 seconds. The display will show **Pon** and the keys will be unlocked.

Error Detection

Note: Errors relating to the refrigeration systems, while requiring corrective action, will not disable the fry dispensing portion of the equipment.

The temperature controller is capable of detecting conditions that fall outside normal operation. In such cases, the controller will display an alarm message to warn the operator that corrective action should be taken. The alarm consists of a flashing message on the controller display. The flashing message will remain until the error is corrected. Some alarm conditions may be easily fixed, while others may require the attention of a qualified service technician. The chart below provides an explanation of each error message and what action may be needed to correct the problem.

Alarm Message	Cause	Corrective Action
"P1" flashing	Thermostat probe failure	Power off; wait one minute, power on.
		Check probe connections on back of controller (Pins 11 and 12. See schematic at end of manual).
		Replace probe.
"HA" alternating with freezer temperature	Maximum temperature alarm	Power off; wait one minute, power on.
		Check that cabinet door seals properly.
		Check and clean the condenser filter and condenser
		Verify condenser fan operation
		Verify compressor operation
"LA" alternating with freezer temperature	Minimum temperature alarm	Power off; wait one minute, power on.
		Check/replace compressor isolation relay.

WARNING! Do **NOT** change the temperature scale (Fahrenheit or Celsius) on the controller.

WARNING! Only qualified and trained personnel should attempt repairs to any of the systems in the Dispenser. Call the Technical Support Line for service issues.

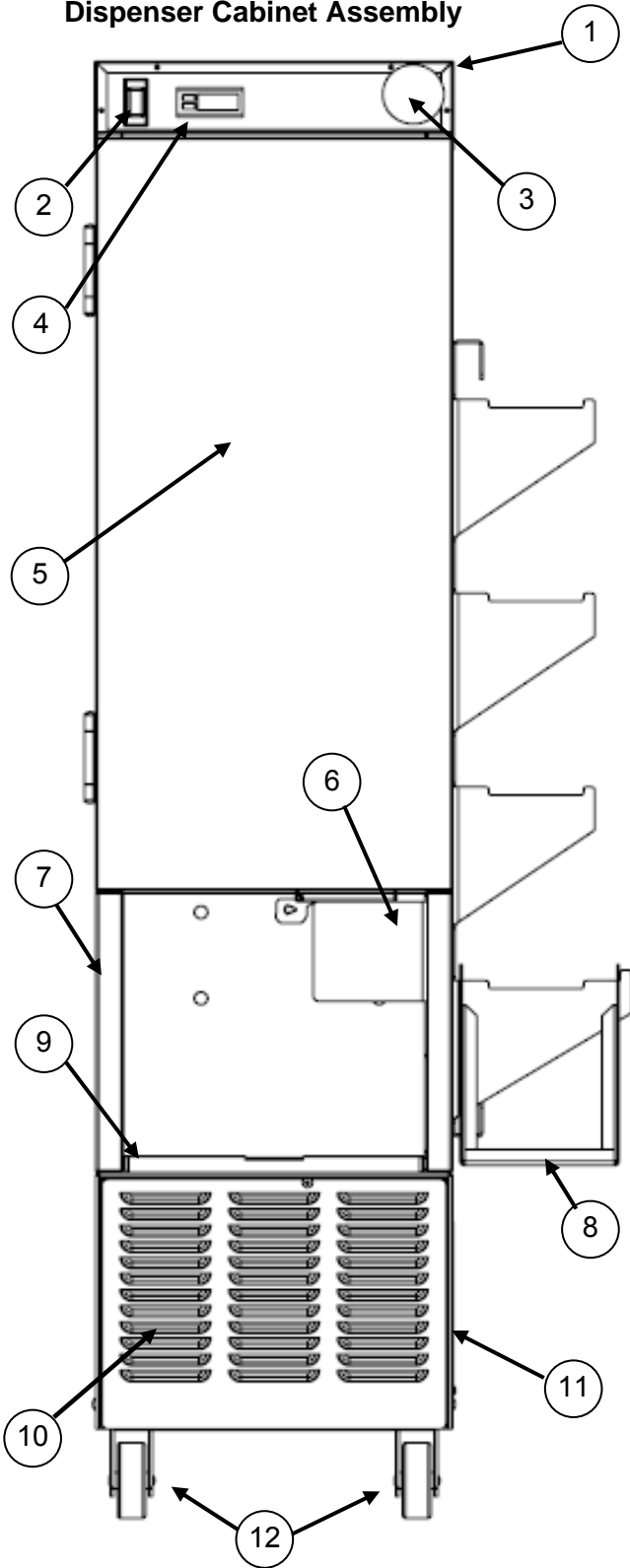
Troubleshooting

The following is a list of possible problems that may occur, probable causes, and corrective action that may eliminate the problem. If, after performing the corrective action, the problem persists, call our Technical Support Hotline for assistance. **Technical Support Hot Line: 1-800-248-2724 (U.S./Canada) or 651-385-2273.**

Problem	Possible Causes	Corrective Actions
No power	Dispenser not plugged in	Verify plug is in the outlet, the on/off switch is on
	Faulty electrical outlet	Check the circuit breaker. Try plugging the unit in another outlet.
	Faulty power cord or plug	Have a qualified electrician test and/or replace the power cord
Dispenser not reaching temperature (HA Alarm) or slow to cool	Dirty or clogged condenser or condenser filter	Clean condenser and condenser filter
	Cabinet Door not closing	Verify hopper is properly installed
		Check the door gasket, if damaged replace.
		Check for damage to the door.
	Outlet Door not installed	Install Outlet Door
	Faulty probe	Verify probe accuracy, calibrate probe.
	Faulty Temperature Controller or refrigeration relay	Call AE for assistance
Condensing unit problem	Call AE for assistance	
Dispenser temperature too cold (LA Alarm)	Check the Compressor Enabled LED on the controller	If the Compressor Enabled LED is off and the compressor is running, suspect a stuck refrigeration relay or controller fault
		If the Compressor Enabled LED is on and the temperature reading is below the set point, suspect the controller.
Not dispensing fries	Hopper is empty	Verify product is in the hopper
	Fries are bridged in the hopper	Re-distribute fries to break up the bridge
	Drum not turning	Verify Dispensing Drum socket is not damaged
		Verify the motor shaft is turning when the Dispense Switch is pressed. If not suspect a faulty Dispense Switch, wiring or a faulty drum motor. Call AE for assistance.
	Outlet Door not opening	Verify proper installation of Outlet Door
		Verify the door shaft is turning when the Dispense Switch is pressed. If not suspect a faulty Dispense Switch, faulty relay PCB, wiring or a faulty door motor. Call AE for assistance.
		Check for damage to the Outlet Door.
Outlet door not closing	Product caught in outlet	Disassemble Outlet Door and Hopper.
Outlet door alignment arrow in closed position	Dispenser turned on while outlet door removed	To position the alignment arrow for door placement, first verify there are no fries in the hopper, then turn the dispenser on and press the dispense button. While depressing the dispense button, shut off the on/off switch. Alignment arrow should be in the proper position to install the outlet door.
Overfilling baskets	Missing diverter or installed incorrectly	Reassemble Hopper assembly
	Drum continues to turn after the Dispense Button is released	Verify Dispense Button is not sticking
		Suspect a faulty relay PCB. Call AE for assistance.

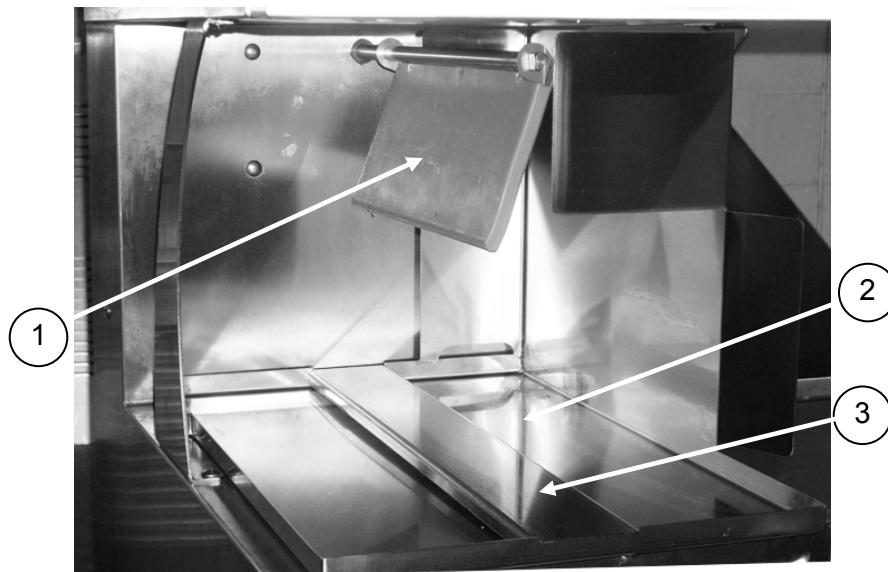
Part Identification

Dispenser Cabinet Assembly

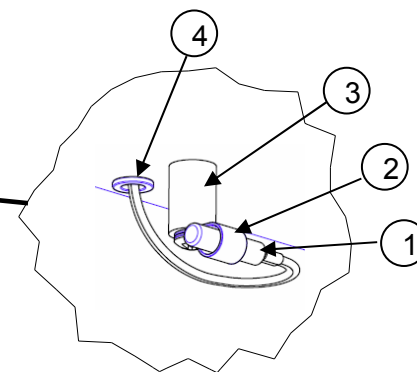
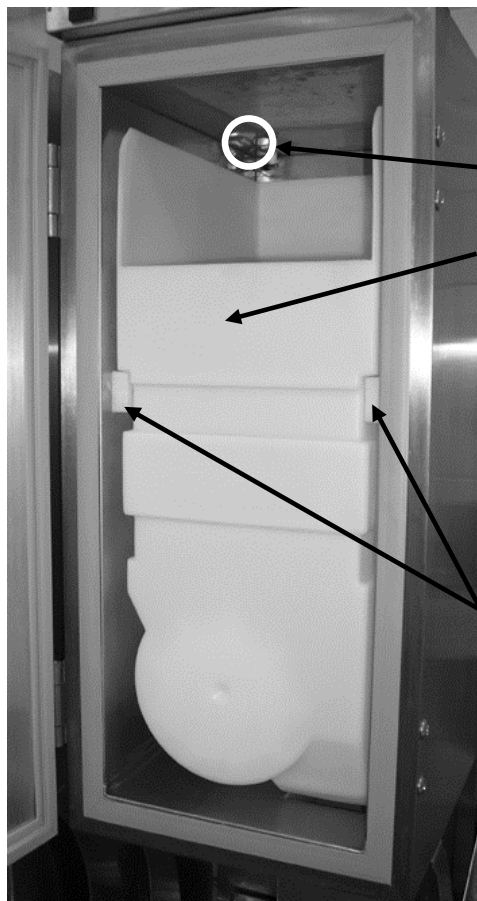


Item	Qty.	Part #	Description
1	1	296486	Top Cover
	4	213559	Screw, Truss head, Phillips, #10-32x1/2"
	4	294092	Screw, Truss head, Phillips
2	1	292246	On/Off Switch 15A
3	1	296515	Dispense Switch
4	1	310082	Temperature Controller, Domestic (°F)
		310083	Temperature Controller, International (°C)
5	1	296444	Door Gasket
	2	293706	Hinge, Door
	4	293855	Screw, Truss Head, Phillips, 3/8-16x1/2"
6	1	296484	Support, Cabinet, Right
7	1	296483	Support, Cabinet, Left
8	1	296512	Kit, Basket Rack, Side Mount
	1	296505	Basket Rack, Side Mount
	1	296506	Drip Tray
	2	296508	Support Pins, Basket Rack
9	1	310125	Drip Tray
		296671	Drip Tray Spacer
10	1	296480	Access Plate, Condenser Filter
	1	295845	Filter, Condenser
11	1	296581	Door, Side Access
	2	294092	Screw, Flat Head, Slotted, #8-32 x 1 In.
12	4	293434	Caster
	16	200774	Screw, Hex-Head 5/16-18x3/4"
	16	290012	Nut, Hex, 5/16-18
	16	216159	Washer, 5/16
Not shown	1	296533	Door Heater Wire (Dom.120V)
Not shown	1	296511	Label Set

Parts identification Cont.



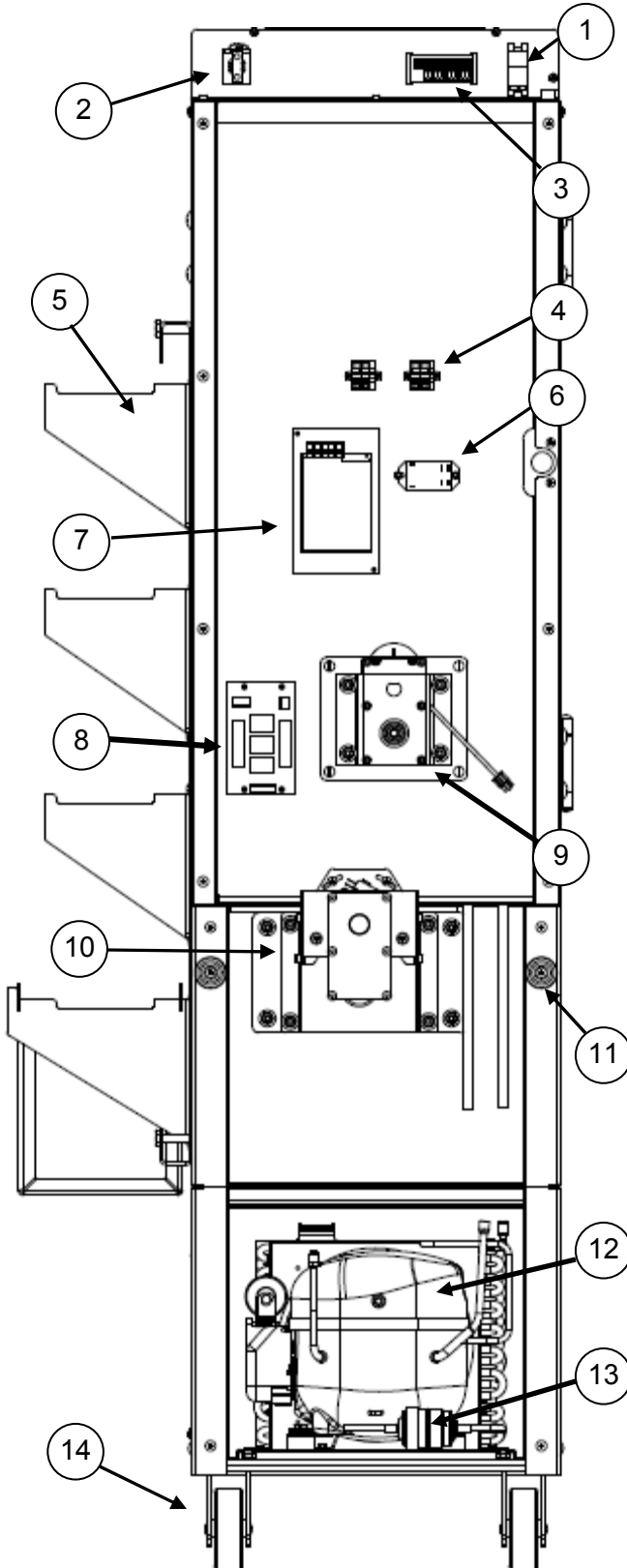
Outlet Assembly			
Item	Qty.	Part#	Description
1	1	296650	Outlet Door
2	1	310125	Drip Tray
3	1	296671	Drip Tray Divider



Interior Parts - Front View			
Item	Qty.	Part#	Description
1	1	291411	Probe, Temperature
2	1	291284	P-Clip
3	1	295234	Spacer
4	1	292058	Grommet
5	1	296525	Hopper
	1	296178	Diverter
	1	202366	Drum
6	4	295699	Hopper Support
		293720	Screw, FH, Slotted 10-32x1"
Not shown	1	293966	Rack, Hashbrown, Optional

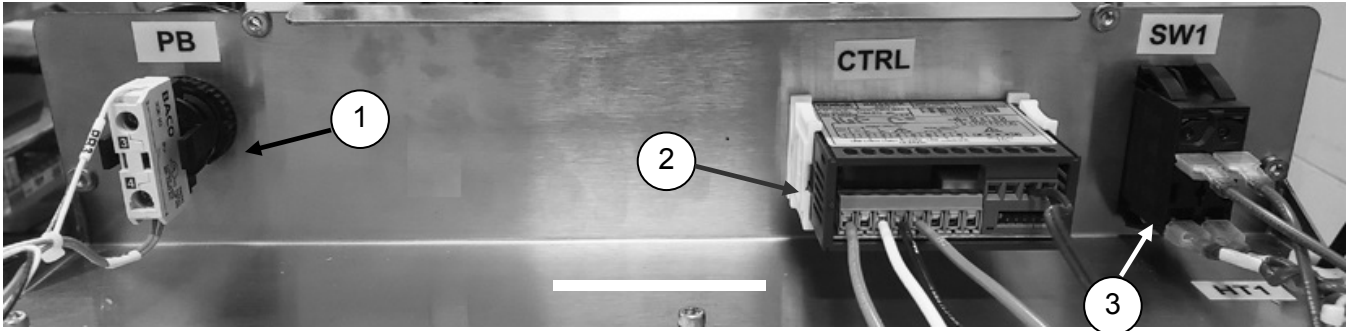
Parts identification Cont.

Dispenser Cabinet interior (rear view)

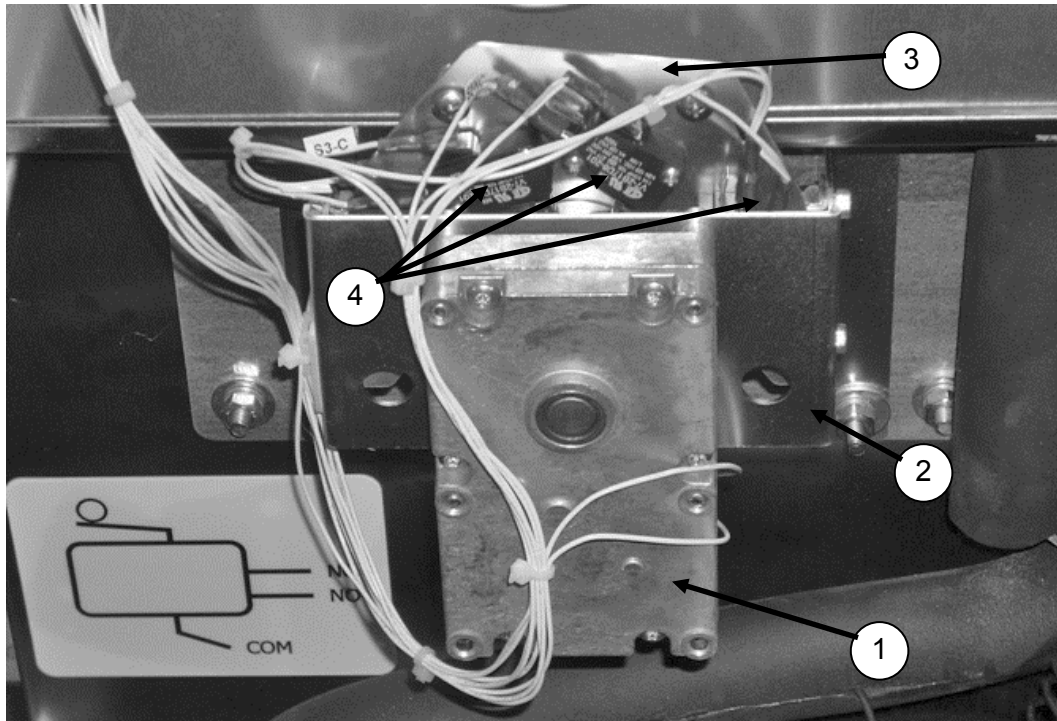


Item	Qty.	Part #	Description
1	1	292246	On/Off Switch
2	1	296515	Dispense Switch
3	1	310082 310083	Controller, Temp., 24V, °F, Dom., 115V 60HZ Controller, Temp., 24v, °C, Intl., 220V 50HZ
4	2	296579	Terminal Block
5	1 1 1 2	296512 296505 296506 296508	Kit, Basket Rack, Side Mount Basket Rack, Side Mount Drip Tray Support Pins, Basket Rack
6	1	293405	Refrigeration Relay
7	1	380051	Power Supply
8	1	380048	Kit, Relay Board (Replacement for 3 and 4 relay control boards)
9	1	See page 18	Drum Motor Assembly
10	1	See page 18	Outlet Door Assembly
11	1	295681	Kit, Bumper, Wall (set of 2)
12	1	294339 294723 296329	Compressor Dom. (120V 60HZ, 1/2hp) Compressor Intl. (240V 50HZ, 1/2hp) Compressor Intl. (240V 60HZ, 1/2hp)
13	1	292501	Filter Drier
14	4 16 16 16	293434 200774 290012 216159	Caster Screw, Hex-Head 5/16-18x3/4" Nut, Hex, 5/16-18 Washer, 5/16
Not shown	1	293399 294129	Power Cord (Dom.120V) Power Cord (Int. 240V Euro)
Not shown	1 1 8	296487 295653 294824	Upper Back Panel Handle, Plastic Screw, Truss Head, #10-32 x 3/8"
Not shown	1 1 6	296482 295653 294824	Lower Back Panel Handle, Plastic Screw, Truss Head, #10-32 x 3/8"
Not shown	1	296572	Terminal Block, Lower
Not shown	1	296575	Harness, 120VAC / 220VAC power
Not shown	1	296576	Harness, 24VDC power

Parts Identification Cont.

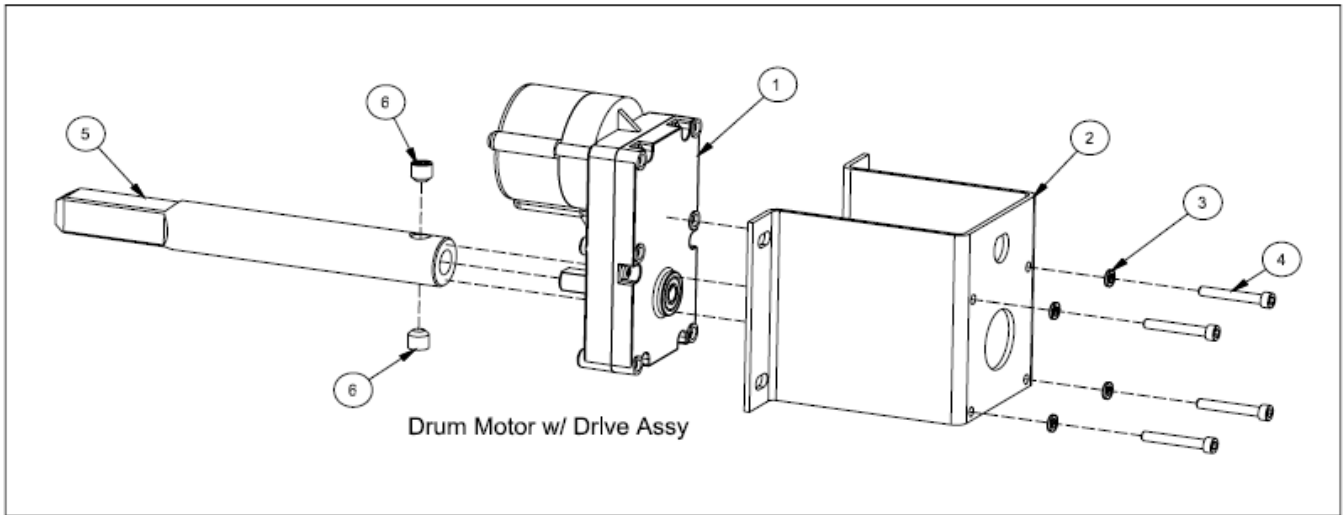


Operator Panel Components			
Item	Qty	Part#	Description
1	1	296515	Dispense Button
2	1	310082	Temperature Controller, Domestic (°F)
		310083	Temperature Controller, International (°C)
3	1	292246	On/Off switch
Not Shown	1	298533	Door Heater Wire.



Outlet Door Assembly							
Item	Qty	Part#	Description	Item	Qty	Part#	Description
1	1	290133	Motor, Gear, 24 VDC	4	3	203249	Switch, Micro
2	1	296496	Bracket, Motor Mount	Not shown	1	296493	Shaft, Door Drive
3	1	296495	Plate, Switch Mount	Not shown	1	296500	Door Drive

Parts identification Cont.



Drum Motor Assembly							
Item	Qty	Part#	Description	Item	Qty	Part#	Description
1	1	292546	Motor, Gear, Brushless, 24 VDC	4	4	213136	Cap Screw, Socket HD, #10-32x1¼"
2	1	202797	Bracket, Mount, Drum motor.	5	1	293318	Drum Shaft
3	4	213140	Washer, Lock, #10	6	2	290653	Set Screw, 3/8"-24 x 3/8"

Refrigeration System

General Operation

The RAM Space Saver employs a cold wall system. Through the refrigeration process, heat is transferred to the condensing unit at the bottom of the cabinet, where it is expelled to the surrounding outside air. It is extremely important to allow unrestricted airflow for the refrigeration process to function properly.

A minimum of 1.0" (26 mm) clearance on both sides, 2.0" (50 mm) behind the dispenser and 24" (61 cm) to the ceiling is recommended.

The temperature control for the RAM Space Saver is capable of detecting conditions that fall outside of normal operation. In such cases, the controller will generate and display an error to warn the operator that an abnormal condition exists and corrective action may need to be taken. Some error conditions are easily fixed, while others may require the attention of a qualified service technician.

See pages 10-12 for a list of error codes and a troubleshooting guide.

CAUTION: Only trained and/or qualified personnel, licensed in refrigeration, should perform service to the refrigeration systems of this equipment.

The set point or turn off temperature is the temperature the refrigeration system will attempt to maintain inside the cabinet. The default set point temperature is 0°F (-18°C), and has a range of -10°F to 20° F(-23°C to -7°C). The set point can be changed using the Set Button on the Temperature Controller. Cabinet temperature is displayed on the Temperature Controller during normal operation.

Defrost

Because the dispenser employs a cold wall design, it will be necessary to manually defrost the cabinet daily. First, remove the product. Turn the On/Off Switch. Remove Baskets, Hopper, Outlet Door, Drip Tray and Drip Tray Divider. Open the Cabinet Door and allow 1 hour to defrost.

Caution: Never use a sharp object to remove frost build-up. Never drill or otherwise puncture cabinet walls or top.

Wipe the cabinet dry and sanitize when defrost is complete.

Required Maintenance

Daily:

- Shut off, clean, defrost and inspect cabinet. (see page 8)

Monthly:

- Clean and inspect the condenser filter. Replace as necessary.

Every 3 months, or as needed as determined by environmental conditions:

- Inspect the door gasket for proper sealing. Adjust door hinges and/or replace gasket if needed.
- Clean the condenser coils, located behind the condenser filter. (See below.)

Cleaning the Condenser Filter and Coil

Monthly cleaning of the condensing unit filter will aid the heat transfer characteristics of the refrigeration system, increase its efficiency, and extend the life of the compressor.

Remove the front louvered panel by removing the retaining screw. Lift and remove the louvered panel. Slide the condenser filter to the left and remove.

The filter can be cleaned in warm soapy water (**HCS**). Rinse and shake off the excess water. Replace the filter and access panel.

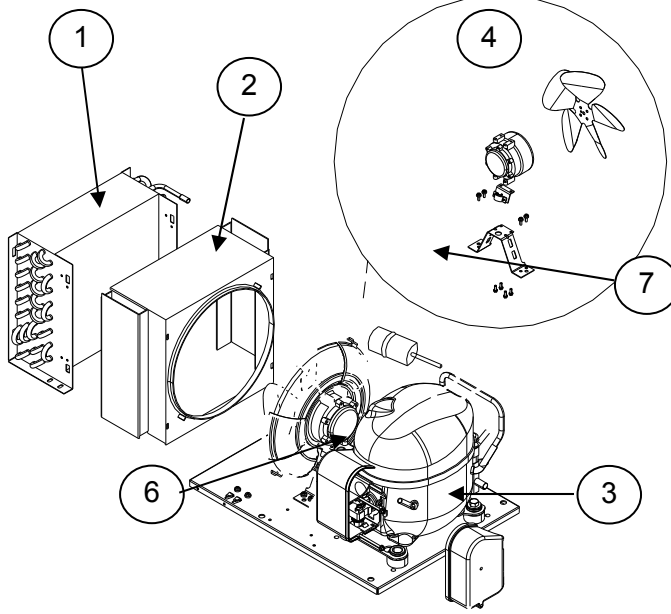
Every 3 months clean the condenser coils. The coils are located behind the condenser filter. The condenser coils should be cleaned with a vacuum or a soft brush.

Failure to keep the condenser filter and coil clean and clear of obstructions could result in temperature loss and damage to the compressor and may void the warranty.

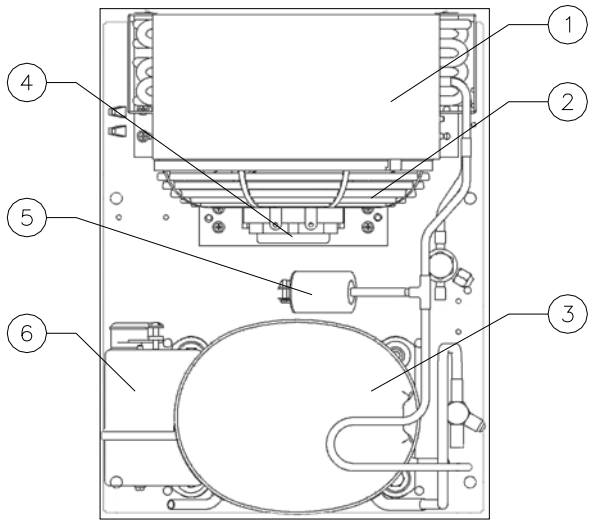
Warning: Keep ventilation openings in the appliance enclosure, particularly in the back-bottom panel, clear of obstruction.

Refrigeration System Components

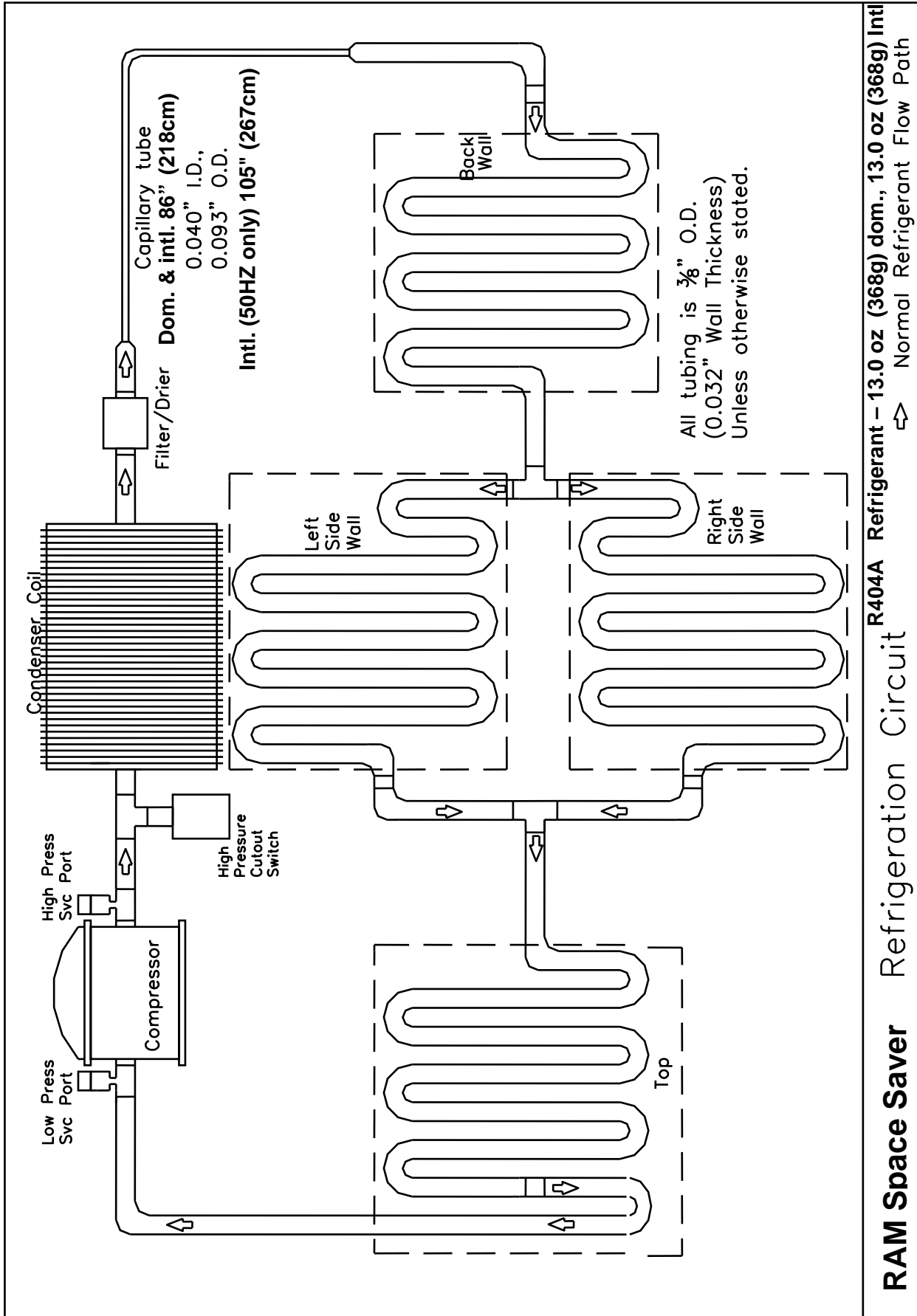
Item	Qty.	Part #	Description
1	1	295596	Condenser
2	1	295603	Fan Shroud
3	1	294339	Compressor Dom. (120V 60HZ , 1/2hp 404A)
		294723	Compressor Intl. (240V 50HZ , 1/2hp 404A)
		296329	Compressor Intl. (240V 60HZ , 1/2hp 404A)
			Compressor Intl. (240V 50HZ 1/2HP R290 only)
4	1	295773	Condenser Fan Motor (Dom.120V)
	1	295608	Condenser Fan Motor (Int. 240V)
	1	295601	Blade, Condenser Fan
	1	293982	Bracket, Condenser Fan
5	1	292740	High Pressure Switch
	1	294739	Overload Switch (1/2hp Dom.120V 404A)
		294781	Overload Switch (1/2hp Int. 240V 50HZ 404A)
		296606	Overload Switch (1/2hp Int. 240V 60HZ 404A)
		295666	Overload Switch, (Model 16-Fp, R290 only) (1/2hp Int. 240V 50HZ)
	1	294738	Start Relay (1/2hp Dom. 120V 404A)
		294780	Start Relay (1/2hp Int. 240V 50HZ 404A)
		296349	Start Relay (1/2hp Int. 240V 60HZ 404A)
		295667	Start Relay, (Model 16-Fp, R290 only) (1/2hp Int. 240V 50HZ)
	1	293985	Start Capacitor (1/2hp Dom. 120V 404A)
		294779	Start Capacitor (1/2hp Int. 240V 50HZ 404A)
		296348	Start Capacitor (1/2hp Int. 240V 60HZ 404A)
		295665	Start Capacitor (Model 16-Fp, R290 only) (1/2hp Int. 240V 50HZ)
7	1	292501	Filter Drier (not pictured)
		293907	Capillary Tube 86" (218cm) 0.093" O.D., 0.040" I.D. (Domestic 120V 60HZ , 1/2 HP Comp.)
		293907	Capillary Tube 105" (267cm) 0.093" O.D., 0.040" I.D. (International 240V 50HZ , 1/2 HP Comp.)
		293907	Capillary Tube 86" (218cm) 0.093" O.D., 0.040" I.D. (International 240V 60HZ , 1/2 HP Comp.)
		293907	Capillary Tube 122" (267cm) 0.093" O.D., 0.040" I.D. (International 240V 50HZ , 1/2 HP Comp., R290 only)



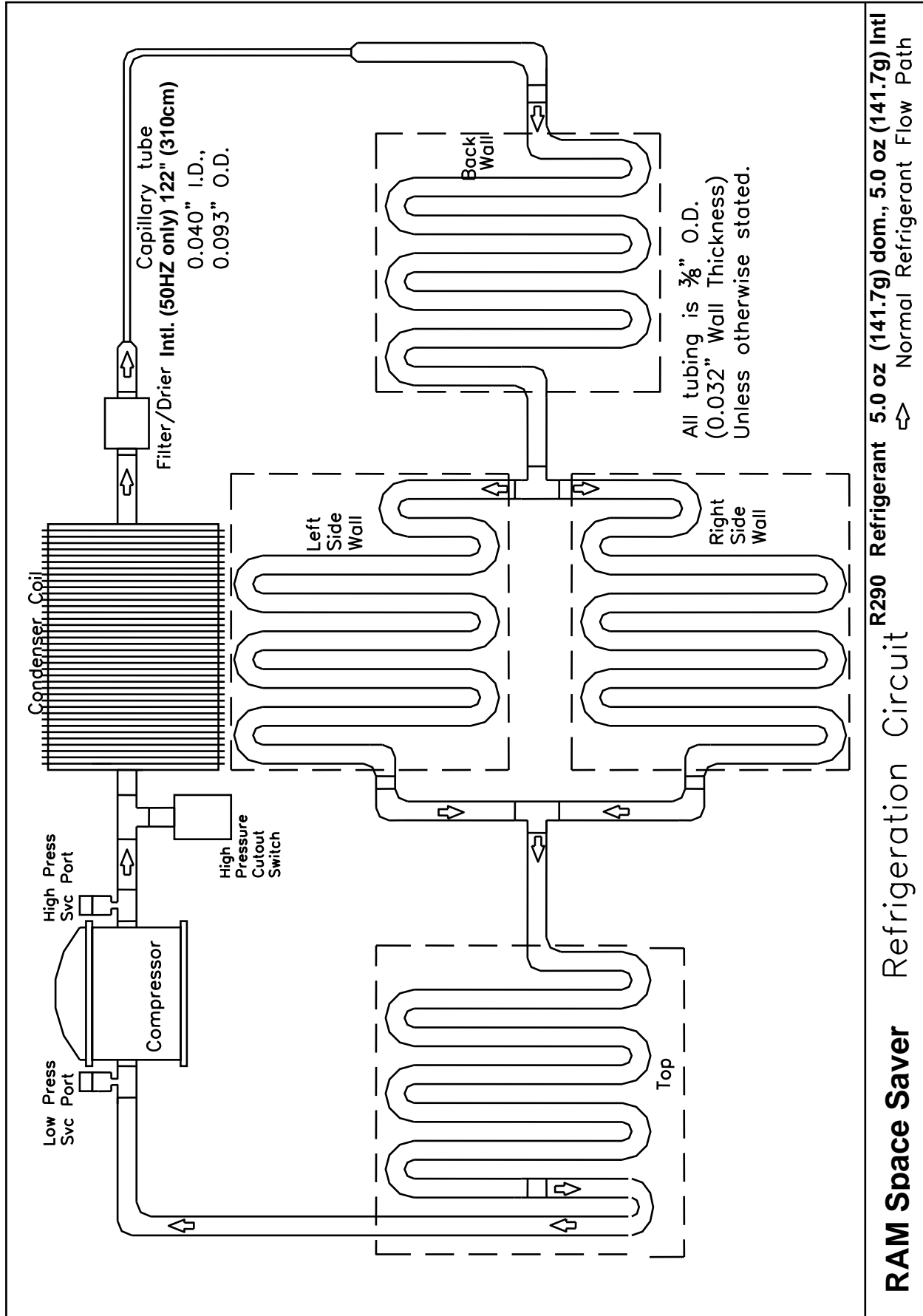
Condensing Unit Assembly



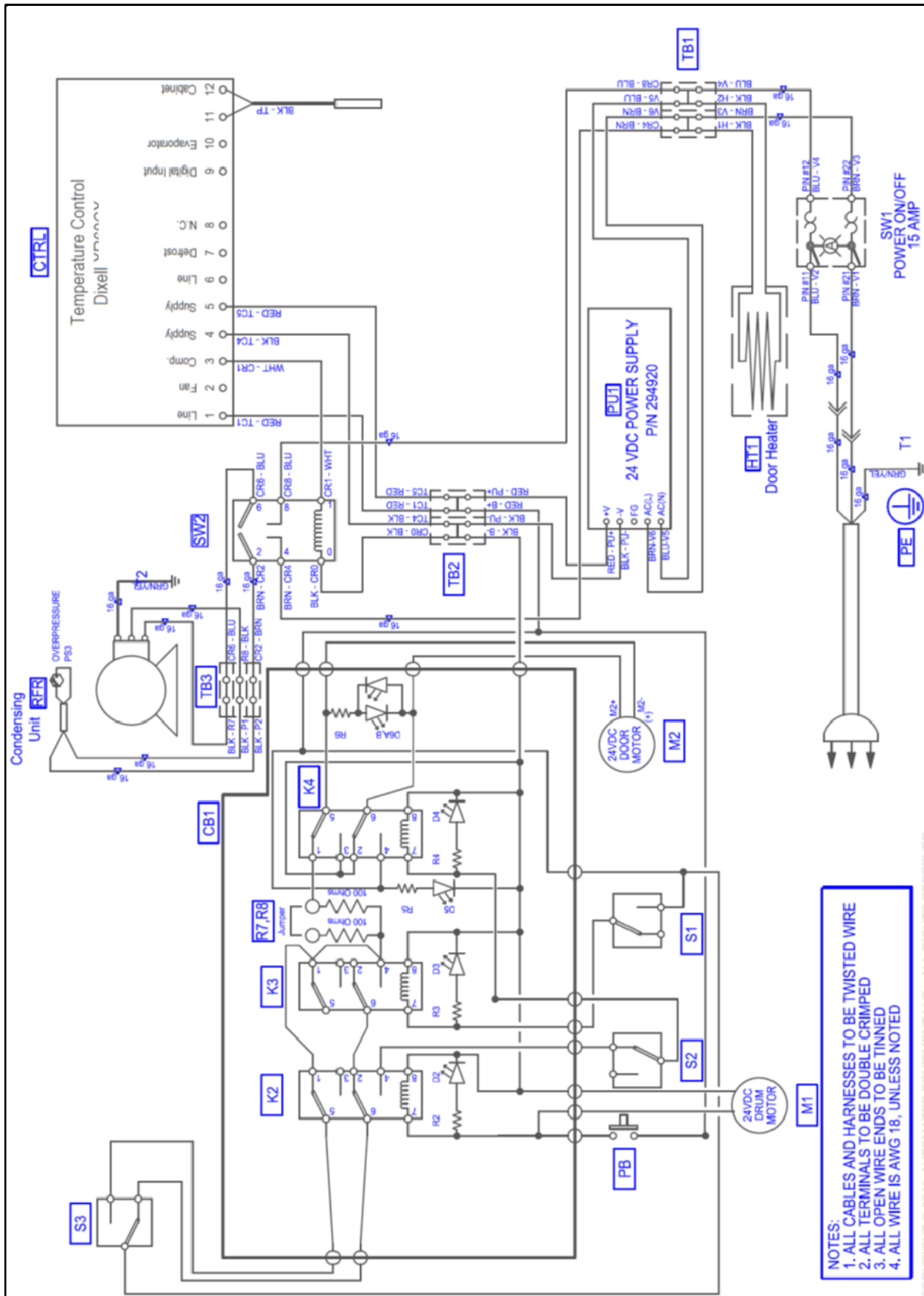
Refrigeration Circuit (404A Refrigerant)



Refrigeration Circuit (R290 Refrigerant)



Electrical Diagram



NOTES:
 1. ALL CABLES AND HARNESSES TO BE TWISTED WIRE
 2. ALL TERMINALS TO BE DOUBLE CRIMPED
 3. ALL OPEN WIRE ENDS TO BE TINNED
 4. ALL WIRE IS AWG 18, UNLESS NOTED

Specifications

Electrical Requirements:

Domestic:

- 120 VAC., 60 HZ, 8 A, 1Φ

International:

- 240 VAC., **50 HZ**, 4.6 A, 1Φ
- 240 VAC., **60 HZ**, 4.6 A, 1Φ

Internat Circuit Breaker: 15 A

Dimensions:

- 16" wide, 27.64" deep, 68.69" high
(407mm x 702mm x 1745mm)

Minimum Operating Clearance Shall be:

- 1" (2.6 cm) clearance on each side
- 2" (5 cm) clearance at the back
- Open to ceiling, minimum 24" (61 cm)

Weight:

- 253 lbs. (115 kg)

Hopper Capacity:

- 36 lbs. (16.3 kg), weight may vary with product.

Operating Temperature:

- 4°F to 0°F (-15°C to -18°C) (Recommended Ambient Operating Temperature of 75°F (24°C))
- Climate Class= N

Maximum Operating Altitude & Safe Tilt:

- Maximum Altitude: 7000 ft (2,134 meters), Maximum Tilt = 10 degrees

Insulation Blowing Gas:

- H₂O

Noise Emissions: < 70 dB (A)



Refrigeration Specifications:

- Domestic:

Model 16-F Refrigerant: **R404A**: 13 oz. (368g),

International:

Model 16-F Refrigerant: **R404A**: 13 oz. (368g)

Model 16-Fp Refrigerant: **R290**: 5 oz. (142g)

- Suction Pressure: 3-7 psi at -3° to 3°F (21 kPa to 48 kPa at -19° to -16°C)
- Operating Temperature: 4°F to 0°F (-15°C to -18°C)
- Factory Temperature Set Point: 0°F (-18°C)
- Factory Differential Set Point: 4°F (3°C)
- High Pressure Switch: opens at 425 psi (2890 kPa), resets at 325 psi (2210 kPa)

Service Information

Warranty Service

Warranty service must be initiated by calling our Technical Support Hotline at 1-800-248-2724 (U.S./Canada) or 651-385-2273 to establish all warranty requests.

Our Technical Support personnel will determine the cause of failure and provide appropriate resolution. Any required replacement parts will be provided by us or by an authorized Service Support Center/Parts Distributor.

Our Technical Support personnel will make all reasonable efforts to perform such repairs during normal business hours, and will not be responsible for any after-hours or holiday charges.

Non-Warranty Service

Service is normally conducted by customer appointed personnel, or by contracting a local service agent. The service person must be licensed in refrigeration to troubleshoot, open, or repair refrigeration and related systems.

Service fees are in accordance with industry standards.

Replacement parts are available through local Service Support Center/Parts Distributors or direct from us by calling 1-800-248-2724 (U.S./Canada) or 651-385-2273 in the event a local distributor is not available.

Our Technical Support Hot Line is available for telephone assistance providing product technical support, parts and parts information, and service agent referral.

Contact our Technical Support Hotline at 1-800-248-2724 (U.S./Canada) or 651-385-2273.

Record the following information for your records:

Date of Installation

Service Agency Telephone

Serial Number

When repairing this unit, use only replacement parts supplied by us, or supplied by our Factory Authorized Parts Distributor. Use of replacement parts other than those supplied by us or by our Factory Authorized Parts Distributor will void the warranty.

All shipping charges are F.O.B. factory, and are subject to change without notice. Prices will be those in effect at the time of shipment.

Automated Equipment LLC. reserves the right to make suitable substitutions in materials, depending upon their availability.

Disposal of Equipment

Before dismantling the equipment, all food should be removed and the equipment thoroughly cleaned.

Dismantling of the equipment must be carried out by qualified personnel, in accordance with the manufacturer's instructions, local safety regulations must be observed.

Dispose of the equipment in accordance with local regulations. It is important to observe the regulations and laws for disposing of environmentally-unfriendly materials. You must understand and follow the proper procedures on the disposal of materials, such as refrigerants, insulation or plastics.

CAUTION: Release of refrigerant into the atmosphere is strictly prohibited!

Notes: