



200-Fx
Frozen Fry Dispenser
 Equipment Manual
 English



Manufactured By
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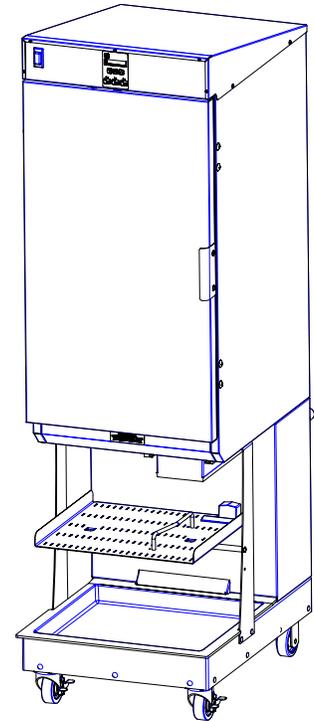


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Introduction

This manual contains important information on the proper installation, operation, and care of the RAM 200-Fx 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 Accumulator assemblies. Clean, sanitize and dry Fry Baskets. (see [pages 6-9](#) for assembly, disassembly & cleaning). Reassemble all components (see [pages 10-12](#) 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

Specifications

Electrical Requirements:

Domestic:

- 120 Volts AC., 60 Hertz, 8 Amps, 1Φ

International

- 220 - 240 Volts AC., 50 Hertz, 4.6 Amps, 1Φ

Internal Circuit Breaker: 15 Amps

Dimensions:

- 22" wide, 32.5" deep, 76.8" high
(580mm x 686mm x 1511mm)

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" (60 cm)

Weight: 300 lbs (136 kg)

Hopper Capacity:

- 42 lbs (19.1 kg), weight may vary with product.

Operating Temperature:

- 5°F to 0°F (-15°C to -18°C)
(Recommended Ambient Operating Temperature of 75°F (24°C))
- Climate Class= N

Refrigeration:

- R-404A: (12.5 oz) (354 g)

Maximum Operating Altitude & Safe Tilt:

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

Insulation Blowing Gas:

- Methyl formate

Noise Emissions: < 70 dB (A)

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

<i>Example: s/n 20FR1303B00103</i>	
20F = Model	03 = Month
R = Manu. Facility	B = Revision Level
13 = Year	00103 = Sequence #

Warranty

The terms "we", "us", "our" or "factory" hereinafter refer to Automated Equipment LLC. We warrant the purchased product to be free from manufacturing defects in material and workmanship under normal use and conditions for the period and component specified below. Warranty is part only unless otherwise specified.

<u>Components Covered</u>	<u>Term</u>
Electronic Circuit Board Assemblies	See Serial # / Warranty Label
Electrical and Mechanical Moving Parts	See Serial # / Warranty Label
Structural frame work or enclosures	See Serial # / Warranty Label
Refrigeration Compressor Extended Warranty	See Serial # / Warranty Label
Crew removable components:	(no labor, part only)
<input type="checkbox"/> Baskets	90 days
<input type="checkbox"/> Basket Rack and Guide	90 days
<input type="checkbox"/> Drip Tray	90 days
<input type="checkbox"/> Power Cord	90 days
<input type="checkbox"/> Hopper, Fry Diverter & Drum	90 days
<input type="checkbox"/> Flap Door	90 days
<input type="checkbox"/> Accumulator Housing	90 days

The Warranty period commences on the date of shipment of the RAM 200-Fx Frozen Fry Dispenser (hereinafter "Product") from our manufacturing facility.

EXCEPT AS OTHERWISE PROVIDED HEREIN WE MAKE NO OTHER WARRANTIES, EXPRESSED OR IMPLIED AND SPECIFICALLY DISCLAIM ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

We shall not be liable for any direct, indirect, consequential damages (including damages for loss of business profits, business interruption, loss of business information and the like) arising out of the use of or inability to use the Product.

THIS WARRANTY IS VOID IF THE PRODUCT IS NOT FUNCTIONING CORRECTLY DUE TO ABUSE OR NEGLIGENCE BY THE PURCHASER, ITS EMPLOYEES, AGENTS, OR OTHER REPRESENTATIVES EITHER BY BREAKING, BENDING, MISUSE, ABUSE, DROPPING, ALTERATION, IMPROPER MAINTENANCE OR ANY OTHER FORM OF NEGLIGENCE OR IMPROPER USAGE. THIS WARRANTY DOES NOT COVER DAMAGE TO THE PRODUCT CAUSED BY NATURAL CAUSES SUCH AS LIGHTNING, ELECTRICAL CURRENT FLUCTUATIONS, FLOOD, FIRE, TORNADOES, OR OTHER ACTS OF GOD. WE WILL INVOICE PURCHASER FOR REPAIRS MADE NECESSARY BY THE HEREIN LISTED CAUSES.

This warranty is governed by the substantive laws of Minnesota, U.S.A., without giving effect to the conflict of law provisions.

This warranty is non-transferable and applies only to the original Purchaser.

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.

Warning!

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

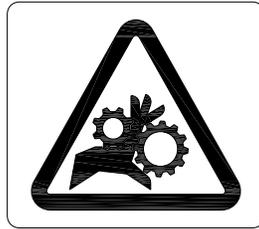
Service functions described in this manual could cause irreversible damage to the equipment and/or injury to personnel if performed improperly.

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 Accumulator Doors and Dispenser Drum while the Dispenser is operating. Disconnect power before clearing blocked Accumulator Doors 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.

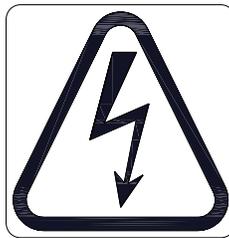
Equipment Safety Cont.



Label is located on the rear access panel and applies to the drum motor and accumulator assemblies within the enclosure. (A different label may be present on US models.)

CAUTION, MOVING PARTS.

DO NOT OPERATE WITH PANEL REMOVED



Label is located on Rear Access Panel and near Power Cord inlet.

CAUTION, RISK OF ELECTRIC SHOCK.

INDICATES HAZARDOUS VOLTAGE WITHIN

DISCONNECT POWER BEFORE SERVICING UNIT.



Label is located on the Rear Access Panel and applies to the cabinet insulation.

CAUTION, RISK OF FIRE

KEEP OPEN FLAME FROM EXPOSED INSULATION WHEN SERVICING

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 ([page 9](#)) for more Information.

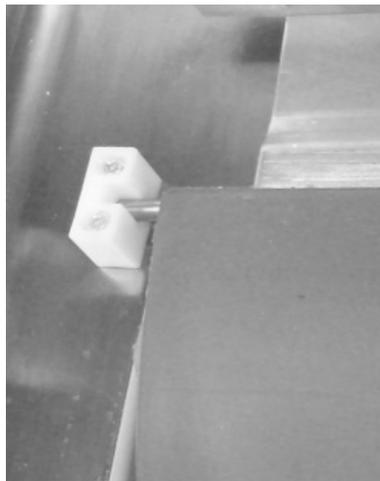


Fry Guide

Install the Fry Guide under the cabinet outlet, sliding it onto the mounting rails.



Flap Door



Pivot Block



Accumulator Housing

Open the cabinet door. Install the Flap Door by slipping it under the Accumulator Doors so the green arrows are visible from inside the cabinet. Seat the Flap Door Pivot Pin into the plastic Pivot Blocks, as shown above. Install the Accumulator Housing on the Accumulator Doors

Dispenser Assembly Cont.



Drum



Fry Diverter

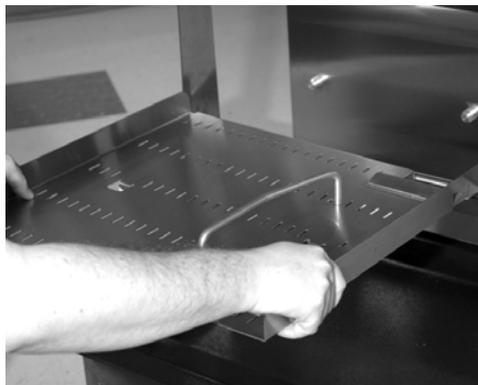


Hopper Assembly

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.



Storage Guide



Basket Rack



Drip Tray

Once the Accumulator Housing and Hopper Assembly are in place, place the Storage Guide alongside the Hopper Assembly and close the Cabinet Door. Assemble Basket Rack and Drip Tray in the dispensing area.

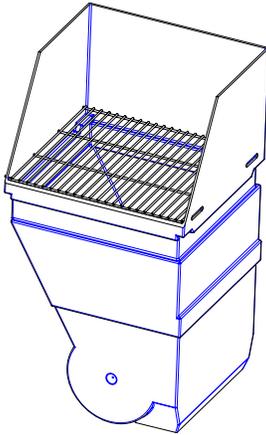
Using the Hash-brown Rack

The RAM 200-Fx cabinet can be used to store frozen hash-browns while serving breakfast. To use the cabinet for hash-brown storage, properly assemble the dispenser ([pages 6-7](#)), then install the hash-brown rack accessory as shown in the diagram below. The rack will serve as a shelf inside the refrigerated cabinet for hash-brown storage.

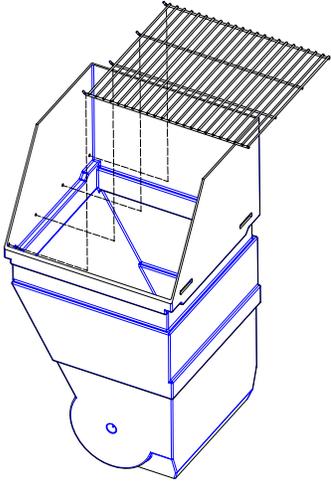
Note: The hash-brown rack should be removed during fry dispensing.

Caution: Do not store hash-browns on the drum below the rack, this can damage the dispenser.

Insert the four rods of the hash-brown rack into the holes in the side of the hopper then lower the rack onto the fry diverter.



Hash-brown rack
PN: 295846
(shown with Hopper p/n 295696)



Using the Storage Guide

The RAM 200-Fx comes with a storage guide which can be used to aid storage inside the cabinet. To use the Storage Guide, properly assemble the dispenser ([pages 6-7](#)), then install the Storage Guide as shown below. An extra bag of fries or other frozen products may be placed in the storage guide. This allows for extra storage inside the cabinet while not interfering with the operation of the dispenser.

Caution: Do not store items inside the cabinet without using the Storage Guide.



Storage Guide
PN: 295942



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. 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 and Accumulator Housing 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. After removing the product, using the On/Off Switch turn the power OFF and unplug the dispenser power cord. 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.

Lift and remove the Storage Guide

Lift and remove the Hopper Assembly and Accumulator Housing.

Lift and remove Flap door assembly.

Lift the front of the Fry Guide and pull out to remove.

Remove Basket Guide assembly from the Dispenser by lifting up on the front of the guide then tilt and pull outward. Remove Drip Tray by lifting, tilting and sliding outward.

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 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.

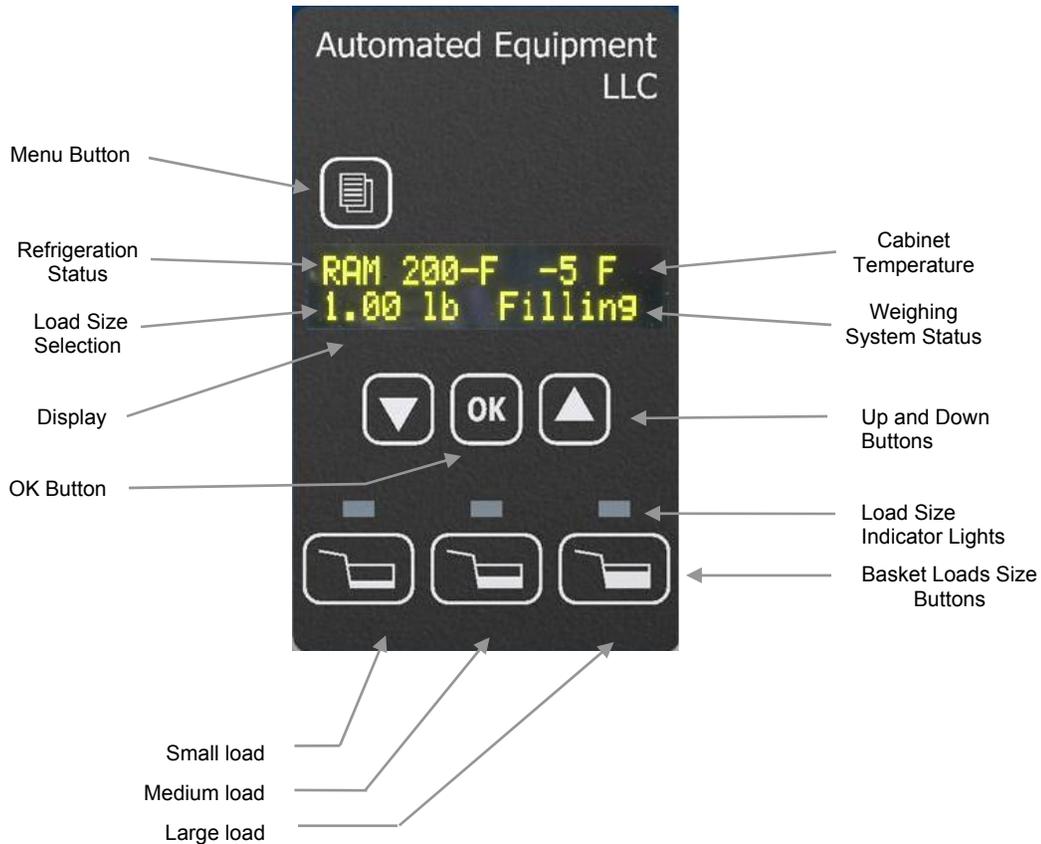
Dry all components and reassemble the Dispenser ([page 6-7](#)). Move Dispenser back into place.

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.

Dispenser Startup

When the dispenser is in place, lock both front casters. Make sure Power Switch, located on the right side of the dispenser is turned off. Assemble the Dispenser ([Pages 6-7](#)). 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.



The Operator Panel consists of two groups of controls: the Hopper controls and System controls with Data Display. It is used to make basket load size selections and to access controller functions. On power up, the display will very briefly show the Software Name, Software Version, Copyright Notice, and then the Main Screen.

The Main Screen will appear as shown above. The display shows:

- Current refrigeration status
 - Waiting** – Refrigeration system in short cycle delay
 - Cooling** – In initial cool down stage
 - RAM 200-F** – in normal refrigeration cycle
 - Open** – Cabinet door is not closed
- Current cabinet temperature (* after temperature indicates compressor is on in normal cycle)
- Current basket load size selection (**Select Size** - if no selection has been made)
- Current weighing system status
 - Filling** – Drum is turning to place fries on the accumulator doors
 - Empty** – Insufficient weight on accumulator doors after filling cycle, hopper is empty.
 - Ready** – Fries are waiting to be dispensed, place basket in fill position to dispense.

Operation

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 bottom tray. The lower tray area 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.

The dispenser hopper holds 42 lbs (19.1 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.

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

Daily Opening and Closing

Setup and Operation

1. Fill hopper with product.

Note: DO NOT SHAKE OR DROP the fries into the Hopper (refer to “Loading the Hoppers”, [page 11](#)).

2. Select a Basket Size Button to dispense desired load.
3. Default settings are:
 - Small load = 0.50 LBS (225 g)
 - Medium load = 1.0 LBS (450 g)
 - Large load = 1.5 LBS (700 g)

A LED light will illuminate above the basket load size that is currently selected.

4. The drum motor will turn until the selected target weights are achieved. If there is insufficient product in the hopper a low fry warning “EMPTY” will show on the display.
5. Place a basket under the Accumulator Outlet. Lift the front of the basket slightly and slide the basket forward over the basket sensor. The Accumulator Doors will open and close, discharging product into the waiting basket.
6. Remove the basket.
7. The dispenser will repeat step 4, preparing the next basket. The dispenser will automatically dispense as soon as the next basket is present.

Daily Closing

Select ‘**Last Basket**’ from the operator panel to cancel all currently selected basket loads: Using the Operator Panel, press the Menu Button once which displays ‘Last Basket’ then press the OK Button.

The dispenser will stop automatically refilling the accumulator housing. Dispense any fries present in the accumulator housing into a basket. The dispenser will NOT refill the housing.

Empty the dispenser. Dispose of any unused product or place into an approved storage container. Place container immediately into freezer to maintain frozen product.

Take the removable components from the Dispenser to the washing area. Wash them with a hot solution of detergent and water. Rinse with clear water and sanitize (**HCS**). Allow to air dry. (See ‘Disassembly & Cleaning’ instructions, [page 9](#).)

Defrost Cabinet Daily:

Turn the power switch off then open the Cabinet Door to allow the Dispenser to defrost for one hour or until free of frost.

Caution: Never use a sharp object to remove frost build-up.

Once the cabinet is free of frost, wipe down the internal and external 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.

Reassemble the Dispenser ([pages 6-7](#)). Move Dispenser back into place.

Last Basket/Cancel Selections

Before cleaning the dispenser or if it becomes necessary to stop automatic dispensing, the operator is able to cancel the selected basket load. The drum will stop turning and any currently selected basket load light will turn off. Any fries present in the accumulator housing will dispense automatically if a basket is presented. The dispenser will NOT refill the housing.

To cancel a currently selected basket load using the Operator Panel, press the Menu Button once which displays 'Last Basket' then press the OK Button. The dispenser will stop automatically refilling the accumulator housing.

To return to normal operation select a Basket Size  Button.

Error Conditions

The dispenser's controller can detect an error or abnormal condition. When an error condition is detected the display will display '**ERROR**' and state the error that has occurred.

Resetting Errors: When an error does occur, it is normally reset by pushing the OK Button.

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

If the error condition persists, turn the Power Switch off and unplug the Power Cord from the wall outlet. Check the Power Cord for any obvious defect. Open the Cabinet Door to make sure the dispenser is properly assembled ([page 6-7](#)) and the product is loaded properly.

See [pages 21-23](#) for a complete list of errors and for a troubleshooting guide to aid in resolving the error conditions.

Low Fries and Hopper Empty Warnings

The RAM 200-Fx Frozen Fry Dispenser is equipped with a low product sensor. When the product level in the hopper nears empty, a low product message 'Low Fries' will appear on the display. The dispenser will continue to dispense product. This message will remain until the hopper is refilled or runs empty.

When the hopper runs empty, a flashing 'Hopper Empty' will be displayed. The dispense cycle will stop.

The 'Hopper Empty' warning indicates the dispenser was unable to achieve the target weight on the accumulator doors. It may also indicate a scale obstruction, calibration problem, or bridged fries in the hopper.

If the 'Hopper Empty' warning is present check and/or fill the Hopper and press a Basket Load Button to restart the cycle.

Note: The Dispenser will also retry the weigh cycle every 90 seconds.

Door Ajar Switch

The dispenser is equipped with a door switch to detecting an open cabinet door. If the door is ajar "Open" will appear on the display. The "Open" message will begin to flash after 5 minutes. If the door remains ajar for more than 15 minutes the refrigeration compressor will shut off until the door is closed again. This condition will not effect the operation of the dispensing portion of the machine but is intended to avoid unnecessary wear on the refrigeration system of the RAM 200-Fx Frozen Fry Dispenser.

Bypass Mode of Operation

Sensor Bypass Mode will allow the dispenser to remain operational in the event that a basket sensor fails. Sensor Bypass Mode is intended to be a temporary condition until a replacement basket sensor can be installed.

Note: The Sensor Bypass Mode is a volatile condition and will return to normal operation if the power is turned off and back on again.

While in Sensor Bypass Mode the basket sensor is disabled and will not dispense fries automatically into a basket when presented.

To dispense the fries into a basket, press the selected Basket Size  Button after placing an empty basket under the accumulator door opening. The accumulator doors will cycle each time the Basket Size  Button is depressed.

While in Sensor Bypass Mode the dispenser will otherwise appear to operate normally, refilling the accumulator housings automatically after each dispense cycle with the selected load of fries.

Note: Engaging Bypass Mode is performed from the Service Functions Menu ([page 18](#)) using the Operator Panel on the front of the Dispenser and may require a manager's password to access the menu.

To access the Service Functions Menu, on the Operator Panel, press the Menu button three times to display 'Service Menu' then press the OK button. If the display does not change the Manager password has been set. Enter the managers password using the up and down arrows and basket load size buttons. Then press the OK button.

The display will change to "Service Menu" with "Error Counts" shown below. Press the Up Arrow  button until 'Bypass Functions' is displayed, then press the OK button to access the Bypass Functions.

The display will read 'Bypass Functions with a flashing 'Refrig' and On' underneath. Use the Up Arrow  button to change 'Refrig' to 'Basket' and press the OK Button. The 'On' will now be flashing. Use the Down Arrow to select 'Off' and press the OK Button. The 'Sensor Bypass Mode is now activated.

Press the Menu Button to exit to the main 'Service Menu' screen. Press the Up Arrow  button until 'Main Screen' is shown then press the Ok Button to return to the Main Screen.

To deselect the Sensor Bypass Mode return to the Sensor parameter in the "Bypass Functions" screen. Press the Up Arrow  button to change 'Off' to 'On' then press the OK Button to save the setting.

Press the Menu Button to exit to the main 'Service Menu' screen. Press the Up Arrow  button until 'Main Screen' is shown then press the Ok Button to return to the Main Screen.

User Functions Menu Structure

Function Name	Description
Last Basket/ Cancel Selections	Halts weighing in process. Turns off all Basket Load Size button lights. Immediate return to Main screen.
Calibrate Note: See procedure on page 24	Calibrates Scale <ol style="list-style-type: none"> 1. Remove Hopper. NOTE: Leave the housing in place on the accumulator doors. 2. Display reads “Place Basket”. Waits for a basket to be placed then empties the accumulator doors into the basket. 3. Tares automatically. 4. Display reads “Place 1.0 lb”, or “Place 450 g” if set to metric units. Place 1.0 lb (450 g) weight on the accumulator doors. 5. Display reads “Place 2.0 lb” or “Place 900 g” if set to metric units. Place an additional 1.0 lb (450 g). 6. Display reads “Remove Weight”. Remove weights from the accumulator. 7. Reinstall hopper. The dispenser will return to normal operation with no basket size selected.
Error History	Displays the last ten recorded errors in reverse order starting with the last error recorded. Up button shows next error. Down button shows previous error. OK button closes function.
Software Version	Display shows current software for both controller software and display software. OK button closes function.
Main Screen	Immediate return to Main Screen.

- Use the Up  and Down  Arrow Buttons to find the desired function.
- Press the OK Button to select the desired function.
- Menu Button exits function at anytime and returns to main menu.

Note: A Service Password is available. Use the Service Password if the manager’s password has been misplaced. The Service Password operates in the Service Menu only and will erase the manager’s password and restore to default (no password). The Service Password sequence is:

Small Basket, Up Arrow, Down Arrow, Large Basket, Medium Basket (Twice) then OK button.

Configuration (Config) Functions Menu Structure

Function Name	Description
Set Targets	<p>Allows the basket load targets to be customized for each basket load size. 0.25 lb to 2.0 lb (100g-1000g) Display shows a flashing “Small” and the current small basket size weight target.</p> <ol style="list-style-type: none"> 1. Up and down arrows move through the three basket load sizes (small, medium and large). Ok button selects basket load size to change. 2. Display shows current basket size target weight flashing. Use the up and down arrows to change the target weight, 0.25 lb to 2.0 lb (100 g to 1000 g). Ok button saves the new target weight and returns to the basket load size selections (small, medium and large). 3. Menu button returns to the Configuration menu
Set Temp	<p>Allows the refrigeration cycle turn “On” and turn “Off” target temperatures to be changed. The default is “On” at 5°F (-15°C) and “Off” at 0°F (-18°C). “OK” Button selects the target (“On” or “Off”) to be set. The target temperature will be blinking.</p> <p>- Turn “On” target is changed using the Up and Down arrows. The differential between the turn “On” and turn “Off” settings remains the same.</p> <p>- Turn “Off” target is changed using the Up and Down arrows and can be set independent of the turn “On” target.</p> <p>Up button will increase the target temperature in 1° increments. Down button will decrease the target temperature in 1° increments. OK button changes the selection between “On” or “Off”.</p> <p>Menu button saves setting and returns to the Configuration menu</p>
Set Language	<p>Allows the display language to be changed.</p> <p>Use Up and Down arrows to change display language. OK button stores the new setting and exits to Configuration Menu.</p>
Set Metric	<p>Changes from English to Metric units. Display will default to currently selected unit.</p> <p>Up and Down arrows switch between “United States” and “Metric”. OK button stores the new setting, closes the function, and exits to Configuration Menu.</p> <p>Note: Scales must be calibrated. See procedure on page 24. Note: Press the Menu Button at any time to abort function and return to the Configuration menu.</p>
Set Password	<p>Allows a password to be set to access both Configuration and Service functions. (default is no password) (See page 23) Press “OK” Button to enter function. Display shows “-----”. Use Basket Size Buttons, and up and down arrows, to enter up to an eight digit password then press the “OK” Button. (Any sequence of the basket size buttons and up and down arrow buttons can be used to create a password.) Display reads “Repeat Password” and “-----”. Repeat the password sequence then press “OK” to save the password and exit to the Configuration Menu. (See page 20 for Service Password.)</p> <p>Note: Press the Menu Button at any time to abort function and return to the Configuration menu.</p>
Main Screen	Press OK to exit Configuration Menu, immediate return to the Main Screen.

Service Functions Menu Structure

Function Name	Description						
Error Counts	<p>Displays the number of occurrences of each error. Press “OK” button to enter function.</p> <p>Display shows Error and Number of Occurrences (Counts).</p> <p>Up arrow shows next error.</p> <p>Down arrow shows previous error.</p> <p>Menu button closes function and returns to Service Menu.</p>						
Clear Functions	<p>Allows for clearing the Error Log, Held Errors and to reset dispenser Parameters. Display shows a blinking function (“Error Log”, “Held Errors” and “Parameter” (‘Parameter’ refers to factory defaults)).</p> <p>Up arrow will advance to next function.</p> <p>Down arrow to previous function.</p> <p>“OK” button selects function.</p> <p>Display will now blink “Keep”.</p> <p>UP and Down arrows will change display between “Keep” and “Reset” (“Keep” retains current settings, “Reset” clears “Error Log”, and “Held Errors”, and resets “Parameters” (Factory Defaults)).</p> <p>Press “OK” button to select “Keep” or “Reset”, closes function and returns to Service Menu.</p> <p>Note: Scale must be calibrated if “Parameters” (Factory Defaults) reset.</p> <p>Note: Press the Menu Button at any time to abort function and return to the Service menu.</p>						
Adjust Temp. (Adjust Temperature Probe) Note: See procedure on page 26 .	<p>Caution: Read procedure on page 26 before continuing.</p> <p>Displays the current temperature probe reading in tenths of a degree i.e.”-1.5°F”.</p> <p>Allows the cabinet temperature probe to be corrected.</p> <p>Up arrow will increase temperature in 0.1° increments.</p> <p>Down arrow will decrease the temperature in 0.1° increments.</p> <p>“OK” button will save the setting and return to Service Menu.</p>						
Scale Readout	<p>Displays the live units used to calculate weight, the live calibrated weight in lbs or grams, and the tare setting. “OK” button closes function, returns to the Service Menu.</p> <table border="1" data-bbox="980 1268 1474 1367"> <tr> <td>Scale:</td> <td><i>Live units</i></td> <td>/Tare</td> </tr> <tr> <td></td> <td><i>Live Calibrated weight</i></td> <td>/Tare Setting</td> </tr> </table>	Scale:	<i>Live units</i>	/Tare		<i>Live Calibrated weight</i>	/Tare Setting
Scale:	<i>Live units</i>	/Tare					
	<i>Live Calibrated weight</i>	/Tare Setting					
Refrig Monitor	<p>Displays the present state of the refrigeration system.</p> <table border="1" data-bbox="980 1444 1474 1549"> <tr> <td><i>Refrig. Cycle</i></td> <td>Door: _</td> <td><i>Timeout</i></td> </tr> <tr> <td>Out: _</td> <td>Back: _</td> <td></td> </tr> </table> <p>Refrigeration Cycle:</p> <p>“Wait” = in short cycle delay or in a Bypass mode.</p> <p>“Cool” = Initial cooling cycle</p> <p>“On” = Normal refrigeration cycle, compressor on.</p> <p>“Off” = Normal refrigeration cycle, compressor off.</p> <p>Timeout – Number of seconds remaining in refrigeration short cycle delay.</p> <p>“Door:” Door Switch status. * indicates door switch on, door closed</p> <p>“Out:” Compressor output status. * indicates compressor output is on, compressor should be running.</p> <p>“Back:” Refrigeration Feedback Relay status. Used to diagnose refrigeration system.</p> <p>“OK” button closes function, returns to the Service Menu.</p>	<i>Refrig. Cycle</i>	Door: _	<i>Timeout</i>	Out: _	Back: _	
<i>Refrig. Cycle</i>	Door: _	<i>Timeout</i>					
Out: _	Back: _						

<p>Weighing Monitor</p>	<p>Displays the present state of the weighing system. <i>Weighing cycle</i> “Idle” - Waiting for a basket size selection. “Check” – Checking Tare weight “Dispens” - In dispense cycle. “Pulsing” – Nearing target weight “Drop” – Dispensing product into basket “Empty” - Dispense cycle has completed, target weight not met. “Disable” – No load selection has been made.</p> <p>“Live weight” is the actual calibrated weight on the accumulator doors. “Out:” Drum motor output (* is present when output is on, numbers just to the right indicate current is present.) “<i>Load size</i>” is the current Basket Load Size selection.</p> <p>“OK” button closes function, returns to the Service Menu.</p>	<table border="1"> <tr> <td><i>Weighing cycle</i></td> <td><i>Live weight</i></td> </tr> <tr> <td>Out:_</td> <td><i>Load size</i></td> </tr> </table>	<i>Weighing cycle</i>	<i>Live weight</i>	Out: _	<i>Load size</i>
<i>Weighing cycle</i>	<i>Live weight</i>					
Out: _	<i>Load size</i>					
<p>Accum Monitor</p>	<p>Displays the present state of the Accumulator Doors. <i>Accum. door position:</i> “Open” - Doors “Close” - In dispense cycle.</p> <p>“Out:” Accumulator door motor output, * indicates on, number to right indicates current. “<i>Accum door state</i>” the current door state, “Ajar” or “Closed”. “Home:” * indicates home position has been reached during cycle.</p> <p>“OK” button closes function and returns to Service Menu.</p>	<table border="1"> <tr> <td><i>Accum. door position</i></td> <td>Out:_</td> </tr> <tr> <td><i>Accum door state</i></td> <td>Home:_</td> </tr> </table>	<i>Accum. door position</i>	Out: _	<i>Accum door state</i>	Home: _
<i>Accum. door position</i>	Out: _					
<i>Accum door state</i>	Home: _					
<p>Sensor Monitor</p>	<p>Displays the present state of the Basket Sensor. “Sensor:” * indicates sensor is reading a basket present.</p> <p>“<i>Basket State</i>” indicates present basket cycle. “None” - No basket is present. “Basket” - Basket is present waiting to be filled. “Filled” - Basket is present and has been filled.</p> <p>“<i>Weigh cycle</i>” indicates position in the weighing cycle “Idle” - Waiting for a basket size selection. “Check” – Checking Tare weight “Dispens” - In dispense cycle. “Pulsing” – Nearing target weight “Drop” – Dispensing product into basket “Empty” - Dispense cycle has completed, target weight not met. “Disable” – No load selection has been made.</p> <p>“OK” button closes function and returns to Service Menu.</p>	<table border="1"> <tr> <td>Basket</td> <td>Sensor:_</td> </tr> <tr> <td><i>Basket State</i></td> <td><i>Weigh cycle</i></td> </tr> </table>	Basket	Sensor: _	<i>Basket State</i>	<i>Weigh cycle</i>
Basket	Sensor: _					
<i>Basket State</i>	<i>Weigh cycle</i>					

<p>Fry Monitor</p>	<p>Used to set the Low Fry Sensor Alarm level. The Low Fry Alarm will turn on after the Low Fry Sensor stops sensing fries and a set amount of fries have been dispensed. If no fries are sensed at start up, the display will read “No Fry Sensor”. Once fries are sensed the display will read “Low Fry Sensor_” The “_” indicates the Low Fry Sensor is active.</p> <p><i>Sensor level setpoint</i> Shows the amount of weight which must dispense, once the sensor stops sensing fries, before the alarm turns on. Up and Down arrow buttons change the Sensor Level setting.</p> <p><i>Current level</i> Shows the weight remaining before the alarm turns on. If the Sensor is indicating fries present the Sensor level setpoint and the Current level will be the same.</p> <p>Menu button exits the function and returns to Service Menu</p>	<table border="1"> <tr> <td style="text-align: center;">Low Fry Sensor_</td> </tr> <tr> <td style="text-align: center;"><i>Sensor level setpoint</i> <i>Current level</i></td> </tr> </table>	Low Fry Sensor_	<i>Sensor level setpoint</i> <i>Current level</i>
Low Fry Sensor_				
<i>Sensor level setpoint</i> <i>Current level</i>				
<p>Bypass Functions</p> <p>Note: Volatile setting. (will reset each time power is cycled)</p>	<p>Used to Bypass certain dispenser systems to allow for diagnosing problems or to operate if a system has failed (sensor). The systems are the refrigeration system, the weighing cycle and the basket sensor. Display will read a flashing “Refrig”.</p> <p>Use the Up and Down arrow buttons to change from “Refrig”, “Weigh” or “Sensor”. “OK” button selects system to be bypassed.</p> <p>Display will read a flashing “On”. Up and Down arrow buttons change between On and Off, then press the “OK” button. (Select “Off” to bypass the selected system.)</p> <p>Display returns to Service Menu. Note: Press the Menu Button at any time to abort function and return to the Service menu</p>			
<p>Test Outputs</p>	<p>Turns on and off outputs for diagnostic purposes.</p> <p>Display shows a flashing “Refrig”: Up and Down arrow buttons change the output selection (“Refrig”, “Drum” or “Accum”). “OK” button selects the output.</p> <p>Display will show selected output and a flashing “Out:” Up arrow turns on the output, * appears next to “Out”. Down arrow turns off the output, removes *.</p> <p>Menu button exits the function and returns to Service Menu Note: The refrigeration system has a two minute short cycle delay. The refrigeration system will turn on when the “Refrigeration timeout” has reached zero (0) and the refrigeration (“Refrig”) bypass function is set to “ON”.</p>	<table border="1"> <tr> <td style="text-align: center;"><i>Output selection</i> <i>Refrig timeout</i></td> </tr> <tr> <td style="text-align: center;">Out: _</td> </tr> </table>	<i>Output selection</i> <i>Refrig timeout</i>	Out: _
<i>Output selection</i> <i>Refrig timeout</i>				
Out: _				

Set Password	<p>Allows a password to be set to access both Configuration and Service functions. (default is no password) (See page 24)</p> <p>Press “OK” Button to enter function. Display reads “Set Password” and “-----”.</p> <p>Use Basket Size Buttons, and up and down arrows, to enter up to an eight digit password. When finished press the “OK” Button. (Any sequence of the basket size buttons and up and down arrow buttons can be used to create a password.)</p> <p>Display reads “Repeat Password” and “-----”. Repeat the password sequence then press “OK” to save the password and exit to the Service Menu. (See note below for Service Password.)</p>
Main Screen	Press OK to Exit Service Menu, immediate return to the Main Screen.

- Use the Up  and Down  Arrow Buttons to find the desired function.
- Press the “OK” Button to select the desired function.
- Menu Button exits function at anytime and returns to main menu.

Note: A Service Password is available. Use the Service Password if the manager’s password has been misplaced. The Service Password operates in the Service Menu only and will erase the manager’s password and restore to default (no password). The Service Password sequence is:

Small Basket, Up Arrow, Down Arrow, Large Basket, Medium Basket (Twice) then OK button.

Error Detection

The main display will read ****Error**** and state the error which has occurred. (i.e. “Weighing Issue”)

If an error does occur, it is normally reset by pushing the “OK” Button. If the failure continues, turn the Power Switch off and unplug the Power Cord from the wall outlet. Check the Power Cord for any obvious defect. Open the Cabinet Door to make sure the dispenser is properly assembled ([pages 6-8](#)) and the product is loaded properly.

See [pages 21-23](#) for troubleshooting an error condition.

Error Codes	
Error	Description
Drum Won't Turn	Drum motor is not turning. (Error 1)
Fry Doors Stuck	Accumulator motor is not turning. (Error 2)
Fry Door Failed	Timeout error on accumulator. (Error 3)
Weighing Issue	Tare weight has shifted excessively. (Error 4)
Cooling Slow	Refrigeration progress too slow. (Error 5)
Cooling Failed	Refrigeration High Pressure Switch may have tripped. (Error 6)
Refrig. Error	Error on refrigeration relay drive. (Error 7)
Probe Failure	Temperature Probe input out of range. (Error 8)
DC Power Low	DC voltage low
NV Data Lost	Invalid data in Configuration (normal at first start up)
NV Data Bad	Call Factory
Internal Issue	Call Factory

Troubleshooting

The following is a list of errors 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.**

Drum Won't Turn

The Controller has detected a CURRENT ERROR FOR THE DRUM MOTOR. The drum motor current draw is monitored by the controller. A drum motor error will occur if the motor current falls outside the expected values.

A DRUM WON'T TURN error could be caused by disconnected drum motor wiring, a faulty drum motor or a faulty controller.

Fry Doors Stuck

The controller has detected a CURRENT ERROR FOR THE ACCUMULATOR MOTOR. The accumulator motor current draw is monitored by the controller. An accumulator motor error will occur if the motor current falls outside the expected values.

An Fry Doors Stuck error could be caused by disconnected accumulator motor wiring, a faulty accumulator motor or broken accumulator linkage.

Fry Door Failed

The controller has detected a TIMEOUT ERROR FOR THE ACCUMULATOR MOTOR HOME SENSOR. The accumulator home encoder sensor sends an input to the controller each time the accumulator doors cycle. It lets the controller know that the doors opened and closed in an acceptable time. A timeout error will occur if the following conditions are not detected. Accumulator home sensor timeouts:

- If the home sensor starts in the home area, it must leave it within 0.5 seconds.
- If clear of the home area, the accumulator motor will make a half turn, then pause.
- When the accumulator motor resumes turning after the pause, the home sensor must find the home area within 2.0 seconds.

A Timeout Error could be caused by an accumulator motor fault, broken accumulator linkage, a disconnected or faulty accumulator encoder or a damaged encoder vane. Verify the accumulator encoder wiring at both the board and at the encoder is secure and the vane is in place and undamaged. Check accumulator linkage to ensure it is undamaged.

Weighing Issue

The controller has detected a LARGE SHIFT IN THE TARE (EMPTY) READING FOR THE SCALE INPUT. Could be caused by an obstruction of the scale or lose of calibration. Verify the accumulator housing and flap door are properly assembled. Check accumulator doors to ensure there are no obstructions (i.e. fries jammed underneath). Verify the shaft collars are not rubbing the back wall of the cabinet. If no obstruction is found calibrate the scale. ([Page 24](#))

Cooling Slow

The controller has detected that the CABINET TEMPERATURE IS NOT COOLING AS EXPECTED. Likely cause is the power was left on while defrosting the cabinet. Other possible causes are a restriction to the air flow across the condensing unit such as might occur with a dirty or plugged condenser filter and/or coil, an improperly positioned temperature probe or a malfunction of the refrigeration compressor. Check for obstructions near the condensing unit inlet grill and inspect and clean the condenser filter and/or coil if needed. ([page 33](#)) Verify the temperature probe is in place and properly secured. CALL OUR TECHNICAL SUPPORT HOTLINE FOR ASSISTANCE. † (see note below to reset)

Troubleshooting cont.

Cooling Failed

The HIGH PRESSURE SWITCH FOR THE REFRIGERATION SYSTEM MAY HAVE TRIPPED. Possible causes include a restriction to the air flow across the condensing unit such as might occur with a dirty or plugged condenser filter and/or coil. Check for obstructions near the condensing unit inlet grill. Inspect and clean the condenser filter and/or coil if needed ([page 33](#)). A failed refrigeration over pressure switch, or a loose wire to the over pressure switch could cause this error. A failed feedback relay or a loose wire to the feedback relay may cause this error. Also a short duration power interruption causes by a power outage or faulty power cord may cause this error. CALL OUR TECHNICAL SUPPORT HOTLINE FOR ASSISTANCE. **(WARNING: HIGH VOLTAGE. Unplug the dispenser before attempting to repair the wiring for the high pressure switch.) † (see note below to reset error)**

Refrig. Error

The controller has detected an ERROR ON THE REFRIGERATION RELAY DRIVE indicating the compressor feedback relay did not turn off when the controller turned off refrigeration. This could be caused by a stuck refrigeration relay, the feedback relay stuck shut, a short circuit, or controller output failure. Verify there is no foreign material or loose connections around the relay output. **† (see note below to reset error)**

Probe Failure

The controller has determined an INPUT FROM THE CABINET TEMPERATURE PROBE IS OUT OF RANGE HIGH OR LOW. The most likely cause is a failed or disconnected temperature probe. Verify the temperature probe wires are properly secured at the controller board.

DC Power Low

The controller has detected a low voltage reading from the power supply. This could be caused by a low supply voltage condition or a faulty power supply. Cycle power and check supply voltage. If error persists it is likely a power supply failure.

NV Data Lost

NVRAM CHECKSUM ERROR. The controller has detected invalid data. **It is normal to get this error the first time a dispenser is powered on after a new processor has been installed or replaced.** The data may be invalid for several reasons. The processor writes the permanent data (error logs, configuration, and operating parameters) along with extra data that it uses to verify the data is valid. Cycle power and calibrate the dispenser. If the error persists it likely indicates a failure of the NVRAM. CALL OUR TECHNICAL SUPPORT HOTLINE FOR ASSISTANCE.

NV Data Bad and Internal Issue – Call Automated Equipment LLC

†Note: “Cooling Slow”, “Cooling Failed” and Refrig. Error” errors are refrigeration errors. These errors, while requiring corrective action, will not disable the fry dispensing portions of the equipment. In order to safeguard the refrigeration system these are held errors and may not reset by pressing the OK Button. Corrective action must be taken before resetting these errors or damage to the refrigeration system may result. Call our Technical Support Hot Line for assistance. These errors are reset from the Service Menu using the Clear Error function.

Calibrations and Adjustments

Scale Calibration

The RAM 200-Fx Frozen Fry Dispenser has a scale which weighs and dispenses frozen fries. This scale may require calibration periodically.

1) Open the cabinet door and remove the hopper from the dispenser.

Note: The accumulator housing should remain in place on the accumulator doors.

Calibration of the scale is performed using the operator panel on the front of the Dispenser.

2) Press the Menu Button until the display reads "User Menu". Use the Up or Down Arrow Buttons to change the User function to "Calibrate" then press the OK Button. The display will change to "**Place Basket**".

3) Place an empty fry basket under the accumulator doors. The accumulator doors will open and close to dispense any contents into the basket to ensure the Accumulator Housing is empty before zeroing the scale.

4) The display will change to "**Zeroing Scale**". The scale now tares (zeros) itself automatically.

5) After it achieves a stable tare the display will change to "**Place 1.0 lb**" or "**Place 450g**" if set to metric units. Place a 1 lb (450 g) reference weight on the accumulator doors. (Note: Four frozen ¼ lb patties can be used in place of a 1 lb reference weight.)

6) Once the scale stabilizes the display will change to "**Place 2.0 lb**" or "**Place 900g**" if set to metric units. Place a 2 lb (900 g) reference weight (an additional 1 lb (450 g)) on the accumulator doors.

7) After the scale stabilizes the display will change to "**Remove Weights**". Remove the reference weight(s) from the accumulator doors and reinstall the hopper.

The dispenser will return to normal operation with no basket size selected.

Set Configuration and Service Passwords

Function Menus. Once set, the password will need to be entered to gain access to restricted menus. Take care to remember your password or write it down and keep it in a safe location.

A Configuration or Service password can be set and/or changed from both the Configuration Function Menu ([page 17](#)) or the Service Function Menu ([page 20](#)) using the operator panel on the front of the dispenser.

To access the Configuration Function Menu to set or change the password, press the Menu Button to access the Configuration Menu. Use the Up or Down Arrow Buttons until "**Set Password**" is displayed then press the OK Button. Or to access the Service Function Menu to set or change the password, press the Menu Button until the Service Menu is displayed then press the OK button to access the Service Menu. Use the Up or Down Arrow Buttons until "**Set Password**" is displayed then press the OK Button.

The display will change to read "Set Password" and "-----". Enter a password using the Basket Load Size Buttons and Up and Down Arrow Buttons. When finished press the OK Button. (Any sequence of the basket size buttons and up and down arrow buttons can be used to create a password.)

The display now reads "Repeat Password" and "-----". Repeat the password sequence then press "OK" to save the password and exit to the Configuration or Service Menu.

To cancel a set password, access the "Set Password" function and press the OK Button twice without entering a password.

A password can be set to restrict unauthorized access to both the Configuration and Service

Target Weight Adjustment

Each Basket Size Button's Target Weight can be individually customized.

Default settings are:

- Small load = 0.50 lbs (225 g)
- Medium load = 1.0 lbs (450 g)
- Large load = 1.5 lbs (700 g)

Note: Adjustments to the target weight for basket size buttons are performed from the Configuration Function Menu ([page 17](#)) using the operator panel on the front of the dispenser and may require a manager's password to access the menu.

To access the Configuration Function Menu and customize the Target Weights for the Basket Size Buttons press the Menu Button to display the Configuration Menu.

If a password is required the display will show "- ----" below "Config Menu". Enter the managers password then press the OK Button.

Press the Up or Down Arrow Buttons until "Set Targets" is displayed. Press the OK Button to enter function.

The display will change to "**Set Targets**" with a flashing "Small" and the current target weight for the small setting displayed. Press the Up and Down Arrows Buttons change from "Small", "Medium" and "Large". Press the OK Button to select the desired Load Size. The current target weight will begin to flash

To change the target weight for the currently selected Basket load Size, press the Up Arrow  Button to increase the target weight in 0.05 LB (25g) increments, or the Down Arrow  Button to decrease the target weight. Use the OK Button to save the new setting. The display will return to a load size flashing (Small, Medium or Large).

Repeat until all adjustments have been made. Press the OK Button to store all new settings. Use the Menu Button to return to the Menu Selections (User, Configuration and Service) and close the function.

Use the "Main Screen" function in the menus to return to the Main Screen.

Temperature Probe Calibration

The RAM 200-Fx Frozen Fry Dispenser uses a single temperature probe mounted to the wall of the cabinet compartment in the upper right. It is the temperature displayed on the Main Screen panel and also used to control the refrigeration system.

The temperature control is factory set. Unless the controller or the temperature probe are replaced, it will not be necessary to change these values. In addition, raising or lowering the target temperature can compensate for small discrepancies between the probe temperature and actual temperature. However, differences of greater than 2° should be corrected. The method for adjusting the temperature probe is simple, but requires an accurate thermometer (preferably certified) to measure the probes deviation from the actual temperature:

Place the thermometer into the freezer compartment as close to the cabinet temperature probe as practical. The machine should be operating at or near normal operating temperature. If the thermometer has a sensing probe, make certain that it is not touching any metal in the compartment, otherwise it may give a false reading.

Wait 5 minutes with the dispenser operating normally and the door closed.

Check the thermometer reading and compare it with the temperature displayed on the operator panel. The best time to check is just after the compressor shuts off.

If the difference between the display and the thermometer is greater than 2°, an adjustment should be made.

Note: Calibration of the temperature probe is performed from the Service Functions Menu using the Operator Panel on the front of the Dispenser and may require a manager's password to access the menu.

To access the Service Menu, on the Operator Panel, press the Menu Arrow Button until "**Service Menu**" with "-----" below :**Service Menu**" is displayed.

If a password is required the display will continue to show "-----" below "Service Menu" after pressing the "OK" button. Enter the manager's password then press the "OK" Button.

Use the Up of Down Buttons to scroll through the functions to "Adjust Temp.", then press the "OK" Button to select function.

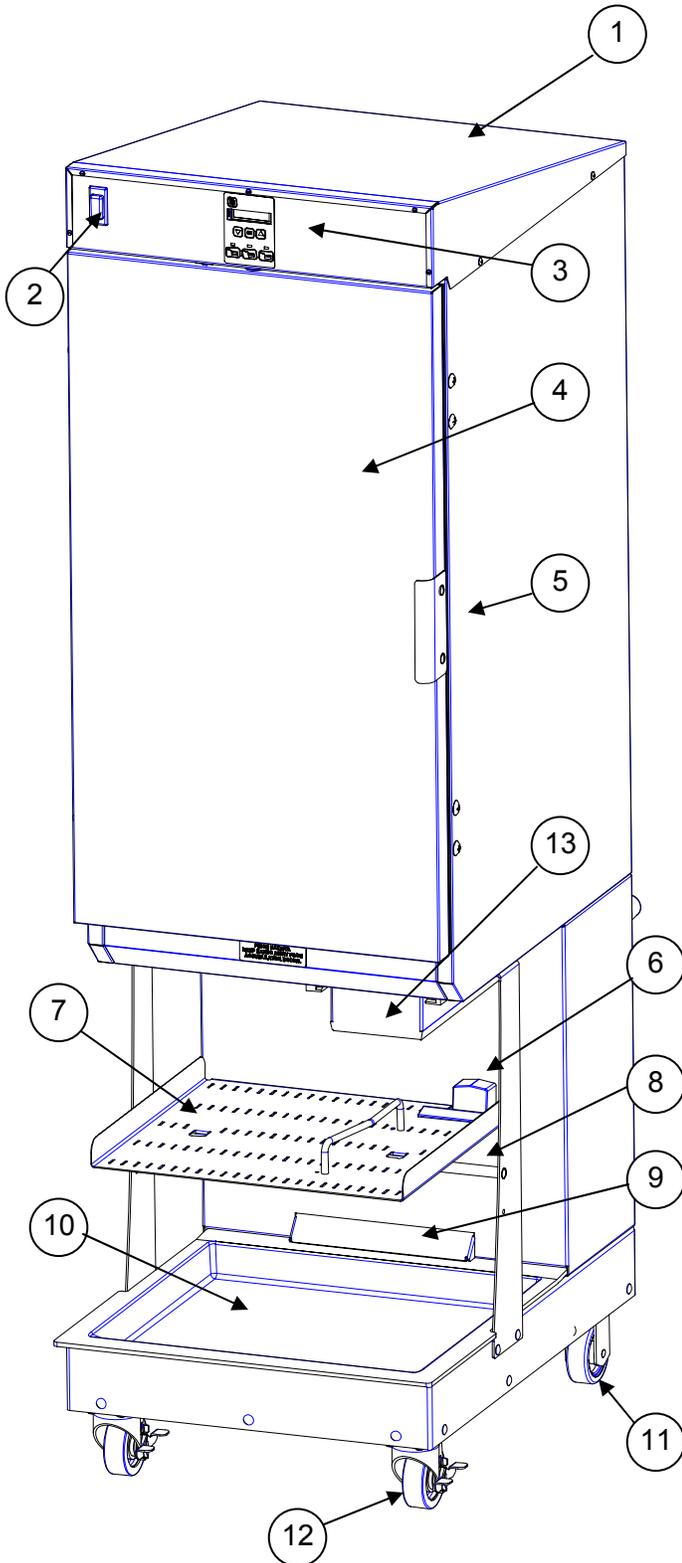
The display will change to "Adjust Temp." with the current temperature probe reading displayed in the lower right of the display.

Adjust the probe temperature to match the correct temperature using the Up Arrow  button to raise the displayed temperature or the Down Arrow  button to lower the displayed temperature. (Note: each time an arrow button is pressed will change the temperature 0.1°).

Once the displayed temperature matches the thermometer temperature press the "OK" button to save the calibration and exit the function. The display will return to the Service Menu.

Part Identification

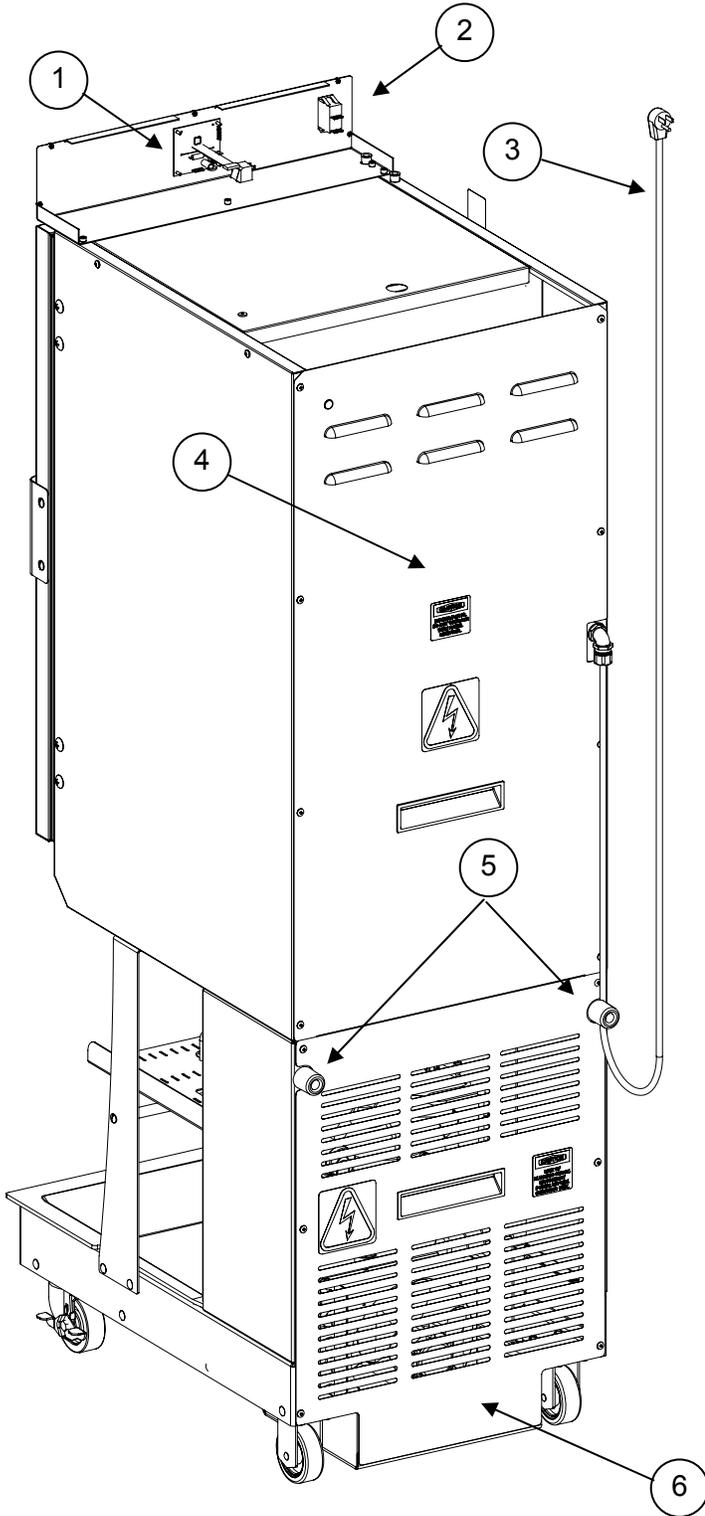
Dispenser Cabinet Assembly



Item	Qty	Part #	Description
1	1	295748	Top Cover
	9	294824	Screw, Truss head, Phillips, #10-32x1/2"
2	1	292246	On/Off Switch 15A
3	1	295820	Keypad, Membrane
	1	295723	Frame, Operator Panel
	5	213262	Screw, Truss Head , Slotted, 10-32x3/8"
	5	213140	Washer, Lock, #10
4	1	295965	Door Assembly w/ gasket
	1	295830	Door Gasket
		296188	Door Gasket (with "proto" in the serial # only)
	2	293706	Hinge, Door (not pictured)
5	4	293855	Screw, Truss Head, Phillips, 3/8-16x1/2"
	1	293197	Handle, Door
6	2	202077	Screw, Truss Head, slotted, 1/4-20x1/2"
	1	See Page 28	Sensor, Basket, Assembly
7	1	295736	Assembly, Basket Rack
	1	294021	Basket Guide Bar
	2	290000	Screw, Truss Head , Slotted, 10-32x3/8"
	1	295783	Basket Stop
	2	293498	Screw, Truss Head, Slotted, 10-32x1/4"
8	2	295781	Support Bar, Basket Rack
	2	213571	Screw, Truss Head, slotted, 1/4-20x 3/4"
9	2	295845	Condenser Filter (Not shown)
10	1	295780	Drip Tray
11	2	293434	Caster, Rear
	8	200774	Screw, Hex-Head 5/16-18x3/4"
	8	290012	Nut, Hex, 5/16-18
	8	216159	Washer, 5/16
12	2	216596	Caster, Front
	8	200774	Screw, Hex-Head 5/16-18x3/4"
	8	290012	Nut, Hex, 5/16-18
13	8	216159	Washer, 5/16
	1	295885	Fry Guide
	2	295893	Rail, Mounting, Fry Guide
Not shown	4	292106	Screw, Flat Head, Slotted, #8-32 x 1 In.
	1	293399	Power Cord (Dom. 120V)
Not shown	1	294129	Power Cord (Int. 240V Euro)
	1	291050	Basket, Fry
Not shown	1	291051	Case of 6 Fry Baskets
	1	295771	Door Heater Wire (Dom. 120V)
Not shown	1	295770	Door Heater Wire (Int. 240V)
	1	295827	Label Set

Parts identification Cont.

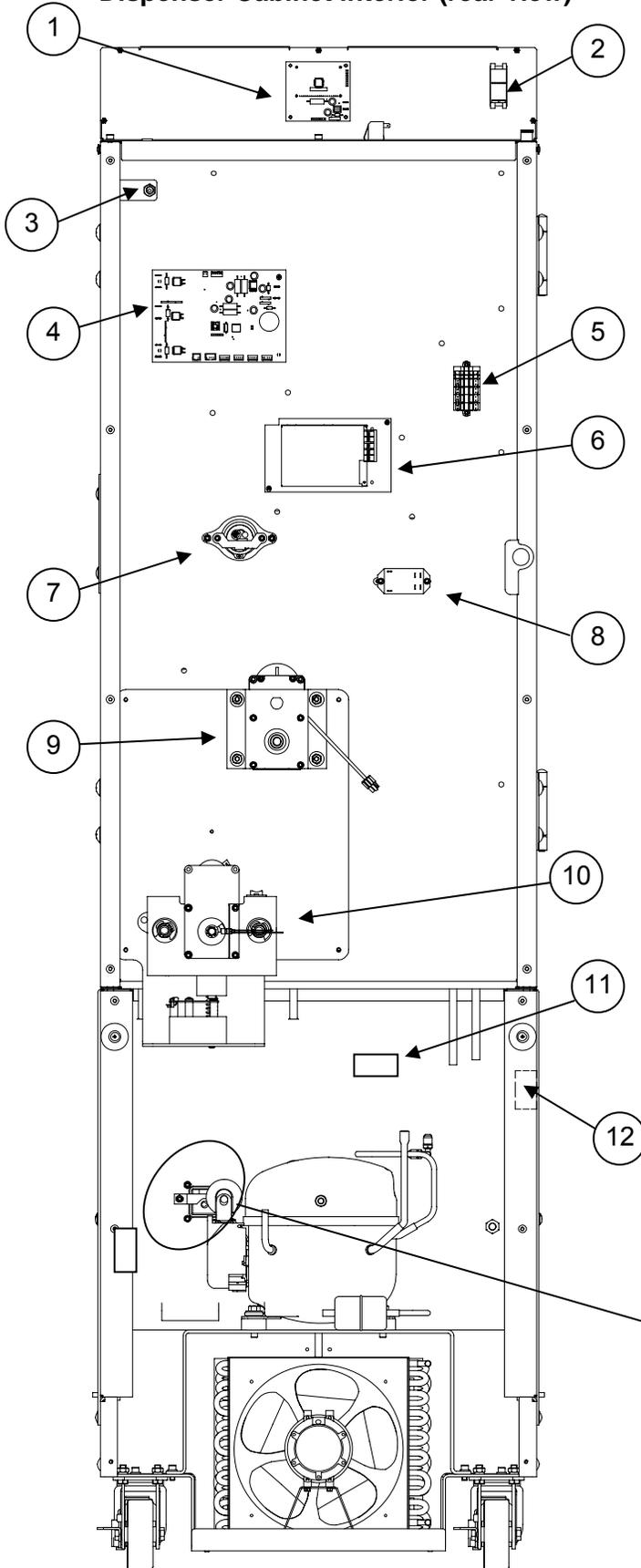
Dispenser Cabinet Exterior (rear view)



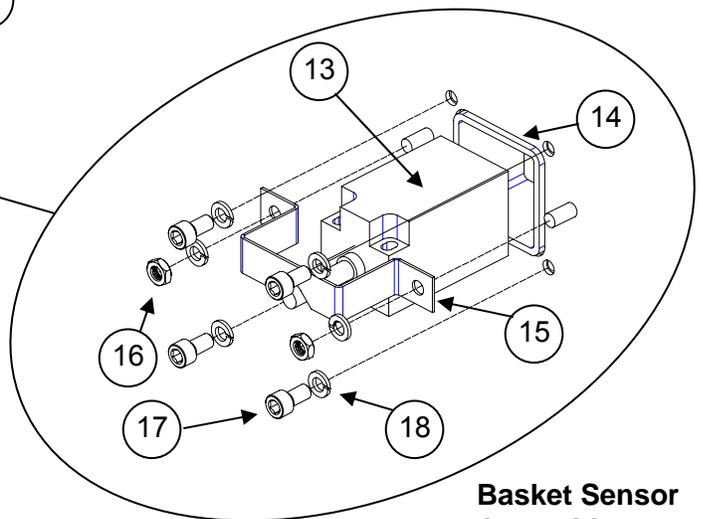
Item	Qty	Part #	Description
1	1	295821	Display Control PCB
2	1	292246	On/Off Switch 15A
3	1	293399	Power Cord (Dom.120V)
		294129	Power Cord (Int. 240V Euro)
		294473	Power Cord (Int. 240V Australia)
4	1	295777	Upper Back Panel
		295653	Handle, Plastic
		294824	Screw, Truss Head, #10-32 x 3/8"
5	1	295681	Kit, Bumper, Wall (set of 2)
6	1	295779	Lower Back Panel
		295653	Handle, Plastic
		294824	Screw, Truss Head, #10-32 x 3/8"

Parts identification Cont.

Dispenser Cabinet interior (rear view)

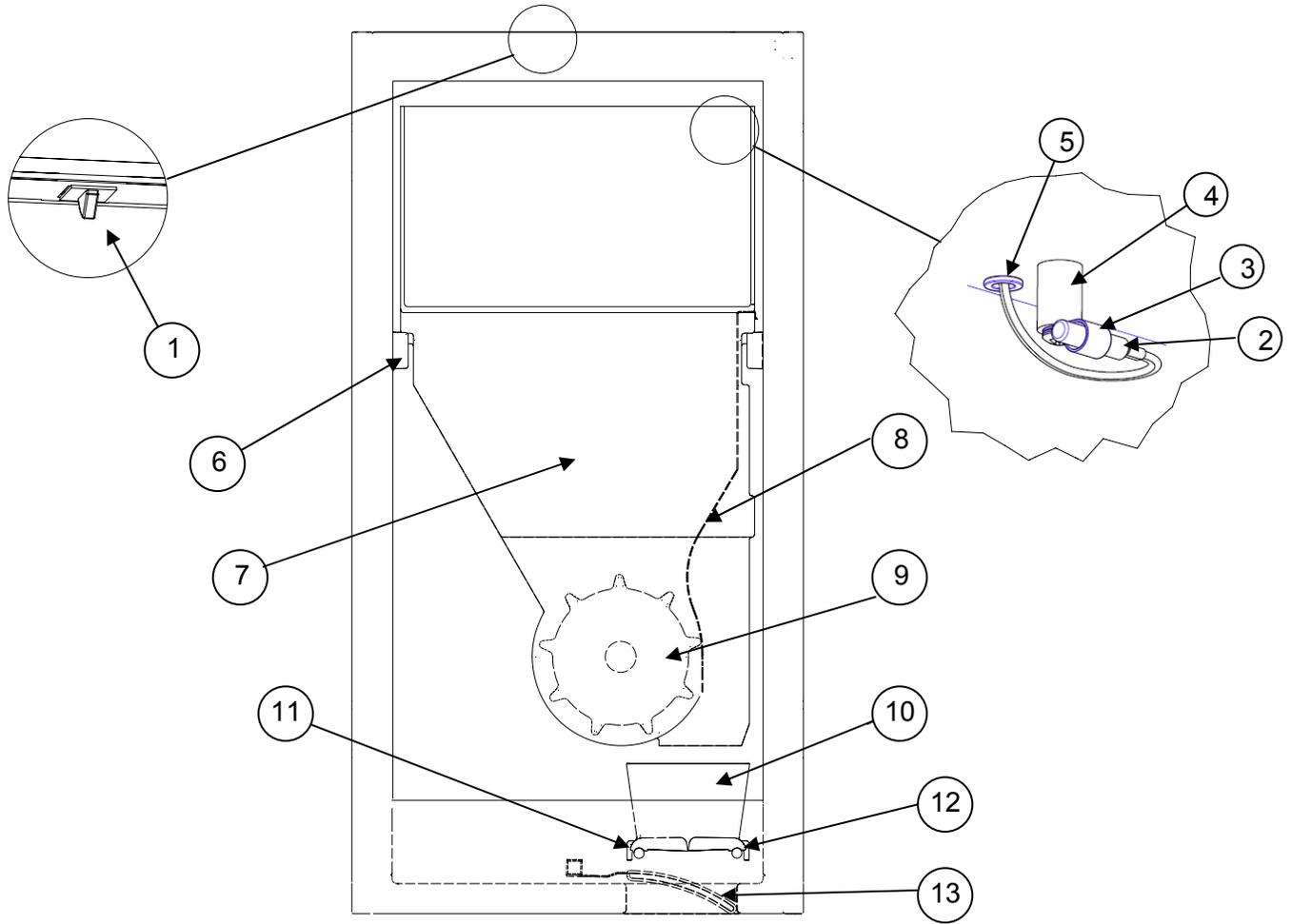


Item	Qty	Part #	Description
1	1	295821	Display Control PCB
2	1	292246	On/Off Switch 15A
3	1	293945	Circuit Breaker
	1	295689	Mounting Bracket
4	1	295686	Nut, Hex Nylock #10-32
	1	295397	Controller PCB
5	4	202795	Screw, Grounding
	1	293401	Upper Terminal Block
6	1	295159	Power Supply, Universal
7	1	See page 32	Low Fry Sensor Assembly
8	1	293405	Refrigeration Relay
	2	213262	Screw, Socket Head 10-32x3/8"
9	1	See page 32	Drum Motor Assembly
10	1	See page 30 & 31	Accumulator Assembly
11	1	293734	Feedback Relay (Dom.120V)
		293974	Feedback Relay (Int. 240V)
12	1	293404	Lower Terminal Block
13	1	293934	Sensor, Basket
14	2	295799	Window, Sensor, Basket
15	1	295800	Bracket, sensor, Basket
16	2	213138	Nut, Hex, #10-32
17	4	295819	Screw, Socket head, #10-24 x 3/8"
18	6	213140	Washer, lock, #10
Not shown	1	295515	Heater Wire, Accum. (Dom. 120V)
		295516	Heater Wire, Accum. (Int. 220V)



Basket Sensor Assembly

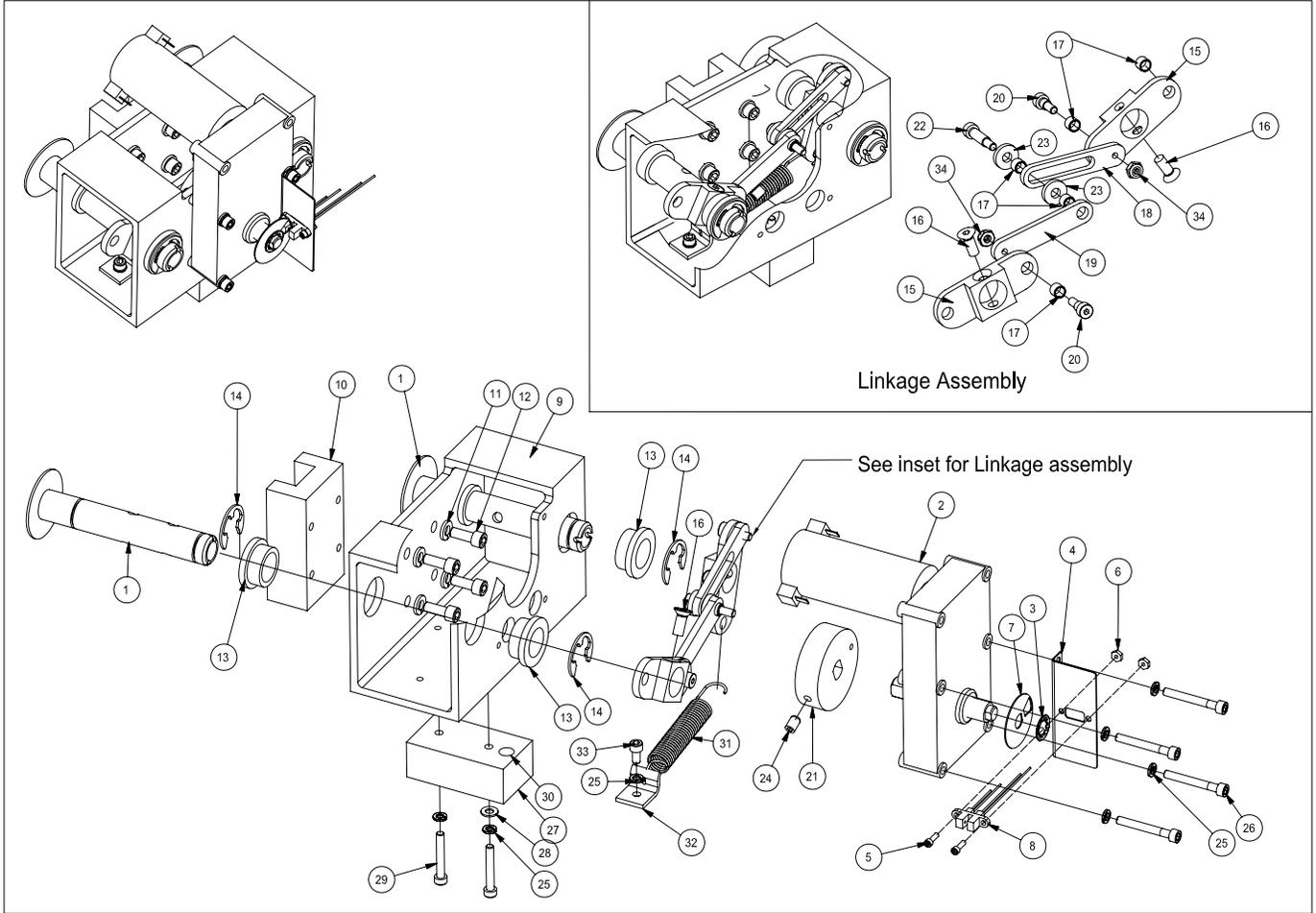
Parts Identification Cont.



Interior Cabinet Components

Item	Qty	Part#	Description
1	1	294407	Door Switch
2	1	295853	Kit, Probe, Temperature (includes P-Clip)
3	1	295824	P-Clip, Probe
4	1	295234	Spacer
5	1	292058	Grommet
6	4 8	295699 293720	Hopper Support, Sidewall (Left or Right) Screw, Flat-head, slotted, SS #10-32x 1"
7	1	295696	Hopper
8	1	295697	Diverter, Fry
9	1	202366	Drum, High Tolerance
10	1	295714	Housing, Accumulator
11	1	295786	Door Accumulator LH
12	1	295787	Door Accumulator RH
13	1	293376	Door, Flap
Not shown	1	295942	Storage Guide

Parts identification Cont.

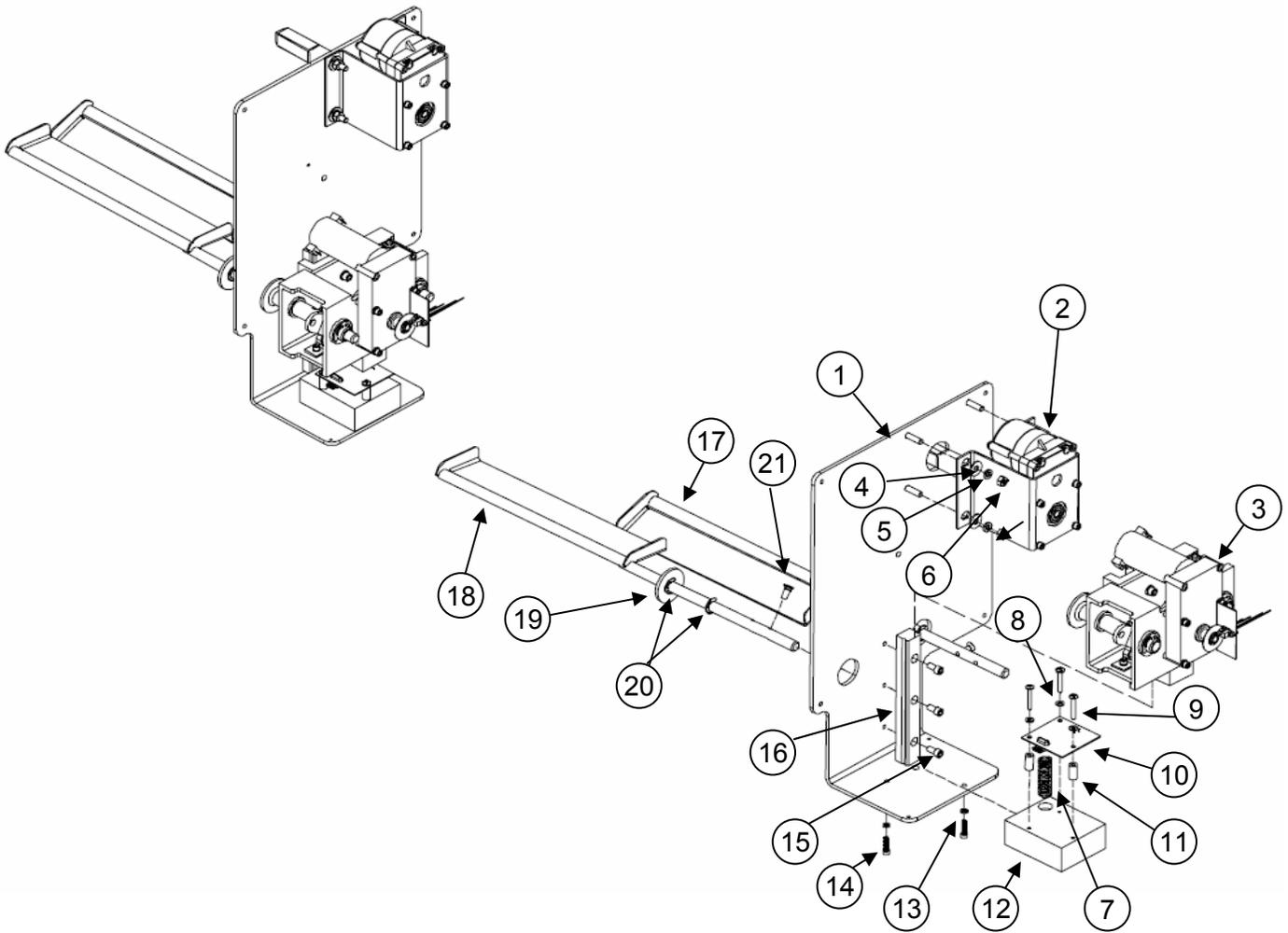


Weighing System Assembly

Item	Qty	Part#	Description
1	2	293322	Weldment, Arm Support
2	1	294009	Kit, Acc Motor, Includes item 3 & 7
3	1	290525	Retaining Ring, Self Locking, 3/8"
4	1	290504	Bracket Mount, Home Sensor
5	2	213663	Screw 4-40 x 3/8" Socket Head
6	2	290529	Nut, hex #4-40
7	1	293328	Encoder Disk
8	1	293876	Accumulator Home Sensor
9	1	293146	Extrusion, Accumulator Housing
10	1	202068	Assembly, Linear Bearing 180mm
11	4	213142	Washer, Split-lock 1/4"
12	4	203097	Screw, Socket HD, M6x1x16mm
13	4	290517	Flange Bearing, 3/4" ID x 1" OD, x 1/2"
14	4	290531	Retaining Ring, E-Style, 1/2"
15	2	293154	Accumulator Toggle
16	2	213549	Screw, socket, flat-head, 1/4"-20x5/8"
17	5	203259	Bearing, Sleeve, 1/4"ID x 5/16"OD x 1/4"

Item	Qty	Part#	Description
18	1	293155	Link, Accumulator
19	1	293323	Link, Accumulator, Push
20	2	290635	Screw, Shoulder, 1/4"x 1/4", #10-24
21	1	294693	Kit, Drive Wheel
22	1		Screw, Shoulder (Only in Kit 294693)
23	2	293325	Washer, Spacer, 0.25 ID x 0.12"
24	1	290295	Set Screw, 1/4-20 x 0.375"
25	5	213140	Washer, lock, #10
26	4	213518	Screw, Socket-head cap, 10-32x1 1/2"
27	1	293327	Block, NCWS Magnet Mount
28	1	213139	Washer, Flat, #10
29	2	213136	Screw, Socket-head cap, #10-32x1 1/4"
30	1	290523	Magnet, NCWS
31	1	293384	Spring, Extension
32	1	293390	Bracket, Spring Base
33	1	213262	Screw, Socket-head cap, M6x1x16mm
34	2	204761	Nut, Nylon lock, Hex, 18-8 SS, 5/16-18

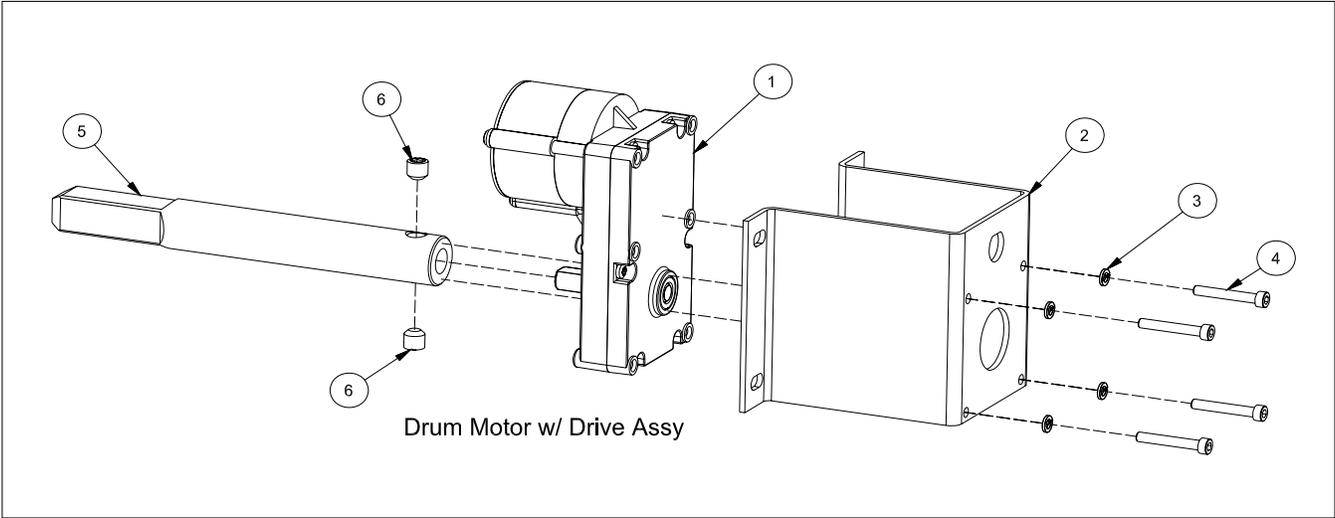
Part Identification Cont.



Dispensing System Assembly

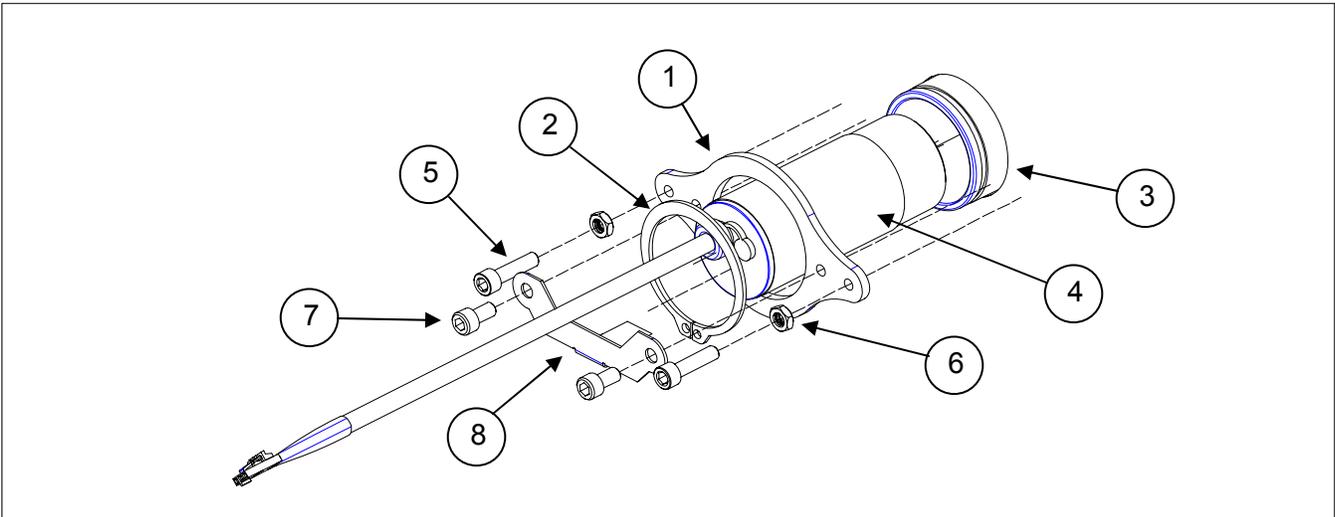
Item	Qty	Part#	Description	Item	Qty	Part#	Description
1	1	295380	Mechanical Panel	12	1	294775	Kit, NCWS Base
	4	213559	Screw, Truss HD, 10-32x1/2" SST	13	2	213140	Washer, Lock, Reg Spr, ZP #10.ipt
2	1	N/A	Assembly, Drum Motor w/ Mount	14	2		Screw, SH Cap, included in 294775
3	1	N/A	Assembly, Weighing System	15	3	213143	Screw, SH Cap, 1/4-20x1/2" L
4	4	213141	Flat washer, 1/4"	16	1	202068	Assembly, Linear Bearing, 180mm
5	4	213142	Washer, split lock, 1/4"	17	1	295786	Door, Accumulator LH
6	4	213260	Hex nut, 1/4-20	18	1	295787	Door, Accumulator RH
7	1	290656	Spring, compression, NCWS	19	2	293596	Collar, Accumulator shaft, UHMW
8	1	293566	Washer, Nylon, 0.173x0.375x0.054"	19	2	203257	O-ring, Buna-N, 11/16"ODx1/2"IDx3/32"
9	3	291308	Screw, Truss HD, Phillips, #8-32x1 1/4"	20	4	213356	Ring, retaining, E-style, ZP, 1/2"
10	1	290519	Circuit Board, NCWS	21	2	213549	FH Cap Screw, Socket, ZP, 1/4-20x5/8"L
11	3	292252	Standoff, Nylon, Unthreaded, 0.75"L				

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"

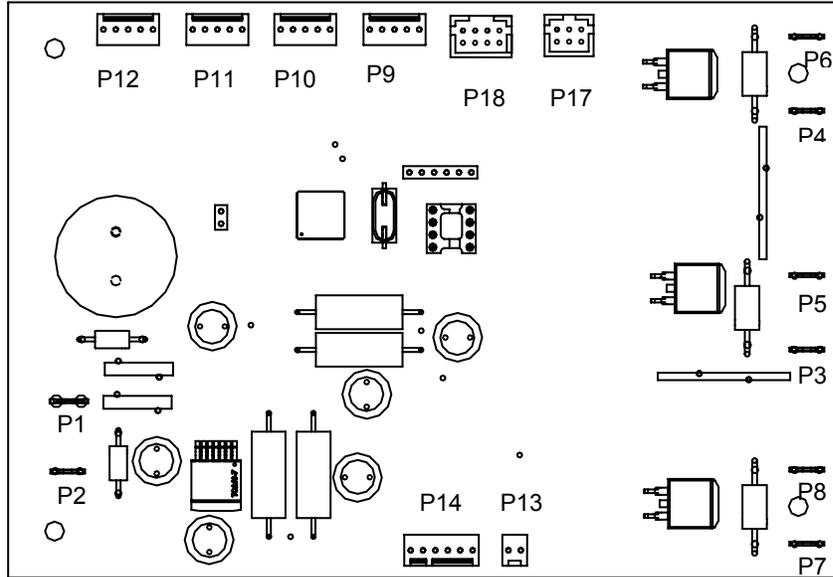


Low Fry Sensor Assembly

Item	Qty	Part#	Description	Item	Qty	Part#	Description
1	1	295794	Brace, Sensor, Fry Level	5	2	213456	Screw, Socket Head, #10-32 x ¾"
2	1	295797	Retaining Ring, Ext. 1 11/16"	6	2	213138	Nut, Hex, #10-32
3	1	295792	Shroud, Fry Level Sensor	7	2	213262	Screw, Socket Head #10-32 x 3/8"
4	1	295833	Sensor, Fry Level	8	4	293731	Retainer, Sensor, Fry Level

Parts identification Cont.

Controller Board



Controller Board

PART#	DESCRIPTION (CONTROLLER BOARD)		QTY
295397	Controller PCB		1
P1	Power Input +24VDC	P9	Accum Home Encoder
P2	Power Input $\frac{1}{\text{G}}$ (Ground)	P10	Basket Sensor
P3	Drum Motor +24VDC	P11	High Pressure Switch Relay
P4	Accum Motor +24VDC	P12	Not Used
P5	Drum Motor $\frac{1}{\text{G}}$	P13	Refrigeration Control Probe
P6	Accum Motor $\frac{1}{\text{G}}$	P14	NCWS Board
P7	Ref. Relay +24VDC	P17	Display Board
P8	Ref. Relay $\frac{1}{\text{G}}$	P18	Expansion Connection (not used)

Refrigeration System

General Operation

The RAM 200-Fx 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" (26 mm) clearance on both sides, 2" (50 mm) behind the dispenser and 24" (61 cm) to the ceiling is recommended.

The temperature control for the RAM 200-Fx 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 21-23](#) for a complete 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 -5°F to 15° F(-20°C to -9°C). The set point can be changed using the "Set Temp" function in the Configuration Menu (see page 16). Cabinet temperature is displayed on the operator panel 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 off. 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 when defrost is complete.

Required Maintenance

Daily:

- Shut off, clean, defrost and inspect cabinet. (see [page 9](#))

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.

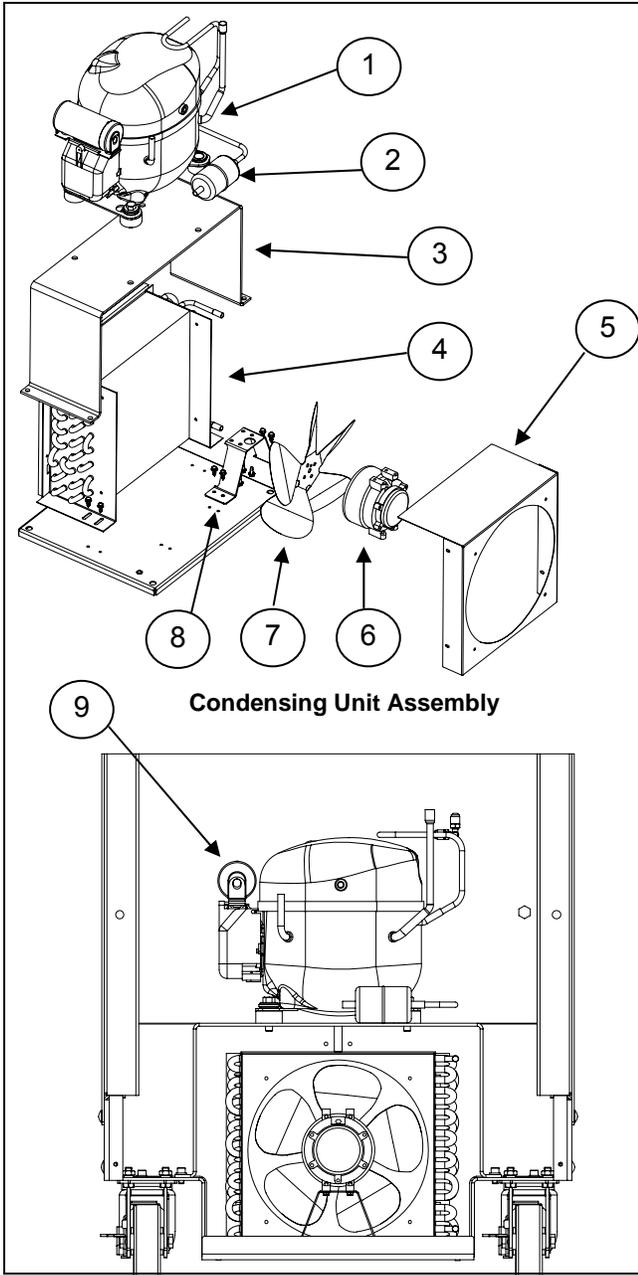
To remove the condenser filter first remove the basket guide and drip tray. The filter is now visible under the angled filter shield. Lift the filter up and out of the filter bracket. Lower the filter from under angled filter shield and remove. The filter can be cleaned in warm soapy water (**HCS**). Rinse and shake off the excess water. Replace the filter and drip tray.

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 stiff 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	294339	Compressor Domestic (120V 1/2HP)
		294723	Compressor International (240V 1/2HP)
2	1	292501	Filter Drier
3	1	295782	Bracket, Support Compressor
4	1	295596	Condenser
		295707	Screw, Sheet Metal, #8x1/2"
5	1	295603	Fan Shroud
6	1	295773	Condenser Fan Motor (Dom.120V)
		295608	Condenser Fan Motor (Int. 240V)
4	4	295588	Screw, #8-28 x 7/16"
7	1	295601	Blade, Condenser Fan
8	1	293982	Bracket, Fan Mounting
		295707	Screw, Sheet Metal, #8 x1/2"
9	1	294739	Overload Switch (1/2hp Dom.120V)
		294781	Overload Switch (1/2hp Int. 240V)
1	1	294738	Start Relay (1/2hp Dom. 120V)
		294780	Start Relay (1/2hp Int. 240V)
1	1	293985	Start Capacitor (1/2hp Dom. 120V)
		294779	Start Capacitor (1/2hp Int. 240V)
Not Shown	1	295518	Capillary Tube 79" (201cm) 0.093" O.D., 0.040" I.D. (Domestic 120V 60HZ, 1/2 HP Comp.) (not pictured)
		295533	Capillary Tube 110" (279cm) 0.093" O.D., 0.040" I.D. (International 240V 50HZ, 1/2 HP Comp.) (not pictured)
		292740	Switch, High Pressure

Refrigeration Specifications

Refrigerant: R404A (12.5 oz) (354g)

Suction Pressure: 3-7 psi at -3° to 3°F
(21 kPa to 48 kPa at -19° to -16°C)

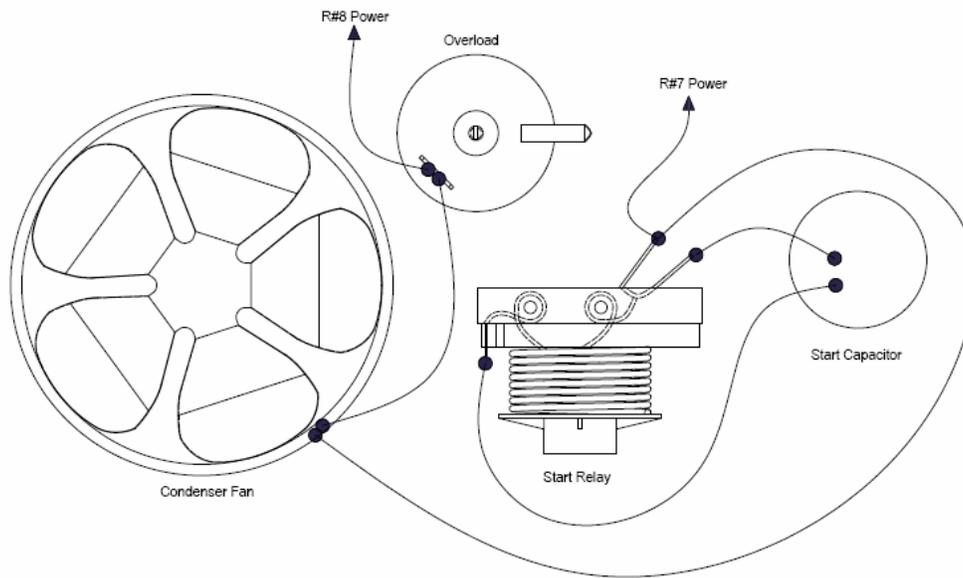
Operating Temperature: 5°F to 0°F
(-15°C to -18°C)

Factory Temperature Set Point = 0°F (-18°C)

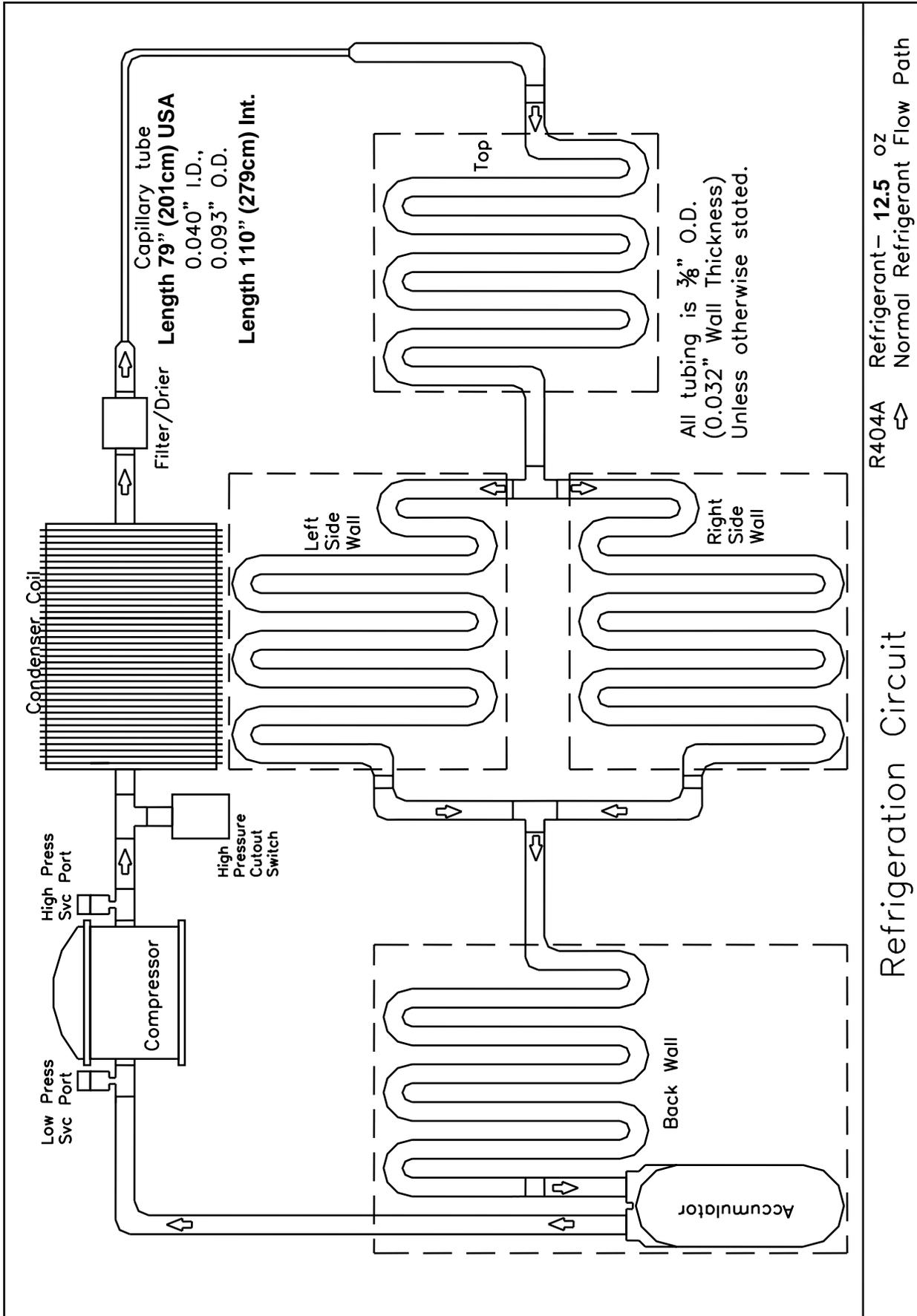
Factory Differential Set Point: 5°F (3°C)

High Pressure switch trips at 425 psi (2890 kPa)
resets at 325 psi (2210 kPa)

Compressor Start Component Wiring



Refrigeration Circuit



Disposal of Equipment

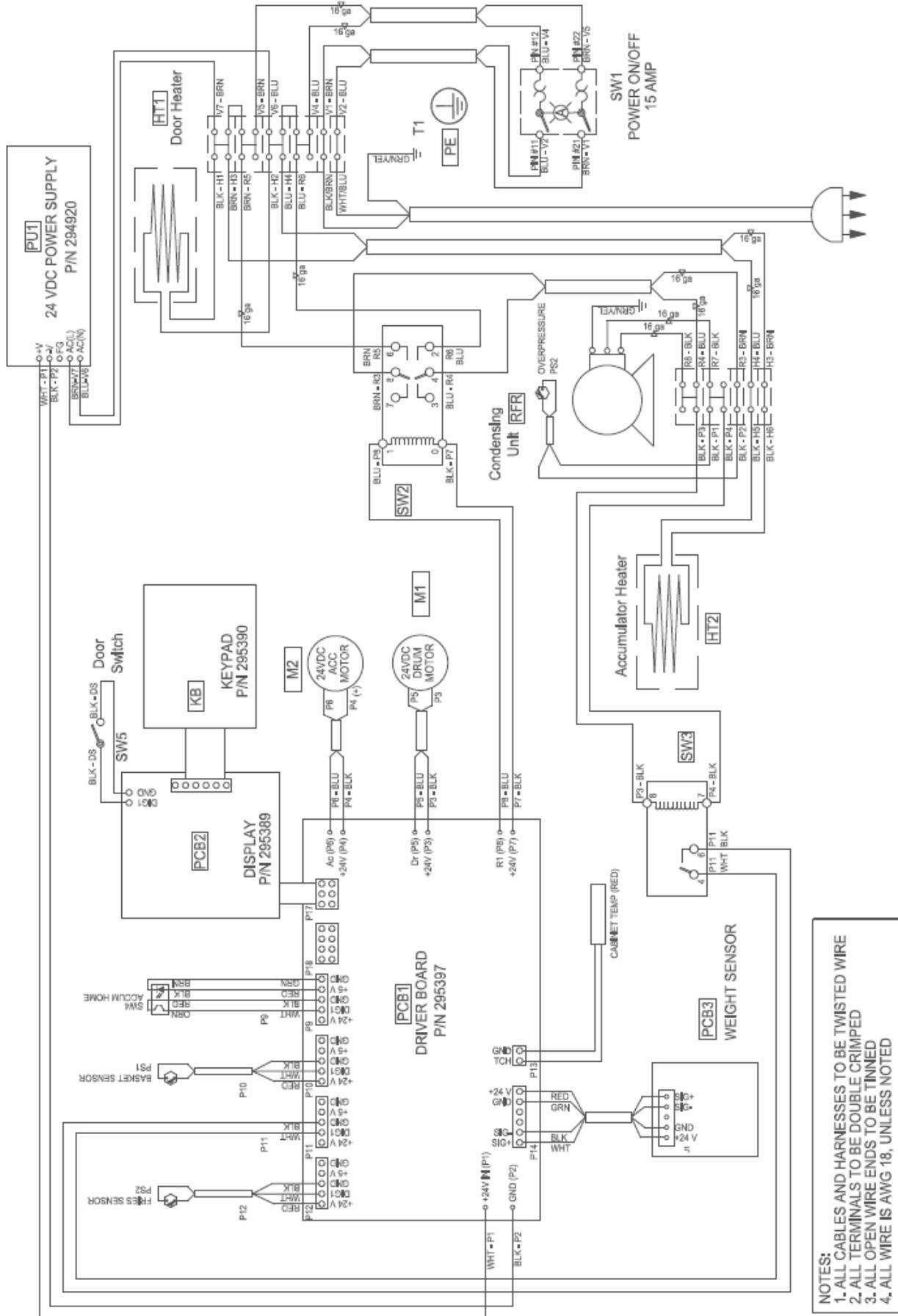
Before dismantling the equipment, all food should be removed and the equipment thoroughly cleaned.

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!

Electrical Diagram



NOTES:
 1. ALL CABLES AND HARNESES 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

Notes: