

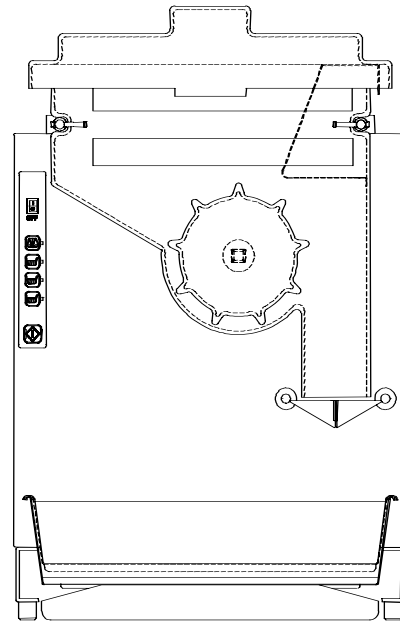


**MODEL DF22**  
*Fry Dispenser*  
**COMPREHENSIVE**  
**EQUIPMENT MANUAL**  
 English P/N 203270 Rev. D



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 After hours, your call will be handled by a pager service;  
 a Technical Support Representative will return your call.



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## DF22 Dispenser

### INTRODUCTION

The DF22 Fry Dispenser is a compact, semi-automated system that replaces manual basketing of fries and related equipment.

The DF22 Fry Dispenser automatically weighs 0.75 lb. (350 gm), 1.0 lb. (450 gm) or 1.5 lb. (750gm) loads of frozen French fries/appetizers and dispenses the selected weight into the Fry Baskets each time the Dispense / Reset Button is pressed.

The DF22 Fry Dispenser's Hopper holds 24 lbs. (11Kg) of frozen fries/appetizers. A rotating Dispenser Drum inside the Hopper transfers the frozen fries onto the Accumulator Doors where an electronic Load Cell accurately weighs the French fries/appetizers.

### INTENDED USE

The DF22 Dispenser is intended to dispense frozen French fries or frozen appetizers.

The DF22 Dispenser is designed to be used on top of a stationary countertop or table, 20-24 inches (50-60 cm) tall, and capable of supporting 200 lbs. (91Kg).

### HAZARD COMMUNICATION STANDARD (HCS)

**The 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 portion of the procedure. See the HCS Manual for the appropriate Material Safety Data Sheets (MSDS).**

**NOTE:** This equipment is manufactured in the U.S., therefore all hardware measurements are in English, and the metric conversions stated are approximate.

### SPECIFICATIONS:

The DF22 Fry Dispenser consists of the following components:

Fry Dispenser Model DF22

#### Optional Equipment:

Replacement/Extra Fry Baskets  
Side Mounted, Fry Basket Rack & Drip Pan, with mounting hardware  
CT22 Dispenser Cart with Swivel Casters  
Remote Dispense Switch  
Landing Shelf

#### Electrical Requirements:

U.S./Canada (UL Listed):  
120 Volts a.c., 60 Hertz, 1Ø, 0.75 A  
International (CE Marked):  
220-240 Volts a.c., 50 Hertz, 1Ø, 0.4A.

#### Space Requirements:

Clear floor space near fry vat at least 22 inches (56 cm) wide and 24 inches (61 cm) deep.  
Basket Handles will extend depth to 29 inches (74 cm) inches.

#### DF22 Fry Dispenser:

Bulk storage of 24 pounds (11Kg) of frozen French fries  
Electrically driven  
Holds 3 Fry Baskets  
Disassembles for cleaning

#### Date of Manufacture:

The manufacturing date is encoded into the serial number identification label on the side of the Dispenser.

*Example: s/n DFBR0203B00007 indicates a manufacturing date of 02-03 or March 2002. In the third place; A=right dispense and B= left dispense.*

### 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

## DF22 Dispenser

### **WARRANTY**

Automated Equipment LLC (hereinafter "AELLC"), warrants 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:

<u>Components covered</u>	<u>Term</u>
Electronic Circuit Board Assemblies	1 year
Electrical and Mechanical Moving Parts	1 year
Structural frame work or enclosures	1 year
Crew Removable Components	
Basket Shelf	90 days
Drip Tray	90 days
Power Cord	90 days
Hopper and Hopper Lid	90 days
Fry Diverter	90 days
Drum	90 days
DF22 Dispenser Accessories:	
Fry Baskets	90 days
Basket Rack & Drip Tray	90 days
CT22 Cart	90 days
Remote Dispense Button	90 days
Landing Shelf	90 days

**The Warranty period commences on the date of shipment from AELLC for the Frozen Product Dispenser and/or Dispenser Accessories (hereinafter "Product").**

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

AELLC 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. AELLC 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.

## DF22 Dispenser

### WARRANTY SERVICE

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

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

### NON-WARRANTY SERVICE

Service is normally conducted by customer appointed personnel, or by contracting a local service agent. Service fees are in accordance with industry standards.

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

AELLC's Technical Support Hot Line is available for telephone assistance providing AELLC product technical support, parts and parts information, and service agent referral. Contact AELLC's Technical Support Hot Line 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 AELLC, or supplied by an AELLC Factory Authorized Parts Distributor. Use of replacement parts other than those supplied by AELLC or by an AELLC Factory Authorized Parts Distributor will void the warranty.

All charges for parts and shipping are F.O.B. AELLC, 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 trained and/or qualified personnel should perform service to 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.**

## DF22 Dispenser

### SAFETY

Here are some guidelines for operating and repairing the DF22 Fry Dispenser:

- In a safety emergency, disconnect the Dispenser Power Cord, rather than turning off the Power Switch.
- Turn off the Power Switch and disconnect the Dispenser Power Cord from the wall outlet before servicing.
- Use appropriate tools for servicing this equipment.
- Inspect the Dispenser on a regular basis to identify problems before they occur.
- Keep the Dispenser clean.
- Keep hands away from the following areas while the Dispenser is operating:
  - Accumulator Doors.
  - Dispenser Drum.
- Fry baskets may be hot.
- When the DF22 Dispenser is used with the CT22 cart, operating procedure must include locking the brake on the casters and not permitting personnel to climb or hang onto the unit.
- Do NOT spray down the Dispenser. It is not sealed, and contamination may get into sensitive components.
- Do NOT roll the Dispenser to the back sink for cleaning, this will cause unnecessary wear on the Dispenser.

### WARNING!

**Only trained and/or qualified personnel should perform service to this equipment. Service functions described in this manual could cause irreversible damage to the equipment and/or injury to personnel if performed improperly.**

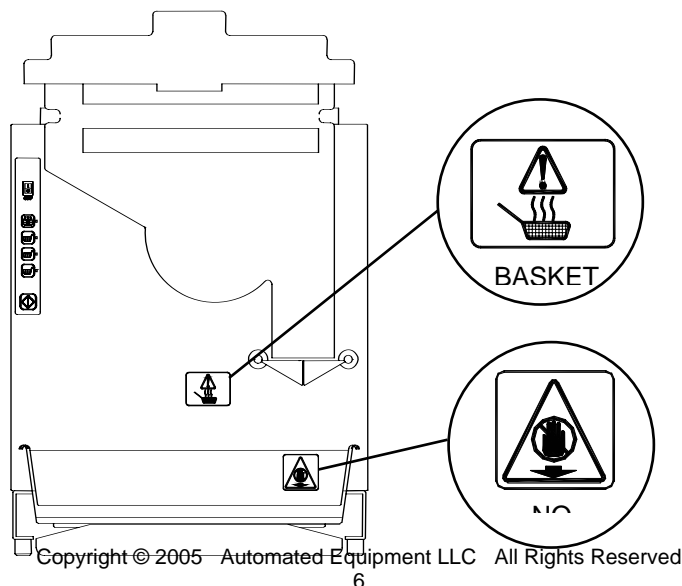
### INTERNATIONAL SAFETY LABELING

Safety labels are affixed to the fry/appetizer hopper. The labels clearly indicate areas on the fry/appetizer dispenser that could be harmful to the operator.

These safety issues are:

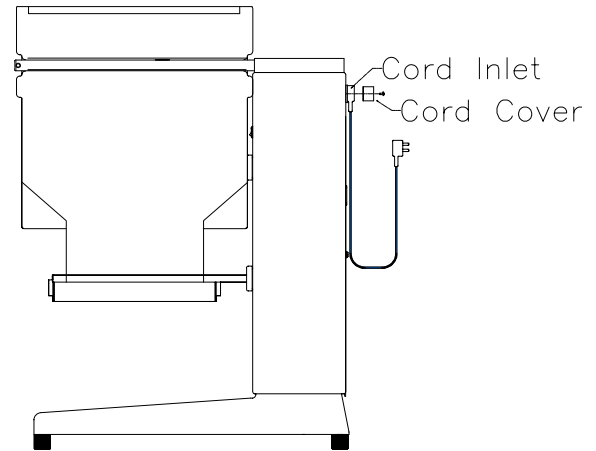
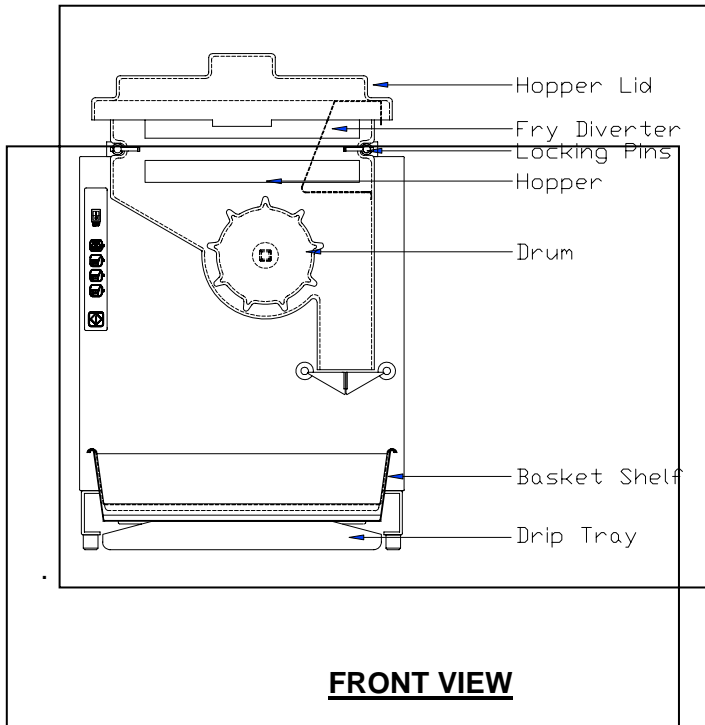
**BASKETS MAY BE HOT:** Fry baskets should always be picked up by the handle.

**NO HANDS BELOW:** Hands should not be placed near or below the accumulator doors while the dispenser is energized.



## DF22 Dispenser

### ASSEMBLING THE DF22 FRY DISPENSER



The above illustration is for a right-handed version of the Fry Dispenser. The procedure for assembly of the left-hand model would be the same except for the changes in locations of the components

#### **INSTALL BASKET SHELF**

1. Set the Basket Shelf on the support rods.

#### **INSTALL DRIP TRAY**

2. Slide the DRIP TRAY into position under the BASKET SHELF.

#### **INSTALL THE HOPPER AND DRUM**

3. Find the square opening in one end of the Dispenser Drum.
4. Place the Dispenser Drum in the Hopper, aligning the square opening on the Dispenser Drum with the hole in the back of the Hopper.
5. Grasp the Hopper so that the hole is toward the DF22 Fry Dispenser.
6. Align the indentations on the Hopper with the Hopper Support Bars.
7. Slide the Hopper onto the Hopper Support Bars until the Drum Motor shaft touches the Dispenser Drum.

**CAUTION:** Do NOT force the Hopper back. This could cause damage to the Hopper or Drum.

8. Rotate the Dispenser Drum (CLOCKWISE or COUNTERCLOCKWISE) while applying gentle pressure to the Hopper until you can slide the Hopper fully onto the Hopper Support Bars. Do not force the Hopper back, you may damage the Dispenser Drum.
9. Lock the Hopper onto the Fry Dispenser by pressing the Locking Pins towards each other.
10. Place the Fry Diverter in the Hopper. The Fry Diverter mounts on the side of the Hopper where the fries discharge. Be sure that it is hooked over the side of the Hopper.
11. Place the Hopper Lid on the Hopper by first hooking the tab over the back lip of the Hopper, then setting the Lid down.
12. Plug the Power Cord into the back of the Dispenser.
13. Install the Power Cord Inlet Protector over the Power Cord and tighten the mounting screws.
14. Plug the Power Cord into a wall outlet.

## DF22 Dispenser

### SET-UP AND CLOSE PROCEDURES

#### Daily Set-Up

1. Verify that the Power Switch is in the OFF position.
2. Plug the Power Cord into a wall outlet.
3. Install the Hopper, Drum, and Fry Diverter (*refer to page 7*).
4. Fill the Hopper with Frozen Fries and install the Hopper Lid (*refer to section, this page*).
5. Turn on the Dispenser and Select a Load Size (*refer to page 9*).
6. To fill a Fry Basket, place a basket under the Accumulator Doors and Press the Dispense / Reset Button.

#### Daily Closing

1. Turn the Power Switch to the OFF position.
2. Remove all Fry Baskets from the Dispenser.
3. Remove the Hopper Lid by lifting it UP and BACK to unhook the tab.
4. Hang the Hopper Lid on the front of the Hopper by hooking the tab on the lip of the Hopper.
5. Discard any Fries remaining in the Hopper at closing.
6. Check that the Accumulator Doors are empty of Fries.
7. Disconnect the Power Cord from the electrical outlet.
8. Remove the Fry Diverter by grasping it and pulling it UP.
9. Slide the Locking Pins outward to release the Hopper.
10. Remove the Hopper, Lid and Drum.
11. Remove the Basket Shelf and Drip Tray.
12. Take the components removed from the Fry Dispenser to the back sink. Wash them in a hot solution of **McD APC (HCS)** and water, rinse in clear water, sanitize and allow to air dry.
13. Wipe down the Fry Dispenser with a hot solution of **McD APC (HCS)** and water. Repeat wipe-down with clear water, then with sanitizer and allow to air dry.  
**NOTE:** Do NOT spray down the Dispenser. It is not sealed, and contamination may get into sensitive components.

14. Move the Dispenser out from the wall, so that you can clean behind and underneath it.  
**NOTE:** DO NOT move the Dispenser to the back sink for cleaning. This will cause unnecessary wear on the Dispenser.
15. Dry all parts and reassemble the Fry Dispenser.
16. Roll the Dispenser back into place.

#### Loading French Fries Into Hopper

To achieve optimum fry yield and the most consistent basket loads, it is important to use the following technique for loading frozen French fries into the Hopper. Depending on your French fry supplier, you will receive your fries packaged in boxes of six pounds (2.5Kg) each, or bags of six pounds (2.5Kg) each. The Hopper will hold 4 bags of fries (24 lbs. / 11Kg)).

For each bag or box of fries:

1. Remove the bag or box of fries from the case. Be careful not to crush the fries.
2. Open the top of the bag or box completely.  
**NOTE:** If your supplier uses bags, make sure the bag top is fully open. If it is partially open, fries may be retained by the bag.
3. Hold the opened end of the box or bag closed with your hand and lay the opened end of the bag or box into the bottom of the Hopper against the wall opposite the Fry Diverter.
4. Release the opened end of the bag or box.
5. Empty the bag or box into the Hopper by pulling it evenly toward the Fry Diverter.  
**NOTE:** Do NOT shake or drop fries from the bag or box into the Hopper.  
**NOTE:** If the loading is done correctly, you will leave a uniform layer of fries in the Hopper by simply pulling the bag or box across the Hopper toward the Diverter, and on out of the Hopper.
6. Repeat steps 1 through 5 until the Hopper is full. **NOTE:** Do NOT fill the Hopper past the top.
7. Close the Lid on the Hopper by engaging the hook at the back of the Hopper, and setting the Lid down.



# DF22 Dispenser

# DF22

## Front Panel Controls

### POWER SWITCH

Supplies electrical power to the Fry Dispenser.  
Illuminates when the Dispenser has power.

### CALIBRATION BUTTON

The sequence for the calibration cycle is as follows:

1. Remove hopper.
2. Push and hold the calibration button for 5 seconds to initiate calibration cycle. Indicator (to the right of the button) begins flashing.
3. Accumulator Doors open, releasing current load of fries, to ensure no load on the Accumulator Doors.
4. Pause while Load Cell stabilizes, takes the Tare reading.
5. Accumulator Doors close, to accept the reference weight (1Lb./16 oz. (450 gm.)).
6. Apply reference weight to the accumulator doors. (If the reference weight is not applied in 30 seconds, the calibration cycle aborts and the indicator switches to steady operation.)
7. Pause while Load Cell stabilizes, takes the Reference reading.
8. Indicator light goes out.
9. Remove reference weight from the accumulator doors.  
**Note:** The Dispenser will be disabled until the weight is removed.
10. Weighing Cycle resumes.

### LOAD SELECT BUTTONS

Allows user to select small, medium, or large loads.  
Pressing the button selects the appropriate load size.

The light to the right of the corresponding button indicates the current load size.

When the Dispenser is powered up, no load size will be selected, and the Dispenser will not operate.

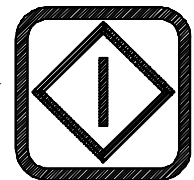
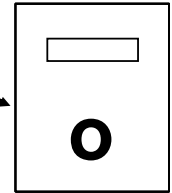
Dispenser will begin operating after a Load Select Button is pressed.

By default the load sizes are as follows:

- Small - 0.75 lb./12 oz. (US) or 350 gm. (International)
- Medium - 1.0 lb./16 oz. (US) or 450 gm. (International)
- Large - 1.5 lb./24 oz. (US) or 750 gm. (International)

### DISPENSE / RESET BUTTON

Press to dispense a load of fries into a Fry basket.  
Press to reset a System Error.



## DF22 Dispenser

### Front Panel System Diagnostics

#### Power On/Off Illuminated Switch

The power On/Off Switch has an internal light that indicates A.C. power to the Dispenser. When the power is turned ON, this light illuminates indicating the presence of A.C. power internal to the Dispenser.

If the On/Off Switch is On but not illuminated, check to make sure the power plug is properly connected to the Dispenser and the wall outlet.

If the plug is connected, check whether the internal Circuit Breaker (SW1) inside the back of the Dispenser has been tripped.

#### 24 Volt D.C. Power Supply

The indicator lights on the Control Panel are powered by the internal 24 volt power supply. After turning the unit On, pressing one of the Load Size Select buttons will illuminate the indicator light associated with this button. This indicates the presence of D.C. power within the Dispenser.

#### Drum Motor and Accumulator Drives

Operations of the Drum Motor and the Accumulator Doors can be verified by putting the Dispenser in the Exercise Mode via the front panel controls.

To enable the Exercise Mode perform the following steps:

1. Turn the Dispenser power switch OFF and Wait 15 seconds.
2. Depress and hold in the Dispense / Reset button while turning the power switch ON.
3. Hold in the Dispense / Reset Button, after approximately 5 seconds, the Dispenser will enter the Exercise Mode. Release the Dispense / Reset Button. The Drum Motor will turn for 5 seconds and then the Accumulator Doors will cycle. This cycling will continue until the power switch is turned OFF.

When the Dispenser is turned ON again, the Dispenser will be in Normal Operating Mode.

## DF22 Dispenser

### **Fries/Low Bridging**

If the Dispenser does not weigh the selected amount of fries within 40 seconds, the Dispenser will give a "Low Fries" indication. The "Low Fries" indication can be caused by one of the following conditions:

- The Hopper is empty, or nearly empty. If this is the case, refill the Hopper with frozen French fries.
- An air pocket has formed around the Dispenser Drum. This happens when the fries above the Drum lock together, forming a "bridge". The Drum then dispenses all the fries under the bridge, and is unable to dispense any more. This is resolved by gently stirring the fries around by hand to collapse the bridge. Bridging of fries usually occurs when a large number of fries is kept in the Hopper for several hours, and has been allowed to thaw.
- The "Low Fries" indication can also be caused by a mechanical failure of the Drum, Motor, or Weighing System.

When a "Low Fries" condition occurs:

1. The Drum will stop turning.
2. The weight setting lights will begin flashing slowly (about one flash per second).
3. A waiting basket will not be filled (although there may be a partial load of fries in the Accumulator Doors).

The Dispenser will retry the weighing again in 90 seconds. Therefore, the expected behavior when the Hopper is empty is: 40 seconds of Drum turning, then for 90 seconds the Drum is halted, 40 seconds turning, 90 seconds halted, and so on, until the Hopper is filled and the Accumulator Doors receive the proper weight of fries.

After refilling the Hopper, if the crew needs fries immediately, they may push the Dispense / Reset Button, which accelerates the weighing cycle and causes the following actions:

1. The current weight setting light will become steady.
2. There will be a two-second pause (for Load Cell stabilization).
3. The Weighing Cycle will restart.

If the Dispense / Reset Button is not pushed, the weighing process will resume after a 90-second time-out is over, and the current weight setting light will stop flashing when the Accumulator Doors have received the selected weight amount.

### **Error Mode**

There are a couple of ways that the normal cycle can be interrupted. These are primarily informational, but represent conditions that may deteriorate into system failure. In these cases, when the Dispenser detects such a condition, it will halt the Dispenser operation and allow the crew to correct the problem.

The sequence when an error is detected is the following:

1. All weight setting lights begin flashing quickly (about five times per second).
2. The error code appears internally on the Diagnostic display (see page 18).
3. The Drum Motor stops turning.
4. The Accumulator Doors stop moving.

The Dispenser will remain in this mode until restarted. When the crew has fixed the problem, the Dispenser can be restarted by pressing the Dispense / Reset Button. The lights will stop flashing and the Weighing Cycle will resume.

## DF22 Dispenser

### Troubleshooting

**WARNING:** Only qualified / trained personnel should remove the back panel.

<b>PROBLEM</b>	<b>PROBABLE CAUSE</b>	<b>CORRECTIVE ACTION</b>
Dispenser not working, no indicator lights on.	Wall outlet not functioning.	Check the wall outlet and associated line circuit breaker.
	Power cord not connected.	Check power cord at wall outlet and Dispenser inlet.
	Internal Circuit Breaker tripped.	Check SW1, inside the back of the Dispenser. Reset if tripped.
	ON / OFF Switch has failed.	Check ON / OFF switch function
Control Panel Lights flashing slowly (about once per second).	Hopper is empty	Fill the Hopper with Fries and press the Dispense / Reset Button.
	Fries have formed a "bridge" over the Drum.	Remove the Hopper Lid and re-distribute the Fries inside.
	Hopper/Drum is not installed properly.	Remove the Hopper Lid and Fry Diverter. Turn the Dispenser Drum, while applying pressure and slide it fully onto the shaft. Re-install the Fry Diverter and Hopper Lid.
	The Load Cell has malfunctioned.	Verify Load Cell tare and calibration (page 19, 20).
	Drum is stripped out or damaged	Remove drum and inspect hole for damage or excessive wear.
Control Panel Lights begin flashing immediately when Dispenser is turned on.	Non-volatile memory failure (Error number 3)	Remove the Back Door of the Dispenser to verify Error number 3. If it is error 3, clean off the Accumulator Doors, press the Dispense / Reset Button, then select Function 4 (Tare Function). This will temporarily restore operation. Contact your service center.
Basket Loads are consistently light or heavy.	Basket Load targets were not set properly.	Verify proper target values. Adjust if necessary (page 20)
	The Hopper is touching the Accumulator Doors.	Re-assemble the Hopper. No objects, other than Fries, may touch the Accumulator Doors.
	Incorrect Fry Diverter installation.	Verify proper Fry Diverter installation.
	Shaft Collar touching the Chassis.	Position the Shaft Collars properly.
	The Load Cell has malfunctioned.	Verify Load Cell tare and calibration. (page 19, 20)
Dispenser Drum is not rotating <i>(continued next page)</i>	The Accumulator Doors are full.	The Dispenser Drum will rotate only when the Hopper Accumulator requires more Fries.
	Hopper is empty (Control Panel Lights are flashing slowly).	Fill the Hopper with Fries and press the Dispense / Reset Button. The Drum will begin rotating in a few seconds.
	Fries have formed a "bridge" over the Drum (Control Panel Lights are flashing slowly).	Remove the Hopper Lid and re-distribute the Fries inside. Then press the Dispense / Restart Button. The Drum will begin rotating in a few seconds.
	The Dispenser has detected a SYSTEM FAULT (Control Panel lights are flashing rapidly).	Continue troubleshooting. Check the display for error identification. Press the Dispense / Reset Button to reset an error. (page 18)
	Hopper / Drum is not installed properly.	Remove the Hopper Lid and Fry Diverter. Turn the Dispenser Drum while applying pressure to the Hopper and slide the Drum fully onto the shaft. Re-install the Fry Diverter and Hopper Lid.

## DF22 Dispenser

Dispenser Drum is not rotating <i>(continued from previous page)</i>	The Hopper is touching the Accumulator Doors.	Re-assemble the Hopper. No objects, other than Fries, may touch the Accumulator Doors.
	The Fry Diverter fell inside the Hopper preventing the Dispenser Drum from turning.	Remove the Fry Diverter from inside the Hopper and install correctly.
	Basket Load targets were not set properly.	Verify proper target values. Adjust if necessary. (page 20)
	Drum Motor fault.	Inspect, repair, or replace as needed.
	The Load Cell has malfunctioned.	Verify with Load Cell calibration procedure. (page 19, 20)
	Drum is stripped out or damaged	Remove drum and inspect hole for damage or excessive wear.
Accumulator Doors do not cycle	Dispense / Reset Button not functioning properly	Verify switch wiring and switch functions by observing the Controller inputs when activating switches <i>(see illustration, page 15 or 16)</i> . Repair the wiring or replace Control Panel.
	Accumulator system fault.	Check the Accumulator Motor and cam switch wiring. Repair or replace if needed. Examine the Accumulator assembly for an apparent fault <i>(refer to drawing, page 28)</i> .

## DF22 Dispenser

### Sequence of Operations

#### **Power Up**

When the Dispenser is turned on the Dispenser performs an internal self test. The self test takes less than one second. The Dispenser then waits for the load size to be selected before starting. During this phase, the Dispenser will not attempt to move or actuate anything.

#### **Normal Weighing Cycle**

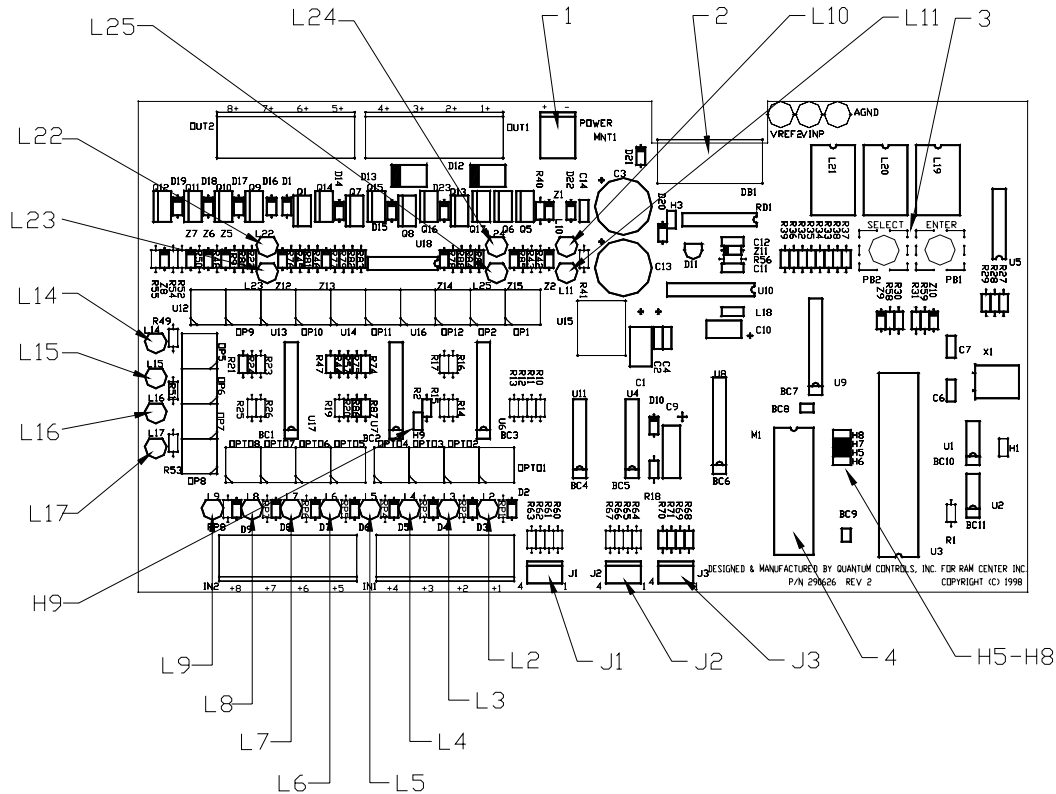
The primary function of the Dispenser is to weigh out fries for dispensing into baskets. The goal is to provide a reasonably consistent weight within a given time frame. The Weighing Cycle is triggered when the Accumulator Doors close after dispensing fries, when the weight setting is increased, or when the Dispense / Reset Button is pressed.

Typical Time (from Start)	Event	Response
-	Weighing Cycle Triggered	Weighing must wait for the Accumulator Doors to close. During a normal cycle, they will be closed before the Weighing Cycle is triggered.
0 sec.	Accumulator Doors Closed	On the assumption that the Accumulator has recently moved, the Dispenser waits 2 seconds for the Load Cell to stabilize.
2 sec.	Initial Reading	After the Load Cell has stabilized, the Dispenser takes an initial reading. If the reading shows that the Accumulator Doors are empty, or near empty, this reading is used as the zero reference. If the reading shows significant weight, part or all of the Weighing Cycle will be skipped.
	Start Drum Motor	The Drum Motor is turned on at full speed until the Load Cell indicates that the weight of fries is within a quarter of a pound of the desired weight.
10 sec.	Half speed	The Drum Motor will begin a pulsing movement designed to slowly deliver fries to the Accumulator Doors. This improves the accuracy of the weighing.
15 sec.	Full Weight	When the Load Cell reads full weight, the Drum Motor stops. The Dispenser waits an additional 2 seconds to be sure that it isn't stopping on a false reading.
17 sec.	Stable Weight	If the Load Cell reading remains within tolerance, the weighing sequence ends.
40 sec.	Weighing Time-out	If the Dispenser has been unable to get the target weight by this time, it stops the Drum Motor and gives a low fries indication.
130 sec.	Weighing Retry	If the weighing times out, the Dispenser restarts the Weighing Cycle after 90 seconds.

# DF22 Dispenser

## I/O Point Definition

### Controller Board 290626 Inputs and Outputs



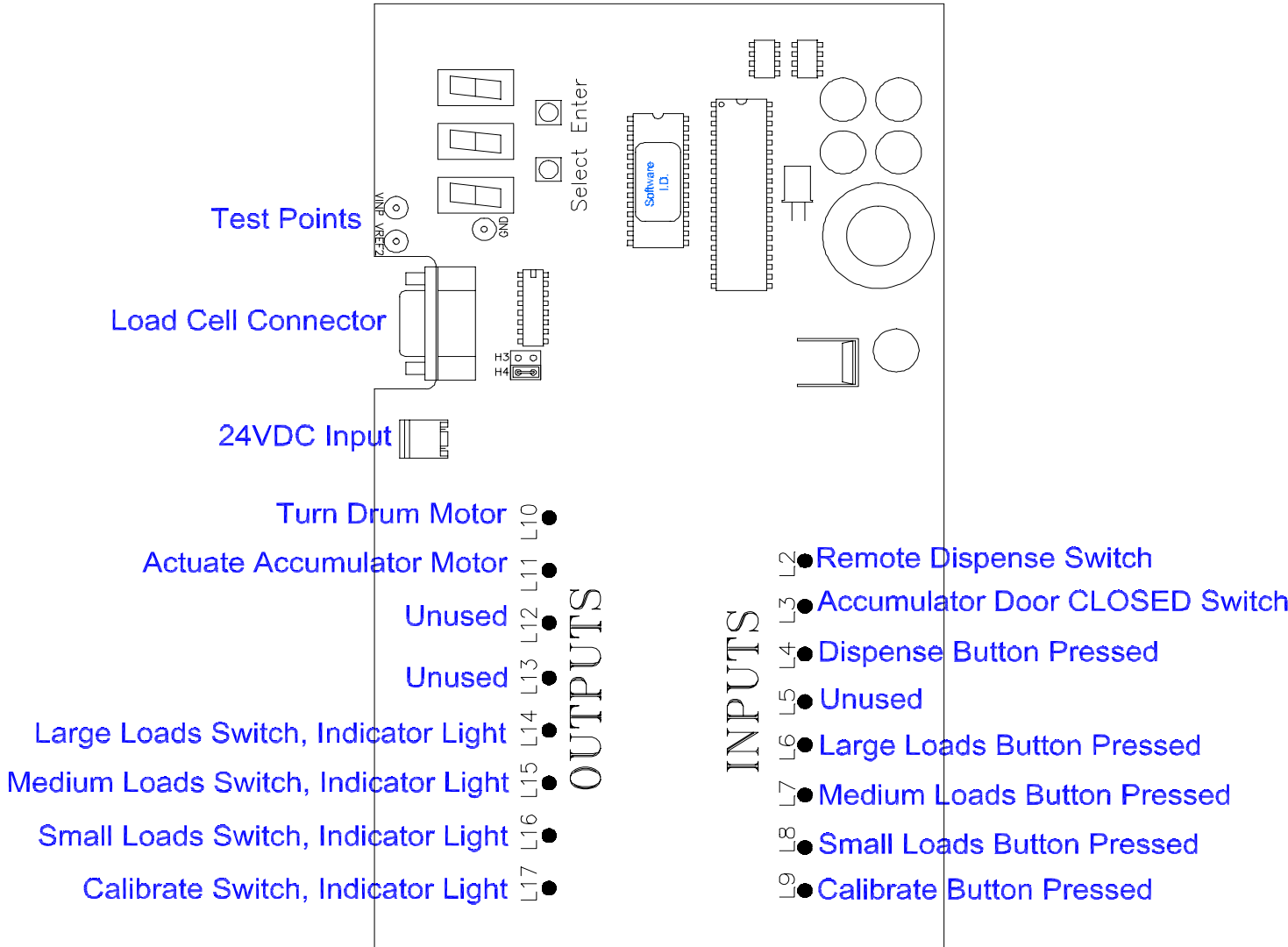
ITEM	DESCRIPTION	ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	Power Input 24 VDC	L2	Remote Dispense Switch	L11	Actuate Accumulator Motor
2	Weight Sensor Connection	L3	Accumulator Door Closed Switch	L14	Large Loads Switch, Indicator Light
3	Function Buttons	L4	Dispense / Reset Button Pressed	L15	Medium Loads Switch, Indicator Light
H5-H8	EPROM Configuration	L5	Unused	L16	Small Loads Switch, Indicator Light
4	Software EPROM Load Cell 203244	L6	Large Loads Button Pressed	L17	Calibrate Switch, Indicator Light
J3	Unused	L7	Medium Loads Button Pressed	L22	Unused
J2	Unused	L8	Small Loads Button Pressed	L23	Unused
J1	Unused	L9	Calibration Button Pressed	L24	Unused
H9	Unused	L10	Rotate Drum	L25	Unused

#### Jumper Settings for Plus Controller Board

H1	H3	H5	H6	H7	H8	H9
		X		X		

**DF22 Dispenser**

**Controller Board 290322/202032 Inputs and Outputs**

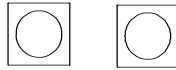
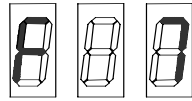




## DF22 Dispenser

### **The Service Interface.**

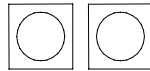
In the back of the Dispenser, on the Controller Circuit Board is the service interface. This service interface is used to adjust the basket load sizes and to test and adjust the operation of the Dispenser. The service interface consists of three LED displays and two push-buttons. The SELECT Button is used to select a function to be executed, or to cancel a function in progress. The ENTER button is used to initiate (enter) a selected function.



**SELECT   ENTER**

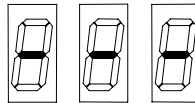
### **Power Up**

During a normal power up, the Controller does a segment test on the display. The display will show all eights, as shown below, for this test. During the segment test the Controller will also run a test of the memory and program. Upon failure of any of these tests, the Controller will stop, leaving the segment test (888) on the display. Normally the display will flash quickly when powering up the Dispenser.



### **Normal Operation**

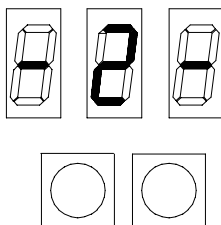
During Normal Operation, the display will show a series of horizontal bars, as shown below. This display indicates that all tests have passed, no errors have occurred, and no function is in use. If the Controller does not give this display shortly after power up, there is a problem.



## DF22 Dispenser

### Error Condition

When an error occurs, all the Control Panel Lights will flash rapidly (5 times per second). Normally, an error condition can be cleared by pressing the Dispense / Reset Button. If an error persists or occurs too often, you may need to know what error is occurring. For this purpose, when an error occurs, the center digit of the normal display is replaced with an error code number. The example below is displaying error code number 2.



Usually, the error code will lead you to the cause of the problem.

Error Number	Error Name	Error Definition
1	ACCUMULATOR TIME_OUT	There is a problem with the Accumulator Doors.
2	ERR_WATCHDOG	The watchdog timer fired (abnormal reset)
3	ERR_NVRAM	Checksum error for the non-volatile storage.

See page 25 for more details.

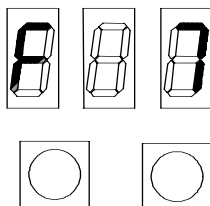
### Selecting a Function

The Controller has several functions that may be used to adjust and test the functions of the Dispenser. These are accessed using the following procedure:

Press the SELECT Button the number of times as the function number desired.

Each time you press the key the display will show the function code for the function that is ready.

The example below shows Function 7: (*Adjust Switch Position #1 DOWN.*)



**SELECT ENTER**

**NOTE:** If you leave the display in this mode, it will return to Normal Operation after a few seconds. This is a safety feature, to prevent functions from being selected by accident.

When the display shows the desired function number, press the ENTER Button to activate the function.

What happens next depends on the function selected.

Pressing the ENTER Button will advance the function to the next step, pressing the SELECT Button will close the function.

## DF22 Dispenser

### **Load Cell Calibration; using the controller board**

1. Remove the BACK PANEL of the Dispenser.
2. Turn the Power Switch to the ON position.
3. SELECT Function 13 and press ENTER Button. Tare should read 25-125 (approx.). Place slight downward pressure on Accumulator doors. Value should change with pressure, if not, the load cell may need to be replaced.
4. SELECT Function 17 and press the ENTER button.
5. SELECT Function 3 on the controller and press the ENTER button to disable the weighing.
6. Place a basket under the accumulator doors and press the Dispense / Reset Button to empty the Accumulator Doors.
7. Remove the Hopper from the Dispenser, fries and all.
8. Verify that the Accumulator doors are empty.
9. For International units, select Function 21 and press the ENTER button. Press ENTER again to change from "US" to "In". Press Select to exit the function.
10. SELECT Function 4 (Tare Function) on the controller and press the ENTER button.
11. SELECT Function 5 (Calibrate) on the controller and press the ENTER button. The word "CAL" will appear on the display.
12. Place a 1.0 lb. (450 gm) weight on the Accumulator Doors (use a 1 lb. reference weight). Wait 10 seconds and press the ENTER button on the controller.
13. Remove the calibration weight and turn power off.
14. Reinstall the Hopper on the Dispenser and turn back on.
15. Manually cycle baskets through the Dispenser. Check basket loads and adjust if necessary.
16. Replace the Back Panel.

**SERVICE NOTE:**

**Calibration must be performed any time a controller pcb, e-prom, or load cell component is replaced.**

## DF22 Dispenser

### Controller Functions

#### Function List

The following is a complete list of the available functions. Functions are detailed on the following pages.

Function Number	Function Name	Function Description
1	restart_function	Same as Dispense / Reset Button on front panel.
2	display_last_error	Shows the code for the last error that occurred.
3	weigh_disable	Toggles the Weighing Cycle on and off.
4	tare_function	Sets the default zero to the current A/D value. Make sure the Accumulator Doors are empty.
5	calibrate	Accepts a 1 lb./16oz (450gm) reference weight; sets the .75 lb./12 oz. (350 gm), 1.0 lb/16 oz. (450 gm) and 1.5 lb./24 oz. (750 gm) targets.
6	adjust_Pos1_up	Adjusts selector switch position #1 (.75 lb./12 oz./350 gm) target upward in increments of 1 oz. (25 gm).
7	adjust_Pos1_dn	Adjusts selector switch position #1 (.75 lb./12 oz./350 gm) target downward in increments of 1 oz. (25 gm)
8	adjust_Pos2_up	Adjusts selector switch position #2 (1 lb./16 oz./450 gm) target upward in increments of 1 oz. (25 gm).
9	adjust_Pos2_dn	Adjusts selector switch position #2 (1 lb./16 oz./450 gm) target downward in increments of 1 oz. (25 gm)
10	adjust_Pos3_up	Adjusts selector switch position #3 (1.5 lb./24 oz./750 gm) target upward in increments of 1 oz. (25 gm)
11	adjust_Pos3_dn	Adjusts selector switch position #3 (1.5 lb./24 oz./750 gm) target downward in increments of 1 oz. (25 gm)
12	watchdog test	Locks up the program so that the watchdog timer fires. Invokes error #2.
13	load_cell_readout	Displays the current reading from the Load Cell (live display, uncalibrated).
14	actuate_Doors	Opens and closes the Accumulator Doors.
15	actuate_Drum	Turns the Drum Motor on and off.
16	actuate_lights	Turns the control panel lights on and off.
17	restore_defaults	Clears the error log and sets default weighing parameters.
18	clear_errors	Clears the error log.
19	error_counts	Displays the error log.
20	parameters	Displays the default weighing parameters.
21	set units	Sets weighing units to ounces "US", or grams "In" International.
22	exercise mode	Enables exercise mode, all subsystems cycle.
23	rev	Displays revision level of installed EPROM

## DF22 Dispenser

### Function Reference

#### Function 1 - Restart

Returns immediately to the normal display. This function serves the same purpose as the Dispense / Reset Button on the front panel. This provides a means of restarting the Dispenser without reaching around to the front of the Dispenser.

#### Function 2 - Display Last Error

Displays the error number of the last error to happen. This allows the Dispenser to be restarted after an error, and then find out what the error was while the Dispenser is in service. Exit using either the SELECT or ENTER Button.

#### Function 3 - Disable Weighing

Returns immediately to the normal display. Turns the weighing process on and off. This is used mainly for testing of the mechanical systems. It prevents the Dispenser from weighing out fries, when the fries are not needed. This is commonly used while testing the mechanical systems, or while diagnosing or calibrating the Load Cell. If weighing is not turned back on, it will be automatically restarted the next time the Dispenser is turned off and on.

#### Function 4 - Tare

Returns immediately to the normal display. Establishes a new zero point for the Load Cell. Before selecting this function, make sure that the Accumulator Doors are empty.

**Note:** This function is redundant to the front panel calibration cycle.

#### Function 5 - Calibrate

Displays the word "CAL" on the display. Clean off the Accumulator Doors and apply a 1 lb./16 ounce (450 gm) reference weight. Wait 10 seconds, then press the ENTER Button. The display will return to normal. This function uses the reference weight to calculate new targets for the 0.75 lb./ 12 oz. (350 gm), 1 lb./16 oz. (450 gm) and 1.5 lb./24 oz. (700 gm) loads.

**Note:** This function is redundant to the front panel calibration cycle.

**Note:** For accurate calibration, tare the Weighing System (Function 4) before calibrating.

#### Function 6 - Adjust Switch Position #1 ( 0.75 lb./12 oz./350gm) UP

Displays the current target value (in ounces or grams, depending on units setting) of switch position #1. The default value for switch position #1 is 12 oz. (350 gm). Pressing the ENTER Button causes the value to increase by 1 oz. (25 gm.), with each activation. When the desired value is reached, press the SELECT Button to close the function and set the value.

#### Function 7 - Adjust Switch Position #1 (0.75 lb./12 oz./350gm) DOWN

Displays the current target value (in ounces or grams, depending on units setting) of switch position #1. The default value for switch position #1 is 12 oz. (350 gm). Pressing the ENTER Button causes the value to decrease by 1 oz. (25 gm.), with each activation. When the desired value is reached, press the SELECT Button to close the function and set the value.

#### Function 8 - Adjust Switch Position #2 ( 1 lb./16 oz./450 gm.) UP:

Displays the current target value (in ounces or grams, depending on units setting) of switch position #2. The default value for switch position #2 is 16 oz. (450 gm.). Pressing the ENTER Button causes the value to increase by 1 oz. (25 gm), with each activation. When the desired value is reached, press the SELECT Button to close the function and set the value.

## DF22 Dispenser

### **Function 9 - Adjust Switch Position #2 (1 lb./16 oz./450 gm) DOWN:**

Displays the current target value (in ounces or grams, depending on units setting) of switch position #2. The default value for switch position #2 is 16 oz. (450 gm.). Pressing the ENTER Button causes the value to decrease by 1 oz. (25 gm.) with each activation. When the desired value is reached, press the SELECT Button to close the function and set the value.

### **Function 10 - Adjust Switch Position #3 (1.5 lb./24 oz./750 gm) UP:**

Displays the current target value (in ounces or grams, depending on units setting) of switch position #3. The default value for switch position #3 is 24 oz. (750 gm). Pressing the ENTER Button causes the value to increase by 1 oz. (25 gm), with each activation. When the desired value is reached, press the SELECT Button to close the function and set the value.

**NOTE:** Adjusting the target weight above 1.5 lbs./24 oz. (750 gm) is **NOT** recommended.

### **Function 11 - Adjust Switch Position #3 (1.5 lb./24 oz./750 gm) DOWN:**

Displays the current target value (in ounces or grams, depending on units setting) of switch position #3. The default value for switch position #3 is 24 oz. (750 gm). Pressing the ENTER Button causes the value to decrease by 1 oz. (25 gm), with each activation. When the desired value is reached, press the SELECT Button to close the function and set the value.

### **Function 12 - Watchdog Test**

The Controller has a timer on it that resets it in the event that an electrical surge causes the Controller circuitry to freeze. During normal operation, the Controller program signals the timer several times per second, to prevent it from firing. This function tests the timer by locking up the program so that the watchdog timer fires. When this function is selected, nothing will happen for approximately 1.5 seconds, then the Controller will reset. You will see the segment test flash by, and then display Error #2 (Watchdog Timer Fired).

**NOTE:** This function causes a Watchdog Timer Error, and will be recorded as such. To prevent confusion, you may want to clear the error log (Function 18) after using this function.

### **Function 13 - Load Cell Readout**

Displays the current Load Cell reading. This is the raw value (it is not compensated for any offset or calibration), and is used to test the Load Cell. This is a live display, and changes constantly with the Load Cell input. Pressing the SELECT Button closes the function. Load cell Tare should be 75-125 (approx.).

**NOTE:** This function does not interfere with any operations of the Dispenser and can be used during normal operations and as a diagnostic tool.

### **Function 14 - Actuate Doors**

Display remains "F14". Each time the ENTER Button is pressed, the Controller will change the state of the output that drives the Accumulator Doors (if it is off it will turn it on, if it is on it will turn it off). This function is used to test the Accumulator Door assembly.

### **Function 15 - Actuate Drum**

Display remains "F15". Each time the ENTER Button is pressed, the Controller will change the state of the output that drives the Dispenser Drum (if it is off it will turn it on, if it is on it will turn it off). This function is used to test the Drum Motor.

## DF22 Dispenser

### **Function 16 - Actuate Lights**

Display remains "F16". Each time the ENTER Button is pressed, the Controller will change the state of the outputs that drive the Control Panel Lights (if the panel lights are off it will turn them on, if they are on it will turn them off). This function is used to test the Control Panel Lights (LED's).

### **Function 17 - Restore Defaults**

This function resets the 0.75 lb./12 oz./350gm, 1.0 lb./16 oz./450 gm, 1.5 lb./24 oz./750 gm, and tare values to programmed default factory values. These will change when the Tare and Calibrate functions are performed. This function is intended to be a general purpose function, which will restore the memory state of the Dispenser to what it was when it was first powered on. This function also clears the error log and resets the programmed modes. Function 20 will display the specific calibration values.

**NOTE:** Function 17 will reset the units to "US" units. If international units are preferred, Function 21 must be performed before calibration.

### **Function 18 - Clear Errors**

This function sets each of the counts in the error log to zero. This can be done at any time, as it has no effect on anything else. It is recommended that this be done periodically to prevent records of occasional errors from building up (even a perfectly running Dispenser will get occasional errors from improper handling) and confusing a service technician at a time when the error log could be useful. In any case, errors should be cleared after every service call to prevent the errors invoked during the call from causing confusion in the future.

### **Function 19 - Error Counts**

Displays the word "Err". Each time the ENTER Button is pressed, it moves to the next error count. When the last count is passed, the display returns to normal mode. The error counts are displayed in numerical order. Error number 3 is not included (error number 3 indicates a memory failure, and therefore renders any history meaningless). For example, if you saw this sequence of displays:

"Err"  
"1. 12"  
"2. 0"

This would indicate that since the last time the errors were cleared, error number 1 had occurred 12 times.

### **Function 20 - Parameters**

Displays the word "Con" (constant). Each time the ENTER Button is pressed, it moves to the next parameter. When all parameters have been displayed, the display returns to the normal mode.

The weighing parameters are (in order of appearance):

1. Switch position #1 target - the number of digitizer steps that represent 0.75 lb./12 oz. (350gm). The default value is 38 (US) or 39 (International).
2. Switch position #2 target - the number of digitizer steps that represent 1.0 lb./16 oz. (450 gm). The default value is 51 (US) or 50 (International).
3. Switch position #3 target - the number of digitizer steps that represent 1.5 lb./24 oz. (750 gm). The default value is 77 (US) or 83 (International).
4. Default tare - the value that the Dispenser uses for zero when it first powers up. The default value is 40

**NOTE:** After the Load Cell has been calibrated, or the loads adjusted, these values may be different

5. 1.0 lb./16oz. (450 gm) Value: Calculated during calibration procedure. Reference weight value minus the tare value.

## DF22 Dispenser

6. Set-1 value: Manually adjusted value for small basket load. From setting via Functions 6 & 7. *Default value is 12.*
7. Set-2 value: Manually adjusted value for the medium basket load. From setting via Functions 8 & 9. *Default value is 16.*
8. Set-3 value: Manually adjusted value for the large basket load. From setting via functions 10 & 11. *Default value is 24.*
9. Calibration reference: Calibration target weight (*Defaults: 16 U.S. or 18 International*).
10. Close time: Expressed in 1/100's of a second. Calculated as time of 1 revolution minus the open time of the Accumulator Motor (*Item 11*). *Normal value is 84.*
11. Open time: Expressed in 1/100's of a second. Calculated as 1/3 of 1 revolution of the Accumulator Motor. *Normal value is 42.*
12. In flight weight adaptive value to improve weighing accuracy.
13. In flight weight adaptive value to improve weighing accuracy.

### **Function 21 - Select Weight Units "US" or "In"**

Entering this function permits selection of ounces or grams as the weighing units. Pressing the ENTER Button will toggle the display between ounces "US" and grams "In" (international) for the weight units. Pressing the SELECT Button sets the displayed weight units for Dispenser operations and forces the calibration values to the proper default values.

**NOTE:** Calibration must be performed after changing this setting.

### **Function 22 - Exercise Mode (volatile setting)**

When the Dispenser is in the exercise mode, all systems will continuously cycle. The exercise mode is designed to "break in" a replaced component. The exercise mode is volatile and will reset when the Dispenser power is turned off.

### **Function 23 - Display EPROM Revision Level**

After entering this function, the readout will display the revision level of the installed EPROM.



## DF22 Dispenser

### System Errors

#### Error List

The status of the Fry Dispenser is indicated by the operations of the Control Panel lights (LED's).

When the Hopper is filled and operating normally, the Push-button LED's operate normally.

When a System Error occurs, the Push-button LED's will begin flashing rapidly (approximately 5 times per second).

In most cases, this signals the need for a minor adjustment or that something has been assembled improperly.

If the cause is not immediately apparent, the error code can be read from the display on the Controller.

Once the fault has been corrected, the Dispense / Reset button will reset the error and return the Dispenser to normal operation.

Error Number	Error Name	Error Definition
1	ACCUMULATOR TIME_OUT	There is a problem with the Accumulator Doors hardware.
2	ERR_WATCHDOG	The watchdog timer fired (abnormal reset)
3	ERR_NVRAM	Checksum error for the non-volatile storage.

**If the display remains blank, or remains with all segments on (888), the EPROM is bad.**

### Error Definitions

#### Error #1 - Accumulator Time Out

Accumulator Home Switch fails to turn off within 0.6 seconds of the motor being turned on, or it fails to turn on within 0.5 seconds of the motor output starting. Error will occur if the motor or home switch is disconnected, obstructed, broken, or the associated input or output on the controller PCB has failed.

#### Error #2 - Watchdog or Abnormal Reset

An event other than a normal power up has caused the processor to restart. This could be a watchdog reset, (indicating that the processor has hung or Function 12 was entered), a processor reset (an EMI/RFI problem), or the processor has detected corrupted memory.

#### Error #3 - NVRAM Checksum Error

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. Data may be invalid for several reasons:

- The first time the controller PCB has been used.
- Software upgrade. (When new software has a different memory configuration).
- Power down interrupted a Non Volatile RAM write cycle. The write cycle usually happens when the reset button is pressed to reset an error.
- The NVRAM has failed.

**NOTE:** Because the error history is kept in the NVRAM, this error is not recorded.

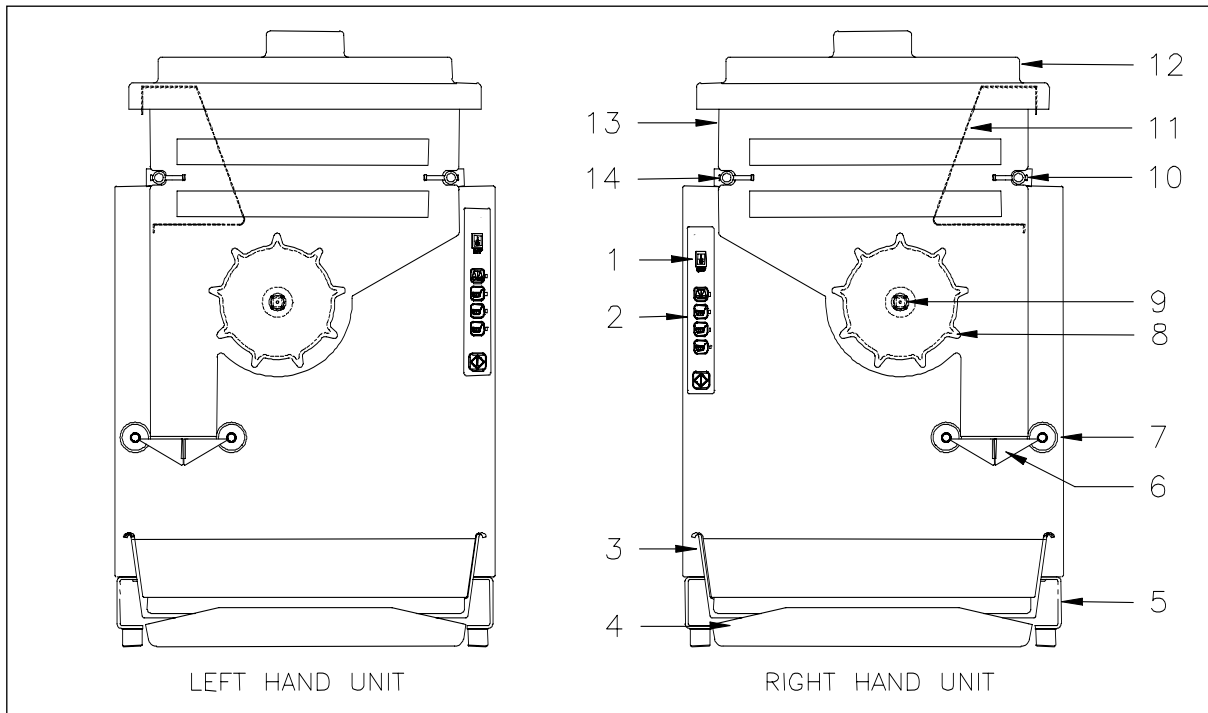
**NOTE:** This error can only happen during power up.

**NOTE:** This error is normal the first time the Dispenser is powered after the Controller board or software chip is replaced.

## DF22 Dispenser

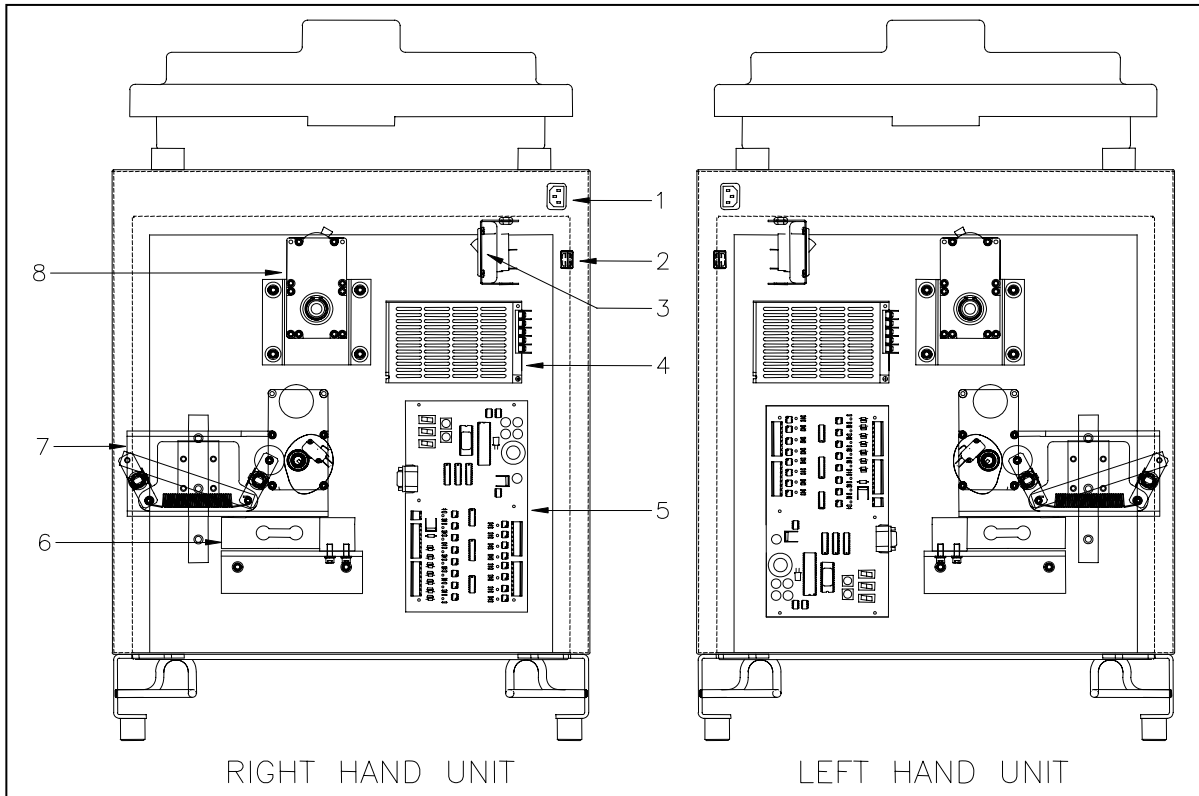
### Component Identification

#### Front View



ITEM	P/N	DESCRIPTION	NO.	DETAILS
1	290055	Main Power On/Off Switch <b>(Note:</b> Original red On/Off Switch: must replace control panel assembly if switch fails. Page 30)	1	Disconnects main A.C. power.
2	203276	Control Panel	1	Controls Dispenser Functions
3	203214	Fry Basket Pan	1	Holds Fry baskets.
4	203357	Drip Tray	1	Collects waste from basket cycles.
5	203237 203209 203204	Cabinet Base Leg (left) Cabinet Base Leg (right) Cabinet Base Feet	1 1 4	Cabinet base. Cabinet base. Base Feet.
6	203253 203254	Accumulator Door, Right Accumulator Door, Left	1 1	Weighs and dispenses fries.
7	203256	Accumulator Door Shaft Collar	2	Protects inner cabinet from contamination.
8	202366	Hopper Drum	1	Turns to dispense fries from the Hopper.
9	203380 203240	Drum Shaft Drum Shaft Collar	1 1	Connects Drum to Drum Motor assembly. Protects inner cabinet from contamination.
10	202885	Hopper Support Bar, Right	1	Secures and positions the Hopper to the Dispenser.
11	203267	Fry Diverter	1	Aids in controlling Fry dispensing.
12,13	203298 203414	Hopper and Lid (right side dispense) Hopper and Lid (left side dispense)	1	Holds frozen fries for dispensing.
14	202884	Hopper Support Bar, Left	1	Secures and positions the Hopper to the Dispenser.
OPT.	291050	Fry Basket (Blue Handle)		

## DF22 Dispenser

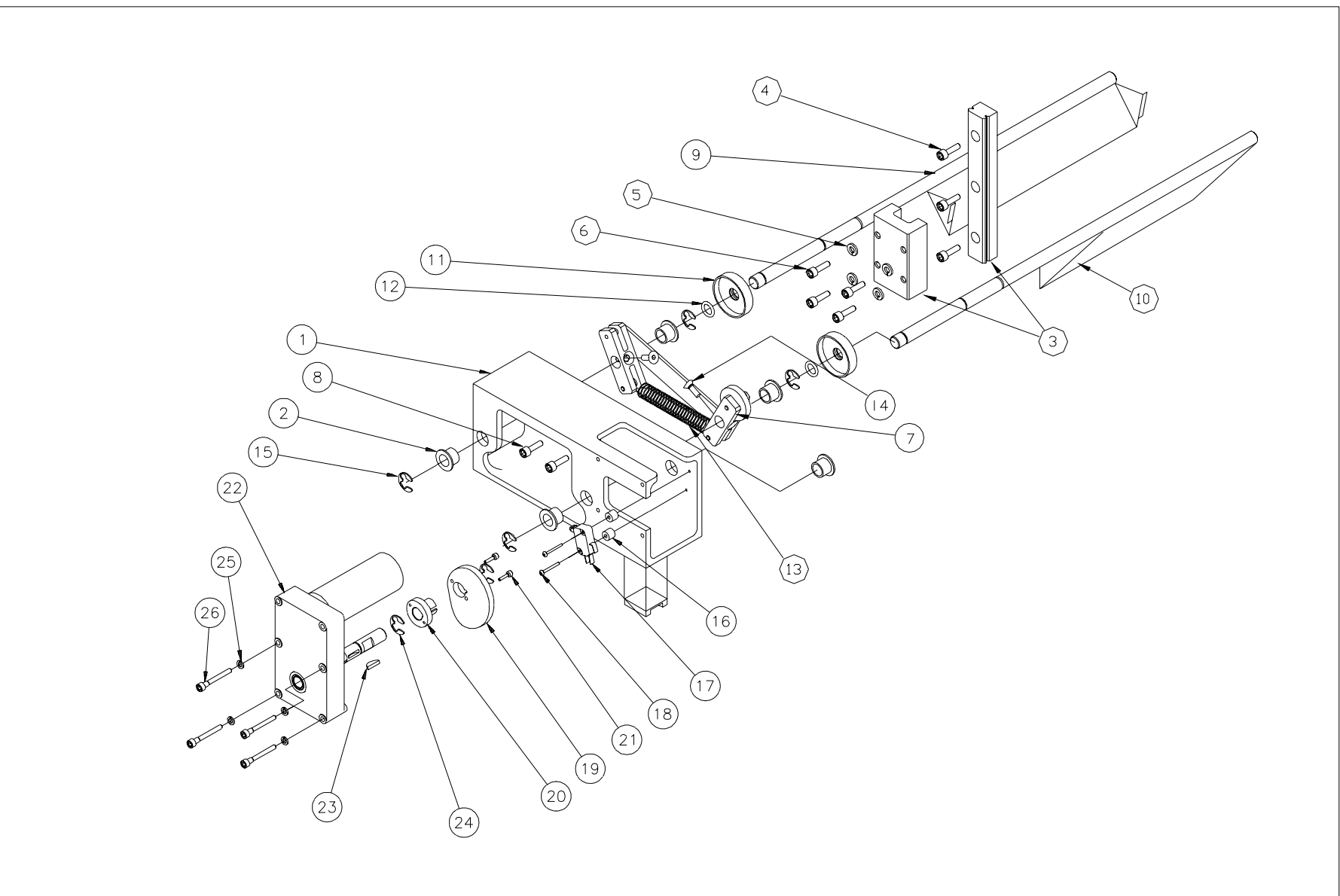


### Rear View

ITEM	P/N	DESCRIPTION	QTY.	DETAILS
1	202881	Power Cord Inlet	1	Chassis connector for the power cord. Main power from wall outlet.
	203425	Power Cord - Domestic	1	
	203434	Power Cord - Australia	1	
	203431	Power Cord - Britain	1	
	203432	Power Cord - Europe	1	
	203280	Cord Clamp	1	
	213129	Cord Clamp Screws	2	
2	290055	Front Panel On/Off Switch (Black) <b>(Note:</b> Original red On/Off Switch: must replace control panel assembly if switch fails. Page 30)	1	Disconnects main A.C. power.
3	203265	Main Circuit Breaker	1	Main A.C. circuit breaker.
4	202793	Power Supply, Universal Input, 24VDC Out	1	Provides 24VDC for Dispenser operations.
5	290626	Controller Board (supersedes 202032 & 290322)	1	Controls Dispenser functions.
	203244	E-Prom	1	Programs the Controller Board.
6	290685	Load Cell (typical) (supersedes 290284)	1	Detects the fry weight in the Accumulator Doors.
	202908	Load Cell Mounting Plate	1	Mounts Load Cell to chassis.
7		Accumulator Doors Assembly	1	Receives fries from Hopper, dispenses to baskets.
	203249	Micro Switch	1	Senses when Accumulator Doors are closed.
	290641	Accumulator Motor (supersedes 203246)	1	Electric Motor drive for Accumulator Doors.
	203260	Return Spring	1	Closes the Accumulator Doors
8		Drum Motor Assembly	1	Dispenses fries to the Accumulator Doors assembly.
	292546	Drum Motor	1	Electric Motor to turn the Hopper Drum.
	202797	Drum Motor Mounting Bracket	1	Mounts the Motor assembly to the chassis.

**DF22 Dispenser**

**ACCUMULATOR ASSEMBLY**

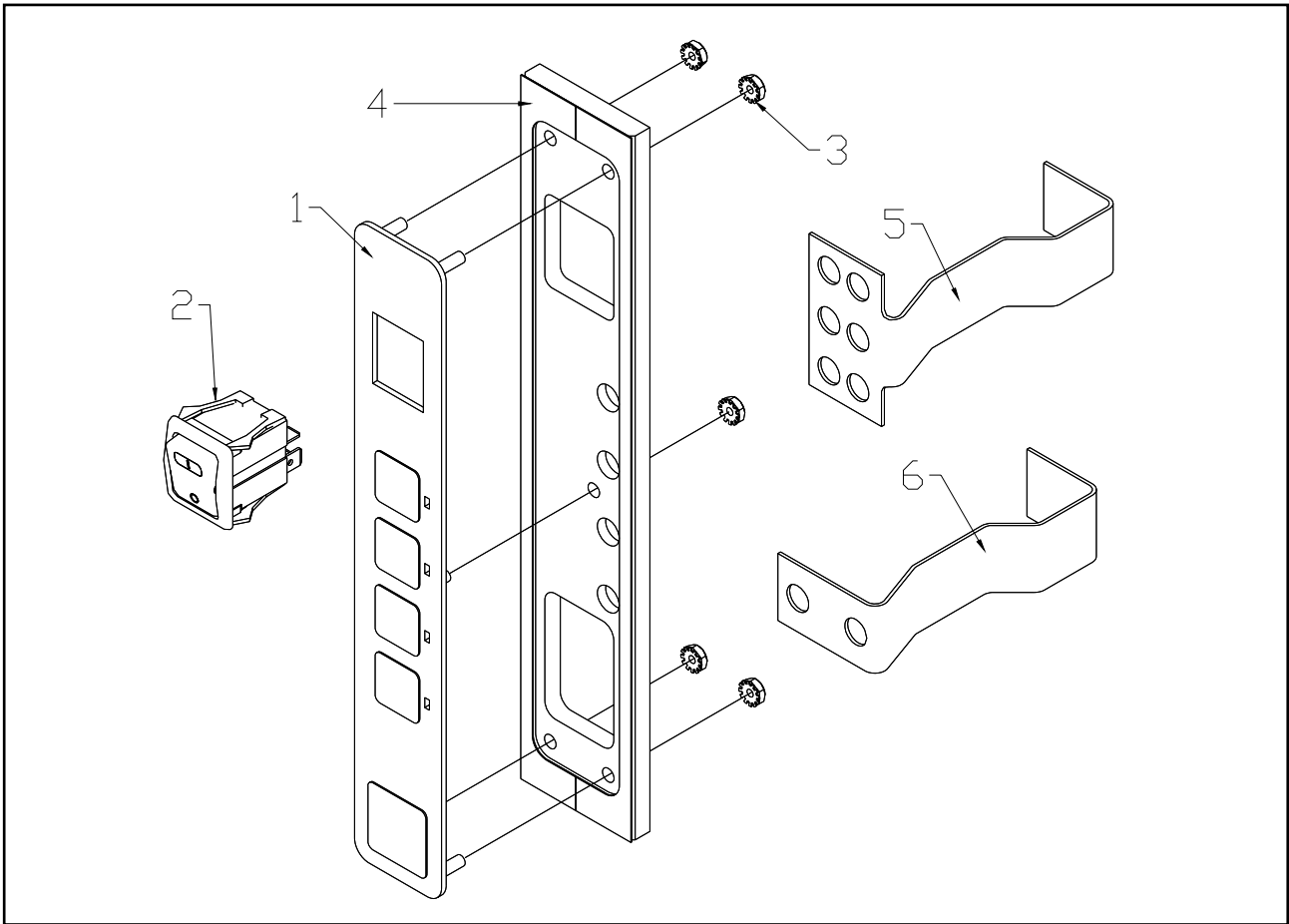


## DF22 Dispenser

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	203245	Extrusion, Accumulator Housing
2	5	202974	Bearing, Flange, 1/2 In. I.D. x 5/8 In. O.D.
3	1	202068	Assembly, Linear Bearing
4	3	202073	Screw, Socket Head Cap, 1/4-20 x 3/4:
5	4	213142	Washer, Lock, 1/4"
6	4	203097	Screw, Socket Head Cap, M6 x 16mm
7	1	203374	Assembly, Linkage, Accumulator
	2	203219	Link, Accumulator Doors
	1	203220	Rod, Connecting
	1	203221	Wheel, Cam Follower
	4	203258	Screw, Shoulder, Socket Head Cap 1/4"x3/4"
	4	203259	Bearing, Plastic, 1/4" I.D. x 5/16" O.D. x 1/4"
	1	203260	Spring, Ext., .650" x 3.271
8	1	202073	Screw, Socket Head Cap, 1/4-20 UNC x 3/4 In., Zinc Plated
9	1	203253	Accumulator Door, Right
10	1	203254	Accumulator Door, Left
11	2	203256	Shaft Collar, 1/2 In. I.D.
12	2	203257	Gasket, O-Ring, 11/16 In. O.D. x 1/2 In. I.D. x 3/32 In. Thick
13	1	203260	Spring
14	2	213549	Screw, Flat head Cap, 1/4-20 UNC x 5/8 In., Zinc Plated
15	4	213356	Retaining Ring, E-Clip, 1/2 In.
16	2	203250	Stand-off, 3/8 O.D. x 0.140 I.D. x 5/16 long, Nylon
17	1	203249	Switch, Microswitch with roller
18	2	213500	Screw, Pan Head Machine, 4-40 UNC x 7/8 In., Phillips, Zinc Plated
19	1	203222	Cam, Accumulator
20	1	203248	Hub, Cam, Accumulator
21	2	213144	Screw, Socket Head Cap, 6-32 UNC x 1/2 In., Zinc Plated
22	1	290641	Motor, DC Drive, Accumulator Doors
23	1	203251	Key, Woodruff, #405
24	2	213356	Retaining Ring, E-Clip, 1/2 In.
25	4	213140	Washer, Lock, #10
26	4	213518	Screw, Socket Head Cap, 10-32 UNF x 1 1/2 In., Zinc Plated
Not Shown	1	290354	Wiring Harness, Accumulator Motor

## DF22 Dispenser

### Control Panel Mounting

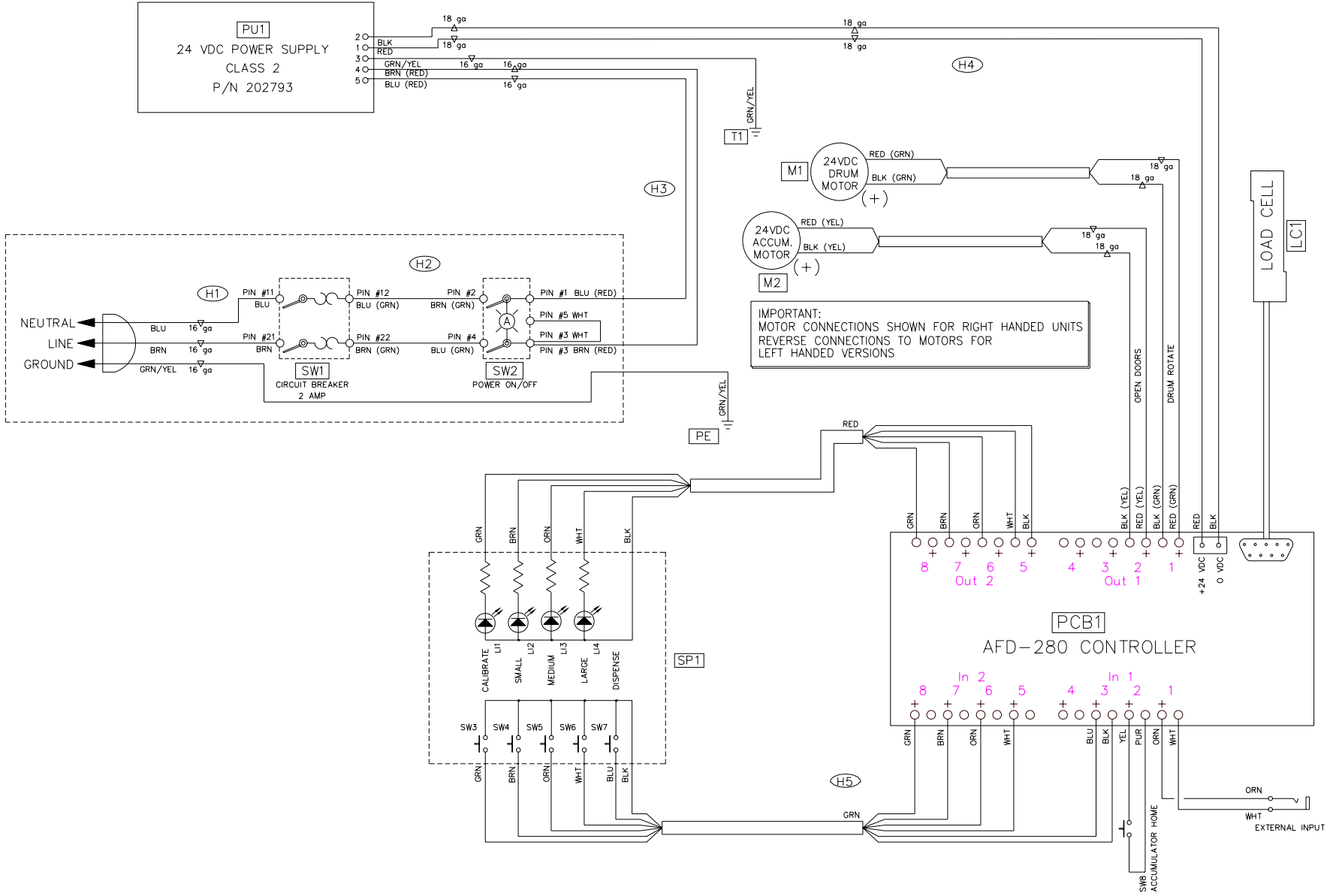


### Operator Assembly 290576

ITEM	PART NO.	Quantity	Description	Function
1	203276	1	Switch Panel, Membrane	Membrane Switches for Dispenser operation and control
2	290055	1	Front Panel On/Off Switch (Black) <b>(Note:</b> Original red On/Off Switch: must replace control panel assembly if switch fails)	Disconnects main A.C. power.
3	202874	5	Nut, Hex, 6 - 32 UNC, Zinc Plated, with External Lockwasher	Secures the Switch Panel ( <i>item 1</i> ) to the Mounting Plate ( <i>item 3</i> )
4	291258	1	Plate, Operator Panel Backing with Adhesive	Adhesive mounted mounting plate for the Switch Panel ( <i>item 1</i> )
5	290664	1	Operator Panel Clip (Center)	Holds the Operator Panel in place
6	290772	1	Operator Panel Clip (Lower)	Holds the Operator Panel in place
1, 2, 3, 4, 5, 6	290576	1	Control Panel Assembly	Complete Control Panel Assembly

# DF22 Dispenser

## Electrical Schematic



## DF22 Dispenser

### Accessories for the DF22 Dispenser

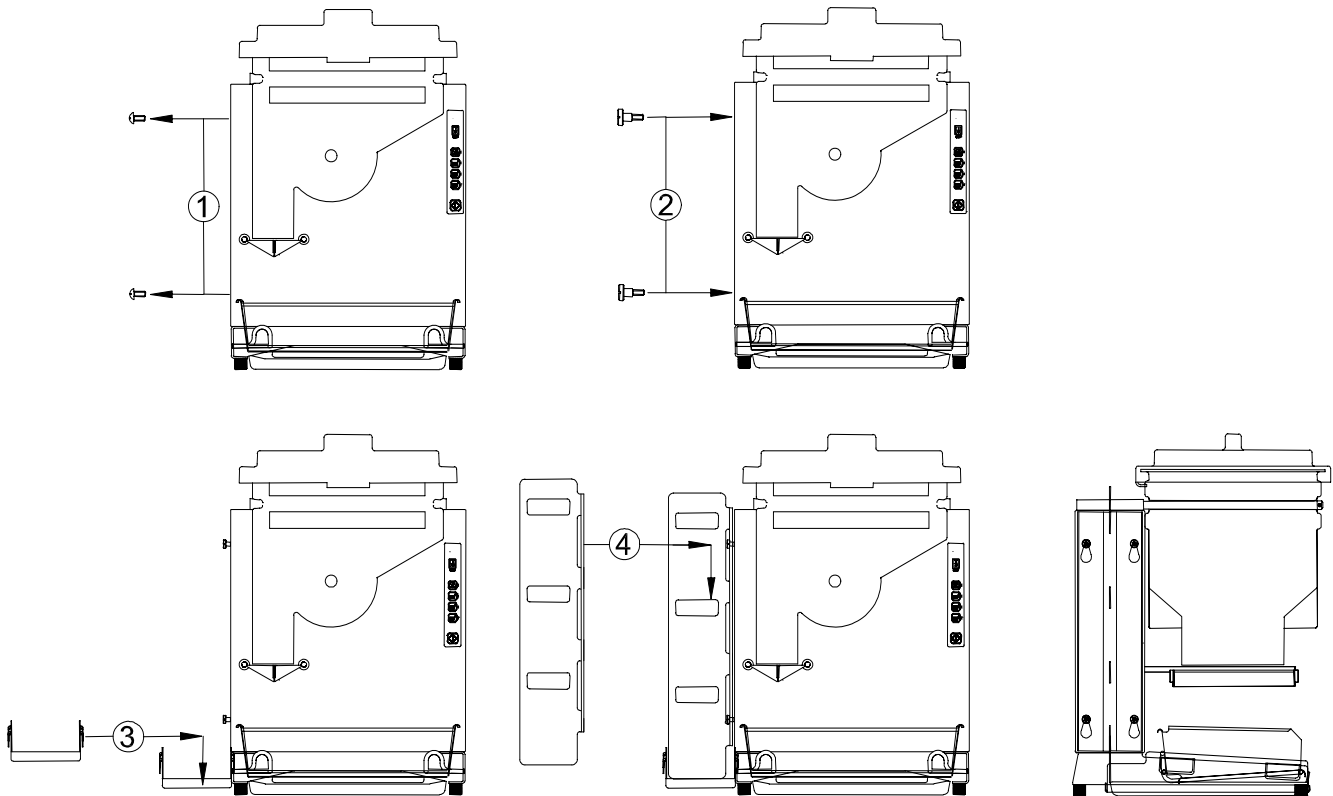
#### Dispenser Basket Rack & Drip Pan Kit (p/n 203383)

Parts included:

- 4 - Stainless Steel Shoulder Bolts (p/n 203367)
- 1 - Basket Rack (p/n 203215)
- 1 - Basket Rack Drip Tray (p/n 203268)

Installation Instructions:

1. Remove the 4 screws covering the mounting holes on the side of the Dispenser.
2. Install and tighten the 4 Shoulder Bolts into the holes in the side of the Dispenser.
3. Clip the Basket Rack Drip Tray onto the Dispenser Leg.
4. Align the Basket Rack mounting holes over the Shoulder Bolts and slide the Basket Rack down to secure into position on the side of the Dispenser.



**NOTE:** This accessory can be easily removed for cleaning and sanitizing.



# DF22 Dispenser

## Accessories for the DF22 Dispenser

### Dispenser Cart Model CT22 (p/n 203358)

The Dispenser Cart includes a Hardware Mounting Kit (p/n 203359)

The kit contains:

- 4 - Threaded standoff for the base of the Dispenser (p/n 290011), *replaces the table top feet.*
- 4 - Flat Washers (p/n 213141)
- 4 - Nuts (p/n 290012)

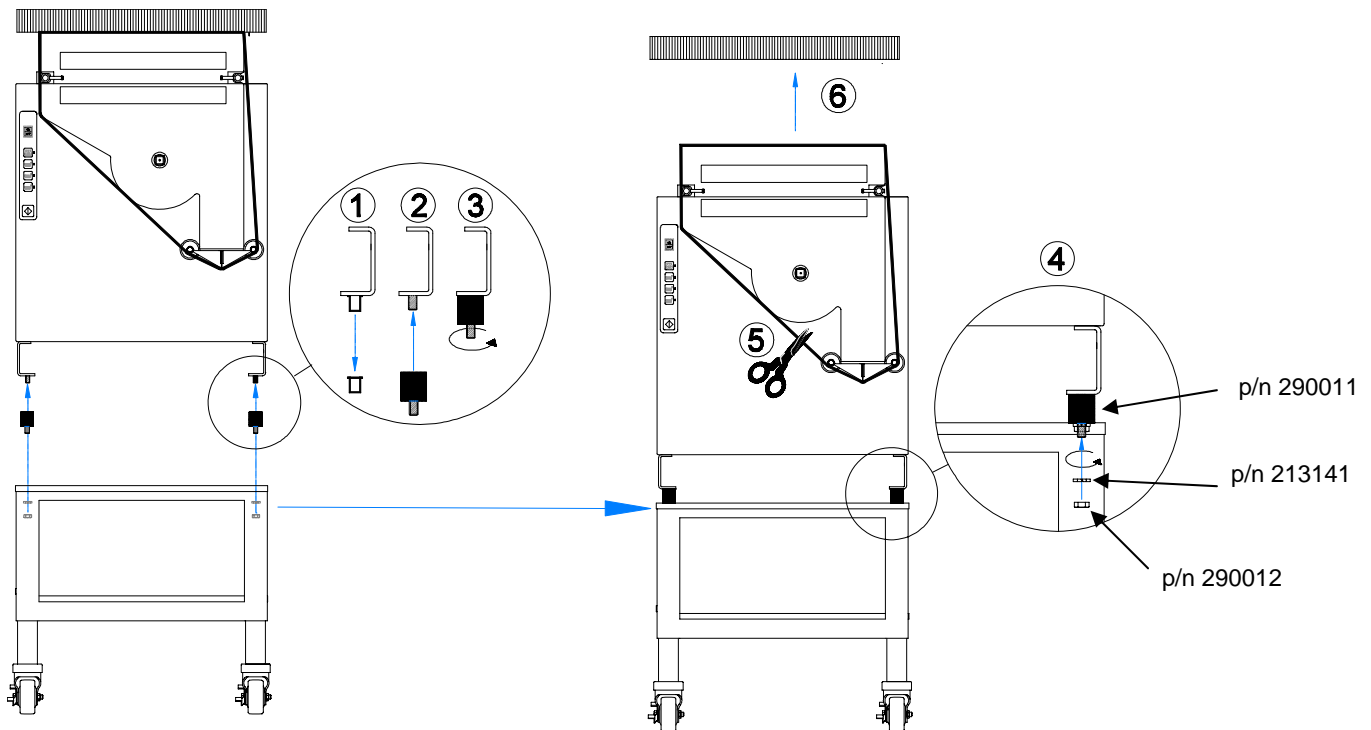
#### Installation Instructions:

Note: these instructions include unpacking instructions for the Dispenser, if you are adding the CT22 Cart accessory to an existing Dispenser, please disregard the unpacking instructions.

1. Remove the 4 protective plastic covers from the studs in the Dispenser legs. (*If you are adding the Cart to an existing Dispenser, remove the 4 Feet from the table top unit.*)
2. Screw the 4 threaded spacer/bolt components onto the Dispenser leg stud.
3. Securely tighten the 4 threaded spacer/bolt components onto the studs.
4. Set the Dispenser onto the CT22 Cart. Align the mounting holes so the spacer bolts pass through the top of the cart. Install and tighten the 4 lock washers and 4 nuts onto the spacer bolts.

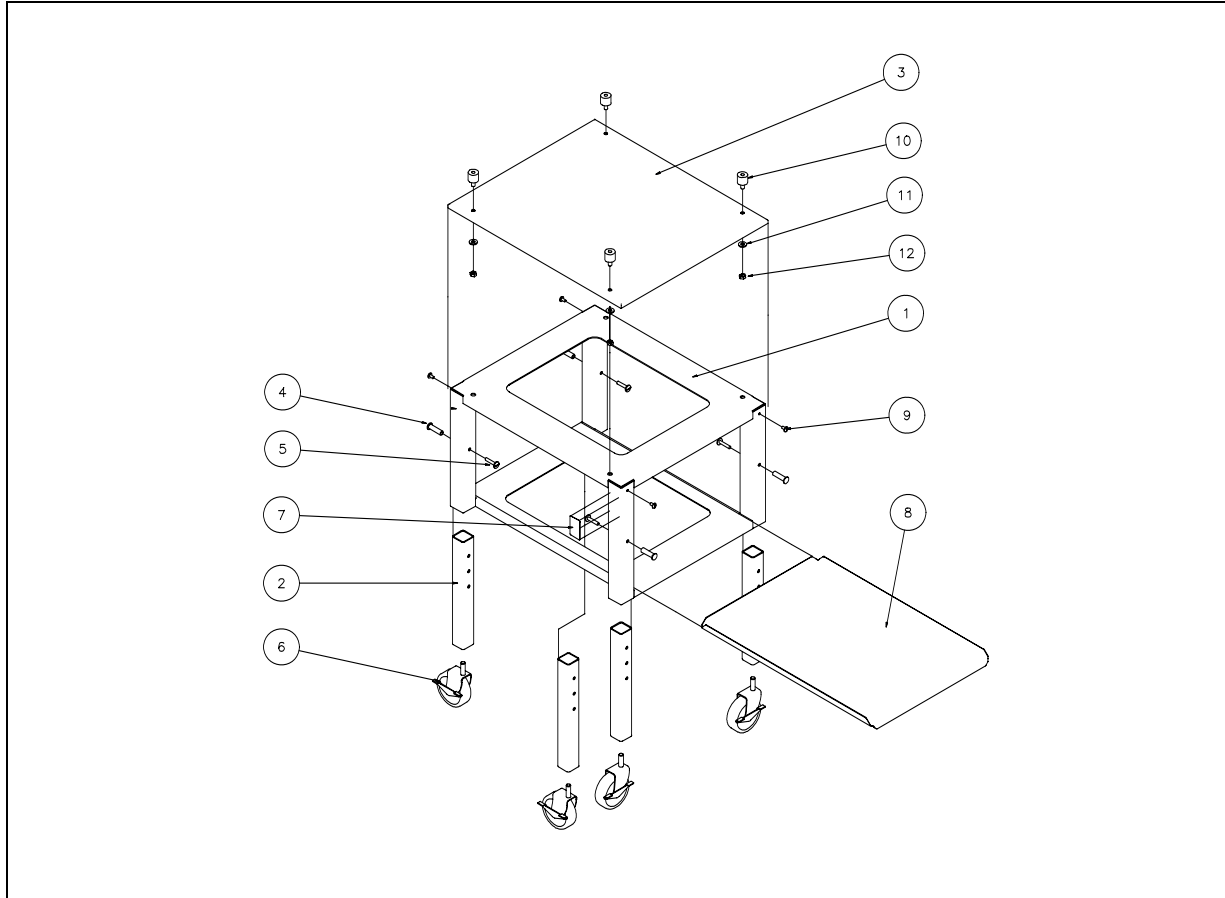
#### **NOTE:** Further Unpacking of a new Dispenser:

5. Remove and discard the Load Cell shipping tape.
6. Remove and discard the cardboard shipping spacer.



## DF22 Dispenser

### Dispenser Cart Assembly (p/n 203358)



Item	Part No.	Quantity	Description	Function
1	203386	1	Cart Frame	Main support structure for cart
2	203387	4	Leg, 3 Position / Includes Caster	Cart Height Adjustment.
3	203393	1	Tray, Shelf, Upper	Mounting surface for Dispenser.
4	203389	4	Nut, Truss Barrel, Nickel Plated, 5/16-18 X 1 3/4"	Hardware for attaching Leg to Cart Frame.
5	203403	4	Screw, Truss Head Machine, Slotted, Nickel Plated, 5/16-18 X 1 3/4"	Hardware for attaching Leg to Cart Frame.
6	203391	4	Swivel Caster, Threaded Stem, with Wheel Brake.	Provides mobility. Brakes can be locked for stability when dispenser is operating.
7	203423	1	Data Label	Manufacturer Information
8	203392	1	Tray, Shelf, Lower	Shelf for lower storage area of cart.
9	202077	4	Screw, Truss Head Machine, Slotted, SS, 1/4-20 X 1/2"	Removed when Landing Shelf is installed.
10	290011	4	Standoff	Joins Dispenser to Cart
11	213141	4	Washer, Flat, SS, 5/16	Hardware for attaching Dispenser to cart.
12	290012	4	Nut, Hex, Nylon insert, SS, 5/16-18	Hardware for attaching Dispenser to cart.

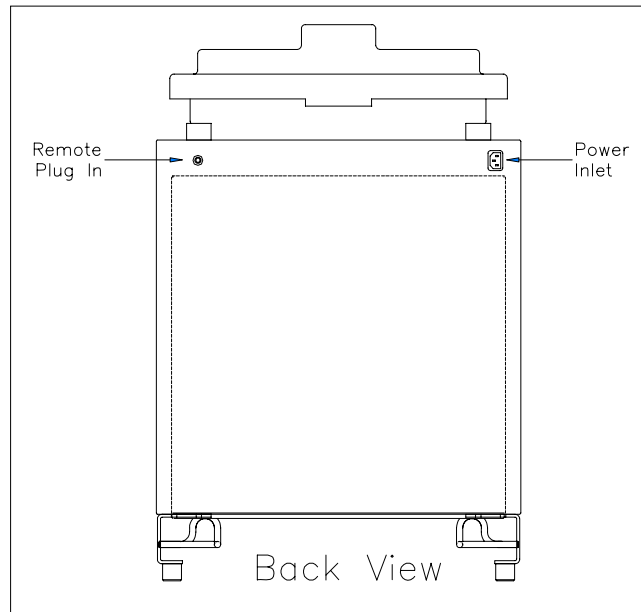
# DF22 Dispenser

## Accessories for the DF22 Dispenser

### Remote Dispense Button (p/n 290013)

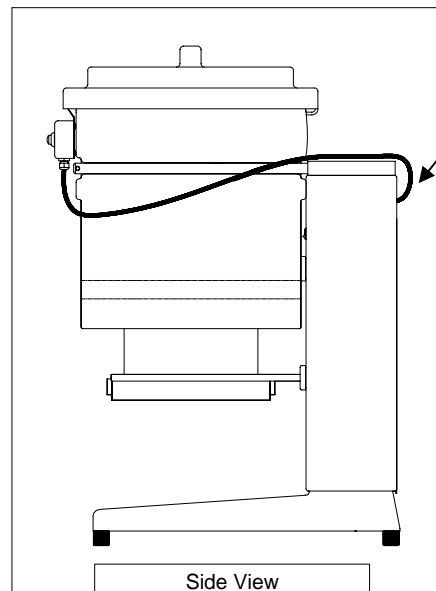
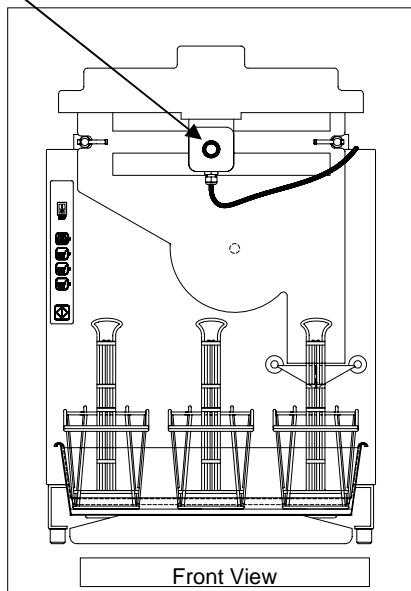
To use the remote DISPENSE Button:

1. Plug the control cord into the jack at the rear of the Dispenser. The jack will have a White Protective Plug in it. Remove this White Plug before inserting the control cable plug.
2. Lift up the Hopper Lid and hang the assembly over the edge of the Hopper.
3. Close the Hopper Lid.
4. The Remote Dispense Button works the same as the Dispense / Reset Button on the Control Panel. *(Reference page 9 of this manual.)*



Replacement Plug for Remote Dispense Button p/n 290034

Button only p/n 290032



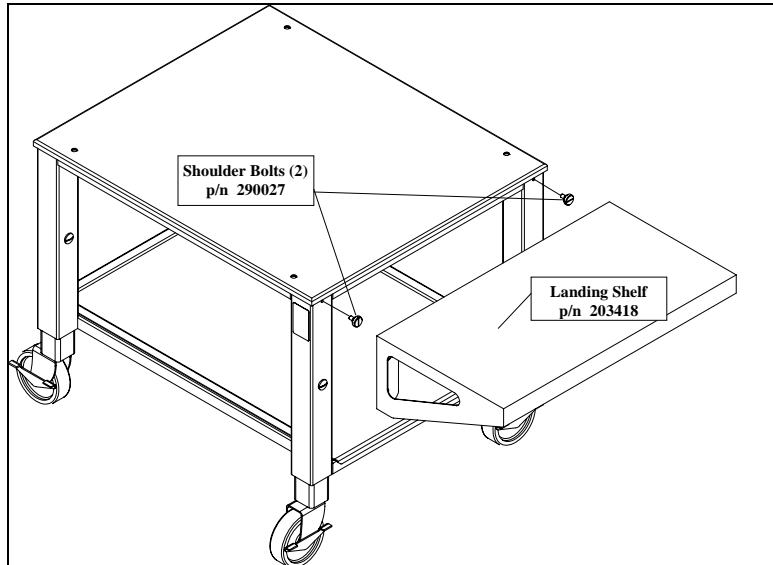
## DF22 Dispenser

### Accessories for the DF22 Dispenser

#### Landing Shelf Kit (p/n 203417)

##### Parts Included:

- 2 - Stainless Steel Shoulder Bolts (p/n 290027)
- 1 - Landing Shelf (p/n 203418)
- 2 - Nylon Spacer Pad (p/n 203419)
- 2 - Screw (p/n 290028)



##### Installation Instructions

1. Replace the 2 slotted head screws with the shoulder bolts (p/n 290027).
2. Align the holes in the landing shelf over the shoulder bolts and push the landing shelf down into position. The nylon spacer pads are factory affixed to the landing shelf and serve to protect the cart from scratches and align the landing shelf properly.

