



MODEL AFD-200
Arch Fry Dispenser
EQUIPMENT MANUAL
p/n 202089

**MANUFACTURED
EXCLUSIVELY FOR
McDONALD'S
BY**

Automated Equipment LLC
5128 Moundview Drive
Red Wing, Mn 55066
Phone: 1 (612) 385-2273
Fax: 1 (612) 385-2166
<http://www.autoequipllc.com>

**For Service Call
1 (800) 248-2724**

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

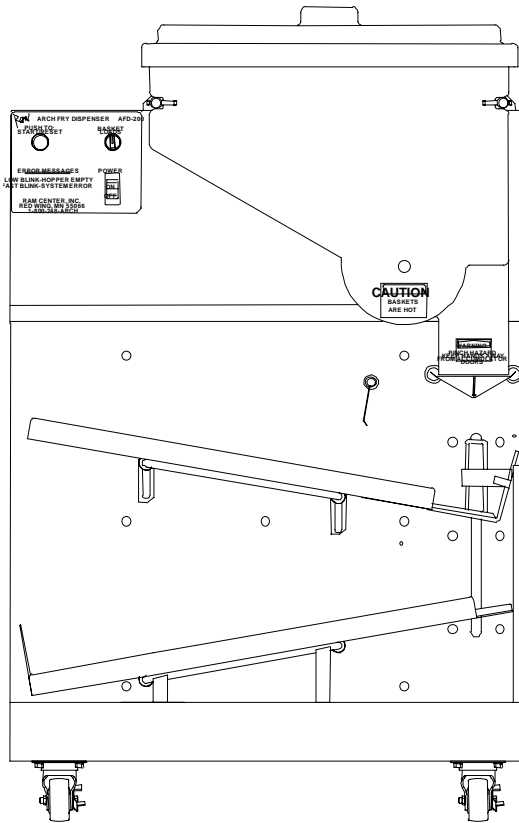


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AFD 200 - WARRANTY

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>
Pneumatic Components	1 year
Electronic Circuit Board Assemblies	1 year
Electrical and Mechanical Moving Parts	1 year
Structural frame work or enclosures	1 year
Lift Saddle Assembly	90 days
Guide Assemblies	90 days
Quick Coupler	90 days
Fry Baskets	90 days

The Warranty period commences on the date of shipment for the Arch Fry Dispenser (hereinafter "Product").

EXCEPT AS OTHERWISE PROVIDED HEREIN AELLC MAKES NO OTHER WARRANTIES, EXPRESS 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 non-transferable and applies only to the original Purchaser. This warranty is valid only in the United States of America.

SERVICE PROVIDED

AELLC will provide 1 (1) year of Warranty Service and toll free phone technical support to Purchaser. If the Product fails to perform during the warranty period and such failure is covered by this warranty, AELLC shall repair or replace, at its option, the Product to restore it to normal operating condition. AELLC shall make all reasonable efforts to perform such repairs during normal working hours Monday through Friday, however, AELLC is not responsible for delays or failures in performance of such services caused by Acts of God, failure of transportation, accidents, labor strikes, shutdowns or work stoppages or other causes beyond AELLC's control.

Warranty service performed herein is provided through AELLC's technical support department or other authorized service agent. Purchaser's unauthorized use of any service personnel or other unauthorized repair will immediately invalidate this warranty.

Replacement parts will be new or rebuilt parts or components. Purchaser is responsible for costs to return damaged warranted components to AELLC for credit. AELLC parts and components not returned to AELLC after thirty (30) days of Purchaser's receipt of replacement parts or components from AELLC will be invoiced for the full spare part or component purchase price.

Purchaser will assure that the Product will receive normal preventive maintenance and adjustments necessary to keep the Product in good operating condition pursuant to guidelines provided by AELLC.

THIS WARRANTY WILL NOT COVER DAMAGE TO THE PRODUCT WHICH OCCURS DUE TO PURCHASER'S FAILURE TO PROPERLY MAINTAIN AND MAKE ORDINARY ADJUSTMENTS REQUIRED FOR PROPER OPERATION OF THE PRODUCT.

INTRODUCTION

The Arch Fry Dispenser is a compact automated system that replaces manual basketing of Fries and the equipment that goes with it. The Arch Fry Dispenser automatically weighs 1 pound (0.45 kg), or 1.5 pound (0.68 kg), loads of frozen French Fries and dispenses them into the Fry Baskets.

The Arch Fry Dispenser's Hopper 42 lbs. (19 kg) of frozen fries prior to Basket Loading. 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.

Empty Fry Baskets are placed on the Upper Guide. The Fry Baskets slide under the Accumulator Doors where French Fries are dispensed into them. The Basket Lift then lowers the filled Fry Baskets onto the Lower Guide where the Fry Baskets wait to be picked up by a crew person.

The Arch Fry Dispenser is usually positioned to the right of an existing fry station and requires 36 linear inches (92 cm) of floor space. 10 modified Fry Baskets are provided with this equipment.

NOTE: This piece of equipment is made in America and has American sizes of hardware. All hardware metric conversions are approximate and can vary in size.

HAZARD COMMUNICATION STANDARD (HCS) The procedures in this manual 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).

SPECIFICATIONS

The Arch Fry Dispenser consists of the following components:

- Arch Fry Dispenser 200
- 10 Fry Baskets (Modified)
- 100 feet (30 meters) of Air Line
- 8 foot (2.5 meter) electrical cord for standard outlet

Optional Equipment:

- Oilless Air Compressor
- End Panel
- Replacement/Extra Fry Baskets

Electrical Requirements:

120 VAC, 15 Amp

Compressed Air Requirements:

2.0 CFM @ minimum of 80 PSI (5.4 bar)

Space Requirements:

Clear floor space near fry vat at least 36 inches (92 cm) wide and 24 inches (60 cm) deep. Basket Handles will extend to 29 inches (74 cm)

Arch Fry Dispenser:

Bulk storage of 42 lbs. (19 kg) of frozen French Fries

Electrically and pneumatically (air) driven.

Equipped with swivel casters.

Handles up to 10 Fry Baskets.

Disassembles for cleaning.

INSTALLATION INSTRUCTIONS

Air Compressor Installation and Start-up

If you have purchased an Air Compressor from AELLC, you will want to install it before you put the Arch Fry Dispenser into position.

1. Choose a suitable location for the Compressor. The Compressor requires a standard 120 VAC outlet. If you have an existing Compressor you may wish to place this Compressor in the same area.

NOTE: Do not place compressor above or near items that must remain dry. The compressor requires weekly purging, and will spray a small quantity of water when purged.

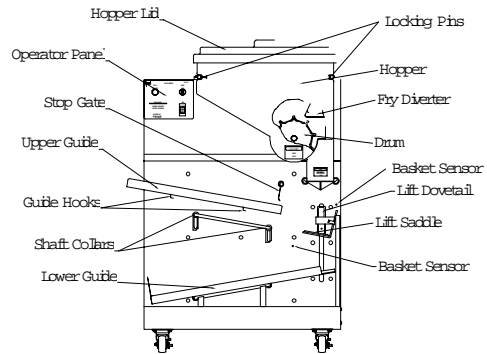
2. Connect the Air Line to the Compressor.
3. Run the Air Line from the Compressor to a location approximately 3 feet (1 meter) above the floor on the wall behind the Arch Fry Dispenser location. You may wish to use the gas line chase (if provided) to run the Air Line.
4. Pull an extra 6 feet (2 meters) of Air Line to allow the Arch Fry Dispenser to move around while connected.

CAUTION: Do NOT connect the Air Line to the Arch Fry Dispenser at this time. The Arch Fry Dispenser has a self-purging water trap in it. If the Air Line is connected to the Arch Fry Dispenser before the Compressor is at full pressure, the purge valve may remain open, which will prevent the Compressor from building pressure and may damage the Compressor.

5. Turn the Compressor ON and allow the Compressor to reach FULL pressure.
6. Verify that the air valve on the compressor (if there is one) is in the OPEN position.

The AELLC supplied Air Compressor operation switch should remain in the AUTOMATIC position.

ASSEMBLING THE ARCH FRY DISPENSER

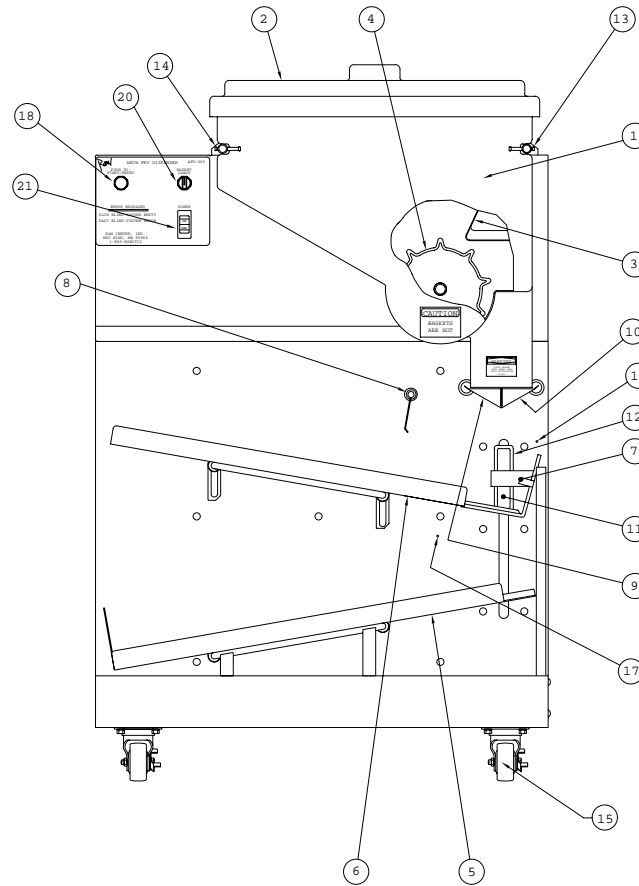


1. Place the hooks of the Lower Guide between the Shaft Collars and push the guide to the LEFT to lock it in place.
2. Place the hooks of the Upper Guide between the Shaft Collars and push the guide to the RIGHT to lock it in place.
3. Install the Lift Saddle on the Lift Dovetail. Make sure the Lift Saddle is completely seated.
4. Find the square opening in one end of the Dispenser Drum.
5. Place the Dispenser Drum in the Hopper, aligning the square opening on the Dispenser Drum with the hole in the back of the Hopper.
6. Grasp the Hopper so that the hole is toward the Arch Fry Dispenser.
7. Align the indentations on the Hopper with the Hopper Support Bars.
8. Push the Hopper forward onto the Hopper Support Bars until the Drum Motor shaft touches the Dispenser Drum.
9. 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.
10. Lock the Hopper onto the Arch Fry Dispenser by pressing the Locking Pins towards each other.
11. Place the Fry Diverter in the Hopper.
12. Place the Hopper Lid on the Hopper.
13. Verify the Compressor pressure is at least 80 PSI (5.4 bar).
14. Verify that air valve on compressor is open.
15. Connect the Air Line to the back of the Arch Fry Dispenser by pushing the Quick Coupler onto the Coupler Nipple until it is secure.

NOTE: The Arch Fry Dispenser has a self-purging water trap in it. If the Air Line is connected to the Arch Fry Dispenser before the Compressor is at full pressure, the purge valve may remain open, which will prevent the Compressor from building pressure.

16. Plug the Power Cord into a wall outlet.

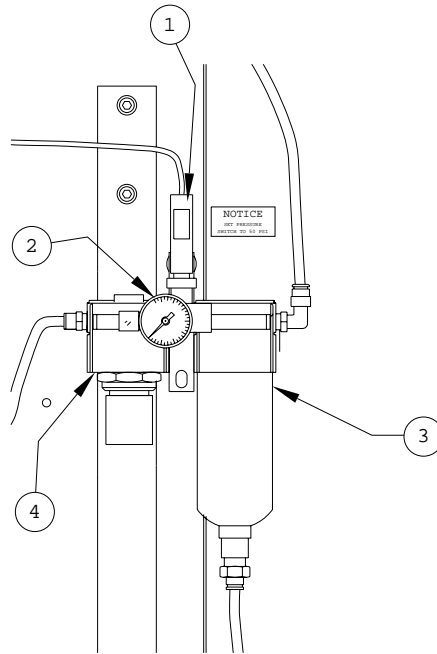
PARTS IDENTIFICATION AND FUNCTION



Arch Fry Dispenser (FRONT VIEW)

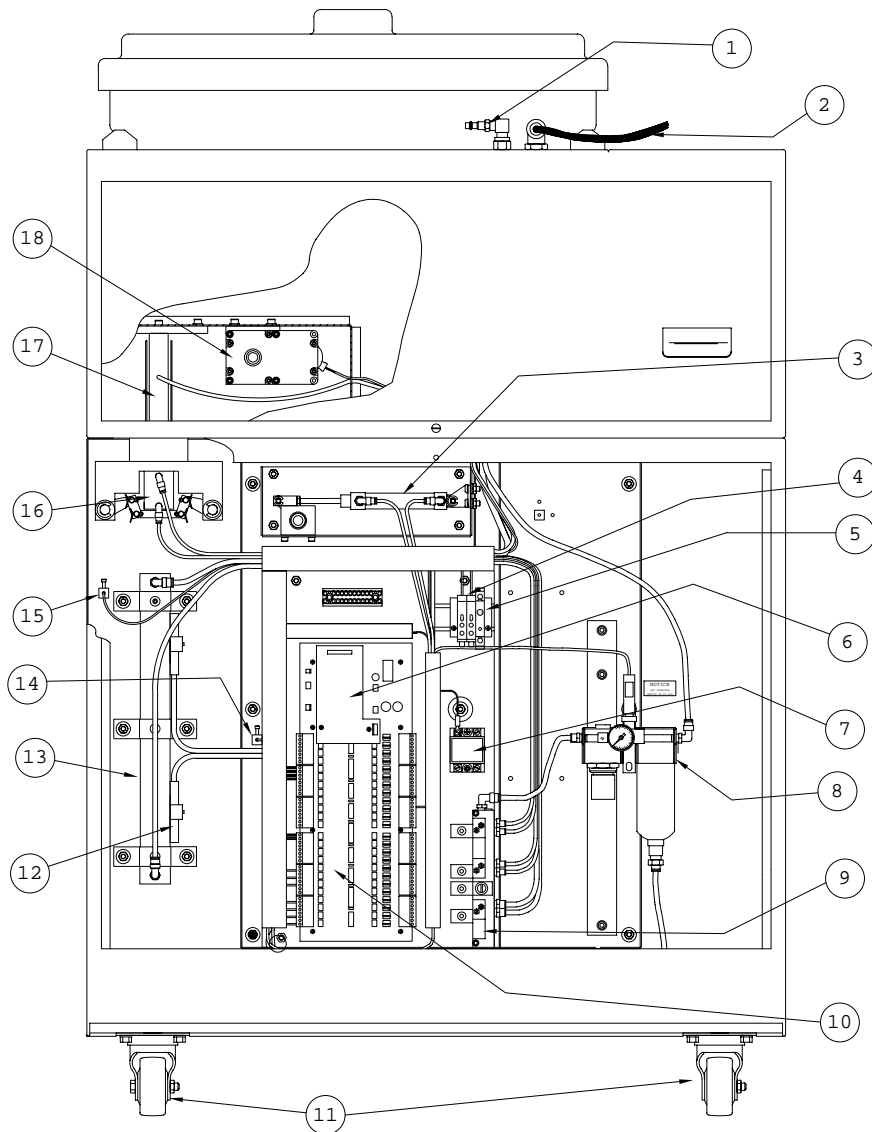
Item	Part Number	Description	Qty	Function
1	213267	Hopper	1	Holds frozen Fries until they are portioned into Fry Baskets.
2	213268	Hopper Lid	1	Covers the frozen Fries in the Hopper.
3	213277	Fry Diverter	1	Funnels uncooked Fries to the accumulator area.
4	213278	Dispenser Drum	1	Dispenses bulk uncooked Fries to the accumulator area.
5	216645 216024	Lower Guide Lower Guide Ultem	1 2	Provides a smooth surface for filled Fry Basket staging. Removable for cleaning.
6	216081 216055	Upper Guide Upper Guide Ultem	1 2	Provides a smooth surface for empty Fry Basket movement towards the Basket Lift. Removable for cleaning.
7	215971 215961	Lift Saddle Saddle Skids	1 2	Carries Fry Baskets from the Upper Guide to the Lower Guide.
8	213473	Pre-Stage Stop Gate	1	Holds Fry Baskets on the Upper Guide when the Basket Lift is not in the UP position.
9	213641	Accumulator Door (L)	1	Holds weighed Fries from the Hopper until a Fry Basket is in position to receive them.
10	213642	Accumulator Door (R)	1	Holds weighed Fries from the Hopper until a Fry Basket is in position to receive them.
11	213900	Lift Dovetail	1	Attachment for Lift Saddle.
12	215948	Carriage Guide-white nylon	1	Provides slip for Lift Dovetail on Arch Fry Dispenser face.
13	215951	Hopper Support Bar (Right)	1	Guides the Hopper on and off of the Arch Fry Dispenser.
14	216018	Hopper Support Bar (Left)	1	Guides the Hopper on and off of the Arch Fry Dispenser.
15	216596	Brake Caster - Front	2	Allows the Arch Fry Dispenser to be locked into place.

16	213254	Fiber Optic Sensor #1	1	Detects when a Fry Basket is in position to receive a load of Fries.
17	213254	Fiber Optic Sensor #2	1	Detects when the Lower Guide is full of Fry Baskets and when a Fry Basket has left the Lift Saddle.
18	215606	Lighted Button (Green)	1	Start/ Reset Button.
19	216489	Bulb (not shown)	1	Replacement bulb for lighted Button.
20	215607	Three Position Switch	1	Selects the Fry Load Size
21	213400	Power Switch (Orange)	1	Turns the Dispenser ON and OFF



AIR FILTER/REGULATOR (Part Number 202250)

Item	Part Number	Description	Qty	Function
1	included	Pressure Switch	1	Monitors the air pressure, and detects a loss of pressure.
2	202606	Pressure Gauge	1	Displays the current system pressure. Assists in adjusting the regulator.
3	202245	Mist Separator with Auto Drain – Watts (Black)	1	Automatically drains water and debris from the Air Line that may cause damage to the Arch Fry Dispenser.
3	290095	Mist Separator with Auto Drain – SMC (Gray)	1	Automatically drains water and debris from the Air Line that may cause damage to the Arch Fry Dispenser.
4	included	Pressure Regulator	1	Regulates 80 PSI (5.4 bar) pressure from the 90-120 PSI (6 - 8 bar) Compressor.



Arch Fry Dispenser (REAR VIEW)

Item	Part Number	Description	Qty	Function
1	213609	Quick Coupler Nipple	1	Connection point for the air line from the compressor.
	213610	Quick Disconnect	1	Disconnects airline from the dispenser.
	213478	Quick Disconnect Fitting	1	Adapts airline to quick disconnect.
2	202172	Power Cord	1	Supplies the Arch Fry Dispenser with power from the wall
3	216089	Stop Gate Cylinder	1	Air-operated cylinder that activates the stop gate.
4	213365	Fiber Optic Amplifiers #1-#2	2	Generates a red light for sensors #1-#2, and controls the sensitivity of the sensors, and inputs Fry Basket present to control card.
5	216485	1.5 AMP Circuit Breaker	1	Protects the fry Drum Motor from electrical overload.
6	213367	Load Cell Board	1	Translates information from the Load Cell into data that the Arch Fry Dispenser I/O Board computer can understand.
7	213924	Solid State Relay	1	Provides high current drive to the drum motor.
8	202250	Filter/Regulator Assembly	1	Controls and monitors the pressure of the air supplied to the Arch Fry Dispenser.
9	203985	4-Stack Air Valve Manifold	1	Air valves that control cylinders in the Arch Fry Dispenser.

10	203984	Dispenser I/O Board	1	Computer that controls the I/O (input and output) of the Arch Fry Dispenser.
11	216595	Caster	2	Wheels allowing Fry Dispenser to be moved for cleaning.
12	213107	Lift Cylinder Switches	2	Indicates the position of the Basket Lift mechanism.
13	290688	Lift Cylinder	1	Air-operated cylinder that moves the Lift Saddle in both UP and DOWN directions.
14	213254	Fiber Optic Sensor #1	1	Optic Sensor Head that detects baskets in the lift.
15	213254	Fiber Optic Sensor #2	1	Optic Sensor Head that detects baskets leaving the lift.
16	290686	Accumulator Door Cylinder	1	Air-operated cylinder that opens and closes the Accumulator Doors.
17	203983	Load Cell	1	Electronic device that converts weight to an electrical signal.
18	292546	Drum Motor	1	Turns the Dispenser Drum that moves the bulk uncooked Fries into the accumulator area.

Air Line

Item	Part Number	Description	Qty	Function
1	213610	Quick Coupler	1	Mate for Quick Coupler Nipple on Arch Fry Dispenser.
2	213478	3/8" OD tube x 1/4" NPT	1	Connects the air supply line to the Quick Coupler body.
3	216482	Tubing, Nylon Reinforced, 3/8 In. O.D (100ft)	1	Supplies the Arch Fry Dispenser with air from a compressor.

Miscellaneous Parts (Not Shown)

	Part Number	Description	Qty	Function
	202002	E-Prom, Loader, 3.25R	1	Software for Dispenser I/O Board.
	216044	24V Power Supply	1	Provides control voltage for dispenser operation.
	219007	Lighted Button Lens Cap (Idec Switch Only)	1	Replacement lens cap for lighted button.
	213914	Screws, Lift Dovetail	4	Attaches Lift Dovetail to Lift Cylinder.
	216055	Upper Guide Slide	2	Slide Mechanism for Baskets.
	216024	Lower Guide Slide	2	Slide Mechanism for Baskets.
	290000	Screws, Slide	26	Attaches slide to guides.
	216258	Fry Basket	10	Receives dispensed fries for cooking.

SET-UP AND CLOSE PROCEDURES

Daily Set-Up

1. Verify the Compressor pressure is at least 80 PSI (5.4 bar).
2. Connect the Air Line to the back of the Arch Fry Dispenser by pushing the Quick Coupler onto the Coupler Nipple until it is secure.

NOTE: The Arch Fry Dispenser has a self-purging water trap in it. If the Air Line is connected to the Arch Fry Dispenser before the Compressor is at full pressure, the purge valve may remain open, which will prevent the Compressor from building pressure.
3. Verify that the Power Switch is in the OFF position.
4. Plug the Power Cord into a wall outlet.
5. Load the Hopper with frozen French Fries. DO NOT SHAKE OR DROP the Fries into the Hopper.
6. Turn the Load Select Switch to the desired load weight.
7. Fill the Upper Guide with empty Fry Baskets.
8. Turn the Power Switch to the ON position (illuminated).
9. Press the Start/Reset Button. Automatic basket loading will begin at the load weight selected.
10. Use filled Fry Baskets from the Lower Guide for French Fry production.
11. Return each empty Fry Basket to the Upper Guide for refilling after the cooking cycle is complete.

Daily Closing

1. Turn the Power Switch to the OFF position.
2. Remove all Fry Baskets from the upper and Lower Guides. Discard and record the uncooked Fries.
3. Remove the Hopper Lid by lifting it straight UP and OFF of the Hopper.
4. Discard and record any Fries remaining in the Hopper at closing.

5. Check that the Accumulator Doors are empty of Fries.

6. Disconnect the Air Line from the back of the Arch Fry Dispenser by grasping the collar on the Quick Coupler and pulling back until it releases from the Coupler Nipple.

NOTE: Disconnecting the Air Line from the Arch Fry Dispenser every day is an important part of Preventative Maintenance. Releasing the air pressure allows the self-purging water trap to drain, thus preventing the water from getting into the system.

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 (and the Dispenser Drum inside) by pulling the Hopper OUT and AWAY from the Hopper Support Bars.

11. Remove the Upper Guide assembly by sliding it to the LEFT then lifting it straight UP.

12. Remove the Lift Saddle by grasping the back support bar with both hands and lifting straight UP.

13. Remove the Lower Guide assembly by sliding it to the RIGHT then lifting straight UP.

14. Take the hardware removed from the Arch Fry Dispenser to the back sink. Wash it in a hot solution of **McD APC (HCS)**, and sanitize. Wipe dry.

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

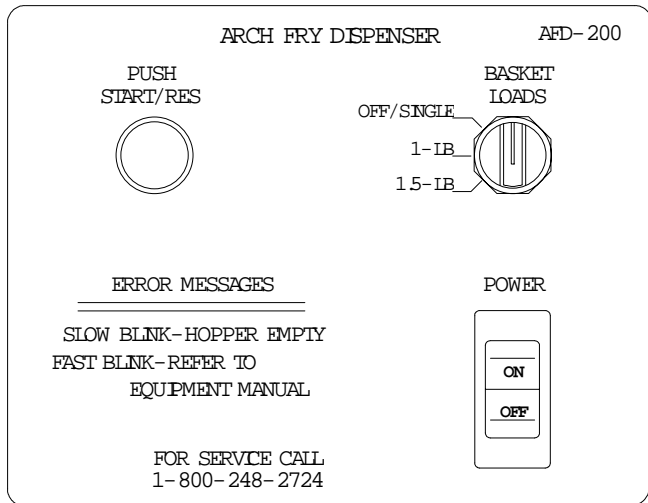
15. Wipe down the Arch Fry Dispenser with a hot solution of **McD APC (HCS)** and water. Repeat wipe-down with clear water to rinse away cleanser residue.

NOTE: Do **NOT** spray down the dispenser. It is not sealed, and contamination may get into sensitive components.

16. Dry all parts and reassemble the Arch Fry Dispenser.

SYSTEM FUNCTIONS AND OPERATION

The following switches and buttons are located on the Operator Panel:



POWER SWITCH (Orange)

Supplies electrical power to the Arch Fry Dispenser. It illuminates when the Arch Fry Dispenser has power.

LOAD SELECT SWITCH

It has 3 positions that allow the operator to select Basket Load weights and control operation.

OFF/SINGLE: Stops automatic Fry Basket loading. Press the Start/Reset Button to dispense only 1 Fry Basket of Fries pre-set to 1.5 pounds.

1 LB: Position for continual dispensing of 1 pound (0.45 kg) Basket Loads.

1.5 LB: Position for continual dispensing of 1.5 pound (0.68 kg) Basket Loads.

START/RESET BUTTON (Green)

Press to start the loading of a single Fry Basket when the Load Select Switch is set for OFF/SINGLE.

Press to start automatic loading of Fry Baskets when the Load Select Switch is set for 1 or 1.5 lb. (0.45 or 0.68 kg) loads.

Press to reset a System Error.

BASKET LOAD ADJUSTMENTS

Slight increases or decreases in Basket Load weights are possible by re-positioning the yellow Basket Load Offset ADJUSTMENT switches (located behind the OPERATOR PANEL). Adjusting these switches allows the crew to increase or decrease the load weight 2, 4, or 6 ounces beyond either the 1 pound (0.45 kg) or 1.5 pound (0.68 kg) setting. Once the switches are re-positioned, the Arch Fry Dispenser will continually basket the new weight until they are changed.

NOTE: Adjusting the load weight above 1.5 pounds (0.68 kg) is **NOT** recommended for proper cooking.

SWITCH NUMBER	TS1	TS2	TS3
Normal Setting	OFF	OFF	INCR
Increase 2 oz. (57 gm)	ON	OFF	INCR
Increase 4 oz. (113 gm)	OFF	ON	INCR
Increase 6 oz. (170 gm)	ON	ON	INCR
Decrease 2 oz. (57 gm)	ON	OFF	DEC R
Decrease 4 oz. (113 gm)	OFF	ON	DEC R
Decrease 6 oz. (170 gm)	ON	ON	DEC R

TROUBLESHOOTING

The status of the Arch Fry Dispenser is displayed in the Start/Reset Button light. When the Hopper is filled and operating normally, the Start/Reset Button remains steadily illuminated. System Errors appear as a flashing green light on the Operator Panel. System Errors are a result of incorrectly assembling the Arch Fry Dispenser, or an interruption in the normal operation.

In the following charts, the PROBLEM columns contain a list of problems that may occur, the PROBABLE CAUSE column describes why the problem may have appeared; and the CORRECTIVE ACTION column describes the action that must be taken to eliminate the problem. If after performing the procedure listed under CORRECTIVE ACTION you have not corrected the problem, call AELLC Service for assistance.

NOTE: Press the Start/Reset Button after correcting the problem.

PROBLEM	PROBABLE CAUSE	CORRECTIVE ACTION
Restart Button is flashing slowly.	Hopper is empty	Fill the Hopper with Fries.
	Fries have formed a "bridge" over the drum.	Remove the Hopper Lid and re-distribute the Fries inside.
	Hopper Drum is not locked onto the shaft.	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.
Restart Button begins flashing immediately when Dispenser is turned on.	Compressor is not running	Check that compressor has power and is turned on.
	Air Line is not connected to the Dispenser.	Connect the Air Line to the Dispenser.
	Compressor has not been allowed to charge before Air Line was connected	Disconnect the Air Line from the Dispenser. Wait until the compressor reaches full pressure (compressor will turn itself off). Reconnect Air Line.
	Air Pressure is below 60 PSI (4.0 bar)	Adjust the compressor to maintain between 90 and 120 PSI (6 and 8 bar). If you need assistance, contact AELLC Service
	Pressure switch is faulty.	Contact AELLC Service
	There is an air leak.	Check the main Air Line, Compressor, and Arch Fry Dispenser for leaks. If you are unable to find it, or need assistance repairing it, contact AELLC Service
Basket Loads are consistently light or heavy.	Basket Load Offset switches were not set properly.	Verify proper switch settings. Re-position the switches if necessary.
	The Hopper is touching the Accumulator Doors.	Re-assemble the Hopper. No objects, other than Fries, may touch the Accumulator Doors.
	The Load Cell is improperly calibrated.	Refer to the Load Cell Calibration procedure in the non-scheduled maintenance section.
	The Load Cell has malfunctioned.	Contact AELLC Service.
Basket Loads suddenly change.	Fries have formed a "bridge" over the drum.	Remove the Hopper Lid and redistribute the Fries.
	The Hopper is empty.	Refill the Hopper with Fries. Remove any empty Fry Baskets from the Lower Guide and place them on the Upper Guide.
	The Fry Diverter is not properly installed.	Remove and re-install the Fry Diverter.
	The Hopper is touching the Accumulator Doors.	Re-assemble the Hopper. No objects, other than Fries, may touch the Accumulator Doors.
Dispenser Drum is not rotating	The accumulator doors are full.	The Dispenser Drum will rotate only when the accumulator doors require more Fries.
	Hopper is empty (Restart Button is flashing slowly).	Fill the Hopper with Fries. The Dispenser Drum will rotate when the next empty Fry Basket is cycled through the Upper Guide.

NOTE: Press the Start/Reset Button after correcting the fault condition.

PROBLEM	PROBABLE CAUSE	CORRECTIVE ACTION
Dispenser Drum is not rotating (cont.)	Fries have formed a "bridge" over the drum (Restart Button is flashing slowly).	Remove the Hopper Lid and re-distribute the Fries inside. The Dispenser Drum will rotate when the next empty Fry Basket is cycled through the Upper Guide.
	The Dispenser has detected a SYSTEM FAULT (Restart Button is flashing rapidly).	Continue troubleshooting. If the accumulator doors need Fries, the Dispenser Drum will continue rotating when the Restart Button is pressed.
	Hopper Drum is not locked onto the shaft.	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 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.
	The Drum Motor Circuit Breaker (CB1) has tripped.	Remove the LOWER BACK panel. Reset the Circuit Breaker by pushing IN the black button labeled 1.5.
	The Fry Basket sensors are dirty or covered with shortening.	Turn off the Power Switch. Clean the sensors with a hot wet towel.
	The Load Cell is improperly calibrated.	Refer to the Load Cell Calibration procedure in the non-scheduled maintenance section.
	The Load Cell has malfunctioned.	Contact AELLC Service.
Fry Basket is filled more than once.	Shortening build-up on Sensors blocked the sensor from detecting a Fry Basket.	Turn off the Power Switch. Clean the sensor with a HOT wet towel. Place an empty Fry Basket on the Lift Saddle. Restart the Arch Fry Dispenser to see if sensor #2 detects the Fry Basket and operation resumes.
	A Fry Basket is positioned incorrectly on the Lift Saddle.	Re-position the Fry Basket in the Lift Saddle.
Fry Baskets are sticking or tipping on Upper or Lower Guide.	Fries, crumbs, or shortening have accumulated on the Guide or Lift Saddle.	Turn the Power Switch off, and clean the Guide and Lift Saddle with a hot towel.
	A Fry Basket is bent or damaged.	Replace the damaged Fry Basket.
	The Lift Saddle is assembled incorrectly.	Re-assemble the Lift Saddle correctly.
	The guide is not assembled correctly.	Re-assemble the guide. If the guide locating Collars are loose, adjust the Collars so that the guide has equal spacing to the nylon runners on the Lift Saddle.
	The Lift Saddle or Guide is bent or damaged.	Contact AELLC Service.
Hopper Accumulator Doors do not shut	Compressor is not running	Check that compressor has power and is turned on.
	Air Line is not connected to the Dispenser.	Connect the Air Line to the Dispenser.
	Compressor has not been allowed to charge before Air Line was connected	Disconnect the Air Line from the Dispenser. Wait until the compressor reaches full pressure (compressor will turn itself off). Reconnect Air Line.
	There is an air leak.	Check the main Air Line, Compressor, and Arch Fry Dispenser for leaks. If you are unable to find it, or need assistance repairing it, contact AELLC Service
	The Accumulator Door Cylinder actuator is loose.	Tighten the bolts holding the cylinder cross bar in place.

NOTE: Press the Start/Reset Button after correcting the fault condition.

PROBLEM	PROBABLE CAUSE	CORRECTIVE ACTION
Fry Basket stop gate does not hold Fry Baskets in place.	Compressor is not running	Check that compressor has power and is turned on.
	Air Line is not connected to the Dispenser.	Connect the Air Line to the Dispenser.
	Compressor has not been allowed to charge before Air Line was connected	Disconnect the Air Line from the Dispenser. Wait until the compressor reaches full pressure (compressor will turn itself off). Reconnect Air Line.
	There is an air leak.	Check the main Air Line, Compressor, and Arch Fry Dispenser for leaks. If you are unable to find it, or need assistance repairing it, contact AELLC Service
One of the Fry Basket sensors is OFF. The Power Switch lamp is ON.	The Sensor or Amplifier has failed.	Turn off the Dispenser and contact AELLC Service.
	The power supply is not functioning properly.	Turn off the Dispenser and contact AELLC Service.
Does not dispense fries into a waiting basket.	Shortening build-up on sensor #1 blocked the sensor from detecting a Fry Basket.	Turn off the Power Switch. Clean the sensor with a HOT wet towel. Place an empty Fry Basket on the Lift Saddle. Restart the Arch Fry Dispenser to see if sensor #1 detects the Fry Basket and operation resumes.
	A Fry Basket is positioned incorrectly on the Lift Saddle.	Reposition the Fry Basket in the Lift Saddle.
	No light is coming from Sensor.	Contact AELLC Service.
SYSTEM ERROR (Restart Button flashes rapidly) as lift reaches top or bottom	The Basket Lift cylinder speed is either too fast or too slow.	Refer to the Maintenance Section of this manual for the procedure to adjust the Basket Lift cylinder speed.
	A tipped Fry Basket stopped the Basket Lift.	Remove the Fry Basket. Check it to be sure that it is not bent or damaged. Clear the Lift Saddle of any Fries or shortening. Press the restart button. If problem re-occurs, remove and re-assemble the guides.
	Some shortening on Sensor #1 or #2 blocked the sensor from detecting a Fry Basket.	Clean the sensors with a HOT wet towel. Press the restart button.
	Compressor is not running	Check that compressor has power and is turned on.
	Air Line is not connected to the Dispenser.	Connect the Air Line to the Dispenser.
	There is an air leak.	Check the main Air Line, Compressor, and Arch Fry Dispenser for leaks. If you are unable to find it, or need assistance repairing it, contact AELLC Service
	Lift Cylinder Switches not working	Contact AELLC Service
	Lift Cylinder Failure	Contact AELLC Service

ORDERING PARTS/SERVICE

Warranty service is initiated by calling AELLC's TECHNICAL SUPPORT HOT LINE at 1-800-248-2724. Technical Support personnel will determine the cause of failure and recommend solutions. If parts are required, the parts will be shipped directly to the restaurant. A local service agent will be dispatched once the problem has been identified and parts have been shipped.

Record the following information for your records:

Date of Installation:

Service Agency Telephone:

When repairing this unit, use only replacement parts supplied by AELLC. Use of replacement parts other than those supplied by AELLC will void the warranty.

All shipping charges are F.O.B. AELLC, and are subject to change without notice. Prices will be those in effect at the time of shipment. AELLC reserves the right to make suitable substitutions in materials, depending upon their availability.

Parts Location and Ordering Information

Use the Parts Identification and Function section in this manual to help you identify the correct part number and quantity of items to order.

NON-SCHEDULED MAINTENANCE

This section gives the procedures for several repairs that do not require special tools.

REPLACEMENT OF WATER TRAP BOWL

Parts: Water trap bowl

1. Turn the main Power Switch for the Arch Fry Dispenser to the OFF position.
2. Remove the Fry Baskets from the Arch Fry Dispenser.
3. Disconnect the Air Line from the back of the Arch Fry Dispenser by grasping the collar on the Quick Coupler and pulling back until it releases from the Coupler Nipple.

CAUTION: Failure to remove the system air pressure could result in injury.

4. Remove the lower back panel of the Arch Fry Dispenser.
5. Make sure the air pressure gauge reads 0 PSI on the regulator inside the Arch Fry Dispenser.
6. Pull down on the thumb clip that locks the water trap bowl and by turning it to the LEFT. The plastic bowl will come off by pulling down on the guard.
7. Remove the old bowl. Insert the new water trap bowl into the metal guard. Ensure that the O-ring is located on TOP of the bowl.
8. Replace the guard and bowl assembly on the Filter/Regulator unit by pushing up and turning it to the RIGHT.

CAUTION: Hand-tighten only!

9. Reconnect the main Air Line to the Quick Coupler. Check for leaks. Replace the outside cover.

ADJUSTING FILTER/REGULATOR AIR PRESSURE SETTING

1. Turn the Arch Fry Dispenser Power Switch to the OFF position.
2. Disconnect the electrical power plug from the wall outlet.
3. Remove the lower back panel of the Arch Fry Dispenser.

4. Ensure at least 80 PSI (5.4 bar) is being supplied to the Filter/Regulator.

5. Pull DOWN on the black adjustment knob located below the air pressure gauge.

6. Turn the knob COUNTERCLOCKWISE to decrease air pressure and CLOCKWISE to increase air pressure. Adjust the air pressure to 80 PSI (indicated on the gauge) by turning the knob.

7. Push UP on the knob to lock it in place.

8. Replace the lower rear panel.

9. Plug the Power Cord into the wall outlet.

10. Move the Arch Fry Dispenser back into position.

11. Turn the ARCH Fry Dispenser Power Switch to the ON position.

RESETTING THE DRUM MOTOR CIRCUIT BREAKER.

WARNING: ELECTRICAL SHOCK HAZARD!

Keep hands and tools away from all electrical components.

1. Turn the Arch Fry Dispenser main Power Switch to the OFF position.

2. Unplug the ARCH Fry System from the wall outlet.

3. Remove the LOWER BACK PANEL of the Arch Fry Dispenser.

4. Locate the Circuit Breaker. If the Start/Reset Button on the breaker has popped out (tripped, showing white), reset the breaker by pushing the BLACK button IN.

5. Re-install the LOWER BACK PANEL.

6. Verify that the Dispenser Drum and Fry Diverter are installed properly.

7. Plug the Power Cord into the wall outlet.

8. Turn the main Power Switch to the ON position.

9. If the breakers trip again, turn the Power Switch to the OFF position, unplug the Arch Fry Dispenser from the wall outlet, and call AELLC for service.

ADJUSTING AIR CYLINDERS

NOTE: The following procedures should be done under the direction of AELLC Technical Support personnel. Please call AELLC Service before proceeding

All air cylinders have flow controls that adjust the speed at which they operate. These factory-adjusted cylinders provide accurate and consistent operation for the loading and staging of Fry Baskets.

If Lift Cylinder speed adjustment is needed, follow the procedures below.

1. Turn the Power Switch to the OFF position.
2. Remove the Arch Fry Dispenser lower back panel.
3. Locate the solenoid valves SV 4 and SV 5 on the manifold. When looking at the valve, you will notice a small round "eye" in the end of the solenoid. This is the solenoid "actuator".
4. Adjust SV 4 (E-STOP) flow control 2 1/2 to 3 full turns counter CLOCKWISE from closed.
5. Using a ball point pen press and hold SV 4 actuator. The Basket Lift will go up.
6. While holding the SV 4 actuator, press and hold the SV 5 actuator. The Basket Lift will go down. When SV 5 is released, the Basket Lift will go up.
7. Monitor the up and down speed of the Basket Lift. It should be 2 seconds in each direction (Count "one-thousand-one, one thousand-two").
8. If the Basket Lift speed is correct, skip to step 12.
9. If the Basket Lift speed needs adjustment, loosen the lock nut on the flow control adjustment screw located to the right of SV 5. The "A" flow control is "up" and the "B" flow control is "down".
10. Adjust the flow control screw for proper speed. Clockwise will decrease the speed, counter-CLOCKWISE will increase the speed.
11. Tighten the lock nut, and return to step 7.
12. Turn the Power Switch ON, and cycle a Fry Basket to verify proper operation.
13. Replace the LOWER BACK PANEL.

For the Stop Gate cylinders perform the following steps:

1. Turn the Power Switch to the OFF position.
2. Remove the Arch Fry Dispenser LOWER BACK PANEL.
3. Locate the solenoid valve SV 1 on the manifold. When looking at the valve, you will notice a small round "eye" in the end of the solenoid. This is the solenoid "actuator".
4. Using a ball point pen press and hold SV 1 actuator. The stop gate will open. When SV 1 is released, the stop gate will close.
5. Monitor the speed of the stop gate. It should be 1 SECOND opening or closing.
6. If the stop gate speed is correct, skip to step 10.
7. If the stop gate speed needs adjustment, loosen the lock nut on the flow control adjustment screw located to the right of SV 1. The "A" flow control is "closed" and the "B" flow control is "open".
8. Adjust the flow control screw for proper speed. CLOCKWISE will decrease the speed, COUNTERCLOCKWISE will increase the speed.
9. Tighten the lock nut, and return to step 5.
10. Turn the Power Switch ON, and cycle a Fry Basket to verify proper operation.
11. Replace the LOWER BACK PANEL.

For the Accumulator Doors cylinder perform the following steps:

1. Turn the Power Switch to the OFF position.
2. Remove the Arch Fry Dispenser LOWER BACK PANEL.
3. Locate the solenoid valve SV 3 on the manifold. When looking at the valve, you will notice a small round "eye" in the end of the solenoid. This is the solenoid "actuator".
4. Using a ball point pen press and hold SV 3 actuator. The Accumulator Doors will open. When SV 3 is released, the Accumulator Doors will close.
5. Monitor the speed of the Accumulator Doors. It should be QUICK OPENING and 1 SECOND closing).
6. If the Accumulator Door speed is correct, skip to step 10.
7. If the Accumulator Door speed needs adjustment, loosen the lock nut on the flow control adjustment screw located to the right of SV 3. The "A" flow control is "up" and the "B" flow control is "down".
8. Adjust the flow control screw for proper speed. CLOCKWISE will decrease the speed, COUNTER-CLOCKWISE will increase the speed.
9. Tighten the lock nut, and return to step 5.
10. Turn the Power Switch ON, and cycle a Fry Basket to verify proper operation.
11. Replace the LOWER BACK PANEL.

PREVENTATIVE MAINTENANCE

You are responsible for performing all indicated maintenance tasks. Careful adherence to these scheduled maintenance tasks will help ensure the most consistent system operation.

Daily Maintenance

The following tasks must be performed daily to ensure the proper operation of your Arch Fry Dispenser.

1. Disassemble and Clean all moving parts and all parts that touch food or shortening.
2. Disconnect the Air Line at the Quick Coupler, and allow the Arch Fry Dispenser to drain for several minutes.

For directions on these steps, see the section titled "DAILY CLOSING".

Compressor Maintenance

The Compressor requires WEEKLY draining of the tank to remove any moisture that has collected. Follow the procedure below. Failure to perform regular maintenance may cause damage and void any warranty claims on the Arch Fry Dispenser.

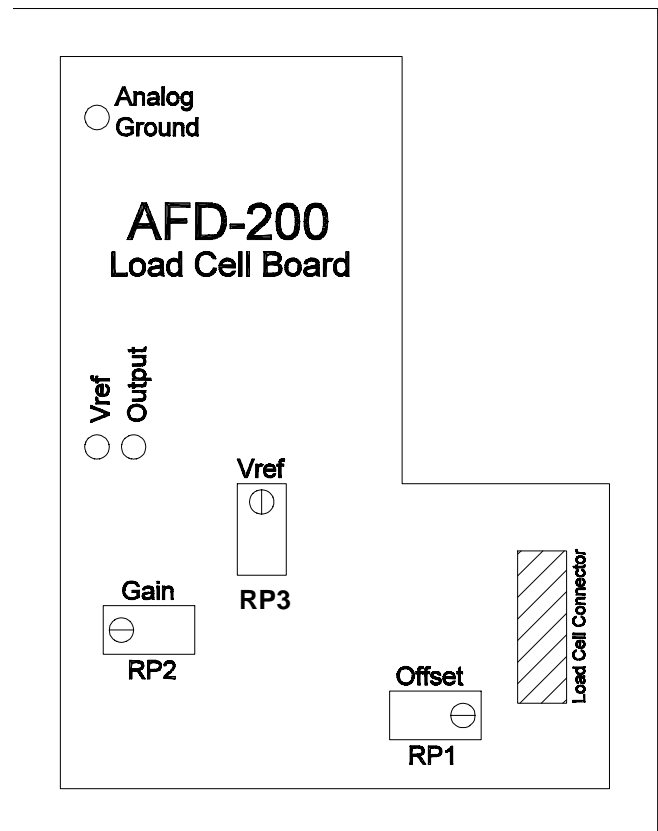
1. Disconnect the Air Line from the back of the Arch Fry Dispenser by grasping the collar on the Quick Coupler and pulling back until it releases from the Coupler Nipple.
2. Open the purge valve on the Compressor tank and allow any collected moisture to escape.
3. Close the purge valve.
4. Allow the Compressor to run and build pressure to MAXIMUM. The Compressor will turn OFF.
5. Re-connect the main Air Line supply to the Arch Fry Dispenser.

LOAD CELL CALIBRATION

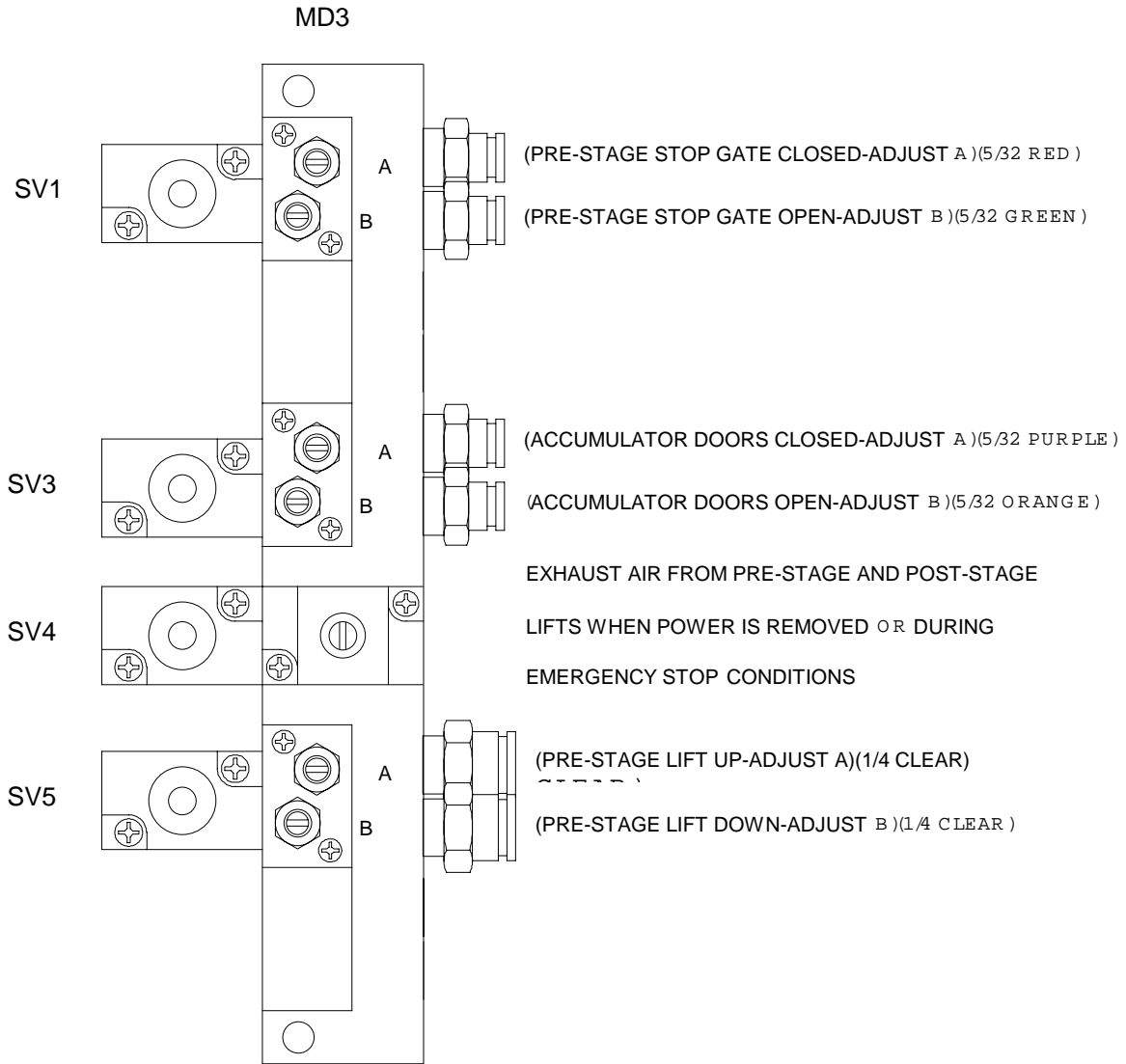
1. For optimum performance, the weighing system should be calibrated twice per year. To do this, follow these steps:
2. Pull the Arch Fry Dispenser away from the wall.
3. Remove the upper back panel of the Arch Fry Dispenser.
4. Verify that all of the Basket Load Offset Switches are in the OFF position.
5. Remove the lower back panel of the Arch Fry Dispenser.
6. Turn the Power Switch to the ON position.
7. Trip the Circuit Breaker for the Drum Motor by pressing the red button on the Circuit Breaker.
8. Cycle a Fry Basket through the Arch Fry Dispenser to empty the Accumulator Doors.
9. Remove the Hopper from the Arch Fry Dispenser.
10. Verify that the Accumulator Doors are empty.
11. The Load Cell Board is a small "L" shaped board piggybacked on the Dispenser I/O Board.
12. Turn the Power Switch to the OFF position.
13. Disconnect the Load Cell Connector and clean the connector pins on the Load Cell Board with a clean pencil eraser.
14. Reconnect the Load Cell Connector and turn the Power Switch to the ON position.
15. Set a digital voltmeter to volts DC.
16. Connect the negative lead to the test point labeled ANALOG on the Load Cell Board.
17. Connect the positive lead to the test point labeled VREF2.
18. Adjust Potentiometer labeled RP3 A/D VREF to 2.4 volts DC.
19. Connect the positive lead to the test point labeled V OUT.
20. Adjust Potentiometer labeled RP1 OFFSET until the voltage is 0 volts DC.

21. Place a 2 pound (0.9 kg) weight on the Accumulator Doors.
22. Adjust Potentiometer labeled RP2 GAIN until the voltage is 4.8 volts DC.
23. Remove the 2 pound weight.
24. Reset the Circuit Breaker for the Drum Motor by pressing the BLACK button on the Circuit Breaker.
25. Reinstall the Hopper on the Arch Fry Dispenser and fill it with Fries.
26. Manually run Fry Baskets through the Arch Fry Dispenser at the 1 lb. (0.45 kg) and 1.5 lb. (0.68 kg) settings. Check Basket Loads and adjust if necessary.
27. Replace both Back Panels and roll the Arch Fry Dispenser into its original position.

LOAD CELL BOARD



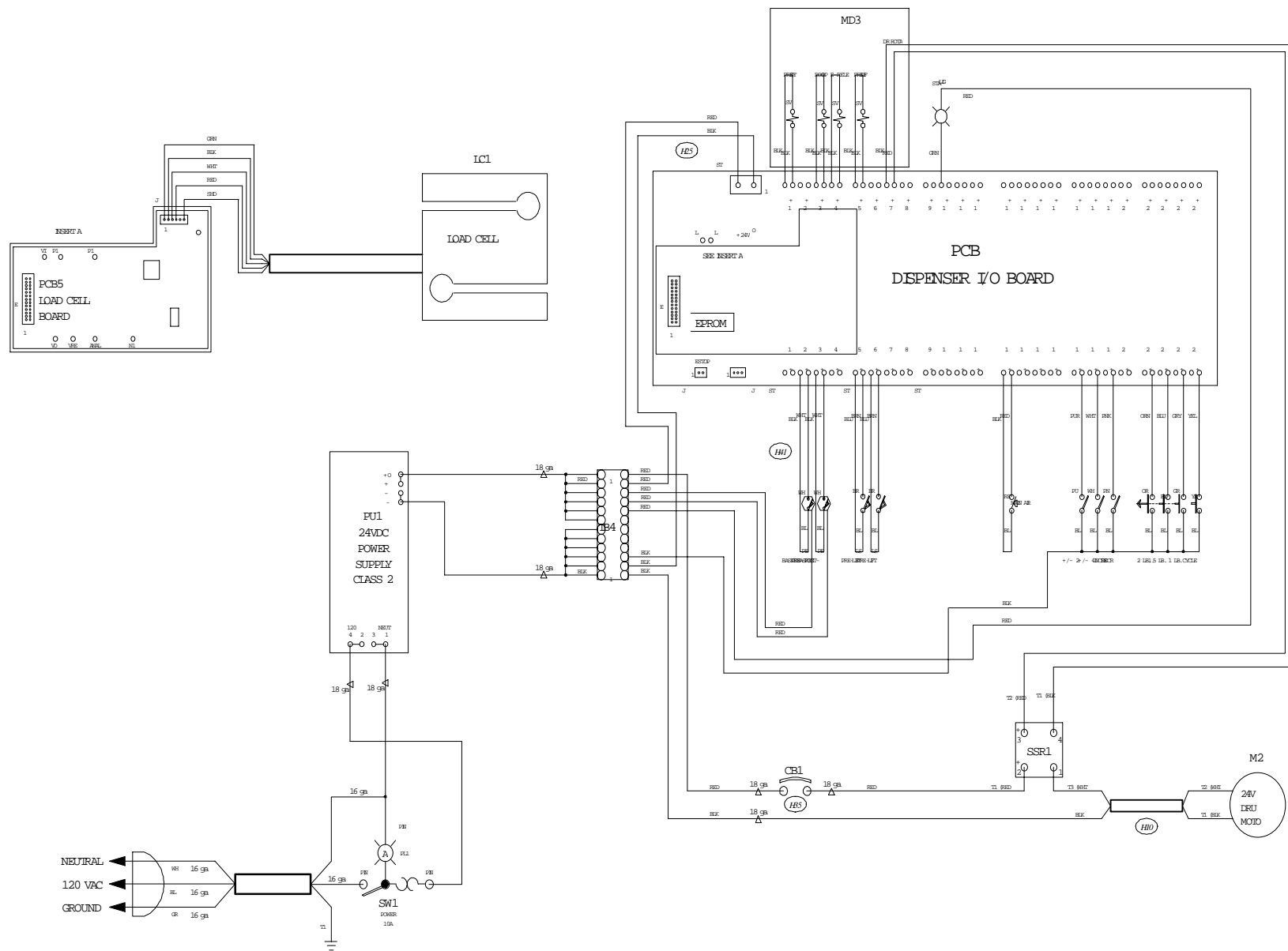
DIAGRAMS



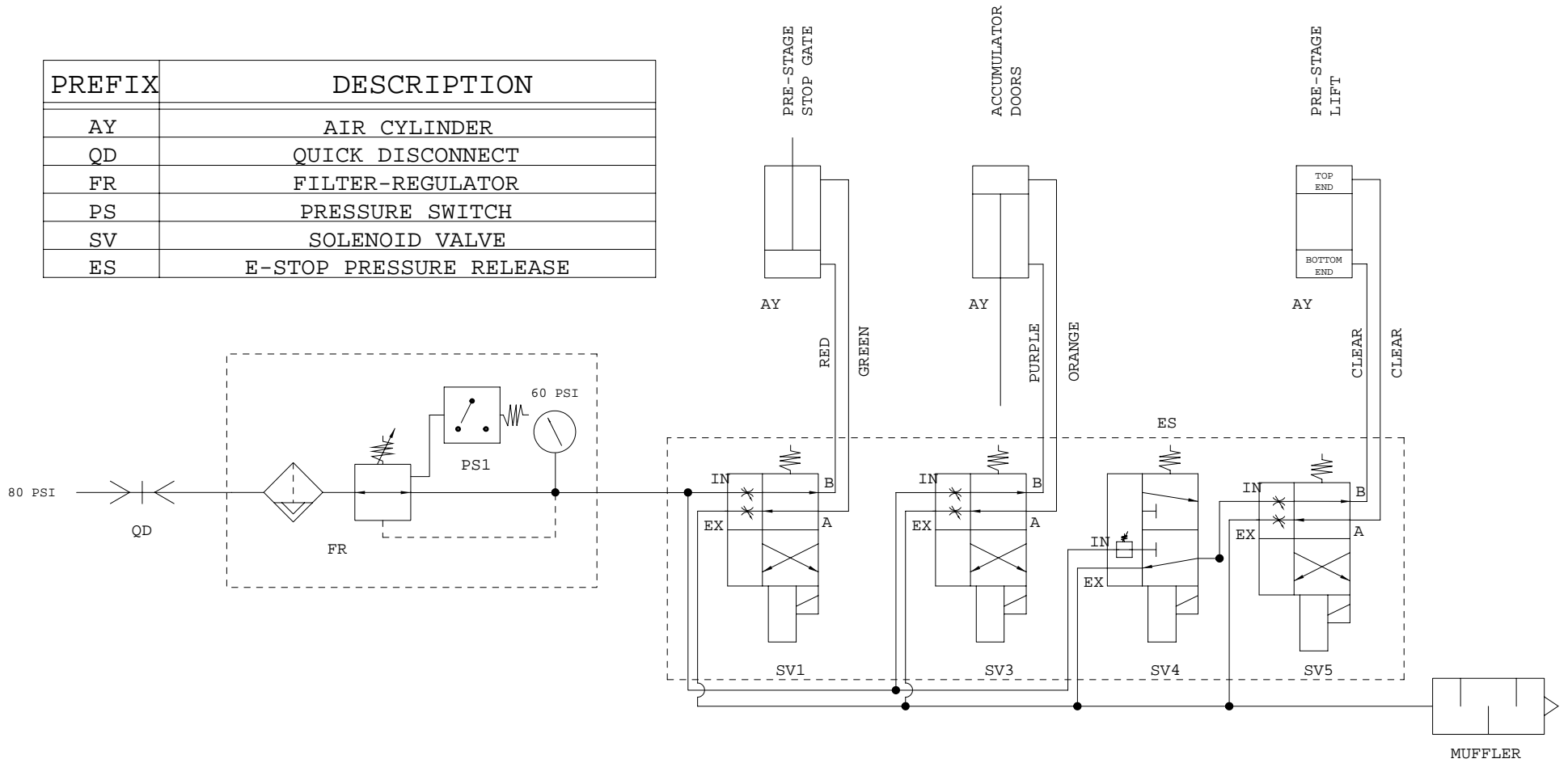
ADJUSTMENT DIRECTIONS

ADJUST VALVE CLOCKWISE TO DECREASE FLOW

ADJUST VALVE COUNTER CLOCKWISE TO INCREASE FLOW



PREFIX	DESCRIPTION
AY	AIR CYLINDER
QD	QUICK DISCONNECT
FR	FILTER-REGULATOR
PS	PRESSURE SWITCH
SV	SOLENOID VALVE
ES	E-STOP PRESSURE RELEASE



Solenoids Illustrated in the De-energized Condition