

FASTCORP, LLC
EVOLUTION FS-01/FS-02
SETUP AND USERS' GUIDE

Version 1-4-11

Thank you for purchasing a **FASTCORP EVOLUTION** frozen merchandiser. This guide will cover the basics of setting up your machine for the first time. Please observe the safety precautions at the beginning of this manual.

This machine represents over 2 years of product development and incorporates many technological advances offering you years of service without *obsolescence*.

It is our sincere philosophy that we are partners with our customers and must grow together. With that in mind, we welcome all comments and suggestions either through your sales representative, our customer service department or whomever you have contact with from **FASTCORP**.

Refer to this manual as you join the **EVOLUTION** in frozen vending from **FASTCORP**.

Thank you,

The **FASTCORP** Team

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FASTCORP ("SELLER") TERMS AND CONDITIONS OF SALE

1. **PRICES.** All prices, quotations, shipments and deliveries by Seller are F.O.B. Seller's facility. All base prices are subject to change upon thirty (30) days notice and all orders are accepted subject to Seller's price in effect at the time of shipment.

2. **APPLICABILITY, ACCEPTANCE AND MODIFICATION.** These terms and conditions apply to all quotations and purchase orders covering the sale of Seller's products or services. Seller's acceptance of Buyer's order is expressly made conditional on Buyer's acceptance of the terms and conditions set forth herein. The terms and conditions set forth herein constitute the complete agreement between the Seller and the Buyer, and may be accepted only in accordance with their terms. They may not be modified except by written agreement referring specifically to these terms and conditions and signed by a duly authorized officer of Seller. Any provisions of Buyer's purchase order which are inconsistent with the foregoing shall be of no force and effect, unless Seller shall have agreed to a modification of these terms and conditions in the manner set forth herein. Buyer's failure to dissent from the terms and conditions, or Buyer's acceptance or use of the Seller's equipment shall constitute Buyer's acceptance of these terms and conditions. Buyer, by these presents and the acceptance of the goods ordered herein represents and warrants the Buyer is solvent and able to pay for the goods in accordance with these terms and conditions of sale. Any order accepted by Seller shall not be assigned, sold or otherwise transferred by Buyer unless Seller expressly agrees in writing to such sale, assignment or other transfer.

3. **DELIVERY AND DELAYS.** Seller's obligation is to deliver the goods F.O.B. Seller's facility. Risk of loss passes to Buyer at the moment of delivery. Buyer will inspect the products within a reasonable time after receipt thereof and if Buyer fails to notify Seller within thirty days after receipt that the products are defective in any respect, Buyer will have waived any rights or claims against Seller. Orders for products made to Buyer's specifications are not subject to cancellation by Buyer. Products made to Buyer's specifications must be inspected and accepted by Buyer before shipment. After shipment, Buyer shall have no rights or claims against Seller for such products. Delivery dates appearing on Seller's order acknowledgment, or given to Buyer in any other manner, are approximate. Seller will not be liable for any delay in the performance hereof or for any damages suffered by Buyer by reason of such delay it caused or by the occurrence of any contingency beyond the control of Seller including, but not limited to, delays or non delivery arising directly or indirectly from fires, floods, substantial damage to its plant, accidents, riots, acts of God, open hostilities, declarations of national emergencies, war, terrorist acts, governmental interference or embargoes, strikes, labor difficulties, shortage of labor, fuel, power, materials or supplies, or any other cause or causes (whether or not similar in nature to any of those herein above specified) beyond its control. Seller shall allocate production and deliveries among Seller's customers in its sole discretion.

4. **STORAGE.** In the event that Buyer is unable to accept delivery of parts or equipment at the time of completion and of shipment, Seller may invoice for the total purchase price as if the shipment has been made and; (i) if Seller is able to store such equipment in its own facilities, the Buyer shall pay Seller reasonable handling and storage charges for the period of such storage; or (ii) if Seller is unable to store such equipment in its own facilities, Seller reserves the right to arrange handling and storage in a suitable warehouse for the Buyer, at the Buyer's expense. In cases where handling and storage become necessary, it will become the responsibility of the Buyer to notify Seller when shipment is to be made and to what destination.

5. **ADEQUATE ASSURANCES.** Seller may, at any time, suspend performance of any order or require payment from Buyer in cash, security or other adequate assurance satisfactory to Seller when, in Seller's sole opinion, the financial condition of Buyer or other grounds for insecurity warrant such action.

6. **TAXES.** Any tax which the Seller may be required to pay or collect, through assessment or otherwise, under any existing or future law upon or with respect to the sale, purchase, delivery, transportation, storage, processing, use or consumption of any goods or services provided by Seller to Buyer, including taxes upon or measured by the receipts from sales or services, shall be for the account of Buyer and may be added to the price of goods or services purchased by Buyer. Buyer shall promptly pay the amount thereof to Seller upon demand.

7. **LIMITED WARRANTY.**

(A). Subject to the limitations specified herein, the EVOLUTION FS-01 and/or EVOLUTION FS-02 Frozen Merchandisers manufactured by Seller is warranted for two (2) years from the date of purchase against defective parts and workmanship and the EVOLUTION FS-01 and/or EVOLUTION FS-02 Frozen Merchandisers' freezer system consisting solely of the compressor, condenser, evaporator and the refrigerant tubing is warranted for two (2) years from the date of purchase against defective parts and workmanship. Any part or parts which are proven to be defective within the applicable warranty period will be repaired and/or replaced free of charge, provided that, (i) the return of such part or parts is authorized in writing by Seller's Warranty Department (the "Return Authorization"), and (ii) the defective part and a copy of the Return Authorization is returned with transportation charges prepaid to the destination designated by Seller's Warranty Department. All labor charges shall be for the account of Buyer.

(B). The warranties provided pursuant to Section 7(A) apply only to the original purchaser of the EVOLUTION FS-01 and/or EVOLUTION FS-02 Frozen Merchandisers and are null and void if the EVOLUTION FS-01 and/or EVOLUTION FS-02 Frozen Merchandisers is sold during the period of warranty.

(C). Notwithstanding anything contained herein to the contrary, the limited warranties provided for herein do not apply to: (i) electrical components, wiring, or circuits

and/or for all mechanical parts or assemblies damaged as a result of operating the EVOLUTION FS-01 Frozen Merchandiser at other than 115 volts, 60 Hertz current and/or EVOLUTION FS-02 Frozen Merchandiser at other than 230 volts, 50 hertz current; (ii) incandescent lamps, neon lamps, fluorescent lamps, ballasts, starters, bins and associated components, graphics or other expendable items; (iii) when other manufactured components are installed by Buyer in the EVOLUTION FS-01 Frozen Merchandiser and/or EVOLUTION FS-02 Frozen Merchandiser; and (iv) coin mechanisms, bill validators, currency systems, telemetry systems, cashless payment systems, debit card readers, and other accessories not manufactured by Seller installed at Buyer's request.

(D). Seller is not responsible for any cost of service rendered or repairs made by buyer or its agents on merchandise or parts unless authorization to incur expense has been given in writing by Seller prior to incurring such expense.

(E). Seller shall not be liable to Buyer under this warranty if Seller determines that the defect was caused by misuse, abuse, vandalism, improper application, improper operation, improper maintenance, alteration, repair or modification, negligence or use, casualty, fire, flood, storage, handling or any other cause beyond the control of Seller.

(F). THE WARRANTIES PROVIDED FOR UNDER THIS SECTION 7 ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, OBLIGATIONS OR LIABILITIES. SELLER EXPRESSLY DISCLAIMS AND BUYER HEREBY WAIVES ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THE BUYER ACKNOWLEDGES AND AGREES THAT NO OTHER REPRESENTATIONS OR WARRANTIES WERE MADE TO OR RELIED UPON BY BUYER WITH RESPECT TO THE QUALITY AND FUNCTION OF THE GOODS SOLD HEREIN. SELLER DOES NOT AUTHORIZE ANY PERSON, COMPANY OR ENTITY WHATSOEVER TO ASSUME FOR IT ANY OBLIGATION OR LIABILITY IN CONNECTION WITH THE SALE OF SAID EQUIPMENT OR ANY PART THEREOF.

8. LIMITATIONS OF BUYER'S REMEDIES. Buyer's remedies with respect to any claim arising out of any order, or Seller's performance in connection therewith, including, without limitation, any claim arising out of any defect or alleged defect in any goods or services furnished by Seller, shall be limited exclusively to the repair and replacement of defective parts as specified in Section 7 herein. Without limiting the foregoing, Seller shall not be liable for breach of contract arising out of or in connection with a warranty claim. In no event shall Seller be liable for any damages including, but not limited to, lost profits or other incidental or consequential damages arising out of this agreement or the use or inability to use any of the products including, but not limited to, the EVOLUTION FS-01 and / or the EVOLUTION FS-02 Frozen Merchandisers, even if Seller has been advised of the possibility of such damages, or of any claim by Buyer or any other party.

9. WAIVER. Waiver by Seller of any breach by Buyer of any of the terms and conditions set forth herein shall not be construed as a waiver of any other breach or the failure of Seller to exercise any right arising from any default of Buyer hereunder shall not be deemed to be a waiver of such right, which may be exercised at a subsequent time.

10. GOVERNING LAW. This Agreement shall be governed by the Uniform Commercial Code as adopted by the State of Connecticut in force as of the date hereof. Buyer consents to the jurisdiction of the state and federal courts within the State of Connecticut. Service of process by certified or registered mail shall be sufficient to commence suit and obtain a judgment by default. Buyer waives any right to personal service of process. Notwithstanding anything contained herein to the contrary, if Seller so directs, any controversy or claim arising out of or related to this agreement or the performance or breach thereof shall be resolved by binding arbitration in accordance with the rules and procedures then obtaining of the American Arbitration Association. Any action or proceeding by Buyer arising out of or in connection with this transaction, including any claim for Seller's breach of contract or Seller's breach of Warranty, must be commenced within two (2) years after the delivery of the equipment to Buyer.

11. Credit. All invoices paid after the due date specified within shall accrue interest at the lesser of 2% per month or the highest rate of interest permitted by law. In the event that the Buyer pays any invoice with a credit card, Buyer hereby waives, releases, and discharges any all rights that Buyer may have, under the terms of Buyer's agreement with the credit card provider, to dispute, challenge and/or protest the payment of any Seller invoice.

SPECIFICATIONS



SAFETY CONSIDERATIONS - GENERAL :

Please read this manual in its entirety. This service information is intended for use by qualified service technicians that are familiar with approved safety and service procedures.

- All repairs must be performed in accordance with Fastcorp Service Instructions and approved safety procedures. Persons attempting to service the machine without proper training or instruction from a Fastcorp service technician may become subject to hazards such as electrical shock which may cause serious injury or death.
- Only factory approved Fastcorp parts should be used in the repair of Fastcorp machines.
- No repairs, adjustments or assembly should be undertaken without using appropriate tools.
- Always remain clear of the Robot Arm, Freezer Lid Lift Mechanism and Cabinet Interior when machine power is on and the Cabinet Door is open.



SAFETY CONSIDERATIONS - ELECTRICAL

Warning - Electric Shock Hazard

**!!!WORKING ON AN ENERGIZED ELECTRICAL CIRCUIT COULD CAUSE
SERIOUS HARM OR DEATH!!!**

**ALWAYS POWER OFF and UNPLUG the EVOLUTION VENDOR BEFORE
ATTEMPTING TO MAKE REPAIRS TO, ADJUST, or INSTALL PARTS ONTO
the EVOLUTION VENDING MACHINE.**



ELECTRIC POWER REQUIREMENTS

The cabinet serial plate indicates the proper Voltage and Amperage required for the vendor.

EVO MODEL	USAGE	VOLTAGE	CYCLE	AMPERAGE
FS01	DOMESTIC - N.A.	115	60	9.7
FS02	INTERNATIONAL	230	50	5.0

The vendor must be plugged into a properly rated single phase, grounded, alternating current outlet with its own circuit protection (fuse/circuit breaker).

DO NOT USE AN EXTENSION CORD OR POWER STRIP TO SUPPLY POWER TO THE EVOLUTION MACHINE.



GROUND THE VENDOR

The Evolution Vendor **MUST** be plugged into a properly grounded outlet. If the outlet will not accept the power cord plug, contact an electrician to install an appropriate AC outlet.

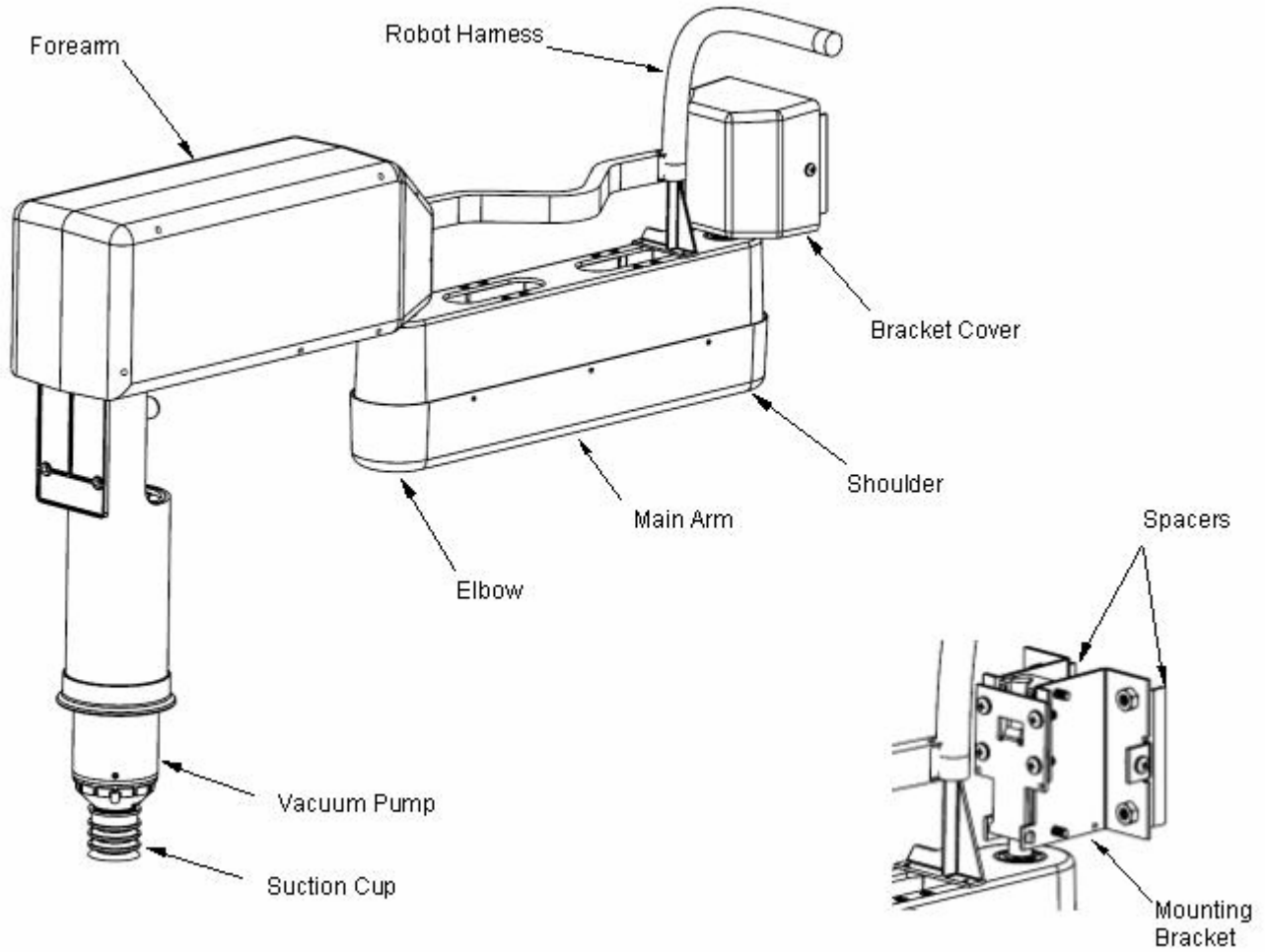
DO NOT REMOVE THE GROUND PIN OR IN ANY WAY BYPASS, MODIFY, DEFEAT, OR DESTROY THE GROUNDING SYSTEM OF THE VENDOR.

FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY SUBJECT THE USER TO THE RISK OF INJURY OR ELECTRICAL SHOCK WHICH CAN BE SERIOUS OR FATAL.

Machine Dimensions:

HEIGHT	73 - INCHES / 185 CENTIMETERS
WIDTH	41 - INCHES / 104 CENTIMETERS
DEPTH	36 - INCHES / 91 CENTIMETERS
WEIGHT, NET	544 - POUNDS / 247 KILOGRAMS
WEIGHT, GROSS	597 - POUNDS / 271 KILOGRAMS

FAMILIARIZE YOURSELF WITH THE NEW ROBOT



TRANSPORT, UNPACKING AND INITIAL SETUP INSTRUCTIONS

TRANSPORT CONSIDERATIONS

The Evolution Vendor should always be maintained in an upright position. Failure to do so may result in permanent damage to the vendor.

Whenever the Evolution Vendor is transported, always install the shipping brackets that were provided with the machine. Replace cable ties as necessary. Refer to the uncrating instructions for cable tie and shipping bracket installation.

!! ATTENTION !!

ALL SHIPPING BRACKETS MUST BE REMOVED BEFORE APPLYING POWER TO THE MACHINE. FAILURE TO DO SO MAY RESULT IN PERMANENT DAMAGE TO THE ROBOT OR ELECTRONICS

RECEIVING INSPECTION

Upon Receipt, before removing packing material, inspect the outside of the machine. Remove exterior packing materials. Inspect the vendor for shipping damage. If possible, report shipping damage to the truck driver at the time of delivery. Have the driver note damage on the bill of lading and immediately notify the trucking company. Although the terms of sale are FOB shipping point, which requires the consignee to initiate shipping damage claims, Fastcorp will gladly help if a claim needs to be filed.

Tools required to uncrate the vendor:

Screw gun with Phillips #2 bit, box cutter knife, 1 3/8-inch socket wrench, 5/16-inch socket wrench or nut driver, 7/16-inch socket wrench, cutting pliers

The Evolution Merchandiser is packaged using the most effective means possible to safeguard the vending machine during transportation and distribution. We encourage you to save the shipping materials for reuse whenever the vendor is shipped.

The cabinet is shrink-rapped after the installation of:

- (4) Corner Boards
- Bubble Wrap
- Card Board Panels

This serves to protect the graphics and prevent damage to the cabinet and door.

We install a protective wood perimeter barrier onto the skids at the base of the cabinet to prevent damage from fork trucks during warehousing and transport.

REMOVE SHRINK WRAP FROM THE CABINET BEFORE STORING THE VENDOR OUTSIDE.

Remove the Shipping Materials:

- Use a screw gun with a #2 Phillips bit to remove the *Fastap* retainer screws from the wood perimeter barrier at the base of the vendor.
- Use a box cutter knife to cut the shrink wrap. ***When cutting the shrink wrap, make all cuts over the corner boards.*** Failure to do so may cause damage to the Power Supply Cord or Graphics.
- Store corner boards, card board panels and wood base barrier for future use.

The shipping skids that are installed onto the Evolution Vendor will accommodate most pump jacks and vending machine lifting devices. It is unnecessary to mount the machine onto a pallet for transport. The skids are held in place by the (4) Leveling Legs.

Remove the Shipping Skids:

- The shipping skids can be removed by lifting and supporting the vendor with an approved lifting device and then remove the (4) leveling legs using a 1 3/8-inch socket wrench. Re-install the leveling legs a minimum of 3/4 - inch. Store shipping skids for future use.
- The shipping skids have kerfs cut through each end and between the leveling legs to allow skids to be split in half and removed using a pry bar if necessary. Splitting the skids will render them unusable. The shipping skids will need to be replaced before the machine is moved, again.



PRECAUTIONARY NOTES

THE VENDOR MUST BE PROPERLY LOCATED AND LEVELED.

- The vendor must be located on a solid, flat and level surface.
- The floor must be capable of supporting the weight load of a fully stocked machine.
- The vendor must be positioned close enough to an electrical outlet so that an extension cord is not necessary.
- The vendor should be moved with a pallet jack, fork lift truck, or vending machine dolly.
- Due to the large size and weight of the vendor, never move the vendor with a hand truck or stair climber.

IF THE MACHINE WILL BE SUBJECT TO MISUSE OR VANDALISM, IT IS RECOMMENDED THAT THE VENDOR BE SECURED TO THE FLOOR OR WALL TO MINIMIZE RISK OF INJURY OR DEATH FROM TIPPING.

CALL THE FASTCORP TECHNICAL SERVICE DEPARTMENT AT
(888) 441-3278 FOR ASSISTANCE.

Adjust the front leveling legs, to level the cabinet front-to-rear then adjust the front and rear legs an equal number of turns to level left to right. **A maximum of 1-inch of thread is visible when the leveling leg is fully extended. Do not extend the leg beyond this point.** A carpenter's level placed on top of the machine (front to back & left to right) will help verify that the machine is level. Leveling legs are adjusted using an adjustable wrench, pliers or a 1-3/8-inch open end wrench. Lowering the legs will raise the machine approximately 1/4" per 4 turns. If the machine is to be used next to another vendor, compare the top and side for proper alignment. Minimum leg extensions should be used in leveling and alignment to attain greater stability. Make sure that all the leveling legs are in contact with the floor and that the machine does not rock. If you cannot level the vendor, select another location. Do not place any objects under the machine. Leveling is extremely important to ensure proper vendor operation. Do not program or operate the machine before the leveling process is complete. If preprogramming selections in a warehouse prior to placement, the machine must be leveled again at the new location and all the program selections checked for proper robot to bin alignment.

POSITIONING THE MACHINE

Maintain a distance of at least 4 inches / 10 cm between the rear wall of the vendor and any obstructions to ensure adequate ventilation airflow. Pay special attention to the air vents at the top and the fan louvers at the bottom of the rear cabinet wall.

Opening the Front Door:

The T-Handle keys can be found in the Coin Change Pocket. The T-Handle lock cylinder and keys that come with each Evolution Vendor are common to all machines shipped from Fastcorp, LLC. All shipping locks should be replaced before the machine is placed on location.

Power Supply Cord FS-01:

The FS01 Evolution Vendor power supply cord is equipped with a resettable Ground Fault Circuit Interrupt device (GFCI). Care should be taken when handling the GFCI module. Damage may occur if dropped onto a hard surface. The end of the power supply cord with the GFCI device is placed into the Delivery Bin to protect it during transport.

The GFCI unit has an LED light to let you know that the device is working. If the GFCI cannot be reset or if the GFCI unit trips immediately after being reset, call Fastcorp Service at (888) 441-3278.

SHIPPING BRACKETS

The Evolution Vendor makes use of shipping brackets to protect the Robot Arm and the Freezer Lid during shipping. It is necessary to install these brackets each time the machine is transported to or from location. Both shipping brackets have been recently modified to make the brackets more user friendly and to make installation possible without the use of tools.

Freezer Lid Shipping Bracket Removal Instructions:

1. The original Freezer Lid Shipping Bracket consists of a metal plate that uses **(2)** screws to fasten it to the **top** of the Freezer Lid Lift Mechanism on the right side of the cabinet. The (2) retaining screws can be removed using a 5/16-inch socket wrench.
2. The current Freezer Lid Hold Down makes use of a red cable tie to prevent the Freezer Lid from opening during shipping. The cable tie wraps around the Freezer Closed Switch Actuator Plate and the Freezer Closed Switch Mounting Bracket on the right front of the Freezer. Carefully cut the red cable tie and manually lift the freezer lid to make sure there are no obstructions.

Both Freezer Lid hold down mechanisms work well and can be used interchangeably.

Robot Arm Shipping Bracket Removal Instructions:

1. The original Robot Arm Shipping Bracket is a metal bracket that supports the Robot Arm during shipping and mounts to the cabinet ceiling on the right side of the machine. The bracket provides a pocket that holds the arm stationary with the use of (2) small clamps. Each clamp makes use of (2) retainer screws. Using a 5/16-inch socket wrench, remove the (2) front clamp retaining screws and loosen the retaining screws on the rear clamp. Slide the end of the Robot Arm forward and out of the rear clamp. The bracket is fastened to the ceiling of the cabinet with (2) nuts that can be removed using a 7/16-inch wrench. The bracket and hardware can then be secured in a safe place for future use.

WARNING: After the Robot Arm Shipping Bracket has been removed, (2) additional nuts will become visible. These nuts MUST remain in place.

The remaining nuts on the ceiling of the cabinet are the fasteners for the upper door hinge.

2. The current Robot Arm Shipping Bracket makes use of a Styrofoam clamshell held in place with a 36.5-inch long cable tie. The shipping bracket can be

removed by cutting the cable tie and removing the clamshell. Store the shipping bracket for future use. Each machine comes with an additional cable tie.

Vacuum Pump Installation:

The Vacuum Pump descends into bins during vend cycles to retrieve products and dispense them into the delivery bin. It has successfully taken the place of the hoses and cables that were used on earlier machines. The Vacuum Pump is wrapped and placed in the Evolution Vendor's Delivery Bin prior to shipping.

Retrieve the Vacuum Pump from the Delivery bin and remove the packing material. Locate the Lift Cable in the front of the Robot Arm. The cable has been secured with a red cable tie. Carefully cut the cable tie using cutter pliers and discard. Support the Robot Arm and pull down on the cable to generate slack in the cable. Align the spline inside the lock ring on the end of the cable with the spline on the top of the Vacuum Pump. Carefully, insert the pump into the lock ring and hand-tighten. Do not use tools - **Hand tighten only.**

Turning On the Machine

Note: Before turning on the machine, make sure the shipping brackets have been removed. The Robot Arm should move freely in every direction and the Freezer Lid must open and close without restriction.

Power Box

The Power Box is the primary power source for the vendor. It is located on the rear cabinet wall behind the Freezer. There is an ON/OFF Power Switch located on top of the Power Box that supplies power to the Freezer, the lamps and the Power Supply located below the Product Delivery Bin on the bottom of the Front Door. The Power Box has (1) input - Power Cord with GFCI and (2) outputs - Freezer and Power Cord to the Power Supply.

Power Supply

The Power Supply is located below the Product Delivery Bin on the bottom of the Front Door. The Power Supply has an ON/OFF switch located on the left side of the box which supplies power to the VMC, the Robot Arm, the Digital Display and the Currency/Telemetry systems.

To turn on the machine, first turn "ON" the Power Box Switch (behind the freezer) and then turn "ON" the Power Supply Switch (below the delivery bin on the bottom of the door). The Freezer and lamps will turn on, the Robot Arm will present itself at the Delivery Position, the Display will light up and the machine will be ready for Programming. Press the VAC button then scroll to Service Menu Option 13 to set the Health Timer so that the machine can be set up before the Freezer cools down. See the Service Menu section for instructions.

General Maintenance and Cleaning

Lubrication

Do not use oil or any other lubricants on moving parts. Lubricants may damage the mechanical and electronic components.

General Cleaning Considerations

It is important to maintain the machine in accordance with this manual. The cabinet, freezer, door and delivery bin should be periodically wiped down with a non-abrasive damp cloth and vacuumed as necessary.

To allow for proper air flow, the fan located in the lower rear corner of the cabinet should be cleaned using a cloth at regularly scheduled intervals. Those intervals will be dictated by the cleanliness of the location. All machines should be cleaned at least once a month.

Disconnect power prior to servicing any electrical or moving components including the fan. Do not pull on wires that supply power to any components. Failure to comply may result in damage to the vendor and increased risk of electric shock.

To avoid the possibility of a fire hazard and to decrease the possibility of restricted airflow into the vendor, do not store anything or allow debris to accumulate on the bottom of the door, inside or behind the cabinet, near the fan or in the general area of the vendor.

Do not use water, soap or any other liquid to clean the inside of the vendor. The outside of the cabinet and glass can be cleaned using a soft cloth and a mild detergent. Never use flammable materials to clean any part of the vendor.

Setup instructions

Currency Systems

- The Evolution Vendor supports **only** 24 - 34 volt Multi-Drop Bus (MDB) Money Systems
- The Evolution Vendor is compatible with any MDB compliant, level 2 or higher coin mechanism or bill validator as well as most card readers and telemetry systems.

The Evolution vendor leaves the factory pre-wired with a DEX port located inside the door near the left side of the window frame. To collect sales data using the DEX port, insert the plug from your DEX handheld into the port and pull out the pin on the 3 position service/door/interlock switch. The door switch is located below the threads of the T-Handle bolt on the back of the door. It is necessary for the machine to have a unique identification number entered into the serial

number field on the Service Menu Option 17) Machine Serial Number (defaults to the VMC Board serial number). Your DEX interrogator may need to be initialized prior to the first read to allow the vendor to be recognized.

Installing Peripherals

Coin and bill accepters as well as card readers and other MDB peripherals should be installed and their function tested prior to placing the vendor into service. Always turn OFF the Power Supply rocker switch (bottom of door under Delivery Bin) before plugging or unplugging MDB peripherals.

Coin Mechanism/Changer

The Coin Changer mounts onto (3) screws on the back of the door inside the security door. Make sure that all (3) mounting screws are tightened. The coin changer harness can be plugged directly into the MDB harness (VMC location J8 MDB) or it can be plugged into the Bill Acceptor Y-Harness.

- Fill all coin tubes until a coin from each tube overflows into the cash box. Test the operation of the coin changer after filling the tubes.
- If the display reads, "Machine Must Be Set Up", program a selection, and then insert coins and test the coin changer for proper operation.
- While testing, push the coin return to verify that coins will dispense into the coin return cup.
- Coins may be dispensed by pressing the payout keys on Service Keypad or by going to Service Menu Option 18) Fill / Dispense.

Bill Acceptor

Remove the lower block-off plate from the door by removing the four #8 nuts with an 11/32-inch socket wrench. Install the Bill Acceptor onto the studs using the four #8 nuts that had previously held on the block-off plate. Some bill validators may require the use of stud extensions. These are usually supplied with the bill validator and should be used only if necessary. Tighten all four nuts to secure the assembly, then turn ON the vendor and test for proper operation.

Card Readers and Telemetry Systems

There are many card readers and telemetry systems available. Fastcorp has tested many of these devices to insure compatibility with our software. On occasion, a new product will be introduced which may require further testing to insure compatibility. If you have any questions relating to your MDB peripherals, please call Fastcorp Technical Service.

Card Readers may be installed directly above the Customer Keypad. Remove the upper block-off plate and install on the four available studs using the four block-off plate #8 retainer nuts and an 11/32-inch socket wrench.

*Note - Store the block - off plates in a safe place for future use.

FREEZER MAINTENANCE EVOLUTION FS01 / FS02

Viewing freezer temperature:

While in Vend Mode (indicated by “Please Insert Money” on the scrolling marquee on the Digital Display), press the “*” key on the Customer Keypad. The current temperature will be displayed on the Digital Display.

Temperature Adjustment:

Standard Frozen Machines

The temperature may be adjusted by turning the Thermostat Dial located on the outside back of the freezer next to the left freezer lid hinge. The scale ranges from 1 which is the warmest setting to 7 which is the coldest. The recommended factory setting is “5”. Three to four hours after powering up the Vendor, the temperature inside the Freezer should drop to about -10°F / -23°C . The operating temperature for the standard ice cream and frozen food vendor will vary based on the prevailing temperature at the machine. Typically the operating range should be between $-5^{\circ}\text{F}/-20^{\circ}\text{C}$ and $-15^{\circ}\text{F}/-26^{\circ}\text{C}$.

Extreme Cold Machines

Extreme cold machines should reach operating temperature in approximately 4 hours after being turned on. Typically, operating temperature ranges between $-30^{\circ}\text{F}/-34^{\circ}\text{C}$ and $-40^{\circ}\text{F}/-40^{\circ}\text{C}$. There is no Thermostat or temperature adjustment mechanism on extreme cold machines (-40°). The temperature may be viewed by pressing the “*” key while in Vending Mode (Please Insert Money).

Servicing the Freezer:

The standard chest freezer inside the EVOLUTION FS-01/ FS-02 does not self-defrost. The freezer chest requires maintenance when ice begins to affect the vend cycle, product loading, or closing the freezer lid. The refrigeration system does not require any maintenance. Depending on the location’s moisture level (relative humidity) and frequency of operation, ice may accumulate inside the Freezer above the level of the bins.

FASTCORP recommends keeping a plastic ice scraper (provided with the machine), and a 9” by 11” piece of cardboard or plastic inside the machine. Place the plastic under the area to be scraped to prevent the ice from falling into the bins. This entire process should only take a few minutes. Wipe the area with a clean dry towel after the frost has been removed. This process should be repeated each time the Vendor is serviced to prevent large scale ice buildup that will require a time consuming freezer defrost.

DEFROST FREEZER:

Depending on usage, temperature, humidity and maintenance practices, it may eventually become necessary to defrost the freezer.

- Press the “LOAD” button and then turn OFF and unplug the vendor.
- Remove all the bins.
- Place the product in an appropriate holding container.
- Scrape off and remove ice from the freezer chest.
- Drain freezer into a pan. Plugs are located on the inside floor and outside front. A wet/dry vac or even a sponge may be used depending on the volume of water.
- Install bins, turn on the freezer and load product after the freezer reaches operating temperature.
- Test-vend each selection to verify accuracy. Edit locations as necessary.

Under most conditions, the Evolution Vendor may lose power for 12 hours without compromising the quality of the product. If freezer temps reach unsafe levels the health sensor will activate and the machine will be placed out of order.

Health Sensor Active Guidelines

When the machine is placed out of service with a Health Sensor Active, the product must be inspected before the machine can be reset and placed back in operation. Often only the top two or three items in each bin will have melted. If the machine loses power for an extended period of time, the product must be discarded and the freezer and bins will have to be cleaned before the machine can be placed back in service.

Ice Cream and Frozen Food Machines: The Health Sensor will go active and the vendor will go out of service if the freezer maintains a temperature warmer than 0°F / -18°C for a period in excess of 15 minutes.

Extreme Cold Machines - The Health Sensor will go active and the vendor will go out of service if the vendor maintains a temperature warmer than -25°F / -32°C for a period in excess of 15 minutes.

Error Recovery -

When a machine is out of service, the error message may be retrieved by pressing the “#” key. If the error is Health Sensor Active, the machine will not accept money until the error has been reset and the machine has reached operating temperatures.

VAC Keypad Security Feature: The Service Keypad “VAC” button must be pressed to release the Keypad Security Feature and allow normal use.

Sold out bins and bin load errors: Sold out bins and bin load errors will trigger a display when the machine door is opened at the time of service. Press “#” to scroll through individual messages or press “*” to exit to 1) Change Price menu. Press the “VAC” button to release the keypads. Press “Load” (freezer lid will open, robot arm will move to the rear loading position) and then press “Close” (the Robot Arm will return to the delivery position) to clear the error and reset the machine. **“Load” then “Close” will signal the VMC that the machine has been filled. Load/Close will automatically set a Health Sensor delay for 75 minutes.**

Health Sensor Active: Errors are cleared by pressing the VAC button and # when the door is opened. Press “Load” (freezer lid will open, robot arm will move to the rear loading position) and then press “Close” (the Robot Arm will return to the delivery position) to clear the error.

If the machine must be operated for testing purposes, the Health Sensor may be bypassed for up to 4 hours. See Programming Instructions, Service Menu Option # 13) Health Timer.

Vendor Errors: All Evolution Vending Machine errors other than Health Sensor Active are automatically cleared as soon as the machine door is opened or power to the machine is cycled off and back on.

VAC - Error Log:

An error history can be accessed by pressing the VAC button on the Service Keypad. Up to ten errors are stored in the Error Log with a time and date stamp. Entries may be viewed in reverse order of occurrence by pressing the “VAC” key. Each time the “VAC” key is pressed, the log will scroll back one entry. Press “*” to exit.

PRODUCT DISPLAY SYSTEM

1. Determine what products will be vended and what the sale price will be.
2. Locate the Product Card Pack and the Price Sticker Sheets from inside the Delivery Bin.
3. Locate the Display Cards that correspond with the products that will be vended from the machine.
4. Locate the Price Stickers that will correspond with each product.
5. Access the Display Card Holder.
 - a) Ice Cream Machines (12 select) - remove the Display Card Holder from in front of the lower Light Fixture. It may be necessary to loosen the (4) lower light fixture retainer wing nuts and move the lamp away from the glass.
 - b) Café 2 Go Machines (20 select) - Open the front door and then access the Display Card Holder from behind the front door glass.

6. Install the Price Stickers and then the Display Cards behind the retainer tabs in the appropriate slots and on the Display Card Holder.
- 7 Ice Cream Machines - install the Display Card Holder in front of the lower Light Fixture. Align the light fixture and Card Holder. Tighten the wing nuts.

BIN SETUP/ PLAN-O-GRAM

The Evolution Vendor utilizes a bin system to hold product. The bin system is made up of a number of bins of various shapes and sizes. The type and size of the bins depends on the size and shape of the products being vended. Every machine comes preconfigured with a specific bin layout or bin plan-o-gram. The configuration of the bin plan-o-gram inside your machine may be modified to accommodate different size bins as your product line changes. If you have any questions relating to modifying your plan-o-gram contact the Fastcorp Service Department.

Product Loading:

Press “LOAD” on the Service Keypad. The Freezer Lid will open and the Robot Arm will move to the rear cabinet loading position. Bins may be filled without being impeded by the Robot Arm.

Press “CLOSE” on the Service Keypad when bins have been filled. The Robot Arm will return to the front delivery position and the Freezer Lid will close. The Health Timer will automatically be set to 75 minutes to allow the freezer to recover from any possible temperature loss due to loading.

“Load” then “Close” will signal the VMC that the machine has been filled. Load/Close will automatically set a Health Sensor delay for 75 minutes.

Notes:

It is important to program the bin selections located on the left as short bins; the rest are tall bins. However, **short and tall bin locations may vary based on the specific freezer in your machine.** The short bins are shaded in Fig 8. If short bins are programmed as tall bins, the robot will make contact with the bottom of the bins and attempt to pull them out, resulting in possible machine failure (out-of-order). If tall bins are programmed as short bins, the machine will only vend product based on the height of a short bin. The robot will leave product at the bottom of the tall bin and flag it Out-Of-Product.

The vending travel limits on the Up/Down axis can be adjusted by going to the Service Menu #21 Up Down Travel Limits and follow the prompts.

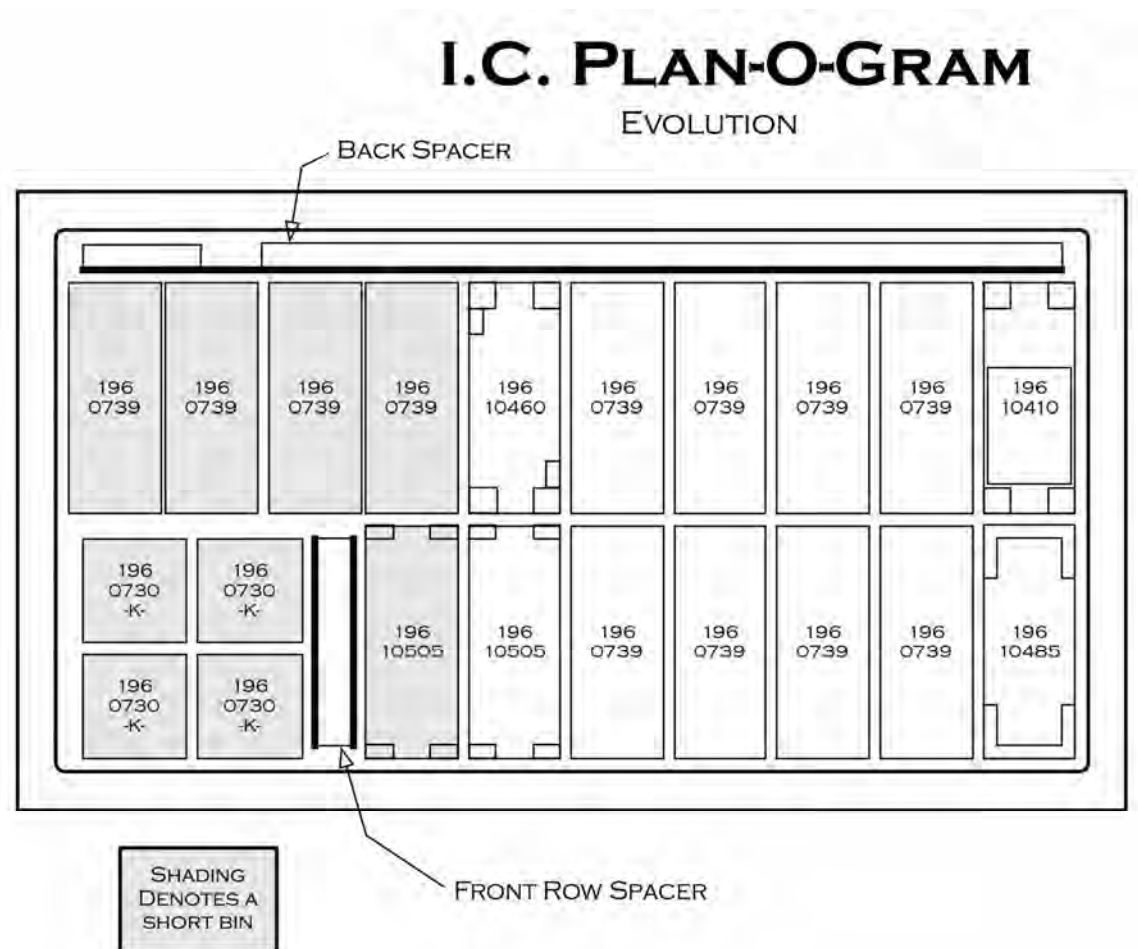
Loading:

- Remove bins, one at a time. Open each bin and move product to the top of the bin. Place new product below the older product so that the older product will be vended first.
- Product should always be level inside the bins. Alternate product direction when loading cone bins.
- Wrapper seams must always face down.
- Styrofoam spacers should be used to prevent small products from shifting in the bins.
- No product should have more than ½-inch of space from left to right and from front to back within each bin.

General Considerations:

- Fastcorp recommends that a bin plan-o-gram form be filled out and attached to the inside of the machine. The product name, price and bin number can also be written directly on each bin. We also recommend that the machine is programmed to leave one product at the bottom of each bin to make it easier for the route driver to match products with a location inside the freezer when servicing the machine.
- Keep a copy of each machine's bin plan-o-gram on file as a reference and as a backup if necessary.
- Each bin can be used as a tall bin or a short bin depending on where it is placed inside the freezer. Short bins are approximately half the height of a tall bin and are located over the compressor. Cut a tall bin at the perforation and it becomes a short bin.
- Always load product from the bottom up so that the oldest product will be vended first (FIFO: first in, first out).
- The standard bin configuration will accommodate most novelty products. Spacers and inserts are provided for products such as ice cream cones, ice cream sandwiches, push ups, etc. Alternative bin shapes and sizes are available to accommodate most products.
- Always keep an extra set of bins on hand to be used in the event of a meltdown. Bins can be removed and replaced quickly.
- There should not be more than one half of an inch distance from left to right and front to back between the product and the bin. Use smaller bins or proper spacers to ensure consistent product retrieval.
- Fastcorp recommends placing the best selling items at the center of the freezer. This shortens the robot travel distance and will reduce vend cycle time.

Fig. 8 Sample Plan-O-Gram (Aerial View)



PROGRAMMING

INTRODUCTION

The machine comes from the factory without any preset selection numbers or bin locations in memory. All information is entered during initial setup and programming. Programming is menu driven and programming menus are accessed in Service Mode. Simply scroll through the menus until the desired function is reached. Once inside a menu function, the computer will prompt the user to enter the required information.

The machine enters Service Mode every time the cabinet door is opened.

NOTES:

- **PRESS THE VAC BUTTON ON THE SERVICE KEYPAD TO DISABLE THE SECURITY-LOCKING FEATURE (DISPLAY READS - “KEYPAD IS LOCKED”) AND ENABLE USE OF THE CUSTOMER KEYPAD.**
- Once enabled, press the “*=Next” key on the Customer Keypad to scroll through the Service Menu options. Press the “D” key to scroll in reverse order.
- If the machine is programmed in one location (for example in your warehouse) and transported to another, it is important to re-level the machine at the new location and perform test vends on each selection. Edit bin locations as necessary.
- **Closing the Door** - When closing the machine door it is important to **NOT** over-tighten the T-Handle. Rotate the T-Handle until the Display changes to, “Please Insert Money”, then turn the handle two additional revolutions and push it in. Over-tightening the T-Handle may result in damage to the T-Handle Assembly and may prevent normal operation.

SERVICE MENU OPTIONS:

- 1) CHANGE PRICE: Allows the prices to be changed.
- 2) SALES METERS: Allows sales data to be viewed.
- 3) EDIT SELECTION: Allows existing selections and bin positions to be edited. Allows bins to be added to existing selections.
- 4) CREATE SELECTION: Allows a selection to be created.
- 5) DELETE SELECTION: Allows a selection to be deleted.

- 6) SELECTION NUMBERS: Allows programmed selection numbers to be viewed. (Use to check for erroneous selections)
- 7) SET DATE & TIME: Allows date and time to be set or viewed.
- 8) AUTO VENDS: Used internally to cycle-vend machines under test.
- 9) SERVICE PHONE #: Allows service phone number to be set. The number is displayed when the machine is out-of-order. (Do not use FASTCORP'S phone #)
- 10) SALES PIN CODE: Allows PIN code to be set and viewed for machine auditing. # 2) Sales Meters may be accessed from outside the machine without opening the door.
- 11) VEND BLOCK: Allows the machine to be disabled for up to 4 predetermined periods of time.
- 12) VEND BLOCK PIN CODE: Allows a PIN code to be set to access the vend block function without opening the door.
- 13) HEALTH TIMER: Suspends Health Control for 1,2,3 or 4 hours; Set freezer temperature scale to display in either Fahrenheit or Centigrade; Set mode for Health Sensor: NAMA Ice Cream, Test, Super Cold or Frozen Food.
- 14) PROGRAM VERSION: Displays version of firmware installed on VMC.
- 15) DISPLAY LANGUAGE: Allows the programmer to choose the language displayed on the screen. Choose from English, German or Spanish. One additional language may be added to memory if necessary.
- 16) LINE MODE: Shortens vend time by leaving the freezer lid open between vends. Lid opens when currency has been detected. Lid will close if there is no activity for 20 seconds.
- 17) MACHINE SERIAL NUMBER: Allows the programmer to enter up to a 10-digit serial number for machine identification during DEXing.
- 18) FILL / DISPENSE: Allows coins to be dispensed from tubes while displaying a coin count.
- 19) TOKENS & COUPONS: Allows coupons and tokens to be recognized as free or valued vends and records sales in appropriate DEX fields.
- 20) FIELD TEST: Allows the machine to run in a diagnostic mode to allow for quick troubleshooting.
- 21) U/PDOWN TRAVEL LIMITS: This feature allows the customer to adjust how deep the Picker Tip will descend into both tall and short bins. NOTE: Increasing the number will cause the vacuum pump to

travel further into the bin. Changing this value by 5 represents a change in travel of 1 inch.

22) **VERIFY ALL BINS:** Automatically moves robot over each bin position. Allows user to verify and edit bin programming.

23) **MDB SETTINGS:** Allows specific settings for currency system:

a. **Force Vend** - Customer cannot use vendor for the purpose of changing bills. If a bill is inserted and the coin return button is pressed, it is ignored. A selection must be chosen. Only exception is when the selection is sold out.

b. **No Cheat** - Money is not accepted if there is a possibility the customer will be short-changed. Bills are not accepted if there is not adequate change for a failed vend.

c. **Change Bill** - Similar to forced vend but focuses only on bills that have been accepted, whereas force vend is also concerned with coins.

d. **Hold Lost Credit** - Funds that could not be returned to a customer during a vend are available for another transaction.

e. **Multi Vend** - Change is not automatically returned after a transaction, but held for another transaction. Press the coin return button to receive your change.

f. **Lev 2 Coin Mech** - When set to "N" (default), the coin mechanism will determine optimum change. If set to "Y", the VMC will determine what coins to give back as change, regardless of the capabilities of the coin mechanism. Power to the VMC must be cycled off and back on after changing this setting.

g. **Instant Reval** - When set to "Y" (default), a stored value cashless device can receive revaluation credit as soon as coin or cash is inserted into the vendor. When option is set to "N", revaluation occurs when a major action is taken such as pressing the coin return. This option is only necessary for older cashless systems where the number of revaluations per credit device is limited.

24) **SOFT DROP:** Allows enabling and setting the "Soft-Drop" feature that lowers the product before it releases it into the product chute.

GETTING STARTED

CALIBRATING THE ROBOT ARM

If the message on the Display reads, "MACHINE NOT SET UP", you will need to calibrate the robot arm. This typically only appears when the VMC or Robot Arm is first calibrated to the cabinet.

- 1) Scroll to menu # 4) Create Selection.
- 2) Press the "#" key to create a selection. You will be prompted to "SET ARM AT LEFT WALL". Position the arm shown in figure 9A. Press the "#" key to accept. Display will show "SELECTION STORED"
- 3) Now you will be prompted to "SET ARM AT DELIVERY". Position the arm as shown in figure 9B. Press the "#" key to accept. Display will show "SELECTION STORED"
- 4) Display should return to "4) CREATE SELECTION"
- 5) You may now program your selections as described in the "PROGRAMMING YOUR MACHINE" section.

Figure 9A

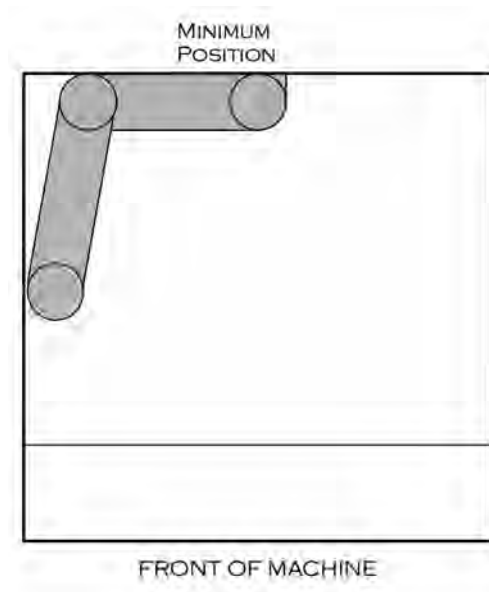
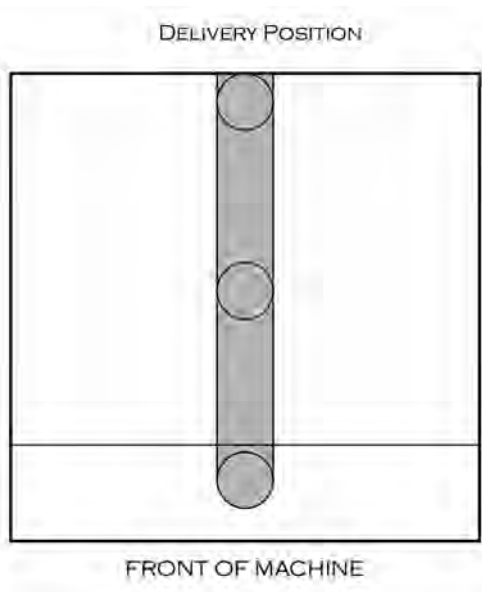


Figure 9B



Re-calibrating the Robot Arm

If the Robot Arm or VMC Board needs to be upgraded or changed, the Robot Arm calibration will need to be erased and recalibrated. The arm may be recalibrated without losing programmed information, but take care to follow the instructions, precisely.

Press the VAC button on the Service Keypad to release the security locking feature.

Go to the Service Menu and press the “*” key repeatedly until the display reads, “4) Create Selection”. **Press and hold the Reset button.** The VMC will beep as you hold the Reset button. The display will immediately read:

THIS FORCES RE-SETUP
*-Next D-Back #-Yes

Continue holding the Reset button. The VMC will continue to beep. The display will change to:

Arm Uncalibrated
*-Next D-Back **#-Yes**

Release the reset button and press the #-Yes button. You will be prompted to “SET ARM AT LEFT WALL”. Position the arm shown in figure 9A in the previous section. Press the “#” key to accept. Display will show “SELECTION STORED”

3) Now you will be prompted to “SET ARM AT DELIVERY”. Position the arm as shown in figure 9B in the previous section. Press the “#” key to accept. Display will show “SELECTION STORED”

ERASE ALL PROGRAMMED INFORMATION:

On occasion it may become necessary to erase all programmed and sales data.

Press the VAC button on the Service Keypad to release the security locking feature.

Go to the Service Menu and press the “*” key repeatedly until the display reads, “4) Create Selection”. **Press and hold the Reset button**. The VMC will beep as you hold the Reset button. The display will immediately read:

THIS FORCES RE-SETUP
*-Next D-Back #-Yes

Continue holding the Reset button. The VMC will continue to beep. The display will change to:

Arm Uncalibrated
*-Next D-Back #-Yes

Continue holding the Reset button. The VMC will continue to beep. The display will change to:

Products Cleared
*-Next D-Back **#-Yes**

Release the reset button and press the #-Yes button. You will be prompted to “SET ARM AT LEFT WALL”. Position the arm shown in figure 9A in the previous section. Press the “#” key to accept. Display will show “SELECTION STORED”

Now you will be prompted to “SET ARM AT DELIVERY”. Position the arm as shown in figure 9B in the previous section. Press the “#” key to accept. Display will show “SELECTION STORED”

You may now program your selections as described in the “PROGRAMMING YOUR MACHINE” section.

3) EDIT SELECTION – Allows you to change the price, edit bin location or add multiple chained bins to a single selection.

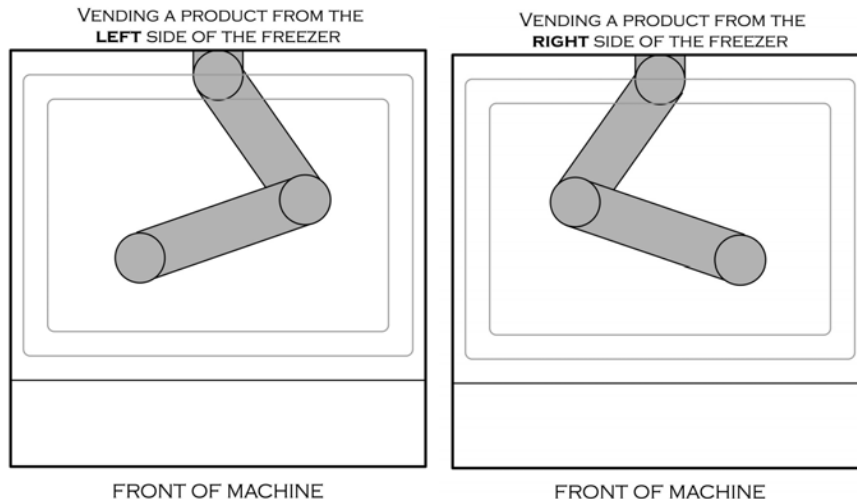
Display	Programming Instructions
3) EDIT SELECTION * = Next D = Back # = Yes	a) Press the #=Yes key. The robot will go to the delivery point and the freezer lid will open.
ENTER SELECT # # - Exit	b) Enter selection number to be edited.
A1 Price: 1.00 *=Exit #=Accept	c) Type over the price and press the “#” key.
A1 Move The Robot *=Cancel #=Accept	d) Adjust the position of the robot over the bin. Press “#” key to save the bin location.
Bin Height: Tall *=Change #=Accept	e) Select Tall or Short by pressing the *key. Press # to accept.
More Bins? *=No #=Yes	f) Press the #=Yes key to add additional (chained) bins or press * to exit menu.

4) CREATE SELECTION - Create new selections, with the ability to chain multiple bins to a single selection.

NOTE: WHEN POSITIONING THE ROBOT OVER A BIN, THE ELBOW SHOULD POINT TO THE OPPOSITE SIDE OF THE FREEZER FROM THE BIN. EXAMPLE- IF THE BIN IS LOCATED ON THE LEFT SIDE OF THE FREEZER THE ROBOT ELBOW SHOULD POINT TO THE RIGHT SIDE AND VICE VERSA.

*** BINS NEAR THE CENTER OF THE FREEZER SHOULD BE PROGRAMMED WITH THE ELBOW POINTING TO THE RIGHT SIDE***

Fig. 10 Robot Arm Positions - Programming



Display	Programming Instructions
9) SET SERVICE PHONE #	
Phone (555) 555 - 1234 * save ABCD=() _ - # ex	c) Press *save to save your service number and exit.

10) SALES PIN CODE - View or change the PIN code that will allow access to Sales Meters without opening the door. While in “Please Insert Money” mode, Press # * and the four numbers you selected.

Display	Programming Instructions
10) SALES PIN CODE *=Next D = Back #=Yes	a) Press the #=Yes key to view or change sales pin code.
Sales PIN: #*1234 *-EXIT #-SAVE	b) Sales Pin Code is factory set at #*1234. Use factory setting or type over four new digits and press the #-Save key. Type this code when you are in “Please Insert Money” mode to gain direct access to Sales Meters.
SAVED	c) Press # to save the new PIN.

11) VEND BLOCK - Block out vending up to four times per day, seven days per week. Time and date must be entered correctly in SET TIME and DATE programming. *NOTE: When Vend Block is ON, vending is OFF.

Display	Programming Instructions
11) VEND BLOCK *=Next D = Back #=Yes	a) Press the #=Yes key to enter Menu Option.
1 BEGIN 01:00 *- SAVE #-NEXT	b) Enter the start time for the first Vend Block. Press *=Save to store time.
1 BEGIN 01:00 1-AM 2-PM	c) Enter “1” for AM or “2” for PM. Display will advance.
BEGIN PERIOD 1 1:00am	d) Block 1 “on” time is displayed momentarily.
1 END 10:00 *- SAVE #-NEXT	e) Type the time you want vending to resume and press *- Save.
1 END 10:00 1-AM 2-PM	f) Enter “1” for AM or “2” for PM. Display will advance.
END PERIOD 1 10:00AM	g) Block 1 “off” time is displayed momentarily.
Sunday OFF *- CHANGE #-NEXT	h) Press # - Next to scroll through all days, press *-Change to select a day.
SAVED	i) After scrolling through all days to Saturday, display will show that your choices have been saved.

Display	Programming Instructions
2 BEGIN *-SAVE	12:00AM #-EXIT
	j) Enter the start time for the second Vend Block or press # to exit.

12) VB PIN CODE - Set or alter the VEND BLOCK option from the outside of the machine without opening the door by using a PIN code.

Display	Programming Instructions
12) VB PIN CODE *=Next D = Back #=Yes	a) Press the #=Yes key to enter Menu Option.
VB PIN : #*5678 *-EXIT #-SAVE	b) Vend block pin code is factory set at #*5678. Use factory setting or type over four new digits and press the #-Save key. Type this code when you are in "Please Insert Money" mode to gain direct access to VEND BLOCK.
SAVED	c) Press # to save the new PIN.

13) HEALTH TIMER - Allows the health sensor to be bypassed for a short time. Secondary options are display mode (°F or °C) and Health control mode. A test option is available for NAMA and for Health inspector's use.

*NOTE: Health Timer resets to 0 if power is cycled off and then on, again.

Display	Programming Instructions
13) HEALTH TIMER *=Next D = Back #=Yes	a) Press the #=Yes key to enter Menu Option.
HEALTH TIMER: 0Hrs *=Next D=Back #=Yes	b) Press *=Next to scroll from 0 to 4 hours.
HEALTH TIMER: 2hrs *=Next D=Back #=Yes	c) Press #=Yes to start timer.
DISPLAY FAHRENHEIT *=Next D=Back #=Yes	d) Press * to select Fahrenheit or Centigrade. Press # to accept.
NAMA Ice Cream *=Next D=Back #=Yes	e) Choose Health Control Mode. Press *=Next to scroll: <ul style="list-style-type: none"> • NAMA Ice Cream (Default) • NAMA Test mode. This does not change operation mode. • Frozen Food • Super-Cold Then press #=Yes

14) PROGRAM VERSION - Shows the date and software version installed.

Display	Programming Instructions
14) PROGRAM VERSION *=Next D = Back #= Yes	a) Press the #= Yes key to enter Menu Option.
FASTCORP GEN 4 UNIVERSAL vX.XXY	b) Program version (X.XX) and revision (Y) are displayed. Press any key to continue.

15) DISPLAY LANGUAGE - Allows the programmer to change the language of all external text and all programming. English, German and Spanish languages reside in the software. One additional language translation may be added to the existing software subject to availability.

Display	Programming Instructions
15) DISPLAY LANGUAGE *=Next D = Back #= Yes	a) Press the #= Yes key to enter Menu Option.
English	b) Press *=Next to scroll through language choices. Press #= Yes to accept.
*= Next D=Back #= Yes	

16) LINE MODE - Line mode shortens the time between vends by holding the freezer door open between vend cycles. If there is no activity for 20 seconds the Freezer Lid will close. (**Default setting is OFF**).

Display	Programming Instructions
16) LINE MODE *=Next D = Back #= Yes	a) Press the #= Yes key to enter Menu Option.
LINE MODE: ON	b) Press the *=Next key to scroll between options.
*= Next D=Back #= Yes	c) Press the #= Yes key to confirm the selection.

17) MACHINE SERIAL NUMBER - Program the serial number of the vendor into the VMC memory so that an external data retrieval unit (DEX) can include the serial number when uploading sales information. Up to 10 digits are allowed. Defaults to VMC Board serial number.

Display	Programming Instructions
17) Machine Serial # *=Next D=Back #= Yes	a) Press the #= Yes key to enter Menu Option.
SN 0000000000 *-Exit #= Save	b) Enter 10 digit ID number (asset #, machine serial #, etc.). Press #= Save .
MACHINE SN SAVED	c) Save serial number is confirmed.

Display	Programming Instructions
17) Machine Serial # *=Next D=Back #=Yes	a) Press the #=Yes key to enter Menu Option.
USE FOR CHANGER SN?	d) Select 1 to assign this number to coin changer. Select 2 if no.
1-YES 2-NO	d) Select option 1 or option2.

18) FILL / DISPENSE: Allows coin count to be viewed for up to 5 coin changer tubes. Coins may be dispensed from tubes 1 through 5.

Display	Programming Instructions
18) FILL / DISPENSE *=Next D=Back #=Yes	a) Press the #=Yes key to enter Menu Option.
Select Tube 1 to 5 # - EXIT	b) Enter any tube number: 1 to 5 to dispense a coin and view coin count.

19) TOKENS & COUPONS – This allows the machine to recognize coupons and tokens as free vends when the Promotional feature is on. Item and price will be recorded as a free vend in the DEX report.

Display	Programming Instructions
19) TOKENS & COUPONS *=Next D=Back #=Yes	a) Press the #=Yes key to enter menu option.
Tokens / Coupons off *= Change #=Accept	b) Press the "*" key to scroll between "On" and "Off". c) Press the "#" key to accept selection.

20) FIELD TEST – Enters a diagnostic mode to allow troubleshooting assistance.

Display	Programming Instructions
20) FIELD TEST *=Next D=Back #=Yes	a) Press the #=Yes key to enter Menu Option.
Press # to Exit Test	b) Second line displays changes to the position of switches and encoders. c) Move any motor by pressing the associated Service Keypad key. d) Press "VAC" key. The Vacuum Pump will turn on then slowly turn off.
Press # to Exit Test S XXX E YYY	e) Press * key to inspect position sensor values for Shoulder and Elbow Sensors.

21) U/D TRAVEL LIMITS -This feature allows the customer to adjust how deep the Picker Tip will descend into both Tall and Short bins.

- Adjustment scale is in Encoder Pulses. Five Pulses = One Inch.
- Increase the number of pulses to go deeper into the bin. Too deep will cause the robot to attempt vending a bin.
- Reduce the number of pulses to go less deep into the bin. Not deep enough will leave too much product in the bin.

21) U/D Travel Limit			a) Press the #=Yes key to enter Menu Option.
* = Next	D-Back	#=Yes	
Tall Bin		212	b) Press “Up” or “Down” to make adjustments to Tall Travel Limits.
* = Next	Up/Down	#=Acc	
Tall Bin		210	c) Press #=Acc to accept the new value.
* = Next	Up/Down	#=Acc	
Short Bin		164	d) Press “Up” or “Down” to make adjustments to Short Travel Limits.
* = Next	Up/Down	#=Acc	
Short Bin		160	e) Press #=Acc to accept the new value.
* = Next	Up/Down	#=Acc	

22) VERIFY BINS – Allows user to quickly step the Robot Arm through all programmed bin locations to verify accuracy. Reposition Robot Arm or accept programmed locations as they are and then move on to the next selection.

Display		Programming Instructions
22) Verify All Bins		a) Press the #=Yes key to enter Menu Option.
*-Next	D-Back #-Yes	
A1	Move the Robot	b) Position Robot Arm more accurately and / or press #=Accept to accept programmed location. Robot Arm will move to the next programmed location each time #=Accept key is pressed until all locations have been verified.
*=Cancel	#=Accept	

23) MDB SETTINGS – Allows user to specify settings for currency system.

- Force Vend - Customer cannot use the vendor for the purpose of changing bills. If a bill is inserted and the coin return button is pressed, it is ignored. A selection must be chosen. The only exception is when the selection is sold out.
- No Cheat - Bills are not accepted if there is not adequate change for a refund in the event of a failed vend.
- Change Bill - Similar to forced vend but focuses only on bills that have been accepted, whereas force vend is also concerned with coins.

- d. Hold Lost Credit - Funds that could not be returned to a customer during a vend are available for another transaction.
- e. Multi Vend - Change is not automatically returned after a transaction, but held for another transaction or until coin return is pressed.
- f. Lev 2 Coin Mech - When set to “N” (default), the coin mechanism will determine optimum change. If set to “Y”, the VMC will determine what coins to give back as change, regardless of the capabilities of the coin mechanism. Power to the VMC must be cycled off and back on after changing this setting.
- g. Instant Reval - When set to “Y” (default), a stored value cashless device can receive revaluation credit as soon as coin or cash is inserted into the vendor. When option is set to “N”, revaluation occurs when a major action is taken such as pressing the coin return. This option is only necessary for older cashless systems where the number of revaluations per credit device is limited.

Display	Programming Instructions
23) MDB Settings *=Next D = Back #= Yes	a) Press the #=Yes key to enter Menu Option.
Force Vend *=Change N #= Accept	b) Press *=Change to change setting and # to accept choice.
No Cheat *=Change Y #= Accept	c) Press *=Change to change setting and # to accept choice.
Change Bill *=Change N #= Accept	d) Press *=Change to change setting and # to accept choice.
Hld Lost Crdt *=Change Y #= Accept	e) Press *=Change to change setting and # to accept choice.
Multi-Vend *=Change N #= Accept	f) Press *=Change to change setting and # to accept choice.
Lev2 Coin Mech *=Change N #= Accept	g) Press *=Change to change setting and # to accept choice.
Instant Reval *=Change Y #= Accept	h) Press *=Change to change setting and # to accept choice.

24) Soft Drop – Allows the Vacuum Pump to lower the product before it is released into the Delivery Bin. The release height may be adjusted and Soft Drop may be turned “ON” or turned “OFF”.

24) Soft Drop *=Next D=Back #= Yes	a) Press the #=Yes key to enter Menu Option.
Use Up / Down Keys *=Turn Off #= Accept	b) Use Service Keypad up/down keys to adjust soft drop level and press #=Accept. c) Press * to turn function “OFF”.
Saved	New Soft Drop release height is saved.

*=Turn Off	#=Accept
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Instructions to Flash Update Evolution Firmware PRIOR to V119K

INSTRUCTIONS:

Necessary tools and components: Micro SD Card - 4GB or smaller.

Note: Evolution program updates can be sent via e-mail and saved to a Micro SD Card. This may require the use of an SD adaptor and possibly a USB adaptor.

1. Open the Evolution machine door and turn the VMC power "OFF". The power switch is located on the left side of the Power Supply under the delivery bin.
2. Open the inner door located to the left of the window opening.
3. The VMC Board is located at the top of the opening and the Digital Display Board is located directly below the VMC. Unlatch the right side of the Display Board and flip it around so that the display may be viewed from the back of the door.
4. The Microprocessor (daughter) Board is located on the upper right corner of the VMC Board. Remove the Micro SD card from its SD Adapter and carefully insert it into the metallic slot located on the upper right corner of the daughter board.
 - The Micro SD card should be inserted straight down into the slot.
 - The contacts on the Micro SD card must face away from you.
 - The lettering on the card will be facing you.
 - There should be an audible "click" when the card is seated.
 - If the card does not drop smoothly into the slot, remove and retry.

*****DO NOT FORCE THE MICRO SD CARD INTO THE SLOT****

BOOT LOADER UPGRADE: To be installed prior to major program revisions. (From Program Revision Prior to 119K)

5. Turn the Power Supply power switch "ON". The Display will scroll through the programs installed onto the Micro SD Card.
6. Use the asterisk "*" key to scroll through the contents of the Micro SD card. There may be more than one program version contained on the card. Typically

there will also be a boot loader program. Use the "*" key to scroll to the latest or highest number version of the boot loader.

- The boot loader version will be displayed in the "BOOTVxxx.bi2" format, where "xxx" is the numeric revision number. For example, BOOTV232.bi2.

7. Press the pound "#" key. The Display will read:
PROGRAMMING
BootVxxx.bi2

An LED status light on the right side of the board will start flashing rapidly. When the process is complete, the display will read:

Update success.
Remove card.....

8. Do not remove the Micro SD card. Press down gently on the top and let go. The card will slide up slightly in the sleeve. Leave the Micro SD card in the slot. The Display will read:

BOOT UPDATE xxx
Done!

The Display will change to read:

BOOT LOAD xxx
Out of Service

PROGRAM REVISION UPGRADE: (From Program Revision Prior to 119K)

9. The MICRO SD Card should still be in the Daughter Board slot. Gently, press down, again, on the Micro SD card so that it locks into the slot. The Display will scroll between the options on the Micro SD Card menu:

- 1- Load Config.
- 2- Save Config.
- 3- Load Firmware
- 4- Save DEX Sales

Use the "*" key to scroll through the menu and enter "3" to load new firmware.

10. Use the asterisk "*" key to scroll through the contents of the Micro SD card. There may be more than one program version contained on the card. Use the "*" key to scroll to the latest or highest number version.

- The program version will be displayed in the "FC0xxxy.bi2" format, where "xxx" is the numeric revision number and "y" is the alphabetic revision suffix. For example, FC0120F.bi2.

11. Press the pound (#) key to enter the selection. The Display will read, "Programming". An LED status light on the right side of the VMC Board will start flashing rapidly. When the process is complete, the display will read, "UPDATE SUCCESS. Remove card..."

12. To remove the Micro SD card, press down gently on the top. It should slide up slightly allowing you to grasp it between your fingers. Lift the SD card straight up and out.

Notes -

- Power does NOT have to be turned "OFF" to remove the SD card.
- The vacuum may produce a clicking sound during this procedure. This is normal and is not a concern.
- A major firmware upgrade may require the Robot Arm to be re-calibrated. Please refer to the section, "Calibrating the Robot Arm" in your manual. Scroll to Service Menu Option "4) Create Selection", Press "#" and follow the prompts to calibrate the Robot Arm.
- Your programming data will need to be re-entered after this upgrade. Go to Service Menu Option 4) Create Selection, Press "#" and follow the prompts to program your machine. Going forward, the data will be saved and automatically re-installed as part of the upgrade process.

13. If you have multiple machines with the same bin configuration, insert your Micro SD card into the Daughter Board Slot after programming your first machine. The power should remain on during this entire process.

- Use the "*" key to scroll to menu option "2 - Save Config". Enter "2" to save the new configuration onto your Micro SD card.
- Choose a name for your bin configuration and save the file onto your Micro SD card (see Fig. 12 in the next section). Carefully, remove the card from the daughter board.
- After installing the Boot Loader and Program Upgrades onto your machines, install the Micro SD card to load your bin configuration onto your remaining machines. Enter "1", "1 - Load Config", and then choose the name that you used to save your bin configuration.
- Follow the steps to load the bin config onto the remaining machines.
- Test-vend selections to confirm accuracy. Go to Service Menu 3) Edit Selection to make adjustments if necessary.

Please contact Tech Support at 888-441-3278 if you have any questions.

Instructions to Flash Update EVOLUTION Firmware After Revision V119K2

The Evolution firmware after revision V119K2 provides many upgrades that have enhanced the functionality and versatility of the Evolution Vendor. More notable additions include the ability to:

- Load a machine configuration from a Micro SD card
- Save a machine configuration to a Micro SD card
- Load new Firmware from a Micro SD card
- Save DEX sales data to a Micro SD card

If the user selects “Load New Firmware”, the firmware will automatically save a copy of the existing programming configuration before starting the firmware upgrade. Once the firmware upgrade is complete, the new firmware will automatically look to see if a programming configuration had been saved and will restore that configuration into its operational memory.

If it is necessary to save a bin configuration or DEX data to a Micro SD card, the naming convention used is similar to that popularly used in cell phone technology for texting and saving phone numbers:

Fig. 12 Phone Dial Pad

	1	2	3	4	5	6	7	8	9	0
International Standard		ABC	DEF	GHI	JKL	MNO	PQRS	TUV	WXYZ	

To name a configuration, “BINS”:

Press the number 2 twice = B

Press the number 4 three times = I

Press the number 6 twice = N

Press the number 7 four times = S

If you make a mistake, use the * key to scroll backwards and clear an entry.

Although DEX sales data remains untouched throughout the program upgrade process, the user should manually save a copy of DEX sales data to the Micro SD card before upgrading the firmware.

Instructions to Update Firmware after Revision V119K:

Necessary tools and components: Micro SD Card - 4GB or smaller.

1. Open the Evolution machine door. The power should remain on during this entire process.
2. Open the inner door located to the left of the window opening on the inside of the door.
3. The VMC Board is located at the top of the opening and the Digital Display Board is located directly below the VMC. Unlatch the right side of the Display Board and flip it around so that the display may be viewed from the back of the door.
4. The Microprocessor (daughter) Board is located on the upper right corner of the VMC Board. Remove the Micro SD card from its SD adapter and carefully insert it into the metallic slot located on the upper right corner of the daughter board.

Notes -

- The Micro SD card should be inserted straight down into the slot.
- The contacts on the Micro SD card should face away from you.
- The lettering on the card will be facing you.
- There should be an audible “click” when the card is seated.
- If the card does not drop smoothly into the slot, remove and retry.

*****DO NOT FORCE THE MICRO SD CARD INTO THE SLOT****

SAVE BIN CONFIGURATION AND DEX FILES: (Firmware after Revision V119K)

5. The Display will scroll between the options on the Micro SD Card menu:
 - 1- Load Config.
 - 2- Save Config.
 - 3- Load Firmware
 - 4- Save DEX Sales

Enter “2” to save your current bin configuration. Name your bin configuration appropriately using the naming convention described in the previous section (see Fig. 12). . Press “#” to save your bin configuration to your Micro SD card. Push down slightly on your Micro SD card and then let it go. It will pop up slightly in the socket.

6. We recommend that you also save your DEX data. Push down on the Micro SD card again while it is still in the slot and when the scrolling display again appears, enter “4” to save and name your DEX file(see Fig. 12).
7. Major Program Upgrades may require a Boot Loader Upgrade in addition to the Program Upgrade. Check with Fastcorp Service to determine if the boot loader upgrade is necessary. If it is not necessary, skip to instruction number 12.

Note: Reinstalling the Boot Loader will not have any affect on the Boot Loader or Program Upgrade.

BOOT LOADER UPGRADE: (Firmware after Revision V119K)

8. The MICRO SD Card should still be in the Daughter Board slot. Press down on the card as before. The Display will scroll between the options on the Micro SD Card menu:

- 1- Load Config.
- 2- Save Config.
- 3- Load Firmware
- 4- Save DEX Sales

Use the “*” key to scroll through the menu and enter “3” to load new firmware.

9. Use the asterisk “*” key to scroll through the contents of the Micro SD card. There may be more than one program version contained on the card. Typically there will also be a boot loader program. Use the “*” key to scroll to the latest or highest number version of the boot loader.

- The boot loader version will be displayed in the “BOOTVxxx.bi2” format, where “xxx” is the numeric revision number. For example, BOOTV232.bi2.

10. Press the pound “#” key. The Display will read:

PROGRAMMING
BootVxxx.bi2

An LED status light on the right side of the board will start flashing rapidly. When the process is complete, the display will read:

Update success.
Remove card.....

11. Do not remove the Micro SD card. Press down gently on the top and let go. The card will slide up slightly in the sleeve. Leave the Micro SD card in the slot. The Display will read:

BOOT UPDATE xxx
Done!

The Display will change to read:

BOOT LOAD xxx
Out of Service

PROGRAM REVISION UPGRADE: (Firmware after Revision V119K)

12. The MICRO SD Card should still be in the Daughter Board slot. Gently, press down, again, on the Micro SD card so that it locks into the slot. The Display will scroll between the options on the Micro SD Card menu:

- 1- Load Config.
- 2- Save Config.
- 3- Load Firmware
- 4- Save DEX Sales

Use the "*" key to scroll through the menu and enter "3" to load new firmware.

13. Use the asterisk "*" key to scroll through the contents of the Micro SD card. There may be more than one program version contained on the card. Use the "*" key to scroll to the latest or highest number version.

- The program version will be displayed in the "FC0xxxy.bi2" format, where "xxx" is the numeric revision number and "y" is the alphabetic revision suffix. For example, FC0120F.bi2.

14. Press the pound (#) key to enter the selection. The Display will read, "Programming". An LED status light on the right side of the VMC Board will start flashing rapidly. When the process is complete, the display will read, "UPDATE SUCCESS. Remove card..."

15. To remove the Micro SD card, press down gently on the top. It should slide up slightly allowing you to grasp it between your fingers. Lift the SD card straight up and out.

Notes -

- Power does NOT have to be turned "OFF" to remove the SD card.
- The vacuum may produce a clicking sound during this procedure. This is normal and is not a concern.
- A major firmware upgrade may require the Robot Arm to be re-calibrated. Please refer to the section, "Calibrating the Robot Arm" in your manual. Scroll to Service Menu Option "4) Create Selection", Press "#" and follow the prompts to calibrate the Robot Arm.
- Your programming data should have been saved to your Micro SD card and automatically reinstalled with the program upgrade. Test-vend selections to confirm accuracy. Go to Service Menu 3) Edit Selection to make adjustments if necessary.

16. If your bin configuration had not been saved, reinsert your Micro SD card into the Daughter Board slot.

- Use the "*" key to scroll to menu option 1- Load Config. Enter "1".
- Choose the name that you used to save your bin configuration.
- Test-vend selections to confirm accuracy. Go to Service Menu 3) Edit Selection and make adjustments if necessary.

Please contact Tech Support at 888-441-3278 if you have any questions.

Robot Control Sequence / Order of Operations

Control of the Robot Arm and the Freezer proceed through a sequence of states during the course of the vend cycle and until the product is delivered. These states are detailed below:

1. Idle State:

The Robot Arm is at the delivery position with the freezer closed.

2. Vend Cycle Begins:

Money is inserted into the machine and a selection is made. A credit is established and Control issues a request to convert a selection number into a product location.

The Freezer Open Switch and Freezer Closed Switch circuits are inspected. If both circuits are active, an error is declared. Otherwise, Control issues a request to open the Freezer. A seven second timer is set and Control proceeds to the "Freezer Open" state.

3. Freezer Open:

Control waits for one of the following conditions to occur:

- The Freezer Open Switch is detected.
- The seven second timer expires and the Freezer Lid is still not open.
- A period of time has elapsed without "seeing" Freezer Encoders.
- A Freezer Lid Lift Motor over-current is detected.

When the Freezer Open Switch has been detected, a sequence of destinations is generated for the Robot Arm. In order to avoid hitting a gusset or wall, the Robot Arm will need to move to an intermediate position inside the cabinet, and then proceed to a position directly over the requested bin. Control starts a timer, sets the Robot Arm in motion and advances to the "Retrieve Inside Cabinet" state.

4. Retrieve Inside Cabinet:

Control guides the Robot Arm to an intermediate position. The Z axis (Up/Down) Home Switch is monitored while the Robot Arm is moving. The Z (Up) Motor is engaged, as necessary, to pull the Vacuum Pump up and to maintain the Z Home Switch in an active state. Control waits for one of the following conditions to occur:

- The intermediate cabinet position is reached.

- The timer monitoring the Robot Arm expires.
- A Robot Arm over-current condition occurs.
- The Robot Arm Angular Sensors report inaccurate data.

When the intermediate cabinet position has been reached, Control advances to the “Retrieve Product” state.

5. Retrieve Product:

“Retrieve Product” is similar to the “Retrieve Inside Cabinet” state. Control directs the Robot Arm to reach a destination directly above the requested bin. When the destination has been reached, Control will set a 5 second timer while the Robot Arm pauses. The “pause state” will allow the Robot Arm to stabilize before the Vacuum Pump descends into a bin.

6. Pause

After the Robot Arm stabilizes, power to the Vacuum Pump is slowly ramped up until it is at the ideal level for product detection. A timer is set and the Z Motor is engaged to descend into the bin. Control proceeds to the Z (Down) state.

7. Z Down

We wait for one of the following to occur:

- An increase in current through the Vacuum Pump circuit indicates that product has been detected.
- Z Down timer expires.
- Z Encoder Pulses are not detected or the signal is lost.
- The Z Home Switch never goes inactive (open circuit).
- The number of encoder pulses exceeds the bin depth.

If product contact is made, the Z Down Motor is halted and (following another pause state to confirm product contact) a timer is set, a “slowdown point” is calculated for the upward travel, a current value is calculated which represents a dropped product and control proceeds to the Z Up state after engaging the Z motor in the UP direction.

8. Z Up

The Vacuum Pump remains ON as it ascends with the product out of the bin. Control waits for one of the following:

- The Z Home Switch is detected (active).
- Z Up timer expires.
- Z Encoder Pulses are not detected or the signal is lost.
- Current flow indicates a dropped product.

When the Z Home Switch is detected, another sequence of destinations is generated for the Robot Arm. To avoid hitting a gusset or a wall, the Robot Arm will move to an intermediate position inside the cabinet and then proceed to the delivery position. Control starts a timer, sets the Robot Arm in motion and advances to the cabinet intermediate position. Control advances to “Deliver Inside Cabinet” state.

9. Deliver Inside Cabinet

The Vacuum Pump remains ON as long as a problem is not detected. The Z axis (Up/Down) Home Switch is monitored while Control guides the Robot Arm to the cabinet intermediate position. The Z- (Up) Motor is engaged, as necessary, to pull the Vacuum Pump up and to maintain the Z Home Switch in an active state. Control waits for one of the following conditions to occur:

- The intermediate cabinet position has been reached.
- The timer monitoring the Robot Arm expires.
- A Robot Arm over-current condition occurs.
- The Robot Arm Angular Sensors report inaccurate data.
- Current monitoring indicates that the product dropped.

When the intermediate cabinet position has been reached, Control advances to the “Deliver to Home” state.

10. Deliver to Home

Deliver to Home is similar to the “Deliver Inside Cabinet” state. If the Robot Arm reaches the delivery position without issue, the vend cycle will be considered successful.

- If the Soft Drop feature had been enabled, Control will direct the Z Motor to descend the appropriate number of encoder pulses before turning OFF the Vacuum Pump to release product into the Delivery Bin. After product has been released, the Z Motor will reel up the Vacuum Pump until the Z Home Switch is active.
- If the Line Mode feature had been enabled, Control will turn OFF the Vacuum Pump to release product into the Delivery Bin and set a 20 second timer. If a new vend request arrives, the vend cycle will begin anew. If no new vend request arrives, then Line Mode will time out after 20 seconds.

Control will direct the freezer to close, set a timer and then Control will proceed to the “Freezer Close” state.

11. Freezer Close

We wait for one of the following to occur:

- The Freezer Closed Switch has been detected.
- The Freezer Open Switch is detected.
- The timer expires and the freezer is still not closed.
- A period of time has elapsed without “seeing” freezer encoders.
- A Freezer Lid Lift Motor over-current is detected.

When the Freezer Closed Switch has been detected, Control will advance to a “Clean-up” state before returning to the “Idle” state to await another vend request.

12. Cleanup

The “Clean-Up” state issues the “Vend Success” or “Vend Failure” signal to the Executive portion of the Evolution firmware. Control resets all parameters to prepare for the next vend request. Motors and switches are inspected. If the Vacuum Pump has returned to the garage, if the Z Home Switch is active, if the Robot Arm is at the delivery point and if no errors have been reported then Control will return to the “Idle” state.

APPENDIX

Evolution Lid Lift Mechanism Installation Instructions

Necessary Tools and Accessory Items:

**1/4 - inch wrench; 3/8 – inch wrench; 5/16 - inch wrench; cutting pliers;
(8) Cable Ties – 7-1/2 inch**

The Fastcorp Evolution Lid Lift Mechanism can be removed and replaced in approximately 30 to 45 minutes.

1. Locate the power switch on the left side of the Power Supply under the delivery bin and turn it “OFF” to remove power to the VMC Board and the Freezer Lid Lift Mechanism.
2. Reach down behind the freezer to unplug the 2 pin connector for the circulation fan. If you cannot reach the 2 pin connector, you must move the machine away from the wall and access the fan panel on the right rear of the cabinet. Remove the (4) screws and unplug the fan harness.
3. Reach behind the freezer (right rear corner) to unplug the 2 pin Thermister connector. Follow the orange wires that exit the rear opening of the right side cabinet reinforcement bracket. The harness will be labeled, “freezer”. Be careful of sharp edges inside the cabinet.
4. Remove the cover from the Freezer Closed Switch Assembly (right front corner of Freezer). Make note of how the harness is plugged into the switch (common and normally open) and then unplug the switch.
5. Note how the Freezer Lid Lift Harness is routed and where the cable ties are positioned. Mark each location on the cabinet and the harness. Follow the harness to the VMC Board and disconnect the connector at J3.
6. Carefully cut and remove the cable ties that hold the harness in place.
7. Manually open the Freezer Lid to access and remove the four (4) Freezer Lid Lift Mechanism retaining screws using a 5/16-inch wrench. These screws will be used over again to install the new mechanism.
8. Remove the Lid Lift Mechanism and carefully pull the harness through the cabinet reinforcement bracket.

9. Reverse the above instructions to install the new Freezer Lid Lift Mechanism. Take care not to damage the wiring harness when threading it through the cabinet reinforcement bracket.
10. Adjust the lift arm so that the Lift Pin on the right side of the Freezer Lid will drop into the fork on the top of the Lift Arm. You may have to raise the lift arm slightly. The Lid Lift Mechanism is adjustable front and back.
11. There is an adjustment at the bottom of the Lift Arm which determines how far the Freezer Lid will open before the Freezer Lid “Open” Switch is activated. Manually open the Freezer Lid. Tilt the top of the lift arm towards the back of the machine. The bottom of the arm will pivot outwards. You will need a ¼-inch wrench or nut driver to loosen the (2) screws. Raise the actuator plate to allow the “Open” Switch to activate sooner.

Evolution Robot Arm Installation Instructions

Necessary Tools and Accessory Items:

**Phillips screwdriver, #2; 5/16 - inch wrench; cutting pliers;
(5) Cable Ties – 7-½ inch**

1. Locate the power switch on the Power Supply under the delivery bin and turn it OFF to remove power from the VMC Board and Robot Arm.
2. Support the end of the Robot Arm with one hand while pulling the Vacuum Pump down to expose the Vacuum Pump Cable with the other hand. Locate the threaded ring at the top of the Vacuum Pump and unscrew it so that the Vacuum Pump can be removed. Gently place the Vacuum Pump in a safe location such as the delivery bin.
3. Follow the Robot Arm to the back wall. Locate the gray plastic cover. Remove the 2 cover retainer screws with a Phillips screwdriver. Remove the cover.
4. The VMC Board is located in the upper left hand corner of the door if you are facing the inside of the door. Lift the clear plastic rain guard and disconnect the (4) connectors leading from the robot arm. There are (2) ribbon cable harnesses located at J6 and J7. The remaining (2) harnesses are located at J4 and J5.
5. Cable ties are used to hold the harness in place. Mark the position of each cable tie so that the harness may be re-installed properly. You will need to cut several cable ties to separate the robot cable from the lid lift harness (Orange Wires connected to J3). There is no need to unplug any other connectors unless if you are also changing the VMC Board.

6. The Robot Arm Harnesses are routed through (2) black plastic wire channels located on the top of the right and rear cabinet walls. To open the wire channels, begin at the channel end closest to the Robot Arm and use your thumb to push up on the bottom of the channel while also pulling out on the top of the channel. The channels should unlatch on top while hinging on the bottom. Remove the harnessing from the wire channels.
7. The mounting shaft of the Robot Arm is clamped into a mount located on the back cabinet wall. The mounting shaft is held in place by (4) screws. Use either a #2 Phillips screwdriver or a 5/16-inch (8mm) socket wrench to loosen the (4) screws. **Do not remove the (4) screws.** Use one hand to support the Robot Arm while pulling out on the top of the hinged Robot Arm Clamp. When the clamp has been pulled out, the Robot Arm Shaft will drop down and out the bottom of the mount. The Robot Arm may now be removed from the machine.
8. Remove the replacement Robot Arm from the packaging and carefully unspool the harness. The Robot Arm Mounting Shaft is pointed on one side and has a horizontal “notch” on the other. The pointed side of the mounting shaft should face the rear cabinet wall as the shaft is installed back into the mount. As you slide the shaft up into the mount, you should hear an audible “click” as the “notch” slides past the clamp on the bracket. Support the Robot Arm until the (4) retaining screws are tight.
9. Carefully lay the harness in the channel as flat as possible. The spiral wire wrap should slightly extend into the channel. Begin at the Robot Mount and push up on the wire channel as you push it in. As you slide your hand to the right, the clamp will close and lock. Repeat the procedure with the right wall wire channel. Take care so that the wires are completely inside the channels and are not pinched.
10. Plug the (4) connectors back into the VMC Board. Take care not to bend any pins as you seat the connectors. Replace the cable ties so that the Robot Arm Harness is positioned along side the Lid Lift Harness as it was before. The Robot Arm Harness must be positioned clear of the inner door and outer door as the doors are opened and closed. **Take care that the harnesses are not pinched by either door.**
11. Replace the grey Robot Arm Mount cover using the 2 Phillips screws. Support the end of the robot arm and pull the cable down until you have access to the threaded ring. Reinstall the Vacuum Pump aligning the spline in the pump with the spline in the thumb ring. Hand-tighten the ring only. Do NOT use tools of any kind to tighten the ring.

12. Review your work. Make sure that the Robot Arm fasteners are tight. Check all connections. Confirm that the Robot Arm moves freely without binding. Confirm that all wires and harnesses are positioned correctly and no wires are being pinched.

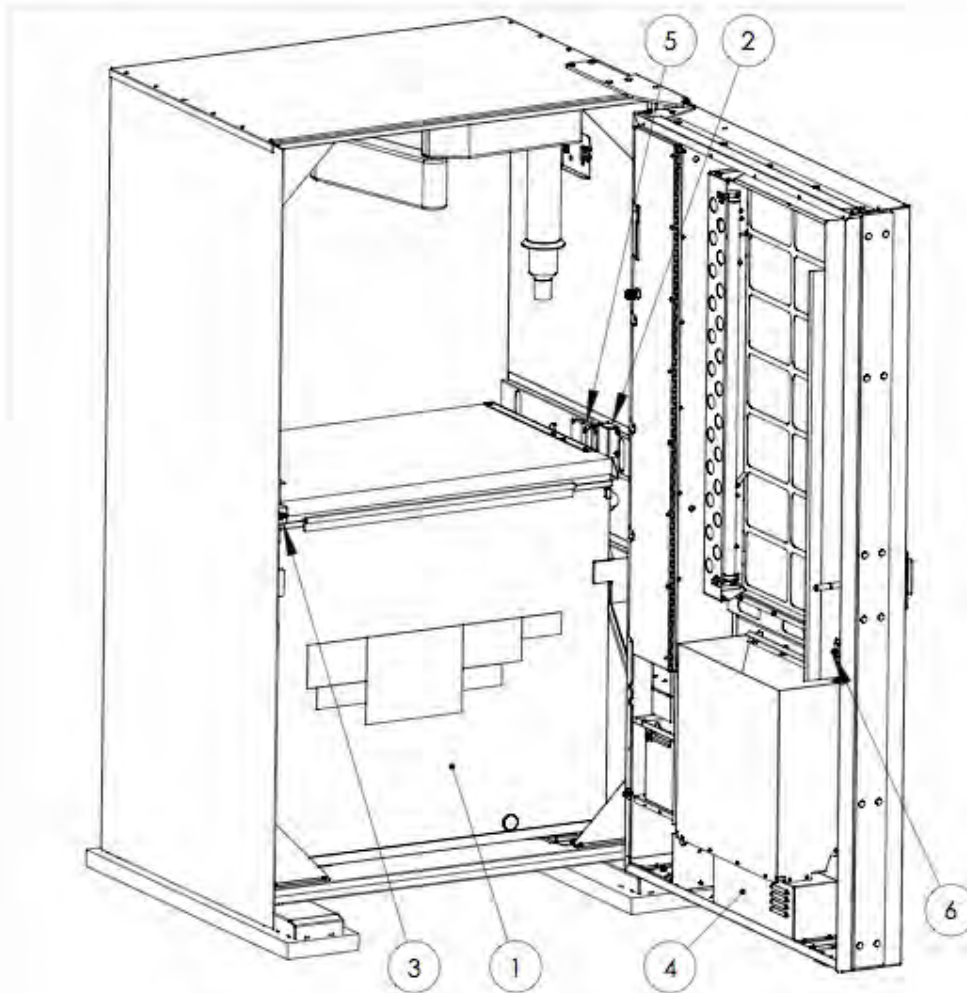
13. Turn on the machine using the Power Switch on the left side of the Power Supply below the Delivery Bin. Position the Display Board so that it may be viewed from the back of the door. Press the "VAC" button to unlock the keypad.

14. The new Robot Arm must be calibrated to the machine, but it is important to erase the existing calibration data. Refer to the section on Calibrating the Robot Arm. Go to Service Menu Option 4) Create Selection. Press and hold the Reset button. The Display will first read, "THIS FORCES RE-SETUP" and then, "Arm Uncalibrated". **Release the Reset button. If you continue to hold the Reset button you will erase all product selections and their freezer locations.**

15. Press the pound (#) key to continue. (See Fig. 9A and 9B) The Display will instruct you to "Put Arm at Left Wall". Fold the Robot Arm so that the upper arm is against the back cabinet wall and the front of the Robot Arm is against the left side cabinet wall. Press the pound (#) key to accept. The Display will instruct you to "Set Arm at Delivery". Move the arm so it is straight out from the back wall with the Vacuum Pump housing in the front center position. Press the pound (#) key to accept.

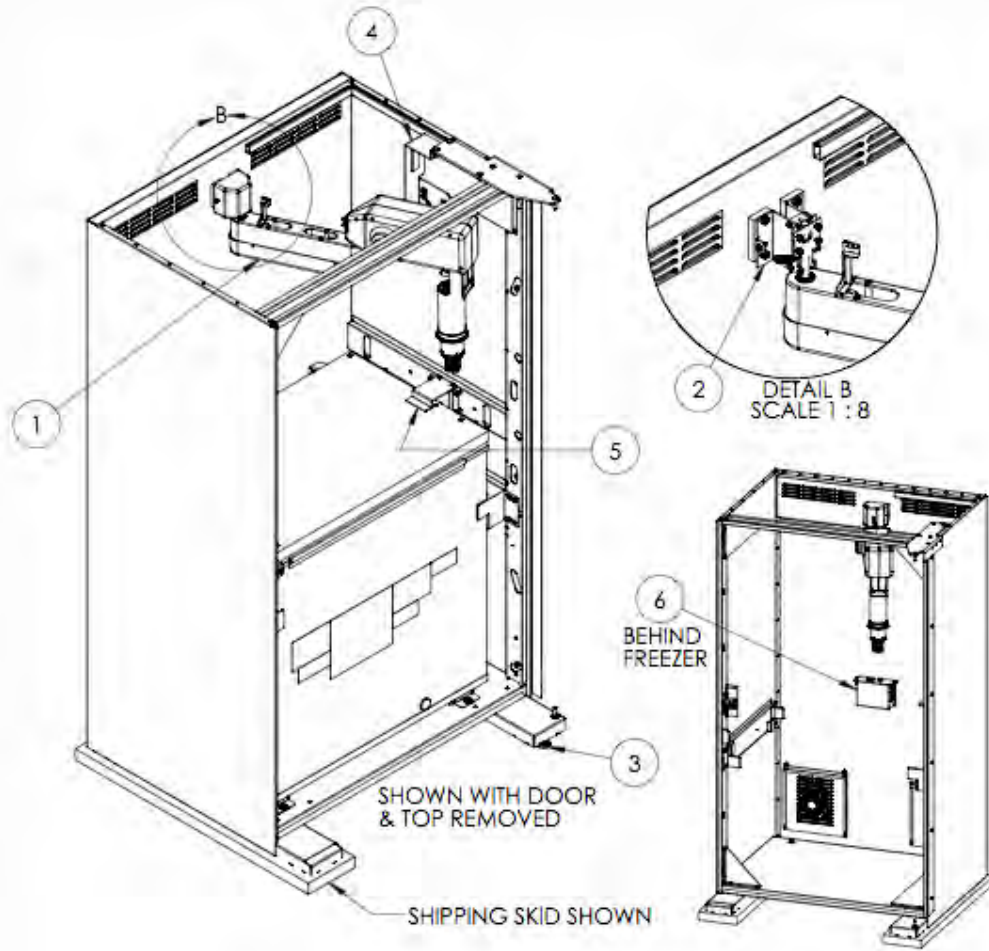
At this point the calibration and installation process is complete. Your selections should still be programmed correctly. We recommend that you try a few test vends to verify the operation and price settings.

Illustration A.1 Evolution Vending Machine



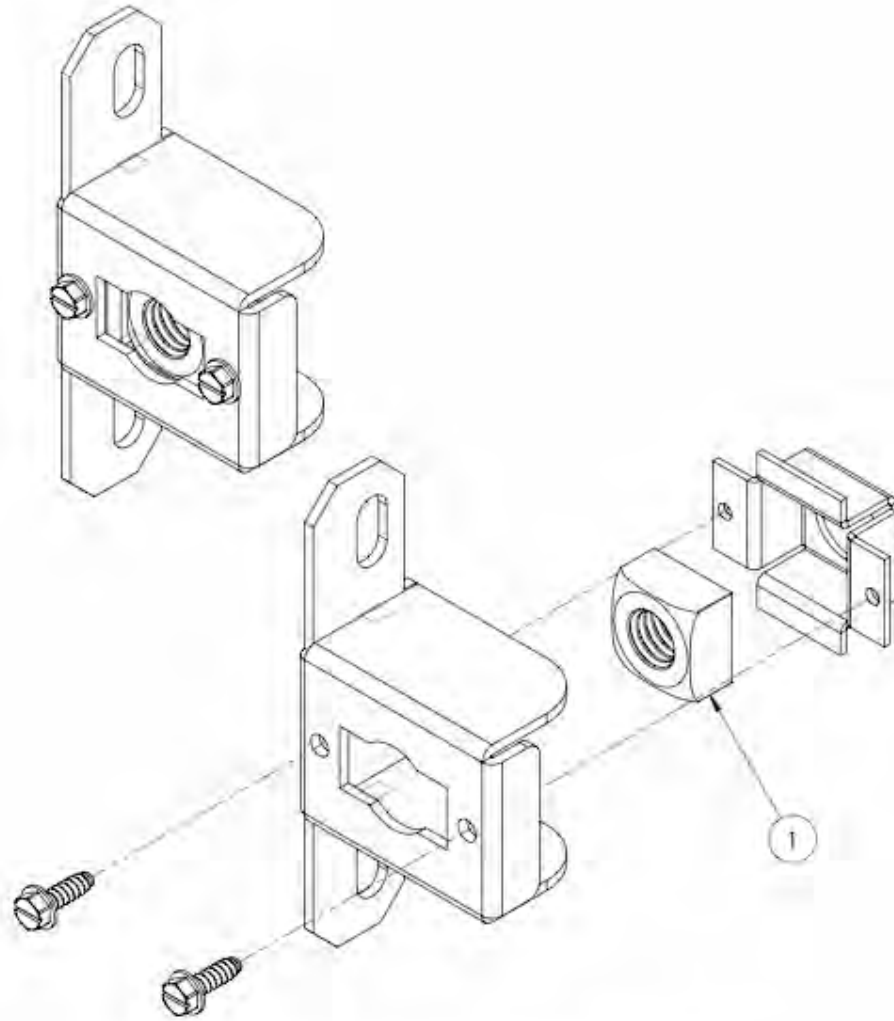
Evolution Vending Machine	
1.	1100014 - Freezer Assembly
2.	1200023 - Freezer Lid Lift Switch & Bracket Ass'y
3.	1100017 - Nut Bracket Assembly
4.	1200014 - Power Supply, Door Assembly
5.	1100003 - Freezer Lid Lift Assembly
6.	3000010 - Switch, Interlock

Illustration A.2 Evolution Vending Machine Cabinet



Evolution Vending Machine	
1.	1100047 - Robot Arm Assembly
2.	1100072 - Robot Mount Assembly
3.	7000007 - Leveler
4.	1100037 - Shipping Bracket, Robot Arm
5.	1100036 - Shipping Bracket, Freezer Lid
6.	1200013 - Power Box, Cabinet Assembly

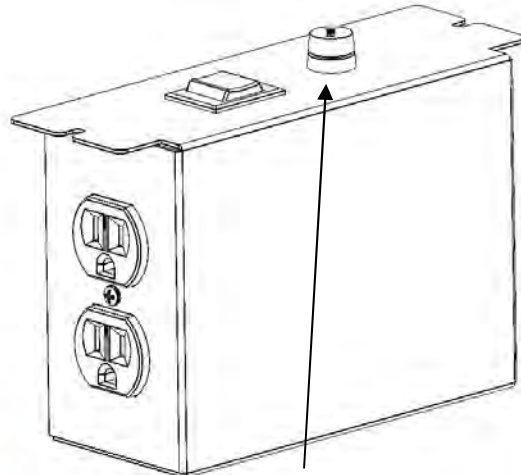
Illustration A.3 Nut Bracket Assembly, T-Handle Lock



1100017 - Nut Bracket Assembly
1. 6100007 - Nut, Square, 1/2-13

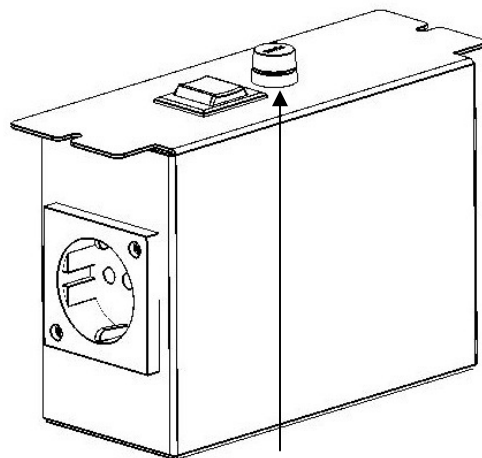
Illustration A.4 Power Box - Cabinet

Model FS-01 - 120 Vac
1200013 – Power Box, Cabinet



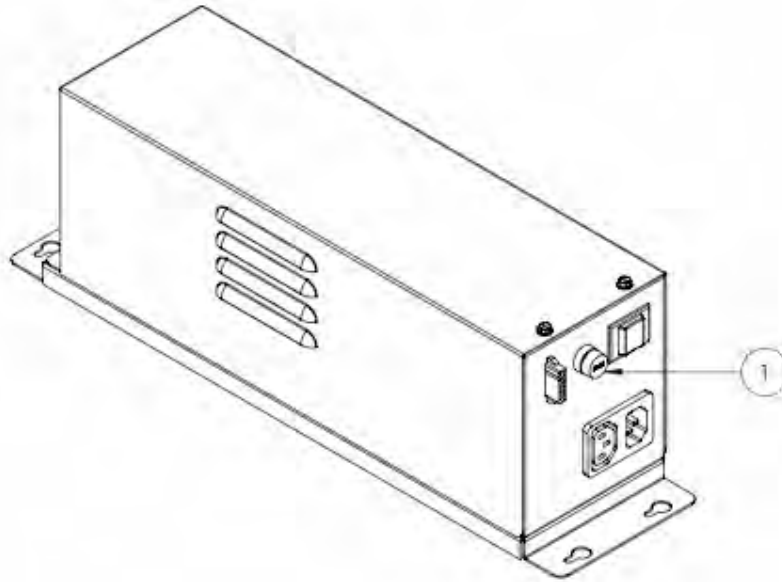
PN 3000087 – Fuse, 5A, 250 Vac,
Littlefuse Type 215

Model FS-02 - 230 Vac
1200063 – Power Box, Cabinet



PN 3000099 – Fuse, 5A, 250 Vac,
Littlefuse Type 215

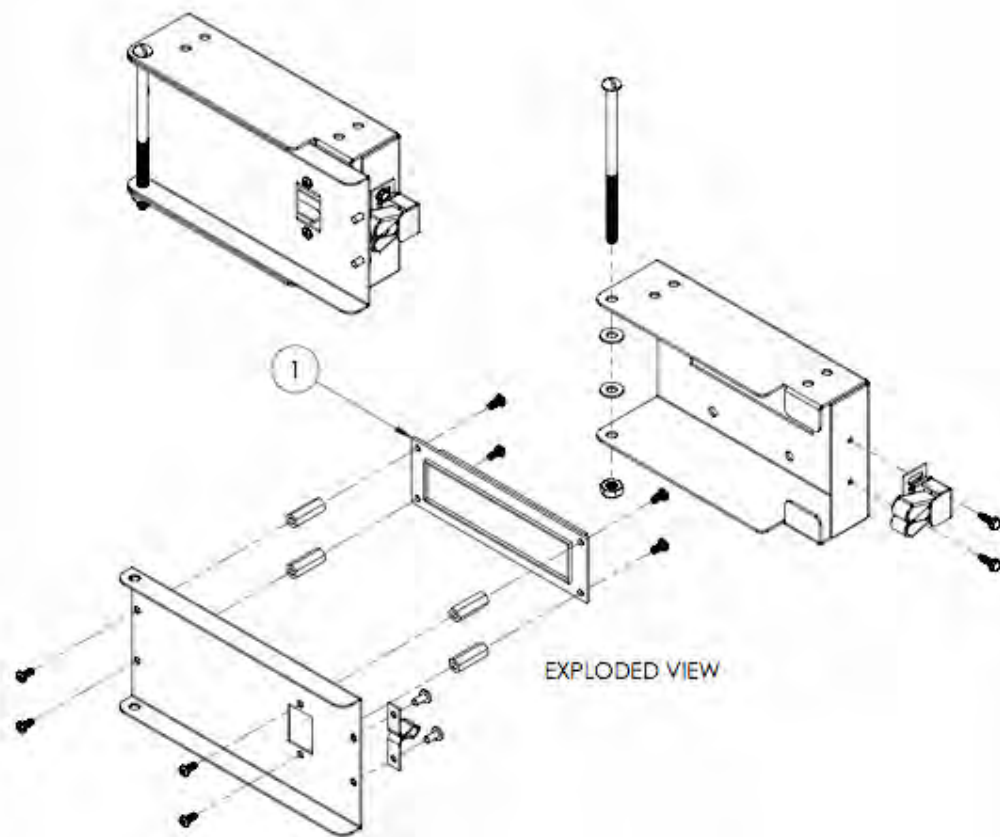
Illustration A.5 Power Supply Assembly, Door



1200014 - Power Supply, Door Assembly

1: 3000086 - FUSE, 10 AMP, 250 VAC, BUSSMAN TYPE S505

Illustration A.6 Display Assembly



1200016 - Display Assembly
1. 3000016 - Display, Graphic

Illustration A.7 Freezer Lid Closed Switch

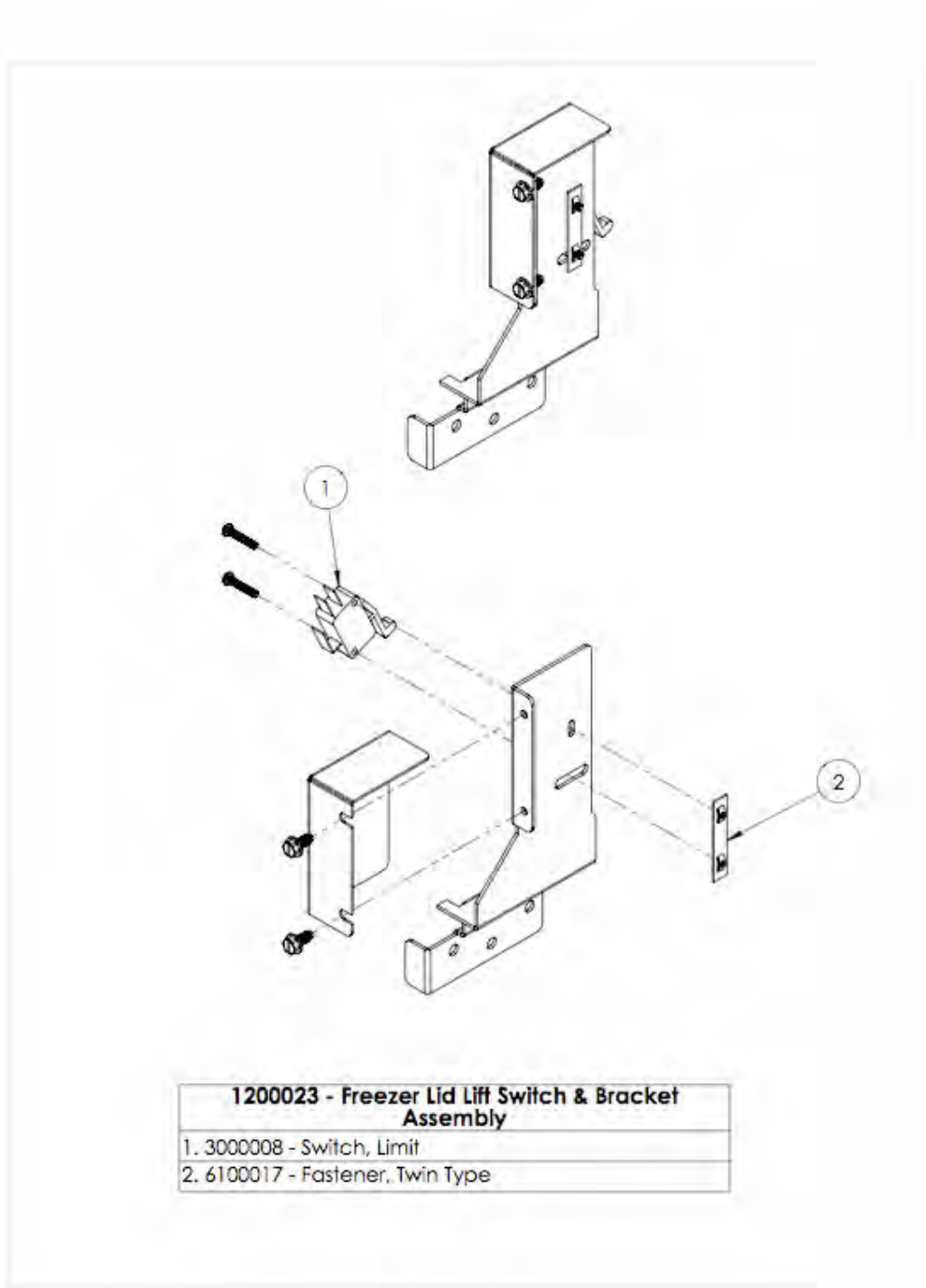


Illustration A.8 Exhaust Fan Assembly

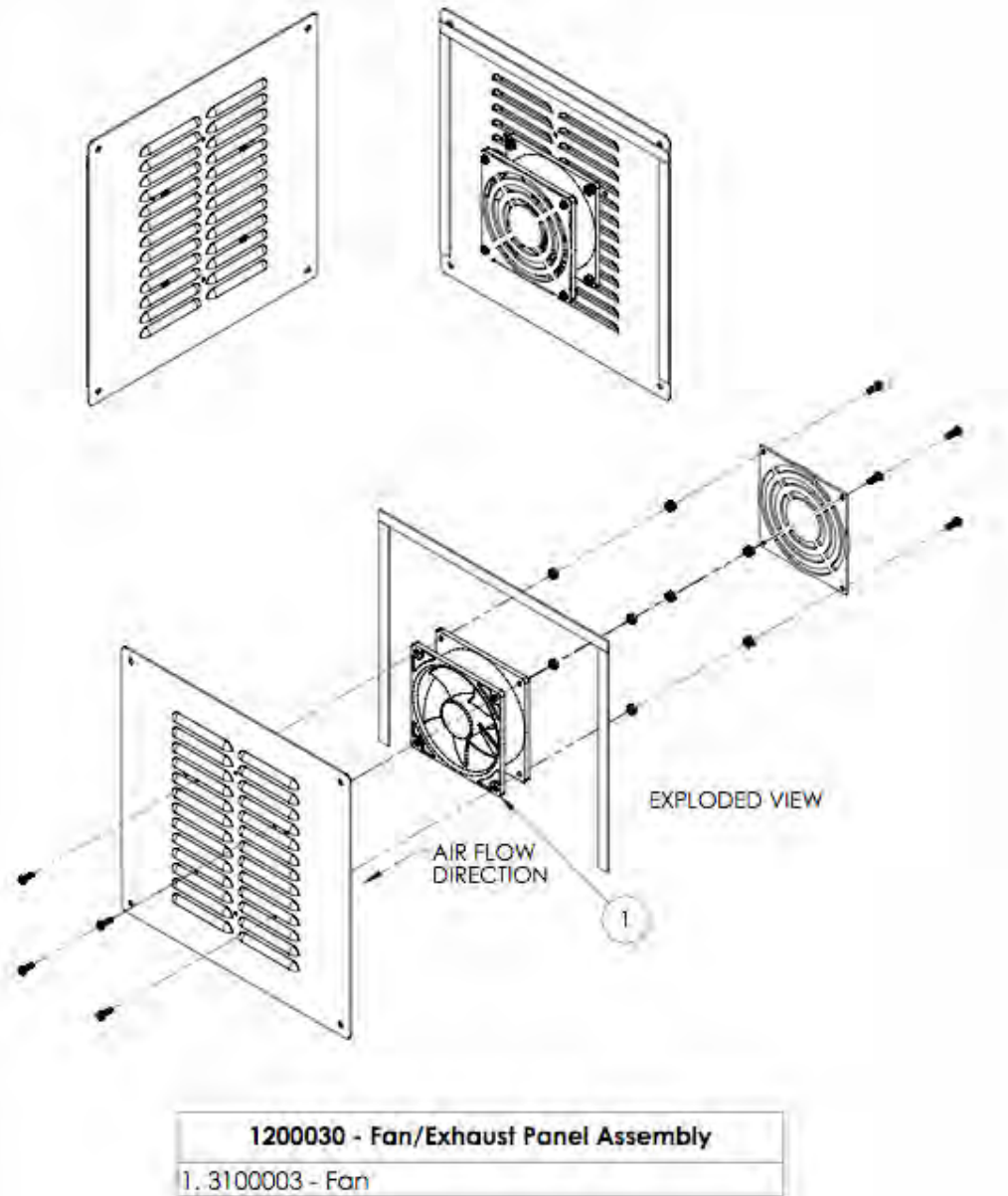
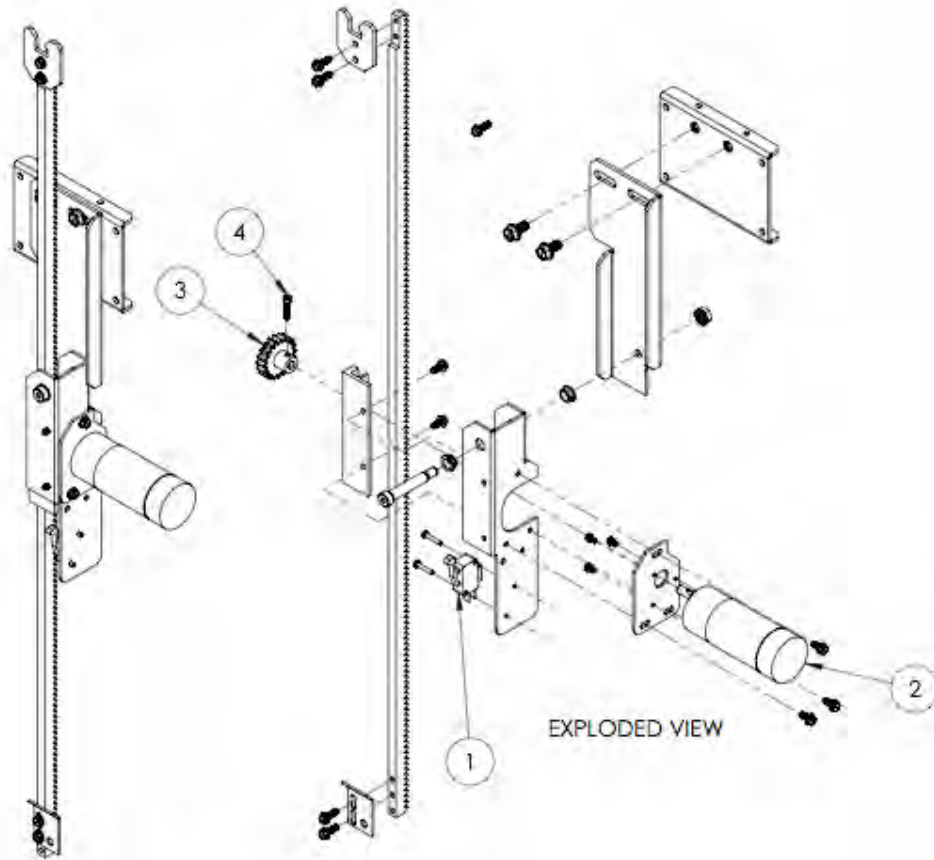
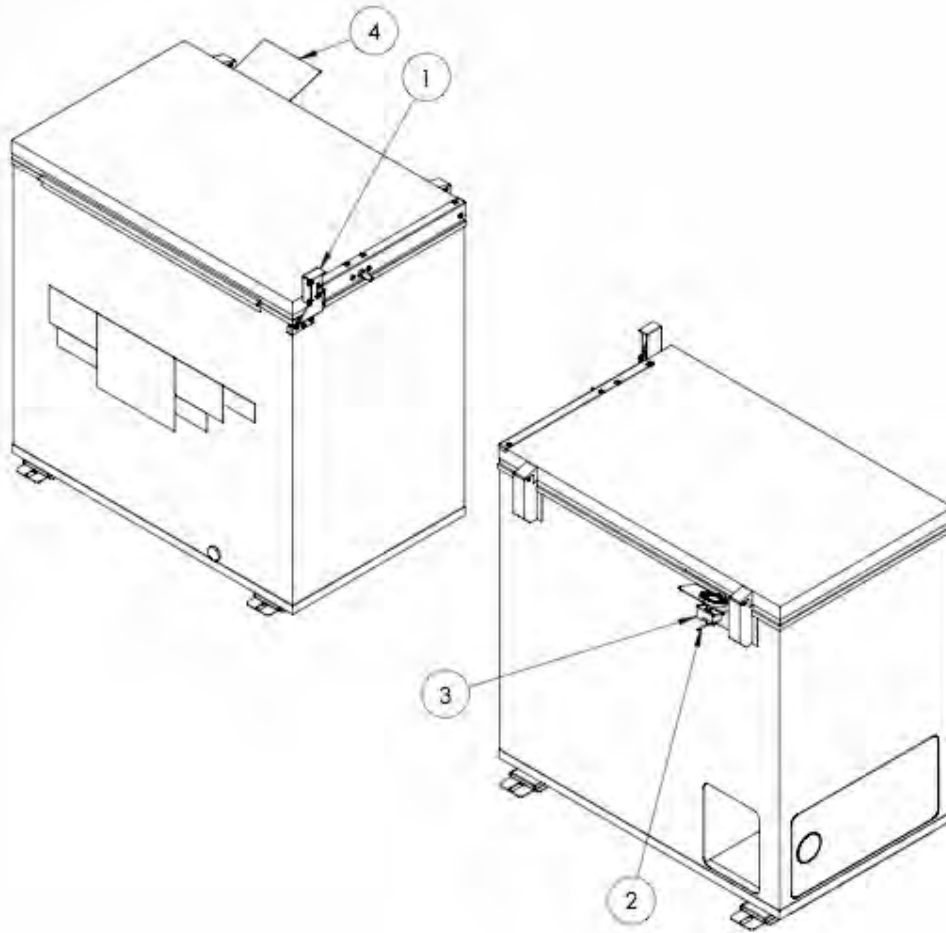


Illustration A.9 Freezer Lid Lift Assembly



1100003 - Freezer Lid Lift Assembly	
1.	3000008 - Switch, Limit
2.	3200001 - Gearmotor
3.	8100001 - Gear
4.	6000018 - #6-32 x 5/8" lg., Soc. Hd. Cap Screw

Illustration A.10 Freezer Assembly



1100014 - Freezer Assembly	
1.	1200023 - Freezer Lid Lift Switch & Bracket Assembly
2.	3000081 - Thermistor
3.	Freezer Thermostat
4.	1100089 - Rain Guard

Illustration A.11 VMC Connector layout

