

# **FRI-Z400 ICE CREAM MACHINE**

## **INSTALLATION & SET-UP GUIDE**

**VERSION 20060508**



**FASTCORP®**

FOOD AUTOMATION SYSTEMS AND TECHNOLOGIES

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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 nondelivery 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 Z-400 Frozen Merchandiser manufactured by Seller is warranted for two (2) years from the date of purchase against defective parts and workmanship and the Z-400 Frozen Merchandiser's 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 Z-400 Frozen Merchandiser and are null and void if the Z-400 Frozen Merchandiser 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 Z-400 Frozen Merchandiser at other than 115 volts, 60 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 Z-400 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 Z-400 Frozen Merchandiser, 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 New Jersey in force as of the date hereof. Buyer consents to the jurisdiction of the state and federal courts within the State of New Jersey. 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 except in the case of a claim for Seller's breach of Warranty relating to the Z-400 Frozen Merchandiser's freezer system as provided for herein which must be commenced within five (5) 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.

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# SPECIFICATIONS

## GENERAL SAFETY SPECIFICATIONS

- Please read this manual in its entirety. This service information is intended for use by a qualified service technician, familiar with the proper safety and service procedures. Before repairing, replacing, or adjusting any FASTCORP machine components, the qualified service technician should be equipped with the proper tools and/or replacement components, using genuine FASTCORP factory parts.



**!!WARNING!! ALL ADJUSTMENTS, ASSEMBLY, AND REPAIRS MUST BE PERFORMED IN ACCORDANCE WITH FASTCORP INSTRUCTIONS AND SAFETY PROCEDURES. PERSONS ATTEMPTING TO SERVICE THE MACHINE WITHOUT PROPER TRAINING MAY SUBJECT THEMSELVES TO HAZARDS SUCH AS ELECTRICAL SHOCK, CAUSING SERIOUS INJURY OR DEATH.**



**ALWAYS POWER DOWN AND UNPLUG THE MACHINE WHEN SERVICING ANY AND ALL ELECTRICAL AND MOVING COMPONENTS.**

- Only use a **dedicated 115V 15 Amp electrical power supply with ground** to power the machine. Lower voltage may result in vacuum related problems and/or improper coin acceptance.



**!!WARNING!! TO ENSURE SAFETY AND PROPER OPERATION, THE MACHINE MUST BE PROPERLY GROUNDED. IF THE GROUND STATUS OF AN OUTLET CANNOT BE READILY DETERMINED OR VERIFIED BY THE FACILITY, HAVE IT CHECKED BY A LICENSED ELECTRICIAN. DO NOT REMOVE THE GROUND PIN OR IN ANY WAY BYPASS, MODIFY, DEFEAT, OR DESTROY THE GROUNDING SYSTEM OF THE MACHINE.**

**EXTENSION CORDS OR POWER STRIPS MUST NOT BE USED TO SUPPLY POWER TO THE MACHINE.**

- Stay clear of the cabinet interior when power is on and the door is open. Moving robotic components may cause head or body trauma if a person comes within the path of the robot. Refrain from standing inside or near the front of an open cabinet while the robot attempts to dispense product. When vending product, the robot accelerates towards the front center section of the cabinet known as the “Drop Point”.

## MEASUREMENT SPECIFICATIONS

**General listing of Tools, Equipment and/or Supplies that May be Required When Installing or Servicing Machine  
(Refer to manual for details under each specific heading)**

### **Installation or Transport:**

Pallet Jack/Dolly or Forklift, Cutting Pliers, Phillips Screwdriver, Flathead Screwdriver, 11/32” Deep Socket, 3/8” Socket, 7/16” Socket, 1 1/2” socket, Bin Plan-O-Gram, Product with Product Listing and Pricing, Product Cards and Price Tags, Peripheral devices (Coin Mech.), Coins, Level, Original Transport Brackets, Cable Ties, Protective Packaging Materials, Tape (low residual adhesive to secure freezer lid), Appropriate Power Supply

### **Maintenance & Troubleshooting:**

Cutting Pliers, Phillips Screwdriver, Flathead Screwdriver, Needle Nose Pliers, 11/32” Deep Socket, 3/8” Socket, 7/16” Socket, 1/4” Socket, 7/64” Allen Wrench w/ 8” T-handle, Bin Plan-O-Gram, Product Listing and Pricing, Volt Meter, Replacement Parts and Corresponding Tools, 15 Amp Fuses

GENERAL		ELECTRICAL	
<b>HEIGHT:</b>	<b>72.0 in./182.9 cm.</b>	<b>VOLTAGE:</b>	<b>110-115 A/C</b>
<b>WIDTH:</b>	<b>37.0 in./93.98 cm.</b>	<b>FREQUENCY:</b>	<b>60 Hz</b>
<b>DEPTH:</b>	<b>36.0 in./91.44 cm.</b>	<b>AMPERAGE:</b>	<b>8.9 Amps.</b>
<b>WEIGHT:</b>	<b>604-lbs./273.97 kg.</b>	<b>AMP DRAW:</b>	<b>2.5 Amps resting /9 Amps operating</b>

## TRANSPORT CONSIDERATIONS

- Always try to keep the FRI-Z400 in the upright position. If the machine must be laid down for delivery purposes, be sure the machine is upright for at least 24 hours before it is plugged into an outlet and powered. This will give the compressor fluid time to re-settle in the freezer compressor. Failure to do so can damage the compressor and void the warranty.
- Whenever the FRI-Z400 is moved or transported, always use the shipping brackets provided when the machine was first delivered and new tie wraps. Refer to the uncrating instructions for tie wrap and shipping bracket installation.

## **PRODUCT IDENTIFICATION**

### **SERIAL NUMBER**

The production date of this *FASTCORP* product is determined by the date code incorporated in the serial number. The vender serial number takes the form XXXXYYYYZZ. The first 4 digits (XXXX) identify the manufacturing run that the vender was built in. The next 4 digits (YYYY) identify the specific machine. The last 2 digits (ZZ) indicate when the machine was produced. The first digit indicates the quarter and the second indicates the year.

<b>First Digit (quarter)</b>	<b>Second Digit (Year)</b>
A = 1 <sup>st</sup> Quarter	C = 2004
B = 2 <sup>nd</sup> Quarter	D = 2005
C = 3 <sup>rd</sup> Quarter	E = 2006
D = 4 <sup>th</sup> Quarter	F = 2007

Example:

69640043 AC

In this example, this was machine number 43 in production run 6964 and was built in the first quarter (A) of 2004

### **MODEL NUMBER**

The model number, FRI-Z400-AAB, is broken down as follows:

1 <sup>st</sup> digit F = <i>FASTCORP</i>	
2 <sup>nd</sup> digit R = Robotic	
3 <sup>rd</sup> Digit S = Snack or I = Ice Cream	
4 <sup>th</sup> thru 7 <sup>th</sup> digits = Model number	
8 <sup>th</sup> digit = Series	A = 1 <sup>st</sup> series B = 2 <sup>nd</sup> series C = 3 <sup>rd</sup> series
9 <sup>th</sup> digit = Electrical	A = 110 volt B = 220 volt
10 <sup>th</sup> Digit = Color	B= Black

## UNPACKING & INSTALLATION

*(A copy of these instructions are attached to the front of the machine)*

This machine has been packed in order to protect its internal components during transportation and distribution. FASTCORP has also made unpacking and installation a quick and easy process. FASTCORP recommends the following steps be taken when unpacking the machine.

**⚠ !!WARNING!! DO NOT PLUG IN THE MACHINE UNTIL ALL STEPS ARE COMPLETED IN THIS SECTION. THE RETAINING BRACKETS AND THE TWO CABLE TIES MUST BE REMOVED BEFORE POWERING UP THE MACHINE TO AVOID DAMAGE TO SENSITIVE MECHANISMS.**

### RECEIVING INSPECTION

Upon receipt, remove packing materials from the exterior of the machine, shrink wrap, fiberboard edge protectors and corrugated front protector from the outside of the vender. Store the fiberboard edge protectors and corrugated front protectors for future transport use. Inspect the vender for any external or internal shipping damage. If there is any damage, have the driver note the damage on the bill of lading and notify FASTCORP. Although the terms of sale are FOB shipping point, which requires the consignee to originate shipping damage claims, FASTCORP will gladly help if you must file a claim. Close the door and tighten the lock.

**⚠ REMOVE SHRINK WRAP FROM CABINET PRIOR TO STORING VENDER OUTSIDE.**

### UNPACKING THE VENDER

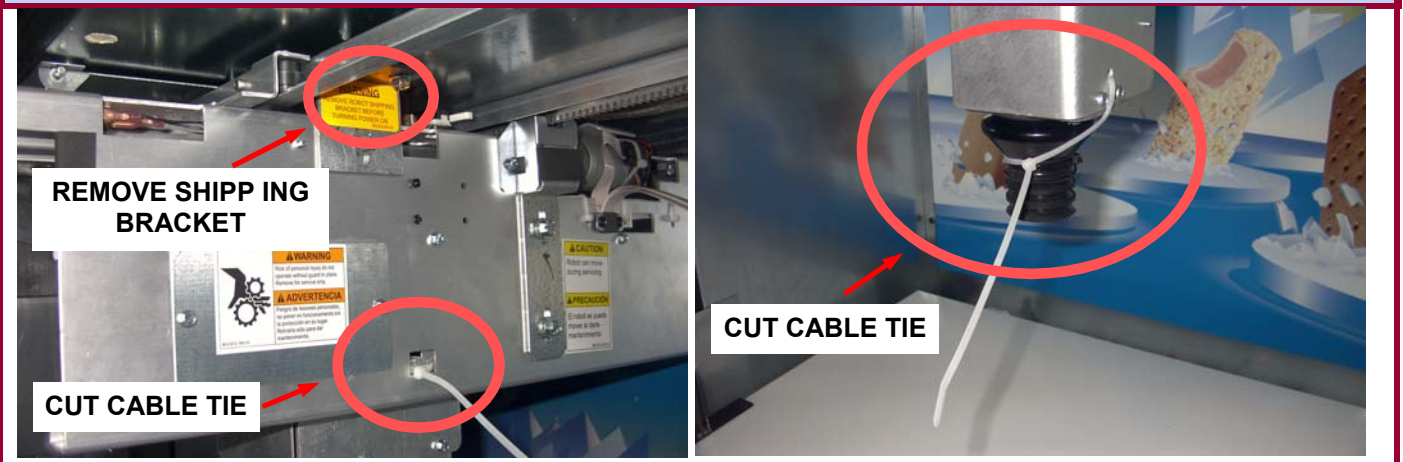
Remove the shipping boards from the bottom of the vender. The shipping boards are attached to the leveling legs. To avoid unnecessary damage to the leveling legs or base, remove shipping boards using a 1½ inch socket type wrench and unscrew the leveling legs. Be sure to replace the legs after removing the shipping boards. Store the shipping boards so that they can be reused anytime the machine is moved. Once the vender is unpacked, check the service area for any additional parts, price/product labels, service/operation manual, or other information concerning factory equipped accessories such as coin and bill acceptors.

### REMOVING THE CABLE TIES & SHIPPING BRACKET:

Remove the shipping bracket from the Robot by unscrewing the (3) 1/4 X 20" bolt with a wrench and the cable ties from the picker and robot assemblies. Refer to the following pictures for the locations of the cable ties. Store the bracket and screws at the base of the door for future use. Finally, remove tape on freezer lid and chest.

**⚠ MACHINE MUST BE UNPLUGGED!**

**Fig. 1**  
(Robot Carriage-Rack Assembly & Hose System)



**⚠ REINSTALL ROBOT RETAINING BRACKET AND CABLE TIES WHENEVER TRANSPORTING MACHINE.**



## **TRANSPORT INSTRUCTIONS** (CHANGING VENDER LOCATIONS)

1. Before re-securing internal components for transporting, turn the machine off. This will disable passive braking and allow the robot to be moved manually.
2. Unplug the main power cord from the wall and attach the cord to the plastic hook or tape to the back of the cabinet. This prevents the power cord from being damaged when the unit is moved.
3. Empty all money from the coin mechanism and bill acceptor. Remove the coin mechanism and bill acceptor (if necessary). *(Steps 3 - 8 can be performed at the warehouse. Steps 6 – 8 must be performed less than 12 hours after the machine is turned off.)*
4. Remove the lock cylinder from the T-handle assembly (if necessary).
5. Make sure that the customer (product) delivery bin is empty and clean.
6. Remove all bins and bin matrix pieces from the inside of the freezer. Remove all product from the bins and return all frozen product to the frozen truck/warehouse. Wipe down the inside and outside of each bin and all matrix pieces.
7. Defrost the freezer. Remove the inside and outside drain plugs and let any water run into a bucket in front of the freezer. Wipe the inside of the freezer down and clean any melted ice cream or debris from the inside of the freezer. Additional water or soapy water solution may be required to completely clean the freezer. Use paper towels to dry the inside of the freezer.
8. When the freezer is clean and dry, reinstall the ice cream bins and matrix. Replace any damaged or dirty bins.
9. Center the robot in the cabinet so that the robot-retaining bracket can be screwed on using the three 1/4 –20 hex bolts set aside in the cabinet door (refer to **UNPACKING AND INSTALLATION**). The robot-retaining bracket secures the robot beam to the trolley plate preventing it from moving left to right. Two bolts are screwed into the top of the cabinet and one bolt is screwed into the side of the robot.
10. Match up the T-slots located on the right side of the robot carriage and robot cover (see **UNPACKING AND INSTALLATION**). Create a loop with the cable tie, insert through the T-slots, and tighten the cable tie. This cable tie secures the robot carriage to the robot beam preventing it from moving front to back.
11. A second cable tie is inserted into the slot on the robot located next to the picker head. Make sure that the picker head is fully retracted and insert the cable tie through the slot and around the base of the picker above the suction cup (see Unpacking and Installation Instructions). Tighten the cable tie once the picker is secure.
12. Secure the Freezer Lid to the Freezer chest with tape (with low residual adhesive such as masking tape) to prevent it from vibrating open.
1. Make sure that the Inner Door is fully closed and has latched. Close the main outer door and screw in the T-Handle until the door is completely closed and secure.
14. Re-install the shipping boards to the bottom of the machine. Make sure that the leveler legs are screwed into the boards to firmly hold the boards in place.
15. Use cardboard or appropriate packing materials to protect the corners of the machine. Cover the machine with shrink-wrap or other protective material to prevent surface scratches or damage.
16. Move the machine using a pallet jack or forklift, taking care to always pick up the machine from the back. If the machine must be turned on its side refer to **TRANSPORT CONSIDERATIONS**.

**NOTE: IF ANY OF THE RETAINING BRACKET(S), CABLE TIES, OR SHIPPING BOARDS ARE MISSING, PLEASE CONTACT THE FASTCORP PARTS DEPARTMENT TO PURCHASE REPLACEMENTS. IF THERE ARE ANY QUESTIONS REGARDING THESE INSTRUCTIONS, PLEASE CALL THE FASTCORP TECHNICAL SERVICE DEPARTMENT AT 1 (888) 441-3278.**

The vender must be located on a solid, flat, and level surface. Make sure the flooring can bear the weight load of a fully stocked vender. The vender must be positioned close enough to an electrical outlet so that an extension cord is not required. If the machine will be subject to user misuse or vandalism, it is recommended that the vender be secured to the floor or wall. Please contact FASTCORP Technical Service Department for more information. Due to the large size and weight of the vender, never attempt to move the vender with a hand truck or stair climber. The vender should be moved with a Pallet Jack or Vender/Cooler Dolly at all times. The vender should never be slid or pushed in place. Never side load the leveling legs, doing so will damage the legs.



## LEVELING THE MACHINE



**!!DANGER!! THE VENDER MUST BE PROPERLY LOCATED AND LEVELED. IF THE MACHINE WILL BE SUBJECT TO USER MISUSE OR VANDALISM, IT IS RECOMMENDED THAT THE VENDER 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 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 a wrench or socket 1-½ inches in size. Lowering the legs will raise the machine approximately 1/4" per 4 turns. If the machine is to be used next to another vender, check 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. If you cannot level the vender, select another location. Do not place any objects under the machine. Leveling is extremely important to ensure proper vender 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-bin alignment.

## POSITIONING THE MACHINE

Do not block the rear of the vender. Keep the vender 4 inches (10 cm) from the wall to ensure adequate ventilation airflow. At the front of the vender, make sure that nothing obstructs the air intake at the bottom of the service door and cabinet. At the rear of the vender, make sure nothing obstructs the air exhaust at the bottom of the cabinet.

## ELECTRIC POWER REQUIREMENTS

Refer to pg. 1, GENERAL SPECIFICATIONS for the proper voltage and frequency requirements (domestically this requirement is 115 Volts, 60 Hertz). The cabinet serial plate also indicates the Amperage of the vender. The vender must be plugged into its own properly rated single phase, 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 MACHINE.**

## GROUND THE VENDER

The vender is equipped with a three wire power supply cord and MUST be plugged into a properly grounded outlet. If the outlet will not accept the power cord plug, contact an electrician to install a proper AC outlet.

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

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

## GENERAL MAINTENANCE & CLEANING

### LUBRICATION

Do not use oil or other lubricants on any moving parts. Application of these substances will cause damage to components.

### GENERAL CLEANING CONSIDERATIONS

It is important to maintain the machine in accordance with this manual in order to facilitate proper air flow within the vender and to prevent the opportunity for insects and rodents to infiltrate the cabinet.

To allow for proper air flow, the fan located in the lower-right 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 and the amount of airborne contaminants, however, all machines should be cleaned at least once per month.



**DISCONNECT POWER PRIOR TO SERVICING ANY ELECTRICAL OR MOVING COMPONENTS (INCLUDING FAN). DO NOT PULL ON WIRES THAT SUPPLY POWER TO ANY COMPONENTS. FAILURE TO COMPLY MAY RESULT IN DAMAGE TO THE VENDER AND INCREASED RISK OF ELECTRIC SHOCK.**



**TO AVOID THE POSSIBILITY OF A FIRE HAZARD AND TO DECREASE THE POSSIBILITY OF RESTRICTED AIR-FLOW INTO THE VENDER, DO NOT STORE ANYTHING OR ALLOW DEBRIS OF ANY KIND TO ACCUMULATE AT THE BOTTOM OF THE DOOR, AT THE BOTTOM OF THE SERVICE AREA OR IN FRONT OF THE FANS.**

Do not use water, soap or any other liquid to clean *inside* the machine. The outside of the cabinet can be cleaned of fingerprints and debris by using a soft cloth with a mild detergent. Never use flammable materials to clean the cabinet interior or exterior as damage to the vender's finish may occur.

### FREEZER MAINTENANCE

**Viewing freezer temperature: while in Vend Mode (indicated by "Please Insert Money" on the digital display), press the "\*" key on the Customer Keypad. The current temperature will be displayed on the digital display.**

Two or three hours after powering up the machine, the freezer temperature should drop until it is between  $-15^{\circ}\text{F}/-26^{\circ}\text{C}$  and  $-20^{\circ}\text{F}/-28^{\circ}\text{C}$ . Any temperature adjustment can be made using the thermostat, located in the upper back right side of the freezer. The freezer is set for  $-20^{\circ}\text{F}/-28^{\circ}\text{C}$  and may be adjusted using a standard screwdriver. Turn the screwdriver clockwise for colder and counter-clockwise for warmer. The range of operation temperature is  $-25^{\circ}\text{F}/-31^{\circ}\text{C}$  to  $15^{\circ}\text{F}/-9^{\circ}\text{C}$  (at  $70^{\circ}\text{F}/21^{\circ}\text{C}$  ambient).



**4 HOURS AFTER INSTALLATION, CHECK AND ADJUST THE THERMOSTAT SO THAT THE FREEZER MAINTAINS A RECOMMENDED TEMPERATURE RANGE OF  $-15^{\circ}\text{F}/-26^{\circ}\text{C}$  TO  $-20^{\circ}\text{F}/-28^{\circ}\text{C}$**

The standard chest freezer inside the FRI-Z400 does not self-defrost automatically. The freezer chest requires maintenance when ice begins to affect the vend cycle, product loading, or the closing of the freezer door. The refrigeration system does not require any maintenance. Depending on the location's moisture level (relative humidity) and frequency of operation, ice deposits will occur primarily around the top three to four inches of the freezer. It is not necessary to defrost the freezer every time there is ice build up. Ice can be chipped away as long as it does not make its way down along the walls or underneath the bins. Excessive ice build-up may require bin removal. The freezer does not have to be unplugged to perform this process.

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.

Depending on usage, temperature and humidity, a full cleaning may be necessary. First, press the load button then power down the machine. Remove all the bins and the bin matrix. Next, place the ice cream in a holding container. Scrape the ice and remove it from the basin. To rinse out the freezer chest, place a drain pan under the drain and remove the drain plugs. One is located on the inside left of the freezer and the other on the outside lower left (a standard screwdriver might be necessary). Finally, reload the old bins or replace with new ones. Turn on the machine and run each selection to make sure the bins did not shift or were put in the wrong location. The freezer will take about 2-4 hours to get down to temperature.

Under normal conditions, the FRI-Z400 can be unplugged with the door closed for up to 12 hours without harming the product. If freezer temperatures reach unsafe levels, the health sensor will activate and the machine will be placed out of order. Your product must be discarded and proper cleaning procedures must be taken.

The screen will read "Health Sensor Active". The machine will not operate until both the RESET button is pressed and the freezer temperature has returned to safe levels. The machine is set not to accept money if the freezer has not reached proper operating temperatures. If the machine must be operated for test purposes, the health sensor can be bypassed even though the freezer is not at an acceptable temperature. This is covered in the following section "**PROGRAMMING / MENU ITEM PROGRAMMING SEQUENCE / HEALTH TIMER**".

# SETUP INSTRUCTIONS

## MONEY SYSTEMS

### TYPES OF MONEY INTERFACE SYSTEMS

- This machine supports **ONLY** 24-34 Volt MDB (Multi-drop Bus) Money systems
- This machine is compatible with any MDB compliant (level 2 and higher) coin mechanism and bill acceptors as well as several of the most common card readers. If you wish to utilize one or more of these devices, please contact **FASTCORP** Technical Support for questions on compatibility.

(Note: The machine is not compatible with the **COINCO 9302GX Coin Mechanism**)

### DEX PORT

The FRI-Z400 comes pre-wired for a DEX port located on the inside of the main door. To collect DEX data, insert the DEX plug into the 1/4 phone jack and pull out the vend service interlock switch located adjacent to the T-handle behind the main door. The vender must be in Vend Mode with display reading- "Please Insert Money".

### INSTALLING PERIPHERALS

Coin and currency acceptors as well as card readers or other MDB peripherals should be installed and their function tested prior to placing the vender in service. Always power down (left toggle switch on power box) before plugging or unplugging peripherals.

### COIN MECHANISM

When installing a coin mechanism, make sure that all 3 mounting screws are tightened. Fill the coin tubes to the proper levels then power up vender and pull the door switch plunger out. Test the operation of the Coin Mechanism by inserting the required amount of change into the slot on the front of the vender. If the display reads "machine must be set up," program at least one selection then test coin mechanism for proper operation. While testing, push the coin return button after inserting one or two coins to verify coins are returned to the change cup. If coins are not returned or if the return lever gets stuck, refer to the adjustment procedure below.

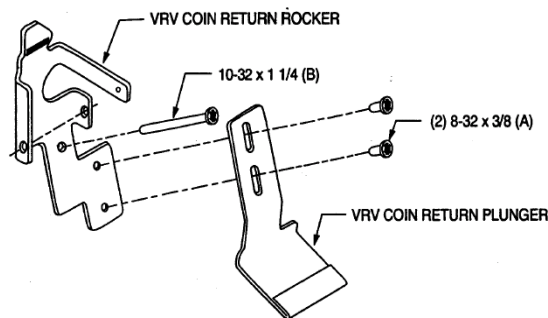
1. Remove power to the vender
2. Place the coin mechanism to be used in position and secure it to the access door.
3. Loosen the two 8-32 x 3/8 (A) screws that secure the VRV coin return plunger to the VRV coin return rocker.
4. Lower the VRV coin return plunger to the coin mechanism's reject lever and tighten the two 8-32 x 3/8 screws (A).
5. With the door open, test the VRV coin return plunger assembly for proper operation.

**Note: If the VRV coin return plunger shifts out of position behind the coin mechanism's reject lever, place the VRV coin return back to its proper position and adjust the 10-32 x 1 1/4 screw (B) to prevent this from occurring.**

6. Once adjusted to the acceptable position, plug in the vender, close the main door and secure it. Place coins in the coin insert from the front of the vender to test for proper operation.

**Note: If coins fall directly into the change cup, the VRV coin return plunger is adjusted too low.**

**Fig. 2**



## **BILL ACCEPTOR**

Remove the lower block-off plate from the door by removing the four #8 nuts with an 11/32 nut driver and the two ground wires from the bottom left stud. Install the bill acceptor on the studs then, using the nuts removed above; secure the bill acceptor to the door. After the bill acceptor is mounted, the **two ground wires must be re-installed** to the stud from which they were removed. Tighten all four nuts to secure the entire assembly, then power up vender and test for proper operation.

**Note: The coin mechanism must be installed with coins in the coin tubes and at least one selection must be programmed in order to test bill acceptor function. Please refer to the programming section for more information on how to program vender.**

## **CARD READERS**

There are many card readers and similar devices available. *FASTCORP* has tested many of these devices in order to ensure compatibility with our software. Occasionally, there will be a new product introduced into the market which may require further testing to ensure correct compatibility. In *most* cases there are no issues so long as the peripherals are of level 2 or higher MDB specifications. If you have any difficulty with peripherals that you are using, please call *FASTCORP* Technical Service.

A card reader can be installed directly above the bill acceptor in the upper most access hole. The access hole will have a block-off plate preinstalled from the factory and must be removed prior to installation of the card reader. Remove the four #8 nuts on the back of the plate using a 11/32 nut driver.

## INITIAL POWER UP

Make sure that the shipping bracket and cable ties are removed from the robot before plugging the machine into the power source. To avoid the risk of injury, make sure that all body parts are clear of the cabinet before turning on the main power. The Main Power Switch is located on the Power Box, under the freezer.

The robot should follow the initial power-up homing sequence:

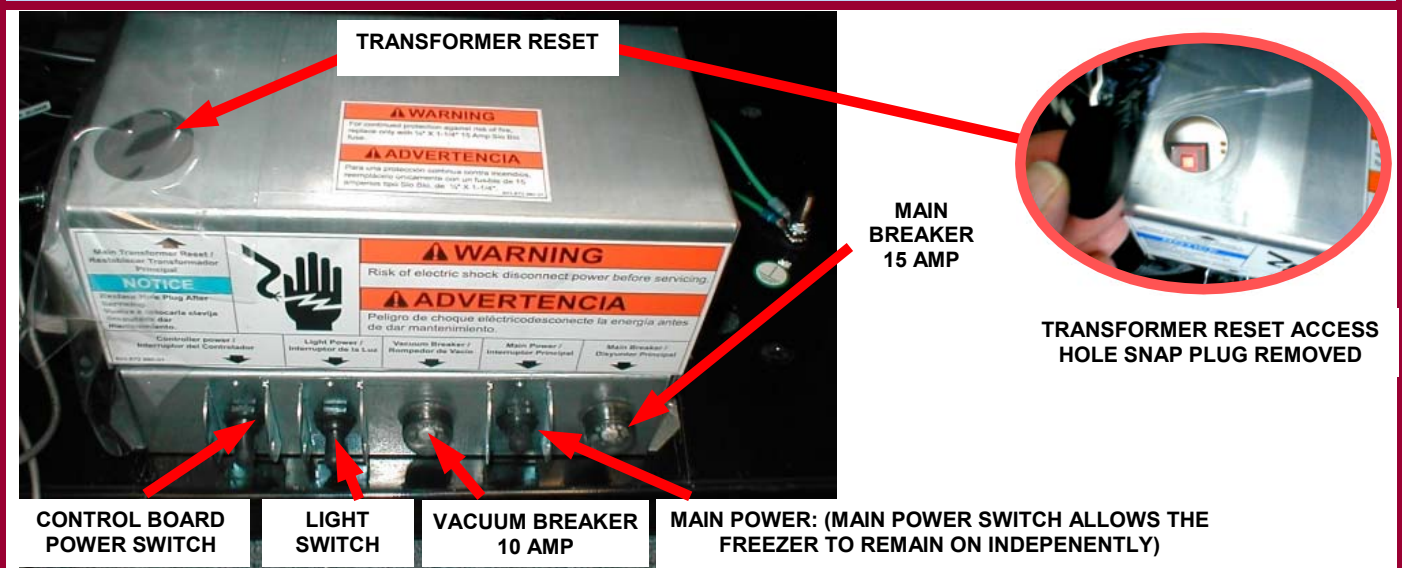
1. Robot picker head moves UP.
2. Robot carriage moves towards the CENTER of the cabinet.
3. Robot carriage moves towards the FRONT of the cabinet (considered the HOME position).

If the robot does not move or follow the power-up homing sequence:

1. There may be setup errors or shipping damage. Review all the previous sections and check for errors on the display. Press the # key for diagnosis.
2. Check the transformer reset breaker and make sure the power switch is on (refer Fig. 3 below).
3. Perform a quick check to see if there are obstructions preventing the robot from moving freely on all axes.
  - a. Power the machine off to disable “dynamic breaking” features that make it hard to move the robot manually.
  - b. Manually move the robot to the left, right, front and back. Check for smooth travel. Note any obstruction or gear binding.

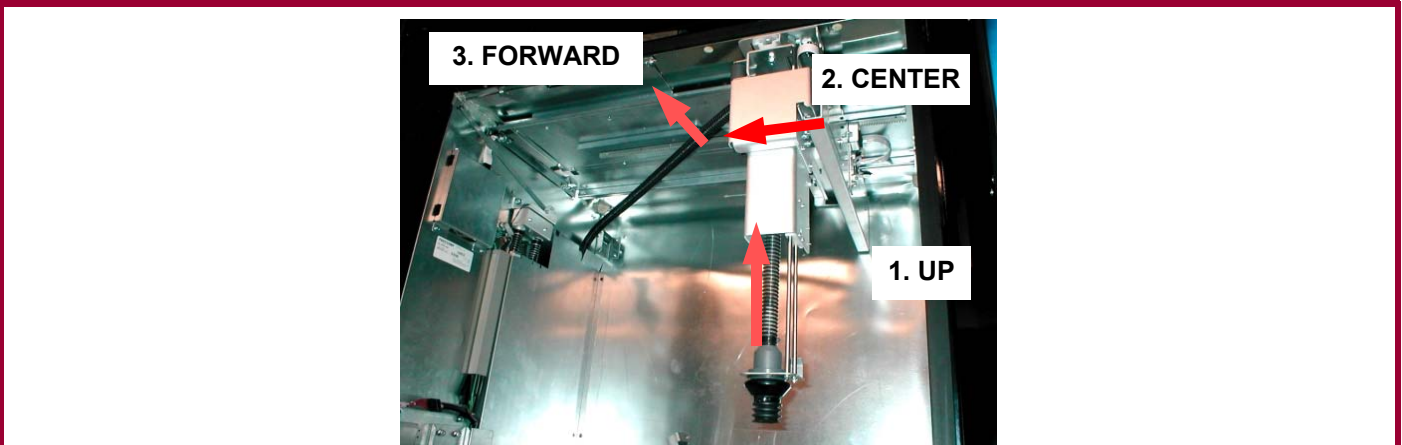
**Fig. 3**

(Homing Sequence/Robot Carriage-Rack Assembly)



**Fig. 4**

(Homing Sequence/Robot Carriage-Rack Assembly)

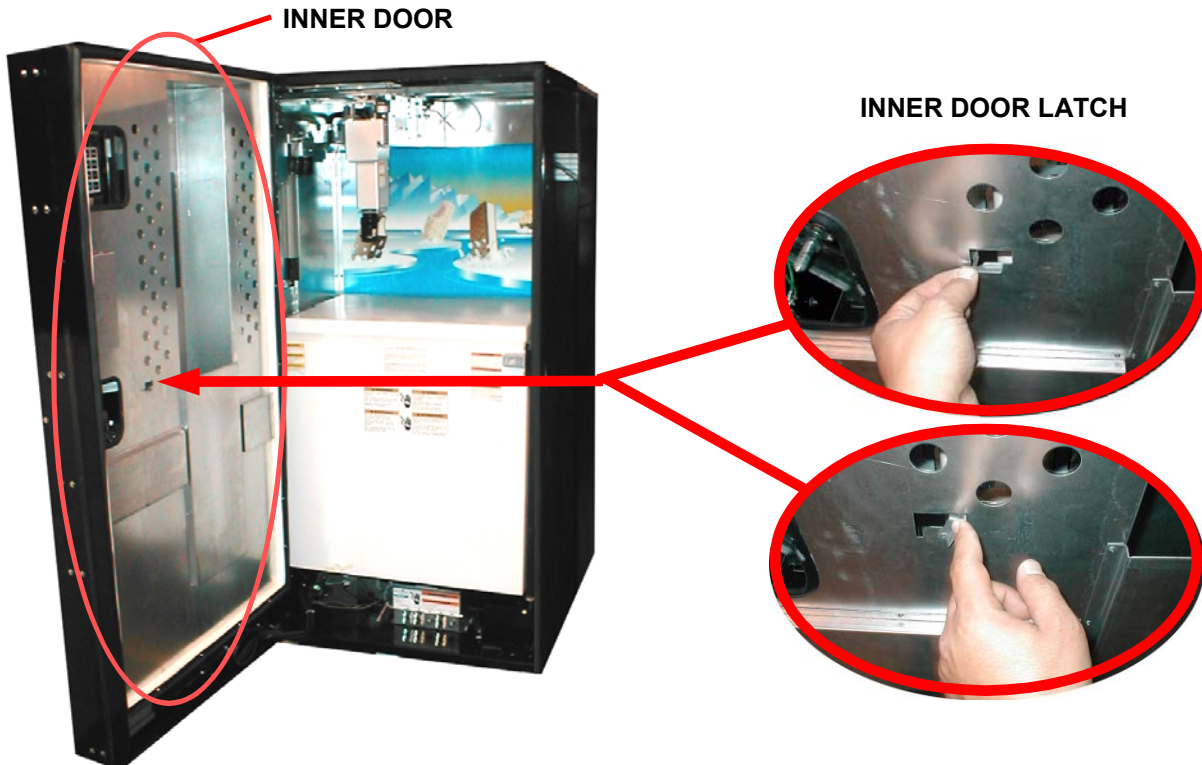




## PRODUCT DISPLAY SYSTEM

1. Determine what products will be vended and locate the corresponding display card provided by the manufacturer.
2. Affix the correct price label to the front of the card using the template provided on the next page. Make a copy and attach to the inside of the machine for future use.
3. Open the main cabinet door and locate the Inner Door Latch to open the Inner Door.
4. Every card slot on the product display sheet has 4 card holder tabs located at each corner. Secure each product card by inserting the corners of the card into the card holder tabs (with product cards facing forward).

*Fig. 5*



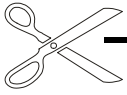
*Fig. 6*



**PRODUCT DISPLAY SYSTEM CONTINUED-**

Use the template provided to attach the price label to the Product Cards. If price labels are attached correctly, they will be visible to the right of the selection numbers on the front of the machine door once the cards are installed.

*Fig. 7*



**USE THIS DIAGRAM AS A TEMPLATE TO LOCATE  
THE PRICE TAG ON THE PRODUCT CARD**

**NOTE: FOR USE WITH .88"W X .50"H SELF ADHESIVE BACK TAGS**



## **BIN SETUP / PRODUCT LOADING**

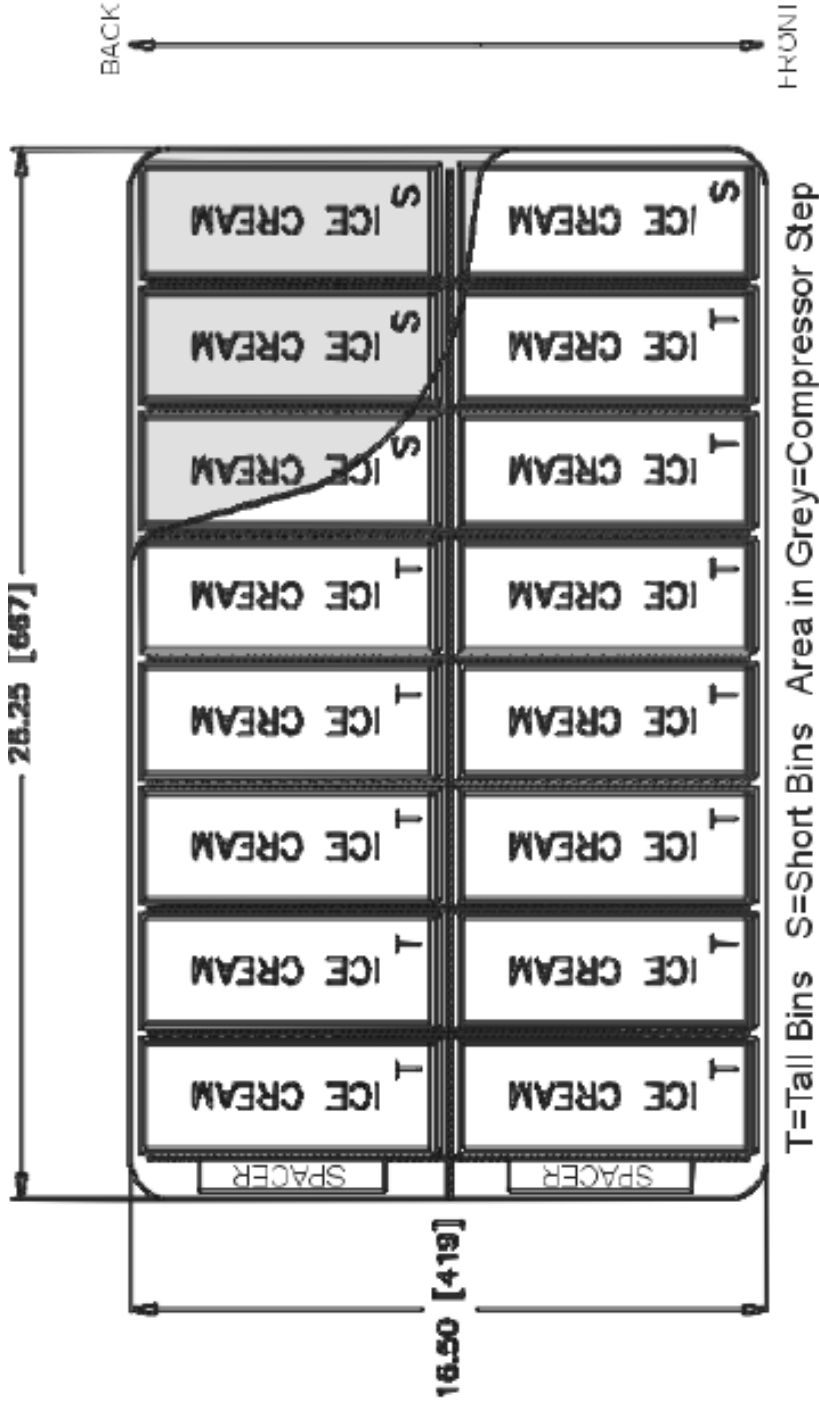
The **FRI-Z400** utilizes a bin system to hold product. The bin system is made up of a number of bins (various shapes and sizes), held together by a plastic bin matrix. The type and size of bin used depends on the size and shape of the product being vended. Every machine comes pre-configured with a specific bin layout or “Bin Plan-o-gram”.

### **GENERAL CONSIDERATIONS**

1. To keep track of products in a bin configuration, we recommend that the 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. In addition, the computer is programmed to leave one product at the bottom of each bin allowing products to be matched by the service person for refilling.
2. Always keep a copy of each machine’s specific bin plan-o-gram at a remote location (office) as a reference and backup copy.
3. Each bin size comes in two different bin heights: tall and short. Short bins are approximately ½ the size of the tall bins and are located on the right side of the chest freezer above the compressor. In a typical configuration, there are a total of four short bins. Short bins do not have to be programmed as menu selection and can be used for product overflow or storage.
4. Always load product from the bottom-up (so that product will be vended with the freshest at the bottom and the oldest on top. FIFO: First In, First Out).
5. The standard bin configuration holds a majority of all ice cream novelties. Spacers and inserts are provided for products such as ice cream cones, sandwiches and Snickers™. However, if there are products that require special bins, contact the *FASTCORP* service dept. for alternative bin shapes and spacers. When reordering bins, refer to the bin part numbers detailed in the machine’s bin plan-o-gram.
6. Always keep an extra set of bins and a plastic bin matrix on hand in the event of a meltdown. Bins can be removed quickly and new bins can easily be installed.
7. There should not be more than a 1/4 inch gap between the product and bin in any direction. Use smaller bins or the proper spacers to ensure product retrieval.
8. *FASTCORP* recommends placing the best selling items at the center of the freezer. This shortens the distance the robot must travel, reducing vend cycle time.

**BIN SETUP/ PLAN-O-GRAM**

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



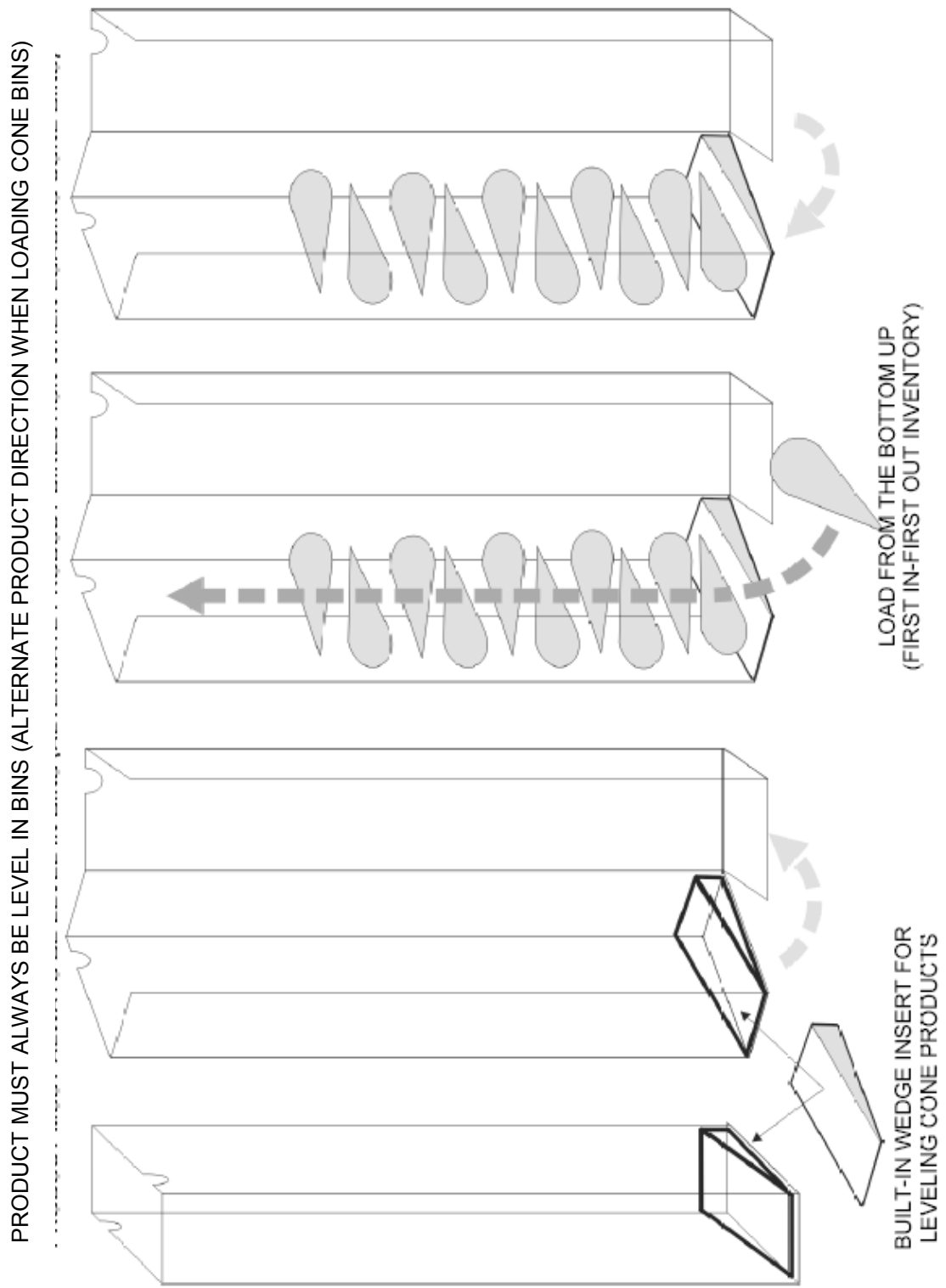
**STANDARD RECTANGLE BIN LAYOUT**

BIN CONFIGURATION LAYOUT DRAWING L0-BC01A  
 FASTCORP 3-10-03 RBL

Note: When programming, it is important to program the bin selections located at the back right and the front right corners as short bins; the rest are tall bins. 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. Refer to PART:A GENERAL INFORMATION, PRODUCT LOADING and PROGRAMMING sections.

**BIN LOADING CONSIDERATIONS**

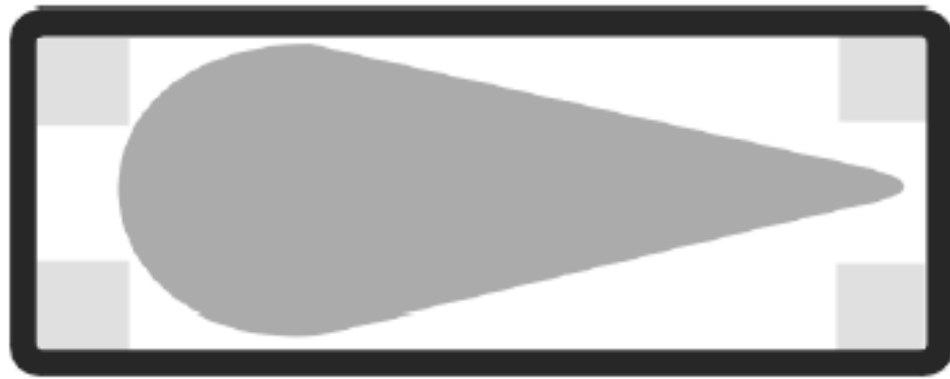
**Fig. 9 Product Loading Example (w/Cone Bins)**



## BIN SELECTION & MODIFICATION CONSIDERATIONS

**Fig. 10 Examples Of Bin Spacer Configurations (Aerial View)**

ALWAYS USE THE CORRECT BIN AND BIN SPACER FOR A PRODUCT.  
WHEN SELECTING A BIN OR MODIFYING A BIN WITH BIN SPACERS, MAKE SURE THAT THE BIN IS NOT TOO TIGHT WHERE PRODUCT CAN GET STUCK AND THAT PRODUCT CANNOT MOVE MORE THAN 1/4" ON ANY GIVEN SIDE.



CONE SPACERS



SNICKERS SPACERS



BOMBPOP SPACERS

Refer to PART:A GENERAL INFORMATION, PRODUCT LOADING and PROGRAMMING sections.

Fig. 11 Price List Reference Sheet (Fill Out and Keep A Copy In Each Machine For Reference)

_____ <b>PRODUCT</b> _____ <b>SELECTION</b> BIN 1 2 3 4 \$ . . _____ <b>PRICE</b>	_____ <b>PRODUCT</b> _____ <b>SELECTION</b> BIN 1 2 3 4 \$ . . _____ <b>PRICE</b>	_____ <b>PRODUCT</b> _____ <b>SELECTION</b> BIN 1 2 3 4 \$ . . _____ <b>PRICE</b>	_____ <b>PRODUCT</b> _____ <b>SELECTION</b> BIN 1 2 3 4 \$ . . _____ <b>PRICE</b>	_____ <b>PRODUCT</b> _____ <b>SELECTION</b> BIN 1 2 3 4 \$ . . _____ <b>PRICE</b>	_____ <b>PRODUCT</b> _____ <b>SELECTION</b> BIN 1 2 3 4 \$ . . _____ <b>PRICE</b>	_____ <b>PRODUCT</b> _____ <b>SELECTION</b> BIN 1 2 3 4 \$ . . _____ <b>PRICE</b>	_____ <b>PRODUCT</b> _____ <b>SELECTION</b> BIN 1 2 3 4 \$ . . _____ <b>PRICE</b>	_____ <b>PRODUCT</b> _____ <b>SELECTION</b> BIN 1 2 3 4 \$ . . _____ <b>PRICE</b>
_____ <b>PRODUCT</b> _____ <b>SELECTION</b> BIN 1 2 3 4 \$ . . _____ <b>PRICE</b>	_____ <b>PRODUCT</b> _____ <b>SELECTION</b> BIN 1 2 3 4 \$ . . _____ <b>PRICE</b>	_____ <b>PRODUCT</b> _____ <b>SELECTION</b> BIN 1 2 3 4 \$ . . _____ <b>PRICE</b>	_____ <b>PRODUCT</b> _____ <b>SELECTION</b> BIN 1 2 3 4 \$ . . _____ <b>PRICE</b>	_____ <b>PRODUCT</b> _____ <b>SELECTION</b> BIN 1 2 3 4 \$ . . _____ <b>PRICE</b>	_____ <b>PRODUCT</b> _____ <b>SELECTION</b> BIN 1 2 3 4 \$ . . _____ <b>PRICE</b>	_____ <b>PRODUCT</b> _____ <b>SELECTION</b> BIN 1 2 3 4 \$ . . _____ <b>PRICE</b>	_____ <b>PRODUCT</b> _____ <b>SELECTION</b> BIN 1 2 3 4 \$ . . _____ <b>PRICE</b>	_____ <b>PRODUCT</b> _____ <b>SELECTION</b> BIN 1 2 3 4 \$ . . _____ <b>PRICE</b>

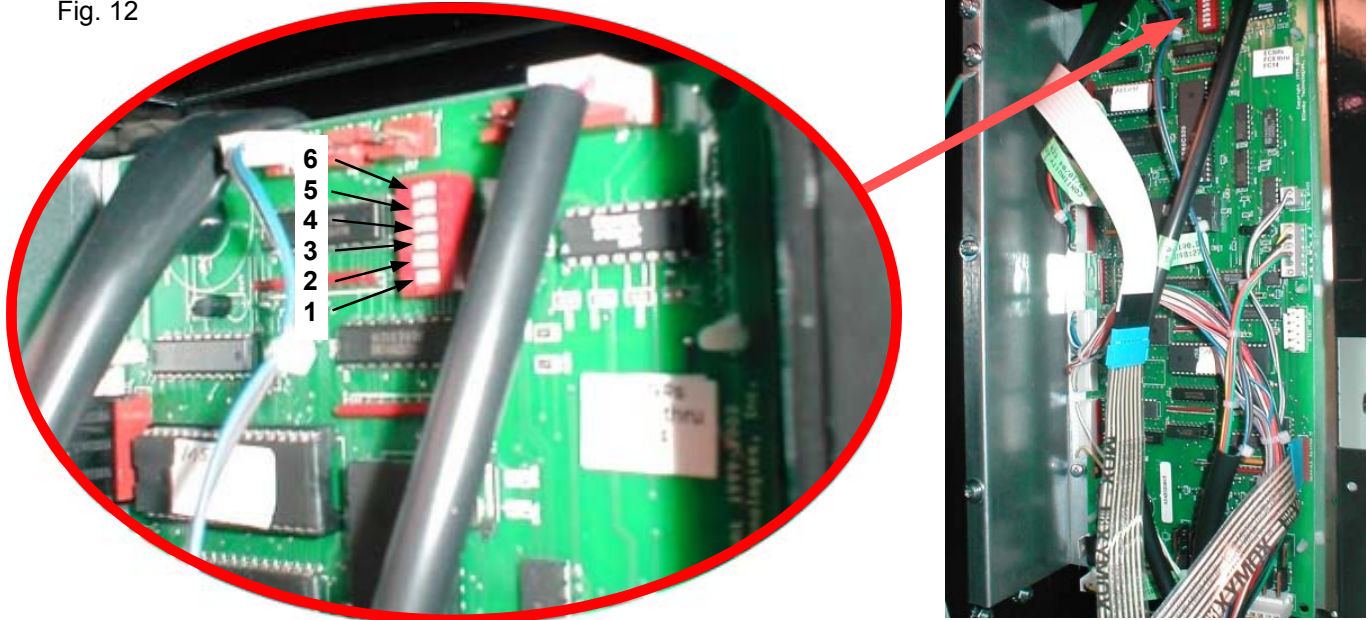
MACHINE SN:

LOCATION NAME:

## PREPROGRAMMING CONFIGURATION

### CONTROL BOARD DIPSWITCH OPTIONS

Fig. 12



SWITCH	NAME	OPTION
1	<b>ESCROW:</b>	<b>ON</b> to enable bill acceptor escrow which prevents more than one bill to be inserted per vend; <b>OFF</b> to disabled escrow
2	<b>SELECTION DIGITS:</b>	<b>ON</b> to make selection 2 characters; off 1 character
3	<b>FORCE VEND:</b>	<b>ON</b> to enable force vend (customer must make selection); prevents the unit from being used as a change machine. The machine will not advance further into the vend cycle until the customer makes a selection. <b>OFF</b> allows change to be dispensed using the coin return.
<b>Selection</b>		
4	<b>NOT USED:</b>	No function
5	<b>AUTO-TEST:</b>	(Used only for factory testing)
6	<b>NOT USED:</b>	No function

#### Clearing The Memory / Factory Reset

Even after computer boards or chips have been changed, legacy selection numbers and bin locations may still exist in memory. Completely clearing the memory may also remove problems that may occur due to power surges or electrical noise.

To completely clear the machine's memory:

1. Power down the machine using the left toggle switch on the power box.
2. Turn all dipswitches to "on" on the computer board.
3. Power up the machine.
4. The screen will display "Factory Test Press Any Key". Press a key on the customer keypad and the screen will change to "Testing External RAM" for about one second.
5. The screen will display "Checking Real Time Clock". Disconnect the power and return the dipswitch settings to normal.

**NOTE: THIS WILL ERASE ALL SALES INFORMATION FROM THE MEMORY. AFTER THIS PROCEDURE IS PERFORMED, THE VENDER WILL NOT OPERATE UNTIL AT LEAST ONE SELECTION IS PROGRAMMED.**

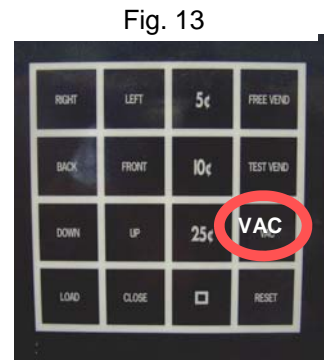
## PROGRAMMING

### 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 completely menu driven. 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.

Programming Menus are accessed in Service Mode. The machine enters Service Mode every time the cabinet door is opened.

**NOTE: THE VAC BUTTON ON THE SERVICE KEYPAD MUST BE PRESSED TO DISABLE THE SECURITY-LOCKING FEATURE (DISPLAY- "USER KEYPAD IS LOCKED OUT"), ENABLING THE CUSTOMER KEYPAD.**



Once enabled, pressing the “\*\_Next” key on the Customer Keypad will list all the menu items on the digital display. In the event that there are bin and sold out errors in memory, the errors are displayed before the programming menus.

Note: if the machine is programmed in one location and transported to another, (for example in your warehouse) it is important to re-level the machine at the new location and perform test vends on each selection. Reprogram/edit bins as needed.

<b>1) CHANGE PRICE:</b>	Allows the price to be changed.
<b>2) SALES METERS:</b>	Allows sales data to be viewed. The total sales meter is non-resetable and offers a total sales and unit counter.
<b>3) EDIT SELECTION:</b>	Allows existing selections to be edited: Price, Product Height (1-4 in.) and Bin (adjust bin location, add bins to the selection number or change bin height).
<b>4) CREATE SELECTION:</b>	Allows a selection to be created.
<b>5) DELETE SELECTION:</b>	Allows a selection to be deleted.
<b>6) SELECTION NUMBERS:</b>	Allows programmed selection numbers to be viewed. (Use to check for erroneous selections)
<b>7) SET DATE:</b>	Allows date to be set or viewed.
<b>8) SET TIME:</b>	Allows time to be set or viewed (military time format).
<b>9) SERVICE PHONE #:</b>	Allows service phone number to be set. The number is displayed when the machine is out-of-order. (Do not use FASTCORP'S #)
<b>10) SALES PIN CODE:</b>	Allows pin code to be set and viewed for machine auditing. Audit data can be viewed without opening the door.
<b>11) VEND BLOCK:</b>	Allows the machine to be disabled for predetermined periods of time.
<b>12) VEND BLOCK PIN CODE:</b>	Allows pin code to be set and viewed and allows access to the vend block times from outside the machine.
<b>13) HEALTH TIMER:</b>	Allows the health sensor to be bypassed for up to 4 hours.
<b>14) PROGRAM VERSION:</b>	Displays current version of operational software.
<b>15) DISPLAY LANGUAGE:</b>	Allows the programmer to choose the language displayed on the screen.
<b>16) LINE MODE:</b>	Allows the machine to detect a customer line and shortens the vend time.
<b>17) MACHINE SERIAL NUMBER:</b>	Allows the programmer to program the serial number of the vendor for machine identification during DEXing.
<b>18) GROUP SALES OPTION:</b>	Allows the programmer the ability to have up to four different metered accounts.
<b>19) TOKENS &amp; COUPONS:</b>	Allows coupons and tokens to be recognized as free vends.
<b>20) FIELD TEST:</b>	Allows the machine to run a self-diagnostic sequence for quick troubleshooting. <b>Press the # key to advance screen.</b>
<b>21) U/PDOWN TRAVEL LIMITS:</b>	This feature allows the customer to adjust how deep the Picker Tip will descend into both tall and short bins. <b>Valid for software versions M5.10/S4.61 or later.</b>



**GETTING STARTED: CREATING SELECTIONS**


1. Before creating a selection, the front product display must be setup. Product and bins must be preloaded in the machine.
2. In Service Mode, press the “\*=Next” key on the Customer Keypad and scroll to “4) CREATE SELECTION”. “4) CREATE SELECTION” allows new selections to be created (Note: do not start programming yet).
3. Menu item "4 CREATE SELECTION" will require the following information to be entered:

1. Enter a selection number:	A1 to D9
2. Enter the price:	\$0.05-\$99.95
3. Enter the height of the product:	1-4 inches
4. Move the robot over center of the product:	Controls on service keypad: front/back, left/right, down/up
5. Enter the length of the bin:	Short/tall
6. Add more than one bin for the selection:	Yes/No

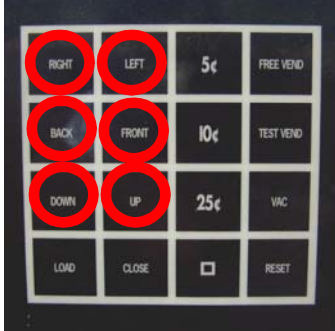
4. In the Programming Menus section, locate the flow chart for the menu item "4 CREATE SELECTION" and follow the step-by-step instructions for programming new selections.

**Fig. 10**  
**Important Customer & Service Keypad Programming Functions**

**CUSTOMER KEYPAD PROGRAMMING FUNCTIONS**



**SERVICE KEYPAD USED TO MOVE ROBOT DURING PROGRAMMING**



5. Once selections have been programmed, use the other menu features to edit and select operating preferences. Refer to Menu Item Description for an overview of each menu item and its features.
6. Once programming is complete, it is important to perform a test to make sure that the machine was programmed correctly. By pressing “Free Vend” on the Service keypad, the machine will allow menu selections to be vended without money. Test each bin selection. Press “Free Vend” again to deactivate this feature.  
 “Test Vend” on the service keypad allows money to be inserted in order to test menu selections. Money deposited will be returned after each test vend. Press “Test Vend” again to deactivate this option.

**Note: Using Test Vend or Free Vend will not effect sales meters.**

## **PROGRAMMING/EDITING AFTER THE MACHINE HAS BEEN OPERATING**

1. After the machine has been programmed and operating in the field, any sold out or bin errors that have occurred will be displayed once the door is opened (Service Mode). A bin error occurs if the robot has made three unsuccessful attempts to retrieve a product from a single bin. Perform a Test or Free Vend to check the selection(s). An "Out Of Product" is displayed when a bin is determined empty.

**Note: It is important to view all bin errors before loading or editing bin selections.**

Do not press "\* Exit" before viewing all bin errors. To scroll through the list of all bin errors including selection and bin number, use the "#Next" key on the customer keypad.

3. Perform a "Free Vend" on these bins to verify that the robot was programmed over the center of the product and that product was loaded properly.
4. **While anywhere in Service Mode, all bin errors and "Out Of Product" bins can be cleared by pressing "Load" and then "Close" on the service keypad .**
5. The machine is ready to be edited and/or loaded with product.

## **PROGRAMMING FLOOR HEIGHT (valid for program versions M5.09 / S4.59 or later)**

If too many products are left at the bottom a bin and the bin indicates "SOLD OUT" the machine's floor height can be adjusted to leave only one product behind in each bin.

1. With the machine pre-programmed, enter "4) CREATE SELECTION" (you will delete this selection at the end of this process; use an empty TALL bin ONLY)
2. Follow the steps for creating a standard selection stopping at step i) of 4) CREATE SELECTION where the picker head is centered over the bin.
3. Using the "DOWN" button on the Service Keypad, lower the picker head into the empty TALL bin until the head is approximately 1 1/2" from the bottom of the bin.
4. Press the VAC button on the Service Keypad once and press the "#" button on the Customer Keypad to accept the location. The head will retract and the robot will home.
5. Select "TALL" for the bin size. The freezer will close and the Digital Display will read "NEW FLOOR HEIGHT".  
Note: Editing floor height for one bin will reset the floor height for all bins including short bins.
6. Put 4" of product back in the tall bin and run free vends to test the new floor height. Repeat the test for a short bin. If the floor height is too high or too low, repeat steps 1-5, changing the distance of the picker from the bottom of the bin until the appropriate height is established.
7. Delete the test selection menu item 5) DELETE SELECTION.

Note: Floor Height selection can also be accessed through 3)EDIT SELECTION



### 3) EDIT SELECTION

Choose from three sub-menus: (a) Change Price, (b) Product Height, (c) Edit Bins- adjust bin location and add bins to a selection number.

Display	Programming Instructions
<p>3) EDIT SELECTION</p> <p>*=Next      D-Back      <b>#=Yes</b></p>	a) Press the <b>#=Yes</b> key
<p>EDIT SELECTION # _ _</p> <p>*=EXIT</p>	b) Enter the selection number that will be edited. Choose from three sub-menus.
<p>Change Price (Sub-Menu)</p>	Edit selection prices.
<p>Change Price</p> <p>*=Next      <b>#=Yes</b></p>	a) Press the <b>#=Yes</b> key or move to the next sub menu.
<p>A1 Price: \$1.00</p> <p>*=Abort      <b>#=Yes</b></p>	b) Type over the price and press the <b>#=Yes</b> key.
<p>A1 Price: \$1.50</p> <p>Accept?      *=No      <b>#=Yes</b></p>	c) Press the <b>#=Yes</b> key to enter the price. Next change product height.
<p>Product Height (Sub-Menu)</p>	Enter the height of the product (1-4 inches). The robot will leave one product at the bottom of each bin so the service person only has to match the products.
<p>Product Height</p> <p>*=Next      <b>#=Yes</b></p>	a) Press the <b>#=Yes</b> key to alter Product Height.
<p>A1 Height: 1inch</p> <p>*=Next      <b>#=Yes</b></p>	b) Press the *=Next key for heights 1-4 inches. Press <b>#=Yes</b> key to enter new product height.
<p>A1 Height:</p> <p>Accept?      *=No      <b>#=Yes</b></p>	c) Press the <b>#=Yes</b> key to enter the product's height.
<p>Edit Bins (Sub-menu)</p>	Adjust bin location and add bins to a selection number.
<p>Edit bins</p> <p>*=Next      <b>#=Yes</b></p>	a) Press the <b>#=Yes</b> key to enter.
<p>A1 Program bin #1?</p> <p>*=Abort      <b>#=Yes</b></p>	b) The robot will move to location of A1 bin one. Press the <b>#=Enter</b> key to verify location of bin 1, the robot will move to programmed location. You may accept the current location or make adjustments using the service keypad.
<p>A1 Move the Robot</p> <p>*=Cancel      <b>#=Accept</b></p>	c) Press the <b>#=Accept</b> key to store location of the robot. Note: do not program selection on or near the home position and end zones.
<p>A1 Bin Height: Short? (Tall)</p> <p><b>*=Next</b>      <b>#=Accept</b></p>	d) Press the *=Next key to select tall or short bin, then press the <b>#Accept</b> key to store bin height.
<p>A1 Bin Height: Short</p> <p>Accept?      *=No      <b>#=Yes</b></p>	e) Press the <b>#=Yes</b> key.
<p>More Bins?</p> <p><b>*=No</b>      <b>#=Yes</b></p>	f) Press the <b>#=Yes</b> key to program or edit additional bins #2, 3 or 4 for selection A1 or press the *=No key to store just one bin. (Program is stored).

#### 4) CREATE SELECTION:

Create up to eighteen brand new selections, with 1-4 bins per selection.

Display	Programming Instructions
<p>4) CREATE SELECTION</p> <p>*=Next      D-Back      <b>#=Yes</b></p>	<p>a) Press the <b>#=Yes</b> key to enter create selection menu.</p>
<p>Enter Selection</p> <p><b>#_ _</b>      *=Exit</p>	<p>b) Enter the selection number you wish to create.</p>
<p>Enter Selection #A1</p> <p>Create?      *=No      <b>#=Yes</b></p>	<p>c) Press the <b>#=Yes</b> key to enter the selection number.</p>
<p>A1 Price: \$0.00</p> <p>*=Abort      <b>#=Enter</b></p>	<p>d) Type in the price and press the enter key.</p>
<p>A1 Price: \$1.50</p> <p>Accept?      *=No      <b>#=Yes</b></p>	<p>e) Press the <b>#=Yes</b> key to enter the price.</p>
<p>A1 Height: 1 inch (1-4 inches)</p> <p>*=Next      <b>#=Accept</b></p>	<p>f) Press the <b>#=Next</b> key until you have selected the height of the product, then press the <b>#=Accept</b> key. If you have selected the proper product height the robot will leave one product at the bottom of the bin for the route driver to match the products when filling the machine.</p>
<p>A1 Height: 2 inches</p> <p>Accept?      *=No      <b>#=Yes</b></p>	<p>g) Press the <b>#=Yes</b> key to enter the product's Height.</p>
<p>A1 Program Bin</p> <p>*=Abort      <b>#=Enter</b></p>	<p>h) Press the <b>#=Enter</b> key to create a bin for the selection number.</p>
<p>A1 Move Robot</p> <p>*=Cancel      <b>#=Accept</b></p>	<p>i) Use the directional buttons on the Service Keypad and move the robot over the center of the product/bin you have selected. Hold the button down to accelerate or pulse your finger on the button to move in 1/16" increments. Move the robot back and then drop the picker head to verify that it is centered over the bin. Press the <b>#=Accept</b> key on the customer keypad to store the location of bin 1.</p>
<p>1 Bin Height: Short (Tall)</p> <p>*=Next      <b>#=Accept</b></p>	<p>j) Press the <b>#=Next</b> key to see Bin Heights. Press the <b>#=Accept</b> key to enter Bin Height.</p>
<p>A1 More Bins?</p> <p>*=No      <b>#=Yes</b></p>	<p>k) Press the <b>#=No</b> key if only one bin is being programmed. The programming for that selection is complete. Simply repeat this process with another selection number. Press the <b>#=Yes</b> key if two or more bins are needed for that selection number. A total of four bins per one selection number are available.</p>
<p>A1 Program Bin #2?</p> <p>*=Abort      <b>#=Enter</b></p>	<p>l) Press the <b>#=Enter</b> key to program a second bin for the selection number.</p>
<p>A1 Move Robot</p> <p>*=Cancel      <b>#=Accept</b></p>	<p>m) Move the robot to the second bin. Press the <b>#=Accept</b> key to enter second bin location.</p>
<p>A1 Bin Height: Tall (Short)</p> <p>*=Next      <b>#=Accept</b></p>	<p>n) Look inside freezer and verify if the bin is tall or short. Press the <b>#=Accept</b> key to enter bin height.</p>
<p>Program Bin 3?</p> <p>*=No      <b>#=Yes</b></p>	<p>o) Enter selection.</p>

### 5) DELETE SELECTION

Delete the selection.

Display	Programming Instructions
5) DELETE SELECTION* *=Next          D-Back <b>#=Yes</b>	a) Press the #=Yes key to enter menu item.
Delete Selection #: A1 (All selections) D=Delete          *=Exit <b>#=Next</b>	b) Press the #=Next key to list selection numbers. Press the D=Delete key to delete the selection.
Delete Selection # A5 OK?          *=No <b>#=Yes</b>	c) Press the #=Yes key to delete selection.

### 6) SELECTION #S

View the current programmed selection numbers.

Display	Programming Instructions
6) SELECTION *=Next          D-Back <b>#=Yes</b>	a) Press the #=Yes key to view selection numbers.
Programmed: A1 *=Exit <b>#=Next</b>	b) Press the #=Next key to list selection numbers.

### 7) SET DATE

Set or view the current date.

Display	Programming Instructions
7) SET DATE *=Next          D-Back <b>#=Yes</b>	a) Press the #=Yes key to enter set date menu.
Enter Date: 01/01/96 *=Abort <b>#=Enter</b>	b) Type in new date and press the #=Enter key to store. Date format: MM/DD/YY
Enter Date: 01/05/96 Accept?          *=No <b>#=Yes</b>	c) Press the #=Yes key to store new date.

### 8) SET TIME

Set or view the current time.

Display	Programming Instructions
8) SET TIME *=Next          D-Back <b>#=Yes</b>	a) Press the #=Yes key to view menu selection.
Enter Time: 15:30:00 (military time) *=Abort <b>#=Enter</b>	b) Type current time and press the #=Enter key.
Enter Time: 15:45:00 Accept?          *=No <b>#=Yes</b>	c) Press the #=Yes key to store the current time.

### 9) SET SERVICE PHONE #

Enter, update, or view the service phone number. The programmed number will appear on the display screen in the event that the machine goes out-of-order.

Display	Programming Instructions
9) SET SERVICE PHONE # *=Next      D-Back <b>#=Yes</b>	a) Press the #=Yes key to enter menu selection.
Phone (###) ### - ####	b) Type in service phone number.
Phone (###) ### - #### Accept?      *=No <b>#=Yes</b>	c) Press the #=Yes key to store.

### 10) SALES PIN CODE

View or change the PIN code that can access sales information (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 *=Next      D-Back <b>#=Yes</b>	a) Press the #=Yes key to view or change sales pin code.
Enter Pin: #*1234 *=Abort	b) Type in new four-digit number.
Enter Pin: #*1996 Accept?      *=No <b>#=Yes</b>	c) Press the #=Yes key to store pin number.

### 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 SET DATE programming.

Display	Programming Instructions
11) VEND BLOCK *=Next      D-Back <b>#=Yes</b>	a) Press the #=Yes key to enter menu selection.
Vend Block: Off (On) <b>*=Scroll</b> A=Abort <b>#=Enter</b>	b) Press the *=Scroll to turn vend block on and press the #=Enter key.
Day: Sun      A=Abort      C=Copy D=Delete      *=Scroll <b>#=Enter</b>	c) Press *Scroll to the day you wish to begin and press the #=Enter key.
Mon Blk 1 on __: __ *=Abort <b>#=Enter</b>	d) Type in the first time you would like the machine to be off and press the #=Enter key.
Mon Blk 1 On 09:00 (military time) Accept?      *=No <b>#=Yes</b>	e) Press the #=Yes key to store the time.
Mon Blk off __: __ *=Abort <b>#=Enter</b>	f) Type the time you want the machine to turn on and press the #=Enter key
Mon Blk 1off 11:00 Accept?      *=No <b>#=Yes</b>	g) Press the #=Yes key to store the time; repeat up to four blocks per day.
Mon Blk 2on __: __ *=Abort <b>#=Enter</b>	h) Press the *=Abort key at the end of the needed blocks or press enter to continue more blocks.



Day: Mon A=Abort C=Copy (Copies information from day to day) D= Delete	i) (C=Copy: copies information from day to day) To copy one day to another press *=Scroll key to the day you want to copy then press the #=Enter key.
*=Scroll <b>#=Enter</b>	
Copy Mon to Tues	j) Press the #=Yes key to copy.
Accept? *=No <b>#=Yes</b>	

### 12) VB PIN CODE

Set or alter the VEND BLOCK option from the outside of the machine without opening the door.

Display	Programming Instructions
12) VB PIN CODE *=Next D-Back <b>#=Yes</b>	a) Press the #=Yes key to enter VB Pin code menu.
VB PIN CODE: #*5678 *=Abort <b>#=Yes</b>	b) The vend block pin code is factory set at #*5678. Use the factory setting or type over four new digits and press the #=Yes key. Type this code when you are in the "Please Insert Money" mode to gain direct access to the VEND BLOCK menu item.

### 13) HEALTH TIMER (Not used with the snack machine)

Allows the health sensor to be bypassed for a short time.

Display	Programming Instructions
13) HEALTH TIMER *=Next D-Back <b>#=Yes</b>	a) Press the #=Yes key to display the health sensor options.
<b>HEALTH TIMER: OFF (1hr, 2hr, 3hr, 4hr)</b> *=Next <b>#=Accept</b>	b) Press * Next to select time. c) Press # Accept to set timer
<b>HEALTH TIMER: 2hrs</b> Accept? *=No <b>#=Yes</b>	d) Press # Yes to start timer

### 14) PROGRAM VERSION

Shows the date and version of the software.

Display	Programming Instructions
14) PROGRAM VERSION *=Next D-Back <b>#=Yes</b>	a) Press the #=Yes key to view program version.

### 15) DISPLAY LANGUAGE

Allows the programmer to change the language of all external text; all programming will still be displayed in English.

Display	Programming Instructions
15) DISPLAY LANGUAGE *=Next D-Back <b>#=Yes</b>	a) Press the #=Yes key to display the current language.
English *=Scroll *=Abort <b>#=Enter</b>	b) Press the "A" key to abort (or exit) menu. Press the #=Enter key to reconfirm English. Press the *=Scroll key to scroll to English, French, Italian, Spanish, Portuguese, German or Dutch and press the #=Enter key to confirm the change.

### 16) LINE MODE (Not used with the snack machine)

If more than one vend is made consecutively, line mode automatically shortens the vend time (the default is ON).

Display			Programming Instructions
16) LINE MODE			a) Press the #=Yes key.
*=Next	D-Back	#=Yes	
LINE MODE: ON			b) Enter the *=Scroll key to select the desired option c) Press the #=Enter key to confirm the selection
*=Scroll	A=Abort	#=Enter	

### 17) MACHINE SERIAL NUMBER

Program the serial number of the vendor into the computer so that an external data retrieval unit can include the serial number when downloading sales information. Program this feature only if an external data retrieval device will be used (e.g. DEX).

Display			Programming Instructions
17) MACHINE SERIAL NUMBER			a) Press the #=Yes key. b) Enter the serial number of the vendor, found on the inside of the door, being sure to add zero(s) if the number is less than 8 digits. Press the #=Enter key to accept.
*=Next	D-Back	#=Yes	

### 18) GROUP SALES OPTION

Vend sales can be recorded into 4 different accounts, each with specific vend times. Example: all sales between 7:00 A.M. and 1200 P.M. may be recorded into account "A"; sales between 12:00 P.M. and 2:00 P.M. may be recorded into account "B"; sales after 2:00 P.M. can go into a third account or back into account "A". All information recorded can be obtained by accessing "Sales Meters" once this option has been set.

Note: If a sale occurs outside of a metered block, it will be recorded into the main meter and not into one of the four accounts.

This feature is typically used in locations where commissions are divided based on time of operation. It is also used to record vend activity to determine what the busiest time of day are for a machine.

Display			Programming Instructions
18) GROUP SALES OPTION			a) Press the #=Yes key. b) Press the *=Scroll key to mover forward.
*=Next	D-Back	#=Yes	
SUN D-Del	A=ABT *=Scrl	C=CPY #=Enter	c) Press the *=Scroll key to scroll through the days of the week. For Sunday, (as shown in the example) press the #=Enter key to enter.
SUN BLK 1 ON __: __			d) Enter the start of the desired meter time. Note: All times must be listed in military time. If the time is before noon, you must enter a zero first. e) Press the #=Yes key after the four digits have been entered.
*=Abort		#=YES	
SUN BLK 1 OFF __: __			f) Enter the end of the desired meter time and press the #=Yes key.
*=Abort		#=Yes	
GROUP (A-D): A			g) Press the letter of the account you want the sales to be recorded into (A, B, C or D), then press the #=Enter key. h) enter additional blocks of time if desired; if not, press the *=Abort key to exit the screen. Press the "A" key to exit the next screen, and "A" once more to return to the main menus.
*=Abort		#=Enter	

## 19) TOKENS & COUPONS

The machine will recognize coupons and tokens as free vends when the Promotional Vend feature is enabled. Item and price will be noted as a free vend in the DEX report.

Display	Programming Instructions
19) TOKENS & COUPONS *=Next      D-Back <b>#=Yes</b>	a) Press to the #=Yes key to enter this menu.
Promotions:      Off *=Scroll      A=Abort <b>#=Enter</b>	b) Press the *=SCRL key to turn the Promotions feature off and on. Scroll to Yes and press the #=ENTR key to enter.
Promotions:      YES Accept?      *=NO      #=Yes	c) Press #=Yes to confirm selection.

## 20) FIELD TEST

The self-diagnostic feature allows for quick troubleshooting through a sequence of system checks. Press the VAC button on the service keypad and run Field Test if the machine goes into OOS (Out Of Service). This allows the suspected problem area to be tested. After the self-diagnostic sequence is complete, press any button to return to the error. Press RESET to clear any errors.

Display	Programming Instructions
20) FIELD TEST YES *=Next      D-Back <b>#=Yes</b>	a) Press to the #=Yes key to begin diagnostics. Failures will be displayed after each failed test.
<b>Input Monitor.....</b> IG Ice Cream Machine	b) The type of motor used in the machine is displayed. The original style motor is the MK DC Motor. The latest style motor is the IG DC Motor.
<b>Input Monitor.....</b>  Airflow Detect      HIGH/LOW Front/Back Encoder      HIGH/LOW Left/Right Encoder      HIGH/LOW Up/Down Encoder      HIGH/LOW Left/Right Home      HIGH/LOW Front/Back Home      HIGH/LOW Up/Down Home      HIGH/LOW Freezer Close      HIGH/LOW Freezer Encoder      HIGH/LOW Freezer Open      HIGH/LOW	c) Manually moving or engaging component parts activates the input monitor, displaying the component and corresponding sensor/switch state (LOW=Open/Positive, HIGH=Closed/Negative).  Press the VAC button to test air flow in the vacuum valve Move the robot in the Front/Back direction Move the robot in the Left/Right direction Move the robot in the Up/Down direction Move the robot off the Left/Right position Move the robot off the Front/Back position Move the robot off the Up/Down position Open and close the Freezer Lid Move the Freezer Lid Actuator Arm Move the Freezer Lid Actuator Arm in the full up position
Press Motor Keys Or # To Continue	d) Press the #Key on the Customer Keypad to advance screen. Press Left, Right, forward, Back, Up and Down on the Service Keypad to test motor function.
Testing Real Time clock	- - -
Keyboard/Buzzer Test Press the A Key	e) Press the "A" Key to test the Customer keypad.

Keyboard/Buzzer Test Press the 4 Key	f) Press the "4" Key to test the Customer keypad.
Keyboard/Buzzer Test Press the 8 Key	g) Press the "8" Key to test the Customer keypad.
Keyboard/Buzzer Test Press the # Key	h) Press the "#" Key to test the Customer keypad.
Keyboard/Buzzer Test Press J20 RIGHT Key	i) Press the "RIGHT" Key to test the Service keypad.
Keyboard/Buzzer Test Press J20 FRONT Key	j) Press the "FRONT" Key to test the Service keypad.
Keyboard/Buzzer Test Press J20 25¢ Key	k) Press the "25¢" Key to test the Service keypad.
Keyboard Reset Key	l) Press the "Reset" Key to test the Service keypad.
Pull Door Switch	m) Pull the Door Switch to test.
Push Door Switch	n) Push the Door Switch to test.
Test DEX Connector Jumper J7-3, 4 #=Next	o) Jump J7 Pins 3 and 4 with a paper clip or wire. Press #=Next to bypass.
RS-232 Connector Jumper J12-1, 2 #=Next	p) Jump J12 Pins 1 and 2 with a paper clip or wire. Press #=Next to bypass.
Checking Robot...	q) Robot moves while diagnostics are performed.
Checking temp #=Skip	r) Feature enabled in NAMA Machines with electronic temperature probe installed. Press #=Skip to bypass temperature checks.
Checking temp #=Skip Test Complete!	s) Press #=Skip to return to the Main Menu.

**21) U/D TRAVEL LIMITS – SOFTWARE VERSION M5.10/S4.61 or later**

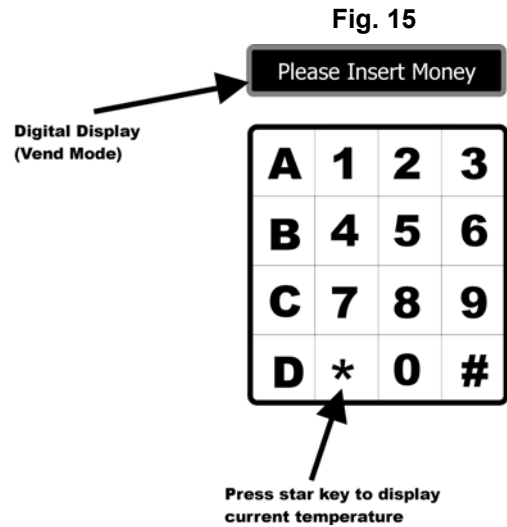
This feature allows the customer to adjust how deep the Picker Tip will descend into both Tall and Short bins.

- Adjustment measurement 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 too attempt vending a bin.
- Reduce the number of pulses to go less deep into the bin. Not deep enough will leave unvended product in the bin.
- Optimum Tall Bin Test Location is 3<sup>rd</sup> bin from the left in the rear row.
- Optimum Short Bin Test Location is 2<sup>nd</sup> bin from the right in the rear row.

Display	Programming Instructions
21) U/D Travel Limits	a) Press the #=Yes key to enter this menu.
* = Next      D-Back      #=Yes	
Restore Defaults	b) Press *=Next to make adjustments to Travel Limits.
*=Next      D-Back      #=Yes	
Adjust Tall Travel	c) Press #=Yes to adjust Tall Travel Limits.
*=Next      D-Back      #=Yes	
Floor (Pulses): 213	d) Adjust Tall Travel Limits by increasing or decreasing the value shown. Press #=Yes to continue.
*=Abort      #=Yes	
Accept	e) Press #=Yes to accept the value for Tall Travel.
*=No      #=Yes	
Adjust Short Travel	f) Press #=Yes to adjust Short Travel Limits.
*=Next      D-Back      #=Yes	
Floor (Pulses): 148	g) Adjust Short Travel Limits by increasing or decreasing the value shown. Press #=Yes to continue.
*=Abort      #=Yes	
Accept	h) Press #=Yes to accept the value for Short Travel.
*=No      #=Yes	
Exit	i) Press #=Yes to exit. Press Free Vend to test values for accuracy.
*=Next      D=Back      #=Yes	

## VIEWING FREEZER TEMPERATURE

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

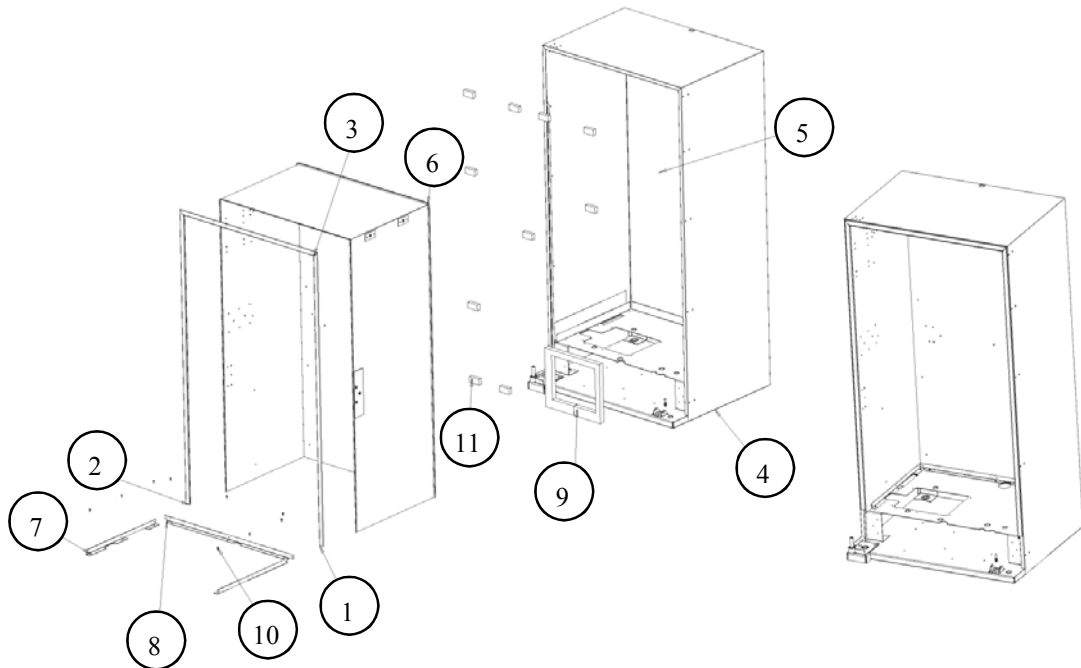


## TESTING CONSIDERATIONS

After programming is complete, it is important to perform a test to make sure that the machine is programmed correctly. Refer to GETTING STARTED; CREATING SELECTIONS, Step 6

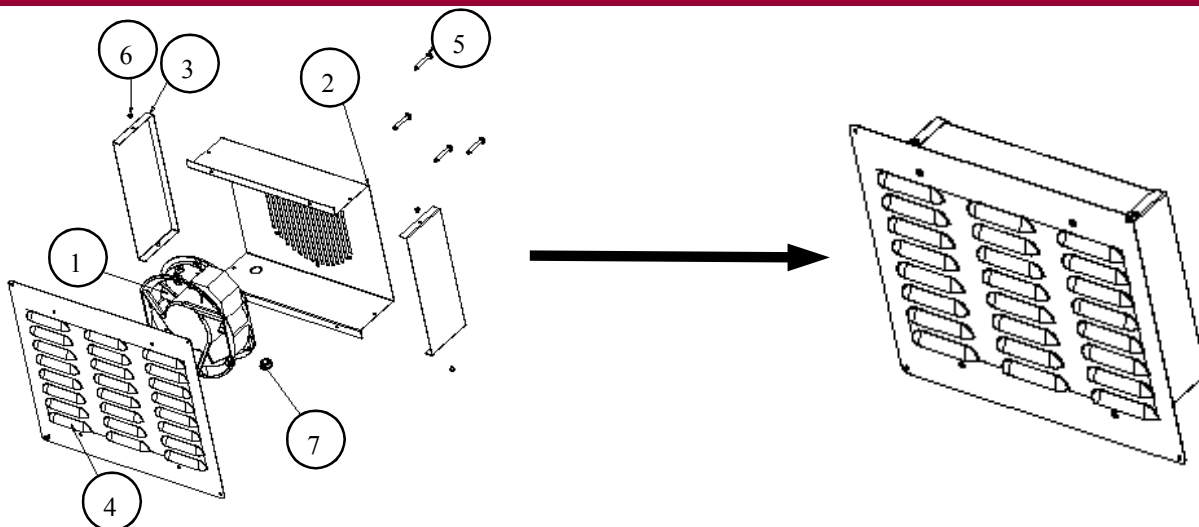
## COMPONENT REFERENCE AND IDENTIFICATION

**Fig. 16**  
(Cabinet, Front)



1. Strip, Breaker (491,020,150.13)	7. SUPP, SPCR, Tank Base (643,030,120.03)
2. Strip. Breaker (491,020,160.13)	8. SUPP, Spacer, Rear, Tank, Base (643,030,140.03)
3. Strip. Breaker (491,020,170.13)	9. Foam, Blocker (803,301,510.01)
4. W/A, Shell, Ext, Cab, (643,020,000.03)	10. Screw, 8-18 X 1/2 (900, 301,500.11)
5. Shell, Back, Painted Black (643,020,020.03)	11. Block, Foam (903,300,700.01)
6. W/A, Wrapper, Tank, Frozen (643,030,000,.03)	

**Fig. 17**  
(Assembly, Fan)

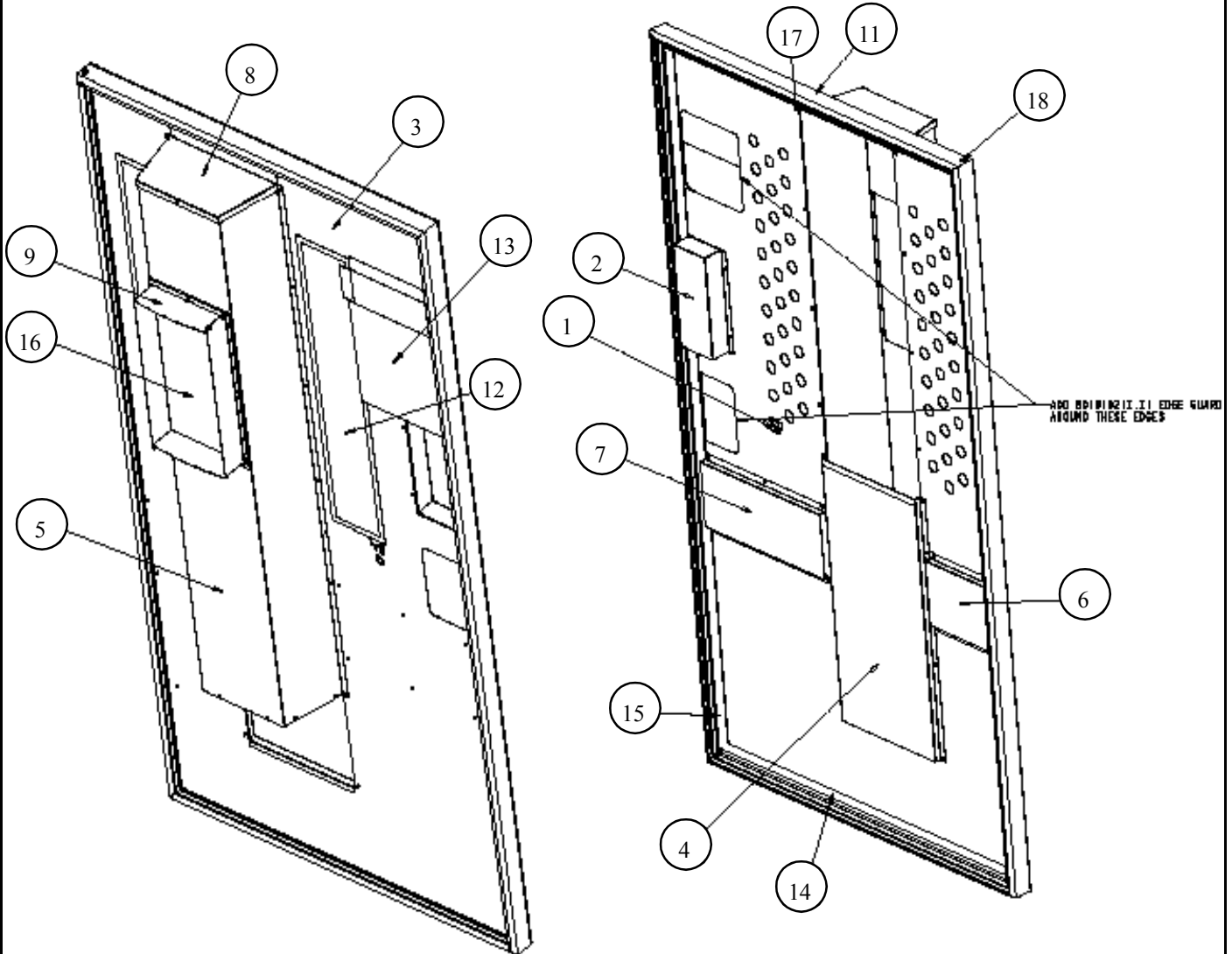


1. Fan, Cond (000,482,660.03)	4. Panel, Louver (643,000,560.03)
2. Mount, Refrigerator Fan (643,000,340.03)	5. Screw, 10-32 Self-tap Phillips (900,301,810.41)
3. Duct, Refrigerator Fan (640,000,350.03)	6. Rivet, 1/8" Aluminum, Silver (901,100,530.01)
4. Panel, Louver (643,000,560.03)	7. Bushing, Nylon (801,904,290.01)



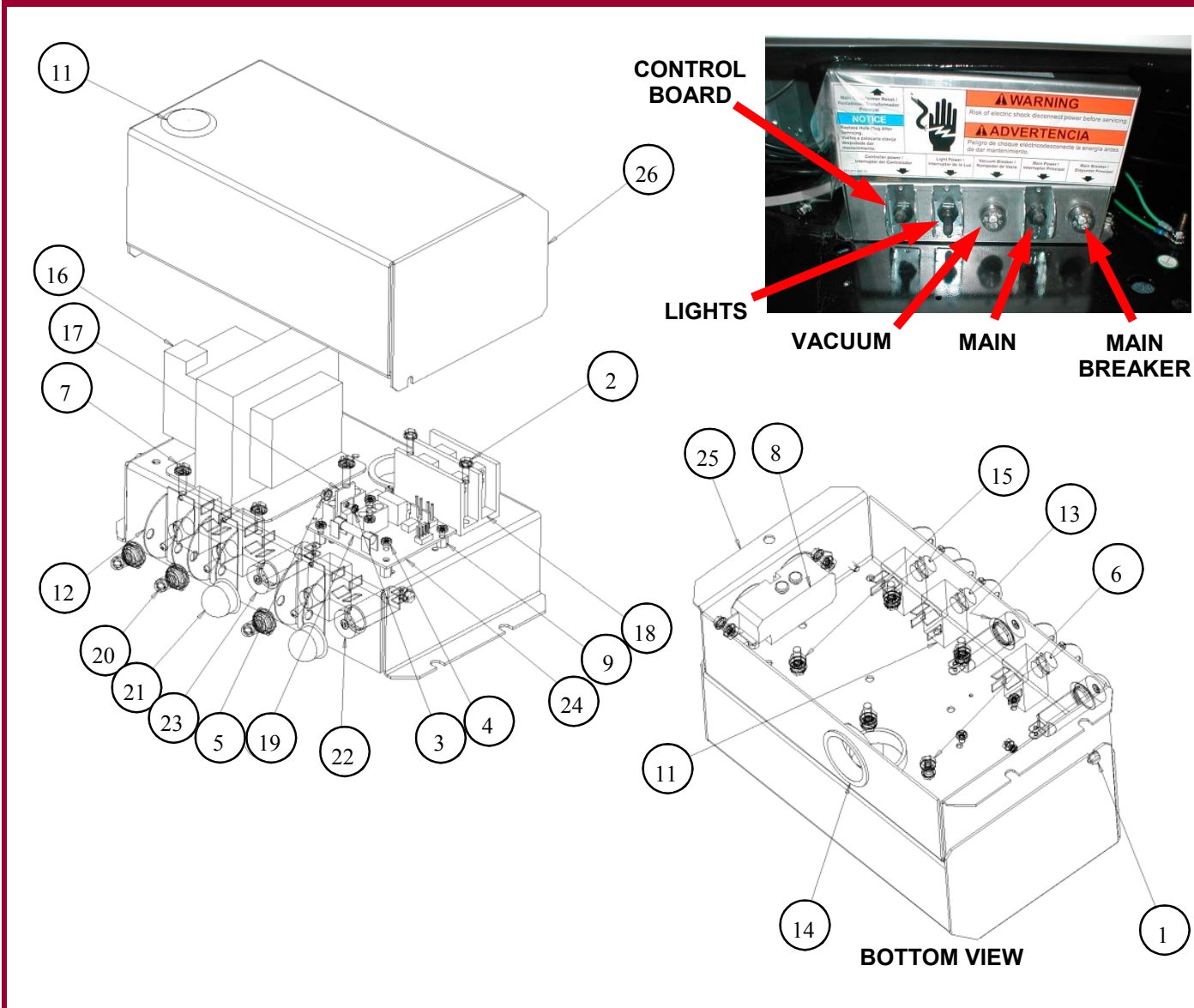
**Fig. 18**  
**(Inner Door, Front)**

**Fig. 19**  
**(Inner Door, Back)**



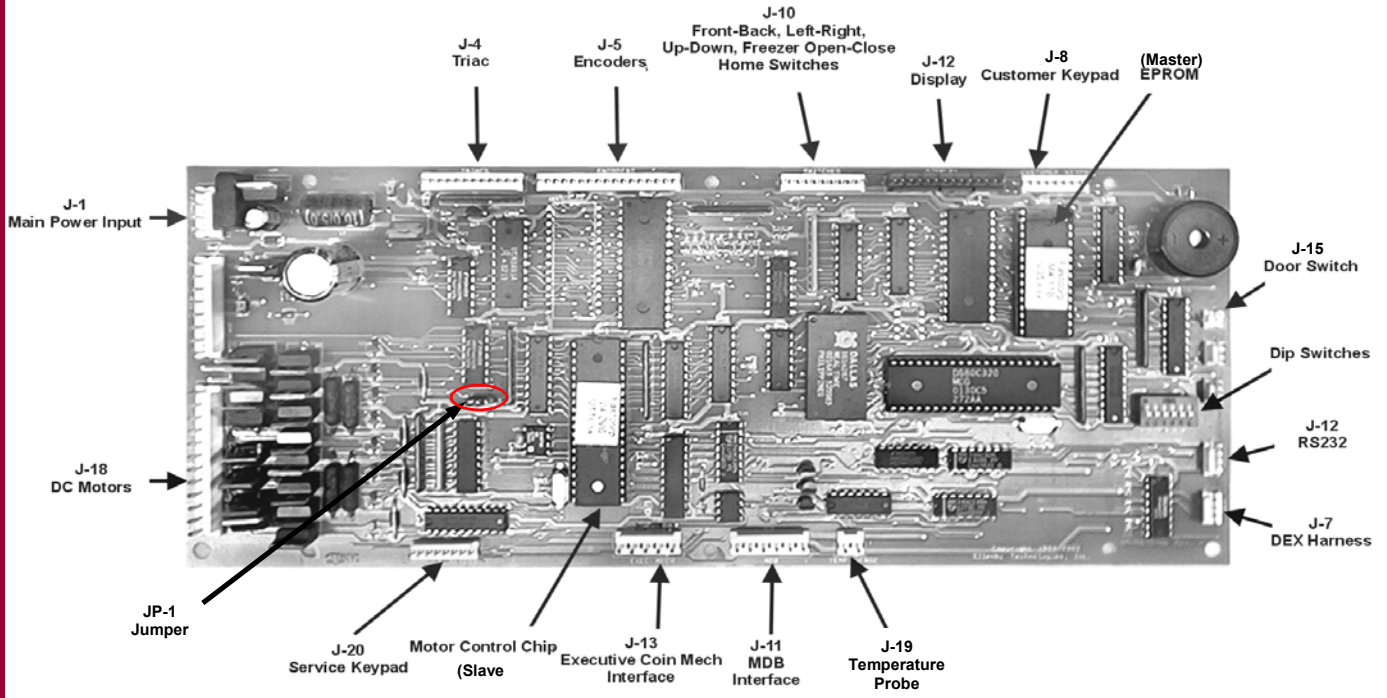
1. Latch, Inner Door (643,000,290.03)	10. Rivet, Domed 1/8" AD46BS (801,100,750.01)
2. Cover, Bill Validator (643,000,540.03)	11. Gasket, Inner Door (801,812,310.01)
3. Chute, Inner Door, Centered (643,000,780.01)	12. Window, Rain (801,818,990.01)
4. Chute, Inner, Frozen-Centered (643,000,790.03)	13. Rain Curtain SBC (801,904,230.21)
5. Chute Product-Frozen-Centered (643,000,810.03)	14. Foam, Guard, Horizontal (803,301,540.01)
6. Stiffener, Inner Frozen-Left (643,000,860.03)	15. Foam, Guard, Vertical (803,301,550.01)
7. Stiffener, Inner Frozen-Right (643,000,870.03)	16. Sheet, Window (805,033,610.01)
8. Cap, Chute, Frozen (643,001,080.03)	17. Rivet, 1/8 Aluminum, Silver (901,100,530.01)
9. Assembly, Window Frame-Centered (643,002,700.03)	18. Bearing (901,803,710.01)

**Fig. 20**  
(Assembly, Power Box)

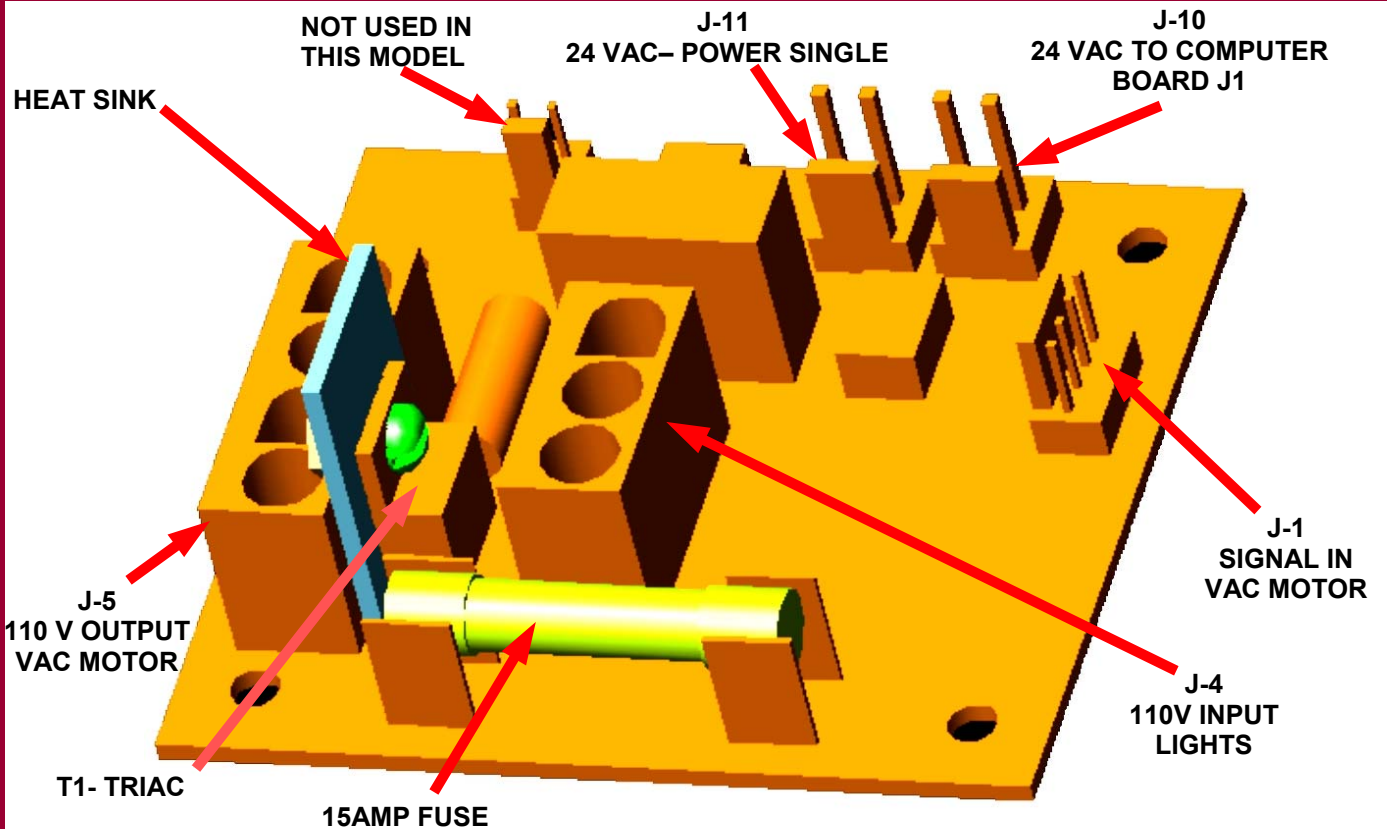


1. Screw Hex Wash Slot 8-32 x 3/8 (18909024)	14. Bushing, Insulating (48904554)
2. Screw—SL HEX Wash 8-32 x .500 (18909061)	15. Nut – Hex Keps 10-32 (48909131)
3. Screw Round HD Slot 4-40 X 1/4 (18909065)	16. Transformer, 24V-Class 2 (49105524)
4. Screw Pan Phil 6-32 X .187 (18909074)	17. Heat Sink, Triac—Upgrade (49114540)
5. Nut Hex Keps 4-40 (18909202)	18. Block, Power Distribution (49900544)
6. Nut Hex Keps 8-32 (18909203)	19. Fuse, 25 Amp (49900596)
7. Screw, Hex Wash Slot 10-32 X 5/8 (18909213)	20. Boot, Toggle Switch (49904547)
8. Receptacle, Duplex (19100553)	21. Boot, Circuit Breaker (49904548)
9. Standoff, Aluminum (19309041)	22. Circuit Breaker Outdoor 15 Amp (49905502)
10. Plug, Snap – In Flush 1.000 in (38904190)	23. Circuit Breaker Outdoor 10 Amp (49905503)
11. Switch, Power (39300543)	24. Board, Single Triac (49905560)
12. Guard, Switch Finger (39400493)	25. Platform, Power Section (64300067)
13. Clip Retainer Circuit Breaker (48904168)	26. Cover, Platform (64300068)

**Fig. 21**  
 (Computer Board– Not Compatible with F820 or VFS702 Models)



**Fig. 22**  
 (Triac Board)



**⚠ !!WARNING HIGH VOLTAGE!! MACHINE MUST BE UNPLUGGED WHEN SERVICING.**

**Fig. 23**  
(Service Keypad)

(PN19310500)



**RIGHT, LEFT, FRONT and BACK-** Moves robot in the respective direction.

**UP and DOWN-** Drops or raises the picker head.

**LOAD and CLOSE-** Used to clear sold-out bins and bin errors (press Load then Close).

**5¢, 10¢, 25¢-** Releases coins of specified denomination from the coin tubes in the coin mechanism.

**FREE VEND-** Allows vending without money; press once to enter, once to exit. Money is not recorded in the vend meter

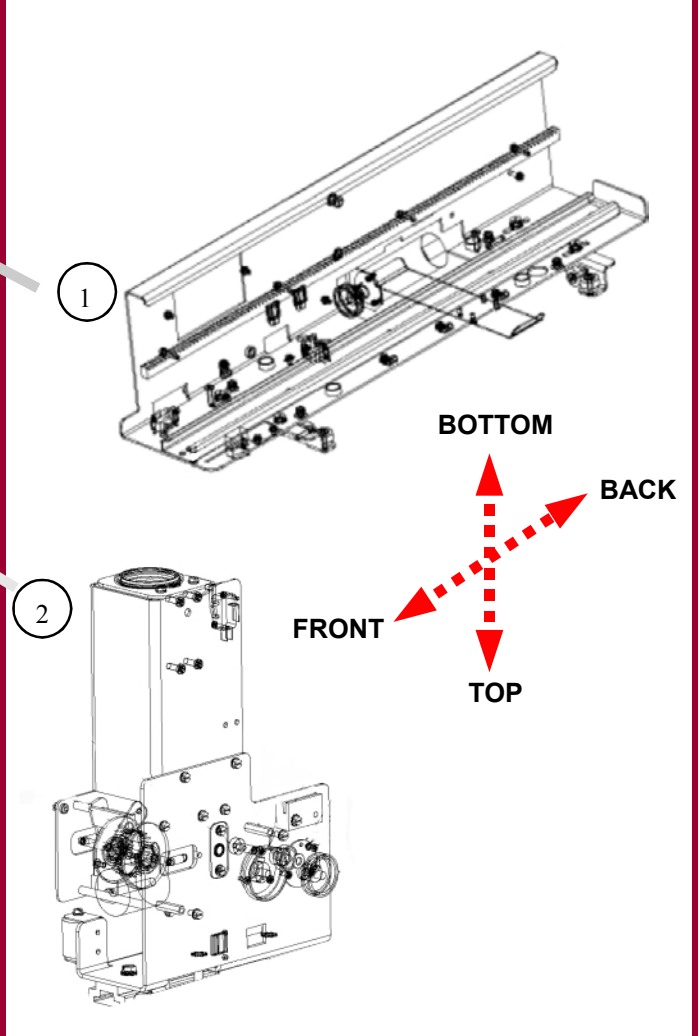
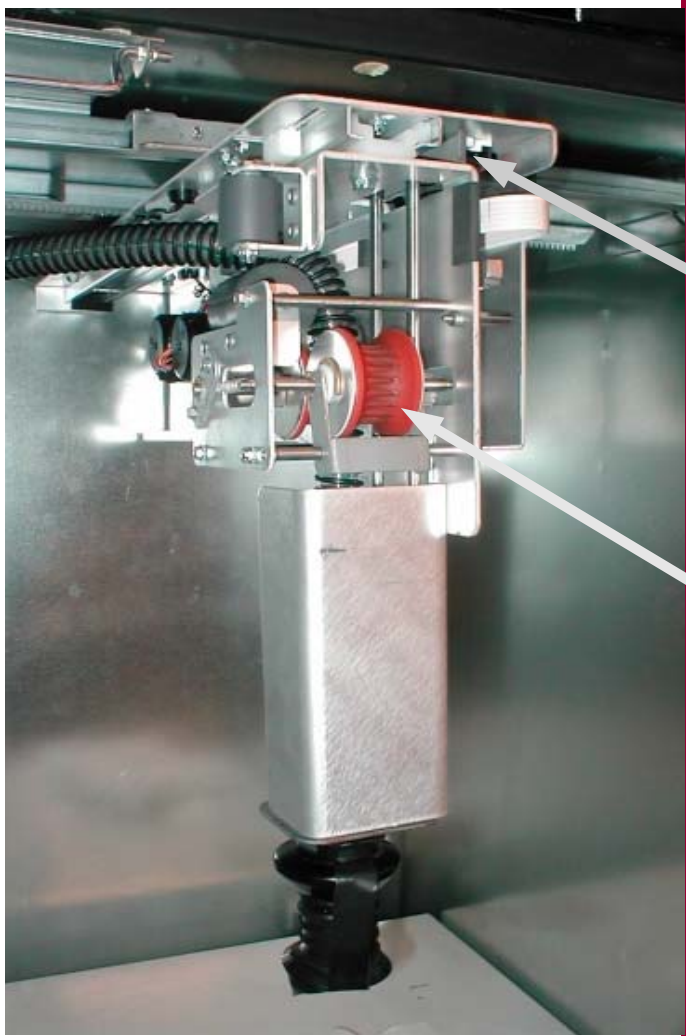
**TEST VEND-** Allows test vending with money; money is not recorded in the vend meter and it is returned after the vend sequence is completed. Press once to enter, once to exit.

**RESET-** Resets the machine in the event of an "OUT OF ORDER" condition.

The following errors can put the machine out-of-order:

- a) Robot errors: motor, encoder or reed switch
- b) Vacuum motor errors
- c) Coin mechanism errors (coin mechanism not detected)

**Fig. 24**  
(Assembly, Robot Carriage-Rack)

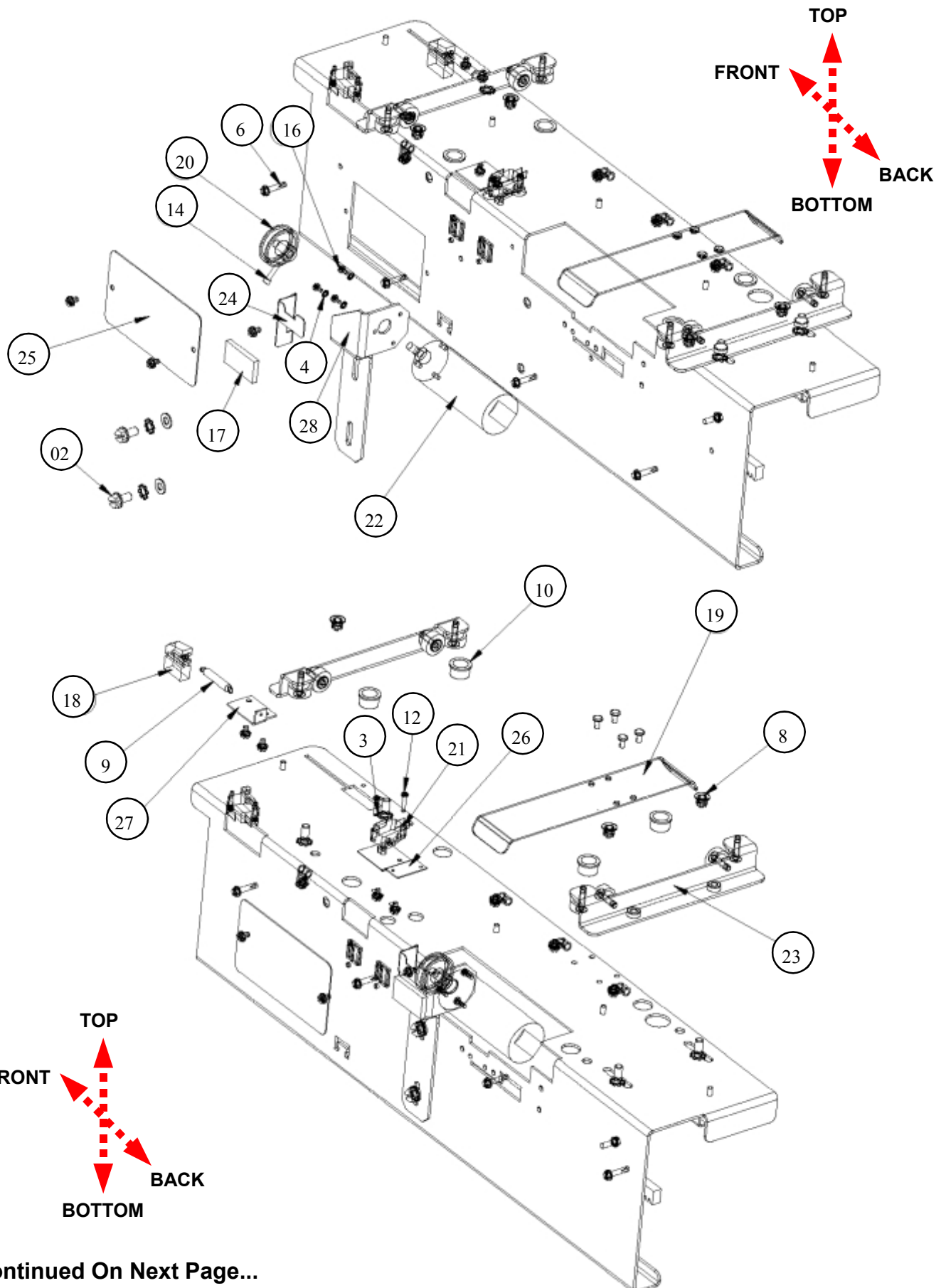


1. Assembly, Beam-Snack & Frozen (643,003,200.03)

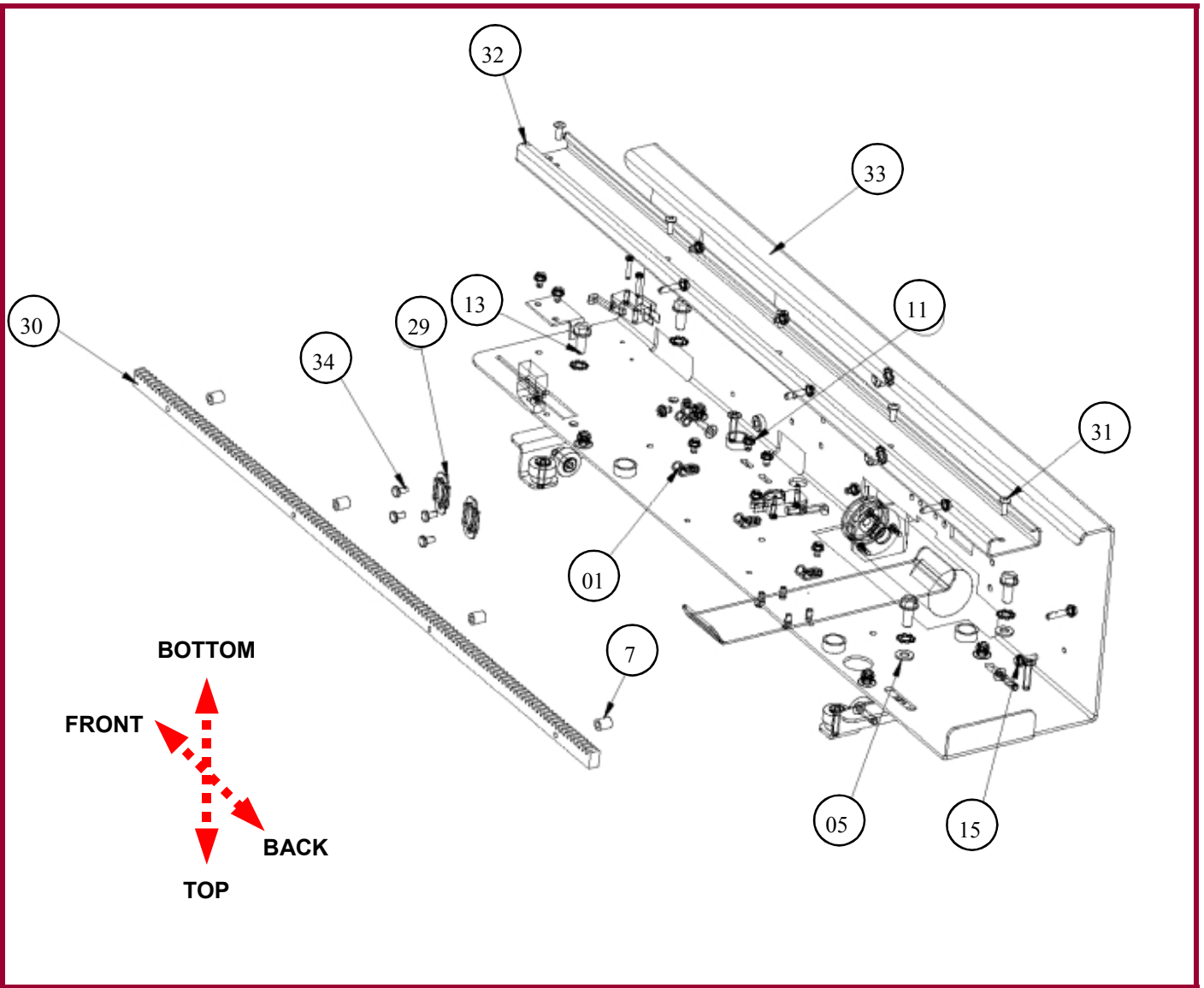
2. A, Carriage- Frozen (64300310.03)



**Fig. 25**  
(Assembly, Beam-Snack & Frozen)

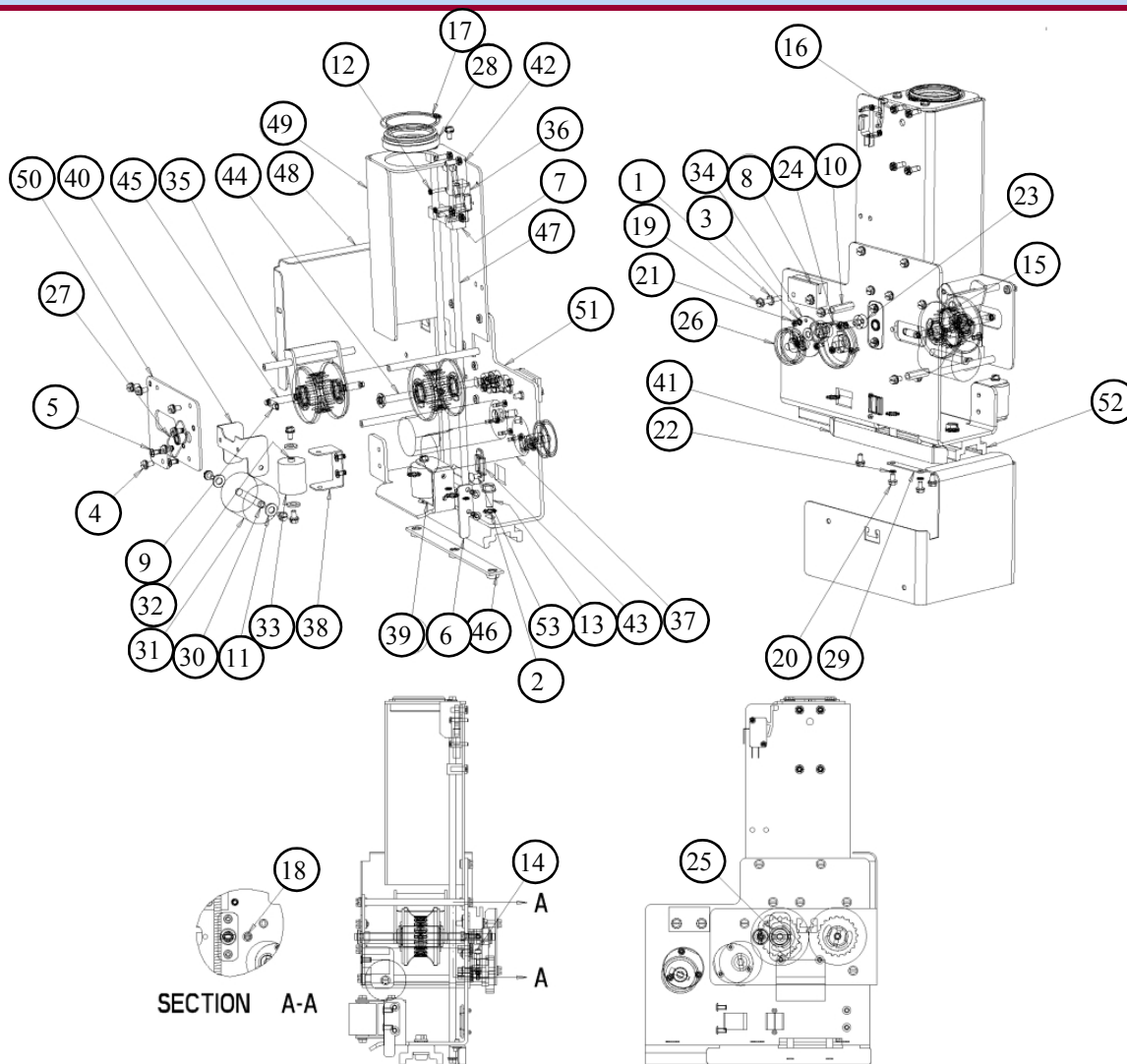


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1. Clamp, Loop—3/16 (189,090,020.A)	18. Trigger, Release (492,001,710.C)
2. Screw, Hex Wash slot 1/4-20 X 1/2 (189,090,520.A)	19. Shield, Ribbon Cable (495,000,240.C)
3. Washer, Ext (189,090,550.A)	20. Gear, X and Y (495,004,060)
4. Washer-Lock, Ext Tooth (189,090,590.A)	21. Switch, Plastic Limit (495,005,660.A)
5. Washer, Flat 3/16 USS (189,090,670.A)	22. Motor, Igarashi (495,055,650.A)
6. Screw, Hex Wash Slot, 8-32 X 3/4 Type 23 (189,092,220.A)	23. Assy, roller, Robot (643,000,900.03)
7. Spacer— Y Rack (389,041,840.A)	24. Guard, X-Gear (643,000,980.03)
8. Plasti-Plug (489,041,020.A)	25. Plate, Y-Motor Access (643,000,990.03)
9. Spring, Trigger (489,041,410.A)	26. Bracket, X-Switch (643,001,010.03)
10. Heyco 2073 (489,045,510.A)	27. Stop, Trigger (643,001,020.03)
11. Screw, HEX Wash Slot (489,091,040.A)	28. Bracket, X-Motor (643,001,060.03)
12. Screw Pan Phil (489,091,190.A)	29. Assembly, Ribbon Tag (643,001,100.03)
13. Screw, HEX Wash Slot Head (489,091,200.A)	30. Rack-Y, Robot (800,503,650.01)
14. Screw, SOC CAP 6-32 X .625 (489,091,210.A)	31. Pop Rivet, 5/32 .126-.250 SS (801,100,760.01)
15. Screw, HEX WAS Slot (489,091,520.A)	32. Track-Y, Robot (801,306,820.01)
16. Screw, Pan Phil M3 X 6 SS (489,092,330)	33. Assy, Beam, PEM (801,306,830.01)
17. Seal, Valve Box (492,000,750.A)	34. Rivet, Plastic Black (801,904,540.01)

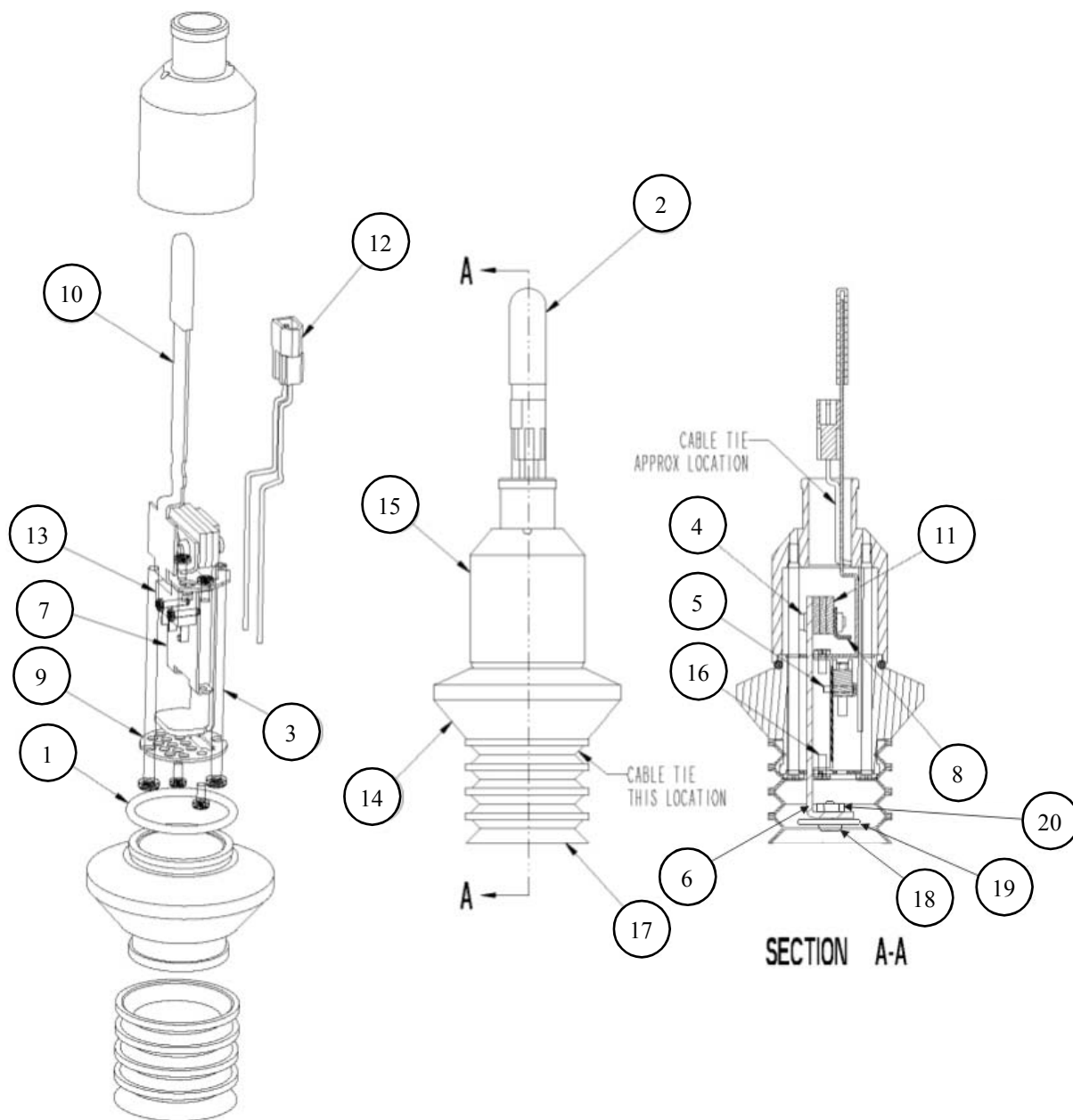
**Fig. 26**  
(Assembly, Carriage—Frozen)



1. Washer, Ext Tooth Lock #8 (18909008)	28. Grommet, Guide (495004281)
2. Washer, Ext Tooth Lock 1/4 (18909055)	29. Link, Guide Rods (49500435)
3. Washer, Ext Tooth Lock #4 (18909059)	30. Rod, Bottom (49500448)
4. Screw, Hex Wash slot SEMS 8-32 X 5/16 (18909215)	31. Roller, Bottom (49500449)
5. Pop Rivet 5/32 DIA (38909019)	32. Rod, Vertical (49500451)
6. Trip, Release (39200173)	33. Roller, Vertical (49500452)
7. Block, Guide (39503431)	34. Spacer, Igarashi Motor-Carriage (49500465)
8. Runner (39503491)	35. Spacer, Carriage (49500488)
9. Spring, Yoke (48904026)	36. Switch, Plastic Limit (49500566)
10. Standoff, 1/4" HEX (48909043)	37. Motor, Igarashi (49505565)
11. Washer, Flat Nylon (48909095)	38. Bracket, Roller, Front (64300091)
12. Screw Pan Phil #4 X 5/8 (48909119)	39. Bracket, Roller, Rear (64300092)
13. Screw, HEX Wash Slot Head 1/4 -20 X 5/8 (48909120)	40. Bracket, Roller, Bottom (64300093)
14. Screw, Socket Head Cap 6-32 X 5/8 (48909121)	41. Ramp, Y-Trip, Frozen (64300096)
15. E-Ring, External—1/4 (48909132)	42. Plate, Guide (64300105)
16. Screw, Rod Guides (48909136)	43. Assembly, Ribbon Tag (64300110)
17. Retaining Ring Ext. -2 in (48909140)	44. A, Drive Wheel (64300370)
18. Screw, HEX was Slot 8-32 X 1/2 Type F Green (48909152)	45. A, Idler Wheel (64300380)
19. Screw, HEX Wash Slot 8-32 X 1 in (48909152)	46. Assembly, Nut Plate-Frozen (64300410)
20. Screw, Hex Wash slot SEMS 6-32 X 1/4 (48909175)	47. Rod, Guide Frozen (80050364)
21. Screw, Pan Phillips M3 X 8 (48909234)	48. Guard-Carriage (80130677)
22. Washer, Lock Helical, Spring (48909245)	49. A, Extension Picker (80130678)
23. Post, Gear (49500403)	50. A, Plate Carriage (80130679)
24. Gear, Drive (49500404)	51. A, Carriage (80130681)
25. Gear, Driven (49500405)	52. Slide, Carriage (80181897)
26. Gear, X and Y (49500406)	53. Rivet, Plastic Black (80190454)
27. Plate, Bearing (49500425)	



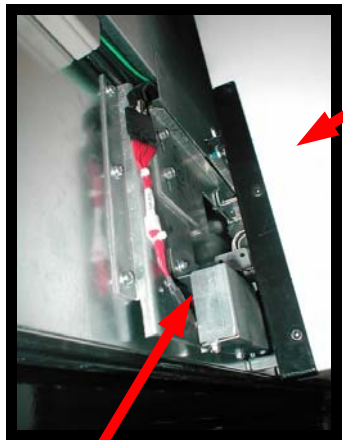
**Fig. 27**  
(Assembly, Picker-Frozen)



1. O-Ring, Picker Frozen (38904180)	11. Spacer, Picker- Frozen (39500397)
2. Cap- Picker Wire Guard- Frozen (38904194)	12. Harness- Picker Switch (39500561)
3. Screw, Pan Phil 6-32 X 3 in (38909170)	13. Switch, Subminiature (39500567)
4. Screw, Pan Phils SEMS 4-40 X 1/2 (38909177)	14. Weight, Picker- Frozen (39503390)
5. Screw, Pan Phil #2 X 3/8 (38909197)	15. Cover, Picker -Frozen (39503391)
6. Probe, Picker -FR (39500392)	16. Screw, Pan Philips #4 X 1/4 Type B (48909114)
7. Mount, Picker Switch-Frozen (39500393)	17. Cup, Suction-Frozen (49500461)
8. Assembly, Contac, Picker Switch-Frozen (39500394)	18. Screw, Pan Phil 6-32 X .250 (18909073)
9. Disk, Picker- FR (39500395)	19. Washer-Picker Probe (38909242)
10. Guard, Picker (39500396)	20. Nut-HEX KEPS (18909204)

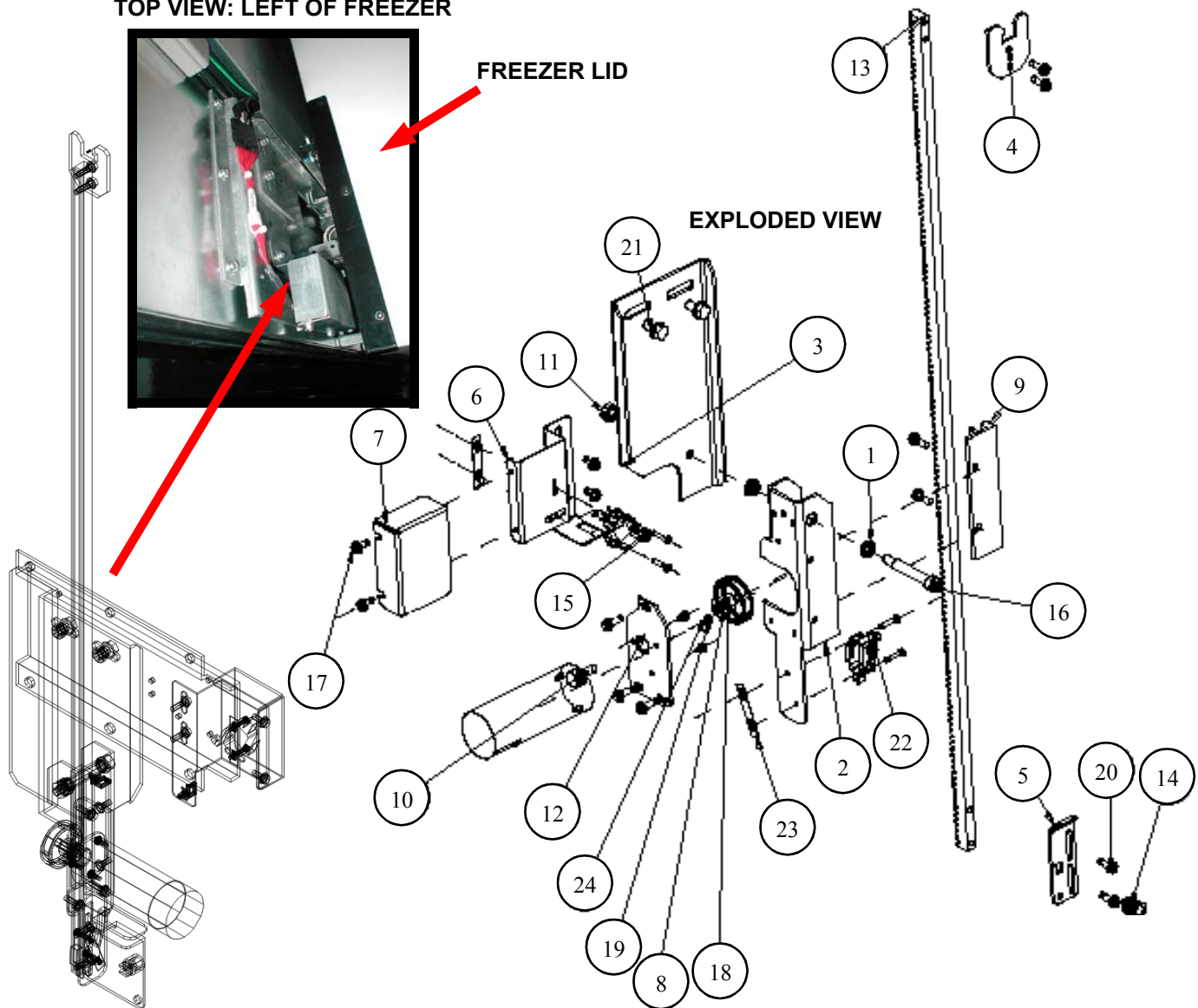
**Fig. 28**  
(Assembly, Lid Lift- Freezer)

**TOP VIEW: LEFT OF FREEZER**



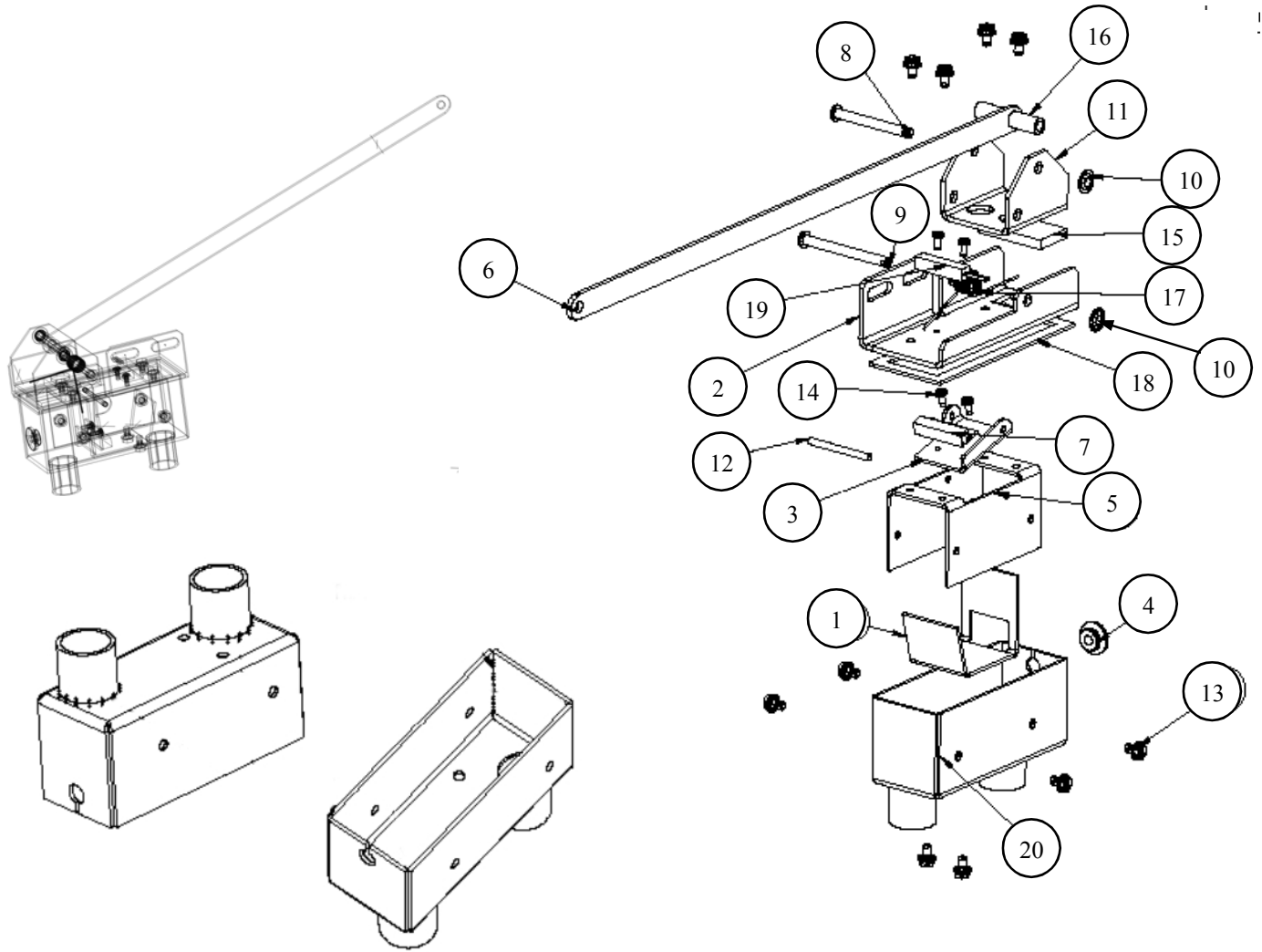
**FREEZER LID**

**EXPLODED VIEW**



1. Bearing, Nylon, Split (489041450.A)	13. Rack, Lift-Frozen (800503560.01)
2. Brkt, Lid Lift, Motor (643000380.03)	14. Screw Grommet (489041460.A)
3. Brkt, Lid Lift, Pivot (643000370.03)	15. Screw Pan Phil (489091190.A)
4. Brkt, Lid, Switch (643000410.03)	16. Screw Shoulder (389090980.B-)
5. Brkt, Switch, Actuator (643000550.03)	17. Screw, Hex Wash Slot (489091080.A)
6. Brkt, Freezer, Lid Switch (643000420.03)	18. Screw, Socket Head Cap (489091210.A)
7. Cover, Freezer Lid Switch (643000430.03)	19. Screw, Pan Phil M3 X 6 SS (489092330.A)
8. Gear, X and Y (495004060.B1)	20. Screw, SEMS, SL HX, Wash (189092230.A)
9. Glide, Rack-Frozen (396001720.C1)	21. Screw, SL HEX, Wash (189092120.A)
10. Motor, Igarashi (495055650.A)	22. Switch, Plastic Limit (495005660.A)
11. Nut, Keps, Hex, .250-20 (489091330.A)	23. Tinnerman, Twin Type #4 (396004080.A1)
12. Plate, Adjust, Motor (643000390.03)	24. Washer, Ext Tooth Lock #4 (189090590.A-)

**Fig. 29**  
(Assembly, Valve Box)



1. Baffle, Valve Box (805,600,480.01)	11. Release Gate, Valve Box (643,000,490.03)
2. Cover, Valve Box (805,600,470.01)	12. Rod, Valve Box (492,000,710.B)
3. Flap, Valve Box (801,306,840.01)	13. Screw, Hex Wash Slot (489,091,040.A)
4. Grommet, Valve Box-Fr (389,041,550.a)	14. Screw, Pan Philips (489,091,140.A1)
5. Insert, Valve Box (805,600,460.01)	15. Seal Valve Box (492,000,750.A)
6. Link, Release, Valve Box (643,000,470.03)	16. Spacer, Valve Gate (489,041,850.A)
7. Magnet, Reed Switch (199,005,650.A)	17. Spring, Torsion (492,040,410.A)
8. Pin, Clevis 3/16 X 1.750 (489,092,290.A)	18. Strip Neoprene Sponge 12 (189,090,820.A)
9. Pin, Clevis 3/16 X 2.00 (189,090,290.A)	19. Switch, Reed (199,005,180.A)
10. Push Nut, 3/16 (193,090,390.A)	20. Weldment, Valve Box (805,702,210.01)