

Main Setup Guide - Models 159, 160, 172, 173, 452, 453, 467, 468, 490, 491, 493

DIFFERENCES:

Some selections will not show all of these items. For example, selection **8** (cup only, which is normally off) has no settings available. Selection **9** (chocolate) has only the product and water throw times displayed. In addition to the whipper option, selection **6** (cappuccino) only shows the following:

5.RATIO 14 View and set the ratio of chocolate to coffee in a cappuccino drink. The default ratio is 14, meaning that 14% of the drink is chocolate, 86% is coffee.

NOTE:

At any of the preceding displays, you can press **(J)** to test throw that item.

TIME OF DAY FEATURES

You can set the clock and calendar features of your machine, as well as set up to four intervals during the day when the machine will be inactive.

1. Pull out the door switch button to the ON position.
2. Press **(#)** until the display shows **TIME HH.MM**. This is the currently set time, expressed in 24-hour format.
 - a. If desired, set the time using the number keys. Remember to express the time in 24-hour format: 2:00pm = 14:00.
3. Press **(*)**. The display shows the current date: **MMDD YY**. For example, **07/25 97** is July 25, 1997.
 - a. If desired, set the month, day, and year using the number keys.
 - b. To change to the European date format (DD-MM), press **(H)**. The display changes to **25-07 97**.
Note that the slash (/) in the U.S. format is replaced by a dash (-) in the European format.
4. Press **(*)**. The display shows **INHIB 1-3-**. This shows the number of active "time-of-day inhibit" periods. In this example, inhibit periods 1 and 3 are active.
 - a. To turn on or off the inhibit periods, press the corresponding number key (1, 2, 3, or 4).
5. Press **(*)**. The display shows **1.STRT 10.00**. This is the start time of the first inhibit period, expressed in 24-hour time format. This example shows period #1 beginning at 10:00am.
 - a. If desired, enter a new start time using the number keys.
6. Press **(*)**. The display shows **1.STOP 14.00**. This is the stop time of the first inhibit period, expressed in 24-hour time format. This example shows period #1 ending at 2:00pm.
 - a. If desired, enter a new stop time using the number keys.

The machine will not vend between the hours of 10:00am and 2:00pm every day.

7. Press **(*)**. The display shows **3.STRT 0.00**. This is the start time of inhibit period #3. Notice that the display did not show inhibit period #2, since it was inactive (see step 4). This time period and any others are treated exactly the same as inhibit period #1.
8. Press **(#)** once to return to step 2, or press and hold **(#)** to exit.

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COFFEE

Programming hot drinks in your merchandiser is based on a "family" concept. Your menu lists the coffee selections as **J0** (black coffee), **J1** (coffee with sugar), and so forth. All selections in the coffee "family" are grouped under **0**. Likewise, the espresso selections are grouped under **4**, and cappuccino selections under **6**.

All procedures for setting up hot drinks are similar, so this example will demonstrate how to set up fresh brew coffee, selection **0**.

1. Pull out the door switch button to the ON position.
2. Press **#** until the display shows *COFFEE*.
3. Press *****. The display shows *J = FB. 0. 4. 6. 8. 9.* This display shows a fresh brew (FB) machine with active selections 0, 4, 6, 8, and 9. Press **H** to change to a freeze dry (FD) machine.

NOTE

If you want to set up drink options (dry product throw, water throw, etc.), skip to step 5. To set up cup sizes, continue with step 4.

4. Press *****. The display shows *CUP = 8OZ.* This display shows the machine is set up for 8 ounce cups. The equals sign (=) indicates the default throw times for that size cup are loaded. Press **H** until the desired cup size is displayed. A question mark (?) in the display instead of an equals sign (=) means that the default throw times for that size cup are not set up. To load the default throw times for your selected cup size, press and hold **C**. Two beeps are heard, the display shows *CLEARING*, then returns to the previous display. **NOTE:** Fresh brew and freeze dry default times differ.
5. From the *J = FB. 0. 4. 6. 8. 9.* display, press **0**. The display shows *0=ON.* This verifies that the **0** selection is turned on. Press **H** to turn the selection off. Press **H** again to turn it back on.
6. Press *****. The display shows *0.PROD 2.70.* This means that the current selection 0 dry product throw time is 2.70 seconds. For another selection, the **0** would be replaced by that selection number. Use the number keys to enter a new time, if desired. Press **J** to do a test throw.
7. Pressing ***** after each display will cause the following screens to appear:

<i>0.PROD+</i>	View and change the settings for extra strong drink.
<i>0.WTR</i>	View and change the settings for the water throw time.
<i>0.STP</i>	View and change the steep time.
<i>0.STP+</i>	View and change the steep time for an extra strong drink.
<i>0.AIR</i>	View and change the air compressor running time.
<i>0.SUG</i>	View and change the settings for the sugar throw time.
<i>0.SUG+</i>	View and change the settings for extra sugar throw time.
<i>0.LTR</i>	View and change the settings for the lightener throw time.
<i>0.LTR+</i>	View and change the settings for extra lightener throw time.
<i>0.WHP XX</i>	View and change the whipper settings. Press H to switch between the settings:
<i>ON</i>	The drink is whipped unless J is pressed.
<i>OFF</i>	The drink is NOT whipped unless J is pressed.

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- 8 Press **(*)**. The display shows: *LOW.MSG X.XX*. The customer will see *USE EXACT CHANGE* in the display when the amount of available change in the coin mechanism falls below the level you set for *X.XX*. Enter a value with the number keys. For example, if *LOW.MSG 1.00* is selected, the customer sees the *USE EXACT CHANGE* message when less than a dollar's worth of change is in the coin mechanism.
- 9 Press **(*)**. The display shows either:
- DECLINE.ON* = More than one vend is allowed, with a declining balance. This means that the customer can choose multiple products until the amount of credit is lower than the lowest priced product in the machine.
- OR**
- DECLINE.OFF* = A declining balance is not allowed. Press **(H)** to switch between these two choices.
- 10 Press **(*)**. The display shows either *ENGLISH, DEUTSCH, FRANCAIS, ESPANOL, PORTUGUES, SWEDISH,* or *NEDERLANDS*. Press **(H)** to select the appropriate language for your display.
11. Press **(*)**. The display shows the currently set machine configuration. **DO NOT CHANGE THIS CONFIGURATION UNLESS YOU KNOW IT IS INCORRECT!** Improper machine operation will result from an incorrect configuration setting. The possible configurations are:
- | | | |
|-------------------|---|---|
| <i>CMF. SNACK</i> | = | Your machine is snack only. |
| <i>CMF. CHLLD</i> | = | Your machine is a chilled snack. |
| <i>CMF. CAN</i> | = | Your machine has a can unit. |
| <i>CMF. FOOD</i> | = | Your machine has a food module. |
| <i>CMF CH.CAN</i> | = | Your machine has chilled snacks and a can unit. |
- If **J+** is displayed (example: *CMF.J+SNACK*), your machine has a coffee section (model 493 only).
- Press **(H)** to change the configuration.
 - Press **(J)** to turn the coffee section setting off or on.
- 12 Press **(*)**. The display shows *+/- +XX°F*. This is the currently set temperature for the chilled snack, or the can or food module.
- Change the temperature: Press **(0)** to increase the temperature; press **(1)** to decrease the temperature.
 - Press **(H)** to change the display units from Fahrenheit to Celsius.
- 13 Press **(*)** to return to step 3 or **(#)** to exit.

SETUP

Configure various machine functions:

1. Pull out the door switch button to the ON position.
2. Press **#** until the display shows **SETUP**.
3. Press *****. The display shows either **FREE ALL** or **FREE OFF**. When **FREE ALL** is displayed, all selections are free. Press **H** to switch between **ALL** and **OFF**.
4. Press *****. The display shows either **DUMB MECH**, **MDB MECH**, **EXEC MECH**, or **NO MECH**. Press **H** to switch between these coin mech choices.
5. Press *****. The display shows the bill validator choices. Press **H** to switch between the choices:
SER. 1.2.5.10.20 = A serial validator is installed. Press **1**, **2**, **5**, **6**, or **7** (respectively) to display the bill (\$) which will be accepted.

OR

MDB. 1.2.5.10.20 = An MDB validator is installed. Configure the validator as follows:

- Press **1**, **2**, **5**, **6**, or **7** (respectively) to display the bill (\$) which will be accepted. For Example, the display shows **MDB. 1.2.5.10.20**. This means that the validator accepts \$1, \$2, \$5, \$1Q and \$20bills.
- Press ***** until the display shows **MDB. <*>**. This means the machine recognizes that an MDB bill validator which accepts non-standard bills or tokens is connected and operating.
- Press **J** to enter the list of bill (\$) or tokens which will be accepted.
- Press ***** to scroll through the list that you set up earlier. Each bill in the list is displayed. For example, the display will show **5.00 ON** when the validator is told to accept \$5.00bills. When all bills have been displayed, the display shows the token screen: **TKN ON** or **TKN OFF**.
- Press **H** to turn a particular selection ON or OFF.
- Press **#** when you have completed the list. **MDB. <*>** will again be displayed.

OR

PULSE DBV = A pulse validator is installed.

OR

NO DBV = No bill validator installed.

6. Press *****. The display shows either:
NO CARD = No card reader is installed,
DUMB CARD = A dumb (12pin) card reader is installed,
MDB CARD = An MDB card reader is installed.
Press **H** to switch between the choices.
7. Press *****. The display shows **CHANGE X.XX**. Change will be given for coins or bills up to this denomination without the customer having to make a selection. For example, if **1.00** is displayed, the machine will give the customer change for a dollar without requiring a selection. Entering **0.00** means that no change will be given.

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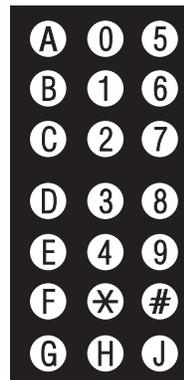
SERVICE

View machine status and test certain functions:

1. Pull out the door switch button to the ON position.
2. Press **#** until the display shows **SERVICE**.
3. Each time you press *****, the display shows a different test or indication as listed in the table below.

NOTE

Some tests may not appear due to machine configuration.



DISPLAY	DEFINITION	TESTS YOU CAN PERFORM
<i>TEST .00</i>	Tests the coin mech, bill validator, and motors.	Insert coins and bills into the merchandiser. The amount you entered is displayed. Vend any selection. A selection can also be vended without inserting any money. NOTE: This is the only way to vend the last (pre-cooled) can from a can module.
<i>VER XXXX</i>	Software version number.	None.
<i>FOOD 0123</i>	Tests the operation of the food door.	Press J to test the food door. Displays: "0" = vend door locked, "1" = loading door closed, "2" = food door open, "3" = food door closed
<i>VERJXXXX</i>	Coffee section software version.	None.
<i>CUP P T P</i>	Tests the cup mechanism and displays other sensor switch conditions.	Press J to drop a cup. "?" displays if no cup, "T" displays if tank is low, "P" displays if waste pail full.
<i>WHIP</i>	Tests the whipper motors.	Press J to run the whipper motors for one cycle.
<i>AIR</i>	Tests the air compressor.	Press J to operate the compressor for one cycle.
<i>BREWER 1</i>	Tests the brewer.	Press J to open the brewer (1 displayed if closed). Press J to close the brewer (- displayed if open).
<i>RINSE *9</i>	Operates the brewer rinse system (fresh brew).	Press J to rinse the brewer. Press 9 to rinse the chocolate mixing bowl.
<i>RINSE *</i>	Operates the bowl rinse system (freeze dry).	Press J to rinse the bowls.

4. Press ***** to return to step 3 or **#** to exit.

FAULTS

Display all the active faults on your merchandiser:

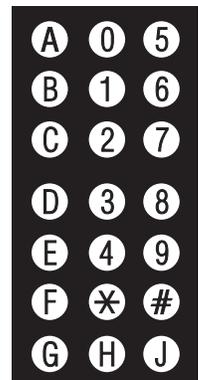
1. Pull out the door switch button to the ON position.
2. Press **#** until the display shows **FAULTS**.
3. Press ***** to see the list of faults:

NOERRORS	There are no faults on the machine.
KEYPAD XY	Key(s) "X" and "Y" are stuck.
ROMERROR	The EPROM is bad.
RAMERROR	RAM is not initialized or is not compatible with the currently loaded software. If this message appears, initialize your RAM by performing the following procedure: NOTE: Initializing RAM will erase all your data and drink settings. Be sure you have written this information down before continuing. Press AND HOLD C . You will see CLEARRING in the display. Continue holding until two beeps are heard and the display shows FINISHED .
LOWWATER	The water level in the tank is low.
JCOMMERR	The coffee section is not responding to the controller.
FOODXXX	The food door has failed.
HC.ERR XX°F	The health control has been set. "XX°F" is the maximum temperature reached.
TEMP REF	The temperature reference on the main PCB cannot be read.
TEMP SENSE	The temperature sensor cannot be read.
TEMP RANGE	The temperature sensor is out of range.
CUPS ?	Out of cups.
WASTE PAIL	The waste pail is full.
DBV ERR	Problem with the bill validator.
BREWER	The brewer is jammed or out of position.
MECHERR	Problem with the coin mechanism.
NONEReady	Time of day inhibit is active, or all selections are out of service.
CHKPRICE	Illegal price is detected.
CARD ERR	Problem with the card reader.

When the first fault item (if any) repeats, you have seen all the faults.

When active faults exist, pulling the door switch will automatically display FAULTS.

4. Press ***** to see more faults or **#** to exit.



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PAY OUT (Does not apply to machines with EXEC coin mechanisms.)

Pay out coins:

1. Pull out the door switch button to the ON position.
2. Press # until the display shows

PRY = 1.2.3 (MDB mech). This is telling you that pressing ① pays out nickels, pressing ② pays out dimes, and pressing ③ pays out quarters.

OR

NDQ = 1.2.3 (dumb mech). This is telling you that pressing ① pays out from tube 1 (nickels), pressing ② pays out from tube 2 (dimes), and pressing ③ pays out from tube 3 (quarters).

3. Press the appropriate key once to pay out one coin.
4. Press and hold the appropriate key to pay out coins continuously.
5. Press and hold # to return to the standby message.

PRICE

Set prices for all the selections in your merchandiser:

The price display:



1. Pull out the door switch button to the ON position.
2. Press # until the display shows **PRICE**.
3. Press *, and the display shows **AO .XX**. "XX" is the price for the **AO** selection.
4. Press * until the selection you want to price is displayed. **NOTE:** Only selections which are actually present in the machine can be accessed this way, except selection **H**, which can always be priced.

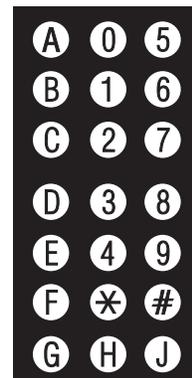
OR

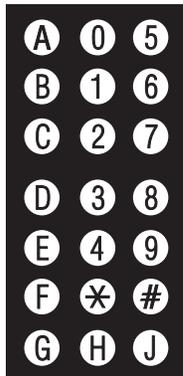
Press the letter and number of the selection you want to price, and it will be displayed immediately. **NOTE:** All selections in the machine are accessible in this way.

5. Enter a new price with the number keys.
6. Repeat steps 4 and 5 until you have priced all the selections.

OR

7. Press # to return to the **PRICE** display, or hold # to exit.





THE KEYPAD

During vending, customers use the keypad to make selections. When you pull the door switch to the ON position, the keypad becomes your programming input device. For reference, we will show the keypad on all the pages.

SPECIAL PROGRAMMING KEYS

- Ⓝ Press this key to move from one function to another. From within a function, press once to return to the beginning of the function; press and hold to return to the standby message.
- Ⓧ This key moves you around inside of a function.
- ⓗ This key allows you to switch between two or more choices.
- ⓙ This is the "action" key. It will start tests, fill the water tank, etc.

DATA

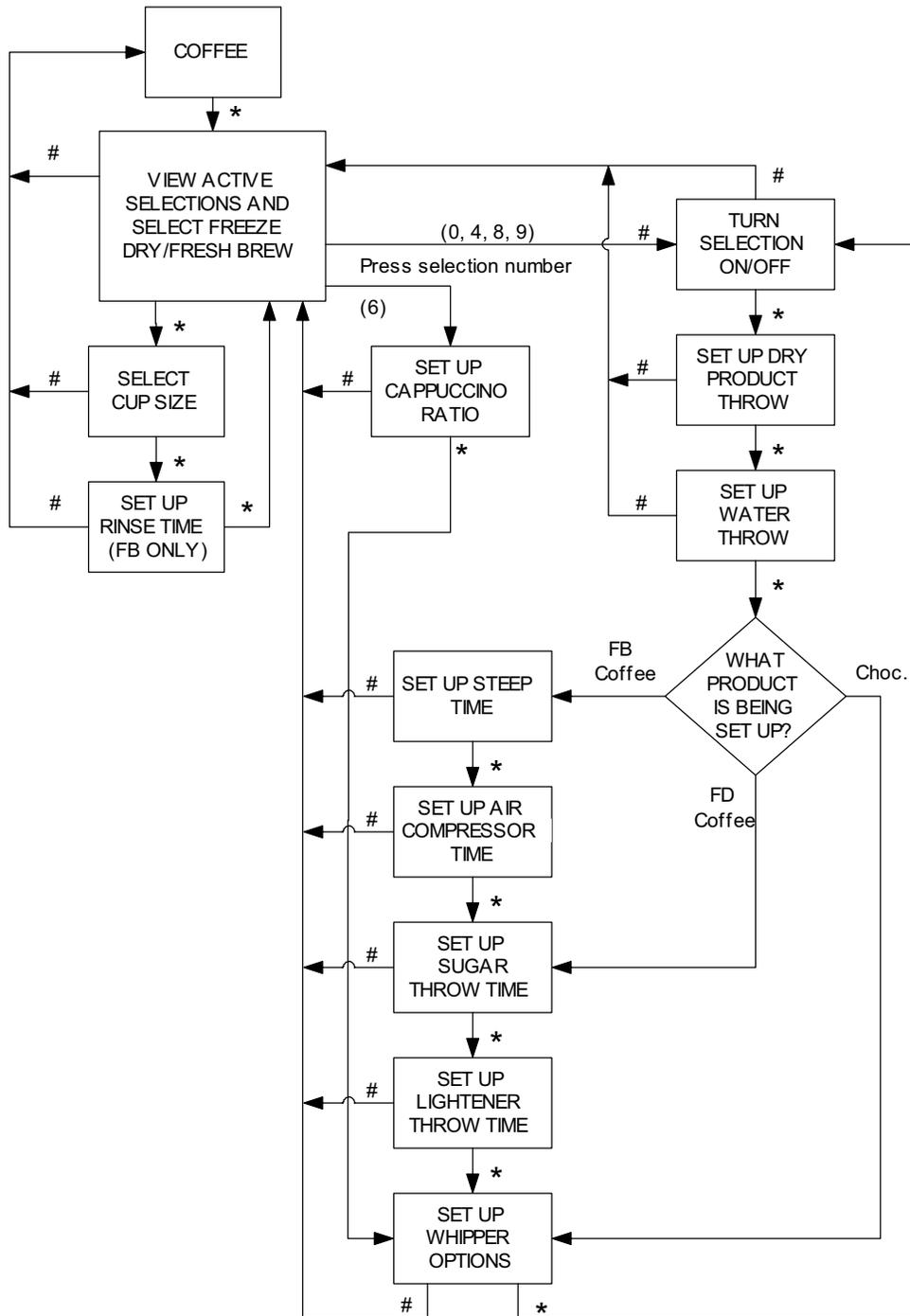
View several types of sales data:

NOTE

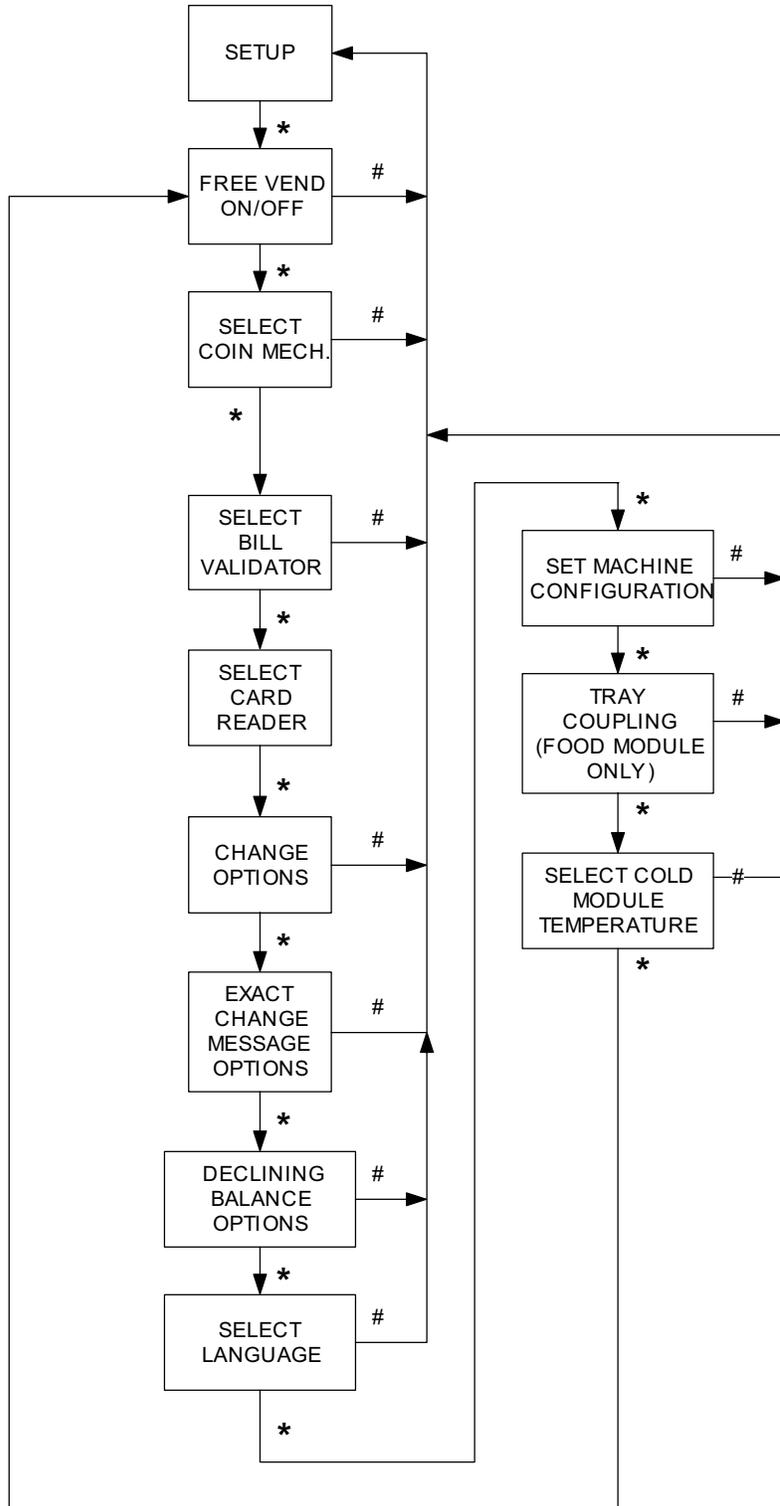
All data is not resettable.

1. Pull out the door switch button to the ON position.
2. Press Ⓝ until the display shows *DATA*.
3. If you have the DEX option, press ⓙ to transfer data into your DEX device.
4. Press Ⓧ. The display shows *NR\$.XX*. This is the dollar and cents amount of machine sales.
5. Press Ⓧ. The display shows *NR XX*. This is the total count of all vends.
6. Press Ⓧ. The display shows *_0.XX*. This is the dollar and cents amount of free vend "sales". (Does not display if the total is zero.)
7. Press Ⓧ. The display shows *_0.XX*. This is the total count of free vends. (Does not display if the total is zero.)
8. Press Ⓧ. The display shows *TST XX*. This is the total count of test vends. (Does not display if the total is zero.)
9. Press Ⓧ to return to step 4, or Ⓝ to exit.

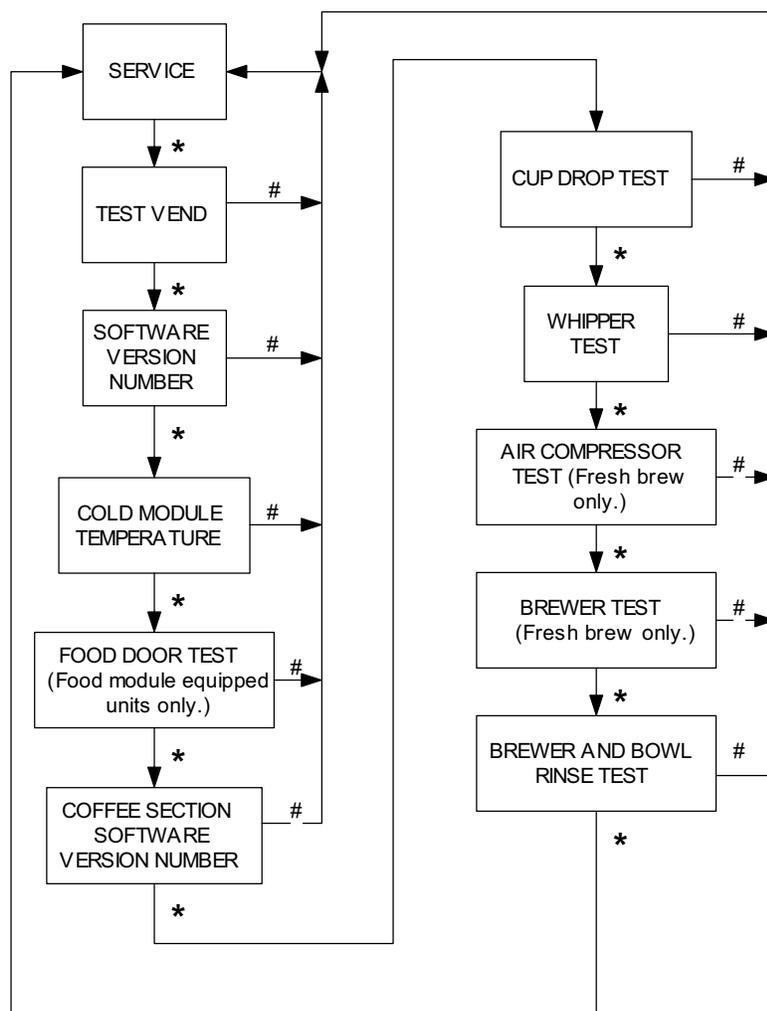
COFFEE PROGRAMMING FLOW CHART



SETUP PROGRAMMING FLOW CHART

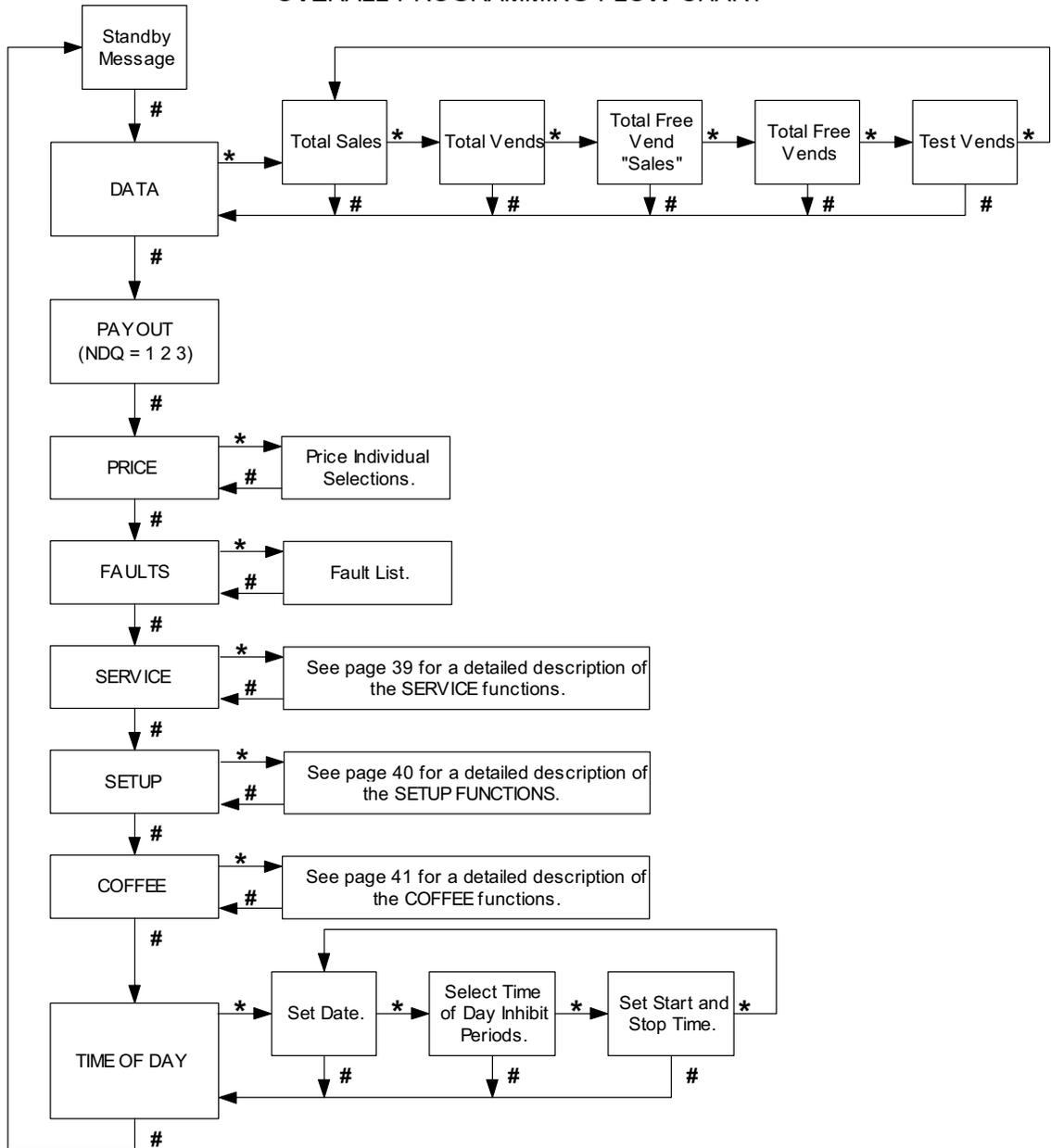


SERVICE PROGRAMMING FLOW CHART



Programming

OVERALL PROGRAMMING FLOW CHART



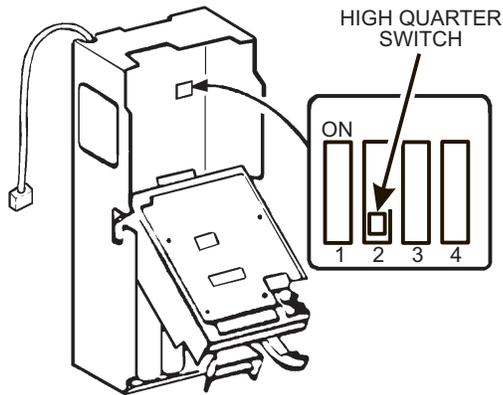
The diagrams on the next few pages are maps of the programming functions in your merchandiser. These functions will be described in greater detail in the text, but the diagrams will help you get around once you are familiar with how programming works. Note that some features may not be available on your merchandiser, depending upon how it is configured. The symbols * and # represent special keys that move you around inside the programming modes, and from one mode to another. As you can see on the diagram, these symbols show up in the pathways in and around the modes.

5. Set Up the Coin Mechanism

If the changer is not a MARS TRC 6000, proceed to *LOADING THE COIN MECHANISM*

If the changer is a MARS TRC 6000, you must set the high quarter switch.

SETTING THE QUARTER SWITCH:



QUARTER SWITCH POSITION	ACTION
LOW	The coin mechanism will only store 6 quarters. The rest are sent to the coin box. Fewer quarters are available for change.
HIGH	The coin mechanism will store 69 quarters. More quarters are available for change.

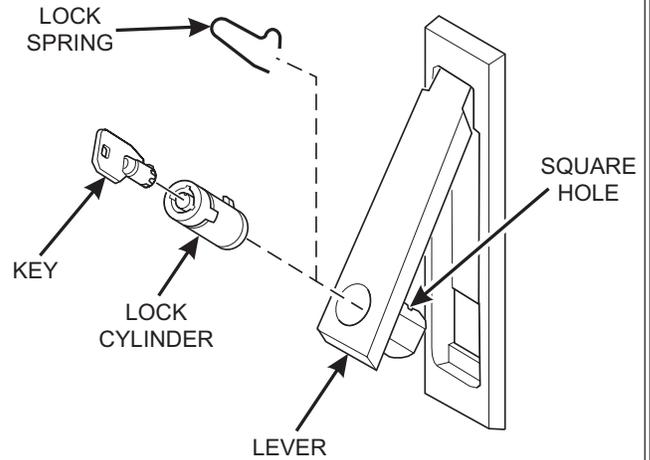
6. Load the Coin Mechanism

1. Open the cabinet door.
2. Open the monetary door.
3. Insert coins one at a time until each of the coin tubes has been filled.
4. Inspect the tubes for shingled coins and correct if necessary.

3. Install the Lock Cylinder

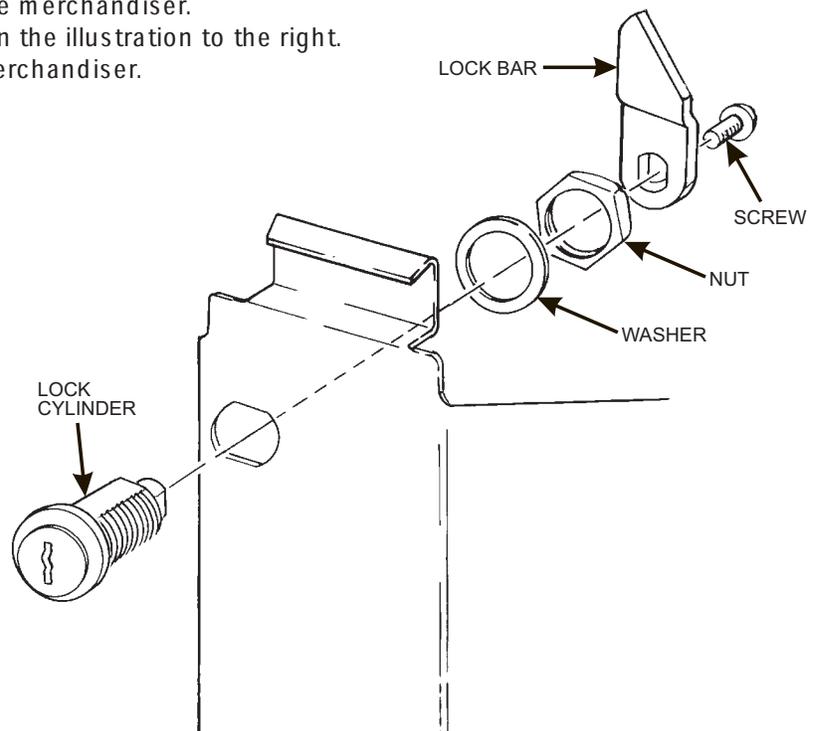
Install an optional lock cylinder in the merchandiser as follows:

1. Position the lift handle lock lever as shown.
2. Depress the lock spring at the square hole of the lock cylinder receptacle and pull the lock springs out through the front.
3. Position the lock cylinder as shown. Depress the spring loaded lock pin.
4. Push the cylinder into the cylinder receptacle in the lever. The pin should snap into the square hole.
5. If the cylinder pin does not seat in the square hole, press against both ends of the lock cylinder. Rotate the cylinder until the pin snaps into place.
6. **Leaving the door open**, test the lock mechanism with a key.



4. Install the Optional Cash Box Lock

1. Remove the cash box from the merchandiser.
2. Assemble the lock as shown in the illustration to the right.
3. Return the cash box to the merchandiser.



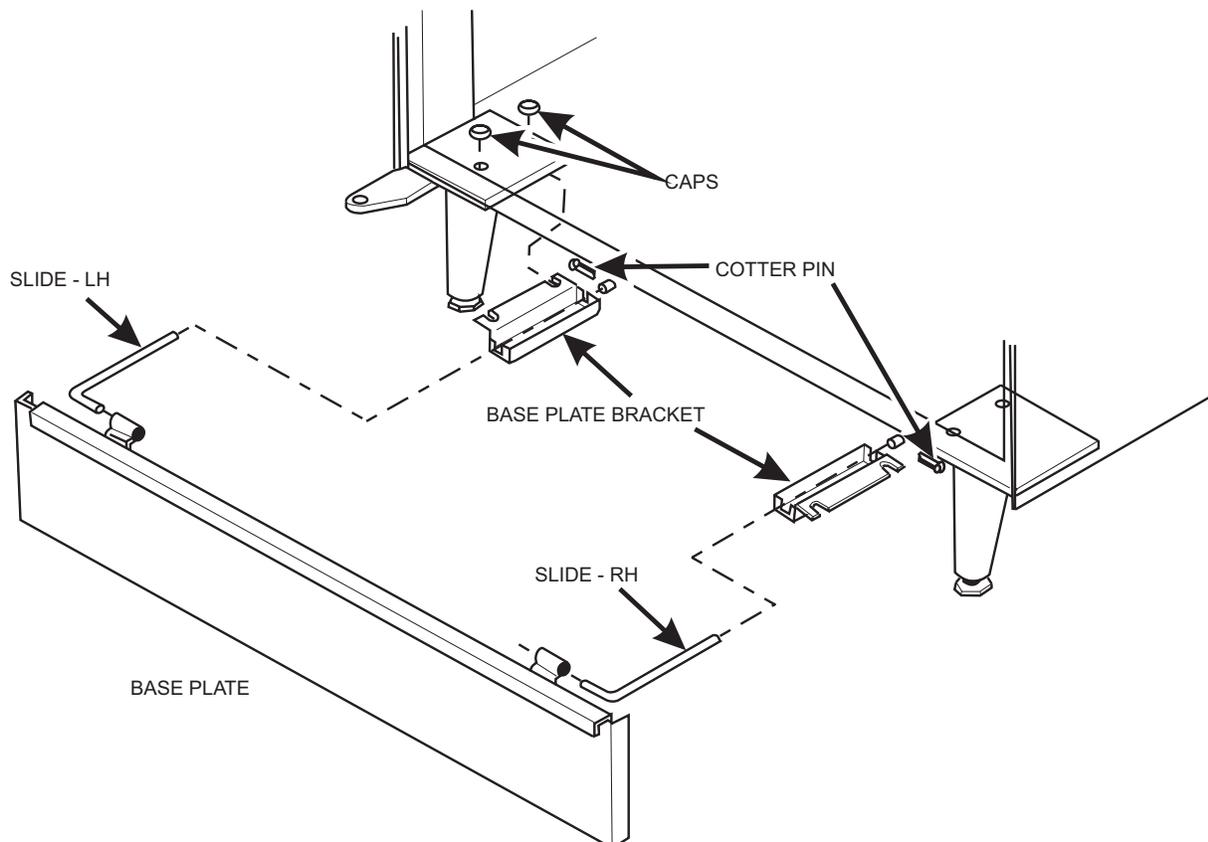
2. Install the Base Plate

Refer to the figure below while completing the following procedures:

WARNING

Do not move the cabinet while the hex head screws and/or carriage bolts are loosened. The cabinet would become unstable and likely to tip and cause injury.

1. Remove the waste pail and the grounds pail from the merchandiser (refreshment center only).
2. Remove the floor liner from the merchandiser (refreshment center only).
3. Remove the two caps as shown.
4. Loosen the left leg assembly carriage bolts and nuts to allow mounting a base plate bracket.
5. Secure one of the base plate brackets to the leg assembly using the two carriage bolts. Tighten the carriage bolts and nuts.
6. Loosen the right leg assembly hex screws to allow mounting the other base plate bracket.
7. Secure the other base plate bracket to the right leg assembly using the two hex head screws. Tighten the hex head screws.
8. Insert the short arms of the slides into the hinged tabs of the base plate. Position the slide so the notch near the short arm is on the bottom side.
9. Insert the long arms of the slides into the base plate brackets.
10. Insert and secure a cotter pin through the hole in the back of each of the slides.
11. Push the base plate toward the merchandiser cabinet. The front tabs of the base plate brackets should seat in the notches in the long arms of the slides.
12. Replace the caps, liner, and pail(s) removed previously.

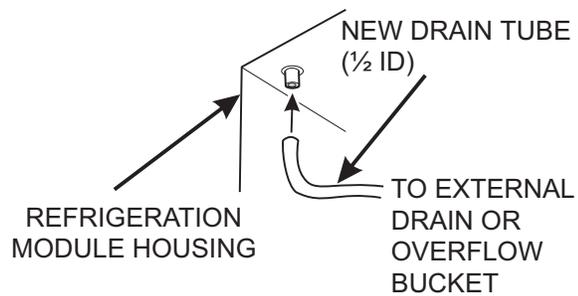
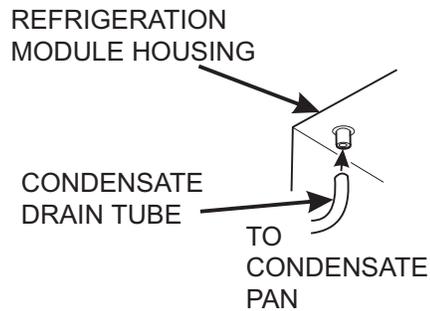


Refrigeration Module

Complete the setup of chilled snack features (if present):

A. Connect a Refrigeration Module to an External Drain (optional)

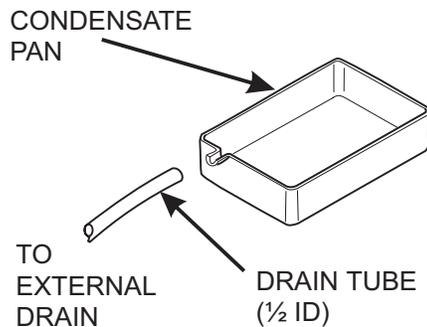
METHOD 1:



1. Remove the condensate drain tube from the refrigeration module.

2. Connect a new drain tube to the refrigeration module housing.
3. Route the new tube to an external drain or to an overflow bucket.

METHOD 2



1. Connect a drain tube to the condensate pan.
2. Route the drain tube to an external drain or to an overflow bucket.

Final Installation

Some machines have a small square rear duct that must be installed before the machine is moved into its final position. If your machine has this duct, locate it and follow the enclosed instructions.

Move the merchandiser to its **final** position:

- You can position this merchandiser anywhere in a bank of machines. It can even be placed on an end flush against a side wall.
- Place the merchandiser at least six inches away from the back wall. This will provide adequate air circulation for the refrigeration unit.
- There should be enough room in front of the merchandiser for the door to move freely.

WARNING
This machine is only rated for installation in an indoor location.

1. Level the Merchandiser

1. Place a spirit level on the top front edge of the cabinet with the door fully closed. Adjust the front legs only until the cabinet is reasonably level (figure 1).
2. Hold the door open about 4 inches. (This relieves any stress the door may be placing on the cabinet.)

WARNING

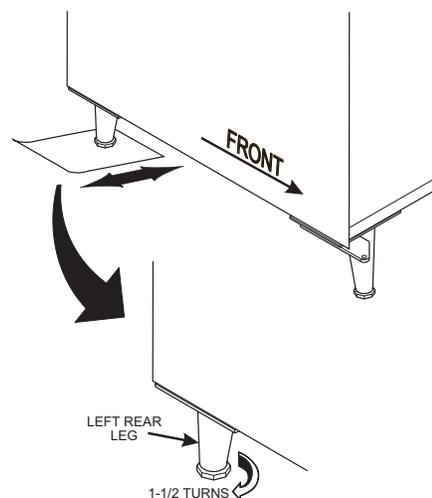
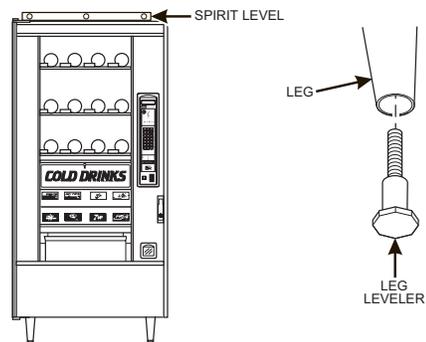
Have an assistant hold the merchandiser while you adjust the leg levelers.

3. Adjust the back legs so that the back leg leveler on the hinge side is off the floor just enough so a piece of paper can slide under it with only a bit of resistance (figure 2).
4. For proper weight distribution on all four legs, raise the back leg on the hinge side by unscrewing the leveler 1½ turns.

NOTE

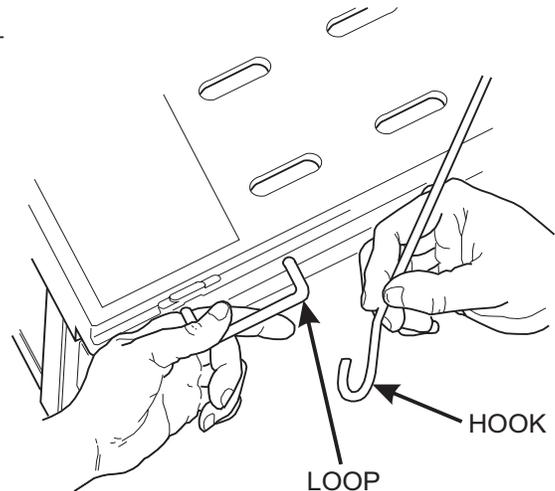
You may need to use pliers or channel locks to loosen the leg levelers.

When the merchandiser is part of a bank of machines, level it in reference to the other machines. After leveling is complete, check that the door operates easily.



4. Return the Gum and Mint Dispenser to the Vending Position

1. Make sure all product pushers are in the vending position.
2. Close the gum and mint assembly lid.
3. Hold the loop on the right side of the magazine with your left hand. Release the hook with your right hand and lower the magazine.
4. Continue to hold the loop until the magazine has been fully lowered.
5. Pivot the gum and mint assembly back to the vending position.



5. Removing and Installing Column Reducers

The two left-most vending columns (as seen from the loading side) can be adjusted for two different widths.

When a column reducer is in place, the width of the column will be $3\frac{1}{16}$ inches.

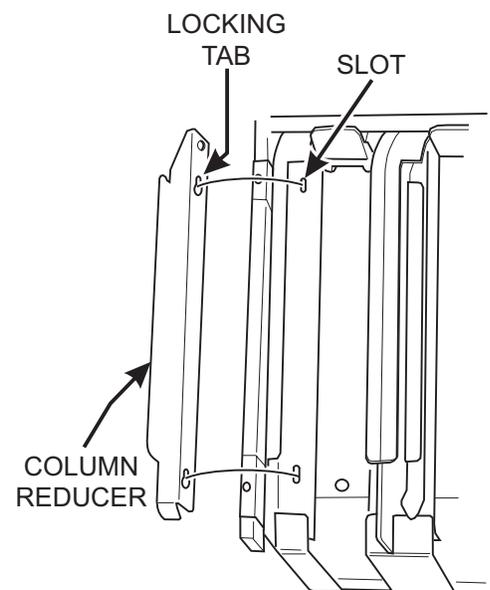
When a column reducer is removed, the width of the column will be $3\frac{7}{8}$ inches.

TO REMOVE A COLUMN REDUCER:

1. Pull the reducer away from the cabinet door to disengage the locking tabs.
2. Lift up to remove the reducer from the gum and mint assembly.

TO INSTALL A COLUMN REDUCER:

1. Place the reducer on the gum and mint dispenser so the locking tabs are in the slots.
2. Push the reducer toward the cabinet door to lock the reducer in place.



3. Load the Gum and Mint Dispenser With Product

1. The gum and mint assembly lid is held closed by two magnets. Open the lid toward the inside of the merchandiser door.

WARNING

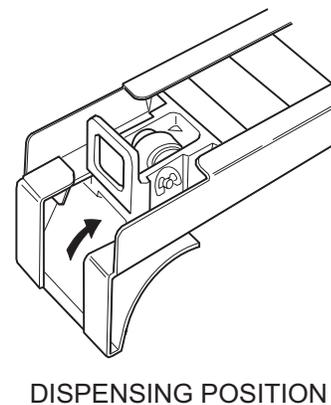
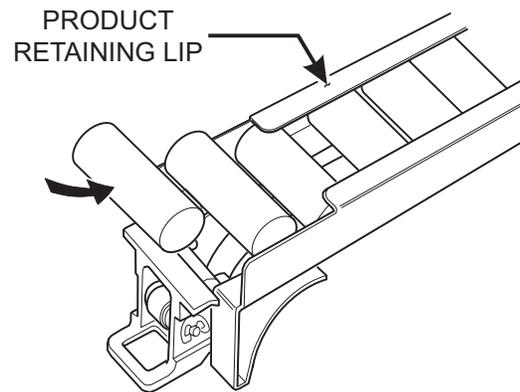
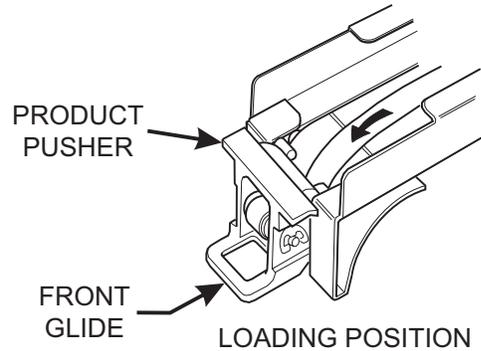
Keep your hand on the product pusher until it is locked in place. Failure to do so may result in personal injury or in damage to the dispenser.

2. Move the product pusher into the loading position:
 - a. Pull back on the pusher.
 - b. Pull down on the pusher and lock the front glide into position.
3. Load the product:
 - a. Push the product forward.
 - b. Be sure the last item is completely under the product retaining lip.

WARNING

Keep your hand on the product pusher until it comes to rest behind the last item in the column. Failure to do so may result in personal injury or in damage to the dispenser.

4. Move the product pusher into the dispensing position:
 - a. Pull the product pusher down to unlock the front glide.
 - b. Slide the product pusher toward the product.

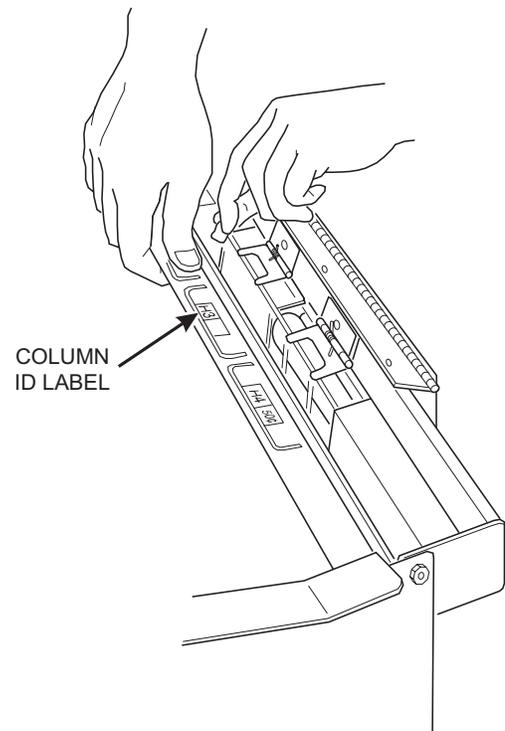


Set Up The Gum and Mint Unit

1. Install Price Labels

The column ID labels have already been attached to the delivery door, and a set of self-adhesive price labels are in the plastic bag that contained this manual.

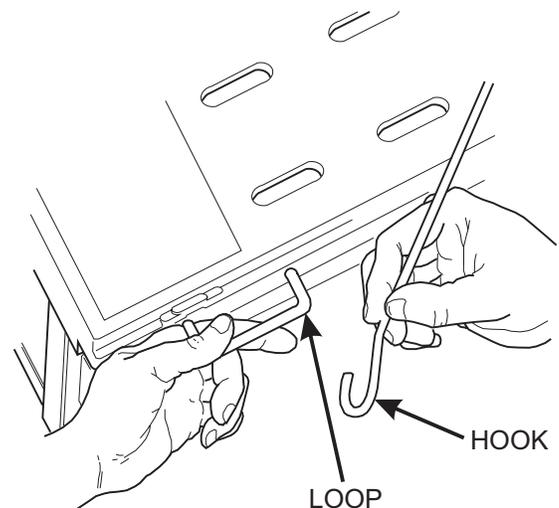
1. Stick the desired price label next to the column ID number as shown.



2. Put the Gum and Mint Dispenser in the Loading Position

The gum and mint assembly is hinged to the delivery pan assembly and is held in the vending position by two magnets. The gum and mint assembly is held in the loading position by a hook and a loop. One end of the hook is attached to the right side of the door. The loop is mounted on the right side of the gum and mint assembly.

1. Use the loop as a handle and raise the gum and mint magazine with your left hand. With your right hand, move the free end of the hook so it catches the loop. This will hold the magazine while you are loading it with product, as shown.



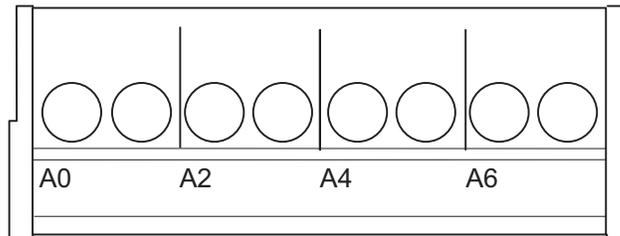
5. Install Price Labels and Selection ID Numbers (continued)

WHICH ID LABEL GOES WITH WHICH SELECTION?

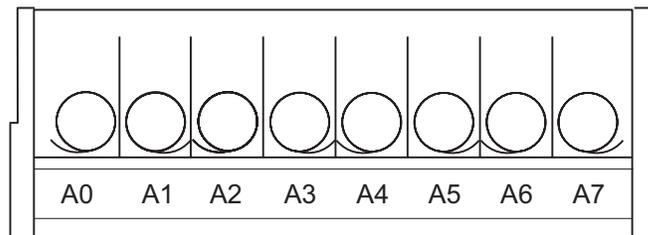
See the figures below for snack and candy tray positions.

		MOTOR POSITION									
TOP TRAY	TRAY A	A0	A1	A2	A3	A4	A5	A6	A7	A8	A9
	TRAY B	B0	B1	B2	B3	B4	B5	B6	B7	B8	B9
	TRAY C	C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
	TRAY D	D0	D1	D2	D3	D4	D5	D6	D7	D8	D9
	TRAY E	E0	E1	E2	E3	E4	E5	E6	E7	E8	E9
FOOD SELECTION/CAN SELECTION/BOTTOM TRAY	TRAY F	F0	F1	F2	F3	F4	F5	F6	F7	F8	F9

EXAMPLE OF A BASIC SNACK TRAY ID LABEL TO USE



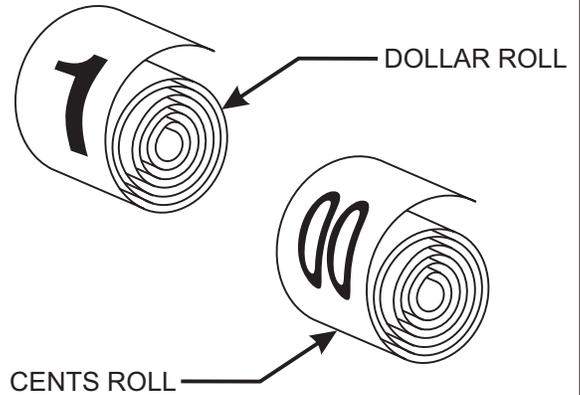
EXAMPLE OF A BASIC CANDY TRAY ID LABEL TO USE



5. Install Price Labels and Selection ID Labels

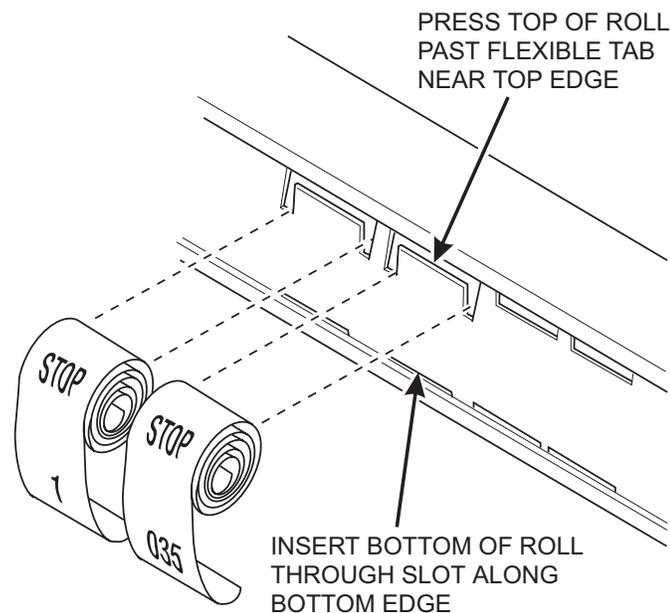
Price Labels

Price labels are printed on coiled-up rolls. You will find these in the plastic bag that contained this manual. There are two types of price rolls: Dollar rolls (1 to 12 in increments of 1) and Cents rolls (00 to 95 in increments of 05)



Price Label Installation

There are three pairs of slots in the front of the tray. Insert the dollar roll in the left-most pair of slots if the price is \$1.00 or more. Insert the cents roll in the center pair of slots. The low-number end of the roll goes in the top slot and the high-number end of the roll goes in the bottom slot.



Price Label Adjustment

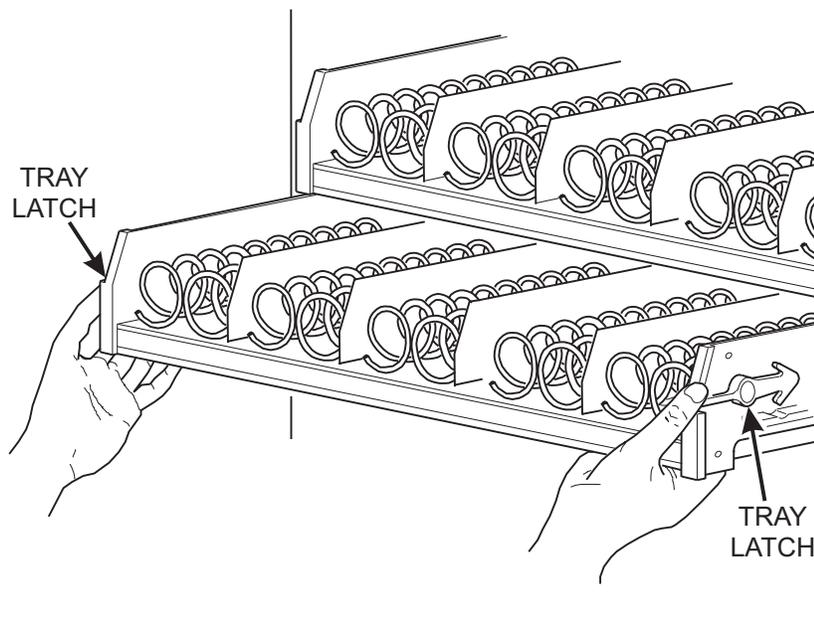
You can set selection prices within the following range:

Minimum Price	\$.00
Maximum Price	\$12.95
Increment	\$.05

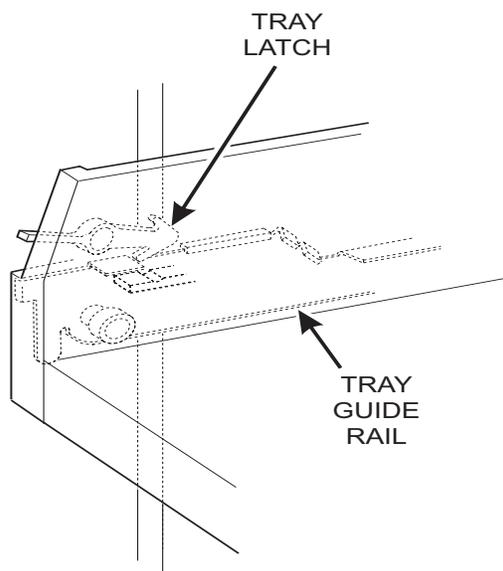
Use your thumb to move each price roll up or down as needed to set the desired price.

4. Return the Trays to the Vending Position

1. Lift the tray until it is parallel to the floor as shown.



2. Push the tray toward the back of the cabinet. If so equipped, the tray latches on the sides of the tray will lock into position.



3. Loading a Tray With Product (continued)

PREPARING THE MERCHANDISER FOR VENDING "LUNCH BUCKET":

Because of the weight and shape of the package, it is recommended that this product be vended only from the bottom tray.

To vend this product, two adjacent positions must be coupled together.

See **INSTALLING A GEAR** for mechanical coupling directions, or see the Programming Guide for electrical coupling directions.

The left spiral coupler should be installed one position counterclockwise from the vertical position.

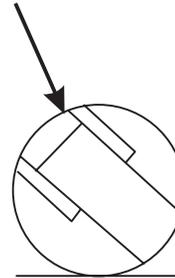
The right spiral coupler should be installed one position clockwise from the vertical position.

Replace the current spirals with six-count spirals. These are available from the parts department. See **REMOVING AND INSTALLING SPIRALS**.

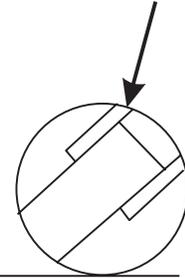
A pad can be installed in the bottom of the delivery pan to quiet and cushion product delivery. This part is available from the parts department.

Load "Lunch Bucket" products as shown.

ONE POSITION
COUNTERCLOCKWISE
FROM VERTICAL



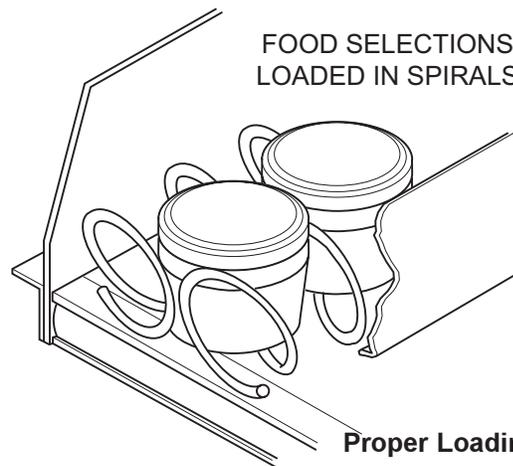
ONE POSITION
CLOCKWISE
FROM VERTICAL



LEFT SPIRAL
COUPLER

RIGHT SPIRAL
COUPLER

AS VIEWED FROM FRONT OF TRAY

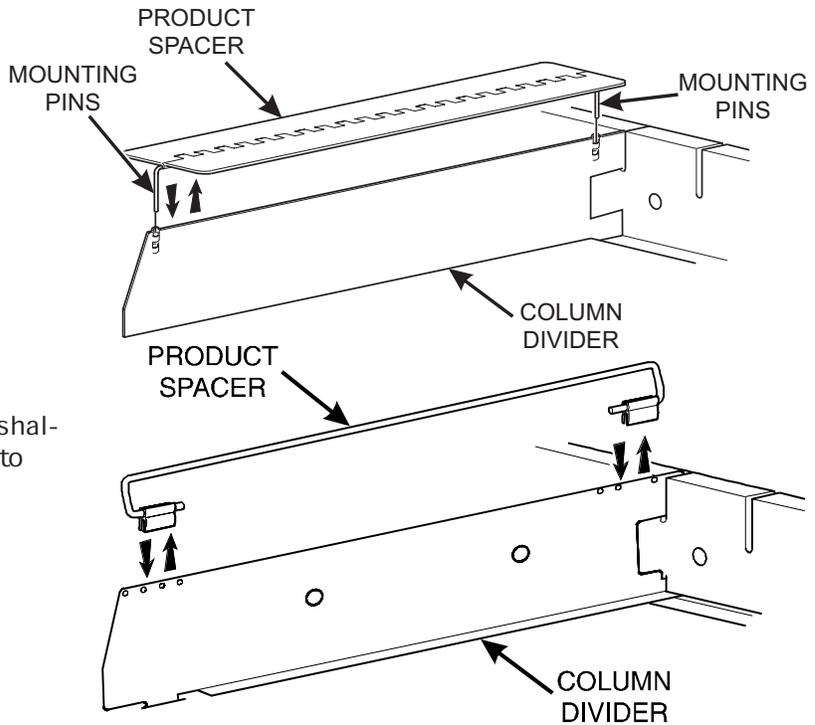


3. Loading a Tray With Product (continued)

INSTALLING A PRODUCT SPACER:

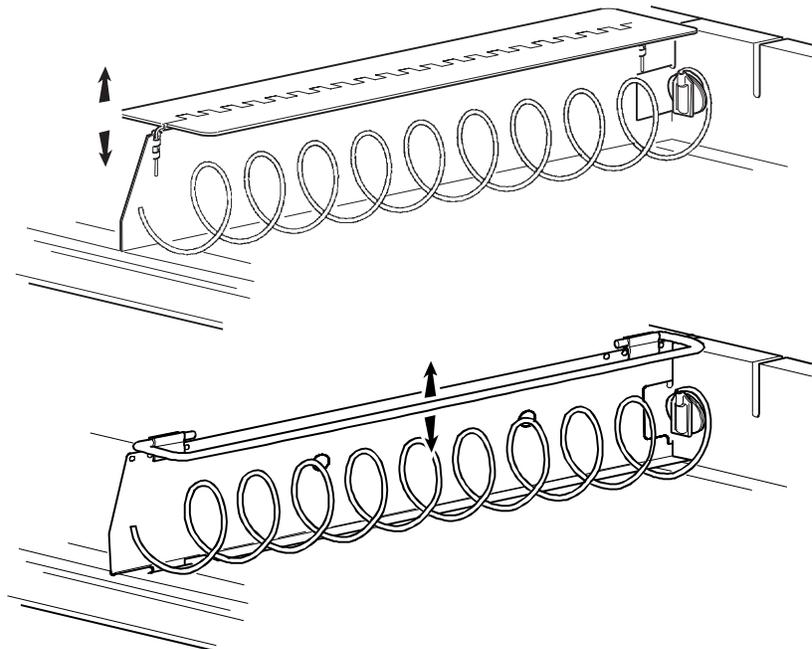
The product spacer will keep a tall, narrow product upright.

Shown at right are product spacers and column dividers on both deep and shallow trays. Insert the product spacer onto the column divider as shown.



ADJUSTING A PRODUCT SPACER:

With product loaded in the tray, rotate the product spacer up or down to keep the product upright as shown.



REMOVING A PRODUCT SPACER:

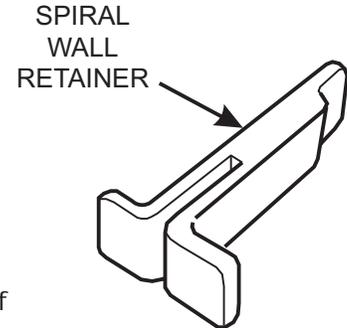
Pull the product up off the column divider.

3. Load Trays With Product (continued)

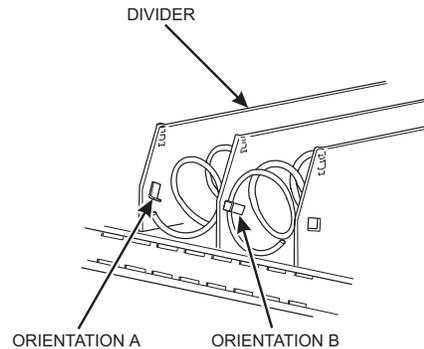
SPIRAL WALL RETAINER USAGE:

A spiral wall retainer serves to compress the spiral and make it act like a spring to more forcefully eject a product. Do some test vends and use a spiral wall retainer when a product does not readily leave the spiral.

- Use a spiral wall retainer in the following cases:
 - The spiral has a capacity of 20, 25, 30, or 38.
 - The product is thin.
 - The product is on a candy tray.
- The spiral wall retainer can also be used with other spirals and types of products.
- The spiral wall retainer is installed near the front of the column divider.
- There are two ways to install the spiral wall retainer.



	RETAINER ORIENTATION	
	A	B
COLUMN	0 and 1	1 and 2
DIVIDER	2 and 3	3 and 4
BETWEEN	4 and 5	5 and 6
THESE	6 and 7	7 and 8
POSITIONS	8 and 9	



- To install a spiral wall retainer, insert the retainer in the square slot near the front of the column divider.
- The spiral wall retainer must be removed in two cases:
 - A Kit-Kat bar loaded into either of the two right hand positions of a tray will not clear the retainer on the column divider between the two positions.
 - A product pusher will catch on a retainer in *ORIENTATION A*.

PRODUCT PUSHER USAGE (OPTIONAL):

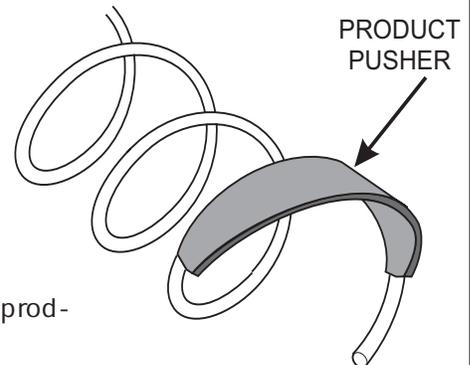
The optional product pusher will give the top of a product an extra tilt to help it fall into the delivery pan.

Use a product pusher in the following cases:

- The spiral has a capacity of 15, 13, or 11.
- The package is non-rigid like bagged peanuts

The product pusher can also be used with other spiral and types of products.

Product pushers are available from the parts department. To use a product pusher, snap it on the spiral as shown. You can adjust the product pusher by moving it around on the spiral to achieve the best vending results.



Main Setup Guide - Models 159, 160, 172, 173, 452, 453, 467, 468, 490, 491, 493

3. Load Trays With Product

**SPIRAL CAPACITY COLOR CODES
(MODELS 159, 160, 467, 468, 490, AND 493)**

SPIRAL CAPACITY	SPIRAL COUPLER COLOR	SPIRAL CAPACITY	SPIRAL COUPLER COLOR
6	Purple	17	Brown
9	Gray	20	White
11	Blue	25	Green
13	Yellow	30	Black
15	Red	38	Orange

The color of the spiral coupler (the little plastic tab attached to the rear of the spiral) will tell you how many products will fit in the spiral. See table at left.

NOTE

Another way to determine spiral capacity is to count the spaces in the spiral !

**SPIRAL CAPACITY COLOR CODES
(MODELS 172, 173, 452, AND 453)**

SPIRAL CAPACITY	SPIRAL COUPLER COLOR
8	Gray
10	Blue
12	Yellow
14	Red
18	White

LOADING A TRAY WITH PRODUCTS IN GENERAL:

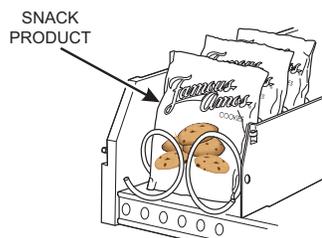
- See **PRODUCT PUSHER USAGE** for spirals with capacity of 11, 13, or 15.
- See **SPIRAL WALL RETAINER USAGE** for spirals with capacity of 20, 25, 30, or 38.
- Begin loading products at the front of the tray and work toward the back. Position the product so the package rests on the tray. DO NOT force a product into a spiral.
- If the fit is too tight or too loose, change the spiral size. See **REMOVING AND INSTALLING A SPIRAL**.
- Be sure there are no empty positions between products in each spiral.

SPECIAL CONSIDERATIONS:

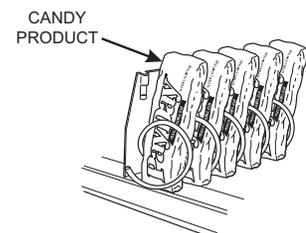
Bagged Products - Position package upright, then push the tops slightly toward the rear of the tray. Also, see **PRODUCT PUSHER USAGE**.

Thin Packages - Position the package upright. Also, see **SPIRAL WALL RETAINER USAGE**.

KitKat - The two right-most columns of the candy tray are designed to accept the KitKat candy bar.



CORRECT LOADING OF SNACKS

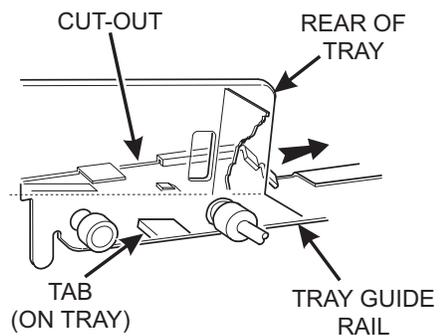
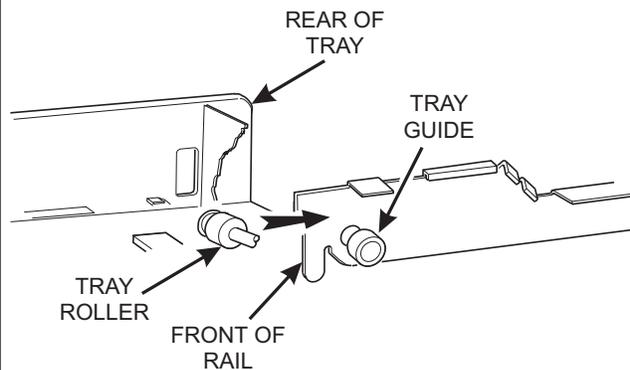


CORRECT LOADING OF CANDY

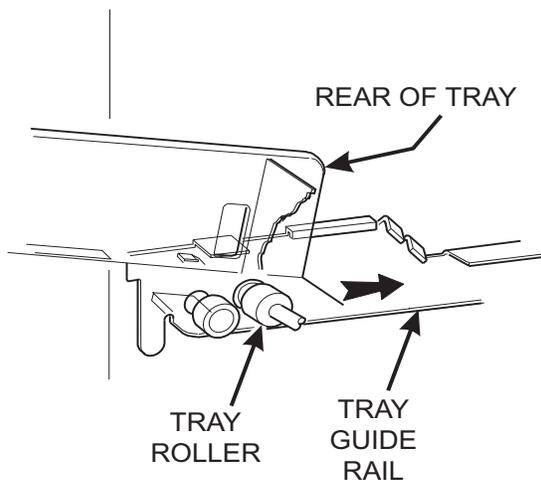
Installing a Tray in the Merchandiser

- Study this procedure before you install a tray for the first time; while you are holding the tray you will not be able to see this area. Proceed as follows:

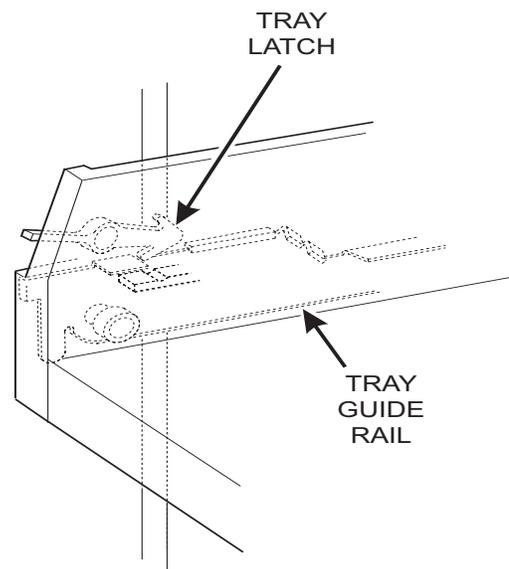
1. Insert the tray so that the tray rollers pass over the tray guide rollers.
5. Hold the tray up while pushing it toward the rear. Stop when the tab on the tray aligns with the opening in the tray guide.



2. Bring the tray roller to rest on the tray guide.



6. Lower the tray until it rests on the tray guide roller. Push the tray in all the way.
7. The tray latch (if so equipped) will fall into the locking position.



3. Tilt the tray upward.
4. Connect the tray wiring harness to the PC board mounted to the guide rail JUST ABOVE the tray you are installing.

Moving a Tray Up or Down

This merchandiser can be adjusted to vend taller products. Some guidelines must be followed:

- Keep in mind that when you increase the product height available to a tray by lowering it, you will be decreasing the product height available to the tray below.
- If a tray is in the lowest position, the tray below it should not be in the highest position.
- If a tray is in the highest position, the tray above it should not be in the lowest position.
- You will need to experiment with various tray positions to get the best results for your products.

CAUTION

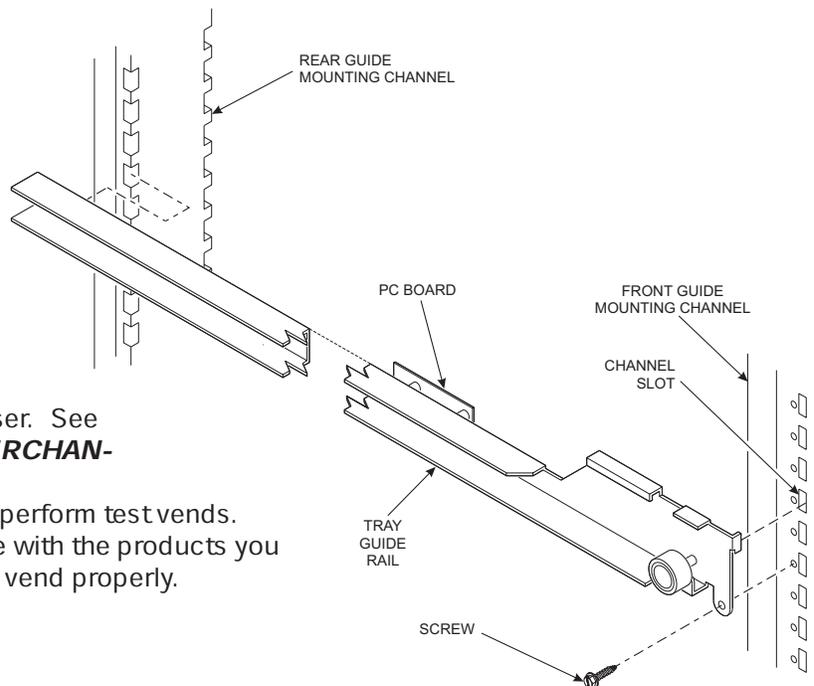
Trays should not be positioned over an open air discharge vent.

NOTE

Tray movement is limited because the tray harness will limit the amount of travel available to the tray guide rails.

Proceed as follows:

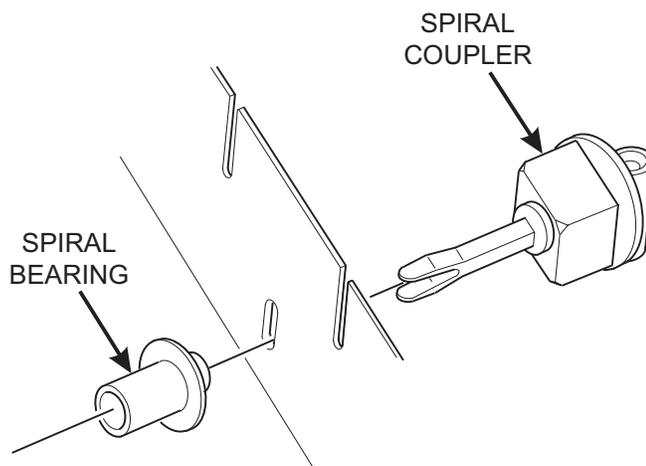
1. Remove the tray from the merchandiser. See **REMOVING A TRAY**.
2. Remove the screw that secures the right tray guide rail to the front guide mounting channel as shown.
3. Tap up on the guide rail and unseat the guide rail tabs from the channel slots.
4. Pull the guide rail away from the front and rear guide mounting channels.
5. Move the guide rail to the desired position.
6. Insert the guide rail tabs into the mounting CVchannel slots as shown.
7. Tap down on the guide rail to seat the tabs in the channel slots.
8. Replace the screw that secures the guide rail to the front guide mounting channel.
9. Repeat steps 2 through 8 for the left guide rail.
10. Return the tray to the merchandiser. See **INSTALLING A TRAY IN THE MERCHANDISER**.
11. Load products into the trays, and perform test vends. Make sure the trays don't interfere with the products you are vending, and that all products vend properly.



Installing a Spiral Coupler (continued)

WHEN USED WITH A COUPLER BEARING:

2. Hold the coupler bearing in place and push the spiral coupler through the bearing until the coupler clicks into position. Be sure the coupler is in the proper orientation as shown.



Installing a Spiral Coupler

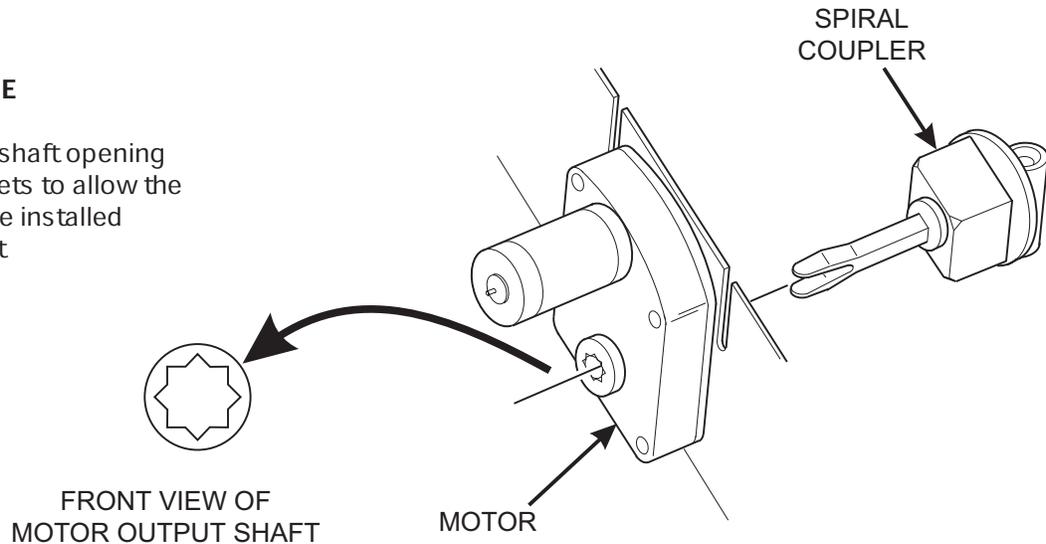
1. Place the gear in position if one is required for this set-up. See **INSTALLING A GEAR**.

WHEN USED WITH A MOTOR:

2. Hold the motor in place and push the spiral coupler through the motor gear box until it clicks into position. Be sure the spiral couplers are oriented as shown below.

NOTE

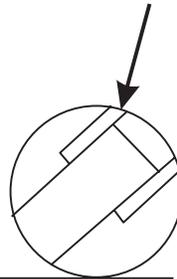
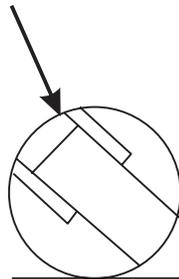
The motor output shaft opening contains eight facets to allow the spiral coupler to be installed in any one of eight positions.



SPIRAL COUPLER ORIENTATION

ONE POSITION
COUNTERCLOCKWISE
FROM VERTICAL

ONE POSITION
CLOCKWISE
FROM VERTICAL



LEFT SPIRAL
COUPLER

RIGHT SPIRAL
COUPLER

AS VIEWED FROM FRONT OF TRAY

Installing a Gear

WHEN ARE GEARS USED?

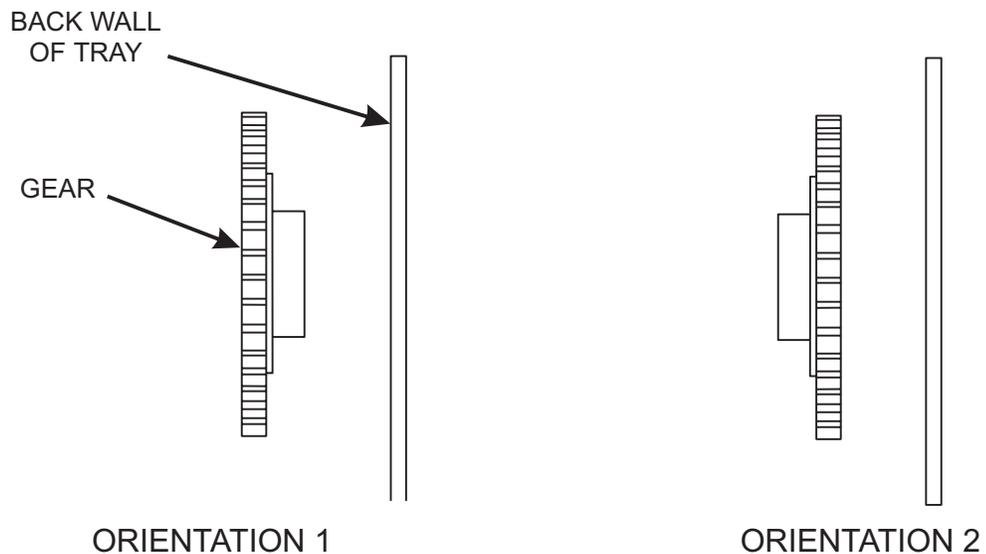
- Gears are used to mechanically couple the spirals together.
- This happens whenever you have two spirals and only one motor for vending a selection.

WHERE ARE THE GEARS PLACED?

- The gear is placed between the back of the tray and the spiral coupler.

HOW IS THE GEAR ORIENTED?

- There are two possible orientations for the gear:



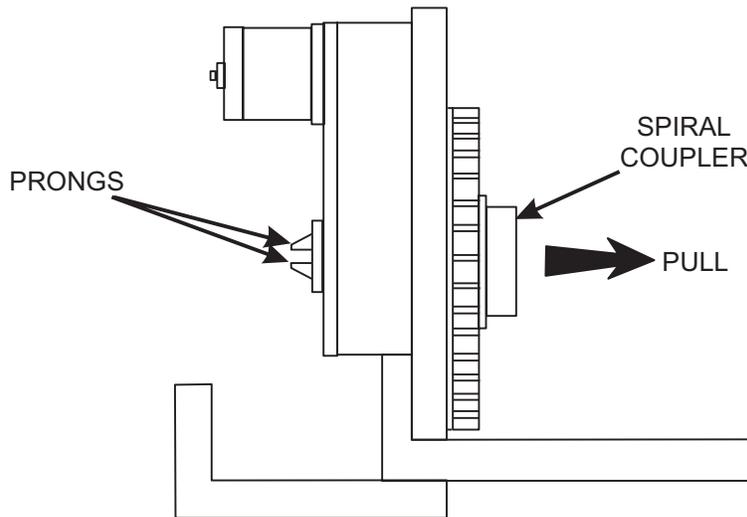
- There are two rules to follow when orienting gears:

RULE 1 - The gears for selections next to each other cannot use the same orientation.

RULE 2 - All gears for a single selection must use the same orientation.

Removing a Spiral Coupler

1. Pinch together the prongs on the end of the spiral coupler as shown.
2. Pull the coupler forward (in the direction of the arrow as shown).



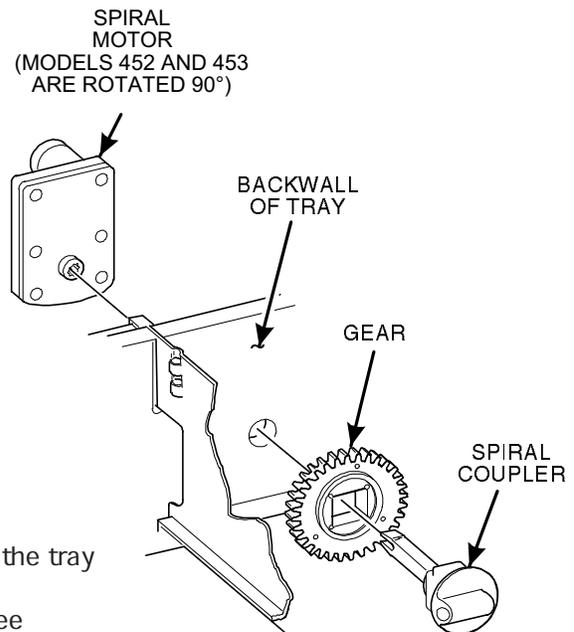
Removing and Installing a Spiral Motor

REMOVING A SPIRAL MOTOR: NOTE, some steps may already be completed.

1. Remove the tray. See **REMOVING A TRAY**.
2. Disconnect the motor harness. See **CONNECTING AND DISCONNECTING A MOTOR HARNESS**.
3. Remove the spiral. See **REMOVING AND INSTALLING SPIRALS**.
4. Remove the spiral coupler. See **REMOVING A SPIRAL COUPLER**.
5. Remove any fasteners and lift the motor clear of the tray.
6. Return the tray to the merchandiser. See **INSTALLING A TRAY IN THE MERCHANDISER**.

INSTALLING A SPIRAL MOTOR:

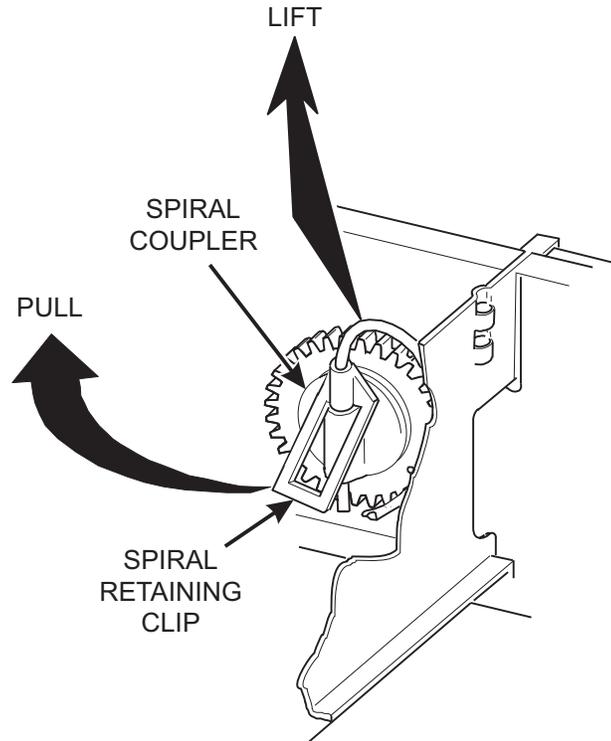
1. Remove the tray. See **REMOVING A TRAY**.
2. Place the motor in the correct position at the rear of the tray as shown. Secure with fasteners, if applicable.
3. Place a gear in position if required by this set-up. See **INSTALLING A GEAR**.
4. Install a spiral coupler in the proper orientation. See **INSTALLING A SPIRAL COUPLER**.
5. Connect the motor harness. See **CONNECTING AND DISCONNECTING A MOTOR HARNESS**.
6. Return the tray to the merchandiser. See **INSTALLING A TRAY IN THE MERCHANDISER**.



Removing and Installing Spirals (continued)

TO REMOVE A SPIRAL:

1. Pull forward on the retaining clip and remove the end of the spiral from the spiral coupler as shown.
2. Remove the spiral from the tray.

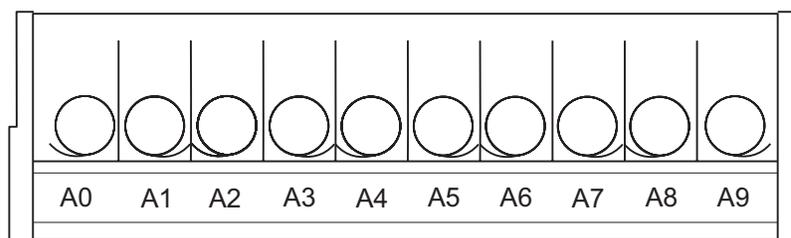


TO INSTALL A SPIRAL:

1. Pull the bottom of the retaining clip toward the front of the spiral.
2. Lower the spiral into the tray column and insert the end of the spiral into the spiral coupler as shown.
3. Release the retaining clip.

SHOULD I USE A CLOCKWISE OR A COUNTERCLOCKWISE SPIRAL?

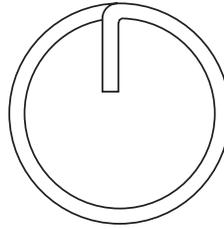
1. The type of spiral used is determined by the column position it will occupy in the tray.
2. Refer to the figure below to find the correct spiral type.



Main Setup Guide - Models 159, 160, 172, 173, 452, 453, 467, 468, 490, 491, 493

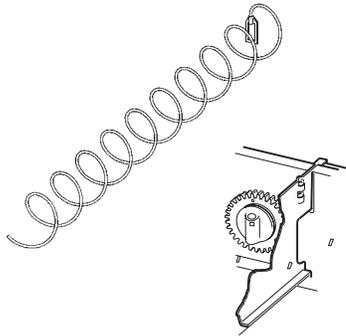
Removing and Installing Spirals

- All spirals are the same diameter:

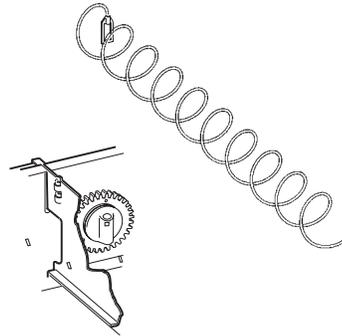


- There are two types of spirals:

COUNTER-CLOCKWISE (left hand)



CLOCKWISE (right hand)



- Spirals are available as follows:

SPIRALS FOR MODELS 159, 160, 467, 468, 490, AND 493

ITEM CAPACITY OF SPIRAL	PART NUMBER		CLIP COLOR
	COUNTER-CLOCKWISE (LH)	CLOCKWISE (RH)	
6 (Optional)	1477102	1477104	Purple
9 (Standard)	1477152	1477149	Gray
11 (Standard)	1477024	1477027	Blue
13 (Standard)	1477030	1477033	Yellow
15 (Standard)	1477036	1477039	Red
17 (Standard)	1477101	1477099	Brown
20 (Standard)	1477042	1477045	White
25 (Optional)	1477048	1477051	Green
30 (Optional)	1477054	1477057	Black
38 (Optional)	1477059	1477062	Orange

SPIRALS FOR MODELS 172, 173, 452, AND 453

ITEM CAPACITY OF SPIRAL	PART NUMBER		CLIP COLOR
	COUNTER-CLOCKWISE (LH)	CLOCKWISE (RH)	
8	1707017	1707019	Grey
10	1707005	1707007	Blue
12	1707009	1707011	Yellow
14	1707013	1707015	Red
18	1707021	1707023	White

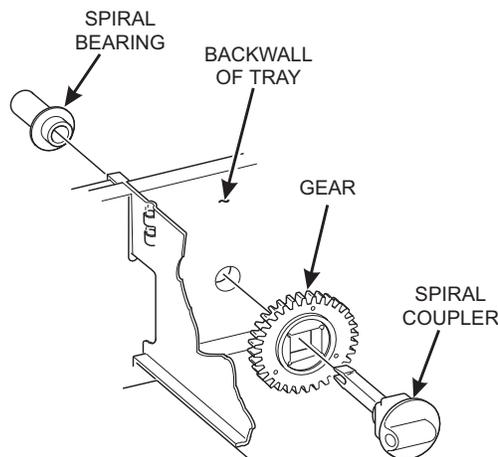
Replacing a Motor With a Spiral Bearing

REMOVING A MOTOR:

1. Disconnect the harness from the motor. See **CONNECTING AND DISCONNECTING A MOTOR HARNESS**, below.
2. Remove the spiral. See **REMOVING AND INSTALLING SPIRALS**.
3. Remove the spiral coupler. See **REMOVING A SPIRAL COUPLER**.
4. Remove the motor. See **REMOVING AND INSTALLING A SPIRAL MOTOR**.

INSTALLING A SPIRAL BEARING:

1. Put the gear into position if required in this set-up as shown. See **INSTALLING A GEAR**.
2. Install the spiral coupler. See **INSTALLING A SPIRAL COUPLER**.



Connecting and Disconnecting a Motor Harness

CAUTION

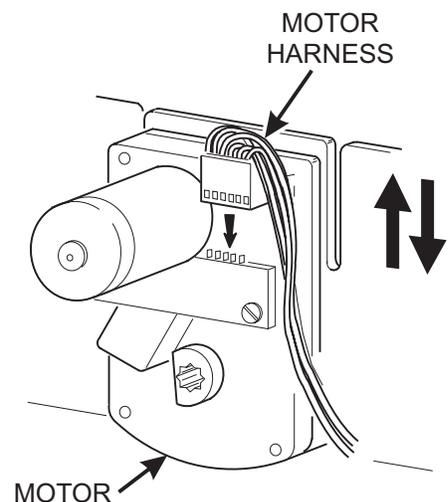
To avoid breaking the motor circuit board, hold the header on the circuit board whenever connecting or disconnecting a motor harness.

DISCONNECTING A MOTOR HARNESS:

1. Pull the harness connector away from the circuit board as shown.
2. Tuck the unused part of the harness out of the way in the trough at the back of the tray.

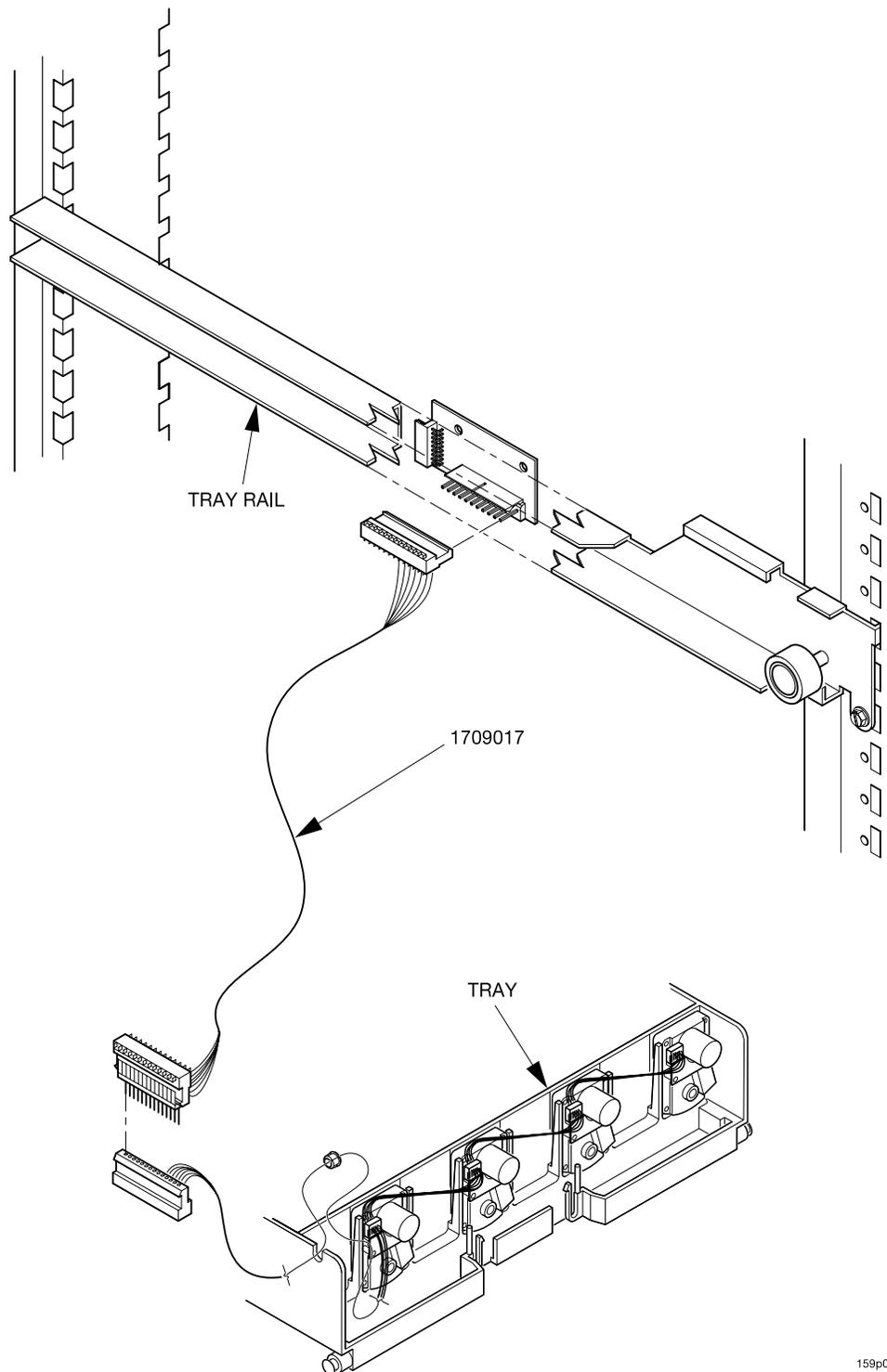
CONNECTING A MOTOR HARNESS:

1. Locate the harness connector for the appropriate tray position.
2. Push the harness connector over the header pins on the motor circuit board as shown.



Operate a Tray Outside the Machine

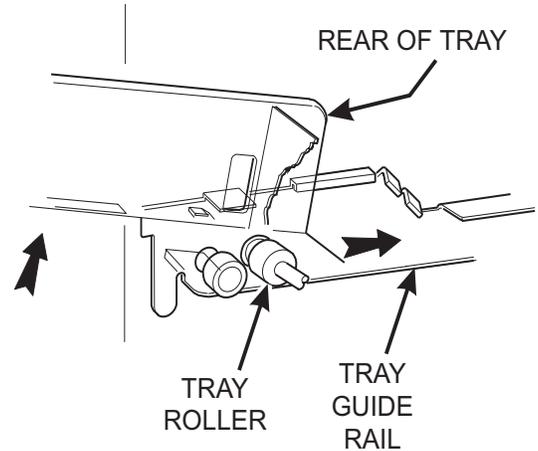
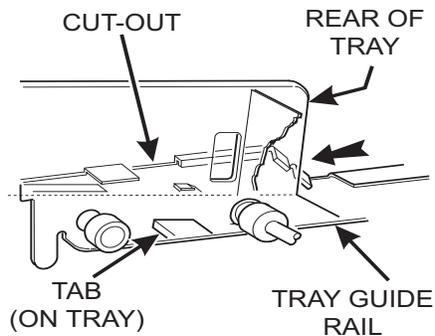
Tray harness extension (P/N 1709017) is available from your GPL Parts department. The extension will enable you to remove the tray from the machine and still operate the motors and spirals. Connect it as shown:



159p0067

Removing a Tray (continued)

5. Lift up on the tray and slide it toward the back. No more than an inch should be needed.



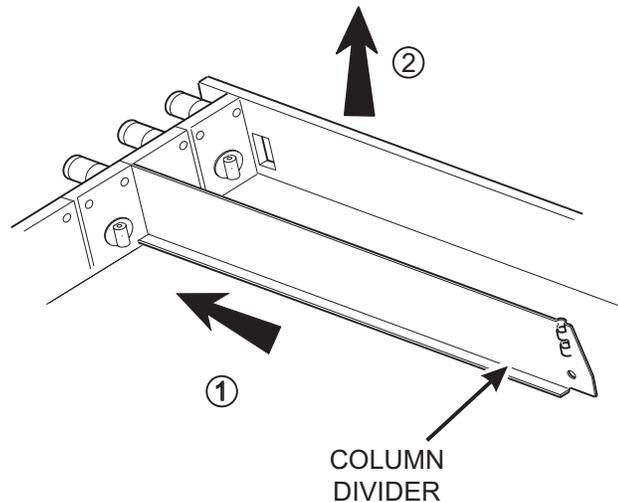
6. The tab near the back of the tray should align with the cut-out in the top of the tray guide rail as shown.
7. Lift the tray clear of the tray guide rail and out of the merchandiser.

CAUTION

When the cabinet door is not fully open, use extra care in removing the bottom tray. Failure to do so may result in damage to the tray or to the delivery pan assembly.

Removing And Installing Column Dividers

1. Push the column divider toward the back of the tray - ①.

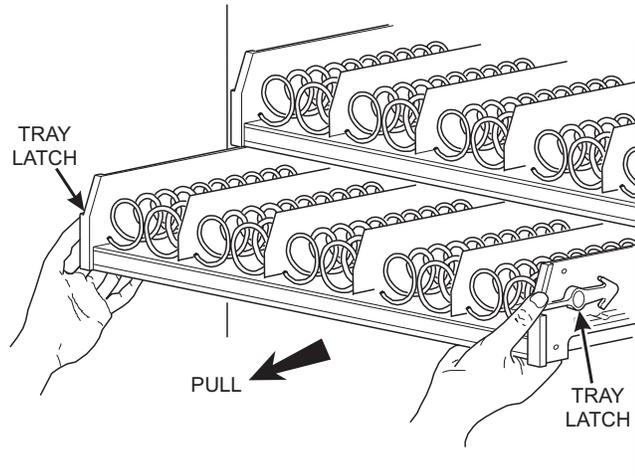


2. Lift the column divider clear of the tray - ②.
3. Install the column divider in the reverse order of removal.

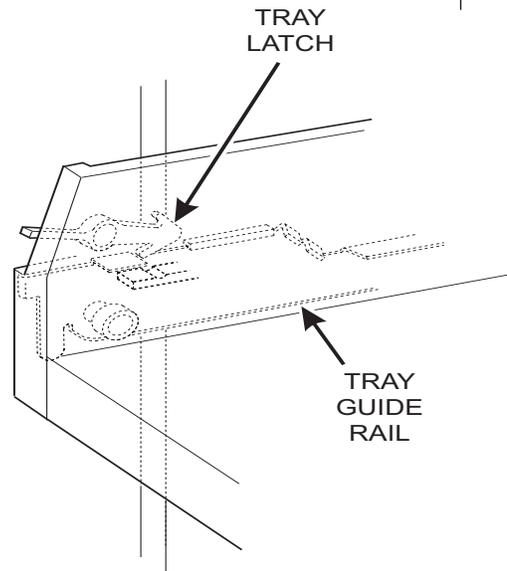
Removing a Tray

- Study this procedure before you install a tray for the first time; while you are holding the tray you will not be able to see this area. Proceed as follows:

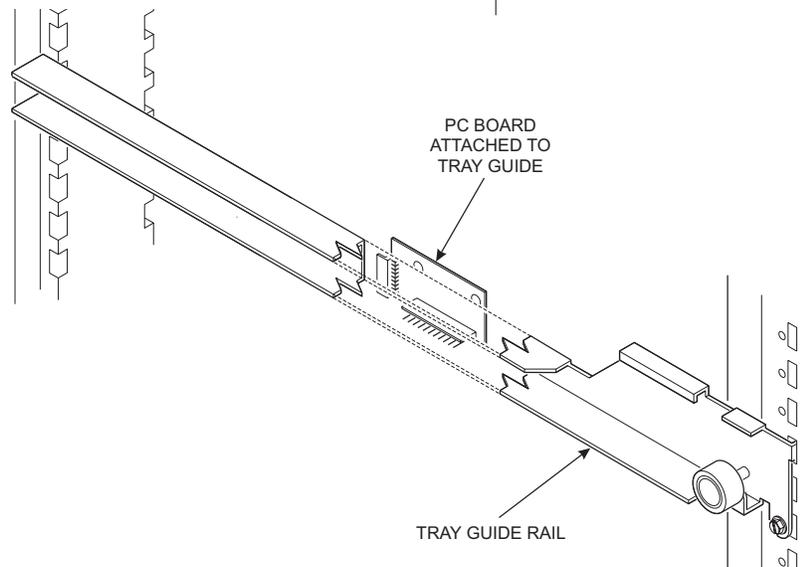
1. If your machine has tray latches, push back on the tray slightly with your palms. This releases the tray latches. Otherwise, skip to step 4.
2. Push down on the tray latches with your thumbs.



3. Pull the tray forward until you hear and feel the rear tray rollers drop into a cut-out in the top of the guide rail. Skip to step 5.
4. Lightly lift the front of the tray and pull the tray toward you until you hear and feel the rear tray rollers drop into a cut-out in the top of the guide rail.



5. Unplug the tray wiring harness from the PC board mounted on the tray guide rail JUST ABOVE the tray you are removing.



2. Set Up Trays to Vend Products

These instructions will guide you through setting up your trays for vending. You will be asked to determine if your tray can physically hold the products you intend to vend. If not, you will be directed to other procedures which will help you get them set up. Follow these nine steps for each tray in your machine:

1. Make sure the tray is in the loading position.
2. Is the column wide enough for the intended product? If so, proceed to the next step. Otherwise, set up your tray to vend wider products (see below, this page). When you're done, return to step 3 in this procedure.
3. Will the products fit between the spiral turns? If so, proceed to the next step. Otherwise, change the spiral.
4. Will the product pass under the tray immediately above? If so, proceed to the next step. Otherwise, reposition the tray and guides.
5. Will the product touch products on either side? If not, proceed to the next step. Otherwise, install a product spacer.
6. Load products in the tray.
7. Return the tray to the vending position.
8. Install the price rolls.
9. Install the selection ID numbers.

Set Up A Tray To Vend Wide Products

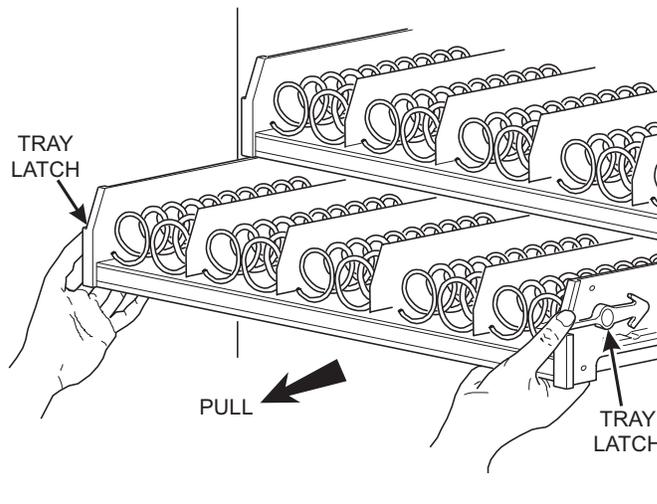
The following steps will help you configure your tray to vend wide products. When you have completed the procedures called out in each step, return to the next step in the procedure. When you are done with the entire wide product steps, return to the set-up procedures above.

1. Remove the tray from the merchandiser and place on a flat surface. See REMOVING A TRAY.
2. You may couple two spirals together with one condition: Please remember that the left spiral of the pair **must** have an even ID number (0, 2, 4, etc.).
3. Remove the column dividers between the pair.
4. Replace the right motor with a spiral bearing and gear and install a gear on the left motor. See REPLACING A MOTOR WITH A SPIRAL BEARING.
5. Return the tray to the merchandiser.
6. Return to step 3 in the *Set Up Trays to Vend Products* procedure, above.

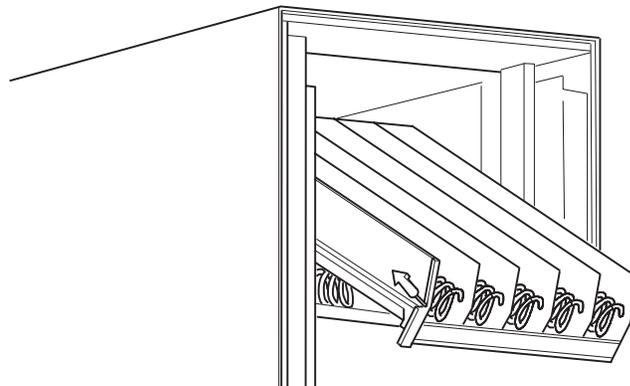
Snack Section Set-Up

1. Place A Tray In The Loading Position

1. Place both hands on the tray as shown.
2. If your machine has tray latches, lightly push back on the tray with your palms. This will release the tray latches on the sides of the tray. Otherwise, skip to step 5.
3. Push down on the tray latches with your thumbs.
4. Pull the tray toward you until you hear and feel the rear tray rollers drop into a cut-out in the top of the guide rail. Skip to step 6
5. Lightly lift the front of the tray and pull the tray toward you until you hear and feel the rear tray rollers drop into the cut-out in the top of the guide rail.



6. Continue pulling the tray forward for another inch. You will then be able to tilt the tray downward into the loading position as shown.



NOTE

When the cabinet door is not fully open, the bottom tray will rest on the delivery pan assembly. Handle the tray with care to avoid scratching the delivery pan assembly.

TIME OUT !!!

Now that you have placed your machine near its permanent location, you need to set up some of the special options you may have.

**IF YOUR MACHINE HAS A COFFEE SECTION
(493) . . .**

Grab the booklet entitled **"HOT DRINK MODULE SETUP, OPERATION AND SERVICE MANUAL"** and follow the setup procedures contained in it. After you have done that, come right back here and proceed with the next step.



**NOW, IF YOUR MACHINE IS EQUIPPED WITH A CAN
OR COLD FOOD MODULE . . .**

Grab the booklet entitled **"CAN AND COLD FOOD MODULE SETUP AND OPERATOR'S GUIDE"** and follow the setup procedures contained in it. After you have done that, come right back here and proceed with the next step.



Go on to the next page and continue with the snack set up.

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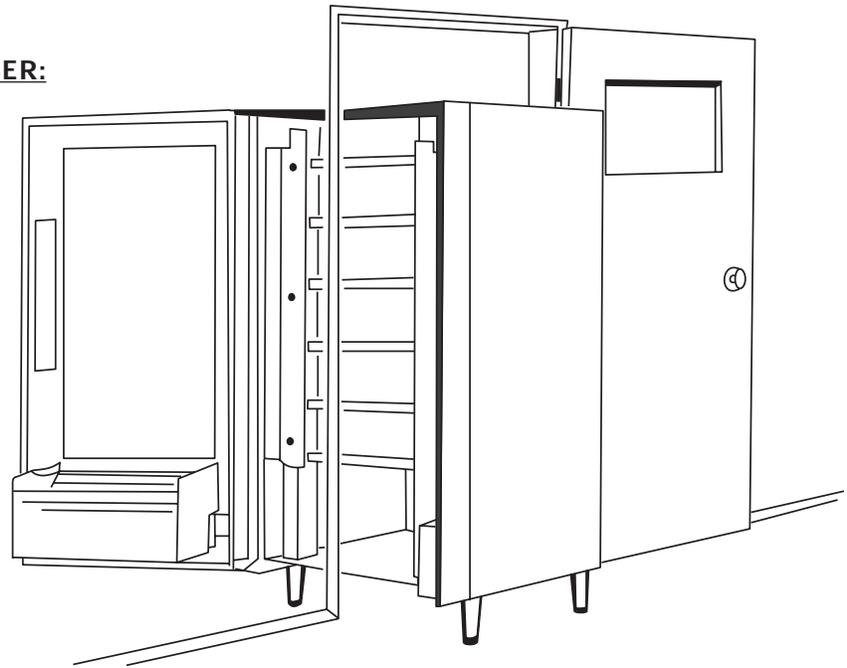
1. Move the Merchandiser Through a Narrow Doorway (continued)

TAKE THE MERCHANDISER THROUGH THE OPENING:

1. Open the cabinet door and place it square with the left side of the cabinet.
2. Carefully walk the merchandiser through the opening.

REASSEMBLE THE MERCHANDISER:

1. Replace the upper and lower panels.



2. Position the Merchandiser

Move the merchandiser to its **approximate** position. (There are some procedures you need to do before it is in its permanent location.) Plug in your merchandiser and turn the power switch to ON.

- You can position this merchandiser anywhere in a bank of machines. It can even be placed on an end flush against a side wall.
- Place the merchandiser at least six inches away from the back wall. This will provide adequate air circulation for the refrigeration unit.
- The merchandiser will operate more efficiently when placed in a shaded location.
- There should be enough room in front of the merchandiser for the door to move freely.

WARNING

This machine is only rated for installation in an indoor location.

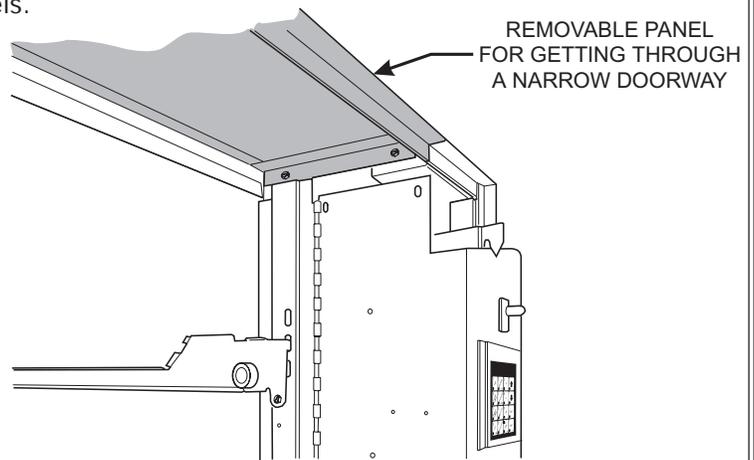
Initial Set-Up

1. Move the Merchandiser Through a Narrow Doorway

Some models have removable panels at the top and bottom of the cabinet. If necessary, the merchandiser can be moved through an opening as narrow as 30 inches by removing these panels.

REMOVE THE TOP PANEL:

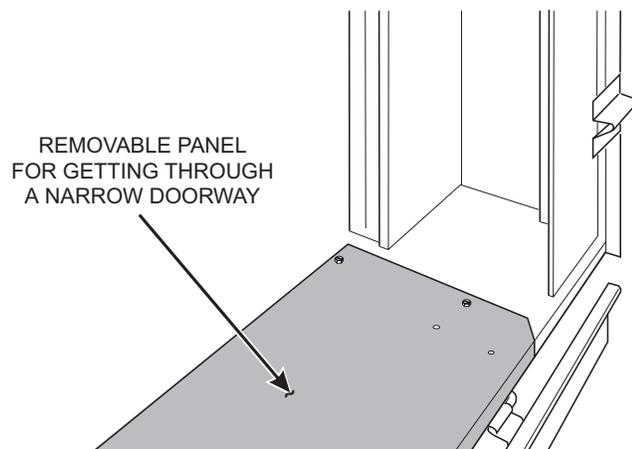
1. Remove the two screws that secure each end of the panel to the cabinet.
2. Pull the panel forward to remove it from the merchandiser.



VIEW LOOKING INTO THE TOP OF THE CABINET

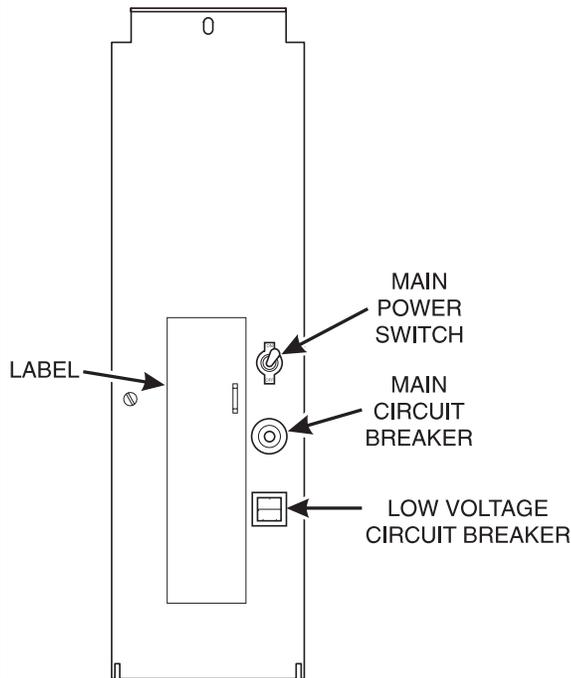
REMOVE THE BOTTOM PANEL:

1. Remove the screws that secure the panel to the cabinet.
2. Pull the panel forward to remove it from the cabinet.

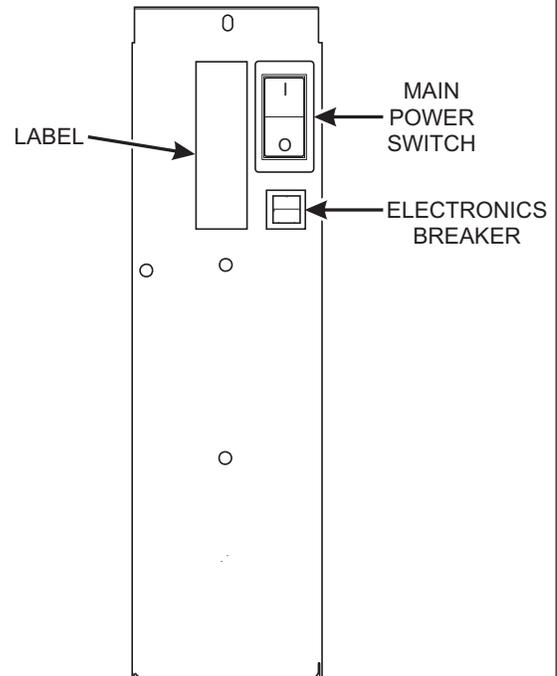


VIEW LOOKING INTO THE BOTTOM OF THE CABINET

How to Turn the Merchandiser ON and OFF



**POWER CONTROL PANEL
STANDARD**



**POWER CONTROL PANEL
GERMANY**

POWER PANEL

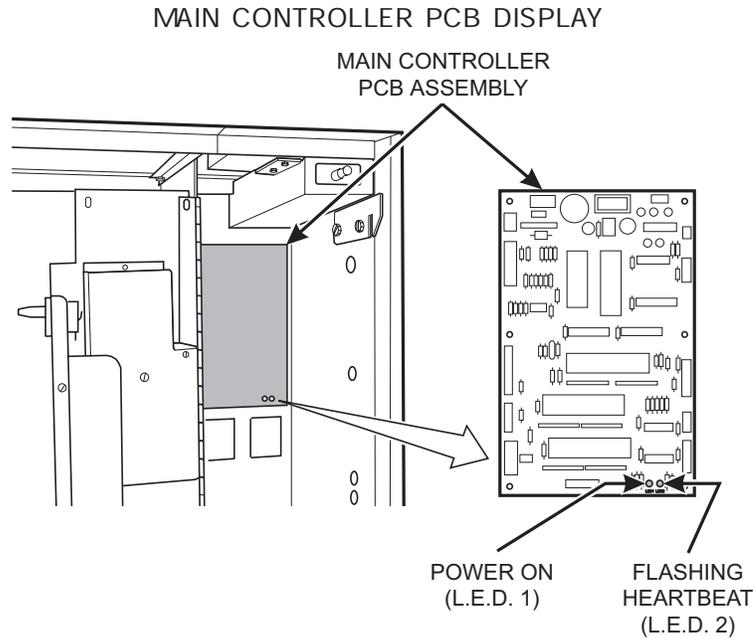
- Power to the merchandiser is controlled by the main power switch, located on the power panel.
- The power panel is on the right side of the merchandiser, behind the monetary door.

WARNING

⚠ - ELECTRICAL SHOCK HAZARD - Lethal voltages are present. Unplug the merchandiser whenever you do one of the following tasks. Failure to do so may result in personal injury:

- Change a fuse
- Change the fluorescent lamp
- Change the lamp starter
- Connect or disconnect a harness (except a motor harness when a tray has been removed)

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Main Controller PCB Display. This display consists of two light emitting diodes (LED) mounted on the controller PCB.

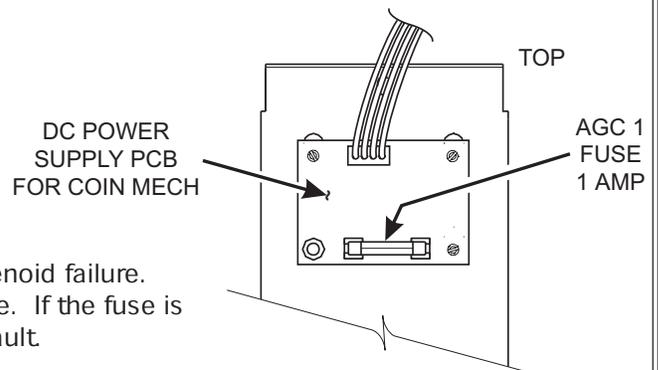
POWER ON (L.E.D. 1) When lit, this red LED indicates electrical power is applied to the controller PCB.

HEARTBEAT (L.E.D. 2) When flashing, this red LED indicates that the controller PCB is active, and the software is operating.

NORMAL CONDITIONS:

When the merchandiser is operating normally, you should see a steady red **POWER ON** indicator and a flashing red **HEARTBEAT** indicator. Contact a service representative if any other condition exists.

Fuse for Coin Mechanism DC Power Supply (U.S./Canada Only). The circuit board mounted on the rear of the power panel is a dc power supply for the coin mechanism. A fuse protects the board circuitry in the event of a coin mechanism solenoid failure. If the coin mechanism is not working, check this fuse. If the fuse is blown, a bad coin mechanism solenoid could be at fault.



Controls and Indicators

Interlock Switch. When the cabinet door is open, this switch turns off the optional fan (if so equipped) and turns on the service light (not present on all models).

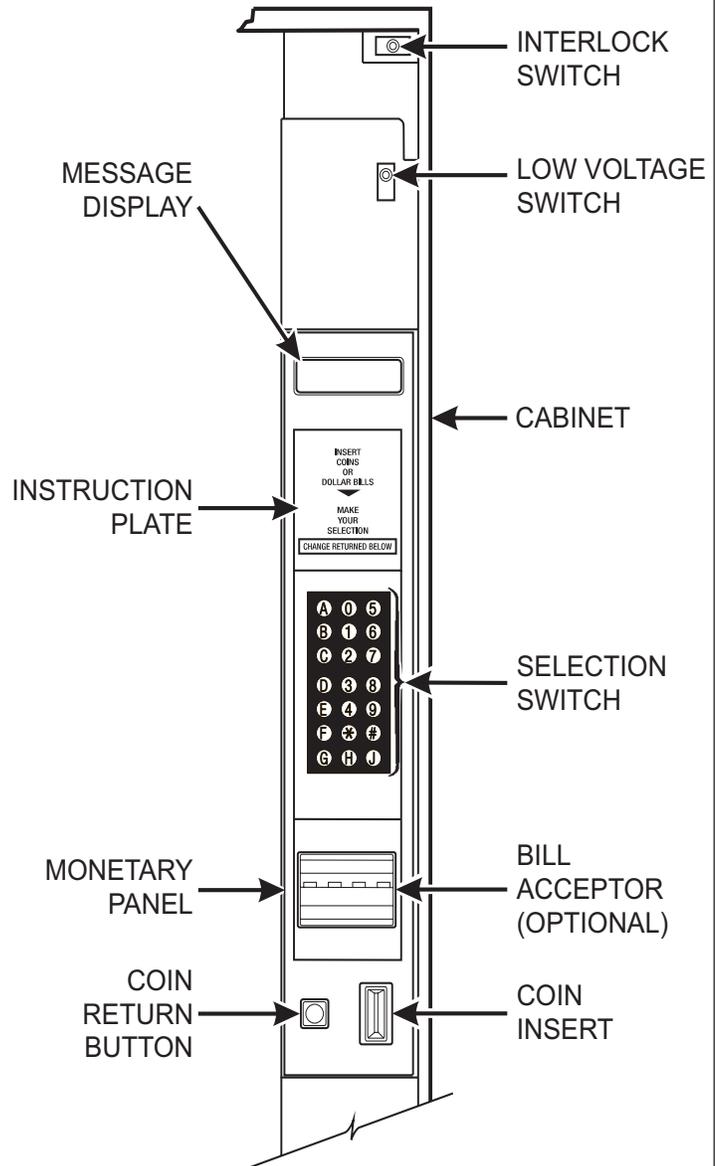
Low Voltage Switch. Informs the controller software of the main door open or closed status.

Message Display. This is how the merchandiser communicates with the outside world. Customers can see messages about how much money they have put into the merchandiser. The message display also tells customers when a selection is sold out and when vending is free. The message display shows you what you are doing when you program the merchandiser, and can show you what is wrong if there is a failure.

Selection Switch Panel. The customer uses these switches to make selections. Also, maintenance people may use this switch panel during programming and other support modes.

Coin Return Button. Pressing this button returns any coins that have been paid into the merchandiser prior to a vend.

Bill Acceptor (Optional). Accepts bills in various denominations, depending upon the type of bill validator, and how the machine is configured.



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Electrical Power Requirements

The merchandiser is supplied with a service cord for the country of use and is terminated in a grounding type plug. The wall receptacle used for this merchandiser must be properly polarized, grounded, and of the correct voltage. Operating the merchandiser from a source of low voltage will **VOID YOUR WARRANTY**. Each merchandiser should have its own electrical circuit and that circuit should be protected with a circuit breaker or fuse conforming to local regulations.

Voltage Check - Place the leads of a voltmeter across the LINE (LIVE) and NEUTRAL terminals of the wall receptacle. The voltmeter should indicate 110-130 volts ac for 120 volt, 60 Hz locations, or 220- 240 volts ac for 230 volt, 50 Hz locations.

Polarity Check - Place the leads of a voltmeter across the LINE (LIVE) and GROUND terminals of the wall receptacle. The voltmeter should indicate 110-130 volts ac for 120 volt, 60 Hz locations, or 220- 240 volts ac for 230 volt, 50 Hz locations.

Noise Potential Check - Place the test leads of a voltmeter across the NEUTRAL and GROUND terminals of the wall receptacle. The meter should indicate 0 volts ac. A measurement greater than 1.5 - 2.0 volts ac could result in problems for the merchandiser's electronic circuitry caused by electrical noise.

Any deviation from these requirements could result in unreliable performance from your merchandiser.

Unpack the Machine

Remove all packing materials from the interior of the machine. Keep all documents; warranty cards, etc. Set aside the base plate kit (if present).

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SPECIFICATIONS

DIMENSIONS AND WEIGHTS

MODEL	HEIGHT	WIDTH	DEPTH	SHIPPING WEIGHT
159	183 cm (72 in)	97 cm (38.1 in)	90 cm (35.4 in)	284 kg (626 lbs)
160	183 cm (72 in)	81.3 cm (32 in)	90 cm (35.4 in)	256 kg (564 lbs)
172	183 cm (72 in)	97 cm (38.1 in)	72.4 cm (28.5 in)	259 kg (572 lbs)
173	183 cm (72 in)	81.3 cm (32 in)	72.4 cm (28.5 in)	214 kg (472 lbs)
452	183 cm (72 in)	97 cm (38.1 in)	72.4 cm (28.5 in)	295 kg (650 lbs)
453	183 cm (72 in)	81.3 cm (32 in)	72.4 cm (28.5 in)	249 kg (550 lbs)
467	183 cm (72 in)	97 cm (38.1 in)	90 cm (35.4 in)	320 kg (705 lbs)
468	183 cm (72 in)	81.3 cm (32 in)	90 cm (35.4 in)	270 kg (595 lbs)
490	183 cm (72 in)	81.3 cm (32 in)	90 cm (35.4 in)	324 kg (714 lbs)
493	183 cm (72 in)	101.6 cm (40 in)	90 cm (35.4 in)	362 kg (798 lbs)

CIRCUIT RATING 230 VOLT, 50 HZ MACHINES

MODEL	CURRENT (AMPS)
159/160	3
172/173	3
452/453	5
467/468	5

CIRCUIT RATING 115 VOLT, 60 HZ MACHINES

MODEL	CURRENT (AMPS)
159/160	3
467/468	9
490	12
493	16

CIRCUIT RATING 220 VOLT, 50 HZ MACHINES

MODEL	CURRENT (AMPS)
490	5

REFRIGERATION SPECIFICATIONS

UNIT	REFRIGERANT	CHARGE
CHILLED SNACK	R-134a	248 g (8.75 oz)
CAN/COLD FOOD	R-134a	277 g (9.8 oz)
FROZEN FOOD	R-404a	215 g (7.59 oz)

Operating environment - All models: FOR INDOOR USE ONLY

Ambient Temperature

Maximum
32°C (90°F)

Minimum
5°C (41°F)

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What is this booklet for?

This Main Setup Guide covers all the machines in the snack family. You will find out how to install your machine in its final location, how to install accessories, and how to set up and customize the snack trays.

If your machine is equipped with a coffee section, a can module, or a food module, you will be instructed when to consult the booklets specifically provided for those items. Follow the instructions given here, and you will be successful.

DON'T THROW THIS BOOKLET AWAY !! It's a valuable reference for your daily maintenance. Put it back in the plastic bag and store it inside the cabinet. That way, it is readily available at a future time.

Main Setup Guide

Models 159, 160, 172, 173, 452, 453, 467, 468, 490, 491, 493

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