CAN/BOTTLE CONVERTIBLE CB700

MODEL 3151

Service Manual

A11026

TABLE OF CONTENTS

Record the Model Number and Serial Number of your machine below.

The Model and Serial numbers are needed for you to obtain quick service and parts information for your machine. The numbers are given on the identification plate located on the backside of the cabinet of the machine.

MODEL NUMBER: _____

SERIAL NUMBER: _____

SPECIFICATIONS

MODEL	3151 7-Wide	
Dimensions		
WIDTH	42 Inches	106 Cm
DEPTH	33 Inches	84 Cm
HEIGHT	72 Inches	183 Cm
WEIGHT	750 Lbs.	340 Kg
Electrical		
115 Volt AC	60 Hz, 7.5 Amps ($\pm$ 10%)	
230 Volt AC	50 Hz, 3.75 Amps ($\pm$ 10%), 862.5 Watts	
Transformer	24 Volt AC	
Refrigeration System		
Type	1/3 Plus, Hermetically Sealed	
Controls	Electronic	
Refrigerant	R-134a	
Charge	8.5 Ounces	
Factory Configuration	14 Columns, 12 Selections	
Coinage	Multi-Drop Bus	

INTRODUCTION

This manual contains instructions, service and installation guidelines for the Convertible Bottle/Can product line.

All models are equipped with an electronic control system. All programming of the vend functions, pricing and features is done at the controller. Changes can be made without any additional accessories or remote parts.

Selections can be priced individually from $.05 to $99.95 in five cent increments (U.S. currency). When adapted to accept international or foreign currency, the maximum vend price will be <u>255</u> times the smallest denomination of coin being accepted.

Features include:

- Self-diagnostics and cash accountability
- Multi Vend and Free Vend features
- Hermetically sealed refrigeration system with R-134a refrigerant
- Programmable electronic control of the refrigeration unit
- Motorized delivery, electronically controlled

> **This vendor utilizes DC motors. Do not attempt to turn by hand. Motor damage could occur.**

- Visual feedback indicates when a product has been vended or when an error condition exists

- No change or loss of program/memory because a power failure

- Cash accountability records Total Cash transactions and Total Vend cycles performed by the vendor. Information for individual selections, complete range (columns), or total machine can be compiled and used for inventory and ordering records.

The vending sequence is "first-in, first-out" for each selection, eliminating the need for stock rotation to maintain fresh products in the vend area.

Read this manual thoroughly to become familiar with the functions of all components, along with the features that are available. The initial set-up of a vending machine is a very important step of insuring that the equipment operates in a trouble-free manner. Following the instructions during the initial installation of the machine will avoid service problems and minimize set-up time.

Should you have any questions pertaining to information in the manual, replacement parts or the operation of the vendor you should contact your local distributor or:

> **VendNet™**
> **165 North 10th Street**
> **Waukee, Iowa 50263 - USA**
> **Phone: 515-274-3641**
> **Parts Fax: 515-987-4447**
> **Sales Fax: 515-274-0390**
> **E-Mail: vendnet@vendnetusa.com**

UNPACKING

This vendor was thoroughly inspected before leaving the factory and the delivering carrier has accepted responsibility for this vendor. Note any damage or irregularities at the time of delivery and report them to the carrier. Request a written inspection report from the claims inspector to file any claim for damage. File the claim with the carrier (not the manufacturer) within 15 days after receipt of the machine.

Carefully remove outside packing material to avoid damage to the finish or exterior of the machine. Remove adhesive residue with denatured alcohol or common household vinegar.

Remove the Knock-Away Support by placing a spacer under the vendor, inserting a screwdriver or prying tool into the groove and splitting it in two. Discard the washers located on each side of the wooden supports. Turn the leveling screws in as far as possible. See **Figure 1**.
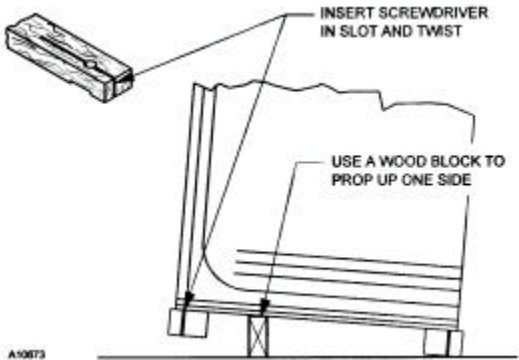
Figure 1. Removing Knock-Away- Supports

Inspect the machine for concealed shipping damage. Report any damage hidden by the shipping material directly to the delivering carrier on a hidden damage report.

Record the model number and serial number of the vendor for your records. These numbers can be found on the Serial Plate on the rear of the cabinet and/or inside the vendor. Refer to these numbers on all correspondence and inquiries pertaining to this vendor.

INSTALLATION

Consult local, state, and country codes and regulations before installation of the vendor.

1. Position the vendor in its place of operation no further than six (6) feet (2 m) from the power outlet or receptacle.

2. Leave at least six (6) inches (15 cm) of space between the back of the machine and any wall or obstruction for proper air circulation.
3. Retrieve the keys to the vendor from the coin return cup.
4. Open outer door and remove all internal packing material.
5. Check that the door will open fully without interference.
6. Level the vendor, making sure all levelers are touching the floor. The vendor must be level for proper operation and acceptance of coins through the coin mechanism.

GROUNDING (EARTHING) & ELECTRICAL

Before connecting the vendor, the integrity of the main electrical supply must be checked for correct polarity, presence of ground (earth) and correct voltage. *These checks should be repeated at 6-month intervals with the routine safety electrical testing of the vendor itself.*

Figure 2. 230-Volt Outlets

For proper operation of any equipment utilizing electronically controlled components, the equipment should be placed on an isolated or dedicated noise-free circuit.
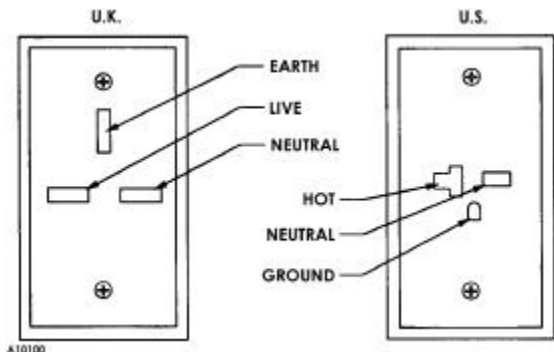
For **115-Volt** vendors the circuit should be a minimum 15 Amp, 60 cycle, properly polarized and grounded (earthed).

For **230-Volt** vendors the circuit should be a minimum 7.5 Amp, 50 cycle, properly polarized and grounded (earthed).
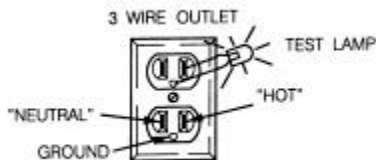
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Figure 3. 115-Volt Outlet

To verify that the receptacle is properly grounded (earthed) and polarized, insert one probe of a Multi-Meter (set to check AC line voltage) or a test light in the ground (earth) terminal (hole) and the other probe into the hot terminal of the outlet. *If unfamiliar with this procedure, contact a licensed electrician.*

If the receptacle is not properly grounded (earthed) or polarized, you should *contact a licensed electrician* to correctly polarize and/or ground (earth) the receptacle to ensure safe operation.

A noise suppressor has been installed in this machine to compensate for any signal noise that could interfere with the normal operation of the controller.

Shown in **Figure 2** and **Figure 3** are two properly grounded (earthed) and polarized wall outlets. **Figure 2** shows two 230-Volt wall outlets.

POWER SWITCHES

The vendor has a door switch operated by the outer door. It is located in the lower right corner of the cabinet. When the door is closed, the switch is pushed in to the ON position, putting the vendor in the *Sales Mode*. When the door is opened, the switch is forced to the OFF position allowing the vendor to be put in *Service Mode*.

To operate the machine with the door open, the door switch must be manually pulled out, placing it in an alternate ON position.
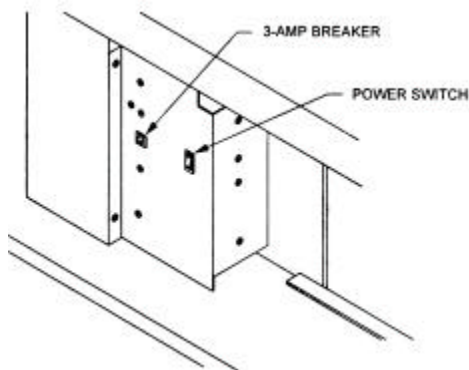
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Figure 4. Power Panel

A power switch is located on the power panel, along with a 3-amp breaker (lower left area with door open). With the door open, this switch will shut-off the light and controller, leaving evaporator fans running. See **Figure 4**. (The 3-amp breaker is protection for the controller.)

HINGE AND DOOR REMOVAL

Removal of the upper hinge or the door from the lower hinge from the lower hinge pin requires removal of the hinge pin retaining screws. See **Figure 5** and **Figure 6**.

WARNING
Support door before removing upper hinge. Door is very heavy and could fall causing serious injury.

1. Open the door to approximately straight out position.

2. Remove upper and lower hinge pin retaining screws.

3. Use wooden blocks to support the door. A second person is required to steady the door. Upper hinge may now be removed from the vendor.

4. Lift door from lower hinge. Service as required.

5. Replace door on lower hinge. Support door on blocks. A second persons is required to steady the door while top hinge is installed.

6. Replace the hinge pin retaining screw.
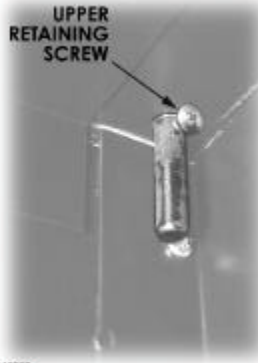
Figure 5. Upper Hinge Pin
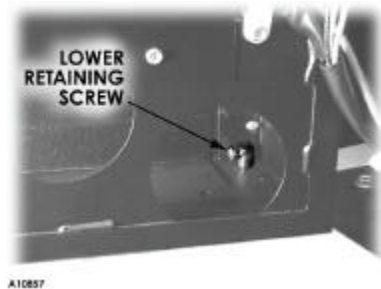
Figure 6. Lower Hinge Pin

LOADING PRODUCTS

PRODUCT COLUMNS

Poducts being loaded must match the products displayed in the *Live Display*.

The *Funnel Slides* (white composite sheets) attached on the sidewalls of each product column must be kept clean. This prevents the possibility of a product bridge (product jam) from occuring. See **Figure 10**.

Figure 7. Product Delivery Mechanism (bottom view)

The product cradle "bed" of the *Product Delivery Mechanism* must be positioned facedown in each column to prevent the possibility of a motor jam. The *Product Delivery Mechanisms* (Vend Mech) are located at the bottom of each product column. If it is not facedown, cycle the motor to re-position. See **Figure 7**.

Most products (10 to 20 ounce cans and bottles) may be loaded without column adjustment. However, the front gate assembly, latch striker, and back spacers may be adjusted if necessary. See **Figure 8.**

To adjust column depth (front to back): lift the gate assembly, latch striker, or back spacer and reposition in the adjustment slots. Product should have ¼ to ½-inch free space at front or back. See **Figure 8, Figure 9 and Figure 10**. The front gate assembly with its latch striker may have to be staggered relative to an adjacent front column loaded with similar sized products.

Figure 8. Column Depth

Facing the open machine, COLUMN 1 is the far right front column COLUMN 2 is the far right back column. COLUMN 13 is the far left front column. COLUMN 14 is the far left back column.
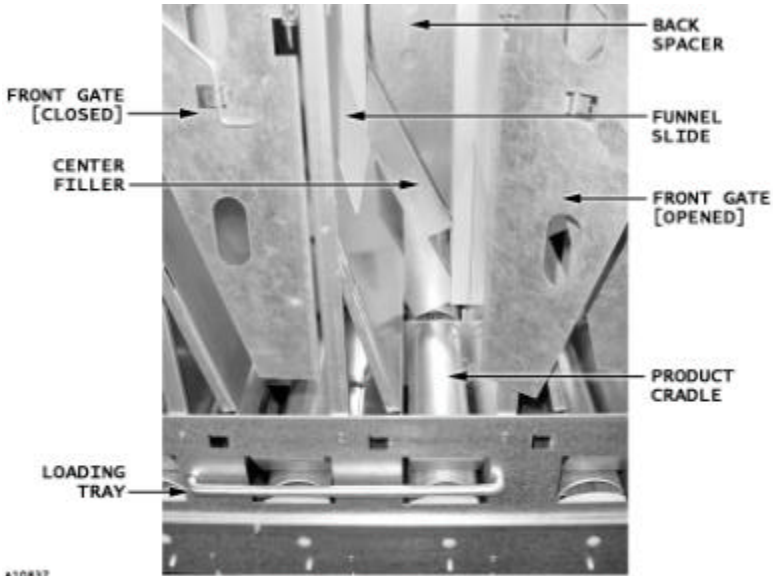
Figure 9. Product Column
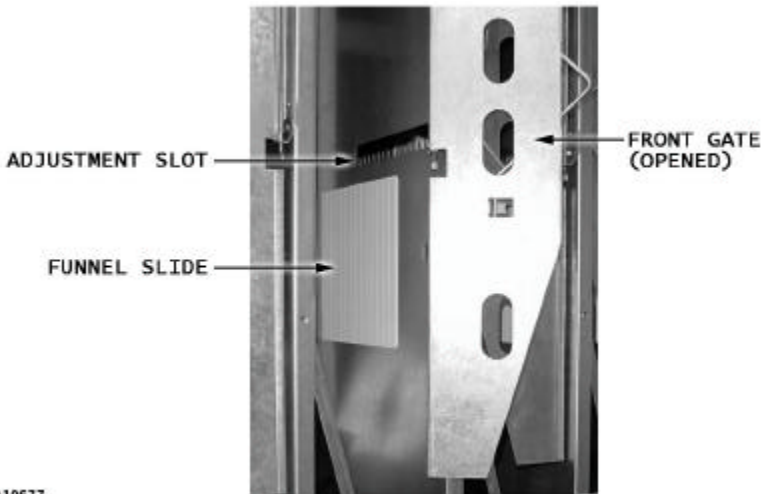
Figure 10. Front Gate Assembly

C B 7 0 0   3 1 5 1   4 2 1 1 2 5 4

> **Standard 12 oz cans may be double loaded in the front and back, increasing the column capacity.**

> **When loading bottled product, make sure that the bottoms of the bottles face the center of the machine. Load bottles in the back of the machine with bottom facing the attendant. Load bottles in the front of the machine with top facing the attendant.**
>
> **Do not load dented or damaged cans or bottles in the columns. Possible jams could occur.**
>
> **Do not store bottles in "spare" space of the cabinet. The refrigeration unit could be damaged.**

DROP SENSOR ADJUSTMENT

The delivery chute uses a drop (vibration) sensor to detect whether product is vended after a selection is made. The drop sensor sends a signal to the controller when a product hits the delivery chute. The sensor is attached to the underside of the delivery chute.

TO ADJUST DROP SENSOR:

1. Loosen the control board cover mounting screws and remove cover.

    a) Find the five (5) board mounts. See Figure 10a.

    b) Release the control board from the board mounts. Beginning with the top right corner of the control board, pinch the board mounts using a pair of needle-nose pliers and pull gently on the circuit board. Follow the same procedure to release the remaining four (4) board mounts.
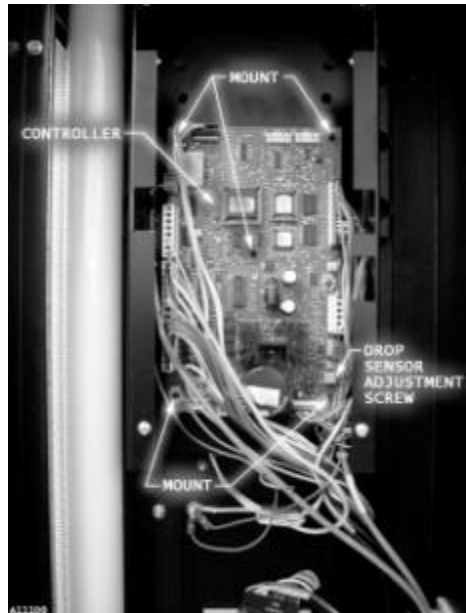
Figure 10a. Control Board Mounts

2. Find the drop sensor adjustment screw and the drop sensor indicator light on the bottom right corner of the control board. See **Figure 10b**. Set the drop sensor to factory setting as follows:

a) Use a small screwdriver to slowly adjust the adjustment screw clockwise (increase sensitivity) and stop when the indicator light comes on.

b) Slowly turn the adjustment screw counterclockwise (decrease sensitivity) and stop when the indicator light goes out. Now turn the adjustment screw counterclockwise 3/4 turn. Test the sensor for proper operation by tapping the hopper. The indicator light should blink when the hopper is tapped.
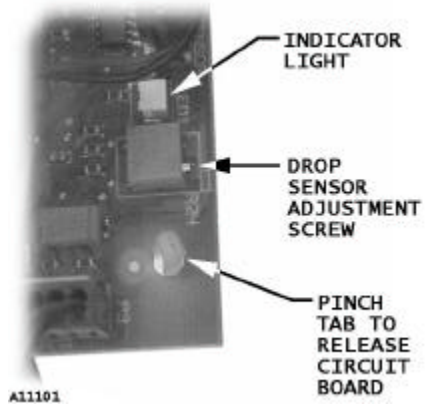
Figure 10b. Drop Sensor Adjustment Screw

c) Re-install the control board back to its mounts. Close the front door and perform several test vends.

d) **If vending special products**, the drop sensor may need the following additional adjustments:

- If machine is sending more than one product per vend request (double vend), then open the door and turn the adjustment screw clockwise 1/4 turn (to increase sensitivity).

- If machine vails to vend product upon vend request, turn adjustment screw counterclockwise 1/4 turn (to decrease sensitivity).

3. Re-install control board cover. Close inner and outer doors.

CONTROLLER

The machine must be in *Sales Mode* to vend products.

The machine must be placed in the *Service Mode* to change program settings and retrieve diagnostic information.

SERVICE MODE BUTTON

Enter the *Service Mode* by simply opening the main door and pushing the blue *Service Mode Button* located on the middle right side of the control board. See **Figure 11**. Upon entering the *Service Mode* diagnostic error codes will be displayed if the controller has flagged any errors. If credit exists when entering the *Service Mode*, it will be restored when the machine is returned to *Sales Mode*.

CAUTION
Electrostatic discharge can cause major problems in the control board. If possible use an anti-static conductive wrist strap when working with the control board. Always handle electronic boards by the edges, not touching any of the components.

Figure 11. Controller

KEYPAD FUNCTION DURING SERVICE MODE

After placing the vendor into *Service Mode* (pressing the blue *Service Mode Button* located on the center right side of the control board), the keypad becomes the input terminal by which the vendor is programmed. The following (Table 1) is a list of the four (4) tasks designated.

Table 1. Service Mode Keypad Functions

BUTTON	MEANING	FUNCTION
A	**UP**	Increase, Next, etc.
B	**DOWN**	Decrease, Previous, etc.
C	**ENTER** (Press and hold for **less** than 2 seconds)	Save, Accept, OK, etc.
C	**HOME** (Press and hold for **more** than 2 seconds)	Exit, Escape, Return, etc.

Letters correspond to Numbers. (A=1, B=2, C=3, D=4, E=5, F=6, G=7, H=8, J=9, L=0)

The letters I, K, M, O, S, V, W, X, Y, and Z will not appear on the keypad.

Reminders of button codes will be included on each page of this manual.

STANDARD CONTROLLER

Refer to **Figure 12** for an overview of the menus available with the Standard Controller.

The Service Mode menus are accessible only when main door is open. Press the *Service Mode Button* and the display will show *"Eror" (Errors Mode)*, which marks the beginning of the Service Menu.

The same control menus are also available in the Extended Controller. Refer to Extended Controller Option on page 19.

CB700 MENU MAP

STANDARD CONTROLLER

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Figure 12. Standard Controller Menu Map

ERRORS MODE

Eror - If an error message appears upon entering the *Service Mode*, press <enter> (C). A description of the error detected will appear. If the word *"nonE"* is displayed there were no errors encountered during the controller's pre-check. After 5 minutes, the machine will return to sales greeting if there is no further activity. To return to *"Eror"* mode, during the operation, press <home> (C - for more than 2 seconds). See table on page 13 for listing of Possible Error Codes.

If the <up> or <down> (A or B respectively) key is pressed and held for 2 seconds during the display of any error code, that error will be cleared. If other errors exist that fall under the currently accessed detail type, the next error will now be displayed. If no other errors of the current type exist, the next error summary code will be displayed, or *"nonE"* will be displayed if no other errors exist.

To move on to the next diagnostic step press the <up> (A) button.

Table 2. Possible Error Codes

MAIN CODE	ERROR DETAIL	
SELS	SS 1 – SS 12	Select switch closed
CHAr	CC	Changer communication
	TS	Changer Tube Sensor
	IC	Inlet Chute blocked
	tJ	Changer Tube jammed
	CrCh	Changer ROM Checksum
ACCE	EE	Excessive escrow
	nJ	Coin Acceptor jammed
	LA	Low acceptance rate
Chut	CS	Chute Sensor always on
StS	DAxx	Column double assigned
	UAxx	Column unassigned
bUAL	bS	Bill Validator Sensor
	biLL	Bill Validator Motor
	bJ	Bill jammed
	bOPn	Open Bill Cash Box
	bFUL	Full Bill Cash Box
	bC	Bill Validator communication
FriG	SEnS	Temperature Sensor
	CoLd	Sensing temperature 3 degrees under Cut out
	CnPr	Not cooling—within 30 min. of Cut in
	ACLo	Less than 95 volts for more than 30 minutes

COLUMN TEST VEND MODE

tESt - Press <enter> (C) while "*tESt*" is displayed to enter mode.

Testing by column, not selection, to determine if the proper vend motor is receiving 24 volts DC from the control board and whether the motor assembly is functioning properly.

"*CO 1*" (Column 1) will be displayed as "*tESt*" is entered. Press <up> (A) or <down> (B) to display each column to be test vended. Test vend will only be attempted in the columns available on your machine. Pressing <enter> (C) will test the currently displayed column. While vend is not in process, pressing "*home*" will return to "*tESt*" display. From there <down> (B) will go to "*Eror*"; <up> (A) moves on to "*CASH*".

CASH COUNTER MODE

CASH - Includes a total count of the cash taken into the machine, which cannot be reset. Counts include the type (CL=cash level). Each count may be displayed in 1 or 2 sets of 4 digits. An example of each:

COUNT TYPE	ACTUAL COUNT	1ST DISPLAY	2ND DISPLAY	3RD DISPLAY
Total Cash Count	29,356.25	*CASH*	*293*	*56.25*
Selection Cash Count	9,356.25	*CL* [number]	*93*	*56.25*

Press <enter> (C) while "*CASH*" is displayed to enter mode.

"*CASH*" will flash in the display along with the total amount of cash taken into the machine. Press <up> (A) or <down> (B) to display each individual selection cash count. Press <home> (C - for more than 2 seconds) to return to "*CASH*" display. From there <down> (B) goes to "*tESt*"; <up> (A) moves on to "*SALE*".

FOR EXTENDED CONTROLLER ONLY

Individual selection counts may be reset on the Extended Controller only. See Configuration Mode on page 24. If individual counters have been configured to reset, they will reset upon reading at least one of them and closing the machine door.

SALE COUNTER MODE

SALE - Includes a total count of products vended from the machine, which cannot be reset. Counts include the type (SL=sale level). Each count may be displayed in 1 or 2 sets of 4 digits. An example of each:

COUNT TYPE	ACTUAL COUNT	1ST DISPLAY	2ND DISPLAY	3RD DISPLAY
Total Sale Count	2,935,625	*SALE*	*293*	*5625*
Selection Sale Count	935,625	*SL [number]*	*93*	*5625*

Press <enter> (C) while *"SALE"* is displayed to enter mode.

"SALE" will flash in the display along with the total amount of sales made by the machine. Press <up> (A) or <down> (B) to display each individual selection sale count. Press <home> (C - for more than 2 seconds) to return to *"SALE"* display. From there <down> (B) goes to *"CASH"*; <up> (A) moves on to *"PriC"*.

FOR EXTENDED CONTROLLER ONLY

Individual selection counts may be reset on the Extended Controller only. See Configuration Mode on page 24. If individual counters have been configured to reset, they will reset upon reading at least one of them and closing the machine door.

SELECTION PRICE MODE

$PriC$ — Setting vend prices using single or multi-pricing. See Configuration Mode on page 24 for setting up the machine for single or multi-pricing vending.

Press <enter> (C) while *"PriC"* is displayed to enter mode. *"ALL"* will display.

To change/reset all selection price settings [P1 through P14] at the same time, then press <enter> (C).

NOTE

Pressing <enter> (C) with *"ALL"* displayed will reset all price selections.

The default price setting for all selections displayed is the P1 price setting. Press <up> (A) to increase price *[in base units]*. Press <down> (B) to decrease price *[in base units]*. Press <enter> (C) will save new setting and return to *"All"* display.

NOTE

The base units value is dependent on the coin mechanism, bill validator, or card reader monetary base unit.

For example: base unit is .05 for US coin mechanisms.

To view/set price settings for selections P1 through P14 separately, then press <up> (A) or <down> (B). The selection number will display followed by the selection price. Press <enter> (C) to change price setting. Press <up> (A) to increase price. Press <down> (B) to decrease price. Press <home> (C - for more than 2 seconds) to save the new setting and return to the *"Px"* (x being the selection number—1 corresponding to button "A", 2 = "B", 3= "C", etc.) display.

The new selection price will also be displayed. From there <home> (C – for more than 2 seconds) will return to *"PriC"* the beginning of the Price Mode.

From there <down> (B) goes to *"SALE"*; <up> (A) moves on to *"SdeP"*.

SET VENDING DEPTH MODE

SdEP — Press <enter> (C) while *"SdEP"* is displayed to enter mode.

Choosing single or double depth for each selection. **This is necessary to prevent slow vends or multiple vends**.

"ALL" will be displayed. Press <enter> (C) to set all the depths the same. The current depth setting will flash in the display along with *"ALL"*. Press <up> (A) or <down> (B) to change the depth setting (1 or 2). Press <home> (C - for more than 2 seconds) to save setting and return to *"ALL"* display. Press <home> (C - for more than 2 seconds) to return to the *"SdEP"* display. From there <down> (B) goes to *"PriC"*; <up> (A) moves on to *"tUFL"*.

COIN TUBE FILL MODE

tUFL - Press <enter> (C) while *"tUFL"* is displayed to enter mode.

Maintaining coin tube levels. As coins are added, the mechanism will keep track of the exact number of each (denominations do not have to be added in order). The control board will then keep track of each coin as it is paid out.

Press <home> (C - for more than 2 seconds) to return to *"tUFL"* display. From there <down> (B) goes to *"SdEP"*; <up> (A) moves on to *"CPo"*.

COIN PAYOUT MODE

ℂ𝐏ᴏ - Testing the control board's coin payout function.

Press <enter> (C) while *"CPo"* is displayed to enter mode.

The lowest coin value will be displayed upon entering mode. Press <up> (A) or <down> (B) to display each of the coin values available for payout. Holding <up> (A) or <down> (B) will pay out the denomination of coin currently displayed. Coins will continue to dispense as long as the button is held down. Pressing <home> (C - for more than 2 seconds) will return to the *"CPo"* display. <down> (B) will then return to *"tUFL"* and <up> (A) will move the process on to *"FriG"*.

<table>
<tr><td>NOTE</td></tr>
<tr><td>In <i>"tUFL"</i>, "<i>CPo</i>" must be used to pay out coins.</td></tr>
</table>

REFRIGERATION PARAMETERS MODE

𝐅𝐫ι𝐆 — Controlling environmental aspects of the machine by setting *"cut in"* and *"cut out"* temperatures of the refrigeration unit. The two functions within the Refrigeration Mode are listed below.

STANDARD CONTROLLER	
FUNCTION	**MEANING**
𝐂ᴜᴛι	Cut In Temperature. Example: 41°F
𝐂ᴜᴛᴏ	Cut Out Temperature. Example: 29°F

Press <enter> (C) while *"FriG"* is displayed to enter mode. *"Cuti"* will be displayed.

Press <up> (A) or <down> (B) to toggle between the two functions. Adjust according to need. Press <home> (C - for more than 2 seconds) at any time to return to *"FriG"* display. From there <down> (B) goes to *"CPo"* and <up> (A) moves to *"Eror"*.

<table>
<tr><td>Note</td></tr>
<tr><td>The temperature displayed will vary between the <i>"Cuti"</i> and <i>"Cuto"</i> settings and does not reflect the actual product temperature.</td></tr>
</table>

CUTI FUNCTION

$\sqsubset u \sqcup$ — Press <enter> (C) to begin setting Cut-In Temperature. The current Cut-In Temperature Setting will be displayed. (Factory preset is 41 F) Press <up> (A) or <down> (B) to change the Cut-In Temperature. (39–45 F; 4–7 C) Press <home> (C - for more than 2 seconds) to save changes and return to *"Cuti"* display. From there <down> (B) or <up> (A) moves on to *"Cuto"*.

CUTO FUNCTION

$\sqsubset u \sqcup \sqcap$ — Press <enter> (C) to begin setting Cut-Out Temperature. The current Cut-Out Temperature Setting will be displayed. (Factory preset is 29 F) Press <up> (A) or <down> (B) to change the Cut-Out Temperature. (24–34 F; -4–1 C) Press <home> (C - for more than 2 seconds) to save changes and return to *"Cuto"* display. From there <down> (B) or <up> (A) moves on to moves to *"Cuti"*.

EXTENDED CONTROLLER OPTION

The Extended Controller have the same basic menus that the Standard Controller plus extended features. The additional menus and control modes shown in this section of the manual are available **only** if you have ordered the **CB700** with an **Extended Controller**.

Refer to **Figure 13** for a map of the Extended Controller main menus. Highlighted menus are part of the Standard Controller and are described in the **Standard Controller** section on page 12 of this manual.

To vend products, or to access error codes and sales counts the machine must be in *Sales Mode*. Only the *External Menu* is accessible.

To change program settings and retrieve diagnostic information, the machine must be placed in the *Service Mode.* The *Service Menu* and *Password Protected Menus* would then be accessible.

CB700 MENU MAP
EXTENDED CONTROLLER
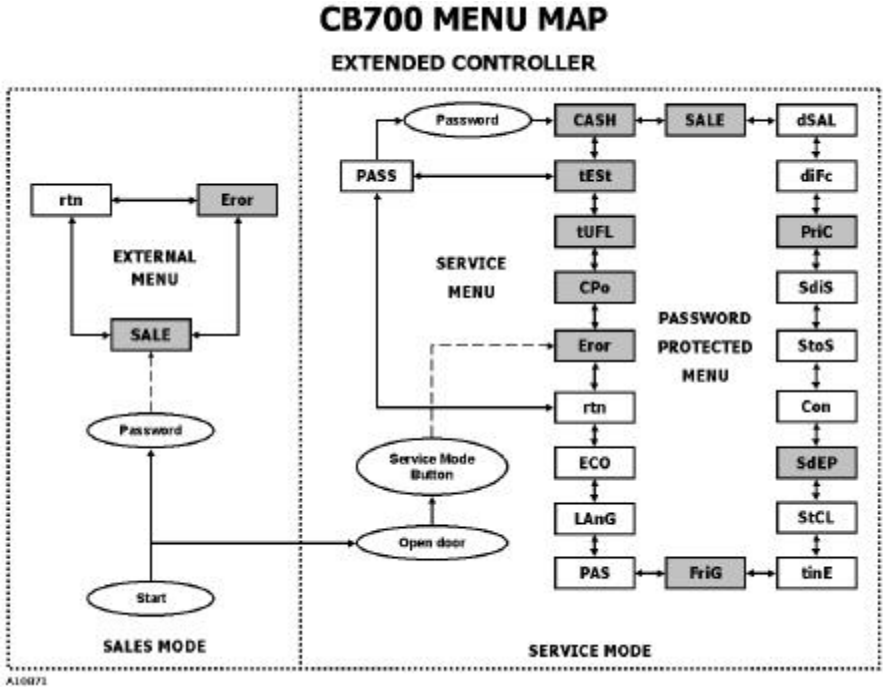
Figure 13. Extended Controller Menu Map

PASSWORD MODE

PASS - Accessing Password Protected Menu. All modes necessary for machine setup are on the Password Protected Menu. A password is required for entry.

Press <enter> (C) while *"PASS"* is displayed to enter mode.

Enter the initial password by pressing buttons D, B, C, A -- IN THIS ORDER. If the control board fails to recognize the correct password, it will revert to the *"PASS"* display in 15 seconds.

If the correct password has been entered successfully, *"CASH"* will be displayed. If no password is entered, <down> (B) will return to *"tESt"* and <up> (A) will move on to *"rtn"*.

RETURN TO SALES/GREETING MODE

rtn - Exiting the service menu.

Press <enter> (C) while *"rtn"* is displayed to return to sales mode and greeting display. From *"rtn"* <down> (B) goes to *"PASS"*; <up> (A) moves to *"Eror"*.

DISCOUNTED SALE COUNTER MODE

dSAL - Allows manual retrieval of total product dispensed during discounted sales periods.

Includes a total count of the sales by the machine, which cannot be reset. Individual selection counts may be reset (see Configuration Mode on page 24). Counts include the type (SL=count level). Each count may be displayed in 1 or 2 sets of 4 digits. An example of each:

DISCOUNT COUNT TYPE	ACTUAL COUNT	1ST DISPLAY	2ND DISPLAY	3RD DISPLAY
Total Sale Count	2935,625	*SALE*	*293*	*5625*
Selection Sale Count	935,625	*SL [number]*	*93*	*5625*

Press <enter> (C) while *"dSAL"* is displayed to enter mode.

"SALE" will flash in the display along with the total amount of sales taken into the machine.

Press <up> (A) or <down> (B) to display each individual selection cash count. Press <home> (C - for more than 2 seconds) to return to *"dSAL"* display. From there <down> (B) goes to *"SALE"*; <up> (A) moves on to *"diFc"*.

NOTE

If individual counters have been configured to reset (see Configuration Mode) they will reset upon reading at least one of them and closing the machine door.

DIFFERENTIAL CASH DISCOUNTED COUNTER MODE

$\text{d}_\text{I}\text{F}_\text{c}$ - Monitoring the difference between regular prices and discounted prices. The total count may not be reset. (In this mode, individual counters cannot be reset.) A minus sign (-) indicates that the product was sold for less than the vend price. Examples:

DIFFERENTIAL COUNT TYPE	ACTUAL COUNT	1ST DISPLAY	2ND DISPLAY	3RD DISPLAY
Negative Differential Cash Count	-636.25	*CASH*	*-6*	*36.25*
Positive Differential Cash Count	636.25	*CASH*	*6*	*36.25*

Press <enter> (C) while *"diFc"* is displayed to enter mode.

"CASH" and the total difference between regular vend prices and discounted prices will flash in the display along with the total amount of cash taken into the machine.

Press <home> (C - for more than 2 seconds) to return to *"diFc"* display. From there <down> (B) goes to *"dSAL"*; <up> (A) moves on to *"PriC"*.

SET DISCOUNT PRICING MODE

$\text{Sd}_\text{I}\text{S}$ — Setting discount prices for each selection. This is done in conjunction with the built-in timer in *"tinE"* mode. Before entering the *"tinE"* mode, selections must be set to *"1"* in *"StCL"* mode. The discounted selection may be time-activated using the *"dScn"* setting in the *"tinE"* mode under the day function.

Press <enter> (C) while *"SdiS"* is displayed to enter mode.

"ALL" will be displayed along with the last discount price set for *"ALL"*. Press <up> (A) or <down> (B) to view other set discount prices. Press <enter> (C) to change a discount price. Hold or press <up> (A) to increase discount price in 5-cent increments. Press <down> (B) to decrease discount price in 5-cent increments. <home> (C - for more than 2 seconds) will save new setting and return to the selection level display.

Press <home> (C - for more than 2 seconds) again to return to *"SdiS"* display. From there <down> (B) goes to *"PriC"*; <up> (A) moves on to *"StoS"*.

SPACE TO SALES MODE

$\text{S}_\text{t}\text{o}\text{S}$ — Determining select button and vend column assignment and assigning multiple columns to select buttons. Using fewer select buttons allows more of a popular product to be loaded in the columns vended through the *"multiple-column"* buttons.

NOTE

There will be a Space to Sales Mode preset from the factory and an available custom Space to Sales Mode.

Press <enter> (C) while *"StoS"* is displayed to enter mode.

Factory Standard Settings: Press <up> (A) or <down> (B) to view each *Space to Sales* setting. Press <enter> (C) to select and lock any factory standard setting (*"opt #"*). The previous setting will automatically be replaced. <u>The display will then begin to sequence through each selection followed by each column assignment.</u> Pressing <home> (C - for more than 2 seconds) will return to *"StoS"*.

EXAMPLE:

After selecting a factory setting, *"SL1"* is displayed, followed by *"1"* and then *"2"*. This means that selection 1 has been assigned to columns 1 and 2.

Custom settings: Press <enter> (C) at the *"CStS"* (<down> (B) from *"oPt 0"*) display option. *"SL 1"* (selection 1) will display followed by each column assigned to this selection. (See example above) Press <up> (A) or <down> (B) to move through each of the 12 available selections and their assigned columns. (*Remember that column numbers will correspond to button letters on the keypad*.)

Press <enter> (C) at any selection to enter the column display. *"Co 1"* for instance — *"Co"* indicating *"column"* followed by its number. Press <up> (A) or <down> (B) to view each column designation. If a column designator is flashing, it is assigned to that selection. If it is not flashing, it is not assigned. Press <up> (A) or <down> (B) to change the column from its current assignment mode (column assignment will be flashing); then press <enter> (C) to add or delete a column from its current selection assignment. <home> (C - for more than 2 seconds) will return to the Selection display with flashing column number. Reassign other selections in the same manner. <home> (C - for more than 2 seconds) again will return to the *"CStS"* display. <u>New assignments will override existing assignments</u>.

When finished, press <home> (*"C"* for more than 2 seconds) to return to *"StoS"* display. From there <down> (B) goes to *"SdiS"*, <up> (A) moves on to *"Con"*.

Table 3. Space to Sales Option Settings

SELECTION	OPT 0	OPT 1	OPT 2	OPT 3	OPT 4	OPT 5	OPT 6	OPT 7	OPT 8
1 [**A**]	NONE	1,2	1,2,3	1,2,3	1,2,7	1	1,2,7,8	1,7	1
2 [**B**]	NONE	3,4	4,5	4,5	3	2,3,8	3,4	2,8	2
3 [**C**]	NONE	5	6	6	4	4	5,11	3,9	3
4 [**D**]	NONE	6	7,8	7	5	5	6,12	4,10	4
5 [**E**]	NONE	7	9	8,9	6	6	9	5,11	5
6 [**F**]	NONE	8	10	10	8	7	10	6,12	6
7 [**G**]	NONE	9	11	11	9	9	13	13	7
8 [**H**]	NONE	10	12	12	10	10	14	14	8
9 [**J**]	NONE	11	13	13	11	11	NONE	NONE	9
10 [**L**]	NONE	12	14	14	12	12	NONE	NONE	10
11 [**N**]	NONE	13	NONE	NONE	13	13	NONE	NONE	11,12
12 [**P**]	NONE	14	NONE	NONE	14	14	NONE	NONE	13,14
13 [**R**]	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
14 [**T**]	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE

NOTE

**Remember that selection numbers correspond to button letters—
Selection 1=Button A; Selection 2=Button B, etc.**

CONFIGURATION MODE

⌐on — Setting machine options in pricing, payback, acceptance, and optional features. In this mode, the configuration, followed by its current setting will be displayed. Note the following list of configuration displays and their meanings.

Table 4. Configuration Mode List

CONFIGURATION	SETTING	MEANING
C1	0	Single Pricing
	1	Multiple Pricing
C4	0	Display errors or "nonE"
	1	Display Sales, Cash Values, and existing error or "nonE"
C5	0	No reset of individual counters
	1	Allow reset of individual counts upon reading and door switch actuation
C6	0	Credit will be returned if proper change cannot be made
	1	Allow vend regardless of changer tube levels (change may not be paid)
C7	0	Allow bill acceptance regardless of payout availability
	1	Accept bill only if coin payout can cover difference between bill value and maximum vend price
C8	0	Escrow to vend (will act as a bill changer)
	1	Forced attempt (will not act as a bill changer)
C9	0	Change automatically returned to customer after a valid vend
	1	Hold customer's change in escrow to allow a multiple purchase
C10	0	Bill escrow disabled
	1	Bill escrow enabled
C11	0	All errors displayed
	1	Certain errors displayed
C12	0	12 Column mode
	1	10 Column mode

Press <enter> (C) while *"Con"* is displayed to enter mode.

Configuration 1 and its setting will be displayed upon entering mode. Press <up> (A) or <down> (B) to view each configuration. Press <enter> (C) to begin the process of changing a configuration. The setting will begin to flash. At this point press <up> (A) or <down> (B) to toggle setting between *"0"* and *"1"*. Press <home> (C - for more than 2 seconds) to save changes and return to configurations display. Repeat the process until all desired changes are complete. When finished, press <home> (C - for more than 2 seconds) to return to *"Con"* display. From there <down> (B) goes to *"StoS"*; <up> (A) moves on to *"SdEP"*.

TIME AND TIMER SETTINGS MODE

5ᴛᴄʟ — Turning off selections with timer or optional key switch kit. Selections set to *"1"* will allow control by timer or key switch. *"0"* selections will function as preset.

Press <enter> (C) while *"StCL"* is displayed to enter mode. *"ALL"* will be displayed. Press <enter> (C) again. *"ALL"* will display without flashing and the current *"StCL"* setting will flash. Press <up> (A) or <down> (B) to change setting between *"0"* and *"1"*. Press <home> (C - for more than 2 seconds) to save change and return to *"ALL"*.

Cycle through selections using <up> (A) or <down> (B) to change individual settings. Press <enter> (C) at any setting to change that setting using <up> (A) or <down> (B). Press <home> (C - for more than 2 seconds) to save setting and return to *"StCL"*. From there <down> (B) will go to *"SdEP"* and <up> (A) will move to *"tinE"*.

TIME AND DATE SETTING MODE

ｔｉｎＥ — Setting ON and OFF times for selections, refrigeration, and/or lighting. Date and time <u>must</u> be set properly for this mode to function.

The following is a chart of functions, their meanings, and an example of each:

Table 5. Time and Date Mode Functions

FUNCTION	ITEM	DISPLAY EXAMPLE
ＹＥＡｒ	Current year	*"99"* (1999)
ｄＡｔＥ	Current month/day	*"0907"* (Sept 7)
ｈｏｕｒ	Current hour/min.	*"1520"* (3:20 pm)
ＳＥｔｄ	Set day of week	*"Fri"* (Friday)
ＳｔＯＰ	Disable clock	*"CLOC"* then *"StOP"*
ｄＡＹ	Timer on/off days and times	*"ALL"*
ｄＳｔ	Display time on LED	*"dSt"* w/flashing setting
ｄＬｔ	Daylight Savings Time	*"dLt"* w/flashing setting

NOTE

Disable Clock is used during machine storage time to conserve the control board battery life.

Press <enter> (C) while *"tinE"* is displayed to enter mode.

"YEAr" will be the first item displayed. Press <up> (A) or <down> (B) to move through the *"tinE"* options. Pressing <home> (C - for more than 2 seconds) at any time while moving through the options will return *"tinE"* to the display. From there pressing <down> (B) will move to *"StCL"*. Press <up> (A) to move to *"FriG"*.

YEAR FUNCTION

ＹＥＡｒ — Press <enter> (C) to begin setting year function. Press <up> (A) or <down> (B) to change the 2-digit year (it should be flashing). Press <home> (C - for more than 2 seconds) to save changes and return to *"YEar"* display. From there <down> (B) moves to *"dLt"* and <up> (A) moves on to *"dAtE"*.

DATE FUNCTION

ｄＡｔＥ — Press <enter> (C) to begin setting date function. Press <up> (A) or <down> (B) to change the first 2 digits of the date (they should be flashing). Press <enter> (C) to lock that item and move to the next. Repeat the process. When finished, press <home> (C - for more than 2 seconds) to save changes and return to *"dAtE"* display. From there <down> (B) moves to *"YEAr"* and <up> (A) moves on to *"hour"*.

C B 7 0 0   3 1 5 1   4 2 1 1 2 5 4

HOUR FUNCTION

hour — Press <enter> (C) to begin setting hour function (in military time). Press <up> (A) or <down> (B) to change the first 2 digits of the time (they should be flashing). Press <enter> (C) to lock that item and move to the next. Repeat the process. When finished, press <home> (C - for more than 2 seconds) to save changes and return to *"hour"* display. From there <down> (B) moves to *"dAtE"* and <up> (A) moves on to *"SEtd"*.

SETD FUNCTION

SEtd — Press <enter> (C) to begin setting *"SEtd"* function. Press <up> (A) or <down> (B) to change the day of the week. When finished, press <home> (C - for more than 2 seconds) to save changes and return to *"SEtd"* display. From there <down> (B) moves to *"hour"* and <up> (A) moves on to *"StOP"*.

STOP FUNCTION

StOP — Press <enter> (C) to begin process of turning off clock. Press <enter> (C) again. This turns off the clock and automatically exits back to the *"StOP"* display. (<enter> (C) acts like a toggle switch in this instance.) When finished, press <home> (C - for more than 2 seconds) to save changes and return to *"StOP"* display. From there <down> (B) moves to *"SEtd"* and <up> (A) moves on to *"dAY"*.

DAY FUNCTION

dAY — Press <enter> (C) to begin adjustment of the *"dAY"* function. (From here the timer is set for each day of the week.) *"ALL"* will be displayed. There are now 2 options to choose from —*"ALL"* or individual days of the week. <up> (A) or <down> (B) will move through the various days. Press <enter> (C) at a day of the week or *"ALL"* (*"ALL"* being the option from which to set the same timer pattern for all days of the week). *"SC-1"* will be displayed followed by *"On"*. From there press <up> (A) or <down> (B) to cycle through all other available timer setting modes. See table on page 28.

Table 6. Day Function Setting Modes

SETTING MODE	MEANING
SC-1…On *SC-1…Off*	1st OFF time for selections 1st ON time for selections
SC-2...On *SC-2…Off*	2nd OFF time for selections 2nd ON time for selections
SC-3…ON *SC-3…OFF*	3rd OFF time for selections 3rd ON time for selections
DScn…On *DScn…Off*	ON time for discounted selections OFF time for discounted selections
FriG…On *FriG…Off*	OFF time for refrigeration system ON time for refrigeration system
Lt-1…On *Lt-1…Off*	1st OFF time for lighting 1st ON time for lighting
Lt-2…On *Lt-2…Off*	2nd OFF time for lighting 2nd ON time for lighting
Lt-3…On *Lt-3…Off*	3rd OFF time for lighting 3rd ON time for lighting

At any Timer Mode press <enter> (C) to initiate a change in the ON and OFF times setting. The current setting with the hour flashing will be displayed. Press <up> (A) or <down> (B) to change the hour of this setting. Press <enter> (C) to lock the change and move to the minutes. Repeat the process. When finished, press <home> (C - for more than 2 seconds) to save changes and return to the timer setting modes listing display. From there <up> (A) or <down> (B) moves to the other timer setting modes. Each may be adjusted using the same process. Press <home> (C - for more than 2 seconds) to return to the day of the week level. Press <home> (C - for more than 2 seconds) again to return to the *"dAY"* display. From there <down> (B) goes to *"StOP"*; <up> (A) moves on to *"dSt"*.

NOTE

For selections which are set to go off and come back on at particular times the first off time for selections must be set from *"SC-1"*. The first return on time for the selections must be set by entering *"SC-1Off"*. Selections to be controlled must be set in the *"StCL"* mode of the Password Protected Menu.

DST FUNCTION

⌐¦5Ł — Press <enter> (C) to begin setting Display Time Setting mode. Press <up> (A) or <down> (B) to change the current setting (flashing) *"1"* indicates that the time of day will be displayed on the LED during the greeting. *"0"* indicates that the time will not be displayed during the greeting. When finished, press

<home> (C - for more than 2 seconds) to save changes and return to *"dSt"* display. From there <down> (B) moves to *"dAY"* and <up> (A) moves to *"dLt"*.

DLT FUNCTION

⌷Lᴸ — Press <enter> (C) to begin setting Daylight Savings Time Enable/Disable mode. *"dLt"* will be displayed along with the current setting (flashing). Press <up> (A) or <down> (B) to change the current setting. *"1"* indicates that Daylight Savings Time is enabled. *"0"* indicates that Daylight Savings Time is disabled. When finished, press <home> (C - for more than 2 seconds) to save changes and return to *"dLt"* display. From there <down> (B) moves to *"dSt"* and <up> (A) moves on to *"YEAr"*. Press <home> (C - for more than 2 seconds) to return to *"tinE"* (beginning of function menu). From there <down> (B) moves to *"StCL"* and <up> (A) moves to *"FriG"*.

REFRIGERATION PARAMETERS MODE

Fᴦɪ�; — Controlling environmental aspects of the machine by setting *"cut in"* and *"cut out"* temperatures of the refrigeration unit. The various functions within the Refrigeration Mode are listed below.

EXTENDED CONTROLLER OPTION	
FUNCTION	**MEANING**
Cuti	Cut In Temperature. Example: 43°F
Cuto	Cut Out Temperature. Example: 29°F
dEG	Select Fahrenheit or Celsius
dSP	Display Inside Cabinet (evaporation) Temperature
FrG	Master control ON/OFF
rELY	Relay Test Mode

Press <enter> (C) while *"FriG"* is displayed to enter mode. *"Cuti"* will be displayed.

Press <up> (A) or <down> (B) to move through all six *"FriG"* functions. Adjust according to need. Press <home> (C - for more than 2 seconds) at any time to return to *"FriG"* display. From there <down> (B) goes to *"tinE"* and <up> (A) moves to *"PAS"*.

Note

> **The temperature displayed will vary between the *"Cuti"* and *"Cuto"* settings and does not reflect the actual product temperature.**

CUTI FUNCTION

$\boldsymbol{\mathsf{Cut}}$ — Press <enter> (C) to begin setting Cut-In Temperature. The current Cut-In Temperature Setting will be displayed. (Factory preset is 41 F) Press <up> (A) or <down> (B) to change the Cut-In Temperature. (39–45 F; 4–7 C) Press <home> (C - for more than 2 seconds) to save changes and return to *"Cuti"* display. From there <down> (B) moves to *"rELY"* and <up> (A) moves on to *"Cuto"*.

CUTO FUNCTION

$\boldsymbol{\mathsf{Cuto}}$ — Press <enter> (C) to begin setting Cut-Out Temperature. The current Cut-Out Temperature Setting will be displayed. (Factory preset is 29 F) Press <up> (A) or <down> (B) to change the Cut-Out Temperature. (24–34 F; -4–1 C) Press <home> (C - for more than 2 seconds) to save changes and return to *"Cuto"* display. From there <down> (B) moves to *"Cuti"* and <up> (A) moves on to *"dEG"*.

DEG FUNCTION

$\boldsymbol{\mathsf{dEG}}$ — Press <enter> (C) to change current Degree Setting. *"dEG"* will be displayed along with the current setting. Press <up> (A) or <down> (B) to change (*"F"* for Fahrenheit (factory preset) or *"C"* for Celsius). When finished, press <home> (C - for more than 2 seconds) to save change and return to *"dEG"* display. From there <down> (B) moves to *"Cuto"* and <up> (A) moves on to *"dSP"*.

DSP FUNCTION

$\boldsymbol{\mathsf{dSP}}$ — Press <enter> (C) to begin setting the Display Temperature function. *"dSP"* will be displayed along with the current setting (flashing). Press <up> (A) or <down> (B) to change the current setting. *"1"* indicates that the temperature will be displayed along with the sales greeting. *"0"* indicates that the temperature will not be displayed along with the sales greeting. When finished, press <home> (C - for more than 2 seconds) to save changes and return to *"dSP"* display. From there <down> (B) moves to *"dEG"* and <up> (A) moves on to *"FrG"*.

Note

The temperature displayed will vary between the *"Cuti"* and *"Cuto"* settings and does not reflect the actual product temperature.

FRG FUNCTION

$\boldsymbol{\mathsf{FrG}}$ — Press <enter> (C) to use the Unit Disable function (Master ON/OFF). *"FrG"* will be displayed along with the current setting (flashing). Press <up> (A) or <down> (B) to change the current setting (*"1"* for normal operation (factory preset) or *"0"* to disable the unit). When finished, press <home> (C - for more

than 2 seconds) to save change and return to *"FrG"* display. From there <down> (B) moves to *"dSP"* and <up> (A) moves on to *"rELY"*.

RELAY TEST FUNCTION

rELY — Press <enter> (C) to begin working in the Relay Test Function. *"Fan"* will be displayed. Press <up> (A) or <down> (B) to move through each relay test function. The test functions are listed below.

Table 7. Relay Test Functions

FUNCTION	TEST TYPE
Fan	Evaporator Fan Relay Test (requires opt. kit)
LitE	Illumination Relay Test (requires optional kit)
Htr	Heater Relay Test (requires optional kit)
CnPr	Compressor Relay Test

Press <enter> (C) at any of the 4 function modes. The name of the relay will flash and then *"OFF"* or *"ON"*. To change setting press <down> (B). To leave it as set, press <home>. This allows the name of the relay to flash and then flash off. If the relay is turned off but is to be tested, press <enter> (C) to test. If the circuit does not work, Test Mode is maintained for 5 minutes to give time for a voltage check. Press <home> (C - for more than 2 seconds) to return (after a test) to the display of the tested menu item. Press <home> (C - for more than 2 seconds) from this point to return to the *"rELY"* display. When finished, press <home> (C - for more than 2 seconds) to save change and return to *"FriG"* display. From there <down> (B) moves to *"tinE"* and <up> (A) moves on to *"PAS"*.

EXTERNAL MENU PASSWORD SETTING MODE

PAS — Setting a password to externally access historical and individual selection can counts, and machine errors. (Factory preset password is A-C-B-D)

NOTE

> **This menu will always display the current password.**
> **Available password letters are A-J (note—only those alpha buttons assigned to a selection**
> **Set one of the password letters to *"J"* or to an unavailable selection to disable external password.**

Press <enter> (C) to begin setting password. The current password will be displayed. (IT WILL BE DISPLAYED NUMERICALLY—A=1, B=2, C=3, ETC) The first digit will flash. Press <up> (A) or <down> (B) to change the digit. Press <enter> (C) to lock and save the new choice. Repeat procedure for other 3 digits.

<enter> (C) after the fourth digit will return to the first digit. Press <home> (C - for more than 2 seconds) to return to *"PAS"* display. From there <down> (B) will move to *"FriG"* and <up> (A) will go to *"LAnG"*. **(Note and remember the password by alpha buttons for ease of entry later.)**

INTERNATIONAL LANGUAGE SETTING MODE

LAnG — Changing display to alternate language.

Press <enter> (C) to begin setting language. The current language will be displayed. Press <up> (A) or <down> (B) to change the language. Press <home> (C - for more than 2 seconds) to lock and save the new choice and return to the *"LAnG"* display. From there <down> (B) will move to *"PAS"* and <up> (A) will go to *"ECO"*. The following languages are available:

EnGL	English
FrEn	French
SPAn	Spanish
HEbr	Hebrew
GEr	German

EXACT CHANGE VALUE MODE

ECO — Controlling the Exact Change Only value. (Indicating that the machine cannot make change at or below the value specified.)

Press <enter> (C) to begin setting Exact Change Only value. The current exact change value will be displayed. Press <up> (A) or <down> (B) to change the value. Press <home> (C - for more than 2 seconds) to lock and save the new choice and return to the *"ECO"* display. From there <down> (B) will move to *"LAnG"* and <up> (A) will go to *"rtn"*. From there <up> (A) will move to the very beginning of the service menu (*"Eror"*).

EXTERNAL MENU

This menu is primarily used to access error codes and sales counts. The main door does not have to be open to enter this menu. Entering the correct 4-alpha button password while the machine is in stand-by accesses the External Menu. Stand-By indicates that the greeting is displayed, credit is not established, and free vend is not set.

This menu gives access to total and individual (per selection) vend counts, machine error diagnostics, and a clearing feature for individual vend counts. This menu does not provide programming ability. Machine will return to sales mode after 5 minutes.

SALE — Extracting information concerning the amount of product vended. The total count cannot be reset, but individual selection counts may be reset if configured accordingly. See Configurations on page 24.

The type precedes counts. Each count may be displayed in 1 or 2 sets of 4 digits. Refer to **Table 8. Sale Counter Mode Examples**.

Table 8. Sale Counter Mode Examples

COUNT TYPE	ACTUAL COUNT	1ST DISPLAY	2ND DISPLAY	3RD DISPLAY
Total Sale Count	2,935,625	*SALE*	*293*	*5625*
Selection Sale Count	935,625	*SL* [number]	*93*	*5625*

Press <enter> (C) while *"SALE"* is displayed to enter mode.

"SALE" will flash in the display along with the total amount of sales made by the machine.

Press <up> (A) or <down> (B) to display each individual selection sale count. Press <home> (C - for more than 2 seconds) to return to the *"SALE"* display. From there <down> (B) will move to *"Eror"* and <up> (A) will go to *"rtn"* (if present). (*Selection number will correspond to alpha buttons in order.*)

RETURN TO SALES/GREETING MODE

rtn — Exiting the External Menu, and returning to Sales Mode and Greeting Display.

Press <enter> (C) while *"rtn"* is displayed to return to Sales Mode and Greeting Display. From there <down> (B) will go to *"SALE"* and <up> (A) will move to *"Eror"*.

ERRORS MODE

Eror — Diagnosing Machine problems. In this mode, any errors will be displayed. *"None"* indicates that no errors were found and the display will return to *"Eror"* on the External Menu. This mode is for display of information only-- Errors must be cleared from the Internal Service Menu.

Press <enter> (C) while *"Eror"* is displayed to enter mode.

All current machine errors will be displayed followed by a description of each, or *"None"* will indicate that there are none. Press <home> (C - for more than 2 seconds) to return to the *"Eror"* display. From there <down> (B) will go to *"rtn"*.

PROGRAM TROUBLESHOOTING

Improper programming can cause unexpected results. Refer to the following troubleshooting guide:

Table 9. Program Troubleshooting Guide

PROBLEM	REFER TO CONTROLLER MENU	
Wrong prices.	PriC	**Selection Price Mode** on page 15
Wrong or incorrect columns vending.	StoS	**Space to Sales Mode** on page 21
Options improperly setup.	Con	**Configuration Mode** on page 24
Multiple or "long" vend cycles.	SdEP	**Set Vending Depth Mode** on page 16
Selections do not work when timer or key switched is activated.	StCL	**Time and Timer Settings Mode** on page 25
Selections are not working.	tinE	**Time and Date Setting Mode** on page 26
Refrigeration system is not working.		
Refrigeration system is not working.	FriG	**Refrigeration Parameters Mode** on page 17 for Standard Controller, and page 29 for Extended Controller.
Temperature is too warm or too cold.		
Can not access the external password mode.	PAS	**External Menu Password Setting Mode** on page 31
Displays wrong messages or wrong language.	LAnG	**International Language Setting Mode** on page 32

Refer also to **Table 2. Possible Error Codes** on page 13.

C B 7 0 0   3 1 5 1   4 2 1 1 2 5 4

VEND CYCLE

STAND-BY CONDITION

The greeting, vend price (if all are set to the same value), and a choice of other optional features will be displayed. If a customer presses a select button before establishing a credit, the vend price for that selection will be displayed, signaling the customer that more money is needed for that selection.

ESTABLISHING CREDIT

Feeding coins into the coin mechanism results in the display of the corresponding credit count. The coin mechanism will accept coins until the highest vend price has been reached. At this point a credit has been set up through the control board that will enable a vend for any selection less than or equal to the established credit.

VALID SELECTION

Making a selection causes the selection switch to close. A logic level signal is constantly sent out from the control board that then travels to each switch's common position. When the switch is closed, the signal travels out the normally closed position to the harness connection to the control board.

VEND SEQUENCE

The control board then distributes 24 volts DC through the door and cabinet wiring harnesses and to the coil of the selection vend motor. At the same time, the display will scroll. This indicates to the customer that a vend is in progress. As the vend motor receives power, it will turn the rotor, attempting to vend a can or bottle.

PRODUCT DELIVERY

As the can or bottle drops onto the product delivery chute, the impact vibration allows the delivery sensor to send a low voltage signal to the control board indicating that a product has been vended. After receiving the sensor signal, the control board will recognize how the machine is programmed and respond accordingly.

If the first can or bottle has just vended the control board will stop all power to the vend motor at the same time that the impact is registered, thus avoiding a multiple vend. As the next can or bottle vends, the control board will cycle the vend motor to pick up another can or bottle, thus allowing a quick vend turnaround of less than 3 seconds.

The control board will use a Learning Mode to determine which is the front or rear product. This process is reset either on powering down or up or a door opening or closing. The Learning Mode acts in conjunction with the depth setting to enable automatic reload after the rear product has vended.

The controller will note the first "long-timed out" vend cycle during the learning process. From this the controller will determine that the next vend will be front product.

SOLD-OUT

The display will cycle to show the vend progress of each selection. If a product drop is not detected in 10 to 12 seconds, *"Sold Out"* will be displayed. *"Sold Out"* may be due to:

- Selected column is jammed.
- Column is actually sold out.
- Sensor does not detect product drop and needs adjustment.
- Selection does not have a column assigned.

At the *"Sold Out"* display, the customer may make a different selection or receive a refund by pressing the coin return lever. If the machine is set for forced purchase, the customer must make an initial selection. If the initial selection is sold out, a full refund or an alternate selection will be allowed. If the machine is totally sold out of all products, the *"Sold Out"* display will be continuous and no money will be accepted into the machine.

RESETTING SOLD-OUT SELECTIONS

Only opening the machine door will clear a sold out condition (which activates the machine door switch). The controller will not attempt a vend until this is done. Pressing a select button will only initiate the *"Sold Out"* display.

REFRIGERATION

When the temperature is above the programmed cut-in temperature, the refrigeration unit is turned on. Upon reaching the cut-out temperature the refrigeration unit is turned off.

If the refrigeration unit runs continuously for more than four hours without reaching the cut-out temperature, the unit is turned off for the programmed twenty (20) minute defrost time. It will then be turned on again automatically.

REFRIGERATION TROUBLESHOOTING

If the refrigeration unit is turned off, or the power is interrupted, or the door is opened, then the refrigeration unit will not start for at least three minutes regardless of the temperature. This is done to prevent damage to the refrigeration unit.

CAUTION

Breaking the refrigerant joints or seals on the system voids the unit warranty. Failure to keep the condenser coil clean and free of dirt and dust and other similar debris voids the unit warranty.

Know and understand how the unit operates. Units may vary, but the operation is basically the same. Never guess at the problem; find the symptom before attempting any repair.

NOTE

Most refrigeration problems are electrical.

The sealed hermetic system should not be worked on outside the Factory Service Center. The three things that can go wrong with a sealed system and should be repaired only at the Factory Service Center are:

- Low Charge - usually caused by leaks; look for oil around seals and welds. Unit will not cool properly. The capillary tube is frosted before it enters the evaporator inlet tube.

- Restriction in Systems (unit frosts, then melts) - not cooling properly.

- Bad valves **-** unit does not cool properly; noisy compressor.

COMPRESSOR WILL NOT START

- Compressor has no power

- Machine not plugged in

- Tripped breaker or blown fuse

- Faulty wall outlet

- Short or open in power cord

- Temperature sensor circuit is open (check with a Multi-Meter)

- Improper wiring

- Low voltage: 5% below (check the power source with a Multi-Meter)

- Overload defective: Trips too fast (check overload with a Multi-Meter)

- Start relay defective (check start relay with a Multi-Meter)

- Compressor has open windings (check compressor windings with a Multi-Meter)

- Defective refrigeration relay

- Unplug power to the machine; remove the relay plate. Use an insulated jumper wire to short the wires on relay terminals 2 and 4 or 6 and 8; then restore power to the machine. The compressor should start immediately, indicating a problem in the control circuit.

  Check relay terminals 1 to 0 with a Multi-Meter. 24VDC should be present.

- No DC voltage (check control board output terminal for a loose connection)

COMPRESSOR TRIPS ON OVERLOAD

- Improper voltage: 5-10% above, 5% below (check power source with a Multi-Meter)
- Overload defective: Trips too fast (check overload with Multi-Meter)
- Relay defective: Won't open after starting (check relay with Multi-Meter)
- Compressor has shorted windings (check compressor windings with Multi-Meter)
- Short in other component (isolate and eliminate each electrical component until short is found)
- Compressor is too hot
    - Dirty condenser
    - Faulty condenser motor or blade
    - Restricted airflow

CAUTION

Condenser must be kept clean of dirt and debris to allow for proper air circulation.

NOISY OR VIBRATING UNIT

- Components rubbing or touching each other
    - Check fan blades and motor
    - Loose shrouds and harness
    - Copper tubing
    - Loose or unsecured parts
    - Dirty condenser fan blades
- Worn or aged compressor grommets
- Compressor
    - Bad valves
    - Slugging
    - Bad windings (see Schematic)
    - Low voltage

UNIT SHORT CYCLES

- Temperature sensor defective or not mounted in the Discharge air duct
- Defective control board
- Temperature setting set too warm (see Refrigeration Parameters Mode on page 17 of this manual)

UNIT OPERATES LONG OR CONTINUOUSLY

- Temperature Sensor defective or not mounted in the Discharge air duct
- Refrigeration relay shorted
- Air flow restricted
    - Faulty evaporator motor or blades causing coils to ice
    - Loose connections on evaporator motor
    - Air flow blocked by product in front of evaporator
    - Exhaust area blocked (machine too close to wall)
- Gasket leak around door
- Excessive load: After loading, unit runs longer to pull out excessive heat from product
- Shortage of refrigerant or restriction
- Bad controller
- Ambient air temperature and relative humidity exceed manufacturers operational standards

REFRIGERATED SPACE TOO COLD

- Temperature sensor defective (check with Multi-Meter)
- Refrigeration control setting too cold (see Refrigeration Parameters Mode on page 17 of this manual)
- Refrigeration relay bad (check with Multi-Meter)
- Faulty control board

REFRIGERATED SPACE TOO WARM

- Temperature sensor defective (check with Multi-Meter)
- Refrigeration control setting too warm (see Refrigeration Parameters Mode on page 17 of this manual)
- Refrigeration relay bad
- Faulty control board
- Restricted evaporator space

C B 7 0 0   3 1 5 1   4 2 1 1 2 5 4

- ♦ Evaporator motor or blades faulty, causing the coils to ice over the evaporator
- ♦ Condenser airflow restricted
- ♦ Plugged or dirty condenser
- ♦ Condenser motor or blades bad
- ♦ Blade stuck
- ♦ Condensing space restricted
- ♦ Unit placed too close to a wall
- Compressor - bad valves
  - ♦ Capillary tube will start frosting 8 to 10 inches (20-25 cm) before evaporator connection tube
  - ♦ Check for oil around brazed connections

TROUBLESHOOTING CIRCUITS WITH MULTI-METER

- To check the power source, use the voltage section of the Multi-Meter (should measure within 5-10% above, 5% below)
- Check overload
  Using the resistance section of the Multi-Meter, check terminals 1 and 3 for continuity. If no continuity is measured (infinity), overload may be tripped. Wait 10 minutes and try again. If still no continuity, overload is defective.

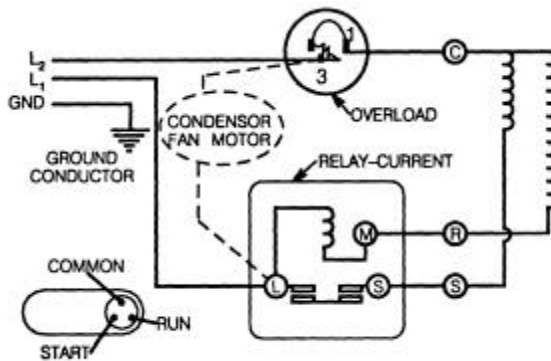CAUTION

Power must be off and fan circuit open.

- Check relay (See **Figure 14**.) Unscrew lead terminals and remove relay from compressor. **Keep relay upright**.
- Check terminals 1 and S, or L and S with the Multi-Meter. Replace relay if continuity exists.
- Check Temperature sensor with the Multi-Meter.
- Check compressor windings as shown in **Figure 14**.
- Check winding resistance with the Multi-Meter. If readings are not within 2 Ohms, the compressor is faulty. Use RX1 scale.

WARNING

Wiring diagrams must be followed as shown. Incorrect wiring can cause serious electrical hazard and potential damage or rupture component electrical parts.

Table 10. Winding Resistance

APPROX. RESISTANCE ACROSS TERMINALS	
COMMON to START:	12 Ohms
COMMON to RUN:	2 Ohms
RUN to START:	14 Ohms
COMMON to SHELL:	No Continuity

A10115

Figure 14. Compressor Schematic

PREVENTIVE MAINTENANCE

ONCE A MONTH

CLEAN CABINET INTERIOR

Wash with a mild detergent and water, rinse, and dry thoroughly. Including baking soda or ammonia in the cleaning solution may eliminate odors. Plastic parts may be cleaned with a quality plastic cleaner. Remove and clean Condensate Drain Hose to eliminate any deposits that may restrict condensate water flow.

The vend mechanisms must be kept clean. Any build-up can cause the mechanisms to malfunction.

Do not get the cleaning solution on electrical components.

To insure proper vending keep delivery slide area free of dirt and sticky substances.

CLEAN CABINET EXTERIOR

Wash with a mild detergent and water, rinse, and dry thoroughly. Polish occasionally with a quality car wax. Plastic exterior parts may be cleaned with a quality plastic cleaner.

EVERY 60-DAYS

CLEAN REFRIGERATION INTAKE SCREEN

Remove screen and clean dust and debris from screen using a soft bristle brush or a vacuum cleaner.

EVERY 6-MONTHS

CLEAN THE CONDENSER COIL AND REAR EXHAUST SCREEN

Remove the Cover Assembly and clean the condenser coil of refrigeration unit using a soft bristle brush or vacuum cleaner.

Pull the refrigeration unit and clean the rear exhaust screen of dirt and debris.

Do not block the evaporator or any area of the airflow with product or supplies.

PARTS ORDERING PROCEDURE

When ordering parts, include the following:

1. The model number and serial number of the machine.
2. Shipping address.
3. Address where the invoice should be sent.
4. The number of parts required.
5. Any special shipping instructions.
6. Carrier desired: air or air special, truck, parcel post, or rail.
7. Signature and date.
8. If a purchase order number is used, be sure that it is visible and legible.
9. Correct part number and description from the pertinent part and/or parts manual.

NOTE

When "Right" and "Left" are used with a part name, it is taken to mean that the person is facing the machine with the door closed.

10. Mail your order to: **VendNetÔ**

165 North 10th Street

Waukee, Iowa 50263 - USA

Phone: 515-274-3641

Parts Fax: 515-987-4447

Sales Fax: 515-274-0390

E-Mail: Vendnt@vendnetusa.com

All orders are carefully packed and inspected before shipment. Damage incurred during shipment should be reported at once and a claim filed with the terminating carrier.

If you do not have the right parts manual, contact the above address. VendNet™ will provide a copy for you, if available.

Do not wait to order until you receive the parts manual; instead use the most accurate description you can. Include the model number and serial number of the machine, the name of the assembly in which the part is used, and if practical, a sample part. Furnish any information to enable our Parts Department to pinpoint the exact part needed.

BEFORE CALLING FOR SERVICE

Please check the following:

- Does your machine have at least 6-inches of clear air space behind it?

- If the power is turned on at the fuse box, is the machine the only thing that doesn't work?

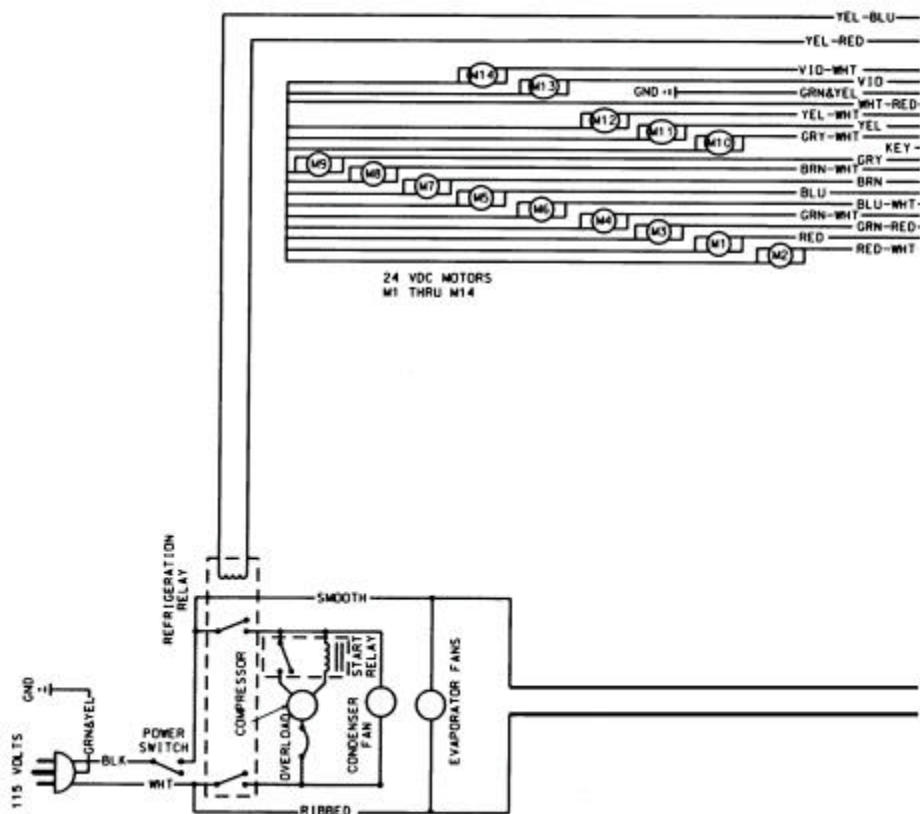- Is the machine plugged directly into the outlet?

- Is the evaporator coil free of dust and dirt? Is the condenser coil free of dust and dirt?

- Is the compressor free of dust?

- Is the circuit breaker at the fuse box reset?

- Are evaporator fans running? To check if fans are running take a small piece of paper in front of the evaporator coil and see if the evaporator fans will blow the paper away.

- Is the condenser fan running? Place a piece of paper in front of the condenser coils and see if it draws the paper to it.

- Is the shelf in front of the evaporator coil clear? (No tools, product, or other air-restricting items).
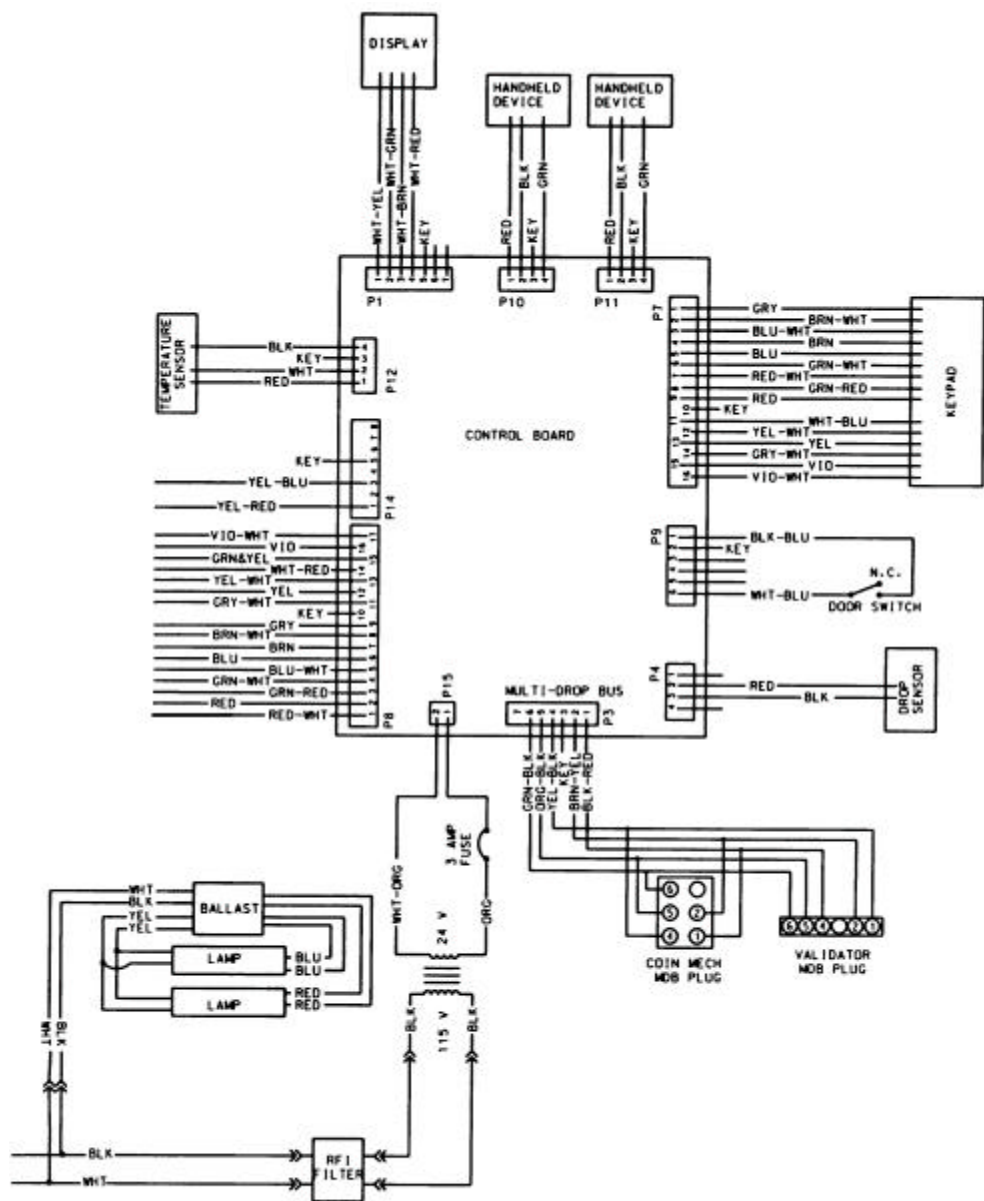
- Is the cold control set as specified?

NOTE

Setting the temperature colder does not accelerate cooling of product.

SCHEMATIC

BOTTLE/CAN 12
WIRING SCHEMATIC
P/N 4210726 REVB
COINCO

DISPLAY

HANDHELD DEVICE

HANDHELD DEVICE

CONTROL BOARD

TEMPERATURE SENSOR

KEYPAD

DOOR SWITCH

N.C.

DROP SENSOR

MULTI-DROP BUS

BALLAST

LAMP

LAMP

3 AMP FUSE

24 V

115 V

RFI FILTER

COIN MECH MDB PLUG

VALIDATOR MDB PLUG

P1 P10 P11 P7 P12 P14 P9 P8 P15 P3 P4

WHT-YEL WHT-GRN WHT-BRN KEY WHT-RED

BLK GRN KEY RED

RED BLK KEY GRN

BLK KEY WHT RED

GRY BRN-WHT BLU-WHT BRN BLU GRN-WHT RED-WHT GRN-RED RED KEY WHT-BLU YEL-WHT YEL GRY-WHT VIO VIO-WHT

KEY YEL-BLU YEL-RED

BLK-BLU KEY WHT-BLU

VIO-WHT VIO GRN&YEL WHT-RED YEL-WHT YEL GRY-WHT KEY BRN-WHT GRY BRN BLU BLU-WHT GRN-WHT GRN-RED RED RED-WHT

RED BLK

GRN-BLK ORG-BLK YEL-BLK BRN-BLK BLK-RED

WHT-ORG ORG

WHT BLK YEL YEL BLU BLU RED RED

WHT BLK

BLK WHT

BLK BLK

ANTI-CHEAT INSTALLATION

1. Unlock and open the door. Separate the Inner Door from the Front Doot.

2. Find the Delivery Box on the bottom right corner of the Front Door as viewed from behind the Front Door. Remove the Delivery Box from the Front Door by removing the bolt nuts. See **Figure 15**.
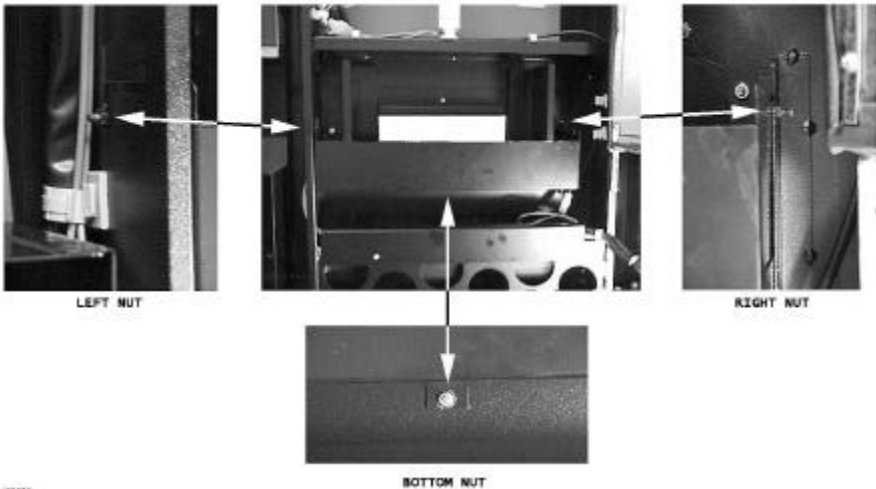

Figure 15. Remove Delivery Box mounting nuts.

3. Remove the four (4) nuts holding the Delivery Bezel and save them for **step 4**. Insert the Anti-Cheat through the Delivery Bezel rectangular hole. See **Figure 16**.
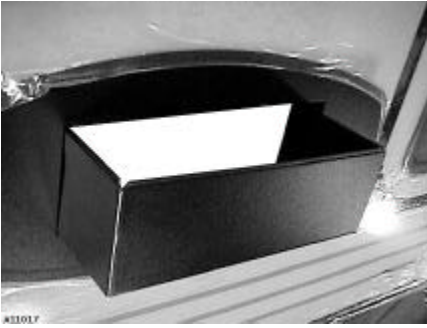
Figure 16. Insert Anti-Cheat through Front Door opening.

Figure 17. Install and tighten nuts.

4. Mount the Anti-Cheat slotted mounting holes over the mounting bolts of the door as shown in **Figure 17**. Re-install nuts removed from **step 3** and tighten them.

5. Re-install the Delivery Box.

6. Close the Inner Door to the Front Door. Plug the machine to the wall outlet and turn on power.

7. Close the Front Door and perform test vends.

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Parts	**(888) 259-9965**	
Email	**vendnet@vendnetusa.com**	
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