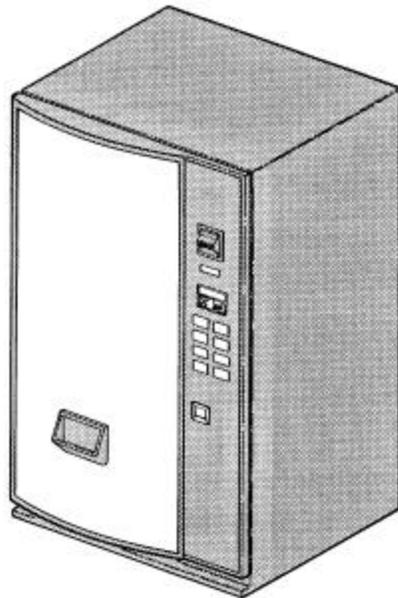




CAN DRINK VENDOR

MDB Series



SERVICE MANUAL

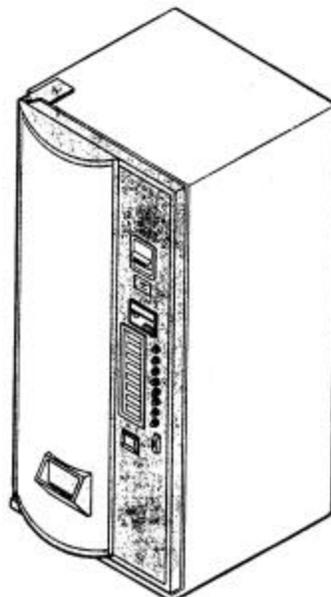
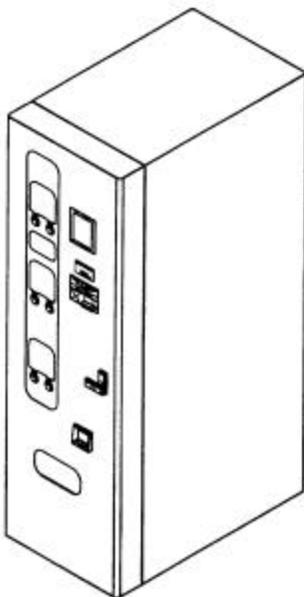


TABLE OF CONTENTS

<i>INTRODUCTION</i>	<i>1</i>	<i>COIN MECHANISM</i>	<i>10</i>
<i>SPECIFICATIONS</i>	<i>1</i>	<i>UPPER EJECTOR MECHANISM REMOVAL</i>	<i>11</i>
Phys	1	<i>LOWER EJECTOR MECHANISM REMOVAL</i>	<i>12</i>
ical Size	1	<i>CARE & CLEANING</i>	<i>13</i>
Electrical	1	Cabinet Interior	13
Refrigeration	1	Cabinet Exterior	13
Capacity	1	Refrigeration System	13
Vend Prices	1	<i>OPERATION RECOMMENDATIONS</i>	<i>13</i>
Money Handling	1	<i>TROUBLESHOOTING</i>	<i>14</i>
<i>UNPACKING</i>	<i>2</i>	<i>REFRIGERATION TROUBLESHOOTING</i>	<i>15</i>
<i>INSTALLATION</i>	<i>2</i>	Compressor will not start	15
Grounding & Electrical	2	Compressor trips on Overload	15
Installation Check List	3	Noisy or vibrating unit	15
Turning on the Machine	3	Unit short cycles	15
<i>LOADING INSTRUCTIONS</i>	<i>3</i>	Unit operates long or continuously	16
Serpentine Columns	3	Refrigerated space too warm	16
Pre-Cool Shelves	4	Refrigerated space too cold	16
Label Installation	4	Troubleshooting circuits with Multi-Meter	16
Live Display	4	<i>BEFORE CALLING FOR SERVICE</i>	<i>17</i>
<i>COLD CONTROL</i>	<i>5</i>	<i>PARTS ORDERING PROCEDURE</i>	<i>17</i>
<i>CONTROLLER FUNCTIONS</i>	<i>5</i>	<i>SCHEMATIC</i>	<i>18</i>
Sales Mode	5		
Service Mode	5		
Selection Button Function	6		
Programming the Controller	6		

Record the Model Number and Serial Number of your machine below. They are necessary to obtain quick service and parts information for your machine. The numbers are available on the identification plate located on the back side of the cabinet of the vendor.

MODEL NUMBER: _____

SERIAL NUMBER: _____

INTRODUCTION

This service manual contains instructions, service and installation guidelines pertaining to the Can Drink Vendor MDB Series. This is a can vendor with pre-cool storage shelves. Product is stored in easily-loaded serpentine columns and routed to the 24-volt motor-driven ejector mechanisms. It is vended on a “first-in, first-out” principle.

The ejector mechanisms consist of a dual cam arrangement. The front cam holds the product to be vended at the vend position, releasing it to the delivery area during the vend cycle. The rear cam is advanced into the path of the cans, in front of the second can, holding them back until the vend cycle is complete. At the end of the vend cycle the next can is released to the vend position, awaiting the next vend.

The electronic control system provides the versatility to allow each selection to be priced individually. The controller monitors electrical functions during each vend and any malfunctions (faulty motors, etc.) detected by the controller will be recorded and that selection will become inoperative. Inoperative selections do not affect the operation of the remaining selections.

SPECIFICATIONS

Physical Size

	<u>8-Select</u>	<u>6-Select</u>	<u>Mini-8</u>
Height	72” 183 cm	68” 173 cm	68” 173 cm
Width	42” 107 cm	21” 53 cm	32” 81 cm
Depth	32 ½” 83 cm	33 ½” 85 cm	36” 91 cm
Weight	765 lbs 348 kg	425 lbs 193 kg	625 lbs 284 kg

Electrical

230 Volt ± 10%, 50 Hertz, 6 Amps or

115 Volt ± 10%, 60 Hertz, 11.9 Amps

Refrigeration

Hermetically Sealed

R-134a Refrigerant

	<u>8-Select</u>	<u>6-Select</u>	<u>Mini-8</u>
Charge	7.5 Oz.	4 Oz.	7.5 Oz.

Capacity

300 ml, 330 ml, or 12 oz Cans

	<u>8-Select</u>	<u>6-Select</u>	<u>Mini-8</u>
Cans in Vend Area	434	204	326
Cans in Pre-Cool Area	26	12	18

Vend Prices

Multiple prices possible

Money Handling

Multi Drop Buss (MDB) Coin Mechanism

MDB Bill Validator with 300 bill stacker available as an option

Grounding & Electrical

The power source should be as given in the Specifications section of this manual.

Prior to connecting the equipment, the integrity of the main electrical supply must be checked for correct polarity, presence of ground and correct voltage. It is recommended that these checks be repeated at 6-month intervals with the routine safety electrical testing of the equipment itself.

To correct negative voltage, amperage, polarity, or ground checks, consult a licensed electrician.

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

WARNING:

Do not operate this vendor on an extension cord.

The power source should be as given in the Specifications section of this manual.

1. Voltage Check: Connect the AC voltmeter probes to the hot and neutral terminals.
2. Polarity and Ground Check: Connect the AC voltmeter probes to the hot and ground terminals.
3. Amperage Check: At the fuse box or circuit breaker panel, locate the proper circuit, and ensure that the fuse or breaker protecting that circuit is rated at 13 amps or greater.

Installation Check List

1. All shipping brackets, packing material and tape have been removed.
2. The vendor is level from front to back and right to left.
3. The coin mechanism has been properly loaded and switches have been set properly.
4. All vend prices have been set correctly.
5. The vendor has been properly loaded and all items in each selection correspond to the label/display and vend price.
6. The machine is plugged directly into a live 230-volt, dedicated outlet, which is properly polarized and grounded.

WARNING:

Do not use extension cords.

7. The machine has at least six (6) inches (15 cm) of space behind it.
8. The door to the vendor is closed tightly and locked.

Turning on the Machine

Locate the power switch in the lower left corner of the door, with the door open, and switch it to the "ON" position. The following should happen:

1. The display light comes on.
2. "USE CORRECT CHANGE" LED will light in the readout.
3. "MAKE ANOTHER SELECTION" LED lights in the readout.
4. Validator stacker, if so equipped, cycles.
5. The evaporator motors and refrigeration unit run.
6. A decimal point (.) and two (2) zeros display.

LOADING INSTRUCTIONS

Serpentine Columns

Make sure that the product being loaded matches the product displayed in the Live Display or on the Selection Button Label.

To load the serpentine columns, place the product in the loading area as shown in **Figure 2**.

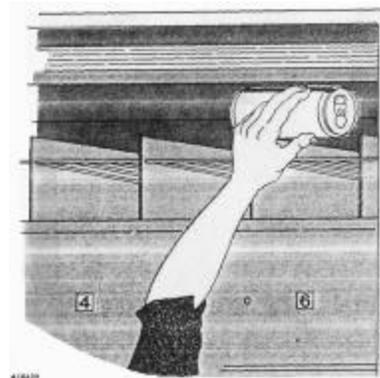


Figure 2. Loading Serpentine Columns

Do not load dented or damaged cans in the serpentine columns. Possible jams could occur. Do not let the first can being loaded strike the cams on the ejector mechanism with full force.

The columns are numbered from left to right when facing the vendor, and from top to bottom. See **Figures 3, 4 and 5.**

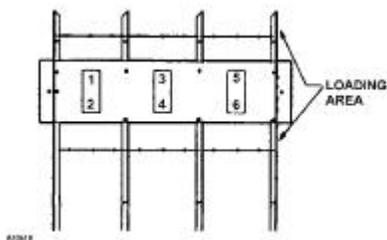


Figure 3. 8-Select Columns

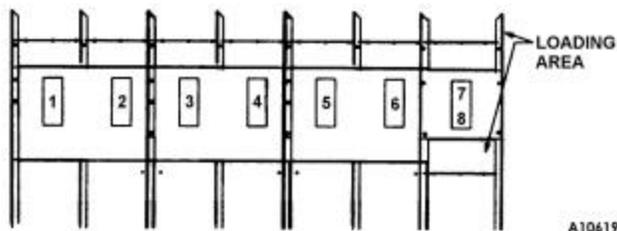


Figure 4. 6-Select Columns

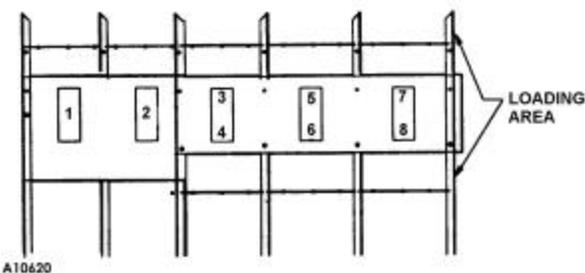


Figure 5. Mini-8 Columns

Pre-Cool Shelves

Use the pre-cool shelves to store high-volume products, usually Cola and Diet Cola. Use the cans in the pre-cool shelves first when reloading to prevent the sale of warm drinks.

CAUTION:

Do not store cans on the floor of the cabinet. The refrigeration unit could be damaged.

Label Installation

(8-Select & Mini-8) Place the selection identification labels for the customer inside the appropriate selection button.

1. Open the outer door and separate the inner door from the outer door.
2. On the back side of the outer door, open the coin mechanism door by sliding the latch at the top to the right.
3. Insert the Selection Label into the pocket provided as shown in **Figure 6.** Make sure the label agrees with the product loaded in the serpentine column.

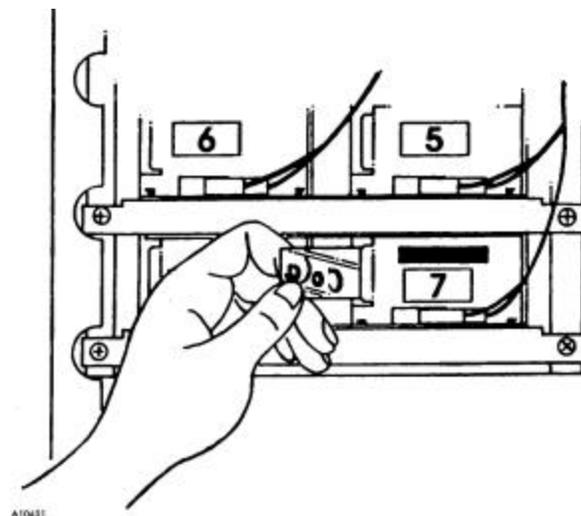


Figure 6. Selection Identification Labels

Use the provided self-adhesive labels to identify the columns for loading. Make sure these labels match the label in the selection button and match the product in the serpentine column. See **Figure 3.**

Live Display

(6-Select) The Live Display provides a full view of the products being dispensed along with the price and selection number of each item.

Access the live display by removing the thumb screw and opening the door to the live display. Place the display item where the product label is in full view of the buying customer and secure with clip.

Slide the price scroll to the correct price for each selection.

COLD CONTROL

Under normal conditions, we recommend setting the cold control to “2” for a temperature of approximately 38°.

Minor adjustment may be necessary at higher altitudes.

CAUTION:

Setting the cold control to a high number does not cool product faster. It may cause cans to freeze.

CONTROLLER FUNCTIONS

Sales Mode

The *Sales Mode* is the normal operating mode of the machine.

At the start of a sales cycle, **.00** displays.

If the coin tube level of the coin mechanism’s lowest denomination is below the lowest sensor, the “USE EXACT CHANGE” LED lights.

As money is deposited, the amount of credit displays.

NOTE:

Upon initial power up or reset, the display test runs until the peripherals and the controller have been initialized.

The customer presses the desired selection button and the selection price displays.

The controller compares the established credit with the vend price of that item.

- If sufficient credit is available and the selection is present, the vend cycle starts.

Following a successful vend, the amount of change to be returned displays for two seconds or until all coinage is paid back.

The vend counter is incremented by one and the cash counter is incremented by the price of the selection vended.

NOTE:

Counter rollover occurs at 99,999,999 for the number of vends and \$999,999.95 for the total cash sales.

- If credit is less than the selection price, the price flashes for three seconds or until a new selection button is pressed.
- If the motor is flagged as faulty, the selection number and the “MAKE ANOTHER SELECTION” LED flashes for three seconds or until a different selection button is pressed.
- If an item is selected and the machine is unable to complete the vend cycle, the “MAKE ANOTHER SELECTION” LED flashes for three seconds or until a different selection button is pressed. The faulty selection is disabled and remains inoperative until cleared or repaired. The amount of credit is returned to the customer.

When the credit amount equals or exceeds the highest priced item, the machine no longer accepts credit.

NOTE:

Credit acceptance is controlled by the coin mechanism.

Vend prices can be verified by pressing the selection letter and number. The vend price will display momentarily.

Service Mode

To change any settings and retrieve diagnostic information, the controller must be placed in the *Service Mode*.

When the controller is placed in the *Service Mode*, the number of active motors displays.

To enter the *Service Mode*, open the door of the machine and press the Service Mode Button. It is on the Control Board on the inside of the door. (See **Figure 7.**)

To exit the *Service Mode*, press the Service Mode Button until **.00** displays. The machine will also exit the *Service Mode* if there is no button pressed for approximately one minute.

If you are in the process of changing data when you exit the *Service Mode* (either by pressing the Service Mode Button or by allowing the system to time-out) any unfinished changes will be ignored, leaving the data in its previous state.

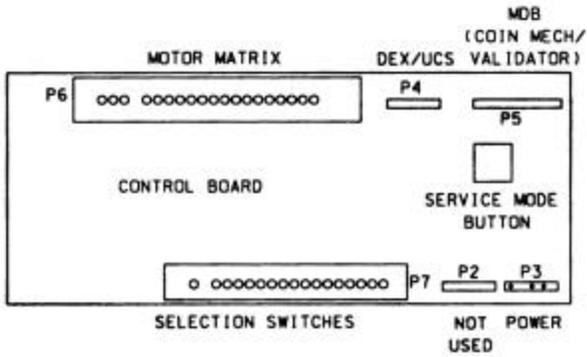
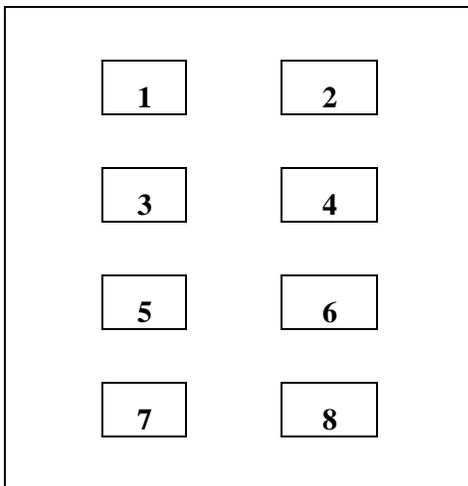


Figure 7. Control Board

Selection Button Function

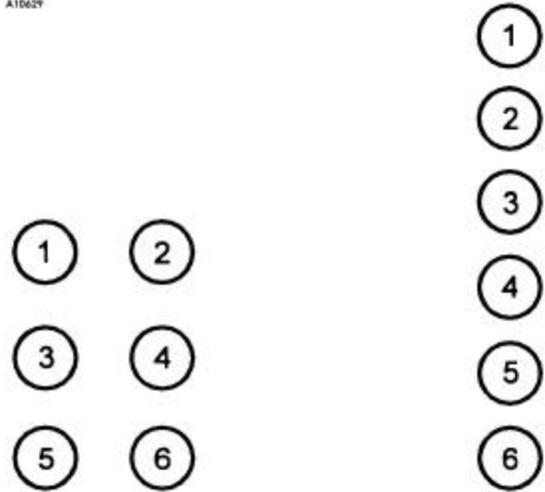
While in the *Service Mode*, the selection buttons perform different functions, depending on the active mode. The selection buttons are numbered as shown in Figure 8, when standing in front of the machine with the door closed.



8-Select

Figure 8A. Selection Button Numbering

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6-Select

Mini-8

Figure 8B. Selection Button Numbering

Programming the Controller

To access the programming, press the Service Mode Button the number of times specified in **Table 2**.

Table 2. Service Mode

Press Service Mode Button # of times	Displays	Mode
1	16	Motor Count
2	CPO	Coin Pay Out
3	dtS	Delivery Test a Single Selection
4	dtA	Delivery Test all Selections
5	SPr	Set Price
6	Opt	Vending Options
7	StoS	Space to Sales
8	Frig	Not Used
9	CASH	Accumulated Cash
10	Vend	Vends by Selection

Motor Count Mode

The Motor Count Mode displays the total number of functional motors configured within the machine. This number should equal the total number of selections. Only the total number of functional motors displays; individual selections do not display.

If a selection button is stuck, it displays next, in the format **S-xx** where **xx** is the selection button number.

To enter this mode, press the Service Mode Button. If the motor count displayed does not agree with the total number of selections in the machine, the electrical circuit of all motors is not complete.

To exit this mode, press the Service Mode Button until **.00** displays. The machine will also exit the *Service Mode* if there is no button pressed for approximately one minute.

To determine which motor is not functioning:

- Test vend single selections.
- Test vend all selections.
- Refer to the “Troubleshooting” section of this manual for further assistance.

Coin Pay Out Mode

In the Coin Pay Out Mode, coins stored in the coin mechanism payout tubes can be removed.

Press the Service Mode Button two times. **CPO** displays.

Table 3: Coin Pay Out Button Assignment

Press Selection Button	To Dispense a Coin of:
1	the lowest denomination
2	the next higher denomination
3	the next higher denomination
4	Returns to the <i>Sales Mode</i>

Pressing a button once will pay out one coin. Pushing and holding a button will allow the coins to pay out at a rate of approximately two per second. Coins will continue to be dispensed from the payout tube as long as its activating button is pressed.

Delivery Test a Single Selection Mode

CAUTION:

Because this machine utilizes DC motors, do not attempt to turn the helix manually or damage to the motor could occur.

To verify that a selection is functioning properly, the controller will check the motor circuit and try to run the selection through a complete vend cycle. The vend count is not increased.

Press the Service Mode Button three times. **dtS** displays. Press the selection to be tested.

- If the selected motor is operational, the motor will run one complete cycle. **dtS** displays.
- If the selected motor fails, a diagnostic code displays to identify the problem. See **Table 4**.

Table 4. Motor Error Codes

Code	Error	Probable Cause
None	Motor current not detected.	Motor is missing or open-circuited.
Err1	Motor did not go up on to cam within the first second of a vend cycle.	Motor home switch is not actuating or is faulty.
Err2	Motor did not return to home.	Motor home switch is not actuating or is faulty.
jA	Motor was previously logged as jammed, or has drawn excessive current during the present vend cycle and will be logged as jammed.	Motor is stuck, blocked or shorted.

NOTE:

Test vending a selection flagged as faulty will reset the flag if the motor successfully completes the vend cycle.

To exit this mode, press the Service Mode Button until **.00** displays. The machine will also exit the *Service Mode* if there is no button pressed for approximately one minute.

Delivery Test All Selections Mode

All selections can be tested to verify that they are functioning properly. The controller will check the motor circuits and run each selection, starting with the first motor. The vend count is not increased.

The operator must observe the testing of the selections, because the controller will skip any motor(s) that was not sensed on the motor circuit prior to beginning the machine test.

Press the Service Mode Button four times. **dtA** displays. Press any button to start. The selection number of each motor is displayed as it is tested.

- If the vend is successful, the controller will continue with the next selection.
- If the selected motor fails, a diagnostic code displays to identify the problem. See **Table 4**.

The test may be stopped at any time by pressing either the Service Mode Button or a selection button.

Set Price Mode

A vend price must be set for each selection. The price programmed must match the desired item. Each item can be priced from 0000 (free vend) to 9999. The decimal depends on the local currency. The default vend price for all selections is 0050 (\$0.50 US).

To check a price, push the selection button while in the *Sales Mode*.

NOTE:

The coin mechanism must be installed to verify the correct price.

To set a price, press the Service Mode Button five times. **SPr** displays.

1. Press the selection button of the item you want to price. The current price displays.
2. To change the price by the smallest denomination of coins (\$0.05 US):
 - To decrease the value, continue to press the selection button.
 - To increase the value, first release the selection button and then press and hold it.

If you overshoot the price, simply release and press the button again to ‘back-up’ to the correct price.
3. To save the displayed price, press another selection button once.
4. Press the Service Mode Button to exit.

Vending Options Mode

There are four vending options that can be used to customize the sales environment. See **Table 5**.

Table 5. Vend Options Mode

DISPLAYS	DESCRIPTION
FORCE VEND OPTION	
1-1 = On	Purchase necessary to receive change from any credit, overriding the "coin return" command.
1-0 = Off	Default. A purchase is not necessary to receive change from any credit.
MULTI VEND OPTION	
2-1 = On	Multiple purchases can be made as long as adequate credit is available. To get change back, customer must hit coin return. If customer fails to hit coin return, after 5 minutes, credit will disappear. If credit is smaller than lowest priced item, then credit will be returned automatically.
2-0 = Off	Default. Customer immediately receives the change after a vend.
NO CHEAT OPTION	
3-1 = On	Prevents the machine from cheating the customer if adequate change is not available.
3-0 = Off	Default. Allows vends (with the "Exact Change" LED lit) even without adequate change.
BILL ESCROW OPTION	
4-1 = On	Default. The last bill inserted is returned to the customer when the coin return button is depressed. The "Coin Return" feature has been disabled.
4-0 = Off	The customer can receive change from a dollar bill insertion when the coin return button is pressed. A purchase is not necessary.

1. Press the Service Mode Button six times. **Opt** displays. To change an option:
2. Press selection button 1 to scroll forward through the four options (1, 2, 3, 4) or press selection button 2 to scroll backward (4, 3, 2, 1).
3. Press selection button 3 to toggle the displayed option between 0 (Off) and 1 (On).

Press any other button to exit.

Space to Sales Mode

Use this mode to vend the same high-volume product from two or more columns. The machine alternates which column the product is vended from.

All accounting data is recorded under the primary selection.

1. Press the Service Mode Button seven times. **StoS** displays.
2. Use button 1 to scroll up and button 2 to scroll down through selections. Stop at selection to set as primary selection. Display will show - 01 -
3. Press button 3 to display column choices. Use button 1 to scroll up and button 2 to scroll down through column numbers. Display will show **1-0** or **1-1**. The second digit indicates 1 for ON or 0 for OFF.
4. Press button 4 to toggle column ON (link a column to a selection button) or OFF (unlink).
5. Press button 6 to return to selection number display. Use button 1 to scroll up and button 2 to scroll down through selections. Pause at a selection and the columns linked to that selection will flash on the display. Check all selections in this manner for correct column links.

NOTE:

Pressing button 5 when a selection number is displayed (**-01-**) will clear the column links for that selection.

6. Press button 6 again to return to **StoS** display. Pressing button 5 at this point will display **Clr?**. Press button 5 again will **clear all links**.

To exit, press the Service Mode Button.

Example:

To vend the same product from three columns, say columns 1, 3 and 5:

1. Press selection button 1 to set it as the primary selection button.
2. Press button 3 to choose the columns to link to the primary selection button:
 - Scroll thru the list until **2-0** displays; press selection button 4 to toggle it ON.
 - Scroll thru the list until **3-0** displays; press selection button 4 to toggle it ON.
 - Scroll thru the list until **5-0** displays; press selection button 4 to toggle it ON.
3. Press button 6 to return to **StoS**
4. Press the Service Mode Button to exit.

Refrigeration Setpoint Control Mode

Not used.

Accumulated Cash Mode

Press the Service Mode Button nine times. **CASH** displays, followed by the non-resettable sales total for the entire machine.

If the total is less than \$100.00 only a single number will alternate with **CASH**.

Example:

CASH 1234 indicates \$12.34.

If the sales exceed \$99.99, the first four digits display, then the last four digits.

Example:

CASH 1234 56.75 indicates \$123,456.75

To view the cash totals by selection, press the selection button. When you have viewed all the totals desired, press the Service Mode Button to exit.

NOTE:

The sales totals reflect the Space to Sales links. There may not be a correspondence between selection number and column number.

Vends by Selection

Press the Service Mode Button ten times. **Vend** displays, followed by the non-resettable vend count total for the entire machine, up to 99,000.

If the total count of all vends is less than 10,000, only a single number display.

Example:

Vend 1234 indicates 1,234 total vends.

If the total count of all vends exceeds 9,999, the first four digits display followed by the last four digits.

Example:

Vend 25 1335 indicates 251,335 total vends.

To view a vend totals for a selection, press the desired selection button.

NOTE:

The vend totals reflect the Space to Sales links. There may not be a correspondence between selection number and column number.

When you have viewed all the totals desired, press the Service Mode Button to exit.

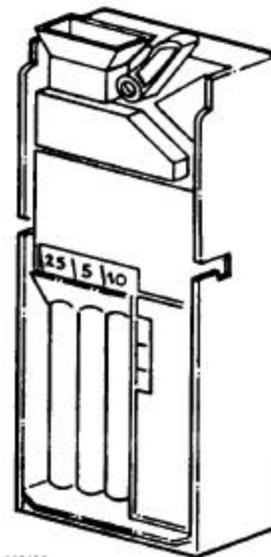
COIN MECHANISM

Load the coin mechanism coin tubes with coins. (See **Figure 9**.)

The coin mechanism pays out coins from self-loading, high capacity change tubes in the least number of coins available.

CAUTION:

Do not plug or unplug the coin mechanism with the power on.



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Figure 9. Coin Mechanism

The controller will monitor the condition of the coin mechanism at all times. Any activity (coins inserted) will be recorded in the Accounting Data Mode.

UPPER EJECTOR MECHANISM REMOVAL

Before removing the Ejector Mechanisms, the product must be removed from the serpentine column and from the vending area. Can Stops are furnished in the service packet that can be used to hold the cans in the upper portion of the serpentine when removing the ejector mechanism in a full column.

The motors can be rotated clockwise slowly by hand to remove the cans that are not being held back by the can stop.

CAUTION:

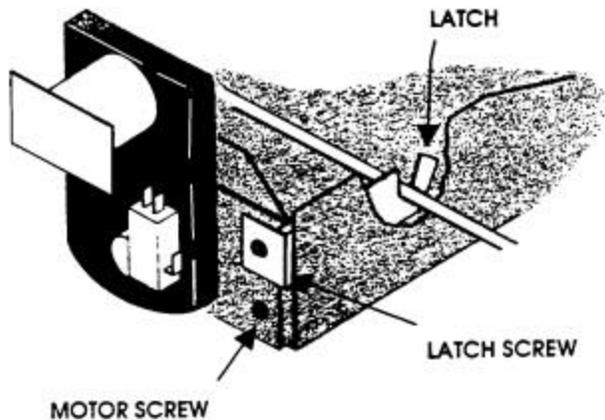
Always rotate the motor in a clockwise direction. Damage to the motor could result if rotated too fast, or in the wrong direction.

To remove the motor or upper ejector mechanism:

1. Turn the power switch to the "OFF" position or unplug the vendor.
2. Loosen the latch screw so the latch drops and out of the way. See **Figure 10**.

NOTE:

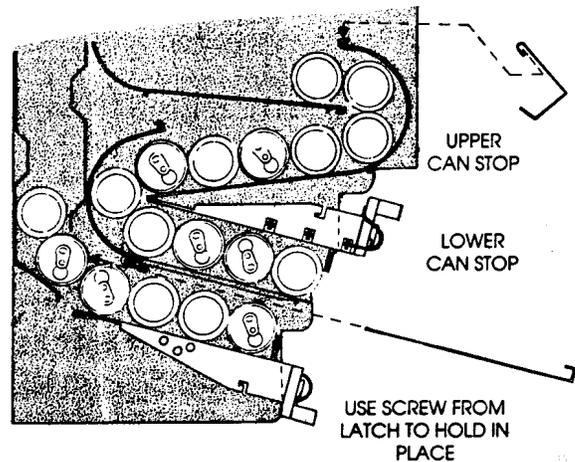
To remove only the motor, skip to Step 7.



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Figure 10. Motor Screw Location

3. Insert the Upper Can Stop (P/N 1211018) by hooking it over the rod and clamping it down over the can. See **Figure 11**.



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Figure 11. Upper Can Stop

4. To remove the complete ejector mechanism without removing the motor, rotate the cam clockwise slowly by hand to remove all cans that are not being held back by the Can Stop installed in Step 3.
5. Unplug the ejector mechanism wiring harness from the main motor harness.
6. Push the ejector mechanism backward until it clears the retaining rod and drops down and out.
7. To remove the vend motor, remove the two motor screws on the motor bracket. See **Figure 10**.

Remove the wire harness connections from the motor switch and circuit board tabs, noting which wire connects to which tab.

If necessary, cut the plastic cable tie that straps the main harness to the motor cylinder and remove the motor.

NOTE:

After the motor screws have been removed, pressure will be needed to pull the motor off the cam drive shaft.

LOWER EJECTOR MECHANISM REMOVAL

Before removing the Ejector Mechanisms, the cans must be removed from the serpentine column and from the vending area. Can Stops are furnished in the service packet to be used to hold the cans in the upper portion of the serpentine when removing the ejector mechanism in a full column.

The motors can be rotated clockwise slowly by hand to remove the cans that are not being held back by the can stop.

CAUTION:

Always rotate the motor in a clockwise direction. Damage to the motor could result if rotated too fast, or in the wrong direction.

To remove the motor or the lower ejector mechanism:

1. Turn the power switch to the "OFF" position or unplug the vendor.
2. Remove the can chute assembly by removing the two screws on the side and one on the bottom.
3. Remove the latch screw and latch. See **Figure 12**.
4. Insert the Lower Can Stop (P/N 1200137-102). Slide the can stop all the way in and screwing down the fastener. See **Figure 13**.

NOTE:

To remove only the motor, skip to Step 8.

5. To remove the complete ejector mechanism without removing the motor, rotate the cam clockwise slowly by hand to remove the cans that are not being held back by the can stop. The cam must be pointing upward to enable the mechanism to be removed.
6. Unplug the ejector mechanism wiring harness from the main motor harness.
7. Push the ejector mechanism backward until it clears the rod and lift upward and out.

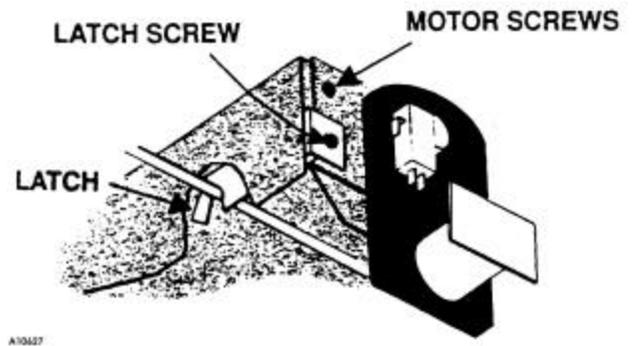


Figure 12. Motor Bracket

8. To remove the vend motor, remove the two screws on the motor bracket. See **Figure 12**.
9. Remove the wire harness connections from the motor switch and circuit board tabs, noting which wire connects to which tab.
10. If necessary, cut the plastic cable tie that straps the main harness to the motor cylinder and remove the motor.

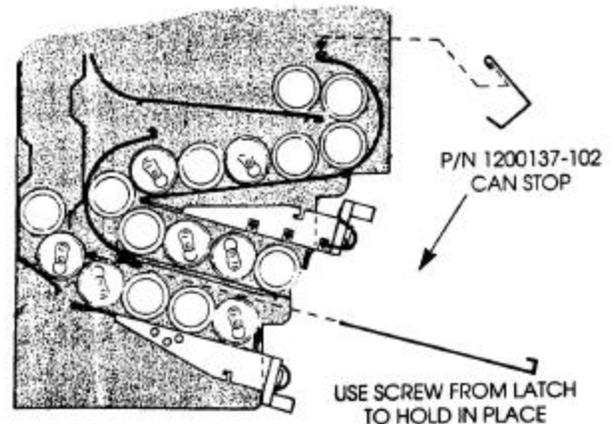


Figure 13. Lower Can Stop

CARE & CLEANING

WARNING:

Always disconnect the power source before cleaning.

Cabinet Interior

Wash with a mild detergent and water, rinse and dry thoroughly. Eliminate odors by including baking soda or ammonia in the cleaning solution. Plastic parts may be cleaned with a quality plastic cleaner. Do not get the cleaning solution on electrical components.

Cabinet Exterior

Wash with a mild detergent and water, rinse and dry thoroughly. Clean occasionally with a quality car wax. Remove and clean Condensate Drain Hose to eliminate any deposits that may restrict condensate water flow.

Refrigeration System

Clean dust from condenser and screen in the front door with a soft bristle brush or a vacuum cleaner. Remove any dirt or debris from the refrigeration system compartment. Clean the condensation pan.

CAUTION:

If the condenser coil is not kept clean, the compressor will overheat or fail, voiding the sealed system warranty.

OPERATION RECOMMENDATIONS

During periods of peak sales we recommend the following to keep cans cool:

1. Fill the machine at night
2. Make sure to fill the machine with product from the pre-cool (rack on the door) first. Fill these racks with your top selling products.
3. Double up selections on fastest moving flavors.
4. During peak selling days, keep extra product in cooler so that when filling machine the product is already cool.
5. Make sure after filling the machine the door lock is tightened completely.
6. **DO NOT USE AN EXTENSION CORD!** The compressor will not cool the machine properly if it is starving for electricity.
7. Do not adjust the Cold Control beyond 2. Adjusting the cold control to a higher number does not accelerate the cooling of the product.

TROUBLESHOOTING

Problem	Cause	Corrective action
Vendor accepts coins, but does not vend on any selection	<ul style="list-style-type: none"> • Plug on control board unplugged or loose • Transformer assembly unplugged at cabinet • Black and white wires unplugged at refrigeration system • Circuit breaker in vendor tripped or broken • Damaged or defective power cord • Vendor unplugged • Fuse or circuit breaker tripped in supply (building) outlet 	<ul style="list-style-type: none"> Check the wire connections at both ends of wire harness for good connections Check the wire connection at both ends of the wire harness for good connection Check the wire connections at both ends of the wire harness for good connections Reset or replace circuit breaker Replace power cord Plug vendor in Reset or replace
Vendor rejects all coins - display lamp on	<ul style="list-style-type: none"> • Plug on controller unplugged or loose • Does not have 230 volts • Defective or a broken circuit • Does not have 24 volt • Bad coin mechanism • Bad controller board 	<ul style="list-style-type: none"> Check the wire connections at both ends of the wire harness for good connections Use Multi-Meter to check voltage between the two wires. Check the wire connections at both ends for good connections Check for breakage and good wire connections Check wire connections at both ends of wire harness for good connections at transformer Repair or replace coin mechanism Replace controller board
Vendor accepts coins, but does not vend on any selection	<ul style="list-style-type: none"> • Plug on control board loose or unplugged • Vend prices set wrong • Broken or loose wire from controller to selection switch, vend switch, sold out switch, vend motor or solenoid • Sold out switch or vend switch defective or out of adjustment • A defective motor • Vend prices set wrong • Bad controller board 	<ul style="list-style-type: none"> Check wire connections at both ends of wire harness for good connections Set prices correctly Check wire connections at both ends of wire harness for good connections Re-adjust or replace switch Replace motor Set prices correctly Replace controller board
Vendor vends properly, but pays out wrong change or no change at all	<ul style="list-style-type: none"> • Vend prices set incorrectly • Changer out of change • Defective coin mechanism • Bad controller board 	<ul style="list-style-type: none"> Set vend prices properly Fill changer inventory tubes Repair or replace coin mechanism Replace controller board
Product does not match selection pushed	<ul style="list-style-type: none"> • Product loaded wrong • Selection switch wires crossed, vend mechanisms plugs crossed • Bad controller board 	<ul style="list-style-type: none"> Load product properly Make sure vend mechanisms are plugged in correctly Replace controller board
Vendor free vends	<ul style="list-style-type: none"> • Vend switch defective or out of adjustment • Bad coin mechanism • Bad controller board 	<ul style="list-style-type: none"> Re-adjust or replace switch Replace or repair coin mechanism Replace controller board
Bill validator does not accept bills	<ul style="list-style-type: none"> • Changer out of change • Validator stacker not closed • No power to bill validator • Bill validator defective • Foreign objects in validator 	<ul style="list-style-type: none"> Fill coin tubes Close Check supply circuit Replace Clean or replace

REFRIGERATION TROUBLESHOOTING

If for any reason the refrigeration unit is turned off or the power interrupted, the refrigeration unit will not start for at least three (3) minutes regardless of the temperature.

When the temperature is above the “cut-in” temperature programmed, the unit will be turned on. When the refrigeration unit reaches the “cut-out” temperature it will be turned off.

Know and understand how to service the unit and how it 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 of the Factory Service Center. The three things that can go wrong with a sealed system and should be repaired at the Factory Service Center are:

1. Low Charge - usually caused by leaks; look for oil around seals and welds. Unit will not seal properly.
2. Restriction in Systems (unit frost, then melts) - not cooling properly, low side in vacuum
3. Bad valves - unit does not cool properly; noisy compressor

Compressor will not start

1. Check if the compressor has power:
 - Tripped breaker or blown fuse
 - Wall outlet faulty
 - Short or tear in power cord
2. Improper wiring
3. Defective refrigeration relay. Unplug the power to the machine and remove the relay plate. Use an insulated jumper wire to short the wires on the output side of the relay; then restore power to the machine. The compressor should start indicating a problem in the control circuit.

Compressor trips on Overload

1. Improper voltage: 5-10% above, 5% below. Test with Multi-Meter.
2. Overload defective: Test with Multi-Meter.
3. Relay defective: Test with Multi-Meter.
4. Compressor defective: Test with Multi-Meter.
5. Short in other component: Isolate and eliminate each electrical component until short is found.
6. Compressor is too hot
 - Dirty condenser
 - Faulty condenser motor or blade
 - Restricted air flow

CAUTION:

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

Noisy or vibrating unit

1. Components rubbing or touching each other
 - Check fan blades and motor
 - Loose shrouds and harness
 - Copper tubing
 - Loose or unsecured parts
2. Worn or aged grommets
3. Compressor
 - Bad Valves
 - Slugging
 - Bad windings (See Schematic 1.)
4. Relay frozen in start position (See Schematic 1.)
5. Low voltage

Unit short cycles

1. Probe in wrong area
2. Differential set too close

Unit operates long or continuously

1. Thermostat faulty
2. Air flow restricted
 - Faulty evaporator motor or blades causing coils to ice over
 - Air flow blocked by product in front of evaporator
3. Gasket leak
4. Excessive load: After loading, unit will run longer to pull out excessive heat from product.
5. Shortage of refrigerant or restriction

Refrigerated space too warm

Restricted evaporator space

- Evaporator motor or blades faulty, causing the coils to ice over the evaporator

Condenser air flow 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 past evaporator connection tube
- Check for oil around brazed connections

Refrigeration control not set correctly. See "Cold Control" section of this manual.

Refrigerated space too cold

- Cold Control set incorrectly.
- Probe located incorrectly.

Troubleshooting circuits with Multi-Meter

1. Using the voltage section of the Multi-Meter, check the power source.
2. Check the overload.

NOTE:

Power must be off and fan circuit open.

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.

3. Checking Relay (See Schematic 1.)
 - A. Unscrew lead terminals and remove relay from compressor. (NOTE: keep relay upright)
 - B. Check terminals 1 and S, or L and S. Replace relay if there is continuity.
4. Checking compressor (See Schematic 1.)
Check winding resistance with the Multi-Meter. If readings are not within 2 Ohms, the compressor is faulty.

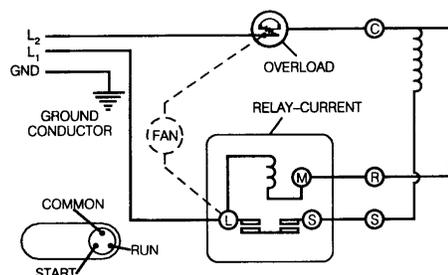
WARNING:

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

Table 6. Winding Resistance

Approximate resistance reading across terminals - use RXI scale:

COMMON to START:	12 Ohms
COMMON to RUN:	2 Ohms
RUN to START:	14 Ohms
COMMON to SHELL:	No Continuity



BEFORE CALLING FOR SERVICE

Check the following:

1. Does your machine have at least 6" of clear air space behind it?
2. If the power is turned off at the fuse box is the machine the only thing that doesn't work?
3. Is the machine plugged directly into the wall outlet?

CAUTION:

Extension cords invite trouble! Do not use them.

4. Is the evaporator coil free of ice?
5. Is the condenser coil free of dust and dirt?
6. Is the compressor free of dust? (A blanket of dust can prevent the compressor from cooling off between workouts.)
7. Has the circuit breaker been reset?
8. Are the evaporator fans running? Take a sheet of paper approximately 4" by 5". Place the paper in front of the evaporator coil and see if the evaporator fans draw the paper to the coil.
9. Is the condenser fan running? Fold a sheet of 8 1/2" x 11" paper in half. Place the paper in front of the condenser coils, and see if it draws the paper to the coils.
10. Is the shelf in front of the evaporator coil clear? (Free of cans, tools or other air restricting items)

PARTS ORDERING PROCEDURE

When ordering parts, include the following:

1. Shipping address.
2. Address where the invoice should be sent.
3. The number of parts required.
4. The correct part number and description. Always refer to the pertinent parts and/or part manual.

When "RIGHT" or "LEFT" is used with the name of a part, it means the person is facing the machine with the door closed.

5. The model and serial numbers of the machine for which the parts are needed.
6. Any special shipping instructions.
7. Carrier desired: air or air special, truck, parcel post or rail.
8. Signature and date.
9. Purchase order number, if used.
10. Mail your order to

VendNet™

P. O. Box 488

165 North 10th Street

Waukee, IA 50263-0488 USA

PARTS FAX: 1-515-987-4447

SALES FAX: 1-515-274-0390

All orders are carefully packed and inspected prior to 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 your local distributor or VendNet™. They will be able to assist you.

Use the most accurate description you can and include the name of the assembly in which it is used and, if practical, a sample part. Furnish any information which will enable our Parts Department to pinpoint the exact part needed.

If you have any questions: check out our Website <http://www.vendnetusa.com>

Call VendNet® at 1-800-833-4411 or 1-888-836-3638 (USA) Or send us E-mail at Vendnet@vendnetusa.com

Ask for the Parts Department. We will be happy to assist you. Include model number and serial number

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