

Vendo[®]

VEC 5
ELECTRONIC CONTROL
PARTS & SERVICE
MANUAL

Vendo®

THE VENDO COMPANY
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Military Board
P# 388697

INSTRUCTIONAL MANUAL

MARS MULTI-PRICE CONTROL

VENDO CONFIGURATION

1. Control Board
2. Display Board
3. Electronic Coin Mech (MC 5000 type)
4. Mars Validator

FEATURES

1. Service Mode
2. Price Setting Mode (Multi-Pricing from \$0.00 to \$6.35)
3. Free Vend Mode
4. \$.05, \$.10, and \$.25 Manual Dispense
5. Diagnostics
6. Credit Display
7. LED indicators for exact change, selection sold out, and check selection price

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Revised 6/89

NOTICE: BEFORE SERVICING ELECTRONIC COMPONENTS IN THE COINAGE CIRCUIT, THE COIN MECHANISM, CREDIT RELAY, SWITCHES, OR MOTORS, TURN OFF THE POWER SWITCH.

There are four modes of operation: Service, Set Price, Operate and Free Vend modes.

1. SERVICE MODE

- A. This mode is automatically entered when the door is open.
- B. The display will continuously show the selection for each defective column for two (2) seconds each.
 - (1) For a defective column (1 thru 7 in a column vender or 1 thru 5 in an 8 or 10 column vender), the display will read 1 _ X, where "X" is the number of the defective column.
 - (2) For columns 6 thru 8 in an 8 column vender and columns 6 thru 10 in a 10 column vender, the defective column will read 2 _ X where "X" is the defective column. 2 _ 1 is column 6; 2 _ 2 is column 7; 2 _ 3 is column 8; 2 _ 4 is column 9; and 2 _ 5 is column 10.
- C. The machine contains an electronic coin mechanism. The dispense switches on the control board operate the coin tube solenoids. The coin tubes will empty at a rate of .5 sec/coin as long as the switch is depressed.
- D. When the door is closed, the self diagnostic feature of the control system will verify all defective columns.

2. SET PRICE MODE

- A. Set Price is entered by depressing the Set Price switch (see Figure 1) which can only be depressed when the door is open.
- B. Depressing a selection switch once displays the present price of the selected product.
- C. Depressing the same selection switch a second time increases the price in \$.05 increments at the rate of \$.05 every half second.
- D. Depressing the selection switch a third time decreases the price in \$.05 increments at the rate of \$.05 every half second.
- E. Continued depressing of the selection switch alternates between incrementing and decrementing price.
- F. Depressing another selection switch or closing the door or waiting five (5) seconds without depressing any switches results in saving the last set price.

- G. Setting the price for a particular column to \$0.00 sets the column on Free Vend (also check Free Vend Mode).
 - H. The maximum price that can be set is \$6.35.
3. OPERATE MODE - Before starting, make sure there is sufficient moneys in the coin mechanism payout tubes.
- A. Before credit is established, the machine will respond to the depression of a selection switch only if the selected product is sold out. "Try Another Selection" LED illuminates unless zero price is set.
 - B. When credit is established, the amount of the credit is displayed on the three (3) digit display.
 - C. If a vend cannot take place, the appropriate LED indicator will flash ten (10) times in ten (10) seconds.
 - (1) "Try Another Selection": This LED indicator will flash (10) times in (10) seconds when a selection is depressed for a product from a column that is either sold-out or has been determined to have a failure. If all columns are empty, the "Try Another Selection" LED will be left on continuously and no further money will be accepted.
 - (2) "Check Selection Price": Insufficient credit will cause this indicator to flash (10) times in (10) seconds. Additional coins can be inserted to establish correct credit or escrow return can be requested to cancel credit.
 - (3) "Use Correct Change": In the event the coin mechanism cannot make change, this indicator will illuminate (10) times in a (10) second interval. The inserted coins will be returned coin for coin upon depression of the escrow return.
 - (4) In the case of all the indicators, the flashing will continue for (10) seconds or until a customer action takes place (depressing another selection switch, escrow return, etc.).
 - (5) The priority for the indicators is:
 - (a) "Try Another Selection"
 - (b) "Check Selection Price"
 - (c) "Use Correct Change"

Revised 6/89

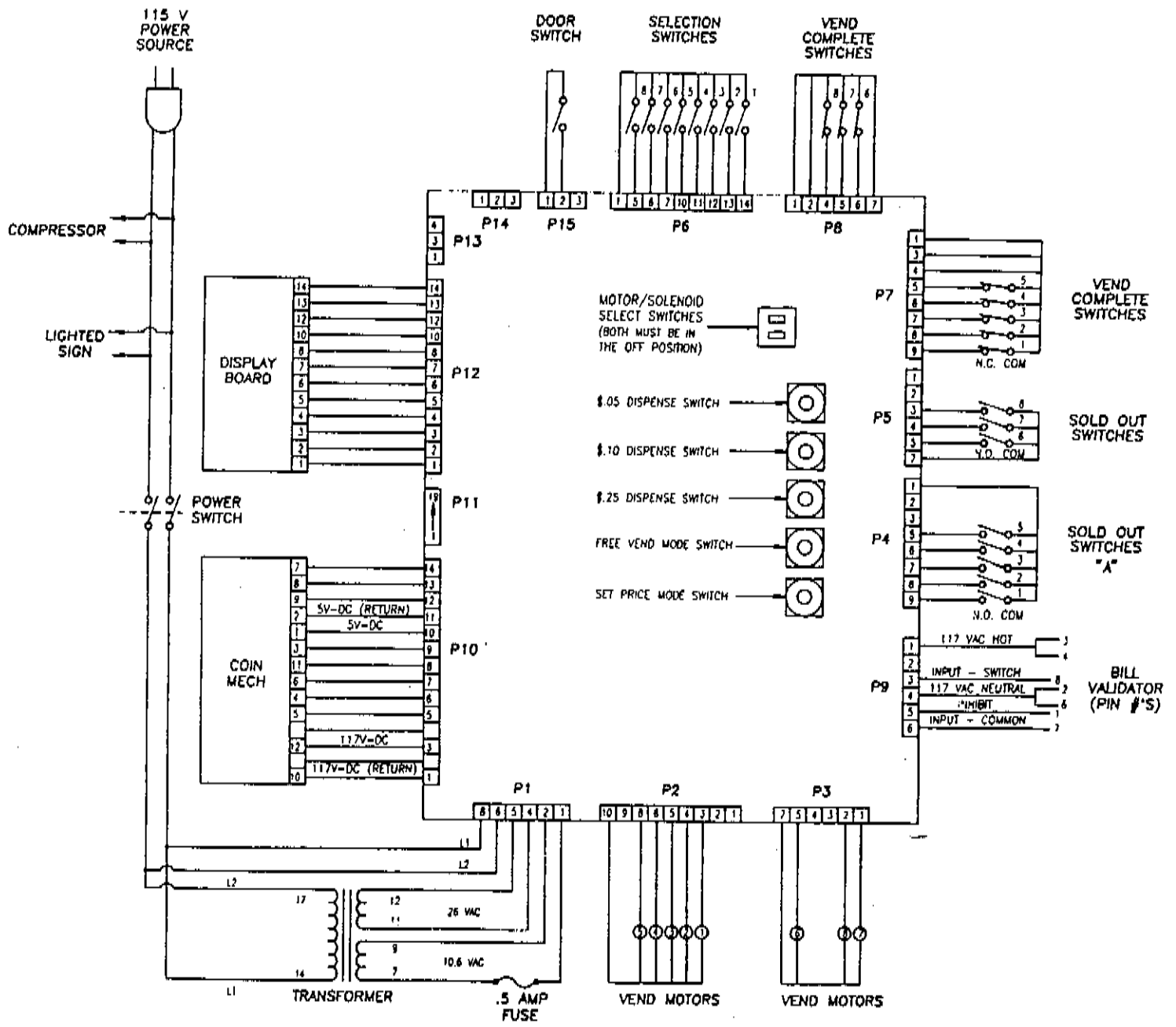
- D. A normal vend will allow the product to be vended, canceling credit when the motor carrier switch remakes at the end of the cycle.
 - (1) In the event the appropriate switch does not remake, indicating a jam or defective motor, within a pre-determined time, that column will not be retired until door closure is detected.
 - (2) Upon door closure, each motor that is not at home will be activated and noted as defective, if not re-homed.
- E. Operate with dollar bill validator:
 - (1) This model allows U.S. currency, one dollar bills only, and will not support dollar bill escrow.
 - (2) When using the coin mechanism, the bill validator will be inhibited by low quarter tube sensor.
 - (3) When using the coin mechanism with or without a dollar bill validator, the coin mechanism will be enabled until credit is equal to or greater than the highest price set.

4. FREE VEND MODE

- A. Free Vend mode is entered by depressing the Free Vend switch (see Figure 1) which can only be depressed when the door is open.
- B. In this mode all columns are set to Free Vend to allow service personnel to check out the machine.
- C. The Free Vend mode is automatically exited upon door closure.

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VEC 5 ELECTRONIC CONTROL MAIN INDEX

MAIN INDEX i-ii

SERVICE SECTION

Service Section Index S1

Electronic Control

Functional Description S2-S7

General Programming Guidelines S8-S10

Control Programming Modes S11-S16

Mode A: Operate Mode S11

Mode B: Service Mode S12-S14

Mode C: Set-Price Mode S14

Mode D: Test-Vend Mode S15

Mode E: Space-to-Sales Programming Mode . S15

Mode F: Display Space-to-Sales Mode S16

ELECTRICAL SERVICING

Electronic Control Board Pin-outs S17-S18

Transformer and Control Board Wiring S19

Wiring Diagram

-Refer to Univendor Parts & Service Manual

TROUBLE SHOOTING S20

-Also Refer to Univendor Parts & Service Manual

VEC 5 ELECTRONIC CONTROL MAIN INDEX (CONTINUED)

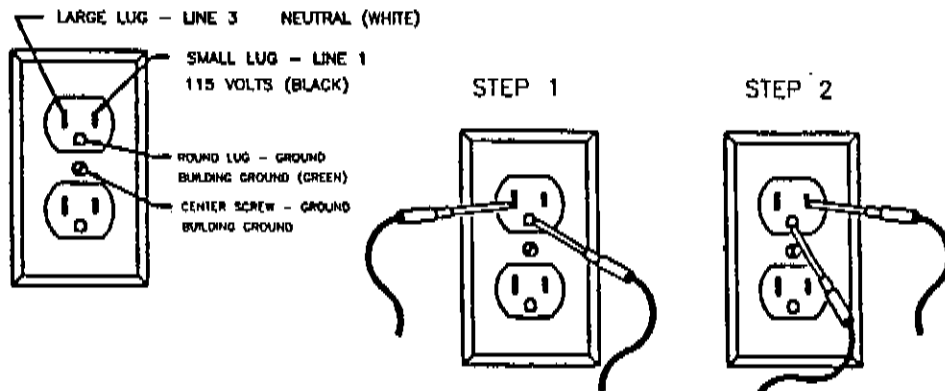
PARTS SECTION	SECTIONS A – K
Parts Section Index	A1
Labels	A2
Suggested Spare Parts	A2
Kit List	A2
Electronic Control Parts	
Seven Up	B1–B2
Standard (Pepsi & Trade)	C1–C2
Coke	D1–D2
Outer Door Parts	E1–E2
Wiring Guides	
Dr Pepper	F1
Seven Up	G1
Pepsi	H1
Trade	J1–J2
Mini Trade Button: Flat/Milt/Curved	J1
Regular Trade Button: Flat/Milt/Curved	J2
Coke	K1

VENDOR ELECTRONIC CONTROL (CONTINUED)

Electronic-Control PC Board: Located in the outer door, inside a protective housing, the electronic control PC board is the heart of the vendor control systems. This board contains all the microprocessors, memory microchips, and other electronic devices needed to control the functions of the vendor. The control board has the capability of controlling from (1) to (10) columns at the same time, and has multi-price storage, in \$.05 increments, up to \$9.95 (US). Also located on the PC board is a small push-button switch, the mode switch, whose purpose is explained in the electronic-control programming section that follows. This switch is accessible through a square hole in the electronic-control housing cover.

CAUTION: To protect the controller (electronic board) from static electricity, use an anti-static material or the equivalent. The wrapping material of a new board can also be used to insulate the board during handling.

WARNING: To insure safe operation, and avoid damage to the electronic components, only plug the vendor into a properly-grounded, properly-polarized outlet. The outlet should be tested to insure correct ground polarization. If the outlet does not meet these conditions, consult a qualified electrician and have the necessary corrections made to the outlet wiring (see figure). Reverse polarity causes the vendor to lose the protection of the in-line fuse. Refer to UniVendor Parts and Service Manual, Service section for further information.



Harnessing: Connected to the electronic-control PC board are a series of harnesses, supplying power to the control board, and distributing power to the various systems within the vendor. The harnesses are all keyed in such a way that they cannot be installed on the wrong set of pins, or mis-connected on their correct PC-board pins.



VENDOR ELECTRONIC CONTROL (CONTINUED)

Price Display / LED Status Display: Located in the control panel, above the selection buttons, and coin-insert plate on the front of the vendor, is a combination 3-digit price display, and 3-character LED status display. The price display indicates the amount of credit established, the price of the selection chosen, as well as sales data during audit, interactive feedback during programming and fault finding codes when servicing. Adjacent to the 3-digit display are a 3 LED indicators, used to indicate either "Use Correct Change," "Check Price of Selection" or "Try Another Selection" during a customer transaction.

Transformer: For areas which supply voltages of 110 VAC, the vendor will be equipped with a step-down transformer, to drop the input voltage available at the location to 24 VAC, for use by the electronic control board. This transformer is mounted in the electronic-control housing.

Door Switch: Located on the electronic-control housing, there is a switch mounted to the transformer cover plate. This push-button switch is the door switch. When activated, this switch signals to the electronic control that the vendor outer door has been closed, signifying the end of service duties, and resetting the control.



VENDOR ELECTRONIC CONTROL (CONTINUED)

Sold-Out Switches: Located on the front mech plate, above the vend-motor assembly, one switch per column, are the sold-out switches. These microswitches "read" the level of product left in a column, and work in conjunction with the sold-out lever in each column. This information is used by the electronic control to determine if a product is available or sold-out. Upon closing the vendor door, after the door switch is operated, the sold-out switches are checked for status, and this information is used both to illuminate the sold-out LED indicator display on the control panel, and to record in the electronic control the sold-out columns. The control will be prohibited from running a vend motor on a sold-out column, until a reload cycle is completed. Refer to UniVendor Parts & Service Manual.

Coin Mechanism (Not Furnished With Vendor):

WARNING: Failure to follow the following procedure may cause damage to the coin mechanism and electronic control board, so that the vendor will not accept coins or vend product.

Step 1: Prior to plugging the coin-mechanism harness to the electronic control board, disconnect power to the machine by:

- A. Disconnecting the machine from its power source, or
- B. Moving the power switch on the control board housing to the "OFF" position.

Step 2: Do not insert a 12-pin, 24-volt changer into the receptacle.

Step 3: Disconnect power before removing the control board cover.

Please note, all coin changers used require a minimum amount of coins in the change tubes to operate properly. Refer to the changer installation instructions for this information.

The control system operates with the following coinage, DBVs and DEX/UCS:

Coinage:

Interface with the control system using part number 1006908M, Multi-price harness. This harness is standard on each vendor.

COINCO 9300L - 115 VDC, 12-PIN

COINCO 9302LF - 24 VDC, 15-PIN

CONLUX / MAKA USPX-4 - 24 VDC, 15-PIN

COINTRON / NATIONAL C3000 - 115 VDC, 12-PIN

MC 5000 - 115 VDC, 12-PIN

MARS TRC6000 - 24 VDC, 12-PIN 115VDC

MARS TRC6010XV - 115 VDC, 15-PIN 24VDC

*UNIVERSAL
DBV ADDRESS
700 2058*

NOTE: The MARS 6800H - 115VAC, 8-PIN, Single-price changer requires the following harness kits, or the equivalent:

Coke & Trade = Pt # 1015745M

Pepsi = Pt # 1015311M

VENDOR ELECTRONIC CONTROL (CONTINUED)

Dollar-Bill Validators:

Part number 1002058M, universal validator harness is required to interface with the control system.

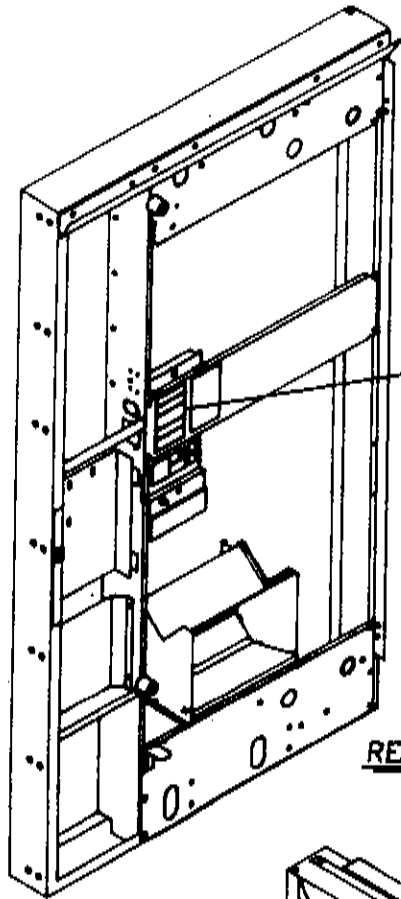
ARDAC US MODEL
COINCO CBA-2
CONLUX/MAKA NB-10L
CONLUX / MAKA NB-15A
MARS VFM1-L1-U2CS
MARS VFM3-L1-U2CS
ROWE CBA-2

DEX/UCS for On-Board Audit:

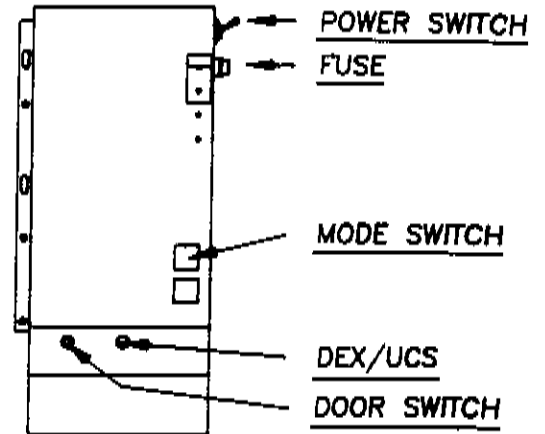
Interface capability with the control system using part number 1013203M optional harness and receptacle kit.

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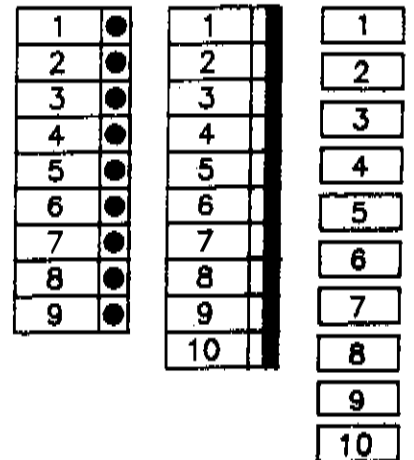
UNIVENDOR ELECTRONIC



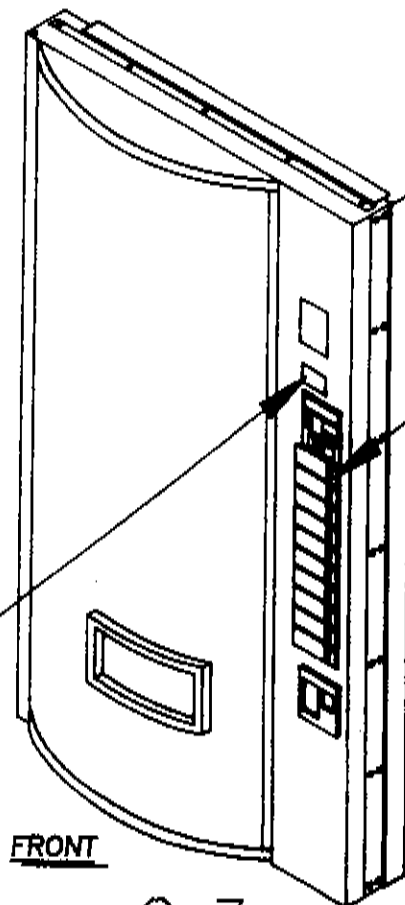
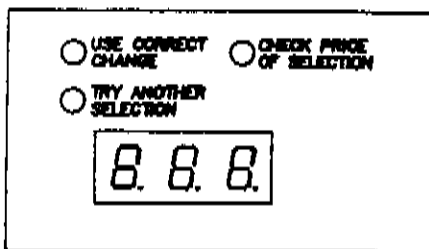
CONTROL BOARD



SELECTION BUTTON EXAMPLES



THREE DIGIT DISPLAY BOARD





CONTROL PROGRAMMING MODES:

To review the programming options available, each mode of the vendor will be reviewed, and the programming options available within each of these modes will be explained. Some general guidelines as they apply to programming the Electronic UniVendor:

- The modes of operation are listed in the order in which they appear during programming. While programming, the code letters for each of these modes will appear on the display.
- Programming is accomplished through use of the mode switch on the electronic control board, and the selection buttons, while following the prompts given in the display. On Coca-Cola and Pepsi-Cola style vendors and trade-style vendors with mini-trade buttons the selection buttons number from top to bottom, number one to ten. On regular trade-style vendors, the selection buttons number one top left, two next to one, three below one, four next to three, etc.
- While programming, codes will appear in the display. These codes guide the programmer through the various modes and options.
- Basic programming information is provided on the control-board operation instruction label on the vendor inner-door panel, should the service person require details while in the field.
- The vendor must be powered up in order to perform control programming.
- The control is designed to automatically leave a programming mode when a) five minutes have elapsed without operator input, b) the vendor door is closed, c) the mode switch is pressed, or d) when credit is established.

WARNING: Damage may occur to the coin mech or controller if the machine is not disconnected from its power source, prior to plugging in the coin changer. Damage can be prevented by tripping the power switch on the control board to the "off" position. The warranty will be voided if this procedure is not followed.

VENDO SODA CONTROL BD: MACHINE TESTING

- (1) Price Set
 - a. Door open
 - b. Depress price set switch (switch all the way to the right)
 - c. Depress a juice selection switch -- display should read 4.25
 - d. Depress the same selection switch(2) more times & hold it down
 - e. Display should be decrementing at a rate of .05 every half second
 - f. Depress the same selection switch(2) more times & hold it down
 - g. Display should be incrementing at a rate of .05 every half second
 - h. Set price of (1) juice column for .25 & (1) soda column for .35
 - i. Close & open door
- (2) Free Vend - also checks selection switch, Vend complete & soldout switch diodes & input lines & "Try Another Selection" LED
 - a. Load (1) can in each column
 - b. Depress free vend switch (2nd switch from right)
 - c. Vend each selection - checks selection & vend complete switch diodes & input lines
 - d. Depress each selection switch again
 - e. "Try Another Selection" LED illuminates -- checks Soldout switch diodes & input line
 - f. Load (1) can in column set for .25 & (1) can in column set for .35
- (3) "Use Correct Change" LED
 - a. Close door -- (no money in mech.)
 - b. Deposit .30 in nickels
 - c. Try to vend .25 selection
 - d. "Use Correct Change" LED should illuminate
- (4) "Check Selection Price" LED
 - a. Try to vend .35 selection
 - b. "Check Selection Price" LED should illuminate
- (5) Vend & Change
 - a. Open door
 - b. Drop (3) nickels in mech coin tube
 - c. Close door
 - d. Vend .25 selection
 - e. Should vend & give .05 in change
- (6) Dollar Bill Validator (Credit pulses & escrows return)
 - a. Open door
 - b. Drop (8) quarters in mech coin tube
 - c. Close door
 - d. Deposit .05
 - e. Feed in (1) dollar bill
 - f. Display should read 1.05
 - * g. Depress escrow return -- should give 1.05 in change

* Vendo version: no Escrow Return



(7) Dispense Switches

- a. Deposit (1) dime in mech coin tube
- b. Open door
- c. Depress (3) Dispense switches & empty mech of coins

(8) Diagnostics

- a. Door closed -- jam selection switch
- b. Open door
- c. Read display - should display number of failed column ("Use Correct Change" LED will illuminate because nickel tube is low)

(9) Dollar Bill (with Coinco Mech)

- a. Close door -- nickel tube low - "Use Correct Change" LED illuminated
- b. Try to feed in dollar bill -- should not accept it
- c. Open door
- d. Drop (5) nickels in rear of mech
- e. Close door
- f. Feed in dollar bill -- should accept
- g. Check credit -- should read \$1.00
- h. Try to feed in another dollar bill -- should not accept it
- i. Do an escrow return
- j. Should give \$1.00 in change

(10) Coinco Mech

- a. Deposit (1) dime & quarter in mech
- b. Vend juice
- c. Should vend & give (1) dime change





SERVICE SECTION INDEX

SERVICE SECTION INDEX	Page S1
ELECTRONIC CONTROL	
Functional Description	Page S2 - S7
General Programming Guidelines	Page S8 - S10
Control Programming Modes	
Mode A: Operate Mode	Page S11
Mode B: Service Mode	Page S12 - S14
Mode C: Set-Price Mode	Page S14
Mode D: Test-Vend Mode	Page S15
Mode E: Space-to-Sales Programming Mode	Page S15
Mode F: Display Space-to-Sales Mode	Page S16
ELECTRICAL SERVICING	
Electronic Control Board Pin-Outs	Page S17 - S18
Transformer and Control Board Wiring	Page S19
TROUBLE SHOOTING	Page S20 & Refer to Univendor Parts & Service Manual



VENDOR ELECTRONIC CONTROL

FUNCTIONAL DESCRIPTION:

The Electronic UniVendor (VEC V) vendor is similar to the standard UniVendor. All parts and components are interchangeable. The exception is that the Electronic UniVendor comes equipped with an integral electronic-control system, which manages the vendor's mechanical functions, monitors the vend system for failures, controls the vendor's coin mechanism, drives the vendor display, and keeps track of sales data, among other functions. The control system consists of two printed circuit boards (control and display), with associated harnesses, brackets, transformers, and hardware. The control system consists of the following major components:

- Electronic-Control PC Board
- Harnessing
- Price/LED Status Display
- Transformer (as required)
- Door Switch
- Sold-Out Switches
- Coin Mechanism

These components work together to jointly control the vendor's functions. The control system is programmed with the following capabilities:

- Space-to-Sales Programming
- Sales-Data Storage
- DEX/UCS Plug for on-board audit, with optional harness
- Multi-Pricing
- Multi-Vend
- Requirement of Product

In order to begin programming the electronic control, it is necessary to understand the purpose and location of each of the major components listed above.

PROGRAMMING (CONTINUED)

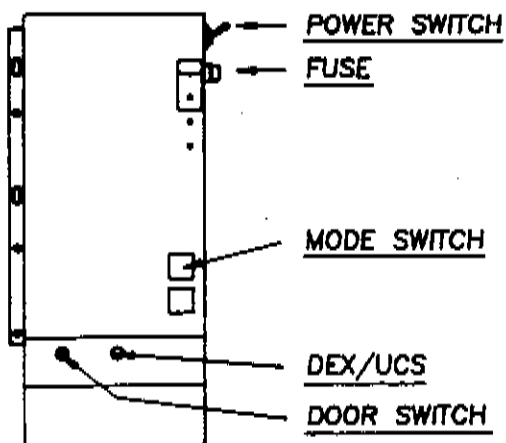
Important - - READ CAREFULLY BEFORE PROCEEDING

To program, it is necessary to press the selection buttons, mode switch in the indicated sequence.

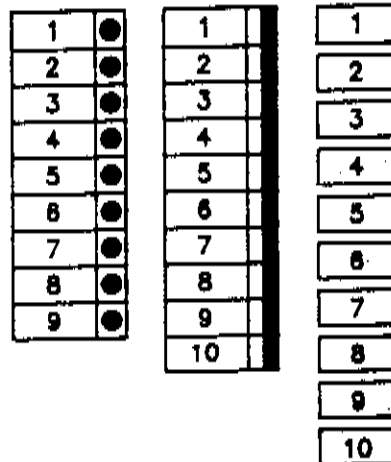
The **MODE SWITCH** will be indicated by **M**

The **SELECTION BUTTONS** will be indicated by **#1,#2, etc.**

CONTROL BOARD



SELECTION BUTTON EXAMPLES UP TO 10 SELECTIONS



THE ELECTRONIC UNIVENDOR VEC V

MODE	SEL SWITCH	DESCRIPTION
	---	DEFECTIVE COLUMN
	#1	CASH HANDLING 0 = Force Vend 1 = Change Machine 2 = Neutral
	#2	0 = Regular Vend 1 = Multi-Vend
	#3	.05 Cents
	#4	.10 Cents
	#5	.25 Cents
	#6	1 = Net Value of Sales 2 = Number of Vends 3 = Value of Bills Accepted 4 = Number of Vends per Selection
-2-		SET PRICE
-3-		TEST VEND
	#1,2,3	SPACE-TO-SALES
	#4,3,2	SOLD-OUT DISPLAY CONTROL
----		ASSIGNED COLUMNS

A. OPERATE MODE

To enter this mode, the machine should be in stand-by mode.

BEFORE CREDIT IS ESTABLISHED:

ACTION		CONDITION
Press any Selection	Price will be displayed	There is vendable product in column
	LED will light: "Try another Selection"	Sold-out or jammed displayed

SOLD-OUT DISPLAY

* To show a 0, indicating at least one selection is sold-out.

To enter this mode, open the outer and inner doors to gain access to the control board. This automatically actuates the door switch.

Push mode switch four times	Display will show -4-	
Push selection button #4,3,2 in order	Display will show "O" or nothing	If "O" is displayed: means this setting is enabled. If nothing is displayed: means this setting is disabled.
Pushing buttons #4,3,2 in order, will toggle between enabled and disabled		

AFTER CREDIT IS ESTABLISHED:

After credit is established	Credit amount is displayed
Press any selection button	
If "Try another selection" LED is flashing	Column is sold out or defective
If "Check Price of Selection" LED is flashing	Insufficient credit-add more coins or push scavenger lever to return credits
If "Use correct change" LED is flashing	Machine cannot make change-must use correct change
If "Try another selection" LED remains illuminated	All columns are sold out

To leave this mode, either depress the door switch, close the inner and outer doors, or wait for five minutes.*

*NOTE: If no action is taken within five minutes, while in any mode, the vendor will automatically return to stand-by mode.

B. SERVICE MODE

To enter service mode, open the outer and inner doors to gain access to the control board. This action automatically actuates the door switch.

Press Mode Switch one time (M)	If columns are not defective	Display will show -1-	No action required
	If columns show defective	Display will show the defective column in two digits: 03, etc	Check defective column(s) and make necessary repairs

SET-OPTION MODE-CASH HANDLING:

Definition of cash-handling numbers 0, 1, & 2:

If 0 is displayed	Force Vend	If a dollar is accepted, customer must make a vend
If 1 is displayed	Change Machine	If a dollar is accepted and stacked, pushing the scavenger lever will return four quarters
If 2 is displayed	Neutral	Do not use this option with a high-level DBV.* With a low-level DBV interface, the bill is held in escrow.
NOTE: When single-price coinage is being used, cash handling must be set at force vend		

***WARNING:** The vendor will not operate with a high-level DBV in the neutral (2) setting. This configuration will cause all functions to shut down.

To set cash handling for force vend, change machine or neutral settings:

ACTION	CONDITION
Press #1 selection button one time	Display will show one of three numbers: 0, 1, or 2
Press #1 selection button again	Display will show the next number
Continue to press selection button #1. The numbers 0, 1, & 2 will repeat in sequence until the desired setting is reached.	

B. SERVICE MODE (CONTINUED)

TO SET FOR INVENTORY MODE:

ACTION	CONDITION
Press selection button #6 one time	Display the net value of sales. The display shows one digit per time from right to left. Example: 92.35 will be displayed as __ 9, _ 9 2, 92.3, & 2.35
Press selection button #6 twice	Display total number of vends
Press selection button #6 three times	Display the total value of bills accepted
Press selection button #6 four times	Display column 1 total number of vends
Press selection button #6 five times	Display column 2 total number of vends
↓	↓
Press selection button #6 thirteen times	Display column 10 total number of vends
Press selection button #6 again	Display will return to show net value of sales at the top of this chart

To leave the service mode, either depress the door switch, or close the inner and outer doors.

C. SET-PRICE MODE (MULTI-PRICE OR SINGLE-PRICE):

To enter this mode, open the outer and inner doors to gain access to the control board. This action automatically actuates the door switch.

ACTION	CONDITION
Push the mode switch twice (M, M)	Display will show -2-
Press any selection button one time	Price for that selection will be displayed
Press the same selection button a second time and hold until the desired price is shown	Display will show an increase in price by \$.05 increments
Press the same selection button a third time and hold until the desired price is shown	Display will show a decrease in price by \$.05 increments
By continuing to press and release the selection button, the price will increase or decrease, in \$.05 increments, until the desired price is shown	

To leave the set-price mode, either depress the door switch, or close the inner and outer doors.

NOTE: When using a single-price changer, all product prices must be the same in both the control board and the changer. If a dollar-bill validator is used, it must be connected directly to the changer and not the control board. Reference service mode section "force vend."

B. SERVICE MODE (CONTINUED)

To enter service mode, open the outer and inner doors to gain access to the control board. This action automatically actuates the door switch.

SET-OPTION MODE-MULTI-VEND / REGULAR VEND:

Definition of multi-vend / regular vend-option numbers 0 & 1:

If 1 is displayed	Multi-vend	Change due is held and displayed to allow additional purchases. Can be returned by pressing the scavenger lever, or by waiting 5 to 10 seconds
If 0 is displayed	Regular vend	Change is paid out immediately after selection has started

To set multi-vend / regular-vend settings:

ACTION	CONDITION
Press #2 selection button one time	Display will show one of two numbers: 0 or 1
Press #2 selection button again	Display will show the next number
Continue to press selection button #2. The numbers 0 & 1 will repeat in sequence until the desired setting is reached.	

TO OPERATE PAY-OUT TUBES:

ACTION	CONDITION
MULTI-PRICE	
Press selection button #3	Dispenses \$.05
Press selection button #4	Dispenses \$.10
Press selection button #5	Dispenses \$.25
NOTE: Single-price changers cannot be used in this mode. The dispense switch on the changer must be used.	

D. TEST-VEND MODE:

To enter this mode, open the outer and inner doors to gain access to the control board. This action automatically actuates the door switch.

ACTION	CONDITION
Press the mode switch three times (M, M, M)	Display will show -3-
Press any selection button	All columns except sold-out or jammed columns are now on free vend

To exit test-vend mode, either press the door switch, or close the outer and inner doors.

NOTE: Test vend does not increment vend or cash counters.

E. SPACE-TO-SALES PROGRAMMING MODE:

WARNING: To exit space-to-sales programming mode before programming has been completed, will cause the controller to shut down. Once the programming has been started, you must continue through the last column/selection. If the controller shuts down, it will not operate until the space-to-sales settings have been reprogrammed.

To enter space-to-sales mode, open the outer and inner doors to access the control board. This action automatically actuates the door switch.

ACTION	CONDITION
Press the mode switch four times (M, M, M, M)	Display will show -4-
Press selection buttons #1, 2, & 3, in order	Display will show C01. Press any selection button that you want to control the column. More than one selection can be assigned to the same column.
<u>5 SECONDS LATER:</u> To assign column #2 to a selection button, depress that selection.	Display will show C02, which means column #2 is ready to program.
Display will sequence through columns (C01, C02, etc.) at 5-second intervals. Continue to assign columns to selection buttons until all columns have been programmed.	
After scrolling through all columns, the display will show -4-, indicating that alternate setting is complete.	

To leave space-to-sales mode, either press the mode switch, or close the inner and outer doors.



F. DISPLAY SPACE-TO-SALES MODE

To enter display space-to-sales mode, open the outer and inner doors to gain access to the control board. This action automatically actuates the door switch.

ACTION	CONDITION
Press the mode switch five times (M, M, M, M, M)	Display will show _ _ _
Press any selection button	Display will show the columns assigned to that selection
Continue to press the same selection button	Display will show all the columns assigned to that selection button until " _ _ _ " is displayed
Press another selection button	The display will again show all the columns controlled by that selection button until " _ _ _ " is displayed
Continue to press the other selection buttons to retrieve the same information.	

NOTE: Any columns not assigned to a selection button will not operate. Any selection without at least one assigned column will indicate sold out.

To leave the display space-to-sales mode, either press the mode switch, or close the inner and outer doors.

ELECTRONIC-CONTROL BOARD - CONNECTOR PIN-OUTS

P1 - POWER

- 1 10.6 VAC Neutral
- 2 10.6 VAC Hot
- 3 Key
- 4 24 VDC Neutral
- 5 24 VDC Hot
- 6 115 VAC Neutral
- 7 N/C
- 8 115 VAC Hot
- 9 N/C
- 10 N/C
- 11 N/C
- 12 N/C

P3 - SOLD-OUT SWITCHES

- 1 Column #1
- 2 Column #2
- 3 Column #3
- 4 Column #4
- 5 Column #5
- 6 Column #6
- 7 Column #7
- 8 Column #8
- 9 Column #9
- 10 Column #10
- 11 N/C
- 12 Sold-out switch (common)

P4 - SELECTION SWITCHES

- 1 Selection #1
- 2 Selection #2
- 3 Selection #3
- 4 Selection #4
- 5 Selection #5
- 6 Selection #6
- 7 Key
- 8 Selection #7
- 9 Selection #8
- 10 Selection #9
- 11 Selection #10
- 12 N/C
- 13 N/C
- 14 Selection switch common

P2 - MOTOR DRIVE

- 1 Column #1
- 2 Column #2
- 3 Column #3
- 4 Column #4
- 5 Column #5
- 6 Column #6
- 7 Column #7
- 8 Column #8
- 9 Key
- 10 Column #9
- 11 Column #10
- 12 N/C
- 13 N/C
- 14 Common 6-10
- 15 Common 1-5

P8 - TRC SERIES COIN MECHANISM

- 1 24 VDC Return NF
- 2 Key
- 3 24 VDC hot NF
- 4 Key
- 5 Data
- 6 INT
- 7 Accept Enable
- 8 Reset
- 9 Send
- 10 VCC (+5 VDC)
- 11 Ground
- 12 Dispense \$.05
- 13 Dispense \$.10
- 14 Dispense \$.25
- 15 N/C
- 16 Key
- 17 115 VDC NF
- 18 115 VDC NF Return

ELECTRONIC CONTROL BOARD - CONNECTOR PIN-OUTS (CONTINUED)

P5 - VEND COMPLETE SWITCHES

1	Column #1
2	Column #2
3	Column #3
4	Column #4
5	Column #5
6	Key
7	Column #6
8	Column #7
9	Column #8
10	Column #9
11	Column #10
12	N/C
13	N/C
14	Vend complete switch common

P7 - BILL VALIDATOR

1	Escrow High
2	\$1 High
3	\$2 High
4	\$5 High
5	Escrow Enable (low)
6	\$1 Enable
7	\$2 Enable
8	\$5 Enable
9	Credit
10	Key
11	Ground
12	115 VAC Hot
13	115 VAC Neutral
14	N/C
15	N/C
16	Enable
17	Enable Return

P9 - DISPLAY BOARD

1	Digit 2 common anode
2	Decimal-point cathode
3	"C" Segment cathode
4	Digit 3 common anode
5	"d" segment cathode
6	"e" segment cathode
7	Digit 1 common anode
8	LED common anode
9	Digit 4 common anode
10	"b" segment cathode
11	Key
12	"o" segment cathode
13	"f" segment cathode
14	"g" segment cathode

P10 - DEX/UCS CONNECTOR

1	Ground
2	Key
3	Data Out
4	Data In
5	12 VDC

P11 - DOOR SWITCH

1	Door switch input
2	Door switch output
3	Key
4	N/C

P12 - SINGLE-PRICE COIN MECHANISM

1	Vend
2	115 VAC Neutral
3	Exact Change
4	N/C
5	Enable
6	ACD In
7	Ground
8	Key
9	115 VAC Neutral
10	115 VAC Hot

TROUBLESHOOTING

POSSIBLE PROBLEM	POSSIBLE CAUSE	SERVICE SUGGESTION
No Power (No Display)	Loose connector at transformer Loose connector at control board Faulty display-board connector Faulty display harness Faulty display board Vendor is not plugged in Fuse at control is blown Power switch on control is set to "OFF" position	Inspect Inspect Replace Replace Replace Inspect Replace Inspect
No power to 24 V circuits on control	Fuse at control is blown	Replace
Wrong display	Display harness not in correct position (both ends) Small metal particles shorting display connectors Faulty display board	Inspect Remove Replace
No vend at one vend motor	Loose module harness Loose connection at the control board Motor is not assigned	Inspect Inspect all control board connections Check the STS assignments
No vend after pushing sel button	Faulty selection switch Faulty selection harness	Inspect Inspect
Selections 9 and 10 flash on display	8-column vendor using a 10-column electronic board	Reprogram STS settings