

GLASS FRONT MERCHANDISER Pro Series



Covers Model:

3114 - PS24 3W

SERVICE MANUAL

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

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

MODEL NUMBER: _____

SERIAL NUMBER: _____

INTRODUCTION

This manual contains instructions, service and installation guidelines for the **Glass Front Merchandiser** product line.

All Glass Front Merchandisers are equipped with an electronic control system, which includes a wide variety of features that can be programmed and used by the owner/operator as needs arise.

All programming of the vend functions, pricing and features is done at the controller. Changes can be made without the need of any additional accessories or remote parts.

Cash accountability provisions allow the owner/operator to retrieve information such as "Total Cash" transactions and "Total Vend" cycles that have been performed by the vendor.

Electrical malfunctions are recorded by the controller and are displayed when the machine is placed in the *Service Mode*. This notifies the service person of non-functional motors or selections.

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. Each selection has an individual motor and operates independently from other motors.

Each vendor can support a "satellite" vending machine, such as a Can Vendor, Food Merchandiser, or Can/Bottle Vendor.

NOTE

In some cases, to attach a satellite vendor a harness adapter will be required. Refer to the satellites Service Manual for additional installation instructions. The satellite vendor utilizes the Glass Front Merchandiser's controller, coin changer, bill validator (if applicable) and keypad to perform the vend functions they require.

Each machine is identified by a model number and a serial number. These identification numbers appear on the Serial Number Plate attached to the inside and rear of the vendor. Record these numbers for your records. All inquires and correspondence pertaining to this vendor should reference the model and serial numbers.

It is recommended that this manual be read thoroughly to familiarize the service person 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 troublefree manner. By following the instructions at the initial installation of the machine, service problems can be avoided and set-up time can be minimized.

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[™] P. O. Box 488 165 North 10th Street Waukee, IA 50263-0488 USA

PHONE:		1-515-274-3641
	USA	1-800-833-4411
PARTS FAX:		1-515-987-4447
SALES FAX:		1-515-274-0390

SPECIFICATIONS

General

71-1/2 inches	182 cm
36-1/2	93 cm
29-3/8	75 cm
	71-1/2 inches 36-1/2 29-3/8

Weight

501 lbs 227 kg

Electrical

Power Cycle Current 115 VAC 60 Hz 1 Amp

Capacity

80 - Select Controller Options:
80 Snack Selections
60 Snack Selections & 12 Satellite Canned Drink Selections

Pricing

MDB Coin Mechanism

UNPACKING

This machine was thoroughly inspected before leaving the factory. The delivering carrier has accepted this vendor as its responsibility. Any damage or irregularities should be noted at the time of delivery and reported to the carrier. Request a written inspection report from the claims inspector to file any claim for damage. File the claim with the carrier <u>(not the manufacturer)</u> within 15 days after receipt of the machine.

Carefully remove the outside packing material in a manner not to damage the finish or exterior of the machine. 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.

Note the model and serial numbers of the vendor for your records. These numbers are on the Serial Plate on the back or inside of the cabinet. Refer to these numbers on all correspondence and inquiries pertaining to this vendor. Remove the two retaining blocks from the shipping pallet. See **Figure 1A.** Slide the vendor forward on the pallet until the side legs are clear of the pallet. See **Figure 1B**. Tilt the machine sideways until the remaining legs are clear of the pallet and remove the pallet. See Figure **1C**.



INSTALLATION

Position the vendor no further than nine feet (2.74 meters) from the power outlet or receptacle and check that the door will open fully without interference.

Level the vendor, making sure all levelers are touching the floor. The vendor <u>must</u> be level for proper operation and acceptance of coins through the coin mechanism. When the vendor is level, the door can be opened to any position and not move by itself. Try the door half closed, straight out and in a wide-open position.

The keys to the vendor are shipped in the coin return cup. Open the outer door and remove all internal packing material.

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

Grounding & Electrical

Prior to connecting the equipment, the integrity of the main electrical supply must be checked for correct polarity, presence of ground and correct voltage (See Figure 2). It is recommended that these checks be repeated at 6-month intervals with the routine safety electrical testing of the equipment itself.

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

For 115 V vendors, the power source should be 115 VAC ($\pm 10\%$) 60 cycle, with at least a 10 amp circuit.



Figure 2

COIN MECHANISM

(Applies to U.S. currency coin mechanisms only)

Load the coin changer coin tubes with nickels, dimes and quarters. See **Figure 3**.

			25¢ OPTIC		PTION
	5¢	10¢	HI 25¢	LOW 25¢	
FULL	68-69	98-99	66-67	8-9	
LEVEL					
LOW	7-8	10-11	8-9	8-9	
LEVEL					

Table 1. Coin Tube Capacity





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

CAUTION:

Do not plug or unplug coin changer with the power on!

Option Switch Setting

Use the three option switches to select the type of coins to be accepted along with the number of quarters that will be stored in the 25ϕ coin tube for overpayment. The coin mechanism option switches have been factory set to OFF.

To change settings:

- 1. Turn the power switch OFF.
- Remove the coin acceptor (upper section) portion of the coin mechanism. See Figure 4.



Figure 4

3. Locate the coin changer option dip switches and select from the following settings:

SWITCH	ON	OFF
1	U.S. and Canadian	Canadian coins
USA/CAN	coins are accepted	are rejected
2	Quarters are	Quarters are
LO 25¢	diverted to the	diverted into the
	cash box after the	quarter tube
	change tube	until it is full
	contains	
	approximately 8	
	quarters	
3	Dollar coins are	Dollar coins are
\$ ACPT	accepted	rejected

Table 2. Coin Mech Option Switches

NOTE:

The bill validator operation of this vendor requires the "LO 25ϕ " option switch to be in the "Hi" or "OFF" position.

The controller will monitor the condition of the coin changer at all times. Any activity (coins inserted) will be recorded.

DOLLAR BILL VALIDATOR

(Available in certain U.S. currency markets only)

The BA32SA bill validator contains an option switch module allowing the unit to be customized to the requirements of an individual account.

All validators shipped from the factory will be set with switches #3 & #8 in the "**ON**" position. All other switches will be set to the "**OFF**" position. See Table 3.

SWITCH	ON	OFF
1	High Security	Standard
		Acceptance
2	Accepts bills in	Accepts bills in
	one direction only	both directions
	(face up, green	(face up)
	seal first)	
3	Serial or Parallel	Pulse interface
	Interface	
4	\$20 Accept	\$20 Reject
5	\$10 Accept	\$10 Reject
6	\$5 Accept	\$5 Reject
7	\$2 Accept	\$2 Reject
8	\$1 Accept	\$1 Reject

Table 3. Validator Option Switches

If you desire settings different from those set at the factory, follow the steps outlined below:

1. Turn off the power switch in the center right side of the cabinet. See **Figure 5**.

WARNING:

To avoid electrical shock, always disconnect the power before performing service.



Figure 5

- 2. Remove the retaining screw that secures the logic board and strain relief. (See **Figure 6.**)
- 3. Slide the logic board downward to expose the option switch module.
- 4. Set the option switches to the desired setting.

Removing Accepted Bills

Accepted bills may be removed by opening the "bill box" lid or by removing the bill box from the validator. (See **Figure 7.**)

NOTE:

If the bill box is removed, make sure that it is fully latched in place when it is returned to the validator.





Figure 7

Troubleshooting

To troubleshoot, read the flashes or blinks of light from the red LED located on the side of the logic board cover. These flashes can be seen through the grey smoked cover. (See **Figure 8.**) During normal operation the LED will be a steady or constant red.



A10071

Figure 8

No. Of	
Flashes	Description
None	Check Power And Harnessing To
	Validator
1	Bill Box Full
2	Bill Box Lid is open or not latched
	in place.
3	Check Bill Path
4	All Bill Accept Switches are Off
5	Bill Jam or Sensor Error
6 or more	Reset (Remove and Apply Power)
	or service required.

Clearing Jams & Cleaning

Trapped bills, debris or dirt can result in poor bill acceptance or bill rejection. Remove the "bill box" and lower housing to clear trapped bills or debris. (See **Figure 9.**) Clean the bill path plastic parts or belts with a cloth moistened with a mild soap and water solution. Clean the magnetic head and optic sensors using a swab and isopropyl alcohol.

CAUTION:

Do not use any petroleum based cleaning solvents, scouring pads or stiff brushes for cleaning.



LOADING PRODUCTS

To load products, lift tray slightly and pull forward until the tray stops. The upper-most trays will tilt for ease of loading.

Load products from front to back, making sure all items fit freely between the augers. Do not attempt to force oversize items or packages into the spaces. <u>Do not skip a space</u>. The bottom of the package should be placed on the bottom of the compartment above the product augers. The label should face the front of the machine for easy identification by the customer. See **Figure 10**.

When finished loading each tray, make sure the tray is returned to its proper standby position. All trays <u>must</u> be pushed to the rear of the cabinet and properly seated in the "detent" position.



Figure 10

The size of the item being vended <u>must be larger</u> than the diameter of the auger being used to vend properly. Undersized items could cause vend problems. If the product does not fit the auger properly, it is recommended that a different auger be used. Optional augers are available; see the "Parts Ordering Procedure" section for ordering information.

CHANGING TIMING AND TRAY SPACING

Difficult-to-vend items can be dispensed more dependably by retiming the augers. Larger items can be vended by altering tray spacing.

Timing

Each auger can be rotated in 20-degree increments for a different drop-off point. Most items can be vended successfully when the auger end is positioned at 6 o'clock.

To change the auger end positions:

- 1. Make sure the auger coupling is seated over the vertical rail or retaining rib on the tray.
- 2. Remove the motor cover. See Figure 11.
- 3. Raise the motor slightly and pull forward on the auger until it separates from the motor. See Figure 12.
- 4. Rotate the auger to the desired position and re-insert the auger coupling into the motor.
- 5. Replace the motor cover and securely tighten.



Figure 11



Tray Spacing

The trays can be raised or lowered in one inch increments to provide additional headroom for vending taller items.

NOTE:

When increasing the headroom between two trays, a corresponding decrease in headroom of an adjoining tray will result.

To change tray spacing, follow the steps outlined below:

- 1. Pull out the tray to be adjusted until it stops.
- 2. Disengage the tray harness from its snap open harness clamp on the right hand side wall. See Figure 13.
- 3. Disconnect the tray plug from its receptacle on the right side wall.
- 4. Lift up on the front of the tray and pull slightly forward (approximately 1/2 inch/1.5 cm) to clear the tray stop.
- 5. Lift up on the rear of the tray and remove it from the vendor.
- 6. Disengage both left and right tray rails from their corresponding slots on the left and right side walls: pull inward on the bottom front of each rail and pull its flange out of the slot.



Figure 13

- 7. Pull each rail forward to disengage its rear tab from the hole in the rear wall. See **Figure 14**.
- 8. Relocate both left and right rails by reversing steps 6 and 7.



Figure 14

NOTE:

Rails must be level front to back and right to left.

- 9. Replace the tray by placing its rear rollers on the left and right rails and lifting up on the front of the tray as you push it back.
- 10. Install the tray plug into its receptacle on the right side wall.
- 11. Re-engage the tray harness into its harness clamp and snap the clamp closed.
- 12. Test vend the tray in its new position to assure that the tray plug is properly seated.

CONTROLLER FUNCTIONS

Sales Mode

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

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

If the coin tube level of the changer's lowest denomination is below the lowest sensor, the "USE EXACT CHANGE" LED will light.

As money is deposited, the amount of credit displays.

NOTE:

Upon initial power up or reset, -- displays until the peripherals and the controller have been initialized.

The customer presses the desired selection number on the keypad. The selection number displays.

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

• If sufficient credit is available and the selection is present, the vend cycle will start.

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 will flash for three seconds or until a new selection key is pressed.
- If the motor is flagged as faulty, the selection number and the "MAKE ANOTHER SELECTION" LED will flash for 3 seconds or until a new selection key is pressed.

• If an item is selected and the vendor is unable to complete the vend cycle, the "MAKE ANOTHER SELECTION" LED will flash for three seconds or until a new selection key is pressed. That selection will be disabled and will remain inoperative until cleared or repaired. The amount of credit will be returned to the buying customer.

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

NOTE:

Credit acceptance is controlled by the coin mechanism.

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 display. If any errors were detected during a vend, the failed motors display next, and then any MDB error codes.

Record the displayed information immediately. Any keypad input will erase this data. MDB errors are cleared upon exiting the *Service Mode*.

<u>To enter the *Service Mode*</u>, open the door of the vendor and press the Service Mode Button. It is on the Control Board on the inside of the door. (See **Figure 15**.)

<u>To exit the Service Mode</u>, press the Service Mode Button. The vendor will also exit the *Service Mode* if there is no key pressed for approximately 25 seconds.

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 15

Displayed Errors

Motor Configuration Errors

When the controller is placed in the Service *Mode*, if any errors were detected during a vend, the failed motors display. The displayed motors were functional when the Sales Mode was last activated, but, due to failures or removal, are not in the circuit now.

For instance, if during a vend the controller detected a motor switch failure, that selection would be flagged as faulty and would be disabled. That motor would display the next time the *Service Mode* is entered.

MDB Errors

These errors are only displayed when the Service Mode is entered and are cleared upon any keypad activity or upon exiting the Service Mode.

Displays	Indicates
CScF	Invalid changer scale factor
tSnS	Defective coin tube changer
CJAM	Coin jam detected
tJAM	Coin tube jam detected
CnEr	Coin acceptance problem detected
AcEr	Acceptor unplugged
ChEr	Coin changer ROM checksum bad
bScF	Invalid acceptor scale factor
bSnS	Defective bill sensor
bJAM	Bill jam detected
StFL	Bill stacker is full
CShb	Bill cash box is out of position
bMtr	Bad bill motor detected
bLEr	Bill acceptor ROM checksum bad
rScF	Invalid card reader scale factor
CdEr	Card error detected
bCrd	Invalid card detected
rJAM	Card reader jam detected
CoEr	Communications error detected
brdr	Card reader failure

Table 5. Error Codes

Programming the Controller

Prc

SIct

Optn

°Deg

To access the programming, enter the Service *Mode*, then choose from the following modes.

Press	Displays	Mode
<1>	Coin	Coin Dispense
<2>		Motor Count
<3>	Acct	Accountability

Price Setting

Vend Options

Test Vend Single Motor

Test Vend All Motors

Refrigeration Control

Table 6. Modes

	(not used on this Machine)			
Coin Dispense Mode				

<4>

<5>

<6>

<E>

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

Press the Service Mode Button, then press <1>. **Coin** displays.

Table 7: Coin Dispense Keys

Press	To Dispense a Coin of:	
<a>	the lowest denomination	
	the next higher denomination	
<c></c>	the next higher denomination	
<d></d>	the highest denomination	

Pressing a key once will pay out one coin. Pushing and holding a key 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 key is pressed.

Pushing any key other than <A>, , <C> or **<D>** will exit back into the *Service Mode*.

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 selection numbers do not display.

Press the Service Mode Button, then press <2>. The controller tests each motor in the configuration.

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, press the Service Mode Button once.

To determine which motor is not functioning:

- 1. Were faulty motors displayed when placed in the *Service Mode*?
- 2. Test vend single selections.
- 3. Test vend all selections.
- 4. Refer to the "Troubleshooting" section of this manual for further assistance.

Accountability Mode

The total vends and total cash are displayed. This information is not resettable. The display will continue to flash the accounting data until the mode is exited.

Press the Service Mode Button, then press *<***3>. Acct** displays.

<u>For the Vend Count</u>, press *A*. The first four digits of an eight digit number display. Then, the last four digits will display.

For the Cash Total, press . The first four digits of an eight digit number display. Then, the last four digits (including any decimal point) display.

To exit, press another function key or press the Service Mode Button.

Price Setting Mode

A vend price must be set for each selection. The price programmed must match the desired item and price scroll. To check a price, push the selection numbers while in the *Sales Mode*.

Press the Service Mode Button, then press <4>. Prc displays.

NOTE:

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

If the item price is set to .00, the item will vend for free.

- 1. Press the selection letter and number of the selection you want to price. That selection's current price displays.
- 2. To change the price:
 - To decrease the value, press <#>.
 - To increase the value, press <*>.
- 3. To save the price displayed:
 - press the selection number of the next item to be priced,
 - press another function key, or
 - press the Service Mode Button.

NOTE:

When setting vend prices, make sure the price scrolls on the product shelves agree with the vend prices programmed into the controller and that the selection labels are properly located below the item.

Test Vend Single Motor Mode

CAUTION:

Because this vendor utilizes DC motors, do <u>not</u> 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, then press <5>. **Slct** displays. Press the letter and number of the selection to be tested.

- If the selected motor is operational, the motor will run one complete cycle and the controller will return to the *Service Mode*.
- If the selected motor fails, **FAiL** will display for 2 seconds; then the controller will return to the *Service Mode*.

NOTE:

Test vending a selection flagged as faulty will reset the flag if the motor successfully completes the vend cycle. Entering and exiting the *Service Mode* will also reset the flag, even if the motor is non-functional.

To exit back to the *Sales Mode*, press the Service Mode Button once.

Test Vend All Motors 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 in the first row.

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.

The accounting data information is not updated in the Test Vend Mode.

Press the Service Mode Button, then press <6>. 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 vend fails, **Fail** displays for two seconds. Then the next motor is tested.

The test may be stopped at any time by pressing and holding any key on the selection keypad during the test. Doing this returns the program to *Service Mode*.

To exit to the *Sales Mode*, press the Service Mode Button.

Vend Options Mode

Various sales options can be enabled and disabled through this option. See **Table 8**.

T.

Press the Service Mode Button, then press <**E**>. **Optn** displays.

To exit the Vend Options Mode, press a different function key, or press the Service Mode Button.

		Toggle,		
Press	Displays	Press	Description	
<a>	Fcry = On	<a>	Force Vend Option: Purchase necessary to receive change from a paper bill,	
			overriding the "coin return" command.	
	Fcrn = Off		A purchase is not necessary to receive change for a bill insertion.	
	$\mathbf{Escy} = On$		Bill Escrow Option: Returns the bill to the customer when no vend is made	
			and the coin return button is pushed. (Must have a validator with escrow capabilities.)	
	Escn = Off		Gives change for bill when the coin return button is pushed.	
<c></c>	MULy = On	<c></c>	Multi Vend Option: Multiple purchases can be made as long as adequate	
			credit is available. After 20 seconds of no activity the change will be returned automatically.	
	MULn = Off		Customer immediately receives the change after a vend.	
<d></d>	Cany = On	<d></d>	Can Drink Option: Host can run a satellite can drink vendor. Selection	
			motors are configured upon exiting the <i>Service Mode</i> if the this option has been changed.	
	Cann = Off		Satellite can drink vendor selections are disabled.	
<f></f>	FrEy = On	<f></f>	Free Vend Option: All product vended at no charge to customer.	
	FrEn = Off		Individual price settings used.	
<2>	Fchy = On	<2>	Fast Change Option: Change is returned as soon as a selection is made.	
	Fchn = Off		Change is returned after a selection is made.	

Table 8. Vend Options Mode

CARE & CLEANING

CA	UTION:				
	Always	disconnect	power	source	before
	cleaning.				

Cabinet Interior

Wash with a mild detergent and water, rinse and dry thoroughly. Odors may be eliminated 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.

PARTS ORDERING

Augers

 Table 9. Auger Sizes Available

	Proc			
TYPE	Width	Thick	Qty	Part Number
	2-3/4	1-3/16	15	4200272-000
C	2-3/4	15/16	18	4200272-001
Α	2-3/4	21/32	24	4200272-002
Ν	2-3/4	1⁄2	30	4200272-003
D	2-3/4	1-1/2	12	4200272-004
Y	2-3/4	2-1/32	9	4200272-005
	2-3/4	3-3/32	6	4200272-006
S	5-1/2	1-13/16	10	4200272-007
Ν	5-1/2	1-1/2	12	4200272-008
Α	5-1/2	1-3/16	15	4200272-009
C	5-1/2	2-11/16	7	4200272-010
K	5-1/2	2-5/8	8	4200272-011

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. Always refer to the pertinent parts and/or part manual for the correct part number and description of a specific part

When "RIGHT" or "LEFT" is used with the name of a part, it is 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

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 **VendNet**TM. They will be able to assist you.

Use the most accurate description you can (and the model number and serial number of the machine); include the name of the assembly in which the part is used and, if practical, a sample part. Furnish any information which will enable our Parts Department to pinpoint the part needed.

1-515-274-3641
1-800-833-4411
1-515-987-4447
1-515-274-0390

If you have any questions, check out our Website http:\\www.vendnetusa.com or please call VendNet[™]. Ask for the Parts Department. We will be happy to assist you. Email: VendNet@Ecity.net

SCHEMATIC

