



HBA10 & HBA11 HOT BEVERAGE MACHINE

CONVERTIBLE HOT BEVERAGE VENDOR



A10250

SERVICE MANUAL

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INTRODUCTION:

This manual contains service and installation guidelines and instructions for the HBA10A & HBA11A Hot Beverage Vendors along with various optional equipment and accessories that are offered within the product line.

Each vendor is equipped with an electronic control system that includes a variety of features and functions that can be programmed and used by the customer as needs arise for specific locations. Some of the features are “programmable message center”, cash and vend accountability “by” selection and machine, programmable to offer each selection in two (2) ingredient strengths or portions for full customer satisfaction, Multiple-Pricing and “Free Vend” capabilities. Keyboard Programming that allow changing programs and functions at the location.

Provisions for vending International Coffee Blends can be included as optional equipment when shipped from the factory. Kits are available for adding in the field if not included with original equipment. Details and functions of all features are defined throughout this manual.

The electronics within the controller will allow all selections to be priced separately at various vend prices, ranging from \$.00 to \$99.95 in five-cent (5¢) increments. All programming of the vend functions, pricing and features are done at the controller and changes to the different programs can be made, or information can be retrieved, without the need of any additional accessories or remote parts.

Service requirements and malfunctions are detected by the controller and stored in memory. “Call for Service” will be scrolled in the display when the machine becomes in-operable. Optional programming allows for the phone number to be included for notification of problems. The service required or malfunction will be displayed to the service person when the controller is placed in the Service Mode.

Each machine will be identified by a model number and a specific serial number. These identification numbers will appear on the Serial Number Plate attached to the inside and rear of the vendor. Record

these numbers for your records. All inquiries and correspondence pertaining to this vendor should reference the model number 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 machine is a very important step of insuring that the equipment operates in a trouble-free manner and by following the instructions at the initial installation of the machine, service problems can be avoided and set-up time will be minimized.

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

Selectivend Service
P.O. Box 488
165 North Street
Waukee, Iowa 50263-0488

Phone: **800-833-4411**

SPECIFICATIONS:

ELECTRICAL:

Power Supply: **Must** be a minimum 20 Amp isolated circuit
 Power Requirements: 115 Volts AC, 60 Cycle 16 Amps
 Transformer: 117 Volts AC Primary, 24 Volts AC, Secondary

WATER SUPPLY:

20 TO 125 Lbs. P.S.I. - 3/8" Water Connection
 6 Gallon Hot Water Tank (1500 watt heater element)

COIN MECHANISM:

Coinco = Model 9302L
 Mars = Model TRC6010 or Equivalent

PRICING:

Individual Prices for each selection
 Free Vend Capability
 Lotto Capability

CUP CAPACITY:

600 - 7 Oz. Squat Cups
 Can handle 7, 8 1/4, 9, & 12 oz.

MACHINE DIMENSIONS:

HEIGHT: 72" high (includes 6" legs)
DEPTH: 32" Deep
WIDTH: 30" Wide
WEIGHT: Net - 400 Lbs.
 Shipping - 429 Lbs.

PRODUCT CANISTER CAPACITY		
PRODUCT	FRESH BREW	FREEZE DRY
Coffee	4.5 Pounds **	36 Ounces
Decaf Coffee	2 Pounds **	36 Ounces
Creme	4 Pounds	4 Pounds
Sugar	7 Pounds	7 Pounds
Chocolate	7.5 Pounds	7.5 Pounds
Soup	3 Pounds	3 Pounds
Tea	24 Ounces	24 Ounces

** For best performance of the Fresh Brew Unit it is recommended that a 17 Grind Vending Grade Coffee product be used.

UNPACKING:

This machine has been thoroughly inspected before leaving the factory and the delivering carrier has accepted this vendor as their 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 (NOT THE MANUFACTURER) 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.

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

To minimize installation time and to avoid service problems due to improper installation, follow the instructions outlined in this manual.

INITIAL INSTALLATION:

To unlock the door, on machines furnished with the lock installed, the key will be taped inside the coin return cup. On machines furnished without a lock, "press down" on the upper leg of the Spring Clip and "PULL".

Position the vendor in its place of operation no further than 6 feet from the power outlet or receptacle and check that the door will open fully without interference. Leave at least six (6) inches of space between the back of the machine and any wall or obstruction for proper air circulation and exhaust.

Level the vendor, making sure all leg levelers are touching the floor. (See **Figure 1**) The vendor **MUST** be level to obtain proper operation and proper 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 the wide open position before deciding the vendor is level.

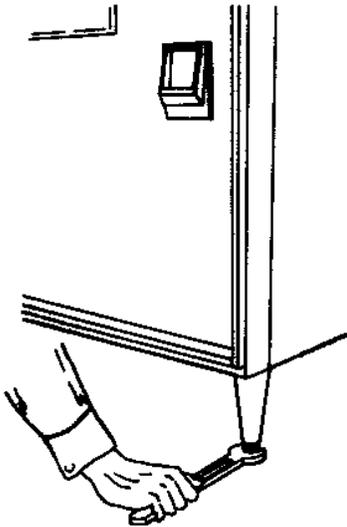


FIGURE 1

Remove all packing material, shipping screws (tags attached) and tape from inside the vendor. Various parts are taped for shipment to prevent damage in transit. To try to operate the vendor without removing the tape from the moving parts may result in damage.

CAUTION:
Do not connect the water heater to the control box until the water tank has filled with water.

PACKAGED LOOSE PARTS:

Various parts are shipped disassembled to prevent damage during transit. These parts will be packed inside the machine. Remove and identify all packaged parts.

FRONT SKIRT ASSEMBLY (OPTIONAL):

The front skirt assembly will not be supplied as part of the basic machine, however, it will be supplied as an option or accessory upon request. Installation instructions will be furnished with the Front Skirt Assembly when ordered.

INSTALL WATER PURIFIER (FILTER):

The water filter will be shipped packaged in the waste bucket. The water filter mount is a standard “twisting ring” type. Removal and Instructions are packaged with each cartridge. See **FIGURE 2**

The cartridge reduces the lime scale build-up and protects the drink taste by filtering out fine particles.

Each cartridge should filter approximately 1,500 gallons of water, but this will vary depending on local water conditions. Fifteen hundred (1,500) gallons of water would provide 20,000 to 30,000 drinks per filter, depending on cup size. Since no feasible “test” of cartridge conditions is available, replacement frequency should be routine based on knowledge of local water conditions and number of units vended.

CAUTION:
Leave the manual water valve in the UP-(OFF) position until you are ready for the water tank to be filled.

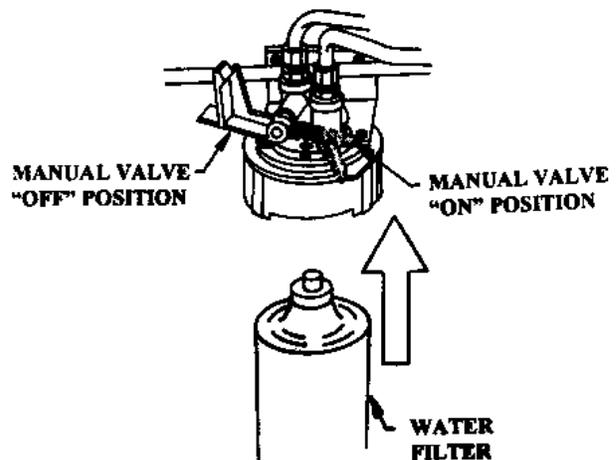


FIGURE 2

WATER TANK LID ASSEMBLY:

The water tank lid assembly is shipped packaged in the waste bucket. Install the water tank lid and secure with two thumb nuts. Connect the harness to the cabinet harness. Connect the Safety Thermostat harness to the Safety Thermostat on the water tank lid.

CONNECT TO WATER SUPPLY:

Located on the rear of the cabinet is a 3/8" standard pipe connection to be used for the water supply. To connect the water line to the pipe connection, use either a 3/8" pipe to flare fitting or a 3/8" pipe to compression fitting. An installation kit, Part No. 1200137-133, is available from Selectivend parts department.

Make sure the manual water valve on the filter installation is in the UP (off) position before turning on the water supply. It is always advisable to install a water supply cut-off valve in the external water supply line.

CONNECT TO POWER SUPPLY: (115 VOLT AC, 20 AMP SERVICE)

The electrical power supply for this vendor **must** be a minimum 20 Amp isolated circuit. The power cord for the vendor is equipped with a 20 amp molded, polarized and grounded plug. To verify that a receptacle is properly grounded and polarized, use a voltmeter or test light as shown in **Figure 3**. Insert one probe of the test device in the receptacle ground terminal and the other probe in the nearest "single slot" or "hot" terminal. (The double slot or "cross" terminal should be "neutral"). You should read 115 volts on the volt-meter or the light should light.

If these requirements are not met you should contact a licensed electrician to properly polarize and/or ground the power source to insure proper operation. Consult local, state and federal codes for compliance before installation of the vendor.

CAUTION:

When the water and power have been turned "ON" the water tank should fill automatically. **Do not connect the water heater to the control box until the water tank has filled with water.**

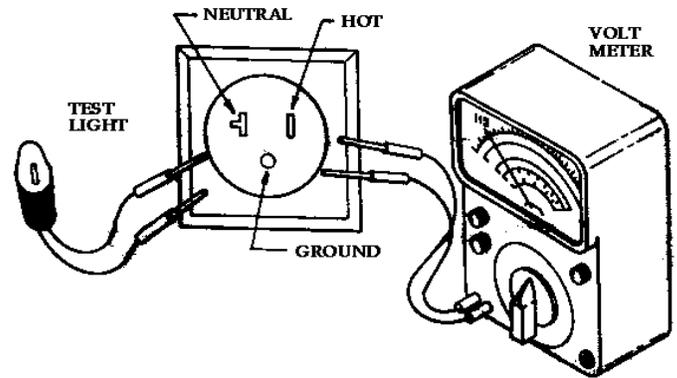


FIGURE 3

INSTALL INGREDIENT HEATERS:

Install Ingredient Heater panel in front of the canisters. Connect ingredient heater harness to the main cabinet harness. The ingredient heaters will not be powered up until the outer door is closed.

WATER TEMPERATURE CONTROL:

The Temperature Control has been preset at the factory to keep the water temperature at approximately 195° but may be re-set if needed. Refer to Page #11 for adjustments and additional information.

CAUTION:

The water in the tank should not boil - 1/4 turn of the adjustment screw will change the temperature approximately 25° F

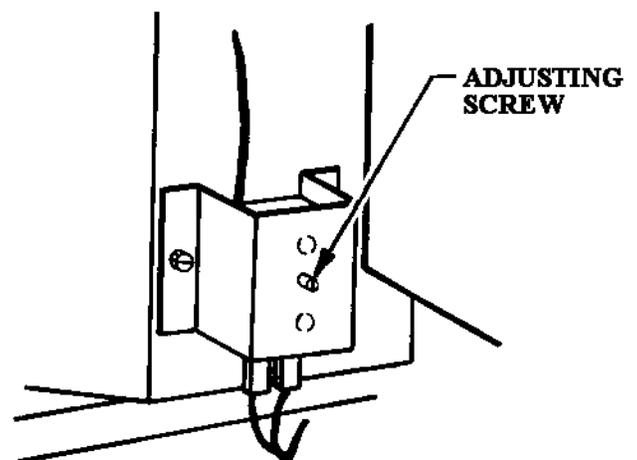


FIGURE 4

INSTALL COIN MECHANISM:

This vendor is designed to use Coinco Model 9302L or Mars TRC6010 coin changers or equivalent. To install the changer, remove the acceptor (upper) portion from the coin mechanism. Position the three (3) “keyhole” slots in the back of the coin mechanism over the screws on the door panel and tighten the screws. Replace the acceptor and plug the changer in the coinage receptacle on the door harness.

The controller circuitry is designed to receive signals from the coin mechanism as the coins are accumulated and all totals are maintained by the controller. When proper credit has been established, the controller will allow a vend to be made.

The acceptance of coins through the coin mechanism is controlled by the controller. The coin mechanism should refuse to accept coins when:

1. Vendor is out of cups.
2. Water supply absent or insufficient.
3. Water Waste Bucket full.
4. Credit equal to or exceeding highest vend price.

When the coin mechanism is disabled by either the Sold Out Switch, Low Level Switch or the Waste Bucket Switch, the controller will disable all vend circuits and the message “Call for Service” will be displayed.

Load the coin changer coin tubes with nickels, dimes and quarters. (See **FIGURE 5**) After a few seconds the credit display will begin to scroll the “Point of Sales” Message. The changer option switches have been factory set in the following positions:

- #1 = OFF
- #2 = OFF
- #3 = OFF

OPTION SWITCH SETTINGS			
SW	DESCRIPTION	POS.	FUNCTION
1	USA/CAN	ON	U.S. AND CANADIAN COINS WILL BE ACCEPTED
		OFF	CANADIAN COINS WILL BE REJECTED
2	LO 25¢	ON	QUARTERS ARE DIVERTED TO CASH BOX WHEN THE CHANGE TUBE HAS INVENTORIED APPROXIMATELY 8 QUARTERS
		OFF	QUARTERS ARE DIVERTED TO CHANGE TUBE UNTIL THE CHANGE TUBE IS FULL
3	\$ ACCEPT	ON	DOLLAR COINS WILL BE ACCEPTED
		OFF	DOLLAR COINS WILL BE REJECTED

COIN TUBE CAPACITY				
	5¢	10¢	25¢ OPTION	
			HI 25¢	LOW 25¢
FULL LEVEL	68 - 69	98 - 99	66 - 67	9 - 10
LOW LEVEL	7 - 8	10 - 11	8 - 9	9 - 10

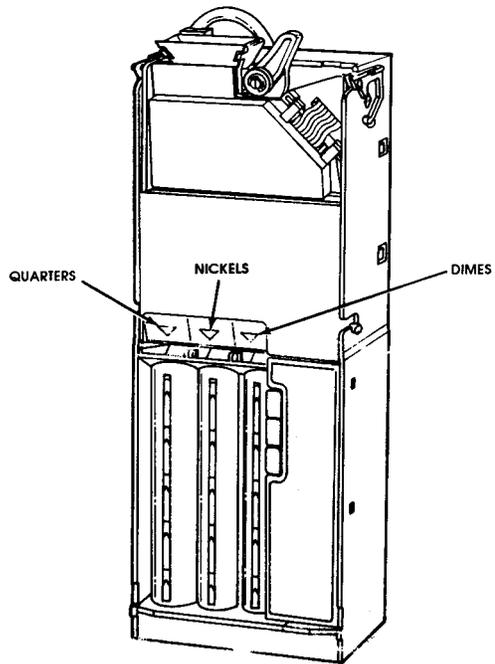


FIGURE 5

NOTE:

Obtain service manuals and operational functions of the coin changer from the coinage manufacturer.

SET PRICES:

Vend prices are controlled by the controller and must be programmed into the controllers memory. The controller must be placed in the “Service Mode” to alter any programming and establish new programs. Vend prices are programmed into the controllers memory using the Selection Key Pad.

To access the “Service Mode”, press the “Service Mode Switch” on the controller. This will advance the controller into the “Root” menu of the programming, indicated by a “<” in the display. Press key “5” to place the controller in the “set price mode”. The display will scroll “Make Selection” then display “??=Selection”. The “??” will be flashing. Enter the selection to be priced. After the selection has been entered, the current vend price for that selection will be displayed. A new price can be set by direct entry. (**Note:** The character to the left flashes until an entry is made. Then the next character to the right flashes in succession until the price is set and stored in memory). To store the price, press the “#” key. The controller will scroll the “Make Selection” message in expectation of another price change. To return to the “root” menu, the “#” key must be entered while the “Make Selection” message is being scrolled.

AUTOMATIC COPY PRICE FEATURE:

The controller automatically copies prices stored in certain selections to facilitate price setting as follows:

When selection “AO” is priced the same price will be copied and stored in the following selections

A1	C0	D2	F1	G1
A2	C1	D3	F2	G2
A3	D0	E0	F3	G3
B0	D1	F0	G0	H0

When selection “A4” is priced the same price will be copied and stored in the following selections

A5	C2	D6	F5	G5
A6	C3	D7	F6	G6
A7	D4	E1	F7	G7
B1	D5	F4	G4	H1

After the primary prices (A0 & A4) have been set, individual selections in the automatic copy groups can be edited and set to a desired price by following the instructions outlined in the proceeding paragraphs.

MANUAL COPY PRICE MODE:

To copy a price from one selection to another, follow the above mentioned price setting procedure, but instead of storing the price, via the “#” key, press the “*” key. This will place the controller in the “copy price” mode and the display will scroll “Copy Price”, then scroll “Make Selection”, then display “??=Selection”. Selections may be entered one after the other. All selections entered will receive this price. To store all of the copied selections and return to the “root” menu, press the “#” key.

INSTALL PRICE LABELS:

Price Labels are provided with the machine and display the vend prices of each selection. Price labels may be affixed by following these instructions:

1. Remove the thumb nut below the display light and lift up on the Menu Label Panel and remove panel.
2. Affix price labels in designated areas for each selection. Make sure labels are square and match the area provided and agree with the prices programmed for each selection.
3. Replace the Menu Label Panel and secure with thumb nut.

IMPORTANT:

Check vend prices of each selection to make sure the price label located on the menu label agrees with the price programmed into the controller. With the controller in the “Sales Mode”, the vend price will be displayed when a selection is made without adequate credit established.

If desired, the following features should be programmed into the controller. Details and

functions of these features are described under Controller Functions & Programming.

1. Set Force Vend Feature
2. Set Multi-Vend Feature
3. Set Lotto Option
4. Set Discount for Vend Without Cup
5. Edit Sales & Service Message

PRODUCT CANISTERS:

When installing the Product canisters they should be installed in locations shown in **FIGURE 7**. When installing the canisters make certain the Motor Drive Pin engages with the Canister Drive Link (See **FIGURE 6**). The Motor Drive Pin should be horizontal to the shelf, and the Canister Drive Link should be vertical to permit ease of installation.

Each product canister is identified by a label to indicate the product to be loaded. Load the appropriate quantity of product in each canister. Do not strike the side of the canisters to enable you to put in a little more ingredient. Avoid overfilling to prevent ingredient packing.

All canisters are placed so the feet enter the keyhole slots. Push the canisters toward the rear of the machine making sure they are properly latched in place. To remove the canisters, push downward on the latch, pull the canister forward and lift out of the keyhole slots.

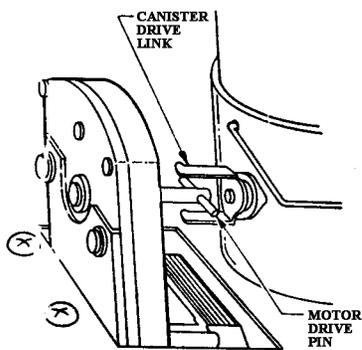


FIGURE 6

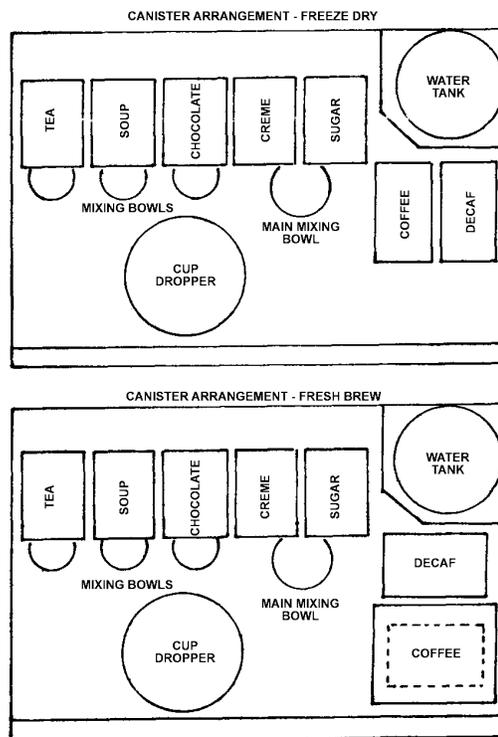


FIGURE 7

CUP MECHANISM:

The cup mechanism tilts out for easy loading. Cups are dispensed from an entire tube and the turret will be indexed in a clockwise direction when a tube becomes empty. If at any time all tubes are not being loaded, tubes counter clockwise from the dispensing position should be loaded first. Make sure cups in the dispensing area are fully seated in the cup ring.

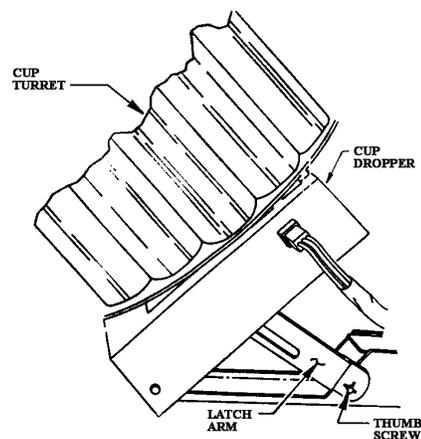


FIGURE 8

INSTALLATION CHECK LIST:

1. All packing material and tape removed from moving parts?
2. All loose parts properly installed?
3. Water filter, electrical and water connections properly installed?
4. Vend Prices and vend options programmed and price labels affixed?
5. Product canisters properly loaded?
6. Cups loaded in Cup Mechanism?
7. Adequate change in Changer pay-out tubes?
8. Water Heater Harness connected to control box.

Scrolling message should be displayed in the digital read-out.

OPERATING INSTRUCTIONS: GENERAL

WATER TANK LID ASSEMBLY:

The water level in the tank is controlled by two (2) switches mounted on the water tank lid. The “Water Level Switch” will maintain a “full” tank condition. This switch will open and close the inlet water valve when operated. A float attached to the lid and suspended in the top of the tank operates the water level switch.

The water level must be maintained below the overflow outlet. When water is drawn from the tank, the inlet water valve must open before the float drops far enough to operate the “Low Level Switch”. The water level switch should operate to refill the tank any time approximately 215 ml (7 oz.) of water is drawn from the tank.

If for any reason water is not available to the tank (waste bucket full or water supply shut off), the “Low Level Switch”, mounted on the lid, will operate after approximately 430 ml (14.3 oz.) of water is removed. If this action occurs the coin mechanism will be disabled and the message “CALL FOR SERVICE” will scroll on the display to alert the customer and the machine will not function. The low level switch must operate before the water level

reaches the water valve port. The “Low Level Switch” is adjustable by loosening its mounting screws.

CHECK & ADJUST LOW LEVEL SWITCH:

1. Turn the water inlet valve at the filter cap to the “OFF” position. (See **FIGURE 2**)
2. Using the Rinse Hose, slowly drain water from the tank until the “Call for Service” message is displayed.
3. Place the controller in the “Service Mode” and test vend Selection #E0. Water should still be available.
4. If little or no water is available, adjust the low level switch. See **FIGURE 9**
5. Turn the water inlet valve at the filter cap to the “ON” position.

CHECK WATER LEVEL SWITCH:

The “Water Level Switch” is not adjustable. If the water level in the tank is not correct:

1. Check the float condition. (Leaks or corrosion build-up)
2. Check the float pivot rod to be sure it moves freely.
3. If the above conditions are good, reform the float rod to obtain the correct water level.

CAUTION:

Always check the low level switch adjustment if the float rod has been reformed.

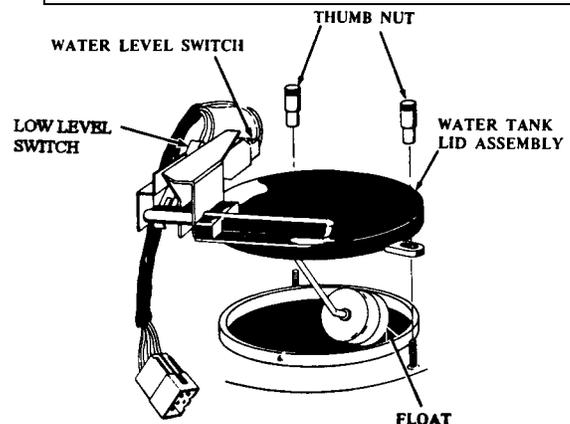


FIGURE 9

WATER TEMPERATURE CONTROL:

The Temperature Control is pre-set at the factory to keep the temperature of the water in the water tank at approximately **195° F** (90.5° C). The drink temperature in the cup should be 155° to 160° (68° - 71° C) even under casual conditions (30 minutes or more between drinks). The temperature of repeated drinks will vary from 160° to 175° (71° - 79° C) as the lines and bowls absorb heat.

To check the water temperature in the tank to determine if the thermostat is operating within the 195° range, insert a thermometer through the self-closing grommet port at the top of the water tank. The temperature should be approximately 195° F

To change the water temperature, rotate the thermostat adjusting screw, clockwise to raise, or counter clockwise to lower the temperature.

Adjusting the thermostat to a higher setting will not accelerate heating of the water in the tank. The thermostat's function is to maintain a constant water temperature.

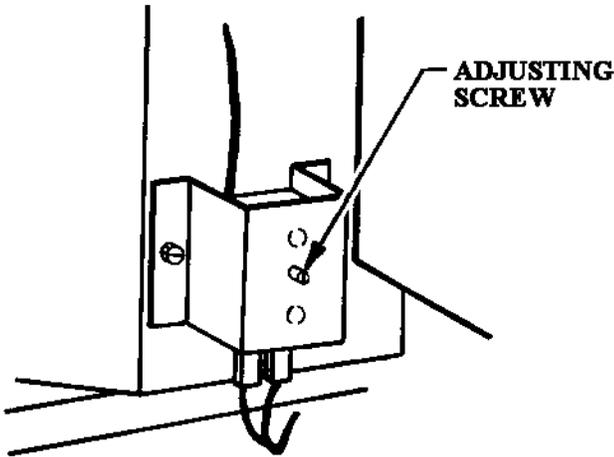


FIGURE 10

CAUTION:

A one-fourth (1/4) turn of this screw changes the temperature approximately 25°F. If the thermostat is set too high, the water will boil. Steam or moisture within the cabinet area causes the ingredients to pack or harden.

If it becomes necessary to replace a thermostat, be sure the sensing bulb is inserted correctly. It is important that no portion of the capillary tube touches the water tank. (See Figure 11.)

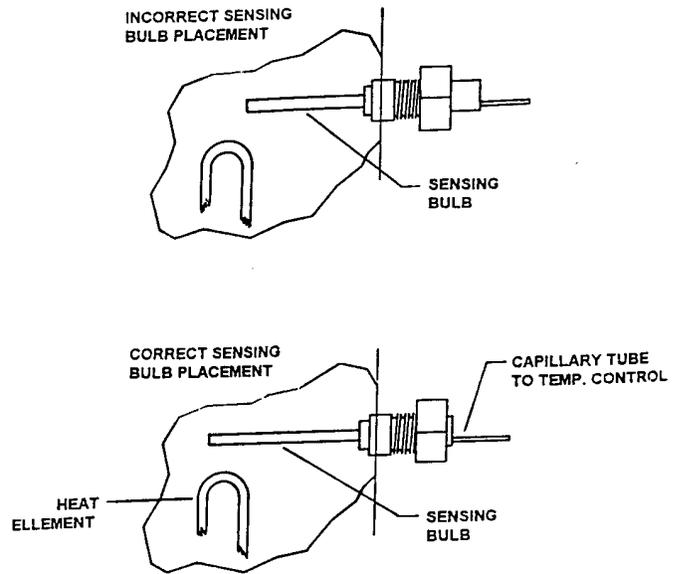


Figure 11

WATER HEATER ELEMENT:

The heating element for the water tank is a 1500 watt immersion heater mounted through the bottom of the tank and secured in place by four (4) hex nuts. The gasket is part of the heater assembly and is mounted on the "outside" of the tank.

WATER TANK:

The water tank is stainless steel and has a capacity of 6 gallons. Water enters the tank through the port in the bottom of the tank. Water to all drinks is supplied by "gravity force" through solenoid operated water valves mounted to a manifold near the top of the water tank. An overflow (open to the atmosphere) is provided to direct excess water to the liquid waste bucket. A spray hose is also provided for cleaning and servicing the vendor.

WATER VALVES:

There are four (4) water valves mounted on a manifold on the water tank which supply the liquid for the various drinks. The valves are solenoid operated with the power being supplied by the controller. The water volume or drink level is determined by the time the controller will supply power to the solenoid. (Refer to “Set Dispense Time” outlined later in this manual) The water flow or volume can also be altered by the “needle valve” adjusting screw on the front of the water valve. If this becomes necessary, the dispense time programmed in the controller will have to be changed accordingly.

Periodic replacement of the “O” Ring and Diaphragm may be necessary to prevent leaks.

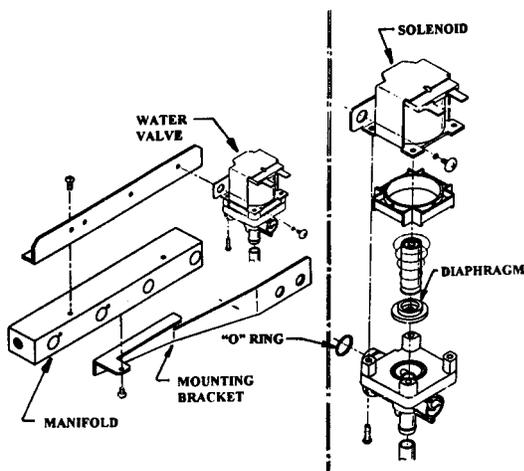


FIGURE 12

INGREDIENT CANISTERS:

The Ingredient Canisters used on both Freeze Dry and Fresh Brew Models are identical with the exception of the “Fresh Brew” coffee canister. Each has a stainless steel “strap” type agitator that is deflected by a rotary actuator to prevent bridging of the product.

When removing or installing any canisters, the drive link on the canister and ingredient motor drive pin must be positioned as shown in **FIGURE 6, Page 9**, to allow proper engagement and prevent bending the drive link.

To remove a canister, press down on the latching device, pull forward on the canister and lift out.

PREVENTATIVE MAINTENANCE SUGGESTIONS

1. Be sure that the exhaust system is clean and clear of obstruction and that the exhaust motor is running.
2. Be sure all canister lids are properly replaced after servicing.
3. Do not strike sides of canisters to enable you to put in a little more ingredient. The normal “load” of ingredient should be more than enough to last until the next service. Proper loading keeps fresh products available and prevents ingredient “packing” and “bridging” in the canisters.

INGREDIENT MOTORS:

All ingredient motors are 115 volts AC, 50/60 cycle. The total run time is controlled by the controller. Timing can be changed to vary the amount of ingredient throw. As the motor turns, the drive link on the canister is engaged by the motor drive pin, turning the auger to dispense the product. As the auger is turning the agitator and strap is engaged, which keeps the ingredient near the dispensing area loose to prevent “bridging” and “packing” to insure a constant volume of product.

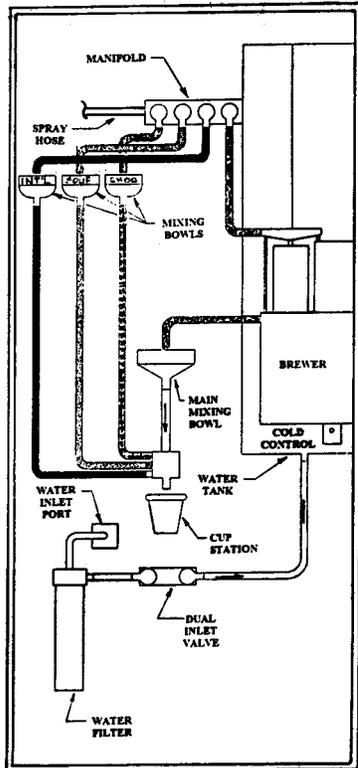
INGREDIENT MOTORS		
PART NUMBER	R.P.M.	APPLICATION
8366620-1	80	TEA, SOUP, CREME, SUGAR, FREEZE DRY COFFEE & DECAF
8330173-3	120	CHOCOLATE, FRESH BREW COFFEE & FRESH BREW DECAF

MIXING BOWLS:

All selections have individual mixing bowls where the ingredients are mixed with water. Coffee, decaffeinated coffee and tea are then routed through the center or main mixing bowl to receive creme and/or sugar if selected. These products are then routed through a single hose and spout to the cup or cup station. All other products are routed directly to

the cup station from their individual mixing bowls. See **FIGURE 13** for a Flow Diagram showing the water and ingredient routing of the various selections.

It is important that all hoses are properly routed or dressed in a manner to be free of restrictions and not “kinked” in any way to restrict the flow of water. Water should enter the mixing bowl at or before any ingredients are deposited. All start times are controlled by the controller and cannot be altered.



FLOW DIAGRAM - FRESH BREW

FIGURE 13

The chocolate ingredients and water are mixed thoroughly in an aeration chamber directly under the mixing bowl. This bowl and aeration chamber may be removed for inspection and/or cleaning by lifting the water inlet spout out of its slot, pressing the bowl toward the motor and rotating counterclockwise. The paddle is not permanently attached to the motor shaft. Pull to remove. There is a slinger disc on the motor shaft between the paddle and the seal gasket and another slinger disc for added protection on the motor shaft between the motor bracket and assembly bracket. These discs must rotate with the motor shaft and should be replaced if loose or

damaged. The seal gasket may be reversed if it is compressed at the seal surface and causing leaks. Periodic replacement of the slinger disc and seal gasket may be necessary to prevent leaks. (See **Figure 14**).

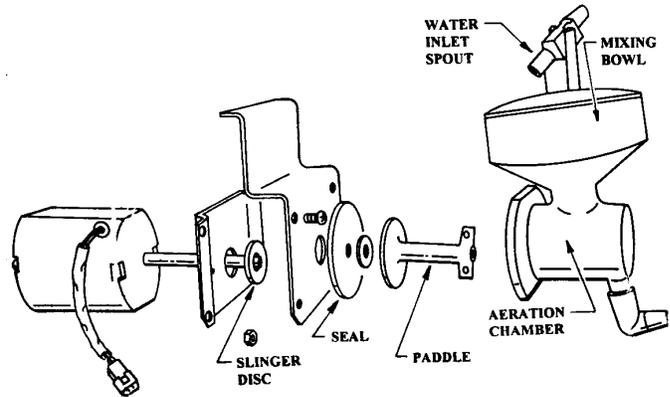


FIGURE 14

Each time the vendor is serviced, the flush cycles should be used to clean all bowls, product tubes and spouts.

The coffee bowl (freeze dry) and the main mixing bowl may be removed for cleaning by pressing “UP” on the bowl and rotating clockwise.

The soup bowl and tea bowl are removed by dismantling the inlet water spout and loosening the two thumb nuts.

To protect the product taste and for sanitary reasons, the product tubes from the bowls to the spouts above the cup station should be cleaned thoroughly, no less often than once a month, or replaced.

INGREDIENT HEATERS:

There are two (2) 20 Watt strip heater elements directly in front of the canister outlets for chocolate, soup, tea, sugar & creme canister spouts to help keep these outlets as dry as possible.

Each of these heaters create enough heat in the metal to which they are attached that a **“HOT”** label is provided as a safety warning. Always disconnect electrically and allow these parts to cool before handling during servicing the vendor with the power **“ON”**.

When the outer door is opened, the power to these heaters is removed. If the area in any of the heater locations is not hot, check for the reason and replace the heaters if they have failed.

CUP MECHANISM:

The cup turret consists of six (6) columns and/or tubes assembled in a frame with a base that has **“teeth”** or **“lobes”** on its outside perimeter. The turret simply rests on a cone-shaped turret shaft and may be lifted off without disconnecting any parts. A spring-loaded **“detent”** pin in the cup rest platform serves to maintain the turret in position, once it has been moved to align a column over the dispensing ring.

The cup mechanism (base and turret) tilts out for easing loading. By disconnecting the latch type support arm (rotate the thumb screw until the spring pin disengages the latch arm), the base may be rotated, on its hinge, approximately 180° for easy access to all parts. See **FIGURE 8**.

The index lever is mounted to the ring gear and spring loaded to move toward the turret when cups are not present in the dispensing position. The lever will move each time the ring gear rotates to dispense a cup. With cups in the dispensing position, the index lever is held away from the turret. When cups in the dispensing position drop below the index lever, the lever is allowed to engage a tooth on the turret base and will advance the turret the distance of one tooth length during each vend cycle. This will occur four (4) times (4 drinks

vended) at which time another column of cups will be deposited into the cup dispensing position.

There will normally be six or seven cups in the dispensing position when the index lever is released. If an empty column arrives at the dispensing position, the vendor will go into a **“Call for Service”** condition, since the cup sensing switch will be released before a second column can be moved into position.

CUP MECHANISM - MOTOR:

The Cup Mechanism Motor is started by the controller. When the spring loaded ring gear is released to the low side of the main drive cam, it rotates the seven dispensing cams to release a cup to the cup station. As the main drive cam is rotated to standby, the dispensing ring gear is reset and the seven cams rotate to separate another cup from the bottom of the column.

Once the controller starts the Cup Mechanism Motor, the Cup Drop Motor Switch will rotate the Cup Mechanism to the **“stand-by”** position. The switch should be adjusted to stop the motor with the dispensing ring gear lobe seated in the notch at the highest point of the cam gear. (See **FIGURE 15**)

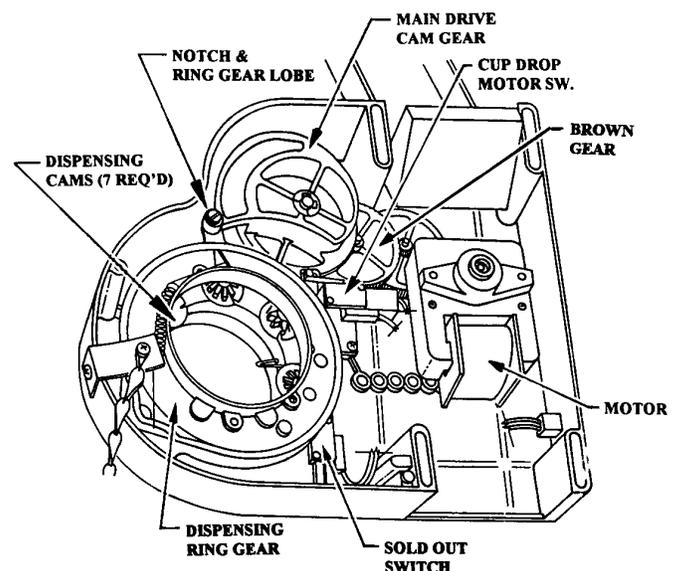


FIGURE 15

CHANGING CUP SIZE:

If it becomes necessary to change the size of cups used in the cup mechanism, it will be necessary to match the seven dispensing cams to the size of the cup to be used. The cams have been color coded for easy identification.

CUP SIZE	COLOR OF CAM	CAM PART NO.
7 OR 8 1/4 OZ (SQUAT)	RED	D1-3006
7 OZ. (TALL)	PINK	D1-3005
9 OZ., 10 OZ., 12 OZ	GREEN	D1-3007

1. Remove the Index Lever by removing its retaining shoulder screw and spring. Lift the lever off the ring gear casting.
2. Remove all cups from the turret and remove the turret.
 - A. If the turret is empty it may be lifted off the base. Disconnect the thumb screw from the latch arm and rotate the base on its hinge to the position shown in **FIGURE 8**.
 - B. If the turret contains cups, disconnect the latch arm from the base and allow the complete assembly to rotate toward you, while retaining the lid of the turret to remove the cups and turret together.
3. With the base assembly in this position, remove three (3) Phillips Screws and lift the dispensing ring assembly from the base.
4. Remove the ring gear spring and the "E" ring retainers and lift the cam cover off.
5. The original cams may now be removed and new cams installed.

Place the ring gear on the mounting ring with the timing marks aligned as shown. Install Cam No. 1 on the pin between the timing marks and Mounting Post No. 1. The notches must face the post shown.

Be sure the timing marks are not shifted, and place Cams No. 2 and No. 3 in position as shown (notches facing post). Install the other four cams with their notches aligned as shown. Place two cups in the assembly and operate the ring gear manually to "check" cam timing.

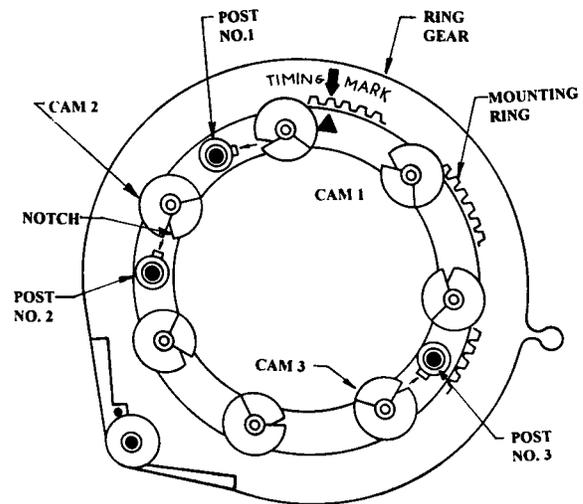


FIGURE 16

Replace cover and retainers. Replace the ring gear spring. Re-install the dispensing ring. Return the base assembly to its loading position and connect the latch arm. Install the indexing lever and cup turret. The Index Lever must be moved to allow the turret to seat properly.

Load approximately six or seven of the new cups into the column over the dispensing ring and also one tube of cups into the first column counterclockwise from the dispensing ring.

Operate the vendor to allow the cup dropper to "index" and dispense several cups before reloading the turret and putting the vendor into operation.

CONTROLLER FUNCTIONS & PROGRAMMING:

The controller must be placed in the "Service Mode" to alter any programming, establish new programs, retrieve diagnostic information and other features.

When the controller is placed in the "Service Mode", Service Diagnostic information will be displayed if any failure or malfunction has occurred since the last time the controller was placed in the Service Mode. Any information displayed should be recorded immediately.

When in the "Service Mode" the keys on the key pad perform different functions depending on the specific mode, or requirements of the programs to

be accomplished. The “KEY” functions are defined in detail under each mode description throughout this manual. Furnished in the service packet is a key pad “over lay” that can be placed over the key pad to illustrate the programming functions.

The chart below can be used as a “Quick Reference” for entering or changing programs. Complete details are outlined under each mode in this manual.

CONTROLLER FUNCTIONS WHILE IN SERVICE MODE		
MODE KEY	CONTROLLER FUNCTION	KEY PAD INPUT
1	COIN DISPENSE	1
	NICKEL DISPENSE	1 + A
	DIME DISPENSE	1 + B
	QUARTER DISPENSE	1 + C
	DOLLAR COIN DISPENSE	1 + D
2	SECURITY & MACHINE CONFIG	2
	SECURITY ID	2 + A + (ID)
	CONFIG - FREEZE DRY	2 + B + 0
	CONFIG - FRESH BREW	2 + B + 1
3	VEND OPTIONS	3
	FORCE VEND “ON”	3 + A
	FORCE VEND “OFF”	3 + A
	MULTI VEND “ON”	3 + B
	MULTI VEND “OFF”	3 + B
	OCCURRENCE/LOTTO “ON”	3 + C
	OCCURRENCE/LOTTO “OFF”	3 + C
	NO CUP DISCOUNT	3 + D + (AMT) + “#”
	LOTTO OCCURRENCE	3 + E + (No.) + “#”
4	MESSAGE EDIT	4
	ENGLISH ONLY	4 + E
	BILINGUAL	4 + B
	FOREIGN	4 + F
5	SET PRICE	5 + SEL + (PRICE) + “#”
	COPY PRICE	5 + SEL + (PRICE) + * + (SEL) + (SEL) + “#”
6	CASH ACCOUNTABILITY	6
	TOTAL VENDS	6 + A
	TOTAL CASH	6 + B
	VENDS/SELECTION	6 + C, REPEAT C
	CASH/SELECTION	6 + D, REPEAT D
	OCCURRENCE/LOTTO VALUE	6 + E
	BILLS	6 + F
	TOTAL “NO CUP” CASH	6 + G
7	SET DISPENSE TIME	7 + (SEL) + TIME + “#”
8	TEST VEND SELECTIONS	8
8	TEST VEND PRODUCT	8 + A + (SEL)
	TEST VEND WATER ONLY	8 + B + (SEL)
	SANITIZE (FRESH BREW)	8 + C

SERVICE MODE:

To place the controller in the “Service Mode” depress the service mode button located on the door to the right of the coin mechanism.

Record any diagnostics that appear in the display. If no diagnostics are displayed the readout will display “STATUS OK”, then “<” which indicates the controller is ready to receive service commands.

NOTE:

The controller will automatically exit the “Service Mode” and enter the “Sales Mode” in 25 seconds if no input or depression of the key pad is made during that time. Any depression or input will allow another 25 seconds before the controller times out.

COIN DISPENSE MODE:

In the “Coin Dispense Mode”, coins that are stored in the coin mechanism payout tubes can be removed. To access the “Coin Dispense Mode” the controller must be placed in the “Service Mode” by depressing the service mode button.

Press Key “1” when at the “<” menu to place the controller in the dispense coin mode. The display will show “Dispense \$”. Coins may be removed by pressing the following keys:

“A”	Will dispense a coin of the lowest denomination (usually a Nickel in a US coin mech)
“B”	Will dispense a coin of the next higher denomination (usually a Dime in a US coin mech)
“C”	Will dispense a coin of the next higher denomination (usually a Quarter in a US coin mech)
“D”	Will dispense the next higher denomination if the coin mech has the capability of dispensing four (4) coins

The controller will remain in the dispense coin mode until another key entry is made. Holding a dispense key down will result in a coin payout rate of approximately 2 coins per second. Enter “#” to exit coin dispense mode and return to the “root” menu.

SET SECURITY CODE:

If the Alarm option is to be used it is necessary to program a security code into the controller to deactivate the alarm circuit when servicing the machine. The security code must be entered prior to opening the outer door.

To set security code the controller must be placed in the service mode by depressing the service mode button on the control board.

Press key “2” when at the “<” menu to place the controller in the set security code mode. The display will flash “A” or “B”. Enter “A”. The display will show “ID=”. A four (4) digit numeric code is to be entered. As the numbers are entered they are displayed. After the fourth character is entered all four characters will be flashed for five seconds. After that period the controller will revert to the “root” menu.

ALARM CONTROL:

The controller is equipped with a circuitry to energize a relay or alarm device to sound an alarm.

Under normal operation conditions, with the power to the controller, the output to the alarm is turned off. If the door is opened without the correct four (4) digit numeric code being entered prior to opening the outer door, the output to the alarm will be turned on. If an alarm is connected, the alarm will sound. If the correct code is entered when the door is opened, the output of the alarm will be held in the “OFF” state for 30 minutes. The alarm will not sound. The alarm override number can be programmed in the service mode. See “Set Security Code”.

ALARM OUTPUT SPECIFICATIONS:

Current sinking NPN transistor
Temperature Range: 0° to 50° C
Maximum Current: 100 MA
Maximum Voltage: 30 VDC

MACHINE CONFIGURATION MODE:

Press key “2” when at the “<” menu in the Service Mode. The display will flash “A” or “B”. Press key “B” to place the controller in the machine configuration mode. The display will show “Fresh Brew” or “Freeze Dry” indicating in which mode the controller is currently set. To change the mode, enter the appropriate character.

Configuration Modes are:

0 = Freeze Dry
1 = Fresh Brew

VEND OPTIONS MODE:

Vend options are available that can be programmed into the controller. The options allow the machine to be programmed to function as a changer without making a purchase, make multiple selections with single deposits, make a “Free Vend” for the occurrence number assigned or discount the price of any beverage selected when the customer uses their personal cup or mug.

The options that are available are:

A = “Force Vend”
B = “Multi Vend”
C = “Lotto”
D = “Set Discount”
E = “Lotto Odds”

Each time the individual modes are entered, the controller will first display the current condition, then alternate from the “ON” or “OFF” condition each time the specific alpha character is entered, or display the amount set for the “No Cup Discount” or to the number set for “Free Vend Occurrence”.

FORCE VEND OPTION:

Press key “3” when at the “<” menu to place the controller in the “Vend Options Mode”. The display will read “V Options”. Press key “A” to enter the force vend option. The display will show the present condition of the machine (“FV On” or “FV Off”). To change the condition, press key “A” again. The display will show the new condition. The condition will alternate from “ON” to “OFF” or from “OFF” to “ON” each time “A” is entered. Press the “#” key when the condition desired is displayed.

Waiting 5 seconds without pressing the “#” key, the controller will abort the “Force Vend” mode and no program changes will be made.

When the “Force Vend ON Mode” is selected, the controller will force the buying customer to make a purchase when a dollar bill is inserted, overriding the “Coin Return” command. Coin return of credit accumulated with coins only is not affected.

When the “Force Vend OFF Mode” is selected, the controller will allow the buying customer to receive change from a dollar bill insertion when the coin return button is pressed. A purchase is not necessary.

When a validator that has an “Escrow” feature is used and the controller is placed in the “Force Vend Off” mode, the bill will be returned.

MULTI VEND OPTION:

Press key “3” when at the “<<” menu to place the controller in the “Vend Options Mode”. The display will read “V Options”. Press key “B” to enter “Multi Vend” option. The display will show the present condition of the machine (“MV On” or “MV Off”). To change the condition, press key “B” again. The display will show the new condition. The condition will alternate from “ON” to “OFF” or from “OFF” to “ON” each time “B” is entered. Press the “#” key when the condition desired is displayed. Waiting 5 seconds without pressing the “#” key, the controller will abort the “Multi Vend” mode and no program changes will be made.

When in the “Multi Vend On Mode”, if the vend price of a selection is smaller than the established credit and that selection is vended, the change will be retained for 20 seconds before a payout is made. The amount of credit and “Make Selection” will be alternately displayed in the digital readout. The buying customer can use the remaining credit to purchase other beverages, or push “Coin Return” to receive the balance. Multiple vends can be made as long as adequate credit is available. When in this mode, to receive change on an over-deposit, the “Coin Return” button must be pushed, or wait approximately 20 seconds for change to be returned.

When in the “Multi Vend Off Mode”, the controller is set in a single selection vend mode, or normal operation. Change will be returned immediately if the established credit exceeds the vend price each time a vend is completed.

LOTTO - OCCURRENCE PROGRAMMING:

Press key “3” when at the “<<” menu to place the controller in the “Vend Options Mode”. The display will read “V Options”. Press key “C” to enter “Lotto” programming option. The display will show the present condition of the machine (“Lotto On” or “Lotto Off”). To change the condition, press key “C” again. The display will show the new condition. The condition will alternate from “ON” to “OFF” or from “OFF” to “ON” each time “C” is entered. Press the “#” key when the condition desired is displayed. Waiting 5 seconds without pressing the “#” key, the controller will abort the “Lotto” mode and no program changes will be made.

When the “LOTTO ON” mode is selected, upon reaching the pre set number of vends, the controller will return the money deposited for that vend. The display will flash “You Win” five (5) times, the “beeper” will sound for 3 seconds.

To set the occurrence, press key “3” when at the “<<” menu, press key “E” to place the controller in the occurrence odds mode. The display will show “Odds = XXXX”. (XXXX denotes the last value set). The allowed occurrence range is 0000 to 9999. A new occurrence rate is entered and then stored by pressing the “#” key. The controller will revert to the “root” menu.

NOTE:

The “Lotto On” mode must be set for the Free Vend to occur. If the controller is set in the “Lotto Off”, the controller will not free vend regardless of the “Odds” value.

NO CUP DISCOUNT OPTION:

This function gives the owner/operator the option to discount the vend price of the beverage when the buying customer uses his own personal cup or mug, there-by not requiring dispensing a cup. For the buying customer to receive the discount and to vend the beverage without dispensing the cup the "tree" selection button must be pressed prior to inserting credit.

Press key "3" when at the "<" menu to place the controller in the "Vend Options Mode". The display will read "V Options". Press key "D" to enter "No Cup Discount" programming option. The display will scroll "Set Discount" followed by the amount of discount currently programmed in the controller. The amount can be changed in .05¢ increments from 00.00 to 99.95. The vend price of the selected item will be reduced by the amount programmed. When the discount amount is changed, press the "#" key to store the new amount in memory.

MESSAGE EDIT/PROGRAMMING:

The controller provides the owner/operator the capability to customize the "point of sales message", display service phone number and program messages in Foreign or multiple languages. The sales message can be changed on location by accessing the message edit mode. Messages can include up to 130 characters including spaces. While in the programming mode the key pad will function similar to a type writer keyboard. (See **Figure 17**) A key pad overlay is furnished in the service packet that will identify the key functions while in this mode. By placing the overlay over the selection panel, the owner/operator can "type" the new message into the controller's memory.

All machines shipped from the factory will have the following point of sales message:

TREAT YOURSELF TO A TASTY HOT
BEVERAGE NOW

CAUTION:

When in the editing mode, if any of the characters in the messages are overwritten (even to correct a spelling error) the controller assumes that a new message is being written. The user must place the cursor past the end of the new message before exiting the message, since all the message string beyond and including the cursor will be erased. If no characters have been overwritten, the message will not be changed regardless of the cursor position in the message.

KEY PAD FUNCTIONS WHILE IN EDIT MODE

A	G	N
K	Y	4
B	H	O
Q	Z	5
C	I	P
U	Ø	6
D	J	R
V	1	7
E	L	S
W	2	8
F	M	T
X	3	9
SPACE	NEXT MENU	BACK SPACE
*	ENTER	\$

FIGURE 17

NOTE:

The upper characters in each block are accessed directly by depressing the desired key, while the bottom characters in each block can only be accessed by depressing the "NEXT MENU" key each time those characters are needed.

MESSAGE EDITING:

Press key “4” when at the “<” menu to place the controller in the “Edit Message Mode”. The display will scroll “Edit Messages”, then flash “E”, “F”, or “B”.

E = English

B = Bilingual (English & Foreign)

F = Foreign only

If “E” is selected, only the “point of sales” and the “Call for Service” messages may be modified. If “B” or “F” is selected both the Sales Messages and Service Messages can be edited. To move forward in any message without typing, hold down on the “NEXT MENU” key for 2 seconds. After 2 seconds, it will advance 1 character every 0.5 seconds. To move backward in the message the “BACK SPACE” key is used.

Press the “NEXT MENU” key twice (ENTER) to save the message as edited. This will advance you to the next message.

The following is a list of messages that are programmed into the controller when shipped from the factory.

WARNING:

It is important to remember that the controller’s micro processor has been programmed to display these messages at specific times during the normal operation of this vendor. This cannot be changed, so any messages altered will be displayed as changed when needed during the operation of the machine.

The following messages will be displayed at various intervals or time while the vendor is in the normal sales or operating mode:

00	POINT OF SALES MESSAGE
01	CALL FOR SERVICE (PHONE NUMBER)
02	MAKE SELECTION
03	PREPARING BEVERAGE
04	REMOVE BEVERAGE
05	THANK YOU
06	USE CORRECT CHANGE
07	USE COINS ONLY
08	SELECT OTHER ITEM
09	YOU WIN

After editing and/or entering message 09, “You Win” mode., the readout will alternately scroll “Service? “A=Yes” & “B=No”. Enter “A” to edit the messages displayed in the service mode. Enter “B” to end the edit message program and return to the root menu.

To exit the message editing mode without changing any text or advancing through the editing program, press the service mode button to return to the Sales Mode. This will leave any un-edited messages intact as stored in the controller’s memory.

The following messages will be displayed at various intervals or time while the vendor is in the Service Mode:

10	CUP DROPPER EMPTY
11	WASTE TANK FULL
12	WATER LEVEL LOW
13	BATTERY BACKED MEMORY FAILURE
14	STATUS OK
15	TOTAL CASH
16	TOTAL VENDS
17	CASH BY SELECTION
18	VENDS BY SELECTION
19	TOTAL LOTTO CASH
20	TOTAL BILLS COLLECTED
21	TOTAL NO-CUP CASH

SET PRICE MODE:

Press Service Mode Switch to place the controller in the Service Mode.

When “<” appears in the display, press key “5” to place the controller in the “set price mode”. The display will scroll “Make Selection” then display “??=Selection”. The “??” flashes. After a selection has been entered, the current vend price for that selection will be displayed. A new price can be set by direct entry. (Note: The character to the left flashes until an entry is made. Then the next character to the right flashes in succession until the price is set and stored in memory). To store the price, press the “#” key. The controller will scroll the “Make Selection” message in expectation of another price to be set. To return to the “root” menu, the “#” key must be entered while the “Make Selection” message is being scrolled.

AUTOMATIC COPY PRICE FEATURE:

The controller copies prices stored in certain selections to facilitate price setting as follows:

A0 Price will be copied and stored in the following selections

A1, A2, A3, B0, C0, C1, D0, D1, D2, D3,
E0, F0, F1, F2, F3, G0, G1, G2, G3, H0

A4 Price will be copied and stored in the following selections:

A5, A6, A7, B1, C2, C3, D4, D5, D6, D7,
E1, F4, F5, F6, F7, G4, G5, G6, G7, H1

After the primary prices (A0, A4, etc.) has been set, any other price in the group can be reset to any desired price by following the instructions outlined in the preceding paragraph.

MANUAL COPY PRICE MODE:

To copy a price from one selection to another, follow the above mentioned price setting procedure, but instead of storing the price, via the “#” key, press the “*” key which stores the price for that selection and places the controller in the “copy price” mode. The readout will display “**Copy Price**”, then scroll “**Make Selection**”, then display “**??=Selection**”. Selections may be entered one after the other. To store all of the copied selections and return to the “root” menu, press the “#” key.

ACCOUNTABILITY INFORMATION:

Accountability information will be stored and will be accessible when the controller is in the service mode.

The controller will keep track of the total vends and sales for all selections in the coffee machine.

The controller will keep track of the total cash accumulated as well as the total lotto paid out and no cup discounts for the vending machine.

Accountability information is never cleared from memory. This prevents accounting information from being lost if the accounting printout is not recorded.

ACCESS ACCOUNTABILITY:

Press the service mode switch to place the controller in the service mode. When “>” appears, press key “6” to place the controller in the display accountability data mode. The following menu will be scrolled. **A = total vends, B = total cash, C = vends by selection, D = cash by selection, E = total lotto cash, F = total bills collected, G = total no-cup cash.**

TOTAL VENDS:

Press key “A” - The display will scroll “Total Vends” followed by the number of vends recorded on the machine to date.

NOTE: When the total vends reach 99999 the number will reset to 0 when another vend is made.

TOTAL CASH:

Press key “B” - The display will scroll “Total Cash” followed by the amount of cash recorded on the machine to date.

NOTE: When the total vends reach \$99,999.95 the number will reset to \$00.00 when another vend is made.

VENDS BY SELECTION:

Press key “C” - The display will scroll “Vends by Selection” followed by “A0 XXXXX”, the number of vends made on Selection A0. Press key “C” again to advance to “A1”. Each time key “C” is pressed, the display advances through all selections available.

Repetitively pressing “C” will increment through all valid selections. The display will show the selection in the left two digits and the vend total in the five right digits. (I.e., “A0 00631”)

CASH BY SELECTION:

Press key “D” - The display will scroll “Cash By Selection” followed by “AO XXXXX”, the cash accumulated by vends made on selection “AO”. Press key “D” again to advance to “A1”, cash

accumulated. Each time key “D” is pressed, the display will advance one selection and display all selections available.

Repetitively pressing “D” will increment through all valid selections. The display will show the selection in the left two digits and the cash total in the seven right digits. (I.E. “AO 0000995).

TOTAL LOTTO CASH:

Press key “E”. The display will scroll “Total Lotto Cash” followed by the amount of cash returned as a result of the lotto occurrence programmed into the controller.

TOTAL BILLS COLLECTED:

Press key “F”. The display will scroll “Total Bills Collected” followed by the number of bills collected in the bill validator.

TOTAL NO-CUP CASH:

Press key “G”. The display will scroll “Total No-Cup Cash” followed by the value of cash returned as a result of “No-Cup” discount refunds made.

SET DISPENSE TIME:

Press the Service Mode button to place the controller in the Service Mode. When “<“ appears, press key “7” to place the controller in the “set dispense time” mode. The display will scroll “**Make Selection**”.

After a selection has been entered, available options will be displayed as you advance through the timing program. The current setting may be accepted by pressing the “#” key. The controller will increment through the program menu by repetitively pressing “#”. The controller will “beep” indicating the displayed time is stored. (If the # key is not pressed, the time will not be changed). Available options will be displayed in the following format.

“Ingredient” will be displayed followed by the current dispense time in seconds and tenths of a second. A new dispense time can be entered by pressing the number digits on the key pad. The character to the left flashes until an entry is made.

Then, the next character to the right flashes in succession until the time is set and stored in memory. To store the time, press the “#” key The controller will then scroll “Water” followed by the current water time in seconds and tenths of a second. A new dispense time can be entered by pressing the number digits on the key pad. To store the time, press the # key.

The controller will then scroll “Light” followed by the current “Light” (creme) time in seconds and tenths of a second. A new time can be entered by pressing the number digits on the key pad. To store the time, press the # key.

The controller will then scroll “Sweet” followed by the current “Sweet” time in seconds and tenths of a second. A new dispense time can be entered by pressing the number digits on the key pad. To store the time, press the # key.

NOTE:

Extra sweet and extra light timing is programmed by pressing key “*” at the “Make Selection” prompt. The time displayed is a percent that is added to the regular sweet and/or light time programmed for each specific ingredient in the menu.

To return to the root menu, enter “#” while the “Make Selection” message is being scrolled.

Dispense time setting can be interrupted at any time by pressing the “Service Mode Switch” to exit the service mode.

The timing chart on Page 23 indicates the factory recommended settings for the ingredients on various selections. It may be necessary to change certain settings to satisfy customer’s taste.

TIMING CHART:

SEL	FUNCTION	FREEZE DRY TIME IN SECONDS					FRESH BREW TIME IN SECONDS				
		7 oz	8.25 oz	9 oz	12 oz		7 oz	8.25 oz	9 oz	12 oz	
A0	COFFEE	00.4	00.5	00.5	00.7		02.0	02.4	02.6	03.4	
	WATER	04.8	05.7	06.2	08.2		04.8	05.7	06.2	08.2	
	LIGHT	00.5	00.6	00.6	00.9		00.5	00.6	00.6	00.9	
	SWEET	00.5	00.6	00.6	00.9		00.5	00.6	00.6	00.9	
	BREW						03.0	03.5	03.9	05.1	
	PUMP						03.0	03.5	03.9	05.1	
	BLENDER	07.5	08.8	09.6	12.9		09.0	10.6	11.6	15.4	
A4	COFFEE	00.2	00.2	00.3	00.3		01.8	02.1	02.3	03.1	
	WATER	04.8	05.7	06.2	08.2		04.8	05.7	06.2	08.2	
	LIGHT	00.5	00.6	00.6	00.9		00.5	00.6	00.6	00.9	
	SWEET	00.5	00.6	00.6	00.9		00.5	00.6	00.6	00.9	
	BREW						02.0	02.4	02.6	03.4	
	PUMP						02.0	02.4	02.6	03.4	
	BLENDER	07.5	08.8	09.6	12.9		09.0	10.6	11.6	15.4	
BO	CHOCOLATE	02.5	02.9	03.2	04.3		02.5	02.9	03.2	04.3	
	WATER	05.5	06.5	07.1	09.4		05.5	06.5	07.1	09.4	
B1	CHOCOLATE	02.0	02.4	02.6	03.4		02.0	02.4	02.6	03.4	
	WATER	05.5	06.5	07.1	09.4		05.5	06.5	07.1	09.4	
C0	COFFEE	00.3	00.4	00.4	00.5		02.0	02.4	02.6	03.4	
	WATER	03.0	03.5	03.9	05.1		03.0	03.5	03.9	05.1	
	LIGHT	00.3	00.4	00.4	00.5		00.3	00.4	00.4	00.5	
	SWEET	00.3	00.4	00.4	00.5		00.3	00.4	00.4	00.5	
	BREW						03.0	03.5	03.9	05.1	
	PUMP						00.0	00.0	00.0	00.0	
	CHOCOLATE	00.9	01.1	01.2	01.5		00.9	01.1	01.2	01.5	
	WATER 2	02.4	02.8	03.1	04.1		02.4	02.8	03.1	04.1	
	BLENDER	05.0	05.9	06.4	08.6		07.5	08.8	09.6	12.9	
C2	COFFEE	00.2	00.2	00.3	00.3		01.8	02.1	02.3	03.1	
	WATER	03.0	03.5	03.9	05.1		03.0	03.5	03.9	05.1	
	LIGHT	00.2	00.2	00.3	00.3		00.2	00.2	00.3	00.3	
	SWEET	00.2	00.2	00.3	00.3		00.2	00.2	00.3	00.3	
	BREW						02.0	02.4	02.6	03.4	
	PUMP						00.0	00.0	00.0	00.0	
	CHOCOLATE	00.5	00.6	00.6	00.9		00.5	00.6	00.6	00.9	
	WATER 2	03.0	03.5	03.9	05.1		03.0	03.5	03.9	05.1	
	BLENDER	05.0	05.9	06.4	08.6		07.5	08.8	09.6	12.9	
D0	COFFEE	00.6	00.7	00.8	01.0		02.2	02.6	02.8	03.8	
	WATER	03.0	03.5	03.9	05.1		03.0	03.5	03.9	05.1	
	LIGHT	00.7	00.8	00.9	01.2		00.7	00.8	00.9	01.2	
	SWEET	00.7	00.8	00.9	01.2		00.7	00.8	00.9	01.2	
	BREW						04.0	04.7	05.1	06.9	
	PUMP						00.0	00.0	00.0	00.0	
	BLENDER	05.0	05.9	06.4	08.6		07.7	09.1	09.9	13.2	

SEL	FUNCTION	FREEZE DRY TIME IN SECONDS					FRESH BREW TIME IN SECONDS				
		7 oz	8.25 oz	9 oz	12 oz		7 oz	8.25 oz	9 oz	12 oz	
D4	COFFEE	00.4	00.5	00.5	00.7		02.0	02.4	02.6	03.4	
	WATER	03.0	03.5	03.9	05.1		03.0	03.5	03.9	05.1	
	LIGHT	00.5	00.6	00.6	00.9		00.5	00.6	00.6	00.9	
	SWEET	00.5	00.6	00.6	00.9		00.5	00.6	00.6	00.9	
	BREW						03.0	03.5	03.9	05.1	
	PUMP						03.0	03.5	03.9	05.1	
	BLENDER	05.0	05.9	06.4	08.6		07.5	08.8	09.6	12.9	
F0	DECAF	00.4	00.5	00.5	00.7		02.0	02.4	02.6	03.4	
	WATER	04.8	05.7	06.2	08.2		04.8	05.7	06.2	08.2	
	LIGHT	00.7	00.8	00.9	01.2		00.7	00.8	00.9	01.2	
	SWEET	00.7	00.8	00.9	01.2		00.7	00.8	00.9	01.2	
	BREW						03.0	03.5	03.9	05.1	
	PUMP						03.0	03.5	03.9	05.1	
	BLENDER	07.5	08.8	09.6	12.9		09.0	10.6	11.6	15.4	
F4	DECAF	00.2	00.2	00.3	00.3		01.8	02.1	02.3	03.1	
	WATER	04.8	05.7	06.2	08.2		04.8	05.7	06.2	08.2	
	LIGHT	00.5	00.6	00.6	00.9		00.5	00.6	00.6	00.9	
	SWEET	00.5	00.6	00.6	00.9		00.5	00.6	00.6	00.9	
	BREW						02.0	02.4	02.6	03.4	
	PUMP						02.0	02.4	02.6	03.4	
	BLENDER	07.5	08.8	09.6	12.9		09.0	10.6	11.6	15.4	
G0	TEA	00.4	00.5	00.5	00.7		00.4	00.5	00.5	00.7	
	WATER	05.4	06.4	06.9	09.3		04.8	05.7	06.2	08.2	
	LIGHT	00.7	00.8	00.9	01.2		00.7	00.8	00.9	01.2	
	SWEET	00.7	00.8	00.9	01.2		00.7	00.8	00.9	01.2	
G4	TEA	00.3	00.4	00.4	00.5		00.3	00.4	00.4	00.5	
	WATER	05.4	06.4	06.9	09.3		05.4	06.4	06.9	09.3	
	LIGHT	00.5	00.6	00.6	00.9		00.5	00.6	00.6	00.9	
	SWEET	00.5	00.6	00.6	00.9		00.5	00.6	00.6	00.9	
H0	SOUP	01.5	01.8	01.9	02.6		01.5	01.8	01.9	02.6	
	WATER	05.4	06.4	06.9	09.3		04.8	05.7	06.2	08.2	
H1	SOUP	01.2	01.4	01.5	02.1		01.2	01.4	01.5	02.1	
	WATER	05.4	06.4	06.9	09.3		04.8	05.7	06.2	08.2	
*	SWEET, %	00.4	00.5	00.5	00.7		00.4	00.5	00.5	00.7	
#	LIGHT, %	00.4	00.5	00.5	00.7		00.4	00.5	00.5	00.7	

TEST VEND BY SELECTION:

Press the Service Mode Switch to place the controller in the Service Mode. When “<” is displayed, press key “8” to place the controller in the Test Vend Mode. The display will flash “A”, “B”, & “C”. The options are as follows:

A= Test Vend entire cycle: Cup Dropper plus product plus water

B= Rinse Cycle, Water Only

C= Sanitizer Cycle for Coffee Brewer

Press key “A”, the display will scroll “Make Selection”. Once the selection is entered, a vend will be made on that selection. A complete vend cycle will be performed and a beverage will be dispensed. If the vend fails, the “beeper” will sound three times. After a successful vend or a failed vend, the readout will scroll “Make Selection” in anticipation of another test vend.

Press key “B”, the display will scroll “Make Selection”. Enter selection. Only water will be dispensed for the time interval programmed for that selection.

The Accounting information recorded in the controller is not affected or altered during the test vend operations.

SANITIZER CYCLE:

On machines configured as “Fresh Brew” vendors the sanitizer circuit may be activated. To sanitize your coffee brewing system, open one (1) packet of sanitizing solution and empty the contents in the brewer water chamber on the brew unit prior to initiating the sanitizer cycle.

When at the “<” menu of the service mode, press “8” to advance to the “Test Vend Section”. Press key “C” to start the sanitizer cycle. The sanitizer circuit provides the following sequence of operation:

- A. Water valve opens. Time = setting for “A0”
- B. Brew start circuit energized, cycle extended for 30 seconds through brew delay circuit. Delay

circuit re-starts brew motor and exhausts sanitizer fluid.

- B. Water valve opens second time.
- D. Brew unit starts and runs normal cycle (15 seconds)
- E. C & D are repeated four (4) more times.
- F. Sanitizing cycle ends.
- G. Controller returns to the “root” menu.

NOTE:

The brew unit should be sanitized monthly for normal operation

BREW FLUSH TIMER (FRESH BREW MODE):

The controller contains a timer that will automatically cycle the coffee water valve and brew motor after any 14 hour period during which no coffee selection has been made. The timer will be reset to zero if any coffee selection requiring the brewer operation is made.

THE BREW CYCLE:

When a coffee selection is made, the brewer motor will start to run (from a signal from the controller) lifting the strainer plate upward toward the bottom of the brewer cylinder causing the cylinder to close. In the same movement, the yoke attached to the brewer piston is lifted. This causes the piston to move up into the cylinder and the valve in the piston is opened so that water and coffee can be filled.

Coffee and water is deposited into the brew cylinder and mixed on their way down into the cylinder.

The brewer motor continues to run moving the piston down into the cylinder. The valve located in the brewer piston will close. The brewing pressure is generated by the downward movement of the piston, pressing the coffee water through the grounds, through the strainer plate.

Air is generated by the movement of the piston and as pressed through the coffee grounds, dries the grounds making them easily removed.

The lifting fork and the strainer plate is moved downward out of the cylinder. The scraper slides forward and back across the face of the strainer

plate scraping the grounds into the waste container completing the brewer cycle.

BREWING (BLEND) TIME:

The blend time is the time during which coffee and water are in contact with each other in the brewer before the piston presses the coffee through the strainer. The infusion time, along with the ingredient/water volume determines the strength of the coffee.

Coffee and water are mixed together on their way down into the cylinder. The timing for the ingredients and water volumes has been factory preset for 7 ounce cup sizes. Timing will have to be changed if cups other than 7 ounces are used, or adjusted slightly to satisfy locations. Refer to “**Timing Chart**”, page #23 for recommended settings.

CLEANING INSTRUCTIONS:

Care should be taken when cleaning the interior of the vendor as high temperatures may be present on components and liquids.

CAUTION: Always disconnect the power source before cleaning the vendor.

CABINET EXTERIOR:

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

CABINET INTERIOR:

Wash with a mild detergent and water. Odors may be eliminated by including baking soda or ammonia in the cleaning solution.

Use hot water for cleaning and avoid using soapy detergents. Spots on stainless steel surfaces can be removed by using alcohol. When cleaning areas such as the mixing bowls, cup chute, etc., that come in contact with the cup or product, use only chemical sanitizers that are approved for use on food contact surfaces.

The following procedure should be used each time the vendor is serviced.

1. Either unplug the vendor or turn the power switch to the “**OFF**” position.
2. Fill the cup turret.
3. Remove the ingredient canisters as follows:
 - A. Coffee - Remove the coffee chute (fresh brew only). Push the latch release and pull canister forward. Lift clear of the keyhole slots.
 - B. Chocolate - Push the latch release and pull canister forward. Lift clear of the keyhole slots.
 - C. Set the canisters aside. Clean and refill them prior to replacing them in the vendor. See step 10.
4. Clean around the ingredient drive motors and the cup mechanism with a small brush or with filtered compressed air if available.
5. Wipe the canister shelves with a clean damp cloth.
6. Clean the interior of the vendor including the top and side walls.
7. Rinse the brew cylinder and wiper blade area of the brewer.
8. Using the rinse hose, rinse all mixing bowls and hoses thoroughly to remove any residue. Periodically remove mixing bowls and clean thoroughly using warm water and detergent. Rinse thoroughly before replacing bowls.
9. Clean the cup housing, cup chute, grille and other areas which the cup might contact. Clean the vend door and vend door trim panel.
10. Clean each canister in the following manner. (This procedure can be followed for full or partially filled canisters).
 - A. With the cover in place on the canister, place the covered end of the canister against your chest with the dispensing spout up.
 - B. Rotate the auger so that the ingredients are forced back into the canister.
 - C. Set the canister upside down on a table with the cover still in place.
 - D. Clean the spout with a small brush or piece of clean terry cloth.

- E. Holding the canister upside down with the cover in place, shake the canister to loosen and aerate the ingredients.
- F. Set the canister right side up on the table. Remove the cover and fill the canister. Do not jar the canister or slap the sides. This causes the ingredients to pack in the auger and may jam the mechanism.
- G. Turn the auger to fill the spout to insure the proper amount of ingredient on the first vend.
- H. Replace the canister on the canister shelf. Be sure the studs are in the keyhole slots and the drive motor is engaging the auger.

- 11. Empty and clean the waste buckets. Use Clorox or Zonite to retard bacterial growth. Do not rinse bucket after anti-bacterial solution is used, this will defeat the purpose. When replacing the waste buckets, make sure the floats are hanging free and all hoses are in their proper location.
- 12. Return the power to the vendor and operate the brew unit through at least one flush cycle.
- 13. Brewer System: Disassemble the brewer for cleaning as illustrated in **Figure 18**. Put the disassembled parts into hot water or flush them. Remove possible coffee remnants from the brewer. Wipe plates and screens. Assemble the brewer in the same way as it was disassembled, but in reverse order.

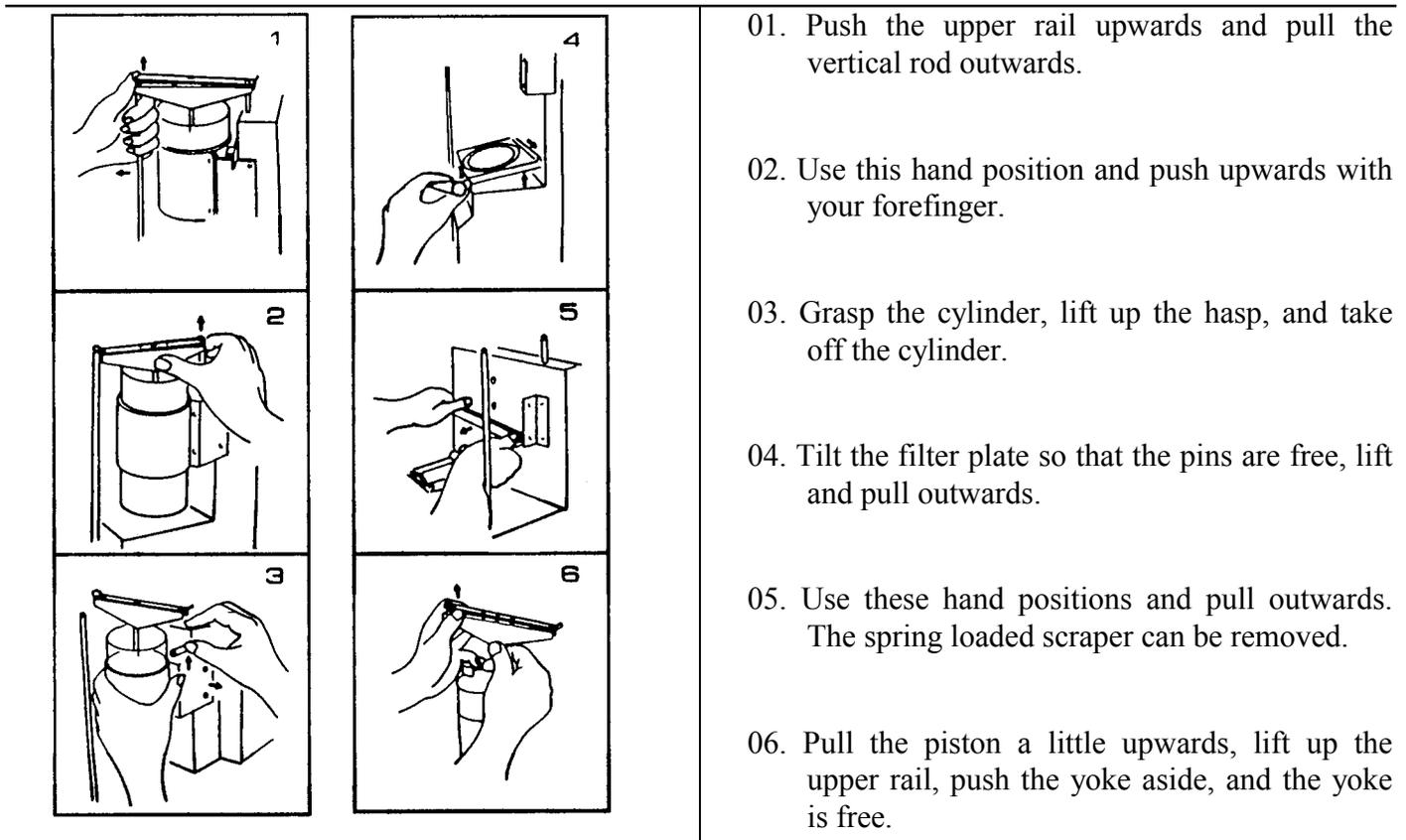
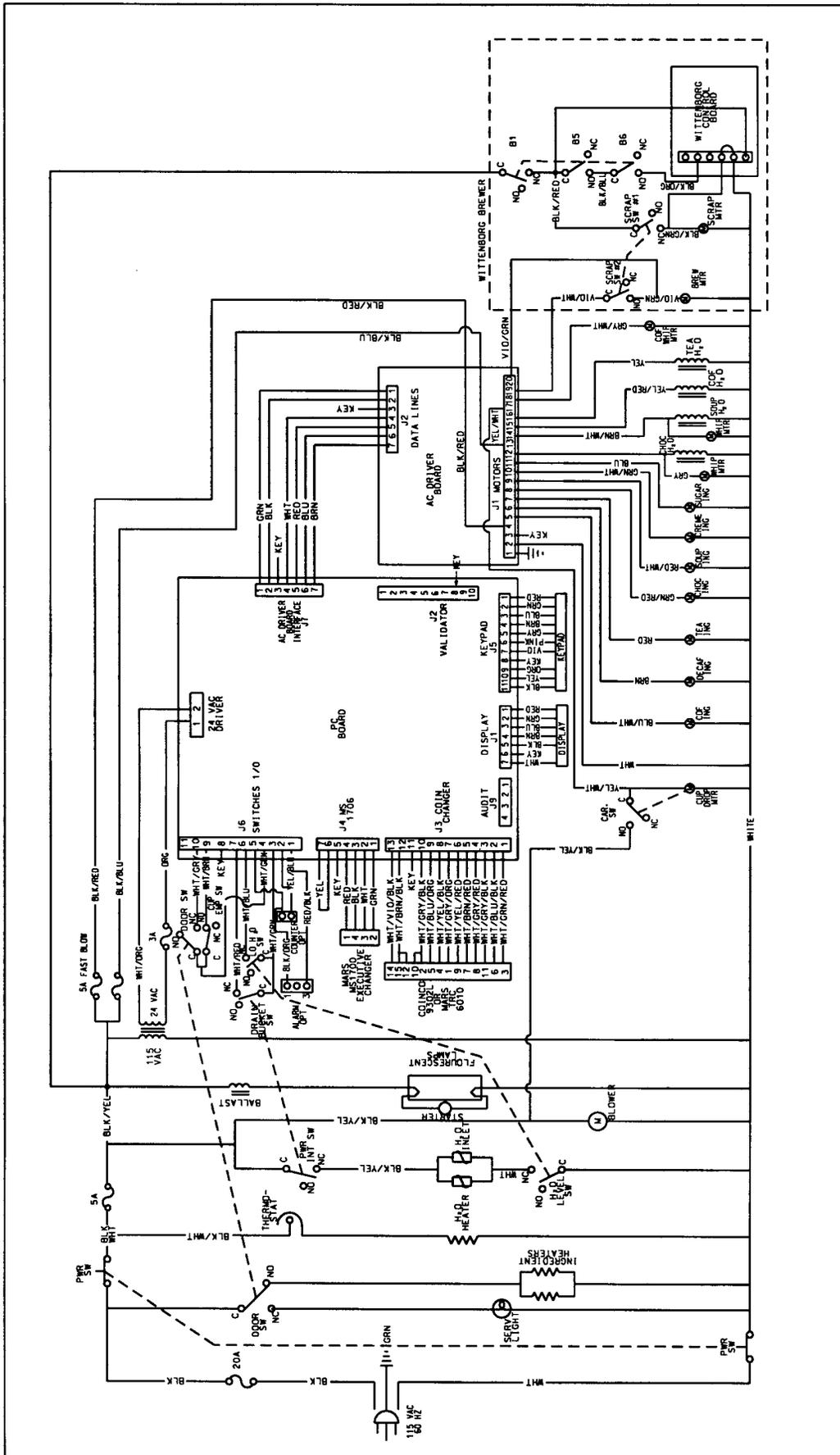


FIGURE 18



COFFEE WIRING DIAGRAM
P/N 4207206 REV A