



V-MAX

HIGH VISIBILITY VENDOR PARTS AND SERVICE MANUAL

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**ADVISORY MEMO
INSTALLATION INSTRUCTIONS
SET-UP GUIDES**



V-MAX

SAFETY SECTION



A COMMITMENT TO SAFETY

The Vendo Company is committed to safety in every aspect of our product design. Vendo is committed to alerting every user to the possible dangers involved in improper handling or maintenance of our equipment. The servicing of any electrical or mechanical device involves **potential hazards**, both to those servicing the equipment and to users of the equipment. These hazards can arise because of improper maintenance techniques. The purpose of this manual is to alert everyone servicing Vendo equipment of potentially hazardous areas, and to provide **basic safety guidelines** for proper maintenance.

This manual contains various **warnings** that should be carefully read to minimize the risk of personal injury to service personnel. This manual also contains service information to insure that proper methods are followed to avoid damaging the vendor or making it unsafe. It is also important to understand these **warnings** are not exhaustive. Vendo could not possibly know, evaluate, or advise of all of the conceivable ways in which service might be done. Nor can Vendo predict all of the possible hazardous results. The safety precautions outlined in this manual provide the basis for an effective safety program. Use these precautions, along with the service manual, when installing or servicing the vendor.

We strongly recommend a similar commitment to safety by every servicing organization. **Only properly-trained personnel should have access to the interior of the machine.** This will minimize the potential hazards that are inherent in electrical and mechanical devices. Vendo has no control over the machine once it leaves the premises. It is the owner or lessor's responsibility to maintain the vendor in a safe condition. See Section I of this manual for proper installation procedures and refer to the appropriate service manual for recommended maintenance procedures. If you have any questions, please contact the Technical Services Department of the Vendo office nearest you.

SAFETY RULES

- Read the Safety Manual before installation or service.
- Test for proper grounding before installing to reduce the risk of electrical shock and fire.
- Turn off power switch or disconnect power cord from wall outlet before servicing or clearing product jams. The vending mechanism can trap and pinch hands.
- Use only fully-trained service technicians for Power-On servicing.
- Remove any product prior to moving a vendor.
- Use adequate equipment when moving a vendor.
- Always wear eye protection, and protect your hands, face, and body when working near the refrigeration system.
- Use only authorized replacement parts.
- Be aware of inherent dangers in rocking or tipping a vending machine.
- Always turn power off before plugging or unplugging vendor to wall outlet.



SECTION I: VENDOR INSTALLATION

- A. Vendors are large, bulky machines of significant size and weight. Improper handling can result in injury. When moving a vendor, carefully plan the route to be taken and the people and equipment required to accomplish the task safely.
- B. Remove all tape, shipping sealant, and Styrofoam from the vendor. Loosen any shipping devices used to secure interior parts during shipping. Remove the wooden shipping base attached to the vendor base by the vendor leveling screws. Make certain the leveling screws are in place and functional.
- C. Position the vendor three to four inches (7.6 cm to 10.2 cm) from a well-constructed wall (of a building or otherwise) on a flat, smooth surface.

IMPORTANT: *The vendor requires three inches (7.6 cm) of air space from the wall to ensure proper air circulation to cool the refrigeration unit.*

- D. Adjust the leveling screws to compensate for any irregularities on the floor surface. Ideally, no adjustment will be necessary and the leveling legs will be flush with the bottom of the vendor. A spirit level is a useful aid to level the vendor. When the vendor is properly leveled the outer door, when opened, will remain stationary. Vendors must be level to ensure proper operation and to maintain stability characteristics. Do not add legs to the vendor.
- E. Check the manufacturer's nameplate on the left or right side of the vendor's outer door to verify the main power supply requirements of the vendor. Be sure the main power supply matches the requirements of the vendor. To ensure safe operation, plug the vendor only into a properly grounded outlet.
DO NOT USE EXTENSION CORDS.
- F. Recommended voltage specs = volts required + amps of circuit.

NOTE: Any power supply variance more than $\pm 10\%$ may cause the vendor to malfunction.

- * Power outlets must be properly **grounded**.
- * Power outlets must be properly **polarized**, where applicable.

Test the outlets using the following information.
(Refer to Figure 1 on Page S-4.)

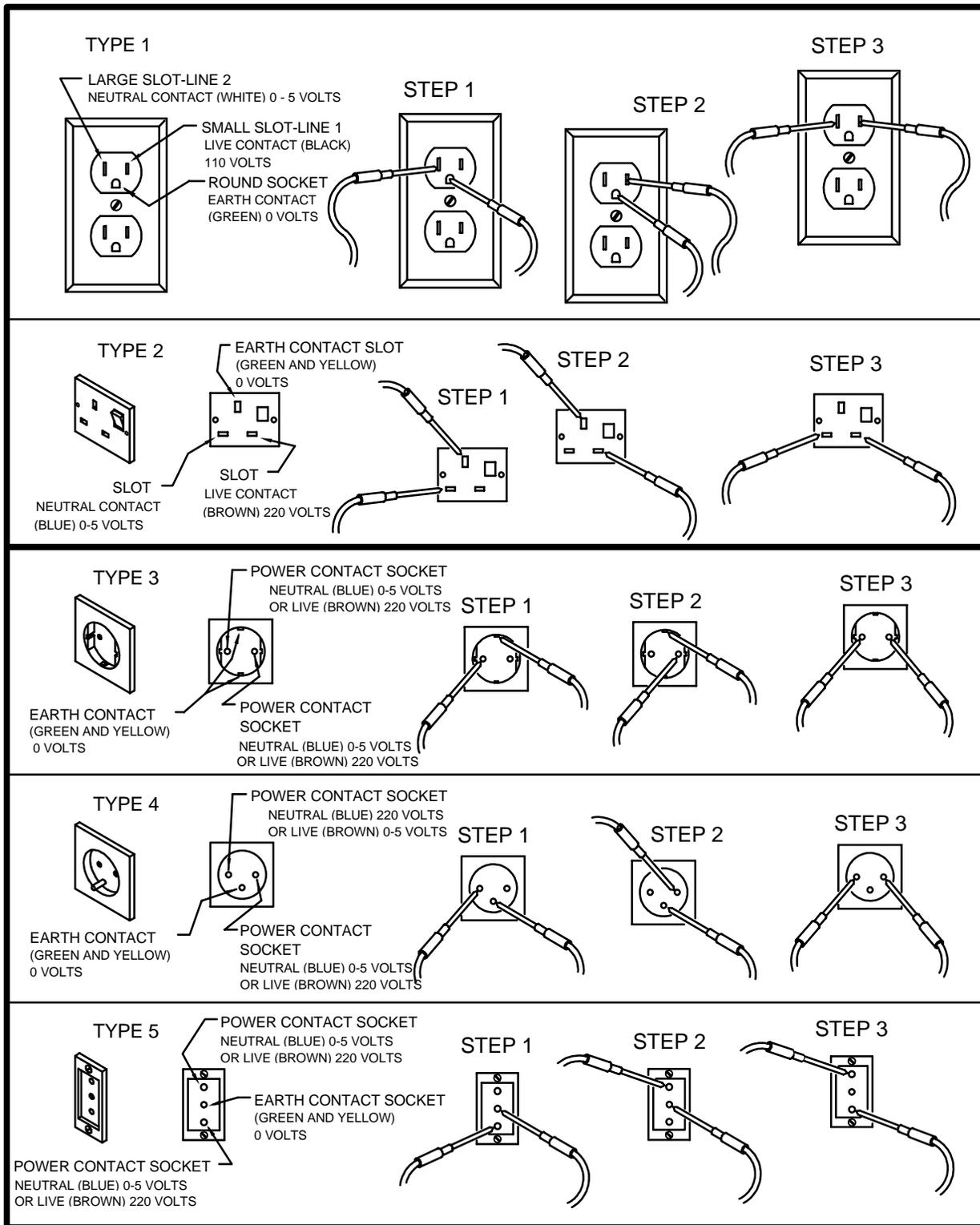


FIGURE 1 CHECKING FOR PROPER GROUNDING AND POLARIZATION



SECTION I: VENDOR INSTALLATION (CONTINUED)

For Type 1 and Type 2 outlets, test for Grounding and Polarization as follows:

1. With a test device (volt meter or test light), connect one probe to the receptacle's neutral contact and the other to the live contact. The test device should show a reaction.
2. Connect one probe to the receptacle's earth contact and the other to the live contact. The test device should show a reaction.

For Type 3 through Type 5 outlets, test for Grounding as follows:

1. With a test device (volt meter or test light), determine which of the receptacle's power contacts is the live contact.
 - A. Connect one probe to the receptacle's earth contact.
 - B. Connect the second probe to the left (or upper) power contact. If a reaction occurs, this is the live power contact. If a reaction does not occur, move the second probe to the right (or lower) contact. A reaction should occur, indicating that this is the live power contact.
2. Connect one probe to the receptacle's live power contact (as determined in step 1). Connect the second probe to the other power contact (neutral). The test device should show a reaction.

IF THE ABOVE CONDITIONS ARE NOT MET FOR THE GIVEN OUTLET TYPE, CONTACT A LICENSED ELECTRICIAN AND HAVE THE NECESSARY CORRECTIONS MADE.



SECTION I: VENDOR INSTALLATION (CONTINUED)

G. Door Support (Figure 2)

The door support is to ensure that the outer door closes squarely to the cabinet. Raising the door can also ensure proper alignment of the door latch.

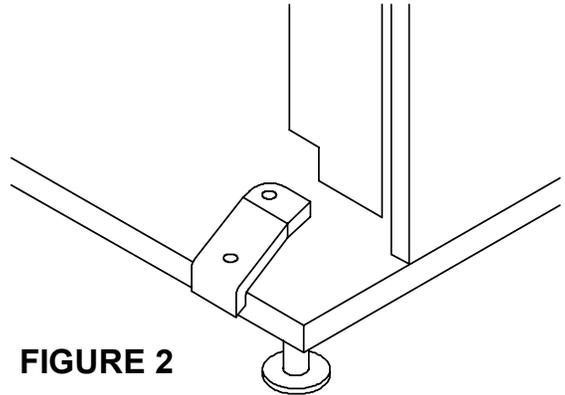


FIGURE 2

NOTE: *Refer to the appropriate parts and service manual for detailed instructions, operating principles, and recommended maintenance intervals and procedures.*



SECTION II: ELECTRICAL HAZARDS

GENERAL

Vendo vending machines are provided with the appropriate power supply setting for your area. Some models are equipped with step-down transformers, as required. This enables the vending machine to operate on different main voltages. Refer to Section I. E. for information to determine the main power requirements. Refer to the appropriate service manual for details of step-down transformer operations.

The power sources just mentioned are standard for both household and commercial lighting and appliances. However, careless or improper handling of electrical circuits can result in injury or death. Anyone installing, repairing, loading, opening, or otherwise servicing a vending machine should be alerted to this point. Apply all of the normal precautions observed in handling electrical circuits, such as:

- Refrigeration servicing to be performed by qualified personnel only.
- Unplug the vendor or move power switch to off position before servicing or clearing product jams.
- Replace electrical cords if there is any evidence of fraying or other damage.
- Keep all protective covers and ground wires in place.
- Plug equipment into outlets that are properly grounded and polarized (where applicable), and protected with fuses or circuit breakers.
- All electrical connections must be dry and free of moisture before applying power.

A. Grounding Systems

Vendo vending machines are provided with the appropriate service cord for the power supply in your area. The service cord will connect to the matching electrical outlet. Always ensure that the outlet to be used is properly grounded before plugging in the vendor. (See pages S-3 through S-5.)

WARNING:
**ALWAYS TEST TO VERIFY PROPER GROUNDING PRIOR TO
INSTALLATION TO REDUCE THE RISK OF ELECTRICAL
SHOCK AND FIRE**

The electrical grounding system also includes the bonding of all metal components within the vendor. This involves a system of bonding wires identified by green or green and yellow marking. The system uses serrated head screws, lock washers, and star washers to ensure the electrical connection between parts. Maintenance of vending equipment may involve disassembly. Include the above items when reassembling, even if the vending machine may appear to function normally without them. Omitting any of these items can compromise a link in the grounding system. See the appropriate service manual or kit instructions for components and assembly instructions.



SECTION II: ELECTRICAL HAZARDS (CONTINUED)

B. Servicing with “Power Off”

For maximum safety, unplug the service cord from the wall outlet before opening the vendor door. This will remove power from the equipment and avoid electrical and mechanical hazards. Service personnel should remain aware of possible hazards from hot components even though electrical power is off. See the appropriate sections of this manual for further information.

C. Servicing with “Power On”

Some service situations may require access with the power on. Power on servicing should be performed **only by fully-qualified service technicians**. Particular caution is required in servicing assemblies that combine electrical power and mechanical movement. Sudden movement (to escape mechanical action) can result in contact with live circuits and vice versa. It is therefore doubly important to maintain maximum clearances from both moving parts and live circuits when servicing.

WARNING:
**“POWER-ON” SERVICING SHOULD BE ACCOMPLISHED ONLY BY
FULLY-TRAINED PERSONNEL. SUCH SERVICE BY UNQUALIFIED
INDIVIDUALS CAN BE DANGEROUS.**

Power to lighting and refrigeration system is shut off automatically by the electronic controller when the outer door is opened. **Applies to V-Max only.**

NOTE: For power-on servicing of the vendor’s lighting system, turn lighting power on by accessing the Lights test function of the electronic controller (see programming on inner door). **Applies to V-Max only.**

For power-on servicing of the vendor’s refrigeration system, turn refrigeration power on by accessing the Compressor test function of the electronic controller (see programming on inner door). **Applies to V-Max only.**



SECTION III: MECHANICAL HAZARDS

A. Servicing of Moving Parts and Assemblies

When servicing assemblies involving moving parts, **use extreme caution!!** Keep fingers, hands, loose clothing, hair, tools, or any foreign material clear of entrapment.

As noted before under the electrical hazards section, Power On servicing should **only** be performed by qualified personnel. Refer to and heed the warnings noted in the electrical hazards section. These warnings refer to the potential hazards associated with electrical power and moving parts. Always maintain maximum clearances from electrical and moving parts.

Always install protective covers and guards when reassembling equipment.

WARNING:
THIS VENDING MACHINE INCLUDES MECHANICAL EQUIPMENT WHICH CAN BE HAZARDOUS IF IMPROPERLY HANDLED OR SERVICED. USE CAUTION AND CONSULT THE VENDO SAFETY MANUAL AND THE VENDO SERVICE MANUAL FOR ADDITIONAL SAFETY INFORMATION.





SECTION IV: REFRIGERATION HAZARDS

GENERAL

Refrigeration systems involve both electrical power and mechanical action. These systems may present any of the potential dangers shown in the sections on electrical and mechanical hazards contained in this manual. See Sections II and III for further information.

A. **Compressed Refrigerant**

Refrigeration systems involve the compression and evaporation of gases. The pressures contained represent a potential hazard if suddenly released in confined areas. Caution is required when performing maintenance tests or repairs. All testing of sealed refrigeration systems must be done by trained personnel who are familiar with the systems and pressures involved.

B. **Physical Protection**

The accidental release of refrigerant gases can result in physical injuries. Always wear protective glasses and protect your hands, face, and body when working near the refrigeration system.

WARNING:
**ALWAYS WEAR EYE PROTECTION AND PROTECT YOUR HANDS,
FACE, AND BODY WHEN WORKING NEAR THE REFRIGERATION
SYSTEM.**

SECTION V: TEMPERATURE HAZARDS

GENERAL

Maintenance personnel should be alerted to the potential hazards from hot metal surfaces. High temperatures may be present throughout the refrigeration system even though electrical power has been removed.



SECTION VI: SUBSTITUTIONS AND MODIFICATIONS

GENERAL

Unauthorized changes or the substitution of unauthorized parts can compromise the equipment designs. This can result in unsafe conditions for either the service personnel or the equipment users. Always refer to the appropriate parts and service manual for replacement parts and maintenance instructions. If questions arise, contact the Technical Services Department of the Vendo office in your area.

When servicing the vending machine, always reassemble all components to their original location and position. Maintain the correct routing for tubing, electrical wiring, etc. Replace all clamps, brackets, and guides to their original locations. Replace all tubing, sleeving, insulating material, and protective covers to their original condition.

WARNING:

VENDO EQUIPMENT HAS BEEN PROVIDED WITH APPROPRIATE PROTECTIVE DEVICES TO PROTECT AGAINST THE POSSIBILITY OF OVERHEATING AND FIRE AS A RESULT OF EQUIPMENT OR COMPONENT FAILURES. SUBSTITUTION, MODIFICATION, OR BYPASSING OF SUCH PROTECTIVE DEVICES CAN CREATE DANGEROUS CONDITIONS. PROTECTIVE CIRCUITS SHOULD NEVER BE BYPASSED, AND FAILED PROTECTIVE DEVICES MUST BE REPLACED ONLY WITH FACTORY-AUTHORIZED PARTS.

A. Service Cord Replacement

Vendo vending machines are furnished with unique power supply cords. If replacement becomes necessary, consult the appropriate parts and service manual and order the correct replacement cord for the model of vending machine in question. Do not use substitute replacement cords. Only authorized service personnel with appropriate training should replace the vending machine service cord. If a question should arise concerning which service cord to order, contact the Technical Services Department of the Vendo office in your area.



SECTION VI: SUBSTITUTIONS AND MODIFICATIONS (CONTINUED)

WARNING:
THIS APPLIANCE MUST BE EARTHED.
IMPORTANT!

The wires in the main leads are colored in accordance with the following code:

110v/120v	220v/240v	
Green	Green and Yellow	Earth
White	Blue.....	Neutral
Black	Brown	Live



SECTION VII: CONSUMER SAFETY WARNING

**WARNING:
VENDOR CAN BE OVERTURNED IF SUFFICIENT FORCE IS
APPLIED, AND MAY RESULT IN SERIOUS INJURY OR DEATH.**

GENERAL

There have been incidents, including fatalities, when vending machines have been vandalized by being pulled over in an attempt to obtain free product or money.

To warn of the danger involved in tipping, shaking, or rocking the vending machine, a decal has been designed to be affixed to vending machines. (One such decal is supplied with the vending machine.) Vendo will supply sufficient decals to be placed on all machines, on request. If you have any questions, contact the Technical Services Department of the Vendo office in your area.

**THE FOLLOWING DECAL SHOULD BE PLACED IN A POSITION ON
THE VENDOR CONTROL PANEL AT EYE LEVEL.**

 <p>WARNING</p> <p>Never rock or tilt. Machine can fall over and cause serious injury or death. Vending machine will not dispense free product.</p> <p>389611A</p>	 <p>MISE EN GARDE</p> <p>Ne jamais secouer ou incliner. Le distributeur peut se renverser et causer des blessures graves ou la mort. Cette machine ne distribue pas de produits gratuitement.</p> <p>389611-1A</p>	 <p>AVISO</p> <p>Nunca voltie o incline esta maquina. Puede caer sobre usted y causarle heridas graves o matarle. Esta Vendomatica no provee producto gratis.</p> <p>389611-2A</p>
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ENGLISH

FRENCH

SPANISH



PARTS, SALES, & SERVICE CENTERS OF VENDO/SANDEN COMPANY

AREA	ADDRESS	PHONE NUMBERS
United States, Canada	The Vendo Company 7209 N. Ingram Fresno, CA 93650 U.S.A.	Tel: (559) 439-1770 Fax: (559) 439-2083
Japan	Sanden International Corporation 31-7 Taito 1-Chome Taito-ku Tokyo 110, Japan	Tel: (81) 3-3835-1321 Fax: (81) 3-3833-7096
Europe, Mid-East, Africa, U.S.S.R.	Vendo GMBH Spangerstr. 22, P.O. Box 130940 40599 Dusseldorf Germany	Tel: (49) 211-74-039-0 Fax: (49) 211-7488541
Australia, New Zealand	Sanden International Pty. Ltd. 54 Allingham St., Condell Park N.S.W. 2200 Australia	Tel: 61-2-9791-0999 Fax: 61-2-9791-9029
Singapore, Hong Kong, Indonesia, Philippines, India	Sanden International (Singapore) Pte., Ltd. Sanden House, 25, Ang Mo Kio St. 65 Singapore 569062 The Republic of Singapore	Tel: 65-482-5500 Fax: 65-482-1697
Taiwan	Sanden International Taiwan Corp. No, 21-6, Sec 1 Tun Hwa S. Rd., Taipei, Taiwan Taiwan, ROC	Tel: 886-2-570-6106 Fax: 886-2-577-1959
Belgium	N.V. Vendo Benelux, S.A. Industrial Research Park N.O.H. 13 Font St. Landry 1120 Brussels Belgium	Tel: 32-2-268-2595 Fax: 32-2-268-2862
England	Vendhall, Ltd. Unit 17, The Basingstoke Enterprise Centre Westham Lane, Worting Rd, Basingstoke, Hants RG22, 6NQ Great Britain	Tel: 44-1256-479309 Fax: 44-1256-844469
Italy	Vendo Italy S.p.A. Casella Postale 9 1-15033 Casale Monferrato Italy	Tel: 39-142-335111 Fax: 39-142-5623-48
Spain	Vendo Iberia, S.A. C/ Sant Ferran No. 92 Poligono Industrial la Almeda, Sector P-1 08940 Cornellà, (Barcelona), Spain	Tel: 343-474-1555 Fax: 343-474-1842



**PARTS, SALES, & SERVICE CENTERS OF VENDO/SANDEN COMPANY
FOR LATIN AMERICA**

AREA	ADDRESS	PHONE NUMBERS
Mexico	Vendo de Mexico Camino Real de Toluca No. 154 Col. Bellavista 01140 Mexico D.F. Mexico	Tel: (525) 515-9745 Fax: (525) 277-0111
Central America	The Vendo Company 7209 N. Ingram Fresno, CA 93650 U.S.A.	Tel: (559) 439-1770 Fax: (559) 439-2083
Chile	Pelp Internacional, S.A. 4560 El Rosal Huechuraba, Santiago, Chile	Tel: (562) 243-9710 Fax: (562) 740-0504
Brazil	Cimaq Industria e Comercio de Maq, Ltda. Estrada Uniao e Industria, 9.120 Itaipava 25730-730 Petropolis Rio de Janeiro, Brazil	Tel: (55242) 22-2666 Fax: (55242) 22-3244
South America	The Vendo Company 7209 N. Ingram Ave. Fresno, CA 93650 U.S.A.	Tel: (559) 439-1770 Fax: (559) 439-2083



NOTES



V-MAX

GENERAL INFORMATION



GENERAL INFORMATION

This manual contains programming, operation, and complete parts and electrical wiring diagrams.

The V-Max controller is a microprocessor which will permit pricing per selection from 0.00 to 99.99. This machine also has space-to-sales programming.

Specifications:

MODEL		V-MAX 720	V-MAX 840	V-MAX 576
SELECTIONS		12	12	6
DIMENSIONS (HEIGHT X WIDTH X DEPTH)				
HIGH VISIBILITY VENDOR		72" x 39 ½" x 34 ¾"	79" x 39 ½" x 34 ¾"	72" x 32 ½" x 34 ¾"
SINGLE COLUMNS		10	10	8
CAPACITY PER COLUMN	12 oz. CAN***	72	84	72
	16 oz. GLASS	30	36	30
	20 oz. **	32	38	32
SHIPPING WEIGHT		685 lbs	750 lbs	611 lbs
OPERATION VOLTAGE		115v 60 Hz.	115v 60Hz.	115v 60Hz.
AMP. RATING		10	10	10
REFRIGERATION VOLTAGE		115v 60Hz.	115v 60Hz.	115v 60Hz.

*Dimensions and shipping weight will vary slightly due to manufacturing tolerances, shipping boards and whether or not coinage is installed.

** 20 oz. PET capacity may vary based on the shape and size of the bottle.

***12 oz. can capacities are listed using a 4-deep set up.



INITIAL SET-UP

A. UNPACKING

Remove all plastic film, cardboard and tape from the outside of the vendor. Loosen any shipping devices used to secure interior parts during shipment (backspacer, shims or spacers).

To remove shipping boards from base, raise vendor on a well-stabilized lifting device. Remove the leveling bolts which hold the boards in place and remove the boards. Replace bolts to equal heights in the threaded holes.

Another method to remove shipping boards is to split the boards apart. Using a pinch bar or a heavy screwdriver and hammer, insert tool into the slots and force the boards apart.

B. POSITIONING

IMPORTANT: PLACE THE VENDOR IN DESIRED LOCATION AT LEAST THREE TO FOUR INCHES AWAY FROM ANY REAR OBSTRUCTION. This is for proper air flow through the refrigeration compartment. The refrigeration system requires front to rear air circulation for proper operation.

C. POWER SUPPLY CONNECTION

CAUTION: DO NOT USE AN EXTENSION CORD!

The vendor's power requirements will vary depending upon the country it was purchased for. To verify the power requirements of the vendor, check the serial plate located on the hinged side of the outer door (see Figure 4 on page G-4). The power requirements are listed on the serial plate.

To insure safe operation of the vendor, the vendor's power supply must be a properly grounded and polarized outlet. Before plugging the vendor into the outlet, test the outlet to confirm it will meet the vendor's power requirements. If the power supply of the outlet is different from the power requirements of the vendor, a transformer may be necessary.

If the power requirements are not properly met, contact a licensed electrician and have the necessary correction made.

Should you require additional information, contact the Technical Services Department of the Vendo office in your area.

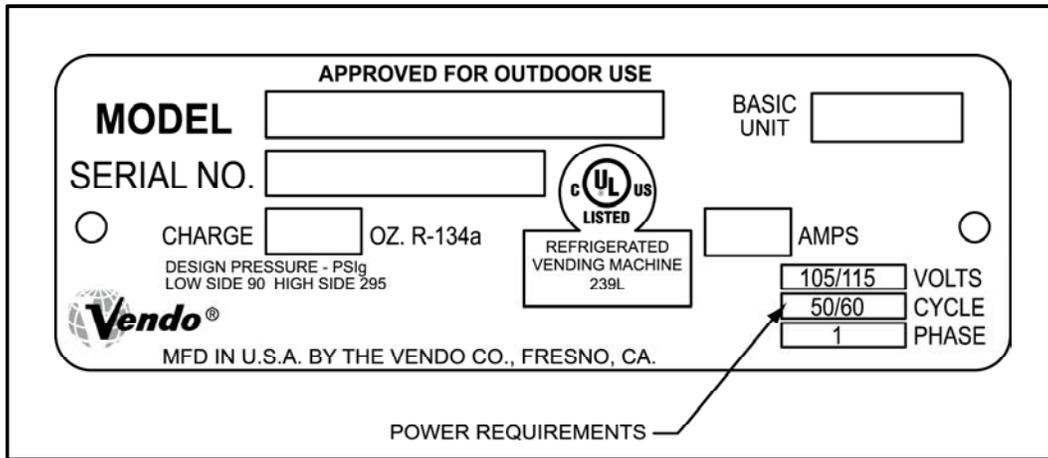


FIGURE 4

NOTE: The **Model** number of the vending machine is located on the top, left hand corner of the serial plate. **Do Not use the “BASIC UNIT” number.** The BASIC UNIT number is the cabinet size, which is used on a number of different machines. A typical model number could read “540TDD00029”. The 540 is the model number, TDD represents the product line of the vendor, and the remaining digits tell what options are included.



FLAVOR AND PRICE LABEL INSTALLATION

A. FLAVOR LABELS

Before installing flavor labels, bend the top (removal) tab down. To install flavor labels, insert the two small tabs on the bottom edge of the label into the slots in the selection button. Press the label in near the two upper tabs until the tabs snap into the slots in the upper wall of the selection button. (See Figure 5.)

Note: If vendor is equipped with optional sold out / ready to vend indicators, then remove the perforated slug from the lower corner of the flavor label to allow the LED dome to show through. (See Figure 5.)

B. PRICE LABELS

Individual price labels can be applied to the flavor labels. The price labels are located in the upper right corner of the flavor labels in the area indicated by a dashed oval.

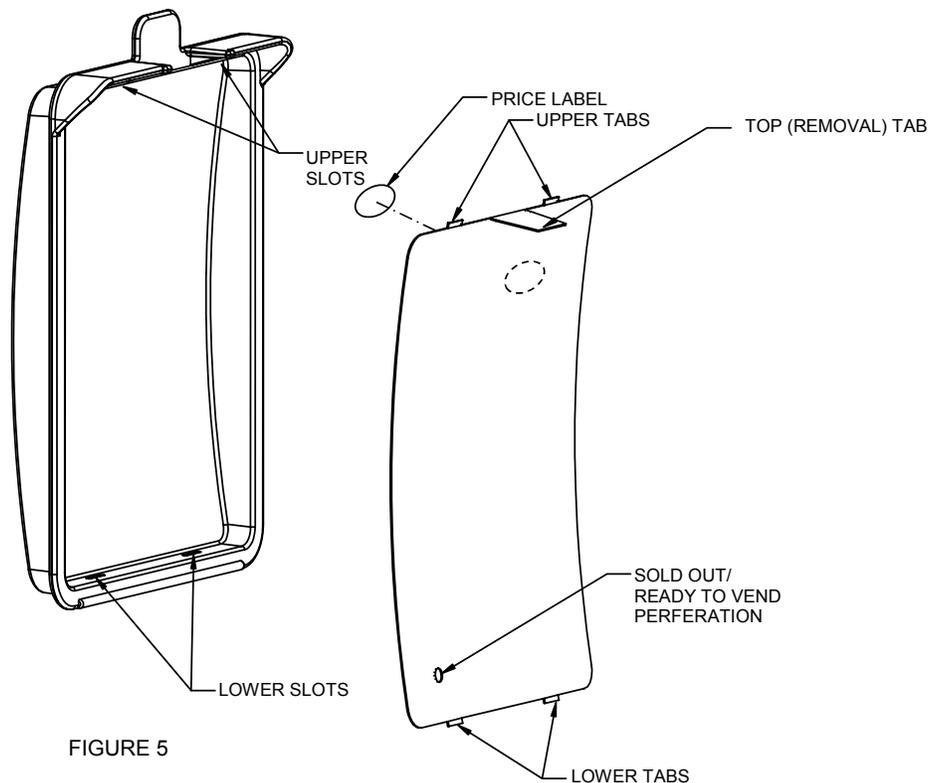


FIGURE 5

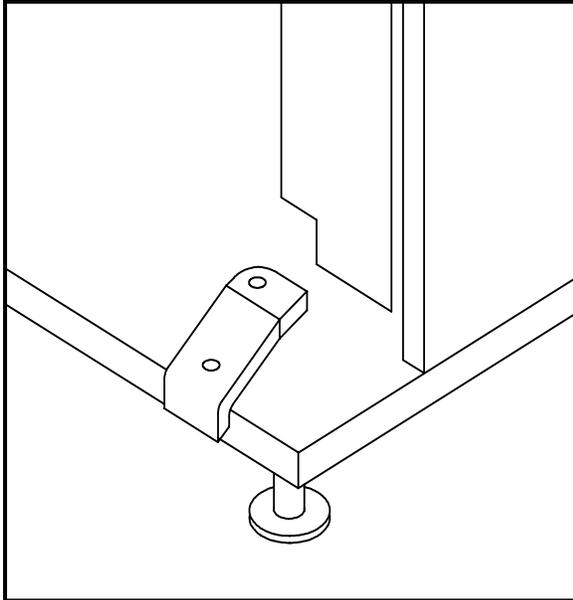


FIGURE 8

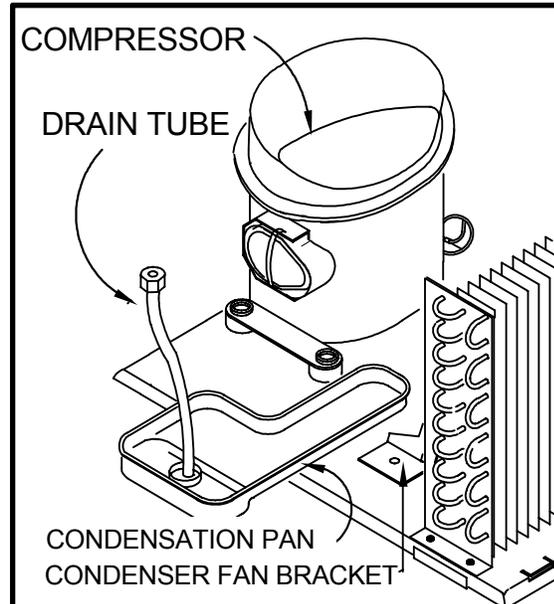


FIGURE 9

ALIGNMENT CHECKS

DOOR ROLLER CHECK:

The door support is to insure that the outer door closes squarely to the cabinet. Raising the door can also insure proper alignment of the door latch (see Figure 8).

REFRIGERATION AREA CHECK:

Check the position of the condensation pan (see Figure 9). The correct position of the pan is between the compressor and the condenser fan bracket. Be sure the drain tube is clipped to the pan and is free of kinks. A water trap is installed into the condensation pan and will prevent warm, moist air from reaching the evaporator area.



LOADING INSTRUCTIONS

BASIC LOAD SET-UP:

The V-Max machine is capable of vending a variety of products. For specific information, refer to the product set-up label on the machine inner door or contact the Technical Services Department of the Vendo office in your area.

Load product evenly. Bottles are loaded with crown end placed toward the back of the column. In initial loading, prime the machine by advancing the product into the buckets. To advance product into buckets, use the vend test function of the electronic controller. When the bucket is loaded, the column is ready to vend.

PRIME ALL COLUMNS DURING INITIAL PRODUCT LOADING



VEND MECHANISM PARTS DESCRIPTION

The parts listed below are part of the vend motor mechanism (refer to Figure 10 on page G-9). One mechanism is required per column. The parts are interchangeable. Setting will differ between single, double, triple, and quadruple depths.

VEND MOTOR ASSEMBLY: P/N 1115821

The motor is attached to the mech plate by three screws.

TIMING CAM: P/N 1113236; RETAINER: P/N 1113244

The motor cam assembly consists of two parts, the cam and the cam retainer. The cam controls the vend cycle. The cam is attached to the motor by the cam retainer. The retainer rotates left or right, and provides for single, double, triple, or quadruple depth operation.

SOLD OUT SWITCH: P/N 368299

There is one sold out switch above the vend motor. The sold out switch is actuated by the sold out flap when the column is empty. It prevents the motor from running when the columns are empty.

VEND BUCKET: P/N 1120146

The vend bucket holds the product(s) in a "ready to vend" position at the base of each column.

MOTOR COUPLING: P/N 1076465

The motor coupling couples the motor to the bucket. It is located behind the motor, on the motor shaft.

ANTI-THEFT CLIP: P/N 389712

The anti-tilt clip prevents product from dropping out of the bucket if the vendor is tilted. The anti-theft clips are located in the bucket.

GATE: P/N 1076642

The gate holds product above the vend bucket.



GATE LINK: P/N 1120140

The rotation of the vend bucket moves the gate link. This opens the gate, allowing one layer of product to drop into the bucket.

GAGE BAR: P/N 1111651

The gage bar holds the product(s) inside the bucket. It also regulates which product is vended first when double, triple or quadruple depth settings are used. (See page G-10 for motor cam settings.)

GAGE BAR CLIPS: P/N 1066104(white), 1066112(black), 1066112-1(gray), 1121704(gray), 1122103(black)

Gage bar clips are attached to the gage bar to create multiple steps when vending product double, triple, or quadruple depths. (See product set-up label on inner door for details.)

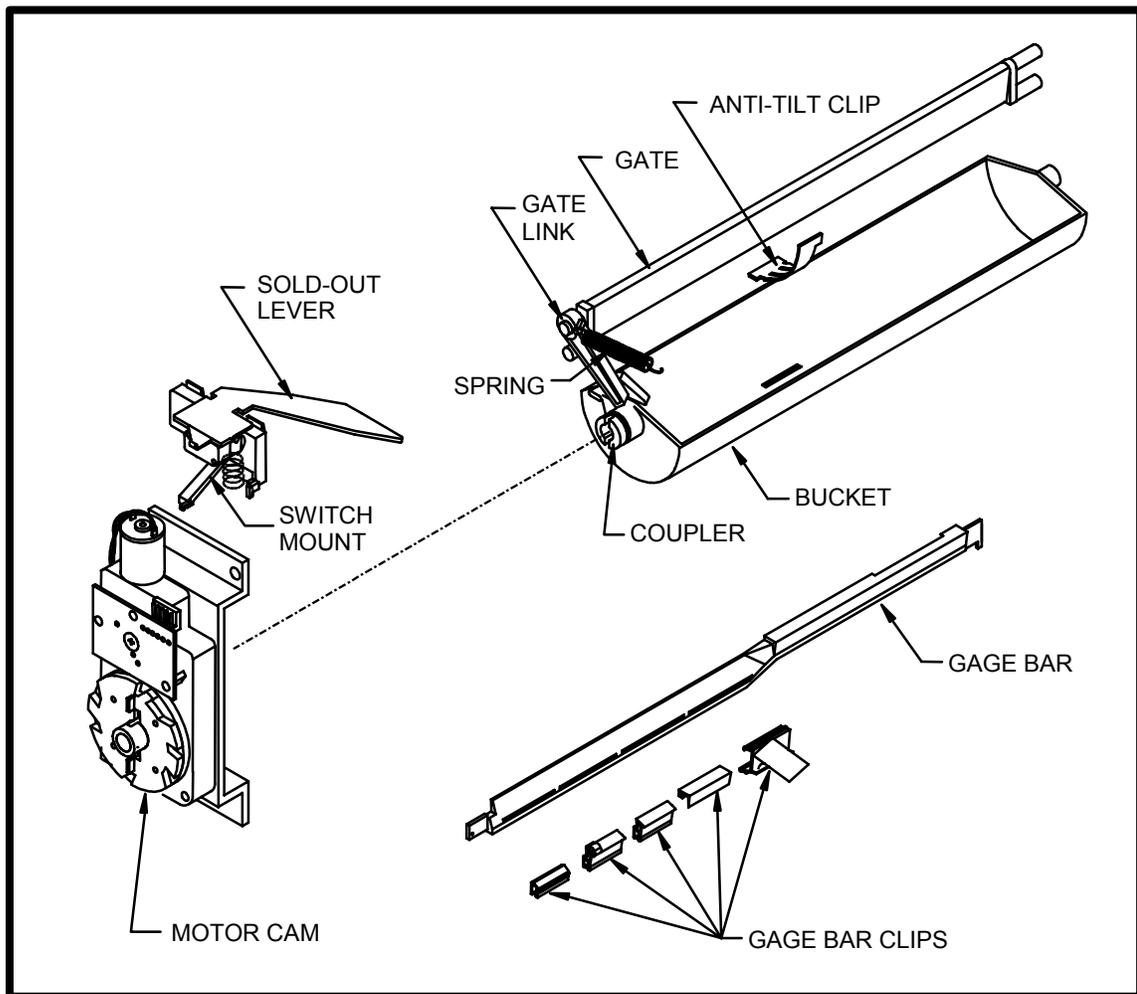


FIGURE 10



VENDO VEND CYCLE

Several operations take place during the vend cycle: When a selection is made, the cam and bucket rotate, product is dispensed and the bucket is then reloaded. The sequence of these operations change slightly when the column's depth setting is changed. With the single depth setting, one purchase is made and the bucket is reloaded. The cam sequence occurs one time per bucket revolution. With the double depth setting, two purchases are made before the bucket is reloaded, and the cam sequence occurs twice per bucket revolution. With the triple depth setting, three purchases are made and the cam sequences three times per bucket revolution. With the quadruple depth setting, four purchases are made and the cam sequences four times per bucket revolution.

PURCHASE SEQUENCE: (See Figure 11, quadruple depth setting pictured)

- PS 1. Customer inserts money.
- PS 2. The coinage reports credit to the vending machine electronic controller. Established credit is displayed on the digital display located near the coin insert slot.
- PS 3. Customer presses a selection button.
- PS 4. The controller receives the signal from the selection switch and (if sufficient credit exists) energizes the corresponding vend motor.
- PS 5. The vend motor rotates the bucket and cam. As the cam rotates, the motor position switch actuator raises to the outer surface of the cam. This closes the switch which signals the controller to remove credit.
- PS 6. Product is immediately dispensed. The motor and cam continue to rotate until the motor position switch actuator drops into the low part of the cam.
- PS 7. Motor stops.

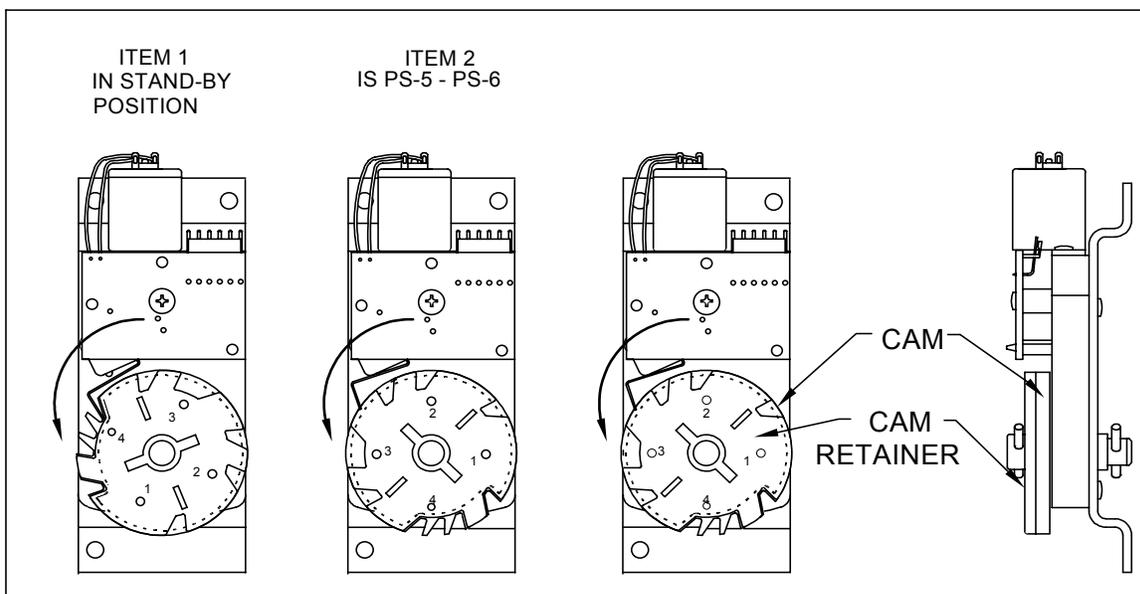


FIGURE 11

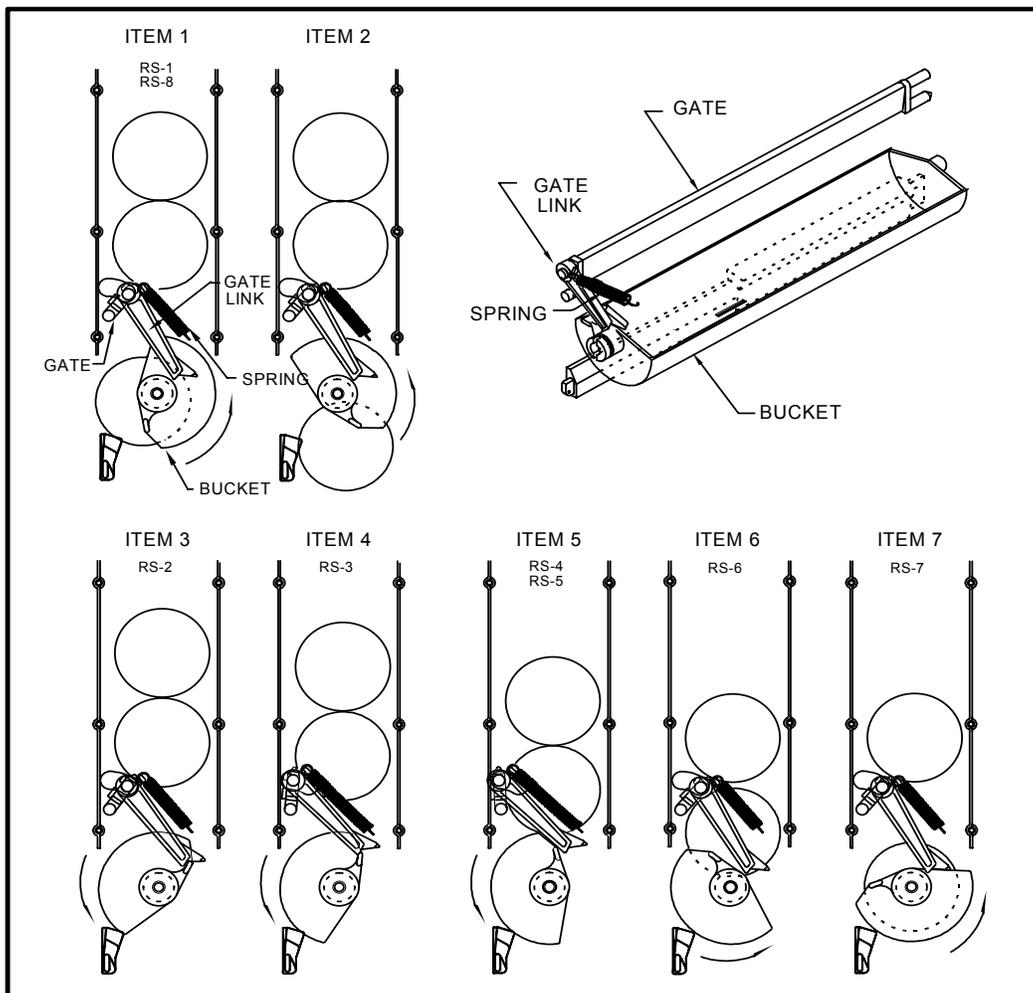
NOTE: The numbers on the cam reflect the number of vends allowed per cycle.



RELOADING SEQUENCE (See Figure 12)

- RS1. The gate link rests at a locked position in a cut out on the mech. plate. This locked position prevents the gate from opening out of sequence.
- RS2. The gate link is guided by a slot in the mech. plate and is actuated by a ridge on the bucket. As the bucket turns, the link is moved out of the locked position.
- RS3. As the link rises, the gate is opened. The spring maintains pressure on the link and the gate.
- RS4. Product falls into the bucket, the link returns to the locked position and the gate is closed.
- RS5. The bucket releases the gate link causing the gate to rest against the product.
- RS6. As the product falls into the bucket, the link returns to the locked position and the gate is closed.
- RS7. The product remaining in the column is held by the closed gate, keeping it above the bucket.
- RS8. The bucket stops, loaded with product and is ready to vend.

FIGURE 12





NOTES



V-MAX

9.3 PROGRAMMING SECTION



VEC 9.3 Control Board Operation

(For Revision 2.030)

The VEC 9.3 controller operates via a 3-button programming system:

Row 1 (all selection buttons in top row) – Increase/Decrease

Row 2 (all selection buttons in middle row) – Enter and/or Save

Row 3 (all selection buttons in bottom row) – Escape/Exit

In order to access the mode functions, open the inner door. Locate the mode button. Press the mode button one time. Row 1 will take you through the modes.

The available modes are:

Diagnostics

Coin Payout

Tube Fill

Test Mode

Cash Data

Sales Data

Set Price

Space to Sales

Configuration

Set Data Password

Set Language

*Set Clock **

*Lighting **

*Refrigeration ***

*Sales Block 1 **

*Sales Block 2 **

*Discount **

*Override ***

Return

* These modes will only appear when the *Timing Features* in *Configuration* are turned ON.

** Limited options will appear in these modes depending on whether the *Timing Features* are ON/OFF.



Diagnostics

See inner door of vendor for errors and how to clear them.

Coin Payout

Allows you to payout coin tubes.

- Press (2) to enter into *Coin Payout* mode.
- Press (1) to choose denomination.
- Press (2) to dispense displayed denomination.
- Press (3) to exit mode.

Tube Fill

Allows you to fill coin tubes via external coin insert. This is the recommended way to fill the coin tubes because the control board is able to keep an accurate count of the coins.

- Press (2) to enter into *Tube Fill* mode.
- Insert coins into coin insert slot and the controller will “count” the number of coins going into the coin mechanism.

Test Mode

Allows you to test vend a column, selection switches, sold-out switches, display, refrigeration relay, light relay, heater relay and temperature sensor (temperature reading).

Vend Testing

- At *Test Mode*, press (2)
- Display will read column X
- Press (1) to choose desired column
- Press (2) to vend
 - If motor vends OK, DISPLAY will read “*Motor OK*”
 - If motor does not test OK
 - Failed “*Motor not Found*” will be displayed, or
 - Failed “*Bad Cam Switch*” will be displayed

Selection Switch Testing

- At *Test Mode*, press (2)
- At *Test Mode – Vending*, press (1)
- *Test Mode Switches* will be displayed. Press (2).
- Press desired selection switch to be tested.

Sold Out Switch Testing

- At *Test Mode*, press (2)



- Press (1) until the display reads *Test Mode – Soldouts*
- Press (2)
- The display will change to *Test Mode – Soldouts Column 1 Yes/No*. If there is product in the column, the display will indicate *No*. If there is not product in the column, the display will indicate *Yes*.
- To advance to different columns, press (1).

Test Mode – Display

Allows you to verify that all of the characters on the display illuminate.

- At *Test Mode*, press (2)
- Press (1) until the display reads *Test Mode – Display*
- Press (2)
- All of the characters on the display should illuminate.

Test Mode - Relays

Allows you to test the compressor, fan, lights and heater relays

- At *Test mode*, press (2)
- Press (1) until display reads *Test Mode - Relays*
- Press (2)
- To advance through sub-modes, press (1)
- To test compressor, press (2) at *Compressor* prompt
- To test *optional** evaporator fan relay, press (2) at *Fan* prompt
- To test lighting system, press (2) at *Light* prompt
- To test optional heater, press (2) at *Heater* prompt
- To exit sub-modes, press (3)

* *The fan relay is an optional feature that is not currently available.*

Test Mode – Temp

Allows you to test the temperature sensor by giving a reading of the current cabinet temperature of the vendor.

- At *Test mode*, press (2)
- Press (1) until display reads "*Test Mode - Temp*"
- Press (2)
- Display will read current temperature in Fahrenheit as well as Celsius
- To exit mode, press (3)

Cash Data

Allows you to retrieve historical information regarding the money accepted by the vendor. To clear the individual selection cash data, you must have the *MIS Auto Reset* in the *Configuration* mode turned ON.

- Press (2) when the display reads *Cash Data*.



- The non-resettable historical data is displayed.
- To display resettable individual selections, press (1)
- To reset historical data, make sure the *MIS Auto Reset* is turned ON in the configuration mode.
- To exit mode, press (3)

Sales Data

Allows you to retrieve historical information regarding the number of units sold by the vendor. To clear the individual selection sales data, you must have the *MIS Auto Reset* in the *Configuration* mode turned ON.

- Press (2) when the display reads *Sales Data*.
- The non-resettable historical data is displayed.
- To display resettable individual selections, press (1)
- To reset historical data, make sure the *MIS data reset* is turned ON in the *Configuration* mode.
- To exit mode, press (3)

Set Price

Allows you to set the vend price of each selection. In this mode, you have the option of pricing each selection button at the same vend price or price each selection button independently.

- Press (2) when display reads *Set Price*
- Pressing (1) will allow you to choose selections or *ALL*
- Pressing (2) will start the current vend price flashing
- Press (1) to increase/decrease the price
- Press (2) to save your new programmed price
- Press (3) to exit mode

Space to Sales

Allows you to program which column will vend when you choose a desired selection button. There are 6 preset configurations (See inner door label for preset options). You also have the option of doing a custom space to sales. To change current setting:

- Press (2) at *Space to Sales* prompt
- Press (2) to change current setting
- Press (1) to scroll through available settings
- Press (2) to save setting
- Press (3) to exit mode

To customize your space to sales:



- Press (2) at *Space to Sales* prompt
- Press (2) again to get the option to flash
- Press (1) until the display reads *Space to Sales – Custom*
- Press (2) and the display will show *Selection 3* and what is currently attached
- To change a selection assignment, press (2)
- To maneuver through the columns, press (1)
- To assign (flashing) or unassign (no flashing/steady) columns, press (2)
- Pressing (3) will ask *Save?*
- Press (2) to save and (3) to exit the mode

Configuration

There are various options that you can turn ON/OFF. The options are:

Multi-Price

ON = All selections can be programmed individually.

OFF = All selections will be set to the same price as selection 1.

*Timing Features**

ON = Gives you access to the *Clock* settings and its associated modes.

OFF = *Clock* settings and its associated modes are hidden.

Door Summary

ON = Sales and cash data are displayed as soon as the outer door is opened or by activating the door switch.

OFF = Sales and cash data are not displayed when the door is opened.

MIS Auto Reset

ON = After you check the sales and cash data, press the door switch and the individual selection data will be reset back to zero.

OFF = Sales and cash data will not be reset by activating the door switch.

Consumer Overpay

ON = A dollar bill will be accepted even if the correct change light is on and there is insufficient change in the coin tubes.

OFF = A vend will not be allowed when the correct change light is on and the consumer attempts to use the dollar bill validator.

Save Credit

ON = Credit that is established will remain indefinitely unless someone either makes a vend or presses the coin return button.

OFF = Credit that is established will be displayed for five minutes unless someone either makes a vend or presses the coin return button – whichever comes first.



Force Vend

ON = The consumer will not be able to insert a dollar into the validator, hit the coin return and receive change without first attempting a vend.

OFF = The consumer can insert a bill into the validator, press the coin return button and immediately receive change.

Multi-Vend

ON = The consumer may insert enough credit to make multiple vends. The credit will remain on the display until an additional vend is made or the coin return button is pressed.

OFF = The consumer is allowed to make a single vend and the credit (if applicable), will be returned after the completion of the vend.

Deny Escrow

ON = The validator will stack all bills received.

OFF = The validator will not stack the bills, rather it will hold them in escrow until a vend is complete.

SO Indicator

ON = A small symbol will appear in the lower right hand corner of the display when at least one column is sold out or the machine detects an error.

OFF = The symbol will not appear.

Count by Selection/Price

COUNT BY SELECTION = Individual sales and cash data will be reported in unit sales.

COUNT BY PRICE = Individual sales and cash data will be reported by vend price.

MIS Reset with Dex

ON = The MIS data will be reset with a DEX connection. This will only affect the resettable data.

OFF = The MIS data will not be reset with a DEX connection.

of Selections 12/6

6 = The machine is configured for a 6 select vendor (Model 576).

12 = The machine is configured for a 12 select vendor (Models 720 & 840).

- To adjust any of the settings, press (2) at *Configuration* mode.
- Press (1) to scroll through the modes.
- Press (2) to change the mode. The current setting will begin to flash.
- Press (1) to change current setting.
- Press (2) to save change.
 - Press (3) to exit sub-mode.



Closed Door Password

Allows you to set a password to access sales data only when the door is closed. Please note that this function will not work if the vend price is set at 0.00.

- Press (2) at *Closed Door Password* mode.
- The current password will be displayed.
- To change current password, press (1) while each digit is flashing
- Press (2) to save and advance to next digit.
- Press (2) after the 4th digit to exit mode

Set Language

Allows you to program different languages on the controller. The current languages available are English, Spanish and French.

- Press (2) at *Set Language* mode.
- The current language will be displayed.
- To change current language, press (2) to start the language flashing.
- Press (1) to choose a language.
- Press (2) to save the language change.
- Press (3) to exit mode.

Set Clock

If the *Timing Features* in the *Configuration* mode are turned ON, you will have access to this mode. This mode allows you to set the current month, day, year, hour and minute.

To set the clock:

- Press (2) at the *Set Clock* prompt. You will be able to scroll through the following options by pressing (1)
 - *Enable ON/OFF* - This will turn the clock timer on or off.
 - *MM/DD/YYYY HH:MM* - This is the current time & date.
 - *Daylight Savings*
- To change current setting, press (2)
- The current setting will begin to flash.
- Press (1) to change current setting
- Press (2) to save current setting.

Lighting

If the *Timing Features* in the *Configuration* mode are turned ON, you will have access to this mode. This mode allows you to turn the lights on/off with the internal timer.



- Press (2) when the display reads *Start Time*
- Press (2) at *Start Time*
- Press (2) at *Start Day*
- Scroll through the days of the week or 'all' with (1)
- To change current setting, press (2)
- Change setting with (1)
- Save changes with (2)
- Press (1) at *Start 00.00*
- Press (2) to change time
- Press (1) to set time
- Press (2) to save
- Press (3) to exit mode
- Repeat process with *Stop Time*

Refrigeration

If the *Timing Features* in the *Configuration* mode are turned OFF, you will only have access to the following two modes:

Fahrenheit and Celsius
Set Point Temperature

To change the degree scale:

- Press (2) when the display reads *Refrigeration*
- The display will show the current degree scale (Celsius or Fahrenheit)
- Press (2) and the degree scale will begin to flash
- Press (1) to choose your setting
- Press (2) to save your setting
- Press (3) to exit and return the display to *Refrigeration*

To change the set point temperature:

- Press (2) when the display reads *Refrigeration* or press (1) when the degree scale is displayed in a steady state (not flashing)
- The display will read *Set Point XX* with the current setting displayed.
- To change the setting press (2) and the current set point temperature will begin to flash
- Press (1) to increase the set point
- Releasing (1) and pressing again will decrease the set point
- Press (2) to save your change
- Press (3) to exit and return the display to *Refrigeration*



If the *Timing Features* in the *Configuration* mode are turned ON, you will have additional access to the following modes:

Enable

Start Time

Start Day

Start 00:00

Stop Time

Stop Day

Stop 00:00

Storage Temperature

Sales Block 1 and 2

Allows you to program the machine to turn off and on at regular intervals.

To program the blocking feature, you must enter the following information:

Start Time – When the machine turns off

Start Days

Stop Time – When the machine turns back on

Stop Days

Selections

Discount

Allows you to program the machine to discount beverages at regular intervals.

To program the *Discount* feature, you must enter the following information:

Start Time – When the discounting begins

Start Day

Stop Time – When the discounting ends

Stop Day

Selections

Amount - Refers to the amount subtracted from the original vend price

Override

This feature is used in conjunction with an optional override key switch and harness. The following features can be activated/deactivated with the key switch:

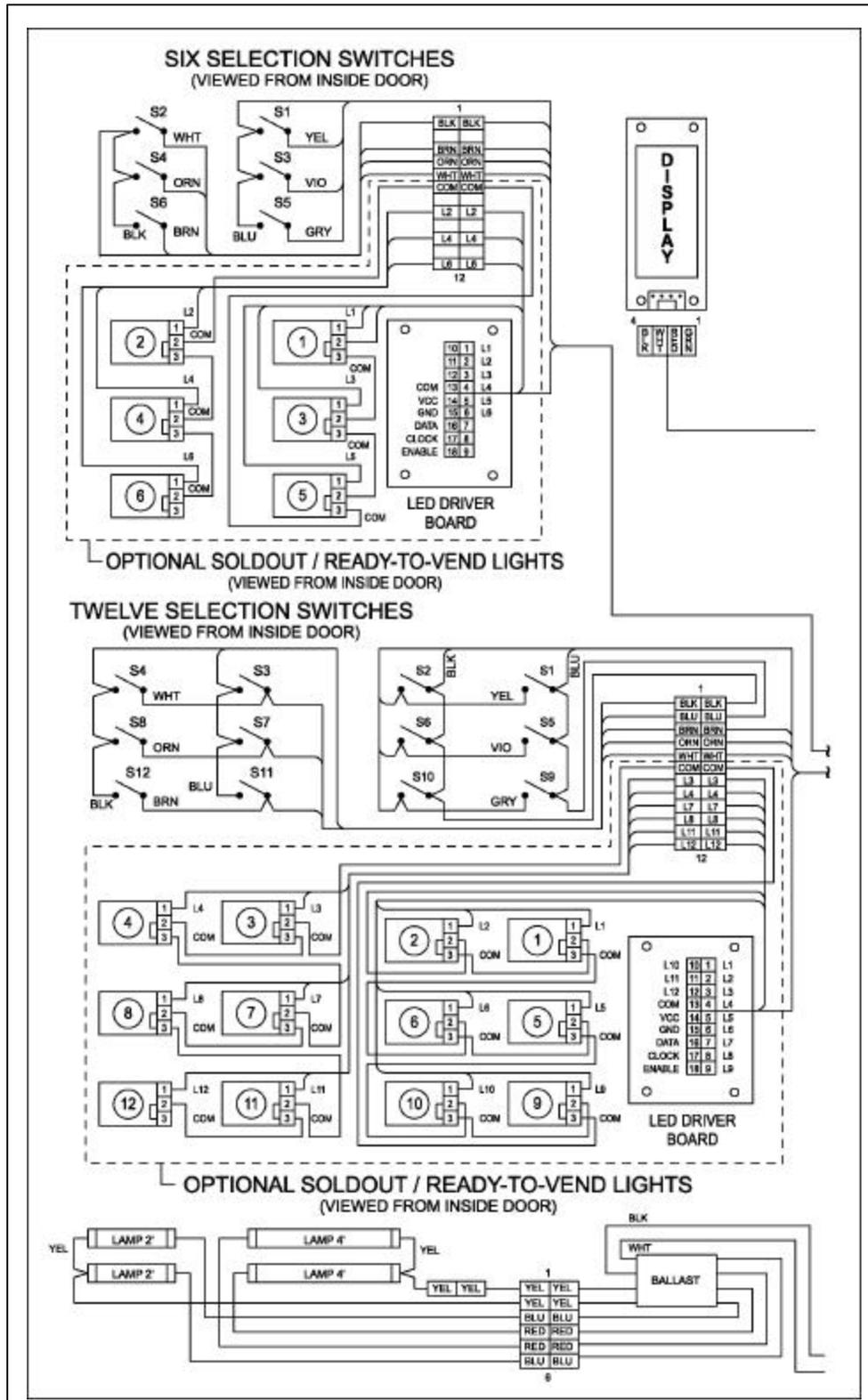
Free, Block, Discount, Lighting and Refrigeration

Return

Exits the programming mode and returns the machine to stand-by.

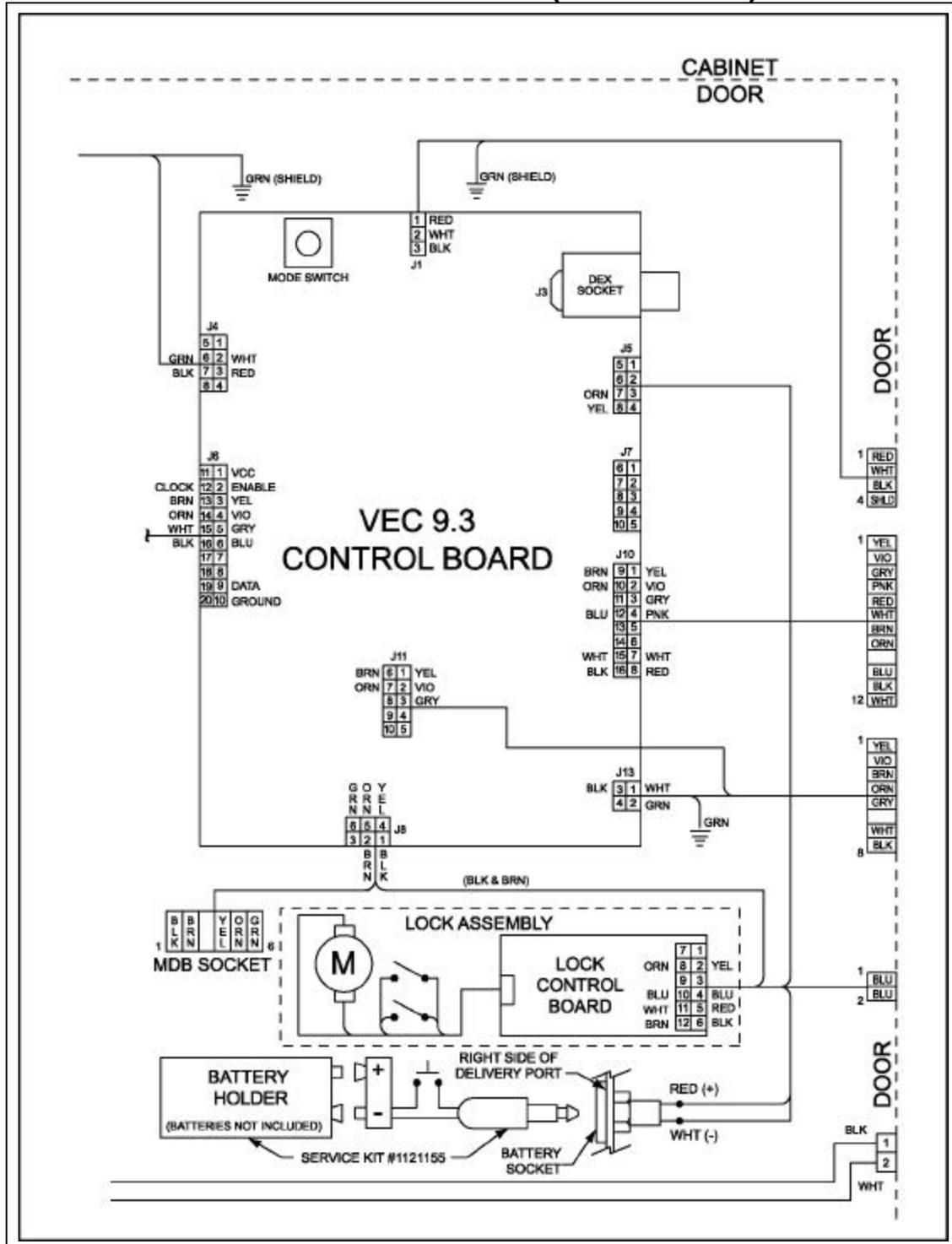


9.3 WIRING DIAGRAM



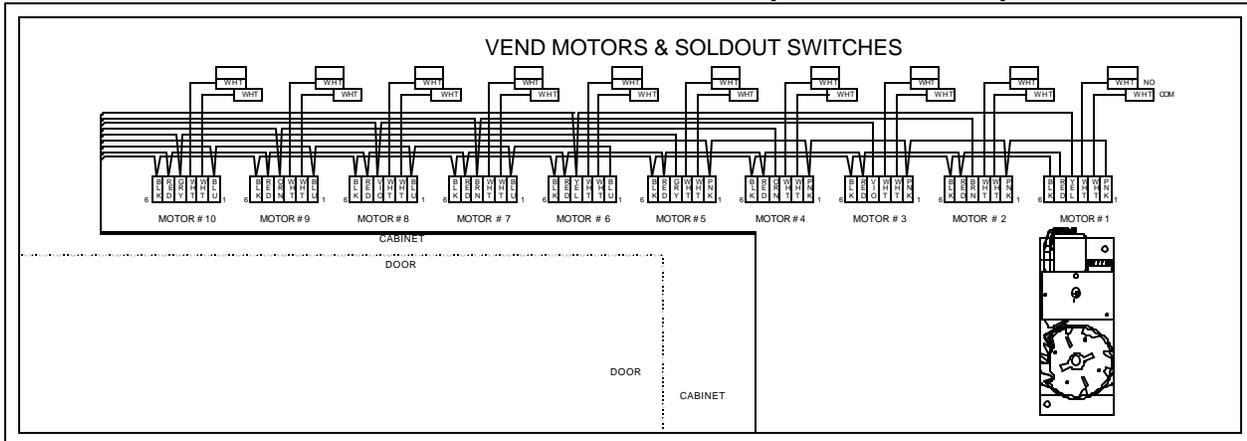


9.3 WIRING DIAGRAM (CONTINUED)

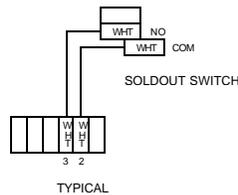




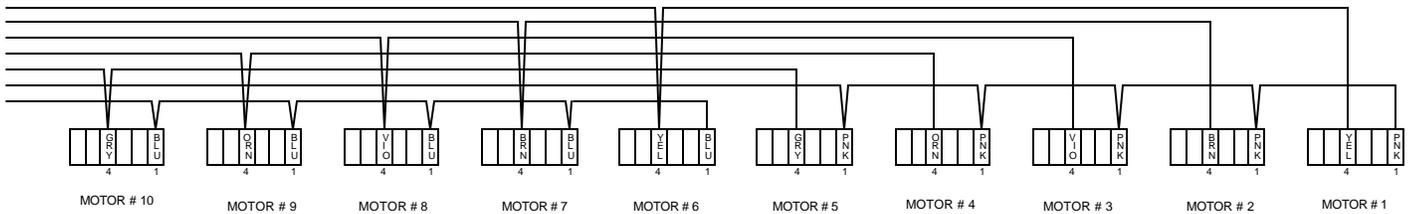
9.3 WIRING DIAGRAM (CONTINUED)



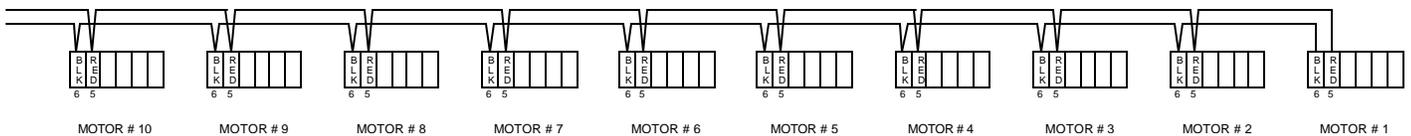
V-MAX MOTOR HARNESS SCHEMATIC BREAKDOWN



PINS 2&3: 0 VDC SOLDOUT SWITCH TO MOTOR BOARD (EXTENSION OF 2X5 MATRIX)



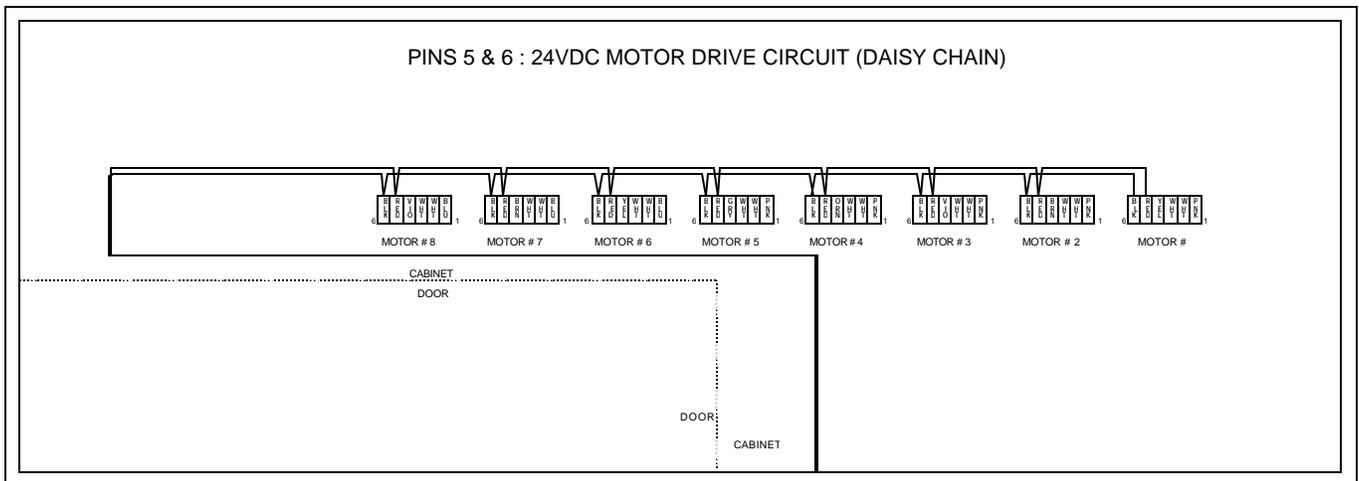
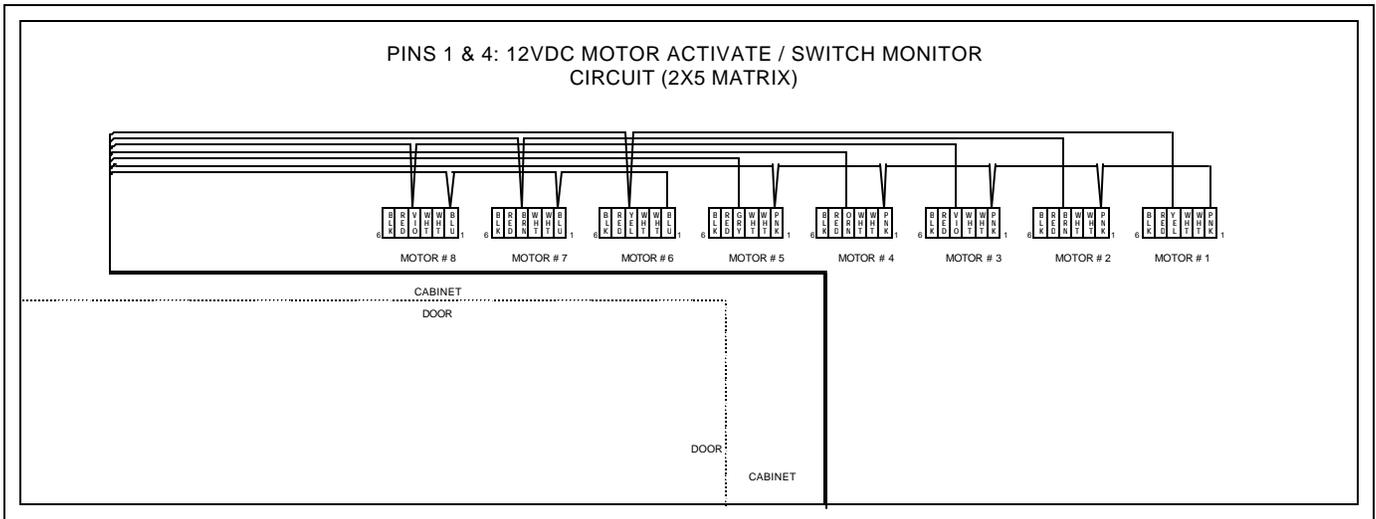
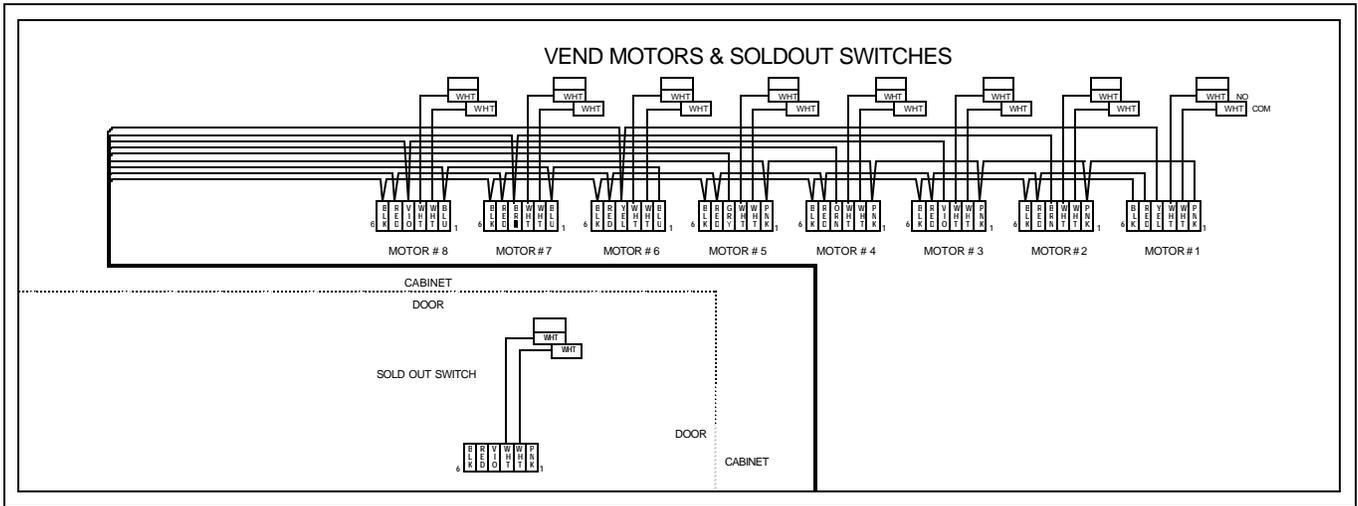
PINS 1&4: 12VDC MOTOR ACTIVATE / SWITCH MONITOR CIRCUIT (2X5 MATRIX)



PINS 5&6: 24VDC MOTOR DRIVE CIRCUIT (DAISY CHAIN)



9.3 WIRING DIAGRAM (SMALL V-MAX)





NOTES

1. If the outer door is left open for over an hour, the lights and compressor will become active. In order to over-ride this option, press the door switch one time.



V-MAX

CABINET PARTS SECTION



READING A PARTS LIST

- I **ITEM NUMBER** is found in two locations:
 - A. It is on the drawing plate, and identifies the part and its location;
 - B. The same number is in the parts lists and ties the two together.

 - II **PART NUMBER** is the part number that has been assigned to a specific part by Vendo, for easier identification.

 - III **QUANTITY REQUIRED** relates to the amount required of a part, or will be indicated by "A/R" (as required) to attach it to another part.

 - IV **PART NAME AND DESCRIPTION** is the general description for the part, for easier identification when ordering a like part.

 - V **HARDWARE** is identified by a letter in a hexagon. Refer to hardware list section for description and part numbers. See pages C-3 through C-5.
-

The example below will show how the parts are listed in the parts lists:

- 1. **VEND MOTOR ASSEMBLY:** This is the main assembly name, and any replaceable parts will be indented below the assembly.

- 2. **RETAINER CAM:** This is an individual part, and will be indented. These indented parts can be ordered separately, so you do not need to order the entire assembly.

- 3. Whenever an assembly is ordered, all the parts that are indented will be included in the assembly. Any hardware will be listed next to their corresponding parts.

- 4. Any parts that may be ordered separately will not have any indented parts listed below them.

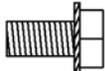
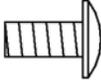
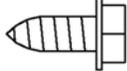
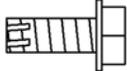
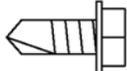
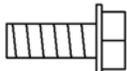
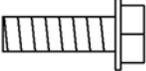
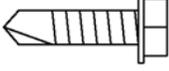
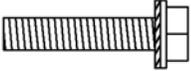
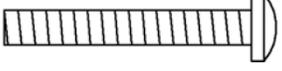
V-MAX VEND MOTOR ASSEMBLY

ITEM NO.	DESCRIPTION	QTY REQ	PART NO.
1	VEND MOTOR ASSEMBLY	-	1115821
2	RETAINER CAM	1	1113244
3	TIMING CAM	1	1113236
4			

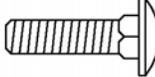
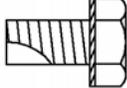
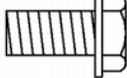
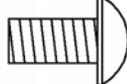
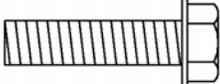
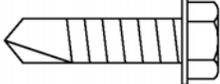
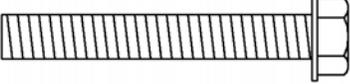
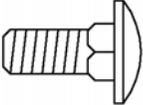
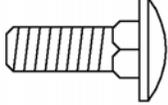
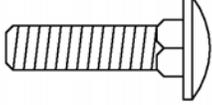
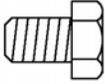
If an asterisk is listed below the parts list, it is an indication that special information is noted. There may be more than one asterisk (*) (**) (***) denoting special notes.

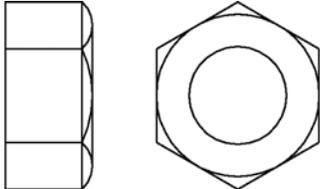
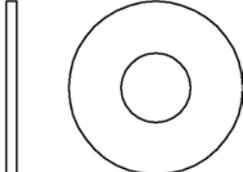
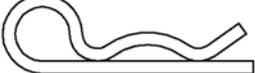
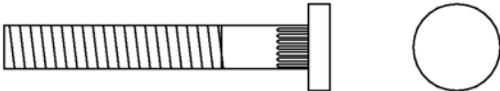


Hardware List

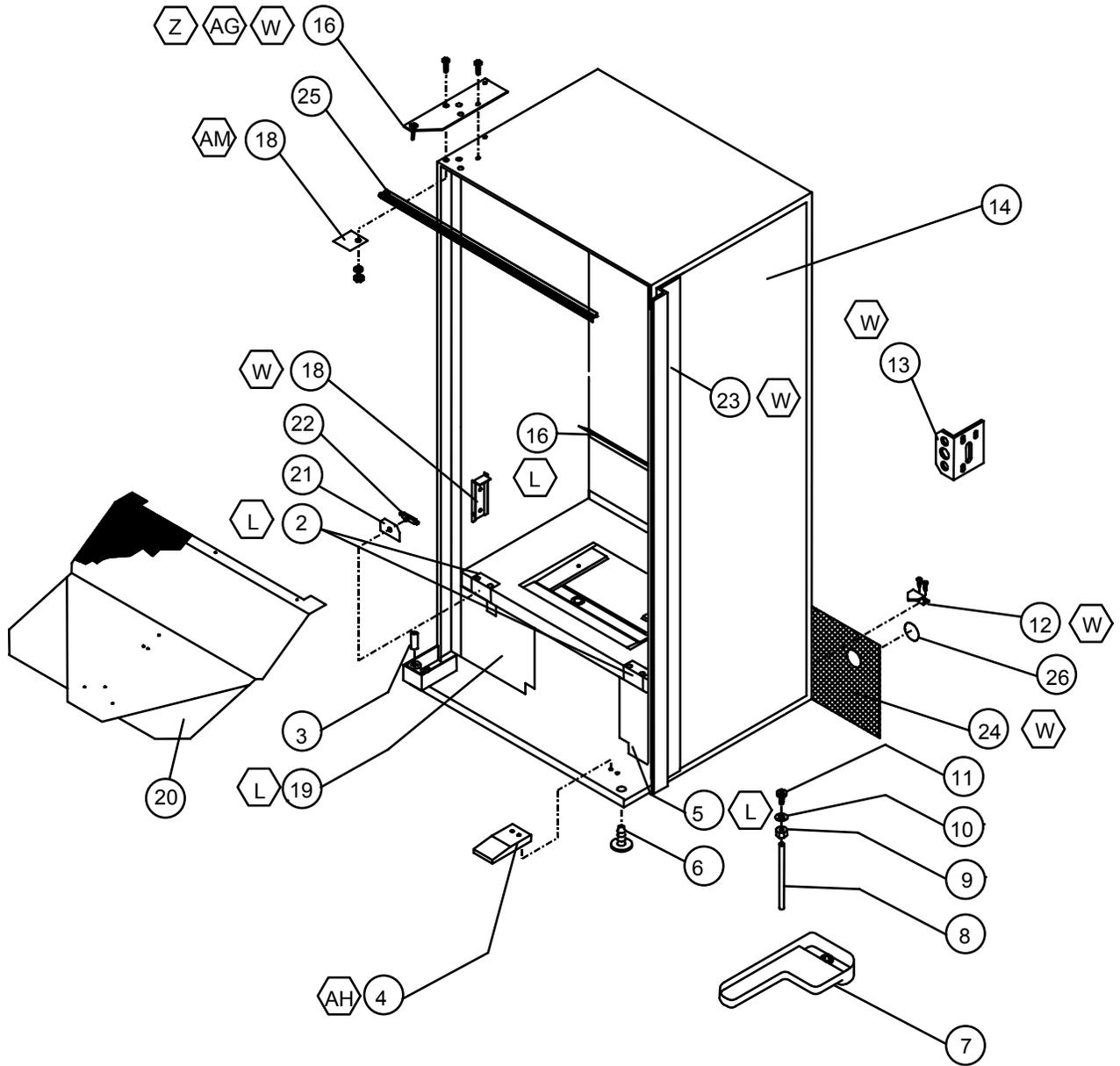
PART NO.	DESCRIPTION	PICTORIAL
A	V802008 #6 X 1/4" MACHINE SCREW	 
B	V802217 #6 X 7/8" TAPPING SCREW	 
C	V800586 #8 X 3/8" TAPPING SCREW W/ LOCK WASHER	 
D	V802214 #8 X 1/2" TAPPING SCREW (FOR PLASTIC)	 
E	V802213 #8 X 5/16" TAPPING SCREW	 
F	V800718 #10 X 3/8" TAPPING SCREW W/ LOCK WASHER	 
G	V801421 #10 X 5/16" TAPPING SCREW	 
H	V802212 #10 X 3/8" TAPPING SCREW	 
I	V802047 #10 X 5/16" TAPPING SCREW W / LOCK WASHER	 
J	V802141 #10 X 1/2" TAPPING SCREW	 
K	V801422 #10 X 1/2" TAPPING SCREW	 
L	V801489 #10 X 1/2" SELF DRILLING SCREW	 
M	V802147 #10 X 1/2" TAPPING SCREW	 
N	V802155 #10 X 5/8" TAPPING SCREW	 
O	V802133 #10 X 3/4" SELF DRILLING SCREW	 
P	V802152 #10 X 7/8" TAPPING SCREW W / LOCK WASHER....	 
Q	V800512 #10 X 1-3/8" TAPPING SCREW	 



R	V802005-1	#10 X 1/2" CARRIAGE BOLT		
S	V801360	1/4" X 1/2" TAPPING SCREW W / LOCK WASHER		
T	V802196	1/4" X 1/2" TAPPING SCREW		
U	V800831	1/4" X 1/2" TAPPING SCREW		
V	V801343	1/4" X 1" TAPPING SCREW		
W	V801490	1/4" X 1" SELF DRILLING SCREW		
X	V802162	1/4" X 1 3/4" TAPPING SCREW.....		
Y	V802069	1/4" X 5/8" CARRIAGE BOLT		
Z	V801434	1/4" X 3/4" CARRIAGE BOLT		
AA	V801435	1/4" 20 X 1" CARRIAGE BOLT		
AB	V800267	1/4" X 3/8" BOLT		
AC	V800956	#8 NUT W / LOCK WASHER		
AD	V800952	#10 NUT W / LOCK WASHER		
AE	V800957	#10 NUT W/..LOCK..WASHER.....		
AF	V802113	#10 LOCK NUT W / NYLON INSERT		
AG	V800959	1/4" NUT W / LOCK WASHER		

AH	387925	NYLON HEX NUT	
AI	V802178	1/4" NUT W/ SERRATED FLANGE	
AJ	V801449	3/8" X 3/32 NUT	
AK	V801412	1/8" X .125 POP RIVET	
AL	V801471	1/8" X .419 POP RIVET	
AM	V801491	3/8" FLAT WASHER	
AN	V802043	PLASTIC SNAP PLUG	
AO	V801080	5/16" RETAINER RING	
AP	387450	COTTER PIN	
AQ	1032526	COTTER PIN	
AR	390315-1	SHOLDER SCREW	
AS	916923	CONDENSER NUT	
AT	337241-1	CUP WASHER	
AU	1121740	1/4" NYLON STANDOFF	

1



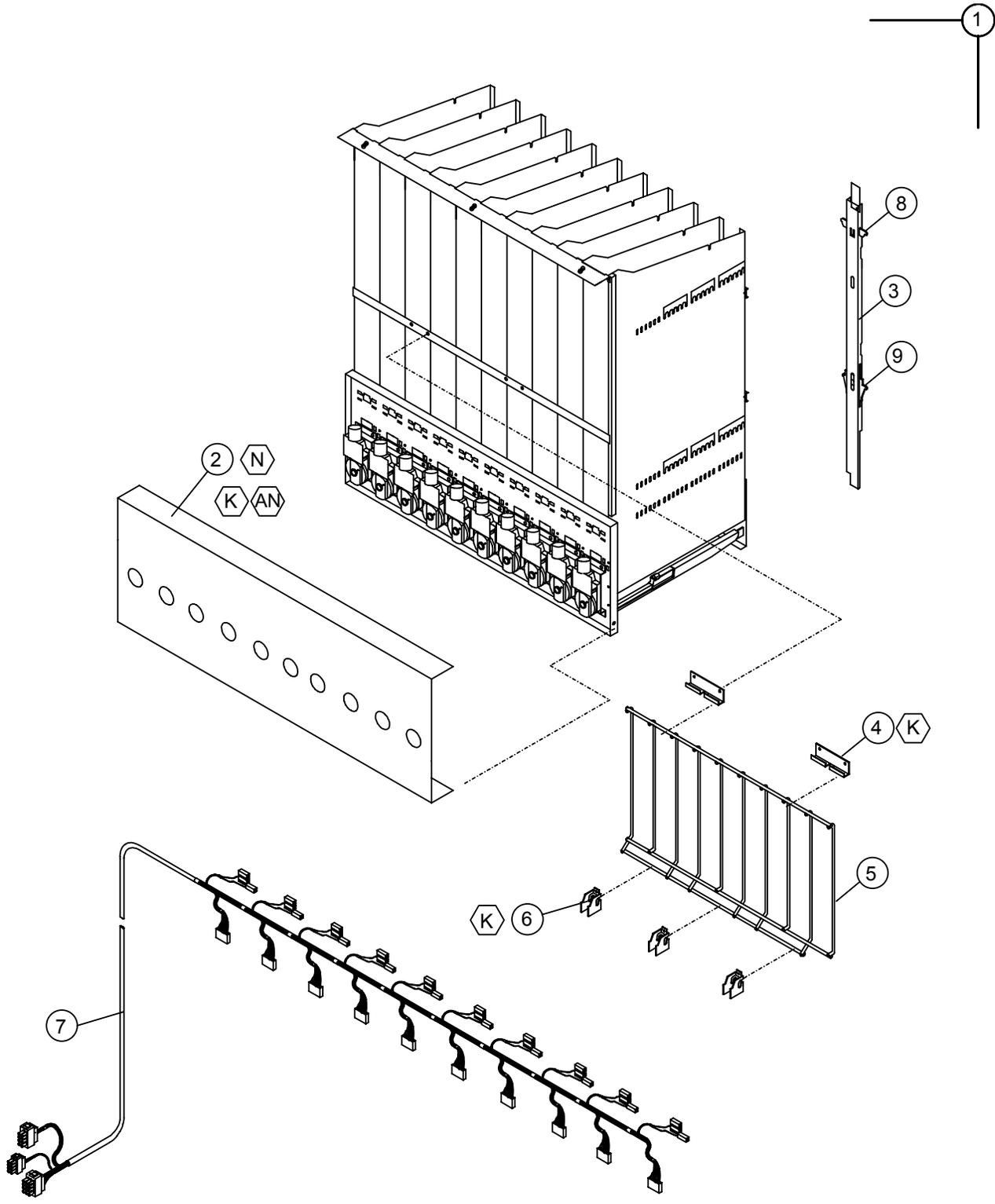


HVV CABINET ASSEMBLY

ITEM NO.	DESCRIPTION	QTY REQ	PART NO.
1*	CABINET ASSEMBLY - FOAMED	1	~
2	CLOSURE BRACKET	2	1078791
3	HINGE PIN	1	389071
4	RAMP	1	1120387
5	AIR DAM – RIGHT	1	1122548
6	LEVELING LEG	4	1059902
7	CONDENSATE PAN	1	1120724
8	DRAIN TUBE	1	1088449
9	NUT - DRAIN TUBE	1	387925
10	DRAIN TUBE GASKET	1	387837
11	DRAIN TUBE FUNNEL	1	1068678
12	BRACKET - REFRIGERATION	2	388387
13	LATCH BRACKET	1	1121186
14**	SIDE DECAL	2	**
15	AIR BAFFLE – CABINET, 39"	1	1068023
~	AIR BAFFLE – CABINET, 32"	1	1120137
16	TOP HINGE, BLUE	1	2000805-04
~	TOP HINGE, GREEN	1	2000805-06
~	TOP HINGE, BLACK	1	2000805-03
17	TOP HINGE BACKING PLATE	1	1120667
18	BRACKET STACK SUPPORT, REAR	2	1079015
~	BRACKET STACK SUPPORT, FRONT	2	1079007
19	LEFT AIR DAM ASSEMBLY (SEE PG. C-15 FOR DETAIL)	1	2008759-01
~	LEFT AIR DAM ASSEMBLY, 32"	1	2008759-13
20	COATED PRODUCT CHUTE, 39"	1	1121926
~	COATED PRODUCT CHUTE, 32"	1	1121926-1
21	DOOR SWITCH BRACKET	1	1121043
22	DOOR SWITCH	1	323007
23	OVERLAPPING DOOR GUARD – 72", BLUE	1	2010111
~	OVERLAPPING DOOR GUARD – 79", BLUE	1	2010111-1
~	OVERLAPPING DOOR GUARD – 72", BLACK	1	2001376
~	OVERLAPPING DOOR GUARD – 79", BLACK	1	2002325
24	SAFETY SCREEN, 39"	1	1009729-6
~	SAFETY SCREEN, 32"	1	1009729-7
25	SEAL, 39"	1	1122500
~	SEAL, 32"	1	1122500-1
26	GROMMET	1	1007319
27	LOWER HINGE BRACKET (NOT PICTURED)	1	1121924
28	FIBERGLASS BOARD, EVAPORATION (NOT PICT.)	1	1122728

*NOTE: WHEN ORDERING CABINET ASSEMBLY, PLEASE PROVIDE **9-CODE** OR **11-CODE** AND **MANUFACTURER'S DATE CODE**.

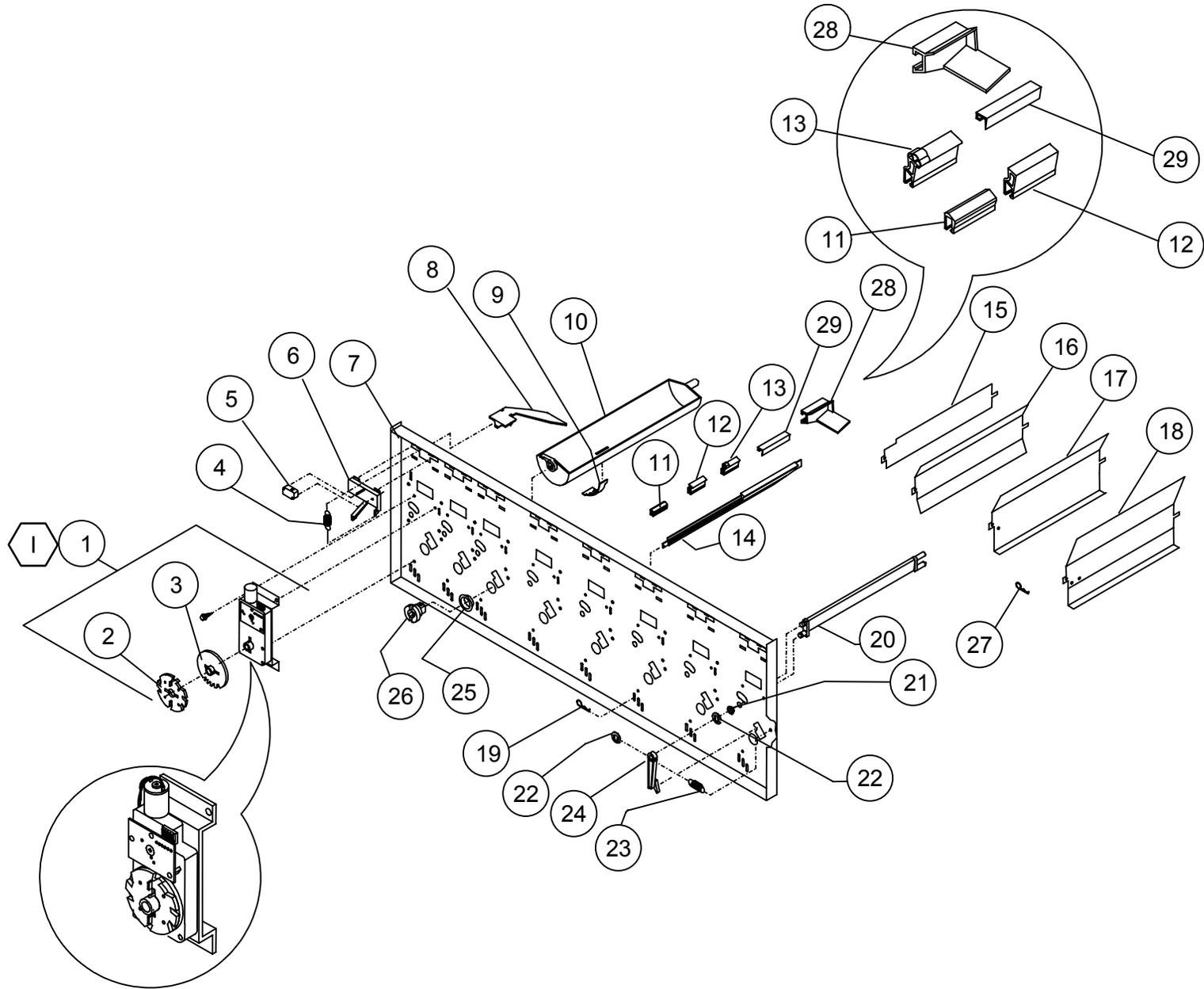
NOTE: WHEN ORDERING DECALS, PLEASE PROVIDE **STYLE.





HVV STACK ASSEMBLY

ITEM NO.	MODEL NUMBER		720	840	576
	DESCRIPTION	QTY REQ	PART NO.	PART NO.	PART NO.
1	STACK CHASSIS ASSEMBLY	1	1112694-01	1112694-02	1112694-03
2	MECH COVER	1	1076634	1076634	1117724
3	BACK SPACER ASSEMBLY	10	2009473-01	2009473	2009473-01
4	HOOK RACK RETAINER	2	1086813	1086813	1086813
5	LOADING RACK / PRODUCT RETAINER	1	1086805-1	1086805-1	1117848
6	BRKT - LOADING RACK	3	1120095	1120095	1120095
7	MOTOR HARNESS	1	1120138	1120138	1117856
8	HANGER -TOP	1	1120489	1120489	1120489
9	HANGER - BOTTOM	1	1120490	1120490	1120490

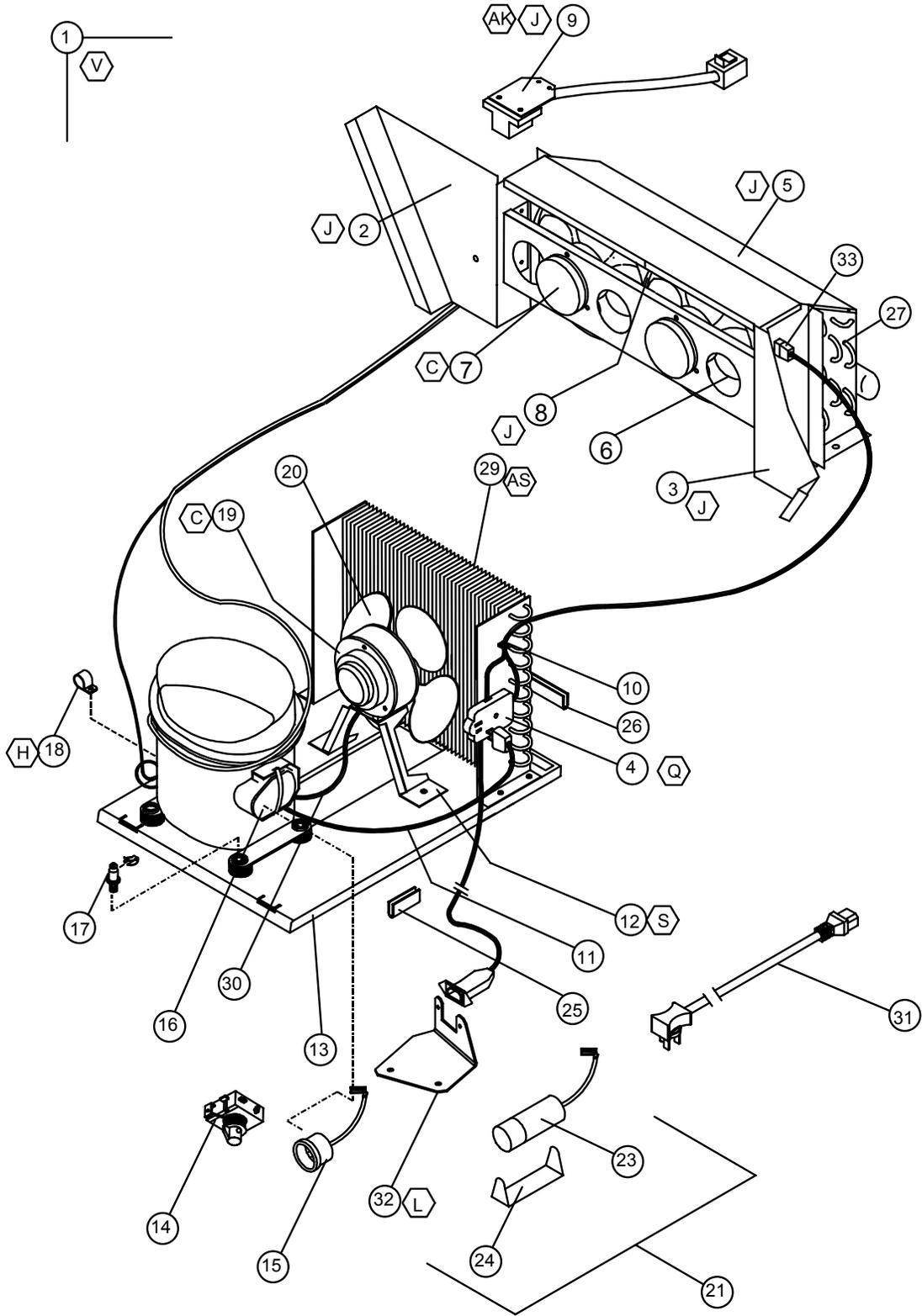




HVV STACK ASSEMBLY

ITEM NO.	DESCRIPTION	QTY REQ	PART NO.
1	VEND MOTOR ASSEMBLY	10	1115821
2	RETAINER - CAM	1	1113244
3	TIMING CAM	1	1113236
4	SPRING	10	390326
5	SWITCH – SOLD OUT	10	368299
6	SWITCH MOUNT – SOLD OUT	10	1120037
7	FRONT MECH PLATE, 39"	1	1079023
~	FRONT MECH PLATE, 32"	1	1117678
8	SOLD OUT LEVER - LONG	10	1112163
9	ANTI-THEFT CLIP	40	389712
10	VEND BUCKET	10	1120146
11	* CLIP - SEE PRODUCT SET UP GUIDE (SHORT - WHITE)	AR	1066104
12	* CLIP - SEE PRODUCT SET UP GUIDE (MEDIUM - GREY)	AR	1066112-1
13	* CLIP - SEE PRODUCT SET-UP GUIDE (TALL - BLACK)	AR	1066112
14	GAGE BAR	10	1111651
15	* PRODUCT SPACER - FLAT .06	AR	1078848
16	*PRODUCT SPACER - 0.27	AR	1122032
~	* PRODUCT SPACER - 0.37	AR	1078864
17	* PRODUCT SPACER - 0.47	AR	1078872
18	* PRODUCT SPACER - 0.74	AR	1122166
19	COTTER CLIP - GAGE BAR	10	387450
20	GATE	10	1121282
21	BUSHING - GATE (FRONT & REAR)	20	385603-5
22	E-CLIP - GATE	20	388589
23	SPRING	10	387849
24	GATE LINK	10	1120140
25	BUSHING - VEND BUCKET (FRONT & REAR)	20	1008706
26	MOTOR COUPLING	10	1076465
27	COTTER CLIP - SPACER	1	1032526
28	FOUR-DEEP CLIP (D CLIP)	1	1122103
29	THIRD CAN CLIP (E CLIP)	1	1121704

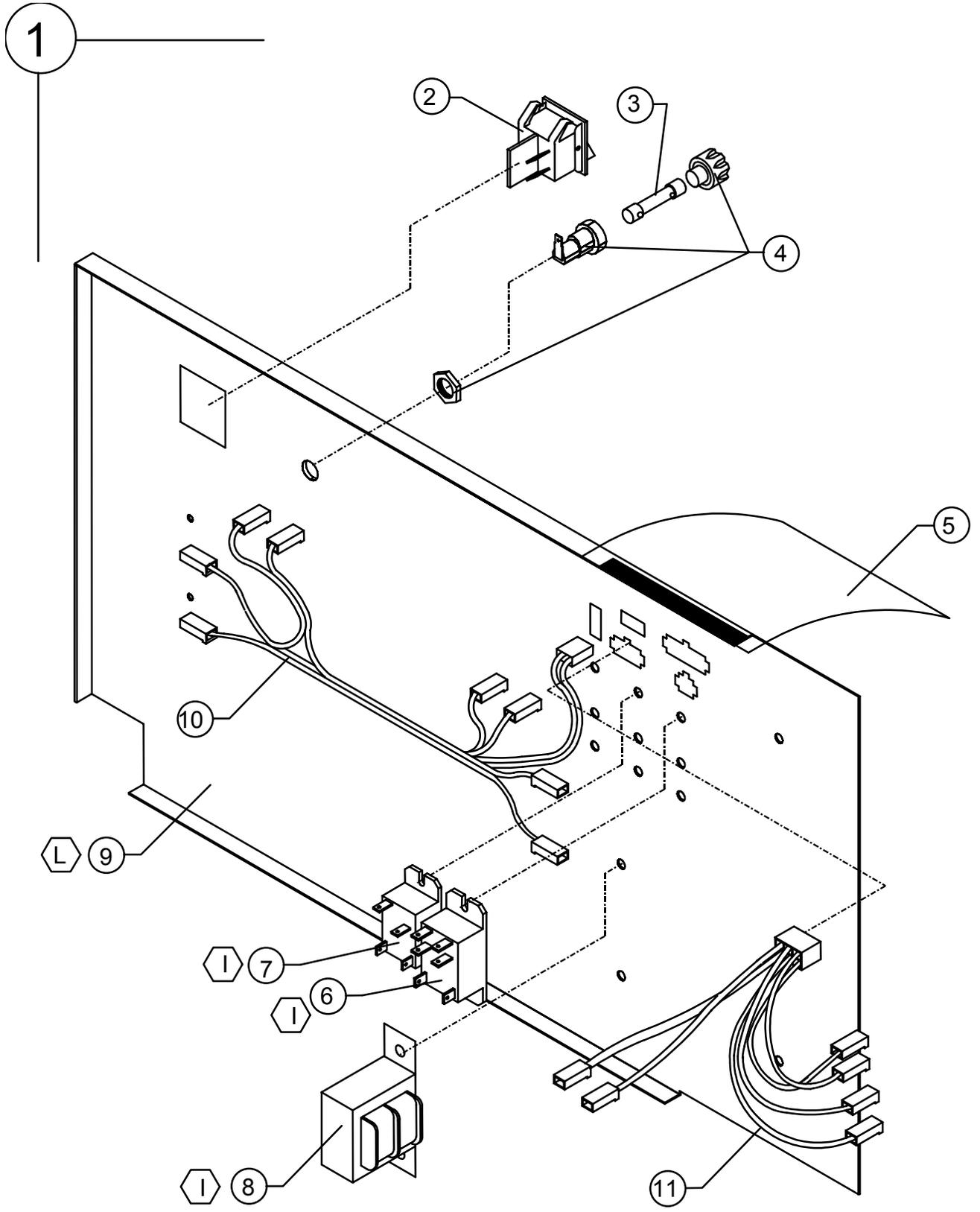
* NOTE: DEPENDING ON PRODUCT SET-UP





HVV REFRIGERATION ASSEMBLY

ITEM NO.	DESCRIPTION	QTY REQ	110V PART NO.
1	REFRIGERATION ASSEMBLY D90 TE S 1/3 R134a CAP START	1	1120341
2	RIGHT EXTENSION - EVAPORATOR	1	1122351
3	LEFT EXTENSION - EVAPORATOR	1	1122350
4	SERVICE PLUG ASSEMBLY US	1	1122251
5	TOP COVER - EVAPORATOR	1	1121640
6	FAN BLADE	1	1113562
7	EVAPORATOR FAN MOTOR	2	42321-17
8	ORIFICE PLATE - EVAPORATOR FAN	1	1120571
~	ORIFICE PLATE - EVAPORATOR FAN, 32" SINGLE FAN	1	390228
9	TEMP SENSOR ASSY - INCLUDES BRACKET	1	1121777
10	CLAMP PUSH MOUNT	1	384692-3
11	COMPRESSOR CORD	1	1121019
12	BRACKET - CONDENSER FAN	1	389797
13	BASE - REFRIGERATION	1	1006703
14	START RELAY (PART OF ASSY 513506066)	1	~
15	OVERLOAD PROTECTOR (PART OF ASSY 513506066)	1	~
16	COVER - OVERLOAD (PART OF ASSY 513506066)	1	~
17	STUD COMPRESSOR MOUNT	2	390102
18	CLAMP	1	324099-3
19	FAN MOTOR - CONDENSER	1	1121770
20	FAN BLADE - CONDENSER	1	320766
21	CAPACITOR ASSEMBLY	1	1112805
22	CAPACITOR CLIP (NOT PICTURED)	1	1076481
23	START/END CAPACITOR	1	1122999
24	BRACKET, CAPACITOR	1	1112848
25	EDGE TRIM - SHORT	3	388304-1
26	EDGE TRIM - LONG	1	388304-3
27	EVAPORATOR	1	385470
28	EVAPORATOR FAN BRACKET MOUNT (NOT PICTURED)	6	1117996
29	CONDENSER	1	1120437
30	CONDENSER MOTOR CORD	1	1121020
31	CORD SET, DOM 90° PLUG	1	1122252
32	POWER INLET BRACKET	1	1122577
33	EVAPORATOR FAN HARNESS	1	1122193





HVV AIR DAM ASSEMBLY

ITEM NO.	DESCRIPTION	QTY REQ	PART NO.
1	AIR DAM ASSEMBLY, LEFT HAND – 39"	1	2008759-01
~	AIR DAM ASSEMBLY, LEFT HAND – 32"	1	2008759-13
2	POWER SWITCH	1	1084546
3	0.8 AMP FUSE	1	1053864
4	FUSE HOLDER	1	387966
5	RAIN CURTAIN	1	1121660
6	RELAY – REFRIGERATION	1	1079724
7	RELAY – LIGHT	1	1089333
8	TRANSFORMER	1	1111201
9	PANEL – LEFT HAND AIR DAM, 39"	1	1121202
~	PANEL – LEFT HAND AIR DAM, 32"	1	1123111
10	HARNESS - POWER	1	1110864
11	HARNESS - RELAYS AND TRANSFORMER	1	1078732



**VENDO HARNESS QUICK REFERENCE GUIDE
For Pepsi-Cola High Visibility Vendors**

PART NO.	DESCRIPTION	PURPOSE	720	840	576
1077686	Door Harness	Connects motors, temp sensor, transformer, refrigeration relay, and light relay to the control board	X	X	X
1035835	MDB Validator Harness	Connects coin changer and validator to the control board	X	X	X
1089341	MDB Changer Harness	Connects coin changer (only) to the control board	X	X	X
1121067	Selection Harness – Right Side – 6 Select	Connects right hand side selection switches to the control board	X	X	
1122777	Selection Harness – Right Side – 3 Select	Connects right hand side selection switches to the control board			X
1121085	Selection Harness – Left Side – 6 Select	Connects left hand side selection switches to the control board	X	X	
1122778	Selection Harness – Left Side – 3 Select	Connects left hand side selection switches to the control board			X
1121211	Selection Harness – Right Side (SO/RTV Lights) – 6 Select	Connects right hand side selection switches and SO/RTV lights to control board (ONLY FOR EQUIPMENT WITH SO/RTV OPTION)	X	X	
1122779	Selection Harness – Right Side (SO/RTV Lights) – 3 Select	Connects right hand side selection switches and SO/RTV lights to control board (ONLY FOR EQUIPMENT WITH SO/RTV OPTION)			X
1121206	Selection Harness – Left Side (SO/RTV Lights) – 6 Select	Connects left hand side selection switches and SO/RTV lights to control board (ONLY FOR EQUIPMENT WITH SO/RTV OPTION)	X	X	
1122780	Selection Harness – Left Side (SO/RTV Lights) – 3 Select	Connects left hand side selection switches and SO/RTV lights to control board (ONLY FOR EQUIPMENT WITH SO/RTV OPTION)			X
1121174	Display Harness	Connects display to the control board	X	X	X
1120138	Motor Harness – 10 Select	Connects vend motors to the door harness	X	X	
1117856	Motor Harness – 8 Select	Connects vend motors to the door harness			X
1121777	Temperature Sensor Harness Assembly	(Includes Temperature Sensor) Connects temperature sensor to the door harness	X	X	X
1120617	Service Cord	Connects the refrigeration deck and air dam (ON/OFF switch) to the wall outlet	X	X	X
1122251	Service Cord – Modular	Connects the refrigeration deck to the service cord outlet	X	X	X
1122252	Service Cordset – Modular	Connects 1122251 to the wall outlet	X	X	X
1118686	Compressor Cord	Connects compressor to the junction box of the service cord	X	X	X
1122193	Evaporator Harness	Connects evaporator fan motors to the compressor junction box	X	X	X
1110864	Power Harness	Connects fuse, transformer, light relay, and ON/OFF switch	X	X	X
1078732	Relay Harness	Connects light relay input and transformer output to the door harness	X	X	X



VENDO HARNESS QUICK REFERENCE GUIDE - CONTINUED
For Pepsi-Cola High Visibility Vendors

PART NO.	DESCRIPTION	PURPOSE	720	840	576
1122607	Lock System Harness	Connects electronic lock system to the control board	X	X	X
1122609	Lighting Harness –Top	Connects upper lights to the ballast (includes lamp holders)	X	X	X
1122610	Lighting Harness – Middle & Bottom	Connects middle and lower lights to the ballast (includes the lamp holders)	X	X	X
1121142	Battery Pack Harness	Connects auxiliary battery back up to the electronic lock	X	X	X

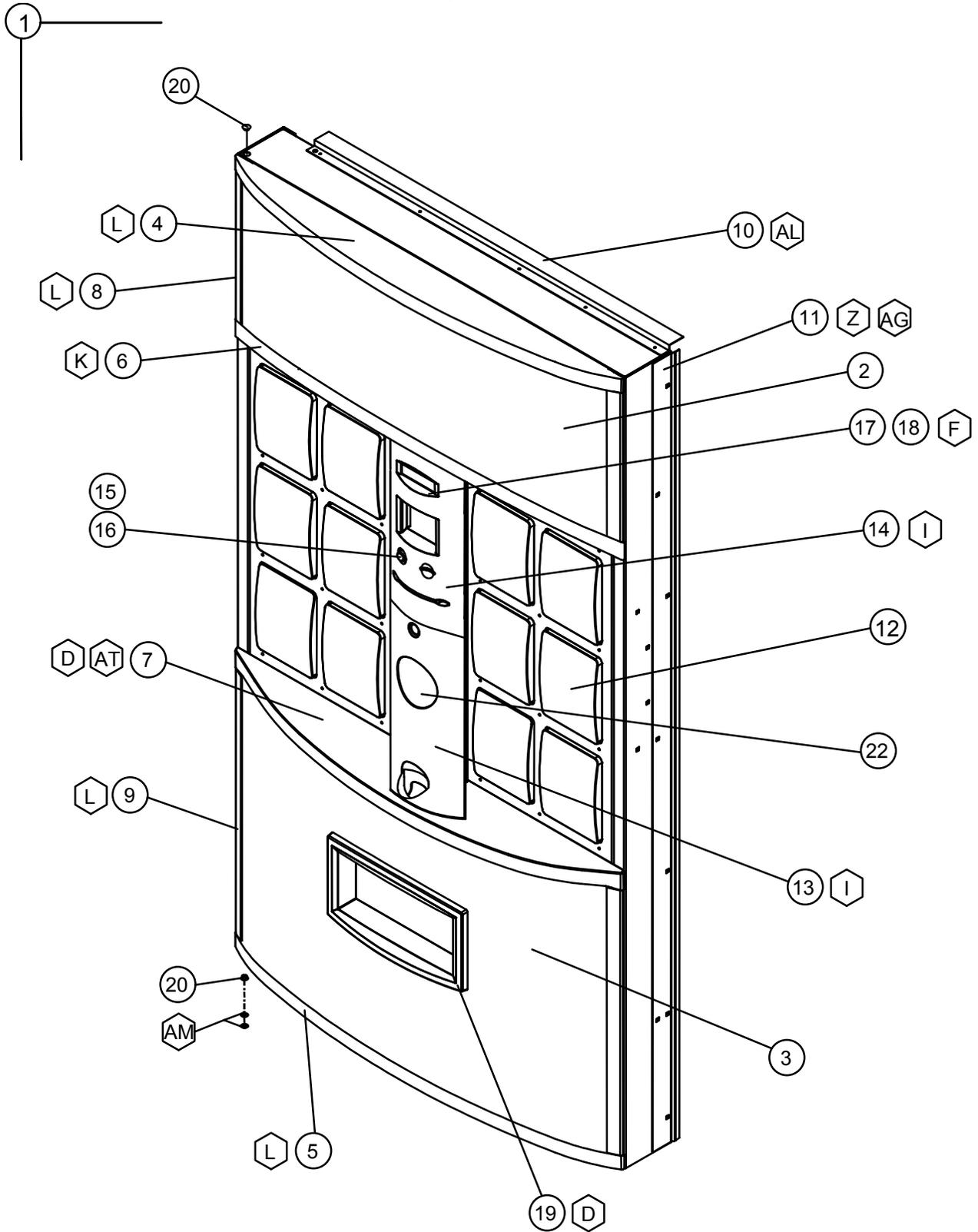


NOTES



V-MAX

HVV DOOR PARTS SECTION



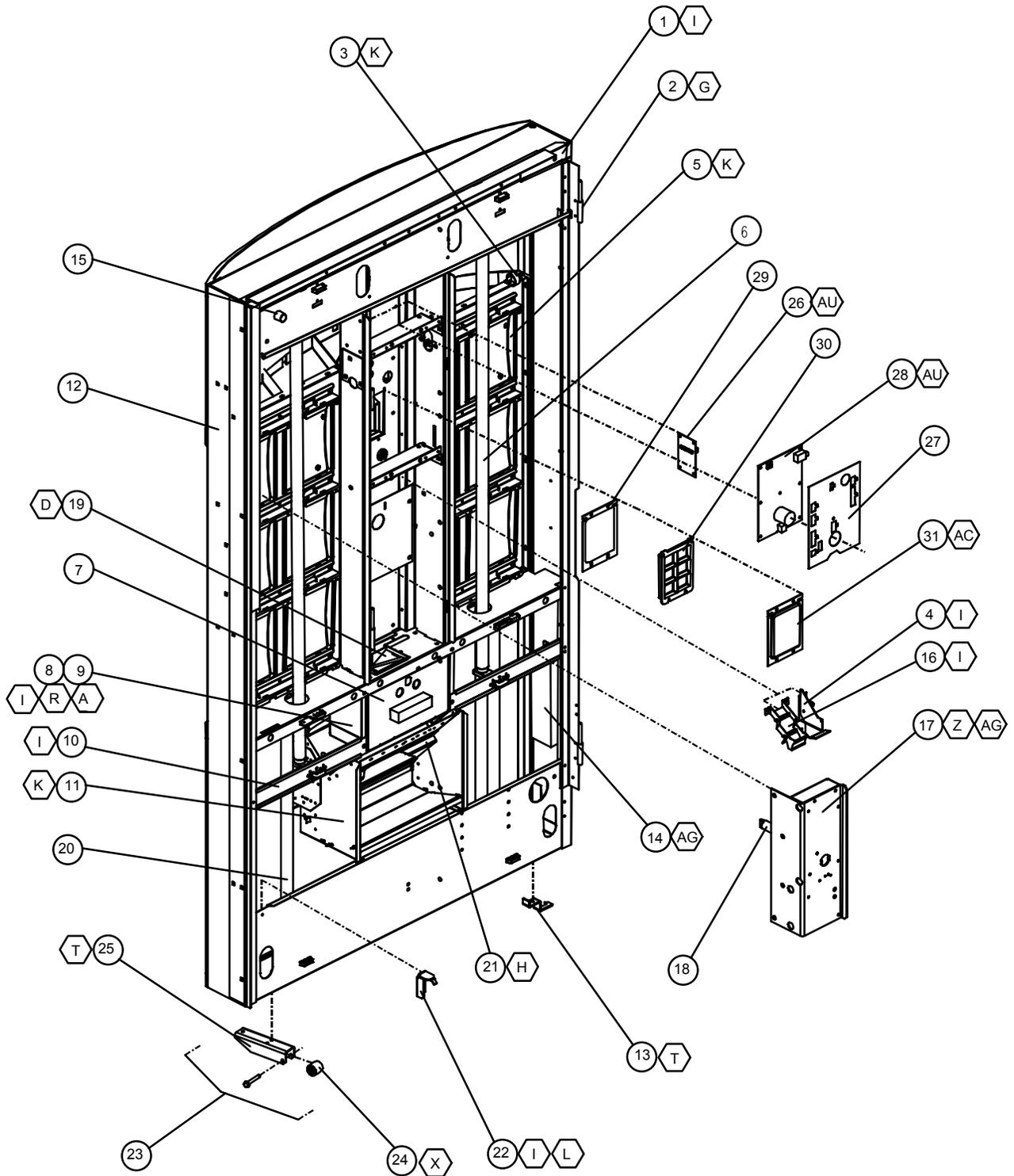


HVV DOOR FRONT

ITEM NO.	DESCRIPTION	QTY REQ	PART NO. 720	PART NO. 840	PART NO. 576
1	SERVICE DOOR, BLUE, W/O SO/RTV SERVICE DOOR, BLUE, WITH SO/RTV SERVICE DOOR, GREEN, W/O SO/RTV SERVICE DOOR, GREEN, WITH SO/RTV SERVICE DOOR, BLACK, W/O SO/RTV SERVICE DOOR, BLACK, WITH SO/RTV	1	1112619-21 1112619-22 1112619-25 1112619-26	1112619-23 1112619-24 1112619-27 1112619-28	1112619-29 1112619-30 N/A N/A
2	UPPER SIGN FACE **	1	**	**	**
3	LOWER SIGN FACE **	1	**	**	**
4	UPPER SIGN CAP, BLUE UPPER SIGN CAP, GREEN UPPER SIGN CAP, BLACK	1	1114341-2 1114341-4 1114341	1114341-2 1114341-4 1114341	388122-1 N/A N/A
5	LOWER SIGN CAP, BLUE LOWER SIGN CAP, GREEN LOWER SIGN CAP, BLACK	1	1114341-3 1114341-5 1114341-1	1114341-3 1114341-5 1114341-1	1084988-1 N/A N/A
6	UPPER / MIDDLE SIGN CAP, BLUE UPPER / MIDDLE SIGN CAP, GREEN UPPER / MIDDLE SIGN CAP, BLACK	1	1121063 1121063-1 1121063-2	1121063 1121063-1 1121063-2	1122769 N/A N/A
7	LOWER / MIDDLE SIGN CAP, BLUE LOWER / MIDDLE SIGN CAP, GREEN LOWER / MIDDLE SIGN CAP, BLACK	1	1121060 1121060-1 1121060-2	1121060 1121060-1 1121060-2	1122768 N/A N/A
8	UPPER SIGN TRIM, 72", BLUE UPPER SIGN TRIM, 79", BLUE UPPER SIGN TRIM, 72", GREEN UPPER SIGN TRIM, 79", GREEN UPPER SIGN TRIM, 72", BLACK UPPER SIGN TRIM, 79", BLACK	2	1121100-1 ~ 1121100-4 ~ 1121100-7 ~	~ 1121100-2 ~ 1121100-5 ~ 1121100-8	1121100-1 ~ N/A N/A N/A N/A
9	LOWER SIGN TRIM, 72" & 79", BLUE LOWER SIGN TRIM, 72" & 79", GREEN LOWER SIGN TRIM, 72" & 79", BLACK	2	1121100 1121100-3 1121100-6	1121100 1121100-3 1121100-6	1121100 N/A ~
10	RAIN GUARD (BLUE) RAIN GUARD (GREEN) RAIN GUARD (BLACK)	1	2005872 2005872-01 2000848	2005872 2005872-01 2000848	2005937 N/A N/A
11	DOOR GUARD, 72", BLUE DOOR GUARD, 79", BLUE DOOR GUARD, 72", GREEN DOOR GUARD, 79", GREEN DOOR GUARD, 72", BLACK DOOR GUARD, 79", BLACK	1	1122179 ~ 1122179-2 ~ 2010131 ~	~ 1122179-1 ~ 1122179-3 ~ 2009503	1122179 ~ N/A N/A N/A N/A
12	SELECTION PANEL (SEE PAGE D-7)	~	~	~	~
13	LOWER CONSUMER PANEL, WITHOUT KEY	1	1121064-1	1121064-1	1121064-1
14	UPPER CONSUMER PANEL UPPER CONSUMER PANEL WITHOUT DBV	1	1121084 1121084-1	1121084 1121084-1	1121084 1121084-1
15	SELECTION SPRING	1	1029959	1029959	1029959
16	COIN RETURN BUTTON	1	1050473	1050473	1050473
17	DISPLAY LENS	1	1121103	1121103	1121103
18	SERIAL DISPLAY, 2 X 20	1	1121184	1121184	1121184
19	EYELET TRIM	1	1121102	1121102	1121102
20	HINGE BUSHING	2	388094	388094	388094
21	PEPSI LOGO DECAL ** AQUAFINA LOGO DECAL ** MOUNTAIN DEW LOGO DECAL **	1	**	**	**

* NOTE: When ordering door assembly, please provide **9-Code** or **11-Code** and **Manufacturer's Date Code**.

** NOTE: When ordering graphics please provide **style**.

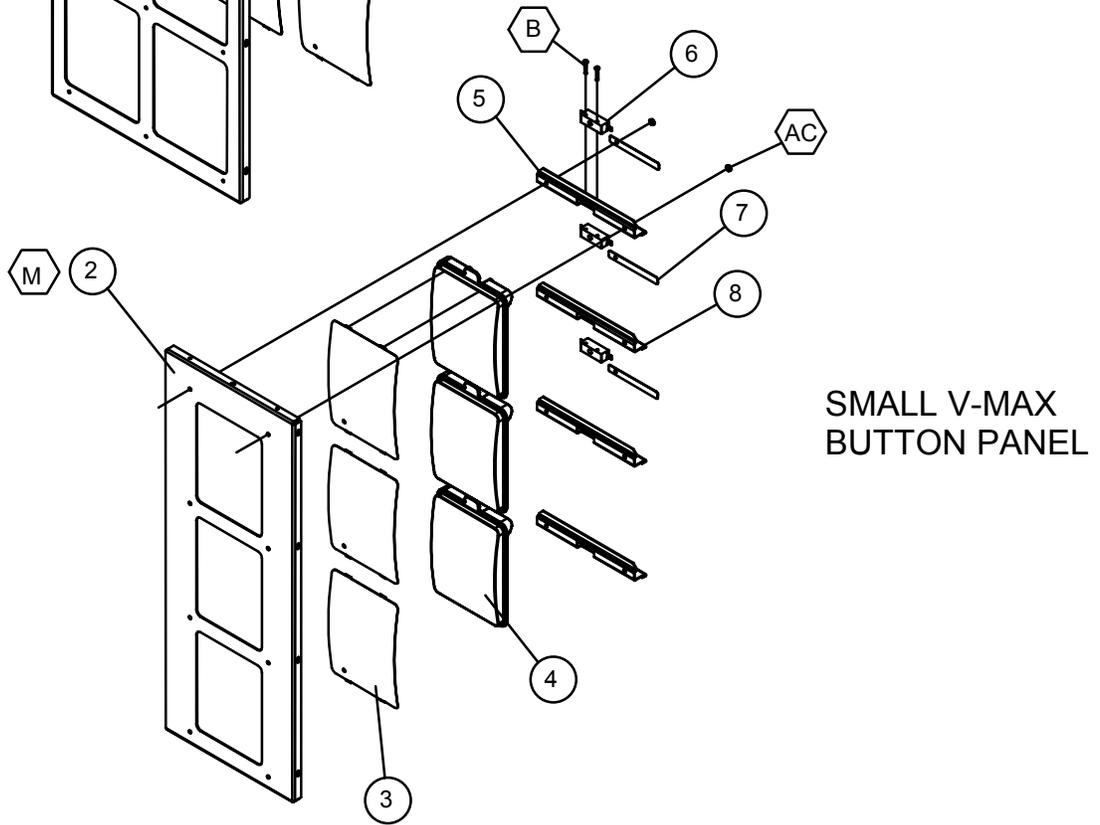
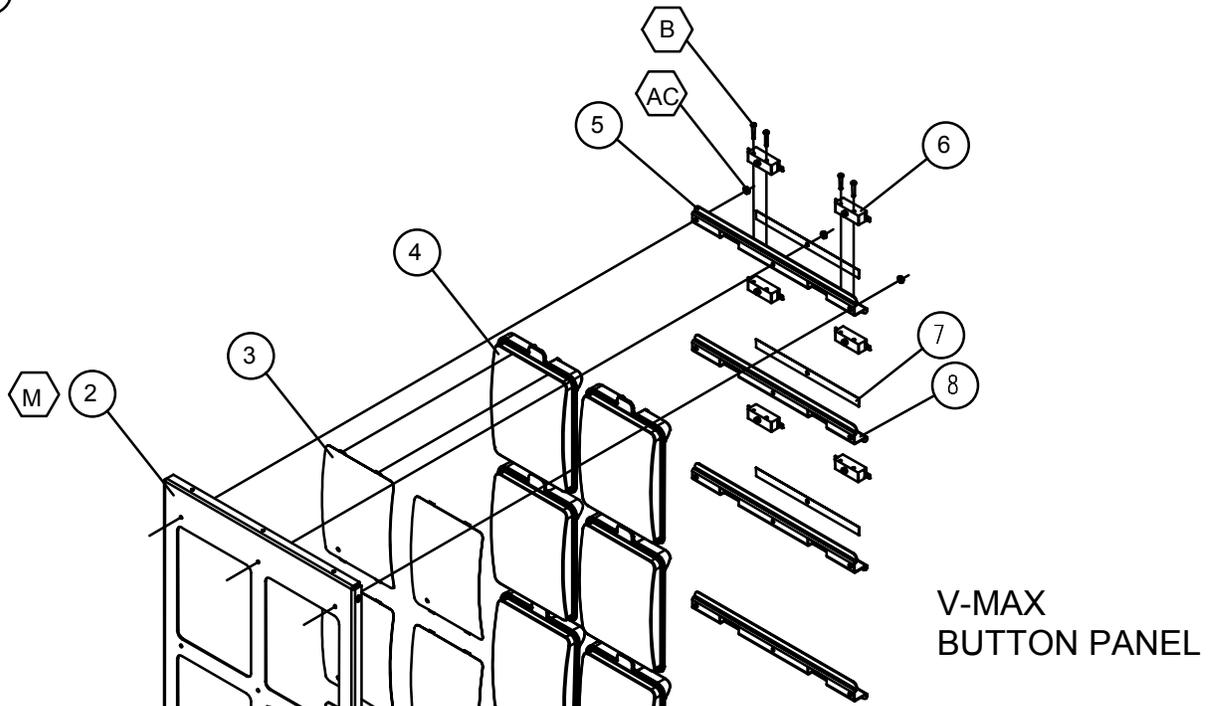
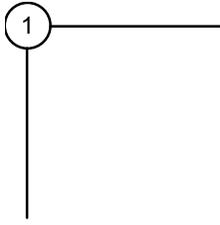




HVV DOOR BACK

ITEM NO.	DESCRIPTION	QTY REQ	PART NO. 720	PART NO. 840	PART NO. 576
1	RAIN GUTTER	1	1121204	1121204	1121204
2	INNER DOOR HINGE, MALE	1	1121287	1121287	1121287
3	CLAMP	1	324099-12	324099-12	324099-12
4	COIN RETURN ASSEMBLY COIN RETURN PIVOT BRACKET COIN RETURN CRANK COIN INSERT SPRING SHOULDER WASHER	1	2006236-43 1121071 1121072 1060023 1122715	2006236-43 1121071 1121072 1060023 1122715	2006236-43 1121071 1121072 1060023 1122715
5	BUTTON ASSEMBLY (SEE PAGE D-7)	2	*	*	*
6	LAMP 4'	2	1121173-2	1121173-2	1121173-2
7	COINBOX ASSEMBLY	1	1121124-1	1121124-1	1121124-1
8	COIN RETURN CHUTE SHIELD	1	1122615	1122615	1122615
9	COIN BOX HOUSING	1	1122639	1122639	1122639
10	LAMP HOLDER STRAP (72" ONLY)	2	1122605	~	1122605-1
11	HOPPER ASSEMBLY	1	133574-10	133574-10	133574-10
12	DOOR WELD 72", BLUE DOOR WELD 79", BLUE DOOR WELD 72", BLACK DOOR WELD 79", BLACK	1	1121120-3 ~ 1121120-10 ~	~ 1121120-4 ~ 1121120-11	1121120-3 ~ N/A N/A
13	LOWER HINGE HOOK	1	1121923	1121923	1121923
14	BALLAST	1	1122569	1122569	1122569
15	DOOR BUMPER (HEYCO 2551)	1	1036912	1036912	1036912
16	COIN INSERT CHUTE	1	1121066	1121066	1121066
17	LOCK ASSEMBLY, HT2-TT	1	1121185	1121185	1123073
18	TRITEQ LOCK LIGHT PIPE/SHROUD	1	1122604	1122604	1123026
19	COIN RETURN CHUTE	1	1121065	1121065	1121065
20	LAMP 2'	2	1121173	1121173	1121173
21	HOPPER GUARD, MEDIUM SECURITY	1	1122684	1122684	1122684
22	INNER DOOR RAMP	1	1121714	1121714	1121714
23	DOOR ROLLER ASSEMBLY	1	1120564	1120564	1120564
24	DOOR ROLLER	1	1120388	1120388	1120388
25	DOOR ROLLER BRACKET	1	1120552	1120552	1120552
26	SOLD OUT / READY TO VEND PCBA DRIVER	1	1121207	1121207	1121207
27	ELECTRONIC CONTROLLER COVER	1	1121194	1121194	1121194
28	VEC 9.3 PCBA, REV 2.030	1	1121094-30	1121094-30	1121094-30
29	DBV GASKET	1	1086759	1086759	1086759
30	DBV PLUG	1	388216-1	388216-1	388216-1
31	DBV INSERT (PLUG) BK	1	2000856	2000856	2000856

*NOTE: When ordering button assembly, please provide 9-Code or 11-Code and Manufacturer's Date Code.



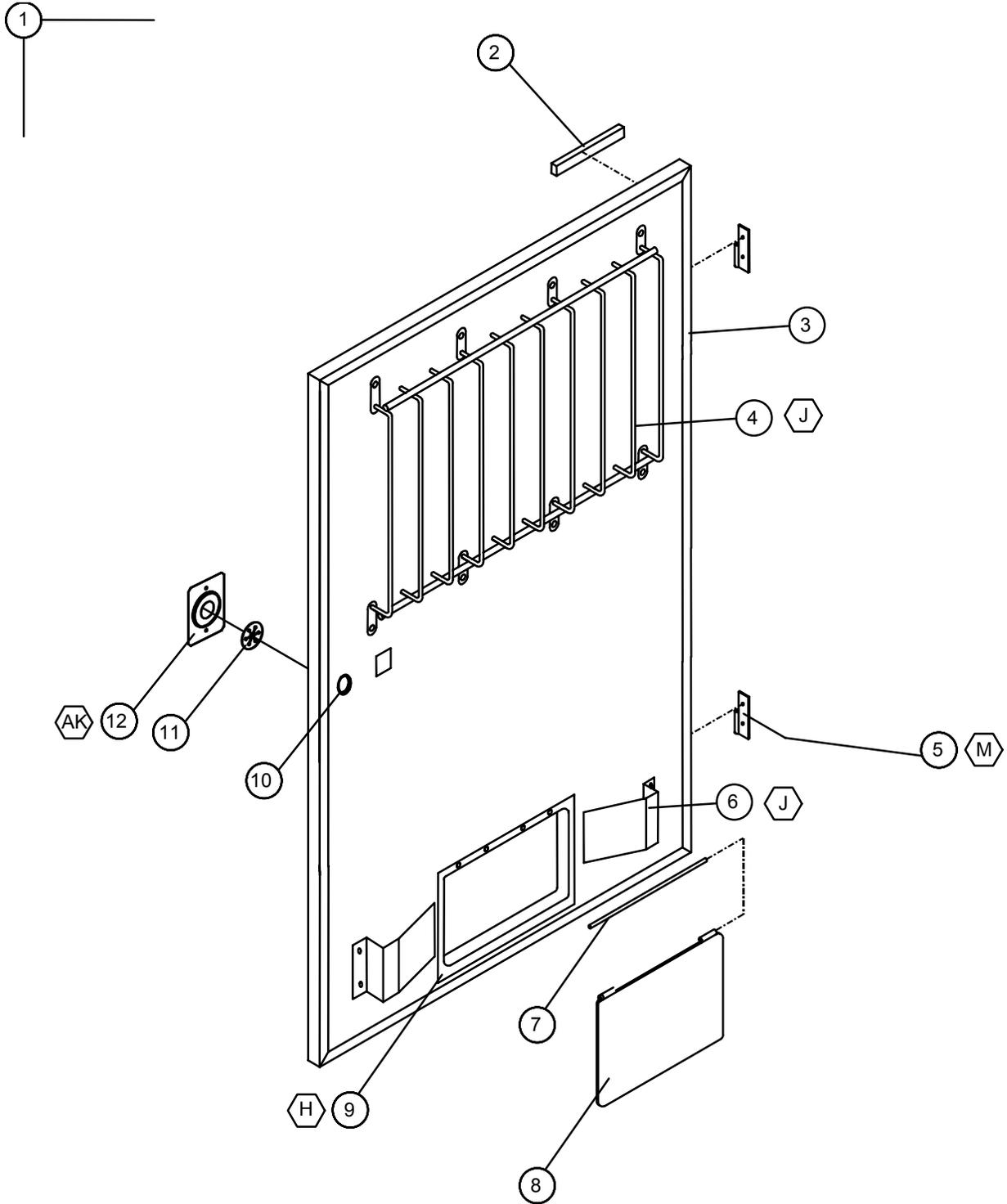


HVV SELECTION PANEL ASSEMBLY

ITEM NO.	DESCRIPTION	QTY REQ	PART NO. 720/840	PART NO. 576
1	BUTTON ASSEMBLY RIGHT PANEL ASSEMBLY, 6 SELECTION, BLUE LEFT PANEL ASSEMBLY, 6 SELECTION, BLUE SOLD OUT/READY TO VEND ASY, RIGHT, 6 SEL, BLUE SOLD OUT/READY TO VEND ASY, LEFT, 6 SEL, BLUE RIGHT PANEL ASSEMBLY, 6 SELECTION, GREEN LEFT PANEL ASSEMBLY, 6 SELECTION, GREEN SOLD OUT/READY TO VEND ASY, RIGHT, 6 SEL, GREEN SOLD OUT/READY TO VEND ASY, LEFT, 6 SEL, GREEN RIGHT PANEL ASSEMBLY, 6 SELECTION, BLACK LEFT PANEL ASSEMBLY, 6 SELECTION, BLACK SOLD OUT/READY TO VEND ASY, RIGHT, 6 SEL, BLACK SOLD OUT/READY TO VEND ASY, LEFT, 6 SEL, BLACK	2	1122613 1122613-1 1122613-2 1122613-3 1122613-6 1122613-7 1122613-8 1122613-9 1122613-20 1122613-21 1122613-22 1122613-23	1122613-4 1122613-5 1122613-14 1122613-15 N/A N/A N/A N/A N/A N/A N/A N/A
2	BUTTON PANEL, BLUE BUTTON PANEL, GREEN BUTTON PANEL, BLACK	2	1121121 1121121-01 1121121-03	1122884 N/A N/A
3	FLAVOR LABEL **	**	**	**
4	SELECTION BUTTON	12	1121057	1121057
5	2-TERMINAL SWITCH	12	1120885	1120885
6	FLAT SPRING	6	1121112	1121112
7	BUTTON SUPPORT SWITCH MOUNT	8	1121070	1121070

* NOTE: When ordering button assembly, please provide **9-Code** or **11-Code** and **Manufacturer's Date Code**.

** NOTE: When ordering graphics please provide **style**.





HVV INNER DOOR

ITEM NO.	DESCRIPTION	QTY REQ	PART NO. 720	PART NO. 840	PART NO. 576
1	INNER DOOR ASSEMBLY	1	134302-61	134302-66	134302-76
2	RAIN SEAL, INNER DOOR, 7"	1	1111732-2	1111732-2	1111732-2
3	INNER DOOR SEAL, 79"	1	1075678	1075678-1	1075678
4	UPPER PRODUCT RETAINER	1	1120633-4	1120633-5	1120093
5	INNER DOOR HINGE, FEMALE	2	1121286	1121286	1121286
6	PRODUCT DEFLECTOR	2	1120129	1120129	1120129
7	HINGE PIN	1	389985	389985	389985
8	REVERSABLE VEND FLAP	1	1013076	1013076	1013076
9	INNER DOOR EYELET	1	387273	387273	387273
10	GROMMET	1	388090	388090	388090
11	INNER DOOR LATCH	1	1121711	1121711	1121711
12	INNER DOOR LATCH BRACKET	1	1121712	1121712	1121712



NOTES



V-MAX

MAINTENANCE SECTION



MAINTENANCE

The following section is a basic guide for general maintenance and servicing of the vendor. This section is divided into three parts: (I) Preventative Maintenance, (II) Lubrication Guide, and (III) Care and Cleaning.

I. PREVENTATIVE MAINTENANCE SUGGESTIONS:

Whenever a vendor is visited on its site, the following service should be performed. Preventative maintenance will help prevent future problems with the vendor.

- A. Observe the vendor and its surrounding area for any unusual indications of problems (rear of cabinet, obstructions of the air flow, dark spots on the sign face, etc.).
- B. Open the door and visually check the inside of the vendor (water accumulation, rust marks, moisture around the edges of the inner door, etc.).
- C. Check the fluorescent lamps, replace as necessary. Replace all lamps within 24 to 48 hours of burnout. This will prevent damage to the ballast.
- D. Check the product temperature for proper cooling.
- E. Check evaporator drain for obstruction; water in the evaporator area must drain to the condensation pan.
- F. Empty condensation pan.
- G. Clean the condenser, free vanes of dirt, lint, etc.
- H. Check that evaporator fan(s) run normally.
- I. Check that the compressor and condenser fan run normally.
- J. Investigate any unusual sounds (fan blades hitting something, refrigeration lines rattling, etc.).
- K. Clean coin acceptor.
- L. Deposit all coinage accepted by the vendor to check for proper operation of the coinage mechanism.
- M. Test the vendor and make a report on the problems.

II. LUBRICATION GUIDE:

Lubricate indicated areas as directed on the chart below.

INTERVALS	PARTS	LUBRICANT
Every six months	Top door hinge, hinge pin at the base of cabinet	Grade two, high low temperature grease
As necessary	Pivot area of bucket and gate	Grade two, high low temperature grease



III. CARE AND CLEANING

DO NOT USE WATER JET FOR CLEANING.

AVOID USING WATER OR ANY OTHER LIQUIDS NEAR ELECTRONIC COMPONENTS

- A. GENERAL PROCEDURE (painted metal areas)
Wash vendor with soap and water. The exterior may be waxed with any good automobile wax.
- B. FRESH PAINT SPLASHES, GREASE, GLAZING COMPOUND REMOVAL
Before drying, these elements may be removed by rubbing lightly with grade "A" Naptha (or equivalent grade solvent). After removal, use general cleaning procedure (listed above in A).
- C. LABELS AND STICKER REMOVAL
Use Kerosene, VM&P grade Naptha or petroleum spirits for removal. When the label material does not allow penetration of solvent (such as vinyl), the application of heat (hair blow dryer) will soften the adhesive and promote removal. **CAUTION:** Excessive heat can cause surface damage. After the label is removed, use the general cleaning procedure (listed above in A).
- D. SCRATCH REMOVAL
Remove or minimize hairline scratches and minor abrasions by using any good quality automobile polish. Test product before using.
- E. LEXAN SIGNS
To clean Lexan sign faces, the following procedure is recommended.
 - 1. Wash sign with mild soap or detergent and lukewarm water.
 - 2. Using soft cloth or sponge; gently wash the sign. **DO NOT SCRUB!**
 - 3. Rinse well with clean lukewarm water.
 - 4. Dry thoroughly with a chamois or cellulose sponge (to prevent water spotting).**DO NOT USE SQUEEGEE!**
NOTE: Most organic solvents, petroleum, spirits, or alcohol are **NOT** compatible cleaning materials for Lexan signs. Usage of those materials could permanently damage the sign.
- F. REFRIGERATION AREA
The condenser and evaporator must be kept clean for efficient operation. Be sure all vanes and tubing are clean and clear of obstruction; this allows free passage of air. Clean with a brush, a vacuum cleaner or compressed air. Keep cabinet drain open; clean as necessary.



REFRIGERATION OPERATION

The refrigeration operation section is divided into three areas: Basic Refrigeration Principle, Detailed Vending Machine Refrigeration Cycle, and Parts Description.

BASIC REFRIGERATION PRINCIPLE

What a refrigeration system really accomplishes is the transfer of heat. A refrigeration system removes the excess heat from a refrigerated area and then transfers it to a condenser where it is dissipated. As heat is removed, the refrigerated area cools.

In vending machines, large quantities of the heat must be transferred rapidly, economically and efficiently. This process must be able to withstand continuous repetition, without loss of refrigerant, over an extended period. The most common system used in the vending industry is the vapor compression (or simple compression) cycle system. It consists of four basic elements: An evaporator, a compressor, a condenser, and a pressure-reducing device (all part of a sealed system).

The compression system operates at two pressure levels: The low evaporating pressure and the high condensing pressure. The refrigerant acts as the transport medium, in which heat is moved from the evaporator to the condenser; at the condenser, the heat is dissipated into the surrounding air.

The liquid refrigerant changes from a liquid to a vapor and back to a liquid again. This change of state allows the refrigerant to absorb, and rapidly discharge, large quantities of heat efficiently.

BASIC VAPOR COMPRESSION SYSTEM CYCLE:

In the evaporator the liquid refrigerant vaporizes. This change occurs at a temperature low enough to absorb heat from the refrigerated space. The temperature of vaporization is controlled by the pressure maintained in the evaporator (the higher the pressure, the higher the vaporization point).

The compressor pumps the vapor from the evaporator, through the suction line, and to the condenser. The compressor takes the low pressure vapor and compresses it, increasing both the pressure and the temperature. The compressor pumps the vapor at a rate rapid enough to maintain the ideal pressure. The hot, high pressure vapor is forced out of the compressor, into the discharge line and then into the condenser.

Air is blown through the condenser, allowing heat to transfer from the condenser and into the passing air. As the heat is removed, the stored refrigerant is condensed into a liquid. The liquid refrigerant is stored in the lower tube of the condenser. This is where it flows through the capillary tube back into the evaporator, where the refrigeration cycle is repeated.



DETAILED REFRIGERATION CYCLE

The following is a detailed refrigeration cycle as it applies to the refrigeration system installed in Vendo equipment. (Refer to the flow chart in Figure 1.)

As the air temperature in the cabinet rises, the electronic temperature sensor reports the air temperature to the electronic controller. The electronic controller actuates the refrigeration control relay, which turns on both the compressor and condenser fan motor.

The evaporator fan pulls air from the front of the refrigerated space of the cabinet. It pulls the air through the evaporator, and blows it up the back of the vend stack. (The evaporator fan runs continuously.) As the air passes through the evaporator, heat is drawn from the air and transferred to the liquid refrigerant. As the cooled air circulates through the vend stack, heat is drawn from the product and transferred to the circulating air. The heated air is again drawn through the evaporator where the heat is removed.

In the evaporator, the liquid refrigerant draws heat from the circulating air. As refrigerant receives heat, it vaporizes.

The compressor pumps the vapor from the evaporator and compresses it, increasing both pressure and temperature. The compressor forces the compressed vapor out, through the discharge line and into the condenser.

The condenser fan pulls air through the condenser. As the hot refrigerant vapor passes through the condenser tubes, heat is drawn from the vapor. This heat is dissipated into the passing air. The air then exits out the back of the vendor. As the refrigerant vapor in the condenser lines is cooled, it returns to a liquid state.

From the condenser the liquid flows to the drier. The drier removes any water and solid particles from the liquid refrigerant.

The cooled liquid refrigerant continues from the drier, through the capillary tube, to the evaporator. The capillary tube steadies the flow rate of the refrigerant. Its small inside diameter allows the pressure in the evaporator to remain low while the pressure in the condenser is high.

The cool refrigerant in the evaporator draws heat from the circulating air in the cabinet. As the temperature in the cabinet drops, the electronic temperature sensor reports the air temperature to the electronic controller. The electronic controller deactivates the refrigeration control relay, which turns off the compressor and condenser fan motor.

When the air temperature in the cabinet rises above the electronic controller's cut in setting, the compressor and the condenser fan engage again.

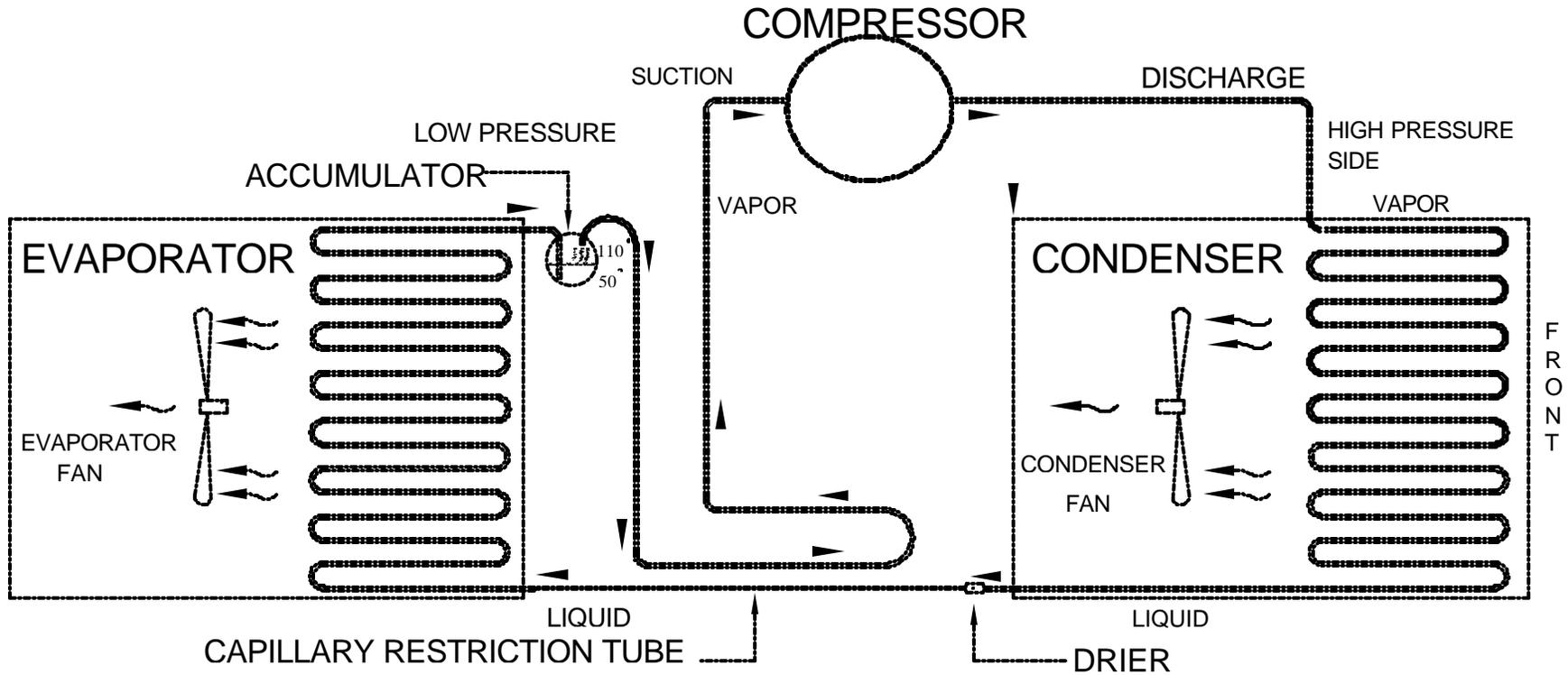


FIGURE 1



REFRIGERATION PARTS DESCRIPTION

The compressor, condenser, drier, capillary tube, evaporator, and accumulator are part of a sealed system (refer to Figure 2). These items are not available separately.

COMPRESSOR

The compressor takes in low pressure vapor and compresses it, increasing both the pressure and the temperature. The hot high pressure gas is forced out to the condenser. The compressor and the motor that drives the compressor are sealed inside a housing. The compressor, as a unit, is mounted on the refrigeration base. The base is mounted in the bottom of the vendor, outside the sealed refrigeration space.

CONDENSER

The condenser takes heat out of the high pressure vapor that it receives from the compressor. As the vapor passes through the condenser it cools and returns to a liquid state. The condenser is mounted to the refrigeration base near the front of the vendor. It is easily accessible for cleaning.

DRIER

The drier is a molecular sieve strainer drier. It removes water and solid particles from refrigerant liquid. One side of the drier is connected to the outlet line of the condenser; the other side is connected to the capillary tube going to the evaporator.

CAPILLARY TUBE

The capillary tube controls, at a steady rate, the flow of refrigerant liquid to the evaporator. It has a very small inside diameter to keep pressure in the evaporator low while the pressure in the condenser is high. It is the connecting link between the condenser and evaporator.

EVAPORATOR

The evaporator is a heat transference device. It removes the heat from the air in a refrigerated space and transfers it to the refrigerant liquid. This liquid evaporates into a vapor and is removed by the compressor. The evaporator is mounted inside the refrigerated space of the cabinet, directly below the delivery chute.

ACCUMULATOR

The accumulator traps any refrigerant liquid which did not boil off into a vapor before reaching the compressor. The accumulator allows the refrigerant liquid to boil off as a vapor (preventing damage to the compressor). It also prevents suction line sweating. The accumulator is mounted in the suction line on the outline side of the evaporator.

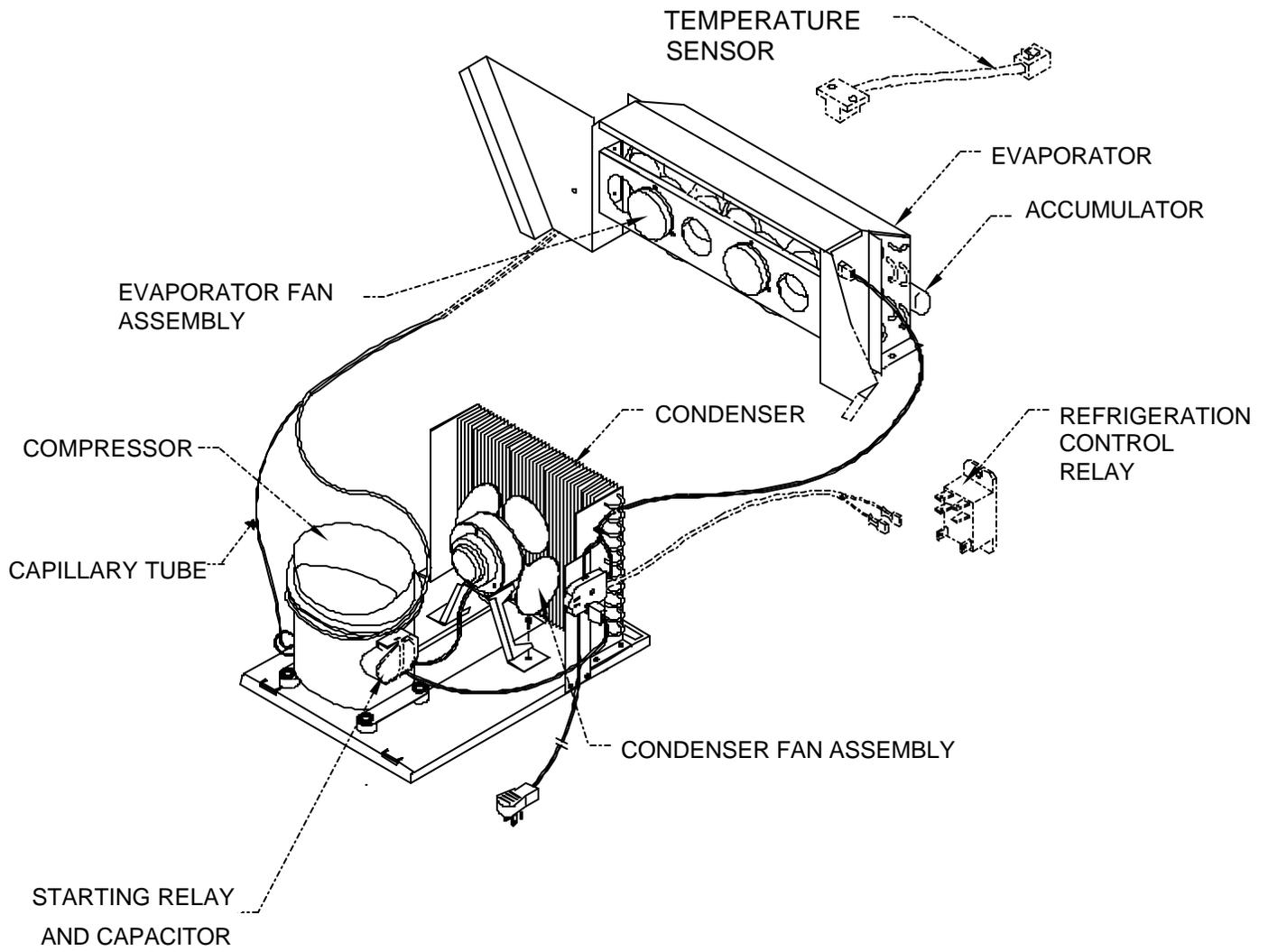


FIGURE 2



The parts listed below are not part of the sealed refrigeration system and are available separately.

START CAPACITOR - P/N: 1088562

The start capacitor is used to increase power during the start. This additional power will help get the compressor running in case there is any back pressure.

STARTING RELAY - P/N: 333894-54

The starting relay is mounted in the terminal box on the outside of the compressor under the housing. When the compressor first starts up, the starting relay closes and completes a starting circuit. When the compressor motor reaches operating speed, the starting relay opens and breaks the starting circuit.

THERMAL OVERLOAD SWITCH - P/N: 1076244

The thermal overload switch is mounted in the terminal box on the outside of the compressor under the housing. If the compressor motor gets hot or draws too much current, the thermal overload opens and breaks the starting and running circuit of the motor. As the motor cools, the thermal overload closes, allowing the compressor to resist.

REFRIGERATION CONTROL RELAY - P/N: 1079724

The refrigeration control relay is mounted behind the left side air dam. This relay controls the compressor and condenser fan motor via the electronic controller.

TEMPERATURE SENSOR - P/N: 1079716

The temperature sensor is mounted in the inlet airflow of the evaporator. This sensor monitors the air temperature and reports it to the electronic controller so that the controller can operate the refrigeration system via the refrigeration control relay.



NOTES



V-MAX

TROUBLESHOOTING



VENDO WARRANTY
For Equipment Purchased prior to 10/1/01

NEW EQUIPMENT

- I. This is a Limited Warranty.
- II. The Vendo Company warrants, to the original purchaser, each part of each new vending machine for a period of fifteen (15) months from the date of shipment, to be free from defects in material and workmanship. This Warranty DOES NOT include light bulbs, fluorescent tubes, fuses, finish, or operating supplies.
- III. In addition to the fifteen (15) month Warranty on each part of each new vending machine, the hermetically-sealed refrigeration system used in machines designed to vend bottles, cans, and aseptic cartons is warranted to be free from defects in materials and workmanship for an additional four (4) years, provided the hermetically-sealed portion of the system has not been opened or damaged. Hermetically-sealed refrigeration systems DO NOT include fan motors, temperature controls, capacitors, overload switches or starting relays which are covered by the fifteen (15) month Warranty.
- IV. Electronic control boards and the LED display are warranted against defects in material and workmanship for an additional two (2) years. The Company, at its option, will either repair or replace products that prove to be defective.
- V. To qualify for Warranty replacement, all requests for returns must be made in writing within the warranty period, accompanied by a record of the cabinet model and serial number. If a return is found to be inoperative due to defects in material and/or workmanship, we will, at our option, make necessary repairs or furnish a reconditioned or new replacement part or refrigeration system at no charge.
- VI. The Vendo Company will pay normal transportation charges on parts and refrigeration system replaced under this Warranty. If special handling or premium transportation is requested, these charges are assumed by the purchaser.
- VII. Any parts and/or refrigeration systems replaced during the warranty period are warranted for the remaining time on the original warranty.
- VIII. This Warranty DOES NOT apply to machines located outside the United States and Canada, reconditioned equipment, equipment sold "as is", or components designed to work on electric currents other than 110v/120v 60hz cycle or 208v/220v 50hz cycle, as specified on the serial tag.
- IX. Title and risk of loss pass to the purchaser on delivery of the vending machine, replacement parts and/or refrigeration system to the common carrier. All loss and damage claims are the responsibility of the purchaser and must be filed with the delivering carrier.
- X. This Warranty DOES NOT include any service guarantee, either explicit or implied, nor will it extend to cover incidental or consequential damages or damages resulting from purchaser or third party negligence, accident, vandalism, or an act of God.
- XI. The Vendo Company reserves the right to make design changes, additions to, and improvements upon any of our product without incurring any obligation to incorporate same on any product previously manufactured.
- XII. This Warranty is in lieu of all other express warranties or other obligations or liabilities on our part, and we neither assume nor authorize any person to assume for us, any other obligation for liability in connection with the sale of said machines or parts thereof. **EXCEPT AS SPECIFICALLY PROVIDED HEREIN, THERE ARE NO WARRANTIES GIVEN, EITHER EXPRESS OR IMPLIED, AND ALL OTHER WARRANTIES, INCLUDING SPECIFICALLY BUT WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, ARE HEREBY EXPRESSLY DISCLAIMED.**

THE VENDO COMPANY 2/1996



**THE VENDO COMPANY
NEW EQUIPMENT WARRANTY
V-MAX VENDING MACHINES
North America/Canada**

- I. This warranty benefits only the original purchaser of a new vending machine, and does not benefit any transferee of a new vending machine from the original purchaser.
- II. The Vendo Company warrants each part of each new vending machine for a period of fifteen (15) months from the date of shipment, to be free from defects in material and workmanship. This Warranty DOES NOT include light bulbs, fluorescent tubes, fuses, finish or operating supplies.
- III. The hermetically-sealed refrigeration system used in machines designed to vend bottles, cans, and aseptic cartons is warranted to be free from defects in materials and workmanship for six (6) years, provided the hermetically-sealed portion of the system has not been opened or damaged. This six (6) year warranty DOES NOT include fan motors, temperature controls, capacitors, overload switches or starting relays.
- IV. Electronic control boards, LED displays and Vend motors, are warranted against defects in material and workmanship for five (5) years.
- V. Return authorization is required to qualify for warranty replacement. All requests for returns must be in writing or via phone, within the warranty period, and accompanied by a record of the cabinet model and serial number of the machine. Freight carrier return tickets will only be issued to the machine owner for refrigeration system returns. This warranty is voided when the serial number of a machine is missing. If a return is found to be inoperative due to defects in material and/or workmanship, we will, at our option, make necessary repairs or furnish a reconditioned or new replacement part or refrigeration system at no charge.
- VI. "Return Material Tags" indicating cabinet model, machine serial number and explanation of defect must accompany all returned parts or machines. "Return Material Tags" will be furnished upon request. On-site inspection of defective parts, at The Vendo Company's option, may be used to facilitate credit approval or the replacement of parts.
- VII. The Vendo Company will pay normal transportation charges on refrigeration systems and parts replaced under this warranty. If special handling or premium transportation is requested, those charges will be assumed by the original purchaser.
- VIII. Any parts and/or refrigeration systems replaced during the warranty period are warranted for the remaining time on the original warranty.
- IX. This warranty DOES NOT apply to machines located outside the United States and Canada, reconditioned equipment, equipment sold "as is", or components designed to work on electric currents other than 110v/120hz 60 cycle or 208v/220hz 50 cycle, as specified on the serial tag.
- X. Title and risk of loss pass to the original purchaser on delivery of the vending machine, replacement parts and/or refrigeration system to the common carrier. All loss and damage claims are the responsibility of the original purchaser and must be filed with the delivering carrier.
- XI. This warranty DOES NOT include any service guarantee, either explicit or implied, nor will it extend to cover incidental or consequential damages resulting from the original purchaser or third party negligence, accident, vandalism, or an act of God.
- XII. The Vendo Company reserves the right to make design changes, additions to, and improvements upon any of our product without incurring any obligation to incorporate same on any product previously manufactured.
- XIII. This warranty is in lieu of all other express warranties or other obligations or liabilities on our part, and we neither assume nor authorize any person to assume for us, any other obligation for liability in connection with the sale of said machines or parts thereof. EXCEPT AS SPECIFICALLY PROVIDED HEREIN, THERE ARE NO WARRANTIES GIVEN, EITHER EXPRESS OR IMPLIED, AND ALL OTHER WARRANTIES, INCLUDING SPECIFICALLY BUT WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, ARE HEREBY EXPRESSLY DISCLAIMED.



PARTS RETURN PROCEDURES

1. All parts returned must be accompanied by a material return tags (P/N 1122825) Tag must clearly state the reason for the return and the Return Goods Authorization Number received from your Vendo Customer Service Rep at 1-800-344-7216. (Return tags are available from our parts department upon request).
2. All parts should be properly wrapped and packed securely to avoid further damage.
3. To replace an inoperative part, please use the following instructions
4. Complete the return tag making sure to fill in ALL requested information to ensure prompt processing. Keep top (white) copy for your records. Attach tag to inoperative part and send it by the most inexpensive method of transportation (Federal Express Ground or Overnight Transportation) **To: THE VENDO COMPANY, 4015 EAST RAINES ROAD, MEMPHIS, TENNESSEE 38118.**
5. Be sure to check () the box marked "credit" and to fill in the invoice number covering the part sent to you or check the box marked "replace with like part".
6. If the box is marked for replace with like part, a like part will be shipped at no charge if our inspection shows that the inoperative part became defective during the warranty period.
7. If the box is marked for credit, a credit will be issued to cancel the invoice on which the replacement part was shipped. This credit will include any applicable prepaid transportation charges. To receive credit the inoperative part must be returned within 30 days from the date the replacement was shipped.
8. Vendo does not issue cash credit for the return of any part or accessory.

REFRIGERATION UNIT RETURN PROCEDURE

1. All refrigeration units returned must be accompanied by a material return tag (P/N 1122826). Tag must clearly state the reason for the return and the Return Goods Authorization Number received from your Vendo Customer Service Rep at 1-800-344-7216. (Return tags are available from our parts department upon request).
2. All refrigeration units should be properly wrapped and packed securely to avoid further damage.
3. To replace an inoperative part, please use the following instructions.
4. Complete the return tag making sure to fill in ALL requested information to ensure prompt processing. Keep top (white) copy for your records. Attach tag to inoperative part and send it by the most inexpensive method of transportation (Federal Express Ground or Overnight Transportation) **To: THE VENDO COMPANY 7209 N. INGRAM AVE. FRESNO, CA. 93650**
5. Be sure to check () the box marked "credit" and to fill in the invoice number covering the part sent to you or check the box marked "replace with like part".
6. If the box is marked for replace with like part, a like part will be shipped at no charge if our inspection shows that the inoperative part became defective during the warranty period.
7. If the box is marked for credit, a credit will be issued to cancel the invoice on which the replacement part was shipped. This credit will include any applicable prepaid transportation charges. To receive credit the inoperative part must be returned within 30 days from the date the replacement was shipped.
8. Vendo does not issue cash credit for the return of any refrigeration unit.

***Canadian and International customers please contact your Customer Service Representative for return instructions**



TROUBLESHOOTING GUIDE

This guide is a general list of probable problems, causes, and solutions. For problems not listed or additional questions, contact the Technical Services Department at Vendo, 7209 N. Ingram Ave., Fresno, CA 93650 or call 1-800-344-7216. Please have the manufacturer's date code and model number of the vendor when you call.

The troubleshooting guide is divided into three columns: Possible Problem, Possible Cause, and Service Suggestion.

POSSIBLE PROBLEM	POSSIBLE CAUSE	SERVICE SUGGESTION
Returns all good coins	No power to vendor	Check power supply.
	No power to changer	Check coin mechanism plugs. Check for faulty harness wiring (see wiring diagram for circuit).
	Acceptor is out of adjustment or coin gate is not closed	Check coin mechanism.
	Electronic-CREM function: 1.) No power to acceptor 2.) Defective acceptor	1. Check electrical connections of the acceptor. 2. Replace acceptor.
	Coin paths are dirty	Clean acceptor with approved cleaner. <u>DRY</u> <u>VERY THOROUGHLY.</u>



POSSIBLE PROBLEM	POSSIBLE CAUSE	SERVICE SUGGESTION
Money accepted, no product vended	Bad selection switch(es)	Check selection switches, replace as necessary.
	Bad selection switch harness connection	Check harness connection.
	Sold-out switch (of column selected) inoperative	Check switch, replace as necessary.
Vend motor runs until two or three products are vended or vend motors run continuously	Improper cam lobe adjustment	Check cam for proper arrangement of cam lobes (see product set-up guide).
	Motor position switch not making proper contact with cam lobe	Check lever for proper lever positioning and freedom of movement.
Refrigeration unit will not run at all	No power to vendor	Check power supply, also check service cord connections.
	Bad temperature sensor	Check / replace.
	Bad refrigeration relay	Check / replace
Compressor will not start	Overload Protector inoperative	Check overload (apply insulated jumper across terminal, if compressor starts, replace overload).



POSSIBLE PROBLEM	POSSIBLE CAUSE	SERVICE SUGGESTION
Compressor will not start, condenser fan motor running - unit hot (power to compressor)	Starting relay or capacitor inoperative	Check relay or capacitor, replace.
	Compressor inoperative	Disconnect power to vendor, remove all leads from compressor, check continuity from "common", "start" and "run" to compressor case. If continuity shows, replace compressor. Also check from "common to start" (using continuity or IHMS). If meter fails to show reading replace compressor.
Compressor starts but does not run	Will not cycle	Check overload and contact, replace overload if necessary.
	Starting relay stays closed	Replace relay.
	Compressor motor problem	Check, replace.
Compressor runs but cabinet temperature warm	Loss of refrigerant	Replace refrigeration unit. (Note: Any work of this nature done without express permission from The Vendo Company can void refrigeration unit warranty.)
	Condenser fan not working	Check circuit to run motor. Replace motor. Check for obstruction of fan blade.
	Blocked or dirty condenser (Refer to initial installation in the service manual)	Check condenser vanes for obstruction, lint or dirt. Clean, also check for proper air flow through refrigeration area.
	Evaporator fan not working	Check circuit to fan motor. Replace motor, also check for obstruction of fan blade.
	Bad inner door seal	Check for moisture on seal. Adjust inner door as necessary (See initial set-up of service manual). Replace door seal.



POSSIBLE PROBLEM	POSSIBLE CAUSE	SERVICE SUGGESTION
Evaporator frosted over	Water at base of evaporator unit	Check for proper drainage (such as plugged drain, kinks in drain tube, etc.), check door seal.
Product freezing up too cold	Temperature setting too low	Adjust temperature setting in electronic controller.
Excessive noise	Fan blade bent or hitting shroud	Straighten, relocate shroud position, or remove shroud.
	Fan motor noisy	Replace if necessary.
	Refrigeration base loose or bent	Tighten bolt or replace if necessary.
Both compressor and condenser fan motors will not operate	Bad refrigeration control relay	Test relay using relay test function of the electronic controller. Replace relay if necessary.
	Bad wiring connection at refrigeration control relay	Check wiring connections. Make corrections if necessary.



NOTES