3 WIDE COMBI
STAND ALONE COLD/FROZEN FOOD VENDOR
(GVC2 Controller)

MODELS:
3532M/3532MA – MULT-ZONE
(Cold and Frozen Food)
3532F/3532FA – SINGLE-ZONE
(Frozen Food)
3532C/3532CA – SINGLE-ZONE
(Cold Food)

SERVICE
MANUAL
Table of Contents

INTRODUCTION............................ 1
SPECIFICATIONS.......................... 2
UNPACKING.................................. 3
LOADING PRODUCTS ....................... 5
TRAY ADJUSTMENTS....................... 7
AUGER TIMING............................... 9
CONTROLLER FUNCTIONS ..............10
SERVICE MODE......................... 11
BASIC PROGRAMMING SETUP ....12
REFRIGERATION CONFIGURATION SETTINGS .....16
PRICING .................................... 17
ADVANCED OPTIONS .................... 18
TEST ALL MOTORS....................... 19
TEMPERATURE CONTROL ............22
HEALTH SAFETY FIELD TEST ....25
REFRIGERATION ....................... 26
REMOVING THE REFRIGERATION SYSTEM.......................... 30
PREVENTIVE MAINTENANCE ..........30
CONVERTING FROM SINGLE ZONE TO MULTI-ZONE MODE ....31
CONVERTING FROM MULTI-ZONE MODE TO SINGLE ZONE.............31
REPLACE AIR FILTER...................... 32
PARTS ORDERING PROCEDURE 34
BEFORE CALLING FOR SERVICE34

Please have the model and serial numbers if you need service and parts information. The numbers are on the identification plate located on the back side of the cabinet of the vending machine.

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

VendNet
165 North 10th Street
Waukee, Iowa 50263
Phone: (888) 259-9965
Parts Fax: (515) 274-5775
Sales Fax: (515) 274-0390
E-mail: vendnet@vendnetusa.com

SERIAL NUMBER: __________________________

INTRODUCTION

This manual contains instructions, service and installation guidelines for the 3W COMBI Vendor. Please read this manual thoroughly and follow instructions. The initial set-up of a vending machine is a very important step of insuring that the equipment operates in a trouble-free manner.

The 3W COMBI Vendor can be factory configured to have two temperature compartments (top and bottom) in a single vending machine separated by moveable air deflectors and insulating barrier. The vending machine has an air duct that runs up and down on the back inner wall of the cabinet. Each compartment can have 3 moveable trays and a total of 6 trays for the entire vending machine. The vending machine will maintain 2°C (36°F) in the Top compartment and down to -24°C (-12°F) in the bottom compartment at an ambient range of 4.4°C-32°C (40°F-90°F). The temperature setting for both compartments are set by the controller (program).

The top compartment has a heater system to maintain constant temperature across varying ambient temperatures. This consists of a heater, temperature sensor, air circulating blower and relays.

The bottom compartment has a temperature sensor and an insulated refrigeration system. Cool air is drawn from the refrigeration system’s evaporator coils through the air duct and is deflected into the bottom zone by a moveable air deflector. There are openings in the bottom trays to allow air to circulate around the products.

All programming of the pricing, vend functions and features are also done at the controller. Changes can be made without any additional accessories or remote parts. Selections can be priced individually from $00.00 to $655.35 in five cent increments (US currency). Cash accountability records, total cash transactions, total vend cycles performed by the vendor, information for individual selections, complete rows or total machine can be compiled and used for inventory and ordering records. Electrical malfunctions are recorded and displayed when the vending machine is placed in the Service Mode. Non-functional motors or selections are indicated. Each selection has an individual motor. Functional selections will continue to operate if other motors become nonfunctional.

The vending sequence is “first-in, first-out” for each selection, permitting stock rotation to maintain fresh products in the vending area.

Each 3W COMBI Vendor has the capability of supporting a “satellite” vending machine, such as a direct wire CB300-SAT, or a USD satellite such as a CF-1000. The satellite vendor utilizes the 3W COMBI Vendor’s existing controller, coin mechanism, bill validator and keypad to perform the vend functions they require. For details on the satellite vendor, refer to the Service Manual pertaining to the specific vendor for installation instructions.
# SPECIFICATIONS

## DIMENSIONS & WEIGHT

<table>
<thead>
<tr>
<th>TYPE</th>
<th>MULTI-ZONE (3 WIDE)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MODEL</td>
<td>3532</td>
<td>3532A</td>
</tr>
<tr>
<td>WIDTH</td>
<td>29.5 in. (74.9 cm)</td>
<td></td>
</tr>
<tr>
<td>DEPTH</td>
<td>38 in. (96.5 cm)</td>
<td></td>
</tr>
<tr>
<td>HEIGHT</td>
<td>72 in. (182.9 cm)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ESTIMATED WEIGHT(^1)</th>
<th>693 lbs (614 kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EST. SHIPPING WT.(^1)</td>
<td>722 lbs (327 kg)</td>
</tr>
</tbody>
</table>

Note: \(^1\) Weights will vary depending on optional equipment installed.

## ELECTRICAL

<table>
<thead>
<tr>
<th>MODEL</th>
<th>Danfoss 5/8 Hp</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOLTAGE</td>
<td>115 VAC 230 VAC</td>
</tr>
<tr>
<td>CYCLE</td>
<td>60 Hz 50 Hz</td>
</tr>
<tr>
<td>NOMINAL AMPS</td>
<td>9.0 Amps 4.5 Amps</td>
</tr>
<tr>
<td>TRANSFORMER</td>
<td>110/24 VAC 230/24 VAC</td>
</tr>
</tbody>
</table>

## REFRIGERATION

<table>
<thead>
<tr>
<th>HORSEPOWER</th>
<th>Danfoss 5/8 Hp</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE</td>
<td>Hermetically Sealed</td>
</tr>
<tr>
<td>CONTROLS</td>
<td>Electronic</td>
</tr>
<tr>
<td>REFRIGERANT</td>
<td>R-404a</td>
</tr>
<tr>
<td>CHARGE</td>
<td>17 oz</td>
</tr>
</tbody>
</table>

## COIN CHANGER, BILL VALIDATOR, CARD READER

| TYPE                                         | MDB Coin Changer level II or III, Bill Validator Level I, Card Reader Level I or II |

## VENDOR OPERATION

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>Suitable for indoor use only</th>
</tr>
</thead>
<tbody>
<tr>
<td>RECOMMENDED OPERATING TEMPERATURE</td>
<td>Between 40° and 90° Fahrenheit (4° and 32° Celsius)</td>
</tr>
</tbody>
</table>
UNPACKING

This vending machine was thoroughly inspected before leaving the factory and the delivering carrier has accepted this vendor as their responsibility. Note any damage or irregularities at the time of delivery and report them to the carrier. Request a written inspection report from the claims inspector to file any claim for damage. File the claim with the carrier (not the manufacturer) within 15 days after receipt of the vending machine.

Carefully remove the outside packing material so as not to damage the finish or exterior of the vending machine. Inspect the vending machine for concealed shipping damage. Report any damage hidden by the shipping material directly to the delivering carrier on a hidden damage report.

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

Remove the shipping skids by placing a 2x6 under the vendor, inserting a large screwdriver or prying tool into the groove and splitting it in two. Turn the leveling screws in as far as possible. See Figure 3a.

INSTALLATION

- Consult local, state and federal codes and regulations before installing the vendor.
- Retrieve the keys to the vendor from the coin return cup.
- Open outer door and remove all internal packing material.
Power Cord

The power cord is a 14 gauge cord and is fastened to rear mounting box so it stays with the machine and doesn’t get changed with a lighter gauge cord. The power cord is connected and routed under the cover as shown in Figure 4g. Keep power cord secured on the center back of the cabinet until the vendor is placed into its final location to prevent damage to the cord.

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

Figure 4g. Power Cord

LEVEL THE VENDOR

All levelers must touch the floor. The vendor must be level for proper operation, cabinet to door alignment, condensate drainage, and for acceptance of coins through the coin mechanism.

GROUNDING (EARTHING) & ELECTRICAL

Before connecting the vendor, the integrity of the main electrical supply must be checked for correct polarity, presence of ground (earth) and correct voltage. Please refer to the Safety Manual and Installation Guidelines Manual (P/N 4206816) that shipped in the service package with your vending machine. These checks should be repeated at six (6) month intervals with the routine safety electrical testing of the vendor itself.

If the receptacle is not properly grounded or polarized, you should contact a licensed electrician to correctly polarize and/or ground the receptacle to ensure safe operation.

For proper operation of any equipment utilizing electronically controlled components, the equipment should be placed on an isolated or dedicated noise-free circuit, properly polarized and grounded.
**MAIN POWER SWITCH**

Plug the power cord to a dedicated power outlet. Open the vendor door. Turn on the main power switch located on the center right hand side of the vendor. See Figure 4h.

![Figure 4h. Power Panel](image)

---

**LOADING PRODUCTS**

Load product from front to back making sure all items fit freely between the auger spaces. Do not attempt to force oversize items or packages into the spaces. Do not skip a space. Place the product on the bottom of the compartment on the product augers with the label facing the front of the vending machine for easy identification by the customer. See Figure 5a.

![Figure 5a. Loading Products](image)

---

**SNACK/CANDY/FOOD TRAY OPTION**

To load products, lift the tray slightly and pull forward until the tray stops. The trays tilt for easier loading.

The size of the item being vended must be larger than the diameter of the auger being used to vend properly.

Undersize items could cause vend problems. If the product does not fit the auger properly, use a different pitched auger. See Error! Reference source not found. for augers available from your distributor or service entity.
<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>WIDTH (INCH)</th>
<th>THICK (INCH)</th>
<th>QTY</th>
<th>PART NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>CANDY</td>
<td>2.75</td>
<td>0.50</td>
<td>30</td>
<td>4200272.103309</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.66</td>
<td>24</td>
<td>4200272.102309</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.94</td>
<td>18</td>
<td>4200272.101309</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.19</td>
<td>15</td>
<td>4200272.100309</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.50</td>
<td>12</td>
<td>4200272.104309</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.03</td>
<td>9</td>
<td>4200272.105309</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.09</td>
<td>6</td>
<td>4200272.106309</td>
</tr>
<tr>
<td>CAN/BOTTLE</td>
<td>2.75</td>
<td>3.09</td>
<td>6</td>
<td>4200272.106309</td>
</tr>
<tr>
<td>DISPENSER (12 OZ CAN)</td>
<td>4.84</td>
<td>2.59 DIA</td>
<td>8</td>
<td>4214090</td>
</tr>
<tr>
<td>SNACK</td>
<td>5.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.19</td>
<td>15</td>
<td>4200272.109309</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.50</td>
<td>12</td>
<td>4200272.108309</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.81</td>
<td>10</td>
<td>4200272.107309</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.62</td>
<td>8</td>
<td>4200272.111309</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.69</td>
<td>7</td>
<td>4200272.110309</td>
</tr>
</tbody>
</table>
TRAY ADJUSTMENTS
By re-timing the augers, difficult-to-vend items can be dispensed more dependably. By altering tray spacing, larger items can be vended. By changing the tray configuration, different product mixes can be accommodated.

VERTICAL SPACING
The trays can be adjusted up or down in half-inch increments to provide additional headroom for vending taller products. When increasing the height in one area, the same amount of room will be lost at the tray above or below the one being adjusted.

3 WIDE SNACK/CANDY/FOOD TRAY
1. Pull out the tray to be adjusted until it stops.
2. Disengage the tray harness from its harness retainer on the right side wall. See Figure 6a on page 8. Disconnect the tray plug from its receptacle on the right side wall.
3. Lift up on the rear of the tray and remove it from the vendor.
4. Disengage both left and right tray rails from their corresponding slots on the left and right side walls by removing two screws holding each rail in place.
5. Relocate both left and right rails by reversing step 4. Rails must be level from front to back and evenly spaced from top to bottom of each side.
6. Replace the tray by placing its rear rollers on the left and right rails and lifting up on the front of the tray as it is pressed back.
7. Install the tray plug into its receptacle on right side wall.
8. Re-engage the tray harness into its harness retainer. See Figure 6a.
9. Test vend the tray in its new position to assure that the tray plug is properly seated.
3 WIDE SNACK/CANDY/FOOD TRAY

1. Pull the tray out until it stops.
2. Locate the harness retainer on the right sidewall. See Figure 6a. Pull the tray harness out of the harness retainer.
3. Unplug the tray plug from its receptacle on the right side wall.
4. Lift up on the front of the tray and pull slightly (approximately 1.5 cm (.5 in) forward to clear the tray stop.
5. Locate the release lever on the left and right tray rails. See Figure 6b. Swing the release levers all the way up to unlatch.
6. Lift up on the rear of the tray and remove it from the vendor.
7. Relocate both left and right tray rails from the left and right side walls.
8. Remove tray rail mounting screws.
9. Pull each rail forward to disengage its rear tab from the hole in the rear wall. See Figure 6b.
10. Relocate both left and right rails by reversing step 7. Rails must be level front to back and left to right.
11. Replace the tray by placing its rear rollers on the left and right rails and lifting up on the front of the tray as you push it back.
12. Swing the tray rail release levers all the way down.
13. Install the tray plug into its receptacle on the right side wall.
14. Re-engage the tray harness into its harness retainer.
15. Test vend the tray in its new position to assure that the tray plug is properly seated.

Figure 6a. Tray Harness

Figure 6b. Tray Rails
AUGER TIMING
SNACK/CANDY/FOOD TRAY
Each auger can be rotated in 20° (degree) increments for a different product vend drop-off point. Most items can be vended successfully when the auger end is positioned at 6 o’clock.

The general rule is - the narrower the product, then the higher the timing.
- Thick Products - 4-6 o’clock
- Most products – 6 o’clock
- Thin Products - 6-8 o’clock

TO CHANGE AUGER TIMING
1. Remove the motor cover. See Figure 6f.
2. Raise the motor slightly and pull forward on the auger until it separates from the motor.
3. Rotate the auger to the desired position and re-insert the hub (auger coupling) into the motor. The hub (auger coupling) must be seated over the vertical rail or retaining rib on the tray.
4. Replace the motor cover making sure it is securely tightened.
5. Test vend to make sure product vends correctly.

CAN/BOTTLE TRAY OPTION
1. Remove the hitch pin. See Figure 6g.
2. Pull hub and auger away from the motor.
3. Rotate the hub and auger.
4. Re-insert the hub and auger.
5. Re-insert the hitch pin.
6. Test vend to make sure product vends correctly.
CONTROLLER FUNCTIONS

IVEND™ CYCLE

All vendor selections have been assigned at the factory to be monitored for iVend™ optical sensing.

For 5 milliseconds at the start of a vend, the iVend™ optical sensor will be checked to make sure it is not blocked, damaged or disconnected.

**If blocked, damaged or disconnected** - the normal home-switch-vend cycle will be used and the optical sensors will be ignored. Both the vend motor and a vend timeout timer are started.

- The selection motor rotates to the home-switch position.
- If there is a home-switch signal, then the vend is considered successful.
- If after 10 seconds there is no home-switch signal, the vend failed. The vend motor is shut down and **MAKE ALTERNATE SELECTION** is displayed. The customer can press selection buttons to activate another motor or press the coin return button.

**If not blocked, damaged or disconnected** - the iVend™ Sensor System is used. The vend motor and a vend timeout timer are started.

- The selection motor rotates to the home-switch position.
- If a product is detected during this time period, then the vend is considered successful.
- If after reaching the home-switch position and a product is not detected, then the vend motor will pause for 1 second while the controller continues to monitor the optical sensor for product delivery.
  - If a product is detected during this pause, then the vend is considered successful.
  - If a product is not detected, then the controller initiates a second vend cycle and another vend timeout timer while continuing to monitor the optical sensor.
    - If a product is detected during this second cycle, the motor will be stopped immediately. The vend is considered successful. The **2ND VEND** accounting counter is increased by one.
    - If after reaching the home-switch position and a product is not detected, then the vend motor is stopped and for 2 seconds the controller continues to monitor the optical sensor for product delivery. If a product is detected, the vend is considered successful. The **2ND VEND** accounting counter is increased by one.

Otherwise, if no product is detected, the selection is sold out.

Such a state will trigger the display of the **MAKE ALTERNATE SELECTION** message. The amount of credit is displayed. The customer can press selection buttons to activate this or another motor or press the coin return button.

- If after 10 seconds there is no home-switch signal and no product is detected, then the vend failed. The vend motor is shut down and **MAKE ALTERNATE SELECTION** is displayed. The customer can press selection buttons to activate another motor or press the coin return button.

**NOTE**: Force Vend is disabled to permit customer to retrieve deposited money.
SERVICE MODE

Use Service Mode to program and service the machine. Use the keypad as an input device. Watch the display for information while in Service Mode.

SERVICE MODE BUTTON

To enter Service Mode, press the Service Mode Button located on the top or upper right corner of the controller cover. See Error! Reference source not found.. To exit Service Mode, press the Service Mode Button.

NOTES

If credit exists when Service Mode is entered, it will be restored when the machine returns to Sales Mode.

If no key is pressed for approximately 1 minute while in Service Mode, the controller will automatically return to Sales Mode.

Figure 2.A Controller—Inside Door Mounted
BASIC PROGRAMMING SETUP

KEYPAD

Use the buttons on the keypad as directed in the step-by-step instructions in this manual in programming the vendor.

DISPLAY

Check the display after pressing the Service Mode Button and/or Keypad Buttons to make sure that the program is responding correctly.

Buttons 0-9 are used to move between the various modes, menus and sub-menus; while the button is used to enter a menu, confirm or save a setting. See Figure 3

1 TUBE FILL/ DISPENSE COINS

Tube Fill counts coins as they are deposited and shows the dollar amount.

<table>
<thead>
<tr>
<th>TUBE FILL</th>
<th>DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Press Service Mode Button</td>
<td>Motor Count 60</td>
</tr>
<tr>
<td>2. Press 1 and begin depositing coins</td>
<td>At least 15 of each denomination</td>
</tr>
<tr>
<td>3. Press 2 times to exit</td>
<td>(Sales Mode)</td>
</tr>
</tbody>
</table>

Tube Dispense pays out coins from the coin mech coin tubes. This mode will also display the current quantity of coins in the coin mech tubes.

**Note:** For dispensing more than a 4 denomination coin mech, use keys greater in the same sequence as shown above.

2 MOTOR COUNT

Displays the total count of working motors.

<table>
<thead>
<tr>
<th>STEP</th>
<th>DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Press Service Mode Button</td>
<td>Motors (- -)</td>
</tr>
<tr>
<td>2. Press then wait.</td>
<td>Motors (- -)</td>
</tr>
<tr>
<td>3. Press to exit.</td>
<td>(Sales Mode)</td>
</tr>
</tbody>
</table>
3 OPTIONS

3.1 FORCE VEND
See GVC2 Programming Manual (P/N 4215507) for more information.

3.2 BILL ESCROW
See GVC2 Programming Manual (P/N 4215507) for more information.

3.3 MULTI VEND
See GVC2 Programming Manual (P/N 4215507) for more information.

3.4 FREE VEND
See GVC2 Programming Manual (P/N 4215507) for more information.

3.5 FAST CHANGE
See GVC2 Programming Manual (P/N 4215507) for more information.

3.6 OPTICAL VEND
See GVC2 Programming Manual (P/N 4215507) for more information.

3.7 POINT OF SALE MESSAGE (POS)
See GVC2 Programming Manual (P/N 4215507) for more information.

3.8 SETPOINT

The following are the factory default SET POINT temperature settings for each machine type:

<table>
<thead>
<tr>
<th>MACHINE TYPE</th>
<th>TEMPERATURE SETTINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frozen</td>
<td>NOT USED in 3W COMBI</td>
</tr>
<tr>
<td>Slackened</td>
<td></td>
</tr>
<tr>
<td>Cold</td>
<td></td>
</tr>
<tr>
<td>Chilled</td>
<td></td>
</tr>
<tr>
<td>Snack</td>
<td></td>
</tr>
<tr>
<td>Dual Zone</td>
<td></td>
</tr>
<tr>
<td>Dual Upper -6</td>
<td></td>
</tr>
<tr>
<td>Multi-Zone Food (MZF)</td>
<td>Bottom Zone -10F (-23C)</td>
</tr>
<tr>
<td></td>
<td>Top Zone 36F (2C)</td>
</tr>
<tr>
<td>Multi-Zone Food-2 (MZF-2)</td>
<td>Bottom Zone -12F (-24C)</td>
</tr>
<tr>
<td></td>
<td>Top Zone 36F (2C)</td>
</tr>
<tr>
<td>Multi-Zone Food-5 (MZF-5)</td>
<td>Bottom Zone-15F (-26C)</td>
</tr>
<tr>
<td></td>
<td>Top Zone 36F (2C)</td>
</tr>
<tr>
<td>Single-Zone Frozen (SZ FROZEN)</td>
<td>-10F (-23C)</td>
</tr>
<tr>
<td>Single-Zone Frozen (SZ FROZEN-2)</td>
<td>-12F (-24C)</td>
</tr>
<tr>
<td>Single-Zone Frozen (SZ FROZEN-5)</td>
<td>-15F (-26C)</td>
</tr>
<tr>
<td>Single-Zone Cold (SZ COLD)</td>
<td>36F (2.2C)</td>
</tr>
<tr>
<td>Single-Zone Cold (SZ COLD-1)</td>
<td>35F (1.6C)</td>
</tr>
</tbody>
</table>

These temperatures should not be adjusted, and it is not recommended. The temperatures have been set according to NAMA specifications for optimal product safety. Before making any adjustment see Health Safety section.
3.9 KEYPAD BACKLIGHT

This menu controls the brightness level of the keypad backlight. (Default is 3)

<table>
<thead>
<tr>
<th>STEP</th>
<th>DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Press Service Mode Button (мота)</td>
</tr>
<tr>
<td>2.</td>
<td>Press 3</td>
</tr>
<tr>
<td>3.</td>
<td>Press 9 to view setting.</td>
</tr>
<tr>
<td>4.</td>
<td>Press 9 repeatedly to change setting.</td>
</tr>
<tr>
<td>Note: 0=Off, 1=Low, 2=Med, 3=High, 4=Max</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Press 6 to save</td>
</tr>
<tr>
<td>6.</td>
<td>Press 3 times to exit.</td>
</tr>
</tbody>
</table>

4 CONFIGURATION

4.1, 4.2, 4.3: CONFIGURE MACHINE TO SNACK, CAN, OR BOTTLE
See GVC2 Programming Manual (P/N 4215507) for more information.

4.4 LANGUAGE
See GVC2 Programming Manual (P/N 4215507) for more information.

4.5 AUTO REINSTATE
See GVC2 Programming Manual (P/N 4215507) for more information.

4.6 SPACE TO SALES (STS)
See GVC2 Programming Manual (P/N 4215507) for more information.

4.7 CUSTOM STS
See GVC2 Programming Manual (P/N 4215507) for more information.

4.8 TIME/DATE
Sets the time and date for timed operations.
The following submenus are available:
Date; Time

4.8.1 DATE

<table>
<thead>
<tr>
<th>STEP</th>
<th>DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Press Service Mode Button (мота)</td>
</tr>
<tr>
<td>2.</td>
<td>Press 4</td>
</tr>
<tr>
<td>3.</td>
<td>Press 8</td>
</tr>
<tr>
<td>4.</td>
<td>Press 1</td>
</tr>
<tr>
<td>5.</td>
<td>Press 6 to edit date</td>
</tr>
<tr>
<td>6.</td>
<td>Press 6 to save.</td>
</tr>
<tr>
<td>7.</td>
<td>Press 4 times to exit</td>
</tr>
</tbody>
</table>
4.8.2 TIME

Time Setting - This menu controls and displays the current time of day. The display will show a 24 hour format.

Examples:
8:05 a.m. = TIME 08.05
01:15 p.m. = TIME 13.15
11:45 p.m. = TIME 23.45

<table>
<thead>
<tr>
<th>TIME SETTING</th>
<th>STEP</th>
<th>DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Press Service Mode Button</td>
<td>Motors (- -)</td>
</tr>
<tr>
<td>2.</td>
<td>Press 4</td>
<td>Configuration</td>
</tr>
<tr>
<td>3.</td>
<td>Press 8</td>
<td>Date/ Time</td>
</tr>
<tr>
<td>4.</td>
<td>Press 2 for Time menu</td>
<td>08:00:25</td>
</tr>
<tr>
<td>5.</td>
<td>Press # to edit</td>
<td>09:00:25</td>
</tr>
<tr>
<td>6.</td>
<td>Press # to save</td>
<td>09:00:25</td>
</tr>
<tr>
<td>7.</td>
<td>Press 4 times to exit</td>
<td>Sales Mode</td>
</tr>
</tbody>
</table>

4.9 HEALTH SAFETY (HS)

The HEALTH SAFETY feature prevents the sale of perishable food if the air temperature inside the Food Vendor compartment rises above the Health Safety temperature limit for more than 15 minutes. The factory default for health safety limit is automatically set when the refrigeration configuration is set. The perishable products being vended must match the refrigeration configuration.

This menu allows the user to specify the operating region to meet health safety requirements. The health safety requirements can be applied to an individual Item(s), Row(s), or ALL (whole machine). If the requirements are violated then the Item(s), Row(s) or the whole machine will be shut down accordingly. The refrigeration configuration determines the health safety set point(s). When the Combi is configured as a Multi-Zone the top three trays are set to the cold food health safety limit of 41°F and the bottom three trays are set to the frozen food health safety limit of 0°F. When the Combi is configured as a Single-Zone Frozen all the trays are set to the frozen food health safety limit of 0°F and when the Combi is configured as a Single-Zone Cold then all the trays are set to the cold food health safety limit of 41°F.

Note: The time requirements for Frozen levels do not apply for a period of 75 minutes immediately following filling the machine (door open state), servicing (service mode button pressed or door open detected), or a defrost cycle. The time requirements for the Cold setting do not apply for 30 minutes immediately following filling or servicing the machine.

4.9.1 HS “All”

<table>
<thead>
<tr>
<th>STEP</th>
<th>DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Press Service Mode Button</td>
<td>Motors (- -)</td>
</tr>
<tr>
<td>2. Press 4</td>
<td>Configuration</td>
</tr>
<tr>
<td>3. Press 9</td>
<td>Health Safety</td>
</tr>
<tr>
<td>4. Press 3 to toggle All ON/OFF</td>
<td>All Items ON/OFF</td>
</tr>
<tr>
<td>5. Press # to save</td>
<td>All Items ON</td>
</tr>
<tr>
<td>6. Press # to exit</td>
<td>Health Safety</td>
</tr>
<tr>
<td>7. Press 9 to toggle HS ON/OFF (default is ON)</td>
<td>Enable ON</td>
</tr>
<tr>
<td>8. Press # to save</td>
<td>Enable OFF</td>
</tr>
<tr>
<td>9. Press 4 times to exit</td>
<td>Sales Mode</td>
</tr>
</tbody>
</table>
4.0 ADVANCED CONFIGURATION

NOTE: THIS IS PASSWORD PROTECTED (2314 DEFAULT)

4.0.1 BEEP ENABLE
See GVC 2 Programming Manual (P/N 4215507) for more information

4.0.2 OPTICS DISABES
See GVC 2 Programming Manual (P/N 4215507) for more information

4.0.3 MOTOR TYPE
See GVC 2 Programming Manual (P/N 4215507) for more information

4.0.4 TALKER
See GVC 2 Programming Manual (P/N 4215507) for more information.

4.0.5 PASSWORD
See GVC2 Programming Manual (P/N 4215507) for more information.

4.0.6 SET DEFAULTS
See GVC2 Programming Manual (P/N 4215507) for more information.

REFRIGERATION CONFIGURATION SETTINGS

<table>
<thead>
<tr>
<th>STEP</th>
<th>DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Press Service Mode Button</td>
</tr>
<tr>
<td>2.</td>
<td>Press 4</td>
</tr>
<tr>
<td>3.</td>
<td>Press 0</td>
</tr>
<tr>
<td>4.</td>
<td>Enter Password (default 2314)</td>
</tr>
</tbody>
</table>
| 5.   | Press 7 to edit Refrigeration Type. Default is Snack | FROZEN (Not used)  
Dual Zone (Not used)  
Dual Upper -6 (Not used)  
Chilled (Not used)  
MZF Multi-zone -10F & 36F  
MZF -2 Multi-zone -12F & 36F  
MZF -5 Multi-zone -15F & 36F  
SZ Frozen Single zone -10F  
SZ Frozen-2 Single zone -12F  
SZ Frozen-5 Single zone -15F  
SZ Cold Single zone 36F  
SZ Cold-1 Single zone 35F  
Snack (Not used)  
Cold (Not used)  
Slackened (Not used) |
| 6.   | Press # to save | MZF-5 |
| 7.   | Press 4 times to exit | Sales Mode |
PRICING

Price Setting - This menu allows three (3) methods for assigning prices:

- ITEM — by individual selections
- ROW — by shelf or tray
- ALL ITEMS — by entire machine.
- COUPONS — by Item, Row, or ALL
- TOKENS — by Item, Row, or ALL
- COMBO

The maximum price that can be set is $655.35.

5.1 ALL

This menu allows you to set the selection price of every item all at once.

**Time Saving Tip:**
Instead of setting the price of each item one at a time, it is much faster to set the common price of the entire machine; then go back and set the price of each item or row.

<table>
<thead>
<tr>
<th>STEP</th>
<th>DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Press Service Mode Button Motors (- - )</td>
</tr>
<tr>
<td>2.</td>
<td>Press Pricing</td>
</tr>
<tr>
<td>3.</td>
<td>Press 3 to enter price ALL Items $0.50</td>
</tr>
<tr>
<td>4.</td>
<td>Press to save. ALL Items $0.50</td>
</tr>
<tr>
<td>5.</td>
<td>Press 3 times to exit. (Sales Mode)</td>
</tr>
</tbody>
</table>

5.2 ROW

Use this menu to set the price of a row (shelf) all at the same time.

**Time Saving Suggestion:**
Instead of setting the price of one item at a time, set the common price of a Row, then go back and set the price of each item.

<table>
<thead>
<tr>
<th>STEP</th>
<th>DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Press Service Mode Button Motors (- - )</td>
</tr>
<tr>
<td>2.</td>
<td>Press Pricing</td>
</tr>
<tr>
<td>3.</td>
<td>Press 2 Row: - - $0.00</td>
</tr>
<tr>
<td>4.</td>
<td>Enter row number and price Example: Top row=01, row below top row=02, etc. Row 01 $0.50</td>
</tr>
<tr>
<td>5.</td>
<td>Press to save. Row 01 $0.50</td>
</tr>
<tr>
<td>6.</td>
<td>Press 3 times to exit. (Sales Mode)</td>
</tr>
</tbody>
</table>

5.3 ITEM

This menu allows price setting by each selection item.

<table>
<thead>
<tr>
<th>STEP</th>
<th>DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Press Service Mode Button Motors (- - )</td>
</tr>
<tr>
<td>2.</td>
<td>Press Pricing</td>
</tr>
<tr>
<td>3.</td>
<td>Press Item</td>
</tr>
<tr>
<td>4.</td>
<td>Enter item and price Item 010 $0.50</td>
</tr>
<tr>
<td>5.</td>
<td>Press to save. The program will automatically go to the next selection number. Item 010 $0.50</td>
</tr>
<tr>
<td>6.</td>
<td>Press 3 times to exit. (Sales Mode)</td>
</tr>
</tbody>
</table>
5.4 COUPON OR TOKEN

Allows the operator to designate the values of coupons or tokens that are accepted by pre-programmed validators.

6 ACCOUNTING

Use this menu to gain access to menus that display or reset data for various types of cash and vend totals. Counts can be viewed by individual items, rows or as the whole machine.

See GVC2 Programming Manual (P/N 4215507) for more information.

ADVANCED OPTIONS

To enter this menu you will be prompted to input a password. The following options are available:

- Discount
- Promo Vend
- Free Vend Rate
- Exact Change
- Unconditional Acceptance
- Max Change
- Programmable POS
- Shutdown

7.7 PROGRAMMABLE POS MESSAGE

These are messages that can be edited. You must first turn off the default POS message under the options menu.

7.7.1 PROGRAMMING the POS MESSAGE

<table>
<thead>
<tr>
<th>STEP</th>
<th>DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Press Service Mode Button</td>
</tr>
<tr>
<td>2.</td>
<td>Press 7</td>
</tr>
<tr>
<td>3.</td>
<td>Enter Password (default is 2314)</td>
</tr>
<tr>
<td>4.</td>
<td>Press 7</td>
</tr>
<tr>
<td>5.</td>
<td>Press 1 to toggle ON/OFF</td>
</tr>
<tr>
<td>6.</td>
<td>Press # to save</td>
</tr>
<tr>
<td>7.</td>
<td>Press 2 to enter message</td>
</tr>
<tr>
<td>8.</td>
<td>Press 1, 4, 7; to move cursor to the left</td>
</tr>
<tr>
<td></td>
<td>Press 3, 6, 9; to move cursor to the right</td>
</tr>
<tr>
<td></td>
<td>Press 2, 5, 8; to move the cursor from top to bottom.</td>
</tr>
<tr>
<td></td>
<td>Once the cursor is in the place you want to edit</td>
</tr>
<tr>
<td></td>
<td>press # In edit mode 0 is space key, 0 is backspace # saves</td>
</tr>
<tr>
<td>9.</td>
<td>Press # to save new message</td>
</tr>
<tr>
<td>10.</td>
<td>Press 4 times to exit</td>
</tr>
</tbody>
</table>
7.7.4 TIME DISPLAY
This option will display the time and date. Programmable POS does not have to be
"ON" for this to work.

<table>
<thead>
<tr>
<th>STEP</th>
<th>DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Press Service Mode Button</td>
</tr>
<tr>
<td>2.</td>
<td>Press 7 and enter password</td>
</tr>
<tr>
<td>3.</td>
<td>Press 7</td>
</tr>
<tr>
<td>4.</td>
<td>Press 4 to enter time display menu</td>
</tr>
<tr>
<td>5.</td>
<td>Press 4 to toggle on and off</td>
</tr>
<tr>
<td>6.</td>
<td>Press # to save</td>
</tr>
<tr>
<td>7.</td>
<td>Press 4 times to exit</td>
</tr>
</tbody>
</table>

Default Password 2314
Default is OFF

7.8 SHUTDOWN
This option allows the controller to shut down a range of selections or the entire
machine based on four (4) time-of-day intervals. If the time falls within one of these
intervals and the entire machine has been selected for shutdown then the message
"VENDING OPERATION TO RESUME AT HH.MM" is displayed.

8 TEST VEND
Use this menu to test vend individual motors. The selection will display with the test vend. If a test vend attempt on a particular motor fails, controller will beep.

<table>
<thead>
<tr>
<th>STEP</th>
<th>DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Press Service Mode Button</td>
</tr>
<tr>
<td>2.</td>
<td>Press 8</td>
</tr>
<tr>
<td>3.</td>
<td>Press selection number on keypad and wait</td>
</tr>
<tr>
<td>4.</td>
<td>Repeat step 3 for other selections.</td>
</tr>
<tr>
<td>5.</td>
<td>Press 3 times to exit.</td>
</tr>
</tbody>
</table>

TEST ALL MOTORS
This menu will test vend all motors. The selection will display with the test vend. If a test vend attempt on a particular motor fails, then the controller will beep. Satellite machines will also be included in the test.

NOTE:
Pressing  at any time will stop the test.

<table>
<thead>
<tr>
<th>STEP</th>
<th>DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Press Service Mode Button</td>
</tr>
<tr>
<td>2.</td>
<td>Press 9 and wait.</td>
</tr>
<tr>
<td>The motor selection number will display while it is being tested.</td>
<td>Item 010</td>
</tr>
<tr>
<td>3.</td>
<td>Press 3 times to exit.</td>
</tr>
</tbody>
</table>
### 0.1 DIAGNOSTIC

This menu is used to perform a self-diagnostics check and display results.

<table>
<thead>
<tr>
<th>STEP</th>
<th>DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Press Service Mode Button</td>
<td>Motors ( - - )</td>
</tr>
<tr>
<td>Press 0</td>
<td>Diagnostic...</td>
</tr>
<tr>
<td>2. Press 1 to start test</td>
<td>Checksum Temp Sensor Optical Coin Acceptor Bill Validator Card Reader1 Card Reader2 Tests Completed</td>
</tr>
<tr>
<td>3. Press 3 times to exit.</td>
<td>(Sales Mode)</td>
</tr>
</tbody>
</table>

### 0.2 TEST RELAY

**Testing of Relays** - This menu provides functions that allow the operator to test the operation of the individual relay lines 1 through 6.

### 0.3 LOG

Engineering download for service technician ONLY!

### 0.4 COIN REJECT RATE

This feature tracks the percentage of coins that have been rejected by the coin mech. This will be reset when in accounting “ALL” has been cleared.

### 0.5 BILL REJECT RATE

### 0.6 IVEND ALIGNED

### 0.7 PASSWORD

See GVC2 Programming Manual (P/N 4215507) for more information.

#### 0.7.1 REFRI LG

<table>
<thead>
<tr>
<th>STEP</th>
<th>DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Press Service Mode Button</td>
<td>Motors ( - - )</td>
</tr>
<tr>
<td>2. Press 0</td>
<td>Diagnostics</td>
</tr>
<tr>
<td>3. Press 7</td>
<td>Password:</td>
</tr>
<tr>
<td>4. Enter Password (default-2314)</td>
<td>Log</td>
</tr>
<tr>
<td>5. Press 1</td>
<td>Refrig Log (Current Status) *- exit 1- edit</td>
</tr>
<tr>
<td>6. Press 1 to toggle ON/OFF</td>
<td>Refrig Log (Choice Flashing) *- exit # - save</td>
</tr>
<tr>
<td>7. Press # to save</td>
<td>Refrig Log (New Status) *- exit 1- edit</td>
</tr>
<tr>
<td>8. Press 4 times to exit.</td>
<td>(Sales Mode)</td>
</tr>
</tbody>
</table>
### 0.7.2 DAQ LOG

<table>
<thead>
<tr>
<th>STEP</th>
<th>DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Press Service Mode Button</td>
</tr>
<tr>
<td>2.</td>
<td>Press 0</td>
</tr>
<tr>
<td>3.</td>
<td>Press 7</td>
</tr>
<tr>
<td>4.</td>
<td>Enter Password (default-2314)</td>
</tr>
<tr>
<td>5.</td>
<td>Press 2</td>
</tr>
<tr>
<td>8.</td>
<td>Press 3 times to exit.</td>
</tr>
</tbody>
</table>

### 0.7.3 STS

<table>
<thead>
<tr>
<th>STEP</th>
<th>DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Press Service Mode Button</td>
</tr>
<tr>
<td>2.</td>
<td>Press 0</td>
</tr>
<tr>
<td>3.</td>
<td>Press 7</td>
</tr>
<tr>
<td>4.</td>
<td>Enter Password (default-2314)</td>
</tr>
<tr>
<td>5.</td>
<td>Press 3</td>
</tr>
<tr>
<td>8.</td>
<td>Press 3 times to exit.</td>
</tr>
</tbody>
</table>

### 0.9 MANUAL DEFROST

<table>
<thead>
<tr>
<th>STEP</th>
<th>DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Press Service Mode Button</td>
</tr>
<tr>
<td>2.</td>
<td>Press 0</td>
</tr>
</tbody>
</table>
| 3.   | Press 9 | Manual Defrost (Current Status) *
| 4.   | Press 9 to toggle ON/OFF | Manual Defrost (Choice Flashing) *
| 5.   | Press # to save | HS Test (New Status) *
| 6.   | Press 3 times to exit. | (Sales Mode) |
CUSTOMER LEAD THROUGH MESSAGES
The following messages will be affected by the language selection and are stored in the controller memory.
Message 1: PLEASE USE EXACT CHANGE
Message 2: PLEASE INSERT MORE MONEY
Message 3: PLEASE MAKE ANOTHER SELECTION
Message 4: OUT OF SERVICE
Message 5: VENDING OPERATION TO RESUME AT (hh.mm)
Message 6: DOOR OPEN ERROR
Message 7: THANK YOU
Message 8: FREE ON US

TEMPERATURE CONTROL
To prevent damage to the refrigeration unit when it is turned off or the power is interrupted, the refrigeration unit will not restart for at least five minutes regardless of the temperature.

SENSORS
Temperature sensor(s) are positioned to best represent the product temperature. The sensor(s) are monitored by the controller program. The refrigeration and heater systems are activated depending on the target temperature setting or SET POINT. The total allowable temperature variation from the SET POINT is DELTA.

SENSOR 1 is located on right side towards the back between trays 4 and 5 and controls the bottom zone temperature of the multi-zone by switching the compressor on and off. Sensor 1 is not used if the machine is configured as a single zone.

SENSOR 2 is located on right side of the evaporator and mounted to the top tube with a copper clip and tie strap. Sensor 2 is used to measure evaporator temperature and terminates a defrost cycle when the coil reaches 50°F.

SENSOR 3 is located on right side towards the back between trays 1 and 2 and controls the upper zone temperature by switching the foil heater on and off when machine is configured as a multi-zone. If the machine is configured as a single-zone cold or frozen, Sensor 3 controls the entire cabinet temperature by switching the compressor on and off.
Figure 9a. Single Zone Airflow

Figure 9b. Multi-Zone Airflow
**RELAYS**
The program controls four relays which then control the refrigeration and heating systems:
- RELAY1 - controls the compressor and the condenser fan (refrigeration system).
- RELAY2 - controls the upper zone blower / heater & evaporator fan via the door switch.
- RELAY3 - controls the defrost heater and evaporator fan.
- RELAY4 - controls the upper zone heater when configured as MZF

NOTE: For more information regarding the Power Panel, please refer to schematic.

**DOOR SWITCH**
The door switch is located in the upper left hand corner of the vending machine door. See Figure 9c.
- If the vending machine is plugged in and the power switch is on and the door is open, then the compressor, evaporator fan, heater and heater fan are all turned off. A 30 minute door timer starts and a compressor delay timer starts.
- If the door is open for more than 30 minutes, the controller will resume closed door operation, the message \textit{DOOR OPEN} is displayed and error code (VMC 7) is set. The DIAGNOSE menu will also display the current state of the door switch after all other messages (if any) are displayed. \textit{DOOR} is displayed if the door switch is in the “door open position” and no message is displayed if the door switch is in the “closed door position”.

If a defrost cycle is in progress (compressor off and defrost DURATION timer on) and the door is opened, then the DURATION timer continues while the door is open.

The HEALTH SAFETY feature prevents the sale of perishable food if the air temperature inside the top zone (SENSOR3) rises above the health safety temperature limits for cold food products (41°F / 5°C) for more than 15 minutes and in the bottom zone (SENSOR1) if the temperature rises above the health safety temperature limits for frozen food products (0°F/-18°C) for more than 15 minutes.

NOTE: The time requirements for the COLD setting do not apply for 30 minutes and 75 minutes for FROZEN immediately following vending machine filling or servicing.

IMPORTANT! The operator is responsible for setting the health safety at the correct level and selection range for the product being vended.

Refer to the GVC2 Programming Manual (p/n 4215507) for additional instructions on how to set the Sensor1&3 Health Safety Level and Sensor1&3 Health Safety Range.
# HEALTH SAFETY FIELD TEST

1. **Simulate Warm Temperature**
   a. Open the door of the Food Vendor
   b. Locate sensor #3 at the back right of the cabinet between 1st and 2nd tray.
   c. Remove the sensor from the mount and place the sensor in a cup of warm water

2. **Disable Last Door Switch Activation**
   This step removes the last door switch activation from the controller’s memory so it doesn’t give the extended recovery time that is normally given after filling or servicing the machine.

<table>
<thead>
<tr>
<th>STEP</th>
<th>DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Press Service Mode Button</td>
</tr>
<tr>
<td>2.</td>
<td>Press 0</td>
</tr>
<tr>
<td>3.</td>
<td>Press 7</td>
</tr>
<tr>
<td>4.</td>
<td>Enter Password (default-2314)</td>
</tr>
<tr>
<td>5.</td>
<td>Press 4</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Press 4 to toggle ON/OFF</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Press # to save</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Press 4 times to exit.</td>
</tr>
</tbody>
</table>

Press 0 in Sales Mode to see current temperatures and “HS Test” message

3. **Perform Test**
   a. Press 0 on the host machine numerical keypad to check the temperature.
   b. Wait until the temperature is above the upper health safety limit—Frozen 0°F, Cold 41°F—(15 minutes)
   c. Try to vend a product from the Food Vendor.
   d. If the health safety is working properly the vend should fail; the machine should have automatically been disabled by the controller board.

4. **After Test is Completed**
   Remove sensor from cup of water and install back in sensor mount.
REFRIGERATION
To prevent damage to the refrigeration unit when it is turned off or the power is interrupted, the refrigeration unit will not restart for at least five minutes regardless of the temperature.

REFRIGERATION TROUBLESHOOTING

CAUTION: Breaking the refrigerant joints or seals on the system voids the unit warranty. Failure to keep the condenser coil clean and free of dirt and dust and other similar debris voids the unit warranty.

Know and understand how the unit operates. Units may vary, but the operation is basically the same. Never guess at the problem; find the symptom before attempting any repair.

NOTE: Most refrigeration problems are electrical.

WARNING: Wiring diagrams must be followed as shown. Wrong wiring may cause serious electrical hazard and potential damage or rupture component electrical parts.

Table 1. Approximate Winding Resistance

<table>
<thead>
<tr>
<th>Across Terminals</th>
<th>Danfoss 5/8 Hp</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMMON to START:</td>
<td>2.9 Ohms</td>
</tr>
<tr>
<td>COMMON to RUN:</td>
<td>0.9 Ohms</td>
</tr>
<tr>
<td>COMMON to SHELL:</td>
<td>No continuity</td>
</tr>
</tbody>
</table>

Figure 10d. Danfoss 5/8 Hp Compressor Schematic
Figure 10b. Danfoss Compressor
The sealed hermetic system should not be worked on outside the Factory Service Center. There are three things that can go wrong with a sealed system and should be repaired only at the Factory Service Center. These are:

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

### COMPRESSOR WILL NOT START

**Compressor has no power:**

- Vending machine not plugged in.
- Tripped circuit breaker or blown fuse.
- Faulty wall outlet or improper wiring.
- Faulty (short or open) power cord.
- Temperature sensor circuit is open. If temperature reading of SENSOR1 is "--", then check sensor harness connection or defective sensor.
- Low voltage. Check the power source with a volt meter. Minimum 103V for 115VAC, 60Hz. Minimum 195V for 230VAC, 50 Hz.
- Check motor protector (overload). See page 29, Troubleshooting Circuits with Multi-Meter.
- No DC voltage. Check control board terminals J14-8, J14-14 for a loose connection.
- Check compressor starting relay. See page 29, Troubleshooting Circuits with Multi-Meter.

**Check compressor winding.** See page 29, Troubleshooting Circuits with Multi-Meter.

- Defective refrigeration control relay. Switch the controller to **Service Mode** then verify that the relay turns on by using the **TEST RELAY** menu.
- Unplug power to the vending machine. Open the power panel. Use insulated jumper wires to short the wire terminals on RELAY1; between 2 and 4. Restore power to the vending machine. The compressor should start, indicating a problem in the control circuit.
- Check relay terminals 1 to 0 with a Multi-Meter. Should have 24VDC applied to them.
- Check the door switch operation. See Door Switch section on page 24.

### COMPRESSOR TRIPS ON OVERLOAD

1. Improper voltage: Check power source with volt meter. Acceptable range is 103-127VAC for 115V (60Hz), or 195-255VAC 230V (50Hz).
2. Defective starting relay. Won’t open after starting. Check compressor starting relay. See page 29, Troubleshooting Circuits with Multi-Meter.
3. Compressor has shorted windings. Check compressor winding resistance values. See page 29, Troubleshooting Circuits with Multi-Meter.
4. Short in other component: Isolate and eliminate each electrical component until short is found.
5. Compressor is too hot.
   - Dirty condenser.
   - Faulty condenser motor or blade.
   - Restricted airflow. Check for clogged air filter. Check for clogged inlet and outlet screens.
6. Defective or worn out overload: Trips too fast or too often.

---

**CAUTION:** Replace air filter every 3 months to maintain proper air circulation to the condenser and to prevent dirt and debris from clogging up the condenser.
NOISY OR VIBRATING UNIT

1. Components rubbing or touching each other.
   ♦ Check fan blades and motor.
   ♦ Loose shrouds and harness.
   ♦ Copper tubing.
   ♦ Loose or unsecured parts.
   ♦ Dirty condenser fan blades.

2. Worn or aged compressor grommets.
3. Compressor.
   ♦ Bad valves.
   ♦ Slugging.
   ♦ Bad windings (Refer to Table 1 and schematic on page 26.).
   ♦ Voltage too low.

UNIT SHORT CYCLES

- Defective condenser fan.
- Dirty or blocked condenser coils.
- Dirty or blocked air filter.
- Dirty or blocked inlet or outlet screens.
- Defective overload (motor protector).

- Temperature sensor is defective or not mounted in the correct spot.
- Temperature setting set too warm. See Temperature Control section and Factory Default Settings section of this manual.
- Defective control board.

UNIT OPERATES LONG OR CONTINUOUSLY

1. Airflow restricted.
   ♦ Clogged or blocked inlet screen, air filter, or outlet screen.
   ♦ Exhaust area blocked. Vending machine too close to wall.
   ♦ Airflow blocked by product in front of evaporator or air duct openings.
   ♦ Faulty evaporator motor or blades causing coils to ice.
   ♦ Loose connections on evaporator motor. Motor not running.

2. Refrigeration relay shorted. Switch the controller to Service Mode, and then verify that relay turns off by using the TEST RELAY menu.

3. Gasket leak around main door or delivery door.
4. Excessive load: After loading, unit runs longer to pull out excessive heat from product.
5. Shortage of refrigerant or restriction.
6. Faulty controller.
7. Ambient air temperature and relative humidity exceed manufacturer’s operational standards.
8. Defective temperature sensor or sensor has been moved or remounted to wrong spot.

REFRIGERATED SPACE TOO COLD

1. Refrigeration relay bad. Switch the controller to Service Mode, and then verify that relay turns on by using the TEST RELAY menu. Check relay terminals for continuity with an ohmmeter.

2. Faulty controller.

REFRIGERATED SPACE TOO WARM

- Condenser airflow restricted.
- Plugged or dirty condenser.
- Condenser motor or blades bad.
- Blade stuck.
- Condensing space restricted.
- Unit placed too close to a wall.
- Compressor - bad valves.
TROUBLESHOOTING CIRCUITS WITH MULTI-METER

<table>
<thead>
<tr>
<th>Caution: Power must be disconnected and fan circuit open.</th>
</tr>
</thead>
</table>

1. To check the power source, use the voltage section of the Multi-Meter. Acceptable range is 103-127VAC for 115V (60Hz), or 195-255VAC 230V (50Hz).
   - **Danfoss 5/8 HP** – Remove relay from compressor. See Figure 10b and Figure 10d on pages 26 and 26.
     - Use ohmmeter to check for continuity between switch terminals 1 and 2. Replace if continuity exists.
     - Use ohmmeter to check for continuity between coil terminals 5 and 2.

2. Check temperature sensor harness to control board for continuity using ohmmeter of Multi-Meter. Replace if there is no continuity.

3. **Check compressor windings** using ohmmeter. Refer to Table 1, Figure 10b, and Figure 10d on page 26.

4. **Check motor protector (overload).** Use the ohmmeter section of the Multi-Meter.
   - **Danfoss 5/8 HP** – Remove the overload. Check between the overload terminals for continuity. If no continuity is measured (infinity), overload may be tripped. Wait 10 minutes and try again. If still no continuity, overload is defective.
REMOVING THE REFRIGERATION SYSTEM

CAUTION: Always disconnect power source BEFORE servicing.

1. Turn off Main Power Switch and unplug vendor power cord from wall outlet.
2. Remove the bottom tray but not rails.
3. Locate the cabinet control harness and temperature sensor harness on the top right of the refrigeration unit. Unplug the connector to refrigeration unit, the temperature sensor 2, and the evaporator fan. See Figure 10g. Remove harness from any retaining clips mounted on the refrigeration unit.
4. Remove the two (2) screws on the front spacer bracket. Pull on the top edge of the front spacer bracket and swing it down to remove it.
5. Remove the front retaining bracket by removing the four (4) screws. See Figure 10h.
6. Remove the mounting screw securing the metal wedge from the left side of the refrigeration unit. Pry and remove the metal wedge.
7. Pull the refrigeration unit halfway out of the cabinet. Unplug the condenser fan harness from the back of the refrigeration unit. Pull the refrigeration unit out.

NOTE: All gaskets must seal tightly to the back and right side of the cabinet when installing the refrigeration unit back into the cabinet.

PREVENTIVE MAINTENANCE

CAUTION: Always disconnect power source BEFORE cleaning or servicing.

ONCE A MONTH

CLEAN CABINET INTERIOR
Wash with a mild detergent and water, rinse and dry thoroughly. Odors may be eliminated by including baking soda or ammonia in the cleaning solution. Plastic parts may be cleaned with a quality plastic cleaner.
The vend mechanisms must be kept clean. Any build-up can cause the mechanisms to malfunction.
Do not get the cleaning solution on electrical components.
To insure proper vending keep delivery box area free of dirt and sticky substances.

CLEAN CABINET EXTERIOR
Wash with a mild detergent and water, rinse and dry thoroughly. Clean occasionally with a quality car wax. Plastic exterior parts may be cleaned with a quality plastic cleaner.
CONVERTING FROM SINGLE ZONE TO MULTI-ZONE MODE

(REQUIRED: Optional Multi-Zone Conversion Kit)

1. Turn power switch off.
2. Remove top four trays from machine by unplugging tray harness and pulling trays out of tray rails.
3. Install turning vane with air holes in bottom opening.
4. Move existing turning vane located at top of machine to center opening and install along with the second turning vane provided in kit.
5. Install upper blower fan and plug into existing harness (Fig. 6).
6. Install upper zone temperature sensor.
7. Assemble and install insulating barrier, locate existing harness in air duct and connect to upper zone foil heater.
8. Install air curtain on bottom side of tray four.
9. Replace trays to proper locations, it is critical that the curtain is installed properly on the fourth tray down to insure proper airflow.
10. Turn power switch on and reconfigure control board to multi-zone mode. (See Configuration Instructions)

CONVERTING FROM MULTI-ZONE MODE TO SINGLE ZONE

1. Turn power switch off.
2. Remove top four trays from machine by unplugging tray harnesses and pulling trays out of Tray Rails.
3. Remove insulating barrier by removing screws located on each side underneath front edge and unplugging foil heater.
4. Unplug harness and remove upper zone blower fan (Fig. 6).
5. Remove turning vane with air holes from bottom opening.
6. Remove one of two existing Turning Vanes (see Fig. 8) located in center opening.
and move second turning vane to top
8. Remove air curtain from bottom side of tray four (Fig. 7)
9. Replace trays to proper locations and connect harnesses
10. Turn power switch on and reconfigure control board to either single zone cold food or single zone frozen mode (See Configuration Instructions).

Every 3 Months

REPLACE AIR FILTER

The refrigeration air filter is to prevent dust from building up on the condenser coils and allows the refrigeration system to operate efficiently.
- Pull the filter and check the air filter.
- If filter is dirty, replace it with the same size and type filter.
- Airflow arrow on filter must point to the left (towards the inside of vending machine).

WARNING: Do not replace with a HEPA type filter. This type may not allow the correct amount of air to flow through.

CLEAN BOTTOM INLET SCREEN

The inlet screen is a long narrow screen located on the bottom right side. It can only be accessed from underneath the cabinet. See Figure 11a on page 32. Remove dust and debris from the inlet screen to allow air to flow to the condenser coils.
EVERY 6-MONTHS

CLEAN DOOR AND DELIVERY DOOR SEALS
Clean the door seals. Inspect them for any deformities or cracking.

CLEAN EVAPORATOR COIL
Open the door. Clean the evaporator coil of refrigeration unit using a soft bristle brush and/or vacuum cleaner.

CLEAN REAR SCREEN
Remove the Back Screen Cover from cabinet back. Clean dust and debris from screen using a soft bristle brush or a vacuum cleaner.

NOTE: Remove screws from Back Screen Cover at the back of the machine, 3 from top and 2 from bottom. Fig. 11c.

CLEAN DELIVERY BOX BOTTOM
Inspect the Delivery Box. Wipe clean any dirt and debris that may have accumulated.

The bottom half of the Delivery Box can be removed for thorough cleaning. To remove the Delivery Box Bottom, loosen the three (3) thumbnuts located on the rear of the Delivery Box. Lift up then pull it out.
PARTS ORDERING PROCEDURE

When ordering parts, include the following:

1. The model and serial numbers of the vending machine for which the parts are needed.
2. Shipping address.
3. Address where the invoice should be sent.
4. The number of parts required.
5. Always refer to the pertinent parts and/or part manual for the correct part number and description of a specific part.

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

6. Any special shipping instructions.
7. Carrier desired: air or air special, truck, parcel post or rail.
8. Signature and date.
9. Purchase order number, if used.

Mail your order to:
VendNet™
165 North 10th Street
Waukee, IA 50263 USA

All orders are carefully packed and inspected prior to shipment. Damage incurred during shipment should be reported at once and a claim filed with the terminating carrier.

If you do not have the right parts manual: contact VendNet™.

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

BEFORE CALLING FOR SERVICE

Please check the following:

- Does your vending machine have at least 6-inches of clear air space behind it?
- If the power is turned on at the fuse box, is the vending machine the only thing that doesn’t work?
- Is the vending machine plugged directly into the outlet?

WARNING: Extension cords can cause problems. DO NOT USE EXTENSION CORDS.

- Is the evaporator coil free of dust and dirt?
- Is the condenser coil free of dust and dirt?
- Is the compressor free of dust? A blanket of dust can prevent the compressor from cooling in between workout cycles.
- Is the circuit breaker at the fuse box reset?
- Is the evaporator fan working? To check if the fan is running take a small piece of paper in front of the evaporator coil and see if the evaporator fan will draw the paper. See Figure 11b on page 33.
- Is the condenser fan running? Fold a sheet of 8 1/2” x 11” paper in half. Place the paper in front of the condenser coil inlet screen located on the bottom right side underneath the cabinet and see if it draws the paper to it. See Figure 11a on page 32.
- Is the shelf in front of the evaporator coil clear? (No tools, product, or other air-restricting items)
The contents of this publication are presented for informational purposes only, and while every effort has been made to ensure their accuracy, they are not to be construed as warranties or guarantees, express or implied, regarding the products or services described herein or their use or applicability. We reserve the right to modify or improve the designs or specifications of such products at any time without notice.

VendNet™
165 North 10th Street
Waukee, Iowa 50263
United States of America

USA & Canada | International
---|---
Service | (800) 833-4411 | (515) 274-3641
Parts | (888) 259-9965 |
Email | vendnet@vendnetusa.com |
Web Site | www.vendnetusa.com |