Model 725

Set-Up & Operators' Guide

GPL ®

7250004

This machine has been engineered to our own rigid safety and performance standards. It has been designed to comply with sanitation and health guidelines recommended by the Automatic Merchandising Health-Industry Council (AMHIC) and it conforms with all other NAMA safety recommendations.

This machine has been manufactured in accordance with the safety standards of both Underwriter's Laboratories and the Canadian Standards Association. To maintain this degree of safety and to continue to achieve the level of performance built into this machine, it is important that installation and maintenance be performed so as to not alter the original construction or wiring and that replacement parts are as specified in the *Parts Manual*. Your investment in this equipment will be protected by using this *Setup and Operation Manual* and the *Parts Manual* in your operation, service and maintenance work. By following prescribed procedures, machine performance and safety will be preserved.

NOTICE:
This merchandiser is intended to store and vend prepackaged non-perishable product. Do not load with perishable food.

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Power Requirements

The merchandiser is supplied with a service cord for the country of use and is terminated in a grounding type plug. The wall receptacle used for this merchandiser must be a properly polarized, grounded, 115 VAC, 15 amp outlet rated for outdoor use. Operating the merchandiser from a source of low voltage will **VOID YOUR WARRANTY**. Each merchandiser should have its own electrical circuit and that circuit should be protected with a circuit breaker or fuse conforming to local regulations.

Voltage Check - Place the leads of a voltmeter across the LINE (LIVE) and NEUTRAL terminals of the wall receptacle. The voltmeter should indicate 110-130 volts ac for 120 volt, 60 Hz locations, or 220- 240 volts ac for 230 volt, 50 Hz locations.

Polarity Check - Place the leads of a voltmeter across the LINE (LIVE) and GROUND terminals of the wall receptacle. The voltmeter should indicate 110-130 volts ac for 120 volt, 60 Hz locations, or 220- 240 volts ac for 230 volt, 50 Hz locations.

Noise Potential Check - Place the test leads of a voltmeter across the NEUTRAL and GROUND terminals of the wall receptacle. The meter should indicate 0 volts ac. A measurement greater than 1.5 - 2.0 volts ac could result in problems for the merchandiser's electronic circuitry caused by electrical noise.

Any deviation from these requirements could result in unreliable performance from your merchandiser.

FOLLOW ALL LOCAL AND NATIONAL CODES

Site Requirements

This machine is designed to be operated in any location with average temperatures ranging from 0º to 105º F.

Specifications

Dimensions	
Height	72"
Width	41"
Depth	40"
Shipping Weight	930 lbs.

This machine is designed to merchandise prepackaged, non-perishable food items. **Not for use with perishable foods.**

Unpack the Merchandiser

Remove all packing materials from the interior of the machine. Keep all documents; warranty cards, etc.

Position the Merchandiser

1. **Plan the merchandiser's location:**

   NOTE

   It is highly recommended that the merchandiser be anchored to its location to eliminate the possiblilty of damage and personal injury due to vandalism or tipping.

   a.   Where possible, try to find a shaded location; this will help the merchandiser to work more efficiently.

   b.   Locate the merchandiser at least four inches away from any wall, so air can circulate to the refrigeration unit.

   c.   There should be enough room in front and to the left of the merchandiser for the door to move freely

2. **Refer to the figure below and prepare the merchandiser's location as follows:**

   a.   The merchandiser should be anchored securely using the two anchor holes provided in the cabinet base.

   b.   The anchors for the machine should be located as shown in the following diagram:
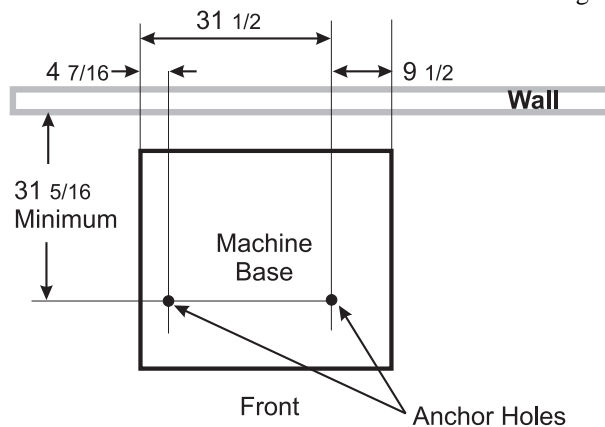
Dimensions shown in inches.

3. **Remove the plastic hole plugs from the anchor holes.**

4. **Position the merchandiser over the anchor points.**

5. **Using a spirit level, adjust the legs until the machine is level, both front to back and side to side.**

6. **Anchor the merchandiser using the two lag screws and fender washers. DO NOT overtighten the screws; tighten them enough to prevent movement of the machine.**

Loading the Merchandiser

1. **Place A Tray In The Loading Position**

   a. Put both hands on the tray as shown.

   b. Push down on the tray latches with your thumbs.

   c. Pull the tray toward you until you hear and feel the rear tray rollers drop into a cut-out in the top of the guide rail.
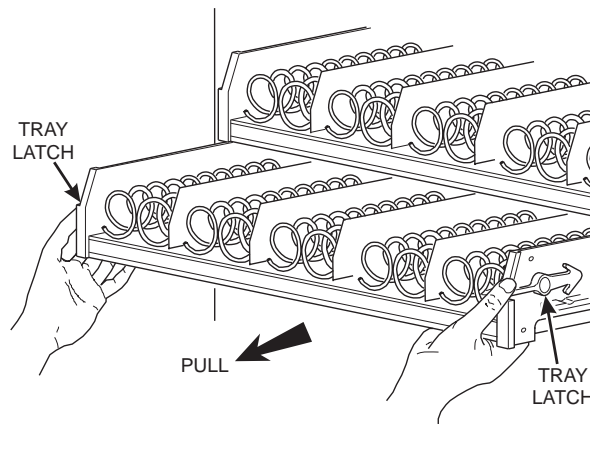
   d. Continue pulling the tray forward for another inch. You will then be able to tilt the tray downward into the loading position as shown.
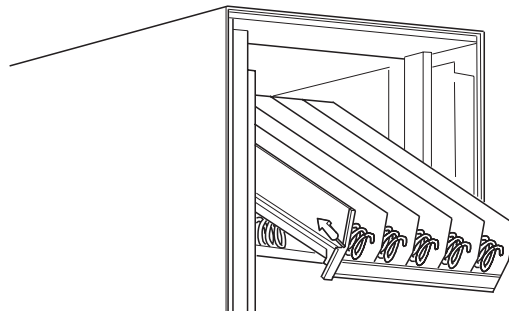
2.   **Set Up Trays to Vend Products**

These instructions will guide you through setting up your trays for vending. You will be asked to determine if your tray can physically hold the products you intend to vend. If not, you will be directed to other procedures which will help you get them set up. Follow these steps for each tray in your machine:

a.   Make sure the tray is in the loading position.

b.   Is the column wide enough for the intended product? If so, proceed to the next step. Otherwise, set up your tray to vend wider products (below). When you're done, return to step c in this procedure.

c.   Will the products fit between the spiral turns? If so, proceed to the next step. Otherwise, change the spiral.

d.   Will the product pass under the tray immediately above? If so, proceed to the next step. Otherwise, reposition the tray and guides.

e.   Will the product touch products on either side? If not, proceed to the next step. Otherwise, install a product spacer.

f.   Load products in the tray.

g.   Return the tray to the vending position.

h.   Install the price rolls.

i.   Install the selection ID numbers.

3. Removing a Tray

Study this procedure before you install a tray for the first time; while you are holding the tray you will not be able to see this area. Proceed as follows:

    a. Push down on the tray latches with your thumbs.
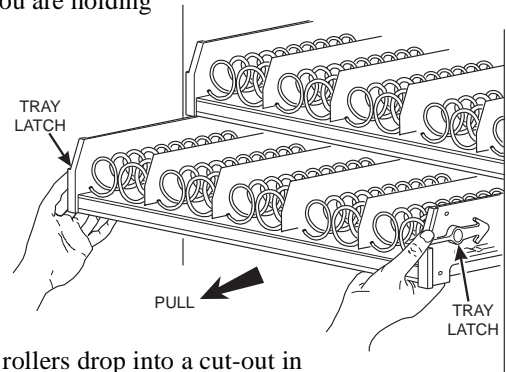
    b. Pull the tray forward until you hear and feel the rear tray rollers drop into a cut-out in the top of the guide rail.
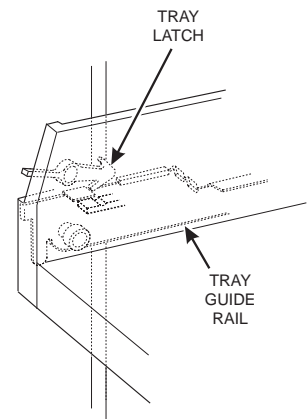
    c. Unplug the tray wiring harness from the PC board mounted on the tray guide rail JUST ABOVE the tray you are removing.
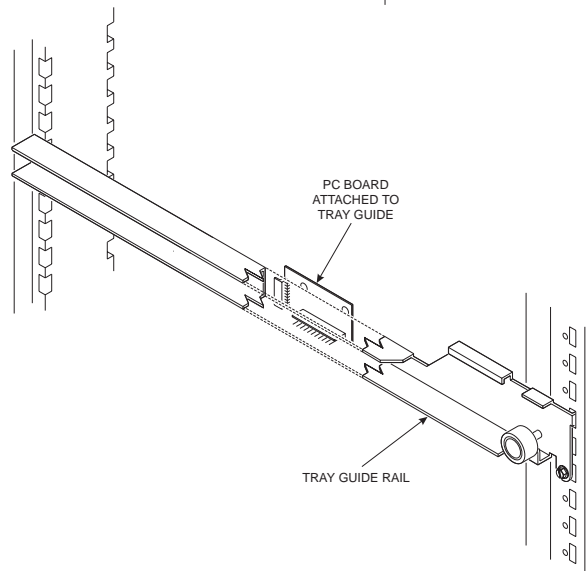
d. Lift up on the tray and slide it toward the back. No more than an inch should be needed.
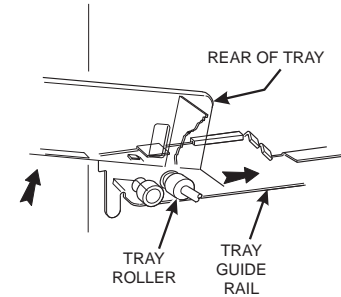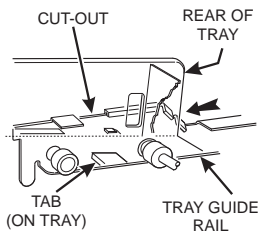
e. The tab near the back of the tray should align with the cut-out in the top of the guide rail as shown.

f. Lift the tray clear of the guide rail and out of the merchandiser.

4. Removing And Installing Column Dividers

a. Push the column divider toward the back of the tray - ① .

b. Lift the column divider clear of the tray - ② .

Install the column divider in the reverse order of removal.
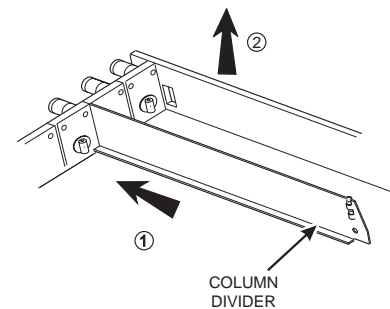
Operate a Tray Outside the Machine

Tray harness extension (P/N 1709017) is available from your National Vendors Parts department. The extension will enable you to remove the tray from the machine and still operate the motors and spirals. Connect it as shown:

TRAY RAIL

1709017

TRAY

159p0067
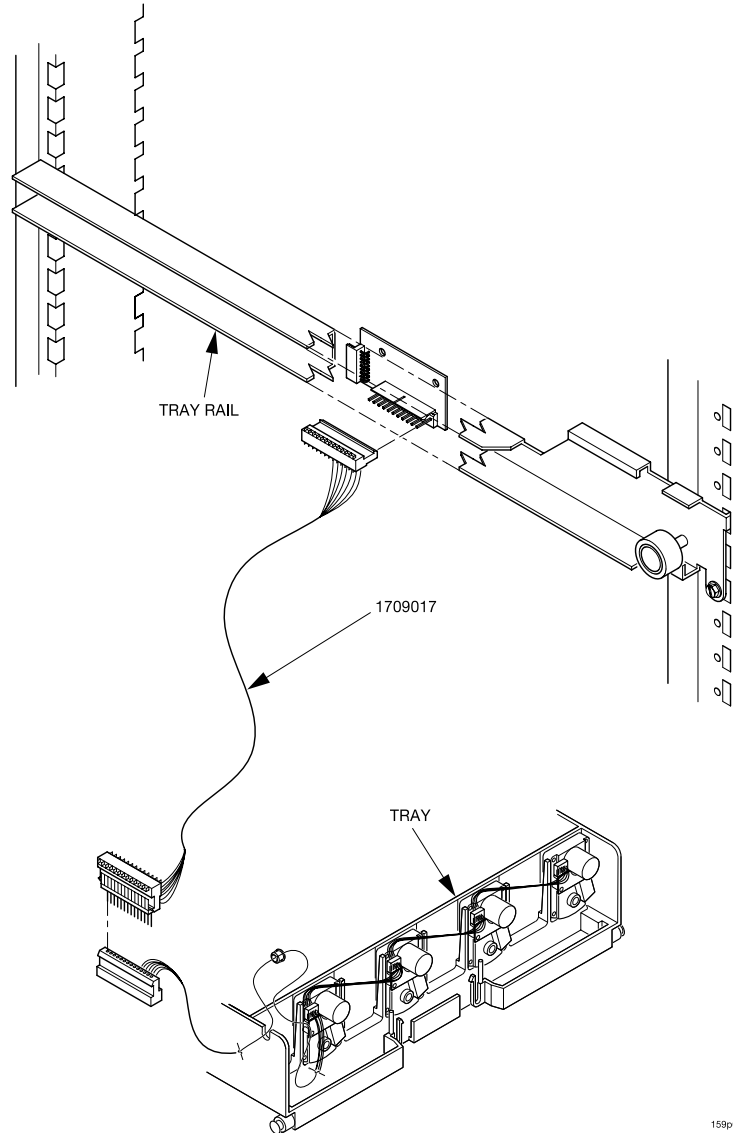
Changing Tray Configurations

1. **Replacing a Motor With a Spiral Bearing**

    a. Remove the motor:

      i. Disconnect the harness from the motor. See *CONNECTING AND DISCONNECTING A MOTOR HARNESS,* below*.*

      ii. Remove the spiral. *See REMOVING AND INSTALLING SPIRALS* (page 9)*.*

      iii. Remove the spiral coupler. *See REMOVING A SPIRAL COUPLER:* (page 10)*.*

      iv. Remove the motor. *See REMOVE A SPIRAL MOTOR:* (page 11)*.*

    b. Install a spiral bearing:

      i. Put the gear into position if required in this set-up as shown. *See INSTALLING A GEAR* (page 12)*.*

      ii. Install the spiral coupler. *See INSTALLING A SPIRAL COUPLER* (page 13)*.*
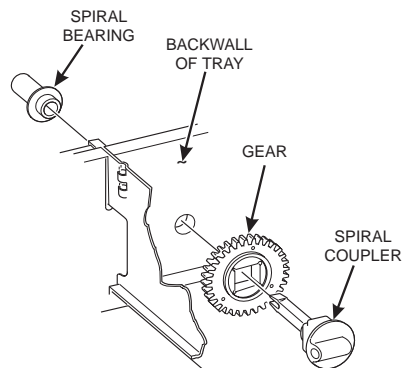
2. **Connecting and Disconnecting a Motor Harness**

    To avoid breaking the motor circuit board, hold the header on the circuit board whenever connecting or disconnecting a motor harness.

    a. Disconnect a motor harness:

      i. Pull the harness connector away from the circuit board as shown.

      ii. Tuck the unused part of the harness out of the way in the trough at the back of the tray.

    b. Connect a motor harness:

      i. Locate the harness connector for the appropriate tray position.

      ii. Push the harness connector over the header pins on the motor circuit board as shown.
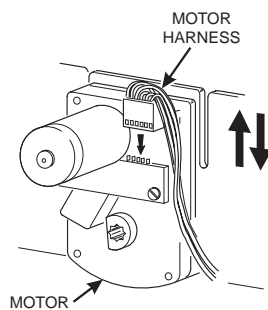
3. Removing and Installing Spirals

All spirals are the same diameter:
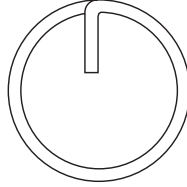
- There are two types of spirals:

COUNTER-CLOCKWISE (left hand)   CLOCKWISE (right hand)
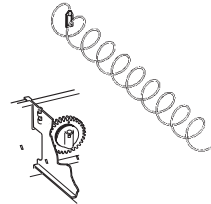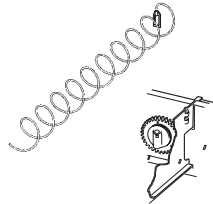
- Spirals are available in eight different capacities. Four of these are standard, and four are options.

ITEM CAPACITY OF SPIRAL	PART NUMBER		CLIP COLOR
	CLOCKWISE (RH)	COUNTERCLOCKWISE (LH)	
6 (Optional)	1477104	1477102	Purple
11 (Standard)	1477027	1477024	Blue
13 (Standard)	1477033	1477030	Yellow
15 (Standard)	1477039	1477036	Red
20 (Standard)	1477045	1477042	White
25 (Optional)	1477051	1477048	Green
30 (Optional)	1477057	1477054	Black
38 (Optional)	1477063	1477060	Orange

a. Remove a spiral:

   i. Pull forward on the retaining clip and remove the end of the spiral from the spiral coupler as shown.

   ii. Remove the spiral from the tray.
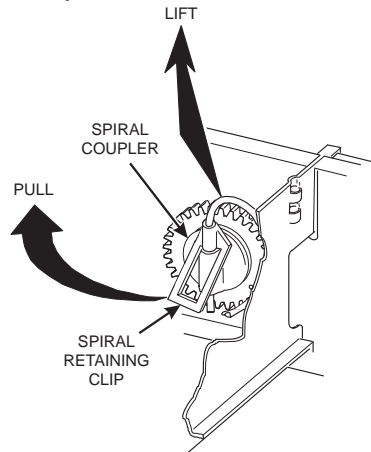
b. Install a spiral:

   i. Pull the bottom of the retaining clip toward the front of the spiral.

   ii. Lower the spiral into the tray column and insert the end of the spiral into the spiral coupler as shown.

   iii. Release the retaining clip.

c. Should I use a clockwise or a counterclockwise spiral?

   i. The type of spiral used is determined by the column position it will occupy in the tray.

   ii. Refer to the figure below to find the correct spiral type.
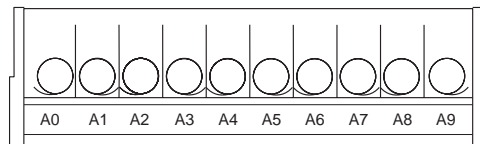
d. Removing a Spiral Coupler:

   i. Pinch together the prongs on the end of the spiral coupler as shown.

   ii. Pull the coupler forward (in the direction of the arrow as shown).
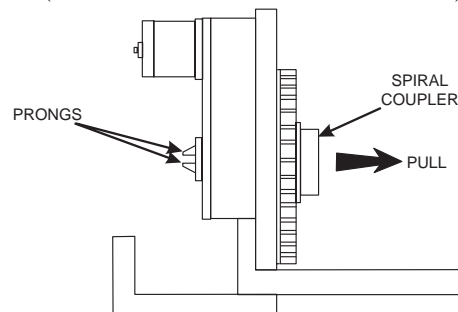
4. **Removing and Installing a Spiral Motor:**

   a. Remove a spiral motor:

<div align="center">NOTE</div>

Some steps may already be completed.

   i. Remove the tray. *See REMOVING A TRAY* (page 5)*.*

   ii. Disconnect the motor harness.*See CONNECTING AND DISCONNECTING A MOTOR HARNESS* (page 8)

   iii. Remove the spiral. *See REMOVING AND INSTALLING SPIRALS* (page 9)*.*

   iv. Remove the spiral coupler. *See REMOVING A SPIRAL COUPLER:* (page 10)*.*
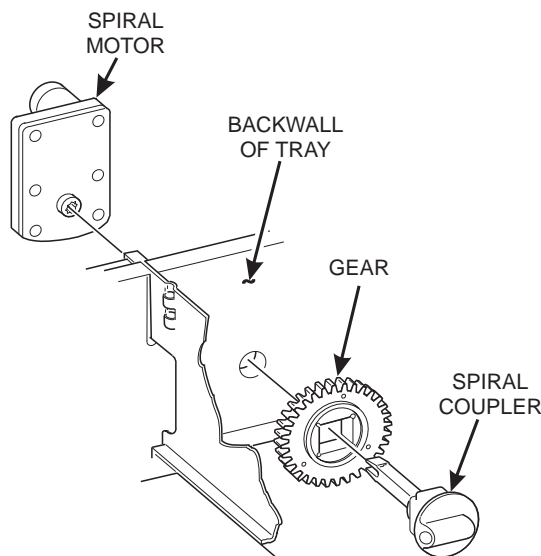
   v. Lift the motor clear of the tray.

   vi. Return the tray to the merchandiser. See *INSTALLING A TRAY IN THE MERCHANDISER* (page 15).

   b. Install a spiral motor:

   i. Remove the tray. *See REMOVING A TRAY* (page 5)*.*

   ii. Place the motor in the correct position at the rear of the tray as shown.

   iii. Place a gear in position if required by this set-up. *See INSTALLING A GEAR* (page 12)*.*

   iv. Install a spiral coupler in the proper orientation. *See INSTALLING A SPIRAL COUPLER* (page 13)*.*

   v. Connect the motor harness. *See CONNECTING AND DISCONNECTING A MOTOR HARNESS* (page 8)*.*

   vi. Return the tray to the merchandiser. *See INSTALLING A TRAY IN THE MERCHANDISER* (page 15)*.*

5. **Installing a Gear**

WHEN ARE GEARS USED?
- Gears are used to mechanically couple the spirals together.
- This happens whenever you have two spirals and only one motor for vending a selection.

WHERE ARE THE GEARS PLACED?
- The gear is placed between the back of the tray and the spiral coupler.

HOW IS THE GEAR ORIENTED?
- There are two possible orientations for the gear:

BACK WALL
OF TRAY

GEAR

ORIENTATION 1   ORIENTATION 2
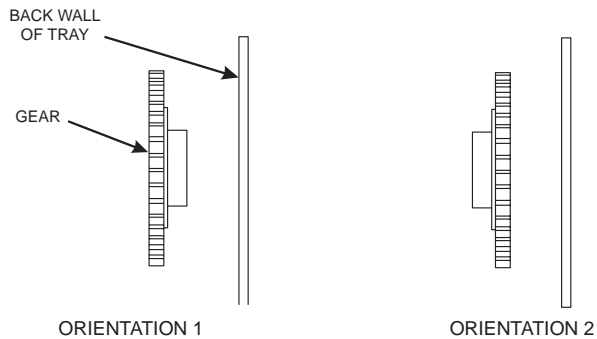
- There are two rules to follow when orienting gears:

RULE 1 -The gears for selections next to each other cannot use the same orientation.

RULE 2 -All gears for a single selection must use the same orientation.

6. **Installing a Spiral Coupler**

   a. Place the gear in position if one is required for this set-up. *See INSTALLING A GEAR* (page 12)*.*

   ### WHEN USED WITH A MOTOR:

   b. Hold the motor in place and push the spiral coupler through the motor gear box until it clicks into position. Be sure the spiral couplers are oriented as shown below.

SPIRAL COUPLER

FRONT VIEW OF MOTOR OUTPUT SHAFT
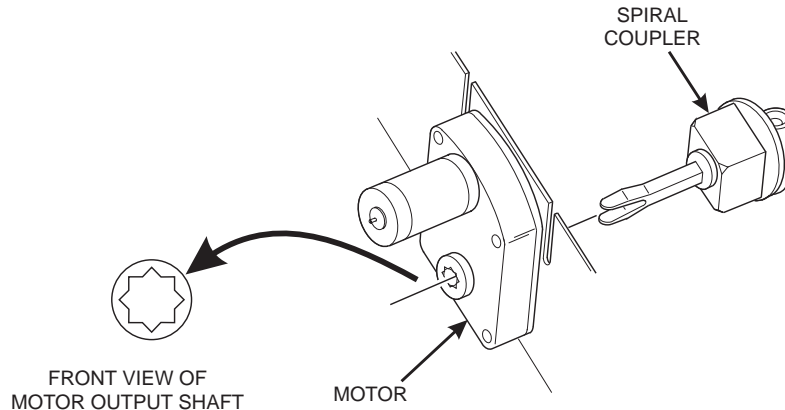
MOTOR

NOTE

The motor output shaft opening contains eight facets to allow the spiral coupler to be installed in any one of eight positions.

SPIRAL COUPLER ORIENTATION

ONE POSITION COUNTERCLOCKWISE FROM VERTICAL

ONE POSITION CLOCKWISE FROM VERTICAL

LEFT SPIRAL COUPLER

RIGHT SPIRAL COUPLER
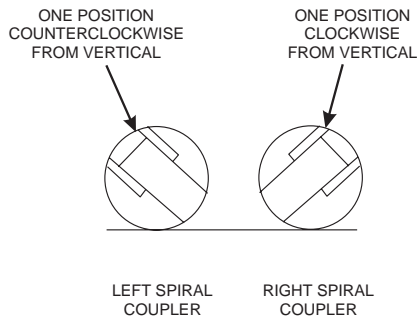
AS VIEWED FROM FRONT OF TRAY

WHEN USED WITH A COUPLER BEARING:

   c. Hold the coupler bearing in place and push the spiral coupler through the bearing until the coupler clicks into position. Be sure the coupler is in the proper orientation as shown.

SPIRAL COUPLER

SPIRAL BEARING
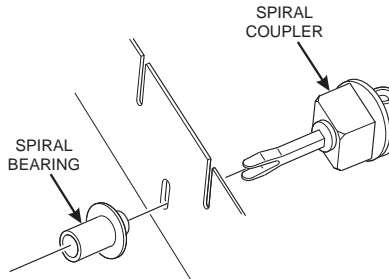
7. Moving a Tray Up or Down

This merchandiser can be adjusted to vend taller products. Some guidelines must be followed:

- Keep in mind that when you increase the product height available to a tray by lowering it, you will be decreasing the product height available to the tray below.

- If a tray is in the lowest position, the tray below it should not be in the highest position.

- If a tray is in the highest position, the tray above it should not be in the lowest position.

- You will need to experiment with various tray positions to get the best results for your products.

CAUTION

Trays should not be positioned over an open air discharge vent.

NOTE

Tray movement is limited because the tray harness will limit the amount of travel available to the tray guide rails.

Proceed as follows:

a. Remove the tray from the merchandiser. *See REMOVING A TRAY* (page 5)*.*

b. Remove the screw that secures the right tray guide rail to the front guide mounting channel as shown.

c. Tap up on the guide rail and unseat the guide rail tabs from the channel slots.

d. Pull the guide rail away from the front and rear guide mounting channels.

e. Move the guide rail to the desired position.

f. Insert the guide rail tabs into the mounting CVchannel slots as shown.

g. Tap down on the guide rail to seat the tabs in the channel slots.

h. Replace the screw that secures the guide rail to the front guide mounting channel.

i. Repeat steps b through h for the left guide rail.

j. Return the tray to the merchandiser. *See INSTALLING A TRAY IN THE MERCHANDISER* (page 15)*.*

Load products into the trays, and perform test vends. Make sure the trays don't interfere with the products you are vending, and that all products vend properly.

REAR GUIDE MOUNTING CHANNEL

PC BOARD

FRONT GUIDE MOUNTING CHANNEL

CHANNEL SLOT

TRAY GUIDE RAIL

SCREW
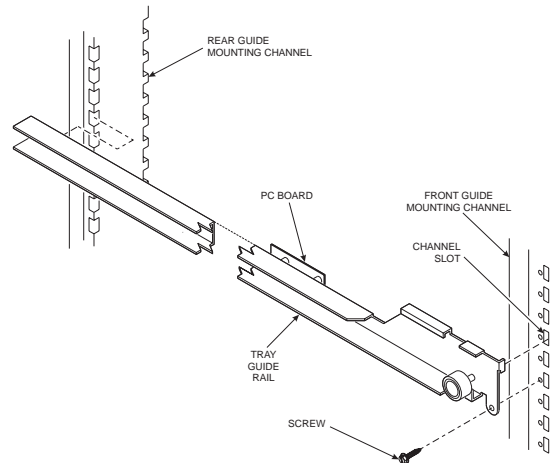
8. **Installing a Tray in the Merchandiser**

   - Study this procedure before you install a tray for the first time; while you are holding the tray you will not be able to see this area. Proceed as follows:

   a. Insert the tray so that the tray rollers pass over the tray guide rollers.
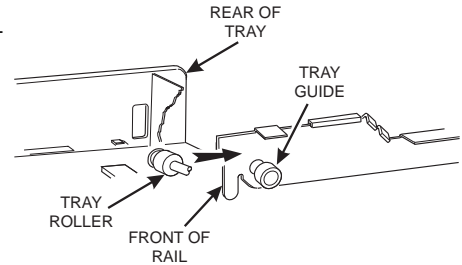
   b. Bring the tray roller to rest on the tray guide.

   c. Tilt the tray upward.

   d. Connect the tray wiring harness to the PC board mounted to the guide rail JUST ABOVE the tray you are installing.

   e. Hold the tray up while pushing it toward the rear. Stop when the tab on the tray aligns with the opening in the tray guide.
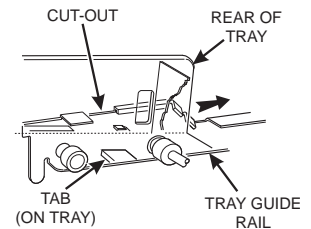
   f. Lower the tray until it rests on the tray guide roller. Push the tray in all the way.

   g. The tray latch will fall into the locking position.
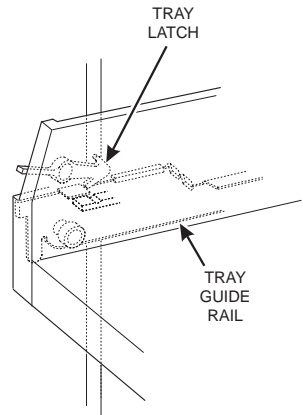
9. Installing and Removing a Product Spacer

    a. Install a product spacer:

        i. Insert the product spacer mounting pins into the column divider as shown.
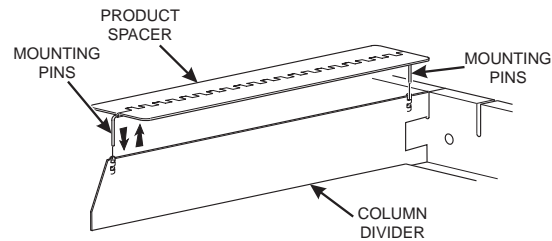
    b. Adjust a product spacer:

        i. With product loaded in the tray, rotate the product spacer up or down to keep the product upright as shown.
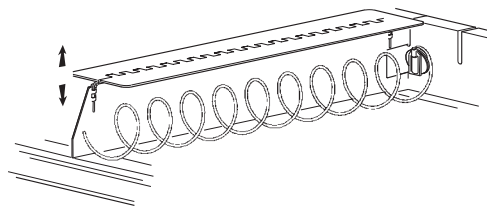
    c. Remove a product spacer:

        i. Pull the product spacer mounting pins from the column divider.

Load Trays With Product

SPIRAL CAPACITY COLOR CODES

SPIRAL CAPACITY	SPIRAL COUPLER COLOR	SPIRAL CAPACITY	SPIRAL COUPLER COLOR
6	Purple	20	White
11	Blue	25	Green
13	Yellow	30	Black
15	Red	38	Orange

The color of the spiral coupler (the little plastic tab attached to the rear of the spiral will tell you how many products will fit in the spiral. See table at left.

NOTE
Another way to determine spiral capacity is to count the spaces in the spiral!

1. **Loading a Tray With Products In General:**

   - See *PRODUCT PUSHER USAGE* (page 18) for spirals with capacity of 11, 13, or 15.

   - *See SPIRAL WALL RETAINER USAGE* (page 18) for spirals with capacity of 20, 25, 30, or 38.

   - Begin loading products at the front of the tray and work toward the back. Position the product so the package rests on the tray. DO NOT force a product into a spiral.

   - If the fit is too tight or too loose, change the spiral size. *See REMOVING AND INSTALLING SPIRALS* (page 9).

   - Be sure there are no empty positions between products in each spiral.

SPECIAL CONSIDERATIONS:

Bagged Products - Position package upright, then push the tops slightly toward the rear of the tray.

Thin Packages - Position the package upright. *See SPIRAL WALL RETAINER USAGE* (page 18).

KitKat - The two right-most columns of the candy tray are designed to accept the KitKat candy bar.

WARNING
This merchandiser does not have a health control circuit. It is not approved for the vending of perishable food items.

SNACK PRODUCT

CANDY PRODUCT

CORRECT LOADING OF SNACKS

CORRECT LOADING OF CANDY
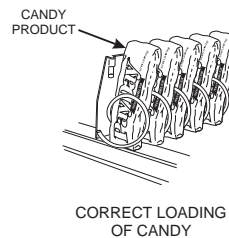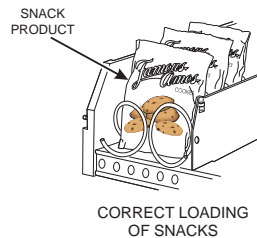
2. Spiral Wall Retainer Usage

A spiral wall retainer serves to compress the spiral and make it act like a spring to more forcefully eject a product. Do some test vends and use a spiral wall retainer when a product does not readily leave the spiral.

- Use a spiral wall retainer in the following cases:

    - The spiral has a capacity of 20, 25, 30, or 38.

    - The product is thin.

    - The product is on a candy tray.

    - The spiral wall retainer can also be used with other spirals and types of products.

    - The spiral wall retainer is installed near the front of the column divider.

    - There are two ways to install the spiral wall retainer.
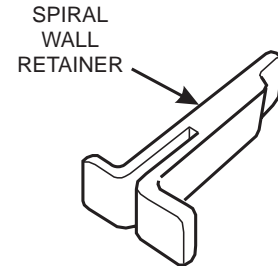
	RETAINER ORIENTATION	
	A	**B**
COLUMN DIVIDER BETWEEN THESE POSITIONS	0 and 1	1 and 2
	2 and 3	3 and 4
	4 and 5	5 and 6
	6 and 7	7 and 8
	8 and 9	
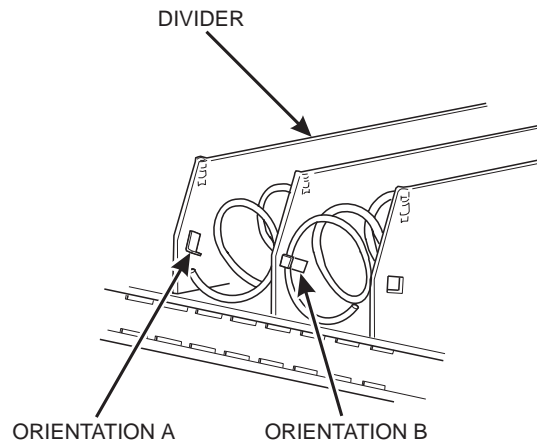
- To install a spiral wall retainer, insert the retainer in the square slot near the front of the column divider.

- The spiral wall retainer must be removed in two cases:

    - A Kit-Kat bar loaded into either of the two right hand positions of a tray will not clear the retainer on the column divider between the two positions.

    - A product pusher will catch on a retainer in *ORIENTATION A*.

3. Product Pusher Usage

The product pusher will give the top of a product an extra tilt to help it fall into the delivery pan.
Use a product pusher in the following cases:

- The spiral has a capacity of 15, 13, or 11.

- The package is non-rigid like bagged peanuts

The product pusher can also be used with other spiral and types of products.
A bag of product pushers has been shipped with the merchandiser. Additional product pushers are available from the National Vendors' parts department. To use a product pusher, snap it on the spiral as shown. You can adjust the product pusher by moving it around on the spiral to achieve the best vending results.
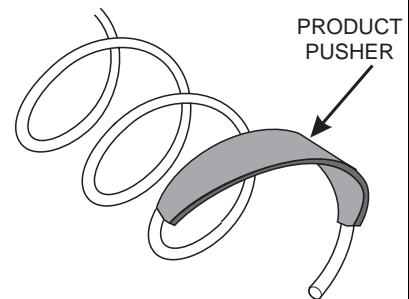
4. **Preparing the Merchandiser for Vending "Lunch Bucket":**

Because of the weight and shape of the package, National Vendors recommends that this product be vended only from the bottom tray.

To vend this product, two adjacent positions must be coupled together.

       See INSTALLING A GEAR (page 12), for mechanical coupling directions.

a. The left spiral coupler should be installed one position counterclockwise from the vertical position. See *INSTALLING A SPIRAL COUPLER* (page 13).

b. The right spiral coupler should be installed one position clockwise from the vertical position. See *INSTALL-ING A SPIRAL COUPLER* (page 13).

c. Replace the current spirals with six-count spirals. These are available from the National Vendors parts department. *See REMOVING AND INSTALLING SPIRALS* (page 9)*.*

A pad can be installed in the bottom of the delivery pan to quiet and cushion product delivery. This part is available from the National Vendors parts department.

d. Load "Lunch Bucket" products as shown.

FOOD SELECTIONS
LOADED IN SPIRALS
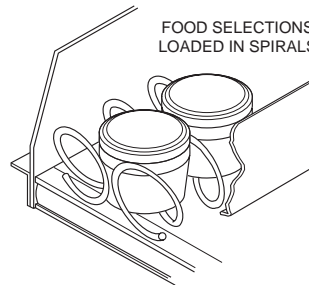
5. **Return the Trays to the Vending Position**

a. Lift the tray until it is parallel to the floor as shown.
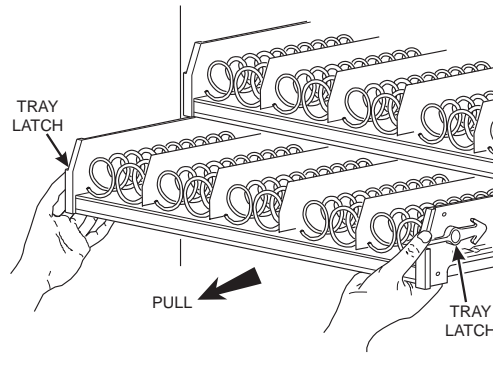
b. Push the tray toward the back of the cabinet. The tray latches on the sides of the tray will lock into position.
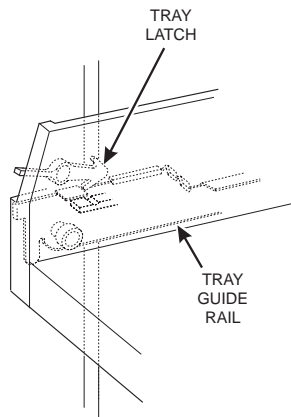
Install and Set Price Labels

- Price rolls are printed on coiled-up strips as shown in this example. (The dollar and cents rolls are factory installed.) If you use another type of currency, you will find the appropriate price rolls in the plastic bag that contained this manual.

- There are two types of price rolls installed:
    - Dollar roll - 1 to 12, increments of 1
    - Cents roll - 00 to 95, increments of 05

- Remove the price rolls as required, and install the appropriate one(s) for your currency.

DOLLAR ROLL

CENTS ROLL

157P0043
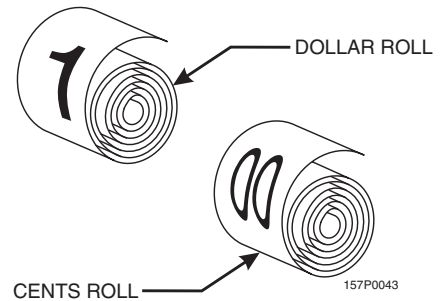
1. **Installing Price Labels:**

- There are three pairs of slots in the front of the tray for each position. Install per this example:

a. Insert the dollar roll in the left-most pair of slots as shown if the price is $1.00 or more.

b. Insert the cents roll in the center pair of slots as shown.

c. The low-number end of the roll goes in the top slot and the high-number end of the roll goes in the bottom slot.

PRESS TOP OF ROLL PAST FLEXIBLE TAB NEAR TOP EDGE

INSERT BOTTOM OF ROLL THROUGH SLOT ALONG BOTTOM EDGE

157P0044
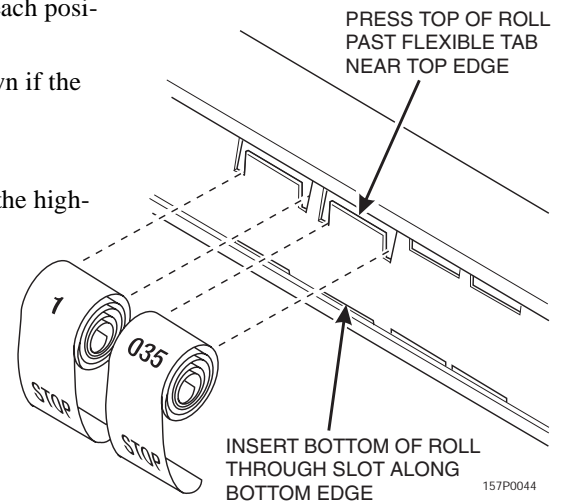
1. **Adjusting the price roll:**

- You can set selection prices within the following range:
    - Minimum price $.00
    - Maximum price $12.95
    - Increment $.05

a. Use your thumb as shown to move each price roll up or down as needed to set the desired price.
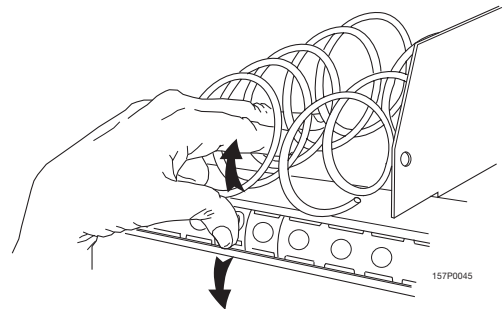
NOTE

You will see the word STOP near either end of the roll.

157P0045

Install Selection ID Labels

Selection ID numbers are printed on clear plastic sheets. You will find these in the plastic bag that contained this manual. You will need to separate them along the scored lines between the selections. **BE CAREFUL** when doing this, because it is easy to split the labels.

1. **Installing Selection ID Numbers:**

    a. Press together the two long edges of the selection ID label.

    b. Snap the selection ID label into position on the front of the tray as shown.

DOLLAR PRICE ROLL

CENTS PRICE ROLL

SELECTION IDENTIFICATION

SELECTION IDENTIFICATION LABEL
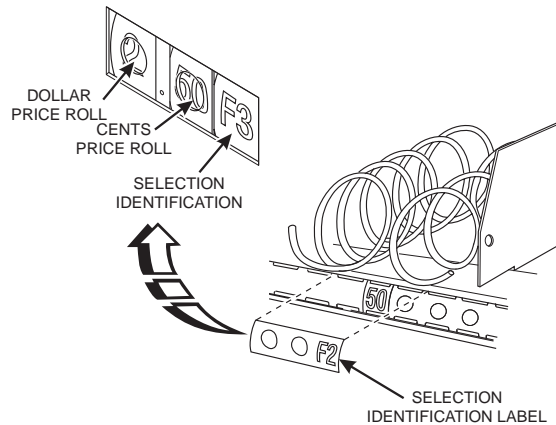
2. **Which ID Label Goes With Which Selection?**

See the figures below for snack and candy tray positions.

MOTOR POSITION

TOP TRAY	TRAY A	A0	A1	A2	A3	A4	A5	A6	A7	A8	A9
	TRAY B	B0	B1	B2	B3	B4	B5	B6	B7	B8	B9
BOTTOM TRAY	TRAY C	C0	C1	C2	C3	C4	C5	C6	C7	C8	C9

NOTE

This example shows a 3-tray merchandiser.

EXAMPLE OF A BASIC SNACK TRAY ID LABEL TO USE

A0   A2   A4   A6   A8
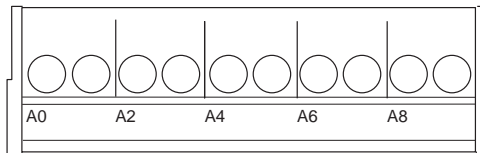
EXAMPLE OF A BASIC CANDY TRAY ID LABEL TO USE

A0 A1 A2 A3 A4 A5 A6 A7 A8 A9
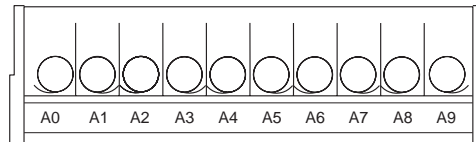
Refrigeration Module

1. **Connect a Refrigeration Module to an External Drain (Optional)**

   a. Connect a drain tube to the condensate pan.

   b. Route the drain tube to an external drain or to an overflow bucket.

2. **Adjust the Air Discharge and Return Vents:**

The air discharge vents are located in the right side wall. The vents are adjusted by loosening the screw and sliding the air duct shutter up or down as required. With the shutter all the way down, the vent is fully open. The vent is closed when the shutter is all the way up. Ideally, the temperature at the top tray should be the same as that at the bottom tray. Using a thermometer to monitor temperature, adjust the air discharge and return vents until the temperatures are as close together as possible.

CAUTION

Do not close off all discharge vents. Doing so can damage the refrigeration unit.

AIR DUCT
SHUTTER

SCREW

AIR
DISCHARGE
VENT
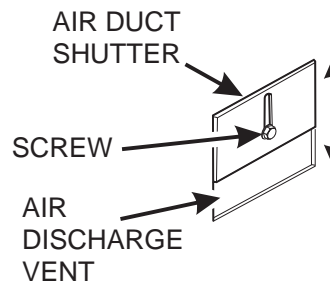
Accessories

1. **Install the Lock Cylinder:**

Install an optional lock cylinder in the merchandiser as follows:

   a. Position the lift handle lock lever as shown.

   b. Depress the lock spring at the square hole of the lock cylinder receptacle and pull the lock springs out through the front.

   c. Position the lock cylinder as shown. Depress the spring loaded lock pin.

   d. Push the cylinder into the cylinder receptacle in the lever. The pin should snap into the square hole.

   e. If the cylinder pin does not seat in the square hole, press against both ends of the lock cylinder. Rotate the cylinder until the pin snaps into place.

   f. **Leaving the door open**, test the lock mechanism with a key.
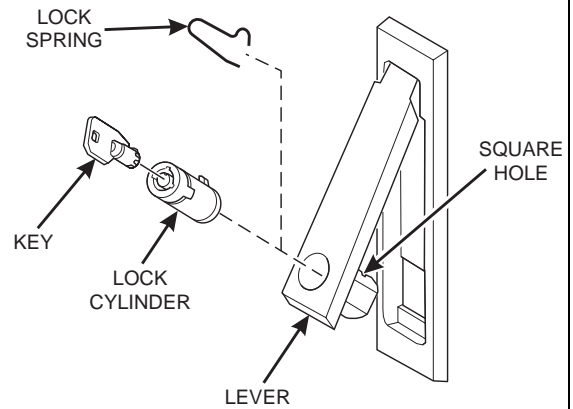
2. **Install the Optional Cash Box Lock:**

   a. Remove the cash box from the merchandiser.

   b. Assemble the lock as shown in the illustration to the right.

   c. Return the cash box to the merchandiser.
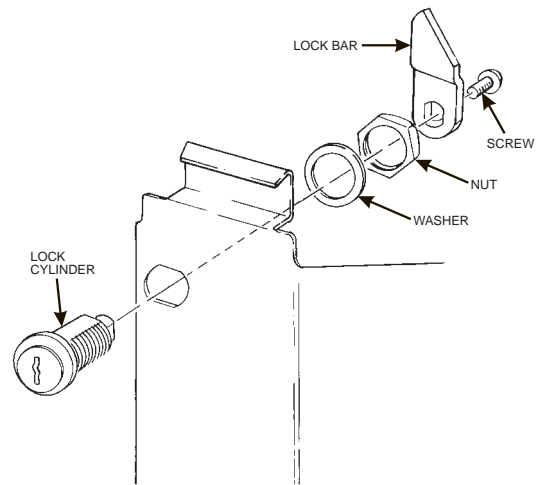
3. **Load the Coin Mechanism:**

   a. Open the cabinet door.

   b. Open the monetary door.

   c. Insert coins one at a time until each of the coin tubes has been filled.

   d. Inspect the tubes for shingled coins and correct if necessary.

   e. Refer to your coin mechanism's operator's manual for any switch settings. If a bill validator is to be used, all tubes are recommended to be set to high level.

LOCK SPRING

SQUARE HOLE

KEY

LOCK CYLINDER

LEVER

LOCK BAR

SCREW

NUT

WASHER

LOCK CYLINDER

Final Checkout

Now, you have connected your merchandiser to the utilities, placed it in its final location, loaded it with products, and set the prices. Before you lock the door and move on, you should check to see if your merchandiser will vend products. In case of problems, perform the operational readiness checks:

1. **Operational Readiness Check**

    a. Perform test vends on all selections (page 32).

    b. Do any of the snack or candy products catch on the tray and fail to vend? If not, skip to step c. If so, perform the following procedures on the affected areas until all products vend properly:

        i. Install and/or adjust a product spacer (page 16).

        ii. Install a product pusher (page 18).

        iii. Install and/or remove spiral wall retainers (page 18).

        iv. Perform the appropriate spiral anti-hang-up procedure(s) (see below).

    c. Test the operation of the coin mechanism (page 32).

    d. Test the operation of the bill validator (page 32).

    e. Return all test vended products to the trays.

2. **Spiral Indexing Procedure (One Spiral, One Motor)**

The spiral indexing procedures involve rotating spirals one position at a time until the product vends properly.

    a. Home all the motors.

    b. Remove the affected spiral.

    c. Is the coupler in the proper position?

    NO - Move the coupler to the position as shown. See *INSTALLING A SPIRAL COUPLER* (page 13). Go to step c.

    YES - Move the coupler to the next clockwise position (if it's on a right-hand motor), or the next counterclockwise position (if it's on a left-hand motor). Go to step d.

    d. Replace the spiral.

    e. Perform a test vend (page 32).

    f. Did the product hang up?

    NO - You're finished. Continue to test vend the remaining selections until everything works right.

    YES - Go to step e.

    g. Did you previously move the coupler to the next clockwise or counterclockwise position?

    NO - Move the coupler to the next clockwise position (if it's on a right-hand motor), or the next counterclockwise position (if it's on a left-hand motor). Return to step 6.

    YES - Return to step b in the operational readiness check (page 25) and try another procedure. Do not move the coupler again.

   3. Spiral Indexing Procedure (Two Spirals, One Or Two Motors)

The spiral indexing procedures involve rotating spirals one position at a time until the product vends properly.

   a. Home all the motors.

   b. Remove the left hand spiral of the affected pair.

   c. Is the coupler in the proper position?

   NO - Move the coupler to the position as shown. See *INSTALLING A SPIRAL COUPLER* (page 13). Go to step d.

   YES - Move the left coupler to the next counterclockwise position. Go to step d.

   d. Replace the left hand spiral.

   e. Remove the right hand spiral, spiral coupler, and gear (if used) of the affected pair as a unit.

   f. Rotate this unit until the right hand spiral mirrors the position of the left hand spiral.

   g. Replace the right hand spiral, spiral coupler, and gear (if used).

   h. Perform a test vend (page 32).

   i. Did the product hang up?

   NO - You're finished. Continue to test vend the remaining selections until everything works right.

   YES - Go to step j.

   j. Did you previously move the left hand coupler to the next counterclockwise position?

   NO - Remove the left hand spiral of the affected pair. Turn the left spiral coupler to the next counterclockwise position. Return to step d.

   YES - Return to step b in the operational readiness check (page 25) and try another procedure. Do not move the coupler again.

Programming

OVERALL PROGRAMMING FLOW CHART

```
┌──────────┐
│ Standby  │
│ Message  │
└──────────┘
      │ #
      ▼
┌──────────┐    *    ┌────────┐  *  ┌────────┐  *  ┌──────────┐  *  ┌──────────┐  *  ┌────────┐
│          │────────▶│ Total  │────▶│ Total  │────▶│  Total   │────▶│Total Free│────▶│  Test  │
│  DATA    │         │ Sales  │     │ Vends  │     │  "Free   │     │  Vends   │     │ Vends  │
│          │         │        │     │        │     │Vend" Sales│    │          │     │        │
└──────────┘         └────────┘     └────────┘     └──────────┘     └──────────┘     └────────┘
      │ #                │ #            │ #             │ #              │ #              │ #
      ▼
┌──────────┐
│ PAYOUT   │
│(NDQ-123) │
└──────────┘
      │ #
      ▼
┌──────────┐    *    ┌──────────────────┐
│  PRICE   │────────▶│ Price Individual │
│          │◀────────│    Selections    │
└──────────┘    #    └──────────────────┘
      │ #
      ▼
┌──────────┐    *    ┌──────────────────┐
│  FAULTS  │────────▶│   Fault List     │
│          │◀────────│                  │
└──────────┘    #    └──────────────────┘
      │ #
      ▼
┌──────────┐    *    ┌──────────────────┐
│ SERVICE  │────────▶│  Test Machine    │
│          │◀────────│    Functions     │
└──────────┘    #    └──────────────────┘
      │ #
      ▼
┌──────────┐    *    ┌──────────────────┐
│  SETUP   │────────▶│ Configure Machine│
│          │◀────────│                  │
└──────────┘    #    └──────────────────┘
      │ #
      ▼
┌──────────┐    *    ┌──────────┐  *  ┌──────────────────┐  *  ┌──────────────────┐  *
│ TIME OF  │────────▶│ Set Date │────▶│ Select Time of Day│───▶│Set Start and Stop │
│   DAY    │         │          │     │  Inhibit Periods  │    │       Time        │
└──────────┘         └──────────┘     └──────────────────┘    └──────────────────┘
      │ #                │ #               │ #                      │ #
```
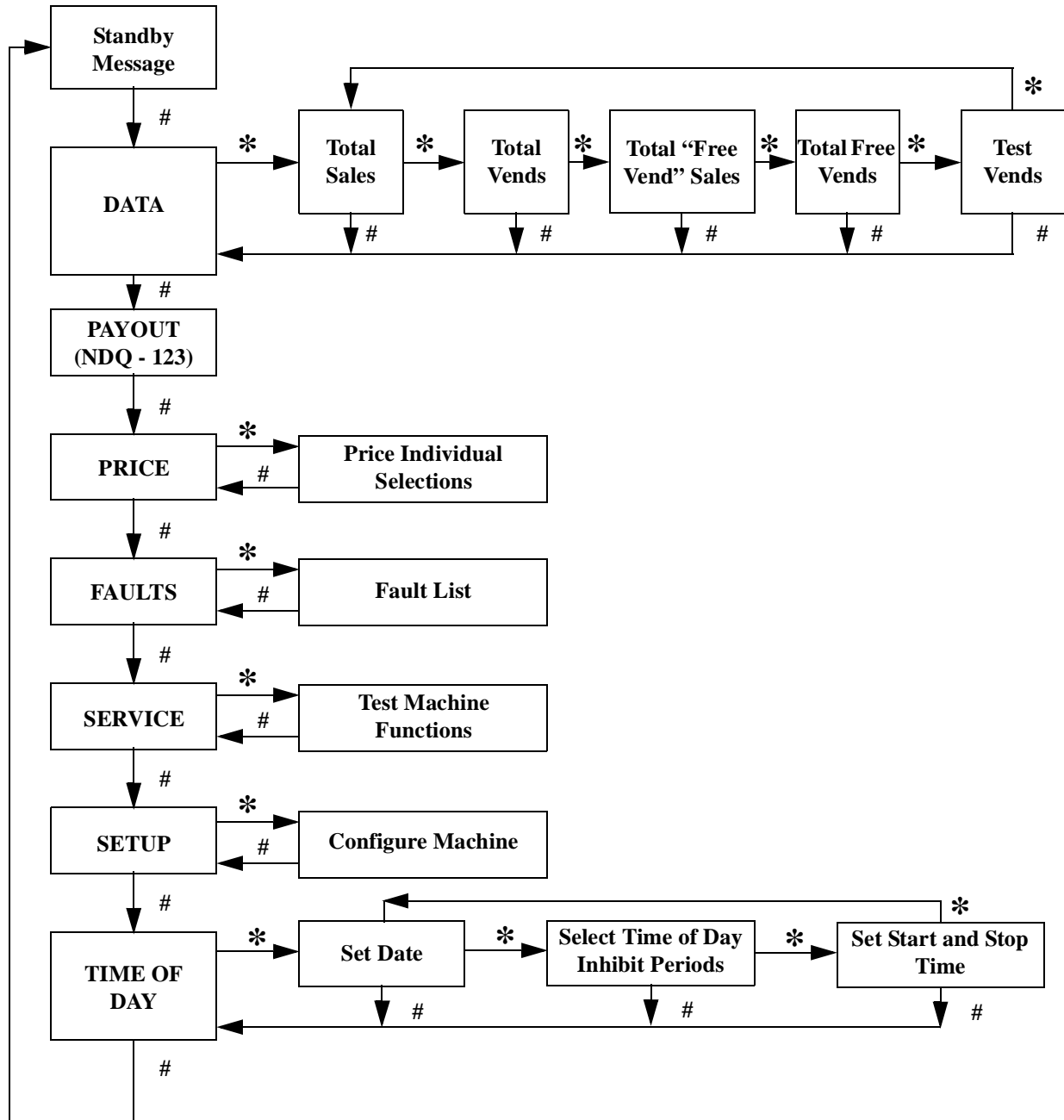
The diagrams on the next few pages are maps of the programming functions in your merchandiser. These functions will be described in greater detail in the text, but the diagrams will help you get around once you are familiar with how programming works. Note that some features may not be available on your merchandiser, depending upon how it is configured. The symbols ✻ and # represent special keys that move you around inside the programming modes, and from one mode to another. As you can see on the diagram, these symbols show up in the pathways in and around the modes.

Setup and Programming Guide - Model 725

SERVICE PROGRAMMING
FLOW CHART

```
        ┌─────────────┐
   ┌───▶│   SERVICE   │◀──── #
   │    └─────────────┘
   │           │ *           #
   │    ┌─────────────┐
   │    │  Test Vend  │────▶
   │    └─────────────┘
   │           │ *           #
   │    ┌─────────────┐
   │    │Software Version│───▶
   │    │   Number    │
   │    └─────────────┘
   │           │ *           #
   │    ┌─────────────┐
   │    │   Machine   │────▶
   │    │ Temperature │
   │    └─────────────┘
   │           │ *           #
   │    ┌─────────────┐
   │    │Food Door Test│───▶
   │    └─────────────┘
   │           │
   └───────────┘ *
```
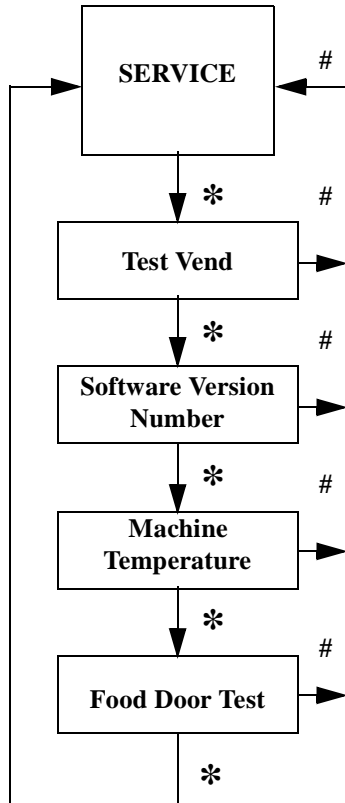
SETUP PROGRAMMING
FLOW CHART

```
        ┌─────────────┐
   ┌───▶│    SETUP    │◀──── #
   │    └─────────────┘
   │           │ #           #
   │    ┌─────────────┐
   │    │  Free Vend  │────▶
   │    │   On/Off    │
   │    └─────────────┘
   │           │ #           #
   │    ┌─────────────┐
   │    │Select Coin Mech│──▶
   │    └─────────────┘
   │           │ #           #
   │    ┌─────────────┐
   │    │Select Bill Validator│─▶
   │    └─────────────┘
   │           │ #           #
   │    ┌─────────────┐
   │    │Select Card Reader│─▶
   │    └─────────────┘
   │           │ #           #
   │    ┌─────────────┐
   │    │   Change    │────▶
   │    │   Options   │
   │    └─────────────┘
   │           │ #           #
   │    ┌─────────────┐
   │    │ Exact Change │───▶
   │    │Message Options│
   │    └─────────────┘
   │           │ #           #
   │    ┌─────────────┐
   │    │Declining Balance│──▶
   │    │   Options   │
   │    └─────────────┘
   │           │ #           #
   │    ┌─────────────┐
   │    │Select Language│───▶
   │    └─────────────┘
   │           │ #           #
   │    ┌─────────────┐
   │    │ Set Machine │────▶
   │    │Configuration│
   │    └─────────────┘
   │           │ #           #
   │    ┌─────────────┐
   │    │Select Machine│───▶
   │    │ Temperature │
   │    └─────────────┘
   │           │
   └───────────┘
```

THE KEYPAD

```
A  0  5
B  1  6
C  2  7
D  3  8
E  4  9
F  ✳  #
G  H  J
```
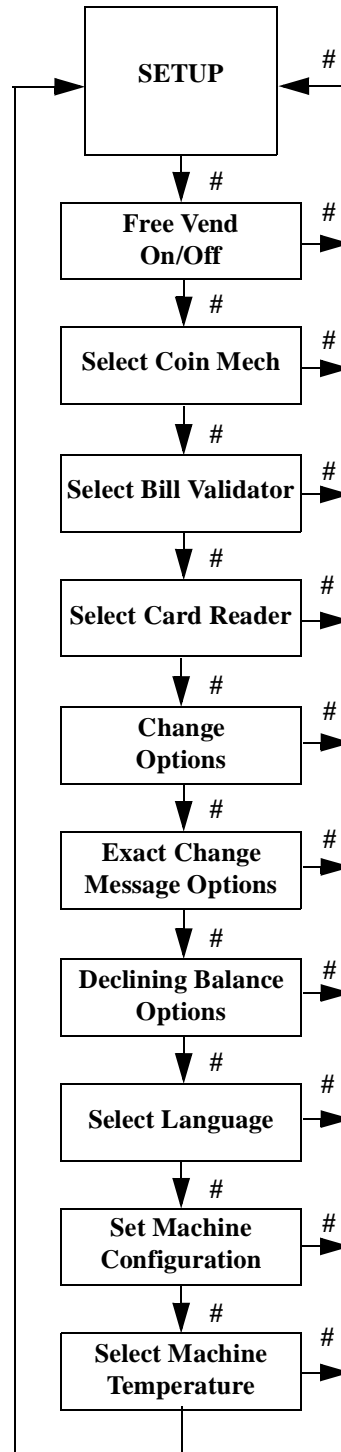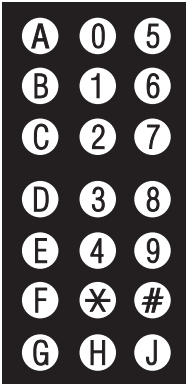
During vending, customers use the keypad to make selections. When you pull the door switch to the ON position, the keypad becomes your programming input device. For reference, we will show the keypad on all the pages.

SPECIAL PROGRAMMING KEYS

(#) Press this key to move from one function to another.
From within a function, press once to return to the beginning of the function; press and hold to return to the standby message.

(✳) This key moves you around inside of a function.

(H) This key allows you to switch between two or more choices.

(J) This is the "action" key. It will start tests, fill the water tank, etc.

DATA

View several types of sales data:

NOTE

Not all data is resettable.

1. **Pull out the door switch button to the ON position.**

2. **Press** (#) **until the display shows** *DATA*.

3. **If you have the DEX option, press** (J) **to transfer data into your DEX device.**

4. **Press** (✳). **The display shows** *NR$ .XX*. **This is the dollar and cents amount of machine sales.**

5. **Press** (✳). **The display shows** *NR XX*. **This is the total count of all vends.**

6. **Press** (✳). **The display shows** *_0 .XX*. **This is the dollar and cents amount of free vend "sales". (Does not display if the total is zero.)**

7. **Press** (✳). **The display shows** *_0 .XX*. **This is the total count of free vends. (Does not display if the total is zero.)**

8. **Press** (✳). **The display shows** *TST XX*. **This is the total count of test vends. (Does not display if the total is zero.)**

9. **Press** (✳) **to return to step 4, or** (#) **to exit.**

PAY OUT
(Does Not Apply To Machines With Exec Coin Mechanisms.)
Pay out coins:

1. **Pull out the door switch button to the ON position.**

2. **Press** (#) **until the display shows**

   PAY = *1.2.3* (MDB mech). This is telling you that pressing (1) pays out nickels, pressing (2) pays out dimes, and pressing (3) pays out quarters.

   <div align="center">OR</div>

   NDQ = *1.2.3* (dumb mech). This is telling you that pressing (1) pays out from tube 1 (nickels), pressing (2) pays out from tube 2 (dimes), and pressing (3) pays out from tube 3 (quarters).

3. **Press the appropriate key once to pay out one coin.**

4. **Press and hold the appropriate key to pay out coins continuously.**

5. **Press and hold** (#) **to return to the standby message.**

PRICE
Set prices for all the selections in your merchandiser:

1. **Pull out the door switch button to the ON position.**

2. **Press** (#) **until the display shows** *PRICE*.

3. **Press** (✱)**, and the display shows** *A0 .XX*. **"XX" is the price for the A0 selection.**

4. **Press** (✱) **until the selection you want to price is displayed. NOTE: Only selections which are actualy present in the machine can be accessed this way, except selection H, which can always be priced.**

   <div align="center">OR</div>

   Press the letter and number of the selection you want to price, and it will be displayed immediately. **NOTE**: All selections in the machine are accessible in this way.

5. **Enter a new price with the number keys.**

6. **Repeat steps 4 and 5 until you have priced all the selections.**

   <div align="center">OR</div>

7. **Press** (#) **to return to the** *PRICE* **display, or hold** (#) **to exit.**

FAULTS

Display all the <u>active faults on your merchandiser:</u>

1. **Pull out the door switch button to the ON position.**

2. **Press (#) until the display shows** *FAULTS*.

3. **Press (✱) to see the list of faults:**

NO ERRORS   There are no faults on the machine.

KEYPAD XY   Key(s) "X" and "Y" are stuck.

ROM ERROR   The EPROM is bad.

RAM ERROR   RAM is not initialized or is not compatible with the currently loaded software. If this message appears, initialize your RAM by performing the following procedure:

> **NOTE**: Initializing RAM will erase all your data and drink settings. Be sure you have written this information down before continuing.

> Press AND HOLD (C). You will see *CLEARING* in the display. Continue holding until two beeps are heard and the display shows *FINISHED*.

FOOD XXX   The food door has failed.

TEMP REF   The temperature reference on the main PCB cannot be read.

TEMP SENSE   The temperature sensor cannot be read.

TEMP RANGE   The temperature sensor is out of range.

DBV ERR   Problem with the bill validator.

MECH ERR   Problem with the coin mechanism.

NONE READY   Time of day inhibit is active, or all selections are out of service.

CHK PRICE   Illegal price is detected.

CARD ERR   Problem with the card reader.

When the first fault item (if any) repeats, you have seen all the faults.

When active faults exist, pulling the door switch will automatically display *FAULTS*.

4. **Press (✱) to see more faults or (#) to exit.**

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SERVICE
View machine status and test certain functions:
   1. **Pull out the door switch button to the ON position.**

   2. **Press** (#) **until the display shows** *SERVICE.*

   3. **Each time you press** (✱)**, the display shows a different test or indication as listed in the table below.**

DISPLAY	DEFINITION	TESTS YOU CAN PERFORM
TEST .00	Tests the coin mech, bill validator, and motors.	Insert coins and bills into the merchandiser. The amount you entered is displayed. Vend any selection. A selection can also be vended without inserting any money. NOTE: This is the only way to vend the last (pre-cooled) can from a can module.
VER XXXX	Software version number.	None.
TEMP XX F	Cabinet temperature.	Press H to change display units from Fahrenheit to Celsius.
FOOD 0123	Tests the operation of the retractable door.	Press J to test the retractable door. Displays: "1" = inner door closed, "2" = retractable door open, "3" = retractable door closed

   4. **Press** (✱) **to return to step 3, or** (#) **to exit.**

Setup and Programming Guide - Model 725

SETUP

Configure various machine functions:

1. **Pull out the door switch button to the ON position.**

2. **Press** ⊞ **until the display shows** *SETUP*.

3. **Press** ✶. **The display shows either** *FREE ALL* **or** *FREE OFF*. **When** *FREE ALL* **is displayed, all selections are free. Press** Ⓗ **to switch between ALL and OFF.**

4. **Press** ✶. **The display shows either** *DUMB MECH*, *MDB MECH*, *EXEC MECH*, **or** *NO MECH*. **Press** Ⓗ **to switch between these coin mech choices.**

5. **Press** ✶. **The display shows the bill validator choices. Press** Ⓗ **to switch between the choices:**

   SER. 1.2.5.10.20 = A serial validator is installed. Press ①, ②, ⑤, ⑥, or ⑦ (respectively) to display the bill (s) which will be accepted.

   OR

   MDB. 1.2.5.10.20 = An MDB validator is installed. Configure the validator as follows:

   - Press ①, ②, ⑤, ⑥, or ⑦ (respectively) to display the bill (s) which will be accepted. For Example, the display shows *MDB. 1.2.5.10.20*. This means that the validator accepts $1, $2, $5, $10, and $20 bills.
   - Press ✶ until the display shows *MDB. <✷>*. This means the machine recognizes that an MDB bill validator which accepts non-standard bills or tokens is connected and operating.
   - Press Ⓙ to enter the list of bill(s) or tokens which will be accepted.
   - Press ✶ to scroll through the list that you set up earlier. Each bill in the list is displayed. For example, the display will show *5.00 ON* when the validator is told to accept $5.00 bills. When all bills have been displayed, the display shows the token screen: *TKN ON* or *TKN OFF*.
   - Press Ⓗ to turn a particular selection ON or OFF.
   - Press ✶ when you have completed the list. *MDB. <✷>* will again be displayed.

   OR

   PULSE DBV = A pulse validator is installed.

   OR

   NO DBV = No bill validator installed.

6. **Press** ✶. **The display shows one of the following:**

   NO CARD = No card reader is installed,

   DUMB CARD = A dumb (12 pin) card reader is installed,

   MDB CARD = An MDB card reader is installed.

   Press Ⓗ to switch between the choices.

7. **Press** ✶. **The display shows** *CHANGE X.XX*. **Change will be given for coins or bills up to this denomination without the customer having to make a selection. For example, if 1.00 is displayed, the machine will**

give the customer change for a dollar without requiring a selection. Entering 0.00 means that no change will be given.

8. Press ✳. The display shows: *LOW.MSG X.XX*. The customer will see *USE EXACT CHANGE* in the display when the amount of available change in the coin mechanism falls below the level you set for X.XX. Enter a value with the number keys. For example, if *LOW.MSG 1.00* is selected, the customer sees the *USE EXACT CHANGE* message when less than a dollar's worth of change is in the coin mechanism.

9. Press ✳. The display shows either:

DECLINE.ON = More than one vend is allowed, with a declining balance. This means that the customer can choose multiple products until the amount of credit is lower than the lowest priced product in the machine.

OR

DECLINE.OFF = A declining balance is not allowed. Press to switch between these two choices.

10. Press ✳. The display shows either *ENGLISH*, *DEUTSCH*, *FRANCAIS*, *ESPANOL*, *PORTUGUES*, *SWEDISH*, or *NEDERLANDS*. Press to select the appropriate language for your display.

11. Press ✳. The display shows the currently set machine configuration. DO NOT CHANGE THIS CONFIGURATION UNLESS YOU KNOW IT IS INCORRECT! Improper machine operation will result from an incorrect configuration setting. The possible configurations are:

OUTDOOR   =   Your machine is an All Temperature Vendor *(this is the only setting your machine should use)*

CNF. SNACK   =   Your machine is snack only.

CNF. CHLLD   =   Your machine is a chilled snack.

CNF. CAN   =   Your machine has a can unit.

CNF. FOOD   =   Your machine has a food module.

CNF CH.CAN   =   Your machine has chilled snacks and a can unit.

12. Press ✳. The display shows *+/- +XX⁰F*. This is the currently set temperature in the machine.

   a.   Change the temperature: Press ⓪ to increase the temperature; press ① to decrease the temperature.

   b.   Press Ⓗ to change the display units from Fahrenheit to Celsius.

13. Press ✳ to return to step 3, or # to exit.

Setup and Programming Guide - Model 725

TIME OF DAY FEATURES
You can set the clock and calendar features of your machine, as well as set up to four intervals during the day when the machine will be inactive.

1. **Pull out the door switch button to the ON position.**

2. **Press** (#) **until the display shows** *TIME HH.MM* **. This is the currently set time, expressed in 24-hour format.**

   a. If desired, set the time using the number keys. Remember to express the time in 24-hour format: 2:00 pm = 14.00.

3. **Press** (✳). **The display shows the current date: MM/DD   YY. For example,** *07/25 00* **is July 25, 2000.**

   a. If desired, set the month, day, and year using the number keys.

   b. To change to the European date format (DD-MM), press (H). The display changes to *25-07 00*. Note that the slash (/) in the U.S. format is replaced by a dash (-) in the European format. Press (H) again to change back to the U.S. date format.

4. **Press** (✳). **The display shows** *INHIB 1-3-*. **This shows the number of active "time-of-day inhibit" periods. In this example, inhibit periods 1 and 3 are active.**

   a. To turn on or off the inhibit periods, press the corresponding number key (1, 2, 3, or 4).

5. **Press** (✳). **The display shows** *1.STRT 10.00*. **This is the start time of the first inhibit period, expressed in 24-hour time format. This example shows period #1 beginning at 10:00 am.**

   a. If desired, enter a new start time using the number keys.

6. **Press** (✳). **The display shows** *1.STOP 14.00*. **This is the stop time of the first inhibit period, expressed in 24-hour time format. This example shows period #1 ending at 2:00 pm.**

   a. If desired, enter a new stop time using the number keys.

   The machine will not vend between the hours of 10:00 am and 2:00 pm every day.

7. **Press** (✳). **The display shows** *3.STRT 0.00*. **This is the start time of inhibit period #3. Notice that the display did not show inhibit period #2, since it was inactive (see step 4). This time period and any others are treated exactly the same as inhibit period #1.**

8. **Press** (#) **once to return to step 2, or press and hold** (#) **to exit.**