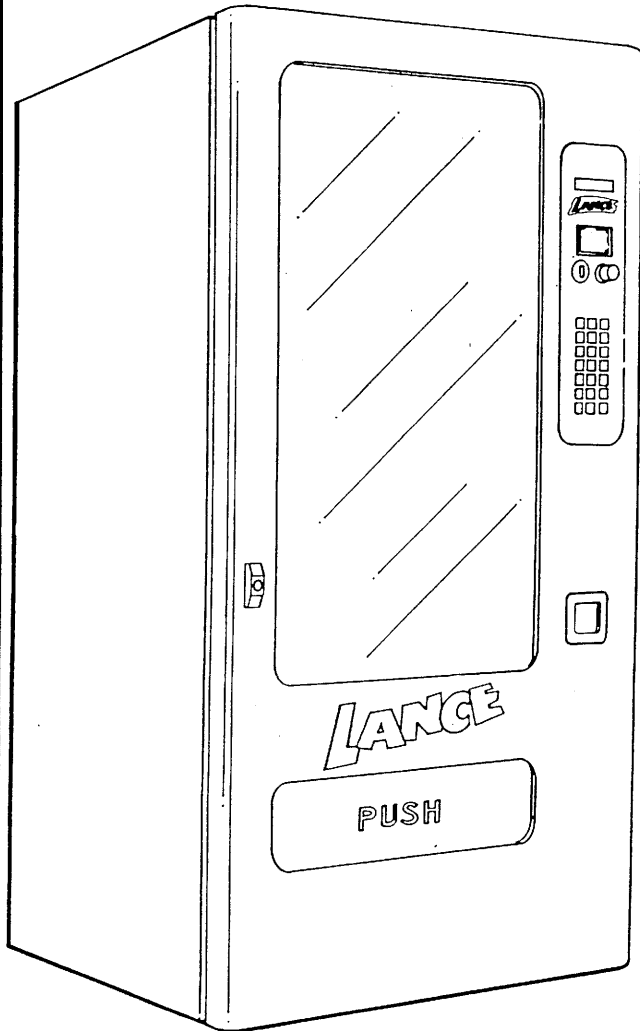# ELECTRONIC

Super Vendor

WITH
COINCO
VALIDATOR

LANCE

24 Selection
Model 3053MDB
Beginning S/N 805302

36 Selection
Model 3054MDB
Beginning S/N 602601

PUSH

LANCE

Service and Parts Manual

Revision
July 1996

P/N 4203642

TABLE OF CONTENTS:

INTRODUCTION:

The contents of this manual contains service and installation guidelines and instructions pertaining to the *Lance Super Vendors* - models 3053MDB and 3054MDB. Also included is the basic functions and operation of these vendors along with various options and accessories that are available for the machines. It is recommended that you read and thoroughly understand the information in this manual before attempting to put these vendors in operation.

The 24 selection and 36 selection *Super Vendors* have been designed and engineered for many years of trouble-free merchandising, as well as maximum customer friendliness and simplified service and maintenance. Each vendor utilizes a "state-of-the-art" electronic control system which allows changing the programming and machine configuration on location without the need of any additional accessories or remote parts.

All selections can be priced individually at various vend prices ranging from $.00 to $99.95 in 5¢ increments.

Electrical malfunctions, service diagnostics, cash accountability and other information is recorded by the control system and will be displayed to service personnel when the machines are placed in the *"Service Mode"*.

Electrical functions are monitored during each vend and any malfunctions detected (faulty motors, switch operations, etc.) will be displayed to service personnel indicating the area where the problem was detected. When a malfunction is detected, that selection will be disabled, prohibiting any vends from being made until the controller has been reset. All other selections will continue to function.

During normal operation, messages will be displayed to the buying customer showing instructions that must be followed.

Both models have the "mix-and-match" designed trays that will allow the changing of selection configurations by adding or reducing the number of motors and helixes. This allows a location to change the vendable products on the spot to meet the specific needs of the location.

Each vendor is capable of supporting a companion vendor for cold drinks which utilizes the *Super Vendors* existing controller, keypad, coin changer and bill validator.

Other features include:

- Larger display area for ultimate merchandising and product display.

- Unitized one-piece door, styled with an attractive European flair.

- Adjustable helixes for greater vend reliability.

- Drop-in 24 Volt DC, current limited motors for greater torque and "burn-out" protection.

- Vertical lighting for optimum product illumination.

- Electronic keypad to eliminate electro-mechanical push button switches.

- Programmable vend options to allow for the "fine tuning" of each vendor to meet the location's needs.

In addition to a parts ordering catalog, optional kit information and wiring diagrams, this manual will detail in step-by-step form:

* Unpacking and installing the vendor.

* Loading product into the vendor.

* Setting and displaying the vend prices.

* Selecting the vend options.

* Care and cleaning the vendor.

* Testing the vendor.

* Adjusting the vendor.

* Bill Validator operation.

* Trouble shooting the vendor.

It is recommended that this manual be read thoroughly to familiarize the service person with the

1

functions of all components along with the features that are available. The initial set-up of a machine is a very important step of insuring that the equipment operates in a trouble-free manner. By following the instructions at the initial installation of the machine, service problems can be avoided and set-up time will be minimized.

All vendors have been thoroughly inspected prior to shipment and have been packed in a manner to prevent damage during transit.

Each machine will be identified by a model number and a specific serial number. These identification numbers appear on the serial number plate attached to the inside and rear of the vendors. An inspection number appears on the final inspection form in each vendor. Record these numbers for your records. Refer to these numbers when reporting any vendor imperfections.

SPECIFICATIONS:

GENERAL SPECIFICATIONS		
	Mode 3053MDB	Model 3054MDB
Number of Selections	24	36
Beginning Serial Number	805302	602601
Height	68 inches	68 inches
Width	29 1/4 inches	35 1/8 inches
Depth	34 1/8 inches	34 1/8 inches
Shipping Container Size	45.9 cubic feet	54.4 cubic feet
Shipping Weight	445 pounds	520 pounds

Electrical Requirements:
    Line Voltage
    Current Draw
	115 Volt AC, 60 cycle
	1.2 amp
		115 Volt AC, 60 cycle
		1.2 amp

Money Handling:
    Coin Changer
    Bill Validator
	Coinco 9302GX
	Coinco BA32SA
		Coinco 9302GX
		Coinco BA32SA

Product Pricing Range	Free to $99.95	Free to $99.95
HELIX CAPACITIES		
Row "A" Snacks and Chips (Medium Snack)	12 count	12 count
Row "B" Snacks and Chips (Medium Snack)	12 count	12 count
Row "C" Sandwich Cracker &Candy (Small Snack)	18 count	
Row "C" Snacks and Chips (Medium Snack)		12 count
Row "D" Sandwich Cracker & Candy (Small Snack)	18 count	18 count
Row "E" Snacks and Chips (Medium Snack)	12 count	
Row "E" Sandwich Cracker & Candy (Small Snack)		18 count
Row "F" Snacks and Chips (Medium Snack)		12 count
Total Capacity	360	528
Gum and Mint (Split Helix) Optional	40 count	40 count
RECOMMENDED MAXIMUM PRODUCT SIZE		
Large Snack Helix	5 27/32" x 1 1/2" x 9"	
Medium Snack Helix	4 3/8" x 1 1/2" x 7"	
Sandwich Cracker Helix	2 15/16" 15/16" x 5 1/2"	
Gum/Mint Split Helix	1" x 13/16" x 5 1/2"	

CONFIGURATION:

The tray configuration has been factory set to LANCE specifications as shown in the diagrams below. If you should experience any change in product mix or package size, adjustments to these configurations can be made on location without tools.

All trays are vertically adjustable in one inch increments within a four inch range. Any large Snack Selections can be converted to two adjacent Sandwich Snack Selections, and any two adjacent Sandwich Snack Selections can be converted to one large Snack Selection.

LANCE
MODEL 3053MDB
24 SELECT *SUPER VENDOR*

					10in
12	12	12	12		
A1	A2	A4	A6		

					8.5in
12	12	12	12		
B1	B2	B4	B6		

					6.5in
18	18	18	18	18	18	
C1	C2	C3	C4	C5	C6

|18|18|18|18|18|18| 6.5in |
| D1 | D2 | D3 | D4 | D5 | D6 |

					8in
12	12	12	12		
E1	E2	E4	E6		
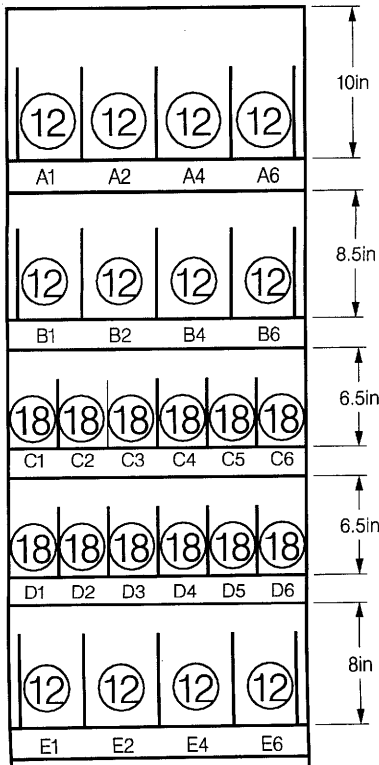
LANCE
MODEL 3054MDB
36 SELECT *SUPER VENDOR*

					9in
12	12	12	12	12	
A1	A2	A4	A6	A7	

					7in
12	12	12	12	12	
B1	B2	B4	B6	B7	

					7in
12	12	12	12	12	
C1	C2	C4	C6	C7	

|18|18|18|18|18|18|18|18| 5.5in |
| D1 | D2 | D3 | D4 | D5 | D6 | D7 | D8 |

|18|18|18|18|18|18|18|18| 5.5in |
| E1 | E2 | E3 | E4 | E5 | E6 | E7 | E8 |

					7in
12	12	12	12	12	
F1	F2	F4	F6	F7	

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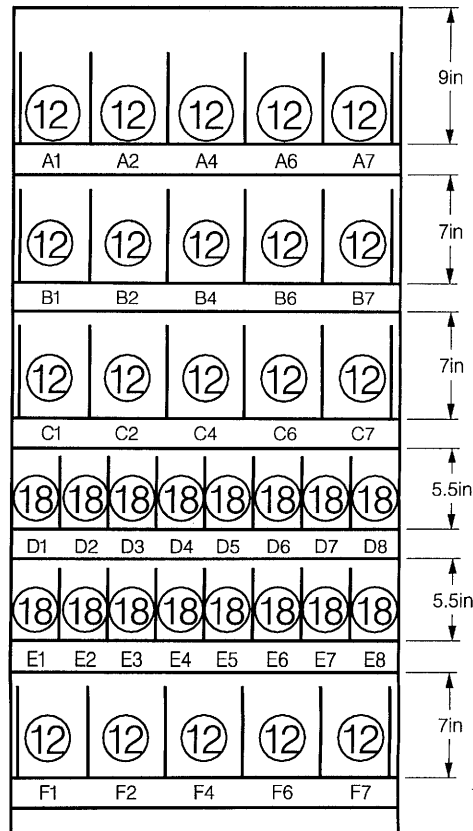
12 - MEDIUM SIZE SNACKS   **4.38" WIDE**
12 - SANDWICH SNACKS   **2.92" WIDE**
ADJUSTABLE TO ACCOMMODATE:
   LARGE SIZE SNACKS   **5.84" WIDE**

20 - MEDIUM SIZE SNACKS   **4.38" WIDE**
16 - SANDWICH SNACKS   **2.92" WIDE**
ADJUSTABLE TO ACCOMMODATE:
   LARGE SIZE SNACKS   **5.84" WIDE**

**One (1) Large Snack selection can be converted to two (2) Sandwich Snack selections.
Two Sandwich Snack selections can be converted to one (1) Large Snack selection.**

UNPACKING:

All vendors have been thoroughly inspected prior to shipment and have been packed in a manner to prevent damage during transit.

An inspection number appears on the final inspection form in each vendor and should be used when reporting any vendor imperfections.

Unpacking is accomplished in the following manner.

1. Cut and remove the banding straps that secure the shipping carton to the vendor.

2. Carefully lift the shipping carton up and away from the vendor. If ceiling height is not sufficient to allow this, carefully cut the carton taking care not to mar or damage the vendor's finish.

3. Remove the protective plastic bag.

4. Remove the base shipping boards by inserting a large screwdriver or prying tool into the notch provided and splitting the knock-away boards. (See **Figure #1**)

5. Locate the key in the coin return cup and unlock the vendor. The "T" handle latch requires a minimum of three (3) full turns counterclockwise to open the main door.

6. Pull the power cord out of the vendor to its full length.

7. Carefully "seat" the rubber grommet on the power cord into the hole in the back of the vendor.

8. Remove all packing material, shipping brackets and tape from inside the vendor. Adhesive residue can be removed with denatured alcohol or common household vinegar.

INSERT SCREW DRIVER
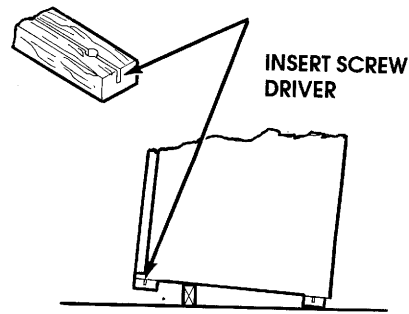
FIGURE #1

INSTALLATION:

Position the vendor in its place of operation no further than six (6) feet from a 115 Volt AC receptacle and check that the door will open fully without interference. For proper operation, especially in the coin changer, it is important that the vendor be perfectly level.

Level the vendor, making sure all levelers are touching the floor. When the vendor is level, the door can be opened to any position and not move by itself. Try the door half closed, straight out and in the wide open position before deciding the machine is level.

Connect the vendor power cord to a grounded 115 Volt AC, 60 Cycle, noise free polarized power source of not less than 15 Amps. Checking the power source can be accomplished with an AC Voltmeter in the following manner:

1. **Voltage Check**

   When the AC Voltmeter probes are connected to the **HOT** and **NEUTRAL** terminals, the voltmeter should indicate 110 to 130 volts AC. (See **Figure #2**)

4
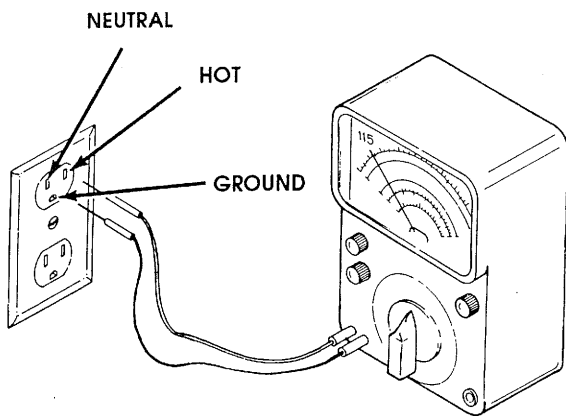
FIGURE #2

2. Polarity and Ground Check

When the AC Voltmeter probes are connected to the **HOT** and **GROUND** terminals, the volt meter should indicate 110 to 130 Volts AC. (See **Figure #2**)

3. Noise Potential Check

When the AC Voltmeter probes are connected to the **NEUTRAL** and **GROUND** terminals, the voltmeter should indicate 0 Volts AC. (See **Figure #2**) Any voltage reading could cause noise problems in the electronic controller.

4. Amperage Check

At the fuse box or circuit breaker panel, locate the proper circuit and ensure that the fuse or breaker protecting that circuit is rated at 15 Amps or greater.

NOTE:

In a standard three (3) prong 115 Volt AC wall outlet the **GROUND** pin is round, the **NEUTRAL** pin is rectangular and located clock-wise from the ground pin and the **HOT** pin is rectangular and smaller than the neutral pin and located counterclockwise from the ground pin. (See **Figure #2**)

To correct negative voltage, amperage, polarity, or ground checks, consult a licensed electrician. To correct a negative noise potential check, install a noise suppressor which can be obtained from any electrical or electronic supply store or in kit form from USI. (See page #35)

Each *Super Vendor* is equipped with a "Power Switch" located above the Control Panel and is operated by the outer door. When the outer door is closed, the switch will be actuated to the N.O. ("ON") position, placing the vendor in the "Vend Mode". When the outer door is opened, the switch will be deactuated to the N.C. ("OFF") position, removing all power to the Controller, Selection Buttons, complete vending circuit and light. (See **Figure #3**)

Turn on the main power by pulling out on the switch plunger. (See **Figure #3**) The product display light will come on, the validator motors will cycle and the display will scroll the "POINT OF SALES" message.

FIGURE #3

| SWITCH "ON" DOOR OPEN | SWITCH "ON" DOOR CLOSED | SWITCH "OFF" DOOR OPEN |

5
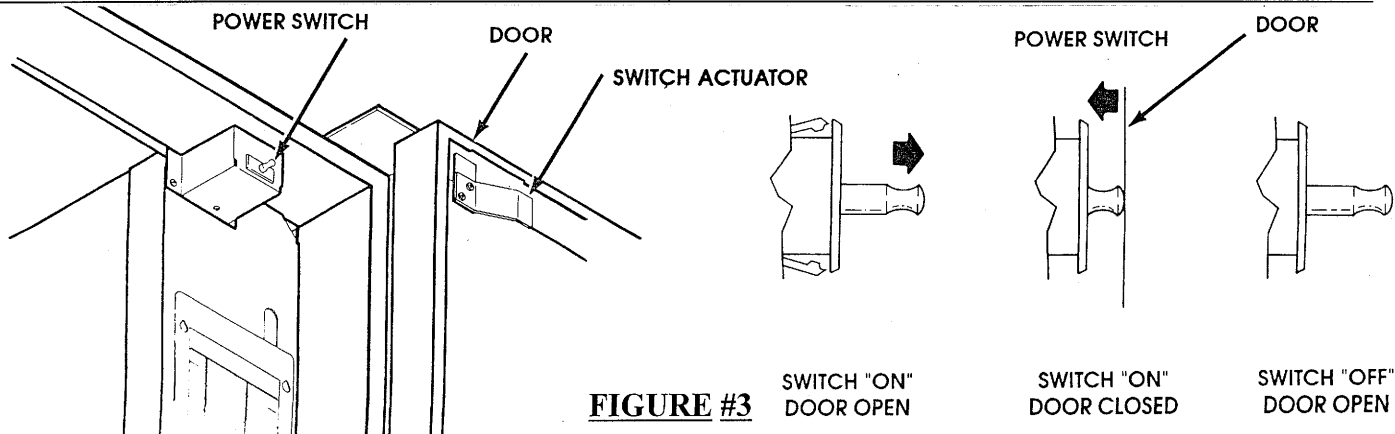
COINAGE OPERATION:

Load the coin changer coin tubes with nickels, dimes and quarters. (See **Figure #4**) If the "DEX/UCS" information is to be used see "Accountability - Fill Coins" section. After a few seconds the credit display will begin to scroll the merchandising message ...** LANCE * AMERICAS FAVORITE BRAND OF SNACK CRACKERS * DONT GO ROUND HUNGRY * SNACK RIGHT * RIGHT NOW

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

QUARTERS   NICKELS   DIMES
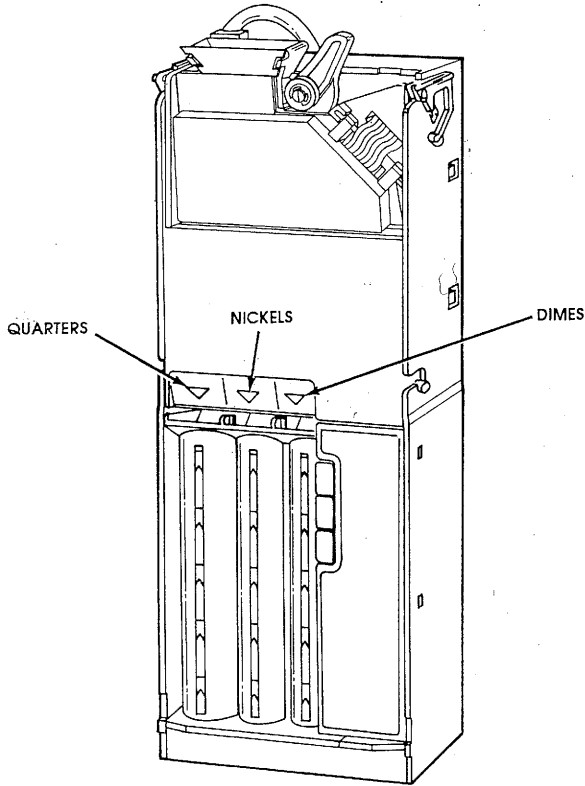
FIGURE #4

FEATURES:

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

OPTION SWITCH SETTING:

The coin changer has three (3) option switches which allow the owner/operator to select the type of coins to be accepted along with the number of quarters that will be stored in the 25¢ coin tube for overpayment. These switches have been factory set in the following positions:

#1	-	**OFF**
#2	-	**OFF**
#3	-	**OFF**

Should a different setting be desired, or a new changer installed, the following switch setting instructions are provided.

A. Open the outer door to turn the main power switch to the "OFF" position. (See **Figure #3**)

B. Remove the coin acceptor portion of the coin changer. (See **Figure #5**)

LIGHT

USA / CAN $ ACPT
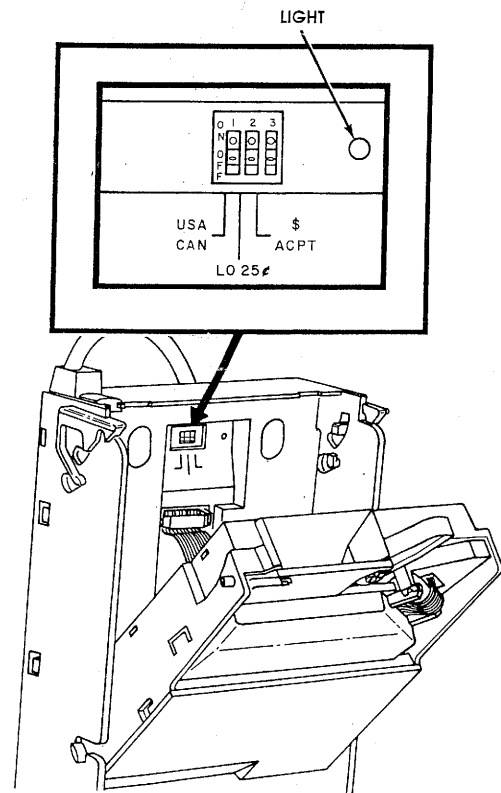
LO 25¢

FIGURE #5

C. Locate the coin changer option switches and select from the following optional settings:

3. **USA/CAN**
   - **"ON":** U.S. and Canadian coins will be accepted.
   - **"OFF":** Canadian coins will be rejected.

4. **LO 25¢**
   - **"ON":** Quarters are diverted to cash box once the change tube has inventoried approximately 8 quarters.
   - **"OFF":** Quarters are diverted into the change tube until the change tube is full.

5. **$ ACPT**
   - **"ON":** Dollar coins will be accepted.
   - **"OFF":** Dollar coins will be rejected.

NOTE:

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

The controller will monitor the condition of the coin changer at all times. Any activity (coins inserted) will be recorded in the accountability area and included in the "DEX/UCS" report. If the "DEX/UCS" information is to be used, the "FILL COINS" procedure should be used when manually filling the coin tubes. See "Accountability - Fill Coins" section of this manual for additional information.

PRODUCT LOADING:

To load the trays with appropriate product, lift each tray slightly to disengage the detent and pull the tray forward until it stops. As the tray travels forward on its rail system, it will automatically tilt downward and allow easy access for servicing and loading. Load each shelf from front to back making sure all items fit freely between the helixes. Do not attempt to force oversize items into the spaces. All spaces forward **must** have a product in them; do not skip a space. General guidelines for each product type are as follows:

A. **Large Snack Helix** - Large bagged items are generally loaded with the bottom of the product resting on the tray floor, spanning the helix coil. It is recommended that large popcorn items be vended in the top row, selections A-1 through A-7, and that a product spacer be used to vend these items with a chip product between popcorn bag selections.

B. **Medium Snack Helix** - Medium bagged items and large candy/snack items are generally loaded with the bottom of the product resting on the tray bottom, between the helix coils.

C. **Sandwich Cracker/Candy Helix** - Sandwich cracker and candy items are generally loaded with the bottom of the product resting on the tray bottom, between the helix coils.

D. **Gum/Mint Split Helix** - **(Optional)** Gum, mint or extremely small snack items are generally loaded with the bottom of the product resting on the tray bottom, between the helix coils.

NOTE:

When loading the product, make sure that the product label is in full view to the buying customer. The product label should read from left to right or from bottom to top. (See **Figure #6**)

SNACK PRODUCT   SANDWICH CRACKER/ CANDY PRODUCT

FIGURE #6

7
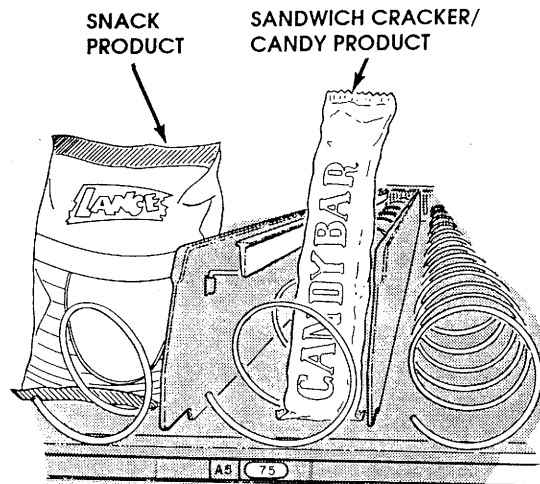
SETTING VEND PRICES:

All pricing is controlled by the controller and a price must be established for each selection. Selections can be individually priced in 5¢ increments from zero (free vend) to $99.95.

The vend prices for these vendors have been factory set to LANCE specifications. Should changes be necessary or should a new controller be installed, the following price setting instructions should be followed:

Make sure that the price scroll under the item agrees with the price programmed into the controller and is secured in place with the scroll lock. (See **Figure #17**).

SET PRICE - SINGLE SELECTION:

1. Open the outer door. Turn the main power switch to the "ON" position by pulling out on the switch plunger. (Refer to **Figure #3**)
2. Place the controller in the *"Service Mode"* by depressing the Service Mode button located on the controller cover. (See **Figure #7**)
   - The credit display will go blank unless "errors" have been detected by the controller's self diagnostic system. Note these "errors" immediately and refer to the self diagnostic system in the Test Mode section of this manual.
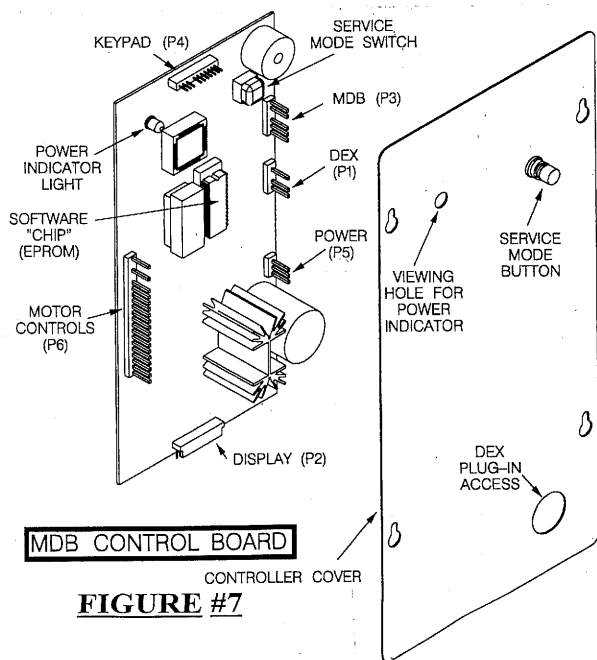
FIGURE #7

3. Place the controller in the "Pricing Mode" by pressing the number "5" key on the keypad, (See **Figure #8**)

A	0	1
B	2	3
C	4	5
D	6	7
E	8	9
F	10	11
G	12	13

KEY PAD IN STANDBY MODE

FIGURE #8

4. Enter the desired selection. (Letter followed by the number). Example "A" plus "3".
   - The selection followed by the current vend price will be displayed.
5. Enter the desired new vend price using the number keys on the keypad. It is not necessary to enter leading zeros.

   EXAMPLE: If the numbers **6 & 5** were entered, that item would have a vend price of $.65

6. To save the vend price programmed press the number "10" key on the keypad.
7. Adjust **"Price Scroll"** to agree with new price. Secure in place using scroll lock. (See **Figure #17**)

   NOTE:
   To cancel any unwanted settings press the number "13" key on the keypad before saving.

8. To exit the "Pricing Mode" and return to the "Sales Mode", press the "Mode Switch" button.

8

SET PRICE - ENTIRE ROW:

1. Open the outer door. Turn the main power switch to the "ON" position by pulling out on the switch plunger. (Refer to **Figure #3**)

2. Place the controller in the *"Service Mode"* by depressing the Service Mode button located on the top of the controller cover. (See **Figure #7**)

   • The credit display will go blank unless "errors" have been detected by the controller's self diagnostic system. Note these "errors" immediately and refer to the self diagnostic system in the Test Mode section of this manual.

3. Place the controller in the "Pricing Mode" by pressing the number **5** key on the keypad, (See **Figure #8**)

   • "SELECTION" will be displayed.

4. Enter a selection from the desired row. (Letter followed by the number) Example "A" plus "3".

   • The selection followed by the current vend price will be displayed.

5. Enter the desired new vend price using the number keys on the keypad. It is not necessary to enter leading zeros.

   EXAMPLE: If the numbers **6** & **5** were entered, that item would have a vend price of $.65

6. To save the vend price programmed press the number **"11"** key on the keypad.

   • All selections in the row selected will receive the same vend price.

7. Adjust **"Price Scroll"** to agree with new price. Secure in place using scroll lock. (See **Figure #17**)

8. To exit the "Pricing Mode" and return to the "Sales Mode", press the "Mode Switch" button.

NOTE:
To cancel any unwanted settings press the number "13" key on the keypad before saving.

SET PRICE - ENTIRE MACHINE:

1. Open the outer door. Turn the main power switch to the "ON" position by pulling out on the switch plunger. (Refer to **Figure #3**)

2. Place the controller in the *"Service Mode"* by depressing the Service Mode button located on the top of the controller cover. (See **Figure #7**)

   • The credit display will go blank unless "errors" have been detected by the controller's self diagnostic system. Note these "errors" immediately and refer to the self diagnostic system in the Test Mode section of this manual.

3. Place the controller in the "Pricing Mode" by pressing the number **5** key on the keypad, (See **Figure #8**)

   • "SELECTION" will be displayed.

4. Enter a selection number. (Letter followed by the number) Example "A" plus "3".

   • The selection followed by the current vend price will be displayed.

5. Enter the desired new vend price using the number keys on the keypad. It is not necessary to enter leading zeros.

   EXAMPLE: If the numbers **6** & **5** were entered, that item would have a vend price of $.65

6. To save the vend price programmed press the number **"12"** key on the keypad.

   • All selections in the entire machine will receive the same vend price.

7. Adjust **"Price Scroll"** to agree with new price. Secure in place using scroll lock. (See **Figure #17**)

8. To exit the "Pricing Mode" and return to the "Sales Mode", press the "Mode Switch" button.

NOTE:
To cancel any unwanted settings press the number "13" key on the keypad before saving.

VERIFYING VEND PRICES:

The vend price for each selection can be verified at any time while the machine is in the "Sales Mode". To verify the price programmed into the controller, depress the specific selection numbers. The selection number, followed by the current vend price will be displayed for approximately three (3) seconds. The price for each selection must also be identified by a "Price Scroll" located on the front of each tray, below each item.

Make sure that the "Price Scroll" and the price programmed for each item agree.

INSTALLATION CHECKLIST:

1. All shipping brackets, packing material and tape have been removed from the vendor.

2. Vendor is level and properly located for access to power source outlet.

3. Service cord plug-in-receptacle is properly grounded.

4. All components are installed on the vendor and are in good condition.

5. All vend prices have been set correctly.

6. All selections have been properly loaded and all items in each selection correspond to the vend price scrolls.

7. All options and features offered have been properly programmed into the controller. Refer to sections:

> FORCE VEND OPTION
> MAXIMUM CHANGE
> PROMOTIONAL VEND OPTION
> LANGUAGE SELECTION
> TIME & DATE DISPLAY
> TIMED SHUT DOWN

CARE & CLEANING:

CAUTION: Always disconnect power source before cleaning.

CABINET EXTERIOR:

Wash with warm water and a mild detergent, rinse thoroughly and dry with a non-abrasive, lint free cloth. Wax occasionally with a quality grade liquid or paste auto wax. Minor scratches can be smoothed with rubbing compound, but deep scratches should be touched up with paint to prevent rust. Plastic parts should be cleaned with non-abrasive plastic cleaner. Jewelers "rouge" can sometimes be used to polish out scratches in plastic.

CABINET INTERIOR:

Wash with warm water and a mild detergent, rinse thoroughly and dry with a non-abrasive, lint free cloth. Offensive odors may be eliminated by adding baking soda or ammonia to the cleaning solution. Paint brushes may be used to clean hard to reach areas such as cabinet and delivery box corners. A damp sponge will pick up loose particles from the delivery box. The delivery box drain tube is equipped with a screen, which can be removed for cleaning.

The vend motors and helixes in the *Super Vendors* require no lubrication. Spray cleaners, lubricants or silicone may damage these moving parts. The nylon tray-rollers need no lubrication but do require occasional cleaning for smooth operation. The vend door and anti-cheat moving parts also require cleaning without lubrication. The main door hinges should require no lubrication, provided the cabinet is installed level. Occasional lubrication of the main door lock screw and lock nut with a quality lubricant, such as lithium grease, will allow the locking mechanism to function more smoothly.

The electronic coin changer is designed to operate without lubrication and minimal cleaning. Occasionally open the coin acceptor portion and wipe the exposed surfaces with a damp cloth.

For cleaning and caring for the bill validator see the Validator section of this manual.

> **CAUTION:** Electronic or electrical components should be kept free of water or other conductive liquids. Should any of these components be exposed to liquids, rinse and dry thoroughly with forced air, heat or time before restoring power to the vendor.

CONTROLLER:

The MDB (Multi-Drop Buss) Controller will support a MDB coin mechanism, a MDB bill validator and up to a maximum of 70, 24 VDC motor driven selections. Also included is a DEX/USC interface that can be used to retrieve data using a DEX/UCS style Hand Held Computer (HHC).

Each time the controller is powered "on", it will default to the "sales mode" of operation, restoring the vend options to their state at power "off". The motor circuits will be checked and the controller will re-configure the vendor to its current state.

During the idle condition of the sales mode the controller will monitor the coin changer, bill validator and keypad for customer input. If no action is taken then the programmable "point of sales" message will be scrolled in the display. If the "Force Vend" option has been selected and the coin changer's coin tubes are below the "low" level sensors, the "PLEASE INSERT EXACT MONEY" message will be displayed.

The controller will allow acceptance of all coins as long as the accumulated credit is less than the maximum vend price of any selection. The amount of credit will be displayed as it is established. Coin acceptance will be disabled when credit has exceeded the highest vend price, during all vends, while coins are being paid out and while the controller is in the *"Service Mode"* of operation.

Bill acceptance will be allowed if the quarter tube of the coin mech is above the low level sensor or if the dime and nickel tubes are both above the low level sensors. If the accumulated credit is greater than or equal to the maximum vend price, then bill acceptance is disabled. If the bill validator is equipped with an escrow and the bill escrow feature is enabled and credit has exceeded the maximum vend price, the bill will be held in the escrow position. Otherwise the bill will go straight to the "bill stacker". If the bill validator does not offer escrow, or the bill escrow is disabled, the bill will go straight to the "bill stacker".

VENDING SEQUENCE:

The amount of credit established will be indicated in the display. When an alpha character is depressed on the keypad, a "beep" will be issued while the alpha is displayed. If a number is depressed within five (5) seconds, a "beep" will acknowledge the entry and one of the following series of events will occur:

1. If there has not been enough credit deposited, the selection's character, number and vend price will be displayed for approximately 1 second, with three "beep" tones, followed by a "PLEASE INSERT MORE MONEY" message being scrolled one time. The amount of credit, (or the point of sales message if no credit has been established), will be displayed again.

2. If there has been enough credit deposited, the selection's character, number and price will be displayed.

    - With **Force Vend "OFF"** - The controller will determine if the exact amount of change can be paid to the customer. If change can not be returned, the vend will be halted and the deposited credit will be returned in "like coin" fashion, three "beep" tones will be issued. "PLEASE INSERT EXACT MONEY" message will be displayed and the idle condition of the sales mode will be resumed.

- With **Force Vend "ON"** - The selection will be vended. If for some reason the exact change cannot be returned, as much as possible will be paid out and the remaining amount will be retained as credit toward another vend. The amount retained will be displayed. If the correct change is returned, the "THANK YOU" message will be displayed for 0.8 seconds, followed by the idle condition of the sales mode.

3. If a motor is not allowed to complete a full cycle, or if after twelve seconds the motor has not yet returned to the home position, the controller will "beep" three times. The "MAKE ALTERNATE SELECTION" message is scrolled one time. This will be followed by the amount of credit.

   - With **Force Vend "ON"** the force vend feature will be overridden for approximately 25 seconds after a faulty vend. Credit will be returned if the coin return lever is pressed during that period.

4. If a selection not in the configuration, or one with a bad motor is selected, the controller will "beep" three times and display the "MAKE ALTERNATE SELECTION" message. The credit or point of sales message will be displayed following this message.

SERVICE MODE:

The *"Service Mode"* is entered by depressing the red "Mode Switch" button located on the top right side of the control board cover. (See **Figure #9**). Upon entering the service mode a "beep" will be issued to recognize the transaction. Diagnostics will be displayed if any errors have been flagged by the controller. If credit exists upon entry of the service mode, it will be restored when the sales mode is re-invoked.

The controller will automatically return to the sales mode within 25 seconds if no keypad entry is made during that time. Pressing the "Mode Switch" button again will also exit the Service Mode.

KEYPAD (P4) SERVICE MODE SWITCH MDB (P3) POWER INDICATOR LIGHT DEX (P1) SOFTWARE "CHIP" (EPROM) POWER (P5) MOTOR CONTROLS (P6) VIEWING HOLE FOR POWER INDICATOR SERVICE MODE BUTTON DISPLAY (P2) DEX PLUG-IN ACCESS MDB CONTROL BOARD CONTROLLER COVER
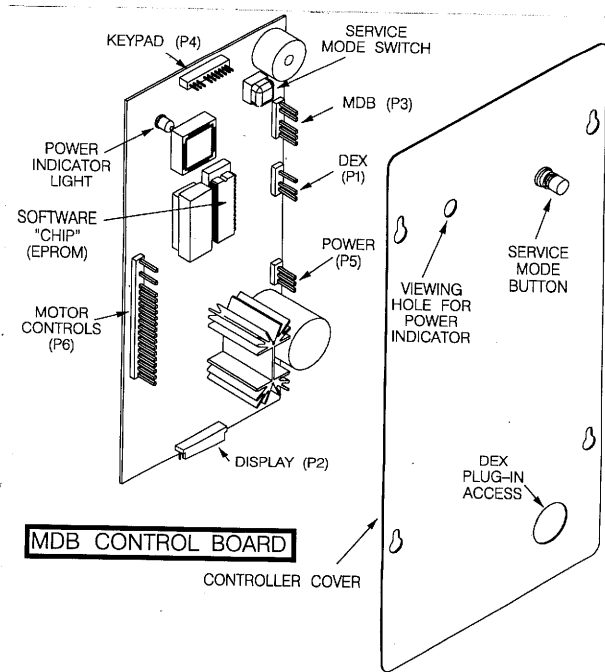
FIGURE #9

The following is a list of error codes that could be displayed

1 = Too little motor current (under 20 mA) - Display shows (for example) **"A1 1"**

- This is an indication of an electrically open motor circuit.

- If a selection is flagged as a bad motor it cannot be vended until it is cleared by performing a "Test Vend" while in the Service Mode of operation

2 = Too much time to complete vend (12 seconds) - Display shows (for example) **"C2 2"**

- This is an indication of a faulty motor or product jam.

- If a selection is flagged as a bad motor it .cannot be vended until it is cleared by performing a "Test Vend" while in the Service Mode of operation

3 = Loss of changer communications - Display shows **"ERROR 3"**

- This is an indication of a harness (connection) or changer problem.

4 = NOVRAM checksum error - Display shows **"ERROR 4"**

- This is an indication of a possible control board problem - Reset vend prices and test vend before determining a bad board.

PROGRAMMING INSTRUCTIONS:

The following programming modes can be accessed while in the *"Service Mode"*. The specific details and instructions of each mode are explained throughout this manual.

KEY INPUT	PROGRAMMING MODE
1	COIN DISPENSING
2	MOTOR COUNT
3	DOWNWARD CONFIGURATION
4	ACCOUNTABILITY
5	PRICE SETTING
6	TEST VEND SINGLE SELECTION
7	TEST VEND ENTIRE ROW
8	TEST VEND ENTIRE MACHINE
9	POINT OF SALES MESSAGE PROGRAMMING
10	LANGUAGE SELECTION
11	VEND OPTIONS
12	CONTINUOUS TEST VENDING OF MACHINE
13	TO EXIT SPECIFIC MODE OR EXIT SERVICE MODE

COIN DISPENSE MODE:

To dispense a coin from the coin changer inventory tubes the controller must be placed in the *"Service Mode"*. While in the service mode, press the number **"1"** on the keypad. The controller will display "DISPENSE". Pressing one of the following letters the coin changer will dispense the appropriate coins. The coins will continue to be paid out as long as the corresponding key is held depressed.

"A"	=	**25¢ Coin**
"B"	=	**10¢ Coin**
"C"	=	**5¢ Coin**

To exit this mode and remain in the "Service Mode" press the number "13" on the keypad. To exit the "Service Mode" press the Mode button.

MOTOR COUNT MODE:

To access the "Motor Count Mode" the controller must be placed in the *"Service Mode"*. While in the service mode, press the number **"2"** on the keypad. When in the "Motor Count Mode" the controller will indicate the total number of functional motors that are in the system. The controller will check the electrical circuit of each motor to determine if it is complete at that instant. The message "MOTORS" followed by the number of functional motors will be displayed.

The motor count can be displayed again by depressing the number "2" on the keypad. Pressing and holding key "2", the count will be displayed constantly.

If the motor count displayed does not agree with the total number of selections in the machine, this indicates that the electrical circuit of all motors is not complete. The service person should determine what motor/motors are not functioning. Listed below are suggested steps to be taken.

1. Were faulty motors displayed when placed in the service mode?
   - Problem would be in these areas.
2. Test vend all selections.
   - Faulty motors will not vend.
3. Refer to the Trouble Shooting section of this manual for further assistance.

To exit this mode and remain in the "Service Mode" press the number "13" on the keypad. To exit the "Service Mode" press the Mode button.

DOWNWARD CONFIGURATION:

In this mode the controller will re-configure the vendor to include all functional motors or selections. If the configuration of the vendor is changed by deleting selections, it will be necessary to access this mode to remove any undesired

selections. To remove undesired motor selections from the configuration, enter the *"Service Mode"* and press the number **"3"** on the keypad. The controller will reconfigure to the currently functioning motors and display "CONFIGURED". This is the only means of removing motors from the configuration.

To exit this mode and remain in the "Service Mode" press the number "13" on the keypad. To exit the "Service Mode" press the Mode button.

ACCOUNTABILITY:

Accounting data, such as total cash, total bills accepted and total vends is recorded for the total machine activity. This can be used to monitor the activity of the vendor.

To access the "Accountability Mode" the controller must be placed in the *"Service Mode"*. While in the service mode, press the number **"4"** on the keypad. The controller will display "ACCOUNTING" and wait for the following keypad inputs:

- **A** Display value of all cash sales since initialization. This total is non-resettable and will rollover after $99,999.95.
- **B** Display total value of bills accepted to the stacker since initialization. This total is non-resettable and will rollover after $99,999.00.
- **C** Display total number of products vended since initialization. This total is not resettable and will rollover after $99,999.95.
- **D** Display total number of products vended since the last reset. This total will rollover at 79,999,920
- **E** Display "RESET" and wait for entry. At this point the totals that are maintained in "D" can be reset to zero. Press **"F"** to reset all resettable values.
- **G** Display "FILL COINS" then show zero credit. As coins are entered the display will indicate the total value of the coins entered. This option is to be

implemented for DEX operations. Pressing the number "13" on the keypad will exit this mode.

12 Display "DEX/UCS" and wait up to 25 seconds while allowing a DEX/UCS dump session to be initiated. Instructions and information contained in reports are outlined under **"DEX/UCS SECTION"**.

To exit this mode and remain in the "Service Mode" press the number "13" on the keypad. To exit the "Service Mode" press the Mode button.

PRICE SETTING:

To access the "Price Setting Mode" the controller must be placed in the *"Service Mode"*. While in the service mode, press the number **"5"** on the keypad. The controller will display "SELECTION". Prices can be entered by individual selections, by a complete row or for the entire machine.

Enter the desired selection letter followed by the number. These will be displayed, along with the current price for that selection.

Enter the desired new vend price using the number keys on the keypad. It is not necessary to enter leading zeros.

> **EXAMPLE:** If the numbers **6** & **5** were entered, that item would have a vend price of $.65

To save the new vend price enter one of the number keys. To cancel an unwanted setting, press **"13"** before saving:

Press "10" to save as individual selection

Press "11" to save price for complete row

Press "12" to save price for complete

vendor

To exit this mode and remain in the "Service Mode" press the number "13" on the keypad. To exit the "Service Mode" press the Mode button.

14

TEST VEND - SINGLE SELECTION:

Single selections can be test vended to verify that they are functioning properly. The controller will check the motor circuit and run the selection through a complete vend cycle if the circuit is complete and the motor is functional. The controller will acknowledge the commands that are being performed by a single "beep" sound. Three "beeps" will sound if a command cannot be performed.

Vending items while in the "Test Vend Modes" will not affect the records being accumulated in the accountability records.

To test vend a single selection the controller must be in the *"Service Mode"*. Each time the service person places the controller in the *"Service Mode"* any diagnostics displayed in the read-out should be noted.

Follow the instructions below to test vend single selections:

1. Place the controller in the *"Service Mode"* by depressing the Service Mode button on the control board.

2. Depress the number **"6"** on the keypad. A single "beep" will sound and the controller will display "SELECTION"

3. Enter the desired selection letter followed by the number. The controller will display the selection number and vend price and the test will start.

    - If the product dispense cycle is successful, one "beep" will sound, the display will blank and the system will remain in the "Service Mode" waiting for the next service command.

    - If the product dispense cycle is unsuccessful, the display will blank, three "beeps" will sound and the system will remain in the "Service Mode" waiting for the next service command.

4. To test vend another selection, repeat **Steps 2 and 3** outlined above.

To exit this mode and remain in the "Service Mode" press the number "13" on the keypad. To exit the "Service Mode" press the "Mode Switch" button.

TEST VEND COMPLETE ROW:

All selections in a complete row can be tested to verify that they are functioning properly. The controller will check the motor circuits and run each selection in a single row, starting with the last selection, if the circuit is complete and the motor is functional.

Each motor will be run through a complete vend cycle and the controller will acknowledge a functional selection with a single "beep", If a selection is not functional, three "beeps" will sound indicating that the command cannot be performed and the controller will continue to the next selection.

While using the "row" test function it will be necessary to observe the testing of the selections to verify the operation as the controller will also sound three "beeps" for selections that are not configured in the machine.

Vending items while in the "Test Vend Modes" will not affect the records being accumulated in the accountability records.

To test vend a complete row the controller must be in the *"Service Mode"*. Each time the service person places the controller in the *"Service Mode"* any diagnostics displayed in the read-out should be noted.

Follow the instructions below to test vend a complete row:

1. Place the controller in the *"Service Mode"* by depressing the Service Mode button on the control board.

2. Depress the number **"7"** on the keypad. A single "beep" will sound and the controller will display "SELECTION".

3. Enter the letter of the desired row. The controller will display the selection number and

the vend price of each selection as the test is started.

- If the test is successful one "beep" will sound and the controller will continue with the next motor. If the vend is not successful the controller will "beep" three times and continue with the next motor. This will repeat until all motors in the row have been tested. The display will blank and the system will remain in the "Service Mode" waiting for the next service command.

4. To test another row repeat **Steps 2 and 3**.

To exit this mode and remain in the "Service Mode" press the number "13" on the keypad. To exit the "Service Mode" press the Mode Button.

TEST VEND COMPLETE MACHINE:

All selections in the entire machine can be tested to verify that they are functioning properly. The controller will check the motor circuits and run each selection if the circuit is complete and the motors are functional.

Each motor will be run through a complete vend cycle and a product will be dispensed. The controller will acknowledge each functional selection with a single "beep". If a selection is not functional, three "beeps" will sound indicating that the command cannot be performed and the controller will continue to the next selection.

While using the "machine" test function it will be necessary to observe the operation of the individual selections as the controller will also sound three "beeps" for selections that are not configured in the machine.

Vending items while in the "Test Vend Modes" will not affect the totals being accumulated in the accountability records.

To test vend the machine, the controller must be in the *"Service Mode"*. Each time the controller is placed in the Service Mode, any diagnostics displayed in the read-out should be recorded prior to inputting any service commands.

Follow the instructions below to test vend the entire machine:

1. Place the controller in the *"Service Mode"* by depressing the Service Mode button located on the control board.

2. Depress the number **"8"** on the keypad. The machine test will begin immediately starting with the last selection in the vendor.

   - If the vend is successful the controller will continue on with the next motor. If the vend is not successful the controller will beep three times and continue with the next motor. This will repeat until vends on all motors in the machine have been attempted, then the display will blank.

To exit this mode and remain in the "Service Mode" press the number "13" on the keypad. To exit the "Service Mode" press the Mode button.

POINT OF SALES MESSAGE:

Provisions have been incorporated into the controller for a "point of sales message" that will be displayed to the buying customer. This message can be used as advertising or encouragement to the buying customer to purchase the products. The point of sales message will appear continuously while the machine is in a standby condition as long as the Force Vend Option is off.

The sales message can be changed on location by accessing the point of sales message mode. Messages can include up to 105 characters including spaces. While in the programming mode the keypad buttons function similar to a typewriter keyboard. A key pad "overlay" indicates the positions of each letter or number. By placing the "overlay" over the selection panel a new message can be typed into the controller's memory.

16

When entering the new message, **all inputs** will overwrite the previous message. If the maximum limit of 105 characters is entered, the message length is automatically saved.

To change the point of sales message the controller must be placed in the *"Service Mode"*. The following outlines the steps to be taken:

1. Place the controller in the *"Service Mode"* by pressing the "Mode Switch" button on the control board.

2. Press the number **"9"** on the keypad.

   - The controller will display "MESSAGE"

3. Enter the new message.

   - Use the key pad "overlay" and refer to **Figure #10** for location of characters on the keypad.

4. Save the message into the controller's memory by depressing the "ENTER" key twice.

NOTE: When in the "Point of Sales Message" Mode, the buttons on the keypad have different functions

A	0	1
B	2	3
C	4	5
D	6	7
E	8	9
F	10	11
G	12	13

KEYPAD IN STANDBY MODE

FIGURE 10A

A	G	M	
S	Y	4	← LOWER CASE
B	H	N	
T	Z	5	← LOWER CASE
C	I	O	
U	0	6	← LOWER CASE
D	J	P	
V	1	7	← LOWER CASE
E	K	Q	
W	2	8	← LOWER CASE
F	L	R	
X	3	9	← LOWER CASE
SPACE	SHIFT	BACK SPACE	
*	ENTER	$	← LOWER CASE

KEYPAD IN MESSAGE MODE

FIGURE #10B

The upper characters in each block are accessed directly by depressing the desired key. The lower characters in each block identified as **"Lower Case"** in Figure #10 can only be accessed by depressing the **"SHIFT"** key **each** time those characters are needed.

To exit this mode, before starting a new message, press the number **"13"** on the keypad. Once a new message is started the previously outlined steps must be followed to properly exit.

LANGUAGE SELECTION:

During the normal operation of the vendor, default messages will be displayed, depending on the condition or function being performed. The controller can be programmed to display the default messages in different languages.

To select the message language, while in the *"Service Mode"* press the number **"10"** on the keypad. The controller will display "LANGUAGE" and wait for the appropriate letter. After the letter has been depressed, the nationality of the language

selected will be displayed. Listed below are the various languages available:

A = Italian	E = English
B = Dutch	F = French / English
G = German	C = Spanish / English
D = Danish	11 = Auxiliary

If "**11**" is selected for the auxiliary language the controller will display "MESSAGE n" and wait for a message to be entered. This is done in the same fashion as explained under the "Point of Sales After starting a new message, the message must be saved before starting another "message" section. Pressing

"13" while "MESSAGE n" is being displayed will save the previous message and advance through the message menu to exit the language mode.

All vendors, when shipped from the factory will be set to display the messages in the "**English**" language. All Auxiliary messages will be blank. The following messages will be affected by the language selection:

NOTE: Selecting Auxiliary Language without programming will result in NO MESSAGES being displayed.

Message #1:
- English: "PLEASE INSERT EXACT MONEY"
- Italian: "PER FAVORE INTRODURRE I PRECISI SOLDI"
- Dutch: "AFGEPAST GELD IN WERPEN"
- Spanish: "POR FAVOR DEPOSITE CANTIDAD EXACTA"
- Danish: "INDKAST AFTALTE PENGE"
- French: "FAITES L'APPOINT"
- German: "ABGEZAHLETS GELD EINWERFEN"
- Auxiliary: Programmable, maximum length 30

Message #2:
- English: "PLEASE INSERT MORE MONEY"
- Italian: "PER FAVORE INTRODURRE PIU SOLDI"
- Dutch: "MEER GELD IN WERPEN"
- Spanish: "POR FAVOR DEPOSITE MAS DINERO"
- Danish: "INDKAST FLERE PENGE"
- French: "MONTANT INFUFFISANT INTRODUISEZ D'AUTRES PIECES"
- German: "MEHR GELD EINWERFEN"
- Auxiliary: Programmable, maximum length 30

Message #3:
- English: "MAKE ALTERNATE SELECTION"
- Italian: "FARE UNA ALTRE SCELTA:
- Dutch: "ANDERE KEUZE MAKEN"
- Spanish: "SELECCIONE OTRO PRODUCTO"
- Danish: "VAELG ANDEN VARE"
- French: "FAITES UNE AUTRE SELECTION"
- German: "ANDERE WARE WAHLEN"
- Auxiliary: Programmable, maximum length 25

Message #4:
- English: "PLEASE CALL SERVICE"
- Italian: "PER FAVORE CHIAMARE SERVIZIO"
- Dutch: "SERVICEDIENST BELLEN"
- Spanish: "POR FAVOR LLAMAR MANTENIMIENTO"
- Danish: "TILKALD SERVICEMONTOR"
- French: "DEMANDEZ LE RESPONSABLE"
- German: "BITTE KUNDENDIENST RUFEN"
- Auxiliary: Programmable, maximum length 25

Message #5:
- English: "VENDING OPERATION TO RESUME AT (hh:mm)"
- Italian: "VENDING OPERATION TO RESUME AT (hh:mm)"
- Dutch: "VENDING OPERATION TO RESUME AT (hh:mm)"
- Spanish: "VENDING OPERATION TO RESUME AT (hh:mm)"
- Danish: "VENDING OPERATION TO RESUME AT (hh:mm)"
- French: "VENDING OPERATION TO RESUME AT (hh:mm)"
- German: "VENDING OPERATION TO RESUME AT (hh:mm)"
- Auxiliary: Programmable, maximum length 25

Message #6: (Not applicable to these Vendors)
- English: "MAKE SNACK SELECTION ONLY"
- Italian: DISPONIBILI SOLO LE SELEZIONI SNACK"
- Dutch: "ALLEEN SNACK KEUZES"
- Spanish: "SOLO DISPONIBLE PRODUCTOS EN ESPIRAL"
- Danish: "KUN VALG AF KONFEKTURE MULIGT"
- French: "CHOISISSEZ UNIQUEMENT LES CONFISERIES"
- German: NUR AUSGABE VON SUSSWAREN MOGLICH"
- Auxiliary: Programmable, maximum length 25

Message #7:
- English: "THANK YOU"
- Italian: "GRAZIE"
- Dutch: "DANK U"
- Spanish: "GRACIAS"
- Danish: "TAK"
- French: "MERCI"
- German: "VIEL. DANK"
- Auxiliary: Programmable, maximum length 10

18

Message #8

English:	"FREE ON US"
Italian:	"FREE ON US"
Dutch:	"FREE ON US"
Spanish:	"FREE ON US"
Danish:	"FREE ON US"
French:	"FREE ON US"
German:	"FREE ON US"
Auxiliary:	Programmable, maximum length 10

VEND OPTIONS:

Vend options are available that can be programmed into the controller. These options allow the machine to be programmed to function as a changer without making a purchase, make multiple selections with single deposits, or vend a free item when selecting another, along with others as indicated in the following list:

A = BILL ESCROW
B = FORCE VEND
C = MAXIMUM CHANGE
D = SET TIME & DATE
E = TIMED SHUT DOWN INTERVALS
F = FREE PRODUCT MODE
G = PROMOTIONAL VEND

To access the above modes the controller must be in the *"Service Mode"*. While in the service mode, press the number **"11"** on the keypad. The controller will display "OPTIONS" and wait for the appropriate letter as defined above.

BILL ESCROW:

The purpose of this feature is to prevent the vendor from being used as a "changer". When in the "ON" position, this option will allow the last bill accepted to be returned, provided the bill validator is equipped with an "escrow" feature. If the validator has the escrow feature, the bill will be returned when the "coin return" command is initiated (coin return button is pushed). When in the "OFF" position, all bills inserted are routed directly to the stacker and when the "coin return" command is initiated, change will be returned to the buying customer.

To set the "Bill Escrow" options the controller must be in the *"Service Mode"*. While in the service mode press the number **"11"** on the keypad. The controller will display "OPTIONS" and wait for the appropriate letter as defined above. Press the letter **"A"** after the "11". The current ("on" or "off") state will be displayed as **"ESCROW xxx"** Pressing "A" again will toggle the on/off state.

To exit this mode and remain in the "Service Mode" press the number "13" on the keypad. To exit the "Service Mode" press the Mode button.

FORCE VEND:

When in the "ON" position, this option will force the buying customer to complete a purchase once they have deposited money of any form. The "coin return" command is disabled. If a vend is attempted and the motor fails during this vend, the customer will be allowed to escrow the credit for up to 25 seconds, regardless of the force vend setting. When in the "OFF" position the controller will allow the buying customer to cancel the transaction at any time and have the credit returned when the coin return command is initiated. A purchase of a product does not have to be made.

To set the "Force Vend" options the controller must be in the *"Service Mode"*. While in the service mode press the number **"11"** on the keypad. The controller will display "OPTIONS" and wait for the next input. Press the letter **"B"**. The current ("on" or "off") state will be displayed as **"F VND xxx"** Pressing "B" again will toggle the on/off state.

To exit this mode and remain in the "Service Mode" press the number "13" on the keypad. To exit the "Service Mode" press the Mode button.

MAXIMUM CHANGE:

The "Maximum Change" Mode is used to control the maximum amount of change that will be refunded on over deposit. This option will prevent change from being returned to the customer until the credit amount is less than or equal to the

programmed maximum change limit. This mode is only recommended when there is a wide spread between the lowest vend price and the highest vend price of items. When the maximum change mode is initiated the credit amount **must** be equal to or less than the programmed amount before change will be refunded.

To set the "Max Change" options the controller must be in the *"Service Mode"*. While in the service mode press the number **"11"** on the keypad. The controller will display "OPTIONS" and wait for the next input. Press the letter **"C"**. The current ("on" or "off") state will be displayed as **"MAX CHG xxx"** Pressing "C" again will toggle the on/off state. Press **"10"** to save.

If the "ON" mode is selected a second menu will appear and the controller will display "MX CHG xxx". This can be modified in the same manner as described in the price setting procedure. Press **"10"** to save settings. To cancel an unwanted setting before saving, press "13".

To exit this mode and remain in the *"Service Mode"* press the number **"13"** on the keypad. To exit the *"Service Mode"* press the Mode button.

SET TIME & DATE:

The time and date must be programmed into the controller if the option of "DEX/UCS" information or the "Timed Shut Down Intervals" are to be used.

To access this option the controller must be in the *"Service Mode"*. While in the service mode press the number **"11"** on the keypad. The controller will display "OPTIONS" and wait for the appropriate letter as defined above.

1. Press the letter **"D"** after the"11".
   - The current time of day will be displayed in a 24 hour format as "TIME hh:mm"
2. A new time may be entered by pressing the numeric keys. These will be displayed as they are entered. Press the number **"10"** to save.
   - The current month will be displayed in a numeric format as "MONTH mm"

3. A new month may be entered by pressing the numeric keys. These will be displayed as they are entered. Press the number **"10"** to save.
   - The current day of the month (1 - 31) will be displayed in a numeric format as "DATE dd"
4. A new day of the month may be entered by pressing the numeric keys. These will be displayed as they are entered. Press the number **"10"** to save.
   - The current day of the week (1 = Sunday - 7 = Saturday) will be displayed in a numeric format as "DAY d"
5. A new day may be entered by pressing the numeric key. This will be displayed as it is entered. Press the number **"10"** to save.
   - The current year will be displayed in a numeric format as "YEAR yy".
6. A new year may be entered by pressing the numeric keys. These will be displayed as they are entered. Press the number **"10"** to save.

Each time the number **"10"** is pressed to save the previous entry, the controller will advance to the next entry. To cancel any unwanted setting before saving, press **"13"** or exit the Service Mode.

TIMED SHUT DOWN INTERVALS:

This option will allow the controller to shut down the entire machine during certain times of the day. Four programmable intervals are available. If activated, during these time intervals the message "VENDING OPERATION TO RESUME AT hh:mm" will be displayed. All vending functions of the machine will be disabled.

To access this option the controller must be in the *"Service Mode"*. While in the service mode press the number **"11"** on the keypad. The controller will display "OPTIONS" and wait for the appropriate letter as defined above.

1. Press the letter **"E"** after the 11".

   - The current on/off state will be displayed as "TIMES xxx". Pressing "E" again will toggle the on/off state.

2. If the "ON" state is selected, wait one second

   - The controller will display "1STRT hh.mm", indicating the start time for the first shut down interval.

3. A new time may be entered by pressing the numeric keys. These will be displayed as they are entered. Press the number **"10"** to save.

   - The controller will display "1STOP hh:mm", indicating the stop time for the first shut down interval.

4. A new time may be entered by pressing the numeric keys. These will be displayed as they are entered. Press the number **"10"** to save.

   - The controller will display daily on/off status as "1DYxxxxxxx". The 'x's will be either a "0" for off, or a "1" for on. The first 'x' will indicate the status for Sunday, the next Monday, and so on, until Saturday. The daily status may be changed by pressing the "0" or "1" in the position desired.

5. When the desired setting is displayed, press the number **"10"** to save. This completes the settings for interval number one.

   - The controller will continue by advancing to the settings for interval number two and display "2STRT hh:mm".

6. Repeat steps 2 through 5 until all four intervals have been programmed. When complete with interval four, the controller will return to the *"Service Mode"*.

To cancel an unwanted setting before saving, press **"13"** or exit the *"Service Mode"* by pressing the Mode button.

NOTE: If the "ON" state is selected, all intervals must be programmed. If an interval is not used, program the start and stop times to zero's.

ONE FREE PRODUCT:

This option will allow a free product to be given to the customer at a programmed interval. When enabled the product will be vended at no cost, all accumulated credit will be returned, and a message "FREE ON US" will be displayed during the vend process. Setting this interval to '1' provides a free vend at every transaction, '0' disables the option, and the maximum valid interval is 255.

To access this option the controller must be in the *"Service Mode"*. While in the service mode press the number **"11"** on the keypad. The controller will display "OPTIONS". Press the letter **"F"**. The controller will display "FREE xxx", indicating the current interval that a free product will be dispensed.

> **EXAMPLE:** If "FREE 75" was displayed, the free product would occur every 75th vend.

A new interval may be entered by pressing the numeric keys, these will be displayed as they are entered. When the desired interval is displayed, press the number **"10"** to save.

To cancel an unwanted setting before saving, press **"13"** or exit the service mode.

PROMOTIONAL VEND:

This option allows the customer to receive an additional product "free" when purchasing another. A maximum of two (2) promotional items can be programmed into each machine. The promotional or free item will always be dispensed from the #2 selection of a row. The primary product will be dispensed from the #1 selection of a row. When enabled, purchasing selection '1' from one of the two possible promotional rows will result in both selection '1' and '2' of that row to vend sequentially. Individual vends from selection "2" can be obtained while in promo vend if these selections are depressed with adequate credit inserted.

To access this option the controller must be in the *"Service Mode"*. While in the service mode press

the number **"11"** on the keypad. The controller will display "OPTIONS". Press the letter **"G** The controller will display "PROMO xxx" indicating the current on/off state. Pressing "G" again will toggle the on/off state.

To program the promotional rows after selecting the "ON" option, wait 1 second and the display will continue to "ROWS X X". The X's will indicate the current promotional rows programmed. (Row A, Row B, etc.). If the promotional rows were never selected the display will show **"-"** New rows may be entered by pressing the alphabetic keys. To clear any previous entries, press the number key **"12"** and enter the new row/rows. When the desired selection is displayed, press the number **"10"** to save.

To cancel an unwanted setting before saving, press **"13"** or exit the *"Service Mode"* by pressing the Mode button.

CONTINUOUS TEST VEND OF MACHINE:

This option will allow a continuous test vend of all motors in the present configuration of the entire machine. The test will start with the last motor and run each motor in the configuration in reverse sequence. As each corresponding vend is attempted, the controller will display the selection number and vend price of that selection. If the vend is successful, the controller will pause for approximately 400 mS, then continue to the next motor. If the vend is not successful, the controller will stop the test vend operation and flash the selection number of the failed motor. The failed motor must be replaced or the problem corrected to proceed past this point. If all motors in the configuration are successfully vended, the controller will pause for 15 seconds and then the cycle will be restarted.

To start the test procedure the controller must be in the *"Service Mode"*. While in the service mode press the number "12" on the keypad three consecutive times in rapid succession. The test sequence will start immediately.

To stop the test vend cycle or to exit this mode, press the number **"13"** and hold until the current motor has been successfully vended. To exit this mode press the "Mode Switch" button.

BILL VALIDATOR:

The BA32SA bill validator contains an option switch module allowing the unit to be customized to the requirements of an individual account. The following chart shows the functions of the option switches:

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

All validators shipped from the factory will be set with switches #3 & #8 in the **"ON"** position. All other switches will be set to the **"OFF"** position. If you desire settings different from those set at the factory, follow the steps outlined below:

1. Remove power from the validator by turning the main power switch to the **"OFF"** position. (See **Figure #3**)
2. Remove the retaining screw that secures the logic board and strain relief. (**see Figure #11**)
3. Slide the logic board downward to expose the option switch module.
4. Set the option switches to the desired setting.
5. Reassemble the bill validator in reverse order of disassembly.
6. Reapply power, the stacker motor should cycle.
7. Test for proper operation.

RETAINING
SCREW

OPTION
SWITCH

STRAIN
RELIEF

Serial or Parallel
Interface ⎤ ⎡ Accept $20
Accepts Bills in one   ⎡ Accept $10
direction only (face up   ⎡ Accept $5
and green seal first)   ⎡ Accept $2
High Security ⎤   ⎡ Accept $1

O N   1 2 3 4 5 6 7 8
O F F

Standard Accept ⎦   ⎣ Reject $1
                              ⎣ Reject $2
Accepts Bills in both ⎦   ⎣ Reject $5
Directions (face up)
                      ⎣ Reject $10
Pulse Interface ⎦ ⎣ Reject $20
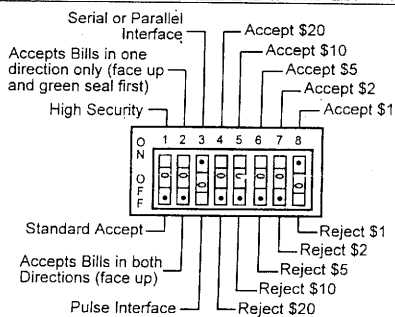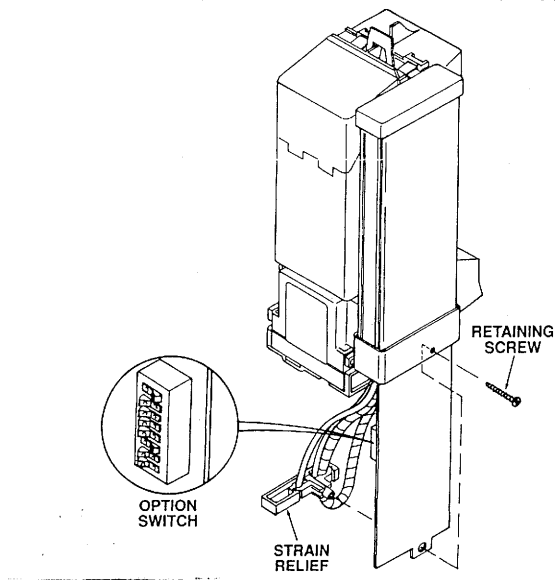
REMOVING ACCEPTED BILLS:

Accepted bills may be removed by opening the "bill box" lid or by removing the bill box from the validator. (See **Figure #12**) If the bill box is removed, *make sure that it is fully latched in place when it is returned to the validator.*

To remove the bill box, push tab on top of unit releasing the bill box. Grasp the bill box and push upward.
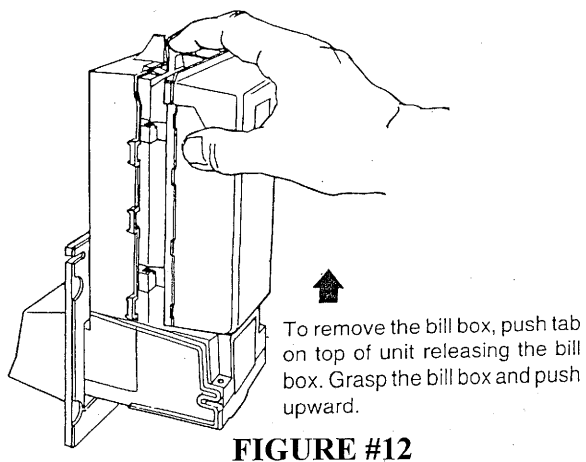
FIGURE #12

TROUBLE-SHOOTING:

Trouble-shooting can be achieved by reading flashes or blinks of light from the (red) LED located on the side of the logic board cover. These flashes can be seen through the grey smoked cover.(See **Figure #13**) During normal operation the **"LED"** will be a steady or constant red.

DIAGNOSTIC CODE
FLASHES HERE
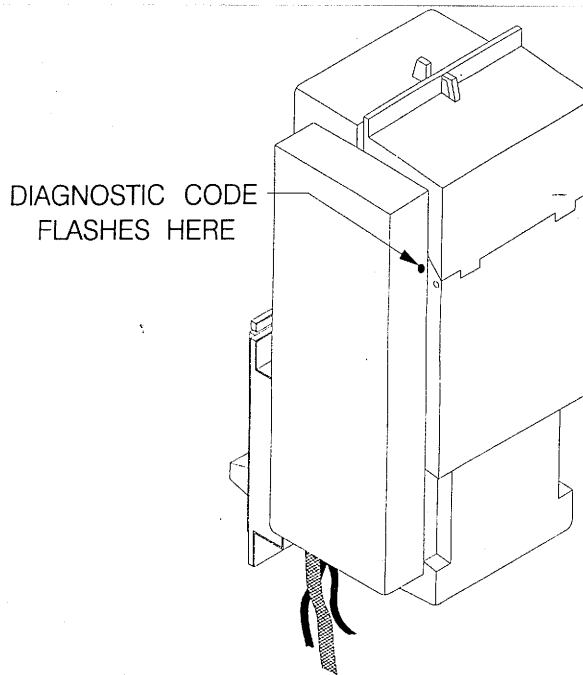
FIGURE #13

NO. OF FLASHES	DESCRIPTION OF DIAGNOSTIC CODES
No Flashes	Check Power and Harnessing to Validator
1	Bill Box Full
2	Bill Box Lid is open or not latched in place.
3	Check Bill Path
4	All Bill Accept Switches are Off
5	Bill Jam or Sensor Error
6 or more	Reset (Remove and Apply Power) or service required.

CLEARING JAMS & CLEANING:

Trapped bills, debris or dirt can result in poor bill acceptance or bill rejection. Remove the "bill box" and lower housing to clear trapped bills or debris. **(See Figure #14)** Clean the bill path plastic parts or belts with a cloth moistened with a mild soap and water solution. Clean the magnetic head and optic sensors using a swab and isopropyl alcohol. *Do not use any petroleum based cleaning solvents, scouring pads or stiff brushes for cleaning.*

23

To service lower housing, first remove the bill box as shown in figure 2. Push tab on bottom of lower unit up and pull the unit to the rear.
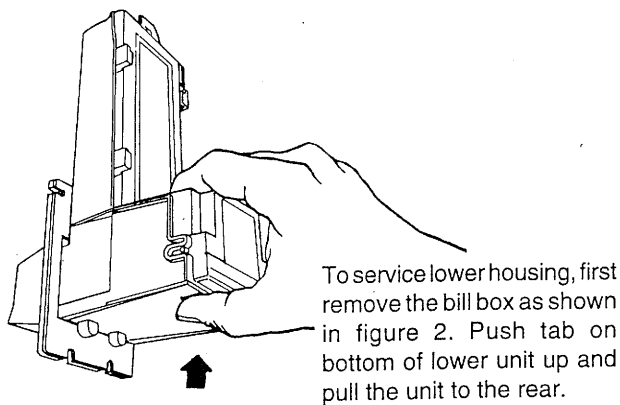
FIGURE #14

MACHINE ADJUSTMENTS:

Adjustments to tray spacing, tray configuration and helix timing are provided to enhance the merchandising features of the *Super Vendors.* By altering the tray spacing, larger items can be vended. By changing the tray configuration, different product mixes can be accommodated. By re-timing the helixes, difficult to vend items can be delivered more dependably.

CHANGING TRAY SPACING:

The trays can be raised or lowered in one inch increments within a four inch range to provide additional headroom for vending larger items.

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

To change tray spacing, follow the steps outlined below:

1. Disengage the tray harness from its snap open harness clamp on the right hand side wall. (See **Figure #15**)
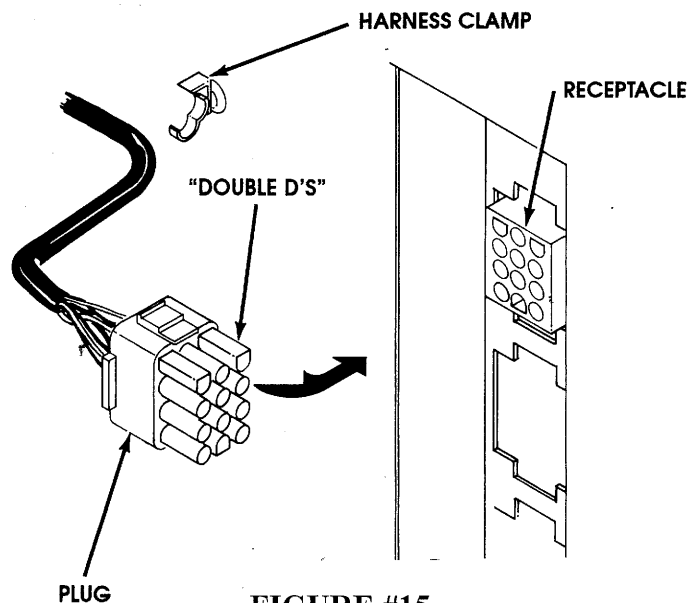
FIGURE #15

2. Disconnect the tray plug from its receptacle on the right hand side wall. (See **Figure #15**)
3. Pull out the tray to be adjusted until it stops.
4. Lift up on the front of the tray and pull slightly (approximately 1/2") forward to clear the tray stop.
5. Lift up on the rear of the tray and remove it from the vendor.
6. Disengage both left and right tray rails from their corresponding slots on the left and right side walls by pulling inward on the bottom front of each rail and lifting its flange out of the slot. (See **Figure #16**)
7. Pull each rail forward to disengage its rear tabs from the hole in the rear wall. (See **Figure #16**)
8. Re-locate both left and right rails by reversing steps 5 and 6.
   - The rails must be level from front to back and evenly spaced from top to bottom on each side.
9. Replace the tray by placing its rear rollers on the left and right rails and lifting up on the front of the tray as it is pushed back.
10. Re-connect the tray plug to its receptacle.
    - For proper plug to receptacle orientation the two flat sided connectors (**Double "D's"**) on the plug should be "up". (See **Figure #15**)
11. Secure the tray harness with the harness clamp and snap it closed.

12. Test vend the tray in its new position to assure that the tray plug is properly connected.

SIDE WALL (LEFT)

RAIL LOCATION HOLES

RAIL LOCATION SLOTS

RAIL POSITION HOLES

FLANGE

TAB

TRAY RAIL (LEFT)
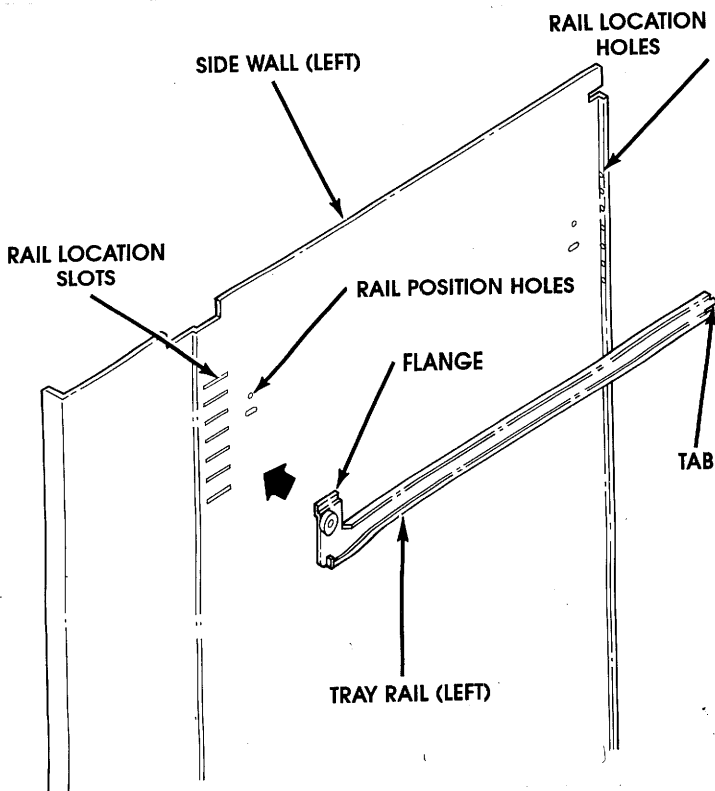
FIGURE #16

HELIX TIMING:

The helix is connected to the motor via an 18 tooth helix hub spline into an 18 tooth internal gear in the motor gear case. This relationship provides a helix timing adjustment in 20 degree increments to alter the product drop-off point at the front of the tray.

Research and testing have determined that a vast majority of all products tested will vend successfully with the leading edge of the helix set at approximately 6:00 o'clock.

This adjustment has been selected as the "Middle of the Road" setting from which adjustments can be made in either direction. All helixes have been factory set to agree with Lance specifications.

Should you experience difficulty in vending odd size or shaped items, the helix can be re-timed by following the steps outlined below. The positioning of the helix will be on a trial and error basis.

1. Pull the tray containing the helix to be re-timed forward to its stop.

2. Remove all product from the compartment.

3. Depress the motor cover latch and remove the motor cover. (See **Figure #17**)

MOTOR COVER

HELIX RETAINER (FLOOR)

MOTOR COVER LATCH

DIVIDER

PRICE SCROLL

TRAY ROLLER

LABEL HOLDER

SELECTION IDENTIFICATION LABEL

SCROLL LOCK
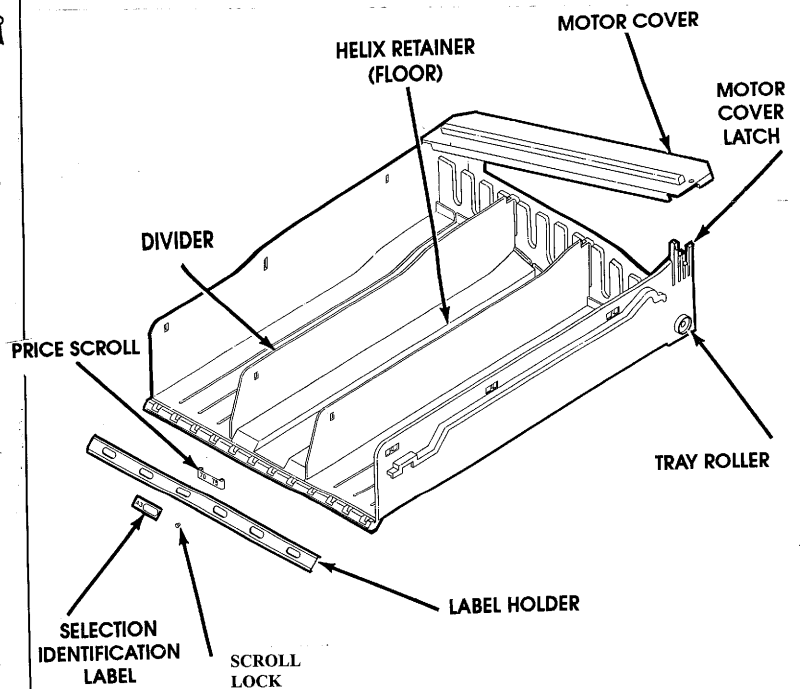
FIGURE #17

4. Lift the helix and motor slightly (approximately 3/4" to disengage the helix hub from its retaining rib in the bottom of the tray. (See **Figure #18**)

5. Separate the helix and hub from the motor slightly (approximately 1") by pulling forward on the helix hub to disengage its spline from the motor's internal gear. (See **Figure #18**)

6. Rotate the helix and hub in either direction and re-install by pushing the spline into the internal gear of the motor.

7. Push down on the motor and helix hub to re-seat the helix hub onto its retaining rib in the bottom of the tray. (See **Figure #18**)

8. Replace the motor cover by hooking the left end into its retainer on the tray and snapping the right end into the motor cover latch. (See **Figure #17**)

9. Load the helix with the appropriate product for testing.

10. Push the tray back to its normal position making sure it is properly seated.

11. Test vend product and re-adjust if necessary.
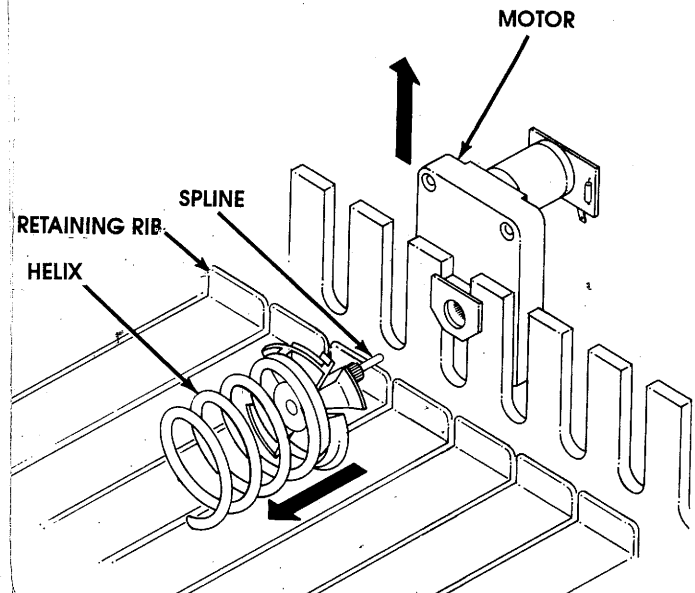
FIGURE #18

QUICK REFERENCE SERVICE COMMANDS:
LANCE SUPER VENDORS - PROGRAMMING INSTRUCTIONS
Press Service "Mode Switch" Button on the Control Board and follow the steps outlined below:

MODE KEY	FUNCTION	TO PROGRAM ENTER THE FOLLOWING
1	DISPENSE COINS	"1" PLUS "A" = 25¢ "1" PLUS "B" = 10¢ "1" PLUS "C" = 5¢
2	MOTOR COUNT	"2" = NUMBER OF ACTIVE MOTORS
3	DOWNWARD CONFIGURATION	"3" = RECONFIGURES MACHINE WITH ALL FUNCTIONAL MOTORS
4	ACCOUNTABILITY	"4" PLUS "A" = TOTAL SALES SINCE INITIALIZATION "4" PLUS "B" = TOTAL BILLS IN STACKER SINCE INITIALIZATION "4" PLUS "C" = TOTAL VENDS SINCE INITIALIZATION "4" PLUS "D" = TOTAL VENDS SINCE LAST RESET "4" PLUS "E" = RESET (RESETTABLE) TOTALS - CONFIRM WITH "F" "4" PLUS "G" = FILL COINS IN COIN TUBES "4" PLUS "12" = "DEX/UCS" REPORT INFORMATION
5	SET PRICE - INDIVIDUAL SELECTION SET PRICE - ENTIRE ROW SET PRICE - ENTIRE MACHINE	"5" PLUS (SEL) PLUS (PRICE) PLUS "10"" "5" PLUS (SEL) PLUS (PRICE) PLUS "11" "5" PLUS (SEL) PLUS (PRICE) PLUS "12"
6	TEST VEND - SINGLE SELECTION	"6" PLUS SELECTION
7	TEST VEND - ENTIRE ROW	"7" PLUS ROW "ALPHA" (PRESS & HOLD "13" TO ABORT)
8	TEST VEND - ENTIRE MACHINE	"8" (PRESS AND HOLD "13" TO ABORT ANY TIME DURING TEST)
9	EDIT POINT OF SALES MESSAGE	"9" PLUS MESSAGE - REFER TO SERVICE MANUAL
10	LANGUAGE SELECTION	"10" PLUS "A" = ITALIAN "10" PLUS "B" = DUTCH "10" PLUS "C" = SPANISH / ENGLISH "10" PLUS "D" = DANISH "10" PLUS "E" = ENGLISH "10" PLUS "F" = FRENCH / ENGLISH "10" PLUS "G" = GERMAN "10" PLUS "11" = AUXILIARY
11	VEND OPTIONS - BILL ESCROW VEND OPTIONS - FORCE VEND VEND OPTIONS - MAXIMUM CHANGE VEND OPTIONS - SET TIME & DATE VEND OPTIONS - TIMED SHUT DOWN VEND OPTIONS - ONE FREE PRODUCT VEND OPTIONS - PROMOTIONAL VEND	"11" PLUS "A" = BILL ESCROW "ON" OR "OFF" "11" PLUS "B" = FORCE VEND "ON" OR "OFF" "11" PLUS "C" PLUS (AMT) PLUS "10" "11" PLUS "D" (SEE PAGE 20) "11" PLUS "E" (SEE PAGE 20) "11" PLUS "F" (SEE PAGE 21) "11" PLUS "G" (SEE PAGE 21)
12	CONTINUOUS TEST VEND	"12+12+12" TEST VEND ALL CONFIGURED MOTORS
13	CANCEL	"13" ABORTS OPERATIONS

S E R V I C E   M O D E

26

ELECTRICAL TROUBLESHOOTING:

This flow chart indicates what should happen when power is applied to the vendor.

```
                    MACHINE              WALL                    REPLACE
                    PLUGGED IN ---NO---  CIRCUIT  ---YES--->     FUSE OR
                    POWER "ON"           BLOWN                   RESET
                                                                BREAKER
                                          |
                                          NO
                                          |
                       YES            CIRCUIT
                                      BREAKER      ---YES--->    RESET
                                      TRIPPED IN                BREAKER
                                      MACHINE
                                          |
                                          NO
                                          |
                                      DEFECTIVE                  REPLACE
                                      TRANSFORMER  --YES--->    TRANSFORMER
```

```
         CREDIT                  SCROLLING      VALIDATOR CYCLES
         DISPLAY  <---NO---      MESSAGE        ACCEPT MOTOR AND
         BLANK                   APPEARS IN     STACKER MOTOR
                                 DISPLAY        RUNS            ---NO
          |
          YES                       YES             YES                DEFECTIVE           REPAIR OR
          |                                                            HARNESSING          REPLACE
      DEFECTIVE        REPAIR OR                                       TO VALIDATOR ---YES---> HARNESS
      HARNESSING       REPLACE                                        FROM BOARD
      FROM DISPLAY ---YES---> HARNESS                                     |
      TO BOARD                                                            NO
          |                                    MACHINE AT                 |
          NO                                   NORMAL                 DEFECTIVE           REPLACE
          |                                    STANDBY IN             VALIDATOR  ---YES---> VALIDATOR
      DEFECTIVE        REPLACE                 SALES MODE                 |
      CREDIT          CREDIT                       |                      NO
      DISPLAY   ---YES---> DISPLAY                 |                      |
                                              TROUBLE               DEFECTIVE           REPLACE
                                              SHOOTING             CONTROL    ---YES---> CONTROL
                                              THE VENDOR           BOARD                 BOARD
```

```
     PRICE SETTING          VEND SEQUENCE           FUNCTIONAL
     PROCEDURE AND          AND                     OPERATION OF COIN
     TROUBLESHOOTING        TROUBLESHOOTING         MECHANISM AND
                            FAILURES                TROUBLESHOOTING

     SEE PAGE 28            SEE PAGE 29             SEE PAGE 30
```

27

ELECTRICAL TROUBLESHOOTING

This flow chart indicates what should happen during the Price Setting Mode and gives troubleshooting hints for problems that could be encountered

```
DEPRESS SERVICE          DEFECTIVE              REPLACE
MODE BUTTON      —NO→     CONTROL      —YES→     CONTROL
Scrolling Message        BOARD                  BOARD
Disappears from Credit
Display
```

```
              DEFECTIVE          REPLACE
              KEY-PAD    —YES→    KEY-PAD
```

```
RECORD ANY                                              NO
MESSAGES
DISPLAYED        DIAGNOSTIC        DISPLAY        DEFECTIVE          REPAIR OR
REFER TO VEND ←YES— INFORMATION    BLANK NO       HARNESSING,  —YES→ REPLACE
SEQUENCE FOR     APPEARS IN THE    MESSAGES       DISPLAY TO         HARNESS
ADDITIONAL       CREDIT DISPLAY    DISPLAYED      BOARD
INSTRUCTIONS
                      NO              YES
                                                    NO
```

```
                                                 DEFECTIVE          REPLACE
ENTER PRICE MODE                                 CONTROL    —YES→    CONTROL
DEPRESS KEY "5",                                 BOARD               BOARD
"SELECTION"
APPEARS IN THE    —NO—
CREDIT DISPLAY
      YES
```

```
ENTER SELECTION TO
BE PRICED
Selection Number and  —NO—
Vend Price Appears
      YES
```

```
ENTER NEW VEND
PRICE - Numbers   —NO—
Appear as Entered
      YES
```

```
CONTINUE SETTING       STORE VEND PRICE IN
PRICES FOR OTHER  ←    MEMORY - DEPRESS   —NO—
SELECTIONS             KEY "10" -DISPLAY
                       WILL BLANK                  TO VERIFY VEND PRICES -
                                                   ENTER SELECTION
                                                   Selection Number and Vend Price
      NO                                           will appear in Credit Display
```

```
         DEPRESS SERVICE MODE BUTTON -
         Scrolling Message Appears in the Credit
         Display - Machine is now in the SALES  —NOTE—
         MODE
```

28

ELECTRICAL TROUBLESHOOTING

This flow chart explains the Vend Sequence and gives troubleshooting hints for problems that could occur during a Vend.

MACHINE AT STANDBY Scrolling Message Appears in Display

— NO → Refer to Troubleshooting Electrical Problems — YES → **REPAIR OR REPLACE HARNESS**

DEFECTIVE HARNESS BETWEEN COIN CHANGER AND CONTROL BOARD — NO → **DEFECTIVE CHANGER**

DEFECTIVE CHANGER — YES → **REPAIR OR REPLACE COIN MECHANISM** — NO →

↓ YES

CREDIT APPEARS IN DISPLAY AS MONEY IS DEPOSITED IN MACHINE

— NO → **MONEY IS REJECTED IN COIN CHANGER & ROUTED TO COIN RETURN** — NO →

YES → **DEFECTIVE HARNESS FROM CREDIT DISPLAY TO CONTROL BOARD**

DEFECTIVE HARNESS FROM CREDIT DISPLAY TO CONTROL BOARD — YES → **REPAIR OR REPLACE HARNESS**

CHARACTERS ARE NOT CLEAR OR LEGIBLE — NOTE → **CHECK LANGUAGE MODE PROGRAM**

↓ NO

DEFECTIVE CREDIT DISPLAY — YES → **REPLACE CREDIT DISPLAY**

DEFECTIVE CREDIT DISPLAY — YES → **REPLACE CREDIT DISPLAY**

↓ NO

DEFECTIVE CONTROL BOARD — YES → **REPLACE CONTROL BOARD**

↓ YES

CREDIT EQUALS OR EXCEEDS VEND PRICE OF ITEM DESIRED

↓ YES

DEFECTIVE HARNESSING FROM KEYPAD TO BOARD — YES → **REPAIR OR REPLACE HARNESS**

DEFECTIVE HARNESSING FROM KEYPAD TO BOARD — NO → **REPLACE KEYPAD**

SELECTION NUMBER OF ITEM SELECTED APPEARS IN DISPLAY AS BUTTONS ARE DEPRESSED

↓ YES

'SELECT OTHER ITEM' APPEARS IN DISPLAY — YES → **DEFECTIVE MOTOR CIRCUIT**

DEFECTIVE MOTOR CIRCUIT — YES → **REPAIR OR REPLACE SHELF HARNESS**

DEFECTIVE MOTOR CIRCUIT — NO → **DEFECTIVE SELECTION MOTOR** → YES → **CHANGE SELECTION MOTOR**

'SELECT OTHER ITEM' APPEARS IN DISPLAY — NO → **"PRICE- - -" APPEARS IN DISPLAY** — YES → **CHECK VEND PRICE OF ITEM SELECTED**

VEND PRICE OF SELECTED ITEM APPEARS AND VEND MOTOR RUNS

↓ YES

ITEM SELECTED IS DISPENSED — NO → **PRODUCT LOADED INCORRECTLY** — YES → **LOAD PRODUCT CORRECTLY**

PRODUCT LOADED INCORRECTLY — NO → **PRODUCT HELIX SPACING TOO SMALL** — YES → **CHANGE TO A WIDER PITCHED HELIX**

↓ YES

CHANGE IS DISPLAYED AND CHANGER REFUNDS OVER-DEPOSIT — NO →

DEFECTIVE COIN MECH HARNESS — YES → **REPLACE COIN MECH HARNESS**

DEFECTIVE COIN MECH HARNESS — NO → **DEFECTIVE COIN MECHANISM** — YES → **REPLACE COIN MECHANISM**

DEFECTIVE COIN MECHANISM — NO → **DEFECTIVE CONTROL BOARD** — YES → **REPLACE CONTROL BOARD**

↓ YES

SCROLLING MESSAGE APPEARS - ANOTHER VEND CAN BE INITIATED — **VEND CYCLE COMPLETE MACHINE AT STANDBY**

ELECTRICAL TROUBLESHOOTING

This flow chart explains the Operation of the Coin Mechanism and gives troubleshooting hints for problems that could occur during a Vend.

PLACE CONTROLLER IN "COIN DISPENSE" MODE Operate Respective Pay-Out Switches on Key Pad

DEFECTIVE CONTROL BOARD — YES → REPLACE CONTROL BOARD

NO

YES

DEFECTIVE COIN MECHANSIM → REPAIR OR REPLACE COIN MECHANISM

COIN MECHANISM REFUNDS 5¢, 10¢ & 25¢ WHEN RESPECTIVE SWITCHES ARE OPERATED

NO

NO

REPLACE CONTROL BOARD ← YES — DEFECTIVE CONTROL BOARD

NO

REPAIR OR REPLACE COIN MECHANISM —YES— DEFECTIVE COIN MECHANISM

NO

DEFECTIVE HARNESS FROM BOARD TO COIN MECHANISM

DEFECTIVE HARNESS FROM BOARD TO COIN MECHANISM — YES → REPAIR OR REPLACE HARNESS

YES

REPAIR OR REPLACE HARNESS

NO

BLOCKER LIGHT IN COIN MECHANISM "ON"

YES

YES

PLACE CONTROLLER IN "SALES" MODE DEPOSITED COINS DO NOT ACCEPT

NO

DEFECTIVE COIN MECHANISM — YES → REPAIR OR REPLACE COIN MECHANISM

NO

UPPER COIN TUBE SENSORS DIRTY — YES → CLEAN TUBE SENSORS

CLEAN SENSOR COILS & COIN TRACKS

YES

DIRTY SENSOR COILS OR DIRTY COIN TRACKS IN ACCEPTOR

ACCEPTED COINS ARE ROUTED TO CASH BOX NO CHANGE IN CHANGE TUBES

NO

YES

NO

REPAIR OR REPLACE COIN MECHANISM —YES— DEFECTIVE COIN MECHANSIM

COIN MECHANISM DOES NOT PAY-BACK CHANGE ON OVER DEPOSIT — YES → EXISTING CREDIT ABOVE MAXIMUM CHANGE SETTING

YES

CHECK MAXIMUM CHANGE SETTING

NO

NO

"EXACT CHANGE ONLY" APPEARS IN CREDIT DISPLAY - CHANGE TUBES FULL OR ABOVE SENSORS

CHANGER COIN TUBES EMPTY — YES → LOAD COIN TUBES CHANGER

NO

REPAIR OR REPLACE COIN MECHANISM —YES— DEFECTIVE COIN MECHANISM

VEND PRICE FOR ITEM SET INCORRECTLY — YES → SET VEND PRICE

NO

NO

CLEAN TUBE SENSORS ←YES— LOWER TUBE SENSORS DIRTY

YES

COINS ARE NOT ROUTED TO CASH BOX WHEN CHANGE TUBES ARE FULL OR ABOVE UPPER SENSORS

NO

DEFECTIVE COIN MECHANISM — YES → REPAIR OR REPLACE COIN MECHANISM

NO

NOTE — YES

UPPER TUBE SENSORS DIRTY — YES → CLEAN TUBE SENSORS

NO

DEFECTIVE COIN MECHANISM —YES→ REPAIR OR REPLACE COIN MECHANISM

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

30

PRINTED CIRCUIT BOARD PIN-OUT

ROW 5
ROW 4
ROW 3
ROW 2
ROW 1

ROW 6
ROW 7
POLARIZING PIN
COLUMN 1
COLUMN 2
COLUMN 3

KEYPAD (P4)

POWER
INDICATOR
LIGHT

MODE SWITCH

VUN+
VUN−
POLARIZING PIN
RX DATA LINE
TX DATA LINE
SIGNAL GROUND

MDB (P3)

EPROM

TX DATA LINE
POLARIZING PIN
RX DATA LINE
SIGNAL GROUND

DEX/UCS (P1)

NOT USED
NOT USED
ROW G SOURCE
POLARIZING PIN
ROW F SOURCE
ROW E SOURCE
ROW D SOURCE
ROW C SOURCE
ROW B SOURCE
ROW A SOURCE
COLUMN 1 SINK
COLUMN 2 SINK
COLUMN 3 SINK
COLUMN 4 SINK
COLUMN 5 SINK
COLUMN 6 SINK
COLUMN 7 SINK
COLUMN 8 SINK
COLUMN 9 SINK
COLUMN 10 SINK

(10 IS DIPLAYED AS 0)

MOTOR
CONTROLS (P6)

AC POWER
INTERFACE (P5)

24 VAC
CONTROLLER GROUND
24 VAC

DISPLAY (P2)

GROUND
VSS
RESET LINE
VDD
CLOCK LINE

FILAMENT A
VGG
FILAMENT B
POLARIZING PIN
DATA LINE

SCHEMATIC:

LANCE MDB SCHEMATIC
P/N 4208022
REV. A

BALLAST

DISPLAY LAMP

SHIELD BEAD

5 AMP BRKR

DOOR SWITCH

115 VAC

TRANSFORMER

24 VAC

3 AMP BRKR

CHASSIS GND

115 VAC 60 HZ

VALIDATOR PLUG MDB

COIN MECH PLUG MDB

1/4", 3 CONDUCTOR OPEN CIRCUIT PHONE JACK

J3 MDB INTERFACE

J1 DEX

J5 AC POWER

CONTROLLER

KEYPAD

J4 KEYPAD

MODE SWITCH

J2 DISPLAY

CREDIT DISPLAY

MOTOR J6

TYPICAL MOTOR SCHEMATIC
1 K 1/2 W

MODEL 3054
MODEL 3053

32

NOTES:

PARTS LISTING

ACCESSORIES AND KITS

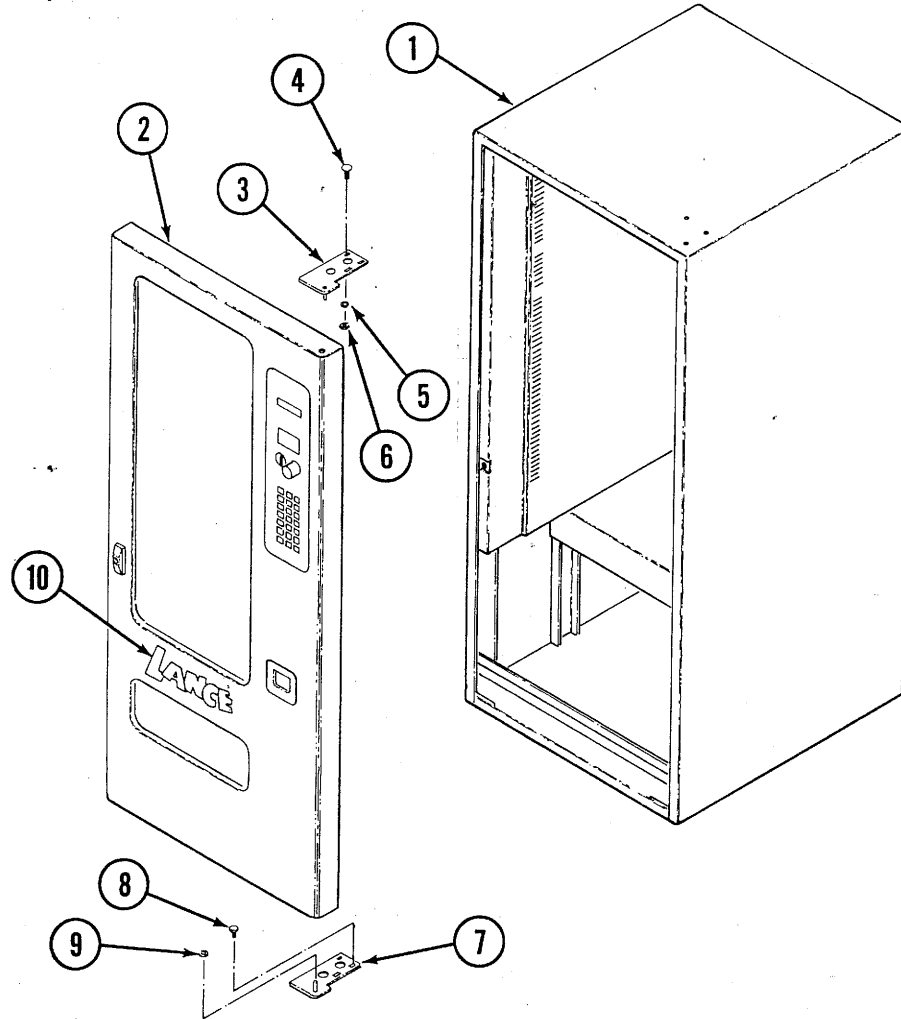| KIT NUMBER	DESCRIPTION
1200137-078	2 SANDWICH SNACK (18) TO LARGE SNACK 12 KIT
1200137-141	TIMER KIT
1200137-142	TIMER KIT (WITHOUT TIMER)
1200137-143	LARGE SNACK (12) TO 2 SANDWICH SNACK (18) KIT
1200137-144	LINE FILTER KIT
1200137-145	KNOCK-OUT KIT
1200137-147	SANDWICH SNACK 18 TO SPLIT HELIX 40 KIT
1200137-148	SPLIT HELIX 40 TO SANDWICH SNACK 18 KIT
1200137-149	RAIN GUARD KIT
1200137-168	TRAY LATCH KIT
1200137-282	POPCORN DEFLECTOR KIT (3053)
1200137-283	POPCORN DEFLECTOR KIT (3054)

UNIT FINAL ASSEMBLY

ITEM	PART NUMBER	3053 QTY	3054 QTY	DESCRIPTION
1	1214278-003	1		COMPLETE CABINET ASSEMBLY 3053 (See Page 39)
"	1214278-004		1	COMPLETE CABINET ASSEMBLY 3054 (See Page 39)
2	1214275-003	1		COMPLETE DOOR ASSEMBLY 3053 (See Page 41)
"	1214275-004		1	COMPLETE DOOR ASSEMBLY 3054 (See Page 41)
3	1212060-004	1	1	UPPER HINGE PLATE
4	4050099	3	3	5/16"-18 x 3/4" CARRIAGE BOLT
5	7186148-000	3	3	5/16" LOCK WASHER PLT'D.
6	4050066	3	3	5/16"-18 HEX NUT PLT'D.
7	1212060-003	1	1	LOWER HINGE PLATE
8	8801388	3	3	5/16"-18 x 3/4" HWH TYPE D BOLT
9	4050767	1	1	3/8" NYLON WASHER
10	4203629	1	1	LANCE LOGO LABEL

TRAY FINAL ASSEMBLY
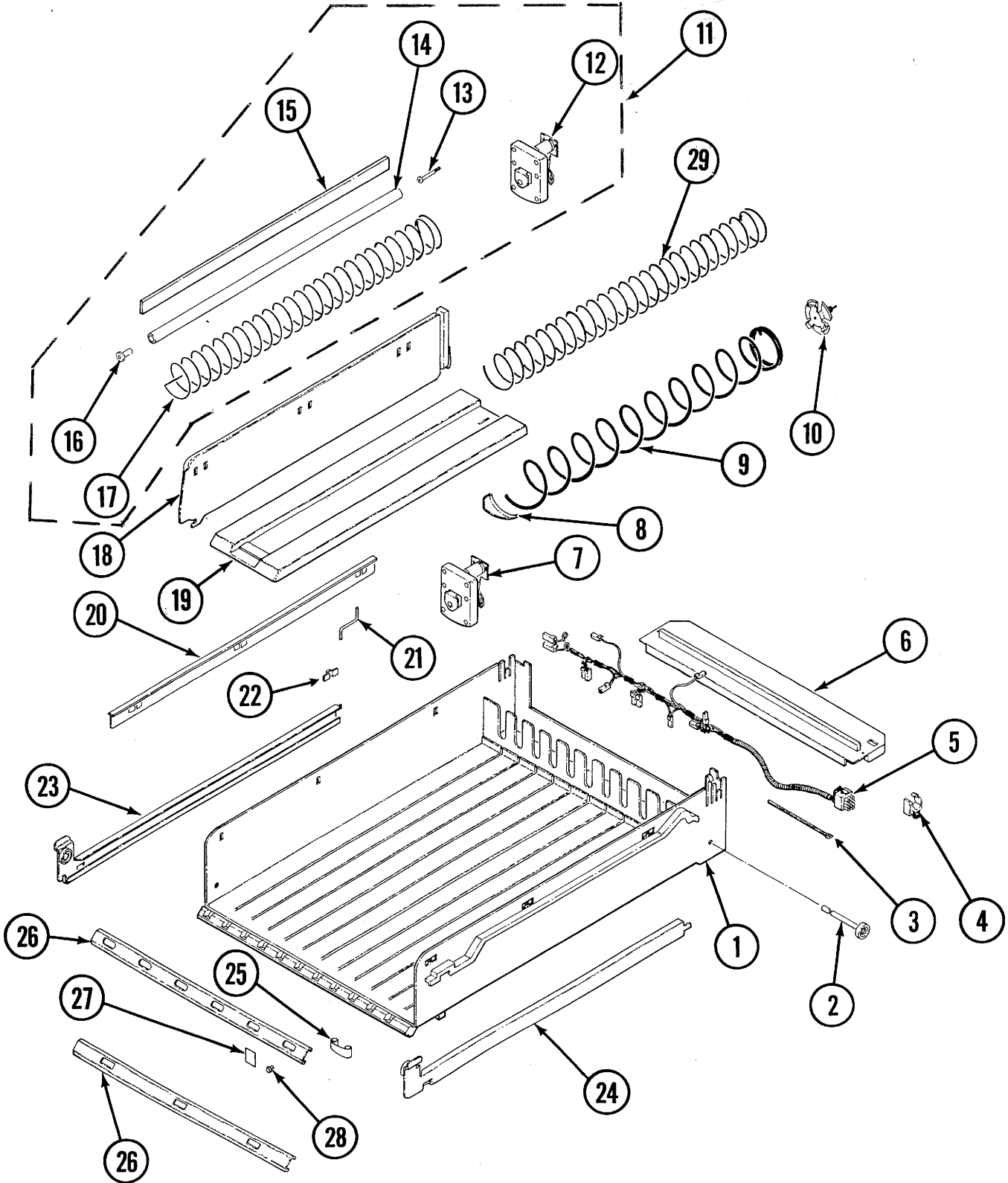
TRAY FINAL ASSEMBLY

ITEM	PART NUMBER	3053 QTY	3054 QTY	DESCRIPTION
	1212048-313 (A)	1		TRAY ASSY. 12 SEL SNACK (3053)
	1212048-302 (B,E)	2		TRAY ASSY. 12 SEL MEDIUM SNACK (3053)
	1212048-303 (C,D)	2		TRAY ASSY. 18 SEL SANDWICH SNACK (3053)
	1212048-314 (A)		1	TRAY ASSY. 12 SEL SNACK (3054)
	1212048-402 (B,C,F)		3	TRAY ASSY. 12 SEL MEDIUM SNACK (3054)
	1212048-403 (D,E)		2	TRAY ASSY. 18 SEL SANDWICH SNACK (3054)
1	4203275	1		PRODUCT TRAY 3053
"	4203276		1	PRODUCT TRAY 3054
2	4060670-004	2	2	TRAY ROLLER
3	4203509	1	1	CABLE TIE WRAP
4	4203468	1	1	HARNESS CLAMP
5	4203508-003	1		TRAY HARNESS 3053
"	4203508-004		1	TRAY HARNESS 3054
6	4203277-003	1		MOTOR COVER 3053
"	4203277-004		1	MOTOR COVER 3054
7	4034388	A/R	A/R	MOTOR - 24 VDC - 360°
8	4025748	A/R	A/R	PRODUCT PUSHER
9	4200272-040	A/R	A/R	LARGE SNACK HELIX - 12 CT
"	4200272-004	A/R	A/R	MEDIUM SNACK HELIX - 12 CT
10	4202015	A/R	A/R	HELIX HUB
11	1200137-147	A/R	A/R	SANDWICH SNACK 18 TO SPLIT HELIX 40 KIT
12	4034388-001	A/R	A/R	MOTOR - SPLIT HELIX 24 VDC - 180°
13	4200164-000	A/R	A/R	#8-32 x 1 1/4" SHOULDER SCREW
14	4202625-001	A/R	A/R	HELIX TUBE
15	4202624-001	A/R	A/R	GUM/MINT SPACER STRIP
16	4203101	A/R	A/R	END CAP
17	4202313-007	A/R	A/R	GUM/MINT SPLIT HELIX - 40 CT
18	4025797	A/R	A/R	PRODUCT DIVIDER
19	4200340	A/R	A/R	HELIX RETAINER (OPTIONAL)
20	8370660-5	A/R	A/R	PRODUCT SPACER (OPTIONAL)
21	8370998	A/R	A/R	SPACER SUPPORT (OPTIONAL)
22	4200281	A/R	A/R	SPRING CLIP (OPTIONAL)
23	1200321-002	1	1	TRAY RAIL - LEFT SIDE
24	1200321-003	1	1	TRAY RAIL - RIGHT SIDE
25	4203341	A/R	A/R	PRICE SCROLL
26	4203229-003	A/R		LABEL HOLDER 3053
"	4203229-004		A/R	LABEL HOLDER 3054
27	4203707	A/R	A/R	SELECTION IDENTIFICATION LABEL
28	4205749	A/R	A/R	BUMPER
29	4200272-001	A/R	A/R	CANDY/SNACK HELIX - 18 CT

A/R = As Required

COMPLETE CABINET ASSEMBLY
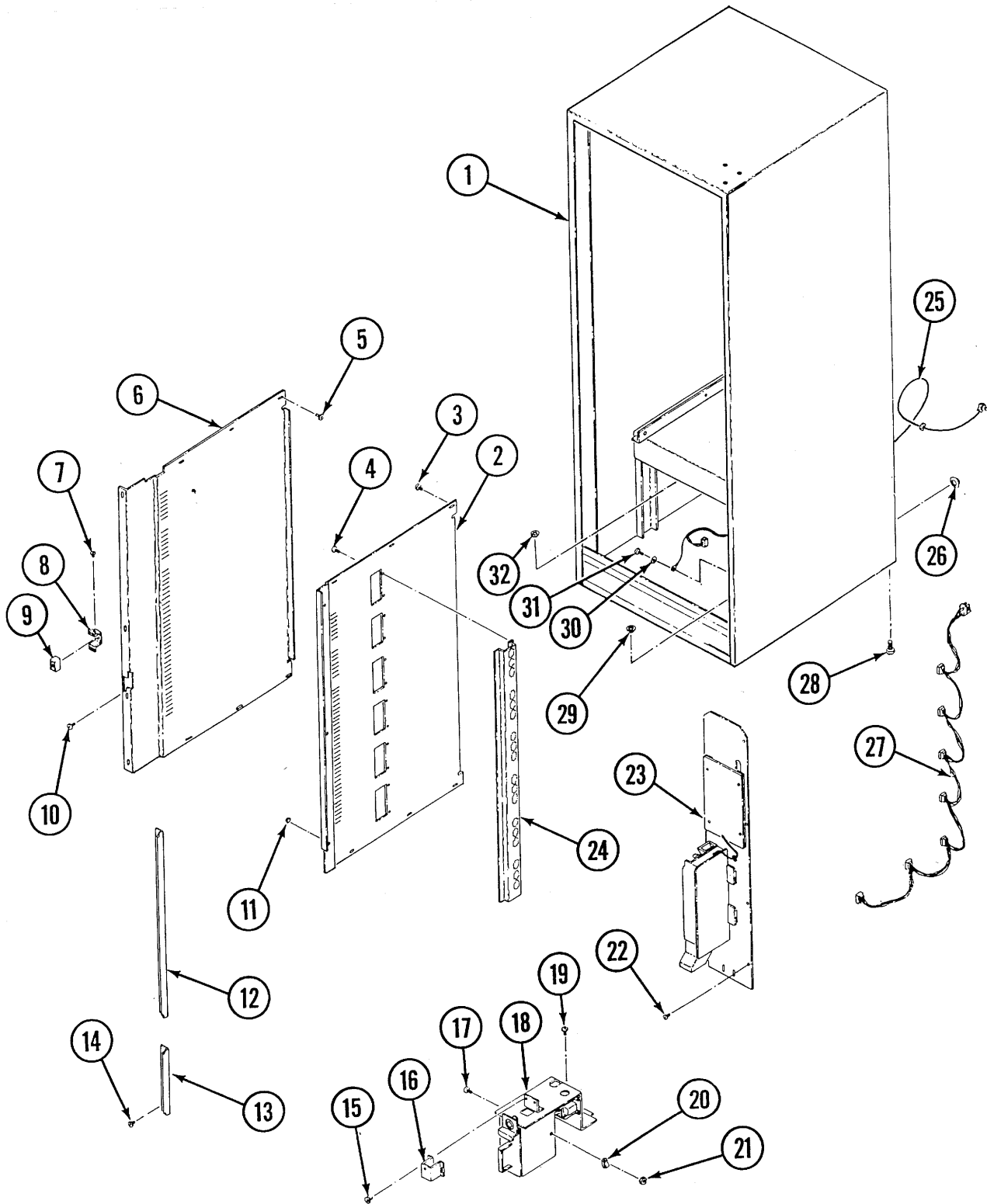
COMPLETE CABINET ASSEMBLY

ITEM	PART NUMBER	3053 QTY	3054 QTY	DESCRIPTION
	1214278-003	1`		COMPLETE CABINET ASSEMBLY 3053
	1214278-004		1	COMPLETE CABINET ASSEMBLY 3054
1	1211432-003	1		CABINET WELD ASSEMBLY 3053
"	1211432-004		1	CABINET WELD ASSEMBLY 3054
2	4203135-002	1	1	RIGHT SIDE PANEL
3	4050423	8	8	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
4	4050423	4	4	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
5	4050423	11	11	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
6	1212109-002	1	1	LEFT SIDE PANEL WELD ASSEMBLY
7	8800638	2	2	#10-16 x 3/8" PHIL PAN HD TYPE B SCREW
8	4203255	1	1	DOOR LOCK NUT BRACKET
9	4203634	1	1	DOOR LOCK NUT
10	4050423	2	2	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
11	7250135-001	3	3	1/2" HOLE PLUG
12	4203645-001	1	1	UPPER ANTI-CHEAT
13	4203645	1	1	LOWER ANTI-CHEAT
14	4050423	6	6	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
15	4050423	2	2	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
16	4203199	1	1	COIN BOX CHUTE
17	4050240	1	1	#8-32 x 3/8" PHL PAN HD M/SCREW
18	1214280	1	1	COIN BOX & POWER SUPPLY ASSY. (See Page 49)
19	4050423	1	1	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
20	4060116	1	1	HARNESS CLAMP
21	4050513	1	1	#8-32 WHIZ LOCK NUT
22	4050423	6	6	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
23	1214279	1	1	CONTROL PANEL ASSY. (See Page 45 & 46)
24	4203143	1	1	TRAY HARNESS RECEPTACLE CHANNEL
25	4203520	1	1	POWER CORD ASSEMBLY
26	7250135-007	1	1	2 1/4" HOLE PLUG
27	4203616	1	1	MAIN HARNESS
28	4060310	4	4	LEG LEVELER 1/2"-13 x 1 13/32"
29	7250135-003	8	8	3/4" HOLE PLUG
30	4050585	1	1	#8 EXT. TOOTH LOCKWASHER
31	4050423	1	1	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
32	7250135-000	2	2	1 3/8" HOLE PLUG
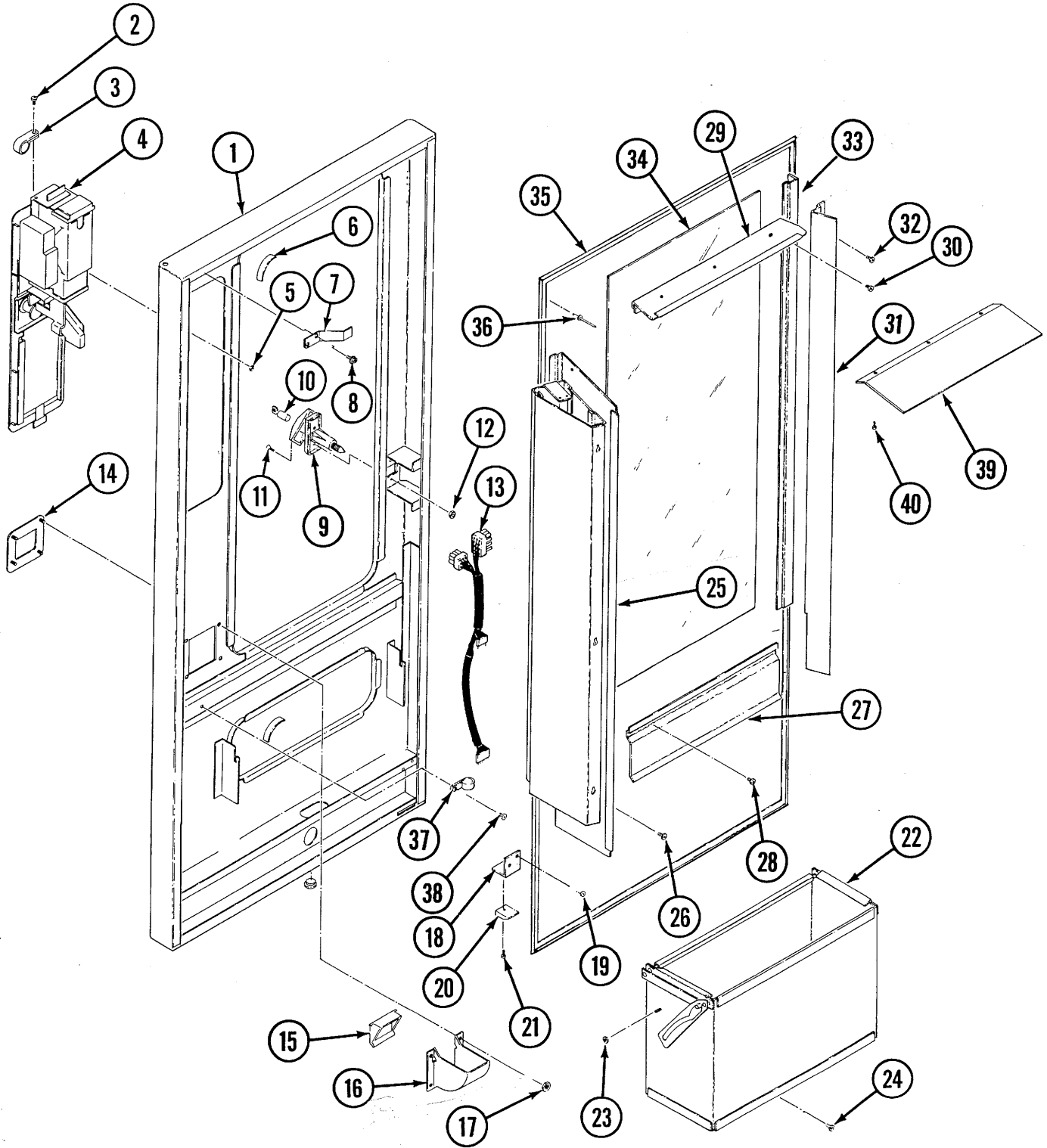
COMPLETE DOOR ASSEMBLY

ITEM	PART NUMBER	3053 QTY	3054 QTY	DESCRIPTION
	1214275-003	1		COMPLETE DOOR ASSEMBLY 3053
	1214275-004		1	COMPLETE DOOR ASSEMBLY 3054
1	1212026-003	1		DOOR WELD - 3053
"	1212026-004		1	DOOR WELD - 3054
2	4050423	1	1	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
3	8324099-6	1	1	1/2" HARNESS CLAMP
4	1214276	1	1	SELECTOR PANEL ASSEMBLY (See Page 47 & 48)
5	4050513	8	8	#8-32 TWIN WHIZ LOCK NUT
6	4203263	8	8	CORNER GASKET
7	4203592	1	1	POWER SWITCH ACTUATOR
8	4050423	2	2	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
9	4203486	1	1	LOCK HANDLE ASSEMBLY
10	4060328-051 thru 060	1	1	LOCK (NUMBERED LAN 51 THRU LAN 60)
11	4050338	2	2	#10-32 x 1/2" FLAT HD PHIL M/SCREW
12	4050495	2	2	TWO WAY LOCK NUT
13	4207897	1	1	DOOR HARNESS
14	4203209	1	1	COIN CUP BEZEL
15	4203208	1	1	COIN CUP DOOR
16	4203207	1	1	COIN CUP
17	4050747	4	4	1/4" HEX NUT
18	4203387	1	1	DOOR GLIDE BRACKET
19	4050423	2	2	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
20	4025610	1	1	DOOR GLIDE
21	4050423	1	1	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
22	1212040-003	1		DELIVERY BOX ASSY - 3053 (See Page 43)
"	1212040-004		1	DELIVERY BOX ASSY - 3054 (See Page 43)
23	4050513	2	2	#8-32 TWIN WHIZ LOCK NUT
24	4050423	3	3	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
25	1212034	1	1	COMPLETE DISPLAY LIGHT ASSEMBLY (See Page 50)
26	4050423	4	4	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
27	4203484-003	1		PRODUCT DEFLECTOR - 3053
"	4203484-004		1	PRODUCT DEFLECTOR -3054
28	4050423	3	3	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
29	4203479-003	1		TOP ANTI-CHEAT - 3053
"	4203479-004		1	TOP ANTI-CHEAT - 3054
30	4050423	4	4	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
31	4203485	1	1	LEFT PRODUCT DEFLECTOR
32	4050423	4	4	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
33	4203566	2	2	DISPLAY WINDOW RETAINER
34	4203478-003	1		DISPLAY WINDOW - 3053
"	4203478-004		1	DISPLAY WINDOW - 3054
35	4203466-003	1		GASKET - 3053
"	4203466-004		1	GASKET - 3054
36	4050667	31	33	POP RIVET
37	4060116	1	1	3/8" HARNESS CLAMP
38	4050423	1	1	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
39	4206399-005	1		PRODUCT DEFLECTOR - 3053
"	4206399-006		1	PRODUCT DEFLECTOR - 3054
40	4050423	3	3	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW

COMPLETE DELIVERY ASSEMBLY

PUSH
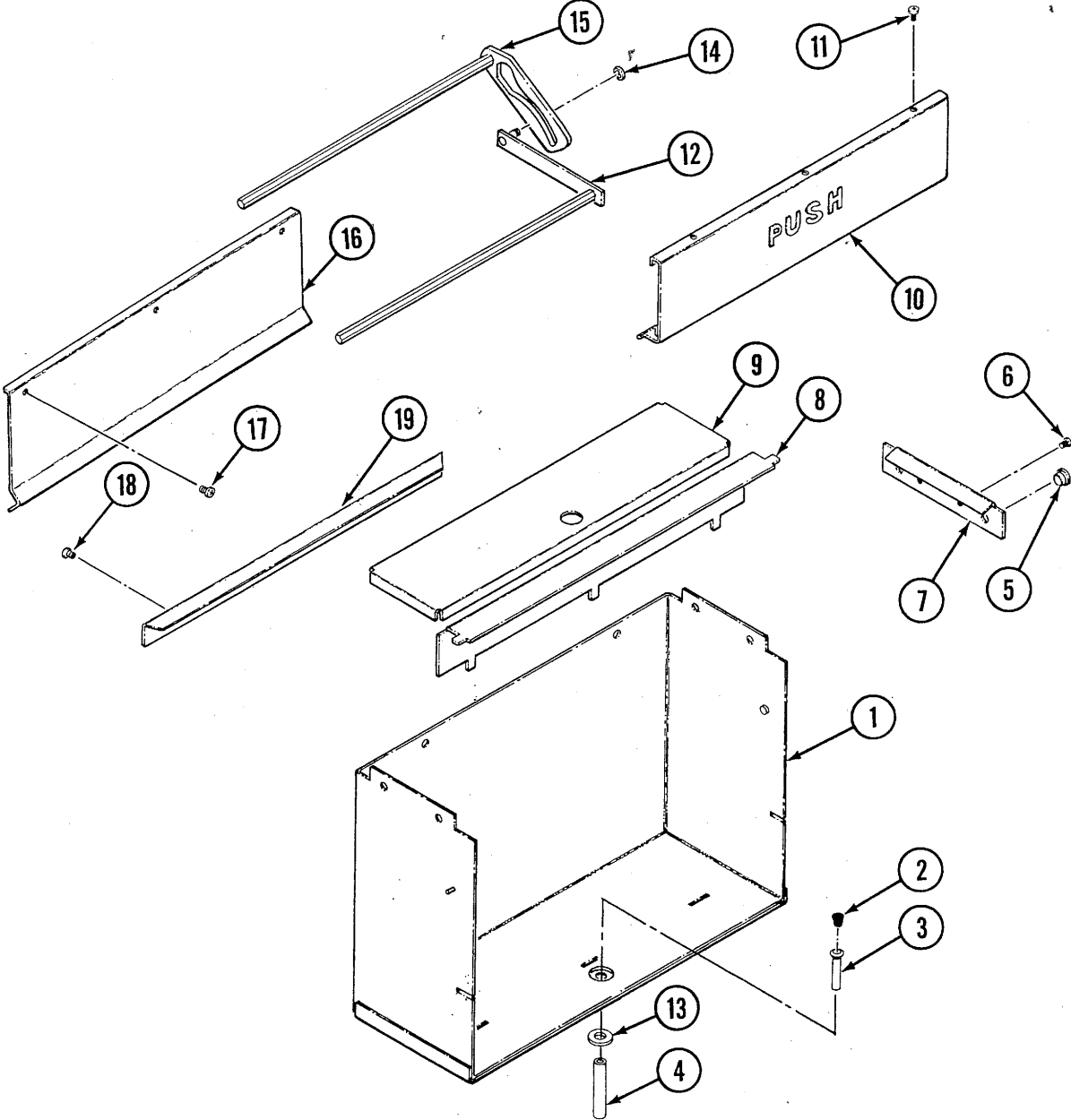
COMPLETE DELIVERY ASSEMBLY

ITEM	PART NUMBER	3053 QTY	3054 QTY	DESCRIPTION
	1212040-003	1		COMPLETE DELIVERY ASSEMBLY 3053
	1212040-004		1	COMPLETE DELIVERY ASSEMBLY 3054
1	1212037-003	1		DELIVERY WELD ASSEMBLY 3053
"	1212037-004		1	DELIVERY WELD ASSEMBLY 3054
2	4060411	1	1	SCREEN
3	4201887	1	1	SNAP IN DRAIN TUBE
4	4025409	1	1	3/8" MAYON TUBING, 4 IN.
5	4025263	4	4	SNAP-IN NYLINER TYPE 7
6	4050423	4	4	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
7	4203379	2	2	PRODUCT DEFLECTOR
8	4203377-003	1		DELIVERY FALSE BOX 3053
"	4203377-004		1	DELIVERY FALSE BOX 3054
9	4203406-003	1		DELIVERY LINER 3053
"	4203406-004		1	DELIVERY LINER 3054
10	1212041-003	1		DELIVERY DOOR WELD 3053
"	1212041-004		1	DELIVERY DOOR WELD 3054
11	4050239	3	3	#8-32 X 3/8" PHIL PH TYPE T SCREW
12	1212038-003	1		FOLLOWER WELD 3053
"	1212038-004		1	FOLLOWER WELD 3054
13	4202284	1	1	PUSH NUT, .500" DIA.
14	8801080	1	1	5/16" "E" RING RETAINER
15	1212039-003	1		CAM ROD WELD 3053
"	1212039-004		1	CAM ROD WELD 3054
16	4203373-003	1		DELIVERY ANTI-CHEAT 3053
"	4203373-004		1	DELIVERY ANTI-CHEAT 3054
17	4050239	3	3	#8-32 x 3/8" PHIL PH TYPE T
18	4050423	2	2	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
19	4203436-003	1		REAR DELIVERY DEFLECTOR 3053
"	4203436-004		1	REAR DELIVERY DEFLECTOR 3054

COMPLETE CONTROL PANEL ASSEMBLY
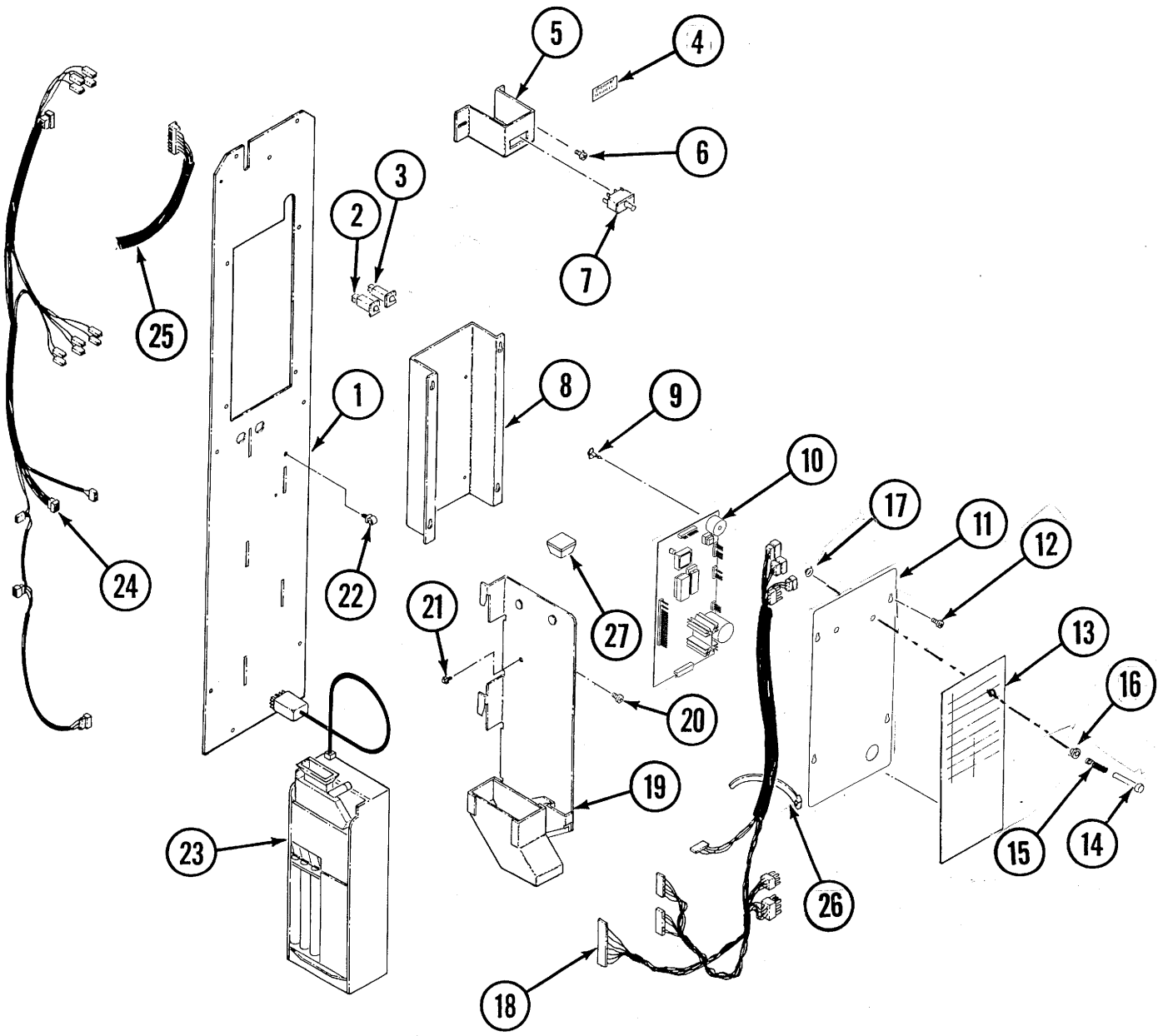
COMPLETE CONTROL PANEL ASSEMBLY

ITEM	PART NUMBER	3053 QTY	3054 QTY	DESCRIPTION
	1214279	1	1	COMPLETE CONTROL PANEL ASSEMBLY
1	4207900	1	1	CONTROL PANEL
2	4203467-003	1	1	CIRCUIT BREAKER 3 AMP
3	4203467-005	1	1	CIRCUIT BREAKER 5 AMP
4	4205057	1	1	VOLTAGE LABEL
5	4203591	1	1	POWER SWITCH BRACKET
6	4050423	1	1	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
7	4034309	1	1	POWER SWITCH
8	1214269	1	1	CONTROLLER MOUNTING BRACKET WELD
9	4025723	5	5	CIRCUIT BOARD STAND-OFF
10	4207895	1	1	CONTROL BOARD
11	4207896	1	1	CONTROLLER COVER
12	4050423	4	4	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
13	4207880	1	1	LABEL - CONTROLLER INSTRUCTION
14	4203144	1	1	SERVICE MODE BUTTON
15	4021017	1	1	SPRING
16	4203181	1	1	1/4" SNAP BUSHING
17	4203477	1	1	1/4" PUSH-ON NUT
18	4207899	1	1	CONTROL HARNESS
19	1212104	1	1	CHANGER MOUNTING BRACKET ASSEMBLY
20	4050423	1	1	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
21	4050423	1	1	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
22	4203468	1	1	HARNESS CLAMP
23	4200419-GX	1	1	COIN CHANGER - COINCO 9302GX
24	4207898	1	1	POWER HARNESS
25	4207902	1	1	DEX HARNESS
26	4203509	1	1	CABLE TIE
27	4200238	1	1	SELF ADHESIVE FEET

COMPLETE SELECTOR PANEL
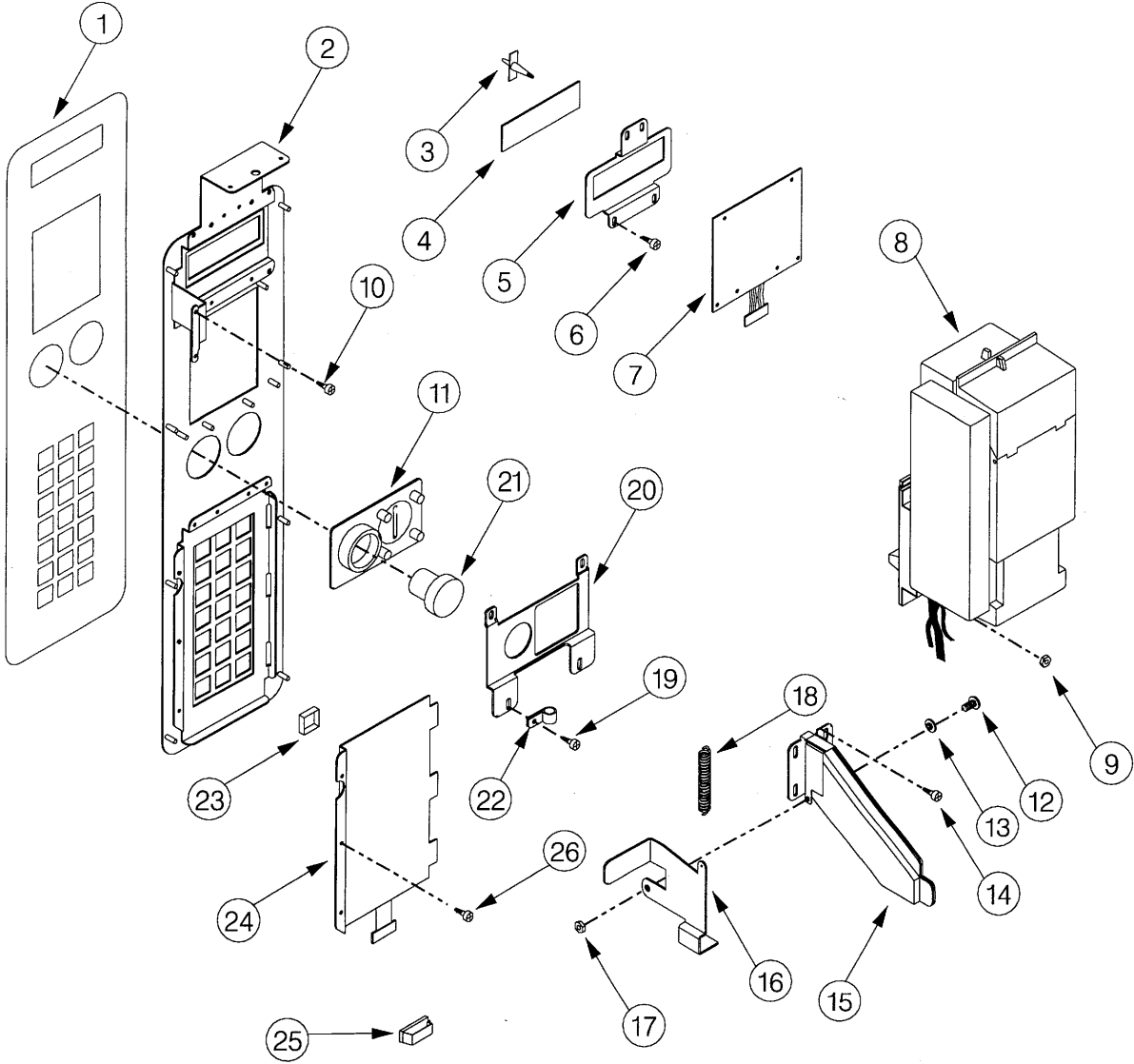
COMPLETE SELECTOR PANEL ASSEMBLY

ITEM	PART NUMBER	3053 QTY	3054 QTY	DESCRIPTION
	1214276	1	1	COMPLETE SELECTOR PANEL ASSEMBLY
1	4207605	1	1	SELECTOR PANEL DECAL
2	1214152-002	1	1	SELECTOR PANEL WELD
3	4025723	4	4	CIRCUIT BOARD STAND-OFF
4	4200659	1	1	READOUT WINDOW
5	4207312-001	1	1	READOUT WINDOW RETAINER
6	4050423	4	4	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
7	4200660	1	1	CREDIT DISPLAY
8	4205536-124	1	1	VALIDATOR - COINCO BA32SA
9	8800956	6	6	#8-32 HEX NUT W/ETW
10	4050423	2	2	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
11	4203186	1	1	COIN INSERT/COIN RETURN MOLDING
12	4050240	1	1	#8-32 x 3/8" PHIL PAN HD TYPE AB SCREW
13	4030100	1	1	BUSHING - SPACER
14	4050423	4	4	#8-18 X 3/8" PHIL PAN HD TYPE AB SCREW
15	1212030	1	1	COIN INSERT WELD
16	4203191	1	1	COIN RETURN LEVER
17	4050511	1	1	NUT - #8-32 TWO WAY LOCK
18	8376074	1	1	SPRING
19	4050423	2	2	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
20	4207279-001	1	1	COIN INSERT RETAINER
21	4203187	1	1	COIN RETURN BUTTON
22	4060116	1	1	3/8" WIRE CLAMP
23	4025741	21	21	PUSH BUTTON
24	1214277	1	1	KEYPAD ASSEMBLY
25	4203696	1	1	RIBBON CABLE CLAMP
26	4050423	3	3	#8-28 x 3/8" PHIL PAN HD TYPE AB SCREW

COIN BOX & POWER SUPPLY ASSY
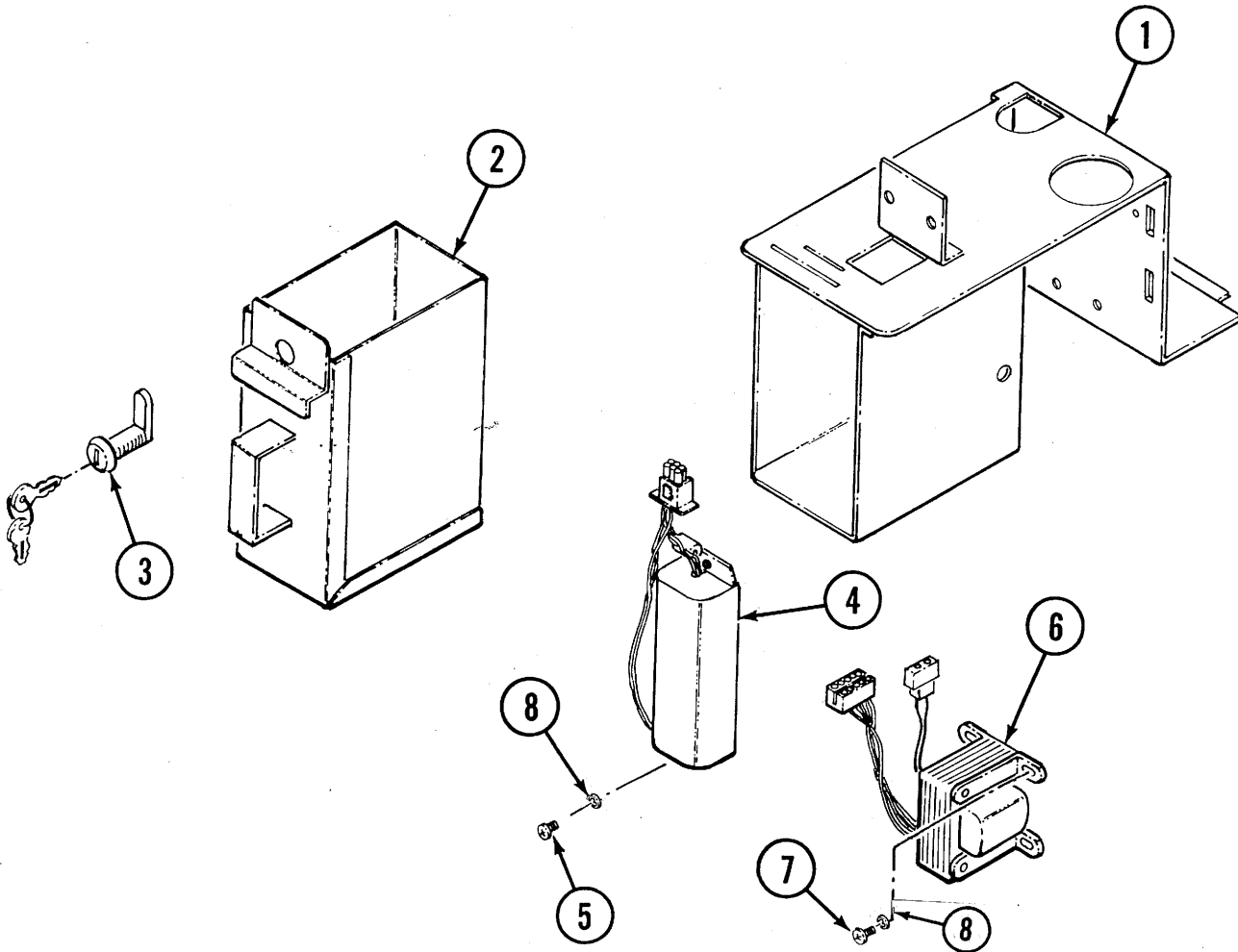
ITEM	PART NUMBER	3053 QTY	3054 QTY	DESCRIPTION
	1214280	1	1	COMPLETE COIN BOX - POWER SUPPLY ASSY
1	1211449	1	1	COIN BOX MOUNT WELD ASSEMBLY
2	1211448	1	1	COIN BOX WELD ASSEMBLY
3	4060318	1	1	COIN BOX LOCK
4	4203625	1	1	BALLAST ASSEMBLY
5	4050423	1	1	#8-18 x 3/8" PAN HD TYPE AB SCREW
6	4206570-000	1	1	TRANSFORMER
7	4050423	2	2	#8-18 x 3/8" PAN HD TYPE AB SCREW
8	4050585	3	3	#8 EXT TOOTH LOCKWASHER

COMPLETE DISPLAY LAMP ASSEMBLY
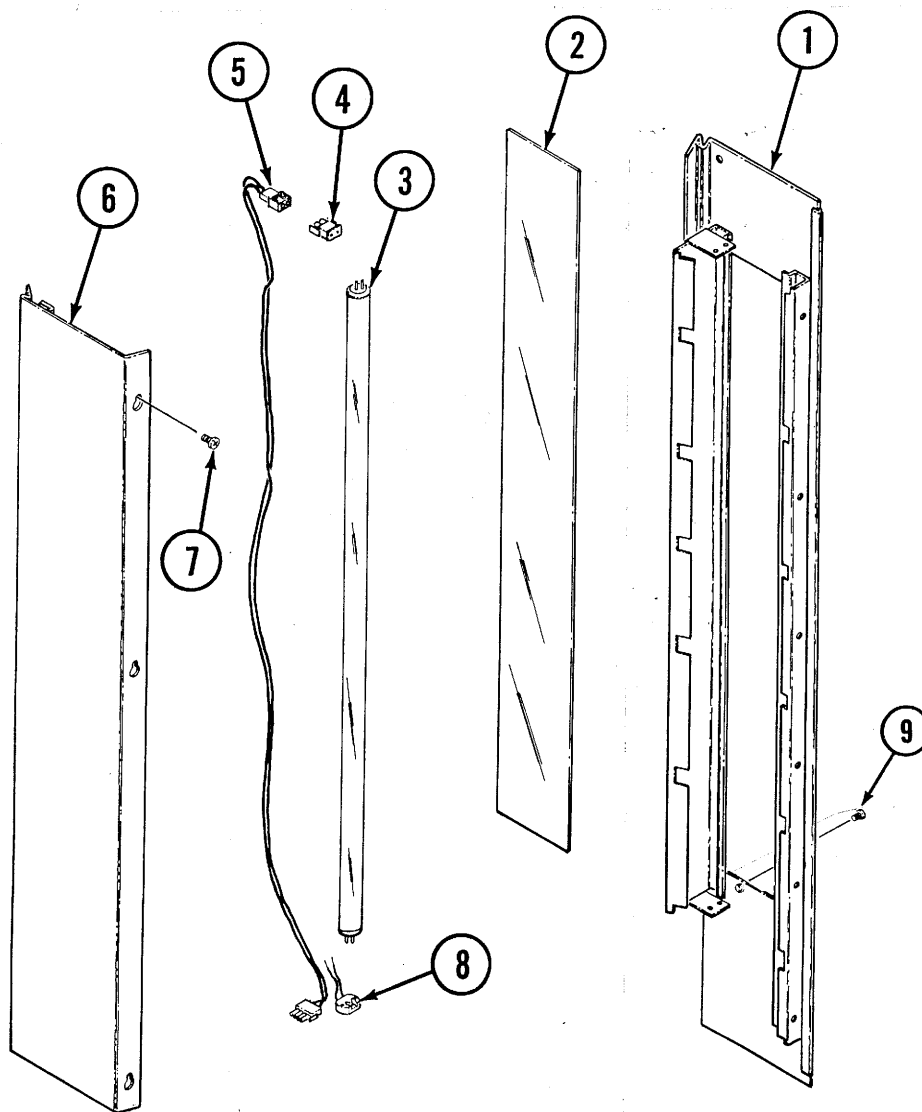
ITEM	PART NUMBER	3053 QTY	3054 QTY	DESCRIPTION
	1212034	1	1	LIGHT ASSEMBLY - COMPLETE
1	1211462-002	1	1	LIGHT BRACKET WELD ASSEMBLY
2	4203464	1	1	LIGHT DIFFUSER
3	4203131	1	1	FLUORESCENT LAMP F30T12
4	4203682	1	1	LIGHT PLUG
5	4203465	1	1	LAMP ASSEMBLY HARNESS
6	4203463	1	1	LIGHT REFLECTOR
7	4050423	3	3	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW
8	4203637	2	2	LIGHT HOLDER
9	4050423	1	1	#8-18 x 3/8" PHIL PAN HD TYPE AB SCREW

NOTES: