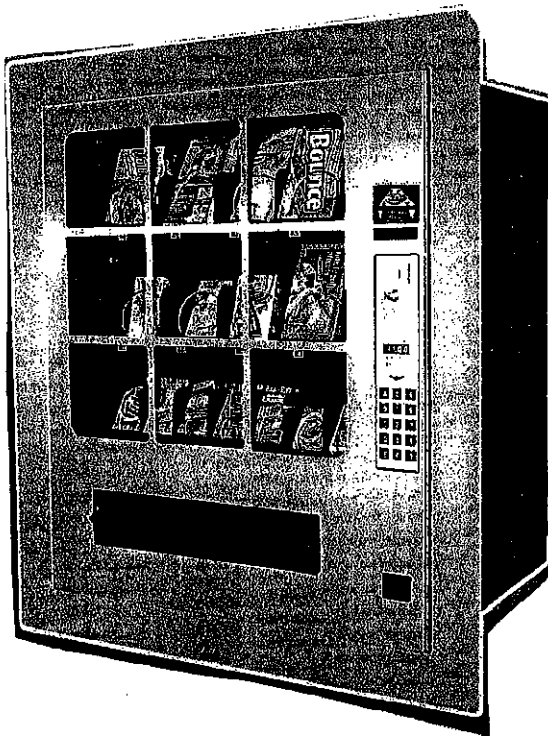


# INSTRUCTION MANUAL FOR

## LM18MDBRL & LM30MDBRL WITH MDB3 Controller



**R**ADDATZ  
**P**RODUCT  
**D**EVELOPMENT  
**Corp**

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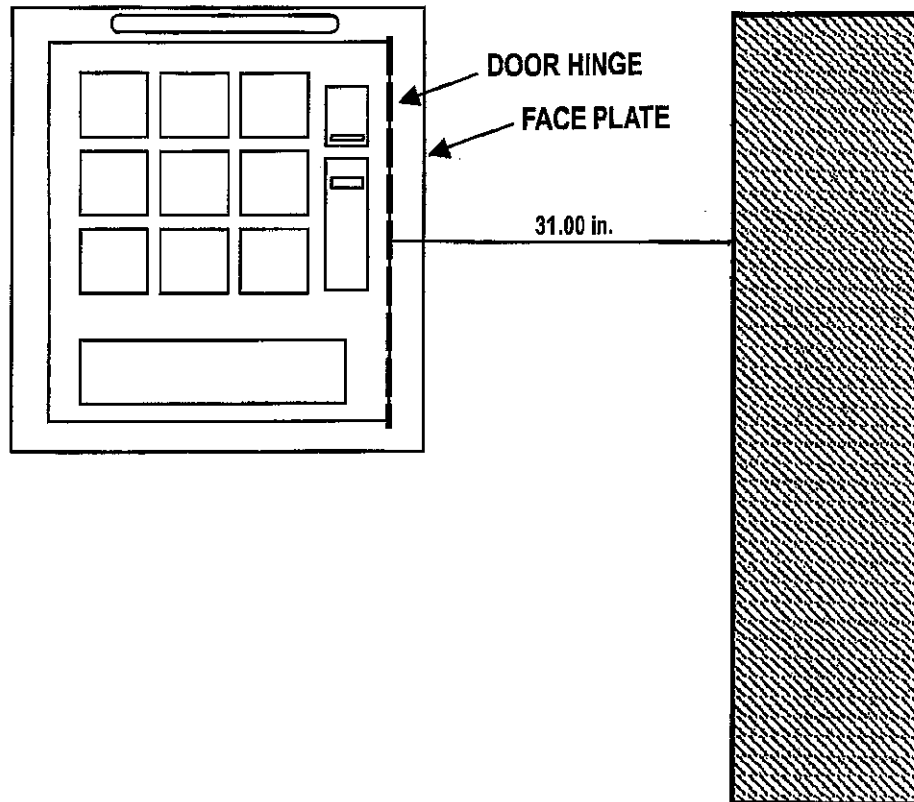
# INSTRUCTION MANUAL FOR LM18MDBRL & LM30MDBRL WITH MDB3 CONTROLLER

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# LM18MDBRL WALL INSTALLATION INSTRUCTIONS



**ON THE VENDOR'S RIGHT SIDE  
YOU MUST ALLOW 31 INCHES FROM CABINET  
TO A WALL, POST OR OTHER EQUIPMENT EXTENDING  
MORE THAN 2 INCHES FROM WALL FACE.  
FAILURE TO COMPLY WILL RESULT IN THE BLOCKAGE OF  
THE VENDOR DOOR FROM OPENING ENOUGH TO ALLOW  
ACCESS TO THE CHANGER AND VAULT.**

## WARRANTY

RPD Corporation warrants this vendor, manufactured by it, to be free from defects in material or workmanship under normal use. Our obligation under this warranty is to the purchaser only and is limited to making good at our factory any part or parts thereof which shall, within one (1) year after delivery of such product to the original purchaser, be returned to us or to our authorized dealer or distributor from whom purchased with all transportation charges prepaid to our factory, and which our examination shall disclose to our satisfaction to have been defective.

This warranty does not extend: **1)** to any of our products which have been subjected to misuse, neglect, accident, incorrect wiring, improper installation, or to use in violation of instructions furnished by us; **2)** To units which have been repaired or altered outside of our factory; **3)** To cases where the serial number of the product has been removed, defaced or changed; **4)** To electrical components, lamps, tubes or circuit breakers; **5)** To accessories not of our own manufacture used with our products. Any part manufactured by RPD Corporation, found by us to be defective within the warranty period will be exchanged by RPD Corporation or their authorized dealer or distributor without charge to the owner.

This warranty applied only to our products which are used within the United States of America, and is in lieu of all warranties expressed or implied, including, but not limited to implied warranties of merchantability or fitness for a particular purpose, and no representative or person is authorized to assume for us any other liability in connection with the sale of our products.

RPD Corporation reserves the right to make any changes or improvements in its products without notice and without obligation and without being required to make corresponding changes or improvements in product theretofore manufactured or sold.

RPD Corporation  
1790 S. Amity Rd.  
Conway, AR 72032

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## IMPORTANT NOTICES

- When the unit is being installed it must be securely fastened to wall with the enclosed mounting brackets. When installing the unit be sure to caulk the flange to stop water penetration. An awning would be advised.
- Disconnect power before connection or disconnecting the changer, dollar bill acceptor, electronic controller or any other electrical device.
- Vendor must be protected from lightning; electrical surge protection must be provided at the wall outlet.
- Inspect the unit immediately upon receipt for freight damage. Claims must be made to the freight carrier.
- A plastic bag on the back of the machine contains price tabs, spiral end pushers, lock tab, lock bracket, spring, flat washer, shoulder bolt, 6 screws with 6 washers to install wall mounts and manual.
- Make sure to record your key number so if you lose your keys, you can replace them. Manufacturer does not keep track of key numbers.
- This machine does NOT have the Drop Detect feature installed. DO NOT turn on the option as it will disable product vend.
- Only load coins in the changer through the TUBE LOAD function (see page 15) or a series of vends.

---

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## FRONT AND REAR LOADING VENDOR

This vendor is designed to allow you access to the product and cash from the front or back; however, you must open the front to load change into the changer or to perform repairs to the changer or bill acceptor.

### Loading Product

Loading your products can be done from either side. The front door of the vendor can remain shut and locked when loading from the rear.

Loading from front: Lift tray and pull toward you until it stops and then tilt the tray down slowly, [reverse order to return shelf].

Loading from rear: [same as above] plus after loading, push shelf in forward until it stops. Note: There are wiring harnesses connected to each tray. It may be necessary to move each harness so binding will not occur during loading of product.

If you load your stock from the front, the harnesses should be hanging in the open space behind the changer [left side looking from the back].

If you load your stock from the rear, the harnesses should be hanging over the back of the trays between the trays and the rear panel coming from the bottom of the cabinet. Cash Access: This can be performed from the front or rear of the vendor.

**Front:** Unlock the lock bar from the rear of the vendor, open the front door, disengage the lock bar and open door fully, slide the changer assembly out until it stops, remove the money, push the slide lock button and slide assembly back into the vendor, close the door and attach the locking bar to the door, close door completely, lock the bar at the rear of the vendor.

**Rear:** Pull rear vendor panel off, reach in and remove the bill stacker, remove the money and reinstall stacker, remove the coin tray, stop [push stop forward then pull up], slide coin box back and remove coins, reinstall coin box and push towards front of vendor, reinstall coin box stop into slot, reinstall rear panel.

## FRONT LOCK [OPTIONAL]

The front option is equipped with two round shackless locks. Record your key numbers and keep them in a safe place. New keys can be provided if you have the key numbers.

# OPERATION GUIDE MDB3 CONTROLLER

## CONTROL SETUP AND OPERATION

Press *mode* switch once to enter service mode.  
Then press appropriate button on door front selection pad.

## COIN DISPENSE

Press 1 - (Display will show "Coin")  
Press 1 to dispense lowest value coin.  
Press 2 to dispense next value coin.  
Press 3 to dispense next value coin.  
Press 4 to dispense next value coin.  
Press 6 to EXIT FUNCTION.

## PRICE SETTING

Press 3 - (Display will show PRC)  
Press 1 to set single selection.  
Press Selection - Press 8 to increase price, press 9 to decrease price, press 2 to set row prices.  
Press Row letter, adjust price by pressing 8 or 9.  
Press 6 to EXIT FUNCTION.

## VEND OPTIONS

Press 5 - (Display will show "opt")  
Press 0 for Forced Vend - FOy (yes) or FOn (no). Press 0 to change setting.  
Press 1 for BILL ESCROW - ESy (yes) or ESn (no). Press 1 to change setting.  
Press 2 for MULTI-VEND - ULy (yes) or ULn (no). Press 2 to change setting.  
Press 3 for DROP-DETECT - ddy (yes) or ddn (no). Press 3 to change setting.  
Press 6 to EXIT FUNCTION.

## TUBE LOAD FUNCTION

Coins can be added to the change tubes by passing the vend cycle with this function.  
ALL COINS MUST BE LOADED THROUGH THE ACCEPTOR.

Press 7 to enter. "t-Ld" will be displayed.  
Load lowest value coins first. The coin count and value will be displayed.  
Load the next value coins.  
The coin count and value will be displayed.  
Repeat process until all coins are loaded.  
Press 6 to EXIT FUNCTION.

## MOTOR TEST FUNCTION

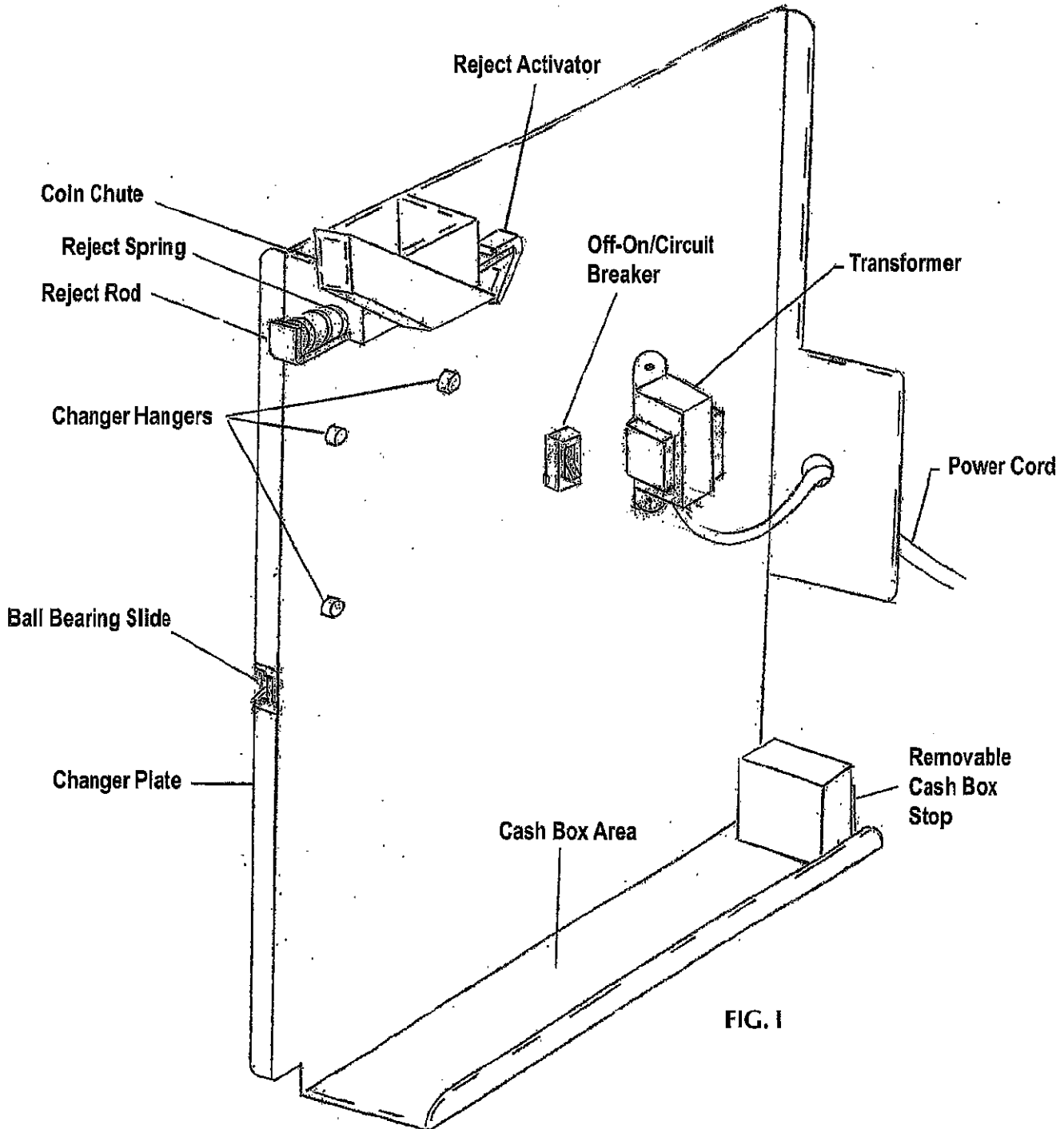
Press 4 to enter. "TEST" will be displayed.  
Press 1 to read valid motor count.  
Press 2 to vend a single selection. "ONE" will be displayed until a selection is pressed.  
Repeat this process for each selection to be tested. Press 3 to test a row of motors.  
"ro" will display until a row letter is pushed (A, B, etc.).  
Press 4 to test all motors in the machine.  
Press 6 to EXIT FUNCTION.

## EXIT SERVICE MODE

Press mode button or wait 30 seconds. A detailed outline of all functions is located on pages 14-15.

**II. INSTALLING THE CHANGER [If not equipped]  
CAUTION: DO NOT PLUG IN OR UNPLUG THE CHANGER  
OR BILL ACCEPTOR WHILE THE POWER IS ON!**

To install the changer, slide the changer plate out until it stops (See FIG. 1). Make sure the retainer nuts are mounted on the two changer mounting studs with enough gaps for the changer back. Now place the changer on the mounting studs. Complete the installation by plugging the connector from the changer into the MDB harness connector (FIG. 1).





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The Bill Acceptor is mounted to the back of the LM18 and LM30 front doors on plastic standoffs and 6-32 screws.

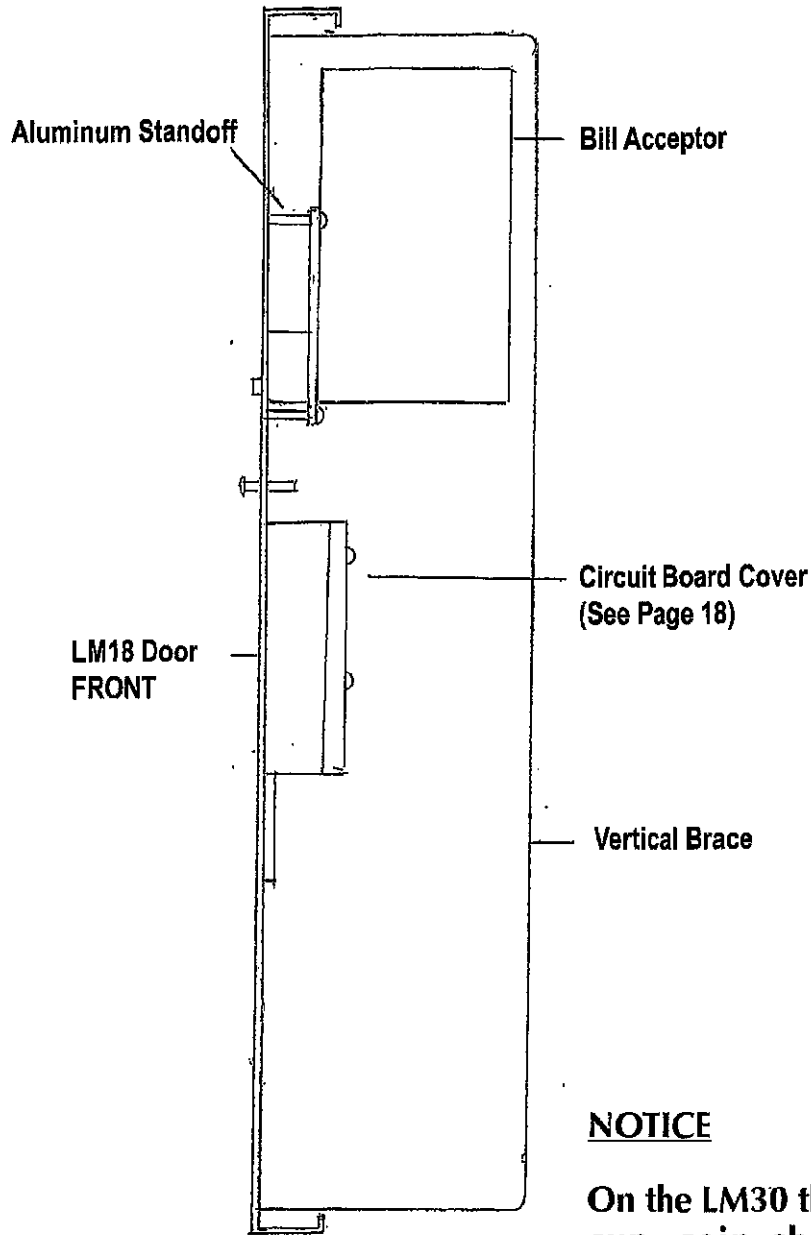


FIG. II

**NOTICE**

On the LM30 the changer, coin return cup, coin chute and reject lever are securely mounted to the vertical brace. There is no sliding changer plate.

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### III. ELECTRICAL POWER

Plug your LM18MDBRL into an approved 115 VAC outlet which has a safety ground. Surge protection must be provided at the wall outlet.

### IV. CIRCUIT BREAKER AND TRANSFORMER

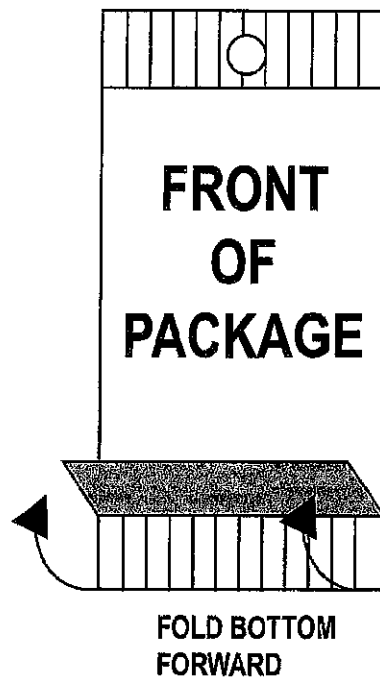
Your LM18MDBRL converts 115 VAC power [230 VAC for export machines] from the wall socket to its operation voltage of 24 VAC with a step down transformer. It is located in the power box [See FIG. I on page 6].

### V. PRODUCT LOADING NOTICE

Some "Soft" packaging, like Armor-All, Rain-X Packet, Wet Towels, etc. needs to be folded for proper vending.

See diagram below for example.

**CONTINUE TO SECTIONS VI - XXIII FOR MORE IMPORTANT INFORMATION**



## VI. LOADING THE PRODUCT

NOTICE: To get a good vend, it is important that each product is loaded properly. The bottom of the product must rest on the vend tray and not on the auger (See FIG. III).

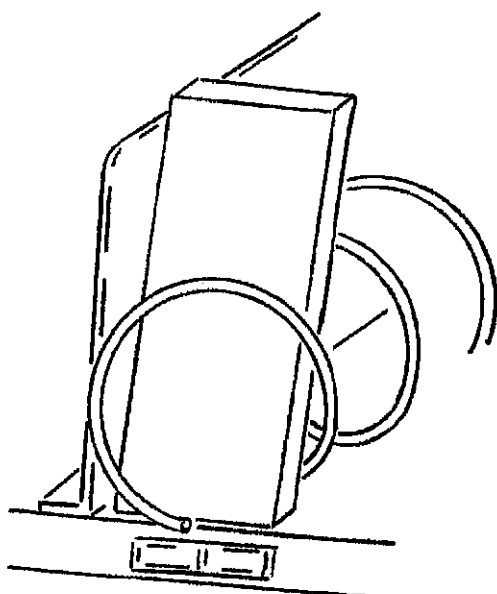
NOTICE: Never force the product between the spirals of the auger. If the product is too tight, use the next larger auger.

NOTICE: Be sure the end of the auger extends to or slightly beyond the end of the vend tray. **End of auger should be in 3 o'clock position.** The LM18MDBRL is already pre-set from the factory to vend products that come in the starter pack. If you are vending items other than what is in the starter pack, you will have to adjust the spiral position to find what position gives the most consistent vend. To do this, simply pull the back of the spiral hub out and turn the spiral to desired position, and push the spiral hub back into the motor.

To load the product, unlatch the tray (Section VI) and pull it forward. When the rear stop is engaged, lower the front of the tray. You are now ready to load the product. Never load more than one tray at a time.

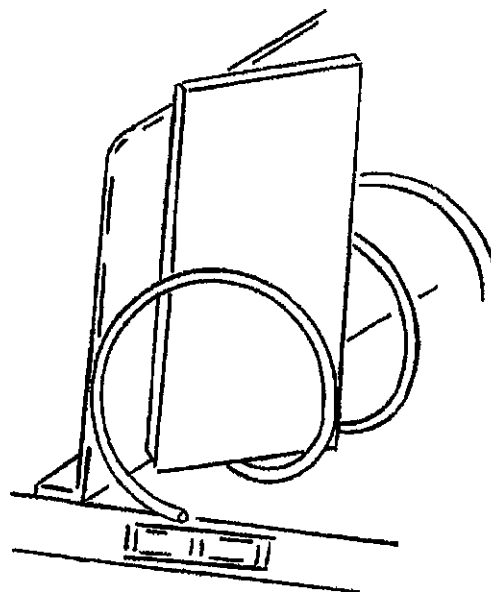
After the tray is loaded, lift its front and push it home. Be sure to reset the tray latch.

The top tray in the LM18MDBRL has been lowered to provide more space for taller products.



**RIGHT**

**FIG. III**

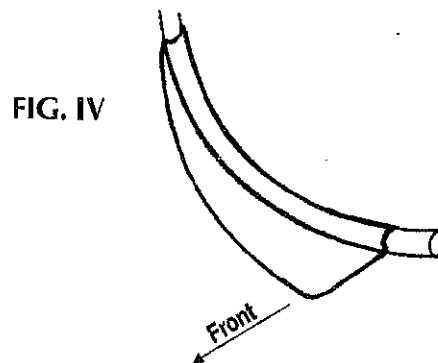


**WRONG**

## VII. PRODUCT PUSHERS

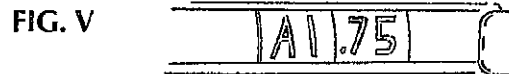
To get a good vend, the end of the vend auger must extend to or slightly past the edge of the tray. This insures that the product will be pushed completely off the tray.

To increase the length of the auger, a plastic product pusher can be snapped on the end as shown in FIG. IV. A supply of product pushers is in the plastic envelope.



## VIII. PRICE TABS

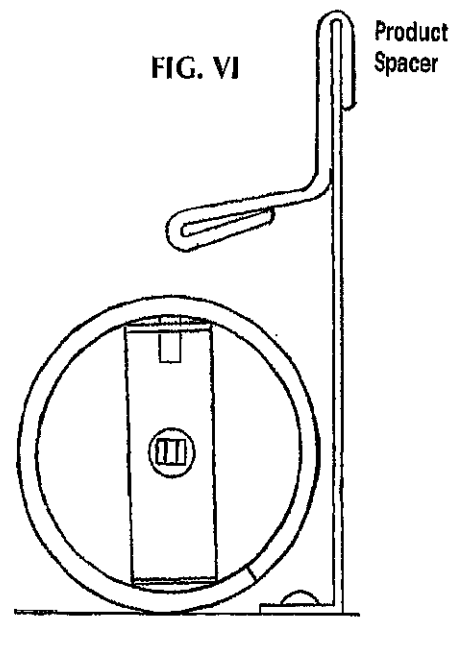
In the plastic envelope you will find a card of price tabs. Peel off the appropriate price, place on shelf as shown in FIG. V.



## IX. PRODUCT SPACER

Each LM18MDBRL is supplied with 2 product spacers. These are used to position thin products to the left and hold them upright.

The product spacers are mounted as shown in FIG. VI. Make sure it does not interfere with the rotation of the auger hub.



## X. MDB CONTROLLER DESCRIPTION

The MDB Controller is designed for years of service and features the industry's longest warranty.

The board contains the LED display and control system in one compact package.

See FIG. VII for mode switch and harness connector locations.

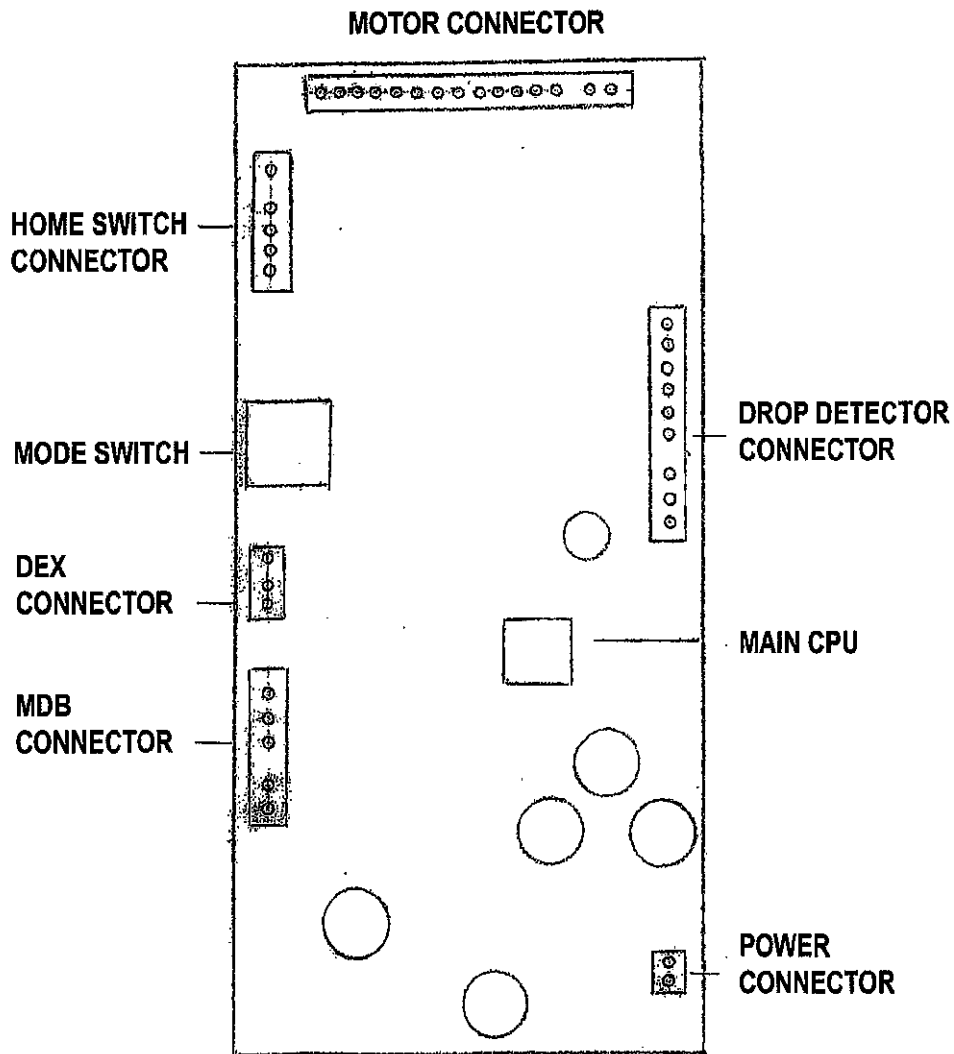


FIG. VII

## **XI. MDB3 CONTROLLER OPERATION**

The electronic controller functions as the brain of your LM18MDB and has the following operating characteristics:

1. At power up the controller configures the vendor according to what is hooked up, ie: motors, changer, bill acceptor, card reader and drop detect system.

If only the bill acceptor is detected, prices can only be set in one dollar units.

2. The changer will not accept coins when:

- A. the top vend price has been reached,
- B. the changer has no power or,
- C. the machine is in vend cycle.

3. The "EXACT CHANGE" light will be lit when there is insufficient change in the coin tubes. During this time, change will not be given. The MDB electronics does not check coin levels in the tubes. It counts coins accepted and coins paid out.

4. The LED credit display will show the total amount of money deposited. If the selection price is greater than the deposits, the display will flash "CHECK PRICE."

5. The bill acceptor will not take bills if:

- A. the top vend price has been reached,
- B. there are insufficient coins in the change tubes,
- C. the unit has no power,
- D. the machine is in vend cycle or,
- E. the bill stacker is full.

6. The controller provides DEX and MDB3 for the card reader systems you selected. Consult the system provider for operation details.

7. If a drop detect unit is installed and the option is turned on, product delivery to the customer is confirmed. If no product is detected:

- A. The vend motor homes and credit remains. Selection can be tried again.
- B. The drop detect unit will sense product up to 5 seconds after motor homed for late drops.

NOTE: If the drop detect options is on and no unit is installed, the vendor will not operate.

8. Selection is made by first pressing the letter (A, B, C, etc.) and then the number of the desired item. If no credit has been established, the item's price will be flashed on the display.

## **XI. MDB CONTROLLER OPERATION (Continued)**

9. If a vend motor fails to make a complete turn, "MAKE ALTERNATE SELECTION" will flash on the display.

10. The electronic controller can be programmed to do the following:

- A. FORCED VEND on or off. This feature insures the vendor will not be used as a bill changer. (On is Standard Setting.)
- B. BILL ESCROW on or off. This feature returns the last bill inserted instead of change if a selection is not made. (Off is Standard Setting.)
- C. MULTI-VEND on or off. This feature allows a customer to buy multiple items up to the amount of the deposit. Change is returned when the reject button is pressed. (Off is Standard Setting.)
- D. DROP DETECT on or off. This option validates product delivery to customer if installed.

## **XII. MDB CONTROLLER PROGRAMMING**

## **(MDB3 CONTROLLER)**

To dispense coins from the changer, access accounting registers, set vend prices, test motors, and select vend options, you must enter the SERVICE MODE.

Press the MODE button on the controller to enter SERVICE MODE.  
"SET" will be displayed.

Press 1 to enter COIN DISPENSING function.

Press 2 to enter ACCOUNTING function.

Press 3 to enter PRICE SETTING function.

Press 4 to enter MOTOR TEST function.

Press 5 to enter VEND OPTIONS function.

To return to SALES MODE, press the MODE button or wait 30 seconds with no activity.

### **A. COIN DISPENSING FUNCTION**

Press 1 to enter. "Coin" will be displayed.

Press 1 again to dispense lowest coin value. The coin value will be displayed.

Press 2 to dispense next coin. The coin value will be displayed.

Press 3 to dispense next coin. The coin value will be displayed.

Press 4 to dispense next coin. The coin value will be displayed.

Press 6 to EXIT FUNCTION.

### **B. ACCOUNTING FUNCTION**

Press 2 to enter. "ACCT" will be displayed.

Press 1 to read total vend counter. "SALE" will display 1 second, then the total non-resettable vend count will appear.

Press 2 to read total cash counter. "CASH" will display, then the total non-resettable cash count will appear.

Press 3 to read resettable vend counter. "r SLE" will be displayed, then the total vends since last reset will appear.

Press 4 to read resettable cash counter. "r CSH" will be displayed, then the total cash taken since last reset will appear.

Press 5 to clear resettable counters.

Press 6 to EXIT FUNCTION.

### **C. PRICE SETTING FUNCTION**

Press 3 to enter. "PrC" will be displayed.

Press 1 to set a single selection price. "ONE" will be displayed until a valid selection is pressed. Then the selection's price will appear. Press 8 to increase the price and 9 to decrease it.



Repeat this process for each selection to be priced.  
Press 2 to set a total row of prices, "ro" will be displayed until a row letter is pushed (A, B, C, etc.). Then the current price will be displayed. Press 8 or 9 to adjust the price.  
Press 6 to EXIT FUNCTION.

D. MOTOR TEST FUNCTION

Press 4 to enter. "TEST" will be displayed.  
Press 1 to read valid motor count.  
Press 2 to vend a single selection. "ONE" will be displayed until a selection is pressed. Repeat this process for each selection to be tested. Press 3 to test a row of motors. "ro" will display until a row letter is pushed (A, B, etc.).  
Press 4 to test all motors in the machine.  
Press 6 to EXIT FUNCTION.

E. VEND OPTIONS FUNCTION

Press 5 to enter. "oPt" will be displayed. Press 0 for FORCED VEND on or off. Display will show FOy (yes) or FOn (no). Press 0 again to change setting.

Press 1 for BILL ESCROW on or off. Display will show ESy (yes) or ESn (no). Press 1 again to change setting.

Press 2 for MULTI-VEND on or off. Display will show ULy (yes) or ULn (no). Press 2 again to change setting.

Press 3 for DROP-DETECT on or off. Display will show ddy (yes) or ddn (no). Press 3 again to change setting.

Press 6 to EXIT FUNCTION.

F. TUBE LOAD FUNCTION

Coins can be added to the change tubes by passing the vend cycle with this function.

ALL COINS MUST BE LOADED THROUGH THE ACCEPTOR.

Press 7 to enter. "t-Ld" will be displayed.

Load lowest value coins first. The coin count and value will be displayed.

Load the next lowest coins. The coin count and value will be displayed. Repeat process until all coins are loaded.

Press 6 to EXIT FUNCTION.

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### XIII. Changing Spirals

- 1 - Push the spiral tail into the "Spiral Holder" (see Fig. VIII).
- 2 - Secure the spiral in the holder with the "Plastic Retainer."
- 3 - Push the "Spiral Holder" into the motor's star drive gear.

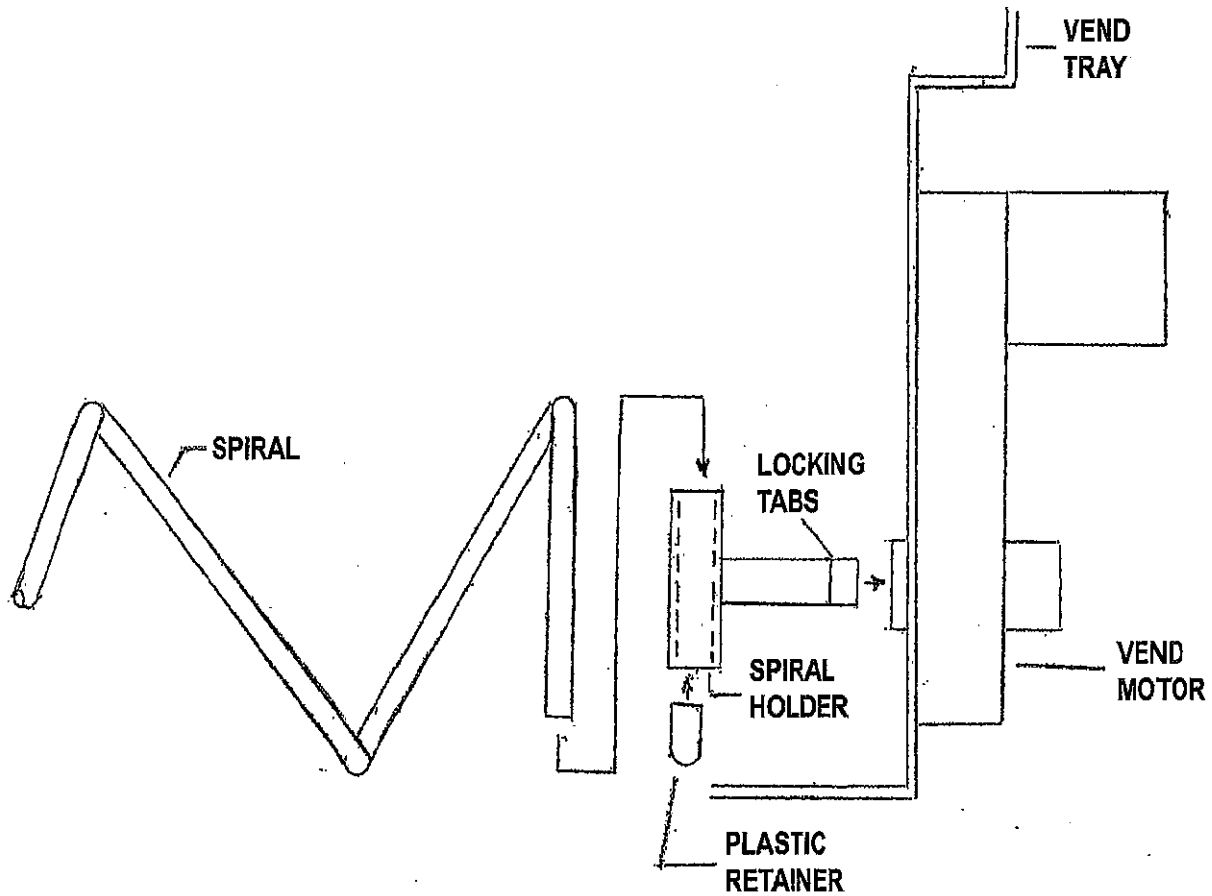


FIG. VIII

#### NOTE:

To remove the spiral holder from the motor, squeeze the "Locking Tabs" and pull the spiral forward.

#### **XIV. REMOVING THE CASH BOX**

The cash box can be removed from the front or the rear.  
See "Cash Access" on page 6.

#### **XV. REMOVING VEND TRAYS**

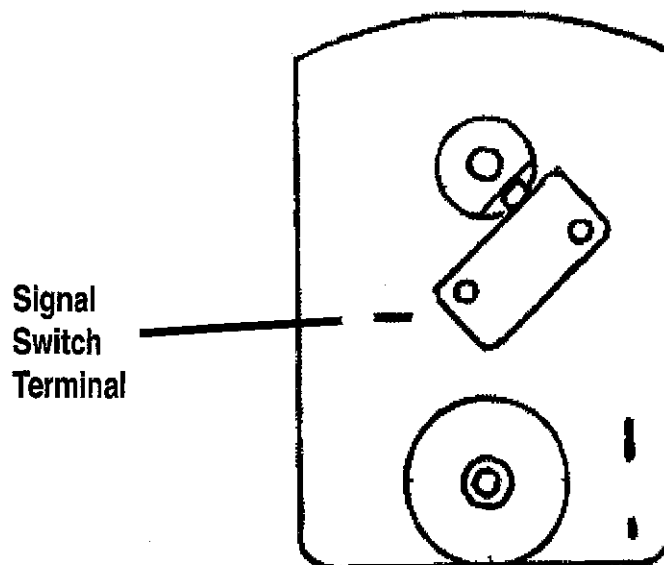
To remove vend tray, lift front of tray, pull the tray forward till the rear tray stop is engaged. Now lift the front of the tray up till the rear tray stop is clear and pull the tray out. Disconnect the tray harness, and you have completed the removal. To reinstall tray, reverse this process. **CAUTION:** Be careful not to damage the motors.

#### **XVI. REPLACING MOTORS**

If a vend motor draws 300MA current or fails to complete rotation in 8 seconds, the electronics will signal "MAKE ALTERNATE SELECTION."

To remove a motor, first remove the vend tray. Then undo the harness and remove the two No. 8 screws securing the motor.

**NOTE: Black signal wire goes on the top .187 wide terminal.**



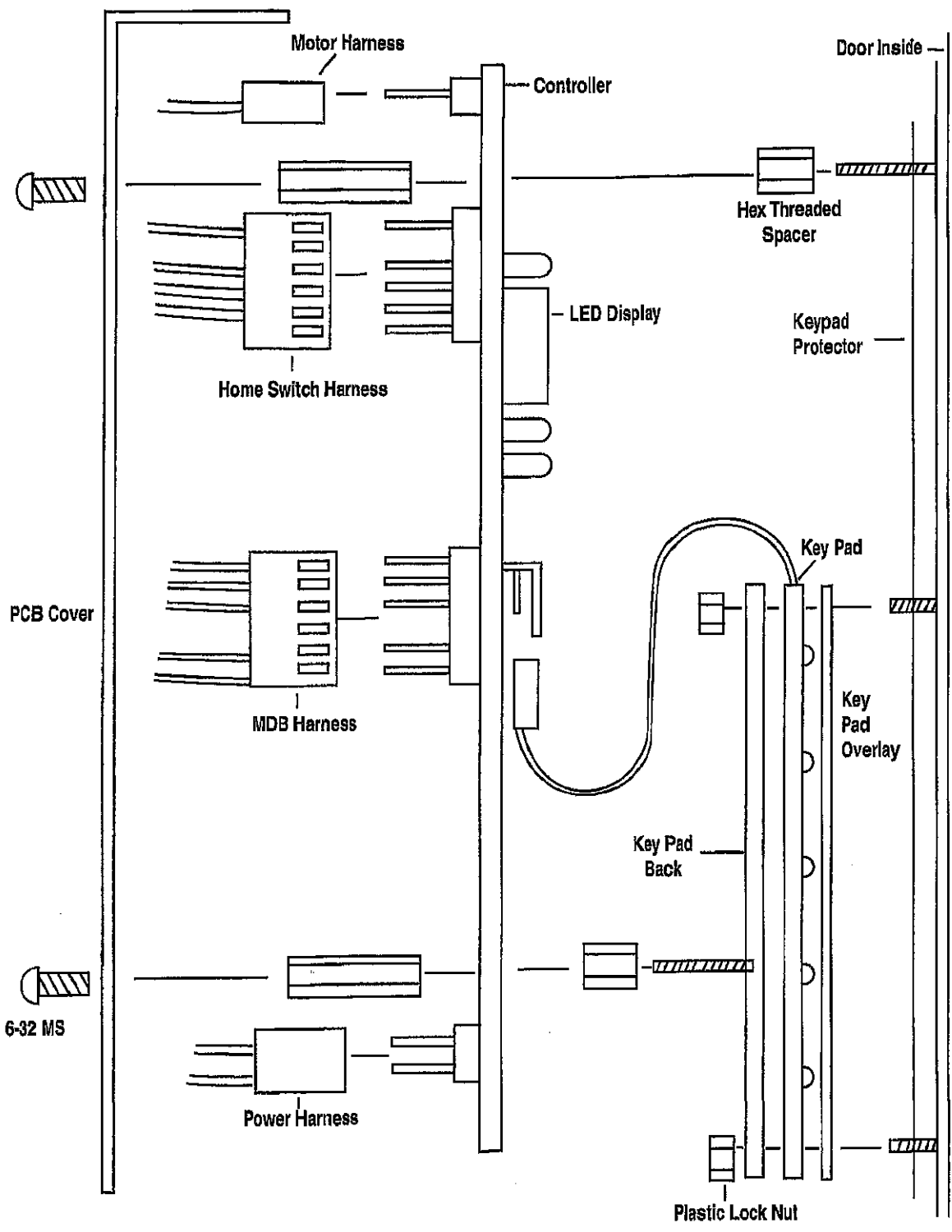


FIG. IX

## **XVII. REMOVING THE CONTROLLER AND KEYPAD** **TURN OFF POWER!!!**

CAUTION: Use extreme care while handling the electronic controller.

To remove the controller and keypad, first remove the PCB cover, then the harnesses plugged to it. Remember the orientation.

Then remove the four hex nuts holding the controller (See FIG. IX). Gently pull it off the studs and disconnect the keypad harness, which is connected to the backside of the controller.

To remove the keypad back, the keypad and keypad overlay, undo the four plastic nuts holding it with a nut driver.

## **XVIII. INSTALLING REPLACEMENT CONTROLLER**

When replacing a Defective or Damaged Controller, install the controller in reverse order as above in XVII.

**CRITICAL STEP:** After installation is complete, apply power to the vendor; Press the Yellow MODE button 1 time. Press the #4 button on the key pad two times. Each spiral will turn one at a time. When it is finished you will need to enter your prices for each item. (How? See page #14, "C" PRICE SETTING FUNCTION.)

## **XIX. REMOVING THE DELIVERY DOOR**

Open the service door and remove the "E" ring holding the delivery door rod. Slide the rod to the left and slide the door off the rod. Reverse the process to reinstall.

## **XX. REMOVING THE TRANSFORMER**

First unplug the LM18 from the wall outlet. Open the front service door and pull the changer plate forward. Disconnect the transformer from the off-on/circuit breaker and power cord. Then remove the two nuts holding the transformer.

## **XXI. LIGHT REPLACEMENT**

The LM18MDBRL is equipped with a long life LED light strip. If replacement is necessary, disconnect the light strip harness and remove the 2 holding screws.

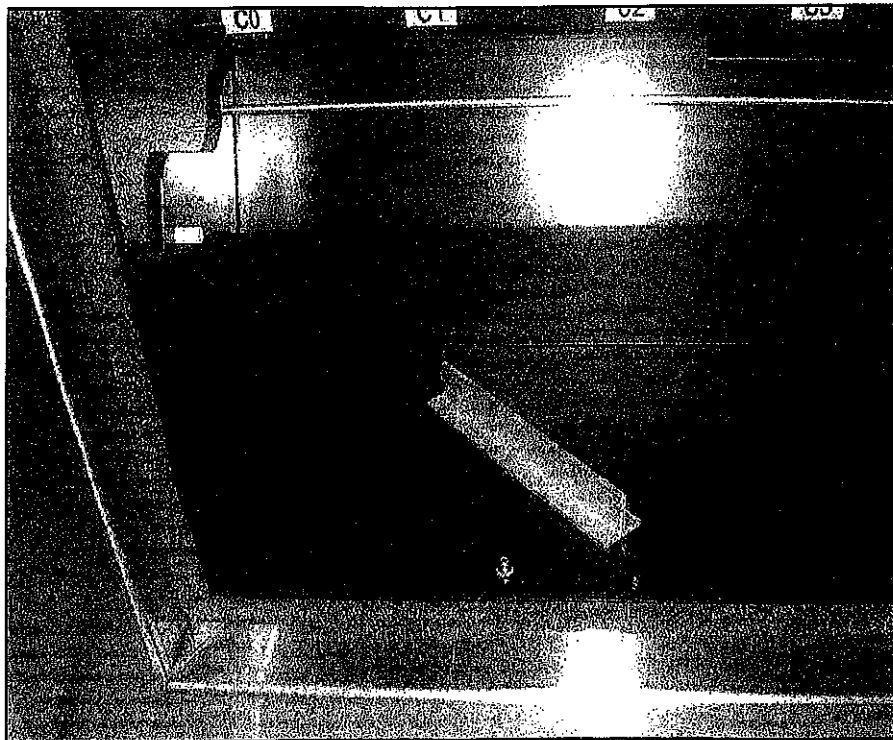
## XXII. SUGGESTED PRODUCT PLACEMENT

The top shelf [A] is designed for Armor-All Protectant Packets and/or like size products.

The second shelf [B] is designed for Blue Towels, Window Cleaner Packets, etc.

The third shelf [C] has narrow spirals for Air Freshener Cards, Armor-All 4 oz. cans, Tire Foam 4 oz., and Armor-All plastic spray bottles. A **"CAN TIPPER"** is provided to be placed on the product vend floor to tip the 4 oz. cans over so they do not land upright and block access door from opening. Place the **CAN TIPPER** on the floor under shelf C, between the spirals where products will fall. Use the self-sticking adhesive provided on the **CAN TIPPER** to secure it firmly to the floor.

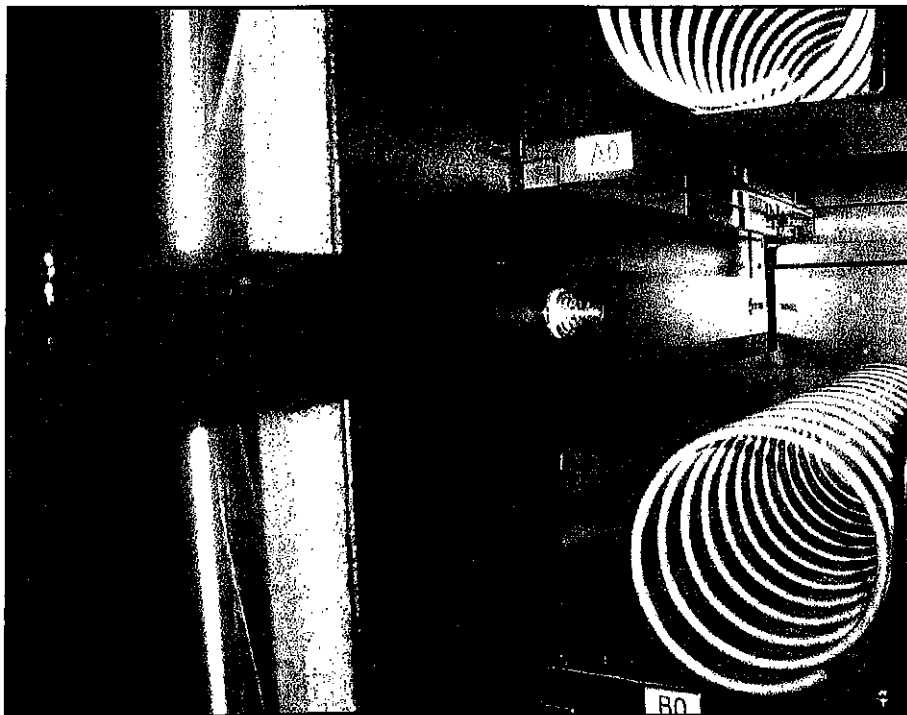
The **CAN TIPPER** can be cut in two with a hacksaw to provide more coverage if needed.

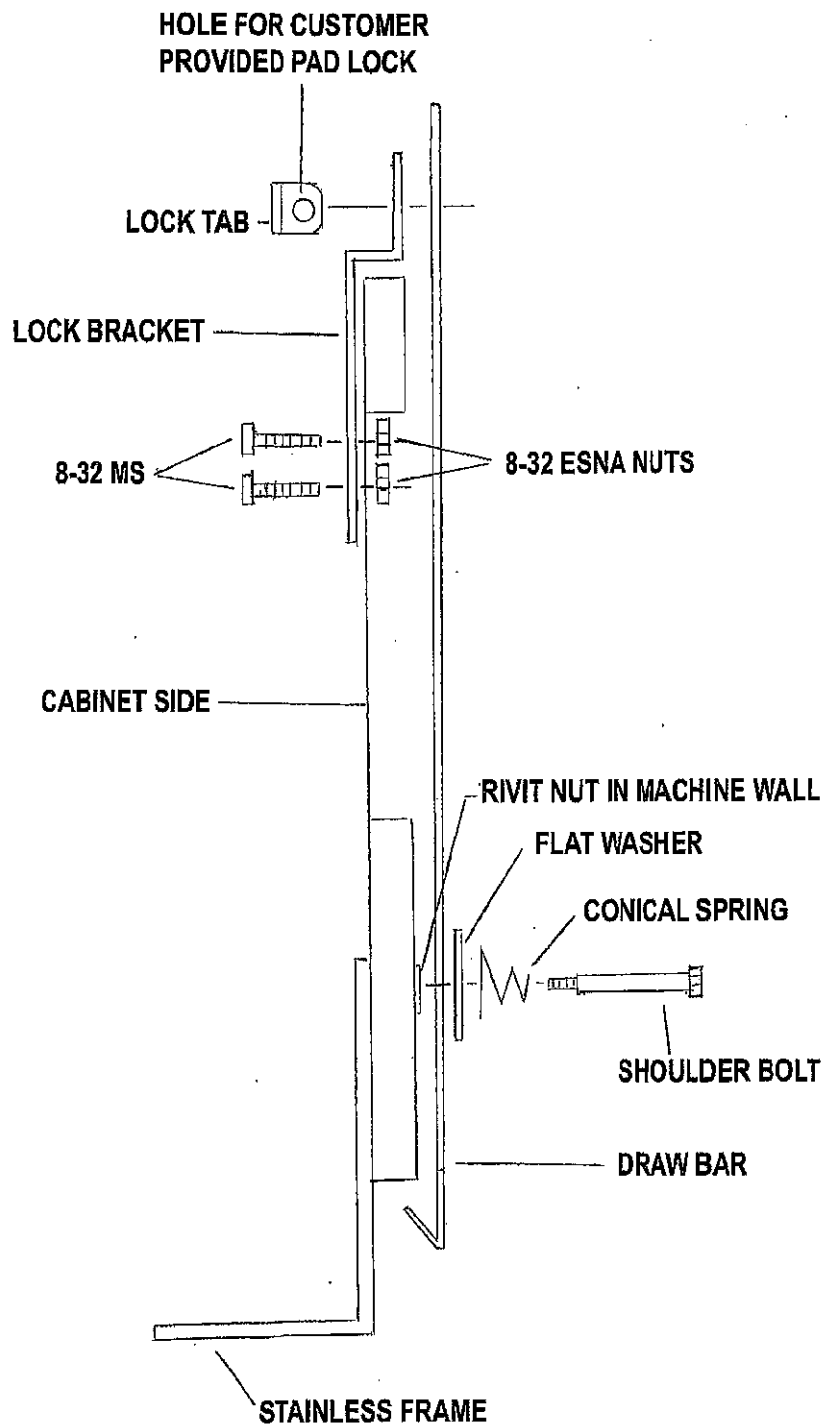


**Please refer back to pages 8 and 9 for proper loading of product.**

### XXIII. INSTALLATION OF DRAW BAR (ONLY ON LM18)

- A. Find small plastic bag that contains a white flat washer, conical spring, shoulder bolt, two 8-32 bolts, and 2 SNA nuts. (See Fig X)  
Also find the Lock Bracket and Lock Tab in the large plastic bag.
- B. Remove the back door (if a rear load machine.)
- C. Mount the lock bracket to the cabinet side with two 8-32 MS and two 8-32 ESNA nuts. (See Fig. X)
- D. Install the draw bar as shown with the flat washer, conical spring and shoulder bolt. (See Fig X)
- E. You are now ready to lock the front door. First extend the draw bar in the forward position. Close the front door on the draw bar so they latch together. Then go to the rear of the machine and pull the draw bar to the rear, closing the front door.
- F. Secure the front door by aligning the slots in the lock bracket and draw bar, then inserting the lock tab.
- G. Insert a pad lock in the hole provided in the lock tab. The front door is now secure.
- H. Replace the rear door.





MACHINE FRONT

FIG. X



# LM18MDBRL TROUBLE SHOOTING GUIDE

## **My vendor is not accepting coins.**

1. Is there power to the vendor, (is it plugged in) and is it turned on?
2. Is the RED LED on the front of the coin changer lit?
3. Is the RED LED on the coin changer flashing an error code or is it constantly lit?
4. If the changer is flashing a code, what error code is the changer alerting you to?  
Codes are listed on coin changer directly above the RED LED.

## **My vendor will not accept currency.**

1. Is there power to the vendor?
2. Is it plugged in and is it turned on? Is the vendor equipped with a bill validator? Is the RED LED on the back of the validator lit? If the validator is flashing a code, what error code is the validator alerting you to? Codes are listed on bill stacker.
3. Is the power cable securely plugged in the side of the validator?  
(Unplug and re-insert)
4. Is there enough money in the changer to give change of a \$5.00 bill for your lowest priced item in the vendor?

## **Products are falling against the window and/or hanging up and not dropping properly to the delivery area.**

1. Is the product a soft packet (such as: Armor-All Sponge Pak, Wet Towel, Window Wipe)? If so, make sure the bottom of the flap of the packet is folded forward and that the product is not setting on the spiral but is setting on the bottom of the shelf. See owner's manual for details.
2. If problem still persists, try using the black "product pushers" that are included in the accessory pack that came with the vendor. The pushers install approximately W from the end of the spiral. See owner's manual for details.

## **Product motor will not vend item.**

1. Is the product priced correctly in the vendor control board? (ex., The price decal states \$1.00. Is the price for that item programmed at \$1.00 in the control board?)  
See owner's manual for details.
2. Perform a motor test using control board service mode.  
See owner's manual for details.
3. Check all terminal connections at back of vend motor.
4. Switch problem motor with motor that is known to work properly and see if problem "travels" with problem motor. If not, check all wiring harness connections between vend-motors and control board.

## **LM18MDBRL TROUBLE SHOOTING GUIDE (Continued)**

### **My vendor is vending items for FREE.**

1. The item is priced at \$0.00 in the control board. Set product pricing to correct price and re-test. See owner's manual for details.

### **My vendor buttons are not working. Why are they hard to push?**

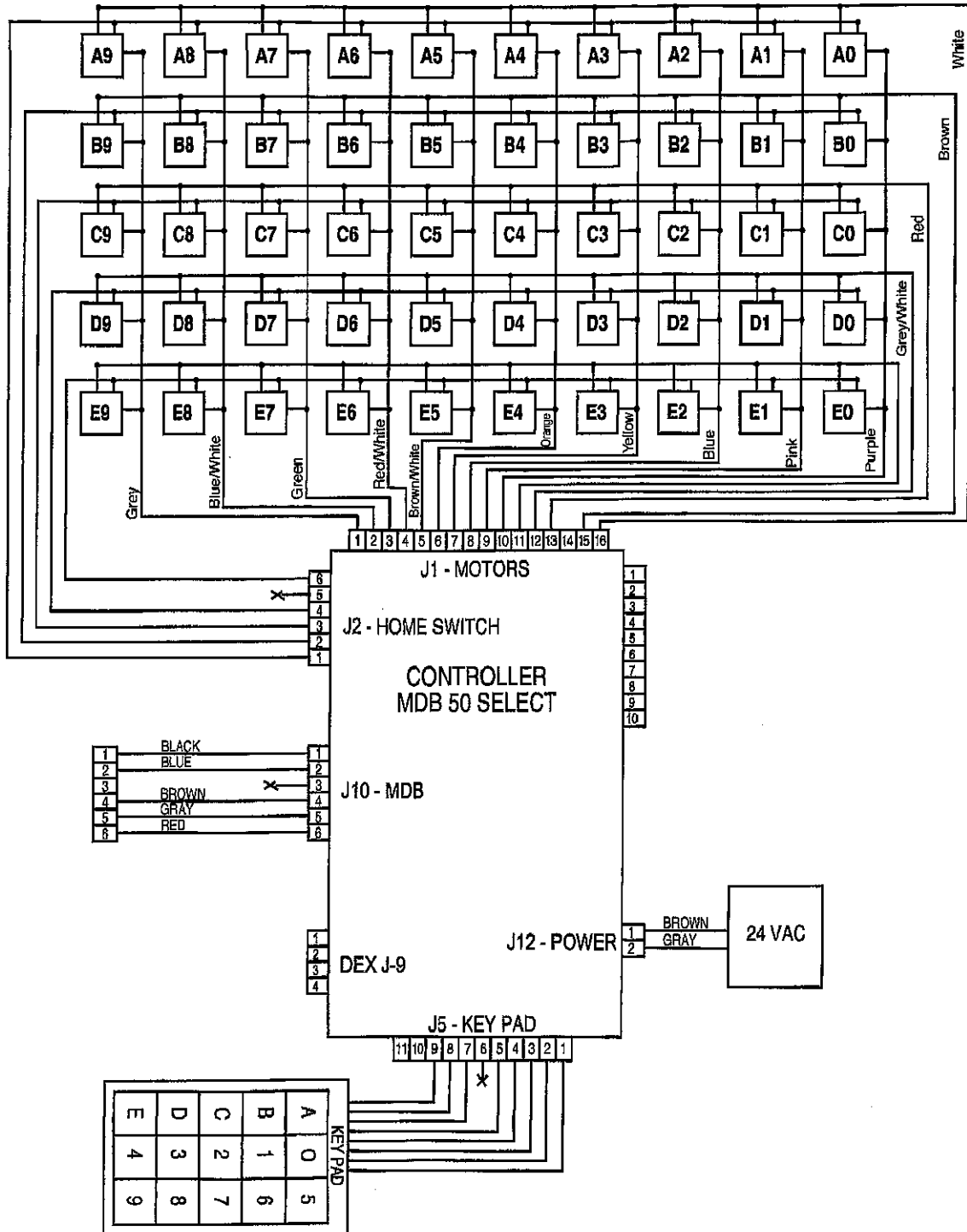
1. Remove touch pad and test touch pad while holding in hand. Does it work?
2. If touch pad works when removed from vendor, remove clear plastic "ice cube" push buttons from door (if equipped). Re-install touch pad and all hardware without buttons.

### **My validator is not accepting currency at the correct amount.**

1. Did you attempt to reprogram unit by using dip-switches on side of validator? If so, re-set all switches to "Off" position and reprogram unit using Mars Program Coupon found in the back of the owner's manual.

# APPENDIX I

## ELECTRICAL DIAGRAM LM18 & LM30



## APPENDIX II

### HIGH VOLTAGE ELECTRICAL DIAGRAM

