

THE GRANDMASTER 2

Set up and Operation Manual

Your Machine Serial Number: _____



1005 17th Street
Columbus, NE 68601
Service Dept. 1-800-795-8251
serv@technikmfg.com

The Grandmaster 2

TABLE OF CONTENTS

SAFETY CONSIDERATIONS	3
UNPACKING	3
MACHINE COMPONENTS DIAGRAM	4
MACHINE MOUNTING	5
AUTOMATIC SEQUENCING	5
MODE OF OPERATION	5
INSTALLING PUSHBUTTONS	6
PRICING MACHINE	6
CARD THICKNESS ADJUSTMENT	7
LOADING TICKETS	8
CHECKING COUNTS	9
SPECIAL FEATURES	9-10
INITIALIZING PROCEDURE	11
RESET PROCEDURE	11
TROUBLESHOOTING	
ERROR CODES	12
ERROR CODE FLOW CHARTS	13-19
CARDS JAM OR HESITATE	20
CARDS JAMMING OR HESITATE FLOW CHART	19
ODD COUNTS AND DISPENSING	20
CARD NOT DISPENSING FLOW CHART	21
FUSE BLOWN	22
NO POWER	22
POWER INTERRUPTIONS	22
NO POWER FLOW CHART	23
CALLING A SERVICE TECHNICIAN	23
SERIAL NUMBER LOCATIONS	24
REGULAR MAINTENANCE	24
SERVICE DOOR & MECH REMOVAL	24
CONTROL BOARD	25
PYRAMID BILL ACCEPTOR	26-29
SERVICE LOG SHEET	31
MACHINE LOG SHEET	32

SAFETY CONSIDERATIONS

1. Unplug the machine when servicing – failure to do this could cause serious injury.
2. If the power cord is damaged, the manufacturer, its service agent, or a similarly qualified person must replace it.
3. Permanent bypass of any safety switches may cause serious injury.
4. Refer to the “**Machine Mounting**” section of the manual for proper installation instructions.
5. A three prong grounded outlet must be used to power this machine.
6. Do not overload power circuits.
7. Do not use extension cords to run power to this machine.

UNPACKING

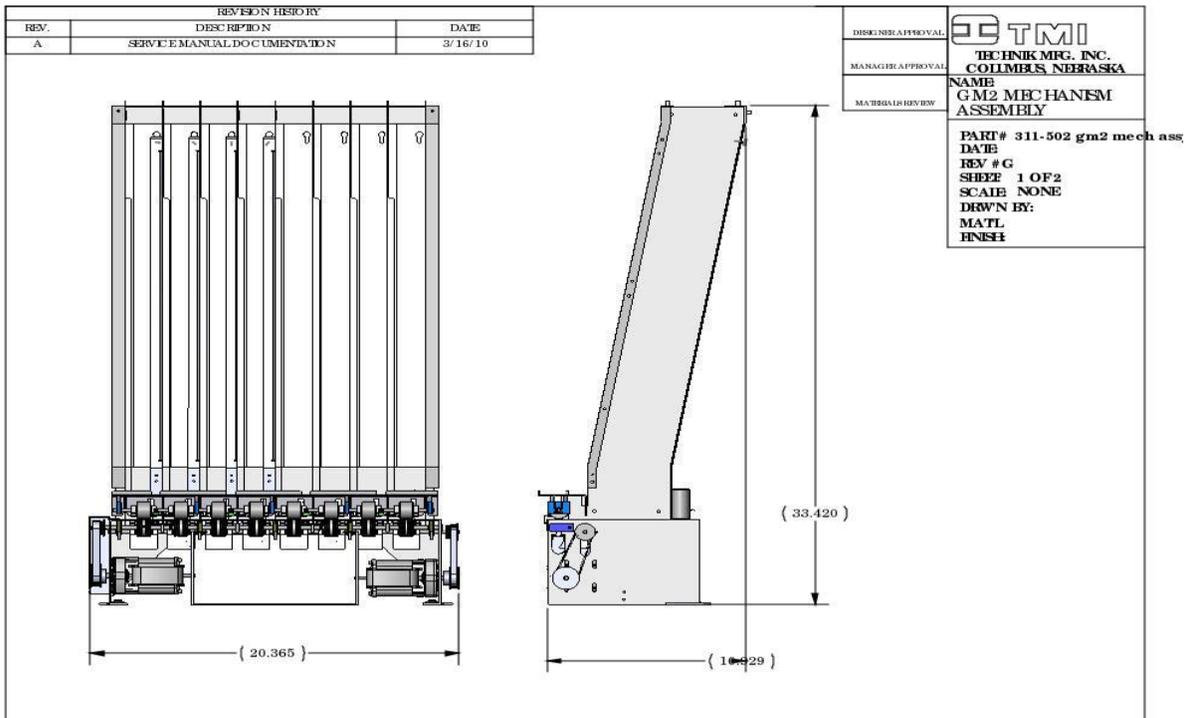
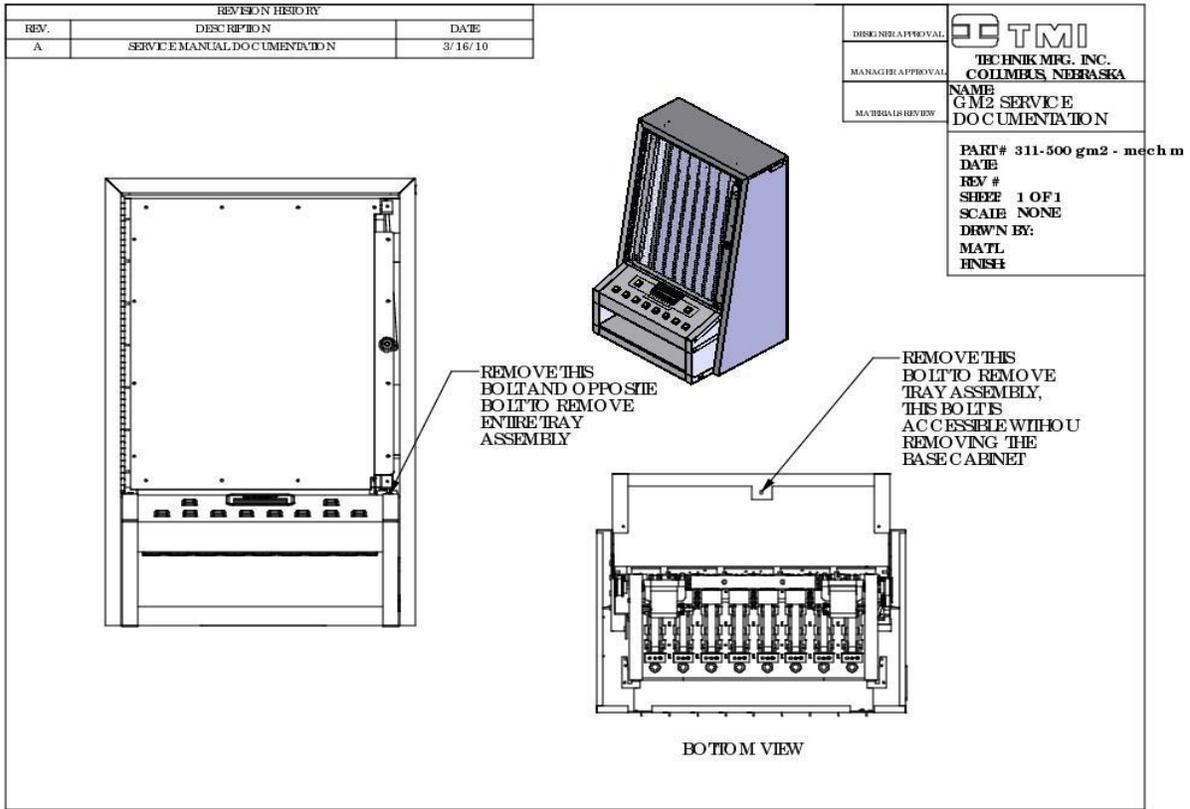
When a machine is received, it should be carefully unpacked and checked closely for any possible damage. If a freight company is involved, and there is damage, please notify them immediately. They will need to thoroughly inspect the damage and fill out a report. Please **do not** install the machine until this has been done.

The following items are included with the machine:

<u>QUANTITY</u>	<u>DESCRIPTION</u>
1	PULL TAB VENDING MACHINE
8	Short weights
8	Long weights
8	Three tab adapters
8	Clear pushbutton covers
8	Inside white pushbutton back
1	6¼-amp fuse
8	\$.25 Currency labels
8	\$.50 Currency labels
8	\$1.00 Currency labels
8	\$2.00 Currency labels
4	Machine keys
1	Ticket display holder
1	Machine manual
1	Warranty certificate
1	Hex wrench (for adjustment)
1	Card hook

*If the machine is equipped with a modem, an alarm, or a printer an Options Manual will be included as well.

MACHINE COMPONENTS DIAGRAM



MACHINE MOUNTING

If machine mounting to a wall is required, there are four holes at the back of the base with 16" spacing. Lag screws and washers (not supplied) can be used to fasten the machine to a wall. If mounting to the floor is desired, holes in the base are provided.

AUTOMATIC SEQUENCING

When the machine is first turned on, it will start its automatic sequencing, (the power switch is located on the main control bar inside the bill acceptor side of the machine and there is also a switch on the back of the cabinet. The sequence starts with three audio "beeps". The LCD will display important information (software version information, and the number of columns it has been initialized for). The machine will cycle through each row's solenoid (lifting) and lighting its pushbutton at the same time. This automatic sequencing is intended to be used as an aid to ensure that the electronics and moving parts are working properly.

MODES OF OPERATION

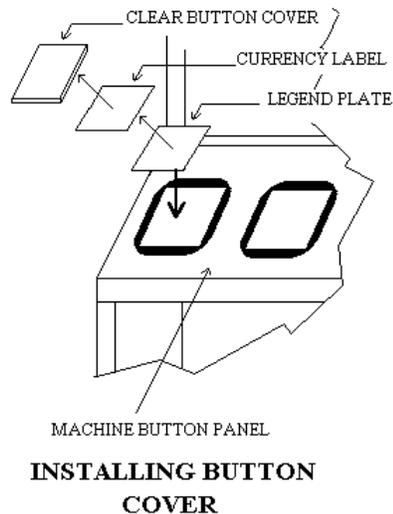
As you are facing the front of the machine with the bill acceptor door open, you will see the control bar. The selector knob allows you to select either **VEND, PRICE, COUNT, MOTOR, OR SERVICE.**

To change modes of operation use the selector switch located on the control bar.

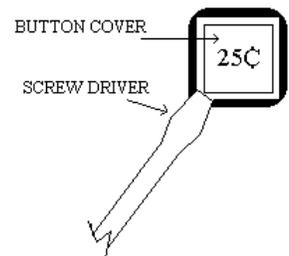
- VEND MODE:** This mode is what the machine should be in during normal operation.
- PRICE MODE:** This mode is used to price the individual columns.
- COUNT MODE:** This mode is used to check and clear accounting information.
- MOTOR MODE:** This mode is used to count inventory, clear a jammed ticket, adjust ticket thickness, and troubleshooting.
- SERVICE MODE:** This mode is used for assisting in troubleshooting and adjustments. All normal vend mode functions are available except money accepted and cards dispensed are not recorded into the accounting information. When in service mode, the audible alarm (single beep) will sound briefly every 15 seconds to serve as a reminder that you are in the service mode.

INSTALLING PUSHBUTTONS

The pushbutton assembly includes the clear top cover, pushbutton label, white plastic back and the pushbutton itself. Insert the currency legend into the clear top cap so that when looking at the front of it, it reads correctly. Place the white plastic back in next, and then simply snap into the pushbutton fixture. To remove the cover, use a thin screwdriver and pry it loose between the white cap and the outer shell. Note the following illustration:



REMOVING BUTTON COVER



PLACE THE SCREW DRIVER AT THE EDGE OF THE BUTTON COVER AND TWIST THE DRIVER UP. REPEAT THIS FOR THE REMAINING EDGES.

IMPORTANT: BE SURE TO GO THROUGH THE “**PRICING THE MACHINE**” SECTION OF THIS MANUAL AFTER CHANGING THE CURRENCY LABELS!!!

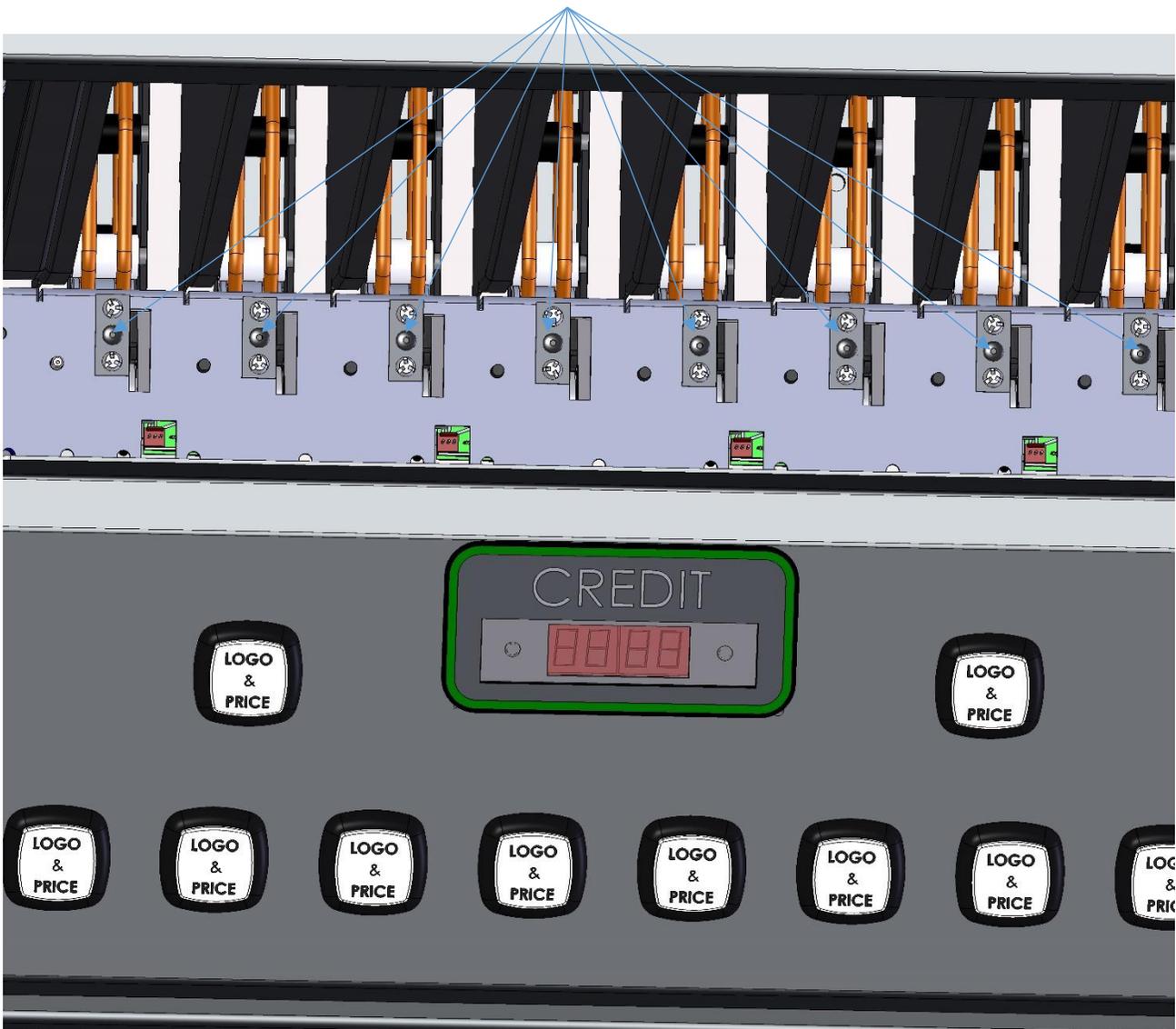
PRICING THE MACHINE

You are now ready to set the column’s prices. As you are facing the machine, open the bill acceptor door. The main control bar is located at the front top of this compartment. On the control bar, turn the selector switch to “**PRICE**”. Notice the display on the front of the machines should now read, “**Price column A**”. Also notice that the column “**A**” pushbutton light is on. The second line of the credit display is indicating the current price of column “**A**”. Press the column “**A**” pushbutton to change to the desired price. Once the proper price is displayed, the row is programmed for that amount and pressing the “**ALL**” button will advance to column “**B**”. The display will now read, “**Price column B**”. Press the column “**B**” pushbutton to set that row to the desired price. Repeat the above steps to price the remaining columns. Once you have programmed all the rows, return the switch on the control bar back to “**VEND**”.

CARD THICKNESS ADJUSTMENT PROCEDURE

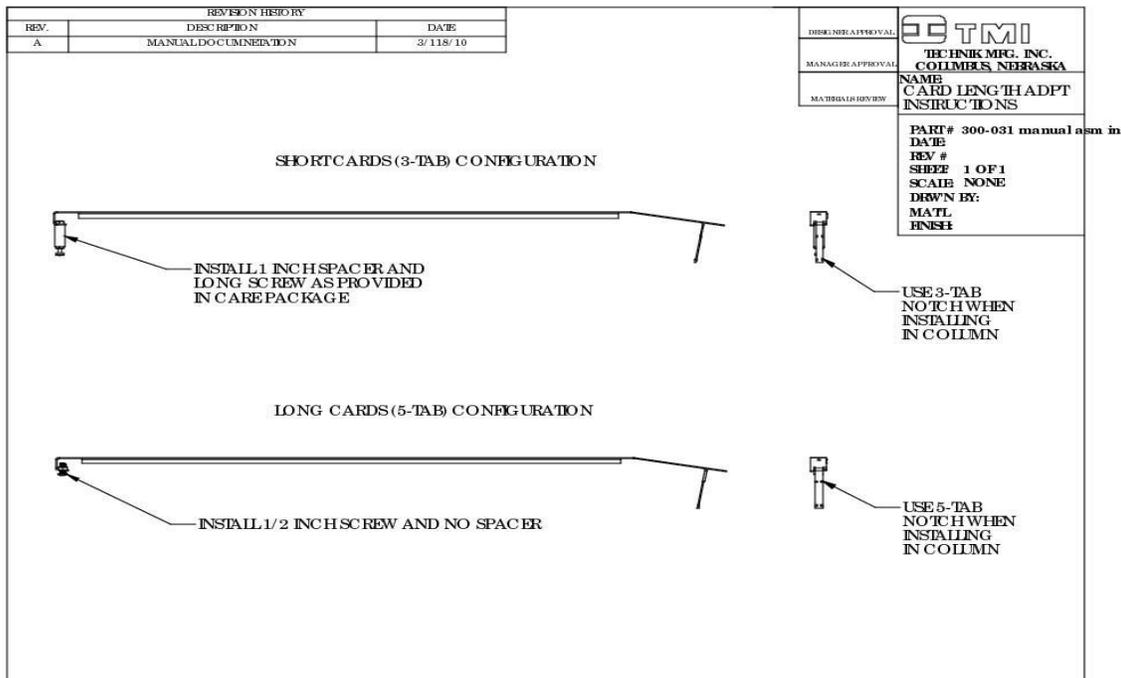
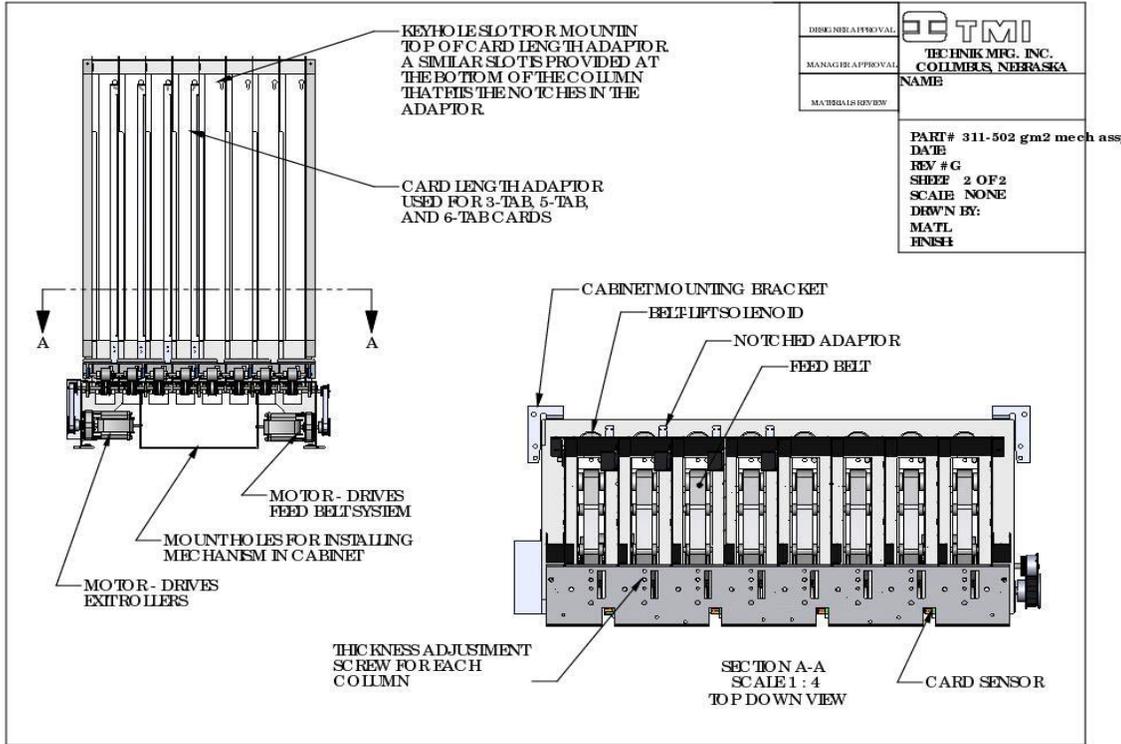
1. With a 9/64" hex head wrench, turn the adjustment screw on the dispenser counterclockwise until a card will not pass the adjustment mechanism.
2. Place the supplied calibration card in the bottom of the column.
3. Place card weight on top of the card with the word "FRONT" facing forward.
4. Insert the hex head wrench into the adjustment screw.
5. Try to dispense the card and turn the adjustment screw clockwise until the card is dispensed. It may take a few tries before the card is dispensed smoothly.
6. Once the card is dispensed, the column is properly adjusted.

ADJUSTMENT SCREW FOR EACH COLUMN



LOADING TICKETS

Before loading tickets into the dispensing mechanism, please make sure the three tab adaptor for each row is positioned correctly. The three tab adaptor is located at the right and to the rear of each row. This three tab adaptor can be positioned for dispensing either 3-window or 5-window tickets. Note the following illustration:



CHECKING THE COUNTS

The Grandmaster 2 has the ability to record dispensing events in each column and the money taken in by the bill acceptor. This information is viewed either as “**Period**” which means re-settable or “**TOTAL**” which means non re-settable. Move the selector knob to “**COUNT.**” While the knob is on “**COUNT,**” all accounting information can be viewed on the display on the front of the machine.

The “**ALL**” button is used to view the counts for cards and cash. Simply continue to press the “**ALL**” button and the next event will be displayed. The cards and cash titled “**PERIOD**” are re-settable counts. The re-settable counts can be cleared by pressing the “**CLEAR**” button. The cards and cash titled “**TOTAL**” are non-resettable. The non-resettable counts will keep lifetime total until the machine is re-initialized.

Returning the selector knob to “**VEND**” will set the machine to normal operations.

SPECIAL FEATURES

The Grand Master 2 has the following feature so that it may be easier to determine the remaining inventory cycle count.

1) Inventory - The Grand Master 2 will electronically count the remaining tickets in each column.

- Place the selector knob in the “**MOTOR**” position. The motor will run constantly.
NOTE: For models so equipped, the “**motor kill switch**” must be by passed. See illustration on page 10 for ‘motor kill switch location.

SPECIAL FEATURES *(continued)*

REVISION HISTORY				TMI
REV.	DESCRIPTION	DATE	DESIGNER/APPROVAL	
A	PRODUCT MANUAL DOCUMENTATION	3/19/10	MANAGER/APPROVAL	TECHNIK MFG. INC. COLUMBUS, NEBRASKA
			MATERIALS REVIEW	NAME GRAND MASTER 2
			PART # 311-500 gm2 MANUAL DATE REV # SHEET 1 OF 1 SCALE NONE DRAWN BY: MATL. RNSEI	

- ❑ To count the remaining tickets in a column, press the push button for that column. The machine will then dispense the tickets from that column until it is empty. With each ticket dispensed, the machine will increment the count on the credit display on the front of the machine.

- ❑ To stop the column from dispensing before it is empty, press that push button for one second. Note that the tickets will stop dispensing and two counts will be on the display. The first number and the number in parenthesis will indicate the number of tickets dispensed. The first count will reset to zero when the pushbutton is pressed again. The count in parentheses will continue counting.

2) Credit Erase- This feature will clear the display of any unused credits. Players may mistakenly not use all their credits and this feature will clear those credits. The machine will return to its normal attract mode when the unused credits have cleared. This credit erase feature takes approximately 6 minutes. See * **“Checking the Counts”** to view this information.

***This feature is not available on approved New York machines.**

INITIALIZING PROCEDURE

This procedure allows automatic reprogramming of the entire system. All pricing and re-settable counts will be lost.

1. Position the selector knob to the “**PRICE**” position.
2. Push and hold in the “**CLEAR**” button.
3. Still holding the “**CLEAR**” button, turn the machine off and back on.
4. Wait for the audible signals (beeps).
5. Release the “**CLEAR**” button.

RESET PROCEDURE

If a row malfunctions it automatically disables its self and the product pushbutton will not illuminate. The other rows will still be functional. Once the malfunction is repaired (say a card jam is cleared) the vending machine must be reset. To reset the vending machine you must cycle the machine power off the on (when cycling the power leave the machine off for a minimum duration of three seconds). This should reset the vending machine. The machine control board does have a battery backup so cycling the power will not lose inventory or machine information.

TROUBLE SHOOTING

WARNING!!! WARNING!!! WARNING!!! WARNING!!! WARNING!!!

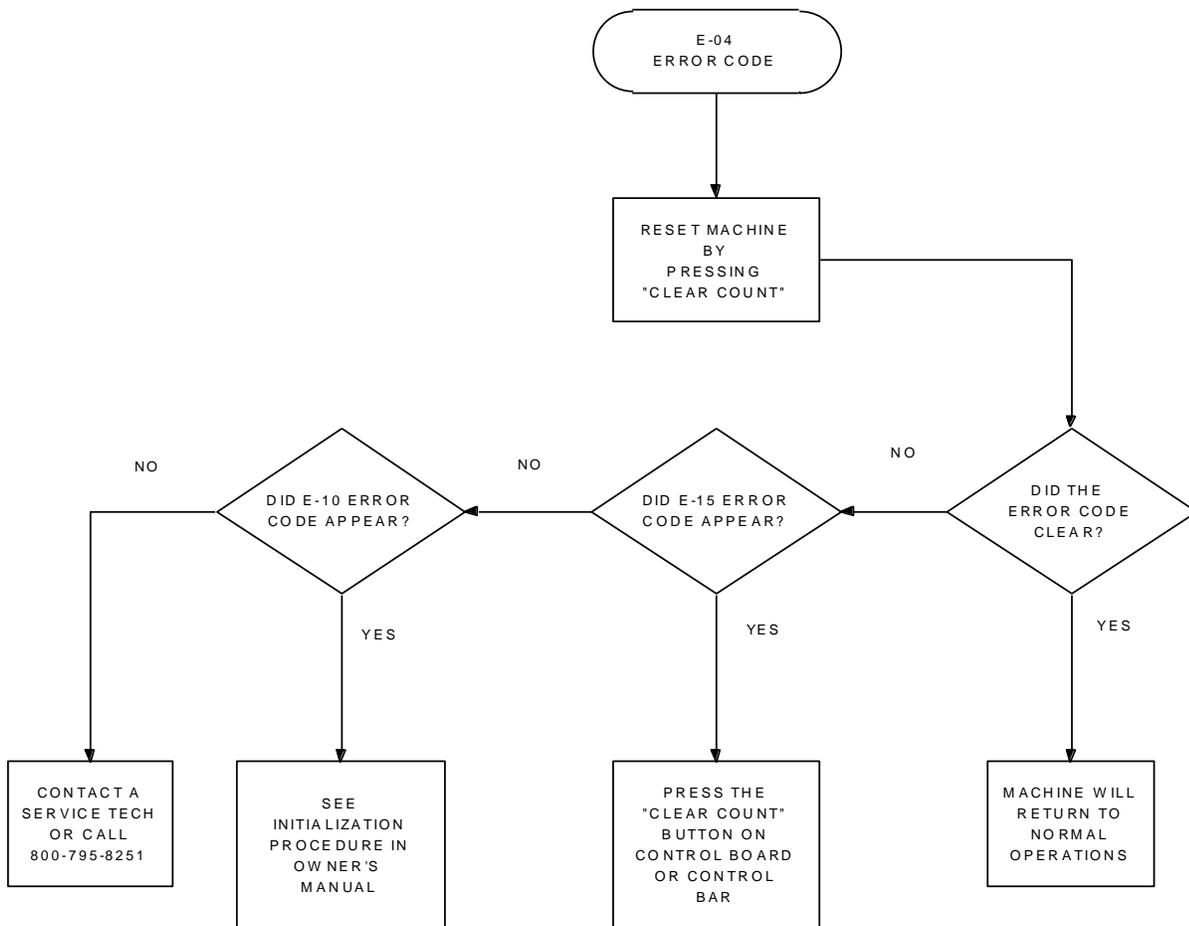
ALWAYS UNPLUG THE MACHINE PRIOR TO SERVICING

ERROR CODES

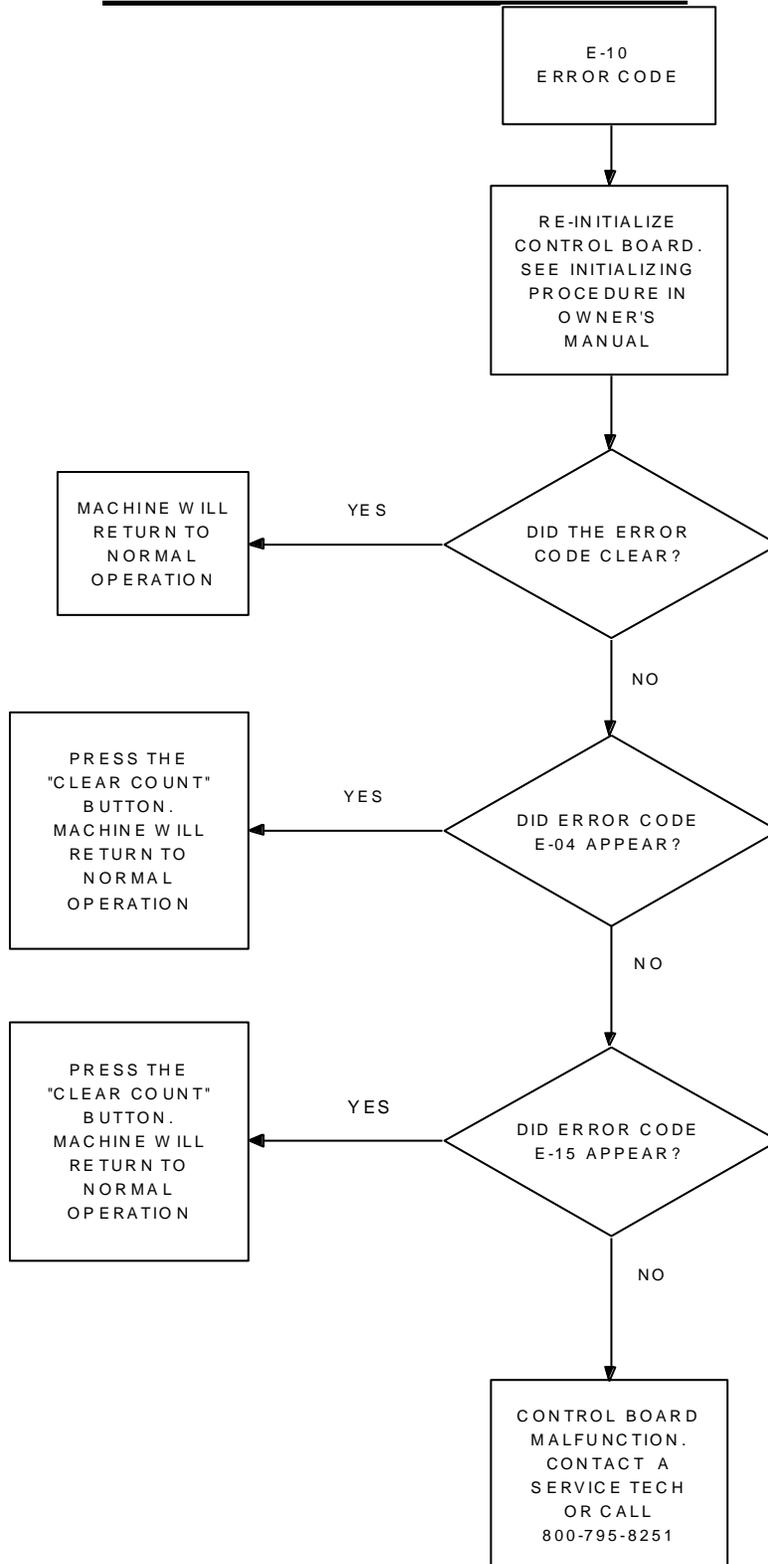
The machine has the ability to determine its own reason for not functioning. It has several error codes that will tell you where the problem is occurring. The codes will appear on the display. The codes that may be encountered are as follows:

- E-04** This means that a card was in the process of being dispensed when the machine lost power. The **E-04** appeared on the screen when power was restored. The machine will not function until the “**CLEAR**” button is pressed. When the **E-04** is cleared a ticket may be dispensed. This ticket has not been recorded by the machine and should be returned to the stack. This feature is intended to prevent tampering/theft of cards. If this error code appears frequently, it is likely that someone is trying to manipulate free tickets.
- E-10** This means that the machine has lost its memory, the row denominations will default to the default pricing and the counts will be cleared. This indicates the machine needs to be re-initialized – see the “**Initializing Procedure**” section of this manual.
- E-11** This means that the bill acceptor pulse was too short in duration. Turn the machine off and then back on. This error code will clear itself.
- E-12** This means the bill acceptor pulse was too long in duration. Turn the machine off and then back on. The error code will clear itself.
- E-13** This means the selected ticket took too long to dispense. Remove the ticket from that row. To clear, turn the machine off, and then back on.
- E-14** This means that an unexpected ticket or foreign object was sensed. Physically remove the card or foreign object. To easily remove a card turn the selector knob to the motor position.
If **E-14** error codes are frequent, then, with the selector knob in “**VEND**”, press the “**CLEAR**” button. The pushbutton light will indicate the column that is causing the error code. The column that has the pushbutton light lit is the column that may have a bad sensor. **Contact a service technician.**
- E-15** This means the non re-settable counters are corrupt. The non re-settable counts have cleared to zero. With the selector switch in the “**PRICE**” position, press the “**CLEAR**” button on the control bar to clear this code. Please note that other error codes may occur after clearing the E-15, usually E-10 and E-04.

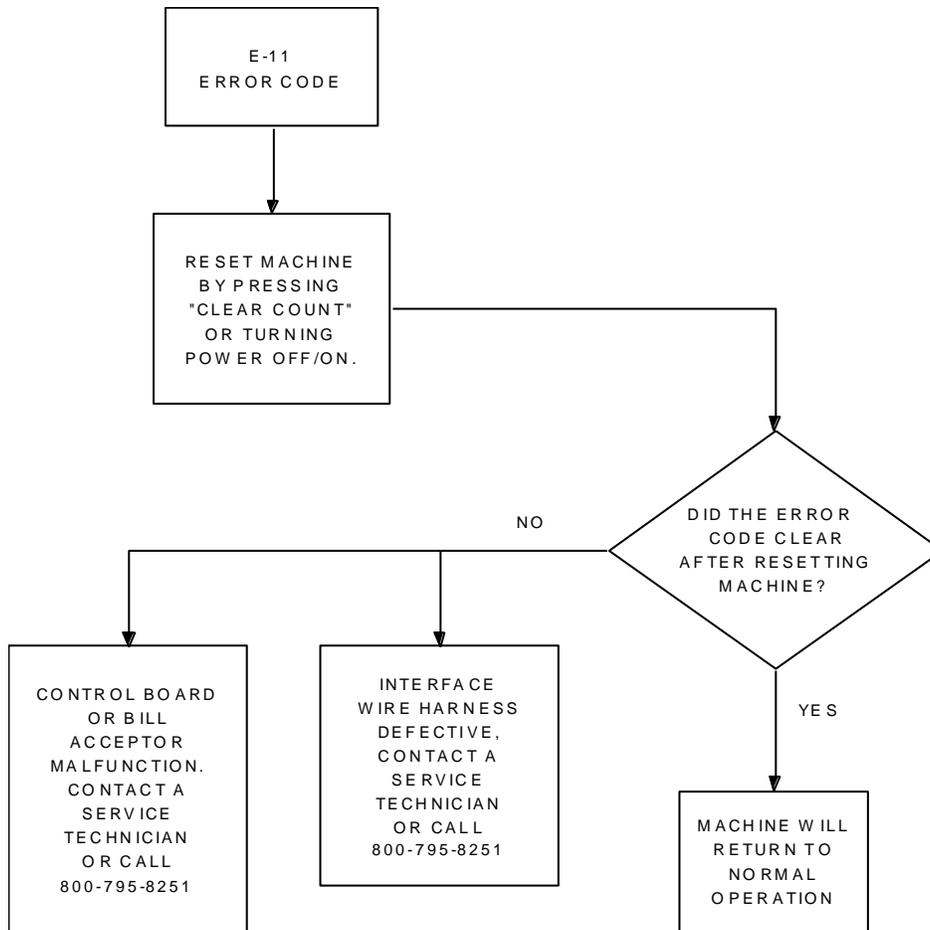
ERROR CODE FLOW CHART



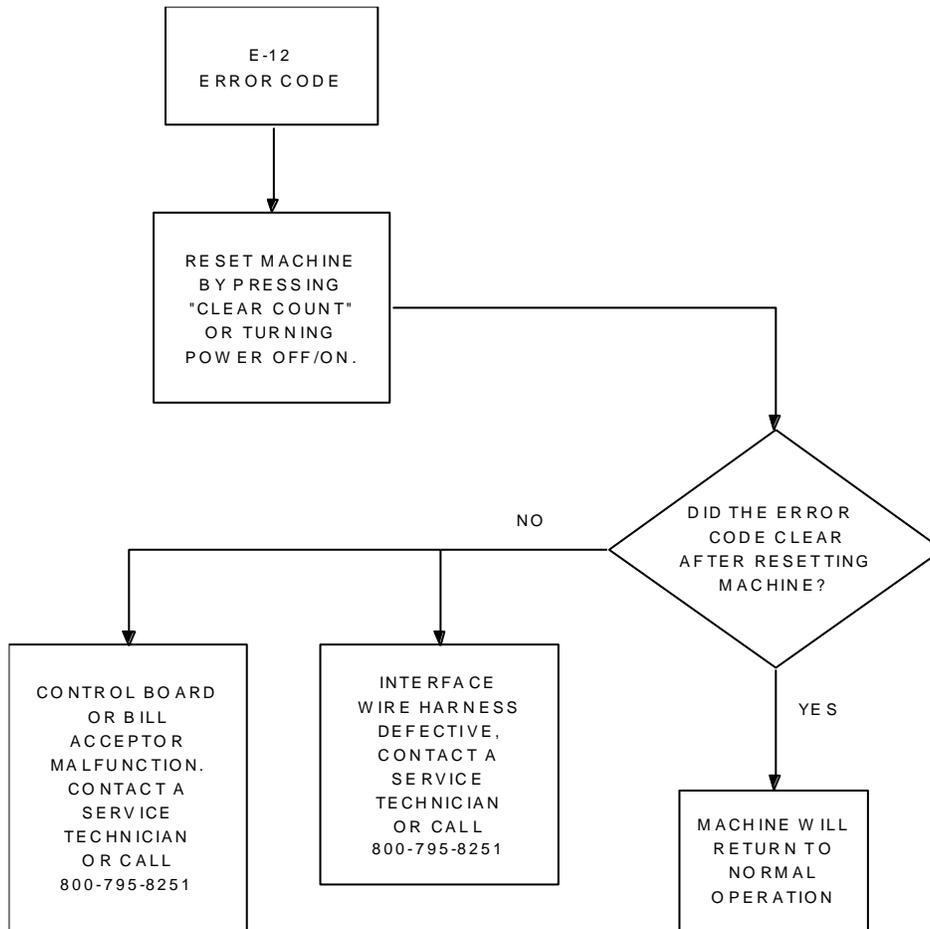
ERROR CODE FLOW CHART



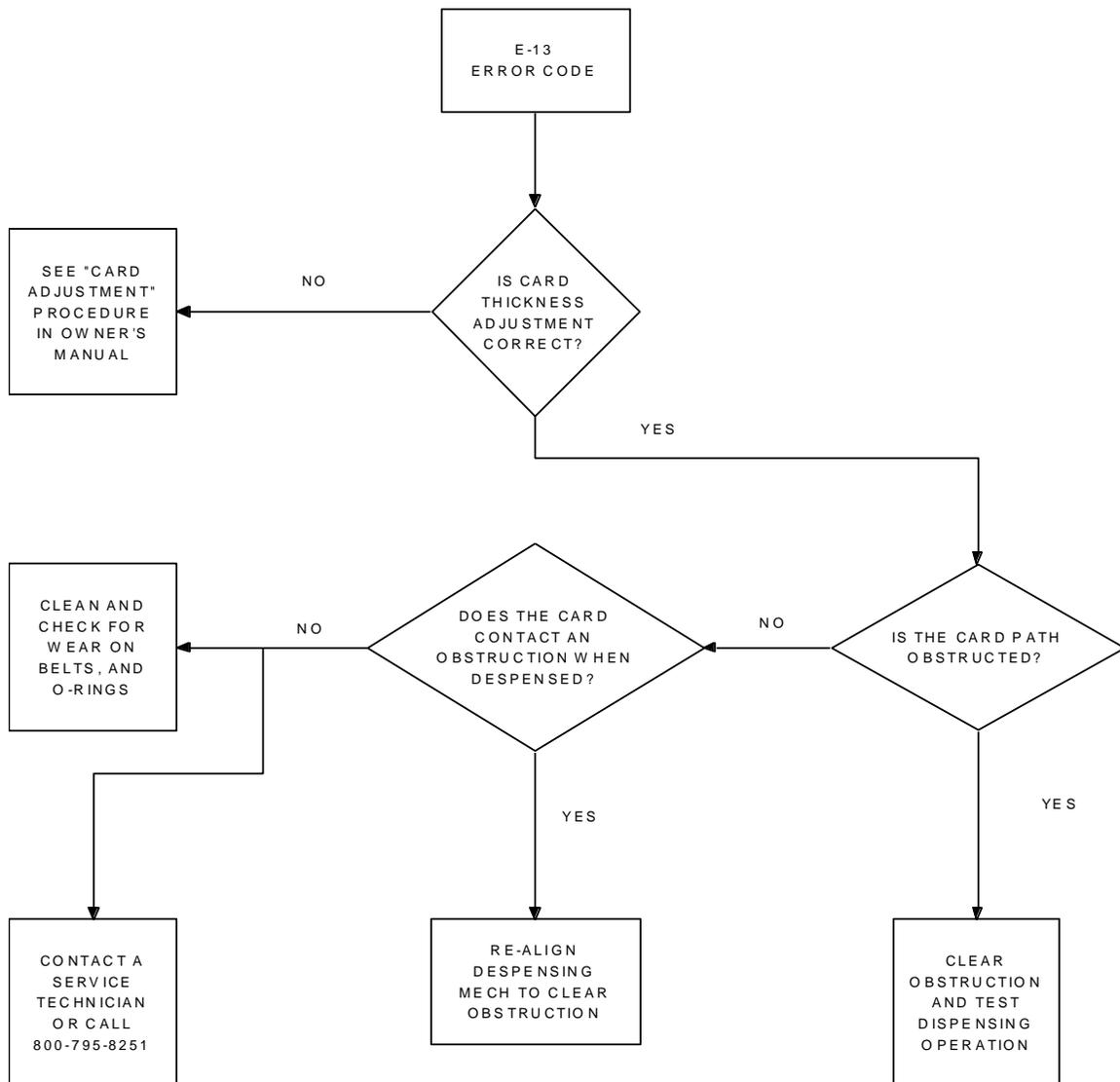
ERROR CODE FLOW CHART



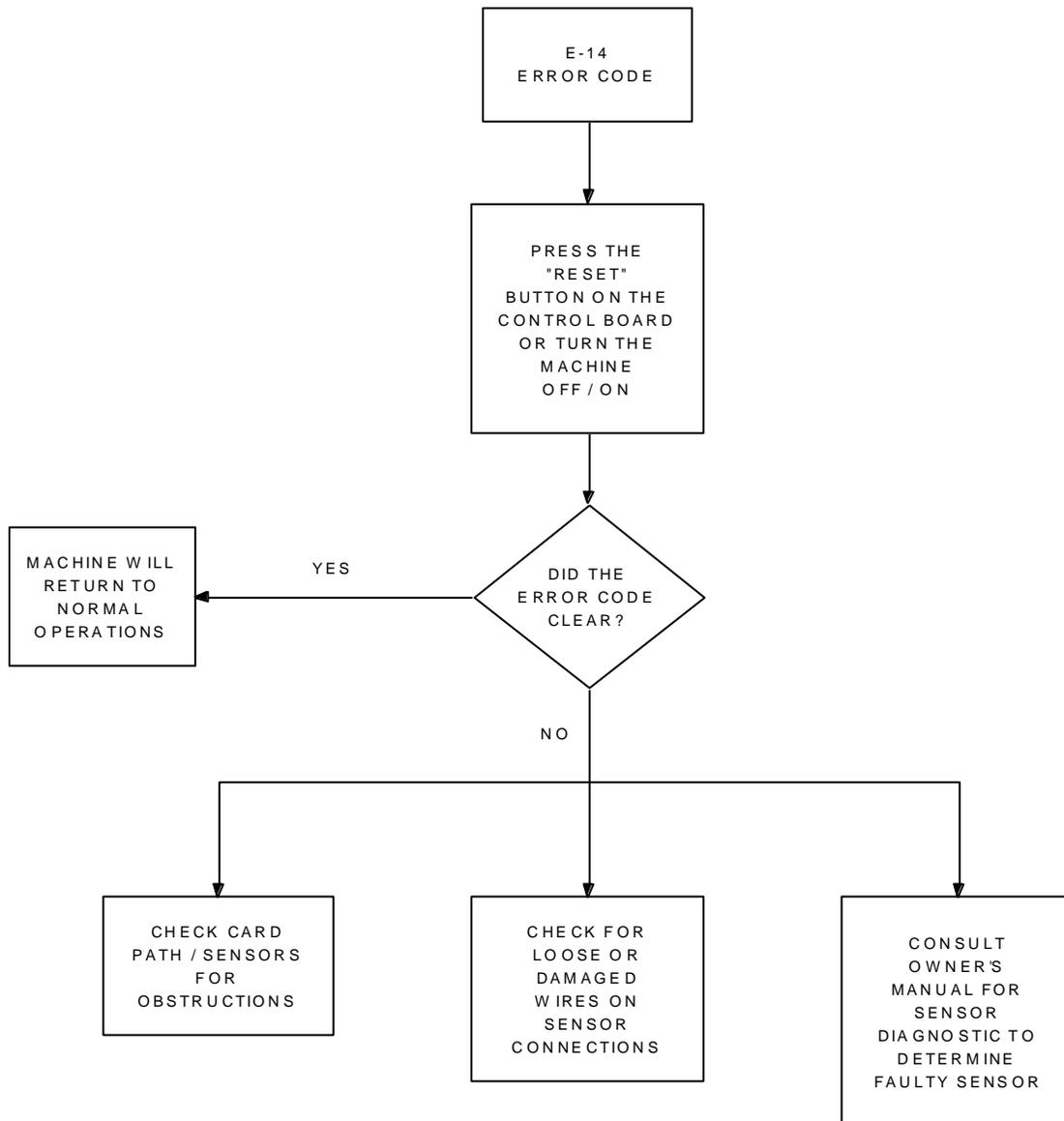
ERROR CODES FLOW CHART



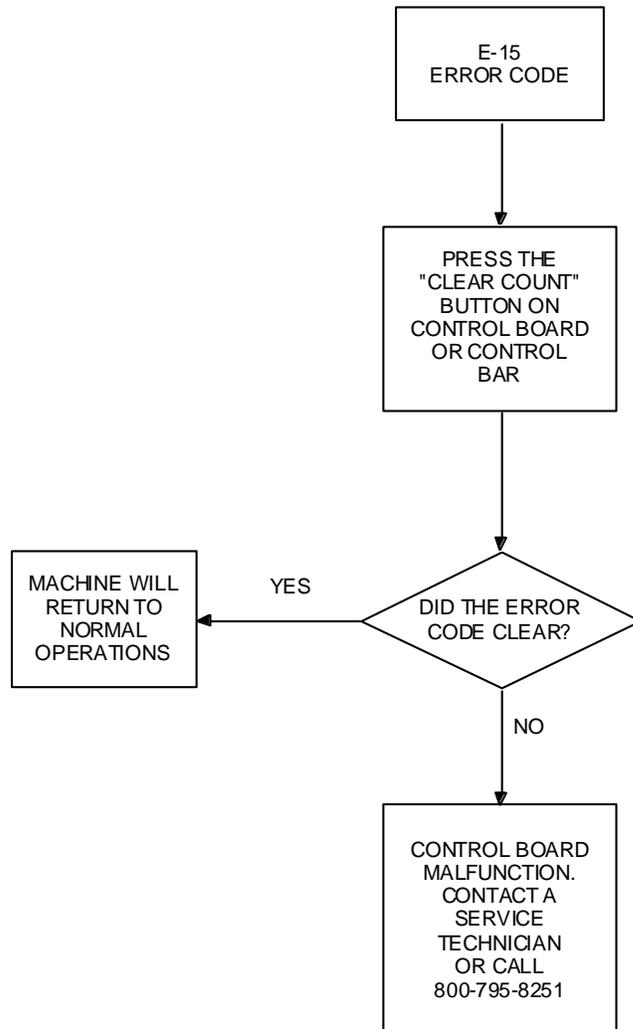
ERROR CODES FLOW CHART



ERROR CODES FLOW CHART



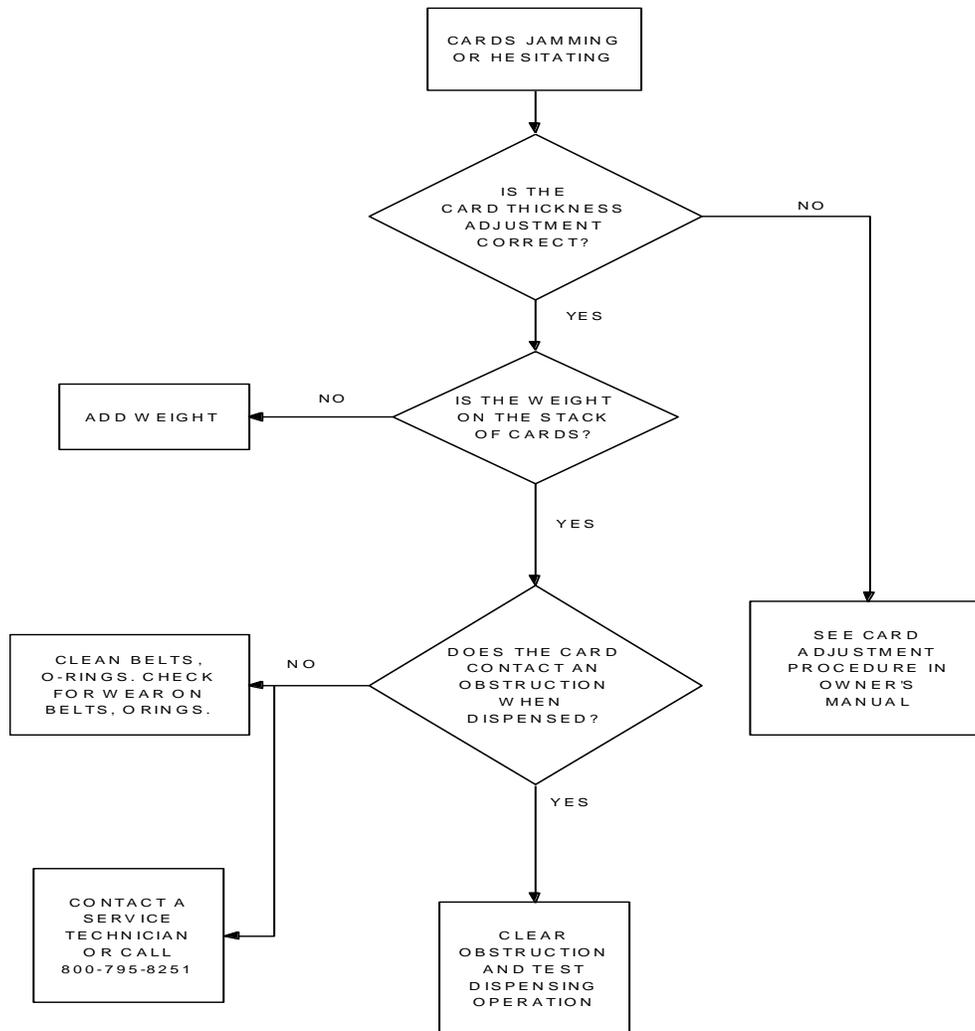
ERROR CODES FLOW CHART



TICKETS JAM OR HESITATE

- 1) Tickets may be too thick or thin and the card gap may need to be adjusted. See **“Ticket Thickness Adjustment”**.
- 2) Tickets may be excessively warped or bowed. Call your supplier.
- 3) Tickets may be glued together. The machine is designed not to accept 2 tickets at once. Again, call your supplier. Also, fanning the tickets prior to loading may solve this problem.
- 4) Tickets may be damaged. Remove damaged tickets and try again.
- 5) A loose roller may cause this problem. A loose setscrew that is intended to lock the rollers to the shaft can cause this. Remove the button panel and disconnect the display cable. Then remove the front filler.

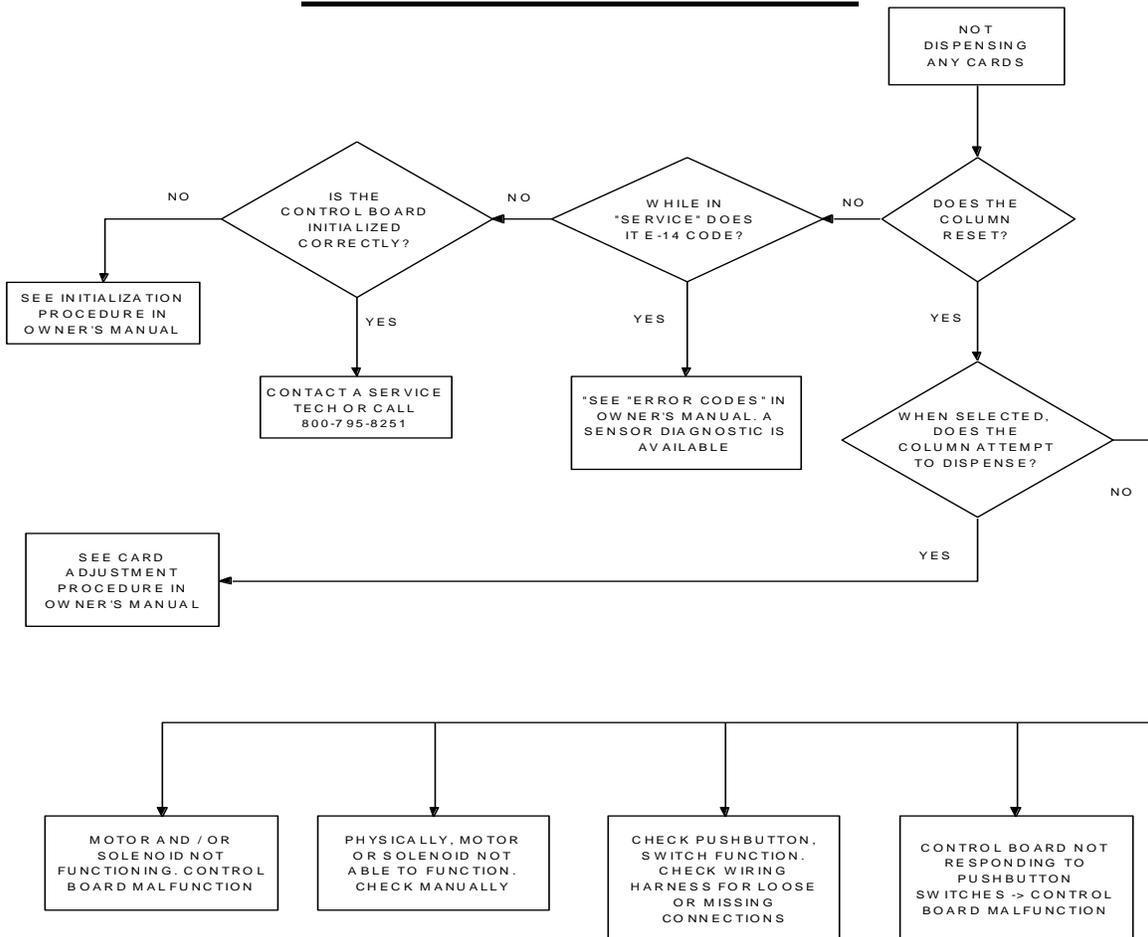
TICKETS JAMMING OR HESITATING FLOW CHART



ODD COUNTS AND DISPENSING

- 1) Static electricity is a major contributor to this and all other electronic equipment. You **MUST** use a 3-prong grounded receptacle.
- 2) At times (mostly in the winter), strange static problems can occur. It may be necessary to spray the carpet area around the machine with a diluted mixture (10:1) of Downy fabric softener and water once every two weeks. **DO NOT SPRAY MACHINE.**
- 3) Total re-programming may be needed. See the “**INITIALIZING PROCEDURE**”. This procedure erases all settings and re-settable counts. The machine must now be re-programmed.
- 4) Low voltage causes many electronic problems. If your unit is plugged into an extension cord, or is on the same line with refrigeration equipment, etc., the 115-volt supply may be less than 100 volts. Have an electrician check the voltage supplied to the machine and repair as needed.
- 5) The sensor may be dirty. One sensor is built into each track just beyond the drive rollers. Should the lower sensor get filled with card shavings, it may not be able to sense. Simply blow air or use a cotton swab to clean this area.

TICKETS NOT DISPENSING



FUSE BLOWN

If the machine shuts down and nothing works, check the fuse. The machine uses a 6¼ - amp AGC fuse.

NO POWER

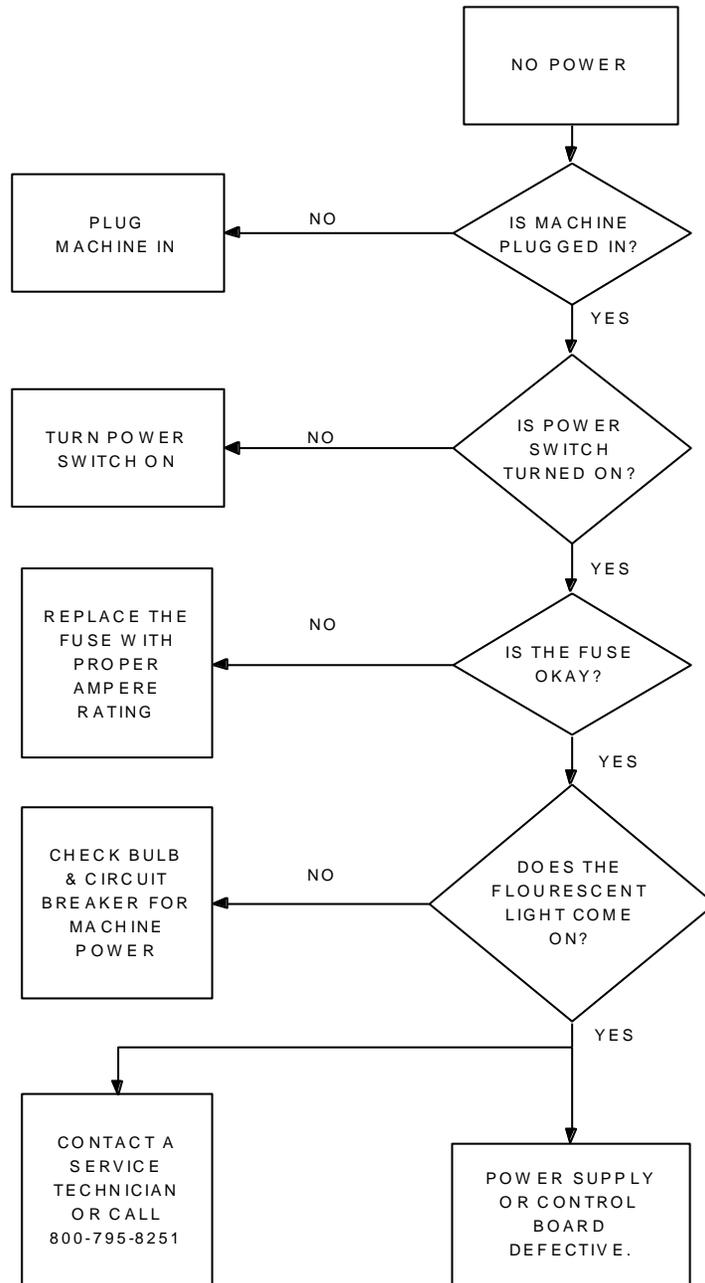
A toggle switch that turns the machine power on and off is located on the back of the machine. This switch can be used as a means of re-setting the machine without opening the cabinet.

POWER INTERRUPTIONS

It is possible that if power dies exactly at the moment a card is being delivered, the card will stop and not be delivered until power is returned and the motor is run. The machine recognizes this situation by displaying an **E-04** error code. The machine will not operate until reset. This single ticket that was dispensed will not have been counted, nor will it have been deducted from the credit. Two possibilities then exist:

- 1) The customer removes and plays the ticket after power has been restored. This is not a problem since the ticket has been paid for. The person at the location realizes this is due to the **E-04** error code and dispenses one additional ticket from that column and returns it to the stack. This procedure corrects the ticket count and the dollar count.
- 2) The person at the location can simply return the ticket to the stack after it has been dispensed and allow the customer to play. This procedure also corrects the card and money count.

NO POWER FLOW CHART



CALLING A SERVICE TECHNICIAN

Service is available at your fingertips. **CALL 1-800-795-8251**

When calling for service, PLEASE HAVE YOUR MACHINE SERIAL NUMBER READY.

SERIAL NUMBER LOCATIONS

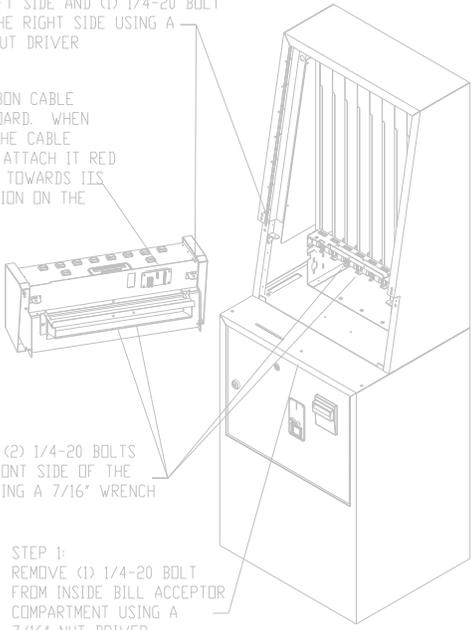
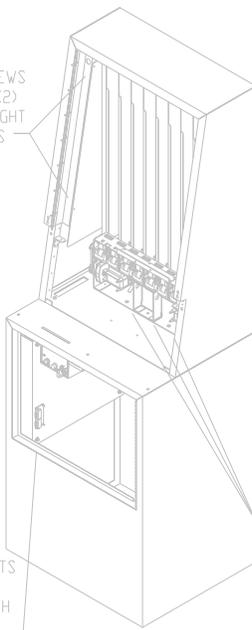
The serial number is located on the inside of the main ticket door below where the lock is mounted. Another is in the bill acceptor compartment on the right wall and on the front of this manual.

REGULAR MAINTENANCE

The bearings and the wear elements are designed for long life and require no regular maintenance. However, it is recommended that the following be performed on a regular basis:

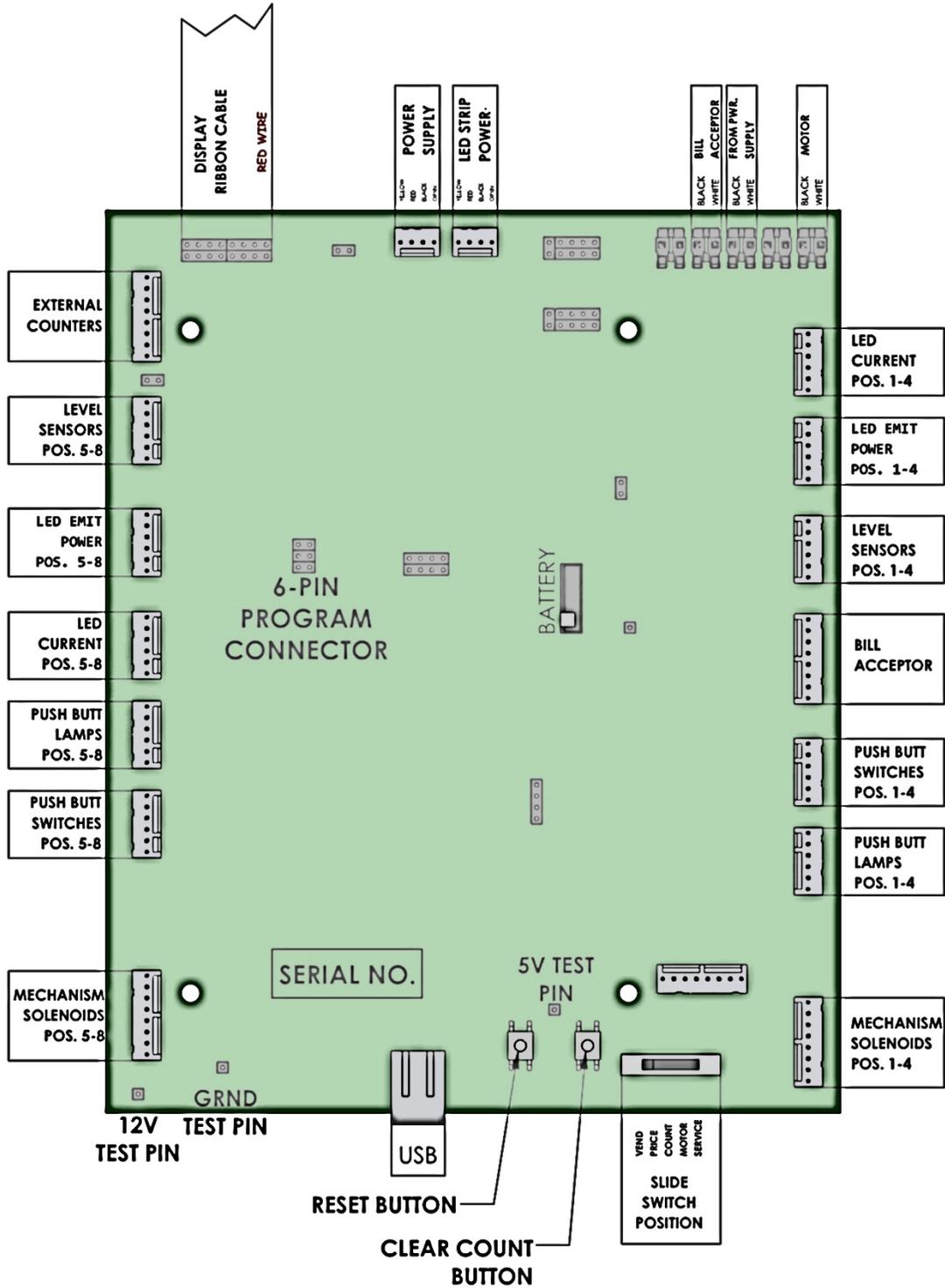
* Blow air in the front of the mechanism onto the sensors to eliminate paper dust from covering the sensor.

* Clean the exterior of the machine with a moist soft cloth and a window cleaning solution. The front glass is made of polycarbonate, which is bullet proof, but it is prone to scratching when rubbed with a dry cloth or rag.

<p>GM SERVICE DOOR REMOVAL INSTRUCTIONS</p> <p>STEP 3: REMOVE (1) 1/4-20 BOLT FROM THE LEFT SIDE AND (1) 1/4-20 BOLT FROM THE RIGHT SIDE USING A 7/16" NUT DRIVER</p> <p>STEP 4: REMOVE RIBBON CABLE FROM THE BOARD. WHEN REPLACING THE CABLE BE SURE TO ATTACH IT RED STRIPE SIDE TOWARDS ITS NOTED POSITION ON THE BOARD.</p> <p>STEP 2: REMOVE (2) 1/4-20 BOLTS FROM FRONT SIDE OF THE MECH USING A 7/16" WRENCH</p> <p>STEP 1: REMOVE (1) 1/4-20 BOLT FROM INSIDE BILL ACCEPTOR COMPARTMENT USING A 7/16" NUT DRIVER</p> 	<p>GM INNER MECHANISM REMOVAL INSTRUCTIONS</p> <p>STEP 2: REMOVE (2) 8-32 SCREWS FROM LEFT SIDE AND (2) 8-32 SCREWS FROM RIGHT SIDE USING A PHILLIPS SCREWDRIVER</p> <p>STEP 1: REMOVE (4) 8-32 NUTS HOLDING ELECTRONIC COVER IN PLACE WITH A 11/32 WRENCH AND UNPLUG MECH WIRES FROM - JB7 OR J11, J1 & J2, J5, JB1 & JB2, AND JB5. REFER TO CONTROL BOARD DIAGRAM AT BACK OF THIS MANUAL.</p> <p>STEP 3: REMOVE (3) 1/4-20 BOLTS USING A 7/16" WRENCH</p> <p>STEP 4: PULL MECH STRAIGHT OUT OF THE REAR BRACKETS HOLDING THE MECH IN PLACE. BE CAREFUL OF THE WIRES CATCHING ON THE CABINET OR OTHER WIRES.</p> 	<p style="text-align: center;">GTMI TECHNIK MFG. INC. COLUMBUS, NEBRASKA</p> <p>NAME: GM INSTRUCTIONS (SERVICE DOOR/MECH)</p> <p>PART # GM8V DATE: 6/12/2003 REV # --- SHEET: 1 OF 1 SCALE: NONE DRW'N BY: JAH CHK'D BY: APPV'D BY:</p> <p>FILE #GM8V MAT'L ----- FINISH: -----</p>
--	--	--

CONTROL BOARD

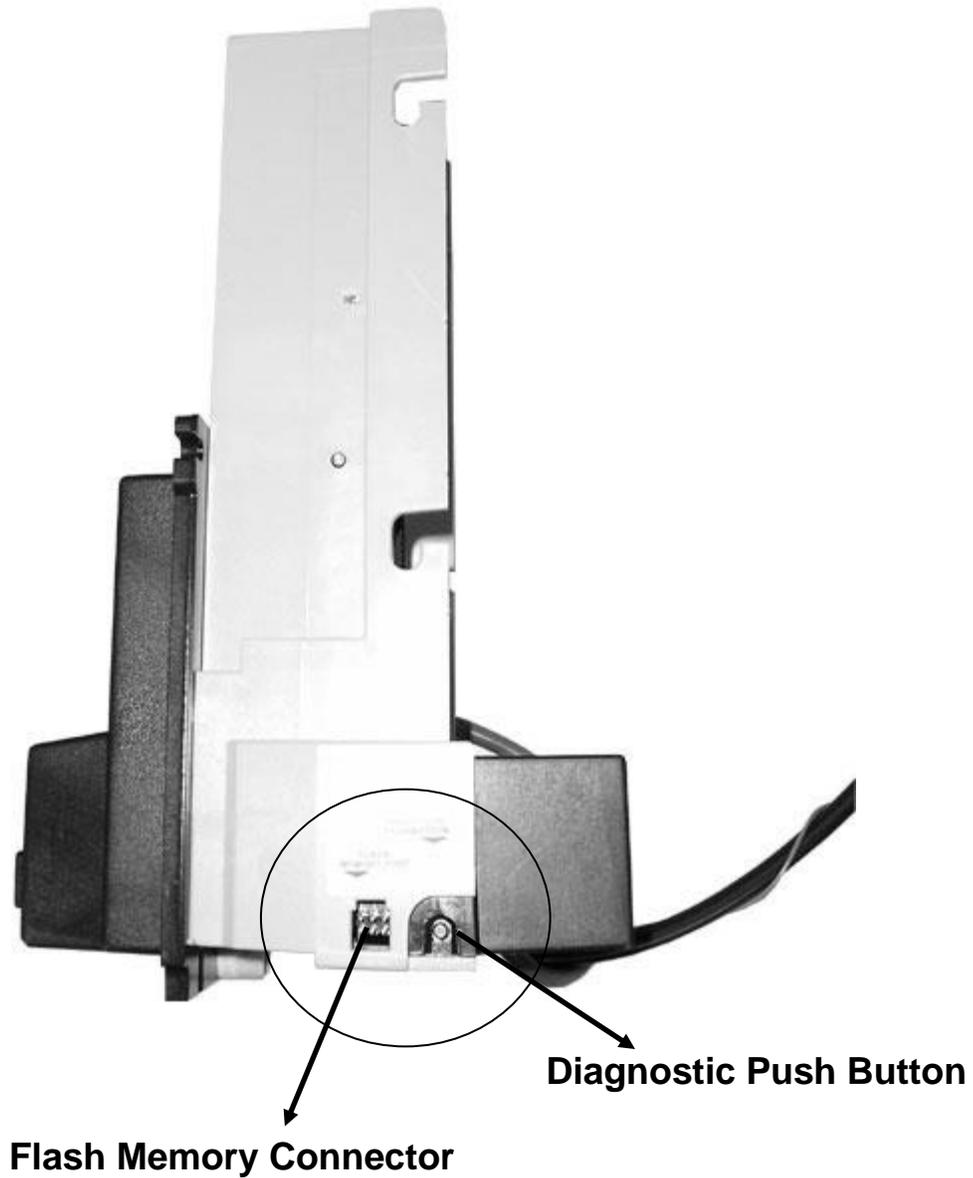
**TECHNIK MFG, INC.
CONTROL BOARD P/N 110-090**



PYRAMID BILL ACCEPTOR

Acceptor Diagnostics

Use the Diagnostic Pushbutton on the side of the acceptor (toward the rear) as shown.



Front Bezel Lighting Flash Codes

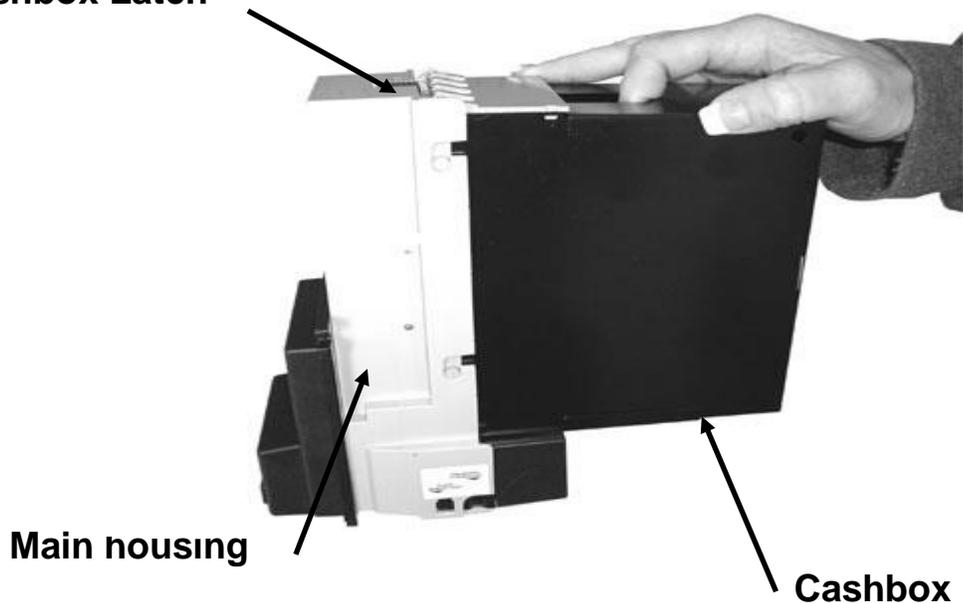
The flash codes shown correspond to the Apex bill acceptor error. The acceptor will flash the error code, then wait 3 seconds and flash it again.

Flashing Code	Meaning of Flashing Code	Corrective Action
LED's always OFF	The acceptor has no power.	Check that power has been applied.
LED's always ON	No error exists – acceptor is OK.	None.
1 Flash	Something is in the bill path	Remove the cassette and Lower Sensor Plate to inspect for foreign objects. Clean if necessary.
2 Flashes	Something is obstructing the stacker.	Remove the cassette and Lower Sensor Plate to inspect for foreign objects. Clean if necessary.
3 Flashes	The cassette is full of currency.	Remove the cassette and empty it.
4 Flashes	The cassette has been removed	Replace the cassette.
5 Flashes	The acceptor is defective	Replace the acceptor.
6 Flashes	The acceptor is not enabled	Verify that the host has enabled the acceptor.
10 Flashes	Configuration Mode has been entered.	Configuration Card must be inserted into the acceptor or cycle power to the acceptor to exit this mode. See Configuration Section for details.

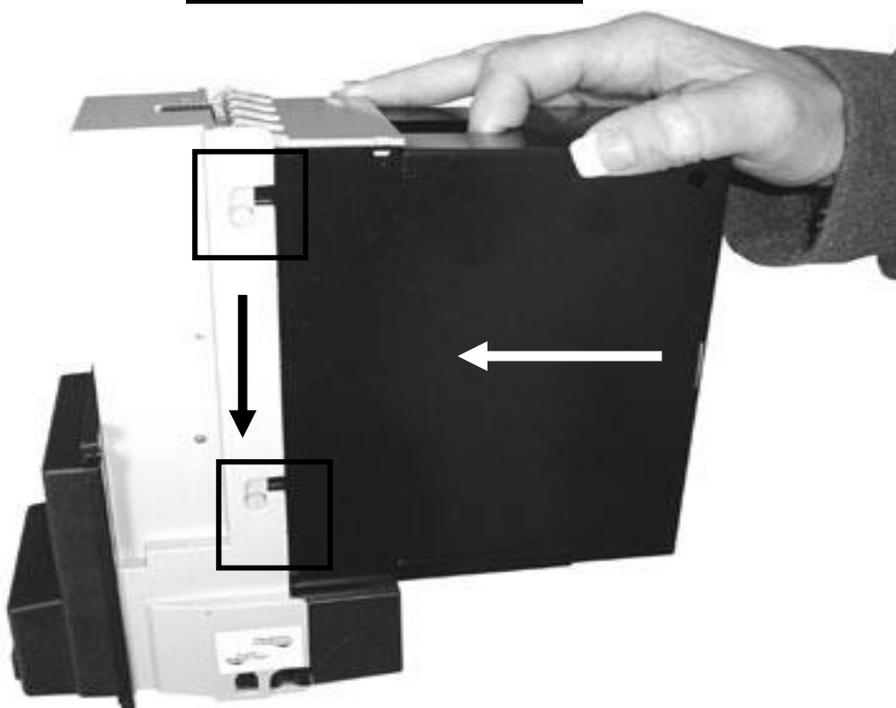
Removing the Cashbox

To remove the stacker, push back the Cashbox Latch toward the front of the acceptor. Then pull the Cashbox upward, and then pull back to remove.

Cashbox Latch



Installing the Cashbox

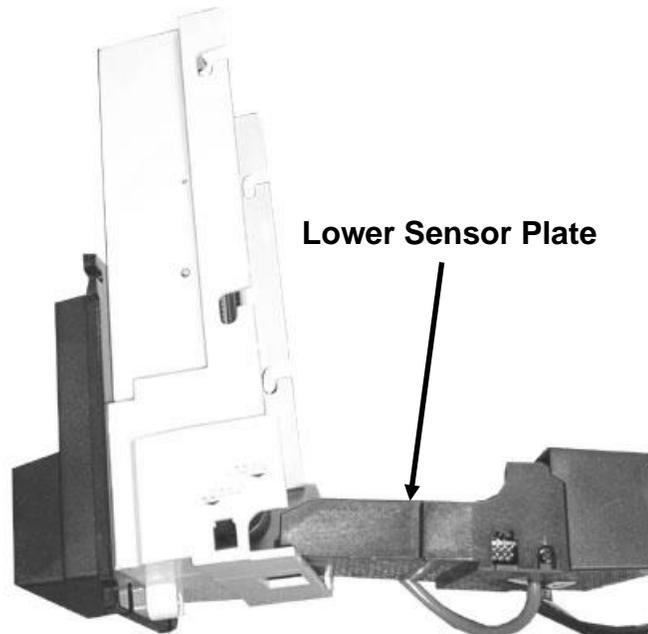
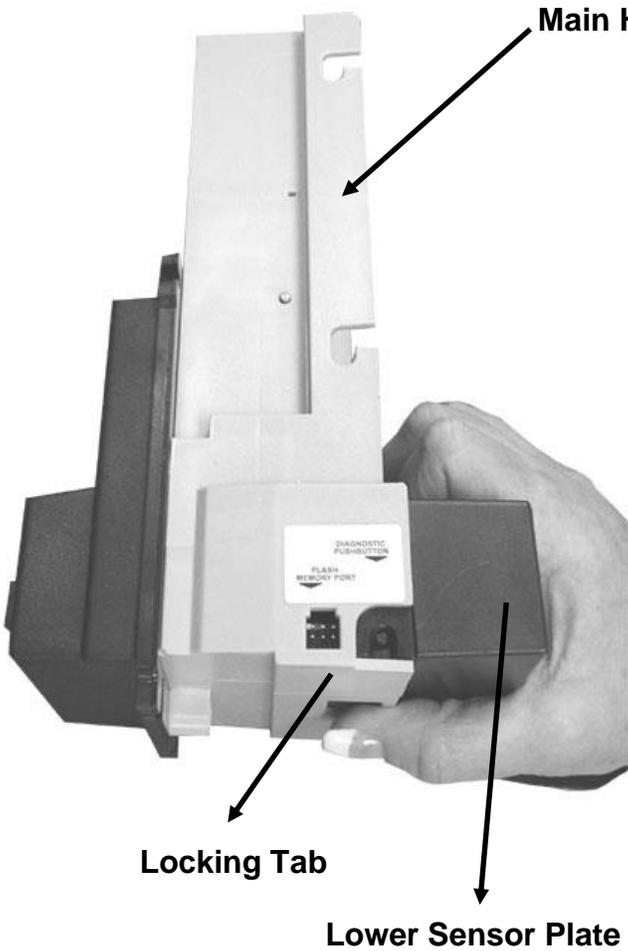


NOTE: WHEN INSTALLING THE CASHBOX MAKE SURE THE TABS ARE PUSHED FORWARD INTO THE SLOTS ON THE MAIN HOUSING AND THEN PUSH DOWN

MAKING SURE THEY CLICK INTO PLACE. IF THE CASHBOX IS NOT PROPERLY INSTALLED THE BILL ACCEPTOR WILL NOT FUNCTION.

Removal of the Lower Sensor Plate

Removal of the Lower Sensor Plate is done by pressing the locking tab in and pulling the plate back. **NOTE:** Before removing the Lower Sensor Plate make sure you unplug the 18 pin connector from the other side of the bill acceptor. It is not shown in the picture.





Technik Mfg., Inc.
1005 17th Street
Columbus, NE 68601
(800) 795-8251
(402) 564-3191
www.technikmfg.com

Instructions For The Technik Grandmaster Randomizer Key Part No. 311-513

These instructions describe the function and use of the Technik Randomizer Key with Technik Minnesota Grandmaster models utilizing firmware revision 111-032H or higher.

The Key allows changing the dispensing function models using 111-032H or higher firmware from random column dispensing to non-random dispensing and vice-versa. Once the machine is programmed for the desired mode and the Key is removed from the machine it will remain in that mode until reprogrammed again using the Key. The machine will remember its mode even when the power is off and its mode cannot be changed without use of a valid Technik Key.

Instructions For Use

To change the mode of a Minnesota Grandmaster perform the following steps:

1. Turn off the AC power of the Grandmaster to be changed.
2. Open the lower cabinet door of the machine and locate the 110-090 main circuit board located on the left side of the cabinet.
3. Plug the Key onto the connector marked "ICSP" near the center of the circuit board. Be careful to orient the Key in the direction shown and ensure that all six pins of the Key are lined up on the ICSP connector.



4. Turn on the machine's AC power.

