



Installation and Operator's Manual

P/N: 71U-1405-300K © 2008, REV 04

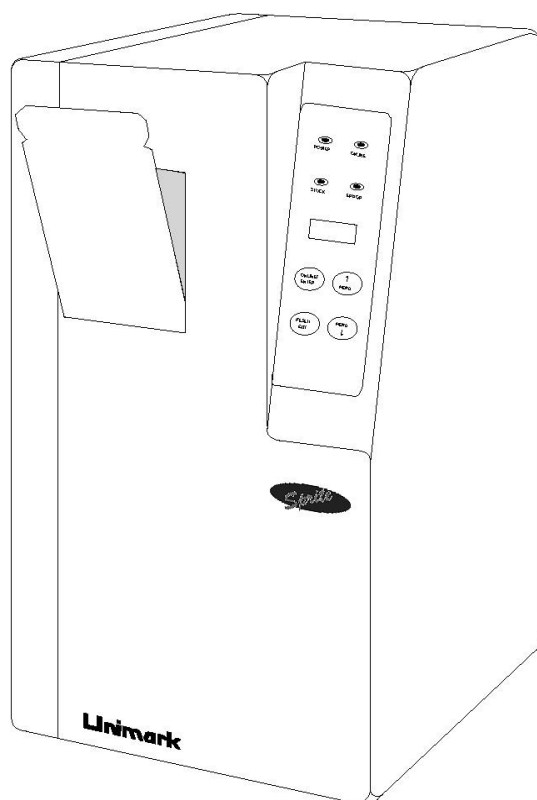


Table Of Contents

1.0	Introduction	Page 3
2.0	Items Included	Page 3
3.0	Product Specifications	Page 4
3.1	Dimensional Diagrams	
3.2	Features of the Sprite	
3.3	Modular Design	
4.0	Installation	Page 7
4.1	Unpacking	
4.2	Location and Set-up	
4.3	Plugging into the Unit	
5.0	Host Interface Specifications	Page 9
5.1	Hardware Interface	
5.2	Data Structure	
6.0	ASCII Control Character List	Page 9
7.0	Front Panel	Page 10
7.1	Keypad/Display Layout	
7.2	Basic Operator Level Menu	
7.3	Adjustments Menu	
7.4	Information Menu	
8.0	Basic Unit Operation and Setup	Page 14
8.1	Initial Setup	
8.2	Loading Ticket Stock	
9.0	Operating Under a CRS or Airline Host	Page 17
10.0	Clearing Stock Jams	Page 17
11.0	Cleaning	Page 19
11.1	Periodic Inspection and Cleaning	
11.2	External Surfaces Cleaning Procedure	
11.3	Internal Surfaces Cleaning Procedures	
11.4	Using a Sprite Cleaning Card	
12.0	Troubleshooting	Page 21
12.1	Basic Failure Analysis	
12.2	Replacing a Blow Fuse	
12.3	Alerts and LCD Messages	
12.4	Issues not Associated with an LCD Alert Message	
13.0	File Updates	Page 31
13.1	Firmware Update	
13.2	Operator Disk File Update	
14.0	Customer/Technical Support	Page 33
14.1	Return Authorization/Customer Service	
14.2	Technical Support	
15.0	Unimark Products, LLC. Warranty Statement	Page 35

FCC Emission Interference

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by Unimark could void the operator's authority to operate the equipment under these conditions and rules.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own cost.

1.0 Introduction:

The SPRITE II is identical in basic form, fit, and function to the original Unimark SPRITE developed in 1999. The only internal functionality difference is that the floppy disk drive, floppy media, and associated cabling and electrical components have been replaced with a flash memory IC, creating in essence a 4MB flash drive. This more than doubles the storage memory provided by the original floppy disk media (standard 1.44MB disk).

The SPRITE II is a state-of-the-art Airline Ticket and Boarding Pass (ATB) printer, hereafter referred to as the Unit, and offers many features not found on typical ATB printers. Unimark wants you to be completely satisfied with your experience with the Unit and encourages your questions and comments. Contact Unimark technical support or customer service at 800-255-6356 (US only) or 913-649-2424 with any inquiries.

The Unit is designed to set on a standard office desktop or counter. This makes the Unit ideal for travel agency environments fitting into any office space configuration.

The Unit transport mechanism accepts full size ATB coupons (8 and 7-3/8 inch stock). The Unit has two stock inputs (Bins A and B), which are external and unsecured, but can be secured using the locked ticket box option. The printed/encoded coupons are automatically presented at the exit bin on the front of the Unit.

The Unit's front control panel incorporates multi-function control push-buttons, indicator LEDs, and an alpha numeric character display. The display provides Unit status and activity information as well as providing visible feedback when the operator or service provider is navigating through the menu system.

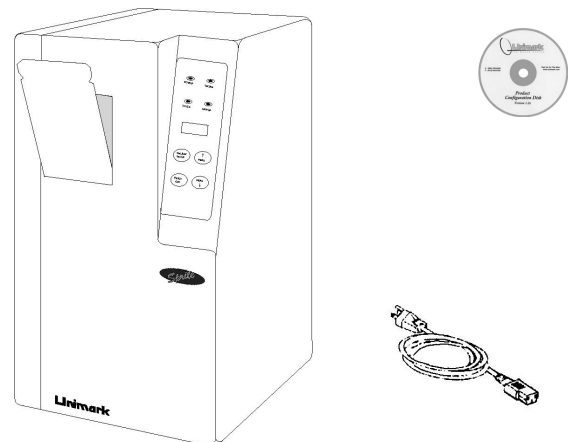
The Unit uses an auto-switching power supply which allows automatic operation in both 110 and 220VAC environments.

Operating Tips:

- Read and follow all warning instruction labels on the Unit itself.
- Do not operate your Unit near water or spill liquid of any kind into it.
- Do not use a damaged power cord. Do not put anything on it or place it where it will be walked on. If the power cord becomes damaged or frayed, replace it immediately.
- Do not insert anything into the ventilation slots or openings as this can result in Unit damage.
- Only trained technicians should attempt to service the Unit if in need of repair.

2.0 Items Included (contents vary with customer configuration):

1. Sprite Unit
2. Keys
3. AC Power Cord
4. Manual or Product CD
5. Optional items such as ticket catchers, locked stock box, and interface cables and adaptors/gender changers
6. Sample Voided Test Stock



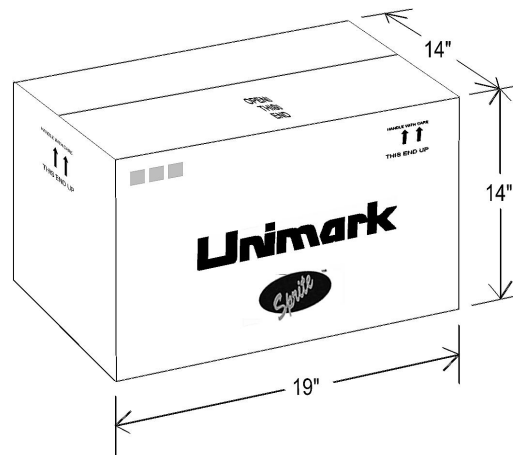
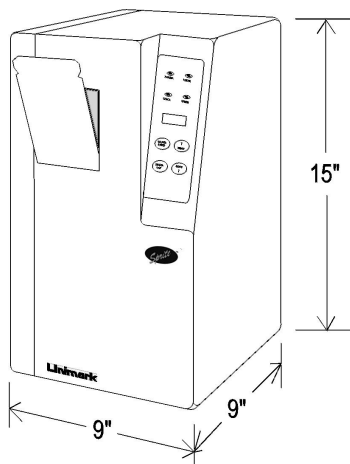
3.0 Product Specifications:

- **Printing system:**
 - Method:** Direct Thermal
 - Resolution:** 203DPI
 - Graphics:** Full Graphics – PCX format
 - Speed:** Up to 10 documents per minute
- **Magnetic encoding:**
 - Stock type:** ATB1 and ATB2 tickets with and without magnetic stripe
 - Encoding specification:** Conforms to IATA specification 1722C, Attachment C
 - Encoding format:** Four tracks Read/Write verification (210 bpi)
 - Pre-Encoding:** Standard pre-read of magnetically encoded SCN numbers
- **Document handling:**
 - Types:** ATB1 and ATB2, 8 and 7-3/8 inch stock
 - Source:** Two external (Bins A and B); 7-3/8 and 8 inch stock
 - Exit:** One stock path exit point at the front
- **Interface:**
 - RS-232:** Two Asynchronous Serial Communication ports (DB-25F DTE standard)
- **Control Panel:**
 - Push-Buttons:** Four momentary push-button keys (see Front Panel Section for details)
 - LEDs:** Four indicator LEDs (see Front Panel Section for details)
 - Display:** 2 row by 8 column (2x8) alpha numeric (see Front Panel Section for details)
- **Physical:**
 - Unit Dimensions:** 9" (229mm) wide, 15" (381mm) high, 9" (229mm) deep
 - Unit Weight:** 17.5 lbs (8 kg)
 - Shipping Box Dimensions:** 14" (366mm) wide, 14" (366mm) high, 19" (483mm) deep
 - Unit Shipping Weight:** 22 lbs (10 kg)
- **Environmental:**
 - Operating Temperature:** 40 to 104°F (4 to 40°C)
 - Storage Temperature:** -4 to 140°F (-20 to 60°C)
 - Relative Operating Humidity:** 10 to 95%, non-condensing, without degraded performance
 - Relative Storage Humidity:** 10 to 95%, non-condensing, without damage to components

Lockable Ticket Box

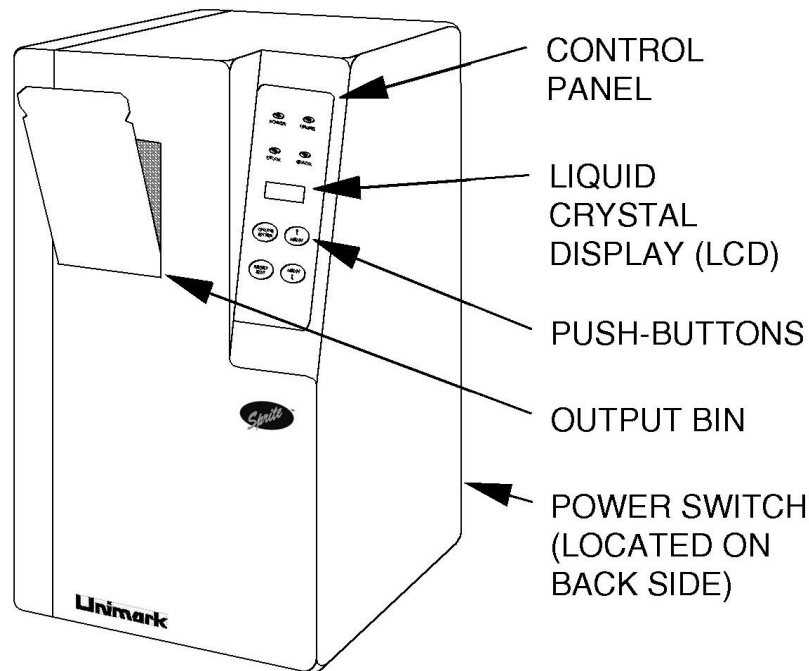
- **Functional:**
 - Capacity:** Holds two secured stacks of 500 coupons for each bin, or 1,000 secured for Bin A and 1,000 unsecured for Bin B
 - Implementation:** Removable box, secured using integrated thumbscrews
- **Physical:**
 - Ticket Box Dimensions:** 5.25" (133mm) wide, 15" (381mm) high, 13" (330mm) deep
 - Ticket Box Weight:** 6.85 lbs (3.1 kg)
 - Unit /w Box Shipping Weight:** 35 lbs (16 kg)

3.1 Dimension Diagrams



3.2 Features of the Sprite

The Unit offers unique advantages and outstanding features to the travel industry.



Simple Operation

While the Unit has many advanced and sophisticated features, its user friendly design makes it easy to use. Most common setup and operating functions are performed through the Control Panel push-buttons and Liquid Crystal Display (LCD).

Magnetics Capability (Optional)

The Unit has the capability to record data on ATB tickets with magnetic stripes. The Unit's magnetic encoding conforms to International Air Transport Association (IATA) specification 1722c, Attachment C. The Unit's magnetic encoder is also capable of SCN pre-read (before print, encoded, burst operations) if required.

Ticket Stock

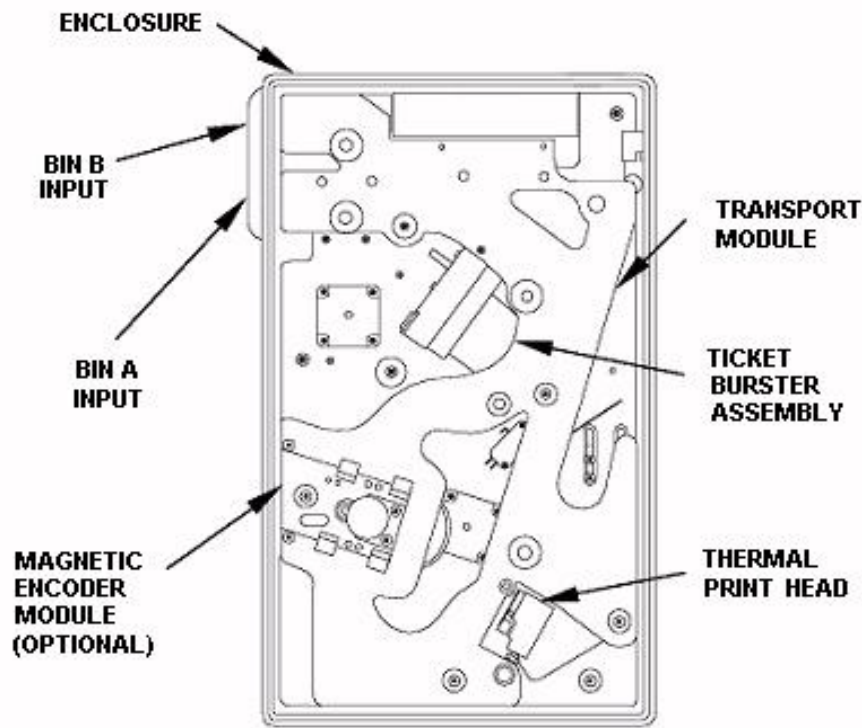
The Unit uses fan-folded, ATB direct thermal stock, user selectable 8-inch or 7 3/8-inch length. The 2 external stock input bins (A and B) are located on the rear panel of the Unit and are directly accessible by the operator. Two standard 1,000 coupon ticket boxes can be placed behind the enclosure to feed the input bins.

Exit Bin

The exit bin holds approximately 50 coupons. The Unit will automatically stop printing documents when it senses a bin full condition. Removing the printed coupons from the exit bin will typically restart the print process automatically unless custom firmware requires operator intervention.

3.3 Modular Design

The Unit is divided into several functional modules. This enables you to quickly isolate a problem, minimizing downtime.



Basic Configuration

The Unit consists of five major modules; the transport mechanism, main controller PCB, the user interface module, communications daughter PCB and the enclosure. The transport mechanism contains all of the motors, sensors, and drive components necessary to burst, transport and print a coupon. The main controller PCB has all the circuitry for driving motors and solenoids, monitoring sensors and formatting print data. On the communications daughter board is where all of the circuitry for communication with the host resides. The user interface module is used for setting up the Unit on initial installations and for displaying messages pertaining to the status of the Unit. The enclosure contains an auto-sensing power supply (for 110/220 environments) and an IEC 320 A/C input module.

Options

Magnetic encoder module can be purchased installed or added later as a factory upgrade.

A lockable ticket box is available that can be configured for two secured stacks of 500 for each bin, or one secured stack of 1000 coupons for Bin A and one unsecured stack of 1000 coupons for Bin B.

The Unit can be equipped with a lockable exit bin (integrated into the enclosure). This is typically used in an STP environment to provide more security.

4.0 Installation

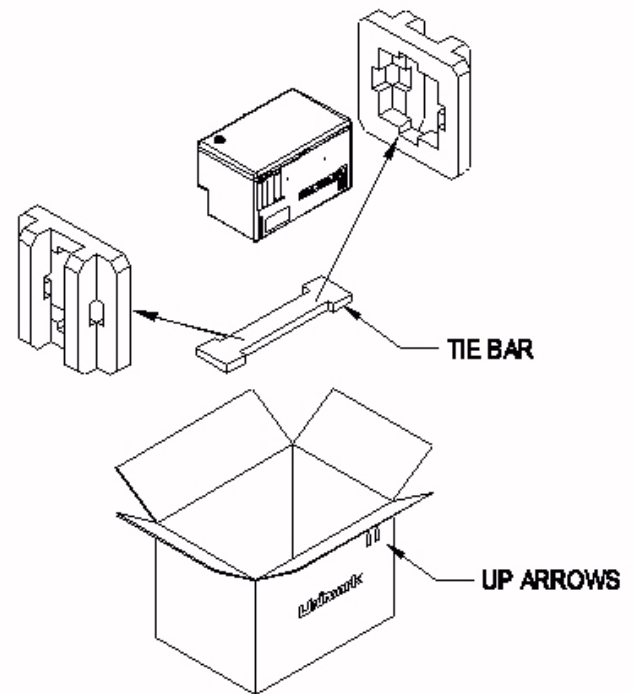
4.1 Unpacking

Inspect the shipping container for evidence of in-transit damage, such as being dropped, crushed, or punctured. If damage is evident, contact the carrier directly to specify the nature and extent of damage. If the container is free of damage, remove the Unit by opening the top side and pulling the Unit (secured with packing foam pieces) from the container. Remove the foam and the plastic bag/cover from the Unit. **The keys are in the accessory kit.**

Retain original shipping carton and foam for future use.

Accessory Kit

After the Unit has been removed from the shipping container, locate the Accessory Kit. The Accessory Kit consists of the enclosure door keys, power cord, Installation and Operator's Manual or Product CD, and some sample stock for testing. The exact contents of the kit are subject to change without notice and vary for each customer.

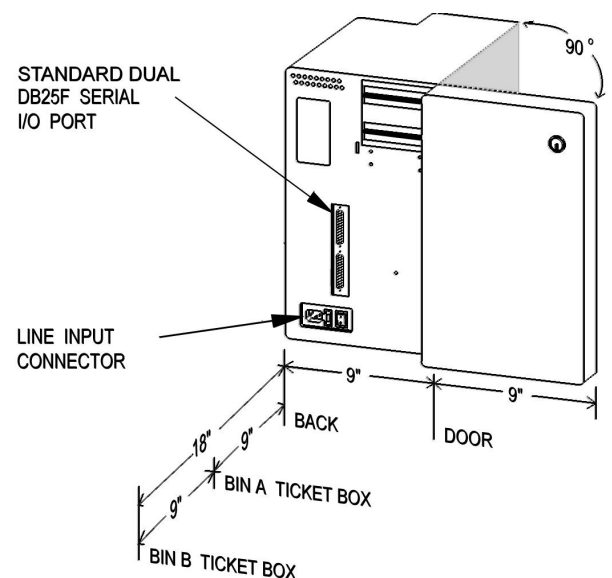


4.2 Location and Set-up

Choose a location that provides at least 1-inch of open space between surfaces adjacent to the Unit and its sides, front, and top to allow proper ventilation. At least 9 inches of space is required behind the Unit for cabling, airflow, and one ticket box (Bin A or Bin B). If two ticket boxes are used (Bins A and B), at least 18 inches of space is required. The power cord supplied with the Unit is 10 feet long.

You should position the Unit so you have access to the door on the right side of the enclosure (**when viewed from the back; as shown**), which must have room to swing open 90° to perform routine maintenance.

- Do not install the Unit where it will be exposed to direct sunlight. Sunlight may affect the optical sensors resulting in stock loading difficulties.
- In particular do not allow the bin inputs to be exposed to direct Sunlight because it will disable the Units ability to detect stock when inserted. The Locked Ticket Box can be used to shield the bin input sensors from light sources.
- Direct sunlight can also affect the readability of the front panel display.
- The Unit is intended for indoor use only. Place the Unit on a firm solid surface. If placed on an unsteady surface, it may fall and become damaged.
- To protect the Unit from overheating, do not block openings on the enclosure. Do not place the Unit on or near a heat source, such as a radiator or heat register.



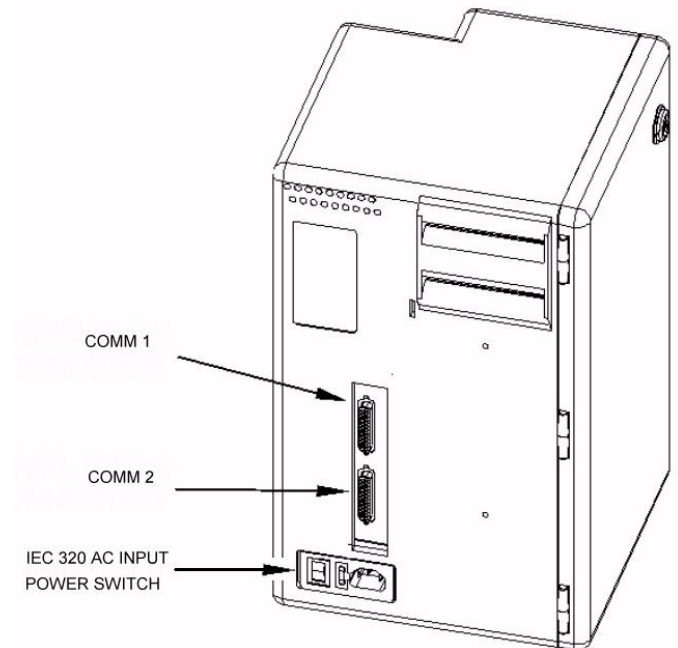
4.3 Plugging into the Unit

Place the Unit so that it is convenient to power and communications connections.

Make sure the power switch is in the OFF (0) position and connect the power cord. Attach the communications cable to the UPPER DB25F connector (COMM 1).

The Unit has the following physical connections:

1. **POWER:** An IEC 320 power connection accepting 110/220VAC (50/60Hz).
 2. **COMM 1 and COMM 2:** RS-232 interface connections. These connections are DB-25 female pin connectors and are configured as DTE. A null modem cable quickly interfaces the Unit to a standard connection on a typical PC-based host system.
- The Unit uses a grounded 3-prong power cable as a safety feature, which will only connect to a grounded wall outlet. If the power cable cannot be plugged into the outlet, contact an electrician to have the outlet replaced. **Do not use an adapter to defeat the grounding feature.**



5.0 Host Interface Specifications

5.1 Hardware Interface

The Unit has two RS-232 Asynchronous Serial Communications ports. The “Top” connector is used to interface to the Host system. The physical connection is provided using a DB-25 female pin connector marked COMM 1. The port is configured as DTE and can be used to connect to an associated DTE host using a null modem cable. The pin-out below provides the basic cabling requirements to connect the Unit to a PC-type host system (table shown assumes the host system uses a DTE DB-9 connector).

Host (DTE) PC/AT or equivalent		Signal Flow	Sprite II (COMM 1)	
Pin #, DB-9	Signal Name		Signal Name	Pin #, DB-25F
1	CD	N/A		
2	RxD	←	TxD	2
3	TxD	⇒	RxD	3
4	DTR	⇒	DSR	6
5	Signal GND	N/A	Signal GND	7
6	DSR	←	DTR	20
7	RTS	⇒	CTS	5
8	CTS	←	RTS	4,11
9	RING	⇒		

The connection from pin 11 to RTS enables the Unit to function with existing customer cabling.

5.2 Data Structure

The Unit uses an asynchronous serial data transmission method. Data is sent based on any combination of the following:

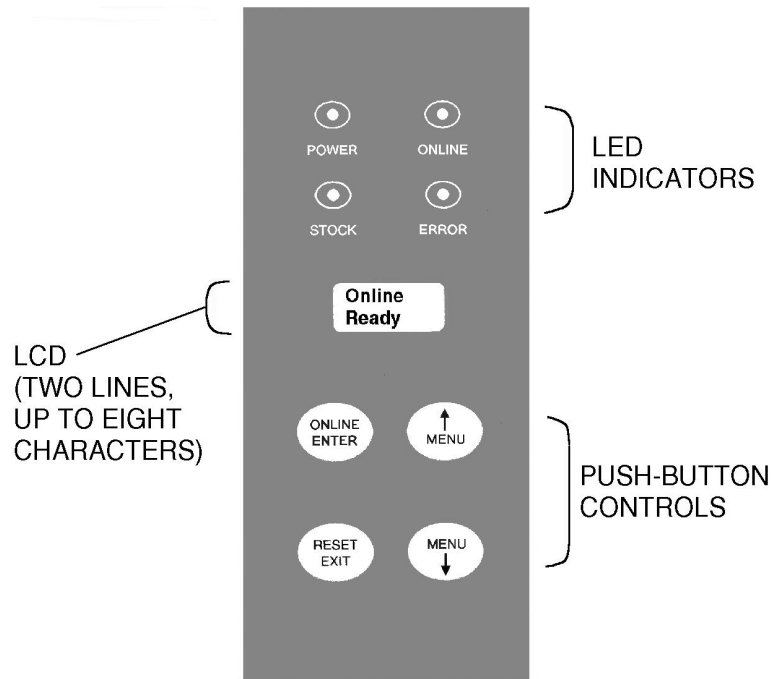
Baud	Data Length	Parity	Stop Bit
1200 - 19,200	7, 8	None, Even, Odd	1, 2

6.0 ASCII Control Character List (some characters available with certain firmware versions only)

- ACK** - Acknowledge character (06_{HEX}). Used to indicate that the message was received correctly.
- CR** - Carriage Return character (0D_{HEX}).
- DC1** - XON character (11_{HEX}). Used to indicate that the serial port is ready.
- DC3** - XOFF character (13_{HEX}). Used to indicate that the serial port is NOT ready.
- ETX** - End Of Text character (03_{HEX}). Used to suffix commands and data to and from the Unit.
- LF** - Line Feed character (0A_{HEX}).
- NAK** - Negative Acknowledge character (15_{HEX}). Used to indicate that the message was NOT received correctly.
- NUL** - NULL pad character (00_{HEX}).
- SOH** - Start Of Header character (01_{HEX}). Sometimes used to prefix special commands or messages.
- STX** - Start Of Text character (02_{HEX}). Used to prefix commands and data to and from the Unit.

7.0 Front Panel

7.1 Keypad/Display Layout



Indicator	LED Color	Function
POWER	Green	Illuminated when the SPRITE power switch is ON. When not illuminated, power is OFF.
ONLINE	Green	When illuminated, the SPRITE is Online and ready to receive data from the CRS. When not illuminated, the SPRITE is Offline and cannot receive data, or an alert state exists (error occurred or SPRITE is out of stock). When flashing, SPRITE is receiving data.
STOCK	Amber	Illuminates when the selected input bin (A or B) is out of stock.
ERROR	Red	Illuminates when the SPRITE diagnostic program detects an alert condition, such as a ticket stock jam

LED Indicator Functions

Push-button	Function
ONLINE ENTER	Toggles the SPRITE between Online and Offline. When Offline, it is used to accept an Offline menu selection or to accept a field entry option.
MENU ↑	Initiates menu operations when SPRITE is Offline. Cycles up through menu selections for the SPRITE configuration and setup.
MENU ↓	Initiates menu operations when SPRITE is Offline. Cycles down through menu selections for the SPRITE configuration and setup.
RESET EXIT	Resets the SPRITE following an error indication when unit is Online. When Offline, it is used to exit the menu level.

PUSH-BUTTON Functions

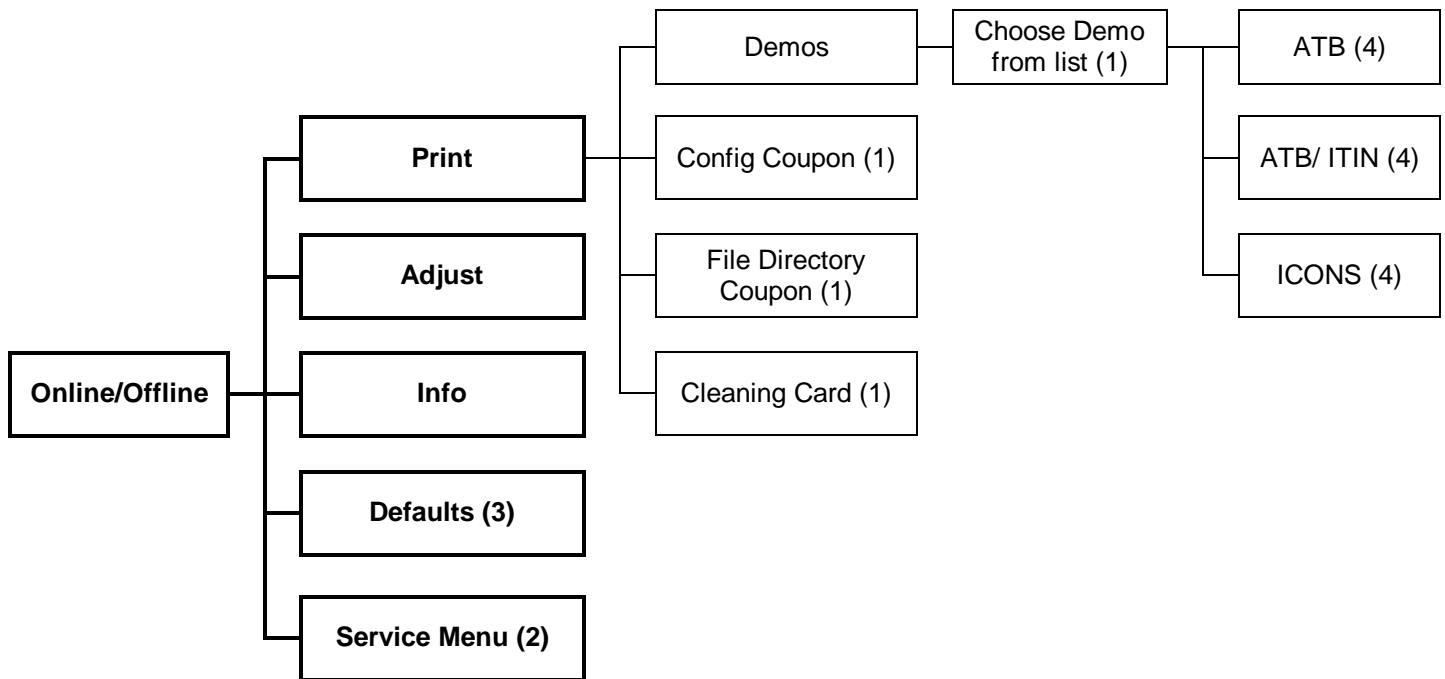
Use the front control panel to monitor and control the Unit during setup and operation. The diagram above shows the SPRITE control panel, consisting of four multi-function control push-buttons, four LED indicators, and a Liquid Crystal Display (LCD) capable of displaying up to two lines of eight characters. The LCD is used to display the current status of the Unit. When the Unit is ready to receive data, it will display ONLINE READY as shown above.

A variety of Unit functions are available when the Unit is Offline. The multi-function control push-buttons are used to select different menus, make changes to software settings, and perform various maintenance tasks.

During normal Unit operation, the operator will not need to access any of these Offline printer functions.

7.2 Basic Operator Level Menu

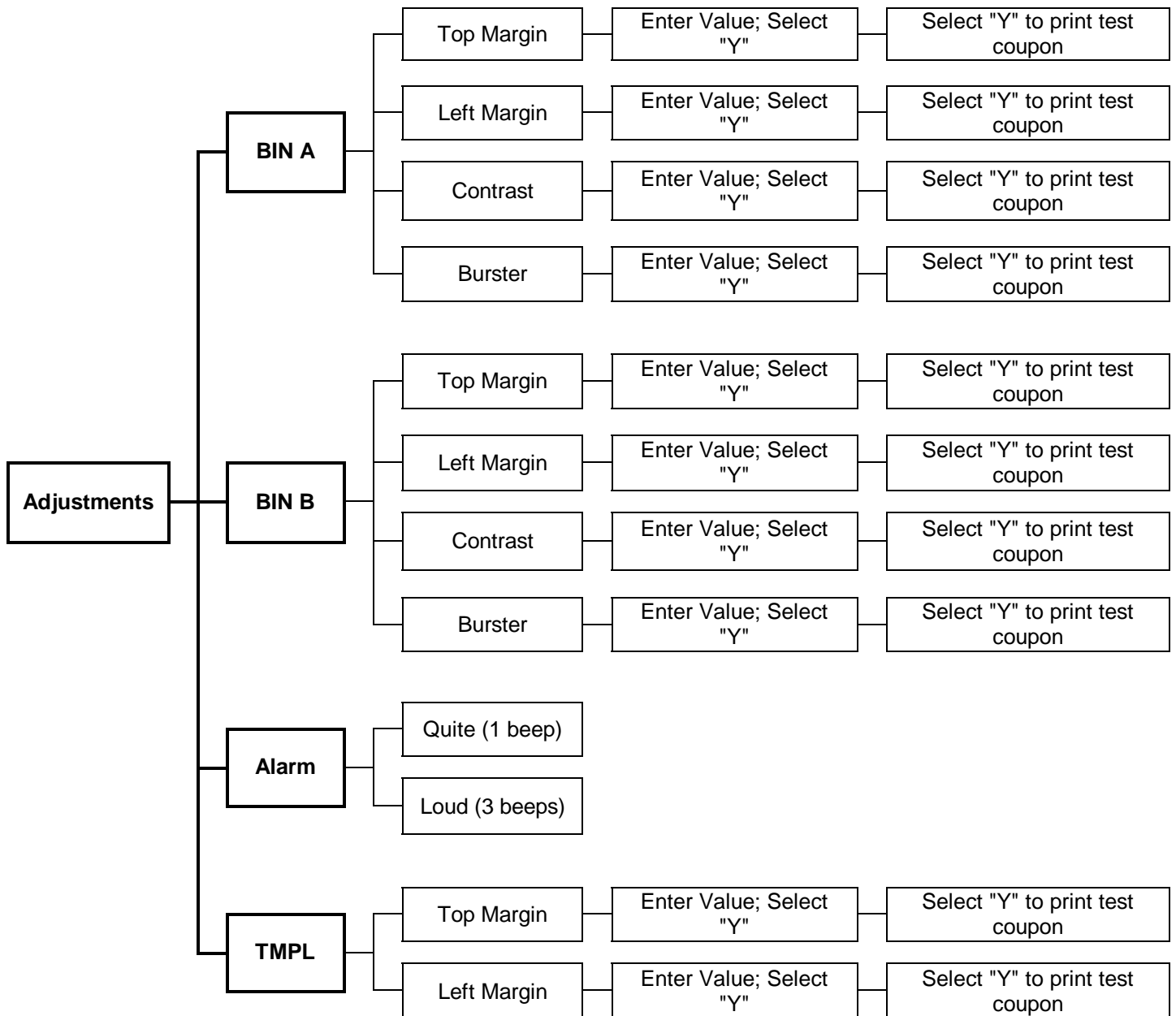
Menu structure may change depending on the specific customer firmware version.



1. Choosing this menu selection causes an action in the Unit. There are no other sub-menus below this.
2. Menu tree requires entry of the service password to access.
3. Choosing this option from the menu will force the Unit to reset all current settings to the factory defaults.
4. Demo names vary depending on the customer.

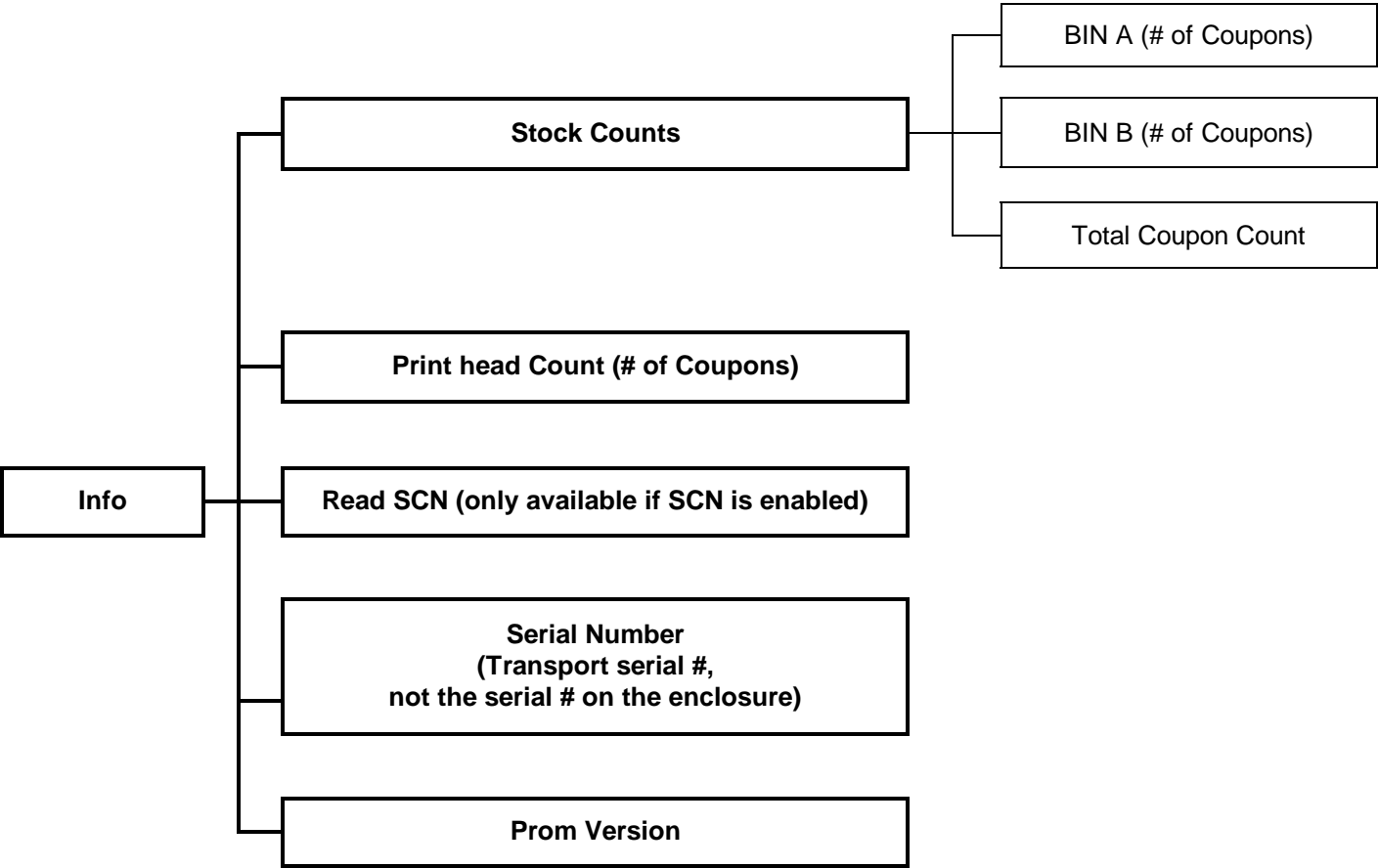
7.3 Adjustments Menu

Menu structure may change depending on the specific customer firmware version.



7.4 Information Menu

Menu structure may change depending on the specific customer firmware version.



8.0 Basic Unit Operation and Setup

This section describes SPRITE power-on and off, initialization, ticket stock setup and loading, and explains operation of the control panel push-buttons, Light Emitting Diode (LED) indicators, and Liquid Crystal Display (LCD). Information is also provided on where to find instructions for operating the Offline Menu and printing sample ATB coupons.

8.1 Initial Setup

The Unit has been configured at the factory to meet each customer's requirements. Use the following procedures to power-on the Unit, load ticket stock, and operate the Unit's controls. If any difficulties are experienced with any of these procedures, please refer to the Troubleshooting Section for help.

CAUTION

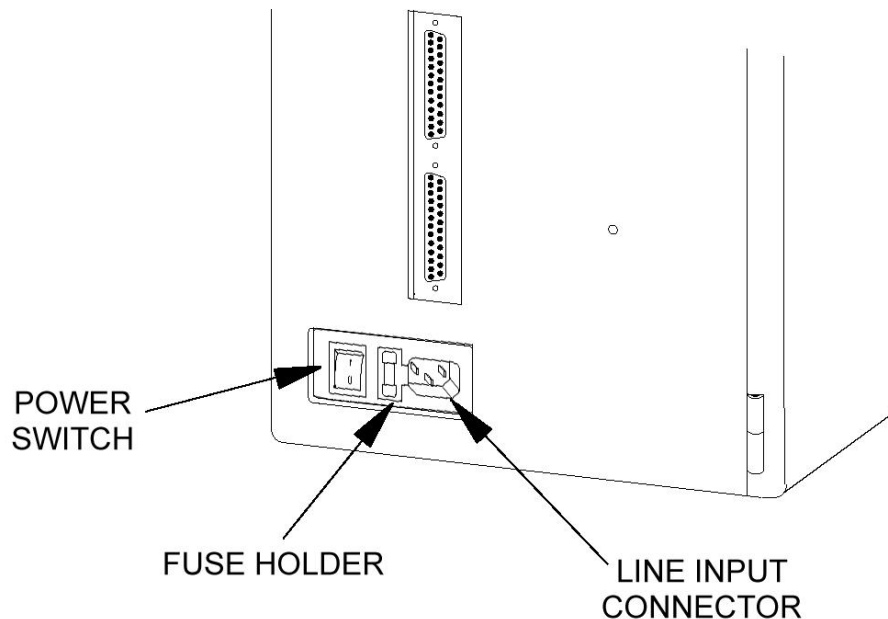
To prevent damage, immediately toggle the power switch to the 0 (OFF) position if the SPRITE does not indicate that initialization is in progress within 5 seconds after power is applied. Initialization is indicated when the control panel LCD displays text immediately after the power switch is toggled to the I (ON) position.

If power-on was aborted, wait 10 seconds before toggling the power switch back to the I (ON) position.

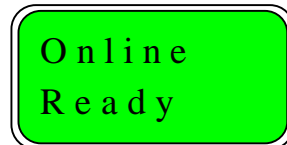
If the LCD still does not display text within 5 seconds, immediately toggle the switch to the 0 (OFF) position (refer to Troubleshooting Section) for help.

Powering ON and OFF

- 8.1.1 To power-up the Unit, locate the black power switch on the back panel, next to the fuse holder and line input connector, and toggle it to the I (ON) position.



- 8.1.2 As soon as the Unit is powered on, it will begin performing an initialization procedure that lasts approximately 30 seconds. During initialization, the SPRITE does a complete diagnostics check on all of its features. These checks include ROM and RAM tests, along with reading needed files from the Flash-Disk. If it finds problems during any of its checks, it will halt the process and place an alert message on the LCD describing the problem. The last test that is performed is to check the paper path for any coupons. If found, these coupons will be voided and placed in the exit bin.
- 8.1.3 When the Unit successfully completes initialization, the following message is displayed to indicate the unit is Online and ready to print:

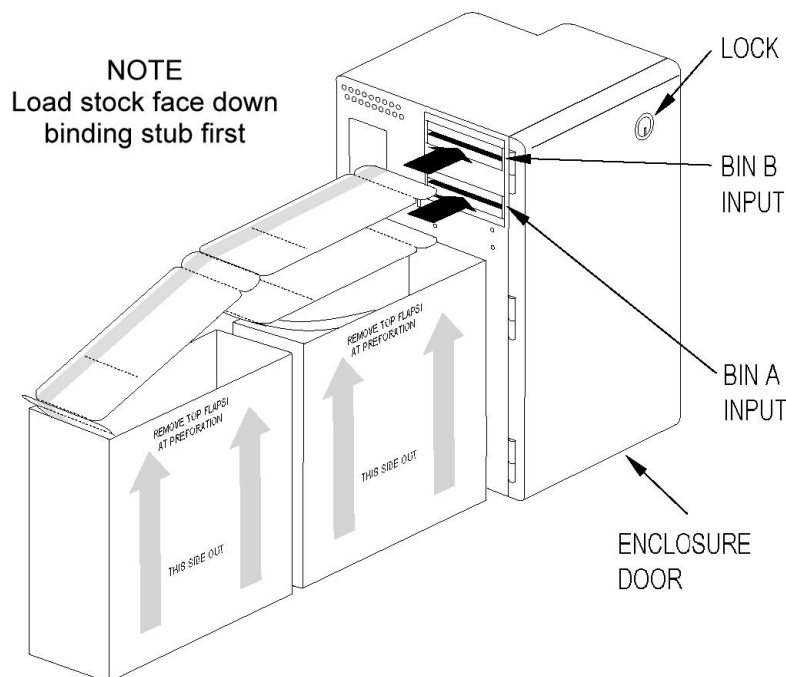


- 8.1.4 If the Unit does not initialize properly, an LCD alert message will be displayed instead of Online, the red alert LED will flash, and a buzzer will sound. Refer to Troubleshooting Section for information about alert conditions and how to clear them.
- 8.1.5 To power-off the Unit, toggle the power switch to the 0 (OFF) position.

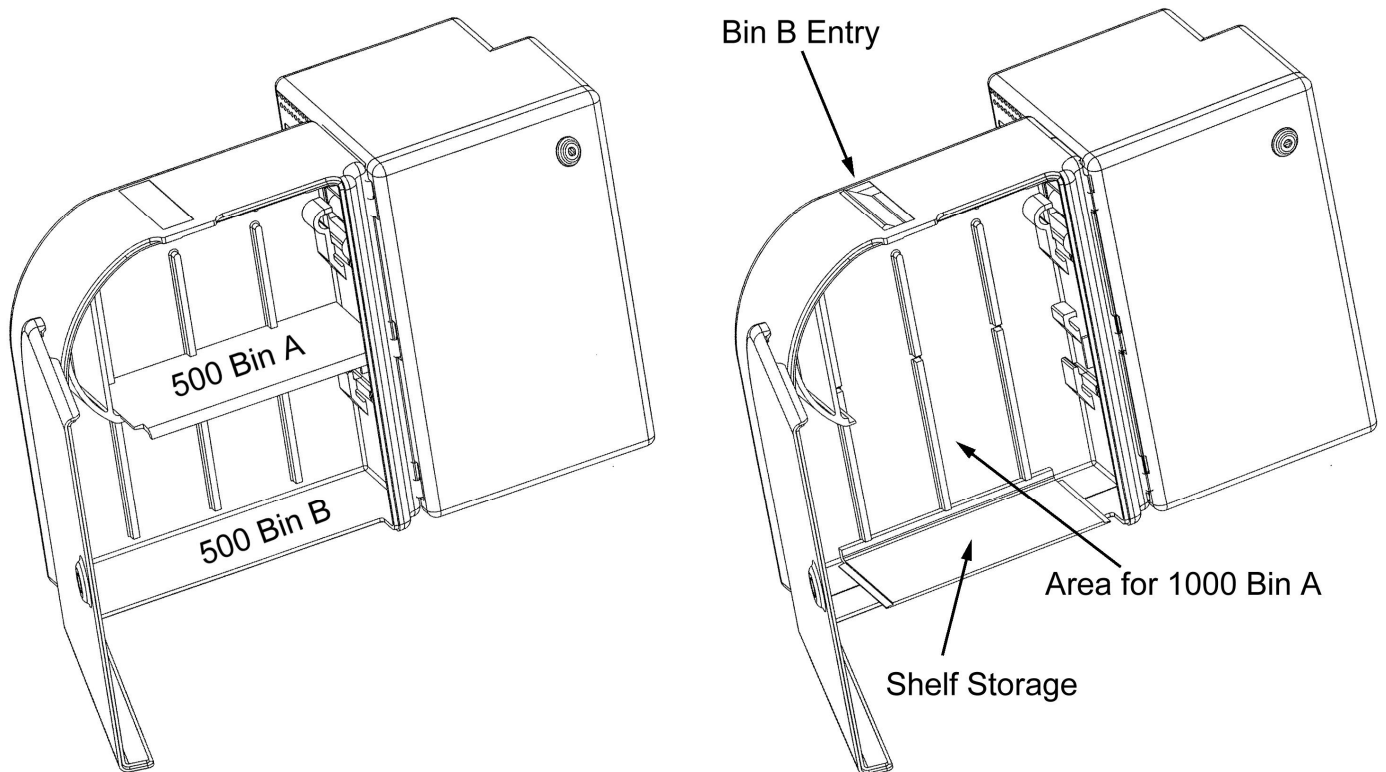
8.2 Loading Ticket Stock

Use the following procedures to load ticket stock in the Unit. If any problems are encountered while loading ticket stock, refer to Troubleshooting Section for help.

- 8.2.1 Verify the power switch is in the I (ON) position and the unit has completed initialization.



- 8.2.2 Position the ticket stock box(es) behind the Unit in line with the ticket inputs for Bin A and B. Refer to the figure on the previous page for orientation information. Insert the ticket stock into Bin A face down, staple stub first. As the stock enters the bin, the motor will begin to run. Release the stock when the bin motor begins to pull the stock into the Unit. The stock will be automatically positioned for use. Repeat the above procedure for Bin B. Check the LCD display; if the unit is Offline, place it Online by pressing the **ONLINE/ENTER** push-button.
- 8.2.3 If the optional Locked Ticket Box was purchased, attach the bin to the rear of the SPRITE printer using the two thumbscrews already installed in the bin. The Locked Ticket Box can be set up in two different configurations. First, with the shelf installed in its normal position, the bins can be loaded with two stacks of 500 coupons each, both of which are secured when the door is closed and locked.

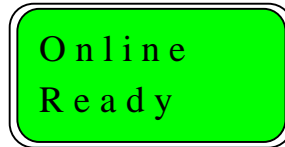


- 8.2.4 The second option is with the shelf removed (it can be stored upside down on the bottom of the box with the lip up and to the rear). In this configuration, there is room for a box of one-thousand for Bin A internally secured. A second, non-secured stock type can be inserted from the top of the bin by sliding the latch forward (toward the Unit) and opening the flap. Refer to the figure above for routing of the stock for this configuration.

9.0 Operating Under a CRS or Airline Host

Before attempting to go Online with the host, the Unit should be powered on, set up, and aligned using the previous procedures. Then continue with the following procedure:

- 9.0.1 Observe the control panel LCD. The LCD must display “Online Ready” or a customized Online status message:

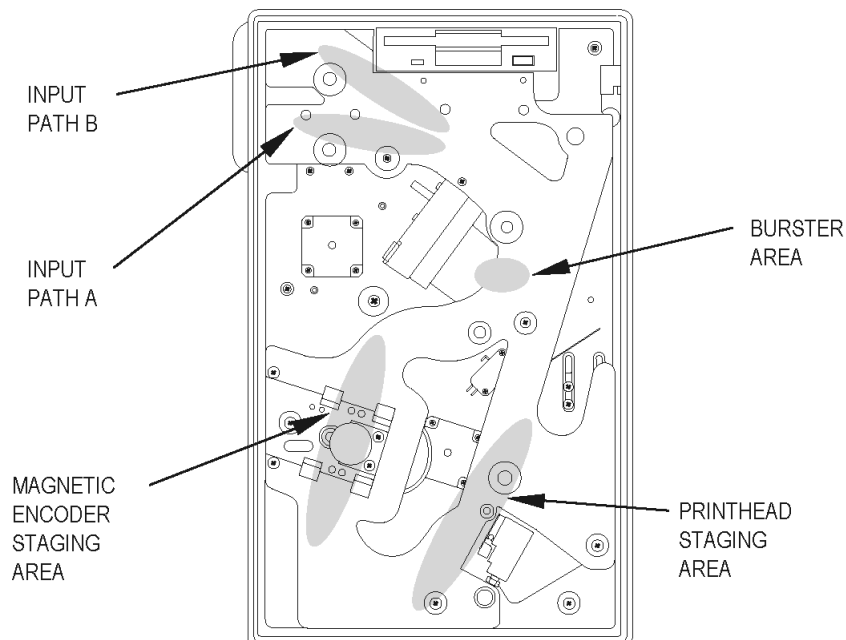


- 9.0.2 If the Unit is not Online, press the **ONLINE/ENTER** push-button.
- 9.0.3 Send test ticketing data to the Unit.
- 9.0.4 Observe the control panel for an indication that the Unit is receiving data. The ONLINE LED indicator will flash when data from the host is being received by the Unit.
- 9.0.5 Verify that a test ticket is printed after the host data transmission is complete and that the test ticket is printed correctly. If the ticket is correct, the Unit is Online and ready to use.
- 9.0.6 If no ticket was printed or the ticket was not printed correctly, make sure the host data communications cable is secure and is connected to COMM 1 (DB25F Serial I/O Port). Refer to the Installation Section for location information. If there is still a problem, refer to Troubleshooting Section for help.

10.0 Clearing Stock Jams

To remove a ticket stock jam, use the following procedure:

- 10.0.1 Note the location of the jam indicated on the LCD and refer to the figure below to locate the corresponding area where the jam occurred.



10.0.2 Press the **RESET/EXIT** push-button to try to clear the jam.

10.0.3 If the Document Path Jam message is cleared, press the **ONLINE/ENTER** push-button to continue operation.

10.0.4 If the jam condition persists, complete the following procedure:



WARNING

To prevent personal injury, remove power before clearing ticket stock jams.

10.0.4.1 Toggle the power switch to 0 (OFF) and disconnect the power cord from the rear of the Unit.

CAUTION

To prevent damage, do not force door open beyond 90°. The cabinet has door locks to limit door opening to 95°.

10.0.4.2 Unlock and open the door on the left side of cabinet to a maximum of 90°.



WARNING

To prevent personal injury, do not touch motors when clearing ticket stock jams. After extended Unit use, motors may become hot to the touch.

CAUTION

To prevent damage, do not hit or scratch the print head and encoder assemblies when clearing ticket stock jams. Contact with hard objects can easily damage the print head and encoder assemblies.

10.0.4.3 Remove the ticket stock causing the jam through the opening in the middle of the transport module.

10.0.4.4 Make sure that all the pieces of the ticket stock are removed from the transport module before continuing.

10.0.4.5 Plug the power cord back into the Unit, toggle the power switch to I (ON), and reload the ticket stock as described in the Installation Section.

11.0 Cleaning

This section describes the preventive maintenance procedures for the Unit. Although the Unit will perform dependably right out of the box, the operator should perform periodic inspections and cleanings to keep it in good working order. With proper care of the enclosure, print head, magnetic encoder (when so equipped), transport assembly, and other components, the Unit can be expected to continue to provide good service for many years. The following inspection and cleaning procedures are presented separately for clarity, but may be performed at the same time.

11.1 Periodic Inspection and Cleaning

Like any piece of office equipment, the Unit will need periodic maintenance. Every three months or 12,000 coupons, the Unit should be cleaned and visually inspected. This process should take no more than ten minutes.

- 11.1.1 Carefully inspect the outer surfaces of the Unit's **enclosure** for signs of excessive internal heat buildup. Visual evidence of excessive internal heat buildup may be confirmed by observation of discoloration or warping of the covers surrounding the electronic components.
- 11.1.2 Examine the Unit's external and internal surfaces, ventilation slots, transport mechanism, and exposed components for dust buildup. All dust should be removed at least every three months to maintain performance.
- 11.1.3 If cleaning is required, complete the recommended cleaning procedures listed in the following sections.

CAUTION

To prevent damage, use only mild commercial cleaning solutions or a mild solution of soap and water to clean the external surfaces of the SPRITE enclosure. The enclosure can be damaged by solvents.

11.2 External Surfaces Cleaning Procedure

Examine the enclosure's external and internal surfaces, ventilation slots, transport assembly, and internal components for dust buildup. All dust should be removed at least every three months to maintain performance.

- 11.2.1 Vacuum dust accumulation from the ventilation slots and other external surfaces of the SPRITE.
- 11.2.2 Dampen a soft cloth or paper towel with a mild solution of soap and water or a mild commercial cleaner and wipe the surface.
- 11.2.3 Dry the cleaned area with a clean, dry cloth or paper towel.

11.3 Internal Surfaces Cleaning Procedure

Dust is primarily produced by ticket stock passing through the transport assembly inside the SPRITE enclosure. Clean the internal surfaces of the enclosure as follows:

- 11.3.1 Toggle the POWER switch to 0 (OFF).
- 11.3.2 Unplug power cord from back of the enclosure.

CAUTION

To prevent damage, do not force door open beyond 90°. The enclosure has door locks to limit door opening to 95°.

- 11.3.3 Unlock door on left side of enclosure and open to a maximum of 90°.
- 11.3.4 Remove all card stock from enclosure by rotating knurled knobs along transport path as required.
- 11.3.5 Vacuum as much dust as possible from inside enclosure.
- 11.3.6 Use compressed air to blow dust from ticket stock path grooves in transport assembly.

11.4 Using a SPRITE Cleaning Card

A cleaning card is available for the SPRITE which will clean the print head and the paper path via a menu selection. To use the cleaning card (P/N 700-5014-200) follow these instructions:

NOTE

Follow the instructions on the cleaning card envelope. Do not open the envelope until you are ready to insert the cleaning card into the Unit.

- 11.4.1 Press **ONLINE/ENTER** push-button to take the Unit to Offline/Menu.
- 11.4.2 Press the up or down arrow push-buttons to access MENU PRINT. Press **ONLINE/ENTER** push-button.
- 11.4.3 Press the up or down arrow push-buttons to access PRINT CLEAN. Press **ONLINE/ENTER** push-button.
- 11.4.4 The display will scroll to alert the operator to REMOVE ALL STOCK FROM INPUT AND EXIT BINS.
- 11.4.5 Once the stock has been removed, the display will scroll INSERT CLEANING CARD IN EITHER BIN.
- 11.4.6 Upon inserting the pre-saturated cleaning card, the coupon will move back and forth three times over the print head and the magnetic read/write heads while the display scrolls CLEANING IN PROGRESS. The operator will hear the drive rollers inside the Unit spin dry for about 10 seconds after each pass.
- 11.4.7 The cleaning card will appear at the front exit bin when the cleaning cycle is complete. Properly dispose of the used cleaning card.
- 11.4.8 Press **RESET/EXIT** three times to return to Offline/Menu, then press **ONLINE/ENTER** to return to Online.

Cleaning card kits are available as needed: 700-5014-205K (Qty 5) and 700-5014-225K (Qty 25).

12.0 Troubleshooting

12.1 Basic Failure Analysis

The Unit continually monitors its operation. The table below describes typical problems that may occur, possible causes, and corrective actions. When the Unit detects a problem, an audible tone is sounded to attract the operator's attention, and an accompanying message is displayed on the LCD to indicate the potential problem. See the following LCD message tables for lists of LCD alert messages and explanations.

For assistance with troubleshooting please contact Unimark technical support @ 800-255-6356 (US only) or 913-649-2424.

Problem	Possible Cause	Corrective Action
Not operating	No power to unit	Switch in OFF position Power cord not plugged in completely Faulty power source Blown fuse – Refer to Troubleshooting Section
Bin A or B will not load stock	Bin A and B are directly exposed to sunlight	Reposition the Unit so that Bins A and B are not directly exposed to sunlight
Offline	ONLINE/ENTER button pressed while SPRITE was Online	Press ONLINE/ENTER button to return Online
	Alert condition forced Unit Offline	Clear alert condition and press RESET/EXIT button followed by ONLINE/ENTER
Unit delivers blank coupons	Stock loaded incorrectly	Remove stock and reload with face side down and staple stub first
	Wrong stock type	Load direct thermal stock
	Contrast adjusted too low for current stock being used	Adjust darkness using the Adjust Contrast option in the menu 1-Lightest; 5-Darkest
Print too dark and blurred	Contrast adjusted too high for current stock being used	Adjust darkness using the Adjust Contrast option in the menu 1-Lightest; 5-Darkest
Stock Light flashing	Stock supply depleted	Reload stock in depleted bin
	Stock not loaded correctly	Remove and reload stock
Print not aligned correctly	Print misalignment	Adjust Top and/or Left Margin using the corresponding adjust menu option
Unit Jamming	Stock left in transport	Check transport for small piece of stock left in Unit
	Drive wheels slipping	Use cleaning card – Refer to Cleaning Section
Burst Failure	Stock damaged and did not burst	Remove damaged stock from Unit and press RESET/EXIT
	Burst position incorrect	Adjust Burst Position using the Burst Adjust option in the menu

12.2 Replacing a Blown Fuse

Use the following procedure and the figure below to replace the fuse in the SPRITE.

12.2.1 Toggle the POWER switch to O (OFF).

12.2.2 Remove the ticket stock and, if installed, remove the optional lockable ticket box to improve access to the fuse holder.

12.2.3 Disconnect the power cord, remove the fuse holder, and check the fuse.

12.2.4 If the fuse is bad, replace it with a fuse of the same rating (see below).



To prevent the risk of fire, replace only with the same type and rating of fuse.

12.2.5 Fuse specifications:

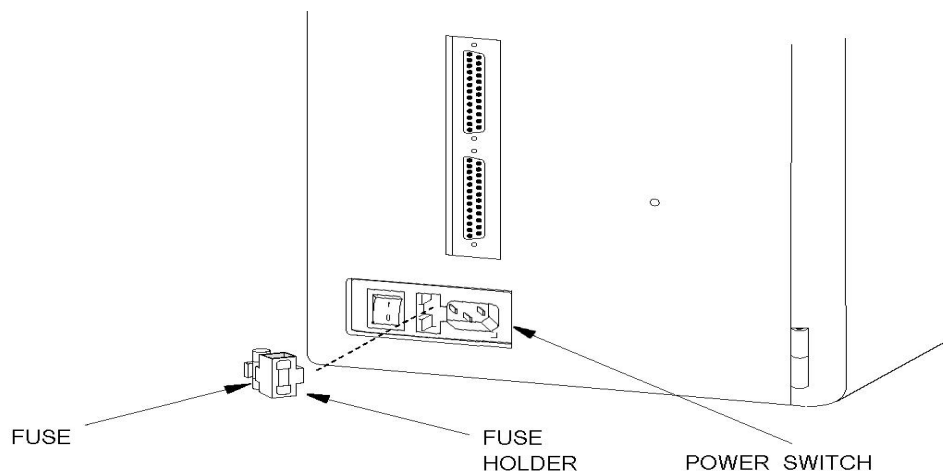
110 to 120 VAC 2 Amps

or

210 to 250 VAC 2 Amps

12.2.6 Re-install the fuse holder, power cord, and optional lockable ticket box (if applicable).

12.2.7 Toggle the POWER switch to I (ON) and re-install the ticket stock. Refer to Loading Ticket Stock Section for details.



12.3 Alerts and LCD Messages

An alert occurs when the Unit detects a condition requiring user intervention such as an empty stock bin, etc. Alerts are indicated by a buzzer sounding and an illuminated LED indicator. A corresponding message is displayed on the control panel LCD. The amber stock LED may also light if the alert condition was caused by the Unit running out of stock.

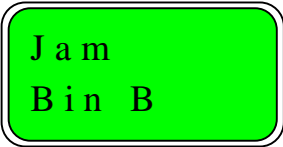

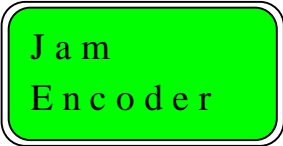

An alert can be either soft or hard. Soft alerts require only that the condition (such as out of stock) be corrected to clear the alert. Hard alerts require that the **RESET/EXIT** push-button be pressed after the condition (such as a stock jam) is corrected.

Basic LCD Alert Messages

Refer to following table for a list of the messages displayed, their description, and the appropriate corrective action:

LCD Messages	Description	Corrective Action (ALERT CLEAR)
Online Comm Err	Communications error (primarily related to serial communications with the host).	Typical message sequence when the Unit detects that the incoming data does not match its communication parameters such as baud rate, parity, or data/stop bit size.
No Fonts Found	Font files unreadable, missing, or corrupted.	Download font files to the flash-disk (obtain files from Unimark Engineering/Service).
No App Found	Application flash unreadable or corrupted.	Controller board is most likely unusable. Contact Unimark Service.
No Setup Found	Setup files unreadable, missing, or corrupted. These are scrolling messages; wait for the entire message for complete instructions.	Reload INI file(s) to the flash-disk (through the RS-232 serial port). Unit may automatically recreate missing or corrupt INI files, but the settings may no longer match the customer defaults.
Bin A Empty	Out of stock in Stock A ¹ .	Replenish Stock A supply. Soft alert cleared.
Load Stock	Alternating message.	

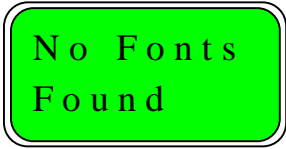
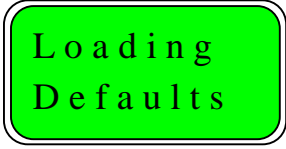
LCD Messages	Description	Corrective Action (ALERT CLEAR)
Bin B Empty	Out of stock in Stock B ¹ .	Replenish Stock B supply. Soft alert cleared.
Load Stock	Alternating message.	
Jam Burster	Burster failure ¹ .	Remove damaged stock from burster area and press RESET/EXIT push-button to clear hard alert.
Clear-Reset	Alternating message.	
Jam Exit	Document jam at exit ¹ .	Clear jam, load stock correctly, and press RESET/EXIT push-button to clear hard alert.
Clear-Reset	Alternating message.	
Jam Bin A	Document jam at Bin A ¹ .	Clear jam, load stock correctly, and press RESET/EXIT push-button to clear hard alert.
Clear-Reset	Alternating message.	

LCD Messages	Description	Corrective Action (ALERT CLEAR)
	Document jam at Bin B ¹ .	Clear jam, load stock correctly, and press RESET/EXIT push-button to clear hard alert.
	Alternating message.	
	Document jam at Encoder ¹ .	Clear jam, load stock correctly, and press RESET/EXIT push-button to clear hard alert.
	Alternating message.	

¹ Indicates that the two messages will be alternately displayed as long as the alert exits.

LCD Alert Messages Displayed During Initialization

The following LCD alert messages may be displayed during initialization:

LCD Messages	Description	Corrective Action (ALERT CLEAR)
	Unit could not locate the required font files on the flash-disk ¹ .	Download font files to the flash-disk (obtain files from Engineering/Service). Then power cycle the Unit. If problems persist, call for service.
Setup File not found, using Default file	Application setup (INI) file could not be found on the flash-disk ² . <i>Scrolling message</i>	Option 1: Take the Unit offline and select the Defaults option. Power cycle the Unit. Option 2: Download APP.INI file to the flash-disk. Power cycle the Unit.
Press Enter key continue 	<i>Second Scrolling message</i>	After loading defaults, the Unit may have different communication parameters than what had previously been set. Other user specified settings, such as print margins, contrast, etc., may have changed as well. If the Unit fails to operate Online with the host or has other problems after loading default settings, call for assistance.
Default file not found	Application setup (INI) and the default (DFL) file could not be found on the flash-disk ² . <i>Scrolling message</i>	Download APP.DFL file to the flash-disk. Power cycle the Unit. If problems persist, call for service.
Contact Service	<i>Second Scrolling message</i>	

¹ Indicates that the two messages will be alternately displayed as long as the alert exits.

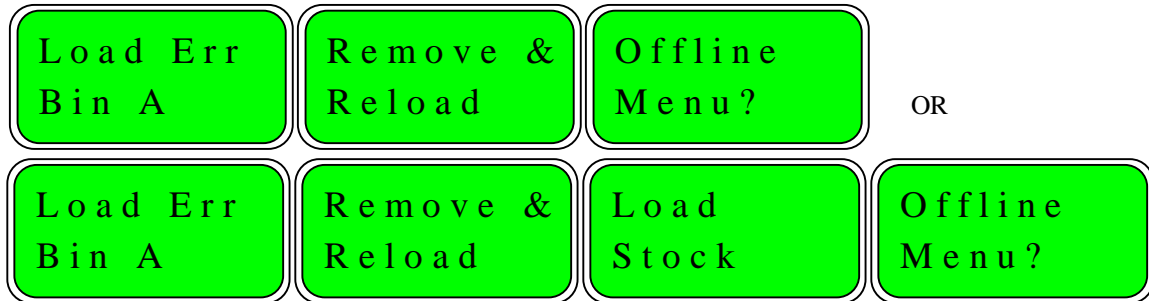
² Indicates a scrolling message.

Stock Status LCD Alert Messages

The following LCD alert messages may be displayed to indicate operator action needed to add or remove stock during normal unit operation:

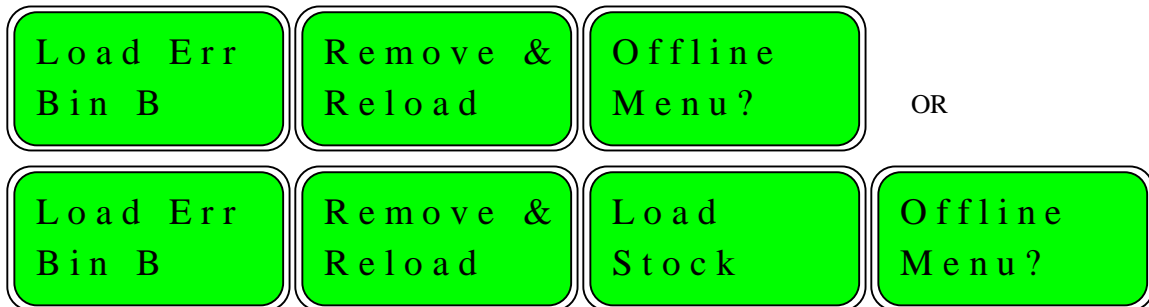
Load Error at Bin A¹: Stock is detected at Bin A, but the unit was unable to pull stock into the transport mechanism.

Removing stock completely from Bin A and reinserting should clear the condition. Pressing the **ONLINE/ENTER** push-button should place the unit back in operation. Messages may vary slightly depending on the sequence of events.



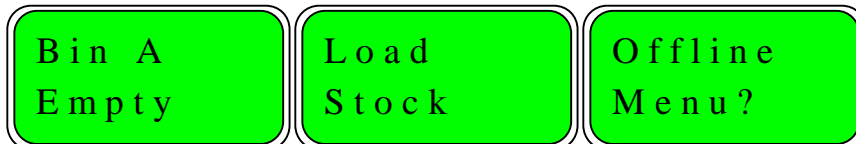
Load Error at Bin B¹: Stock is detected at Bin B, but the unit was unable to pull stock into the transport mechanism.

Removing stock completely from Bin B and reinserting should clear the condition. Pressing the **ONLINE/ENTER** push-button should place the unit back in operation. Messages may vary slightly depending on the sequence of events.



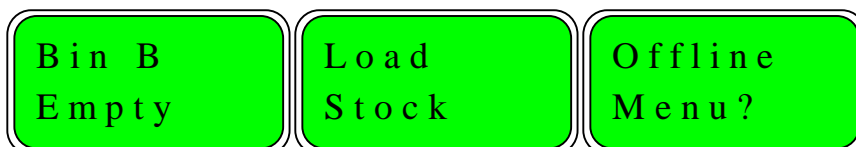
Bin A Empty¹ (While processing Tickets): Stock ran out in Bin A while processing tickets.

Manually load more stock into Bin A and press the **ONLINE/ENTER** push-button to place the unit back in operation.



Bin B Empty¹ (While processing Tickets): Stock ran out in Bin B while processing tickets.

Manually load more stock into Bin B and press the **ONLINE/ENTER** push-button to place the unit back in operation.



¹ Indicates that the two messages will be alternately displayed as long as the alert exits.

Bin A Empty¹ (Stock manually removed typically): Stock removed from Bin A.

Manually load more stock into Bin A; unit already in the Online state and ready for operation.



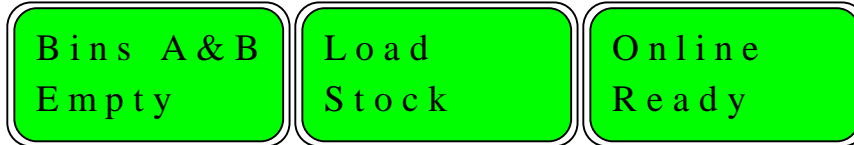
Bin B Empty¹ (Stock manually removed typically): Stock removed from Bin B.

Manually load more stock into Bin B; unit already in the Online state and ready for operation.



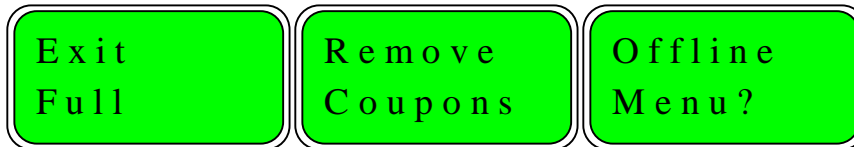
Bin A & B Empty¹ (Stock manually removed typically): Stock removed from Bins A & B.

Manually load more stock into Bins A & B; unit already in the Online state and ready for operation.



Exit Bin Full¹: Exit bin has filled and tripped the stock level sensor.

Manually remove coupons to restart print process; press **ONLINE/ENTER** push-button if necessary.



AEA Related LCD Alert Messages

Refer to following table for a list of the messages displayed, their description, and the appropriate corrective action:

LCD Messages	Description	Corrective Action (ALERT CLEAR)
Online ERR2cc	Illogical command. Where cc = the unrecognized command	Unit received an illogical command, or a non-AEA (non-supported) command. Press ONLINE/ENTER push-button twice to clear the message; or message will be cleared upon receiving any valid AEA command.
Online ERR3cc	Error in ticket print message. Where cc = the element where the error was detected	Unit detected an error in the ticket print message. Press ONLINE/ENTER push-button twice to clear the message; or message will be cleared upon receiving any valid AEA command.
Online ERR5	Print/Encode error.	Unit has detected an error during the print and/or encode process. Press ONLINE/ENTER push-button twice to clear the message; or message will be cleared upon receiving any valid AEA command.
Online ERR6#	Missing PECTAB. Where # = the PECTAB name being referenced by the ticket print message	Ticket print message is referencing a PECTAB not currently in memory. Press ONLINE/ENTER push-button twice to clear the message; or message will be cleared upon receiving any valid AEA command.
Online ERR7	Check-In or Revalidation in progress.	Unit could not process command because it is in a Check-In or Revalidation state. Press ONLINE/ENTER push-button twice to clear the message; or message will be cleared upon receiving any valid AEA command.
Online ERR8ee	Error in PECTAB load. Where ee = the element where the error was detected	Unit detected a format error in the PECTAB load. Press ONLINE/ENTER push-button twice to clear the message; or message will be cleared upon receiving any valid AEA command.
Online ERR9	Memory access error during object load.	There is not enough memory available load objects such as a PECTABs or Logos. Press ONLINE/ENTER push-button twice to clear the message; or message will be cleared upon receiving any valid AEA command.
Online ERRSs	Incorrect stock type selected. Where s = the stock type number in the ticket print message	Ticket print message is requesting a stock type not currently configured for the selected Bin. Press ONLINE/ENTER push-button twice to clear the message; or message will be cleared upon receiving any valid AEA command.

12.4 Issues not Associated with an LCD Alert Message

Online LED Doesn't Blink When Host Is Sending Data

The cabling may not be properly connected on the rear of the Unit. Have maintenance personnel verify that the host communications cable is connected to the upper port on the rear of the Unit.

Online LED Blinks, but Unit does not Print

Each host interface is unique and, as such, may have special communications requirements. A Baud Rate, Parity, Word Length or Stop Bit parameter mismatch between the Unit and the host system would cause a Comm Error alert. However, a Start Of Text, End Of Text, or Protocol mismatch would not cause a Comm Error alert. Print out a configuration coupon set and verify that all of the settings match the requirements of your host, and make changes as needed.

Print Quality

When the SPRITE print quality is not acceptable, it may be necessary to clean the print head assembly and print head platen roller. Refer to Cleaning Section for instructions on cleaning the print head and platen.

If the print is not in the correct position on the ticket, or the print is not dark enough, adjustment may be necessary. The left margin and top margin may be adjusted to correct the print position. The print darkness may also be adjusted to improve readability. Each of these adjustments is available separately for Bin A and Bin B. However, these adjustments are only available when the Unit is Offline and the Adjustments menu is selected.

Because of the wide variance in stock quality, some print issues can be resolved by changing stocks. Keep in mind that print quality can fluctuate widely based on stock selected

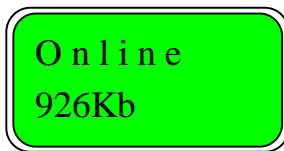
13.0 File Updates

13.1 Firmware Update

The basic firmware update process will involve downloading the firmware update file to the flash-disk and then initiating the process by power cycling the Unit to update the application firmware.

The following describes the process:

- 13.1.1 Establish a link to the Unit's RS-232 serial interface using the CRS application or a basic communications program like TeraTerm. Program must be capable of both matching the Unit's communication parameters and transmitting the firmware update file in a binary format that will not alter its data structure.
- 13.1.2 Using the communications program, transmit the update file to the Unit. Assuming the download file format is recognized, the Unit will display a byte count-down indicating the remaining data to be received.




- 13.1.3 Once the entire file is downloaded the LCD will return to the Online/Ready state. Depending on the Unit's FW and the type of host application, a PDOKxxxxxxx message may be shown on the PC screen.
- 13.1.4 The Update file is now loaded onto the internal flash-disk.
- 13.1.5 Power cycle the Unit.
- 13.1.6 The Unit will detect an Update file on the flash-disk and check the file version against the application flash memory.
- 13.1.7 If the versions are different, the LCD will display "Program Update" as a scrolling message, and prompt the operator (waiting for the operator to select update or bypass).



(where x.xx.xx is the version)

(N will be flashing)

- 13.1.8 To continue with the update, press **MENU**  to change the **N** to a **Y**. Then press **ONLINE/ENTER** and follow the instructions on the display.

Under no circumstances turn the power off during this process or the firmware flash will become corrupted.

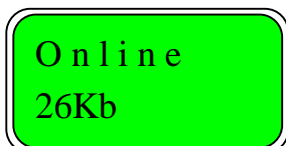
- 13.1.9 Once the update process has completed, the Unit will erase the update file from the flash-disk and reboot the Unit. The new firmware is active at this point.

13.2 Operator Disk File Update

The basic file update process will involve downloading an individual or group file to the flash-disk and then initiating a power cycle to initialize the Unit with the new operator disk files.

The following describes the process:

- 13.2.1 Establish a link to the Unit's RS-232 serial interface using the CRS application or a basic communications program like TeraTerm. Program must be capable of both matching the Unit's communication parameters and transmitting the firmware update file in a binary format that will not alter its data structure.
- 13.2.2 Using the communications program, transmit the individual or group file to the Unit. Assuming the download file format is recognized, the Unit will display a byte count-down for each individual file indicating the remaining data to be received. The size of these individual files will be small compared to the firmware update file.



- 13.2.3 Once each individual file is downloaded the LCD will return to the Online/Ready state. Depending on the Unit's FW and the type of host application, a PDOKxxxxxxx message may be shown for each file on the PC screen
- 13.2.4 The Operator Disk files are now loaded onto the internal flash-disk.
- 13.2.5 Power cycle the Unit.
- 13.2.6 The Unit will now initialize using the new/updated Operator Disk files.

14.0 Customer/Technical Support

14.1 Return Authorization/Customer Service

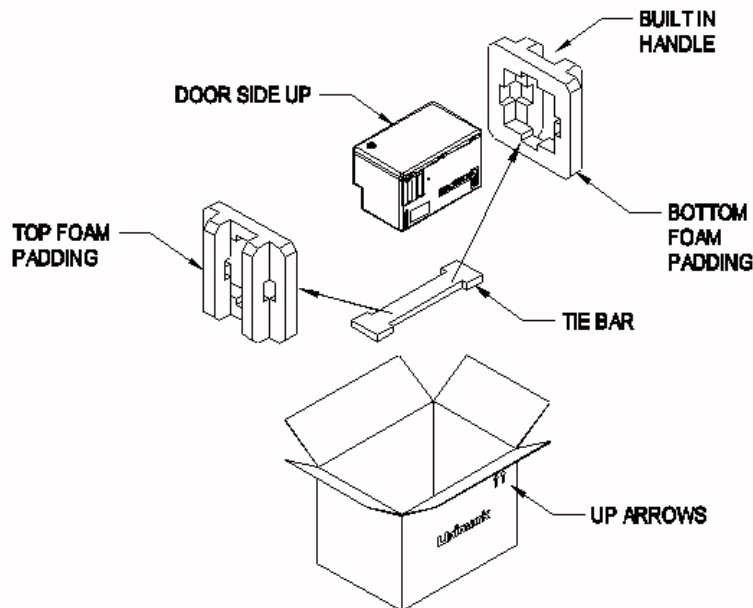
To return a product to Unimark for repair or other assistance, please be prepared with the following information before calling our Customer Service department at 800-255-6356 (US only) or 913-649-2424:

- Customer name and telephone number
- Product model number or description
- Product serial number
- Description of failure
- Billing address
- Customer ship to address and method of shipping
- Repair option selection (Warranty, Flat Rate, Time and Materials or Refurbishment)

Our Customer Service Specialist will be entering the information into our system during your call to ensure quick and accurate handling of your return. You will then be given a return authorization number.

The original shipping container and packing material in which the SPRITE was shipped to you provides optimal protection for reshipment. If you retained the original shipping material and it is still in good condition, we recommend that you re-use it. Otherwise, contact Unimark for a packing kit. The figure below shows an exploded view of typical packing for shipping the SPRITE. Use this figure and the following procedures to pack the SPRITE for shipping.

- 14.1.1 Prepare item for return to Unimark - Do NOT include accessories, power cable or ancillary items unless directed otherwise by Customer Service. **DO NOT SHIP WITH TICKET STOCK INSTALLED!**



- 14.1.2 Position the shipping container with the "UP" arrows pointing up and the open end of the box on top as shown.
- 14.1.3 Place the top and bottom pieces of foam padding on the SPRITE.
- 14.1.4 Position the SPRITE above the shipping container so the door faces up and lower it into the open container.
- 14.1.5 If requested to send and accessory items back with the Unit, place them in a plastic bag of some type and position it into the box next to the back panel.
- 14.1.6 Close the shipping container flaps, short flaps first, and seal with packing and sealing tape.
- 14.1.7 Be certain the Return Authorization (RA) number assigned by Unimark Customer Service is on the packing slip and on the outside of the shipping container.

14.2 Technical Support

As a purchaser or Unimark authorized third party maintainer of Unimark products, you have the added benefit of technical assistance in the installation, diagnosis and use of Unimark products.

Just call our toll free number 800-255-6356 (US only) or 913-649-2424 and allow the auto-attendant to guide you to our technical support line. A technical support analyst will assist you.

To better serve you, please have the product in question on-line and ready to test prior to calling technical support. In addition, have the following information available:

- Model Number/description
- Serial Number
- Failure message/code/description

Unimark operates two service support centers. Select the office closest to you from the Unimark Contacts web page (www.unimark.com). The customer support telephone number and e-mail address are listed for your convenience.

15.0 Unimark Products, LLC. Warranty Statement

Printer

Unimark Products, LLC. warrants to Purchaser that under normal use and service, the products (with the exception of the thermal print head, platen roller, and belts) purchased hereunder shall be free from defects in material and workmanship for a period of one year (365 days) from the date of shipment by Unimark.

Expendable and/or consumable items or parts such as lamps, fuses, labels, and ribbons are not covered under this warranty. This warranty does not cover equipment or parts which have been misused, altered, neglected, handled carelessly, or used for purposes other than those for which they were manufactured. This warranty also does not cover loss, damages resulting from accident, or damages resulting from unauthorized service.

Thermal Print Head / Platen Roller / Belts / Magnetic Read-Write Head

This warranty is limited to a period of one year, (365 days) or 1,000,000 linear inches of use, whichever comes first, for the thermal print head, platen roller, belts, and magnetic head. This warranty does not cover print heads, platen roller, belts, and magnetic head components which have been misused, altered, neglected, handled carelessly, or damaged due to improper cleaning or unauthorized repairs.

Warranty Service Procedures

If a defect should occur during the warranty period, the defective Unit shall be returned, freight and insurance prepaid, in the original shipping containers to Unimark Products, LLC. A Return Authorization (RA) number must be issued before the product can be returned. To open an RA, please call the Unimark Customer Service Department at (800) 255-6356 or 913-649-2424. Please print your RA number on the outside of the box and on the shipping document. Include a contact name, action desired, a detailed description of the problem(s), and examples when possible with the defective Unit. Unimark shall not be responsible for any loss or damages incurred in shipping. Any warranty work to be performed by Unimark shall be subject to Unimark's confirmation that such product meets Unimark warranty. In the event of a defect covered by its warranty, Unimark will return via ground transportation, the repaired or replaced product to the Purchaser at Unimark's cost.

With respect to a defect in hardware covered by the warranty, the warranty shall continue in effect until the end of the original warranty period, or for ninety (90) days after the repair or replacement, whichever is later.

General Warranty Provisions

Unimark makes no warranty as to the design, capability, capacity or suitability of any of its hardware, supplies, or software.

Software is licensed on an "as is" basis without warranty. Except and to the extent expressly provided in this warranty and in lieu of all other warranties, there are no warranties, expressed or implied, including, but not limited to, any warranties of merchantability or fitness for a particular purpose.

Purchaser shall be solely responsible for the selection, use, efficiency and suitability of Unimark's products.

Limitation of Liability

In no event shall Unimark be liable to the purchaser for any indirect, special or consequential damages or lost profits arising out of or relating to Unimark's products, or the performance or a breach thereof, even if Unimark has been advised of the possibility thereof. Unimark's liability, if any, to the purchaser or to the customer of the purchaser hereunder shall in no event exceed the total amounts paid to Unimark hereunder by the purchaser for a defective product.

In no event shall Unimark be liable to the purchaser for any damages resulting from or related to any failure or delay of Unimark in the delivery or installation of the computer hardware, supplies or software or in the performance of any services.

Some states do not permit the exclusion of incidental or consequential damages, and in those states the foregoing limitations may not apply. The warranties herein give you specific legal rights, and you may have other legal rights which vary from state to state.