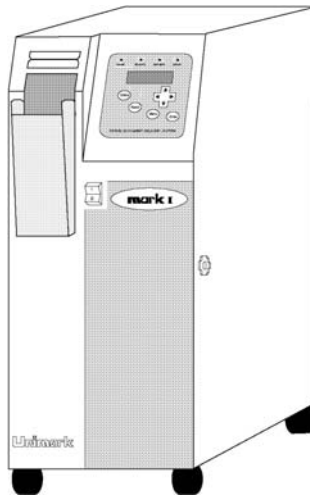


# **mark I**

Travel Document Delivery System<sup>®</sup>

## **Operator's Manual**



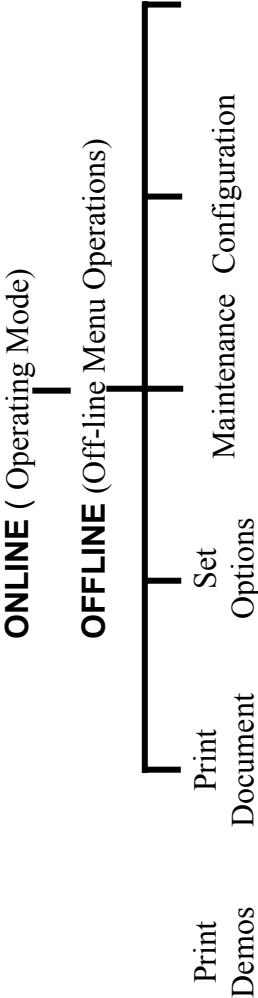
9910 Widmer Road  
Lenexa, Kansas 66215  
Phone 800-255-6356  
Fax 913-649-5795  
Email [www.unimark.com](http://www.unimark.com)

## Important Safety Instructions

Your Unimark MARK I Travel Document Delivery System® (TDDS) has been designed to give you many years of safe, reliable service. As with all electrical equipment, there are a few basic precautions you should take to avoid getting hurt or damaging the printer.

- Read carefully the installation and operating instructions in the documents provided with your printer.
- Read and follow all warning instruction labels on the printer itself.
- This printer is intended for indoor use only. Place the printer on a firm, solid surface. If you place it on an unsteady surface, it may fall and become damaged.
- In case of emergency, disconnect the power cord.
- To protect your printer from overheating, make sure all openings on the printer are not blocked. Do not place the printer on or near a heat source, such as a radiator or heat register.
- Do not use your printer near water or spill liquid of any kind into it.
- Be certain that your power source matches the rating listed on the back of the printer.
- Your printer has a grounded, 3-prong plug as a safety feature and it will only fit into a grounded outlet. If you cannot plug it in, chances are you have an older, non-grounded outlet. Contact an electrician to have the outlet replaced. **Do not use an adapter to defeat the grounding.**
- Avoid damaging the 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 on the printer as this can result in electrical shock or fire.
- Only qualified, trained service technicians should attempt to repair your printer if damaged or in need of repair.

**MARK I MENU**



**NOTE**

There are submenus and options under each menu shown. The actual menus, submenus, and options available may vary from one customer to another. All off-line menu operations are reserved for qualified service technicians and some options are password protected.

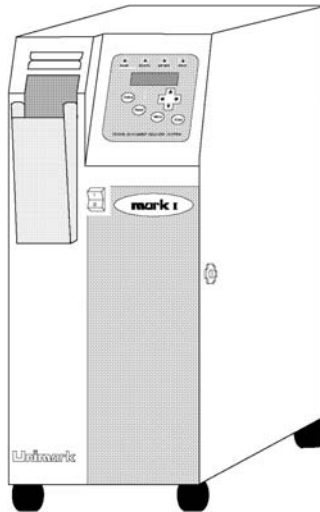






# mark I

Travel Document Delivery System®



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71U-1400-100 Revision C

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**Unimark, Inc.**

## **FCC Notice**

This printer generates and uses radio frequency energy. If not installed and used properly, this printer may cause interference to radio or television reception. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Part 15 of the FCC Rules, which are designed to provide reasonable protection against such interference in a commercial environment.

Operation of this equipment in a residential area is likely to cause interference, in which case the user, at his own expense, will be required to take what ever measures necessary to correct the interference.

Changes or modifications to this printer not expressly approved by Unimark, Inc. could void the user's authority to operate this printer.

## Warnings and Cautions

The MARK I TDDS is designed to operate safely and effectively under normal circumstances with both cabinet doors closed. However, some of the procedures presented in this manual, such as cleaning and clearing ticket jams, must be completed while the left door of the cabinet is open. When the left door of the printer is open, the operator is exposed to moving mechanisms and other conditions that may cause injury.



### **WARNING**

**For your safety, a warning notice will appear before any procedure in which the potential for injury exists. Each warning notice will be prefaced by the international safety alert symbol and warning label to indicate that the potential for personal injury exists if the warning notice is ignored. The warning text explains the injury that may result and how to avoid it. All warning notices in this manual are announced by the display of the warning label shown above.**

### **CAUTION**

**You may damage some of the assemblies or subassemblies in the MARK I during maintenance procedures if you do not take precautions. When an assembly or a subassembly is subject to damage, a caution notice will appear before the step. Each caution notice will explain the potential damage and present the appropriate precautions. All caution notices in this manual are announced by the display of the caution label shown above.**

## **NOTE**

**Notes are included in this manual when appropriate to amplify or clarify the information presented. Notes are always announced by the display of the label shown above.**

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## **Section 1 - Introduction**

"Our mission at Unimark is to provide our customers with innovative products and services designed to meet their unique challenges...now and in the future.

We accomplish this by continually developing our technical expertise, researching new solutions and responding to changing market needs.

We stand committed to quality and integrity in all that we do. Our employees—*our most important asset*—strive to plan ahead, to achieve goals and to improve performance each day."

Dean Lawrence,  
President and CEO  
Unimark, Inc.

### **Introduction**

Congratulations on your purchase of the Unimark MARK I Travel Document Delivery System® (TDDS)! The MARK I is a state-of-the-art Airline Ticket and Boarding (ATB) printer. It offers many features not found on typical ATB printers. We want you to be completely satisfied with your experience with the printer and its supporting manuals. We encourage your questions or comments. Call us on our toll-free hot line, 1-800-255-6356.

### **Scope and Purpose of This Manual**

The *Operator's Manual* is intended for the people who use and operate the printer. It is a non-technical guide to installation, operation, troubleshooting, and simple maintenance. Below is a brief description of each part of this manual.

### **Section 1- Introduction**

An introduction to the printer and an overview of features, specifications, and options.

### **Section 2- Installation**

Procedures for installation of the printer.

## **Introduction**

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### **Section 3- Operation**

Procedures for operating the printer.

### **Section 4- Troubleshooting**

Using MARK I diagnostics to identify and correct problems during normal operation of the printer.

### **Section 5- Preventive Maintenance**

General MARK I maintenance procedures.

### **Section 6- Technical Support**

Contact information and necessary information prior to contact.

### **Section 7- Return Authorization/Customer Service**

Contact information and necessary information prior to contact, and return process.

### **Section 8- Packing & Shipping**

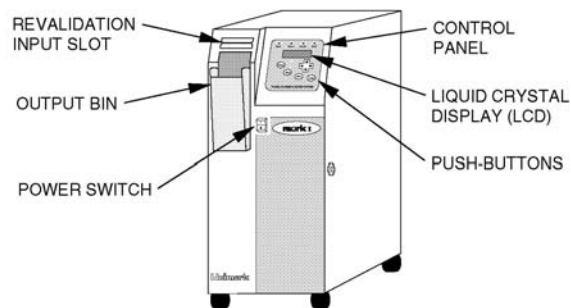
Packing instructions to return the printer for repair.

### **Section 9- Glossary**

Definitions of terms, abbreviations, and acronyms associated with the printer.

### **Features of the MARK I TDDS**

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



*Figure 1-1. MARK I Travel Document Delivery System®*

**Quality**

Unimark endeavors to build quality into the MARK I and every product that bears the Unimark name.

**Reliability**

The printer is designed to provide years of reliable, trouble-free service.

**Simple Operation**

While the printer has many advanced and sophisticated features, its user friendly design makes it easy to use. All setup and operating functions are performed through the Control Panel push-buttons and Liquid Crystal Display (LCD). Refer to Figure 1-1 for location information.

**Magnetics Capability**

The printer has the capability to record data on ATB1 and ATB2 tickets with magnetic stripes. The printer magnetics conforms to International Air Transport Association (IATA) specification 1722C, Attachment 'C.'

**Ticket Stock**

The printer uses fan-folded, ATB direct thermal stock, user selectable 8-inch or 7 3/8-inch length. There are 2 internal secured stock bins, A and B, which each hold 1,000 documents. Bins A and B are designed to process 7 3/8-inch or 8-inch stock. An external bin C provides the capacity for an additional 1,000 + documents. Bin C is designed for 8-inch stock only.

**Revalidation Input**

The Revalidation Input slot allows the operator to feed previously encoded documents into the system. The magnetic stripe is read by the system and the data is sent to the host. The operator can modify the data and the document will be re-encoded and reprinted with the modified data.

**Output Bin**

The output bin holds 100 documents and a operator selectable option allows the system to stop printing documents when the bin is full. When the Bin Full Option is enabled, the LCD will

## Introduction

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prompt the operator that the bin is full, remove documents to continue. Two Lockable Output Bin Options are available. The optional bins hold 100 or 1,000 printed tickets.

### Reject Bin

The system uses an internal reject (void) bin to store documents that have been rejected by the printer's magnetic encoder. The reject bin has a capacity of 50 tickets. When the bin is full, the control panel LCD will prompt the operator to remove the tickets and press RESET to continue.

### Modular Design

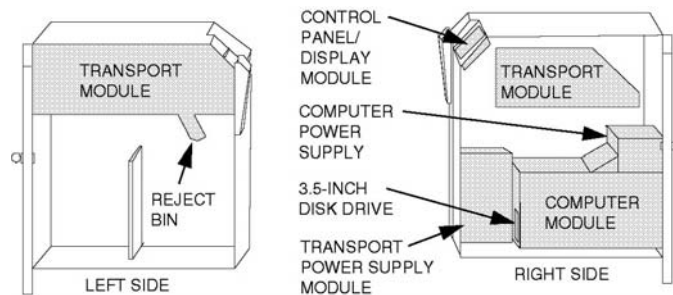
The printer's modular design consists of only four major modules. This allows the operator to quickly isolate a problem, minimizing down-time.

### Customer Support

Call Unimark's dedicated customer support hot line any time you have a problem or suggestion. Customer Service is available from 8:00 a.m. to 5:00 p.m. CST. The hot line number is 1-800-451-2926.

### Superior Warranty

The MARK I is available with an unparalleled customer-oriented warranty. Warranty information is at the end of this section.



*Figure 1-2. Location of Major MARK I Modules*

## **MARK I Modules**

The printer consists of four major modules. Refer to Figure 1-2 to identify the location of the transport module, transport power supply module, computer module, and control panel/display module. The left side of the printer enclosure is secured with a key lock and is operator accessible. The right side of the enclosure is secured with a key and a security lockout. The right side has no user or operator serviceable parts and is only accessible to qualified service technicians.

### **Transport Module**

The transport module moves ticket stock through the system to print characters, symbols, and graphics. All ticket stock is also transported through the magnetic encoder so travel document information can be digitally encoded on ticket stock equipped with a magnetic stripe. The transport module uses ticket stock designed for direct thermal printing.

### **Transport Power Supply Module**

The transport power supply module supplies operating power to the transport module.

### **Computer Module**

The computer module is similar to a personal computer (PC) and is dedicated to the operation and control of the printer. The computer module controls the overall operation of the printer, the transport module, and the control panel/display module. It contains a 32-bit motherboard, serial interface card, printer controller card, computer power supply, and a 1.44 Megabyte, 3.5-inch floppy disk drive. This disk drive has sufficient capacity for standard ATB printer operation.

One of several different central processor units (CPUs) may be installed as part of Unimark's commitment to continually improve performance. An optional hard drive and modem are also offered.

The configuration of the printer can be easily changed through control panel selections or by updating the program stored on the floppy diskette.

## Introduction

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### Control Panel/Display Module

This module consists of the Liquid Crystal Display (LCD) and the associated printed circuit board (PCB).

### Product Specifications

Table 1-1 lists the specifications for the base MARK I TDDS.

Table 1-2 lists the printer option specifications.

Component	Characteristic	Specification
Computer System	CPU = Am5x86-P75 Drive = IDE Disk Ctrl. Non-volatile RAM (NVRAM)	133 MHz CPU w 32-bit Motherboard, 4 Mb RAM, 3.5-inch 1.44 Mb floppy for software, 2 kb for storing printer config. and maintenance history data
Computer Data Interface	Dual Serial Ports Parallel Port CRS Protocols	RS-232 asynchronous 36-pin Centronics interface
Document Handling	Types Stock Source	ATB1, ATB2, 8-inch and 7 3/8-inch 2 Internal Bins, 1 External Rear Feed Bin
	Revalidation	1 Front Feed Slot
Printing System	Method Ticket Stock Resolution Fonts Graphics Speed	Direct Thermal Direct Thermal Treated 203 dpi (8 dots per mm) Selectable Character Fonts Full Graphics - PCX format Up to 40 documents per minute
Magnetic Encoder	Encoding Standard Compliance  Four Tracks  Stock Control No. (SCN)	IATA RP 1722C, Attachment C Fully compliant with IATA ATB2 specifications, ATA Resolutions, Write, Read, & Write Verification (210 bpi)  Standard Pre-read of Magnetically Encoded SCN
Environment	Temperature Humidity Ventilation  Cabling Space	40° to 104° F (4° to 40° C) 10% to 95% Noncondensing 1-inch minimum top, sides, and front, forced air movement 3 inches minimum behind unit
Power Input	Power Source	115/220 VAC (+/- 10%) auto-sensing 50/60 Hertz 115 VAC - 4.0 amp slo-blo 220 VAC - 2.0 amp slo-blo
Physical Data	Width Height Depth Weight Cabinet Material	11 5/8 inches (295 mm) 23 1/2 inches (597 mm) 21 3/4 inches (552 mm) 67 pounds (28 kg) Fire Retardant High-Impact Strength Noryl
Shipping Data	Width Height Depth Weight	14 3/4 inches (35.6 cm) 27 3/4 inches (63.5 cm) 27 3/4 inches (63.5 cm) 78 pounds (35 kg)

*Table 1-1. MARK I Base Unit Specifications*

Component	Characteristic	Specification
Modem	Internal	Baud Rate Selectable to 19,200
Lockable Ticket Bin	Holds 100 Printed Tickets	
Large Capacity Coupon Stacker	Holds 1,000 Printed Tickets	(Available with or w/o lockable feature)
Hard Disk Drive	Internal	IDE
Additional System Memory	Up to 32 Mb of RAM	
Fold up Bin C Ticket Shelf (Mounts to rear of cabinet)	Width Height Depth	4 61/64 inches (11.7 cm) 12 1/8 inches (30.8 cm) 9 15/32 inches (24.1 cm)

Table 1-2. MARK I Options Specifications

## NOTE

**MARK I specifications are subject to change without notice.**

## MARK I Dimensions

Refer to Figure 1-3 and Figure 1-4 for a pictorial representation of the dimensions of the MARK I TDDS and its shipping container.

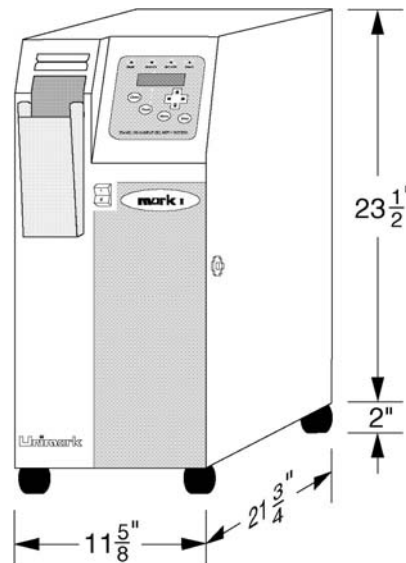
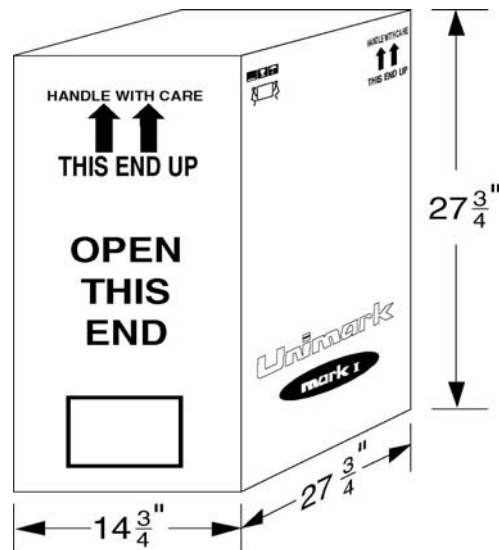


Figure 1-3. TDDS Dimensions



*Figure 1-4. Shipping Dimensions*

### Warranty Information

The Unimark plan for the performance and support of the MARK I TDDS will track and maintain the history of each and every unit. It is our vision that in so doing we provide our customers with a level of reliability and support unparalleled in the industry.

Built-in machine diagnostics and performance history are used to ensure our proactive maintenance directives.



## Section 2 - Installation

This section provides information and procedures to install the MARK I TDDS. Review this section before you begin the installation.

### Site Considerations and Requirements

#### Choosing a Location for the MARK I TDDS

Choose a location that provides at least 1-inch of open space between surfaces adjacent to the printer and its sides, front, and top to allow proper ventilation. At least 3 inches of space is required behind the printer for cabling and airflow. The power cord supplied with the printer is 10 feet long.

Position the printer so adequate space is provided on both the left and right sides to open the doors. The left and right doors must be able to be swung open 90° to load ticket stock or to perform routine maintenance. Refer to Figure 2-1 for maintenance space requirements.

Do not install the unit where it will be exposed to direct sunlight. Sunlight may affect the optical sensors resulting in stock loading difficulties. Direct sunlight can affect the readability of the front panel.

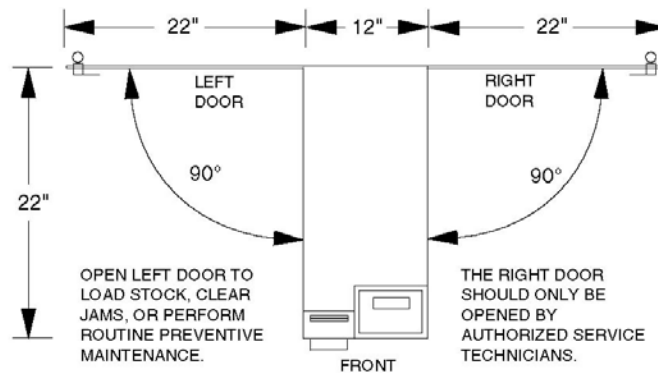


Figure 2-1. Maintenance Space Requirements (As Viewed From Above)

## Installation

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Use the following procedures to unpack the printer, install the printer's power cord, floppy diskette, and ticket catcher, enable the Bin Full feature, and connect the printer to a Computer Reservation System (CRS).

### 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 the damage. If OK, remove the printer from the shipping container. Save the packaging in case the printer must be reshipped for any reason.

### Accessories Kit

After the printer has been removed from the shipping container, remove the Accessories Kit from the Bin A location on the left side of the printer. The Accessories Kit consists of the power cord, ticket catcher, gender changer, Unimark Application System Software floppy diskette, MARK I Operator's Manual, and some sample ticket stock for testing. (The exact contents of the kit are subject to change without notice.) The keys are in a package attached to the front of the printer.

### NOTE

**The diskette must be removed from the Accessories Kit and installed by a qualified service technician in the printer's 3.5-inch disk drive. The printer will not operate without the diskette installed.**

### Bin Full Feature

The Bin Full Bale (Figure 2-2) allows the printer to sense when the ticket catcher is full (approximately 100 tickets) and sets an alarm that commands the printer to stop printing more tickets. The alarm is cleared and printing is resumed as soon as the tickets are removed. To enable the Bin Full feature, simply place your index finger against the top left side of the Bin Full Bale rod and push slightly to the right while pulling

**E**                1     1     1     1     2     1     1                1     33     33     11     1

**port on the rear of the printer before applying power.**

### NOTE

**The correct port to connect to may be located in a different place than shown in Figure 2-3.**

1. On the rear of the printer, connect the CRS host data communication cable to the COM 1 DB25M (male) Serial I/O Port. It is very important that the correct port is used. Refer to the CRS help desk or a qualified service technician for further instructions.

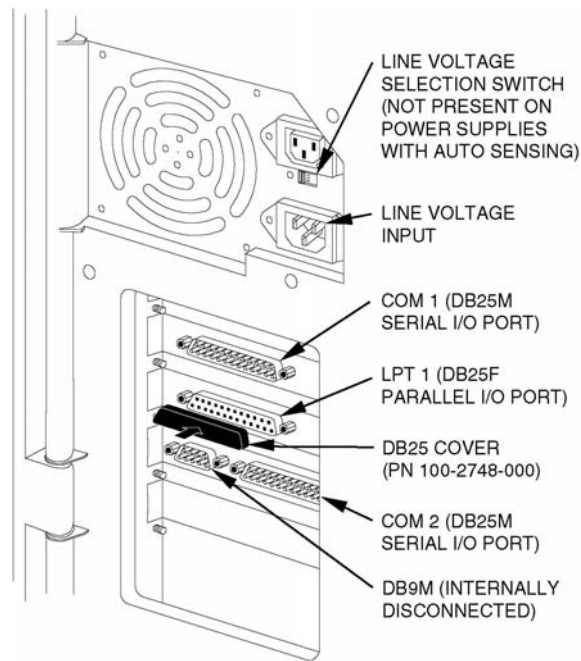
If the host's cable cannot be connected to the printer because it has a male connector, install a Gender Changer on the end of the cable. A Gender Changer is included in the Accessories Kit. Refer to the "Installing The Gender Changer" paragraph at the end of this section for more detailed instructions.

### CAUTION

**To prevent damage to the computer module's power supply, verify that the Line Voltage Selector Switch (if present on the rear of the printer) is set for the correct voltage before applying power.**

2. Make sure that the Line Voltage Selection Switch (if present) is set to the correct line voltage. For power sources of 105 to 120 volts, set the switch to the 115-volt position (Figure 2-3). Verify that the power source meets the required amperage and frequency specifications listed in Table 1-1 of 0- Introduction before applying power.
3. Plug the power cord into the AC power line voltage input on the rear of the printer. Refer to Figure 2-3 for location information.
4. Plug the other end of the power cord into a 3-prong grounded wall outlet.
5. Make sure the Unimark Application System Software floppy diskette has been removed from the Accessories Kit and installed in the 3.5-inch floppy disk drive by a qualified service technician before continuing. The 3.5-inch disk drive is located on the front side of the computer

module behind the right door (when viewed from the front). Refer to Figure 1-2 in Section 1- Introduction.



*Figure 2-3. CRS and Power Connections to MARK I*

### **NOTE**

**Upon request, the printer's software can be modified by Unimark to allow the LPT1 Parallel I/O Port to be used to send itinerary data to a dot matrix printer.**

6. If authorized, connect the itinerary printer's parallel cable to the LPT1 DB25F (female) Parallel I/O Port (Figure 2-3).
7. Refer to Section 3- Operation for instructions to complete the initial setup of the printer.

### Installing the Gender Changer

The printer's COM 1 Serial I/O Port uses a DB25M (male) connector. If the CRS host's cable also has a male connector, it will be necessary to install the Gender Changer (PN 600-2034-000).

1. Insert the flat blade of a small screwdriver into the matching slot on one of the two standoff screws on the Gender Changer.
2. Hold nut on opposite end of screw to prevent it from turning, and rotate screwdriver counter-clockwise until nut is removed.
3. Repeat steps 1 and 2 to remove other nut, then remove both standoff screws. Discard nuts, but retain the screws for installation.

### NOTE

**Do not force the Gender Changer onto COM 1 (DB25M Serial I/O Port) on the rear of the printer. (It can only be installed one way.) If the Gender Changer does not easily press onto the connector, rotate it 180 degrees and press it on.**

4. Observing the orientation of COM 1, press the Gender Changer onto the DB25M Serial I/O Port.
5. Using the standoff screws removed from the Gender Changer in step 3, screw one in on each side of the Gender Changer and tighten until the Gender Changer is securely fastened to the printer.

## Section 3 - Operation

This section describes MARK I 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 off-line Maintenance Menu and printing test documents. Instructions for operating with a Computer Reservation System (CRS) host system are provided at the end of this section.

### Initial Setup

The printer has been configured at the factory to meet each customer's requirements. Use the following procedures to power-on the printer, load ticket stock, and operate the printer's controls. If any difficulties are experienced with any of these procedures, please refer to Section 4- Troubleshooting for help.

### CAUTION

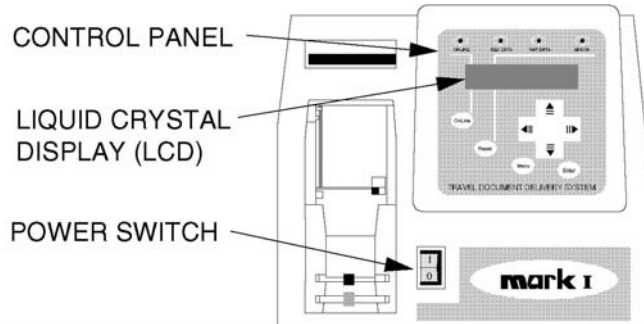
**To prevent damage, immediately toggle the power switch to the 0 (OFF) position if the MARK I does not indicate that initialization is in progress within 5 seconds after power is applied. Initialization is indicated when the control panel LCD displays text immediately after the power switch is toggled to the 1 (ON) position.**

**If power-on was aborted, wait 10 seconds before toggling the power switch back to the 1 (ON) position.**

**If the LCD still does not display text within 5 seconds, immediately toggle the switch to the 0 (OFF) position and refer to Section 4- Troubleshooting for help.**

### Powering the MARK I On and Off

1. To power-up the printer, locate the green power switch (Figure 3-1) below the control panel on the front of the printer and toggle it to the I (ON) position. The light inside the switch will go on when power is applied to the printer. As soon as the printer is powered on, it will begin performing an internal initialization procedure that may take up to 2 minutes.



*Figure 3-1. Control Panel and Power Switch Location*

2. Monitor the control panel LCD during initialization for the following messages:

- 2.1 Verify that the top line of the LCD indicates:

Performing RAM Test

- 2.2 Verify that the second line of the LCD sequentially indicates:

Writing 0  
Writing 1  
Verifying 1  
Writing Pattern  
Verifying Pattern  
RAM test complete

- 2.3 Verify that the LCD then indicates:

Please wait while  
system initializes



3. When the printer successfully completes initialization, verify that the LCD indicates:

ONLINE --- READY  
Path A,B,C Empty

4. To power-off the printer, toggle the power switch to the O (OFF) position. The light inside the switch will go off when power is removed from the printer.

### **Loading Ticket Stock**

Use the following procedure to load ticket stock in the printer. If any problems are encountered while loading ticket stock, refer to Section 4- Troubleshooting for help.

1. Verify the power switch is in the I (ON) position.

### **CAUTION**

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

2. Unlock the door on left side of the printer and swing it open 90°.
3. Rotate the ticket stock box until the arrows on the side of the box point up (Figure 3-1), then remove the box top.



### **WARNING**

**To prevent personal injury, do not wear loose clothing or jewelry and do not stick fingers into transport module when loading ticket stock. The transport module contains moving mechanisms that can crush or cut. Read the entire procedure before loading ticket stock.**

## Operation

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Place the box(es) into the selected bin(s) with the printable side of the first ticket facing down.

### NOTE

The printable side of direct thermal stock has a heat sensitive coating. Although it is obvious which side of the ticket stock is the printable side, it may not be as easy to determine on blank itinerary stock.

To determine which side of the direct thermal stock is the printable side, rub your fingernail or a hard object across the surface of the ticket. The printable side will show a dark mark and the non-printable side will not.

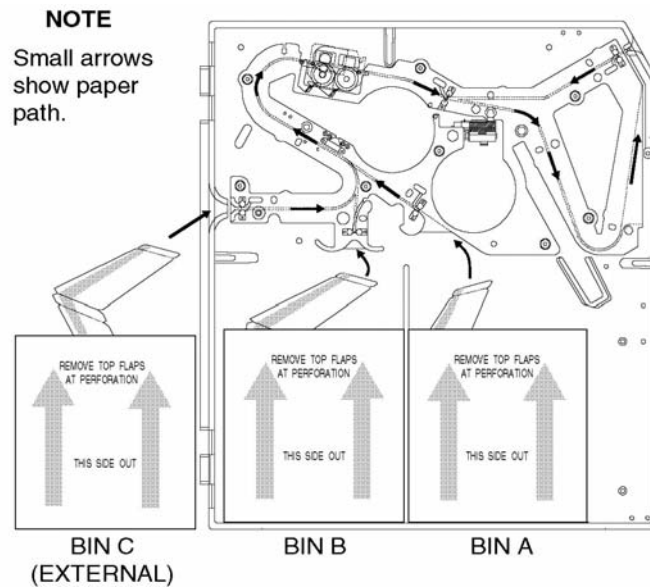


Figure 3-2. Ticket Stock Bin Location & Orientation

**WARNING**

**To prevent personal injury, be prepared to release ticket stock when a bin input senses that a ticket is in position for loading.**

**The paper drive motors will begin to run and the ticket stock will quickly move a short distance as the stock is positioned for loading into each bin input.**

**Be aware of this abrupt action and be prepared to release the ticket stock when the bin motor begins to pull ticket stock into the bin input.**

4. Insert ticket stock into selected bin inputs, staple stub first with the printable side oriented as shown in Figure 3-2. Release ticket stock when the bin motor begins to pull the ticket stock into the operating position. Refer to drawing on inside of door for more detail.
5. When all selected paths have been loaded with ticket stock, close and lock the left side door.
6. If the printer is off-line, press the ON LINE push-button to resume operation.

**Controls and Indicators**

Use the control panel on the front of the cabinet to monitor and control the printer during set up and operation. Figure 3-3 shows the MARK I control panel. The controls and indicators consist of four LED indicators, four push-button controls, four arrow (direction selection) push-buttons, and an LCD.

Table 1-1 describes the function of each LED indicator. Table 3-2 describes the function of the LCD. Table 3-3 describes the function of each push-button, and Table 3-4 describes the operation of the power switch.

## Operation

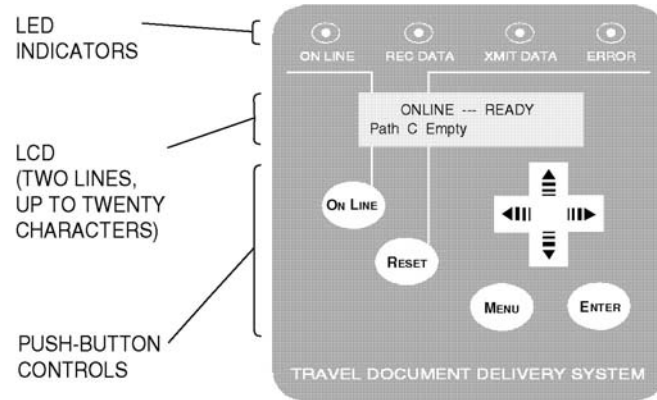


Figure 3-3. MARK I Control Panel

Indicator	LED Color	Description
ONLINE	Green	When lighted, the printer is on-line and ready for data communication with the CRS. When not lighted, the printer is off-line and cannot communicate with the CRS.
REC DATA	Yellow	Lights (flashes) when printer is receiving data from CRS.
XMIT DATA	Yellow	Lights (flashes) when printer is transmitting data to CRS.
ERROR	Yellow	Not used, but flashes during initialization.

Table 3-1. MARK I Control Panel LED Indicators

Display	Type	Description
LCD	Liquid Crystal Display	Provides verbal information for the operator about printer status and configuration.

*Table 3-2. MARK I Control Panel Display*

Push-button	Description
ON LINE	Used to toggle the printer between the on-line and off-line modes. The ONLINE LED indicator lights when the on-line mode is selected. (Refer to Table 3-1 for indicator information.)
RESET	Used to reset the printer following an error indication when the printer is on-line.
MENU	Used to initiate off-line menu operations.
ENTER	Used to enter a menu selection or to accept a field entry when the printer is off-line.
ARROWS (4)	Used to navigate up, down, left, or right through the off-line menus in order to access various menu functions to setup, maintain, or configure the printer.

*Table 3-3. MARK I Control Panel Push-buttons*

Display	Type	Description
Power Switch	Lighted Green Rocker Switch	When toggled to the I (ON) position, the printer is powered on and the switch is lighted. When toggled to the 0 (OFF) position, the printer is powered OFF and the switch is not lighted.

*Table 3-4. MARK I Power On/Off Control*

### Off-Line Printer Functions

A variety of printer functions are available when the printer is off-line. The push-button controls are used to select different menus, print test documents, print demo coupons, make changes to software settings, and perform various maintenance tasks.

During normal printer operation, the operator will not need to access any of the off-line printer functions. However, if installation specific software setup is required, a qualified

service technician should complete all Third Party Maintainer (TPM) installation instructions before proceeding further.

### Operating Under a CRS Host

Each CRS host has a unique way of working with ATB printers. The MARK I was designed to work with any major CRS available at the time this manual was printed. If a problem occurs while operating the printer, please refer to Section 4- Troubleshooting for help.

All installation specific connections, software setup, and print adjustments should be completed before attempting to go on-line with the CRS. After the printer is powered on and loaded with ticket stock, complete the following instructions to go on-line:

1. Observe the control panel LCD. The top line of the LCD should display:

ONLINE — READY

2. If the printer is not on-line, press the ON LINE push-button.
3. Call the CRS and request that the printer be commanded to print a test document (or demo coupon).
4. Observe the control panel for an indication that the printer is receiving data. The REC DATA LED indicator will flash when data from the CRS is being received by the printer.
5. Verify that a test document is printed after the CRS data transmission is complete and that the document is printed correctly. If the document is correct, the printer is on-line and ready to use.
6. If no document was printed or the document was not printed correctly, make sure the host data communications cable is secure and is connected to the correct port on the rear of the printer. If there is still a problem, refer to Section 4- Troubleshooting for help.

## Section 4 - Troubleshooting

The MARK I continually monitors its operation. Table 4-1 describes typical problems that may occur, possible causes, and corrective actions. When the printer detects a problem, an audible tone is sounded to attract the operator's attention, and an error message is displayed on the LCD to indicate the potential problem. Table 4-2 on page 4-6 lists common printer malfunction error messages and describes what they mean.

For assistance with troubleshooting a system malfunction, please contact the Unimark Customer Support Hotline at 1-800-451-2926.

<b>Problem</b>	<b>Possible Cause</b>	<b>Corrective Action</b>
Burst Failure	Stock damaged and did not burst	Remove stock from burster area. press <b>RESET</b> push-button to continue.
Bin C will not load stock	Bin C is exposed to direct sunlight	Reposition the unit so direct sunlight does not shine into the Bin C input.
Encode Error	Mag. stock not loaded.	Load magnetic stock in selected bins.
Jam in Ticket Stock Path or Transport	Ticket stock loaded wrong.	Clear the jam and load the ticket stock correctly. Refer to the "Clearing Ticket Stock Jams" paragraph for instructions.
Not Initializing (All LEDs are blinking)	The printer's floppy diskette needs to be installed.	Toggle the printer's power switch to the 0 (OFF) position, re-insert floppy diskette, and attempt to power on. If this does not correct the problem, call for service.
	Floppy diskette may not be properly loaded or some of the disk's files may be corrupted.	Install a backup floppy diskette and attempt to power on. If this does not correct the problem, call for service.
Not Initializing (No LEDs are blinking)	The printer's controller module has malfunctioned.	The printer's serial interface card may need to be reseated because it loosened during shipment. Call for service.
Out of Forms	One of the selected bins is out of stock.	Load more ticket stock in the selected bins.

## Troubleshooting

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Problem	Possible Cause	Corrective Action
Not Operating (LCD indicates OFFLINE)	The printer is off-line or the ON LINE push-button was pressed while unit was on-line.	Press the ON LINE push-button to place the printer on-line.
Not Operating (LCD shows an off-line message)	Ticket Stock Bin (A, B, or C) is empty.	Load more ticket stock. Refer to the "Loading Ticket Stock" paragraph in Section 3- Operation for instructions.
	Paper jam in transport module or ticket stock path.	Clear the jam and load the ticket stock correctly. Refer to the "Clearing Ticket Stock Jams" paragraph for instructions.
	Computer has detected an error condition and has taken the printer off-line	Refer to Table 4-2 on page 4-6 for an explanation of the error message. Most errors can be corrected by clearing a jam, pressing RESET, or restarting the printer. If problems persist, call the CRS Help Desk for assistance.
Not Operating (LCD shows erroneous characters)	Defective floppy diskette and/or software error.	Have a qualified service technician install a backup floppy diskette, then attempt to power on. If this does not work, advanced service is required.)
Not Operating (LCD is blank)	The printer is not powered on.	Toggle the printer's power switch to the I (ON) position.
	Power line fuse may have blown or power line circuit breaker may have tripped	Check the fuse or breaker protecting the power line going to the wall outlet used to power the printer. If OK, verify the wall outlet has power.
	The printer's power supply may have malfunctioned, a printed circuit board may be defective, or the CMOS may have suffered a memory loss.	Make sure power cable(s) are plugged in and completely seated on both the wall outlet and printer ends. If this does not correct the problem, call for service.
Not Printing (REC DATA LED does not blink)	The host is not communicating with the printer.	Make sure that the host communication cable is connected and completely seated on the printer.



Problem	Possible Cause	Corrective Action
Not Printing on Ticket	Ticket stock loaded incorrectly.	Load ticket stock correctly.
	Wrong ticket stock.	Load direct thermal ticket stock.
Not Printing In Correct Place on Ticket	Print misalignment.	Call the CRS help desk for assistance.
Print too Light or Dark	Print darkness misadjusted.	Call the CRS help desk for assistance.

*Table 4-1. Solutions to Typical Problems*

### Alarms and Error Messages

An alarm occurs when the MARK I computer detects a printer malfunction such as an empty ticket bin, etc. Alarms are indicated by an audible tone sounding three times over a 5-second period or one time every 15 seconds (depending on the exception alarm software option setting) and an error message displayed on the control panel LCD.

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

### Burst Failure Error Message

If the printer fails to separate or burst a ticket from the ticket stock when printing a ticket, printing will stop and the LCD will alternately display:

Burst Failure  
Clear Burst Area

and

Burst Failure  
Press RESET to Cont.

When a burst failure occurs, clear the ticket stock from the burster assembly path and press the RESET push-button. Then press the ON LINE push-button to continue operations. If the burst failure persists, advanced service is required. Call Unimark for corrective action.

### **Data Error Message**

The printer detected a non-specific host data problem. The LCD will display:

Data Error

This error message is used for troubleshooting host related problems. No corrective action is required by the operator, but the error message should be communicated to the CRS Help Desk.

### **Host Comm. Error Message**

The printer has detected an error in the data received from the host. The LCD will display:

Host Comm. Error

This error message is used for troubleshooting communication setup problems. Call for service and have the service technician check the communication settings.

### **Magnetic Encoding Error Message**

When the printer is configured to use ticket stock with a magnetic stripe, the magnetic stripe is encoded with digital data and then read to verify correctness before a ticket is printed. An encoding error occurs when the printer has attempted to encode/decode the magnetic stripe and it could not be written or read by the read/write heads. The LCD will display:

Encode Error

Press RESET to Cont.

Verify the ticket stock being used has a magnetic stripe. Press the RESET push-button first and then the ON LINE push-button to attempt to print and encode the ticket. If the encode error condition persists, advanced service is required. Call Unimark for corrective action.

**Out of Forms Error Messages**

When the printer runs out of ticket stock in the path selected, the control panel LCD displays:

Printer Out of Forms  
Load Forms in Path \_\_\_\_

The second line of the display will indicate the empty ticket stock path, A, B, or C. When this message is displayed, reload ticket stock into the selected path as described in Section 3-Operation, and press the ON LINE push-button to continue operations.

**Print Exit Bin Full Message**

The printer has detected that the direct exit bin is full. The LCD will display:

Print Exit Bin Full  
Press RESET to Cont.

Remove the printed tickets from the exit bin and press the RESET push-button to continue.

**Printer Malfunction Error Messages**

When the printer fails to perform an internal function within a certain time limit, a malfunction is detected, an audible tone is sounded, and a printer malfunction error message is displayed on the LCD:

Printer Malfunction  
Restart Printer

The second line will alternate between displaying "Restart Printer" and one of the messages listed in Table 4-2. To correct the printer malfunction, press the RESET push-button on the control panel. Then press the ON LINE push-button to continue operations. If the printer malfunction error message persists, advanced service is required. Call the CRS Help Desk or Unimark Customer Service for corrective action.

<b>Message</b>	<b>Description</b>
Burst Path Operation	The operation to burst or separate a ticket failed.
Calibrate Park Oper.	The stock failed to park in the proper location.

Message	Description
Calibrate Path Oper.	The operation to recalibrate the ticket stock in pick path A, B, or C failed.
Encode Event Cond.	The operation to move the ticket through the encode station failed.
Exit Event	The operation to move the ticket past the exit sensor failed.
Load Park Path Oper.	The operation to park the ticket stock after a path load operation failed.
Load Path Operation	The operation to load pick path A, B, or C with ticket stock failed. Refer to Figure 4-1 on page 4-9 for location information.
Motor Init Oper.	Motor failed to initialize properly.
Path Command	A path primitive command failed.
Park Path Operation	The operation to park the ticket stock failed.
Pick Path Operation	The operation to pick ticket stock from pick path A, B, or C failed. Refer to Figure 4-1 on page 4-9 for location information.
Preprint Event Cond.	The operation to move the ticket from the pre-encode position to the pre-print position failed.
Preselect Path Oper.	The operation to pre-position the ticket stock before the burst station failed.
Print Event	The operation to print the ticket failed.
Print Path Event	The operation to move the ticket from the print head to the exit sensor failed.

*Table 4-2. LCD Error Messages*

### Reject Bin Full Message

The printer has detected that the reject bin is full. The first line of the LCD will display:

Reject Bin Full

The second line of the LCD will alternately display:

Remove Documents

and

Press RESET to Cont.

Open the left door, remove the voided tickets from the reject bin, close and lock the door, and press RESET to continue. Refer to Figure 4-1 on page 4-9 for location information. The LCD will then display:

Restarting Printer  
Please Wait

After 2 seconds the message is replaced by:

OFFLINE  
Press ONLINE to Cont

Press the ON LINE push-button to restore the printer to full operation.

### **SCN Read Error Message**

This error can only occur when magnetic encoding is selected. The printer cannot read the pre-encoded Stock Control Number (SCN) from the magnetic stripe on the ticket stock. The LCD will alternately display:

SCN Read Error

and

ONLINE — READY

or

OFFLINE

The alternate message displayed depends on the current state of the printer. This error message may be displayed because: (1) the ticket stock does not contain a magnetic stripe, (2) the ticket stock is loaded incorrectly, or (3) the stock is not pre-encoded.

Make sure the correct ticket stock is loaded and that it is loaded correctly. If the error still persists, the SCN read hardware may not be adjusted properly or it may have malfunctioned. Call for service as soon as possible.

### Stored Config Lost Message

The printer has detected that the installation specific configuration file is not available and the user specific default configuration file has been loaded instead. The LCD will alternately display:

Stored Config Lost  
User Defaults Loaded

and

Service Maybe Req'd  
To Correct Operation

and

OFFLINE  
Press ONLINE to Cont

These error messages indicate that one or more of the settings entered on site could not be read or the file where they were stored has become corrupted.

Typically, three beeps will be sounded every 2 seconds while these messages are displayed until the ON LINE push-button is pressed. Then the LCD will alternately display:

Stored Config Lost  
User Defaults Loaded

and

Service Maybe Req'd  
To Correct Operation

and

ONLINE — READY

The printer may or may not begin printing and the tickets that are printed may contain errors. Call for service as soon as possible. The installation specific settings need to be reentered. Replacing the floppy diskette with a backup may solve the problem.

### Ticket Stock Jam Message

A ticket stock jam occurs when ticket stock or a ticket moving through the printer's transport assembly fails to reach an expected position due to an obstruction in the ticket path or a ticket wrinkling. When a ticket stock jam occurs, the LCD will alternately display:

Clear Document Path  
Press RESET to cont.

and

Document Path Jam  
Jam in \_\_\_\_\_ path

The second line of the LCD indicates the location in the transport module where the jam has occurred. Refer to Figure 4-1 on page 4-9 for an illustration of where ticket stock jams may occur. Press the RESET push-button to reset the printer and clear the ticket stock jam message. Then press the ON LINE push-button to continue operations.

If this does not correct the error, refer to the "Clearing Ticket Stock Jams" paragraph for further instructions.

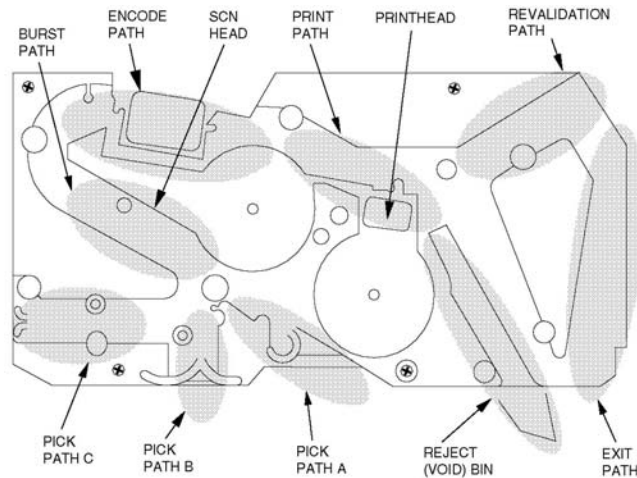


Figure 4-1. Ticket Stock Jam Locations.

### User Defaults Lost Message

The printer has detected that both the installation specific and user specific default configuration files are not available and the factory default file has been loaded instead. The LCD will alternately display:

User Defaults Lost  
Factory Defaults Loaded

and

Contact Service  
To Correct Operation

and

OFFLINE  
Press ONLINE to Continue

This error message indicates that the file containing the user specific default settings could not be read or the file where they were stored has become corrupted.

Typically, three beeps will be sounded every 2 seconds while these messages are displayed until the ON LINE push-button is pressed. Then the LCD will alternately display:

User Defaults Lost  
Factory Defaults Loaded

and

Contact Service  
To Correct Operation

and

ONLINE — READY

The printer may or may not begin printing and the tickets that are printed may contain errors. Call for service as soon as possible. The installation specific settings need to be reentered. Replacing the floppy diskette with a backup may correct the problem.



### **Clearing Ticket Stock Jams**

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

1. Note the location of the jam indicated on the LCD and refer to Figure 4-1 to locate the corresponding area where the jam occurred.
2. Press the RESET push-button to try to clear the jam.
3. If the Document Path Jam message is cleared, press the ON LINE push-button to continue operation.
4. If the jam condition persists, complete the following procedure:



#### **WARNING**

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

- 4.1 Toggle the power switch to 0 (OFF) and disconnect the power cord from the rear of the printer.

#### **CAUTION**

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

- 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 printer use, motors may become hot to the touch.**

### CAUTION

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



To prevent damage, do not touch the transport, burster, printhead, and encoder assemblies or components in these assemblies unless standard electrostatic discharge (ESD) handling precautions are taken.

- 4.3 Remove the ticket stock causing the jam through the opening in the side or bottom of transport module.
  - 4.4 Make sure that all the pieces of the ticket stock are removed from the transport module before continuing.
  - 4.5 Plug the power cord back into the printer, toggle the power switch to I (ON), and reload the ticket stock as described in Section 3- Operation.
5. Press the RESET push-button to clear the jam. Then press the ON LINE push-button to resume operation.

### Problems Not Associated With An Error Message

Some printer problems may be diagnosed by the lack of an expected LED indication or LCD message. If none of the preceding errors, possible causes, and corrective actions are applicable, check for the following:

### NOTE

The MARK I can operate in either line printer or Association of European Airlines (AEA) printer mode. PECTABs are not used in line printer mode.

### **LCD Doesn't Read "Pectabs Saved" After Downloading Pectabs**

The current firmware (software) load may not support PECTABs. Have a service technician verify that the correct Unimark System Application Software is loaded. The floppy diskette may not be write enabled. Verify that the floppy diskette is write enabled. If the RECV DATA LED blinks when receiving pectabs, the RECV STX and RECV ETX options may be set improperly. Verify that these options are set properly in the Communications Menu. Selection and operation of all off-line printer functions are reserved for qualified service technicians.

### **RECV DATA LED Doesn't Blink When Host Is Sending Data**

The cabling may not be properly connected on the rear of the printer. Have a service technician verify that the CRS host communication cable is connected to the correct port on the rear of the printer. If the wrong port was selected, the printer will be damaged and require service. Some printer's have more than one Serial I/O (COM) Port. Make sure the host's cable is connected to COM 1. If the gender changer was used, make sure it is securely seated into the COM1 port. Retry sending data or a test document to the printer.

### **Using The LEDs Inside The Computer Module**

It is possible that the printer could stop operating because of a defective microprocessor. Have a service technician open the right door and observe the three LEDs through the holes provided on the side of the computer module. All three should blink when the printer is processing data. Should any of these LEDs be solidly on or off, service will have to repair or replace the associated printed circuit board.

### **Burn-In Testing**

It may be necessary for a service technician to perform a burn-in test to determine if a problem is originating from the printer, cabling, or the CRS host.

### **Print Quality**

When the MARK I print quality is not acceptable, it may be necessary to clean the printhead assembly and printhead platen roller. Refer to Section 5 - Preventive Maintenance for instructions on cleaning the printhead 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. However, these adjustments are only available when the printer is off-line and the Adjustments menu is selected. All off-line menu functions are reserved for qualified service technicians.

## Section 5 - Preventive Maintenance

This section describes the preventive maintenance procedures for the MARK 1 printer. Although the printer will perform dependably right out of the box, the operator must do a periodic inspection and cleaning to keep it in good working order. To prevent damage, Unimark recommends that only qualified service technicians should attempt to perform preventive maintenance on the printer. With proper care, the printer's enclosure, printhead, magnetic encoder, transport assembly, and other components 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:



### **WARNING**

**To prevent personal injury, remove power before doing preventive maintenance.**



### **CAUTION**

**To prevent damage, do not touch the transport, burster, printhead, and encoder assemblies or components in these assemblies unless standard electrostatic discharge (ESD) handling precautions are taken.**

### **NOTE**

**The printer contains electronic circuitry, solenoids, and motor-driven mechanisms that all generate a small amount of heat. In normal operation, the cabinet may feel warm, particularly on the top surface; however, it should not feel or smell hot.**

### **Periodic Inspection and Cleaning**

Every three months (more often in high-volume applications), inspect the printer for unusual wear or damaged components. The inspection will take less than 10 minutes.

1. Carefully inspect the outer surfaces of the printer cabinet 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 assemblies.
2. Examine the printer cabinet's external and internal surfaces, ventilation slots, transport module, and exposed components for dust buildup. All dust should be removed at least every three months to maintain performance.
3. If cleaning is required, complete the recommended cleaning procedures listed in the following paragraphs.

### **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 printer cabinet. The cabinet can be damaged by solvents.**

### **Cleaning External Surfaces**

Use the following procedure to clean the external surfaces of the printer:

1. Vacuum the dust accumulation from the fan, ventilation slots, and other external surfaces of the printer.
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.
3. Dry the cleaned area with a clean, dry cloth or paper towel.

### Cleaning Inside Cabinet

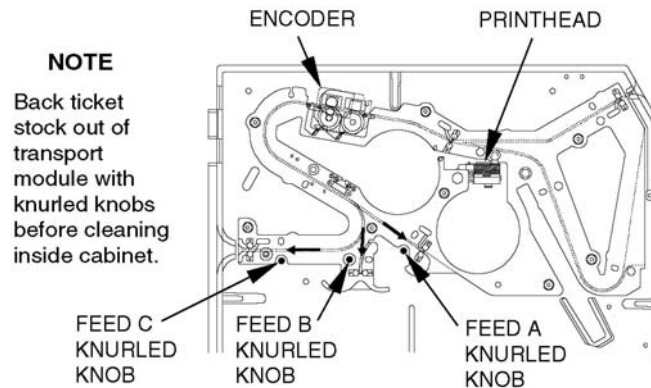
Since the printer is ventilated by a fan cycling outside air through the cabinet, dust can collect inside the cabinet. Dust is also produced from ticket stock passing through the transport module. Use the following procedures to clean inside the printer cabinet:

1. Toggle the power switch to 0 (OFF) and unplug the power cord from the rear of the printer.

### CAUTION

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

2. Unlock door on left side of cabinet and open to a maximum of 90°.
3. Back the ticket stock all the way out of the transport module by turning the knurled knobs shown in Figure 5-1.



*Figure 5-1. Location of Encoder and Printhead Assemblies*

4. Remove ticket stock as necessary and vacuum dust from inside of printer.
5. Using compressed air, blow the dust from ticket stock path grooves in transport module.

## **Preventative Maintenance**

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6. Using compressed air, blow the dust off the sensors in ticket stock path as shown in diagram on inside of door.
7. After all cleaning is complete, plug the power cord back into the rear of the printer, toggle the power switch to I (ON), and reload the ticket stock. Refer to the "Loading Ticket Stock" paragraph in Section 3- Operation for more detailed instructions.

### **Cleaning the Encoder, Printhead, and Platen**

The printhead and magnetic encoder assemblies should be cleaned every three (3) months or when 25,000 coupons have passed through the transport module, whichever comes first. Unimark offers a cleaning card (PN 700-5014-000) to assist in cleaning the printhead and encoder assemblies, or the cleaning can be accomplished using a lint-free cloth and isopropyl alcohol. The following procedures describe both methods of cleaning the printhead and magnetic encoder assemblies.

### **Using the MARK I Cleaning Card**

The MARK I Cleaning Card, saturated with a cleaning solution, has been designed to be fed through the transport system and clean the printhead, printhead platen, and encoder drive wheels.

To use the cleaning card, the printer must be reconfigured while the printer is off-line and the Maintenance menu is selected. The Clean Printer option is provided for use with the cleaning card. All off-line menu functions are reserved for qualified service technicians.



### Cleaning the Encoder Drive Rollers

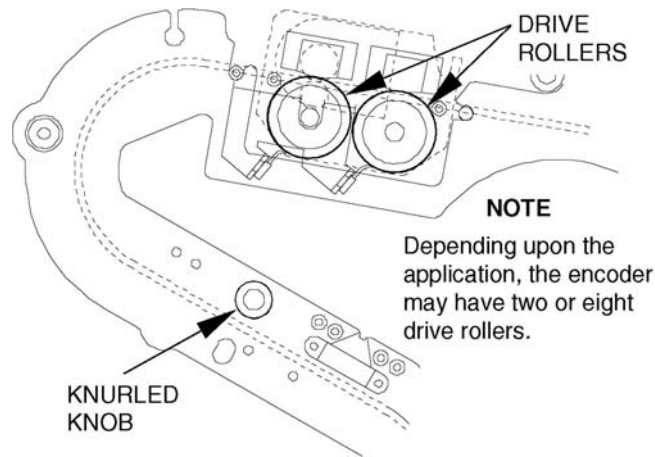
Use the following procedure to manually clean the encoder drive rollers:

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

#### CAUTION

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

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



*Figure 5-2. Cleaning Encoder Drive rollers.*

3. Back the ticket card stock all the way out of the transport module by turning the knurled knobs shown Figure 5-1.
4. Dampen a lint-free cloth with isopropyl alcohol.
5. Hold the cloth firmly against one of the drive rollers (Figure 5-2) with one hand while turning the knurled knob clockwise with the other. Turn the knob a few times and remove the cloth. The cloth will be discolored from the dust buildup on the roller.

## **Preventative Maintenance**

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6. Dampen another area of the cloth and repeat this process until the cloth no longer discolors. This will indicate the roller is clean.
7. Dampen another area of the lint-free cloth with isopropyl alcohol.
8. Hold the cloth firmly against the next drive roller and repeat steps 5, 6, and 7 until all the drive rollers are clean. (Depending upon the application, the encoder may have a total of eight drive rollers, two original, three on the bottom in the center of the paper path, and three on top in the center of the paper path.)
9. After all cleaning is complete, plug the power cord back into the rear of the printer, toggle the power switch to I (ON), and reload the ticket stock. Refer to the "Loading Ticket Stock" paragraph in Section 3- Operation for more detailed instructions.

### **Cleaning the Printhead and Printhead Platen**

Use the following procedure to manually clean the printhead and printhead platen:

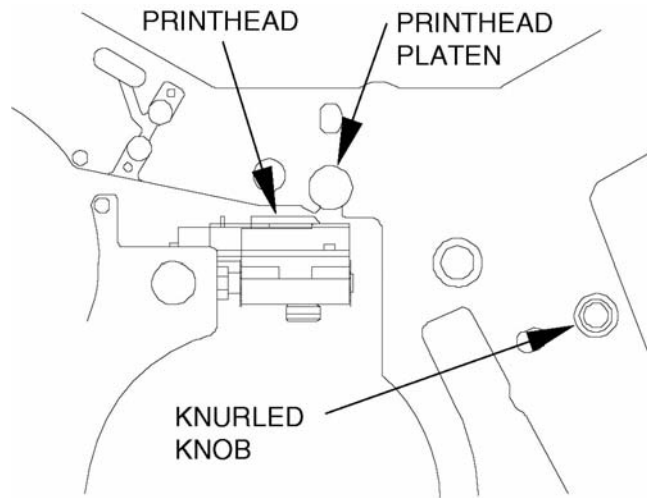
1. Toggle the power switch to 0 (OFF) and disconnect the power cord from the rear of the printer.

#### **CAUTION**

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

2. Unlock door on left side of cabinet and open to a maximum of 90°.
3. Back the ticket card stock all the way out of the transport module by turning the knurled knobs shown in Figure 5-1.

4. Use a foam swab dampened with isopropyl alcohol to clean the flat surface of the printhead (Figure 5-3) that contacts the printhead platen. Move the swab back and forth across the printhead until all dirt is removed.



*Figure 5-3. Cleaning the Printhead and Printhead Platen.*

5. Dampen a lint-free cloth with isopropyl alcohol.
6. Hold the cloth firmly against the printhead platen (Figure 5-3) while using your other hand to turn the knurled knob for the print path in a clockwise direction. While holding the dampened cloth against the platen, gradually move it back and forth across the width of the platen, cleaning the entire platen surface. The cloth will be discolored from the dust buildup on the platen.
7. Dampen another area of the cloth and repeat this process until the cloth no longer discolors. This will indicate the platen is clean.
8. After all cleaning is complete, plug the power cord back into the rear of the printer, toggle the power switch to I (ON), and reload the ticket stock. Refer to the "Loading Ticket Stock" paragraph in Section 3- Operation for more detailed instructions.

### **NOTE**

**The Print Demos menu may not be available in some software versions. All menu titles and functions are dependent upon the customer supplied software configuration specifications provided to Unimark.**

9. Print a demo coupon to confirm the print alignment and darkness are acceptable. A demo coupon can be printed when the printer is off-line and the Print Demos menu is selected. All off-line menu functions are reserved for qualified service technicians.

## **Section 6 – 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 (800 649-5795) and allow the auto-attendant to guide you to our technical support line for Bar Code or Travel Products. 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 Unimark Contact web page ([www.unimark.com](http://www.unimark.com)). The customer support telephone number and email address are listed for your convenience.



## **Section 7 - 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) 451-2926 (U.S. office) or +44-1628-829-990 (International office):

- 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 (RA) number. Perform the following steps to complete the return process:

1. Prepare item for return to Unimark – Do NOT include accessories, power cable or ancillary items unless directed otherwise by Customer Service.
2. Packaging – Use original packaging materials or equivalent. If not available, Unimark can provide and bill.
3. Enter the RA# on the packing list and on the outside of the container in at least two locations for easy identification at Unimark.
4. Shipping label to include return address as well as “Ship To:”.
5. Notify your “carrier-of-choice” for pick-up and delivery to  
Unimark





## Section 8 – Packing & Shipping

### When to Ship

The MARK I has been designed to provide years of trouble-free service. However, it may be necessary to return the printer for warranty repair work or to ship it to another location. To ensure safe transport of the printer, follow the packing and shipping guidelines in this section.

### Packing for Shipment

The original shipping container and packing material in which the printer was shipped from the factory provides optimal protection for reshipment. If the original shipping material was saved and it is still in good condition, Unimark recommends that it be reused. Otherwise, contact Unimark for a packing kit. Figure 8-1 shows an exploded view of the packing materials used to ship the printer. Use Figure 8-1 and the following procedures to pack the printer for shipping:

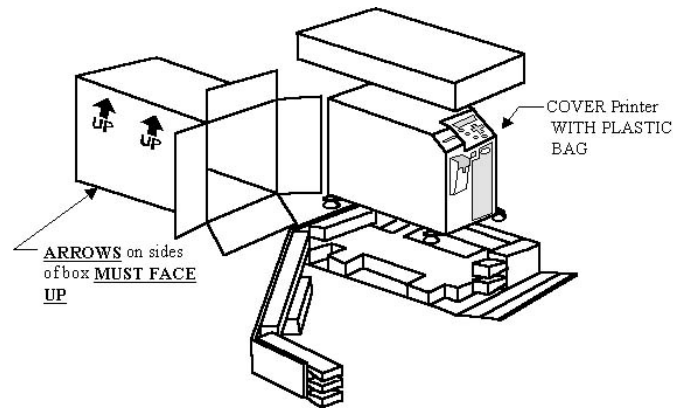


Figure 6-1. Packing for Shipment

Figure 8-1. Packing for Shipment

1. Position the shipping container with the "UP" arrows pointing up and the open end of the box on the side. Reference Figure 8-1 throughout these instructions for possible clarification.
2. Place the printer inside the plastic bag.

## **Packing & Shipping**

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3. Place the printer onto the bottom piece of foam padding.
4. Wrap the narrow foam pad sleeving around the base of the printer, enclosing the wheels of the printer and consequently the bottom foam padding.
5. Place the top piece of foam padding onto the printer.
6. Slide the wrapped printer into the open side of the shipping container.
7. Close the shipping container flaps, short flaps first, and seal with packing and sealing tape.
8. Mark the outside of the shipping container, "Fragile. Handle with Care".
9. 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 in at least two locations for easy identification at Unimark.

### **Carrier and Insurance**

Unimark, Inc. cannot be responsible for damage incurred during shipment. Choose a reliable carrier to ship the printer or assembly. We also recommend that you insure the printer being shipped for its full replacement value.

Ship the MARK I printer to:

RA# \_\_\_\_\_

Unimark, Inc.  
9910 Widmer Road  
Lenexa, KS 66215

Telephone (800) 451-2926

## Section 9 - Glossary

### A

**Amps (Amperes)** A unit of measurement that indicates the amount of electric current flowing in a circuit in a given time. Fuses or circuit breakers are rated in amps. These devices protect circuits by preventing too much electric current from flowing through the circuit. All fuses or circuit breakers located in the power circuit supplying the MARK I must have a rating higher than the current specified for the MARK I.

**Association of European Airlines (AEA)** The AEA specifications for parametric tables (PECTABs) are observed by the MARK I.

**ATB** See Automated Ticket / Boarding Pass.

**ATB1 and ATB2** Specific airline ticket or boarding pass formats. The MARK I can be configured to print and encode the appropriate format.

**Automated Ticket / Boarding Pass (ATB)** A designation given to the industry standard format for airline ticket and boarding pass documents.

### B

**Baud** A unit of measurement used to indicate the signaling speed of data transmissions in an amount equal to the number of discrete conditions or signal events occurring per second.

**Bin** Storage or holding location for bulk ticket stock in the MARK I.

**Binding Stub** The part of the ticket, boarding pass, or itinerary stock used for stapling related travel documents together.

**Bit** A unit of measurement that represents either a binary one or zero.

## Glossary

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**BPI (Bits Per Inch)** A unit of measurement used to indicate the number of digital bits of information that can be magnetically encoded in a row on one inch of the magnetic stripe on the back of some types of ticket stock.

**Burster** The mechanical device in the transport assembly that separates or bursts the individual ticket stock form (coupon) from the continuously fed bulk ticket stock.

**Byte** A byte is a unit of measurement used to represent one unit of computer data composed of 8 bits.

## C

**CRS (Computer Reservation System)** The airline travel reservation system to which the MARK I is interfaced.

## D

**Direct Thermal Printing (DTP)** A printing method that applies heat to specially treated paper (ticket stock or coupons) in patterns of dots that form readable characters.

**DPI (Dots Per Inch)** The printhead assembly generates dots that are transferred to the ticket to form readable characters. Dpi is a unit of measurement that indicates the total count of the number of dots that can be printed in a one-inch straight line.

## E

**Electromechanical Device** A device that uses a motor or solenoid to cause a mechanical action.

**Electrostatic Discharge (ESD)** A static electricity charge will build up on the human body from normal daily activity, particularly in cool and dry weather. This static build-up may reach several thousand volts and can be discharged into MARK I assemblies where it can damage sensitive electronic components. A standard ESD precaution is to touch a ground potential such as the metal chassis of the computer assembly and maintain contact with it before and during contact with assemblies in the MARK I that are

ESD-sensitive. ESD wrist and ankle straps are available for this purpose.

**Encoder** An optional device required for magnetics operations in the MARK I. The encoder magnetically transfers digital information to ticket stock forms (or coupons) that have a magnetic stripe on the back.

**ESD** See Electrostatic Discharge.

**ETDN (Electronic Ticket Distribution Network)**  
An electronic data network to which the MARK I can be connected for printing tickets.

## **F**

**Floppy Disk Drive** A device inside the computer assembly for reading and writing data. The MARK I is configured with a standard 3.5-inch floppy disk drive like those found in personal computers.

## **L**

**LAN (Local Area Network)** A small network of computers that can share data and share the MARK I printer.

**LCD (Liquid Crystal Display)** A device that displays alpha numeric characters.

**LED (Light Emitting Diode)** A device that emits light to indicate a state or condition.

## **M**

**Magnetic Stripe** An optional brown colored stripe of magnetic material that may be applied to the back side of a coupon by the ticket stock manufacturer. In the MARK I, this stripe passes by the encoder in the transport assembly where digital information is transferred magnetically to the stripe. This information can then be read by the MARK I or other devices.

## Glossary

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**Magnetics** Refers to the methods and devices used to record and retrieve digital information on magnetic stripes printed on ticket stock. The MARK I may be ordered with or without magnetics capability.

**Mb (Megabyte)** A unit of measurement representing 1,000,000 bytes of information.

**Modem** A contraction of MODulator-DEModulator, a device that allows the MARK I computer assembly to transmit and receive digital data over telephone lines.

## P

**PC (Personal Computer)** A single-user microcomputer designed for personally controllable applications.

**PECTABs (Parametric Tables)** An AEA data message specification.

**Pick Path** In the MARK I, the pick path refers to the ticket stock path for one of three possible ticket stock sources.

**Printhead Assembly** The device in the transport assembly that prints readable characters, symbols, and images on ticket stock.

## S

**Staple Tab** See Binding Stub.

**STP (Satellite Ticket Printer)** One of several airline ticket printers at remote locations used to print tickets generated by a centrally located computer or CRS.

## T

**TDDS (Travel Document Delivery System)** The MARK I printing device used to generate airline tickets, boarding passes, itineraries, and other travel documents.

**Ticket Stock** The blank perforated forms used to print airline tickets, boarding passes, and itineraries. Sometimes referred to as "coupons".

**Transport Module** The module in the MARK I that separates individual ticket forms from the ticket stock and prints the travel document.