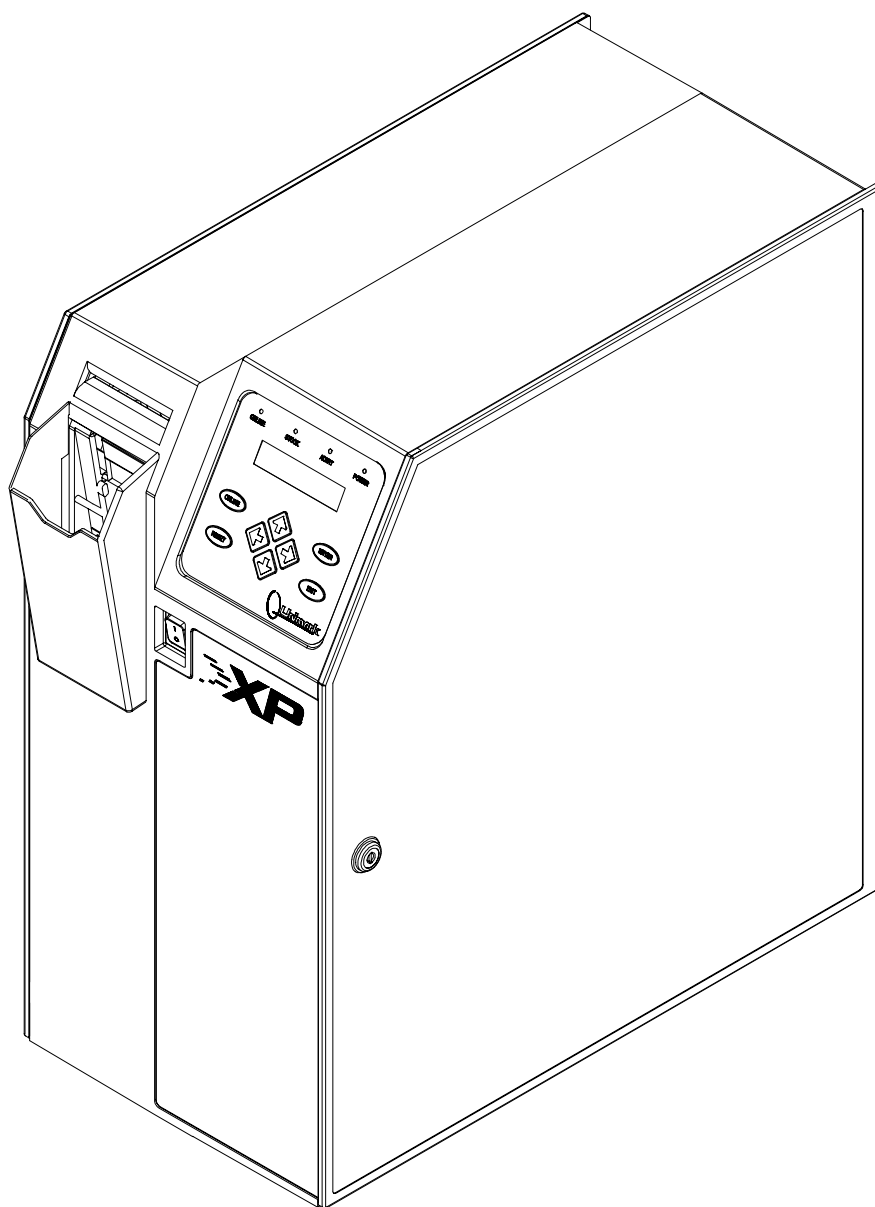




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P/N: 71U-1429-100K, REV C

## Installation and Operator's Manual



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## 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 XP is a state-of-the-art Airline Ticket and Boarding (ATB) pass printer (hereafter referred to as the Unit), capable of high speed printing and incorporating standard ATB features such as magnetic data encoding and revalidation. The Unit has two RS-232 Asynchronous Serial Communication ports to interface to the host system. The ports are configured as DTE requiring a null modem cable connection to a DTE host system. Other interface options are available or can be developed such as Ethernet, USB, or Modem.

The Unit is designed to set on the floor. There are multiple caster options available, allowing the Unit to be easily moved around in airport and travel agency environments.

The Unit transport mechanism accepts full size ATB coupons (8 and 7-3/8 inch stock). The Unit has three input bins. Bins A and B are internal secured locations for ATB ticket stock. Both A and B bins can hold up to 1000 ATB documents. Bin C is external which is typically unsecured and used for mini ITIN stock. An optional Bin C shelf is available as well as a Bin C box which can be secured. The printed/encoded coupons are automatically presented at the exit bin on the front of the Unit. The Unit has an internal reject bin for coupons which cannot be properly encoded or are otherwise damaged and unusable.

The Unit's front control panel incorporates control/function keys, 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 autoswitching 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.

### Warnings and Cautions

The Unit is designed to operate safely and effectively under normal circumstances with both enclosure 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 enclosure is open. When the left door of the Unit is open, the operator is exposed to moving mechanisms and components.



#### **WARNING**

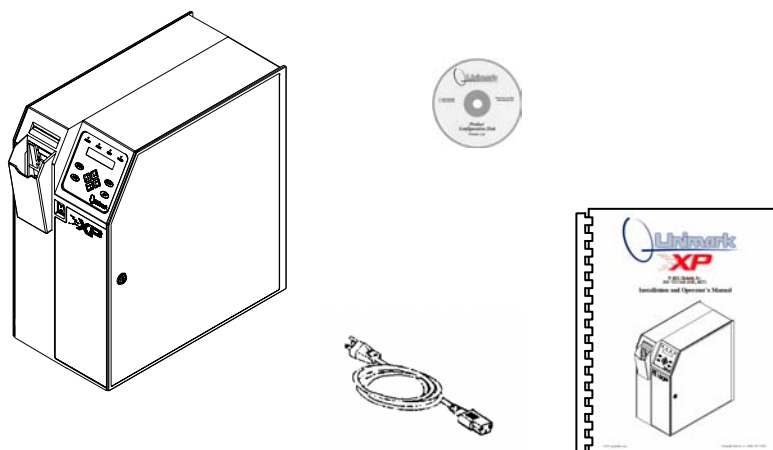
**For your safety, a warning notice will appear before any procedure involving moving components. Each warning notice will be prefaced by the international safety alert symbol and warning label. The warning text will explain the precautions to take involving the procedure being followed.**

#### **CAUTION**

**You may damage some of the components in the Unit during maintenance procedures if you do not take specific precautions. When a component is subject to damage, a caution notice will appear before the step. Each caution notice will explain the potential damage and specify the appropriate precautions.**

## 2.0 Items Included (contents vary with customer configuration):

1. XP Unit
2. Keys
3. AC Power Cord
4. XP Manual or Product CD
5. Optional items such as ticket catchers, Bin C options, and interface cables and adaptors/gender changers
6. Sample Test Stock



## 3.0 Product Specifications:

- Printing system: **Method:** Direct Thermal  
**Resolution:** 203DPI  
**Speed:** Up to 50 documents per minute  
**Font:** Contains Andale from Agfa Monotype Corporation®
- 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 internal (Bins A and B); 7-3/8 and 8 inch stock  
One external (Bin C); 8 inch stock only  
**Revalidation:** One front input feed slot; 7-3/8 and 8 inch stock  
**Reject:** One internal reject bin  
**Exit:** One stock path exit point at the front below the revalidation slot
- Interface: **RS-232:** Two Asynchronous Serial Communication ports (DB-25F DTE standard)  
**Ethernet:** \*Optional network interface (RJ-45) with TCP/IP and Web Server functionality  
**USB:** \*Optional Universal Serial Bus interface  
**Modem:** \*Optional Modem Phone Line (RJ-11/RJ-12) interface  
**RF:** \*Optional RF antenna mount  
\* Not part of the Standard XP configuration  
\*\* Other interface options can be developed as necessary
- Control Panel: **Keys:** Eight momentary push button keys (see “Front Panel” section for details)  
**LEDs:** Four indicator LEDs (see “Front Panel” section for details)  
**Display:** 2 row by 20 column (2x20) alpha numeric (see “Front Panel” section for details)
- Physical: **Dimensions:** 11-5/8” wide, 23-1/2” high (without casters), 21-3/4” deep  
**Weight:** 50lbs (23 kg), *Standard Configuration*  
**Shipping Container Dimensions:** (See “Installation” section)
- Environmental: **Operating Temperature:** 40 to 104°F (4 to 40°C)  
**Storage Temperature:** -4 to 140°F (-20 to 60°C)  
**Relative Operating Humidity:** 5 to 95%, non-condensing, without degraded performance  
**Relative Storage Humidity:** 5 to 95%, non-condensing, without damage to components

## 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 from the shipping container by opening the side panel marked “OPEN THIS END”. Pull the Unit (secured with packing foam pieces) from the container and remove the foam from the Unit.

The keys are in a package attached to the rear of the Unit.

**Retain original shipping carton and foam for future use.**

#### Accessories Kit

After the Unit has been removed from the shipping container, remove the Accessories Kit from the Bin A/B location on the left side. The Accessories Kit consists of the power cord, ticket catcher, Operator's Manual or Product CD, and some sample stock for testing. The exact contents of the kit are subject to change without notice.

#### Bin Full Feature

The Bin Full Bale allows the Unit to sense when the ticket catcher is full (approximately 125 tickets). Under this condition a front control panel alert is set and ticket printing is automatically halted. The alert condition 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 and push slightly to the right while pulling out. This action moves the bin full bale from the locked storage position to the operating position. The bin full bale should move freely up and down.

#### Attaching the Ticket Catcher

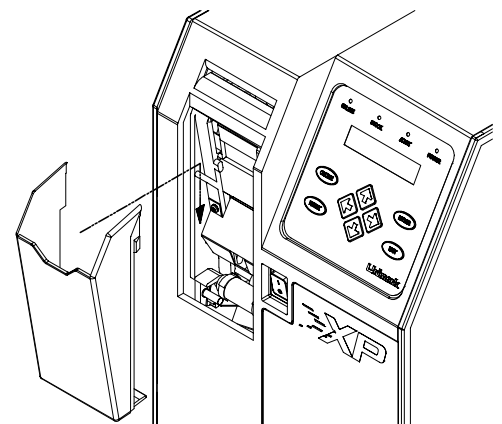
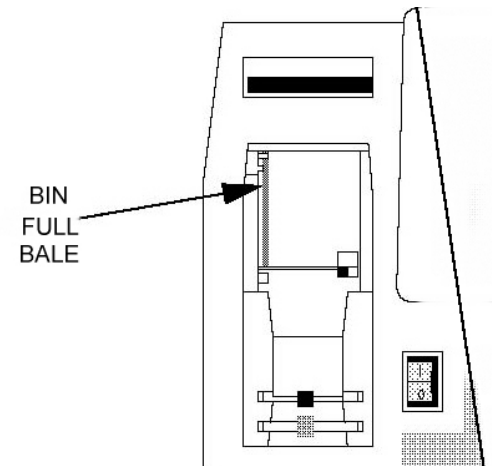
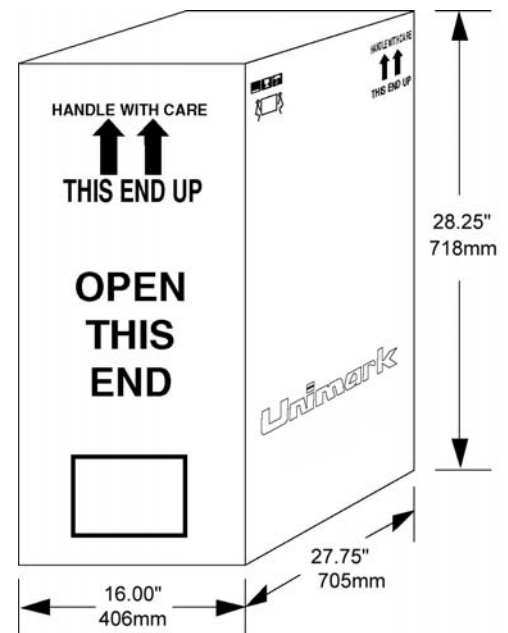
Remove the ticket catcher from the Accessories Kit. Hold the catcher by the sides, between your thumb and fingers, with the open end of the catcher facing up. Set the bottom of the catcher into the bottom of the opening in the front of the Unit. Gently squeeze the sides of the ticket catcher and push it into place. Let go of the ticket catcher and it will remain in place.

#### Handle

The Unit can incorporate a handle located on the front just below the user interface keypad. The handle is designed to assist the operator when rolling the Unit out to load stock and for service and product support. **The handle is not to be used to lift Unit, which could result in product damage.**

#### Bin C Shelf

The Unit can incorporate a shelf to support stock for the Bin C input. The shelf is located on the rear of the Unit. During shipment it is stored in the locked upright location. During on-site installation, the shelf can be pulled down from the top and let down to the horizontal (down) location. A support chain will limit the downward swing of the shelf.



## 4.2 Location and Set-up

Choose a location that provides at least 1-inch of open space between surfaces adjacent to the Unit's sides, front, and top. This space is required to allow for proper ventilation of the Unit. At least 3 inches of space is required behind the Unit for cabling and airflow.

Position the Unit so adequate space is provided on both the left and right sides to open the doors. Alternately verify that the Unit can be moved (or rolled) to an open area where the doors can be fully opened. The left and right doors must be able to swing open 90° to load ticket stock or 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. 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.
- 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.**

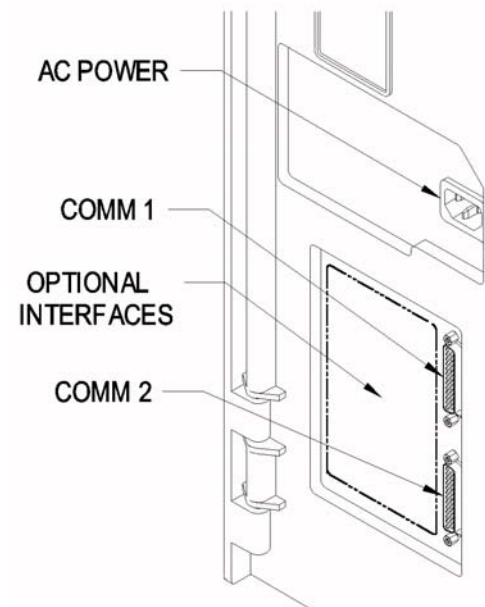
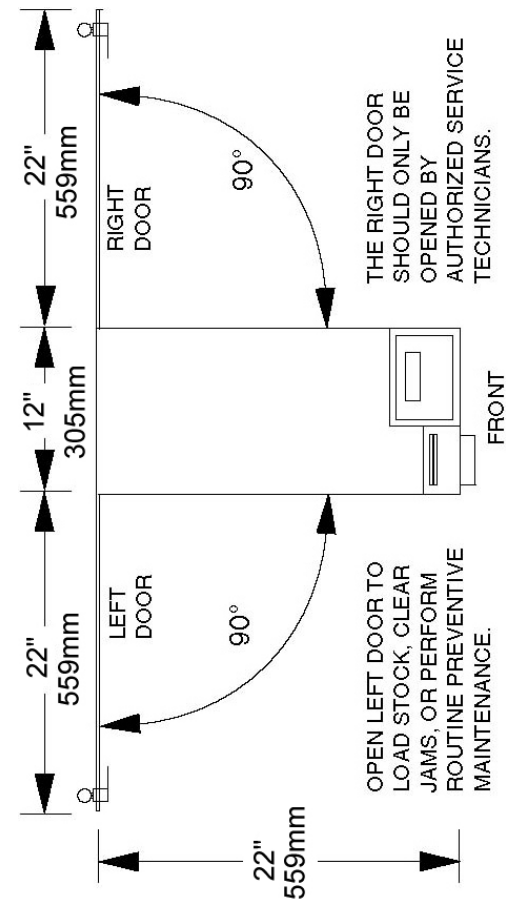
## 4.3 Plugging into the Unit

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.

### Optional Connections

3. **Ethernet:** An optional RJ-45 connection is available for Ethernet-based connections providing TCP/IP and Web Server connectivity.
4. **USB:** An optional Universal Serial Bus connection is available for USB connectivity.
5. **Modem:** An optional RJ-11/RJ-12 connection is available for modem (phone line) based connections.
6. **RF:** An optional antenna mount is available for RF based connectivity.



## 5.0 Host Interface Specifications

### 5.1 Hardware Interface

The Unit has two RS-232 Asynchronous Serial Communications ports to interface to the Host system. The physical connection is provided using two DB-25 female pin connectors marked COMM 1 and COMM 2. The ports are configured as DTE connections and can be used to connect to an associated DTE host using a null modem cable. The pinout 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	XP (COMM 1 and 2)	
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. This connection can be removed if necessary.

The Unit may also have optional hardware interfaces including Ethernet, USB, and Modem. Custom firmware interfaces can be written for these and the existing serial interface.

### 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 - 115,200	7, 8	None, Even, Odd, Mark, Space	1, 2

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

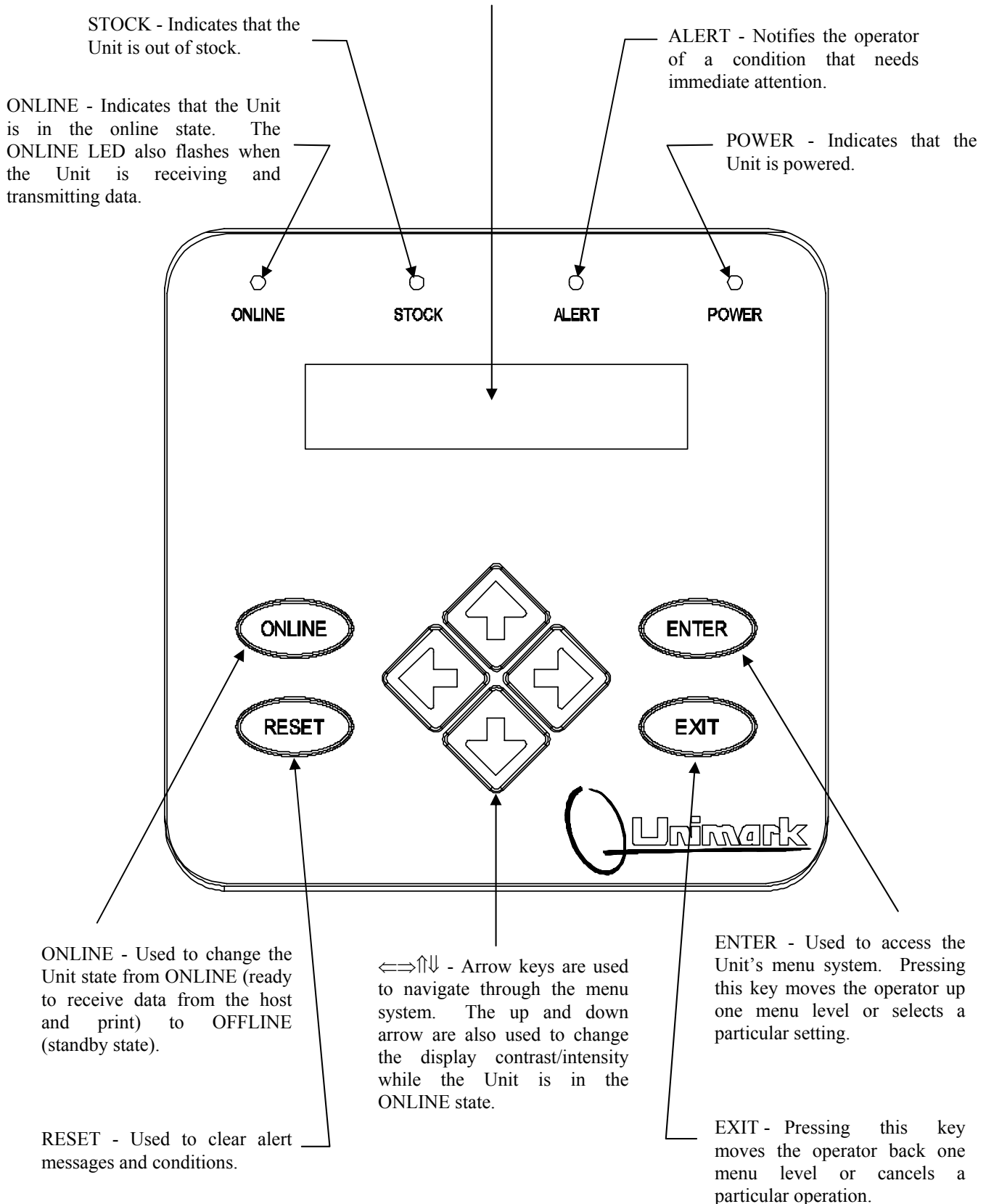
- ACK** - Acknowledge character (06<sub>HEX</sub>). Used to indicate that the message was received correctly.
- CR** - Carriage Return character (0D<sub>HEX</sub>).
- DC1** - XON character (11<sub>HEX</sub>). Used to indicate that the serial port is ready.
- DC3** - XOFF character (13<sub>HEX</sub>).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



## 7.0 Front Panel

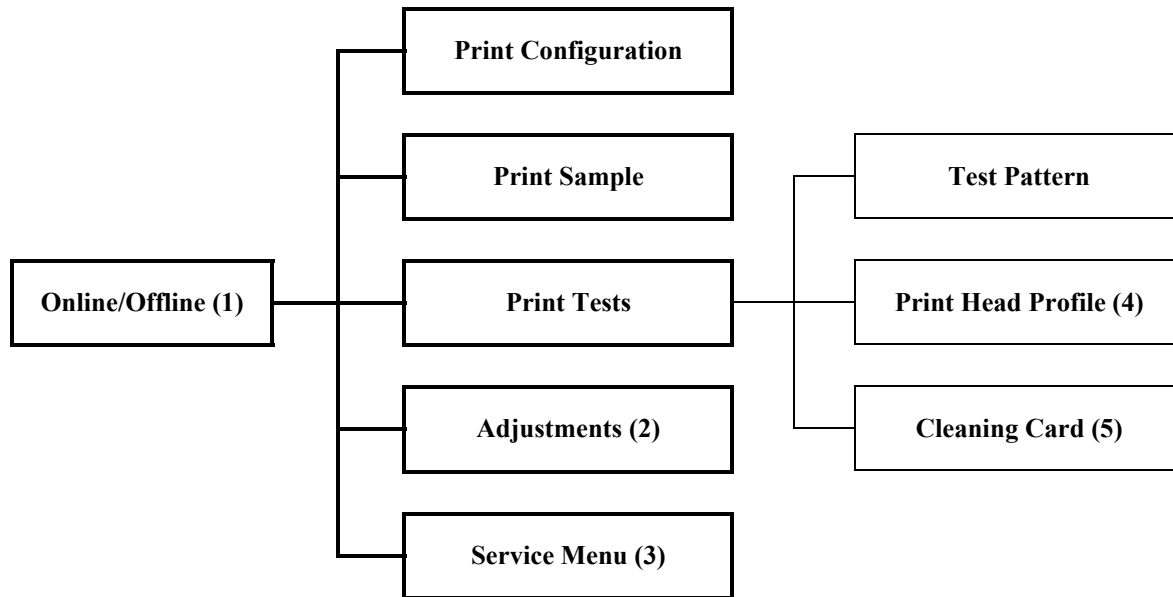
### 7.1 Keypad/Display Layout

The front control panel character display provides the operator with information about the Unit's state. The display is also used to navigate the Unit's menu system, allowing the operator to change settings and address conditions to which the Unit has alerted the operator.



## 7.2 Basic Operator Level Menu

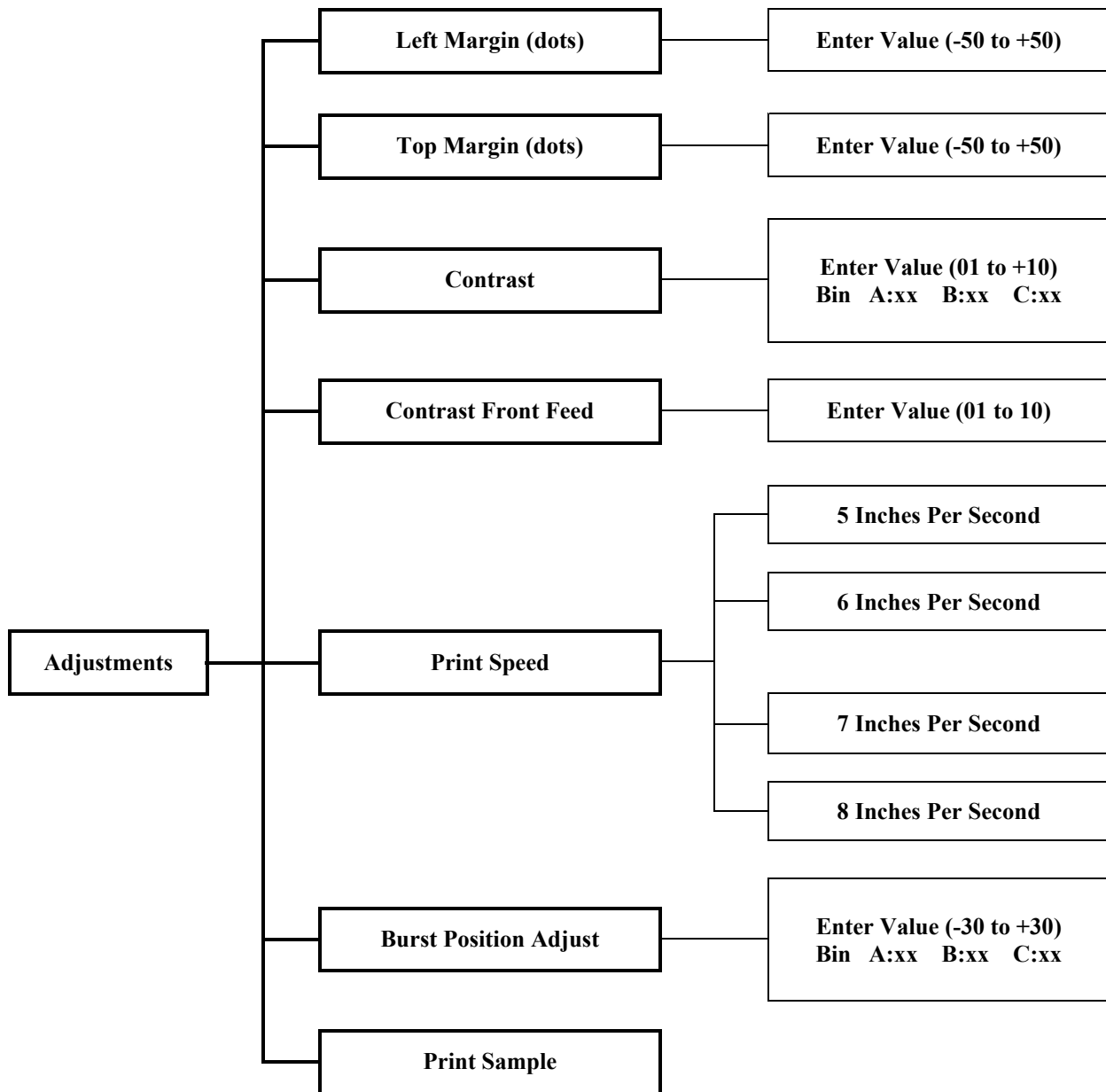
Menu structure may change depending on the specific customer firmware version.



1. Press the ONLINE key to take the Unit off-line, and then press the ENTER key to access the menu system.
2. See Adjustments sub menu tree for further details.
3. Service menu is password protected. See Service sub menu trees for further details.
4. Print head profile checks element resistance and then prints results. Profile algorithm takes approximately 20 sec.
5. See Operator's Manual "Cleaning" Section for complete process details.

## 7.3 Adjustments Menu

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



1. Left Margin shifts the entire printed image left and right (staple stub direction).
2. Top Margin shifts the entire printed image to the top and bottom edges.
3. Contrast sets print darkness (individual settings for each bin).
4. Contrast setting for the reval slot input.
5. Print speed selects the ticket stock speed through the print head path area.
6. Burst position adjustment (individual settings for each bin).

## 8.0 Basic Unit Operation and Setup

The Unit has been configured at the factory to meet each customer's requirements. Use the following procedures to power on the Unit and load ticket stock. 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 O (OFF) position if the Unit does not indicate RAM TEST status on the display within 2-3 seconds after power is applied.**

**If the display does not show ONLINE status within 30 seconds, refer to the "Troubleshooting" section for help.**

## 8.1 Powering the Unit On and Off

- 8.1.1 To power-up the Unit, locate the power switch below the front control panel on the front of the Unit and toggle it to the **I (ON)** position. As soon as the Unit is powered on, it will begin performing an internal self-test procedure that may take up to 10 seconds.
- 8.1.2 To power-down the Unit, simply toggle the power switch to the **O (OFF)** position.

## 8.2 Loading Ticket Stock

### CAUTION

**Take caution when opening the left side door. Refer to "Installation" section for details on how the left side door opens and the space required.**



### WARNING

**To prevent personal injury, do not wear loose clothing or jewelry and do not stick fingers into transport mechanism when loading ticket stock. The transport mechanism contains moving parts. Read the entire procedure before loading ticket stock.**

- 8.2.1 Verify the power switch is in the **I (ON)** position.
- 8.2.2 Unlock the door on the left side of the Unit and swing it open.
- 8.2.3 Rotate the ticket stock box until the arrows on the side of the box point up, then remove the box top (see the figure on the next page for an example of ticket stock loading). The example shown on the next page is a standard ARC box design. Ticket stock box nomenclature varies from stock supplier and controlling agencies. Check with the ticket stock supplier for details.
- 8.2.4 Place the box(s) into the selected bin locations with the printable side of the first ticket facing down, and the magnetic stripe (if applicable) on the back of the ticket against the inner wall.

**NOTE** The printable side of direct thermal stock has a heat sensitive coating. Although it is obvious which side of ATB 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.**



## WARNING

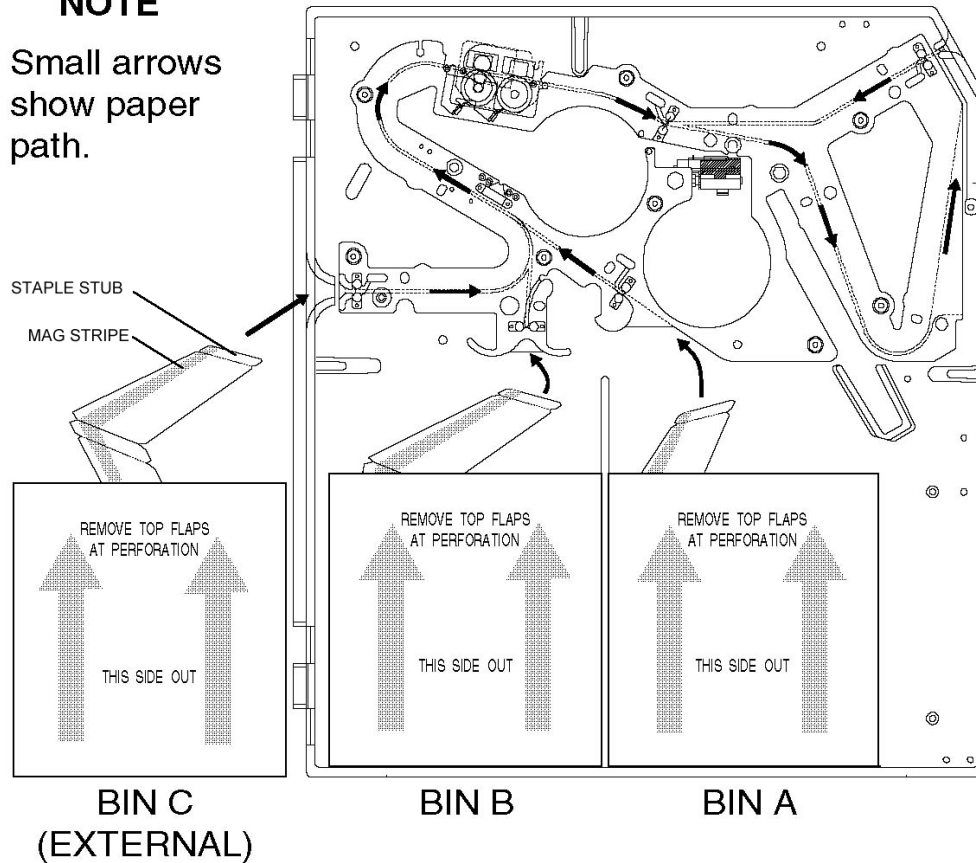
To prevent personal injury, be prepared to release ticket stock when the bin input senses that ticket stock has been inserted.

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 release the ticket stock when the bin motor grabs onto the ticket stock and pulls it into the bin input.

## NOTE

Small arrows show paper path.



- 8.2.5 Insert ticket stock into selected bin inputs, staple stub first and oriented as shown above. Note that the magnetic stripe (if applicable) must be against the inner wall as shown. Release ticket stock when the bin motor begins to pull the ticket stock into operating position. Refer to diagram on the left side door (internal panel) for more detail.
- 8.2.6 When all selected paths have been loaded with ticket stock, close and lock the left side door.
- 8.2.7 If the Unit is in the Off-line state, press the ONLINE key to resume operation.

## 9.0 Operating Under a CRS or Airline Host

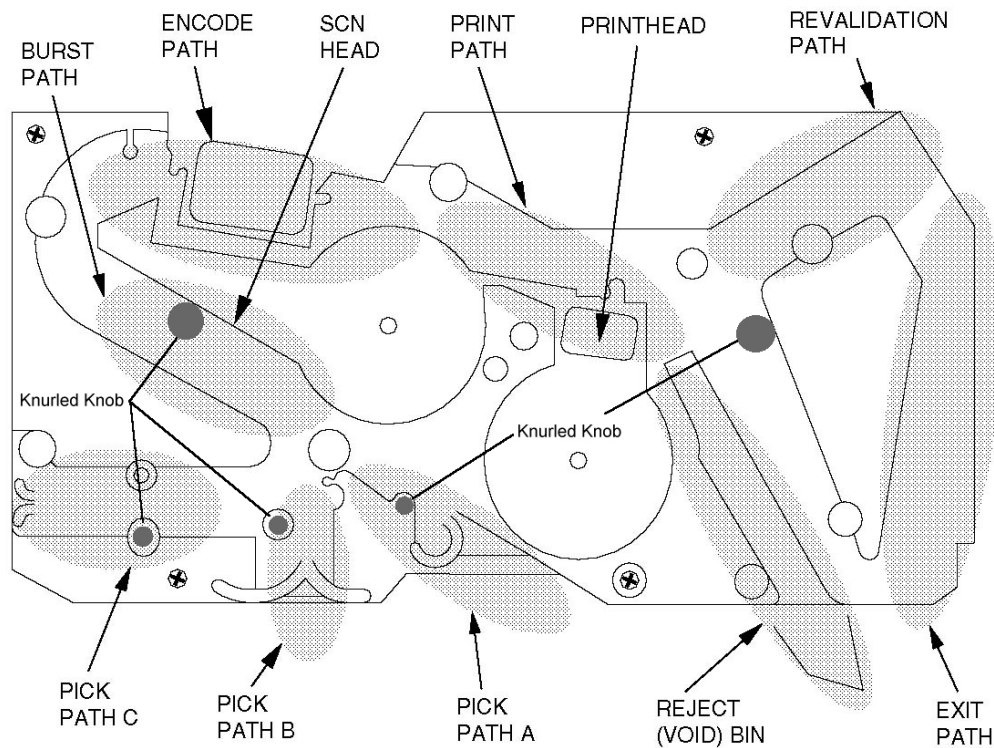
Each CRS (Computer Reservation System) or Airline host has a unique way of working with ATB Units. The Unit was designed to work with all major CRS. If a problem occurs while operating the Unit with your CRS connection, refer to the “Troubleshooting” section for help.

All host connections, set-up, and print adjustments should be completed before attempting to go on-line with the CRS. After the Unit is powered on and loaded with ticket stock, complete the following instructions to go on-line:

- 9.0.1 Observe the front panel display. The top line of the display should show “ONLINE”. The exact wording on the display may vary depending on the specific customer firmware version.
- 9.0.2 If the Unit is not on-line, press the ONLINE key. If the Unit will not go on-line, refer to the “Troubleshooting” section for help.
- 9.0.3 Once the Unit is on-line, contact the CRS and request that a document be sent to the Unit.
- 9.0.4 Observe the front panel for an indication that the Unit is receiving data. The ONLINE LED will flash when the Unit receives and Transmits data.
- 9.0.5 Verify that the test document is printed after the CRS data transmission is complete and that the document is printed correctly. If the document is correct, the Unit is ready to use.
- 9.0.6 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 Unit. If there is still a problem, refer to the “Troubleshooting” section for help.

## 10.0 Clearing Stock Jams

The figure below defines the paper path areas in the transport mechanism. To clear a ticket stock jam, use the following procedure:



- 10.0.1 Note the location of the jam indicated on the display and refer to the figure above to locate the corresponding area where the jam occurred.
- 10.0.2 Press the RESET key. The Unit will attempt to clear the jam.
- 10.0.3 If the Document Path Jam message is cleared, press the ONLINE key to continue operation.
- 10.0.4 If the jam condition persists, complete the following procedure:



### WARNING

**To prevent personal injury, REMOVE POWER before manually clearing ticket stock jams.**

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

### CAUTION

**Take caution when opening the left side door. Refer to “Installation” section for details on how the left door opens and the space required.**

- 10.0.4.2 Unlock the door on the left side of the Unit and swing it open.



### 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

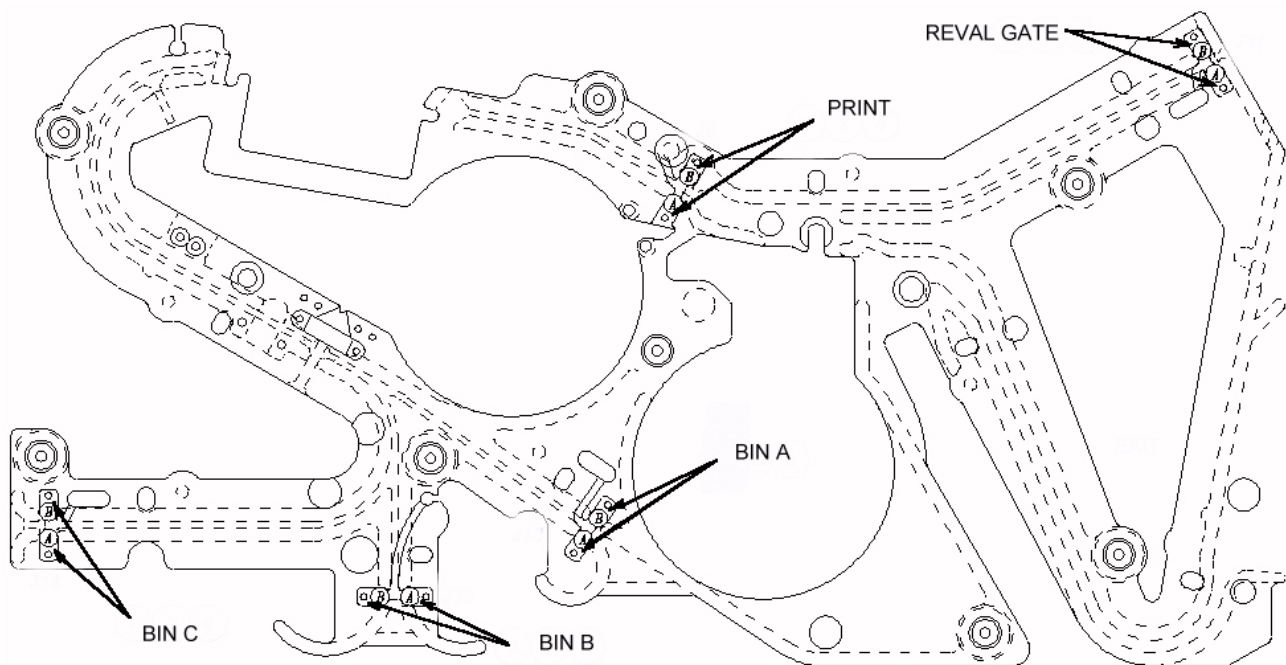
To prevent damage, do not hit or scratch the print head and encoder components when clearing ticket stock jams. Contact with hard objects can easily damage the print head and encoder components.



## CAUTION

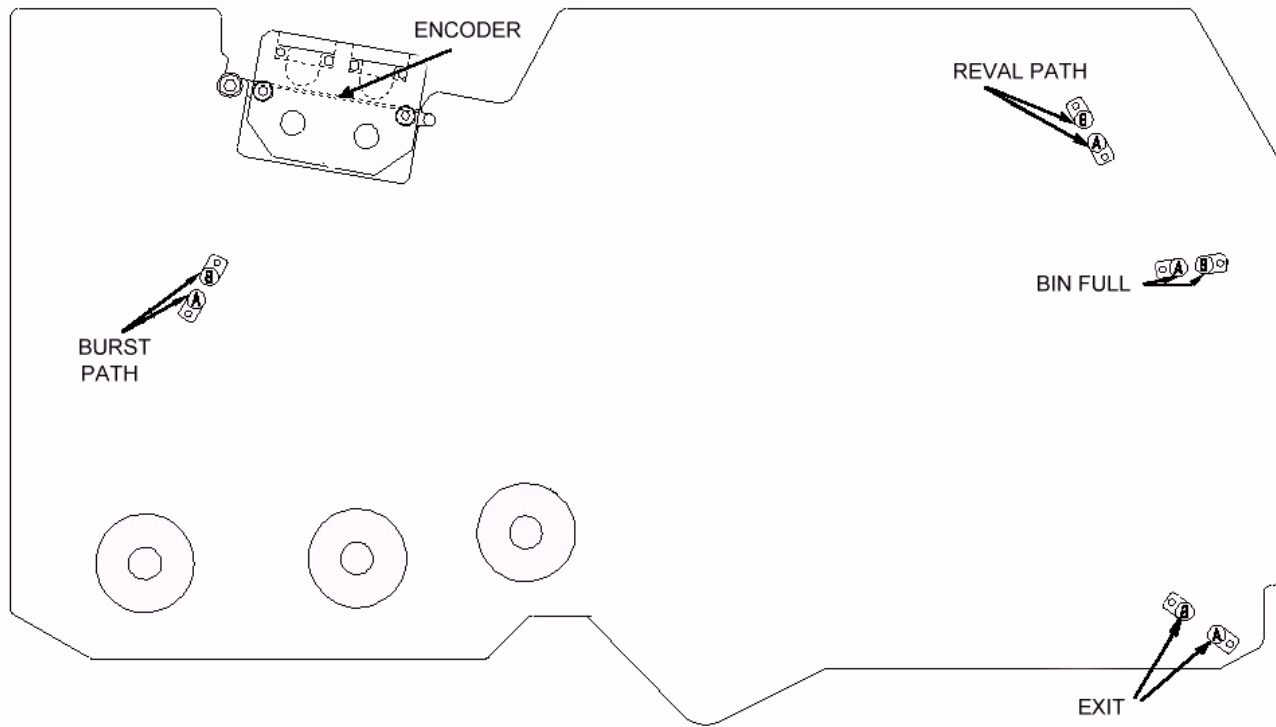
To prevent damage, do not touch the print head or encoder components unless standard electrostatic discharge (ESD) handling precautions are taken.

- 10.0.4.3 Using the three lower knurled knobs, attempt to move the stock back out of the Bin A, B, and C input paths. Using the two larger knurled knobs, attempt to move the stock through the encoder, print, exit, and revalidation path areas.
- 10.0.4.4 If you cannot remove the stock using the knurled knobs, remove the ticket stock causing the jam through the openings in the path either through the side areas or bottom of the transport mechanism.
- 10.0.4.5 Make sure that all the pieces of the ticket stock are removed from the transport mechanism and all sensors are cleared before continuing. Refer to the following two figures for sensor locations.
- 10.0.4.6 Plug the power cord back into the Unit, toggle the power switch to **I** (ON), and reload the ticket stock as described in the “Basic Operation and Setup” section.



**Stock Sensors on Outer Wall**





**Stock Sensors on Inner Wall**

## 11.0 Cleaning

This section defines basic cleaning procedures for the Unit. Although the Unit will perform dependably right out of the box, periodic inspection and cleaning should be performed to keep it in good working order.

To prevent damage, Unimark recommends that only qualified service technicians should perform Section 11.2 and above.

The following inspection/cleaning procedures are presented separately for clarity, but may be performed at the same time:

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



### WARNING

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



### CAUTION



**To prevent damage, do not touch the print head or encoder components unless standard electrostatic discharge (ESD) handling precautions are taken.**

## 11.1 Using the Cleaning Card

The Cleaning Card is saturated in a 99% Isopropyl Alcohol cleaning solution, and has been designed to be fed through the transport mechanism and clean the print head, print head platen, and encoder drive wheels. Cleanings cards are available from Unimark by calling customer service at 800-255-6356. The part number for the cleaning card is 700-5014-600 (single), or the card may be ordered as a kit of five (-605K), twenty-five (-625K), etc.

**Do not remove the card from the sealed pouch until you are ready to insert the card into the Unit.**

To use the cleaning card:

- 11.1.1 Power the Unit on.
- 11.1.2 Take the Unit off-line (press the ONLINE key).
- 11.1.3 Press the ENTER key to enter the menu system.
- 11.1.4 Press the UP/DOWN arrow key until the “Print Tests” menu appears.
- 11.1.5 Press the ENTER key to access this menu.
- 11.1.6 Press the UP/DOWN arrow key until the “Cleaning Card” option appears.
- 11.1.7 Press the ENTER key.
- 11.1.8 Tear open the pouch containing the cleaning card.
- 11.1.9 Insert the cleaning card into the front revalidation slot of the Unit. The Unit will automatically move the cleaning card through the encoder, print head, and exit path areas of the Unit.
- 11.1.10 Wait until all motors stop running before using the Unit, and allow at least one minute for the cleaning solution to evaporate.
- 11.1.11 Press the ONLINE key and place the Unit back in the on-line state.

## 11.2 Periodic Inspection

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

- 11.2.1 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.
- 11.2.2 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.
- 11.2.3 If cleaning is required, complete the recommended cleaning procedures listed in the following sections.

## 11.3 Cleaning External Surfaces

### CAUTION

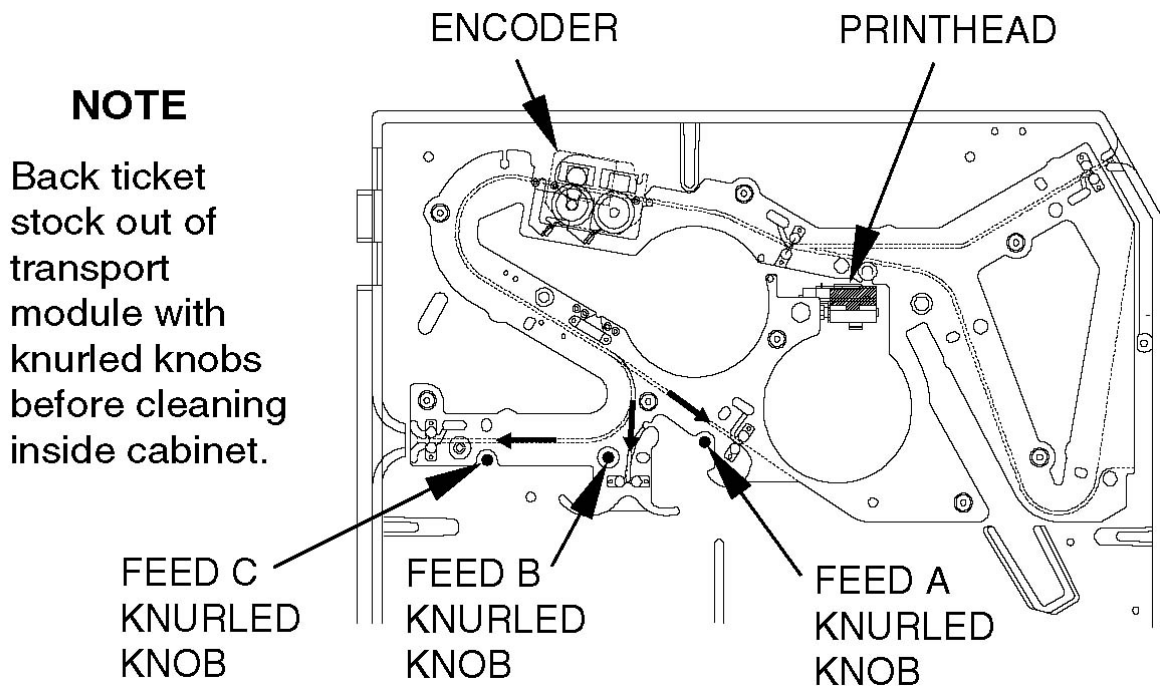
**To prevent damage, use only mild commercial cleaning solutions or a mild solution of soap and water to clean the EXTERNAL surfaces of the Unit’s enclosure. The enclosure can be damaged by strong solvents.**

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

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

## 11.4 Cleaning Inside the Enclosure

Dust is produced from ticket stock passing through the transport mechanism. Use the following procedure to clean inside the Unit enclosure (left paper stock side):



11.4.1 Toggle the power switch to **O** (OFF) and unplug the power cord from the rear of the Unit.

### CAUTION

**Take caution when opening the left side door. Refer to “Installation” section for details on how the left door opens and the space required.**

11.4.2 Unlock the door on the left side of the Unit and swing it open.

11.4.3 Back the ticket stock all the way out of the transport mechanism by turning the knurled knobs shown in the figure above.

11.4.4 Remove ticket stock as necessary and vacuum dust from inside of Unit.

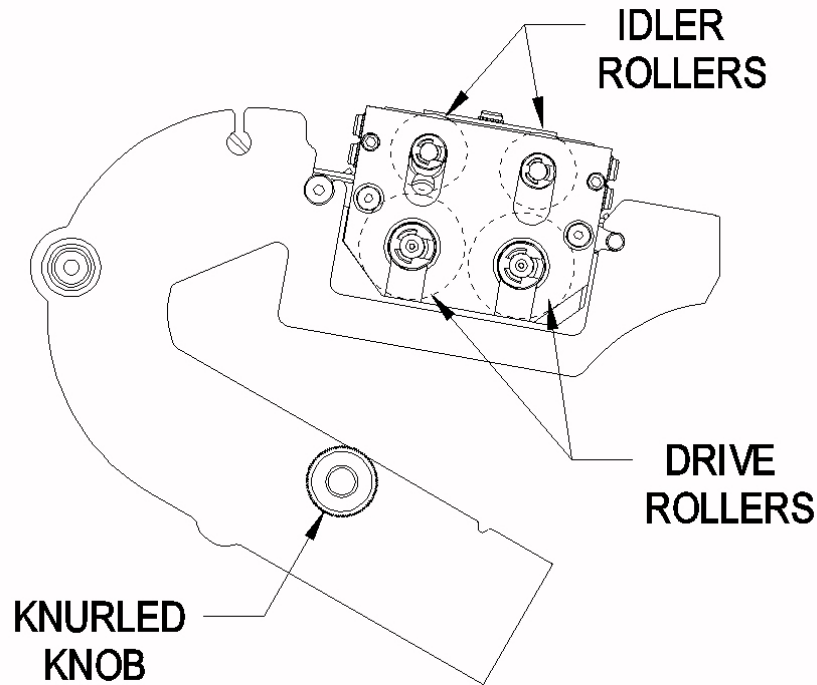
11.4.5 Using compressed air, blow the dust from ticket stock path grooves in transport mechanism.

11.4.6 Using compressed air, blow the dust off the sensors in the ticket stock path. Refer to the diagram on the left side door (internal panel) or the sensor location figures in the “Clearing Stock Jams” section.

11.4.7 After all cleaning is complete, plug the power cord back into the rear of the Unit, toggle the power switch to **I** (ON), and reload the ticket stock. Refer to the “Basic Unit Operation and Setup” section.

## 11.5 Cleaning the Encoder Drive and Idler Rollers

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



- 11.5.1 Toggle the power switch to **O** (OFF) and disconnect the power cord from the rear of the Unit.

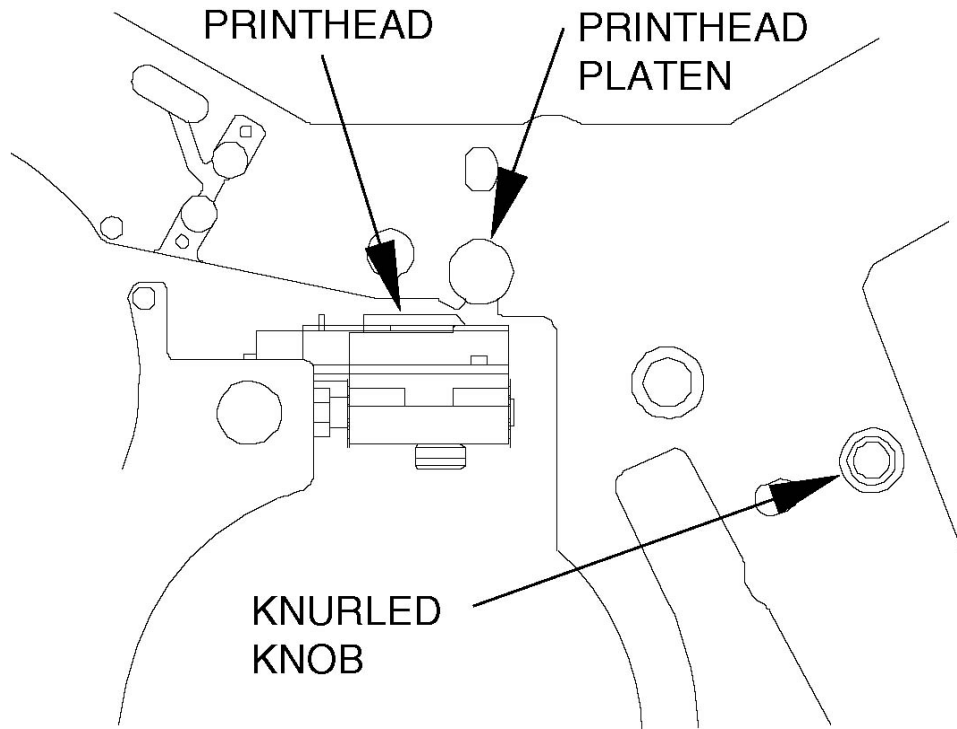
### CAUTION

**Take caution when opening the left side door. Refer to “Installation” section for details on how the left and right side doors open and the space required.**

- 11.5.2 Unlock the door on the left side of the Unit and swing it open.
- 11.5.3 Back the ticket card stock all the way out of the transport mechanism.
- 11.5.4 Dampen a lint-free cloth with a 99% Isopropyl Alcohol cleaning solution.
- 11.5.5 Hold the cloth firmly against one of the bottom drive rollers 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/ink buildup on the roller.
- 11.5.6 Dampen another area of the cloth and repeat this process until the cloth no longer discolors. This will indicate the roller is clean. Repeat until all bottom drive rollers are cleaned.
- 11.5.7 Dampen another area of the cloth. Hold the cloth against one of the top idler rollers 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/ink buildup on the roller.
- 11.5.8 Dampen another area of the cloth and repeat this process until the cloth no longer discolors. This will indicate the roller is clean. Repeat until all top idler rollers are cleaned.
- 11.5.9 After all cleaning is complete, plug the power cord back into the rear of the Unit, toggle the power switch to **I** (ON), and reload the ticket stock. Refer to the “Basic Unit Operation and Setup” section.

## 11.6 Cleaning the Print Head and Platen

Use the following procedure to manually clean the print head:



- 11.6.1 Toggle the power switch to **O** (OFF) and disconnect the power cord from the rear of the Unit.

### CAUTION

**Take caution when opening the left side door. Refer to “Installation” section for details on how the left door opens and the space required.**

- 11.6.2 Unlock the door on the left side of the Unit and swing it open.
- 11.6.3 Back the ticket card stock all the way out of the transport mechanism.
- 11.6.4 Dampen a foam swab in a 99% Isopropyl Alcohol cleaning solution and apply it to the flat burn-line surface area of the print head. This is the area that normally contacts the print head platen. Move the swab back and forth across the print head until it is clean.
- 11.6.5 Dampen a lint-free cloth with a 99% Isopropyl Alcohol cleaning solution.
- 11.6.6 Hold the cloth firmly against the print head platen while using your other hand to turn the knurled knob 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.
- 11.6.7 Dampen another area of the cloth and repeat this process until the cloth no longer discolors. This will indicate the platen is clean.
- 11.6.8 After all cleaning is complete, plug the power cord back into the rear of the Unit, toggle the power switch to **I** (ON), and reload the ticket stock. Refer to the “Basic Unit Operation and Setup” section.

## 12.0 Troubleshooting

### 12.1 Basic Scenario Failure Analysis

The following table describes typical fault scenarios that may occur, the possible causes, and corrective actions to be taken.

Scenario	Possible Cause	Corrective Action
Burst Failure	Stock damaged and could not burst/separate	Remove stock from burst area and press RESET key to continue
	Stock length setting does not match stock being used	Check with CRS or Airline host and confirm stock length setting
	Burst positioning needs adjustment	Check the burst position level for the selected bin (in adjustments menu and listed on configuration coupon). Adjust if appropriate (more +pos number moves burst position further into the transport mechanism, while a more -neg number moves the burst position towards the bin input.
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	Magnetic stock not loaded	Load magnetic stock in selected bins
	Stock loaded in the wrong direction	Load stock correctly (confirm magnetic stripe location is against the inside wall)
Not powering up properly or stuck in self-test state	Unit may have a hardware failure on the transport mechanism PCBA (Printed Circuit Board Assembly)	Toggle the Unit's power switch to the <b>O</b> (OFF) position, wait a few seconds, then switch the power switch to the <b>I</b> (ON) position and attempt to power on again. If this does not correct the problem, call the CRS or Airline host Help Desk for assistance
Out of Forms	One of the selected bins is out of stock.	Load more ticket stock in the selected bins
Not Operating (display indicates Offline)	The Unit is off-line or the ONLINE key was pressed while Unit was on-line.	Press the ONLINE key to place the Unit on-line
	Paper jam in transport mechanism or ticket stock path	Clear the jam and load the ticket stock correctly. Refer to the "Clearing Ticket Jams" section for instructions
	Host system has detected an error condition and has taken the Unit off-line	Most errors can be corrected by pressing the RESET key, or restarting the Unit. If problems persist, call the CRS or Airline host Help Desk for assistance
Not Operating (display shows erroneous characters)	Unit may have a hardware failure on the transport mechanism PCBA (Printed Circuit Board Assembly)	Toggle the Unit's power switch to the <b>O</b> (OFF) position, wait a few seconds, then switch the power switch to the <b>I</b> (ON) position and attempt to power on again. If this does not correct the problem, call the CRS or Airline host Help Desk for assistance
Not Operating (display is blank)	The Unit is not powered on.	Toggle the Unit's power switch to the <b>I</b> (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 Unit. If OK, verify the wall outlet has power
	The Unit's power supply may have malfunctioned, or a printed circuit board may be defective	Make sure power cable(s) are plugged in and completely seated on both the wall outlet and Unit ends. If this does not correct the problem, call the CRS or Airline host Help Desk for assistance
Not Printing (ONLINE LED does not blink)	The host is not communicating with the Unit	Make sure that the host communication cable is connected and completely seated on the Unit
	The required hardware connection has not been made or has been misconnected	Check the host connection and verify that the correct one has been installed. For example, if using the serial RS-232 ports, make sure the cable is connected to COMM1 and not COMM2 by mistake (some versions may use COMM2)
Not Printing on Ticket	Ticket stock loaded incorrectly	Load ticket stock in correct orientation
	Using thermal transfer (TT) ticket stock	Load direct thermal (DT) ticket stock
Not printing in correct location on the ticket	Print misalignment	Call the CRS or Airline host help desk for assistance
Print too Light or Dark	Print contrast level is too low for the stock being used	Check the print contrast level for the selected bin (in adjustments menu and listed on configuration coupon). Adjust if appropriate
	Print head location misadjusted	Call the CRS or Airline Host help desk for assistance

## 12.2 Basic Alert Messages

A front panel alert message occurs when the Unit detects a condition that must have user intervention. These messages may also be indicated by an audible tone and/or an LED flashing. Exact message will vary depending on specific customer firmware.

The following table describes typical alert messages that may occur, the possible causes, and corrective actions to be taken.

Alert Message	Possible Cause	Corrective Action
“Jam - Burst Failure” “Clear, Press Reset”	Unit failed to burst or separate a ticket from the stock source	Press RESET key. Unit will attempt to clear the jam itself. If it cannot clear the jam you may have to manually remove the stock
“Jam – Bin A, B, or C” “Clear, Press Reset”	Unit failed to move stock from Bin (as indicated) to the proper location for the burst operation or when loading new stock	Press RESET key. Unit will attempt to clear the jam itself. If it cannot clear the jam you may have to manually remove the stock
“Jam – Encoder” “Clear, Press Reset”	Unit failed to move the stock through the encoder to the print head path area	Press RESET key. Unit will attempt to clear the jam itself. If it cannot clear the jam you may have to manually remove the stock
“Jam – Print” “Clear, Press Reset”	Unit failed to move the stock past the print head to the exit path area	Press RESET key. Unit will attempt to clear the jam itself. If it cannot clear the jam you may have to manually remove the stock
“Jam – Exit” “Clear, Press Reset”	Unit failed to move the stock out the exit point and clear the exit sensor and rollers	Press RESET key. Unit will attempt to clear the jam itself. If it cannot clear the jam you may have to manually remove the stock
“Jam – Reval” “Clear, Press Reset”	Unit failed to move the stock from the revalidation slot/path into the encoder path area	Press RESET key. Unit will attempt to clear the jam itself. If it cannot clear the jam you may have to manually remove the stock
“Online” “Communications Error”	There is a mismatch between the host and Unit’s communication parameters (baud, parity, data bits)	Check the host CRS parameters against the Unit’s communication settings. Call the CRS or Airline host Help Desk for assistance
“Bin(s) A,B,C Empty” “Please Load Stock”	Indicated bin(s) are empty	Check bin location(s) indicated and load stock as necessary
“Exit Bin Full” “Remove Coupons”	Indicates that the exit bin is full	Remove stock from exit bin/catcher
“Reject Bin Full” “Empty, Press any key”	Indicates that the reject bin is full	Remove stock from reject bin, then press any key to clear message
“Bin(s) A,B,C” “SCN Read Error”	Unit could not read SCN (Stock Control Number) from the stock installed in the indicated bin(s)	Check stock in indicated bin(s) and verify it is installed correctly Verify stock in indicated bin(s) is actually pre-encoded SCN type
“Online” “Missing PECTAB x”	Unit could not print tickets because the referenced format table (PECTAB) was not in memory	Load the appropriate PECTAB. Call the CRS or Airline Host help desk for assistance. ERR6 will be returned to the host CRS.
“Online” “PT:xx Element:##”	Unit detected an error in the PECTAB sent to Unit. xx is the PECTAB name and ## is the element that has the error.	Call the CRS or Airline Host help desk for help. ERR8 will be returned to the host CRS.
“Online” “PT: Bad Header”	Unit detected an error in element 00 (header element) of the PECTAB being downloaded to the Unit.	Call the CRS or Airline Host help desk for help. ERR8 will be returned to the host CRS.
“Online” “# Stock Type Err” OR “Missing Stock Type #”	Unit detected a mismatch between the stock type being called out in the ticketing data stream and what is setup in the Unit’s configuration for each bin.	Call the CRS or Airline Host help desk for proper stock setup based on the ticketing data stream being utilized. ERRS will be returned to the host CRS.
“Online” “TK: Missing Sep.”	Unit detected an error in the ticketing data stream. The Unit did not receive a separator character in a location that it expected.	Call the CRS or Airline Host help desk for help. ERR3 will be returned to the host CRS.
“Online” “TK: Bad Elem ##”	Unit detected an error in the ticketing data stream. ## indicates the element number in the data where the Unit detected the error.	Call the CRS or Airline Host help desk for help. ERR3 will be returned to the host CRS.
“Online” “ERR7: Cpn Inserted”	Unit has received a ticketing data stream while a coupon has been inserted in the front revalidation slot. The Unit cannot process tickets while a coupon is inserted for revalidation.	Call the CRS or Airline Host help desk for help. ERR7 will be returned to the host CRS. Reset will eject coupon. ERR1 will be returned to host CRS.

## 13.0 Thermal Print Head Replacement

13.0.1 Power the Unit off. CAUTION: Print head is sensitive to ESD.

13.0.2 Unlock the door on the left side of the Unit and swing it open.

13.0.3 Remove the power cable from the rear of the print head.

13.0.4 Remove the interface cable from the rear of the print head. The cable may have RTV applied to the cable, therefore take caution when pulling the cable free from the print head.

13.0.5 Loosen the thumbscrew on the underside of the print head. Turn the thumbscrew counter clockwise until it drops free from the print head, but remains captive in the print head block.

13.0.6 Slide the print head assembly straight out from the transport mechanism. Note how the guide on the print head assembly matches the groove in the print head mounting block.

13.0.7 Slide the new print head assembly into the transport mechanism, matching the print head assembly guide to the groove in the print head mounting block.

13.0.8 Tighten the thumbscrew clockwise and secure the new print head assembly. Torque thumbscrew to 10in-lbs.

13.0.9 Re-install the power and interface cables into the print head assembly.

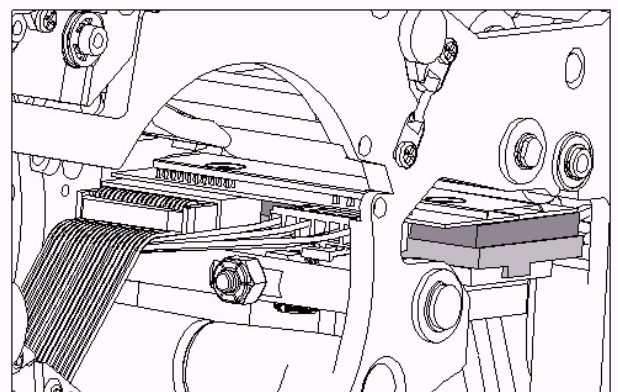
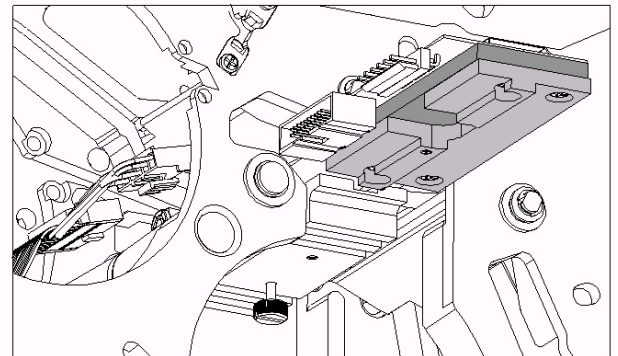
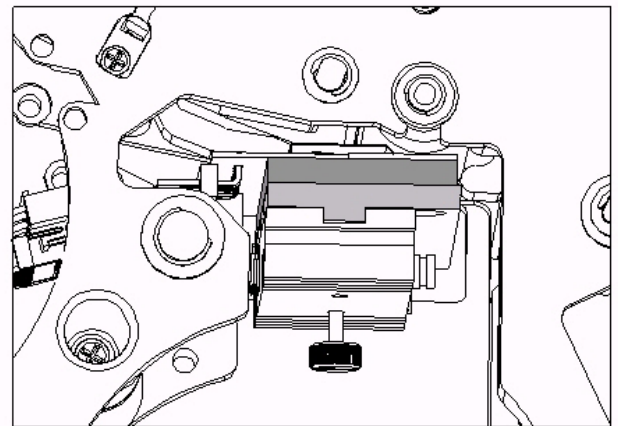
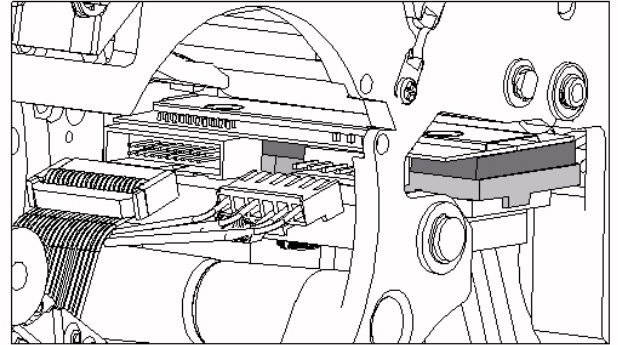
13.0.10 Power the Unit on. Take the Unit off-line by pressing the ONLINE key.

13.0.11 Press the ENTER key and then either the UP or DOWN arrow until the SERVICE MENU appears. Press the ENTER key.

13.0.12 Enter the service password (UP/DOWN arrows change the individual character value and RIGHT/LEFT arrows move the cursor side to side). Press the ENTER key.

13.0.13 Press the UP or DOWN arrow key until the MAINTENANCE menu appears. Press the ENTER key.

13.0.14 Press the UP or DOWN arrow key until the NEW PRINthead option appears. Press the ENTER key. The Unit will read the baseline resistance of the print head you just installed. Once the baseline resistance has been read, press the ONLINE key to put the Unit back into service.





## 14.0 Customer/Technical Support

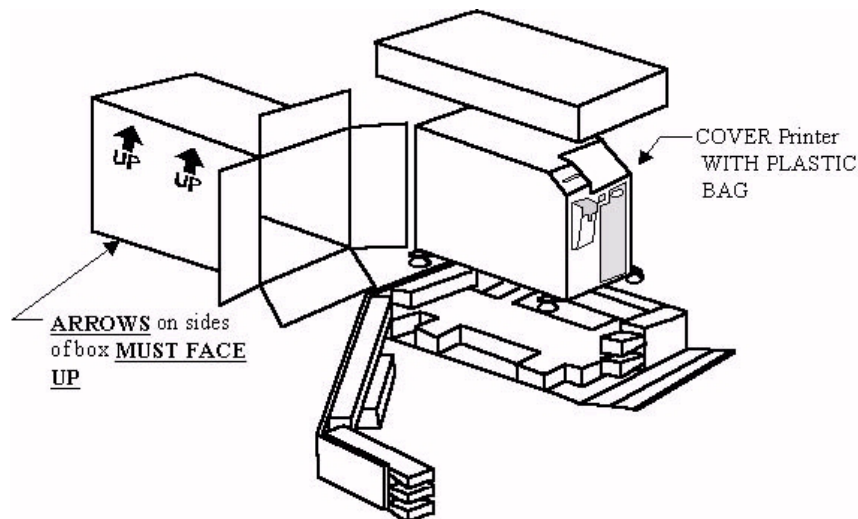
### 14.1 Return Authorization/Customer Service

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. Perform the following steps to complete the return process:

- 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 Packaging – Use original packaging materials or equivalent. If not available, Unimark can provide at a small cost.



- 14.1.3 Place the Unit inside an appropriately sized plastic bag.
- 14.1.4 Place the Unit onto the bottom piece of foam pad.
- 14.1.5 Wrap the narrow foam pad sleeve around the base of the Unit, enclosing the wheels of the Unit and consequently the bottom foam pad.
- 14.1.6 Place the top piece of foam padding onto the Unit.
- 14.1.7 Slide the wrapped Unit into the open side of the shipping container.
- 14.1.8 Enter the RA # on the packing list and on the outside of the container in at least two locations for easy identification at Unimark.
- 14.1.9 Shipping label to include return address as well as "ship to".
- 14.1.10 Notify your "carrier of choice" for pick-up and delivery to Unimark.

## 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 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](http://www.unimark.com)). The customer support telephone number and e-mail address are listed for your convenience.

## 15.0 Warranty Statement

### Printer

Unimark 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 and Stock Drive Rollers / Belts / Magnetic Read and Write Heads

This warranty is limited to a period of one year, (365 days) for high wear items such as the platen and stock drive rollers, belts, and magnetic read and write heads. In addition, the thermal print head warranty is limited to a period of one year (365 days) or 1,000,000 linear inches of use, whichever comes first. This warranty does not cover any 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 at: 10556 Lackman Rd, Lenexa, KS 66219. 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. 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.